Appendix INT-1

Initial Study

COUNTY OF SACRAMENTO
PLANNING AND ENVIRONMENTAL REVIEW DIVISION

INITIAL STUDY

1.1 PROJECT INFORMATION

CONTROL NUMBER: PLNP2011-00095
NAME: JACKSON TOWNSHIP SPECIFIC PLAN
LOCATION: The Plan Area is located on 1,391 acres in central Sacramento County, approximately 2 miles south and 1.5 miles west of the City of Rancho Cordova. The Plan Area is primarily located within the Vineyard community, but the portion north of Kiefer Boulevard is located within the Cordova community.
ASSESSOR'S PARCEL NUMBERS: 067-0050-002, -004, -005, -019, -020, -021, -022, -028, -029, -045, -047, -051, -058, 067-0060-007, -008, -010, -011, -012, -013, -014, -016, 067-0070-002, 067-0080-004, -023, -028, -031, -032, -033, -034, -040, -042, -045, -048, -049, -050, -051, -057, and -061.
OWNER: There are 24 different landowners within the Plan Area, the largest of which is the Applicant, Tsakopoulos Investments, which owns 862 acres (62%) of land within the Plan Area.
APPLICANT: Tsakopoulos Investments, represented by Angelo G. Tsakopoulos.

1.2 PROJECT DESCRIPTION

The proposed Project includes a land use plan that would provide for a range of different uses, including Low Density Residential, Medium Density Residential, High Density Residential, General Commercial, Community Commercial, Mixed Use, Office, schools, a fire station, parks, a wetland preserve, a greenbelt/drainage corridor, landscaping, detention, agriculture, and associated roadways.
Overall, the Project includes 6,143 residential units of varying densities, including 100 units within a mixed use area, as well as nearly two million square feet of commercial, retail, and non-residential mixed use space.
The Project is designed to promote non-vehicular travel, including biking, walking, and use of transit. The land plan includes two "hubs" with higher densities and more mixes of uses, including a Town Center located along Jackson Road and a smaller Village Center located at the intersection of Excelsior Road and Kiefer Boulevard. The Village Center would serve the proposed Project, future development in the West Jackson Highway Master Plan Area to the west, and the existing Independence at Mather subdivision, which is currently isolated from services. Most of the homes developed within the Plan Area would be located within 1.4 miles of parks, schools, transit lines, and either the Town Center or Village Center.
The applicant is also proposing three other alternatives that are generally similar to the proposed Project, with slight variations. For the most part, the alternatives are similar, but Alternative 1A includes more Office space, Alternative 1B changes the configuration of the land uses in the Village Center, and Alternative 1C is a combination of the two.
See the Project Description and Alternatives chapters in the EIR for detailed descriptions of the proposed Project and all of the Alternatives.

1.3 ENVIRONMENTAL SETTING

The Plan Area is currently designated as Extensive Industrial, General Agriculture 20 (minimum parcel sizes of 20 acres), and a small area of Urban Reserve on the Sacramento General Plan Land Use Diagram and zoned Light Industrial (M-1), Agricultural 80 (AG-80), and Interim Agricultural Reserve (IR).

The Plan Area is largely undeveloped. Current land uses on the properties within the Plan Area are predominantly for grazing, small ranches, and agricultural-residential homes. A portion of the Plan Area includes the Sacramento Raceway, which hosts regular stock car and drag racing events several times a month throughout the year.

To the west of the Plan area, land uses are characterized by agricultural uses, mining activities, and commercial sales of landscaping materials. Lands to the east are generally similar to the Plan Area, with grazing and agricultural-residential uses predominating. The property to the east also includes the Sacramento Rendering Company plant, a facility that accepts animal tissue, processes it, and then distributes the byproduct for use in the manufacture of other goods. Land to the north is dominated by the presence of Mather Airport and appurtenant facilities, and includes the Independence at Mather residential subdivision and a wetland and nature preserve. Mather Golf Course is located further to the northeast. Properties to the south of the Plan Area on the opposite side of Jackson Highway are generally in agricultural or agricultural-residential use or are within a wetland preserve.

Most of the Plan Area site is grassland with interspersed wetlands; portions of the site have historically been disturbed by agricultural activities. The southwestern portion of the Plan Area is within the headwaters of Elder Creek, and a small bend in Morrison Creek runs through the northeastern corner of the Plan Area.

1.4 ENVIRONMENTAL EFFECTS

Appendix G of the California Environmental Quality Act (CEQA) provides guidance for assessing the significance of potential environmental impacts. Based on this guidance, Sacramento County has developed an Initial Study Checklist. The Checklist identifies a range of potential significant effects by topical area.

Due to the size and scope of the Project, it is known that an Environmental Impact Report (EIR) will be required. This Initial Study Checklist has been used to scope the EIR, by focusing out minor issues that do not warrant the more in-depth and detailed explanation that will be found in the EIR. Therefore, when an impact has been determined to be a more complicated issue that needs to be analyzed in more detail, the Checklist identifies that impact as a potentially significant impact and refers the reader to the EIR with little additional information. In addition, although some impacts are identified as less than significant in the Checklist, the impact may refer the reader to the EIR if the topic may be controversial or require more explanation than would be appropriate in the Checklist. Detailed topical discussions are not included in this Checklist. The reader should refer to the technical sections of the EIR for additional analysis.

1.5 INITIAL STUDY CHECKLIST

Appendix G of the California Environmental Quality Act (CEQA) provides guidance for assessing the significance of potential environmental impacts. Based on this guidance, Sacramento County has developed the following Initial Study Checklist. The Checklist identifies a range of potential significant effects by topical area. The words "significant" and "significance" used throughout the following checklist are related to impacts as defined by the California Environmental Quality Act as follows:

1 Potentially Significant indicates there is substantial evidence that an effect MAY be significant. If there are one or more "Potentially Significant" entries an Environmental Impact Report (EIR) is required. Further research of a potentially significant impact may reveal that the impact is actually less than significant or less than significant with mitigation.

2 Less than Significant with Mitigation applies where an impact could be significant but specific mitigation has been identified that reduces the impact to a less than significant level.

3 Less than Significant or No Impact indicates that either a project will have an impact but the impact is considered minor or that a project does not impact the particular resource.

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
1. **LAND USE** - Would the project:				
a. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to a general plan, specific plan or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	X			A full evaluation of the Project's consistency with other land use plans, policies, or regulations intended to avoid or mitigate environmental effects will be included in the EIR.
b. Physically disrupt or divide an established community?			X	The Project would result in the development of a new community in an area that is currently undeveloped, but is located near other planned development areas. As such, it will not create physical barriers that substantially limit movement within or through the community. Therefore, there would be no impact, and this will not be further analyzed in the EIR.
2. **POPULATION/HOUSING -** Would the project:				
a. Induce substantial unplanned population growth in an area either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of infrastructure)?	X			The Project proposes the establishment of a new major development area that is not currently located within the Urban Policy Area (UPA), but is located within the Urban Services Boundary (USB). One of the entitlement requests is an amendment of the UPA to allow for the expansion of the UPA area. Expansion of the UPA and approval of the proposed Project would directly induce substantial population growth. This impact will be addressed in the EIR.
b. Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere?			X	The project will result in the removal of a few existing agricultural residential dwellings, but includes the creation of 6,143 total dwellings, resulting in a net increase in housing stock. This is a less-than-significant impact, and will not be further addressed in the EIR.
3. **AGRICULTURAL RESOURCES** - Would the project:				

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
a. Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance or areas containing prime soils to uses not conducive to agricultural production?	X			The Plan Area contains some Prime Farmland (as noted on the current Sacramento County Important Farmland Map published by the California Department of Conservation), and implementation of the Project would convert it to non-agricultural uses. The Plan Area also contains Farmland of Local Importance and land designated for Grazing by the California Department of Conservation. This impact will be analyzed in the EIR.
b. Conflict with any existing Williamson Act contract?	X			There are Williamson Act contracts in effect for portions of the Plan Area, but each contract is in Nonrenewal status. This impact will be analyzed in the EIR.
c. Introduce incompatible uses in the vicinity of existing agricultural uses?	X			The Project is located on property that is currently in agricultural production and in the vicinity of other properties in agricultural production. This impact will be analyzed in the EIR.
4. **AESTHETICS -** Would the project:				
a. Substantially alter existing viewsheds such as scenic highways, corridors or vistas?	X			The project does not occur in the vicinity of any designated scenic highways, corridors, or vistas, but it is visible from many major roadways. Furthermore, the Project would substantially change the visual character of the Plan Area from undeveloped agricultural land to an urbanized suburban community. This impact will be analyzed in the EIR.
b. Substantially degrade the existing visual character or quality of the site and its surroundings?	X			Approval of the Project would allow for a new major development project in an area that is currently undeveloped and agricultural in nature. This would result in a substantial change in the visual character of the site and its surroundings. This impact will be addressed in the EIR.
c. Create a new source of substantial light, glare, or shadow that would result in safety hazards or adversely affect day or nighttime views in the area?	X			The project will result in news sources of light and glare as the Plan Area would be developed with 6,143 new homes and nearly 2 million square feet of new businesses. This could potentially result in an effect on day and nighttime views of the area. This impact will be analyzed in the EIR.

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
5. **AIRPORTS -** Would the project:				
a. Result in a safety hazard for people residing or working in the vicinity of an airport/airstrip?	X			The project is located within the overflight zone of Mather Airport. This impact is analyzed in the EIR.
b. Expose people residing or working in the project area to aircraft noise levels in excess of applicable standards?	X			The project is located in the vicinity of Mather Airport and may be located within one of its noise contours. This impact will be analyzed in the EIR.
c. Result in a substantial adverse effect upon the safe and efficient use of navigable airspace by aircraft?	X			The project is located in the vicinity of Mather Airport. This impact will be analyzed in the EIR.
d. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?			X	The project does not involve or affect air traffic movement. There would be no impact, and this is not addressed further in the EIR.
6. **PUBLIC SERVICES -** Would the project:				
a. Have an adequate water supply for full buildout of the project?	X			The Project will result in the development of a new urban community that would require connection to water services. This may require new additional water supplies. This impact will be analyzed in the EIR.
b. Have adequate wastewater treatment and disposal facilities for full buildout of the project?	X			The Project will result in the development of a new urban community that would require connections to wastewater treatment and disposal services. This impact will be analyzed in the EIR.
c. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	X			The Kiefer Landfill has capacity to accommodate solid waste until the year 2030. However, the buildout and continued operation of the proposed Project will extend beyond 2030. This impact will be analyzed in the EIR.
d. Result in substantial adverse physical impacts associated with the construction of new water supply or wastewater treatment and disposal facilities or expansion of existing facilities?	X			The Project will result in the development of a new urban community that would require connection to a public water supply. This may require the construction of new or expanded infrastructure for water supply delivery or wastewater treatment and/or disposal. This impact will be analyzed in the EIR.

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
e. Result in substantial adverse physical impacts associated with the provision of storm water drainage facilities?	X			The Project would result in the development of a new urban community in an area that is currently undeveloped. This will result in the need for new storm water drainage facilities. This impact will be analyzed in the EIR.
f. Result in substantial adverse physical impacts associated with the provision of electric or natural gas service?	X			The Project will result in the development of a new urban community in a currently undeveloped location, which will require electric and natural gas service and development of the associated delivery infrastructure. This impact will be analyzed in the EIR.
g. Result in substantial adverse physical impacts associated with the provision of emergency services?	X			The Project would result in the development of a new urban community that would incrementally increase the demand for emergency services within the Plan Area. The Project includes the development of new fire station that would assist in providing emergency services to the Plan Area and surrounding areas. Development of the fire station is considered as part of the analysis of the potential physical impacts on the environment. However, additional facilities could possibly be required, the construction of which could have an adverse effect on the physical environment. This impact will be analyzed in the EIR.
h. Result in substantial adverse physical impacts associated with the provision of public school services?	X			The Project includes the development of three elementary schools and one middle school/high school campus. These schools would serve students generated by directly by the Project and surrounding areas. The EIR will analyze whether additional school facilities are necessary. The EIR also analyzes the physical environmental impacts associated with development of each of the proposed school sites.
i. Result in substantial adverse physical impacts associated with the provision of park and recreation services?	X			The Project will result in increased demand for park and recreation services, but it will provide for the development of 73.3 acres of developed parkland, as well as wetland preserve, greenbelt corridors, and landscaping. The EIR will analyze whether the developed parkland acreage is sufficient to meet requirements. The EIR considers the physical impacts associated within the development of the onsite parks in its analysis.
7. **TRANSPORTATION/TRAFFIC** - Would the project:				

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
a. Result in a substantial increase in vehicle trips that would exceed, either individually or cumulatively, a level of service standard established by the County?	X			A Traffic Impact Study is being prepared for the Project. Due to the scale of development, there will be a substantial increase in the number of vehicle trips to and from the Plan Area. This impact will be analyzed in the EIR.
b. Result in a substantial adverse impact to access and/or circulation?			X	The Project will be required to comply with applicable access and circulation requirements of the County Improvement Standards and the Uniform Fire Code. Upon compliance, impacts are less than significant. Nonetheless, this impact will be fully analyzed in the EIR.
c. Result in a substantial adverse impact to public safety on area roadways?			X	The Project will be required to comply with applicable access and circulation requirements of the County Improvement Standards and the Uniform Fire Code. Upon compliance, impacts are less than significant. This impact will be further addressed in the EIR.
d. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?			X	The Project includes infrastructure and plans to provide for the support of alternative transportation, including bicycles and public transit. This impact will be analyzed in the EIR.
8. **AIR QUALITY** - Would the project:				
a. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?	X			The Project would result in the development of a new 1,391-acre urban community, which exceeds the Sacramento Metropolitan Air Quality Management District's screening thresholds for criteria pollutants. Therefore, a full analysis and air quality modeling will be completed as part of the EIR to determine the Project's potential impact.
b. Expose sensitive receptors to pollutant concentrations in excess of standards?	X			The Project includes the development of four schools, thousands of residences that could be sensitive receptors. Furthermore, other projects in the area would contain similar uses. This impact will be analyzed in the EIR.
c. Create objectionable odors affecting a substantial number of people?	X			The Project does not include the development of uses that would generate objectionable odors. However, the Plan Area is located approximately 1.5 miles west the Sacramento Rendering Company, which has been the source of complaints of detectable odors. This impact will be analyzed in the EIR.

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
9. **NOISE -** Would the project:				
a. Result in exposure of persons to, or generation of, noise levels in excess of standards established by the local general plan, noise ordinance or applicable standards of other agencies?	X			A portion of the Plan Area contains the Sacramento Raceway, which currently generates substantial noise. Although the raceway is part of the Plan Area, it is not owned by the applicant, so operations could continue preliminary phases of construction on properties that are owned by the applicant. This impact will be addressed in the EIR.
b. Result in a substantial temporary increase in ambient noise levels in the project vicinity?			X	Project construction will result in a temporary increase in ambient noise levels in the Project vicinity. This impact is less than significant due to the temporary nature of the these activities, limits on the duration of noise, and evening and nighttime restrictions imposed by the County Noise Ordinance (Chapter 6.68 of the County Code). Nonetheless, this impact will be analyzed in the EIR.
10. **HYDROLOGY AND WATER QUALITY** - Would the project:				
a. Substantially deplete groundwater supplies or substantially interfere with groundwater recharge?	X			The Project will be served by the Sacramento County Water Agency Zone 40, which is served by groundwater sources. Therefore, the Project will incrementally add to groundwater consumption. This impact will be analyzed in the EIR. Although the Project would result in the development of 1,391 acres that are currently largely undeveloped, the Plan Area is not located in an area of significant recharge capability. Groundwater recharge is not further addressed in the EIR.
b. Substantially alter the existing drainage pattern of the project area and/or increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?			X	The Project would alter the site's current drainage patterns by channelizing existing drainages and add urban development that could result in additional surface runoff if stormwater infrastructure is not designed and built properly. Compliance with applicable requirements of the Sacramento County Floodplain Management Ordinance, Sacramento County Water Agency Code, and Sacramento County Improvement Standards will ensure that impacts are less than significant. Nonetheless, this impact will be analyzed in the EIR.

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
c. Develop within a 100-year floodplain as mapped on a federal Flood Insurance Rate Map or within a local flood hazard area?	X			Portions of the Plan Area are within the 100-year floodplain. This impact will be analyzed in the EIR.
d. Place structures that would impede or redirect flood flows within a 100-year floodplain?	X			See response 10c. This impact will be analyzed in the EIR.
e. Expose people or structures to a substantial risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	X			See response 10c. This impact will be analyzed in the EIR.
f. Create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems?			X	See response 10b. Adequate on- and/or off-site drainage improvements will be required pursuant to the Sacramento County Floodplain Management Ordinance and Improvement Standards. Nonetheless, this impact will be analyzed in the EIR.
g. Create substantial sources of polluted runoff or otherwise substantially degrade ground or surface water quality?			X	Compliance with the Stormwater Ordinance and Land Grading and Erosion Control Ordinance (Chapters 15.12 and 14.44 of the County Code respectively) will ensure that the Project will not create substantial sources of polluted runoff or otherwise substantially degrade ground or surface water quality. This impact will be less than significant and will not be further addressed in the EIR.
11. **GEOLOGY AND SOILS** - Would the project:				
a. Expose people or structures to substantial risk of loss, injury or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?			X	Sacramento County is not within an Alquist-Priolo Earthquake Fault Zone. Although there are no known active earthquake faults in the project area, the site could be subject to some ground shaking from regional faults. The Uniform Building Code contains applicable construction regulations for earthquake safety that will ensure less than significant impacts. This impact will not be further addressed in the EIR.

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
b. Result in substantial soil erosion, siltation or loss of topsoil?			X	Compliance with the County's Land Grading and Erosion Control Ordinance will reduce the amount of construction site erosion and minimize water quality degradation by providing stabilization and protection of disturbed areas, and by controlling the runoff of sediment and other pollutants during the course of construction. This will be addressed in more detail in the EIR.
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, soil expansion, liquefaction or collapse?			X	Pursuant to Title 16 of the Sacramento County Code and the Uniform Building Code, a soils report will be required prior to building construction. If the soils report indicates than soils may be unstable for building construction then site-specific measures (e.g., special engineering design or soil replacement) must be incorporated to ensure that soil conditions will be satisfactory for the proposed construction. Although this would ensure that the impact would be less than significant with compliance with the Sacramento County Code and Uniform Building Code, this impact will be addressed in more detail in the EIR.
d. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available?			X	The Project will be required to connect to the public sewer system. There will be no impact. This will not be further addressed in the EIR.
e. Result in a substantial loss of an important mineral resource?			X	The project is not located within an Aggregate Resource Area as identified by the Sacramento County General Plan Land Use Diagram, nor are any important mineral resources known to be located within the Plan Area. There are areas identified as mineral resource areas directly northwest of the Plan Area, but not within the Plan Area itself. However, due to its proximity to mining activities, the EIR will address this impact in more detail.
f. Directly or indirectly destroy a unique paleontological resource or site?			X	No known paleontological resources (e.g. fossil remains) or sites occur at the project location. There would be no impact. This will not be further addressed in the EIR.
12. **BIOLOGICAL RESOURCES** - Would the project:				

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
a. Have a substantial adverse effect on any special status species, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community?	X			The project site may contain suitable habitat for some special status species. This impact will be analyzed in the EIR.
b. Have a substantial adverse effect on riparian habitat or other sensitive natural communities?	X			The project site may contain riparian habitat or other sensitive natural communities. This impact will be analyzed in the EIR.
c. Have a substantial adverse effect on streams, wetlands, or other surface waters that are protected by federal, state, or local regulations and policies?	X			There are wetlands located within the Plan Area. The Project includes a large wetland preserve area to preserve some of the wetlands, but the Project would still result in a loss of wetlands in other portions of the Plan Area. This impact will be analyzed in the EIR.
d. Have a substantial adverse effect on the movement of any native resident or migratory fish or wildlife species?	X			Resident and/or migratory wildlife may be displaced by project construction, and the development of a new urban community in a currently undeveloped location could permanently displace migratory wildlife species. This impact will be analyzed in the EIR.
e. Adversely affect or result in the removal of native or landmark trees?	X			Native and/or landmark trees may occur within the Plan Area, and if so, are likely to be affected by construction. This impact will be analyzed in the EIR.
f. Conflict with any local policies or ordinances protecting biological resources?			X	The project is consistent with local policies/ordinances protecting biological resources. This impact will be analyzed in the EIR.
g. Conflict with the provisions of an adopted Habitat Conservation Plan or other approved local, regional, state or federal plan for the conservation of habitat?	X			The County is in the process of preparing the South Sacramento County Habitat Conservation Plan, and the Project's wetland preservation area is part of that plan's preservation strategy. It is also worth noting that portions of the Plan Area are located within an area known as the Mather core area, which has been identified by the US Fish and Wildlife Services as a priority recovery area for several species that rely on vernal pool habitat. This impact will be analyzed in the EIR.

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
13. **CULTURAL RESOURCES -** Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource?		X		A cultural resources study has been completed for the Project. This impact will be analyzed in the EIR.
b. Have a substantial adverse effect on an archaeological resource?		X		No archaeological resources are known to occur within the Plan Area. The Northern California Information Center was contacted as part of a 2008 archaeological inventory study prepared for the properties owned by the applicant. The record search indicated that there were no recorded archaeological resources located within or adjacent to those properties. Some resources have been recorded on other properties nearby. Standard mitigation would ensure that impacts would be less than significant if any previously unknown archaeological resources are discovered during ground-disturbing activities within the Plan Area. This impact will be further addressed in the EIR.
c. Disturb any human remains, including those interred outside of formal cemeteries?		X		No known human remains are known to exist within the Plan Area. Nonetheless, mitigation has been recommended to ensure appropriate treatment should remains be uncovered during project implementation. This will be addressed in the EIR.
d. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?	X			The Native American Heritage Commission has indicated that there are no known Sacred Land listings within the Plan Area. Several cultural resources studies have been prepared, and Native American tribes were contacted in 2007 and again in 2013 to notify them of the proposed Project. A response was received in 2007 from the Ione Band of Miwok Indians and others were received in 2013 from the United Auburn Indian Community and the Shingle Springs Racheria. None of the responses indicated that known tribal resources were located within the Plan Area, but they indicated that there could be resources. All of the letters requested additional information and to be kept up to date on the project. This impact will be addressed in the EIR.

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
14. **HAZARDS AND HAZARDOUS MATERIALS** - Would the project:				
a. Create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	The Project would not involve the transport, use, or disposal of major quantities of hazardous materials, but smaller quantities could potentially be used during construction and operation of the Project. It is possible that a portion of the Plan Area could be developed with medical offices, which may use and store small quantities of hazardous materials. Transport, use, storage, and disposal of these materials are highly regulated, so adverse effects are unlikely, and this would be a less-than-significant impact. Nonetheless, this impact will be analyzed in the EIR.
b. Expose the public or the environment to a substantial hazard through reasonably foreseeable upset conditions involving the release of hazardous materials?	X			The Project does not include the development of any uses that would create a substantial hazard to the public. However, the presence of the Sacramento Raceway could create some hazardous conditions for surrounding development if it continues operating, particularly since it the property has a history of violations concerning hazardous materials and hazardous conditions. This impact will be analyzed in the EIR.
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?	X			The Project includes the development of four schools. This impact will be analyzed in the EIR.
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, resulting in a substantial hazard to the public or the environment?			X	The project is not located on a known hazardous materials site, so this impact would be less than significant. Nonetheless, this will be addressed in the EIR.

	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant or No Impact	Comments
e. Impair implementation of or physically interfere with an adopted emergency response or emergency evacuation plan?			X	The project would not interfere with any known emergency response or evacuation plan, so this impact would be less than significant. However, commenters on the Notice of Preparation expressed concerns that emergency responders would have difficulty differentiating between the Plan Area and the City of Jackson, due to similar names, and therefore not be able to locate people in need of emergency services. Therefore, this impact will be addressed in the EIR.
15. GREENHOUSE GAS EMISSIONS – Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	X			The Project has been designed to minimize greenhouse gas emissions to assist the County in meeting its greenhouse gas emission reduction goals. However, due to the large scale of the project, this impact will be fully analyzed in the EIR.

1.6 SUPPLEMENTAL INFORMATION

LAND USE CONSISTENCY	Current Land Use Designation	Consistent	Not Consistent	Comments
General Plan	Extensive Industrial, General Agriculture (20 AC)		X	The Project requests entitlements to amend the General Plan designations for the Plan Area.
Community Plan	AG-80, IR, M-1		X	The Project requests entitlements to amend the Community Plan designations for the Plan Area.
Land Use Zone	M-1, AG-80, IR		X	The Project requests entitlements to amend the zoning for the Plan Area.

1.7 INITIAL STUDY PREPARERS

Environmental Coordinator: Catherine Hack
Assistant Environmental Coordinator: Tim Hawkins

Appendix INT-2

Notice of Preparation and Comments

Department of
Community Development
Lori A. Moss, Director

Divisions
Building Permits & Inspection
Code Enforcement
County Engineering
Planning & Environmental Review

DEPARTMENT OF COMMUNITY DEVELOPMENT
Planning and Environmental Review Division
NOTICE OF PREPARATION

AUGUST 5, 2013

TO: ALL INTERESTED PARTIES

SUBJECT: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR JACKSON TOWNSHIP SPECIFIC PLAN

Sacramento County will be the CEQA Lead Agency for preparation of an Environmental Impact Report (EIR) for a project known as JACKSON TOWNSHIP. This Notice of Preparation has been sent to responsible and trustee agencies and involved federal agencies pursuant to Section 15082 of the CEQA Guidelines. Agencies should comment on the scope and content of the environmental information that is germane to the agencies' statutory responsibilities in connection with the proposed project. Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but not later than 30 days after receipt of this notice.

The project description, location, and the probable environmental effects are contained in the attached materials and may also be viewed online by going to the PER homepage (www.per.saccounty.net) and searching for environmental documents. The direct link to the document search page is: http://www.per.saccounty.net/EnvironmentalDocuments/Pages/SearchDocuments.aspx.

Please send your Agency's response to this Notice to:

Catherine Hack, Environmental Coordinator
Department of Community Development
Planning and Environmental Review Division
827 7th Street, Room 220, Sacramento, CA 95814
or via e-mail at: DERA@saccounty.net.

Your response should include the name of a contact person in your agency.

Agencies with specific questions about the project should contact Lauren Hocker, Environmental Review Project Manager, at (916) 874-7914 for further information.

PLNP2011-00095 JACKSON TOWNSHIP SPECIFIC PLAN

PROJECT TITLE:

JACKSON TOWNSHIP SPECIFIC PLAN

CONTROL NUMBER:

PLNP2011-00095

OWNER:

Various (see list attached to NOP)

APPLICANT/PROJECT PROPONENT:

Tsakopoulos Investments, Angelo G. Tsakopoulos

PROJECT DESCRIPTION AND LOCATION:

The proposed Plan Area, approximately 1,391 acres, is located in southeastern Sacramento County, lying south of the Mather Specific Plan Area, east of Excelsior Road, north of Jackson Highway and west of Eagles Nest Road in the Vineyard Community (Plate NOP-1 and Plate NOP-2). The Plan Area is currently designated on the Sacramento General Plan with land use designations of Extensive Industrial and General Agricultural. The property has current zoning of Light Industrial (M-1), Industrial Reserve (IR) and Permanent Agriculture (AG-80). There are 24 different landowners within the Plan Area. The largest landowner–Excelsior Estates LLC, represented by Angelo G. Tsakopoulos as the applicant–owns and/or controls approximately 862 acres (approximately 62 % of the total) within the Plan Area boundaries.

The proposed Project includes a range of different uses, including low density (6.0 units/acre), medium density (13 units/acre), and high density (25 units/acre) residential; general and community commercial; office; and mixed use. The proposal also includes three elementary schools, a middle school/high school, a public-quasi public site for a fire station, and parks. Land along the northern and eastern sides of the Project are shown as Wetland Preserve. These designated lands match the adjacent land use proposal to the east, known as NewBridge, and reflect the current status of the proposed preserve boundaries being negotiated as part of the anticipated South Sacramento Habitat Conservation Plan (SSHCP). The anticipated SSCHP preserve boundaries are planned to continue southward, extending beyond Jackson Road, but the exact location of this preserve has not yet been determined. For this reason, the Project includes an area designated Agriculture in the southeastern corner of the site; there is an equivalent area to the east within the NewBridge project. It is anticipated that the area needed for the preserve will be smaller than the total area shown as Agriculture, but rather than prematurely designate some areas for urban uses and some as Wetland Preserve, the entire corner is reserved as Agriculture, which maintains the current use of the land. Although the land use plan reflects the existing AG use, the technical studies will assume the potential for 6 units per gross acre, to ensure that overall infrastructure planning of the planning areas is coherent should some portion eventually be proposed for development, once the preserve is identified.

The proposed Project includes 6,143 residential units spread somewhat evenly between low density (35% of units), medium density (29% of units), and high density (35%) of units, with an additional 100 units (2% of units) within the mixed use designation areas. The analyses will assume that the units in the mixed use area are high density. In addition to the residential units, the Project includes 1,996,100 square feet of non-residential uses. There are also three alternative versions of the Project which the applicant has provided; these are project alternatives, not CEQA Alternatives. A table which summarizes the proposed land uses and an exhibit showing the land plan area provided at the end of the NOP (Table NOP-1 and Plate NOP-4).

Plate NOP-1: Regional Location Map

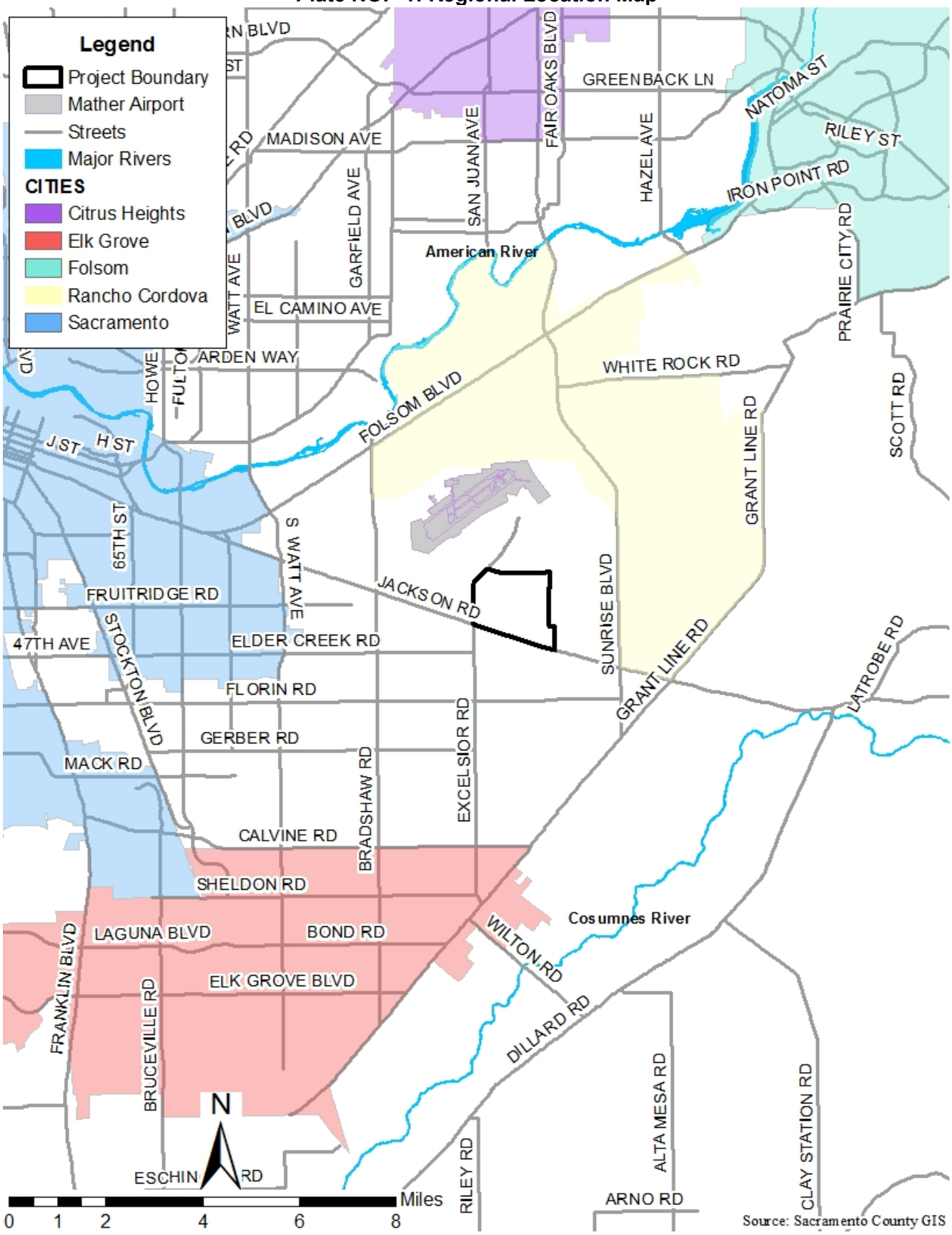
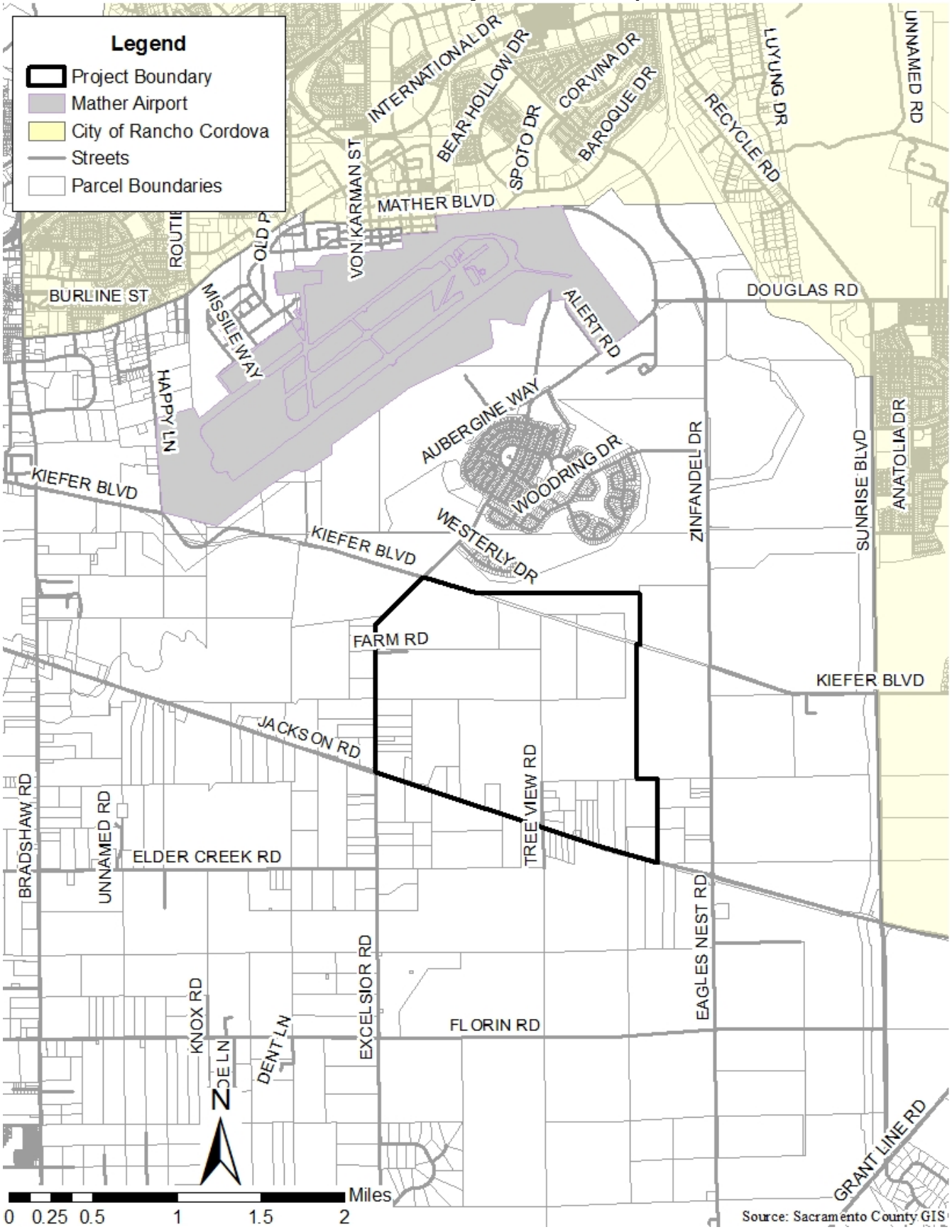


Plate NOP-2: Project Location Map



Most homes within the Plan Area will be within a quarter-mile of an open space area: either a park, linear parkway, or natural open space. Likewise, most homes will be within a half-mile of the retail/employment land uses. According to the application materials, a key feature of the Plan Area is a large, centrally-located greenway/drainage corridor with a trail on one side that will provide easy, non-vehicular linkages from one end of the community to the other. An interconnected street system, connecting trails and paths with potential for future transit connections, is provided throughout the Plan Area. Street layouts were designed in coordination with County Department of Transportation and Planning and Environmental Review staff. The Circulation Plan and Bikeway Master Plan diagram are included with the other project exhibits at the end of this NOP (Plate NOP-5 and Plate NOP-6).

The Plan Area is within the Elk Grove Unified School District and the Cordova Recreation and Park District. The Project includes three sites designated as elementary school sites (approximately 10 acres each) and one site designated as a joint middle school/high school (approximately 70 acres). The elementary schools are co-located with neighborhood parks to invite joint use. A total of eight neighborhood parks and one Community Park are included in the proposed Project.

Alternative 1 involves a 40.1 acre Office (O) use designated along Tree View Lane, in the place of the 22.3 acre MD and the 16.9 acres HD sites. **Alternative 2** involves the three parcels in the northwest corner of the site designated MD, HD and CC. The CC and MD parcels switch locations and the acreages of all three parcels change slightly. **Alternative 3** is essentially a combination of Alternatives 1 and 2. Alternative 3 involves the addition of the 40.1 acre Office parcel as described in Alternative 1 as well as the switch in location of the CC and MD sites as described in Alternative 2. Land Use Summary tables and exhibits for these alternatives are provided at the end of the NOP (Table NOP-2, Table NOP-3, Table NOP-4, Plate NOP-7, Plate NOP-8, and Plate NOP-9).

In order to approve the Project (or project alternatives) which are described above, the following entitlements must be approved by the Sacramento County Board of Supervisors:

1. A **General Plan Amendment** to move the Urban Policy Area (UPA) boundary south to include approximately 1,391 acres encompassing the Jackson Township Specific Plan (Plate NOP-10).
2. A **General Plan Amendment** to amend the Land Use Diagram designations within the Jackson Township Specific Plan from General Agriculture (568 +- acres) and Extensive Industrial (823 +-acres) to Low Density Residential, Medium Density Residential, Commercial and Office, Mixed Use, Recreation, Natural Preserve, and Public/Quasi Public (Plate NOP-11).
3. A **General Plan Amendment** to amend the General Plan, including the Land Use Diagram, to include a Mixed Use Land Use Designation.
4. A **General Plan Amendment** to amend the Transportation Diagram to reflect proposed roadway alignments (Plate NOP-12).
5. A **General Plan Amendment** to amend the Bicycle Master Plan to add on- and off-street bikeways (Plate NOP-6).
6. A **Community Plan Amendment** to amend the Vineyard Community Area Plan to change the Community Plan designation of the parcels located within the Jackson Township Specific Plan area (1,391+-acres) from Permanent Agriculture (AG-80) (772.5 acres), Light Industrial (596.5 acres) and Industrial Reserve (IR) (22 acres) to Jackson Township Specific Plan Area (1,391+-acres) (Plate NOP-13).
7. **Adoption of the Jackson Township Specific Plan** for the approximately 1,391 acre Jackson Township Specific Plan area, including a Specific Plan land use diagram, Design Guidelines and Development Standards.

8. A **Zoning Ordinance Amendment** to establish a Special Planning Area (SPA) Ordinance for a 838+-acre portion of the Jackson Township Specific Plan area and a **Rezone** to amend the Zoning Designations for a 838+- acre portion (owned by the applicant) of the Jackson Township Specific Plan Area from AG-80 (489+-acres), M-1(+-327acres) and IR (22 +-acres) to Jackson Township Special Planning Area (SPA) (Plate NOP-14).
9. A **Large Lot Tentative Subdivision Map** for the lands owned by Tsakopoulos Family Trust, consisting of 12 existing parcels of approximately 838 acres, to be divided into 44 parcels for the purpose of creating legal parcels corresponding to land use blocks within the Jackson Township Specific Plan.
10. **Adoption of an Affordable Housing Plan** for the Jackson Township Specific Plan.
11. **Adoption of a Development Agreement** for the Jackson Township Specific Plan by and between the County of Sacramento and the Tsakopoulos Family Trust for the 838 acres owned by the Tsakopoulos Family Trust.
12. **Adoption of a Public Facilities Financing Plan** for the Jackson Township Specific Plan that includes a Capital Improvement Program and Financing Plan.
13. **Adoption of a Water Supply Master Plan Amendment** to amend the existing Zone 40 Water Supply Master Plan to include provision of water service to the Jackson Township Specific Plan Area. This action requires Sacramento County Water Agency Board of Directors approval.
14. **Approval of a Water Supply Assessment** for the Jackson Township Specific Plan required by the California Water Code to link land use and water supply planning activities. This action requires Sacramento County Water Agency Board of Directors approval.

In addition to the above listed entitlements, separate annexation requests to LAFCo will include:

- A Sphere of Influence Amendment (SOIA) and concurrent Annexation to County Service Area (CSA) 10 or creation of a new CSA. Note: a separate subsequent action may be required by the Sacramento County Board of Supervisors to establish a Benefit Zone, to implement funding and service provision.
- Annexation to Sacramento Regional County Sanitation District (SRCSD).
- Annexation to Sacramento Area Sewer District (SASD).

It should be noted that this application request does not include rezone of the properties not owned by the applicant, and that any subsequent rezones would be the subject of future applications and CEQA review.

PROJECT OBJECTIVES:

The following summarizes the project objectives that guided the planning of the Jackson Township Specific Plan:

1. Develop an economically viable mixed use project in close proximity to the urban core.
2. Develop a marketable project which minimizes greenhouse gas emissions.
3. Develop an economically-stable community where property values are retained over time.
4. Develop a project containing a variety of housing types so as to create a demographically mixed community.
5. Develop a project which allows for easy access to green space, schools, and a town center containing various retail, dining, and other commercial services.
6. Develop a project which provides employment opportunities for workers of all income levels.

7. Develop a project which promotes a jobs-housing balance in the Jackson Highway/Mather area.
8. Develop a project which allows residents to engage in short, non-vehicle commutes.
9. Develop a project which utilizes proven design practices which result in the creation of strong communities that remain economically stable over time.
10. Develop a project which contains a circulation system that promotes walking, biking, and the use of public transit.
11. Develop a project which contains a comprehensively planned infrastructure system.
12. Develop a project which ensures funding for the on-going maintenance needs of parks, open space facilities, public services and other infrastructure.
13. Develop a project which preserves, to the extent feasible, the area's most important and valuable biological resources with a wetlands preserve.
14. Develop a project which contains adequate school facilities for community residents and assists in meeting the school facility needs of surrounding projects.
15. Develop a project which includes a community park and a variety of neighborhood parks sufficient to meet park district requirements.

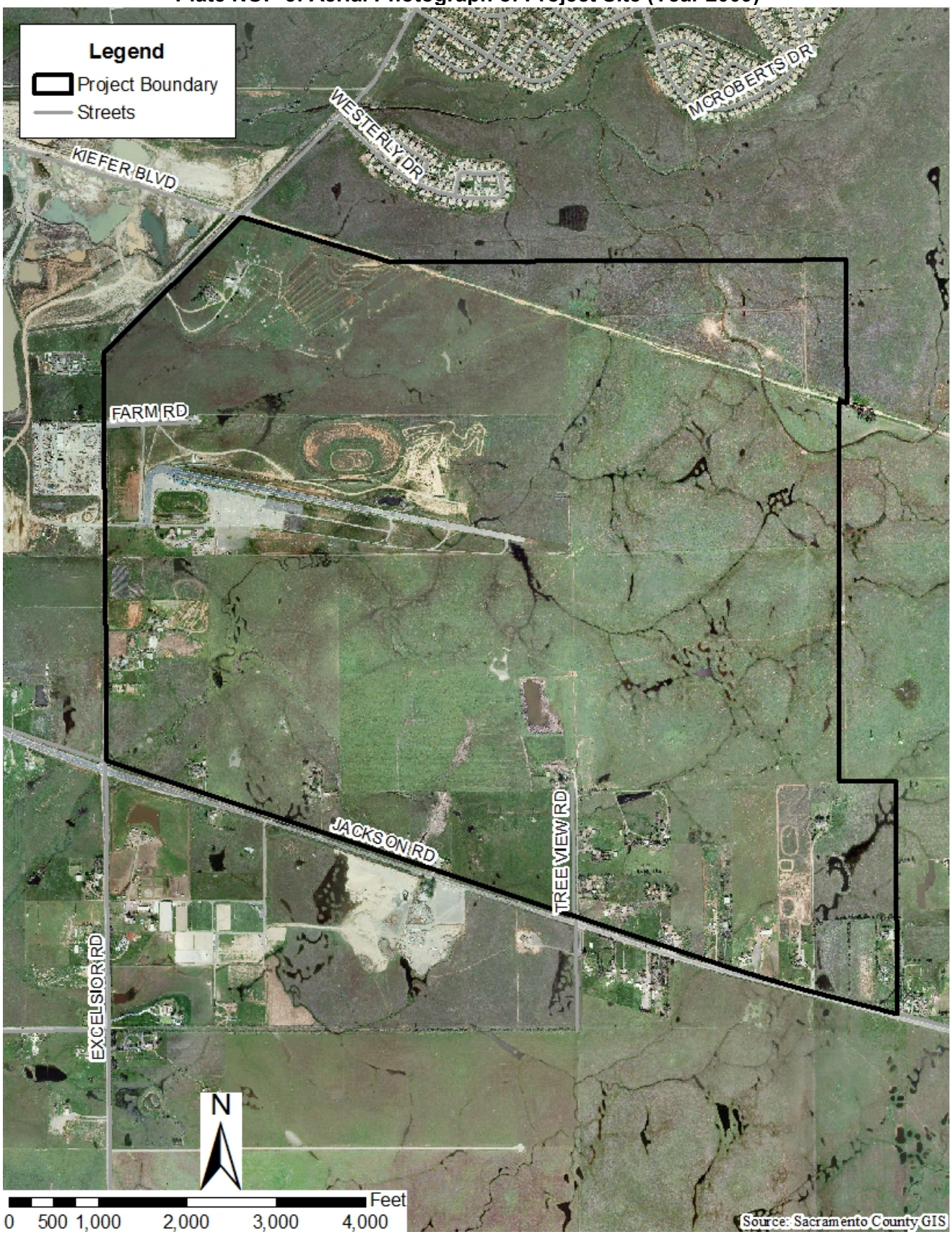
ENVIRONMENTAL/LAND USE SETTING:

An aerial photograph of the site, taken in the year 2009, has been provided for context (Plate NOP-3). The current land uses on the properties within the Plan Area are predominantly grazing, small ranches, and agricultural residential homes. A portion of this site also includes the Sacramento Raceway, which hosts racing events on Wednesday nights, twice per month on Friday night, Saturday nights, and drag races on Saturday and Sunday. To the west of the Project, land uses are characterized by agricultural uses, mining, and commercial sales of landscaping materials. Lands to the east are generally similar to the Project site, with grazing and agricultural-residential uses predominating. The property to the east also includes the Sacramento Rendering Company plant, which is a facility that accepts animal tissue, processes it, and then distributes the byproduct for use in the manufacture of other goods. Land to the north is dominated by the presence of Mather Airport and appurtenant facilities, but also includes residential areas (Independence at Mather), nature preserve, and golf course property. Properties to the south of the Project, across Jackson Road, are generally in agricultural or agricultural-residential use or are designated as wetland preserve.

There are roadways extending along the southern and western sides of the Project boundary: Jackson Road on the southern boundary and Excelsior Road along the western boundary. There is no road along the eastern Project boundary, though Eagles Nest Road is only a few hundred feet to the east. There is also no road on the northern property boundary, but the Sacramento County General Plan Transportation Diagram shows that Kiefer Road will be extended through the site (there is currently an unmaintained dirt road along the alignment on County-owned right-of-way). Jackson Road is a state highway (State Route 16), though the California Department of Transportation is considering the possibility of relinquishing part of the facility to local control (as found in the *Transportation Corridor Concept Report: State Route 16*, dated June 26, 2012 and published by Caltrans). Where it is adjacent to the site, the roadway is a two-lane facility without a center left-turn lane, though it is four lanes on either side of the intersection of Jackson Road and Excelsior Road. Excelsior Road is also a two-lane facility with more lanes on either side of the intersection with Jackson Road.

Most of the Project site is grassland with interspersed wetlands and wetland swales; portions of the site have historically been disturbed by agricultural activities. The southwestern Project area is within the headwaters of Elder Creek, and a small bend in Morrison Creek extends slightly into the northeastern corner of the Project site.

Plate NOP-3: Aerial Photograph of Project Site (Year 2009)



PROBABLE ENVIRONMENTAL EFFECTS/EIR FOCUS:

The analyses in the EIR will describe existing conditions, describe the legal and regulatory framework relevant to the proposed Project, describe standards of significance to be used in analysis, and describe analysis methodologies. A review of the project and of the environmental resources in the study area has resulted in the identification of the following potential areas of environmental effect:

Aesthetics
Proposed new development areas will be analyzed for their effects on the views from surrounding properties and roadways.

Agricultural Resources
Areas of active agricultural use, designated agricultural lands, prime farmland soils, and Williamson Act contract land will be identified and analyzed within and adjacent to the project area.

Air Quality
Project-related emissions analyzed may include toxic air contaminants, ozone precursors, and particulates. The analysis will include discussions of emissions resulting from construction activities and emissions resulting from operational activities of the completed project. Where possible, emissions will be quantified using the California Emissions Estimator Model (CalEEMod) and/or other appropriate models.

Biological Resources
The Project will be analyzed to identify areas where proposed changes may impact biological resources in the area. The analyses will discuss impacts to general wildlife populations and habitats, but will focus on special-status species and particularly sensitive habitats, including wetlands.

Climate Change
Project-related greenhouse gas emissions will be quantified and analyzed for the cumulative impacts to climate change. The probable impacts to the project as a result of climate change will also be examined.

Cultural/Historical Resources
The changes and new proposed uses will be analyzed for compatibility with cultural and historical resources.

Geology, Soils, and Mineral Resources
Underlying soil types and suitability will be examined in areas where urban uses are proposed. Erosion potential will also be considered.

Hazards and Hazardous Materials
Hazardous materials sites, if any, will be identified in the vicinity of proposed new development areas. Data sources may include Envirostor and Geotracker. Project compatibility with any existing hazardous materials sites will be examined.

Land Use
The project proposal will be examined to determine consistency with land use policies/ordinances/plans that have been adopted in order to avoid environmental effects. The project impact relative to the planned and existing land use environment will also be disclosed.

Noise
Existing and proposed uses with the potential to generate significant noise will be analyzed, which will include modeling of noise generated by transportation sources. This will include an analysis of the existing Sacramento Raceway and Mather Airport.

Public Services
The proposal will be analyzed for its compatibility with public services and to determine what may be required to extend service to the project. Services analyzed may include but are not limited to: schools (Elk Grove Unified School District), park services (Cordova Recreation and Park District), libraries, fire protection (Sacramento Metropolitan Fire District), and police protection (Sacramento County Sheriff's Department).

Public Utilities
The proposal will be analyzed for its compatibility with public utilities and to determine what may be required to extend service to the project. Utilities analyzed may include but are not limited to: water supply (Sacramento County Water Agency Zone 40), sewer service (annexation to Sacramento Area Sewer District and Sacramento Regional County Sanitation District), and energy services (Pacific Gas and Electric and Sacramento Municipal Utility District).

Transportation
A Traffic Impact Study will be prepared to examine the effects of proposed project development and facilities on area roadways.

Hydrology and Water Quality
Areas of flooding potential will be identified and drainage patterns will be examined within the watersheds affected by the project. The project will be analyzed for impacts to the existing hydrologic environment and vice versa. Agencies involved with flood control issues will be consulted. These may include, but are not limited to: the California State Department of Water Resources, the State Reclamation Board, the Sacramento Area Flood Control Agency (SAFCA), and the Sacramento County Department of Water Resources. The potential impacts of the project on water quality will also be examined, which includes construction-related impacts (e.g. erosion of exposed soil) and operational impacts (e.g. use of pesticides and fertilizers).

The above descriptions are not exhaustive, and other sections and discussions may be included if further research indicates that the inclusion is warranted. As the analyses progress and the extent of impacts to the above categories is determined, appropriate CEQA Alternatives will be included for analysis. Pursuant to the CEQA Guidelines Section 15206, this is a project of "statewide, regional or areawide significance" and scoping meetings are required. The scoping meetings have not been scheduled at this time. When available, a Public Notice of the date, time, and location of the scoping meeting(s) on the project will be provided.

INTENDED USES OF THE EIR:

The Sacramento County Planning Commission and the Board of Supervisors will use the information contained in the EIR to evaluate the proposed project and render a decision to approve or deny the requested entitlements. Responsible agencies, such as the California Department of Fish and Game, the United States Fish and Wildlife Service, the United States Army Corps of Engineers, the Central Valley Regional Water Quality Control Board, and LAFCo may also use the EIR for planning/permitting purposes that include, but are not limited to, the following:

- Federal Clean Water Act Section 404 Permit (U.S. Army Corps of Engineers)
- Federal Endangered Species Act Section 7 Consultation (U.S. Fish and Wildlife Service)
- Section 401 Water Quality Certification (Regional Water Quality Control Board – Central Valley Region)
- California Endangered Species Act Incidental Take Permit (California Department of Fish and Wildlife)
- Section 402 National Pollutant Discharge Elimination System Permit (Regional Water Quality Control Board – Central Valley Region)
- Annexations (LAFCo)

Plate NOP-4: Proposed Land Use Plan

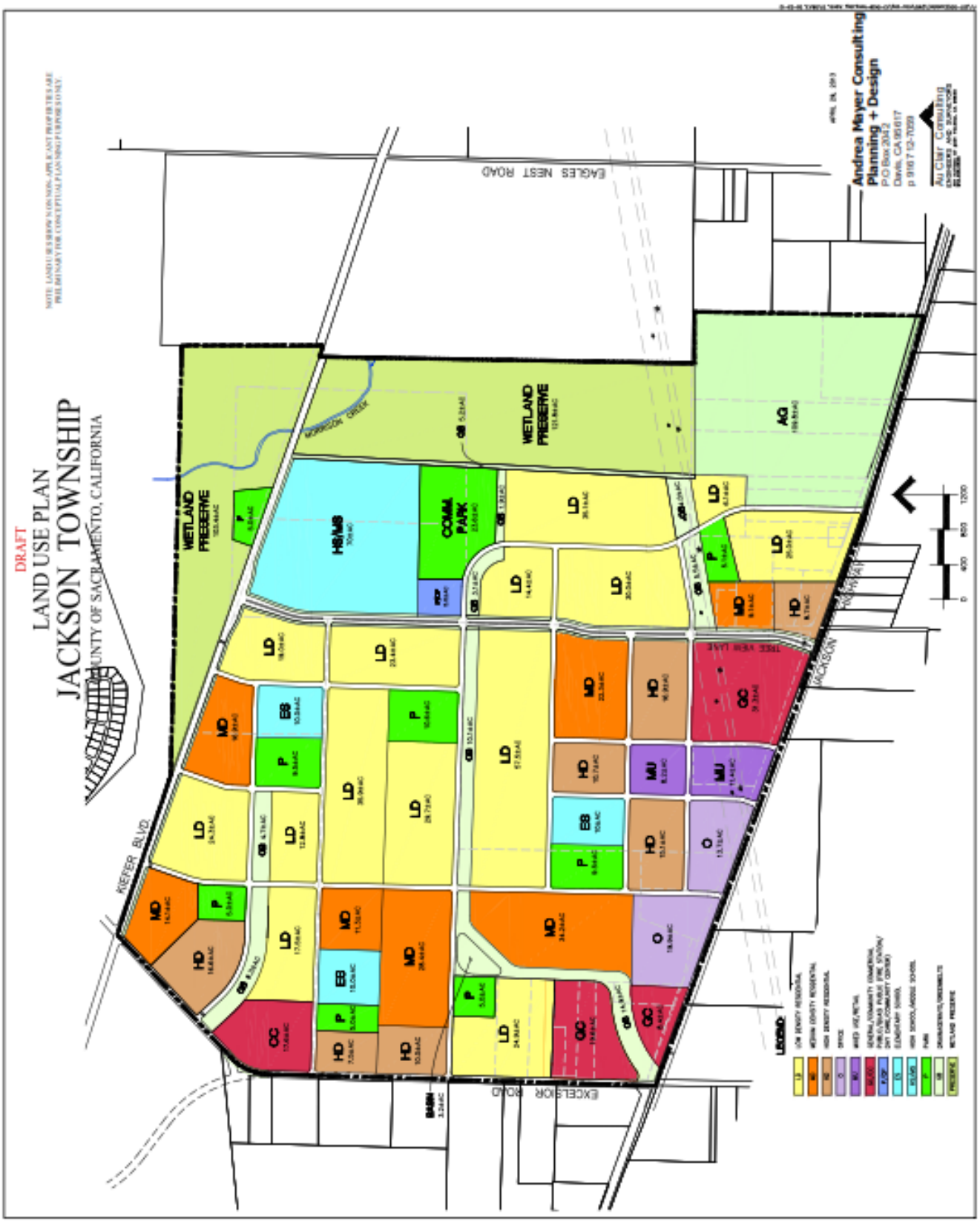


Table NOP-1: Land Use Summary

Residential Designations	***Acres***	***Average Density***	***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
LD-Low Density Residential	355.7	6.0	1.0–10.9	2134	34.7%
MD-Medium Density Residential	136.3	13.0	11.0–19.9	1772	28.9%
HD-High Density Residential	85.5	25.0	20.0–30.0	2137	34.8%[7]
Subtotal	**577.5**	**--**	**--**	**6,043**	**98.4%**
Commercial + Office Zones	***Acres***	***F.A.R.***	***Square Footage***	***D.U.'s***	***% of D.U.'s***
GC-General Commercial	59.3	0.25	645,700	n/a[1]	--
CC-Community Commercial	17.6	0.25	191,600	n/a[1]	--
MU-Mixed Use	19.6	0.50	427,000	100[5]	1.6%[7]
O-Office	33.6	0.50	731,800	n/a[1]	--
Subtotal	**130.1**	**--**	**1,996,100**	**100**	**1.6%**
Public/Quasi Public Zones	***Acres***				
PQP-Fire Station/Community Center	5.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**105.0**				
Park + Open Space Zones	***Acres***				
CP-Community Park	23.6[3]				
P-Neighborhood Park	54.7[3]				
OS-Wetland Preserve	225.2				
OS-Greenbelt/Drainage Corridor	57.7				
OS-Landscape Corridor	14.5				
OS-Detention Basin	3.2				
Subtotal	**378.9**				
AG-Agriculture	109.3				
RW-Primary Roadways	90.2				
	Acres		***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
TOTAL	***1,391.0***		***10.5[6]***	***6,143***	***100%***

NOTES: DU → dwelling unit, F.A.R. → Floor-Area Ratio (i.e. a F.A.R. of 0.25 means that for every one acre of land in the category–like General Commercial–0.25 acres will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. Population calculation is 6,143 d.u x 2.64 people per household=**16,217 people**
3. Park requirement calculation (not including AG land): LD/MD 3906 d.u. x 0.0146=57.0 acres and HD/MU 2237 d.u. x 0.0122=27.3 acres, for a total acreage of **84.3**.
4. Park credit calculations: 78.3 acres of Community/Neighborhood Parks + 12.0 acres (25% credit for 48.2 acres of greenbelts along drainageways and wetland preserve) for a total of **90.3 acres**.
5. 100 dwelling units are assigned to the 8.2-acre MU parcel only, and zero units assigned to the 11.4-acre parcel.
6. Double-net density calculation: 6,143 d.u./585.7 acres (577.5 acres+8.2 acres of MU)= **10.5 du/acre**. This does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU-120 CB-1.
7. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land. This includes HD and MU parcel allocations, for a total of 2,237 d.u. = 36.4%.

Plate NOP-5: Circulation Plan

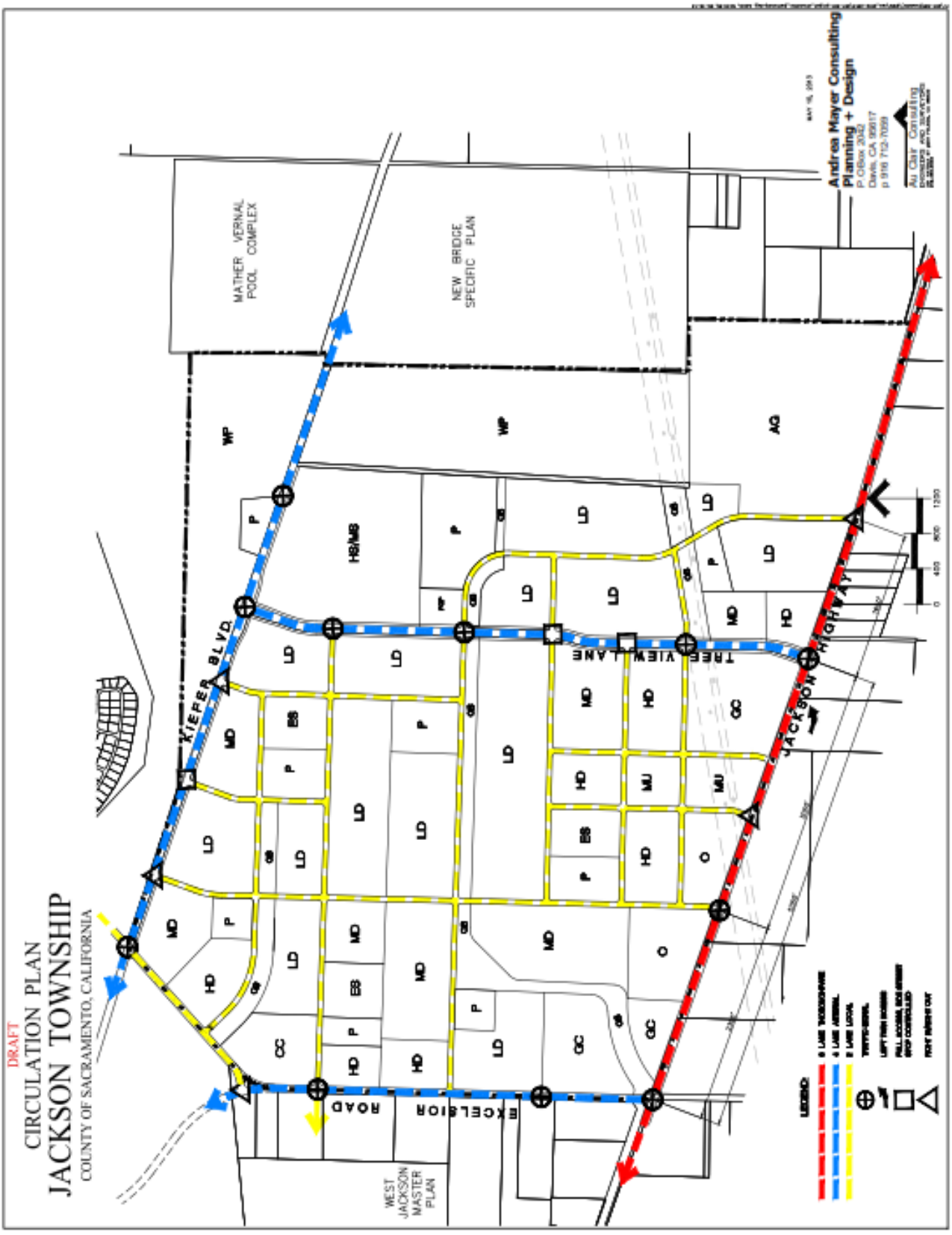


Plate NOP-6: Bikeway Master Plan

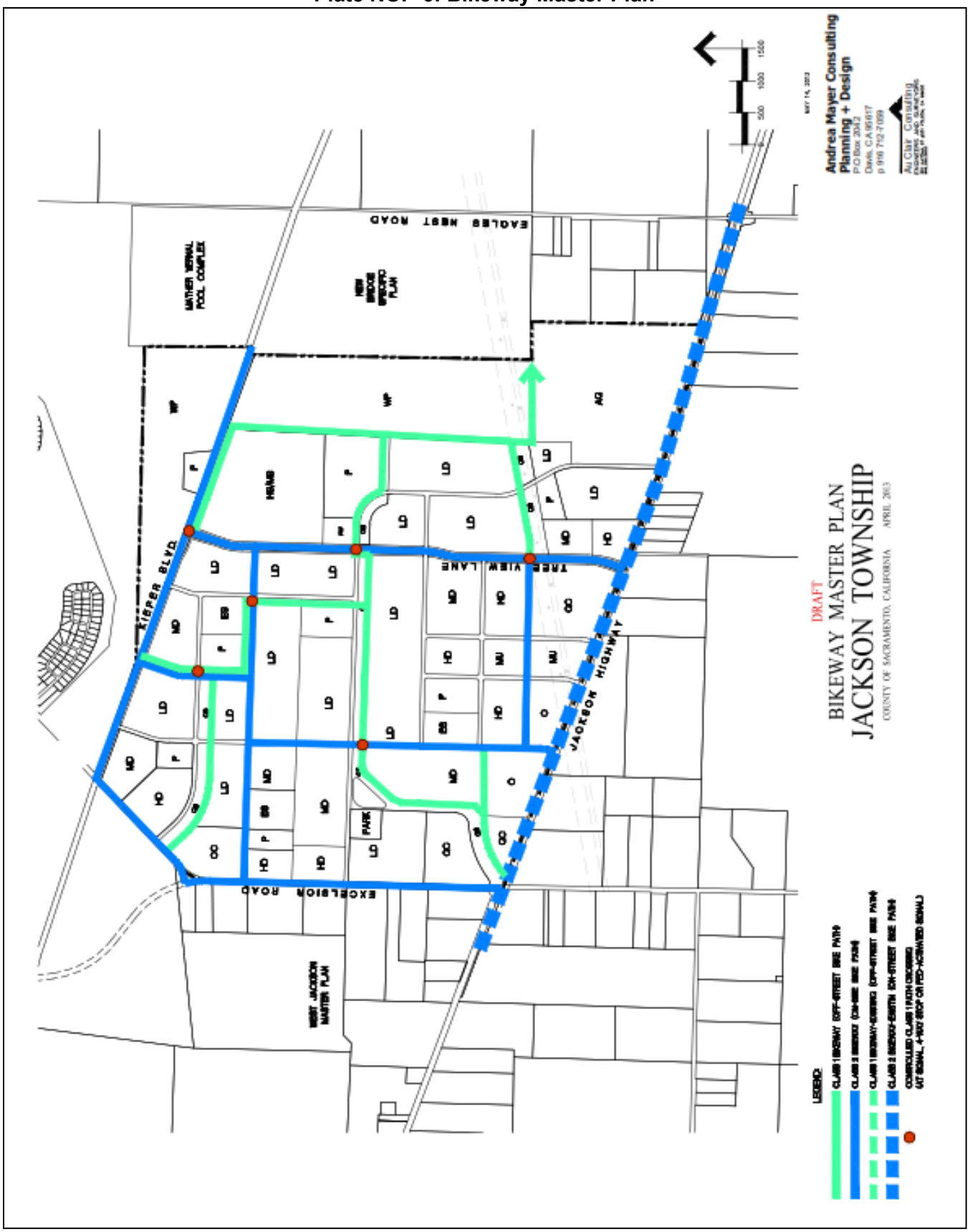


Plate NOP-7: Alternative 1 Land Use Plan

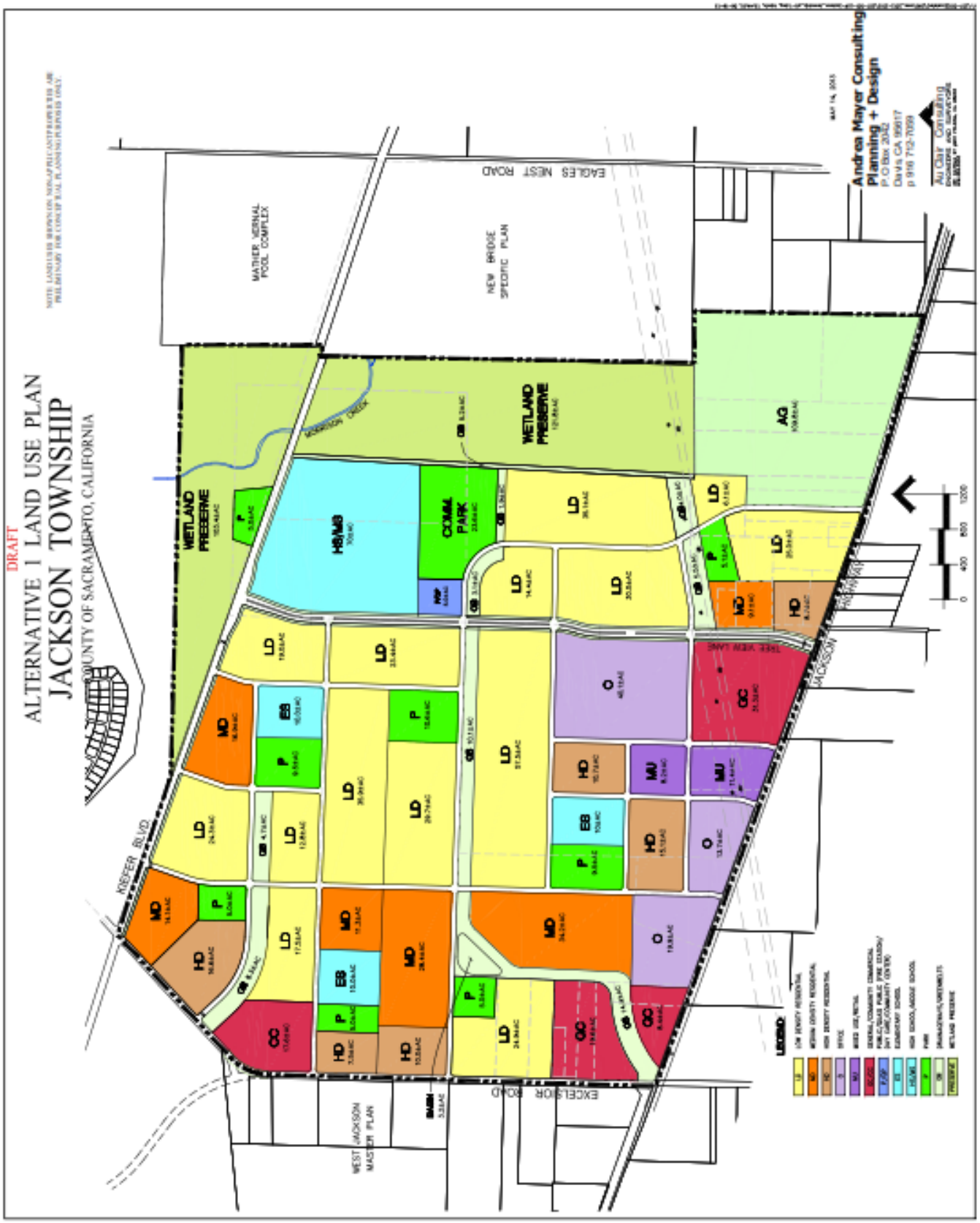


Table NOP-2: Alternative 1 Land Use Summary

Residential Designations	***Acres***	***Average Density***	***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
LD- Low Density Residential	355.7	6.0	1.0-10.9	2134	37.4%
MD-Medium Density Residential	114.0	13.0	11.0-19.9	1482	26.0%
HD- High Density Residential	68.6	29.0	20.0-30.0	1989	34.9%[7]
Subtotal	**538.3**			**5,605**	**98.3%**
Commercial + Office Zones	***Acres***	***F.A.R.***	***Square Footage***	***D.U.'s***	***% of D.U.'s***
GC-General Commercial	59.3	0.25	645,700	n/a[1]	
CC-Community Commercial	17.6	0.25	191,600	n/a[1]	
MU-Mixed Use	19.6	0.50	427,000	100[5]	1.7%[7]
O- Office	73.7	0.50	1,605,100	n/a[1]	
Subtotal	**170.2**		**2,869,400**	**100**	**1.7%**
Public/Quasi Public Zones	***Acres***				
PQP-Fire Station/Community Center	5.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**105.0**				
Park + Open Space Zones	***Acres***				
CP- Community Park	23.6[3]				
P- Neighborhood Park	54.7[3]				
OS- Wetland Preserve	225.2				
OS- Greenbelt/Drainage Corridor	59.1				
OS- Landscape Corridor	14.5				
OS- Detention Basin	3.2				
Subtotal	**380.3**				
AG-Agriculture	109.3				
RW- Primary Roadways	87.9				
	Acres		***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
TOTAL	***1,391.0***		***10.4[6]***	***5,705***	***100%***

NOTES: DU → dwelling unit, F.A.R. → Floor-Area Ratio (i.e. a F.A.R. of 0.25 means that for every one acre of land in the category–like General Commercial–0.25 acres will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. Population calculation is 5,705 d.u x 2.64 people per household =**15,061 total population**
3. Park requirement calculation (not including AG zoning): LD/MD 3616 d.u. x .0146=52.8 acres and HD/MU 2089 d.u. x .0122=25.5 acres, for a total of **78.3 acres.**
4. Park credit calculations: 78.3 acres of Community/Neighborhood Parks + 12.0 acres (25% credit for 48.2 acres of greenbelts along drainageways and wetland preserve) for a total of **90.3 acres.**
5. 100 dwelling units are assigned to the 8.2 acre MU parcel only, 0 units assigned to the 11.4 acre parcel.
6. Double net density calculation: 5,705 d.u./546.5 acres (538.3 ac.+8.2 ac. of MU)= **10.4 du/ac.** Note: this does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU 120 CB-1.
7. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 2,089 d.u. = 36.6%.

Plate NOP-8: Alternative 2 Land Use Plan

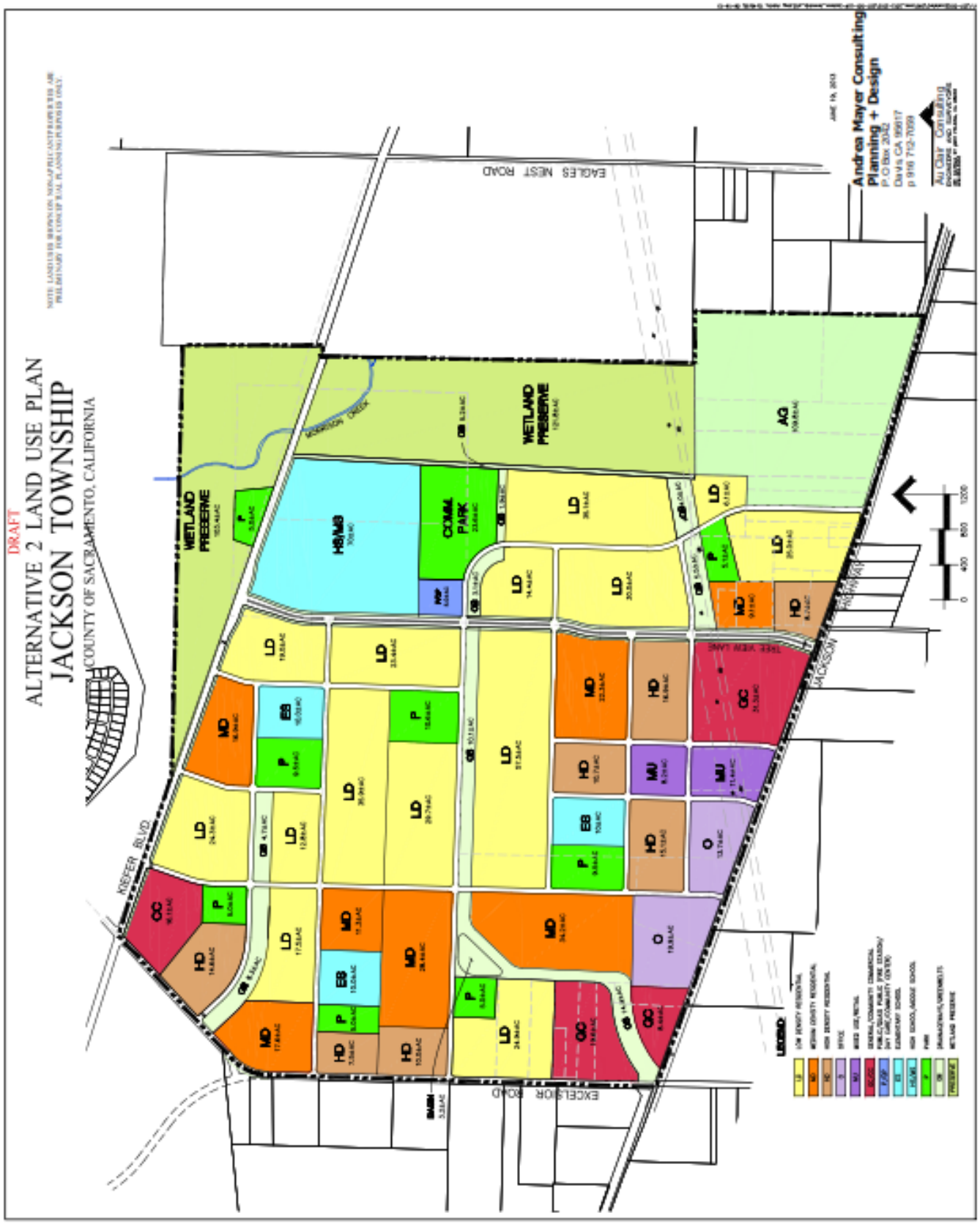


Table NOP-3: Alternative 2 Land Use Summary

Residential Designations	***Acres***	***Average Density***	***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
LD- Low Density Residential	355.7	6.0	1.0-10.9	2134	34.8%
MD-Medium Density Residential	139.8	13.0	11.0-19.9	1817	29.6%
HD- High Density Residential	83.5	25.0	20.0-30.0	2087	34.0%[7]
Subtotal	**579.0**			**6,038**	**98.4%**
Commercial + Office Zones	***Acres***	***F.A.R.***	***Square Footage***	***D.U.'s***	***% of D.U.'s***
GC-General Commercial	59.3	0.25	645,700	n/a[1]	
CC-Community Commercial	16.1	0.25	175,300	n/a[1]	
MU-Mixed Use	19.6	0.50	427,000	100[5]	1.6%[7]
O- Office	33.6	0.50	731,800	n/a[1]	
Subtotal	**128.6**		**1,979,800**	**100**	**1.6%**
Public/Quasi Public Zones	***Acres***				
PQP-Fire Station/Community Center	5.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**105.0**				
Park + Open Space Zones	***Acres***				
CP- Community Park	23.6[3]				
P- Neighborhood Park	54.7[3]				
OS- Wetland Preserve	225.2				
OS- Greenbelt/Drainage Corridor	57.7				
OS- Landscape Corridor	14.5				
OS- Detention Basin	3.2				
Subtotal	**378.9**				
AG-Agriculture	109.3				
RW- Primary Roadways	90.2				
	Acres		***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
TOTAL	***1,391.0***		***10.5[6]***	***6,138***	***100%***

NOTES: DU → dwelling unit, F.A.R. → Floor-Area Ratio (i.e. a F.A.R. of 0.25 means that for every one acre of land in the category–like General Commercial–0.25 acres will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. Population calculation is 6,138 d.u x 2.64 people per household =**16,204 total population**
3. Park requirement calculation (not including AG zoning): LD/MD 3951 d.u. x .0146=57.7 acres and HD/MU 2187 d.u. x .0122=26.6 acres, for a total of **84.3 acres.**
4. Park credit calculations: 78.3 acres of Community/Neighborhood Parks + 12.0 ac.(25% credit for 48.2 acres of greenbelts along drainageways and wetland preserve)= **90.3 acres**
5. 100 dwelling units are assigned to the 8.2 acre MU parcel only, 0 units assigned to the 11.4 acre parcel.
6. Double net density calculation:6,138 d.u./587.2 acres (579 ac.+8.2 ac. of MU)= **10.45 du/ac.** Note: this does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU 120 CB-1.
7. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 2,187 d.u. = **35.6%.**

Plate NOP-9: Alternative 3 Land Use Plan

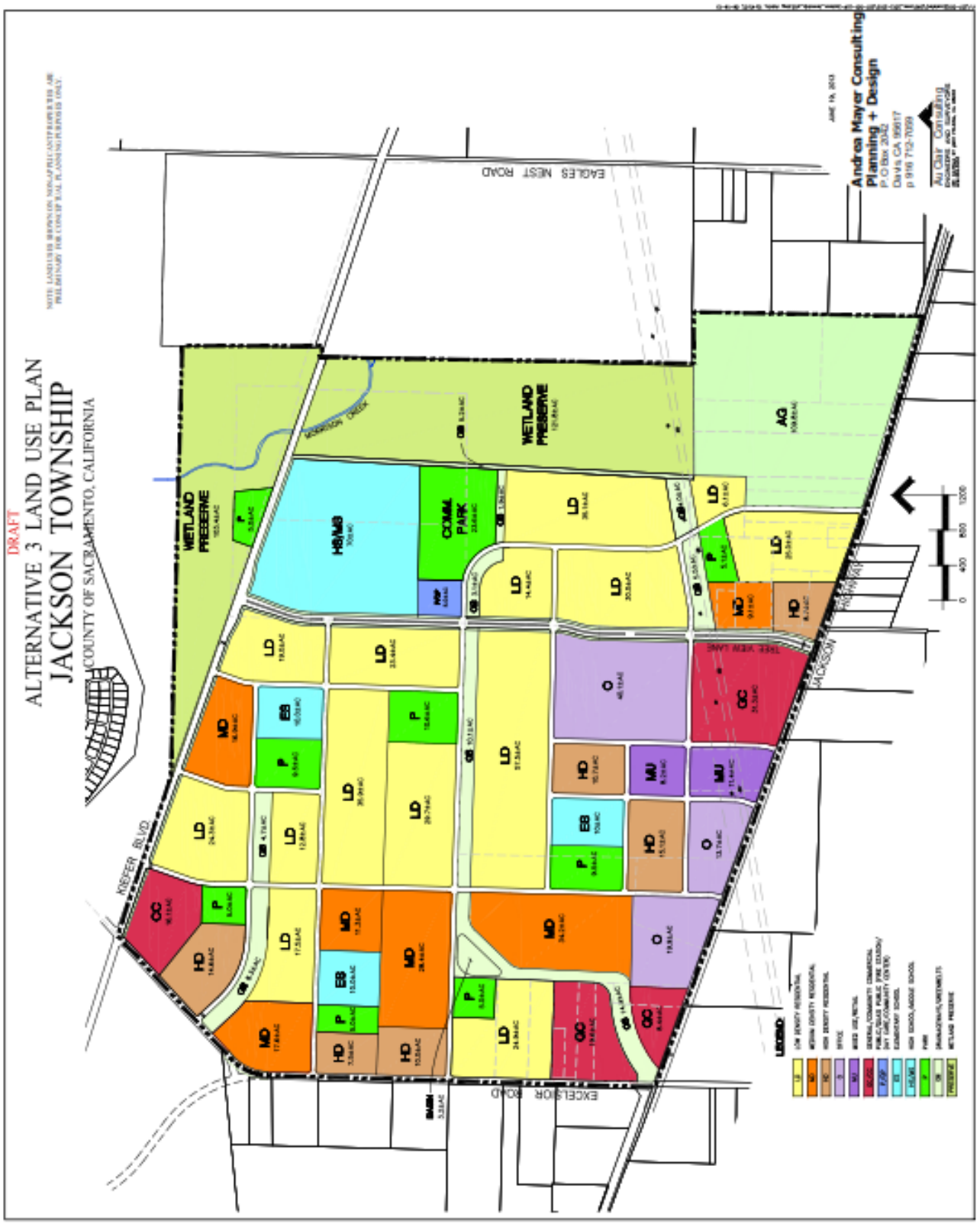


Table NOP-4: Alternative 3 Land Use Summary

Residential Designations	***Acres***	***Average Density***	***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
LD- Low Density Residential	355.7	6.0	1.0-10.9	2134	37.5%
MD-Medium Density Residential	117.5	13.0	11.0-19.9	1527	26.8%
HD- High Density Residential	66.6	29.0	20.0-30.0	1931	33.9%[7]
Subtotal	**539.8**			**5,595**	**98.2%**
Commercial + Office Zones	***Acres***	***F.A.R.***	***Square Footage***	***D.U.'s***	***% of D.U.'s***
GC-General Commercial	59.3	0.25	645,700	n/a[1]	
CC-Community Commercial	16.1	0.25	175,300	n/a[1]	
MU-Mixed Use	19.6	0.50	427,000	100[5]	1.8%[7]
O- Office	73.7	0.50	1,605,100	n/a[1]	
Subtotal	**168.7**		**2,853,100**	**100**	**1.8%**
Public/Quasi Public Zones	***Acres***				
PQP-Fire Station/Community Center	5.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**105.0**				
Park + Open Space Zones	***Acres***				
CP- Community Park	23.6[3]				
P- Neighborhood Park	54.7[3]				
OS- Wetland Preserve	225.2				
OS- Greenbelt/Drainage Corridor	59.1				
OS- Landscape Corridor	14.5				
OS- Detention Basin	3.2				
Subtotal	**380.3**				
AG-Agriculture	109.3				
RW- Primary Roadways	87.9				
	Acres		***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
TOTAL	***1,391.0***		***10.4[6]***	***5,695***	***100%***

NOTES: DU → dwelling unit, F.A.R. → Floor-Area Ratio (i.e. a F.A.R. of 0.25 means that for every one acre of land in the category–like General Commercial–0.25 acres will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. Population calculation is 5,695 d.u x 2.64 people per household =**15,035 total population**
3. Park requirement calculation (not including AG zoning): LD/MD 3661 d.u. x .0146=53.5 acres and HD/MU 2031 d.u. x .0122=24.8 acres, for a total of **78.3 acres.**
4. Park credit calculations: 78.3 acres of Community/Neighborhood Parks + 12.0 ac.(25% credit for 48.2 acres of greenbelts along drainageways and wetland preserve)= **90.3 acres**
5. 100 dwelling units are assigned to the 8.2 acre MU parcel only, 0 units assigned to the 11.4 acre parcel.
6. Double net density calculation: 5,695 d.u./548 acres (539.8 ac.+8.2 ac. of MU)= **10.4 du/ac.** Note: this does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU 120 CB-1.
7. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 2,031 d.u. = 35.7%.

Plate NOP-10: Urban Policy Area Amendment

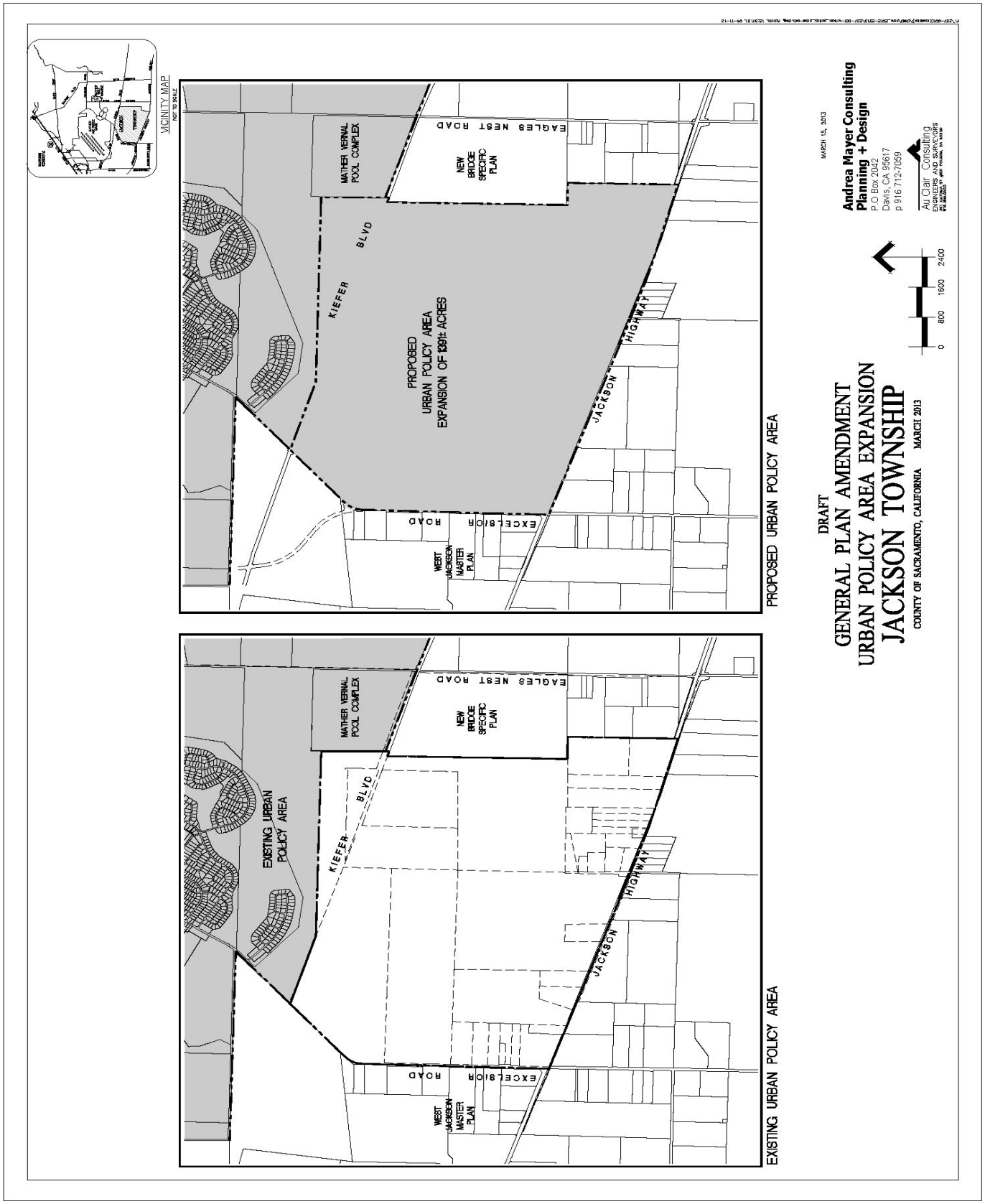


Plate NOP-11: General Plan Amendment

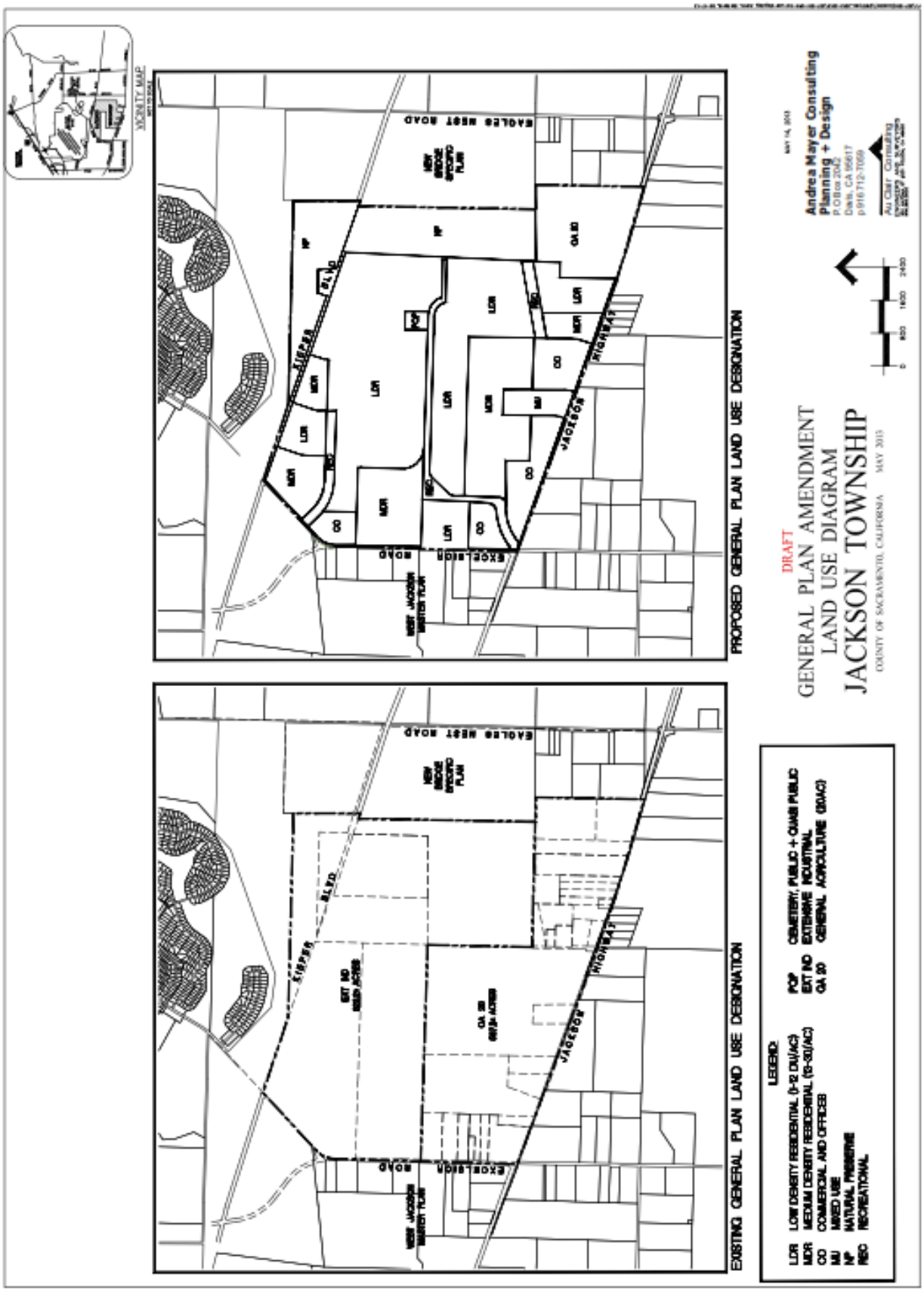


Plate NOP-12: General Plan Transportation Plan Amendment

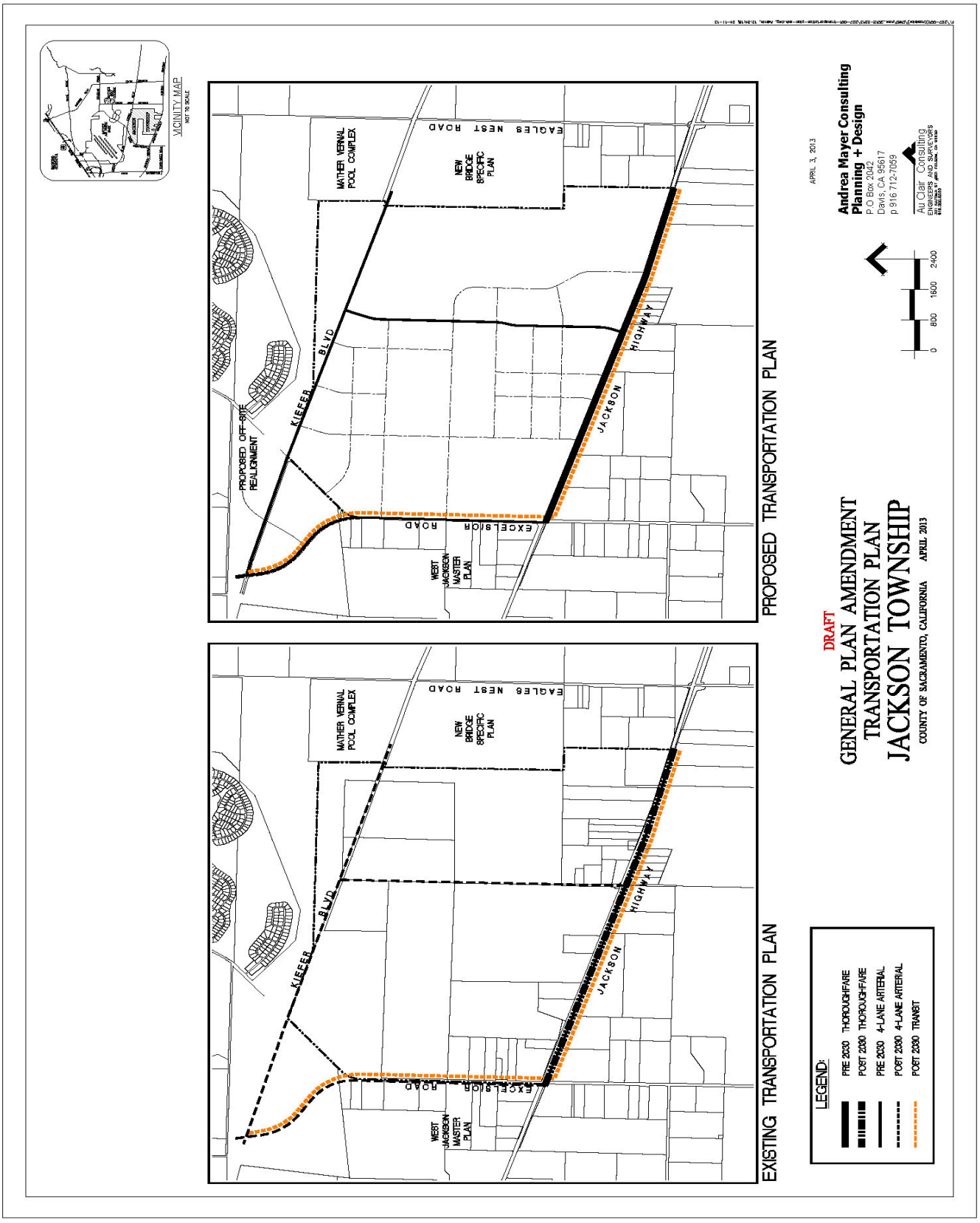


Plate NOP-13: Vineyard Community Plan Amendment

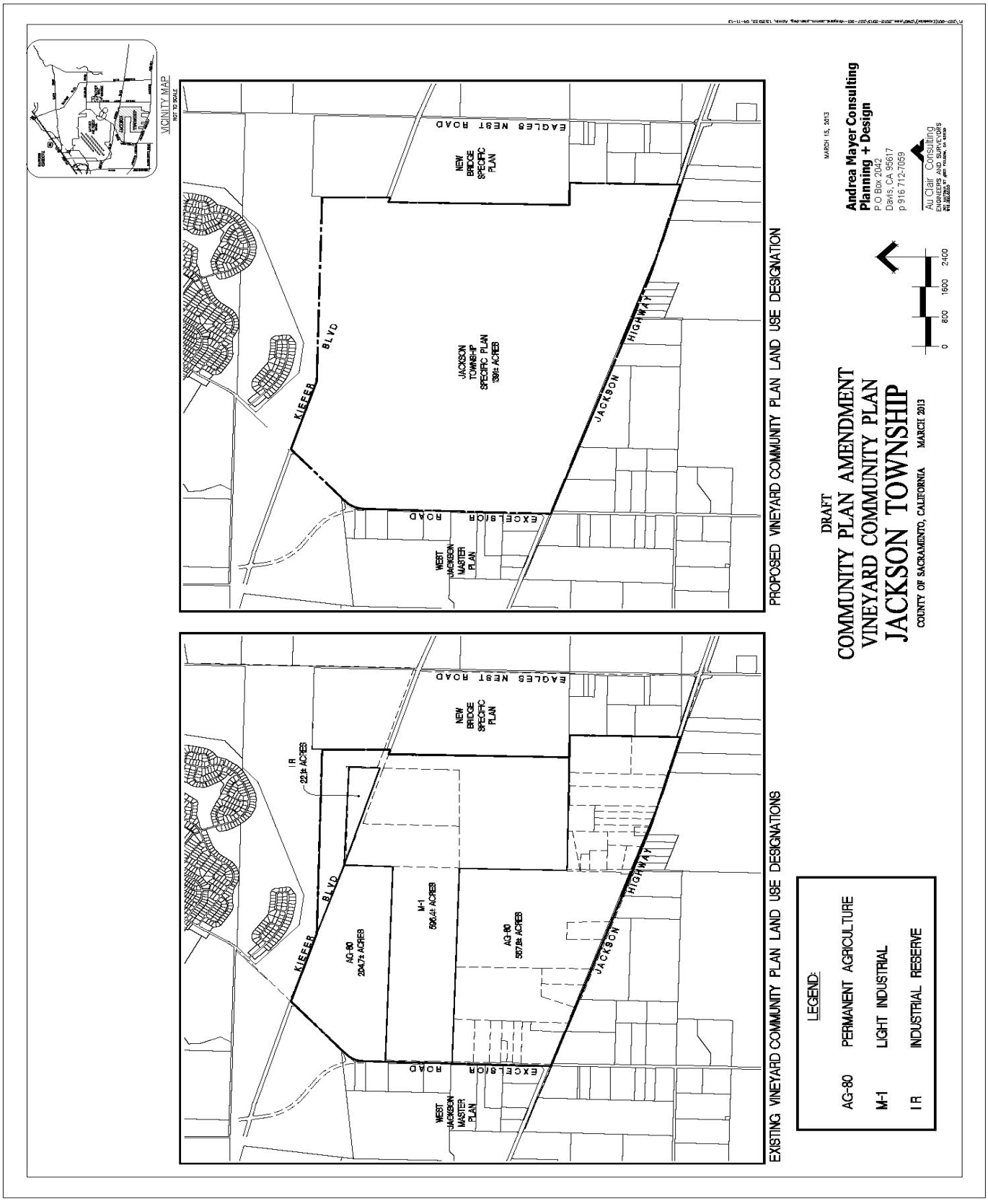
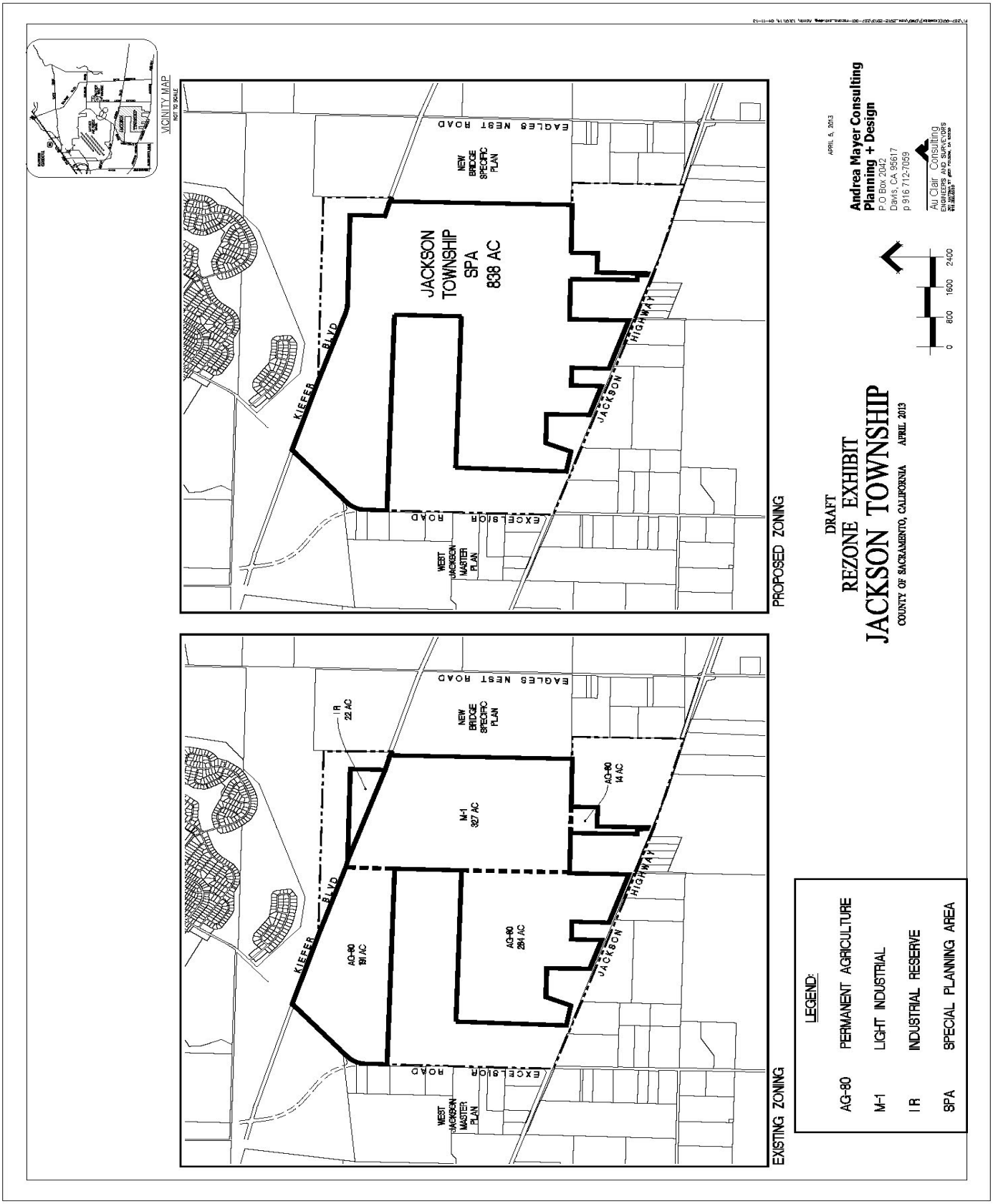


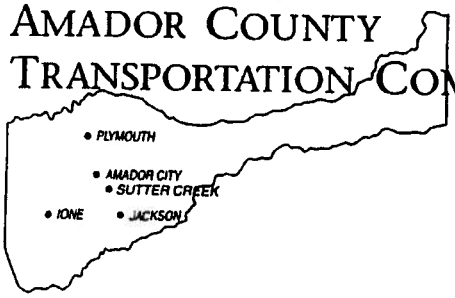
Plate NOP-14: Rezone Exhibit



ATTACHMENT 17
Department of Community Development
Director's Office

SEP 5 2013

ACTC
AMADOR COUNTY TRANSPORTATION COMMISSION



RECEIVED
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PLANNING DEPT.
County of Sacramento

August 22, 2013

Lori Moss, Director
Sacramento County
Community Development Department
PO Box 839
Sacramento, CA 95812-0839

Subject: Draft Environmental Impact Report for Jackson Township Specific Plan; Request for County Agenda Notices

Dear Ms. Moss:

On behalf of the Amador County Transportation Commission (ACTC), we greatly appreciate receiving the recent Notice of Preparation concerning a Draft Environmental Impact Report for Jackson Township Specific Plan. The ACTC will submit comments pursuant to the NOP.

As you may know, the ACTC represents the Amador Region which is seriously concerned regarding current or future plans for State Route 16/Jackson Highway - a vital transportation corridor connecting our regions. Given this concern, ACTC requests to be provided advance notice of any proposed land use action, transportation project, or environmental documentation that may affect the State Route 16/Jackson Highway Corridor with an adequate opportunity to provide input and participate in the planning process. Specifically, ACTC requests to receive notices of agendas for all meetings of the County Planning Commission and the County Board of Supervisors. If email notification is available, please send such notices to "charles@actc-amador.org". Your attention to this matter is greatly appreciated. If you have any questions, please don't hesitate to contact me (charles@actc-amador.org - 209/267-2282).

Sincerely,

Charles F. Field
Executive Director

CF/nc

Cc: Leighann Moffitt, Planning Director/Planning and Environmental Review
Mike Winter, Senior Planner/Planning and Environmental Review
Craig A. Kramer, Sacramento County Clerk/Recorder

117 VALLEY VIEW WAY, SUTTER CREEK, CA 95685 – PHONE (209) 267-2282 – FAX (209) 267-1930 - info@actc-amador.org

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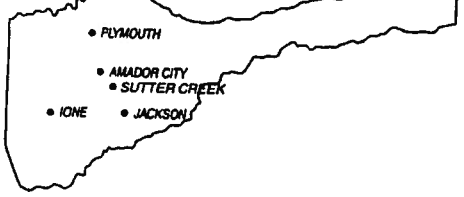
ACTC
AMADOR COUNTY TRANSPORTATION COMMISSION



RECEIVED
SEP - 6 2013
PLANNING DEPT.
County of Sacramento

August 19, 2013

Lori Moss, Director
Sacramento County
Community Development Department
PO Box 839
Sacramento, CA 95812-0839

Subject: Draft Environmental Impact Report for Jackson Township Specific Plan

Dear Ms. Moss:

On behalf of the Amador County Transportation Commission (ACTC), we greatly appreciate receiving the recent Notice of Preparation concerning a Draft Environmental Impact Report for Jackson Township Specific Plan. The ACTC will submit comments pursuant to the NOP. As you may know, the ACTC represents the Amador Region who is seriously concerned regarding current or future plans for State Route 16/Jackson Highway which is a vital transportation corridor connecting our regions. Given this concern, ACTC requests to be provided notice of any land use or transportation project that may affect the SR 16 corridor with an opportunity to provide input or participate in planning with adequate time and material to provide review and input as may be necessary. ACTC would also request being placed on the mailing or email list for Board of Supervisor and Planning Commission meeting agendas. Your attention to this matter is greatly appreciated. If you have any questions, please don't hesitation to contact me (charles@actc-amador.org - 209/267-2282).

Sincerely,

Charles F. Field
Executive Director

CF/nc

Cc: Leighann Moffitt, Planning Director/Planning and Environmental Review
Mike Winter, Senior Planner/ Planning and Environmental Review
Craig A. Kramer, Sacramento County Clerk/Recorder

117 VALLEY VIEW WAY, SUTTER CREEK, CA 95685 – PHONE (209) 267-2282 – FAX (209) 267-1930 - info@actc-amador.org

ATTACHMENT 17 CH

Amador County Transportation Commmission

117 Valley View Way
Sutter Creek, CA 95685
209.267.2282
fax: 209.267.1930

September 12, 2013

TO: Sacramento County Planning and Environmental Review Division
Attention: Catherine Hack, Environmental Coordinator
827 7th Street
Room 220
Sacramento, CA 95814

FROM: Charles F. Field, Executive Director

SUBJECT: Notice of EIR Scoping Meeting - Jackson Township Specific Plan

Thank you for providing the Amador County Transportation Commission (ACTC) with an opportunity to comment on the "Notice of EIR Scoping Meeting Jackson Township Specific Plan". As you may know, the ACTC has been representing Amador County and cities and surrounding counties and communities with respect to the long term maintenance of interregional travel on the State Route 16 corridor in Sacramento County. ACTC was unable to send a representative to the EIR scoping meeting but is happy to see that per the notice provided, attendance is not necessary "in order to provide comments on what is addressed in the EIR". The following are ACTC's comments concerning contents of the EIR pertaining to evaluation of impacts and proposed mitigation measures for State Route 16 which is affected by the proposed Jackson Township Specific Plan. Addressing these concerns in the EIR will be greatly appreciated. We will look forward to seeing a copy of the draft and another opportunity to comment when it is available.

1. The Notice of Preparation states that there are no roads on the north or eastern boundaries of the development. SR-16 is stated as the main road to the south and Excelsior will be the main road on the western boundary. Since Excelsior has no direct connection to highway 50 and is a functionally insufficient road to handle this volume of traffic, the majority of Sacramento commuting traffic is anticipated to use SR-16. Given that SR-16 is a state owned facility, a more detailed operational methodology consistent with Caltrans Guide for the Preparation of Traffic Impact Studies (Caltrans, December 2002) is warranted for this facility. Per Section V. of the Caltrans TIS guidelines – this would entail analyzing study area segments and intersections of SR-16 with the applicable methods listed below. The County guidelines would still be applicable to all non-state owned roadways analyzed as part of the EIR.

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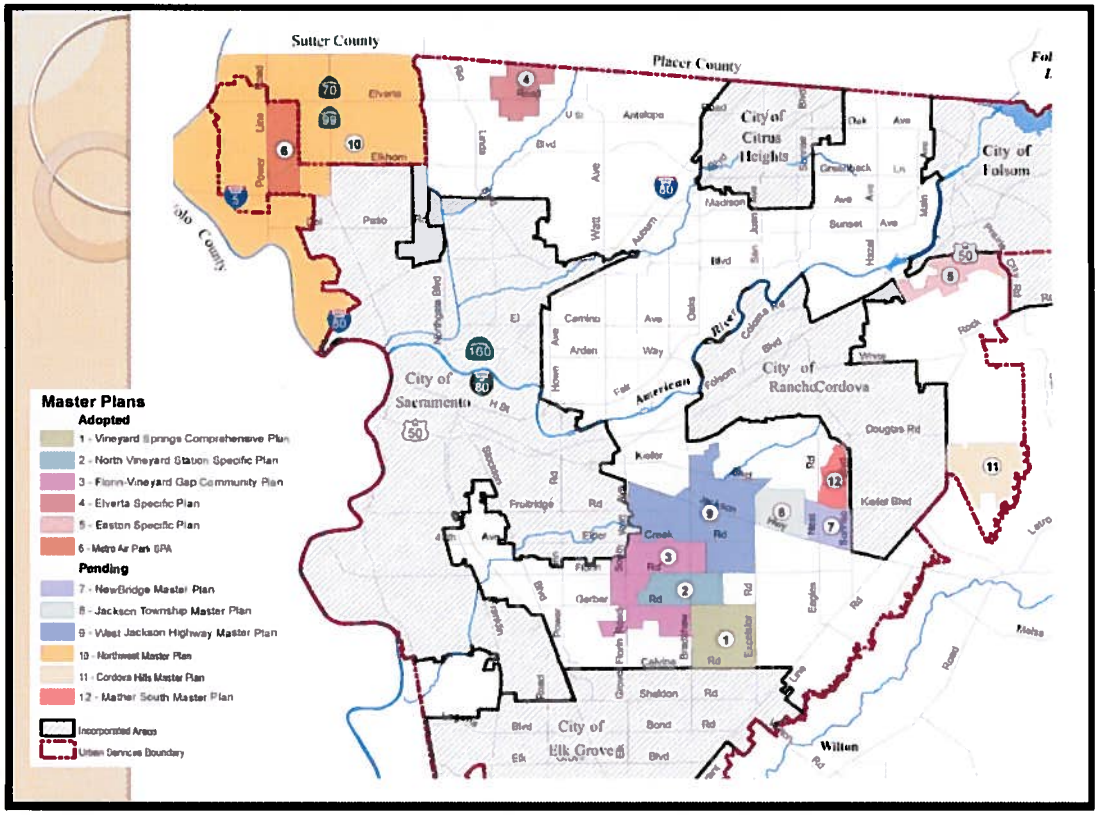
Department of Community Development
Planning and Environmental Review Division

A.	Freeway Segments – Highway Capacity Manual (HCM)*, operational analysis	
B.	Weaving Areas – Caltrans Highway Design Manual (HDM)	
C.	Ramps and Ramp Junctions – HCM*, operational analysis or Caltrans HDM, Caltrans Metering Guidelines (most recent edition)	Ramp
D.	Multi-Lane Highways – HCM*, operational analysis	
E.	Two-lane Highways – HCM*, operational analysis	
F.	Signalized Intersections8 – HCM*, Highway Capacity Software**, operational analysis, TRAFFIXTM**, Synchro**, see footnote 8	
G.	Unsignalized Intersections – HCM*, operational analysis, Caltrans Traffic Manual for warrants if a signal is being considered	signal
H.	Transit – HCM*, operational analysis	
I.	Pedestrians – HCM*	
J.	Bicycles – HCM*	
K.	Caltrans Criteria/Warrants – Caltrans Traffic Manual (stop signs, traffic signals, freeway lighting, conventional highway lighting, school crossings)	
L.	Channelization – Caltrans guidelines for Reconstruction of Intersections, August 1985, Ichiro Fukutome	

*The most current edition of the Highway Capacity Manual, Transportation Research Board, National Research Council, should be used.

8 The procedures in the Highway Capacity Manual "do not explicitly address operations of closely spaced signalized intersections. Under such conditions, several unique characteristics must be considered, including spill-back potential from the downstream intersection to the upstream intersection, effects of downstream queues on upstream saturation flow rate, and unusual platoon dispersion or compression between intersections. An example of such closely spaced operations is signalized ramp terminals at urban interchanges. Queue interactions between closely spaced intersections may seriously distort the procedures in" the HCM.

2. To ensure that cumulative conditions are accurately reflected, the CEQA traffic analysis must include and document all Existing Plus Pending and Approved Projects (EPAP) within or affecting the study area. The County's EPAP listing is shown below. External through trips from counties to the east (e.g., Amador County) must also be reflected and documented as it pertains to SR-16.



3. All segment and intersection LOS worksheets must be documented in a technical appendix for public review. For intersections, the worksheets must include intersection pedestrian cycles and timing parameter values assumed for SR-16.

4. The traffic analysis must document the estimated 95th percentile queues on SR-16 relative to available storage. If present, queue spillback conditions must be identified and characterized as impacts as appropriate (safety impact). To address operations of closely spaced signalized intersections – simulation analysis is recommended.

5. Assumed future/cumulative AM and PM peak hour heavy-duty vehicle percentages used as inputs for segment and intersection analyses must be documented and supported.

6. It is noted that Caltrans is considering the possibility of relinquishing a segment of SR 16 in the vicinity of this project per their Transportation Concept Report. Given that this process has not been formalized, the CEQA document must consider the possibility that the SR-16 relinquishment will not occur. The SACOG MTP, County of Sacramento General Plan, City of Sacramento General Plan and the City of Rancho Cordova each define the future design and functional classification of SR-16 through the study area differently. Recently the foothill communities of Amador have voiced the desire for the future design of SR-16 to be retained as

a limited access expressway through the study area (with or without relinquishment). To adequately address the traffic impacts of the Jackson Township Specific Plan, each land use based alternative identified in the NOP should be analyzed relative to three SR-16 design alternatives: 1) existing geometrics given that no funding has been programmed for SR-16 improvements (i.e., can not assume future development will cover the full cost of improving SR-16); 2) full access 6-lane local arterial with ½ mile intersection spacing with 35 mph speed limit; and, 3) 4/5 lane limited access expressway with one mile intersection spacing. ACTC is in the midst of analysis and discussions with Sacramento County Department of Transportation concerning a potential fourth alternative that may be a compromise between alternative 2 and 3 as listed. This alternative may warrant consideration as well.

7. On page 7 transit is mentioned, but not how it will connect to the Sacramento Regional Transit System.
    - We request that the traffic analysis component of the CEQA document investigate the connectivity between this development and the Sacramento Regional Transit System.

8. On page 17 transit is shown as a post 2030 facility.
    - Please show and explain how this transit facility will be incorporated into this development plan and how it will connect to Sacramento Regional Transit.

9. Page 5 of the DRAFT Jackson Township Specific Plan states that "The site is surrounded and fed by significant transportation options...Jackson Highway, Excelsior Road, and Kiefer Boulevard."
        - Excelsior Road travels through a newly constructed residential development with a 2-lane alignment with driveways that back out onto the road and has a posted speed limit of 25 mph with several speed bumps. From there it meanders around what used to be Mather Air Force Base in a circuitous route to Highway 50. This is not a significant transportation option.
        - Kiefer Boulevard is currently a dirt road behind this development project and is currently listed as a post 2030 project with no foreseeable funding. This too is not a significant transportation option.
    - We request that the Traffic Analysis performed for this development rely only on realistically fundable and useable routes, the only one of which available is SR 16.

ATTACHMENT 17

CH

Taxpayer ID no.: 20-1322599
Amador Council of Tourism
PO Box 40
Sutter Creek, CA 95685
209.267.9249

September 6, 2013

Catherine Hack
Environmental Coordinator
Department of Community Development
Planning and Environmental Review Division
827 7th Street, Room 220
Sacramento, CA 95814

Re: Notice of Preparation of a Draft Environmental Impact Report for Jackson Township Specific Plan

Dear Ms. Hack,

Thank you for the opportunity to comment on the Notice of Preparation for Jackson Township Specific Plan Draft Environmental Impact Report (DEIR). The main concern for Amador Council of Tourism, with regard to this proposed project, is the name – Jackson Township.

The City of Jackson was incorporated in 1905, however, for approximately 55 years prior to incorporation this general area, and the town site specifically, was referred to as "Jackson." Additionally, Highway 16 was created and named the "Jackson Highway" because, since 1919, the road has been a thoroughfare between the Sacramento area and the County seat of Amador County: the City of Jackson. Use of the name "Jackson Township" for a new project on the Jackson Highway which leads to the historic City of Jackson is confusing at best, and has the potential to impact the economic vitality of the City of Jackson.

The City of Jackson, together with the County of Amador, relies on tourism for a large part of its economy, and the Jackson Highway is the northwest portal to the City of Jackson. Tourists from great distances including Sacramento, San Francisco, and points beyond, utilize the Jackson Highway to access the City of Jackson and Amador County. A development named "Jackson Township" that includes commercial uses and which is located on the Jackson Highway, en route to the City of Jackson, could be confusing to tourists destined for the City of Jackson. For this reason, the economic impact of this project on the City of Jackson should be addressed in the Jackson Township Specific Plan DEIR.

To avoid these potential impacts to the City of Jackson, we are requesting that the County of Sacramento require a name change for the proposed specific plan. A name that is not similar to any existing nearby or surrounding jurisdiction would alleviate any confusion and allow the new development to create its own identity.

Sincerely,

Wayne Garibaldi
President, Amador Council of Tourism

cc: Amador County Board of Supervisors
Amador County Chamber of Commerce
City of Jackson

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Department of Community Development
Planning and Environmental Review Division

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Planning and Environmental Review Division

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AMADOR COUNTY CHAMBER OF COMMERCE & VISITORS BUREAU
115 Main Street • P.O. Box 596 • Jackson, CA 95642 • (209) 223-0350 • Fax (209) 223-0508

August 28, 2013

Catherine Hack
Environmental Coordinator
Department of Community Development
Planning and Environmental Review Division
827 7th Street, Room 220
Sacramento, CA 95814

Re: Preparation of a Draft Environmental Impact Report for Jackson Township Specific Plan

Dear Ms. Hack,

We are formally requesting that the County of Sacramento require a name change for the proposed Jackson Township Specific Plan and allow the new development to create its own identity.

Our concern – the proposed project name: Jackson Township. We are not looking for a naming dispute….no TROUBLES like the conflict in Ireland. Our historic city of Jackson was born in the gold rush and has kept lively for over 150 years. Gold seekers passed through our city while traveling to Sacramento on what is now the Jackson Highway (northwest portal to the city of Jackson).

Amador was organized as a new county in 1854, Jackson became the new county's county seat. In 1905, Jackson incorporated as a city. The history of Jackson is in Amador County. To have a city of Jackson and a Jackson Township next door will cause nothing but confusion for emergency services, commercial uses, and tourism.

The Amador County Chamber of Commerce and Visitors Bureau has been dedicated to furthering the best interests of our business owners, residents, and visitors for more than 80 years. Tourism has historically been a leading industry to Amador County. The economic impact of this project on the city of Jackson should also be addressed in the Jackson Township Plan.

Should you have any questions, please contact our City Planner, Susan Peters, at (209) 223-1646.

Sincerely,

Tom Blackman
President

cc: Amador County Board of Supervisors
Mike Daly, Jackson City Manager
Pat Crew, Jackson Mayor
Amador Council of Tourism

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY
EDMUND G. BROWN JR., GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Rm. 151
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682
PERMITS: (916) 574-2380 FAX: (916) 574-0682

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AUG 30 2013
County Of Sacramento
Department of Community Development
Planning and Environmental Review Division

August 28, 2013

Ms. Cathy Hack
Sacramento County
827 Seventh Street, Room 220
Sacramento, California 95814

Subject: Jackson Township Specific Plan
SCH Number: 2013082017
Document Type: Notice of Preparation

Dear Ms. Hack:

Staff of the Central Valley Flood Protection Board (Board) has reviewed the subject document and provides the following comments:

The proposed project is located adjacent to or within the Elder Creek which is under the jurisdiction of the Central Valley Flood Protection Board. The Board is required to enforce standards for the construction, maintenance, and protection of adopted flood control plans that will protect public lands from floods. The jurisdiction of the Board includes the Central Valley, including all tributaries and distributaries of the Sacramento River, the San Joaquin River, and designated floodways (Title 23 California Code of Regulations (CCR), Section 2).

A Board permit is required prior to starting the work within the Board's jurisdiction for the following:

- The placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee (CCR Section 6);

- Existing structures that predate permitting, or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the encroachment has not been clearly established or ownership and use have been revised (CCR Section 6);

- Vegetation plantings will require the submission of detailed design drawings; identification of vegetation type; plant and tree names (i.e. common name and scientific name); total number of each type of plant and tree; planting spacing and irrigation method that will be utilized within the project area; a complete vegetative management plan for maintenance to prevent the interference with flood control, levee maintenance, inspection, and flood fight procedures (CCR Section 131).

Vegetation requirements in accordance with Title 23, Section 131 (c) states "Vegetation must not interfere with the integrity of the adopted plan of flood control, or interfere with maintenance, inspection, and flood fight procedures."

The accumulation and establishment of woody vegetation that is not managed has a negative impact on channel capacity and increases the potential for levee over-topping. When a channel develops vegetation that then becomes habitat for wildlife, maintenance to initial baseline conditions becomes more difficult as the removal of vegetative growth is subject to federal and State agency requirements for on-site mitigation within the floodway. The project should include mitigation measures to avoid decreasing floodway channel capacity.

Hydraulic Impacts - Hydraulic impacts due to encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation. The project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. Off-site mitigation outside of the State Plan of Flood Control should be used when mitigating for vegetation removed within the project location.

The permit application and Title 23 CCR can be found on the Central Valley Flood Protection Board's website at http://www.cvfpb.ca.gov/. Contact your local, federal and State agencies, as other permits may apply.

The Board's jurisdiction, including all tributaries and distributaries of the Sacramento River and the San Joaquin River, and designated floodways can be viewed on the Central Valley Flood Protection Board's website at http://gis.bam.water.ca.gov/bam/.

If you have any questions, please contact me by phone at (916) 574-0651, or via e-mail at jherota@water.ca.gov.

Sincerely,

James Herota

James Herota
Staff Environmental Scientist
Projects and Environmental Branch

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, California 95814

CITY OF
JACKSON
CALIFORNIA

"Preserving Our Past, Enriching Our Present, Building Our Future"
33 Broadway, Jackson, California 95642-2301 • voice (209) 223-1646 • fax (209) 223-3141
E-mail: cinfo@ci.jackson.ca.us • Web site: http://ci.jackson.ca.us

August 27, 2013

Catherine Hack
Environmental Coordinator
Department of Community Development
Planning and Environmental Review Division
827 7th Street, Room 220
Sacramento, CA 95814

Re: Notice of Preparation of a Draft Environmental Impact Report for Jackson Township Specific Plan

Dear Ms. Hack,

Thank you for the opportunity to comment on the Notice of Preparation for Jackson Township Specific Plan Draft Environmental Impact Report (DEIR). The main concern for the City of Jackson with regard to this proposed project is the name – Jackson Township.

The City of Jackson was incorporated in 1905, however, for approximately 55 years prior to incorporation this general area, and the town site specifically, was referred to as "Jackson." Additionally, Highway 16 was created and named the "Jackson Highway" because since 1919 the road has been a thoroughfare between the Sacramento area and the County seat of Amador County: the City of Jackson. Use of the name "Jackson Township" for a new project on the Jackson Highway which leads to the historic City of Jackson is confusing at best and has the potential to impact emergency services for both locations as well as the economic vitality of the City of Jackson.

With the proliferation of cell phones utilized for emergency services calls, identification of incident location is imperative for adequate response times. The close geographical relationship between the historic City of Jackson and the proposed project will inevitably lead to confusion amongst dispatch operators should the name "Jackson Township" be retained for the project. It is for this very reason that streets within a community or region are given unique names, and why incorporated cities may not be named alike. This issue must be addressed in the emergency services analysis in the DEIR.

The City of Jackson, together with the County of Amador, relies on tourism for a large part of its economy, and the Jackson Highway is the northwest portal to the City of Jackson. Tourists from great distances including Sacramento, San Francisco, and points beyond, utilize the Jackson Highway to access the City of Jackson and Amador County. A development named

Mayor: Patrick Crew • Vice Mayor: Connie Gonsalves • Councilmembers: Wayne Garibaldi • Marilyn Lewis • Keith Sweet
City Manager: Michael Daly • City Attorney: Andrew J. Morris

"Jackson Township" that includes commercial uses and which is located on the Jackson Highway - en route to the City of Jackson - could be confusing to tourists destined for the City of Jackson. For this reason, the economic impact of this project on the City of Jackson should also be addressed in the Jackson Township Specific Plan DEIR.

To avoid these potential impacts the City of Jackson, we are requesting that the County of Sacramento require a name change for the proposed specific plan. A name that is not similar to any existing nearby or surrounding jurisdiction would alleviate any confusion and allow the new development to create its own identity.

Your cooperation with regards to this issue is greatly appreciated. Should you have any questions, please do not hesitate to contact our City Planner, Susan Peters, at (209) 223-1646.

Sincerely,

Patrick Crew
Mayor

cc: Amador County Board of Supervisors
Amador County Chamber of Commerce
Amador Council of Tourism

ECOS
ENVIRONMENTAL
COUNCIL
OF SACRAMENTO

Post Office Box 1526 • Sacramento, CA • 95812 • (916) 444-0022

August 30, 2013

Catherine Hack, Environmental Coordinator
Department of Community Development
Planning and Environmental Review Division
827 7th Street, Room 220
Sacramento, CA 95814
Email: DERA@saccounty.net

Re: Comments on the Notice of Preparation of a Draft Environmental Impact Report for Jackson Township Specific Plan (PLNP2011-00095)

Dear Ms. Hack,

The Environmental Council of Sacramento (ECOS) appreciates the opportunity to comment on the above referenced Notice of Preparation. While this entire Jackson Corridor was supposedly master planned, we have concerns regarding the comprehensiveness of the master planning approach and therefore the environmental document must address these concerns.

Land Use

From the information provided with the Notice of Preparation, ECOS is questioning the need for three land use alternatives. Upon cursory review, there appears to be little difference among these alternatives. The environmental document should give a detailed description of why these three alternatives were selected and why other perhaps preferable alternatives, at least from a transit perspective, were not included.

ECOS believes that the commercial and office space provided is far more than is reasonably likely to occur. Assumptions that are overly optimistic about employment generating land uses will skew the transportation analysis and green house gas/ozone emission numbers to look much lower than will likely occur with buildout. Are the commercial/industrial lands dictated by noise contours? This cannot be determined from the information provided.

ECOS also feels strongly that the cumulative acreages/square footage being proposed for the Jackson Corridor, perhaps also including Cordova Hills, ought to be examined by economic consultants for their relationship to reasonable economic forecasts. This isn't in the scope of the DEIR necessarily, but should be an important part of the Jackson Corridor master planning effort.

Sacramento Raceway is not controlled by the project proponents, yet land uses are shown to replace the Raceway. It is likely, due to noise constraints that little development can occur on any of these properties while Sacramento Raceway is in operation. The DEIR must look at the matter of development phasing regarding the Raceway, the potential impact of residential development around the Raceway and any potential problems with soil contamination on the Raceway site.

How is this project being integrated with the remainder of the Jackson Corridor projects from a land use and transportation perspective? This is a critical consideration, and it does not appear that it has been given much consideration to date in the master planning process.

A holding capacity analysis should also be conducted to determine how the proposed additional land uses impact the General Plan holding capacity for residential uses and industrial/commercial uses. With all the development proposed in the Jackson Corridor, how is this impacting the General Plan assumptions?

Air Quality

The environmental document must analyze the impact of this proposal on the Metropolitan Transportation Plan - Sustainable Communities Strategy (SCS) and on the State Implementation Plan (SIP). Neither the SCS nor the SIP envisioned the degree of development that is currently proposed in the Jackson Corridor, including this project. These developments could jeopardize compliance with green house gas reduction requirements as well as ozone attainment.

To provide adequate disclosure and ensure compliance with CEQA, the climate change analysis should be conducted in the following manner:

1. Greenhouse Gas (GHG) Emission Inventory
    a. Compile GHG emission inventories for each of the project alternatives consistent with the Local Governments for Sustainability (ICLEI) Clean Air and Climate Protection (CACP) software and following the Intergovernmental Panel on Climate Change (IPCC) and ICLEI protocols.
    b. Include contributions from vehicle use, energy generation, waste disposal (including wastewater treatment, solid waste disposal, and composting of vegetative waste), and water supply impacts occurring at offsite facilities - including commercial, institutional, and transportation - serving the Specific Plan site and its projected build-out population and full range of possible uses or mix of uses.
    c. Detail the methodologies and calculations used in inventory compilation sufficient to provide transparency, allow for replicability, and provide substantial evidence supporting the assumptions, analysis, and conclusions in the inventories.
2. Significance of GHG Emissions
    a. Identify the GHG emission significance threshold under CEQA for the Specific Plan and discuss the basis and implications of this significance threshold in comparison with those adopted by other jurisdictions in the region or recommended by state, regional, county, and non-governmental agencies for use in Sacramento County.
    b. Identify the GHG emission reduction targets for light duty vehicles contained in the approved Sustainable Communities Strategy for the SACOG region, compare to the corresponding per-capita GHG emission rates estimated for the Specific Plan land uses and activities under each of the three alternatives, and analyze the impacts of Specific Plan alternatives on regional attainment of the adopted targets.

3. Analysis of Energy Use
    a. Analyze potential energy use (including transportation-related energy), sources of energy supply, and way to reduce energy demand, including through the use of efficient, low emission transportation alternatives for each of the three project alternatives.

4. Consistency with Sacramento County Climate Action Plan
    a. Identify all measures and strategies contained in the Sacramento County Climate Action Plan (CAP), both mandatory and voluntary, that are applicable to land uses and activities proposed in the Specific Plan.
    b. Analyze and report any technological or environmental constraints limiting implementation of any applicable CAP measures or strategies identified above.
5. Mitigation Measures
    a. Identify and analyze mitigation measures capable of reducing GHG emissions from Specific Plan land uses and activities to less-than-significant levels under CEQA.
    b. Identify and analyze alternative transportation measures capable of reducing per-capita light duty vehicle GHG emissions to the target levels in horizon years contained in the approved Sustainable Communities Strategy for the SACOG region.
    c. Provide substantial evidence that proposed mitigation measures will be capable of being accomplished in a successful manner within a reasonable of time, taking into account economic, and environmental, legal, social, and technological factors.
    d. Provide substantial evidence or details of full enforcement mechanisms demonstrating that proposed mitigation measures will be real and verifiable. Include specific and mandatory performance standards to ensure that proposed mitigation measures, as implemented, will be effective.
    e. Identify monitoring and reporting requirements for proposed mitigation measures that are sufficient to satisfy CEQA requirements.

Water

The increase in demand for water associated with the proposed General Plan changes need to be thoroughly analyzed. What water demand assumptions associated with this area were included in the General Plan Update EIR? What is the cumulative impact of this project, along with other approved or pending projects within the Urban Services Boundary on total water demand, and does that cumulative demand exceed surface water and safe yield supplies as per the Water Forum agreement?

These above questions should also be answered in consideration of the potential expansion of Zone 40 service to the Elk Grove SOI Expansion area outside of the Urban Services Boundary.

Habitat Preservation

This is an area of the county rich in habitat values, particularly vernal pools, and impacts analysis will need to be done for all vernal pool plants and invertebrate.

As well, impacts analysis will need to be done for: Swainson's hawk, tri-colored blackbird, ferruginous hawk, white tailed kite, loggerhead shrike, northern harrier, greater sandhill crane, American badger, western red bat, pallid bat, western pond turtle, California tiger salamander, and possibly giant garter snake.

This project may be required to do compensatory mitigation. The environmental impacts of this mitigation must be addressed. What the mitigation will be, the location of the mitigation, or alternative locations, and the premitigation conditions of these sites must be discussed in the DEIR. Doing the mitigation is an integral part of the project and a discussion concerning the impacts of that mitigation is critical to the completeness of the environmental document.

Transportation and Circulation

1. Pedestrian and bicycle travel to and from nearby places:

The EIR should analyze the quality and safety of pedestrian travel to nearby places, including the following.

Transit stops and stations
Proposed offices
Proposed mixed use/retail
Safe pedestrian and bicycle crossings on Jackson Highway, Keifer Blvd and Excelsior Road
Safe auto dropoff and pickup for parents and students at the proposed middle/high school campus
Safe walking to and from the proposed middle/high school campus
Safe access for bicycle riders to and from the proposed middle/high school campus
Safe auto dropoff and pickup for parents and students at the proposed elementary school campus
Safe walking to and from the proposed middle/high school campus
Safe access for bicycle riders to and from the proposed elementary school campus
A strong grid network with block lengths that reduce speed and encourage walkability and bikeability

2. Pedestrian and vehicular traffic analysis:

The analysis of pedestrian and vehicular traffic is important to evaluating the pedestrian environment. We recommend using a pedestrian level of service analysis that includes factors such as:

vehicle speed and volume
crossing distance
number of lanes
pedestrian crossing time and delay
distance between crossings
pedestrian signals
traffic signals
parking

landscaping and trees
bike lanes
vehicle turning volumes

3. Pedestrian mobility for all:

The analysis of pedestrian mobility should take into account the abilities of various types of pedestrians, including younger, older, physically disabled, and sight impaired, as well as able bodied.

4. Public Transportation:

The EIR should consider the strong need for adequate transit connections to jobs and services outside the plan area, and the consequent need for safe access to transit stops and stations for pedestrians and bicyclists

The master planning effort does not appear to have adequately incorporated transit service. Providing transit service along Jackson Highway is by no means considered adequate. The entire Jackson Corridor area, including this project, must incorporate substantial transit service. Without adequate transit service, the air quality and climate change benefits that could be achieved due to the area's nearness to other jobs and housing will be lost.

We encourage the project proponents to work with other project proponents in the Jackson Corridor area, as well as with the County and Regional Transit, to develop a comprehensive transit plan. The provision of transit service that will provide the necessary air quality and climate change mitigation benefits will require the establishment of a Transit Services District. County Service Area 10 can be utilized as an example of how this has been accomplished in the past.

This environmental document, as well as other environmental documents in the Jackson Corridor, must include an analysis of transit service and its impact on air quality and climate change.

Conclusion

The above comments are provided given ECOS's desire to see this development become a viable part of the Jackson Corridor new development area. We believe that these issues must be addressed in the Draft Environmental Impact Report and adequate mitigation proposed to address these issues.

If we can provide further clarification, do not hesitate to contact us.

Sincerely,

Ron Maertz
Land Use Committee Chair

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
2379 GATEWAY OAKS DRIVE, SUITE 150
SACRAMENTO, CA 95833
PHONE (916) 274-0635
FAX (916) 274-0602
TTY 711

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September 3, 2013

032013-SAC-0114
03-SAC-16/PM 9.49
SCH# 2013082017

Ms. Catherine Hack
County of Sacramento
827 7th St., Room 220
Sacramento, CA 95814

Jackson Township Specific Plan— Notice of Preparation (NOP)

Dear Ms. Hack:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Jackson Township Specific Plan. The proposed Specific Plan Area, approximately 1391 acres, is located in southeastern Sacramento County, lying south of Mather Specific Plan Area, east of Excelsior Road, north of State Route (SR) 16 (Jackson Highway) and west of Eagles Nest Road in the Vineyard Community. The land use plan is estimated to result in approximately 6,300 dwelling units and approximately 1.9 million square feet of employment and commercial services land uses. The Plan also includes schools, parks, and open space preserves. The following comments are based on the NOP.

Traffic Impact Study

The Jackson Township development will generate additional traffic that is expected to impact SR 16 and US Highway (US) 50. Caltrans appreciates the County giving us the opportunity to provide comments on the scope of the Jackson Corridor Joint Traffic Impact Study (TIS) that includes the Jackson Township Specific Plan development and other developments in its vicinity. We would appreciate continued involvement as the joint traffic study progresses. Whether or not the joint traffic study effort continues, Caltrans recommends that a TIS analyze the direct and cumulative traffic impacts to the State Highway System generated by the Jackson Township development. We recommend using the Department's *Guide for the Preparation of Traffic Impact Studies* (*TIS Guide*) for determining which scenarios and methodologies to use in the analysis. The appropriate level of study is determined by the particulars of a project, the prevailing highway conditions, and the forecasted traffic. The *TIS Guide* is available at the following website address:
http://dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf

We would appreciate the opportunity to review and comment on the scope of the TIS before the study begins.

Relinquishment

Caltrans has entered into discussions with the City of Sacramento, County of Sacramento, and City of Rancho Cordova to relinquish SR 16 between the US 50 interchange and Grant Line Road. Should the relinquishment occur, Caltrans will have no approval role on any modifications to Jackson Highway within the segment relinquished to the County.

However, should relinquishment not occur, or occur after construction of the Jackson Township development begins, Caltrans cannot approve any design changes that would not comply with the design standards set forth by the Caltrans Highway Design Manual, and we cannot approve facility modifications that are incompatible with the SR 16 Transportation Corridor Concept Report. Furthermore, since relinquishment will not occur for quite some time and is contingent on the approval of California Legislature and California Transportation Commission, the environmental review process for the Jackson Township Specific Plan should assume the Jackson Highway continues to function as part of the State Highway System.

If you have any questions regarding these comments or require additional information, please contact Angela Shepard, Intergovernmental Review Coordinator, at (916) 274-0566 or by email at: angela.shepard@dot.ca.gov

Sincerely,

Eric Fredericks, Chief
Office of Transportation Planning – South

c: Scott Morgan, State Clearinghouse

Department of
Community Development
Lori A. Moss, Director

Divisions
Building Permits & Inspection
Code Enforcement
County Engineering
Planning & Environmental Review

DEPARTMENT OF COMMUNITY DEVELOPMENT
Planning and Environmental Review Division
NOTICE OF PREPARATION

AUGUST 5, 2013

TO: ALL INTERESTED PARTIES

SUBJECT: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR JACKSON TOWNSHIP SPECIFIC PLAN

Sacramento County will be the CEQA Lead Agency for preparation of an Environmental Impact Report (EIR) for a project known as JACKSON TOWNSHIP. This Notice of Preparation has been sent to responsible and trustee agencies and involved federal agencies pursuant to Section 15082 of the CEQA Guidelines. Agencies should comment on the scope and content of the environmental information that is germane to the agencies' statutory responsibilities in connection with the proposed project. Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but not later than 30 days after receipt of this notice.

The project description, location, and the probable environmental effects are contained in the attached materials and may also be viewed online by going to the PER homepage (www.per.saccounty.net) and searching for environmental documents. The direct link to the document search page is: http://www.per.saccounty.net/EnvironmentalDocuments/Pages/SearchDocuments.aspx.

Please send your Agency's response to this Notice to:

Catherine Hack, Environmental Coordinator
Department of Community Development
Planning and Environmental Review Division
827 7th Street, Room 220, Sacramento, CA 95814
or via e-mail at: DERA@saccounty.net.

Your response should include the name of a contact person in your agency.

Agencies with specific questions about the project should contact Lauren Hocker, Environmental Review Project Manager, at (916) 874-7914 for further information.

PLNP2011-00095 JACKSON TOWNSHIP SPECIFIC PLAN

PROJECT TITLE:

JACKSON TOWNSHIP SPECIFIC PLAN

CONTROL NUMBER:

PLNP2011-00095

OWNER:

Various (see list attached to NOP)

APPLICANT/PROJECT PROPONENT:

Tsakopoulos Investments, Angelo G. Tsakopoulos

PROJECT DESCRIPTION AND LOCATION:

The proposed Plan Area, approximately 1,391 acres, is located in southeastern Sacramento County, lying south of the Mather Specific Plan Area, east of Excelsior Road, north of Jackson Highway and west of Eagles Nest Road in the Vineyard Community (Plate NOP-1 and Plate NOP-2). The Plan Area is currently designated on the Sacramento General Plan with land use designations of Extensive Industrial and General Agricultural. The property has current zoning of Light Industrial (M-1), Industrial Reserve (IR) and Permanent Agriculture (AG-80). There are 24 different landowners within the Plan Area. The largest landowner–Excelsior Estates LLC, represented by Angelo G. Tsakopoulos as the applicant–owns and/or controls approximately 862 acres (approximately 62 % of the total) within the Plan Area boundaries.

The proposed Project includes a range of different uses, including low density (6.0 units/acre), medium density (13 units/acre), and high density (25 units/acre) residential; general and community commercial; office; and mixed use. The proposal also includes three elementary schools, a middle school/high school, a public-quasi public site for a fire station, and parks. Land along the northern and eastern sides of the Project are shown as Wetland Preserve. These designated lands match the adjacent land use proposal to the east, known as NewBridge, and reflect the current status of the proposed preserve boundaries being negotiated as part of the anticipated South Sacramento Habitat Conservation Plan (SSHCP). The anticipated SSCHP preserve boundaries are planned to continue southward, extending beyond Jackson Road, but the exact location of this preserve has not yet been determined. For this reason, the Project includes an area designated Agriculture in the southeastern corner of the site; there is an equivalent area to the east within the NewBridge project. It is anticipated that the area needed for the preserve will be smaller than the total area shown as Agriculture, but rather than prematurely designate some areas for urban uses and some as Wetland Preserve, the entire corner is reserved as Agriculture, which maintains the current use of the land. Although the land use plan reflects the existing AG use, the technical studies will assume the potential for 6 units per gross acre, to ensure that overall infrastructure planning of the planning areas is coherent should some portion eventually be proposed for development, once the preserve is identified.

The proposed Project includes 6,143 residential units spread somewhat evenly between low density (35% of units), medium density (29% of units), and high density (35%) of units, with an additional 100 units (2% of units) within the mixed use designation areas. The analyses will assume that the units in the mixed use area are high density. In addition to the residential units, the Project includes 1,996,100 square feet of non-residential uses. There are also three alternative versions of the Project which the applicant has provided; these are project alternatives, not CEQA Alternatives. A table which summarizes the proposed land uses and an exhibit showing the land plan area provided at the end of the NOP (Table NOP-1 and Plate NOP-4).

Plate NOP-1: Regional Location Map

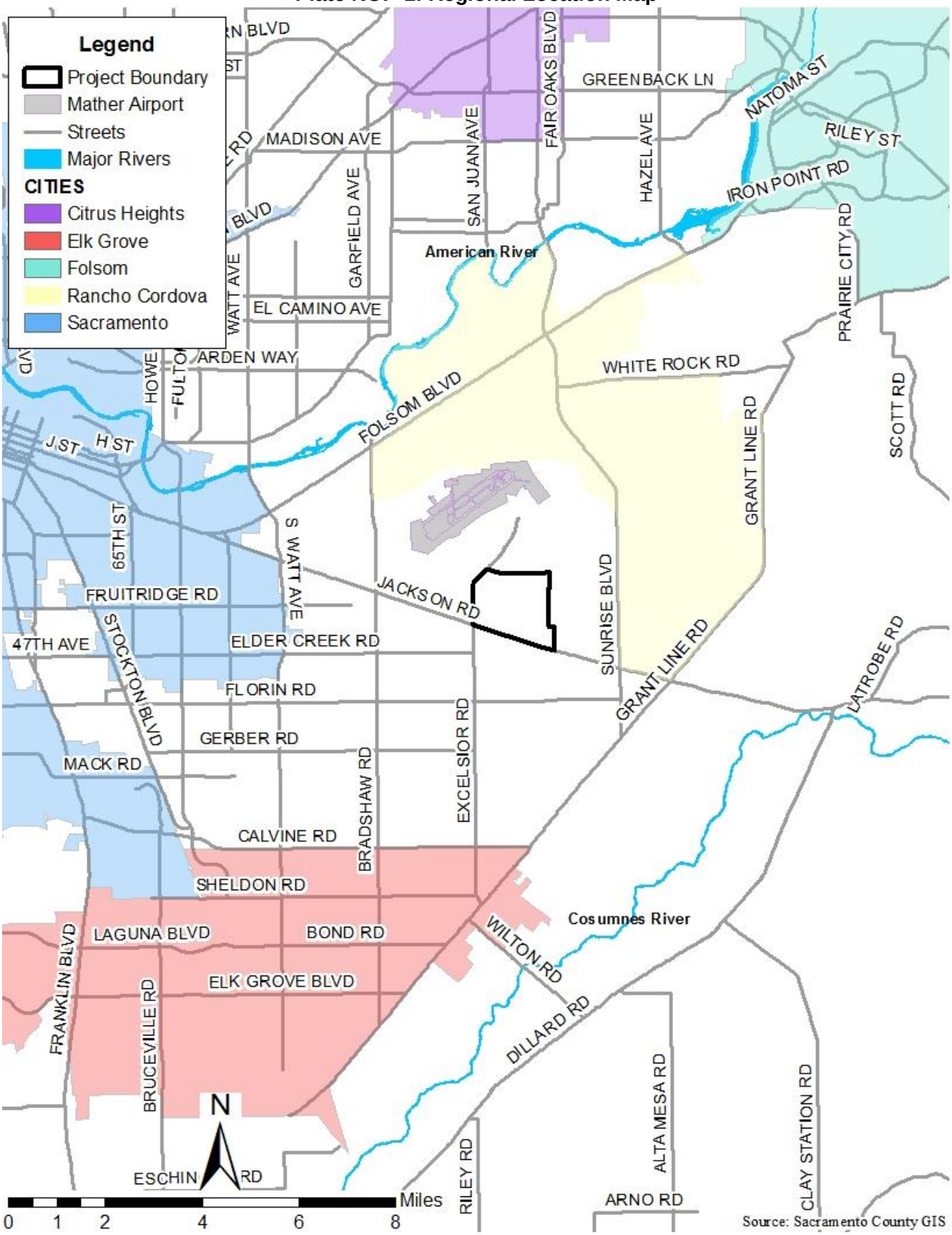
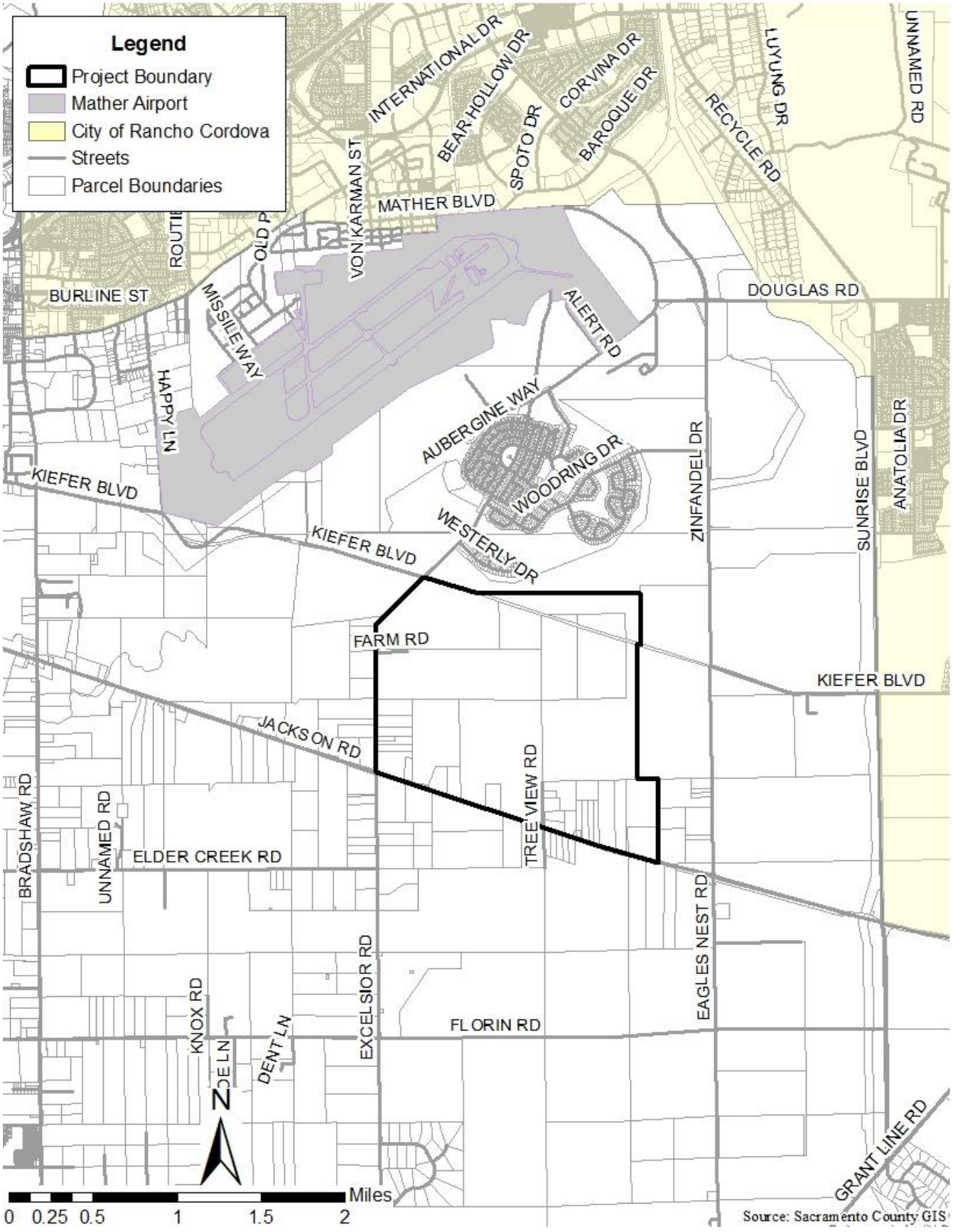


Plate NOP-2: Project Location Map



Most homes within the Plan Area will be within a quarter-mile of an open space area: either a park, linear parkway, or natural open space. Likewise, most homes will be within a half-mile of the retail/employment land uses. According to the application materials, a key feature of the Plan Area is a large, centrally-located greenway/drainage corridor with a trail on one side that will provide easy, non-vehicular linkages from one end of the community to the other. An interconnected street system, connecting trails and paths with potential for future transit connections, is provided throughout the Plan Area. Street layouts were designed in coordination with County Department of Transportation and Planning and Environmental Review staff. The Circulation Plan and Bikeway Master Plan diagram are included with the other project exhibits at the end of this NOP (Plate NOP-5 and Plate NOP-6).

The Plan Area is within the Elk Grove Unified School District and the Cordova Recreation and Park District. The Project includes three sites designated as elementary school sites (approximately 10 acres each) and one site designated as a joint middle school/high school (approximately 70 acres). The elementary schools are co-located with neighborhood parks to invite joint use. A total of eight neighborhood parks and one Community Park are included in the proposed Project.

Alternative 1 involves a 40.1 acre Office (O) use designated along Tree View Lane, in the place of the 22.3 acre MD and the 16.9 acres HD sites. **Alternative 2** involves the three parcels in the northwest corner of the site designated MD, HD and CC. The CC and MD parcels switch locations and the acreages of all three parcels change slightly. **Alternative 3** is essentially a combination of Alternatives 1 and 2. Alternative 3 involves the addition of the 40.1 acre Office parcel as described in Alternative 1 as well as the switch in location of the CC and MD sites as described in Alternative 2. Land Use Summary tables and exhibits for these alternatives are provided at the end of the NOP (Table NOP-2, Table NOP-3, Table NOP-4, Plate NOP-7, Plate NOP-8, and Plate NOP-9).

In order to approve the Project (or project alternatives) which are described above, the following entitlements must be approved by the Sacramento County Board of Supervisors:

1. A **General Plan Amendment** to move the Urban Policy Area (UPA) boundary south to include approximately 1,391 acres encompassing the Jackson Township Specific Plan (Plate NOP-10).
2. A **General Plan Amendment** to amend the Land Use Diagram designations within the Jackson Township Specific Plan from General Agriculture (568 +- acres) and Extensive Industrial (823 +-acres) to Low Density Residential, Medium Density Residential, Commercial and Office, Mixed Use, Recreation, Natural Preserve, and Public/Quasi Public (Plate NOP-11).
3. A **General Plan Amendment** to amend the General Plan, including the Land Use Diagram, to include a Mixed Use Land Use Designation.
4. A **General Plan Amendment** to amend the Transportation Diagram to reflect proposed roadway alignments (Plate NOP-12).
5. A **General Plan Amendment** to amend the Bicycle Master Plan to add on- and off-street bikeways (Plate NOP-6).
6. A **Community Plan Amendment** to amend the Vineyard Community Area Plan to change the Community Plan designation of the parcels located within the Jackson Township Specific Plan area (1,391+-acres) from Permanent Agriculture (AG-80) (772.5 acres), Light Industrial (596.5 acres) and Industrial Reserve (IR) (22 acres) to Jackson Township Specific Plan Area (1,391+-acres) (Plate NOP-13).
7. **Adoption of the Jackson Township Specific Plan** for the approximately 1,391 acre Jackson Township Specific Plan area, including a Specific Plan land use diagram, Design Guidelines and Development Standards.

8. A **Zoning Ordinance Amendment** to establish a Special Planning Area (SPA) Ordinance for a 838+-acre portion of the Jackson Township Specific Plan area and a **Rezone** to amend the Zoning Designations for a 838+- acre portion (owned by the applicant) of the Jackson Township Specific Plan Area from AG-80 (489+-acres), M-1(+-327acres) and IR (22 +-acres) to Jackson Township Special Planning Area (SPA) (Plate NOP-14).
9. A **Large Lot Tentative Subdivision Map** for the lands owned by Tsakopoulos Family Trust, consisting of 12 existing parcels of approximately 838 acres, to be divided into 44 parcels for the purpose of creating legal parcels corresponding to land use blocks within the Jackson Township Specific Plan.
10. **Adoption of an Affordable Housing Plan** for the Jackson Township Specific Plan.
11. **Adoption of a Development Agreement** for the Jackson Township Specific Plan by and between the County of Sacramento and the Tsakopoulos Family Trust for the 838 acres owned by the Tsakopoulos Family Trust.
12. **Adoption of a Public Facilities Financing Plan** for the Jackson Township Specific Plan that includes a Capital Improvement Program and Financing Plan.
13. **Adoption of a Water Supply Master Plan Amendment** to amend the existing Zone 40 Water Supply Master Plan to include provision of water service to the Jackson Township Specific Plan Area. This action requires Sacramento County Water Agency Board of Directors approval.
14. **Approval of a Water Supply Assessment** for the Jackson Township Specific Plan required by the California Water Code to link land use and water supply planning activities. This action requires Sacramento County Water Agency Board of Directors approval.

In addition to the above listed entitlements, separate annexation requests to LAFCo will include:

- A Sphere of Influence Amendment (SOIA) and concurrent Annexation to County Service Area (CSA) 10 or creation of a new CSA. Note: a separate subsequent action may be required by the Sacramento County Board of Supervisors to establish a Benefit Zone, to implement funding and service provision.
- Annexation to Sacramento Regional County Sanitation District (SRCSD).
- Annexation to Sacramento Area Sewer District (SASD).

It should be noted that this application request does not include rezone of the properties not owned by the applicant, and that any subsequent rezones would be the subject of future applications and CEQA review.

PROJECT OBJECTIVES:

The following summarizes the project objectives that guided the planning of the Jackson Township Specific Plan:

1. Develop an economically viable mixed use project in close proximity to the urban core.
2. Develop a marketable project which minimizes greenhouse gas emissions.
3. Develop an economically-stable community where property values are retained over time.
4. Develop a project containing a variety of housing types so as to create a demographically mixed community.
5. Develop a project which allows for easy access to green space, schools, and a town center containing various retail, dining, and other commercial services.
6. Develop a project which provides employment opportunities for workers of all income levels.

7. Develop a project which promotes a jobs-housing balance in the Jackson Highway/Mather area.
8. Develop a project which allows residents to engage in short, non-vehicle commutes.
9. Develop a project which utilizes proven design practices which result in the creation of strong communities that remain economically stable over time.
10. Develop a project which contains a circulation system that promotes walking, biking, and the use of public transit.
11. Develop a project which contains a comprehensively planned infrastructure system.
12. Develop a project which ensures funding for the on-going maintenance needs of parks, open space facilities, public services and other infrastructure.
13. Develop a project which preserves, to the extent feasible, the area's most important and valuable biological resources with a wetlands preserve.
14. Develop a project which contains adequate school facilities for community residents and assists in meeting the school facility needs of surrounding projects.
15. Develop a project which includes a community park and a variety of neighborhood parks sufficient to meet park district requirements.

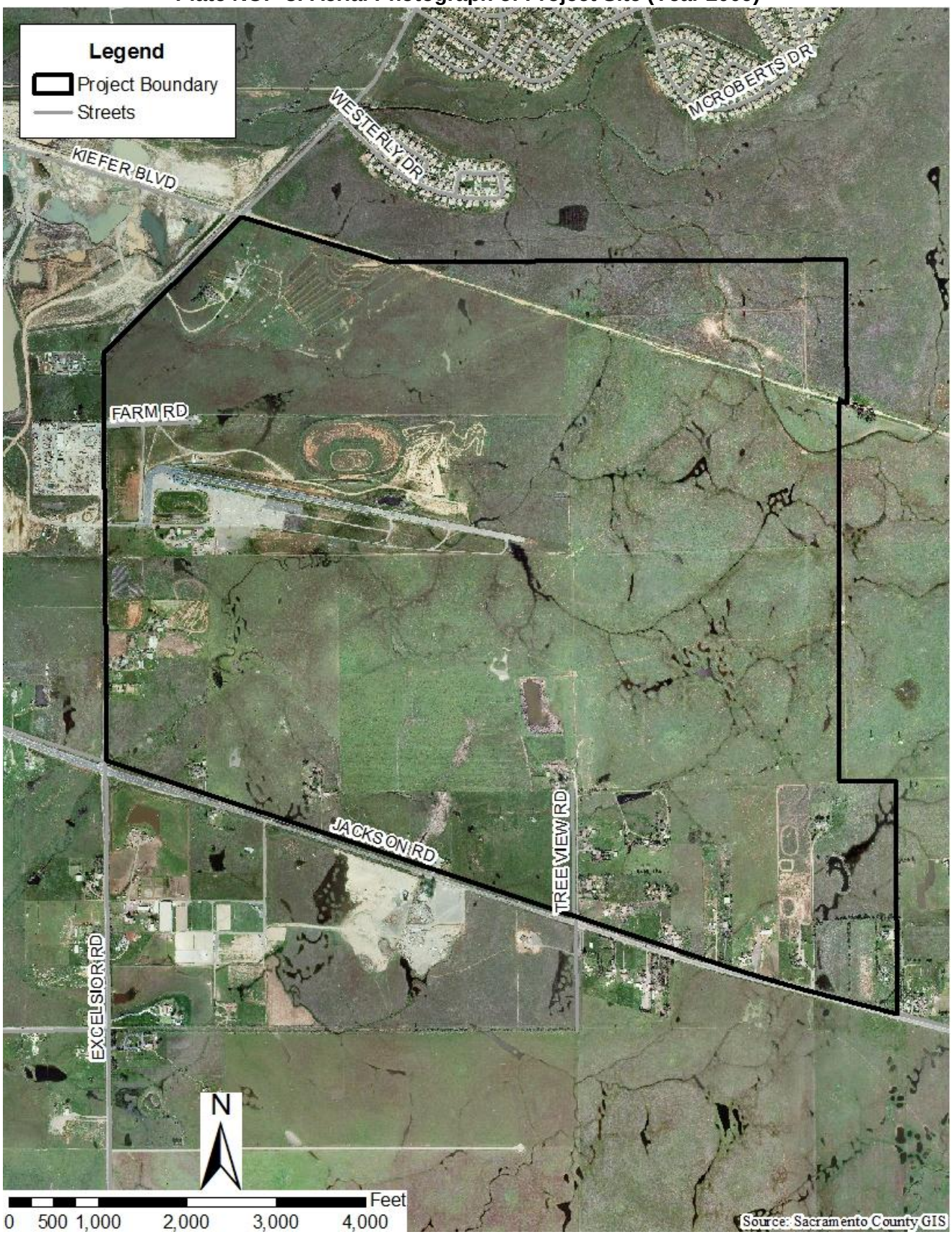
ENVIRONMENTAL/LAND USE SETTING:

An aerial photograph of the site, taken in the year 2009, has been provided for context (Plate NOP-3). The current land uses on the properties within the Plan Area are predominantly grazing, small ranches, and agricultural residential homes. A portion of this site also includes the Sacramento Raceway, which hosts racing events on Wednesday nights, twice per month on Friday night, Saturday nights, and drag races on Saturday and Sunday. To the west of the Project, land uses are characterized by agricultural uses, mining, and commercial sales of landscaping materials. Lands to the east are generally similar to the Project site, with grazing and agricultural-residential uses predominating. The property to the east also includes the Sacramento Rendering Company plant, which is a facility that accepts animal tissue, processes it, and then distributes the byproduct for use in the manufacture of other goods. Land to the north is dominated by the presence of Mather Airport and appurtenant facilities, but also includes residential areas (Independence at Mather), nature preserve, and golf course property. Properties to the south of the Project, across Jackson Road, are generally in agricultural or agricultural-residential use or are designated as wetland preserve.

There are roadways extending along the southern and western sides of the Project boundary: Jackson Road on the southern boundary and Excelsior Road along the western boundary. There is no road along the eastern Project boundary, though Eagles Nest Road is only a few hundred feet to the east. There is also no road on the northern property boundary, but the Sacramento County General Plan Transportation Diagram shows that Kiefer Road will be extended through the site (there is currently an unmaintained dirt road along the alignment on County-owned right-of-way). Jackson Road is a state highway (State Route 16), though the California Department of Transportation is considering the possibility of relinquishing part of the facility to local control (as found in the *Transportation Corridor Concept Report: State Route 16*, dated June 26, 2012 and published by Caltrans). Where it is adjacent to the site, the roadway is a two-lane facility without a center left-turn lane, though it is four lanes on either side of the intersection of Jackson Road and Excelsior Road. Excelsior Road is also a two-lane facility with more lanes on either side of the intersection with Jackson Road.

Most of the Project site is grassland with interspersed wetlands and wetland swales; portions of the site have historically been disturbed by agricultural activities. The southwestern Project area is within the headwaters of Elder Creek, and a small bend in Morrison Creek extends slightly into the northeastern corner of the Project site.

Plate NOP-3: Aerial Photograph of Project Site (Year 2009)



PROBABLE ENVIRONMENTAL EFFECTS/EIR FOCUS:

The analyses in the EIR will describe existing conditions, describe the legal and regulatory framework relevant to the proposed Project, describe standards of significance to be used in analysis, and describe analysis methodologies. A review of the project and of the environmental resources in the study area has resulted in the identification of the following potential areas of environmental effect:

Aesthetics
Proposed new development areas will be analyzed for their effects on the views from surrounding properties and roadways.

Agricultural Resources
Areas of active agricultural use, designated agricultural lands, prime farmland soils, and Williamson Act contract land will be identified and analyzed within and adjacent to the project area.

Air Quality
Project-related emissions analyzed may include toxic air contaminants, ozone precursors, and particulates. The analysis will include discussions of emissions resulting from construction activities and emissions resulting from operational activities of the completed project. Where possible, emissions will be quantified using the California Emissions Estimator Model (CalEEMod) and/or other appropriate models.

Biological Resources
The Project will be analyzed to identify areas where proposed changes may impact biological resources in the area. The analyses will discuss impacts to general wildlife populations and habitats, but will focus on special-status species and particularly sensitive habitats, including wetlands.

Climate Change
Project-related greenhouse gas emissions will be quantified and analyzed for the cumulative impacts to climate change. The probable impacts to the project as a result of climate change will also be examined.

Cultural/Historical Resources
The changes and new proposed uses will be analyzed for compatibility with cultural and historical resources.

Geology, Soils, and Mineral Resources
Underlying soil types and suitability will be examined in areas where urban uses are proposed. Erosion potential will also be considered.

Hazards and Hazardous Materials
Hazardous materials sites, if any, will be identified in the vicinity of proposed new development areas. Data sources may include Envirostor and Geotracker. Project compatibility with any existing hazardous materials sites will be examined.

Land Use
The project proposal will be examined to determine consistency with land use policies/ordinances/plans that have been adopted in order to avoid environmental effects. The project impact relative to the planned and existing land use environment will also be disclosed.

Noise
Existing and proposed uses with the potential to generate significant noise will be analyzed, which will include modeling of noise generated by transportation sources. This will include an analysis of the existing Sacramento Raceway and Mather Airport.

Public Services
The proposal will be analyzed for its compatibility with public services and to determine what may be required to extend service to the project. Services analyzed may include but are not limited to: schools (Elk Grove Unified School District), park services (Cordova Recreation and Park District), libraries, fire protection (Sacramento Metropolitan Fire District), and police protection (Sacramento County Sheriff's Department).

Public Utilities
The proposal will be analyzed for its compatibility with public utilities and to determine what may be required to extend service to the project. Utilities analyzed may include but are not limited to: water supply (Sacramento County Water Agency Zone 40), sewer service (annexation to Sacramento Area Sewer District and Sacramento Regional County Sanitation District), and energy services (Pacific Gas and Electric and Sacramento Municipal Utility District).

Transportation
A Traffic Impact Study will be prepared to examine the effects of proposed project development and facilities on area roadways.

Hydrology and Water Quality
Areas of flooding potential will be identified and drainage patterns will be examined within the watersheds affected by the project. The project will be analyzed for impacts to the existing hydrologic environment and vice versa. Agencies involved with flood control issues will be consulted. These may include, but are not limited to: the California State Department of Water Resources, the State Reclamation Board, the Sacramento Area Flood Control Agency (SAFCA), and the Sacramento County Department of Water Resources. The potential impacts of the project on water quality will also be examined, which includes construction-related impacts (e.g. erosion of exposed soil) and operational impacts (e.g. use of pesticides and fertilizers).

The above descriptions are not exhaustive, and other sections and discussions may be included if further research indicates that the inclusion is warranted. As the analyses progress and the extent of impacts to the above categories is determined, appropriate CEQA Alternatives will be included for analysis. Pursuant to the CEQA Guidelines Section 15206, this is a project of "statewide, regional or areawide significance" and scoping meetings are required. The scoping meetings have not been scheduled at this time. When available, a Public Notice of the date, time, and location of the scoping meeting(s) on the project will be provided.

INTENDED USES OF THE EIR:

The Sacramento County Planning Commission and the Board of Supervisors will use the information contained in the EIR to evaluate the proposed project and render a decision to approve or deny the requested entitlements. Responsible agencies, such as the California Department of Fish and Game, the United States Fish and Wildlife Service, the United States Army Corps of Engineers, the Central Valley Regional Water Quality Control Board, and LAFCo may also use the EIR for planning/permitting purposes that include, but are not limited to, the following:

- Federal Clean Water Act Section 404 Permit (U.S. Army Corps of Engineers)
- Federal Endangered Species Act Section 7 Consultation (U.S. Fish and Wildlife Service)
- Section 401 Water Quality Certification (Regional Water Quality Control Board – Central Valley Region)
- California Endangered Species Act Incidental Take Permit (California Department of Fish and Wildlife)
- Section 402 National Pollutant Discharge Elimination System Permit (Regional Water Quality Control Board – Central Valley Region)
- Annexations (LAFCo)

Plate NOP-4: Proposed Land Use Plan

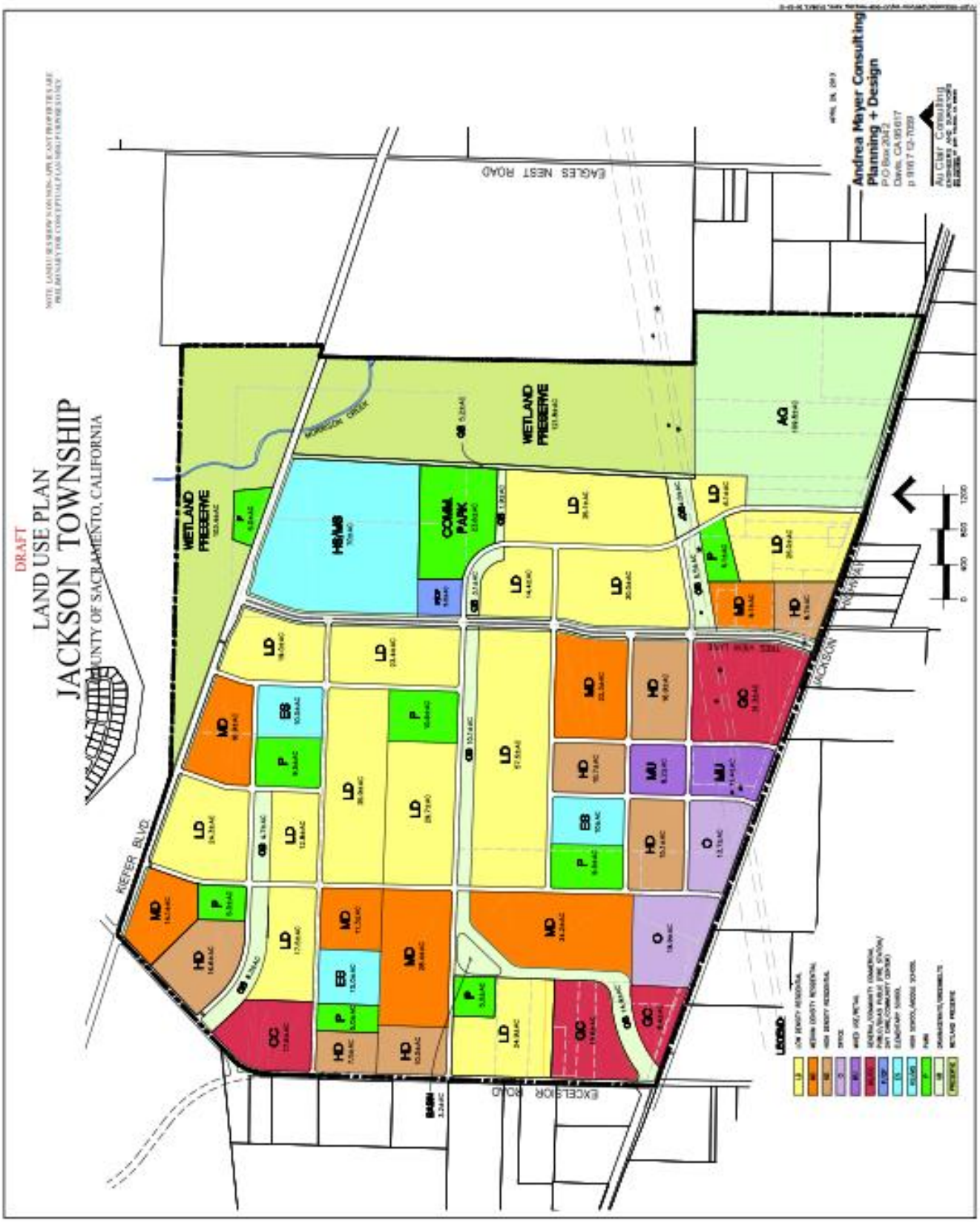


Table NOP-1: Land Use Summary

Residential Designations	***Acres***	***Average Density***	***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
LD-Low Density Residential	355.7	6.0	1.0–10.9	2134	34.7%
MD-Medium Density Residential	136.3	13.0	11.0–19.9	1772	28.9%
HD-High Density Residential	85.5	25.0	20.0–30.0	2137	34.8%[7]
Subtotal	**577.5**	**--**	**--**	**6,043**	**98.4%**
Commercial + Office Zones	***Acres***	***F.A.R.***	***Square Footage***	***D.U.'s***	***% of D.U.'s***
GC-General Commercial	59.3	0.25	645,700	n/a[1]	--
CC-Community Commercial	17.6	0.25	191,600	n/a[1]	--
MU-Mixed Use	19.6	0.50	427,000	100[5]	1.6%[7]
O-Office	33.6	0.50	731,800	n/a[1]	--
Subtotal	**130.1**	**--**	**1,996,100**	**100**	**1.6%**
Public/Quasi Public Zones	***Acres***				
PQP-Fire Station/Community Center	5.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**105.0**				
Park + Open Space Zones	***Acres***				
CP-Community Park	23.6[3]				
P-Neighborhood Park	54.7[3]				
OS-Wetland Preserve	225.2				
OS-Greenbelt/Drainage Corridor	57.7				
OS-Landscape Corridor	14.5				
OS-Detention Basin	3.2				
Subtotal	**378.9**				
AG-Agriculture	109.3				
RW-Primary Roadways	90.2				
	Acres		***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
TOTAL	***1,391.0***		***10.5[6]***	***6,143***	***100%***

NOTES: DU → dwelling unit, F.A.R. → Floor-Area Ratio (i.e. a F.A.R. of 0.25 means that for every one acre of land in the category–like General Commercial–0.25 acres will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. Population calculation is 6,143 d.u x 2.64 people per household=**16,217 people**
3. Park requirement calculation (not including AG land): LD/MD 3906 d.u. x 0.0146=57.0 acres and HD/MU 2237 d.u. x 0.0122=27.3 acres, for a total acreage of **84.3**.
4. Park credit calculations: 78.3 acres of Community/Neighborhood Parks + 12.0 acres (25% credit for 48.2 acres of greenbelts along drainageways and wetland preserve) for a total of **90.3 acres**.
5. 100 dwelling units are assigned to the 8.2-acre MU parcel only, and zero units assigned to the 11.4-acre parcel.
6. Double-net density calculation: 6,143 d.u./585.7 acres (577.5 acres+8.2 acres of MU)= **10.5 du/acre**. This does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU-120 CB-1.
7. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land. This includes HD and MU parcel allocations, for a total of 2,237 d.u. = 36.4%.

Plate NOP-5: Circulation Plan

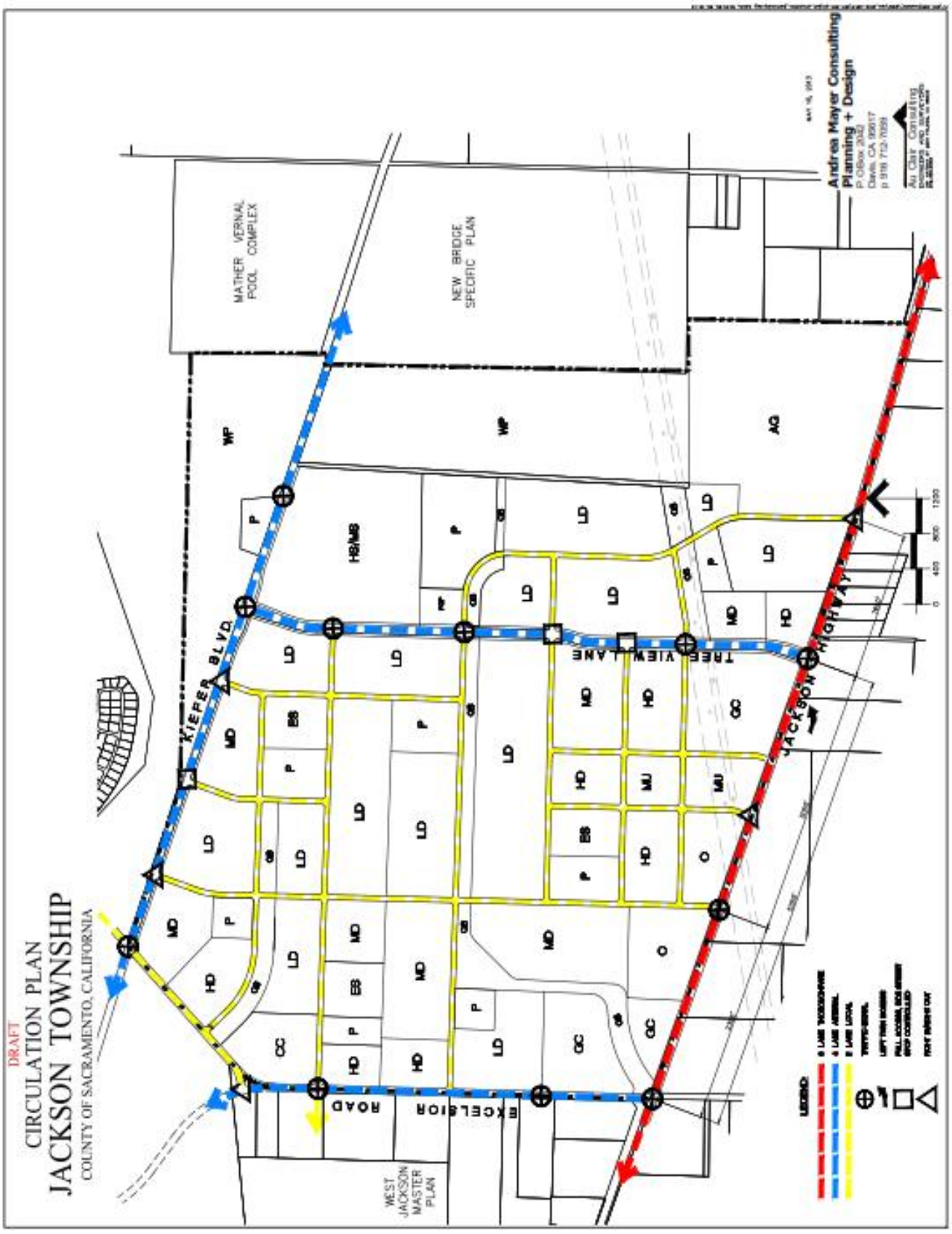


Plate NOP-6: Bikeway Master Plan

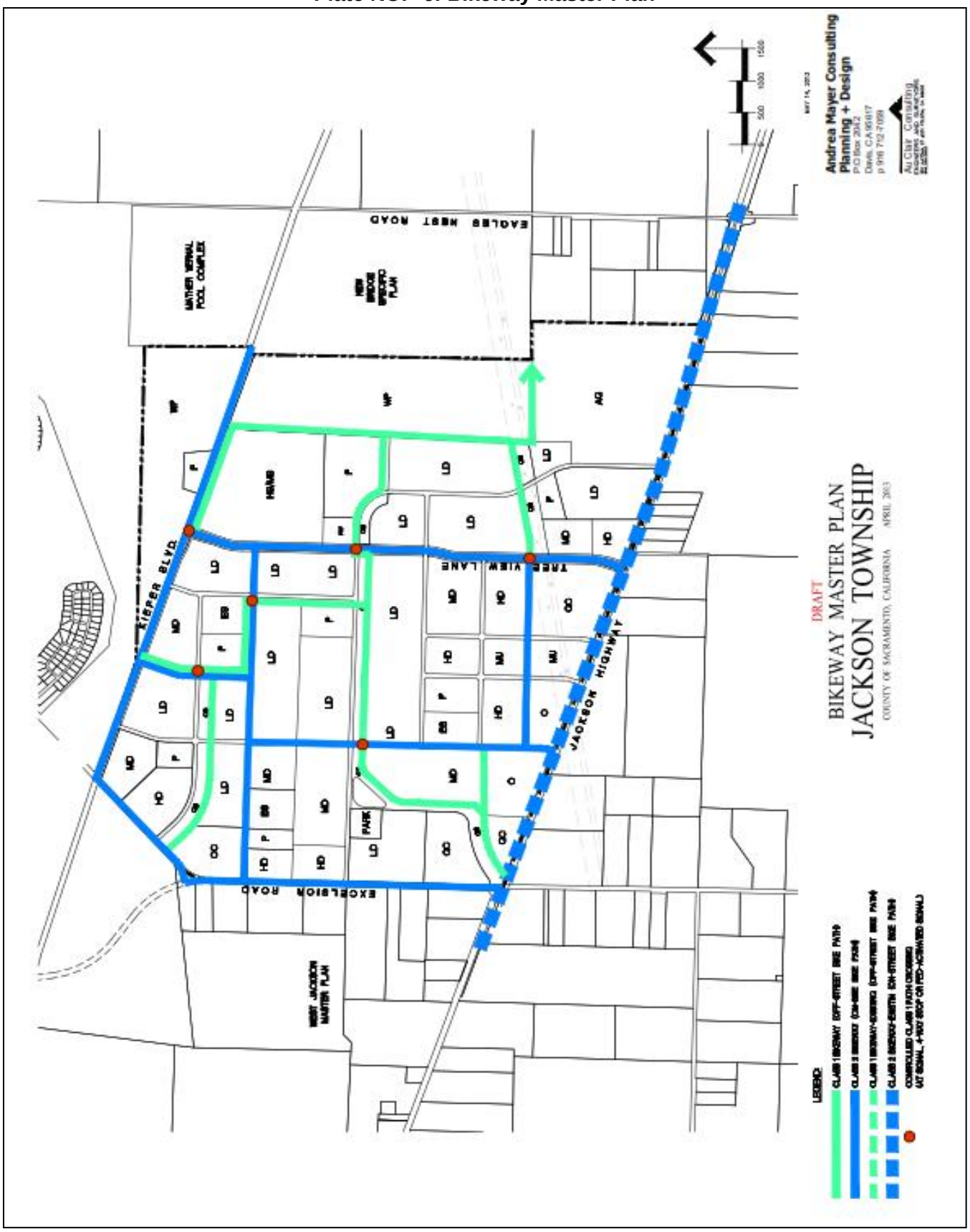


Plate NOP-7: Alternative 1 Land Use Plan

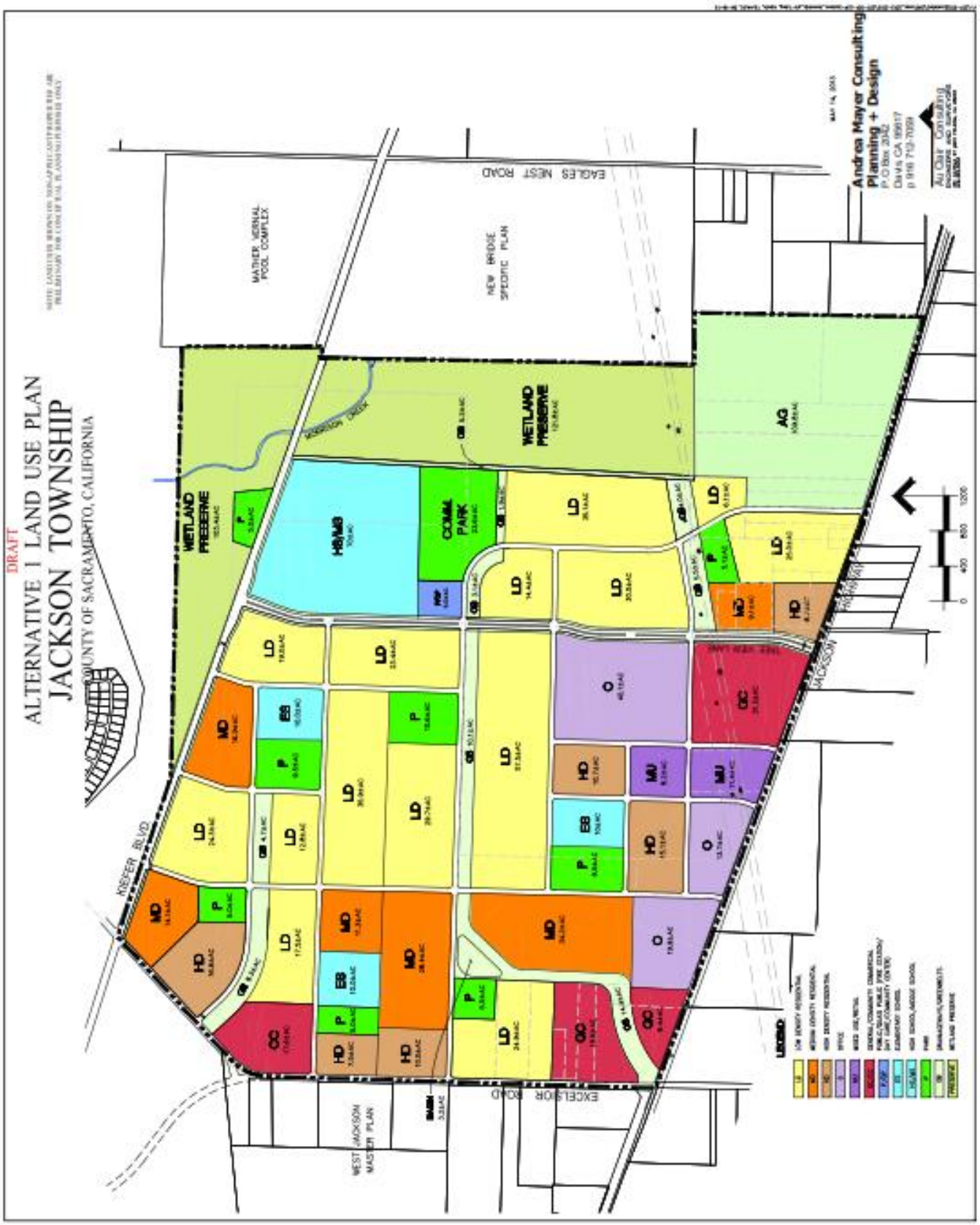


Table NOP-2: Alternative 1 Land Use Summary

Residential Designations	***Acres***	***Average Density***	***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
LD- Low Density Residential	355.7	6.0	1.0-10.9	2134	37.4%
MD-Medium Density Residential	114.0	13.0	11.0-19.9	1482	26.0%
HD- High Density Residential	68.6	29.0	20.0-30.0	1989	34.9%[7]
Subtotal	**538.3**			**5,605**	**98.3%**
Commercial + Office Zones	***Acres***	***F.A.R.***	***Square Footage***	***D.U.'s***	***% of D.U.'s***
GC-General Commercial	59.3	0.25	645,700	n/a[1]	
CC-Community Commercial	17.6	0.25	191,600	n/a[1]	
MU-Mixed Use	19.6	0.50	427,000	100[5]	1.7%[7]
O- Office	73.7	0.50	1,605,100	n/a[1]	
Subtotal	**170.2**		**2,869,400**	**100**	**1.7%**
Public/Quasi Public Zones	***Acres***				
PQP-Fire Station/Community Center	5.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**105.0**				
Park + Open Space Zones	***Acres***				
CP- Community Park	23.6[3]				
P- Neighborhood Park	54.7[3]				
OS- Wetland Preserve	225.2				
OS- Greenbelt/Drainage Corridor	59.1				
OS- Landscape Corridor	14.5				
OS- Detention Basin	3.2				
Subtotal	**380.3**				
AG-Agriculture	109.3				
RW- Primary Roadways	87.9				
	Acres		***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
TOTAL	***1,391.0***		***10.4[6]***	***5,705***	***100%***

NOTES: DU → dwelling unit, F.A.R. → Floor-Area Ratio (i.e. a F.A.R. of 0.25 means that for every one acre of land in the category–like General Commercial–0.25 acres will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. Population calculation is 5,705 d.u x 2.64 people per household =**15,061 total population**
3. Park requirement calculation (not including AG zoning): LD/MD 3616 d.u. x .0146=52.8 acres and HD/MU 2089 d.u. x .0122=25.5 acres, for a total of **78.3 acres.**
4. Park credit calculations: 78.3 acres of Community/Neighborhood Parks + 12.0 acres (25% credit for 48.2 acres of greenbelts along drainageways and wetland preserve) for a total of **90.3 acres.**
5. 100 dwelling units are assigned to the 8.2 acre MU parcel only, 0 units assigned to the 11.4 acre parcel.
6. Double net density calculation: 5,705 d.u./546.5 acres (538.3 ac.+8.2 ac. of MU)= **10.4 du/ac.** Note: this does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU 120 CB-1.
7. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 2,089 d.u. = 36.6%.

Plate NOP-8: Alternative 2 Land Use Plan

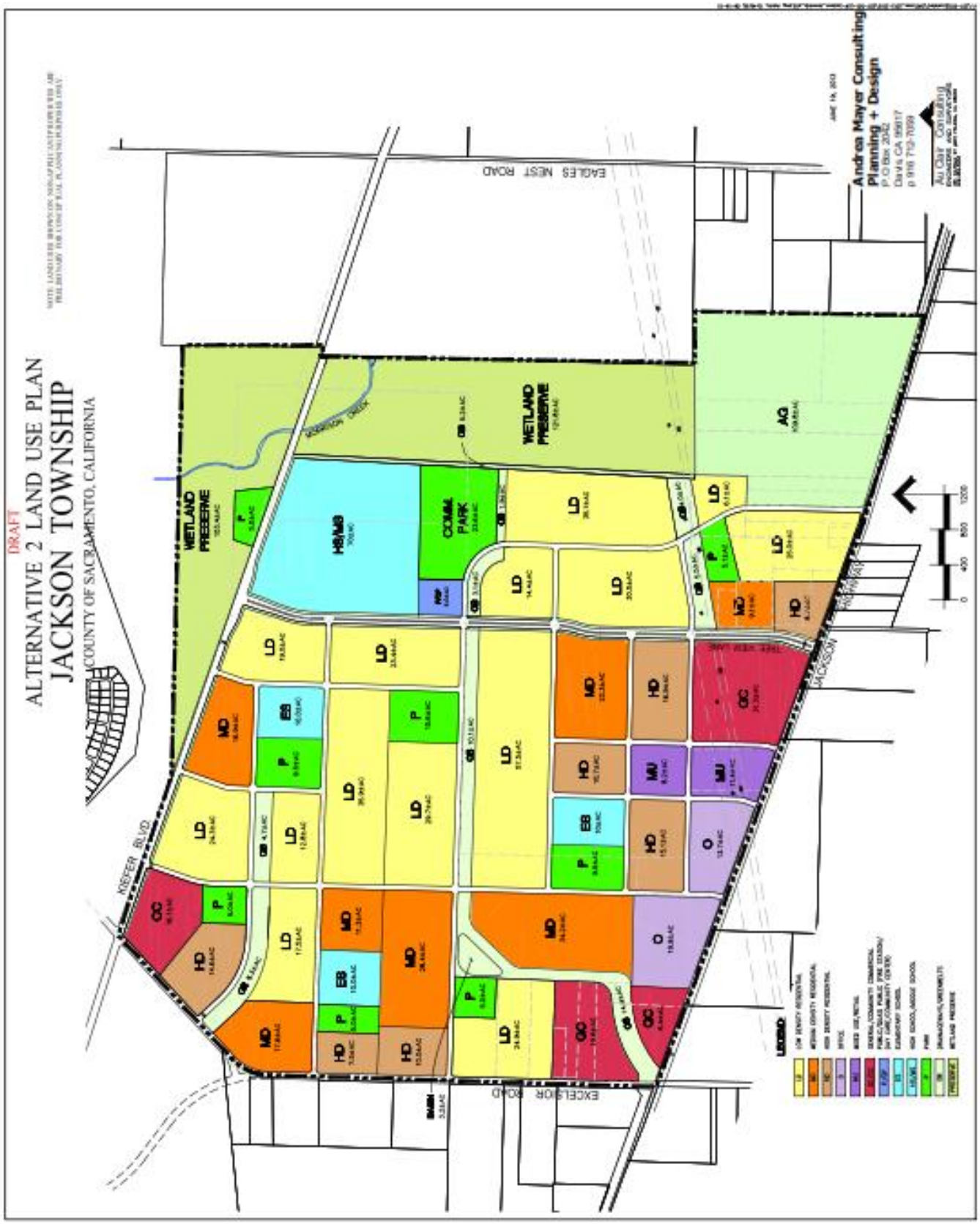


Table NOP-3: Alternative 2 Land Use Summary

Residential Designations	***Acres***	***Average Density***	***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
LD- Low Density Residential	355.7	6.0	1.0-10.9	2134	34.8%
MD-Medium Density Residential	139.8	13.0	11.0-19.9	1817	29.6%
HD- High Density Residential	83.5	25.0	20.0-30.0	2087	34.0%[7]
Subtotal	**579.0**			**6,038**	**98.4%**
Commercial + Office Zones	***Acres***	***F.A.R.***	***Square Footage***	***D.U.'s***	***% of D.U.'s***
GC-General Commercial	59.3	0.25	645,700	n/a[1]	
CC-Community Commercial	16.1	0.25	175,300	n/a[1]	
MU-Mixed Use	19.6	0.50	427,000	100[5]	1.6%[7]
O- Office	33.6	0.50	731,800	n/a[1]	
Subtotal	**128.6**		**1,979,800**	**100**	**1.6%**
Public/Quasi Public Zones	***Acres***				
PQP-Fire Station/Community Center	5.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**105.0**				
Park + Open Space Zones	***Acres***				
CP- Community Park	23.6[3]				
P- Neighborhood Park	54.7[3]				
OS- Wetland Preserve	225.2				
OS- Greenbelt/Drainage Corridor	57.7				
OS- Landscape Corridor	14.5				
OS- Detention Basin	3.2				
Subtotal	**378.9**				
AG-Agriculture	109.3				
RW- Primary Roadways	90.2				
	Acres		***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
TOTAL	***1,391.0***		***10.5[6]***	***6,138***	***100%***

NOTES: DU → dwelling unit, F.A.R. → Floor-Area Ratio (i.e. a F.A.R. of 0.25 means that for every one acre of land in the category–like General Commercial–0.25 acres will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. Population calculation is 6,138 d.u x 2.64 people per household =**16,204 total population**
3. Park requirement calculation (not including AG zoning): LD/MD 3951 d.u. x .0146=57.7 acres and HD/MU 2187 d.u. x .0122=26.6 acres, for a total of **84.3 acres.**
4. Park credit calculations: 78.3 acres of Community/Neighborhood Parks + 12.0 ac.(25% credit for 48.2 acres of greenbelts along drainageways and wetland preserve)= **90.3 acres**
5. 100 dwelling units are assigned to the 8.2 acre MU parcel only, 0 units assigned to the 11.4 acre parcel.
6. Double net density calculation:6,138 d.u./587.2 acres (579 ac.+8.2 ac. of MU)= **10.45 du/ac.** Note: this does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU 120 CB-1.
7. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 2,187 d.u. = **35.6%.**

Plate NOP-9: Alternative 3 Land Use Plan

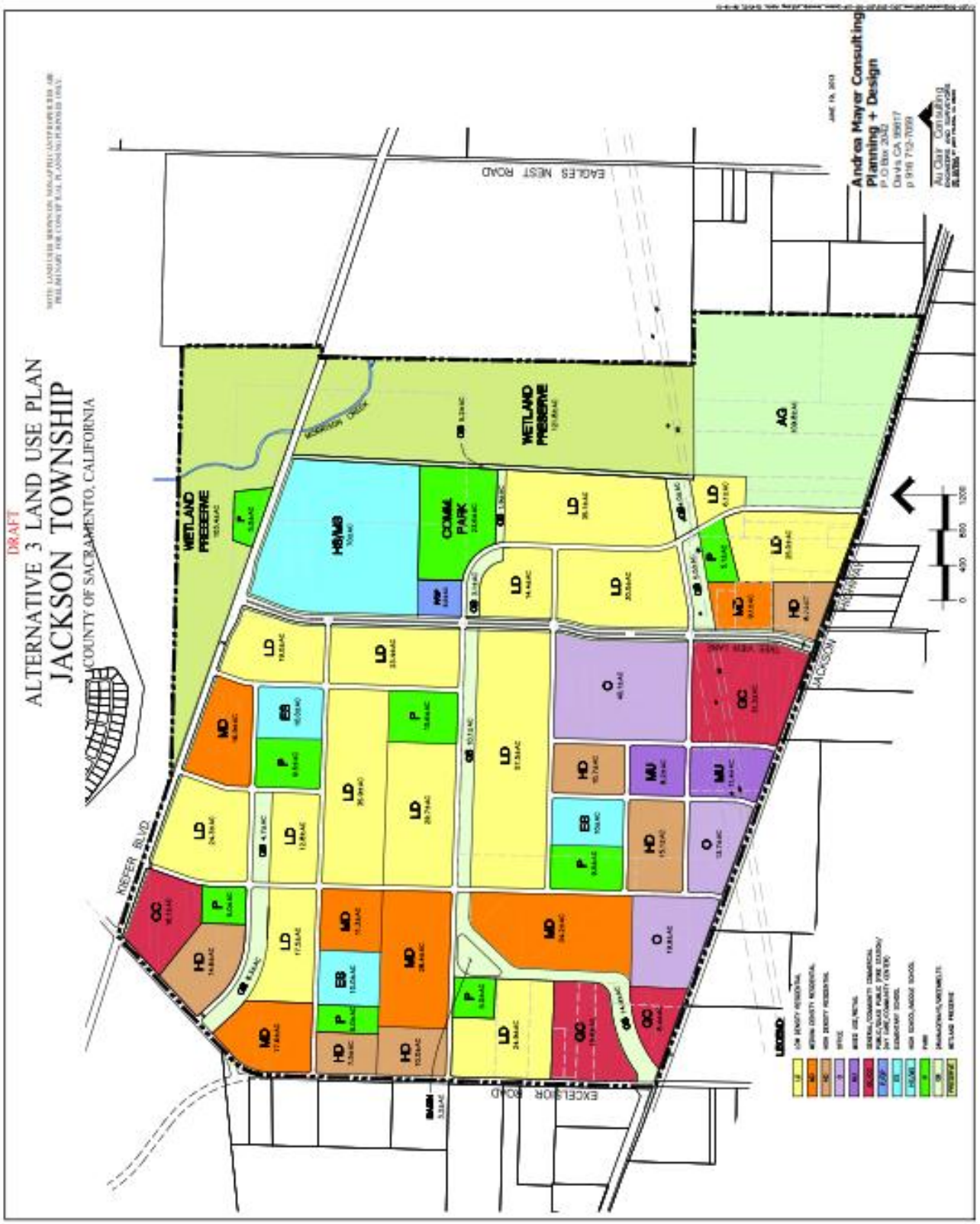


Table NOP-4: Alternative 3 Land Use Summary

Residential Designations	***Acres***	***Average Density***	***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
LD- Low Density Residential	355.7	6.0	1.0-10.9	2134	37.5%
MD-Medium Density Residential	117.5	13.0	11.0-19.9	1527	26.8%
HD- High Density Residential	66.6	29.0	20.0-30.0	1931	33.9%[7]
Subtotal	**539.8**			**5,595**	**98.2%**
Commercial + Office Zones	***Acres***	***F.A.R.***	***Square Footage***	***D.U.'s***	***% of D.U.'s***
GC-General Commercial	59.3	0.25	645,700	n/a[1]	
CC-Community Commercial	16.1	0.25	175,300	n/a[1]	
MU-Mixed Use	19.6	0.50	427,000	100[5]	1.8%[7]
O- Office	73.7	0.50	1,605,100	n/a[1]	
Subtotal	**168.7**		**2,853,100**	**100**	**1.8%**
Public/Quasi Public Zones	***Acres***				
PQP-Fire Station/Community Center	5.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**105.0**				
Park + Open Space Zones	***Acres***				
CP- Community Park	23.6[3]				
P- Neighborhood Park	54.7[3]				
OS- Wetland Preserve	225.2				
OS- Greenbelt/Drainage Corridor	59.1				
OS- Landscape Corridor	14.5				
OS- Detention Basin	3.2				
Subtotal	**380.3**				
AG-Agriculture	109.3				
RW- Primary Roadways	87.9				
	Acres		***Density Range (DU/acre)***	***D.U.'s***	***% of D.U.'s***
TOTAL	***1,391.0***		***10.4[6]***	***5,695***	***100%***

NOTES: DU → dwelling unit, F.A.R. → Floor-Area Ratio (i.e. a F.A.R. of 0.25 means that for every one acre of land in the category–like General Commercial–0.25 acres will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. Population calculation is 5,695 d.u x 2.64 people per household =**15,035 total population**
3. Park requirement calculation (not including AG zoning): LD/MD 3661 d.u. x .0146=53.5 acres and HD/MU 2031 d.u. x .0122=24.8 acres, for a total of **78.3 acres.**
4. Park credit calculations: 78.3 acres of Community/Neighborhood Parks + 12.0 ac.(25% credit for 48.2 acres of greenbelts along drainageways and wetland preserve)= **90.3 acres**
5. 100 dwelling units are assigned to the 8.2 acre MU parcel only, 0 units assigned to the 11.4 acre parcel.
6. Double net density calculation: 5,695 d.u./548 acres (539.8 ac.+8.2 ac. of MU)= **10.4 du/ac.** Note: this does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU 120 CB-1.
7. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 2,031 d.u. = 35.7%.

Plate NOP-10: Urban Policy Area Amendment

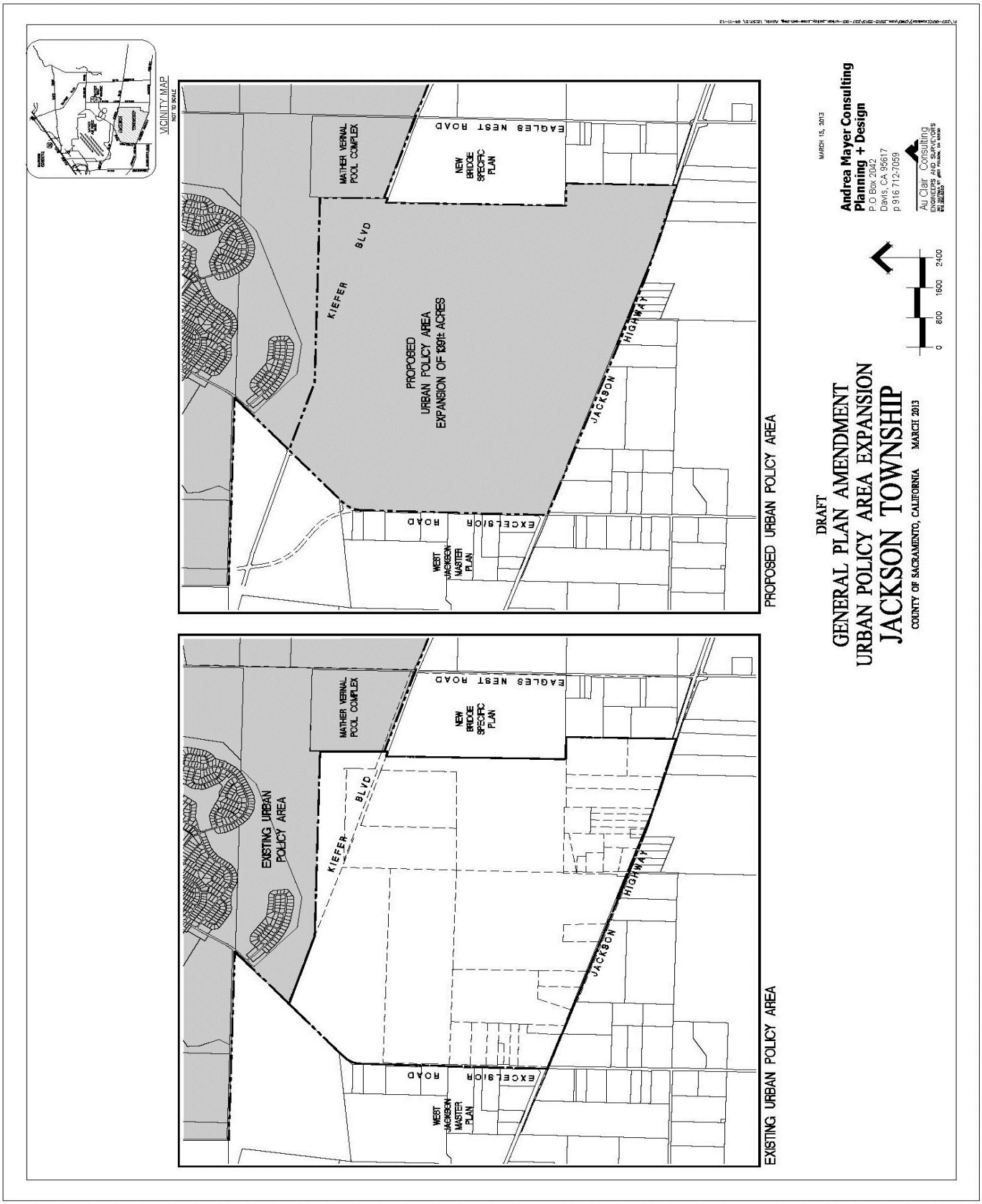


Plate NOP-11: General Plan Amendment

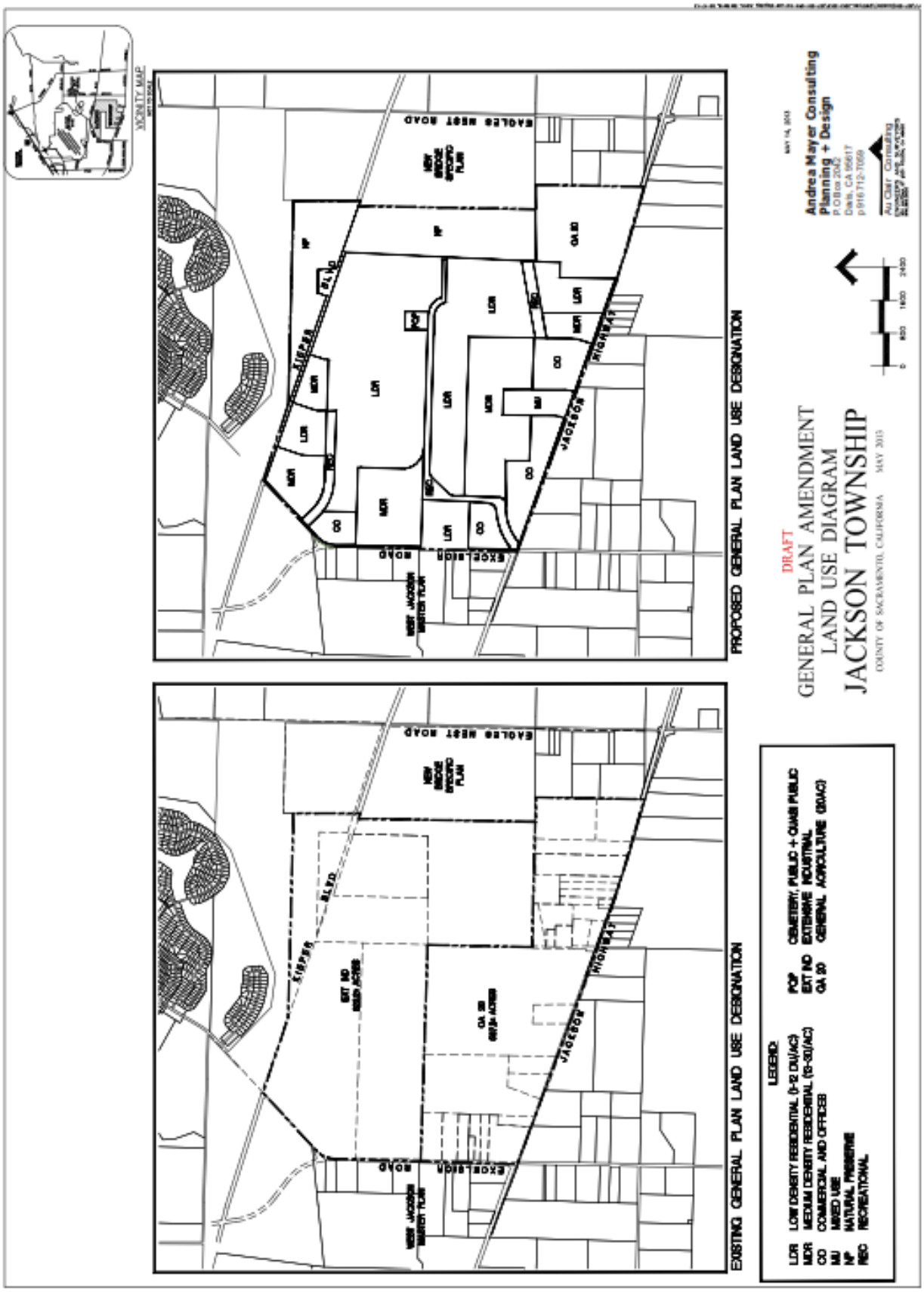


Plate NOP-12: General Plan Transportation Plan Amendment

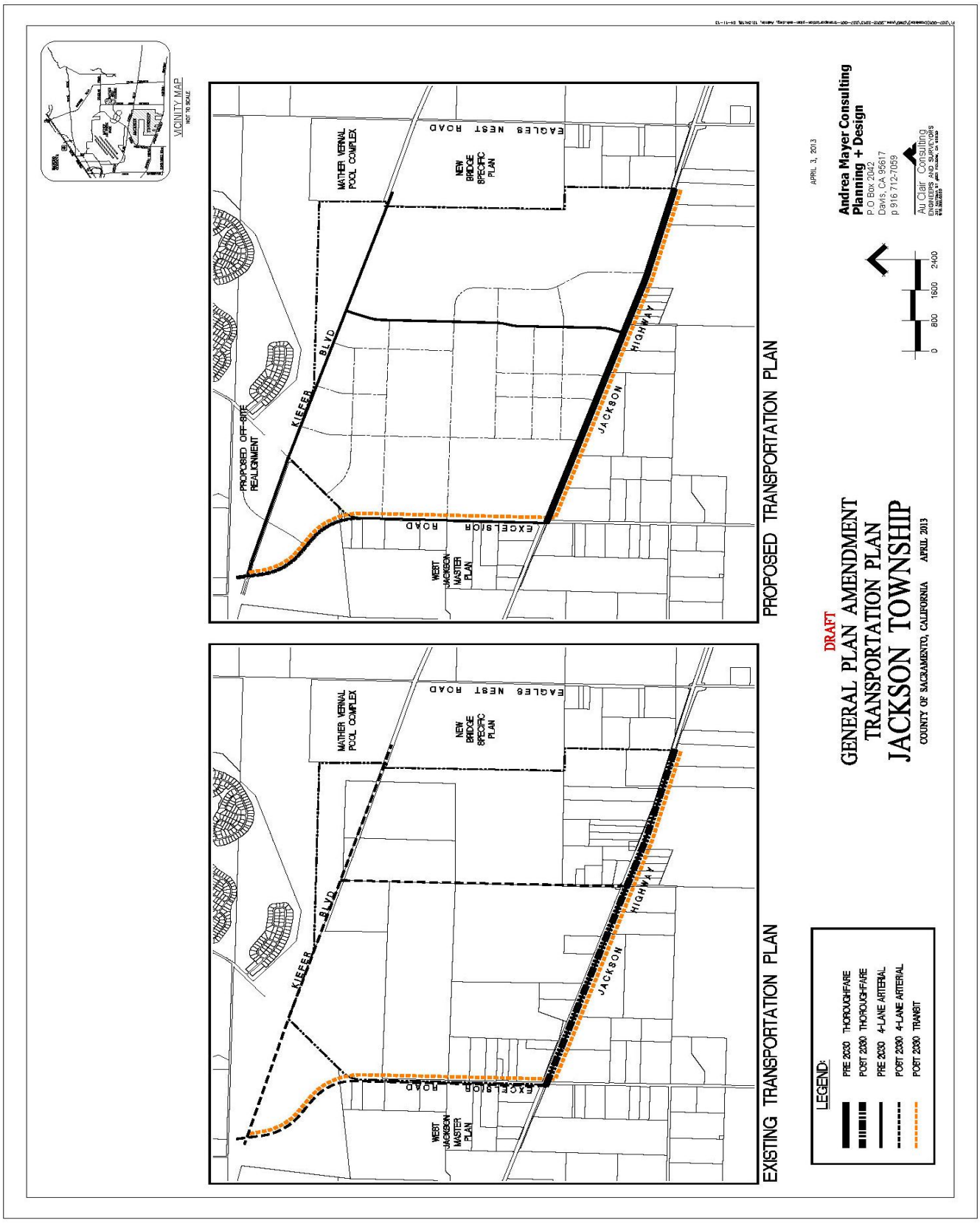


Plate NOP-13: Vineyard Community Plan Amendment

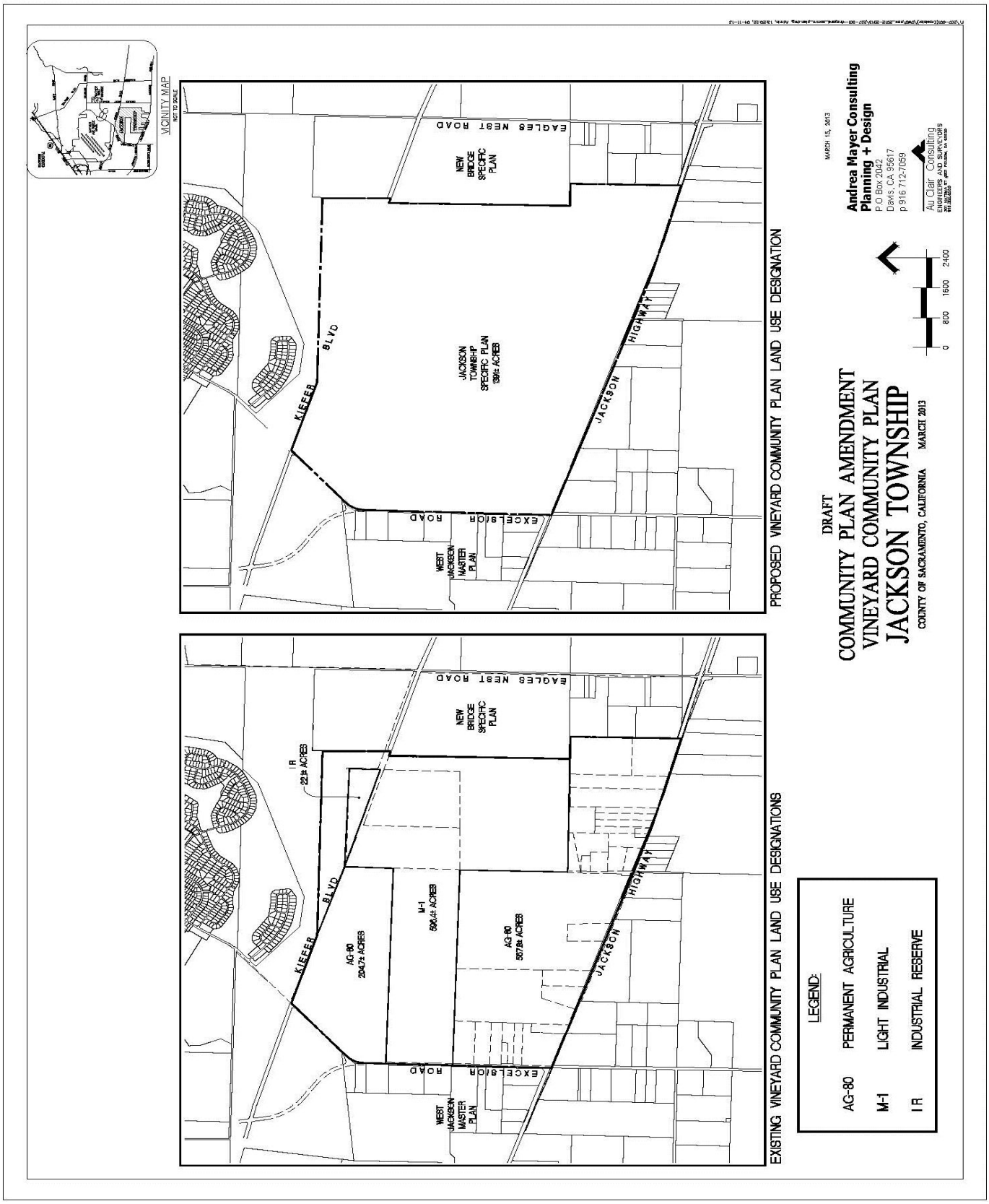
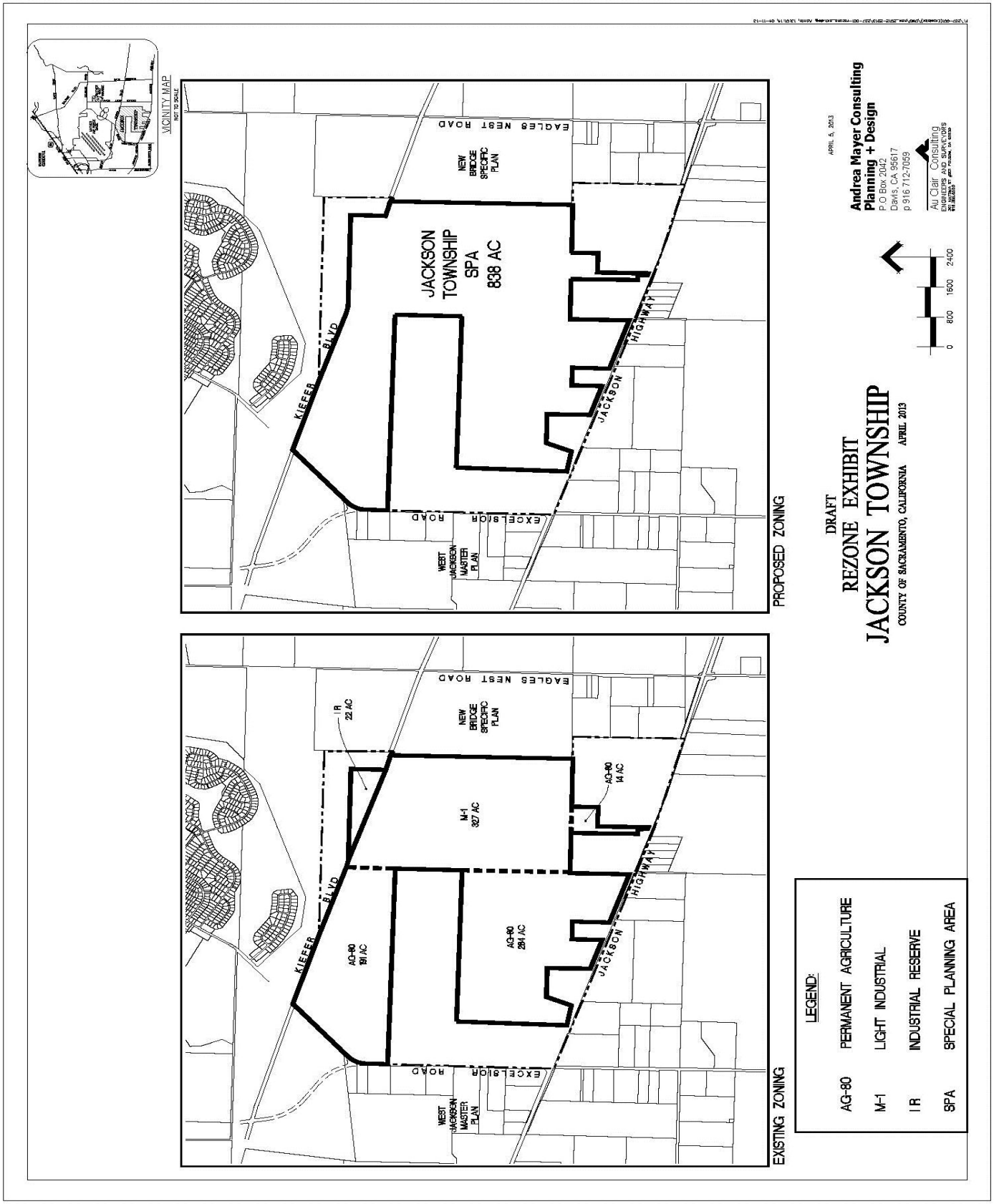


Plate NOP-14: Rezone Exhibit



Attachment A: Jackson Township Specific Plan

Subject Site Parcel Numbers and Owner of Record

Assessor Parcel Number	Owner of Record
067-0050-002	Excelsior Estates LLC
067-0050-004	Excelsior Estates LLC
067-0050-005	Smith Racing Enterprises LLC
067-0050-019	Excelsior Estates LLC
067-0050-020	Excelsior Estates LLC
067-0050-021	Excelsior Estates LLC
067-0050-022	Excelsior Estates LLC
067-0050-028	Excelsior Estates LLC
067-0050-029	Cay and Eric Goude
067-0050-045	Gibson Ranch Llc
067-0050-047	Excelsior Estates LLC
067-0050-051	Excelsior Estates LLC
067-0050-058	Excelsior Estates LLC
067-0060-007	Excelsior Four Partnership
067-0060-008	Kenneth & Kathryn Whipple
067-0060-010	James & Margaret Matthews
067-0060-011	Richard Huffman
067-0060-012	Ronald & Kristy Giles
067-0060-013	Mira & Lazar Dijamatovich
067-0060-014	Excelsior & Jackson
067-0060-016	Sheryl Cecchettini
067-0070-002	Christopher Mc Hale
067-0080-004	Excelsior Estates LLC
067-0080-023	Daniel Schmidt
067-0080-028	Martin Pham
067-0080-031	Ferguson Family 2009 Trust
067-0080-032	Ronald Adams
067-0080-033	James & Marilyn Schlaegel
067-0080-039	Roy Lanza
067-0080-040	Tsakopoulos Investments LLC
067-0080-042	Michael and Judith Clemons
067-0080-045	Steven and Teresa Matulich
067-0080-048	Chetcuti Family 1992 Trust
067-0080-049	Chetcuti Family 1992 Trust
067-0080-050	Excelsior Estates LLC
067-0080-051	Excelsior Estates LLC
067-0080-057	Andrew and Lisa Chatoian
067-0080-059	Susan King
067-0080-061	Terry & Jane Christensen

SACRAMENTO AREA
BICYCLE ADVOCATES

909 12th St, Ste. 116
Sacramento, CA 95814

sacbike.org
saba@sacbike.org
916 444-6600

September 5, 2013

Catherine Hack, Environmental Coordinator
County of Sacramento, Department of Community Development
Planning and Environmental Review Division
827 7th Street, Room 220
Sacramento, CA 95814
E-mail: DERA@saccounty.net

Subject: Notice of Preparation (NOP) for Environmental Impact Report (EIR) for Jackson Township Specific Plan (PLNP2011-00095)

Dear Ms. Hack:

Thank you for the opportunity to comment on the subject NOP. We appreciate that a number of the project's objectives state or imply that safe, comfortable, and convenient bicycling for everyday transportation is important to the project's design, such as #2 (minimize greenhouse gas emissions), #5 (easy access to the project's various land uses), #6 (employment opportunities for workers of all income levels, many of whom may rely on bicycles for transport to work), # 8 (allow residents to engage in short, non-vehicle commutes), and # 10 (a circulation system that promotes walking, biking, and the use of public transit).

For the EIR analysis, the proposed project will have a significant adverse impact on bicycling if it fails to adequately provide for access by bicycle. A failure to provide adequate access for bicyclists will occur if the project does not:

- Provide bikeways throughout the project area and connections to surrounding areas that are safe, comfortable, and convenient for bicyclists of all ages and abilities to use for both transportation and recreation, and
- Provide bicycle parking that is secure and convenient for bicyclists both on short-term visits (e.g. shopping, errands) and long-term visits (e.g. for jobs or school) to destinations within the project.

Because the proposed project area is approximately 1.5 miles square, all portions of it are within easy riding range for most bicyclists. Traffic stress induced by high speed and high volume vehicle traffic is the primary impediment to large numbers of people being willing to use bicycling for everyday transportation (Mekuria et al. 2012; Geller n.d.). Women in particular are likely to be very susceptible to traffic stress because of concerns about personal safety and traffic risks, explaining the current large and increasing gender differences in bicycling participation (Garrard et al. 2012).

Therefore, it is critical that the project provides a continuous bikeway network that consists of low-traffic-stress routes throughout the project area. Low-traffic-stress bikeways are those 1)

on streets with low volumes (< 5,000 vehicles per day) and low speeds (<30 mph) of traffic or 2) on higher speed, higher volume streets if an exclusive zone for bicycles is provided that is at least 6 ft wide and is not compromised by parked cars, or 3) on higher speed, higher volume streets if a physically separated bicycle facility is provided (Mekuria et al. 2012). Low-stress bikeways also must include crossings of high-speed, high-volume arterials and thoroughfares that are comfortable for all bike riders (e.g. crossings equipped with median refuges, long-signal timing, special bicycle signals, painted bicycle lanes to alert vehicles of bicycle presence).

We request that the EIR's Traffic Impact Study report in detail how the project's proposed circulation plan provides a low-stress bikeway network both within the project area and connecting to bikeways on surrounding project areas (especially west across Excelsior Road to the West Jackson Master Plan area). Plate NOP-5: Circulation Plan shows that the project proposes only 2-lane streets within the project area except for 2 north-south 4-lane arterials. Plate NOP-6: Bikeway Master Plan shows that the project proposes to provide "controlled" crossings for Class 1 bike paths at one of the arterials and at many of the 2-lane local streets. Therefore, we are optimistic that such a low-stress network can be provided.

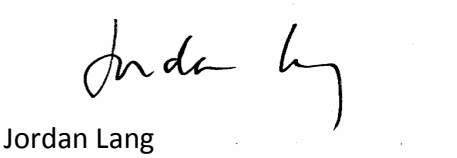
To demonstrate that an adequate bikeway network will be provided by the project, the EIR analysis should estimate the bicycle mode share and the vehicle miles traveled that are expected for the project.

We request that the EIR also address the extent to which the project's Design Guidelines and Development Standards ensure that adequate bicycle parking will be provided at key destinations (e.g. stores, schools, public institutions, places of employment, etc.) throughout the project area. Please refer to the Association of Pedestrian and Bicycle Professionals (APBP) Bicycle Parking Guidelines at http://www.apbp.org/default.asp?page=Publications for standards for adequate bicycle parking, both short-term and long-term.

SABA works to ensure that bicycling is safe, convenient, and desirable for everyday transportation. Bicycling is the healthiest, cleanest, cheapest, quietest, most energy efficient, and least congesting form of transportation.

Thank you for considering our comments.

Sincerely,



Jordan Lang
Project Analyst

CCs: Rachel DuBose, SMAQMD (rdubose@airquality.org)
Dan Klinker, Sacramento County Alternative Modes Coordinator (klinkerd@saccounty.net)

Citations:

Garrard, Jan, Susan Handy, and Jennifer Dill. *Women and Cycling* in Pucher, John and Ralph Buehler. *City Cycling*. Cambridge, MA : The MIT Press, 2012.

Geller, Roger. *Four Types of Cyclists*. Portland, OR: City of Portland Office of Transportation, undated, circa 2007, http://www.portlandonline.com/transportation/index.cfm?&a=237507&c=44597

Mekuria, Maaza, Peter Furth, and Hilary Nixon. *Low-Stress Bicycling and Network Connectivity*. Mineta Transportation Institute, San Jose State University. May 2012. Report 11-19.

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

Larry Greene
AIR POLLUTION CONTROL OFFICER

September 10, 2013

Ms. Cathy Hack
Sacramento County Planning and Environmental Review Division
827 7th Street, Room 220
Sacramento, CA 95814
hockerl@saccounty.net

Sent Via Email Only

Subject: **Notice of Preparation of a Draft Environmental Impact Report for the Jackson Township Specific Plan**

County Control Number: **PLNP2011-00095**

SMAQMD Number: **SAC201101396**

Dear Ms. Hack,

Thank you for submitting the Jackson Township Specific Plan Notice of Preparation to the Sacramento Metropolitan Air Quality Management District (SMAQMD) for review. Our comments follow.

We recommend that the County analyze operational emissions and prepare an operational air quality mitigation plan prior to the release of the FEIR. Please note that because the Jackson Township Specific Plan boundaries are outside of the Urban Policy Area, its potential emissions may not have been considered in the most recent Metropolitan Transportation Plan (MTP) or, consequently, our State Implementation Plan. If this is the case, we recommend a 35% reduction instead of the usual 15% reduction, a request which consistent with other projects not in the MTP, such as Cordova Hills. Construction emissions should also be analyzed and any mitigation included in the EIR and MMRP. For more information regarding operational air quality mitigation plans, please visit the Mitigation section of our website.

The EIR should discuss and analyze connectivity within the Jackson Township Specific Plan and to adjacent properties such as the Newbridge Master Plan, the Mather Specific Plan, the West

Sacramento Metropolitan Air Quality Management District
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916/874-4800 ▪ 916/874-4899 fax
www.airquality.org

Jackson Highway Master Plan, and regional connections such as the Folsom South Canal. All modes should be considered, including pedestrian and bicycle.

Please note that a major update to the California Emissions Estimator Model (CalEEMod) was released on July 26, 2013, and additional updates are imminent. We encourage the County to use the most recent model from http://www.caleemod.com/ when conducting relevant air quality analyses.

All projects are subject to SMAQMD's rules and regulations at the time of construction. Attached is a list of rules that may apply to this project. For the complete list, please refer to our website at http://www.airquality.org/rules/index.shtml.

We look forward to reviewing the draft environmental impact report. Please do not hesitate to contact me at 916.874.4800 if you have any questions regarding this letter.

Sincerely,

RDuBose

Rachel DuBose
Air Quality Planner/Analyst

Attachment: SMAQMD Rules and Regulations

C: Larry Robinson SMAQMD
Lauren Hocker Sacramento County Community Development

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SMAQMD Rules & Regulations Statement (revised 3/12)

*The following statement is recommended as standard condition of approval or construction document language for **all** development projects within the Sacramento Metropolitan Air Quality Management District (SMAQMD):* All projects are subject to SMAQMD rules in effect at the time of construction. A complete listing of current rules is available at www.airquality.org or by calling 916.874.4800. Specific rules that may relate to construction activities or building design may include, but are not limited to:

Rule 201: General Permit Requirements. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from SMAQMD prior to equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact the SMAQMD early to determine if a permit is required, and to begin the permit application process. Portable construction equipment (e.g. generators, compressors, pile drivers, lighting equipment, etc.) with an internal combustion engine over 50 horsepower are required to have a SMAQMD permit or a California Air Resources Board portable equipment registration. Other general types of uses that require a permit include, but are not limited to dry cleaners, gasoline stations, spray booths, and operations that generate airborne particulate emissions.

Rule 403: Fugitive Dust. The developer or contractor is required to control dust emissions from earth moving activities, storage or any other construction activity to prevent airborne dust from leaving the project site.

Rule 414: Water Heaters, Boilers and Process Heaters Rated Less Than 1,000,000 BTU PER Hour. The developer or contractor is required to install water heaters (including residence water heaters), boilers or process heaters that comply with the emission limits specified in the rule.

Rule 417: Wood Burning Appliances. This rule prohibits the installation of any new, permanently installed, indoor or outdoor, uncontrolled fireplaces in new or existing developments.

Rule 442: Architectural Coatings. The developer or contractor is required to use coatings that comply with the volatile organic compound content limits specified in the rule.

Rule 460: Adhesives and Sealants. The developer or contractor is required to use adhesives and sealants that comply with the volatile organic compound content limits specified in the rule.

Rule 902: Asbestos. The developer or contractor is required to notify SMAQMD of any regulated renovation or demolition activity. Rule 902 contains specific requirements for surveying, notification, removal, and disposal of asbestos containing material.

Naturally Occurring Asbestos: The developer or contractor is required to notify SMAQMD of earth moving projects, greater than 1 acre in size in areas “Moderately Likely to Contain Asbestos” within eastern Sacramento County. Asbestos Airborne Toxic Control Measures, Section 93105 & 93106 contain specific requirements for surveying, notification, and handling soil that contains naturally occurring asbestos.

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SMUD™

September 6th, 2013

Ms. Catherine Hack
Department of Community Development
Planning and Environmental Review Division
827 7th Street, Room 220
Sacramento, CA 95814

SUBJECT: COMMENTS ON THE NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR JACKSON TOWNSHIP SPECIFIC PLAN (Control Number PLNP2011-00095)

Dear Ms. Hack,

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Jackson Township Specific Plan. The Sacramento Municipal Utility District (SMUD) is the primary electricity provider for Sacramento County, the proposed project location. SMUD's vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce climate change impacts, and lower the cost to serve our region. As a Responsible Agency, SMUD's goal is to ensure that the construction and operation of the proposed Jackson Township Specific Plan limits the potential for significant environmental effects on SMUD facilities, employees, and customers.

SMUD's active participation in the California Environmental Quality Act (CEQA) process ensures that our community power requirements are integrated into the planning and environmental review process. Our CEQA involvement is consistent with SMUD's strategic directives and core values, which call for us to ensure a safe environment for its employees and customers (Policy SD-6) and to promote environmental leadership through community engagement, improved pollution prevention, energy efficiency and conservation, and conservation (Policy SD-7).

It is our desire that the Jackson Township Specific Plan acknowledge any project impacts related to the following:

- Overhead and or underground transmission and or distribution line easements
- Electrical load needs/requirements
- Energy Efficiency
- Utility line routing
- Utility infrastructure expansion
- Climate Change

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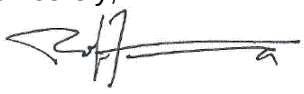
In addition, SMUD had the opportunity to provide comments on the Sacramento County Master Data Needs Letter and preliminary Jackson Township Specific Plan; please see the attached copy of our letter that identifies areas of interest for SMUD's evaluation of Jackson Township's electricity demands. Based on SMUD's review of the NOP and our understanding of the proposed project we feel that any issues pertaining to our current infrastructure and any need for future infrastructure have been considered at an appropriate level at this time. However, the projected load for the area has increased from the estimated 44 MW to 50 MW with the addition of square footage to the project area. Given this increase, there are no changes to the referenced electrical facilities. It is SMUD's expectation that the environmental impacts of any new onsite and/or offsite infrastructure required for development of the Jackson Township Specific Plan will be analyzed in the EIR.

SMUD would like to be kept apprised of the planning, development, and completion of this project. Should any changes stated in this NOP occur, SMUD is interested in communicating with the project proponents for future planning purposes. Please ensure that the information included in this response is conveyed to the project planners and any project proponents.

Future CEQA documents should be sent to the attention of the Environmental Management Department at the following address:

Sacramento Municipal Utility District
Attention: Rob Ferrera
Environmental Management
6201 S Street, MS B203
Sacramento, CA 95817

Environmental leadership is a core value of SMUD and we look forward to collaborating with you on this project. Again, we appreciate the opportunity to comment on this NOP. If you have any questions regarding this letter, please feel free to contact me at (916) 732-6676.
Sincerely,



Rob Ferrera
Environmental Specialist
Environmental Management
Legislative & Regulatory Affairs
Sacramento Municipal Utility District

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SMUD™

January 16, 2013
L&RA 13-004

Mr. David Defanti, Senior Planner
Sacramento County
Department of Community Development
Planning and Environmental Review
827 7th Street, Room 230
Sacramento, CA 95814

Re: Sacramento County Master Plan Data Needs Letter and Jackson Township Specific Plan

Dear Mr. Defanti:

Thank you for the opportunity to comment on the preliminary Jackson Township Specific Plan and to participate on the Master Plan/Specific Plan Technical Advisory Committee (TAC) for Jackson Township and the other Specific Plan Areas. The Sacramento Municipal Utility District (SMUD) currently serves as the primary electricity provider for Sacramento County.

This letter is sent in response to Sacramento County Planning's request for initial feedback from SMUD in advance of the issuance of a Notice of Preparation for the Jackson Township Specific Plan California Environmental Quality Act (CEQA) process. The first part of this letter outlines an initial list of specific data SMUD needs to begin evaluating the projected electricity needs of the Jackson Township development.

Recognizing that Jackson Township is one of several new growth areas being developed in approximately the same area within roughly the same timeframe, the second part of our letter outlines an initial list of the cumulative data SMUD needs to begin evaluating the projected electricity needs of Jackson Township and its future surrounding communities.

The nature of planning for the expansion of an electric system to serve the number and diversity of future electric customers projected makes the cumulative data extremely important. It is the projection of future build out that will allow SMUD to meet our customers' energy needs, as well as the type and location of above ground infrastructure including transmission lines, substations, transformers, switches, distribution lines (which can be undergrounded), and other electric facilities.

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1) **Jackson Township Specific Plan:** SMUD has reviewed the Proposed Jackson Township Specific Plan and land use information derived from the applicant-submitted Project Description document available on the Sacramento County website. While SMUD is providing these initial comments, energy facility requirements and proposed locations of these facilities may be refined based on changes to the land use plan and information currently available. The cumulative analysis of projects within the Jackson Highway Area (area bound by Douglas Road on the north, Sunrise Boulevard on the east, Calvine Road to the south and an area west of South Watt Avenue/Florin Road), may provide additional insight to additional requirements and future comments. SMUD is requesting the following information to better analyze the electricity needs of the plan area:

   - A general phasing plan including an anticipated project construction start date, number of units/non-residential square footage per phase, and anticipated date(s) of completion or each phase.
   - Information regarding the developers' desire to incorporate on-site energy generation in the plan area. If so, who are the end users of this energy?
   - Whether there are any brownfield areas on-site?
   - Encourage the developer to work with SMUD early in the development process to identify opportunities to participate in SMUD programs. Additional information that would be helpful in determining the appropriate program use includes:
     i. A more detailed explanation of building type for non-residential development including commercial, industrial, office and public/quasi-public uses.
     ii. Work with the developer to understand the proposed orientation of buildings as tentative maps are processed.
     iii. Whether there are any energy efficiency measures (e.g., SMART homes, SMART appliances, energy efficient lighting, rooftop solar, etc.) and/or Net Zero proposals incorporated into the plan.

   SMUD has identified the existing SMUD facilities within the Jackson Township Specific Plan Area:

   - Four 230 kV lines in the common corridor that runs through the proposed south-easterly portion of the Jackson Township development area. Two of the lines are owned by SMUD and two are owned by PG&E. The SMUD lines are the Cordova-Hedge 230 kV line and the Cordova – Pocket 230 kV line. Please provide a drawing that overlays the transmission lines and easements with the proposed plan.

   Based on the land use information provided, the estimated demand for the Jackson Township Specific Plan Project is approximately 44 MW. Below is a list

of the proposed sub-transmission and distribution substation electrical requirements.

- SMUD has not identified any new transmission facilities (230 kV) necessary to maintain reliability or serve load in our 10-year planning horizon for this geographic area. With that said, SMUD Grid Planning continues to evaluate transmission options that may be required for proposed development through the 2022 planning period and beyond as well as transmission required to access and deliver renewable energy resources.
- A new distribution substation in the vicinity of Jackson Highway and the proposed Tree View Lane. New electrical substations generally require a ½-acre to ¾-acre parcel. Location of this site may be refined depending on environmental data provided for this site location. The Parcel on which the substation is to be located will be dedicated to SMUD.
- Installation of new sub-transmission (69 kV) electrical lines along Kiefer Boulevard.
- Installation of new sub-transmission (69 kV) electrical lines along Jackson Highway.
- Installation of new sub-transmission (69 kV) electrical lines along Excelsior Road.
- Additional new sub-transmission (69 kV) electrical lines may be required depending upon where the new electrical substation is sited.

In addition, the following requirements would apply:

- Certain uses are not permitted or compatible with the safety, operation, maintenance and construction of our transmission lines facilities. No structures/buildings or residential uses are allowed within the easement including covered parking, swimming pools, gazebos, wells and man-made reservoirs, lands or similar bodies of water. Any open space/park uses and facilities proposed within the transmission line easement will need to be discussed with SMUD.
- Tree, landscaping, light standards and equipment shall not exceed 15 feet in height within the easement area.
- SMUD's transmission easement should be designated on subdivision/parcel maps as "RESTRICTED USE AREA-NO BUILDING."
- All cut, fill and grading within SMUD's transmission easement must be conducted in a manner so that minimum horizontal and vertical clearances are maintained in accordance with California Public Utilities Commission General Order No. 95. Any violations shall be corrected at the owner's expense.

- Vehicular access to the transmission easement shall be provided at all times.
- All sub-transmission electrical lines will be routed overhead in an easement outside the rights-of-way of on-site project streets. Typically, for the sub-transmission 69 kV lines, a twenty-five (25) foot public utility easement for overhead and underground facilities and appurtenances adjacent to all public street rights of ways will be required at time of subdivision/parcel map for all existing and new transmission lines.
- The owners/developers must disclose to future/potential owners the existing and proposed 69 kV lines, 230 kV lines and substations.

Additional data is required to conduct the cumulative analyses. The Jackson Township Specific Plan comments may need to be updated during the environmental review process once the cumulative analysis has been conducted.

2) **Data Needs for Cumulative Impacts:** The following information is required to determine the sequencing of transmission/distribution development and to evaluate the cumulative impacts of the Specific Plans/Master Plans on electrical utility provisions and operations. This information will not only be required for the proposed Specific Plans/Master plans including NewBridge, West Jackson Highway, and Mather South; but is also being required for approved Master Plans including Vineyard Springs Comprehensive Plan, North Vineyard Station Specific Plan, Florin-Vineyard Gap Community Plan, Easton Specific Plan, and Cordova Hills Master Plan.

   - A description of the land use mix including number of units for residential development or building square footage for non-residential uses, number of acres per land use type, density.
   - A general phasing plan including a anticipated project construction start date, number of units/non-residential square footage per phase, and projected date of completion. While we fully expect these numbers to be preliminary, this data will assist us in determining where facilities should be placed and what we need to plan for them in the foreseeable future.
   - Land use diagrams showing proposed land use locations and proposed utility locations.
   - A clear project description for each Master Plan/Specific Plan proposal.
   - A description of any proposed large customers.
   - Any previously prepared environment constraints studies or technical studies.
   - A list of and description of any previous CEQA or National Environmental Policy Act (NEPA) certifications.
   - Information regarding proposed undergrounding.
   - Any energy efficiency measures and Net Zero proposals.

We appreciate the opportunity to comment on the preliminary plan and look forward to collaborating with the plan team on future work product. All correspondence for the Jackson Township Specific Plan should be addressed to the individuals listed below:

SMUD Local Government Relations
Attn: Arthur Starkovich
6201 S Street, B404
Sacramento, CA 95817

For Environmental Review Process:
SMUD Environmental Management
Attn: Rob Ferrera, Environmental Health and Safety Specialist III
6201 S Street, B203
Sacramento, CA 95817

If you have any questions regarding this letter, please feel free to contact Arthur Starkovich (916) 732-6486 or myself at (916) 732-6370.

Sincerely,

Steve Johns
SMUD, Local Government Relations Manager

cc: Arthur Starkovich, SMUD Local Government Relations
Rob Ferrera, SMUD Environmental Management
Steve Breece, SMUD Distribution System Planning
Craig Cameron, SMUD Grid Planning

ATTACHMENT 17

9/4/2013 VIA EMAIL

Catherine Hack, Environmental Coordinator
Department of Community Development
Planning and Environmental Review Division
827 7th Street, Room 220, Sacramento, CA 95814

RE: Notice of Preparation of a Draft Environmental Impact Report for Jackson Township Specific Plan (Control Number PLNP2011-00095)

Dear Ms. Hack:

Thank you for the opportunity to comment on the Jackson Township Specific Plan NOP. We hope the following comments will encourage the County of Sacramento to evaluate the potential impacts to public health that may be caused by the proposed development, which includes 6,143 residential units, 1,996,100 square feet of commercial and office uses, 105 acres for fire station/community center and elementary, middle, and high schools, 379 acres for parks and open space, and 200 acres for agriculture and primary roadways.

The Notice of Preparation for the Jackson Township Specific Plan indicates that "a Traffic Impact Study will be performed to examine the effects of proposed project development and facilities on area roadways." However, more than just area roadways may be affected by the proposed project. Distances between home, work, school and shopping that are too great for walking or bicycling often force people to drive and a transportation network that serves primarily car trips with wider and faster roads and/or fewer crossing opportunities increases the rates and severity of collisions for pedestrians and bicyclists. Further, transportation systems and land-use patterns can have a harmful impact on health. People in communities built to facilitate automobile travel, and where there are few, inconvenient or unsafe options for walking and biking, are at greater risk for inadequate physical activity, obesity and chronic diseases. In Sacramento County, only 37% of adults achieve the U.S. Centers for Disease Control and Prevention recommended minimum for physical activity.

For members of the public and their elected representatives to make informed conclusions and decisions regarding new development, the full impacts to the health and safety of people must be evaluated. The State of California, in CCR 15126.2 Consideration and Discussion of Significant Environmental Effects, provides that short-term and long-term effects of the project are to be considered by environmental impact reports and "*the discussion should include . . . health and safety problems caused by the physical changes*". Public Resource Code §21083 states that the Office of Planning and Research shall develop guidelines for implementation, including criteria for determining if

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www.walksacramento.org

a project may have a significant effect on the environment. One of the conditions under which such a determination of significance would be made is if "*the environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly.*"

WALKSacramento asks that the environmental impact report for the Jackson Township Specific Plan consider the health and safety impacts to people resulting from the proposed community design, land uses, transportation facilities and circulation network. The analysis could include vehicle miles travelled, vehicle collisions, walking mode share, pedestrian hazards and safety, and opportunities to walk to school, shopping, work, transit, recreation and socializing. Alternatives and mitigations for impacts to health and safety should also be identified.

Sincerely,

Chris Holm
Project Analyst

JACKSON TOWNSHIP SPECIFIC PLAN

ATTACHMENT 17











Sacramento County, CA

PUBLIC HEARING DRAFT

September 2021

JACKSON TOWNSHIP SPECIFIC PLAN

Adopted xxxx, 20xx

Ordinance #

EIR State Clearinghouse #2013082017

County of Sacramento, CA

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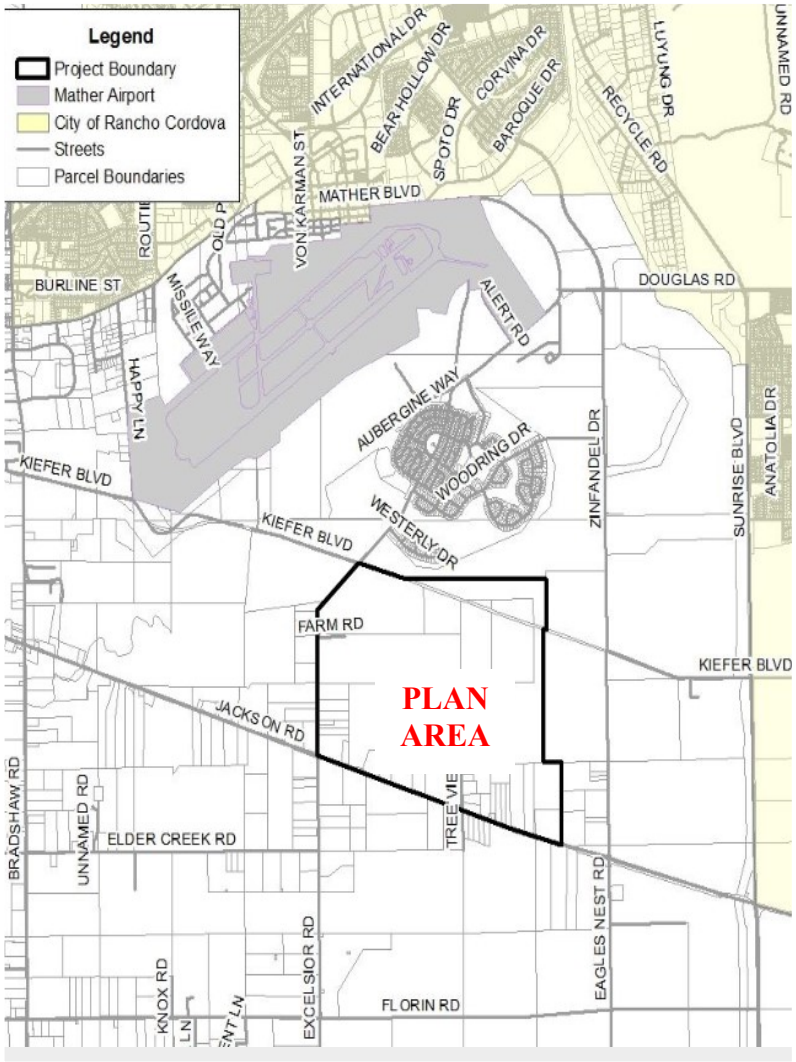
EXECUTIVE SUMMARY

The Jackson Township Specific Plan (JTSP) directs the formation of the approximately 1400 acre master planned community located within the Jackson Highway area, near the "geographic center" of the County. The Plan Area is located east of Excelsior Road, west of Eagles Nest Road, south of the Mather Airport and north of Jackson Road.

The JTSP represents the opportunity to implement the collective vision of the General Plan, the SACOG Blueprint and the applicant to create a sustainable, healthy and successful community in the Jackson Highway corridor. The overarching vision is of a vibrant and self-sustaining community that incorporates environmentally sustainable practices, distinct and walkable neighborhoods featuring complementary land uses and the integration of open space as the foundation of the community.

The Jackson Township Specific Plan Area (Plan Area) is a self-sustaining, mixed-use community including a broad spectrum of residential uses, employment, retail and supporting uses, recreational, open space and public uses. The projected yields, at full build out, would provide up to approximately 5,700 dwelling units and 5,200 jobs.

Specific plans provide an opportunity to creatively implement the intent of the General Plan and serve as a refinement of General Plan policies. The JTSP is the primary land use, policy and regulatory document used to guide development of the Plan Area. The Specific Plan establishes a development framework for land use, community design and character, infrastructure improvements and a subsequent project approval structure for



EXECUTIVE SUMMARY

orderly development within the approximately 1,400 acre Plan Area. The Specific Plan document is organized as follows:

- **Chapter 1-Introduction**: summarizes the purpose, background, organization and authority of this document.
- **Chapter 2-Plan Area Context**: describes the location, natural setting, and land use conditions on and adjacent to the Plan Area.
- **Chapter 3-Community Vision and Land Use**: identifies the vision and organizing principles that guide the physical form and development patterns of the Plan Area, depicts the overall land use plan and land use districts that constitute the Plan Area.
- **Chapter 4-Circulation and Mobility**: describes the network to accommodate the movement of vehicles, pedestrians and bicyclists.
- **Chapter 5-Public Utilities:** describes plan-wide water, wastewater, storm drainage, electric, natural gas, and communications.
- **Chapter 6-Public Services:** identifies plan-wide public services including parks, schools, libraries, law enforcement, fire and solid waste.
- **Chapter 7-Resources & Sustainability:** identifies the environmental conditions and sensitive resources found in the Plan Area and describes the project's sustainability features.
- **Chapter 8-Implementation**: describes phasing, implementation procedures and strategies for financing and maintenance of public facilities and services.
- **Chapter 9-Administration:** outlines the Specific Plan process and its relationship to the subsequent entitlement processes, describes the administrative procedures to implement and amend, interpret and enforce the Specific Plan.

- **Appendices:** Appendices provide supporting analysis and technical detail for many aspects of the Specific Plan, including:
  - Appendix A-Development Standards
  - Appendix B-Design Guidelines
  - Appendix C-Potable Water System Study
  - Appendix D-Wastewater Master Plan
  - Appendix E-Master Drainage Study
  - Appendix F Infrastructure Master Plan
  - Appendix G-Public Facilities Financing Plan (PFFP)
  - Appendix H-Urban Services Plan (USP)
  - Appendix J-Planning Area Detail

- **Related Documents**

Related documents include, but are not limited to:

  - Environmental Impact Report
  - Sacramento County General Plan
  - Sacramento County Zoning Code
  - Sacramento County Improvement Standards
  - Development Agreements

CHAPTER ONE: INTRODUCTION

1.1 OVERVIEW

The Jackson Township Specific Plan (JTSP) directs the formation of the 1400 acre master planned community located within the Jackson Highway area. The overarching vision is of a vibrant and self-sustaining community that incorporates environmentally sustainable practices, distinct and walkable neighborhoods featuring complementary land uses and the integration of open space as the foundation of the community.

The Jackson Township Specific Plan proposes a self-sustaining, mixed-use community including a broad spectrum of residential uses, employment, retail and supporting uses, recreational, open space and public uses. The projected yields, at full build out, would provide up to approximately 5,700 dwelling units and 5,200 jobs. The Jackson Township community will be an integrated community where residents can live, work, shop, educate, recreate and gather as a community.



Emphasis has been placed on creating a vibrant, comprehensively planned, sustainable community: one that generates a sense of place for residents and visitors. The amenities and natural resources will provide residents with an identifiable location that they can call "home" for generations to come.

1.2 PROJECT BACKGROUND AND HISTORY

The Plan Area is approximately 1,391 acres in size and is located east of Excelsior Road, west of Eagles Nest Road, south of the Mather Airport and north of Jackson Road, as shown on Exhibit 1.1. The Plan Area is outside of the Urban Policy Area (UPA); however the north boundary of the Plan Area is directly adjacent to the UPA boundary. The Plan Area is comprised of approximately 40 parcels, ranging in size from less than 1 acre to 214 acres. The primary land uses are grazing, agricultural residential development and the Sacramento Raceway. The Plan Area is comprised of one "participating" landowner and numerous "non-participating" landowners.



Exhibit 1.1: Project Location

1.3 KEY FEATURES AND PROJECT OBJECTIVES

The JTSP represents the opportunity to implement the collective vision of the General Plan, the SACOG Blueprint and the applicants to create a sustainable, healthy and successful community in the Jackson Highway corridor. Sustainability is measured in terms of providing infrastructure and a built environment that are coordinated to conserve resources and use renewable resources. Healthy is measured in the quality of life and the array of community services that are provided. Success will be measured by the test of time, as Jackson Township grows and emerges over the next 20 to 30 years, and then matures as a place that is vibrant, stable and a desirable place to live and work.

1.3.1 Project Objectives

The following summarizes the project objectives that guided the planning of Jackson Township Specific Plan:

- Establish an approximately 1,400+ acre mixed-use community which incorporates feasible, smart growth principles to lower greenhouse gas emissions and provides protection of valuable environmental resources, resulting in:
  a) an economically stable, sustainable community with a broad range of compatible land uses that provide a balance of jobs and housing, including residential, commercial, office, mixed-use, recreation and public/quasi-public uses;
  b) financially viable homes and businesses which provide a high level of energy efficiency and an attractive, well maintained community;

c) a Land Use Plan which is consistent with General Plan Policy LU-120 and the SACOG Blueprint smart growth principles.

- Establish a land use and circulation system that promotes a variety of non-vehicular modes within a community environment that is safe, accessible and convenient for all modes of travel.
- Promote a diversity of housing opportunities responsive to regional needs and market conditions including single-family dwellings, apartments, townhouses and live-work units that serve a broad range of family incomes.
- Provide a comprehensively planned infrastructure system to serve the entire Plan Area and ensure funding for the on-going maintenance needs of the parks, open space facilities, public services and infrastructure.

1.4 PURPOSE AND LEGAL AUTHORITY OF THE SPECIFIC PLAN

Specific plans provide an opportunity to creatively implement the intent of the General Plan and serve as a refinement of General Plan policies. The JTSP is the primary land use, policy and regulatory document used to guide development of the Plan Area. The specific plan establishes a development framework for land use, community design and character, infrastructure improvements and a subsequent project approval structure for orderly development within the approximately 1,400 acre Plan Area.

Preparation of a specific plan is authorized by Section 65450 et seq. of the Government Code. Government Code Section 65451 mandates that a specific plan include a text and a diagram or diagrams which specify all of the following in detail:

1) The distribution, location, and extent of the uses of land, including open space, within the area covered by the plan.

(2) The proposed distribution, location, and extent and intensity of major components of public and private transportation, sewage, water, drainage, solid waste disposal, energy, and other essential facilities proposed to be located within the area covered by the plan and needed to support the land uses described in the plan.

(3) Standards and criteria by which development will proceed, and standards for the conservation, development, and utilization of natural resources, where applicable.

(4) A program of implementation measures including regulations, programs, public works projects and financing measures necessary to carry out paragraphs (1), (2), and (3).

The specific plan must also contain a statement of relationship of the specific plan to the General Plan. Consistency with the General Plan is required by state law. Furthermore, no zoning, tentative maps, parcel maps, or public works projects can be approved, adopted, or undertaken unless they are consistent with the adopted specific plan. The JTSP was prepared pursuant to State Law and is compatible with the applicable policies and programs of the General Plan.

1.5 RELATIONSHIP TO COUNTY PLANS & REGULATIONS

1.5.1 Sacramento County General Plan

The California Government Code requires that Specific Plans be consistent with the local jurisdiction's adopted General Plan. The General Plan is a statement of the community's land use values and is the underlying basis for its vision and direction. An analysis of the consistency of the JTSP with applicable General Plan policies and actions is provided in the EIR.

1.5.2 County Zoning Code

The JTSP includes Development Standards(Appendix A) and Design Guidelines (Appendix B), which are adopted into the Jackson Township Special Planning Area Ordinance (Sacramento County Zoning Code Title V, Chapter 8, Article__) These regulations shall govern development, improvements and construction within the Plan Area.

1.5.3 Sacramento County Improvement Standards

The Sacramento County Improvement Standards establish basic standards and detail sheets for construction of public infrastructure. These standards and specifications apply to all construction within the Plan Area, unless otherwise addressed herein. To the extent that a component or regulation of the Specific Plan differs from a requirement of the Standards, the Specific Plan will take precedence. Where the Specific Plan is silent, the Standards will be used for purposes of interpretation, and/or directly applied as appropriate.

1.6 SPECIFIC PLAN RELATED DOCUMENTS

1.6.1 Environmental Impact Report

Sacramento County is the lead agency in the preparation and certification of an Environmental Impact Report (EIR), pursuant to the California Environmental Quality Act (CEQA). The EIR for the JTSP (Control Number: PLNP 2011-00095, State Clearinghouse Number 201308201) examines the environmental impacts of the proposed plan and identify potential changes in the environment that would result from implementation of the plan. CEQA Guidelines Section 15183 provides that projects consistent with development density, zoning, community planning, and the general plan for which an EIR was certified do not trigger a new environmental review unless there are new impacts that have not already been properly addressed. Section 65457(a) of the California Government Code and CEQA Guidelines Section 15182(a) provide that no EIR or negative declaration is required for any residential project undertaken in conformity with an adopted Specific Plan for which an EIR has been certified.

The EIR for the Jackson Township Specific Plan is intended to qualify subsequent projects within the Plan Area for these exemptions, assuming those projects are consistent with the adopted Specific Plan, and fulfill all applicable Zoning conditions and CEQA mitigation measures.

1.6.2 Development Agreements

Subject to the provisions of the Specific Plan, the property owners and the County may execute Development Agreements in accordance with Section 6.2.2 of the County Zoning Code.

1.6.3 Development Standards

Concurrent with the approval of this Specific Plan, Development Standards were adopted by Sacramento County. The Jackson Township Development Standards (DS) act as the zoning regulations for the Plan Area. The Development Standards set forth the permitted uses, development standards and other regulations for the Plan Area. When conflicts occur between the provisions in the County Zoning Ordinance or the County Improvement Standards and the DS, the provisions of the JTDS shall apply. Where the DS do not address a specific provision, the County Zoning Ordinance and/or Improvement Standards shall govern development in the Plan Area.

1.6.4 Design Guidelines

Concurrent with the approval of this Specific Plan, Design Guidelines for the JTSP were approved by Sacramento County. The JTSP Design Guidelines (Appendix B) provide specific direction for the development of all land uses to ensure quality and consistent design treatment.

1.7 PROPOSED ENTITLEMENTS

Implementation of the Specific Plan requires approval of the following entitlements by the Sacramento County Board of Supervisors:

- A General Plan Amendment to move the Urban Policy Area (UPA) boundary south to include the Jackson Township Specific Plan.
- A General Plan Amendment to amend the Land Use Diagram designations, to amend the Transportation Diagram and the Bicycle Master Plan.
- A Community Plan Amendment to amend the Vineyard and Cordova Community Plans.
- Adoption of the Jackson Township Specific Plan including a Specific Plan land use diagram, Design Guidelines and Development Standards.
- Adoption of a Public Facilities Financing Plan for the Jackson Township Specific Plan that describes a Capital Improvement Program and funding and financing strategy for planned improvements.
- Adoption of an Urban Services Plan for the Jackson Township Specific Plan that describes the cost to provide annual public services and the funding sources identified to cover projected costs.
- Adoption of a Water Supply Master Plan Amendment to amend the existing Zone 40 Water Supply Master Plan.
- A Zoning Ordinance Amendment to establish the Jackson Township Special Planning Area (SPA) for the first phase will occur subsequent to the approval of the entitlements listed above.

In addition to the above listed entitlements, separate annexation requests to LAFCo include:

- Sphere of Influence Amendment (SOIA) and concurrent Annexation to County Service Area (CSA) 10 or creation of a new CSA.
- Annexation to Sacramento Regional County Sanitation District (SRCSD).
- Annexation to Sacramento Area Sewer District (SASD).

Future applications will be subject to the policies, improvement standards, development standards and design guidelines included in this specific plan. Future approvals may include, but are not limited to, the following:

- Large Lot Tentative Maps
- Tentative Subdivision Maps
- Lot Line Adjustments
- Site Plan Review
- Use Permits
- Variances
- Project Development Agreements
- Encroachment Permits
- Subdivision Improvement Agreements
- Zoning Ordinance Amendments to establish subsequent SPA's

CHAPTER TWO: PLAN AREA SETTING

2.1 REGIONAL CONTEXT

The Plan Area, approximately 1,391 acres in size, is located in the "geographic center" of Sacramento County, lying south of the Mather Specific Plan Area, east of Excelsior Road, north of Jackson Highway and west of Eagles Nest Road, primarily within the Vineyard Community. The portion of the Plan Area north of Kiefer Boulevard is within the Cordova Community. Exhibit 2.1 depicts the Plan Area location within the regional context.

2.1.1 2.1.1 Pre-Specific Plan Land Use Designations

The General Plan designates the Plan Area as Extensive Industrial and General Agriculture 20 acres. The Community Plan and zoning designations are Light Industrial (M-1), Industrial Reserve (IR) and Permanent Agriculture (AG-80).

2.2 PLAN HISTORY AND SETTING

2.2.1 Site History

The Plan Area lies along the boundary between the historical Brighton and Lee townships. Brighton Township was originally established by the court of sessions in 1851. Lee Township was formed in 1856 by the Sacramento County Board of Supervisors. Lee Township was carved out of what was originally San Joaquin and Cosumnes townships.

One of the earliest Europeans to cross the vicinity of the Plan Area was William Daylor, who was employed by John Sutter. In 1848, Daylor partnered with William Grimshaw and opened a store and Indian trading post at Daylor's ranch on the Cosumnes near present day Sloughhouse. The trading post was on the Jackson Road, a wagon road from Sutter's Fort to the Southern Mines. Built on this historic

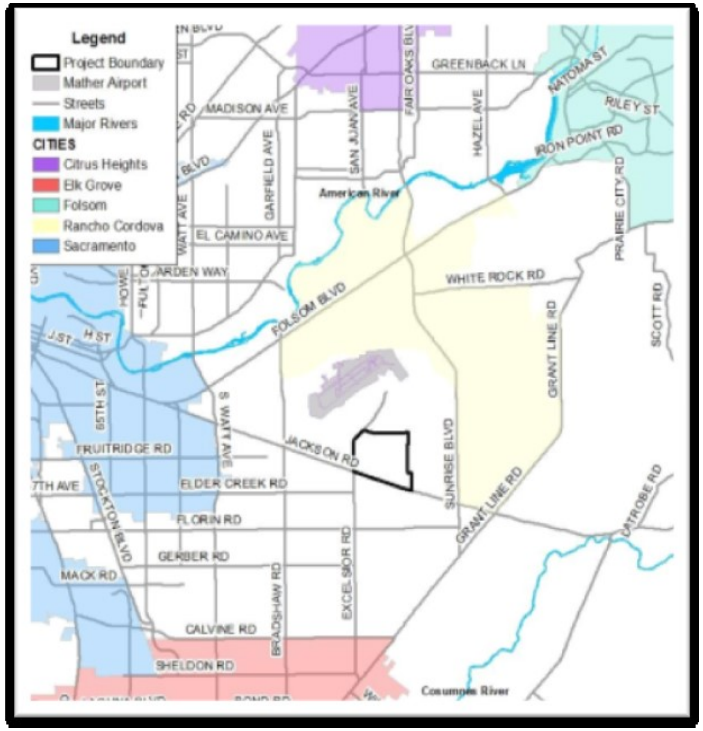


Exhibit 2.1 Regional Location

route, Jackson Highway (State Route 16) today constitutes the south boundary of the Jackson Township Specific Plan Area.

Essentially all the early settlers of this area were involved in dry farmed grain production and/or cattle or sheep ranching. By 1910, the Natomas Company of California owned most of the Plan Area. In the mid-1950s, an easement for a massive electrical transmission line was acquired across a portion of the Plan Area. During the same era, the Plan Area was still sparsely inhabited, comprised of approximately 7 dwellings and a ranch complex including a small reservoir.

By 1967, the Carmichael quadrangle map depicts a total of 13 buildings and a drag racing complex developed in the central portion of the Plan Area, known as the Sacramento Raceway. During this same period, approximately 16 residential dwellings were constructed within the Plan Area, primarily along Jackson Highway and Excelsior Road.

2.2.2 Setting

The Plan Area is comprised of 24 different landowners. Excelsior Estates, LLC is the participating landowner, represented by Angelo G. Tsakopoulos as the applicant. The applicant owns and/or controls approximately 883 acres (approx. 64 % of the total) within the Plan Area boundaries. In addition to the applicant properties, the pre-Specific Plan land uses within the Plan Area include grazing, small ranches, agricultural residential homes and the Sacramento Raceway. Exhibit 2.2 depicts an aerial photograph of the undeveloped Plan Area and adjacent lands.

2.2.3 Adjacent Uses

Adjacent land uses to the Specific Plan Area include the following:

West: The site is bound to the west by Excelsior Road, and the area is characterized by an assortment of industrial and agricultural uses, including mining and decorative stone and rock sales. This area is within the West Jackson Highway Master Plan Area.

North: The Mather Field Special Planning Area is located north of the Plan Area boundary and includes Independence at Mather, a nature preserve, the Mather Commerce Center and Mather Regional Park, which includes the Mather Golf Course. Additional land uses north of the Mather Special Planning Area include the Stone Creek residential community.

East: Existing land uses along the eastern Plan Area boundary include agricultural and industrial lands, including, grazing, agricultural residential uses and the Sacramento Rendering Plant. This area is also generally within the NewBridge Specific Plan Area. The NewBridge Specific Plan includes a proposed wetland preserve area located west of Eagles Nest Road, adjacent to the proposed wetland preserve within the JTSP. Together, the two adjacent wetland preserves will create a natural corridor consistent with the goals of the proposed South Sacramento

South: Existing land uses to the south of the Plan Area are primarily small ranches, agriculture and wetland preserve.



2.3 PROJECT BACKGROUND

The formal initiation of the Jackson Township Specific Plan occurred in June 2013; however, the applicant began the pre-planning and visioning process in early 2004. The applicant's vision is to diverge from the norm of development in the prior decades and to create a self-sustaining, mixed use "complete" community with a range of residential densities and a compact form.

CHAPTER 2: PLAN AREA SETTING AND CONTEXT



The SAGOG Blueprint, adopted in 2005, acknowledged the Jackson Highway Corridor as an appropriate and logical area to urbanize. The County 2030 General Plan, adopted in 2011, contemplated new growth areas to occur via expansion of the Urban Policy Area (UPA), including the Jackson Highway area. General Plan policies, namely LU-119 and 120, provided a clear process and guidance, based on smart growth principles, for the master plans/specific plans to be prepared for new communities.

The land use process for the JTSP evolved over numerous years. The framework provided by the Blueprint, the General Plan, AB 32 and SB 375 helped inform and discern the planning process along the way. Outreach and collaboration with community groups, stakeholders, landowners, community members and area residents resulted in refinement of the Preferred Land Use Plan. In addition to the Preferred Land Use Plan, a number of land use alternatives were studied as part of the EIR to analyze different variations to the Land Use Plan. The Alternatives are described in full detail in the EIR.

2.4 CONSTRAINTS & OPPORTUNITIES

Natural resources, drainage, noise and utility easements were the primary Plan Area conditions that were considered in the site analysis and the design of the land plan. Such conditions influence both opportunities and constraints to the future development of the Plan Area.

CHAPTER 2: PLAN AREA SETTING AND CONTEXT

2.4.1 Natural Resources

The land uses within the Plan Area and surrounding lands include rangeland, rural residential and cropland. Habitat types occurring within the Plan Area include annual grassland, irrigated pasture and ditch, northern hardpan vernal pool, seasonal wetland, marsh, irrigation pond, and ephemeral drainages. Known or potential biological constraints within the Plan Area include sensitive habitats associated with Morrison Creek, vernal pools, marshes, other potential waters of the U.S.; potential habitat for special-status vernal pool and other plant and animal species; potential foraging and nesting habitat for Swainson's hawk, a state-listed species, and other special-status birds species; and protected trees. See Chapter 7.2 for a complete description of the Plan Area natural resources.



2.4.2 Drainage

The Plan Area lies on the Sacramento Plains between the American River on the north, the Sacramento River on the west and the Cosumnes River on the south and east. The natural drainage system of the Plan Area transports water in a west southwesterly direction to a series of lakes on the east side of the Sacramento River. The drainage system is known as the Morrison Creek Stream Group Basin. The Morrison Creek drainage system lies largely outside the west boundary of the Specific Plan. However, a small tributary drainage takes up the northwest corner of the Plan area. A second drainage, Elder Creek, drains the central portion of the Specific Plan area northeast to southwest. The 1967 U.S.G.S. Carmichael Quadrangle illustrates ponds, reservoirs and wetlands associated with the Elder Creek drainage system.



View looking east along north property line

2.4.3 Noise

Existing sources of potential noise in the Plan Area vicinity at the time of Specific Plan preparation include Mather Airport, industrial land uses to the west and Jackson Highway, bordering the Plan Area on the south. The Sacramento Raceway, which is part of the Plan Area, operates as Sacramento Raceway Motorsports Park. The facilities include drag racing, stock car and motocross tracks, grandstands, concessions and maintenance facilities.



2.4.4 Easements

Two parallel high voltage electrical transmission lines cross the Plan Area. One of the lines is a SMUD transmission line and the second is a Pacific Gas and Electric Company (PG&E) transmission line. An easement for a water line and right-of-way for the unconstructed portion of Keifer Boulevard are existing along the north boundary.

3: Community Vision /Land Use Plan

3.1 Overview

The following chapter describes the vision for the Plan Area and the land use goals used to implement the project vision. This chapter also describes the development framework for the community and provides detail of the Land Use Plan and Land Use Designations. A description of each land use type is provided, including density and intensity ranges pursuant to each zoning category.



Illustrative View of Town Center Streetscape

3.2 Vision and Principles

The vision for the JTSP responds directly to an overarching theme in the General Plan- grow efficiently. The General Plan Land Use Element begins with this goal: *An orderly pattern of land use that concentrates urban development, enhances community character and identity through the creation and maintenance of neighborhoods, is functionally linked with transit, promotes public health and protects the County's natural, environmental and agricultural resources.* Several strategies are included, one which applies directly to the Plan Area; *Strategy III: Growth Management and Design*. This strategy illustrates the General Plan's intention to create land use patterns that minimize the impacts of new and existing development and maintain or improve the quality, character and identity of neighborhood and community areas. The JTSP land use plan responds to the objective described for New Growth Areas: *New communities that feature a mix of housing, jobs and retail development configured in a compact and transit supportive manner, that incorporate mixed use development (both vertical and horizontal), and that protect environmental resources and preserve open space.*

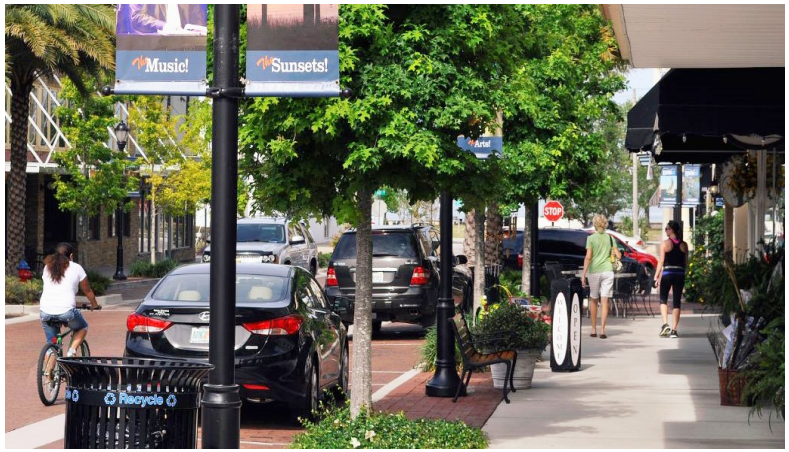
The vision for the Plan Area embraces the framework provided by the General Plan by providing a balanced mix of land uses, their appropriate placement within the Plan Area and an infrastructure network that accommodates regional transportation facilities while providing integrated opportunities for pedestrian and alternative travel modes. The community will be enhanced with a strong sense of place intended to foster social cohesion, one that promotes non-vehicular modes of travel, encourages education and recreation, minimizes energy use and maximizes sustainability.

CHAPTER 3-COMMUNITY VISION/LAND USE PLAN

The JTSP incorporates the following organizing principles into the overall vision:

Principle 1: Design a Distinct Community with a Compact Form

The Land Use Plan is designed to use the land efficiently, by providing a moderately dense mix of land uses in a compact pattern. The Town Center includes both vertical and horizontal mixed uses in an urban setting, with a "Main Street" as a central element, the Village Center and surrounding residential uses have medium to high densities, while the interior neighborhoods have a more conventional form. The land uses are organized in a modified grid pattern to encourage more walking, biking and use of alternative vehicles and to shorten auto trips. Efficiency is achieved through placement of the primary employment uses in close proximity to higher density residential uses and Jackson Road.



Principle 2: Encourage Mixed Use Development

The land plan designates a cohesive mix of complementary land uses to create active, vital neighborhoods, providing an integration of residential uses with appropriately scaled commercial uses in close proximity to each other. The zoning in the Mixed Use (MU) site allows both vertical and horizontal integration of residential and commercial land uses.

Principle 3: Provide Transportation Choices and Transit-Oriented Design



Jackson Township provides a comprehensive roadway and trail system that will maximize the potential for people to walk, ride bicycles or carpool. Streets have been designed in a walkable grid pattern, enhanced by street trees and amenities. These elements, in combination with the greenbelt system within the Plan Area, will result in a pedestrian and bicycle friendly environment that will promote non-vehicular use as a primary choice, becoming a way of life for residents.

The JTSP Mobility Plan designates a transit route, which loops through the Plan Area, and a Transit Center/stop in the Town Center on "Main Street". The anticipated loop transit pattern will provide bus service within one quarter mile of 90% of residents.

Principle 4: Provide Diverse Housing Choices

The JTSP provides a wide variety of places where people can live, including apartments, condominiums, townhouses, live-work units, attached and detached single-family homes. The range of neighborhood types and lot sizes include large rural lots, executive estate size lots, traditional lots and compact lots in a variety of styles. This creates many housing opportunities for families, singles, seniors and people with special needs while providing community identity and diversity.



Principle 5: Emphasize Quality Design

The JTSP emphasizes quality site planning and architectural design as important factors in creating a strong sense of community and sense of place. The design details of the development, such as the relationship of the buildings to the street, setbacks, placement of garages, sidewalks, landscaping, the aesthetics of building design and the design of the public rights-of-way, are factors that influence the attractiveness of living in a compact development and facilitate the ease of walking and biking to work or neighborhood services. Comprehensive Design Guidelines, provided in Appendix B, will ensure that the character and quality of each development fulfills the project vision through the build out of the Plan Area.



Principle 6: Maximize Natural Resource Conservation

The Land Use Plan includes a large open space preserve in the eastern portion of the Plan Area, preserving existing high quality biological habitat which are adjacent to existing preserves in conjunction with the SSHCP. The comprehensive greenbelt and trail system borders and links the preserve area to the rest of the Plan Area, serving as an integral, unifying element of the community. In addition to conserving resources and protecting species, the conservation of natural resources improves overall quality of life by providing places for outdoor enjoyment.

Principle 7: Incorporate Sustainable, Energy Efficient Design

The JTSP incorporates sustainability concepts and practices in the approach to land use, circulation, public utilities, public services and environmental resources. The sustainability elements of energy efficiency, water conservation and water quality build upon the foundation of using land efficiently due to the "smart growth" land use plan. Chapter 7 provides details of the JTSP measures and programs, which will result in a sustainable, eco-aware community which grows responsibly while enhancing and respecting the local, State and global efforts to reduce the impacts of climate change.

3.3 Community Framework

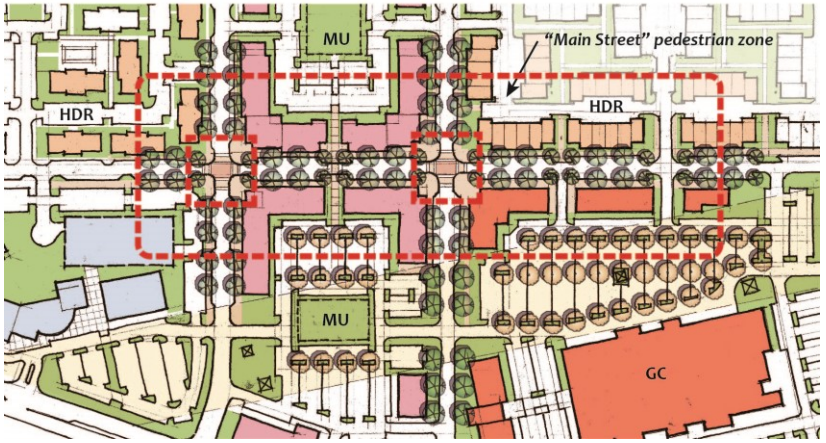
The development framework of the Plan Area was guided by several key elements that achieve the community's desired physical form, as depicted in Exhibit 3.1, Community Framework. As described in Chapter 2.4, the significant physical elements that influenced the form of the Land Plan are the vernal pool complex on the east and the Morrison and Elder Creek drainages. Other contributing factors are the existing major roadways, primarily Jackson Highway. The key elements that inspired the community design framework are the Town Center, Village Center, Community Gathering Areas and Connected Neighborhoods.

3.3.1 Town Center

The Town Center is strategically located along Jackson Highway between Excelsior Road and Grenville Drive. This gridded 9 block area, approximately 125 acres in size, will provide vibrant commercial, office and mixed use with adjacent medium and high density residential uses to serve at a sub-regional, community and neighborhood level. These



higher intensity uses will help support transit use along the Jackson Highway corridor. The core of the Town Center is the "Main Street", which has a pedestrian enhanced zone. Main Street and the adjacent streets will be lined with multi-story mixed-use retail, office and residential uses. Tree-lined streets provide a comfortable environment for working, shopping, walking and gathering. Both public and private plazas, including a transit stop, are indicated in the MU sites to enhance the Town Center as a hub of community activity with a focus on transit and non-vehicular modes of transportation.



Conceptual Illustration of Main Street Pedestrian Zone

CHAPTER 3-COMMUNITY VISION/LAND USE PLAN

Framework Elements:

Town Center

- Compact, gridded 9 block area with vibrant mix of uses
- Close proximity to transit corridor
- Hub of civic, employment & shopping services within short walking distances
- High intensity housing in node with lower densities radiating outwards

Village Center

- Neighborhood activity/gathering place
- Retail services within ½ mile walking distance of most residences

Community Gathering Areas and Open Space

- Significant community gathering and destination places within a network of trails and greenways
- Joint High School/Middle School and Community Park located to serve as gathering place and hub of neighborhood interaction.
- The wetland preserve provides passive open space and serves as a "green" edge for the east edge of the Plan Area.

Connected Neighborhoods

- 5 minute walk (1/4 mile) from most homes to a school/ park site or open space
- 10 minutes (½ mile) from most homes to the retail/employment nodes
- Tree-lined streets, convenient trails and safe street crossings

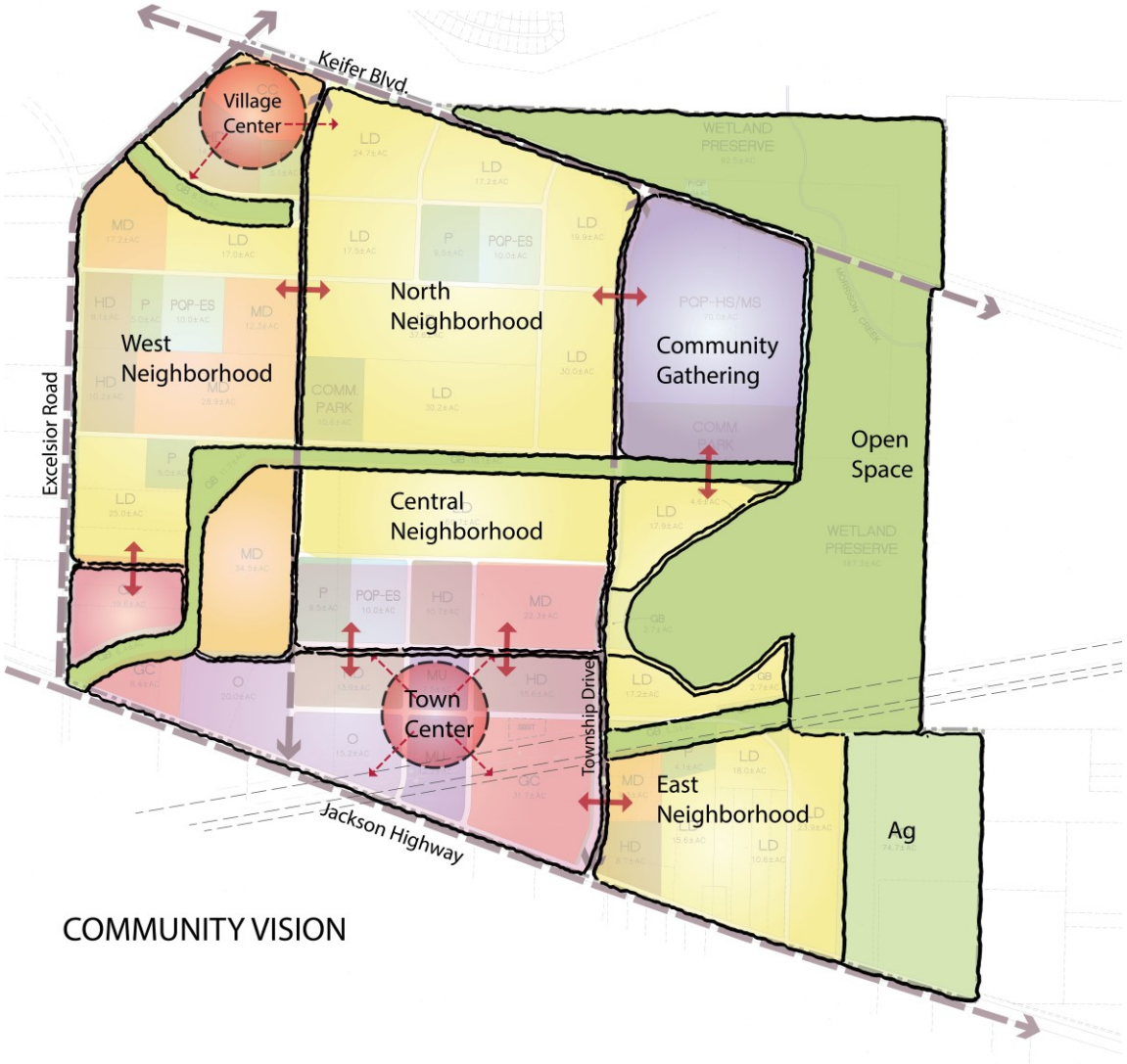


Exhibit 3.1: Community Framework

3.3.2 Village Center

The Village Center commercial site is situated along Excelsior Road at the new intersection with Douglas Road. This smaller hub will provide local commercial and retail uses for the northern and western residential neighborhoods, as well as the existing residents at Independence at Mather.



Example of Village Center Uses

3.3.3 Community Gathering and Open Space Network

A key part of the vision for the Plan Area is that the community is enhanced with a strong sense of place, intended to foster social cohesion, one that promotes non-vehicular modes of travel, encourages education and recreation. The land plan locates significant community gathering and destination places within a network of trails and greenways. The Community Parks, and the expansive joint High School/ Middle School site are ideally located to provide hubs of neighborhood interaction and use. The open space and trail network will facilitate ease of non-vehicular modes to travel from home, work or transit to these community assets.



3.3.4 Connected Neighborhoods

The neighborhoods of Jackson Township are designed to provide a mix of housing types which are integrated and interconnected. The neighborhoods are oriented to have a school, park or open space as a central focus of the neighborhood. The majority of homes will be within a 5 minute walk (1/4 mile) to a school, park or greenbelt trail. In addition, most of the homes are a 10 minute walk (½ mile) to either the Town Center, Village Center or Community Park complex. Tree lined streets, convenient access to trails and safe street crossings will promote a neighborhood identity of connectedness and interaction. Exhibit 3.2 illustrates the walkability of the community.

CHAPTER 3-COMMUNITY VISION/LAND USE PLAN



Exhibit 3.2: Community Walkability

3.4 Land Use Goals and Policies

This section discusses the goals and policies that guide the vision and arrangement of Specific Plan land uses. Goals and policies pertaining to Circulation, Public Utilities, Public Services, Resources and Implementation are found in those Chapters. Goals are general statements about the desired outcomes of the Specific Plan. Policies are implementable actions to meet the intended goals.

The General Plan Land Use Element provided detailed guidance for the Specific Plan. A complete list and consistency analysis of applicable General Plan goals and policies is provided in Appendix A. The following JTSP land use goals are used to implement the project vision and to guide the form and character of the emerging community.

General Land Use Goals and Policies

Goal 3.1: Foster a distinctive community with a strong sense of place

- ***Policy 3.1.1:*** *Locate a town center and civic hub in a central location to serve as gathering places for the community and attractive destinations accessible via greenways, trails and transit.*
- ***Policy 3.1.2****: Locate the schools and parks as focal points and gathering places within each neighborhood.*
- ***Policy 3.1.3****: Design neighborhoods so that most dwelling units are within one-quarter mile of an open space area such as a park, school, greenway or other open space.*

Goal 3.2: Provide a diverse mix of land uses

- *Policy 3.2.1: Structure the development standards to allow opportunities for the integration of residential uses into the local commercial and office zones as a permitted use to provide a close link between work and home.*
- ***Policy 3.2.2:*** *Allocate land uses to result in an approximate 1 to 1 ratio of housing to job-generating uses to encourage close home-work linkages to reduce automobile dependence.*

Housing Goals and Policies

Goal 3.3: Provide a range of housing choices and opportunities within easy walking distance of transit, employment, shopping and recreation

- ***Policy 3.3.1****: Assign a range of housing types (i.e., apartments, townhouses, lofts, single family detached homes) within the residential land use categories assigned on the Land Use Plan and within the density ranges shown on Table 3.2.*
- ***Policy 3.3.2****: Allocate a balanced mix of residential land use types across the Plan Area in the full range of permitted densities, from 0.2 du/acre to 40 du/acre. Strive for an overall target of 10 du/ac.*

Goal 3.4: Provide affordable housing opportunities within the Town Center and within ¼ mile of the Transit Center, transit stops, schools, parks and shopping.

- ***Policy 3.4.1****: An adequate number of HDR sites shall be made available to meet the obligation of the affordable housing ordinance. Sites shall meet or exceed the criteria of the ordinance for suitability as affordable housing.*

Employment Goals and Policies

Goal 3.5: Provide a variety of employment opportunities, which can provide both jobs and services for Plan Area residents, ranging from retail, public service, corporate and medical office jobs.

Policy 3.5.1: *The permitted uses in the GC, CC, MU and O designations shall be broad to encourage and allow a full range of uses to serve the Plan Area with employment.*

Policy 3.5.2: *Locate a regional serving commercial center on Jackson Road on the GC site in the Town Center. Locate a community/neighborhood scale center on Excelsior Road. Provide convenient access to these sites from the adjacent streets and provide pedestrian and bicycle connections from the adjacent neighborhoods.*

Sustainability Goals and Policies

Goal 3.6: Encourage sustainable building and landscape designs and standards.

- ***Policy 3.6.1:*** *Create Design Standards to promote the inclusion of measures related to the conservation of energy, water, soil, building materials and other non-renewable resources.*
- ***Policy 3.6.2:*** *Include recharging stations, preferred parking and other incentives for alternative energy vehicles in all non-residential zones.*

Recreation and Open Space Goals and Policies

Goal 3.7: Provide a connected, accessible open space network to enhance existing natural resources.

- ***Policy 3.7.1:*** *Establish a network of open space and recreation amenities including a community park, neighborhood parks, linear parkways, and pedestrian and bike connections throughout the Plan Area.*
- ***Policy 3.7.2:*** *Create a comprehensive system of multi-purpose drainageways, utilizing green infrastructure to mimic the natural hydrologic processes. These greenways will provide an interconnected system of both natural and created open spaces, becoming signature elements of the Plan Area.*
- ***Policy 3.5.3:*** *Set aside the eastern area of Plan Area as a wetland preserve, consistent with the SSHCP. Enhance the public enjoyment of this passive open space by providing adjacent trails, viewing areas and interpretive signage, where feasible.*

Goal 3.8: Incorporate buffers and/or compatible land uses to preserve and protect sensitive land uses and existing assets.

- ***Policy 3.8.1:*** *Designate appropriately sized buffers between proposed developed areas and the open space preserves, natural open space and other sensitive resources, consistent with the SSHCP and/or Federal permits.*
- ***Policy 3.8.2:*** *Require buffers for adjacent agricultural land uses designated for interim protection using techniques including, but not limited to; linear parkways, open space, fencing, tree windrows and berms. Provide agricultural disclosure for new residential uses adjacent to active agricultural uses.*

3.5 Land Use Plan

The Land Use Plan is the culmination of a comprehensive collaboration between County staff, the applicant's team and landowners; a process which identified physical constraints, examined adjacent land uses and analyzed General Plan policies and influences on the land use planning process. The Land Use Plan emerged from the strong framework provided in the 2030 General Plan, specifically from the Land Use Element.

The Land Use Plan, shown on Exhibit 3.3, illustrates the arrangement of land uses, transportation networks and open spaces that will comprise the JTSP community. Table 3.2 provides a detailed summary of the land use zones, acres and dwelling uses allocated on the Land Use Plan and evaluated in the EIR analysis.

3.5.1 Relationship between Zoning and General Plan

A summary of the JTSP land use categories is presented in Table 3.2. The table also lists the County General Plan land use designations that are consistent with the categories of the JTSP. It is important to understand the difference between General Plan land use designations and zoning districts. The General Plan land use designations define each designation in broad terms, while the zoning districts and accompanying regulations contain detailed development standards.

Rezoning of the Plan Area to the Jackson Township Special Planning Area (SPA) will occur in phases as areas are ready for development, as shown on Exhibit 8.1. The initial phase to be rezoned subsequent to the Specific Plan approval is a portion of Area 1A/1B, which is owned by the participating landowner and Applicant Excelsior Estates LLC. The remaining portion of the Applicant owned property and properties not owned by the applicant, herein referred to as non-participating property, will be the subject of future entitlement applications for rezoning consistent with the adopted Land Use Plan, adoption of an SPA and other approvals required for development to commence.

The provisions in the SPA, the Specific Plan and the Development Standards, Appendix A, constitute Zoning.

Table 3.1: Land Use Categories/GP Designation Consistency

SYM	JTSP CategoryDescription	Consistent General Plan Land Use Designation
Residential Zones		
LD	Low Density Residential	Low Density Residential
MD	Medium Density Residential	Medium Density Residential
HD	High Density Residential	Medium Density Residential
Commercial, Office and Mixed Use Zones		
GC	General Commercial	Commercial and Offices
CC	Community Commercial	Commercial and Offices
MU	Mixed Use	Commercial and Offices
O	Office	Commercial and Offices
Public/Open Space Zones		
PQP	Public and Quasi-Public	Public and Quasi-Public
P	Park	Recreation
OS	Open Space	Recreation
WP	Wetland Preserve	Natural Preserve
AG	Agriculture	General Agriculture

CHAPTER 3-COMMUNITY VISION/LAND USE PLAN

Table 3.2 Land Use Summary

Residential Designations	*Acres*	*Ave. Density*	*Density Range*	*D.U.'s*	*% of D.U.'s*	*Projected Jobs*
LD- Low Density Residential	382.6	6.0	1.0-8.9	2295	40.3%	
MD-Medium Density Residential	124.5	10.0	9.0-15.9	1245	21.9%	
HD- High Density Residential	82.0	25.0	16.0-30.0	2050	36.0%[4]	
Subtotal	**589.1**			**5,590**	**98.2%**	
Commercial + Office Designations		***f.a.r.***	***Approx. s.f.***			
GC-General Commercial	59.7	0.25	650,100	n/a[1]		1,300
CC-Community Commercial	16.2	0.25	176,400	n/a[1]		353
MU-Mixed Use	19.7	0.50	429,000	100[2]	1.8%[7]	858
O- Office	35.2	0.50	766,600	n/a[1]		2,737
Subtotal	**130.8**		**2,022,100**	**100**	**1.8%**	**5,248[4]**
Public/Quasi Public Designations						
PQP-Tank Site	1.0					0
PQP-High School/Middle School	70.0					274
PQP-Elementary School	30.0					198
Subtotal	**101.0**					**472[5]**
Park + Open Space Designation s						
P- Community Park	40.6					
P- Neighborhood Park	38.2					
OS- Wetland Preserve	259.8					
OS- Greenbelt/Drainage Corridor	55.6					
OS- Landscape Corridor	14.5					
Subtotal	**408.7**					
AG-Agriculture	74.7					
RW- Primary Roadways	86.7					
TOTAL	**1,391.0**		**10.6[3]**	**5,690 units**	**100%**	**5,248 jobs**

Table 3.2 Footnotes

1. Dwelling units are not permitted in these designations.
2. 100 dwelling units are assigned to the 7.5 acre MU parcel only, 0 units assigned to the 12.2 acre MU parcel.

3. Double net density calculation: Residential acreage 589.1 +7.5 MU=596.6-59.6 (10% net residential exclusion per Policy 120 CB-1) = **537 acres 5690 du /537=10.6 du/ac.**

4. Job generation is based on 1 employee per 500 s.f in GC, CC, MU and employee per 280 s.f in office.

5. Job generation in PQP-Schools is based on data provided by Elk Grove Unified School District.

CHAPTER 3-COMMUNITY VISION/LAND USE PLAN

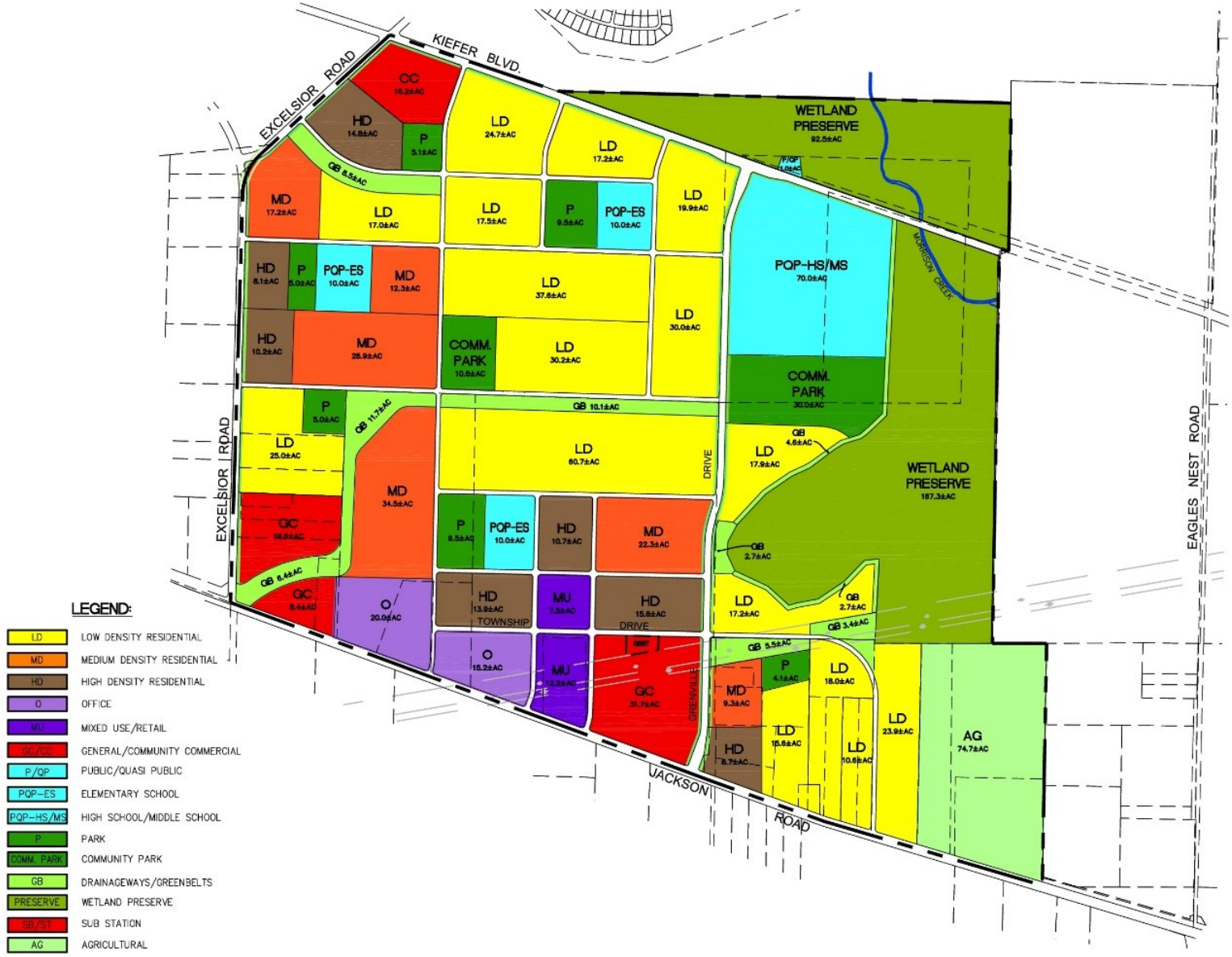


Exhibit 3.3: Land Use Plan

3.6 Residential Land Uses

3.6.1 Low Density Residential (LD)

The LD land use category provides for single family detached homes on standard suburban size lots, however, attached homes are also allowed. Alternative lot configurations such as alley, cluster or halfplex lots may also occur. The density range is 1.0 to 8.9 dwelling units per gross acre (du/ac) and the projected average density is 6.0 du/ac.



Low Density Residential Example

3.6.2 Medium Density Residential (MD)

The MD land use category accommodates a variety of housing types. This density allows for single family detached housing, as well as detached and attached housing types. MD housing types may include, but are not limited to lot configurations such as standard, halfplex, cluster, alley, courtyard, greencourt, zero-lot line, brownstones, townhomes, or condominiums. The density range is 9.0 to 15.9 dwelling units per gross acre (du/ac) and the projected average density is 10.0 du/ac.



Medium Density Residential Example

3.6.3 High Density Residential (HD)

The HD land use category anticipates a variety of attached and multi-family housing types. The HD sites are strategically located in the Town Center and near the Village Center to promote alternative transportation through the proximity to jobs, goods, services and transportation hubs. The HD sites will provide both rental and for-sale housing opportunities such as but not limited to apartments, brownstones, townhomes or condominiums. HDR sites may be identified to provide affordable housing units in conformance with the Affordable Housing Ordinance Title 22.35. The density range is 16.0 to 30.0 dwelling units per gross acre (du/ac) and the projected average density is 25 du/ac.



High Density Residential Example

3.6.4 Affordable Housing

Affordable Housing obligations are a component of new development projects, as outlined in Title 22 of the Code, Chapter 22.35. The ordinance outlines a variety of options with which to satisfy the obligation. The JTSP will meet its affordable housing obligation by paying the Affordability Fee on all newly constructed market rate units at the time building permits are paid. The County establishes the fee and adjusts it annually.

The ordinance requires at least 50% of the funds collected from large development projects (750 dwelling units or larger) is to be used by the housing agency to construct the affordable units within the development. The ordinance describes the characteristics of the land to be considered as appropriate for the construction for affordable housing. These characteristics include a minimum size of 4 acres, minimum density of 20 units per acre, be free of environmental constraints and be within ¼ mile of at least 3 existing or planned amenities, such as schools, parks, transit, grocery store or public library. The 7 HD sites in the Plan Area all meet the criteria to serve as sites to accommodate affordable housing.

3.7 COMMERCIAL AND OFFICE USES

3.7.1 General Commercial (GC)

The GC land use category is designated for larger, visible sites within the Town Center and along Jackson Highway. The three GC commercial sites are targeted to serve the immediate region and the Jackson Township community, including shopping centers, larger format retailers and a range of freestanding uses such as banks, restaurants, entertainment, offices and public uses. The target floor area ratio (f.a.r.) is 0.25.



Example of General Commercial Uses

3.7.2 Community Commercial (CC)

The Community Commercial (CC) site serves as the Village Center for the Plan Area and neighboring communities. The 17 acre site is strategically located on Excelsior Road so that it serves as a close destination for the North and West neighborhoods, as well as for the Independence at Mather community to the north. The CC zone provides the opportunity for both community and local oriented uses, including retail and services such as a grocery store, restaurants, professional and personal services. The target f.a.r. is 0.35.



Example of Community Commercial Use



Example of Mixed Use in the Town Center

3.7.3 Mixed Use (MU)

The two Mixed Use (MU) sites form the geographic and cultural hub of the Town Center, serving as a gateway to the community. Anticipated uses include retail commercial, services, civic and quasi-public uses in a compact, urban style setting. The northern MU site permits integrated residential uses, in both vertical (different uses stacked above one another) and horizontal (different uses on a single parcel) mixed use opportunities. The southern MU site has the constraint of overhead powerline easements which prohibits residential uses. However, this MU site is envisioned to provide an urban style plaza in the center, which enriches its function as a centerpiece of the Town Center. The target floor area ratio (f.a.r.) for the non-residential uses is 0.50.

3.7.4 Office (O)

The three office sites are located on Jackson Highway within the Town Center. Uses anticipated within this zone generally include professional offices, research/development campuses, medical offices and clinics; hospitals, law firms; accountant offices; insurance, real estate, and financial; governmental offices; social services; and non-profit organizations. Retail commercial activities that complement or are accessory to the primary uses of the zone are also appropriate. The target f.a.r. is 0.50.



Example of Office Use

3.8 PARKS, OPEN SPACE, PUBLIC AND AGRICULTURE

3.8.1 Parks

Parks provide locations in the Plan Area for recreation and community gathering. Two community parks and six neighborhood parks are distributed throughout the Plan Area. This category is intended to provide locations for parks and other related compatible public services/uses. The proposed parks meet the parkland requirements of the Cordova Recreation and Park District. Both active and passive recreational activities are permitted.



Example of Park Playground

3.8.2 Open Space

This category is to provide for open space uses, including greenbelts. The larger greenbelts are multi use corridors, combining drainage, detention basins, water quality basins, local and regional trails and nodes. The greenbelts form the overall pedestrian and bikeway trail network and provide passive recreation opportunities. Greenbelts may also provide space for compatible recreation amenities such as benches and gathering areas for the adjacent community.



Example of Greenbelt Trail

3.8.3 Wetland Preserve (WP)

The 260 acre wetland preserve abuts the east and north boundaries of the Plan Area. The function of the WP is to preserve and protect existing natural resources, while also providing visual open space for the Plan Area. Uses within and access into the WP areas are restricted pursuant to the SSHCP and/or the United States Army Corps of Engineers (USACE).

3.8.4 Public/ Quasi –Public (P/QP)

This category is to provide for the establishment of public and quasi-public uses, such as fire and police facilities, utilities, local government offices/facilities, public schools, community centers, places of worship and other similar uses. The intent of this zone is to identify appropriate locations for these uses without impacting, disrupting, or otherwise removing other lands for residential or other uses. The land use plan identifies one (1) site for a joint high school/middle school, three (3) sites for public elementary schools and one (1) site for a potential water supply tank. P/QP uses are permitted uses in most zones, allowing public agencies the flexibility of siting, as determined at the time services are needed.



3.8.5 Agriculture

The Agriculture category is applied to approximately 75 acres located in the southeast quadrant of the Plan Area, comprised of 6 large agricultural-residential properties. The Development Standards describe the allowed uses and Section 9.2.4 describes the subsequent entitlement process for the properties within the AG zone.

CHAPTER 4: CIRCULATION & MOBILITY

4.1 OVERVIEW

This chapter provides a discussion of the existing and proposed circulation system for the Plan Area. The circulation system includes a hierarchy of roadways and non-motorized transportation options. The mobility plan includes bicycles, pedestrians and transit. Emphasis is placed on ensuring connectivity between uses and on creating a safe and efficient circulation system that allows for multiple transportation options. The circulation system is designed to link with the existing local and regional transportation systems.

The land uses are sited to provide close proximity between housing, open space, recreation, schools, entertainment, shopping, and services. These community elements are incorporated as part of an extensive interconnected mobility system of multi-use trails, paths, shaded sidewalks and transit facilities. These elements will result in a pedestrian and bicycle friendly environment that will promote non-vehicular use as a primary choice becoming a way of life for residents.

4.2 TRANSPORTATION AND CIRCULATION GOALS AND POLICIES

The land use design, roadway system, and mobility network were influenced by the numerous General Plan goals and policies related to smart growth principles. The following are goals and policies directly related to circulation aspects:

Goal 4.1: Create and maintain a balanced and connected multi-modal transportation system that provides choices for the efficient and safe movement of people, good and services.

> ***Policy 4.1.1:*** *Implement the roadway system as shown in Exhibit 4.1 and the street sections, Exhibit 4.2.*
>
> ***Policy 4.1.2:*** *Implement the mobility system as shown in Exhibit 4.5, which illustrates the non-vehicular system of multi-use trails, on-street bike lanes and transit facilities.*

Goal 4.2: Coordinate with transit service providers to identify improvements and facilities for local and regional routes.

> ***Policy 4.2.1:*** *Transit facilities shall be provided in locations determined by and in coordination with the transit provider and may include a transit center/stop, shelters, signage and other amenities as appropriate to the location.*

Goal 4.3: Establish a transportation management plan to guide transportation alternatives in the Plan Area and provide for the creation, funding and administration of a transportation management association (TMA) or join an existing TMA.

> ***Policy 4.3.1:*** *The TMA or transportation coordinator will prepare and distribute materials to residents, employers and public services related to transportation options available in the Plan Area, such as bus routes, timetable, carpools, "bike-to-school pools", etc.*
>
> ***Policy 4.3.2:*** *The TMA or transportation coordinator will provide information about telecommuting and may offer training and support to businesses that elect to implement telecommuting programs.*

***Policy 4.3.3**: The TMA will coordinate with the school district to make information available to residents regarding safe routes to school for elementary school children.*

***Policy 4.3.4**: The TMA will coordinate with the County Parks Department to explore the provision of a bicycle repair station in close proximity to the regional bike trail.*

Goal 4.4: Provide facilities and incentives which encourage public transit use, vehicle sharing and carpooling.

***Policy 4.4.1**: Fund a transit program to provide each Plan Area household with access to transit facilities, consistent with General Plan Policy LU-120.*

***Policy 4.4.2:** Locate at least one joint use park and ride lot, operated as a non-State-owned facility on a parcel occupied by retail, office or a related use in close proximity to Jackson Road and the transit center.*

***Policy 4.4.3**: The TMA will explore establishment of a vehicle sharing program.*

Goal 4.5: Provide a complete trail and pathway system which provides off-street connectivity within the Plan Area for both cyclists and pedestrians, designed to minimize barriers and reduce potential travel disruptions.

***Policy 4.5.1**: Construct the local and regional Class I trails and Class II bike lanes as shown on the Mobility Plan, Exhibit 4.3, in complete segments as adjacent development and roadway construction progresses. Avoid dead-end or isolated trail segments by providing interim segments if necessary.*

Goal 4.6: Provide a safe, pedestrian friendly system to promote walking as a mode of transportation.

***Policy 4.6.1**: Design and construct a network of sidewalks and paths throughout the Plan Area. All street sections shall accommodate pedestrians with either attached or landscape-separated sidewalks.*

***Policy 4.6.2**: Install pedestrian safety and visibility features such as bulbouts, raised crosswalks, high visibility striping and pedestrian refuge islands in medians where space allows.*

4.3 ROADWAY SYSTEM

Primary vehicle access to and from the Plan Area will be from a network of primary streets, including the existing roads which border the Plan Area; Jackson Road, Excelsior Road and Kiefer Boulevard. Planned roadways internal to the Plan Area consist of Grenville Drive (formerly Treeview Lane), which has both four lane and two lane segments, and the remainder of new roads are two lane streets on a grid pattern.

Exhibit 4.1 depicts the locations of roadway types within the Plan Area. Jackson Road consists of five lanes, Kiefer Boulevard is four lanes and the primary segment of Excelsior Road is three lanes. Additional lane and frontage improvements will be completed by others for Jackson and Excelsior Roads due to their location on Plan Area boundaries. The north and south segments of Grenville Drive are four lanes and the interior segment is two lanes with a center median. The segment of Excelsior Road beyond the intersection with Douglas Road is two lanes. The remainder of the internal collector and local residential streets consist of two lanes. Roadways in the Town Center feature diagonal and parallel parking, wide sidewalks

and slower traffic speeds, which enhance the bicycle and pedestrian travel in the Town Center.

4.3.1. Typical Cross-Sections

Thirteen different street cross-sections are proposed within the Plan Area to accommodate a wide range of roadways ranging from a five-lane thoroughfare to residential collector streets. Street sections A through M are labeled alphabetically and are shown in Exhibit 4.2. These cross-sections are referenced for specific roadways on Exhibit 4.1. Table 4-1 compares each cross-section type including the number of lanes, ROW, presence of medians, bicycle lanes and pedestrian facilities. The locations of these street sections will be identified at the tentative tract map level for individual projects. The following describes some of the key attributes of the roadway cross-sections:

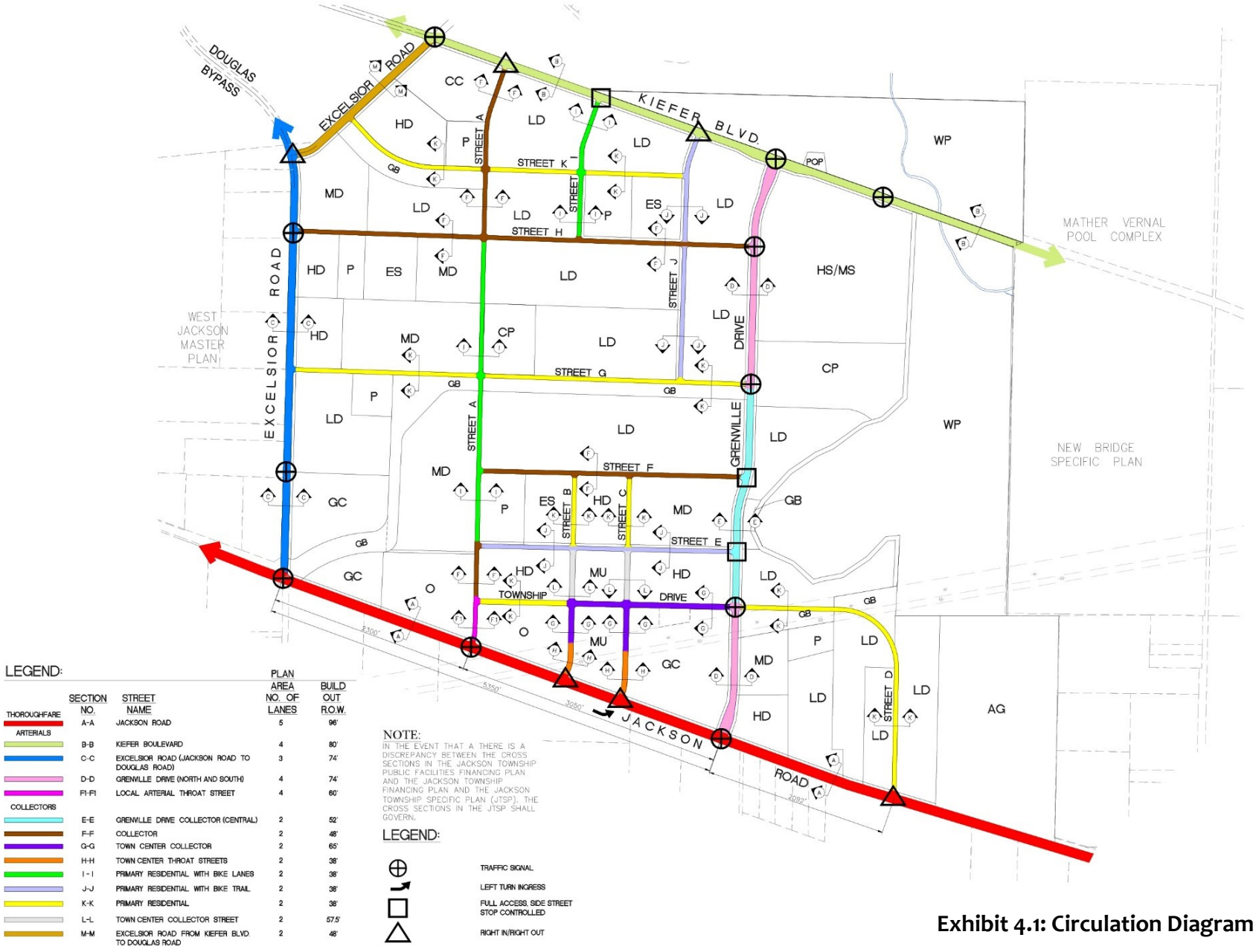
- Lane widths – On thoroughfare and arterial streets (Sections A through D), the lane closest to the landscaped median is 12-feet, while the other lanes are 11-feet. These widths, which are consistent with County design standards, reduce operations and maintenance costs, and decrease pedestrian crossing distances at signalized intersections. Two-lane collector in the Town Center (G) and the 2 lane segment of Grenville Road (E) have 12 foot lanes. The lane widths on all other two-lane collector streets are 11 feet.
- Medians – A 12-foot landscaped median is provided in sections A through E. The landscaped median provides aesthetic landscaping opportunities, safety benefits, and left-turn ingress at select locations.
- Complete Streets – Roadways within the Plan Area are designed to serve multiple modes of transportation. This includes sidewalks or Class I trails on all streets and Class II bicycle lanes on all four-lane and six-lane roads and the majority of the collector streets (Sections A, B, D, E, and J) as shown on the Mobility Plan Exhibit 4.3

4.3.2 Intersections

Intersections within the Plan Area may be controlled by traffic signals, roundabouts or stop signs, depending on the roadway type, location and traffic volumes. Major streets are designed to provide adequate spacing between signalized intersections. This includes planned intersections along Jackson Road, Kiefer Boulevard and Excelsior Road, which comply with the spacing requirements for these major roadways. The Plan Area roads and intersections comply with the level of service per General Plan Policy CI-9: *"Plan and design the roadway system in a manner that meets Level of Service (LOS) D on rural roadways and LOS E on urban roadways, unless it is infeasible to implement project alternatives or mitigation measure that would achieve LOS D on rural roadways or LOS E on urban roadways."*

4.3.2.1 Roundabouts

Roundabouts may be considered at intersections of two-lane streets where traffic conditions create favorable conditions for their implementation, in consultation with County Department of Transportation (DOT). Roundabouts provide safer and more efficient operations than traffic signals or stop signs at the intersection of two-lane roadways. By yielding at the entry rather than stopping, vehicle delay is typically reduced, which corresponds to a decrease in fuel consumption, air pollution and greenhouse gases.



LEGEND:

THOROUGHFARE	SECTION NO.	STREET NAME	PLAN AREA NO. OF LANES	BUILD OUT R.O.W.
ARTERIALS	A-A	JACKSON ROAD	5	96'
	B-B	KIEFER BOULEVARD	4	80'
	C-C	EXCELSIOR ROAD (JACKSON ROAD TO DOUGLAS ROAD)	3	74'
	D-D	GRENVILLE DRIVE (NORTH AND SOUTH)	4	74'
	F1-F1	LOCAL ARTERIAL THROAT STREET	4	60'
COLLECTORS	E-E	GRENVILLE DRIVE COLLECTOR (CENTRAL)	2	52'
	F-F	COLLECTOR	2	48'
	G-G	TOWN CENTER COLLECTOR	2	65'
	H-H	TOWN CENTER THROAT STREETS	2	38'
	I-I	PRIMARY RESIDENTIAL WITH BIKE LANES	2	38'
	J-J	PRIMARY RESIDENTIAL WITH BIKE TRAIL	2	38'
	K-K	PRIMARY RESIDENTIAL	2	38'
	L-L	TOWN CENTER COLLECTOR STREET	2	57.5'
	M-M	EXCELSIOR ROAD FROM KIEFER BLVD. TO DOUGLAS ROAD	2	48'

NOTE:
IN THE EVENT THAT A THERE IS A DISCREPANCY BETWEEN THE CROSS SECTIONS IN THE JACKSON TOWNSHIP PUBLIC FACILITIES FINANCING PLAN AND THE JACKSON TOWNSHIP FINANCING PLAN AND THE JACKSON TOWNSHIP SPECIFIC PLAN (JTSP), THE CROSS SECTIONS IN THE JTSP SHALL GOVERN.

LEGEND:

- TRAFFIC SIGNAL
- LEFT TURN INGRESS
- FULL ACCESS, SIDE STREET STOP CONTROLLED
- RIGHT IN/RIGHT OUT

Exhibit 4.1: Circulation Diagram

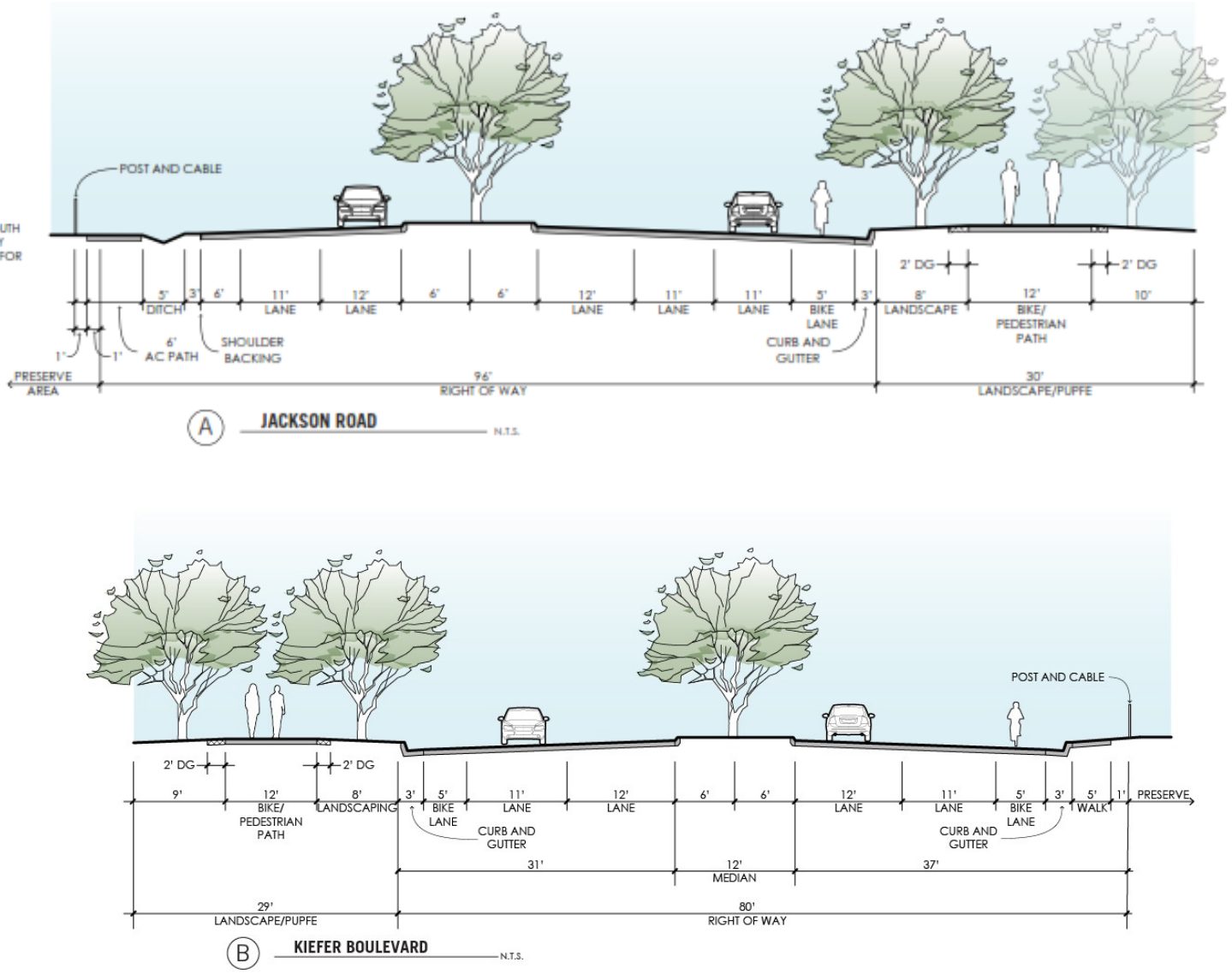
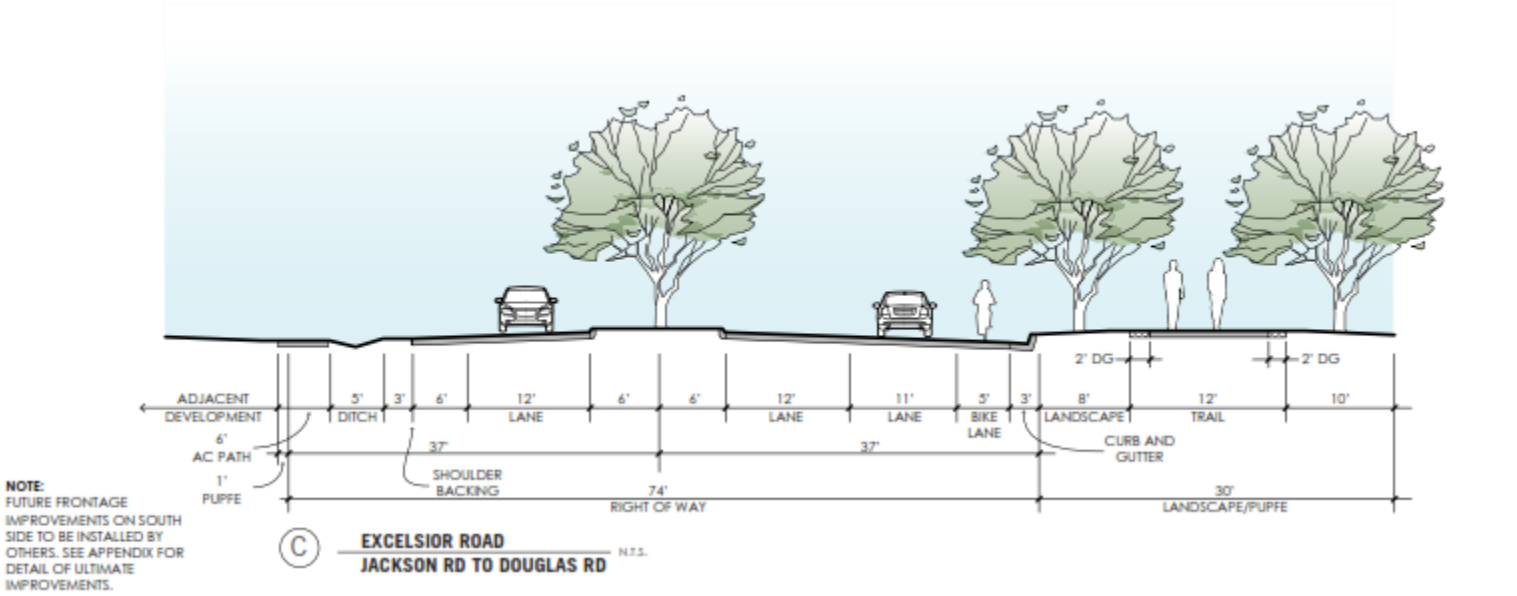


Exhibit 4.2: Street Sections A and B



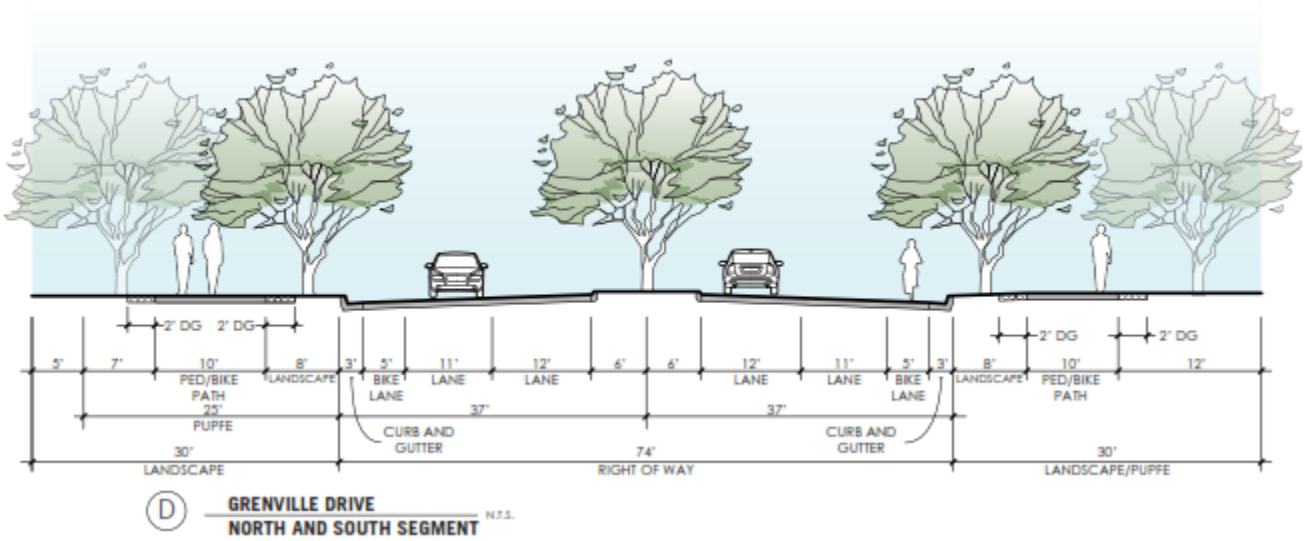
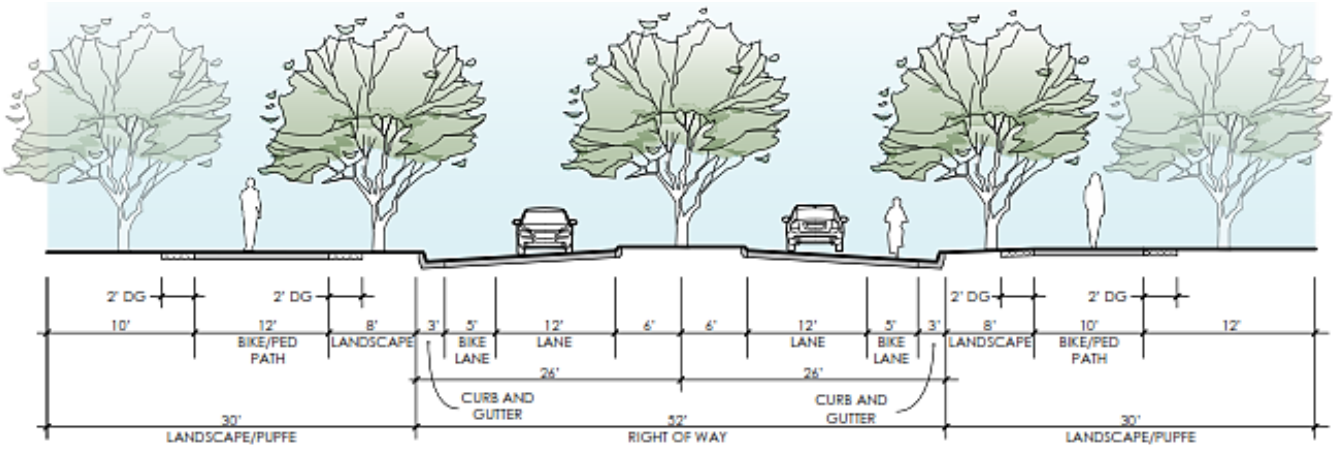
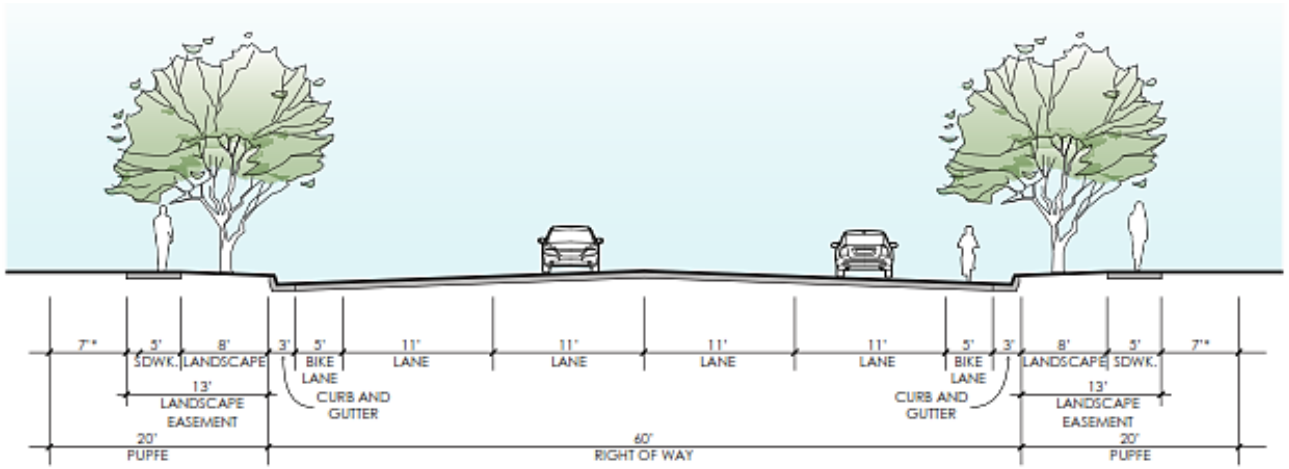


Exhibit 4.2: Street Sections C and D



E **GRENVILLE DRIVE**
CENTRAL SEGMENT N.T.S.

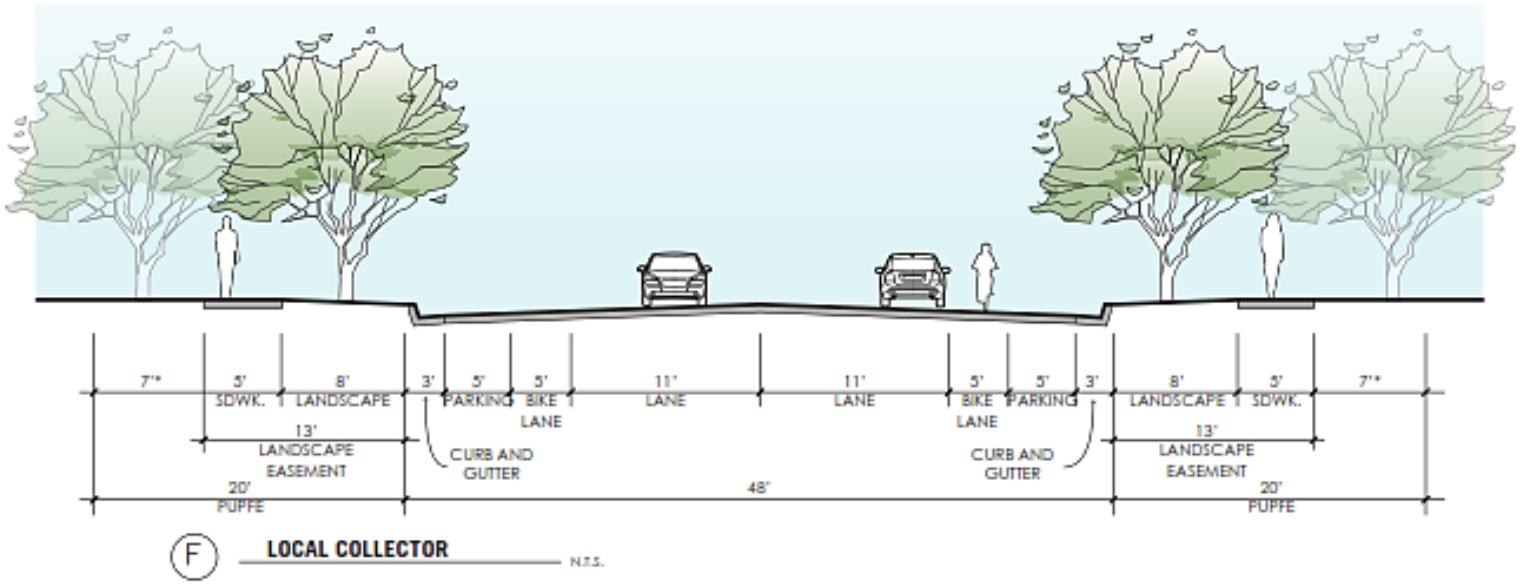
NOTE:
NO FRONT ON LOTS, DRIVEWAYS, OR PARKING ARE ALLOWED ALONG THIS SECTION.



F1 **60' LOCAL ARTERIAL**
THROAT STREET N.T.S.

NOTE:
* 7' PUPFE BEHIND SIDEWALK MAY BE MODIFIED SUBJECT TO FINAL UTILITIES

Exhibit 4.2: Street Sections E and F1



F **LOCAL COLLECTOR** N.T.S.

NOTE:
WHEN CONDITIONS WARRANT AND WITH DOT APPROVAL, STRIPING MAYBE REVISED TO DELETE PARKING AND ADD A 2-WAY CENTER TURN LANE. SEE APPENDIX 'K' FOR ALTERNATIVE SECTION.

* 7' PUPFE BEHIND SIDEWALK MAY BE MODIFIED SUBJECT TO FINAL UTILITIES

Exhibit 4.2: Street Section F

Exhibit 4.2: Street Section G and Plan View

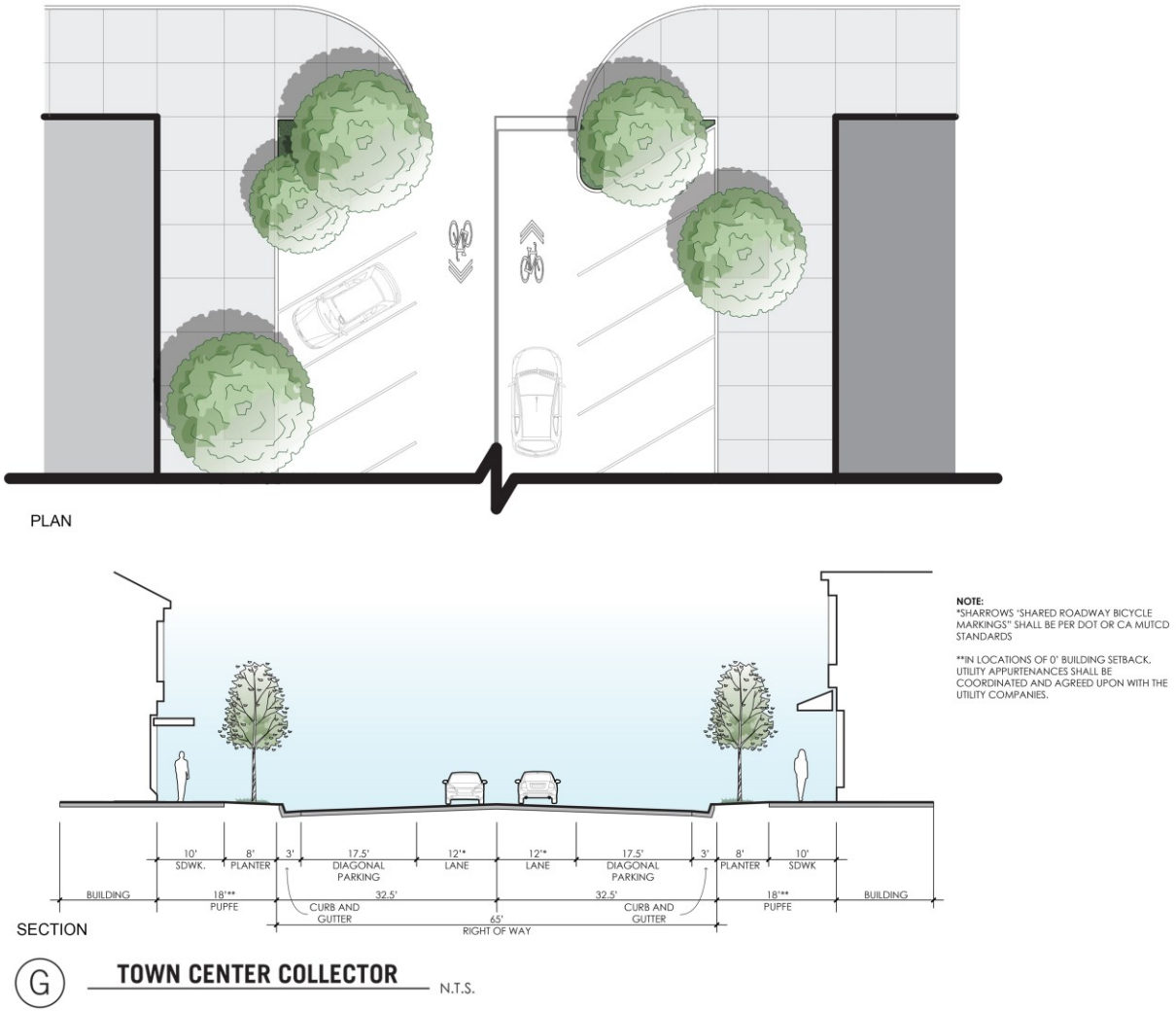
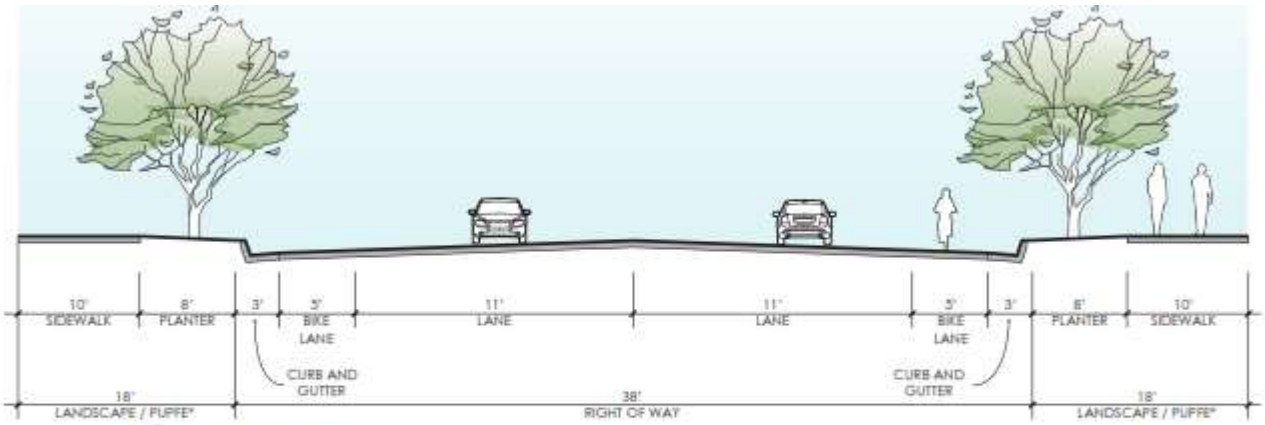
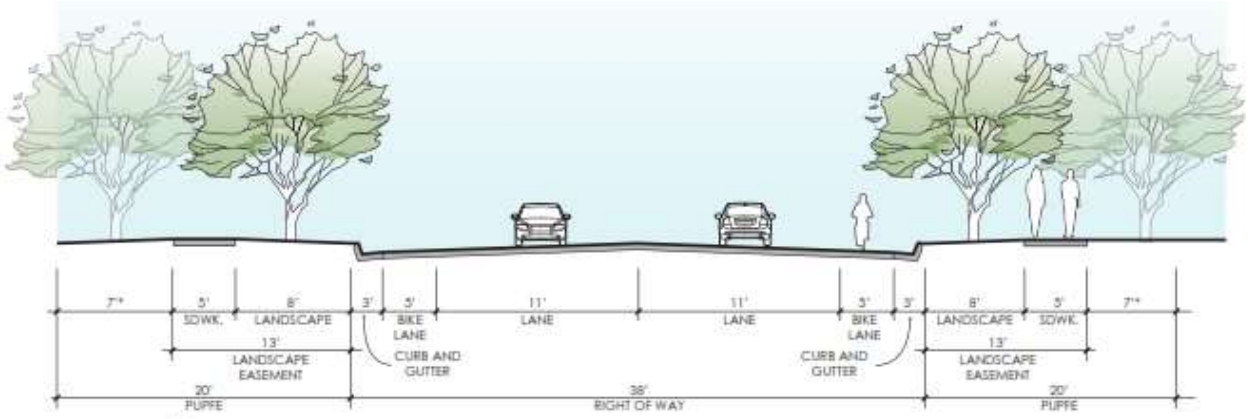


Exhibit 4.2: Street Section G and Plan View



(H) **COLLECTOR THROAT STREET** N.T.S.

NOTE:
*IN LOCATIONS OF 0' BUILDING SETBACK, UTILITY APPURTENANCES SHALL BE COORDINATED AND AGREED UPON WITH THE UTILITY COMPANIES.

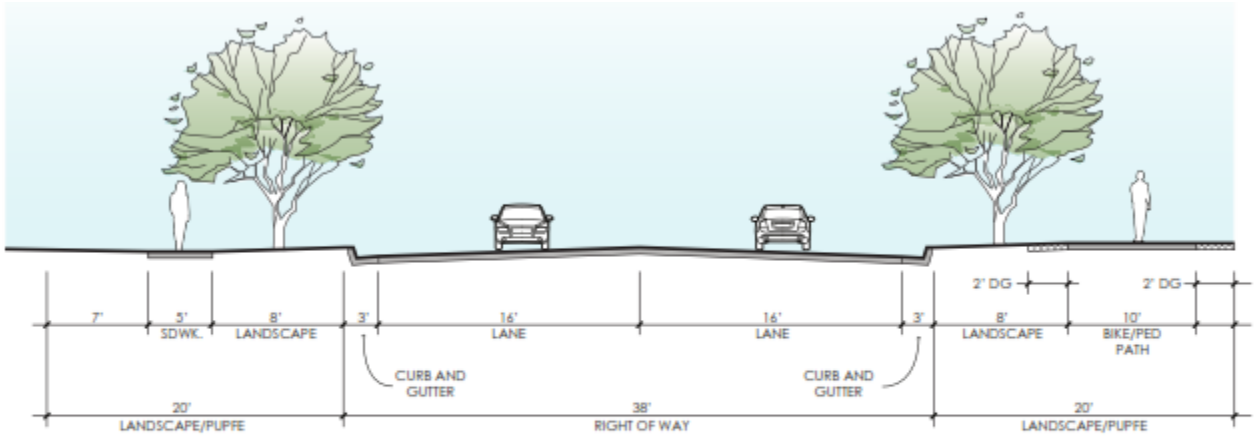


(I) **PRIMARY RESIDENTIAL WITH BIKE LANES** N.T.S.

NOTE:
NO FRONT ON LOTS, DRIVEWAYS, OR PARKING ARE ALLOWED ALONG THIS SECTION.

* 7' PUPFE BEHIND SIDEWALK MAY BE MODIFIED SUBJECT TO FINAL UTILITIES

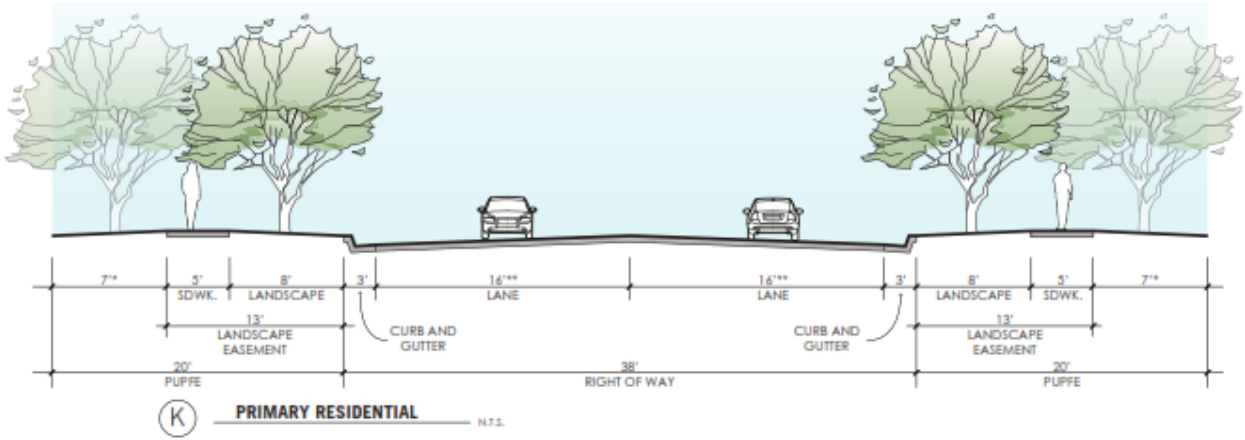
Exhibit 4.2: Street Section H and I



(J) **RESIDENTIAL WITH BIKE TRAIL** N.T.S.

NOTE:
*IN LOCATIONS OF 0' BUILDING SETBACK, UTILITY APPURTENANCES SHALL BE COORDINATED AND AGREED UPON WITH THE UTILITY COMPANIES.

*7' PUPFE BEHIND SIDEWALK MAY BE MODIFIED SUBJECT TO FINAL UTILITIES



(K) **PRIMARY RESIDENTIAL** N.T.S.

NOTE:
* 7' PUPFE BEHIND SIDEWALK MAY BE MODIFIED SUBJECT TO FINAL UTILITIES

**SECTION "K" WITHIN THE TOWNCENTER SHALL INCLUDE SHARROWS CONSISTENT WITH SECTION "G".

Exhibit 4.2: Street Sections J and K

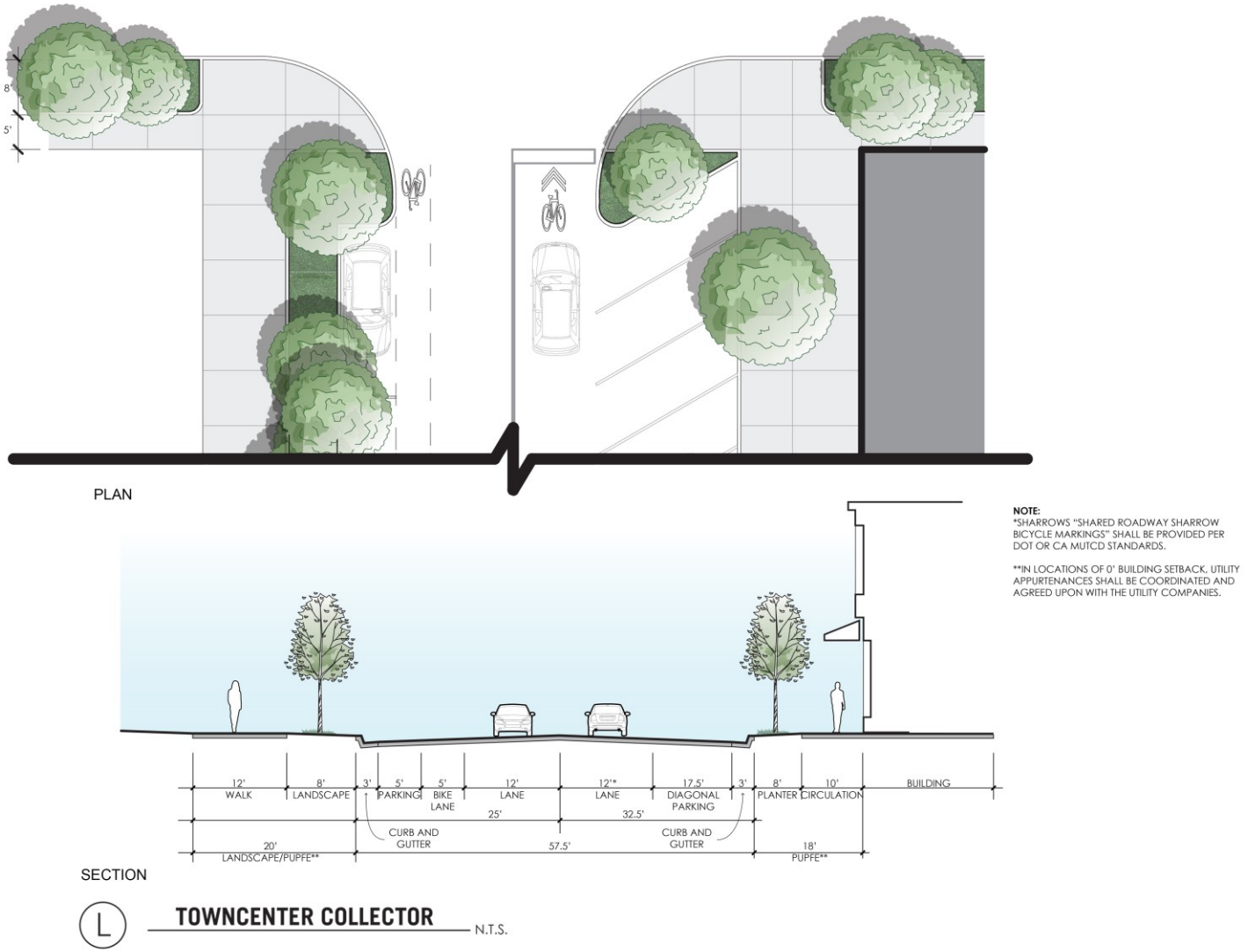
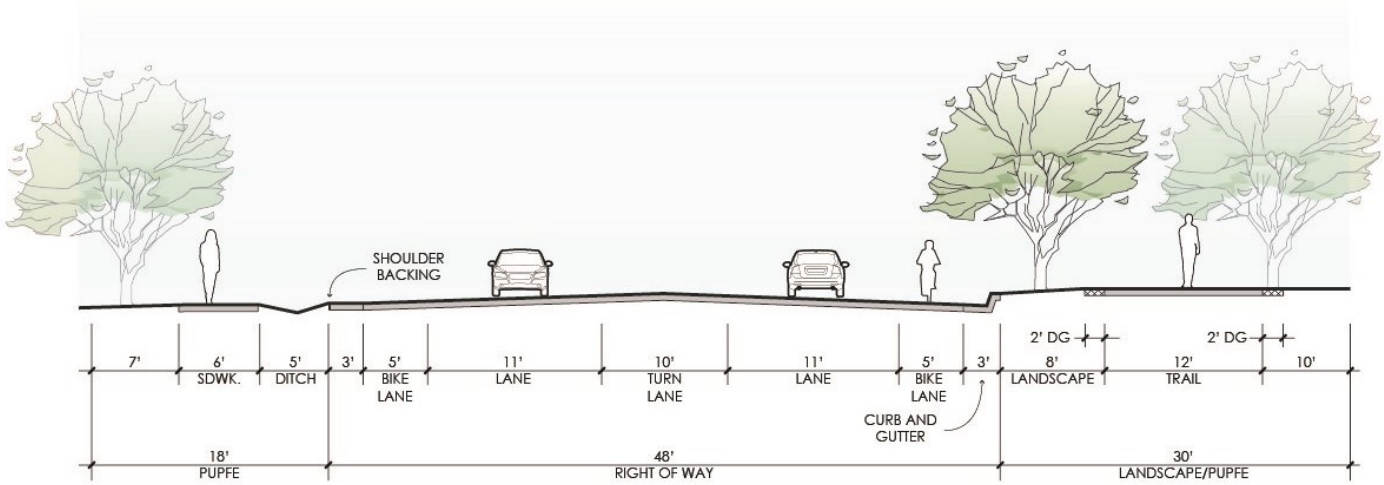


Exhibit 4.2: Street Section L and Plan View



NOTE:
FUTURE FRONTAGE IMPROVEMENTS ON WEST SIDE TO BE INSTALLED BY OTHERS. SEE APPENDIX FOR DETAIL OF ULTIMATE IMPROVEMENTS.

(M) **EXCELSIOR RD**
KIEFER BLVD TO DOUGLAS RD N.T.S.

Exhibit 4.2: Street Section M

Table 4-1: Plan Area Roadway Cross-Sections

ROADWAY TYPE	PLAN AREA # OF LANES	BUILD OUT R.O.W	CENTER MEDIAN	CENTER TURN LANE	CLASS I BIKE TRAIL	CLASS II BIKE LANE	ON-STREET PARKING	PATH/ SIDEWALK
THOROUGHFARE								
Section (A-A) Jackson Road	5[1]	96'	12'		✓	✓	N/A	6'/12'
ARTERIALS								
Section (B-B) Kiefer Boulevard	4	80'	12'		✓	✓	N/A	12'/ 5'
Section (C-C) Excelsior Road –Jackson to Douglas Road	3[1]	74'	12'		✓	✓	N/A	6'/12'
Section (D-D) Grenville Drive	4	74'	12'		✓	✓	N/A	10'
Section (F1-F1) Arterial Throat Street	4	60'	N/A			✓	N/A	5'
COLLECTORS								
Section (E-E) Grenville Drive	2	52'	12'		✓	✓	N/A	12'/10'
Section (F-F) Collector	2	48'	N/A			✓	Parallel	5'
Section (G-G) Town Center Collector	2	65'	N/A				Diagonal	10'
Section (H-H) Town Center Throat Streets	2	38'	N/A			✓	N/A	10'
Section (I-I) Primary Residential with Bike Lanes	2	38'	N/A			✓	N/A	5'
Section (J-J)Primary Residential with Bike Trail	2	38'	N/A		✓ 1 side		Parallel	5'/10'
Section (K-K) Primary Residential with Parking	2	38'	N/A				Parallel	5'
Section (L-L) Town Center Collector Street	2	57.5'	N/A			✓ 1 side	Diagonal +Parallel	12'/10'
Section (M-M) Excelsior Road-Kiefer Boulevard to Douglas Road	2[1]	48'	N/A	✓		✓	N/A	5'

FOOTNOTES: 1. Sections A-A, C-C and M-M occur on Plan Area boundaries. The cross sections shown and number of lanes demonstrate the Plan Area obligation. Future frontage improvements for Sections A-A, C-C and M-M will be completed by others. See Appendix at the end of this document for cross sections showing ultimate improvements for these sections.

4.4 MOBILITY SYSTEM

The Mobility Plan, Exhibit 4.3, displays the mobility network, which consists of a transit loop within the Plan Area and designated corridors for bicycles and pedestrians. This system compliments the street network where vehicles, bicycles and pedestrians mix. This multimodal network is an important component for connectivity and promoting non-vehicular travel within and outside of the Plan Area. The mobility network is designed to allow intuitive and efficient movement throughout the Plan Area and includes sidewalks, off street Class I bike trails, on-street Class II lanes, Class III routes and a transit center/stop. Neighborhood electric vehicles (NEVs) are permitted to use the general purpose lanes on two-lane streets with posted speed limits of 35 miles per hour (mph) or less.

4.4.1 Bikeway System

The bikeway system is illustrated in Exhibit 4.3, Mobility Plan. The bikeway system includes Class I trails, Class II lanes and Class III routes. The JTSP promotes frequent connections between the Class I system and adjacent uses. Where a street is adjacent to open space, a park or a walkway, the Class I bike path (separated from the street) may replace the standard sidewalk. Where a cul-de-sac or loop street, multi-family or non-residential project is adjacent to the Class I path, a paved connection will be provided. The Class I system within a greenbelt may meander to minimize environmental impacts and create visual interest. Barriers (e.g., bollards, rail fence, post and cable, posts, etc.) will be provided along bike paths within greenbelt areas. Class II bike lanes are designated on-street bike routes, five feet wide, delineated with signage and striping. Class III routes are not identified on the Mobility Plan but shall be determined in conjunction with the individual tentative maps.

4.4.1.1 Class I Facilities

Numerous Class I trails are provided throughout the Plan Area. Regional Class I trails are 12' in width and local Class I trails are 10' in width. The Class I trails are predominantly located within the greenbelts traversing the Plan Area and along Jackson Road. Excelsior Road, south side of Kiefer Boulevard and Grenville Drive. The signature trails that are designed to provide significant connectivity are located within three primary greenbelts, which are identified as the North, Central and East Greenbelts. A detailed description of these mobility features is provided in Section 6.2.4.2, titled Multi-functional Greenbelts and are shown on Exhibit 6.1 in the Public Services Chapter. These Class I trails are located within the greenbelts and have minimal street crossings, elevating the safety and ease of use. These trails are envisioned to provide convenient opportunities for pedestrians and cyclists to use alternative modes to reach frequent destinations within the Plan Area, such as to schools, parks, shopping and transit. The Regional Trail within the Central Greenbelt is anticipated to connect with the planned West Jackson Master Plan Area to the west and the NewBridge Specific Plan Area to the east. In addition, the paths provide emergency and maintenance vehicle access to open space areas.



Example of Class I Regional Trail



Exhibit 4.3: Mobility Master Plan

4.4.1.2 Class II Bicycle Lanes



Class II bicycle lanes are provided on expected bicycle commute corridors on the primary periphery roadways of Jackson Road, Excelsior Road and Kiefer Boulevard, which border the Plan Area. Internal to the Plan Area, several collector streets have Class II bicycle lanes to provide ample routes for users to reach destinations, such as shopping, schools and parks. The Class II lanes also provide users with opportunities to use the on-street lane to reach the Class I off-street trails.

4.4.1.3 Class III Bicycles Routes



Class III (shared use of general purpose lane) facilities may also be provided on local streets. Class III routes will be designated with pavement markings as shown in the photo. Class III routes are not identified on the Mobility Plan but shall be determined in conjunction with the individual tentative maps.

4.4.2 Pedestrian System

A primary objective of the JTSP is the provision of a pedestrian-friendly, walkable community. The JTSP is designed with a basic grid roadway network intended to provide superior access for all modes and balance vehicle traffic across multiple streets. Pedestrians also have full access to Class I bikeways described in Section 4.4.1. Specific pedestrian treatments shall be determined in conjunction with the subsequent tentative maps.

4.5 TRANSIT SYSTEM



Raised Crosswalk example

Transit service for the Plan Area will likely be operated by Sacramento Regional Transit (RT). No transit service was provided to the Plan Area or vicinity prior to the Specific Plan. The General Plan Circulation Map and the RT Transit Master Plan identify Jackson Road as a Bus Rapid Transit (BRT)/Hi-Bus route.

Coordination and consultation with RT and County Department of Transportation (DOT) staff occurred during the Specific Plan process to identify potential routes and transit facilities to serve the Plan Area, in conjunction with the other Master Plan projects in the Jackson Corridor. The Mobility Master Plan, Exhibit 4.3, identifies a potential RT transit route through the Plan Area and a Transit Center/stop in the Town Center. The proposed transit route will provide bus stops within one quarter mile of approximately 90% of residents. The Transit Center, as shown on Exhibit 4.3, is located just north of Jackson Road within the southern MU site. This location is surrounded by commercial, office, mixed use and high density residential zoning, enhancing its potential for strong ridership. The funding sources for transit will be funded by the Project through fees and assessments, as discussed in Section 9.2.3.

CHAPTER FIVE: PUBLIC UTILITIES

5.1 OVERVIEW

This chapter provides an overview of the public utilities required to serve the Plan Area. The intent of this chapter is to describe the timely implementation of public utilities to maintain the specified levels of service for the Plan Area. This chapter describes the backbone infrastructure for water, wastewater, drainage and dry utilities necessary to serve the Plan Area. As the Plan Area develops, the utility systems are subject to refinements and modifications. The goals and policies for each public utility are provided in the corresponding subsection. The providers of the public utilities are shown in Table 5.1.

Table 5.1: Utility Providers

Utility	Provider/ Authority
Water	Sacramento County Water Agency (SCWA)
Wastewater	Sacramento Area Sewer District (SASD)
Drainage/ Flood Control	Sacramento County Department of Water Resources (DWR)
Electric Service	Sacramento Municipal Utility District (SMUD)
Natural Gas	Pacific Gas & Electric (PG & E)
Communications	AT&T/Comcast
Cable/Broadband	Comcast

5.2 WATER SUPPLY AND DISTRIBUTION

Water Supply Goals and Policies

Goal 5.1: Coordinate with the Sacramento County Water Agency and other appropriate water purveyors to ensure the adequate provision of water supply to the Plan Area.

> ***Policy 5.1.1:*** *Sufficient water resources shall be identified and the necessary transmission and storage facilities shall be constructed to provide potable water to meet the Plan Area needs.*

5.2.1. Existing Water Supply and Distribution

The Plan Area is within the Zone 40 North Service Area (NSA) of the Sacramento County Water Agency (SCWA). Existing water facilities in the vicinity of the Plan Area include the Vineyard Surface Water Treatment Plant (SWTP), the Excelsior Well Field, and the Anatolia Terminal Storage and Pumping Facilities (Anatolia Facilities). A transmission line connects these facilities, a portion of which exists within the Plan Area. These existing facilities are depicted in Exhibit 5.1, Existing Water Facilities.

5.2.2 Potable Water Supply and Distribution

SCWA prepared a Water Supply Master Plan (WSMP) Amendment for the Plan Area, dated February 2016. The WSMP Amendment addresses the sufficiency of water supply for the Plan Area and updated information contained within the Zone 40 WSMP, February 2005. The 2005 WSMP was developed for the entire Zone 40/NSA to outline a flexible program of water management alternatives that could be implemented as the availability and feasibility of water supply sources changed.

CHAPTER 5: PUBLIC UTILITIES

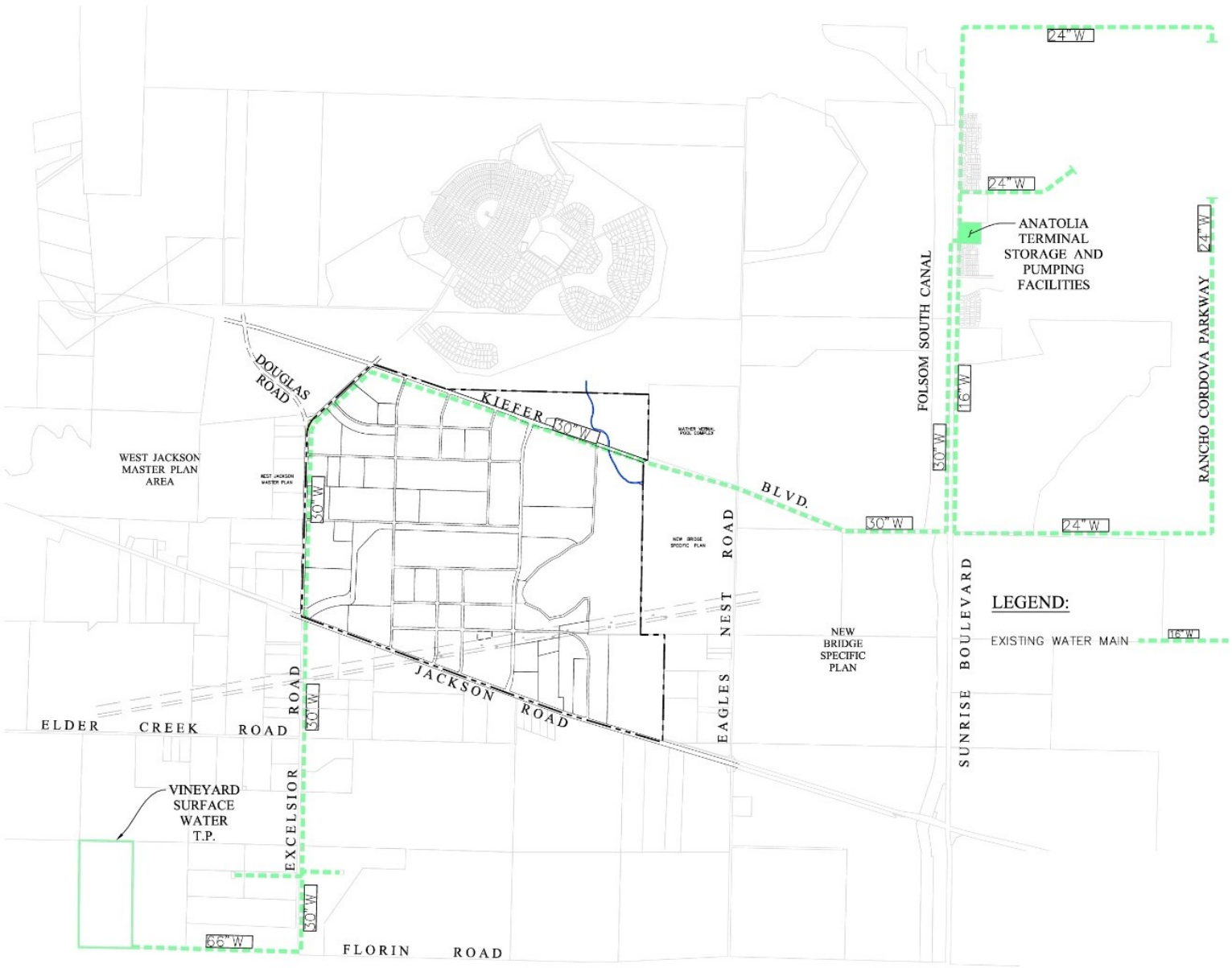


Exhibit 5.1: Existing Water Facilities

Significant changes such as water supply variations, General Plan Amendments, annexations, incorporation or new major programs are addressed through formal updates or amendments to the WSMP. The 2016 WSMP Amendment presents an evaluation of the water demands, water supplies, water system facilities and costs specifically for the Plan Area.

SCWA provides the primary water supply to the NSA from various sources, including the Vineyard SWTP, ground water wells, treatment facilities located in the Mather area and the Anatolia Facilities. SCWA also has an emergency water connection with Cal American (CAL AM) Water District. The Anatolia Facilities are the initial source of water supply for the Plan Area. Two transmission mains will be extended to the Plan Area from the Anatolia Facilities. One main will be extended along Jackson Road and a second main will be extended along Kiefer Blvd. These facilities are shown in Figure 5.2, Proposed Off-site Water System.

The Jackson Township Potable Water System Study, August 2017, was prepared by Stantec Consulting to provide detailed analysis of the water distribution system and to verify the base information in the WSMP Amendment prepared by SCWA. Various hydraulic models were prepared to calculate the maximum day (4.24 MGD), peak hour (8.48 MGD) and fire flow (4000 gpm for 4 hours) demands of the Plan Area. The average annual use is 2,374 acre feet. The modeling of the water demands of the Plan Area verify that the proposed facilities extending to the Plan Area from the Anatolia Facility have the necessary capacity to serve the Plan Area at buildout. The Potable Water System Study is provided in Appendix C.

A second series of modeling was done of the NSA WSMP backbone infrastructure, with all the future transmission mains and reservoirs identified to meet the water demands of the entire service area at buildout. Exhibit 5.3, NSA Buildout System, shows the additional facilities to be installed with the development of the NSA. The modeling confirmed that when all the infrastructure is in place, the Plan Area will maintain adequate flows comparable to the initial modeling with water supplied from the Anatolia Facility.

5.3 On-Site Potable Water Distribution System

A new municipal water distribution network will be constructed in the Plan Area, as shown on Exhibit 5.4, Proposed On-site Potable Water Distribution System. Peaking factors, fire flow requirements and a normal pressure range (typically 35 to 65 psi) were considered in planning and designing the distribution pipe network as required by the County's Standard Specifications. New 12 inch "backbone" water lines will form the basis of a grid extending through the Plan Area as the backbone roads are constructed. Within neighborhoods, local distribution lines will be a minimum of 8-inch diameter. Looping of water mains is required as needed to meet the minimum standards of the SCWA and Sacramento Metro Fire District.

Individual final map applications will include additional analysis of the water system to confirm that SCWA and Fire District minimum flows and pressures under peak demands are maintained. All subsequent development applications will be reviewed to ensure consistency with the WSMP Amendment in accordance with the County Standards, Fire Codes and State Laws and the water conservation provisions of the Plan Area.

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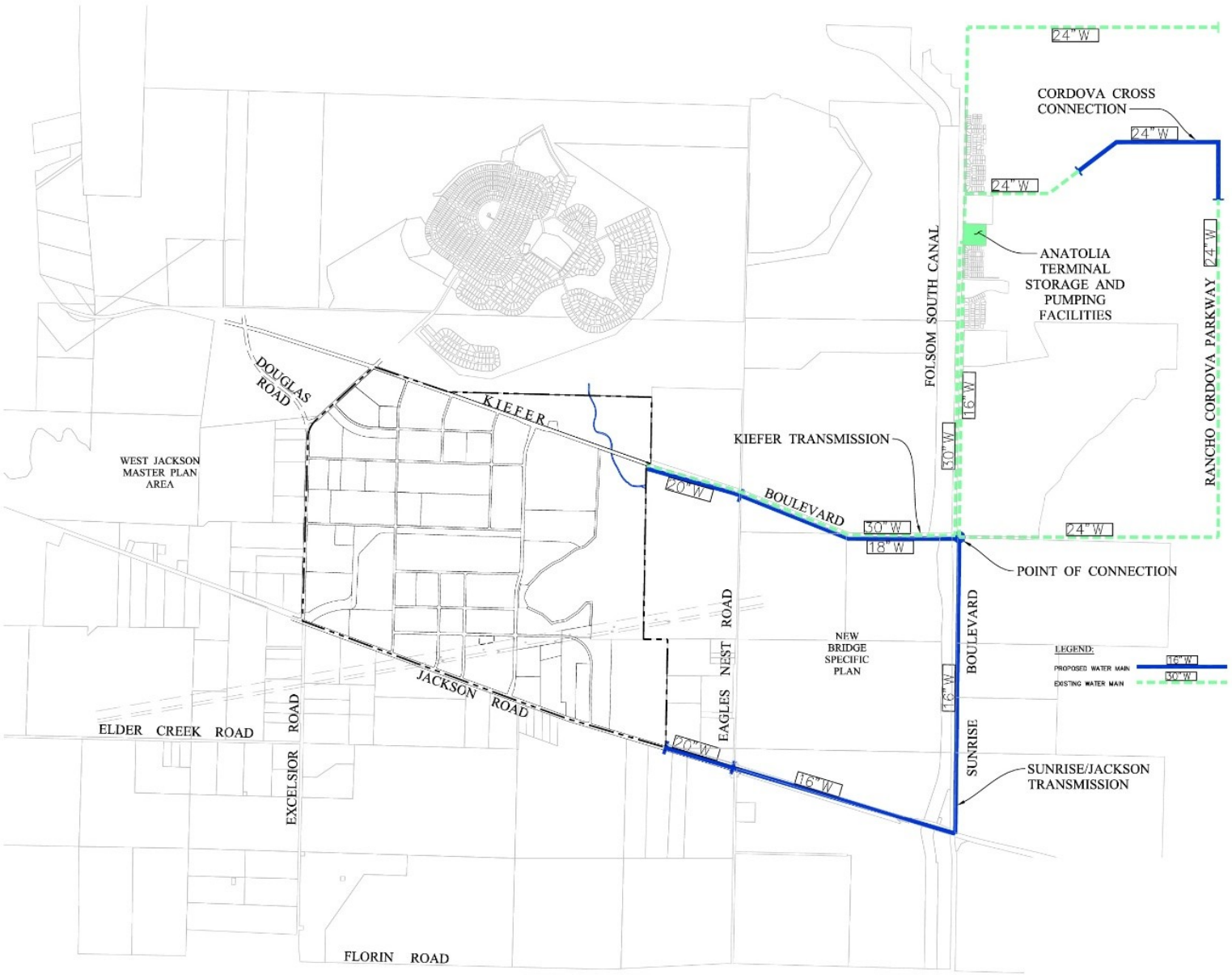

Exhibit 5.2: Proposed Off-site Water Supply

CHAPTER 5: PUBLIC UTILITIES

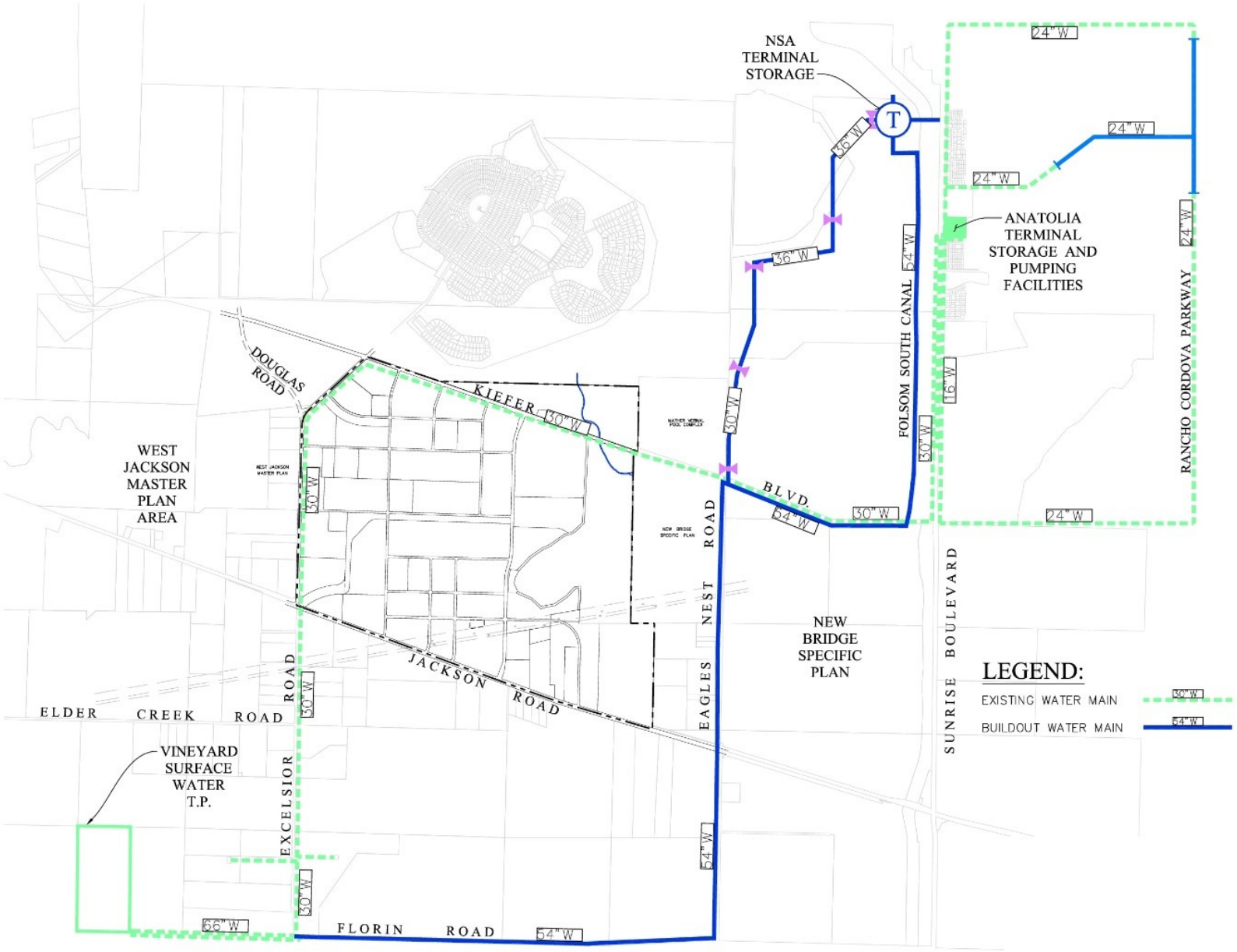

Exhibit 5.3: NSA Buildout Water System

CHAPTER 5: PUBLIC UTILITIES

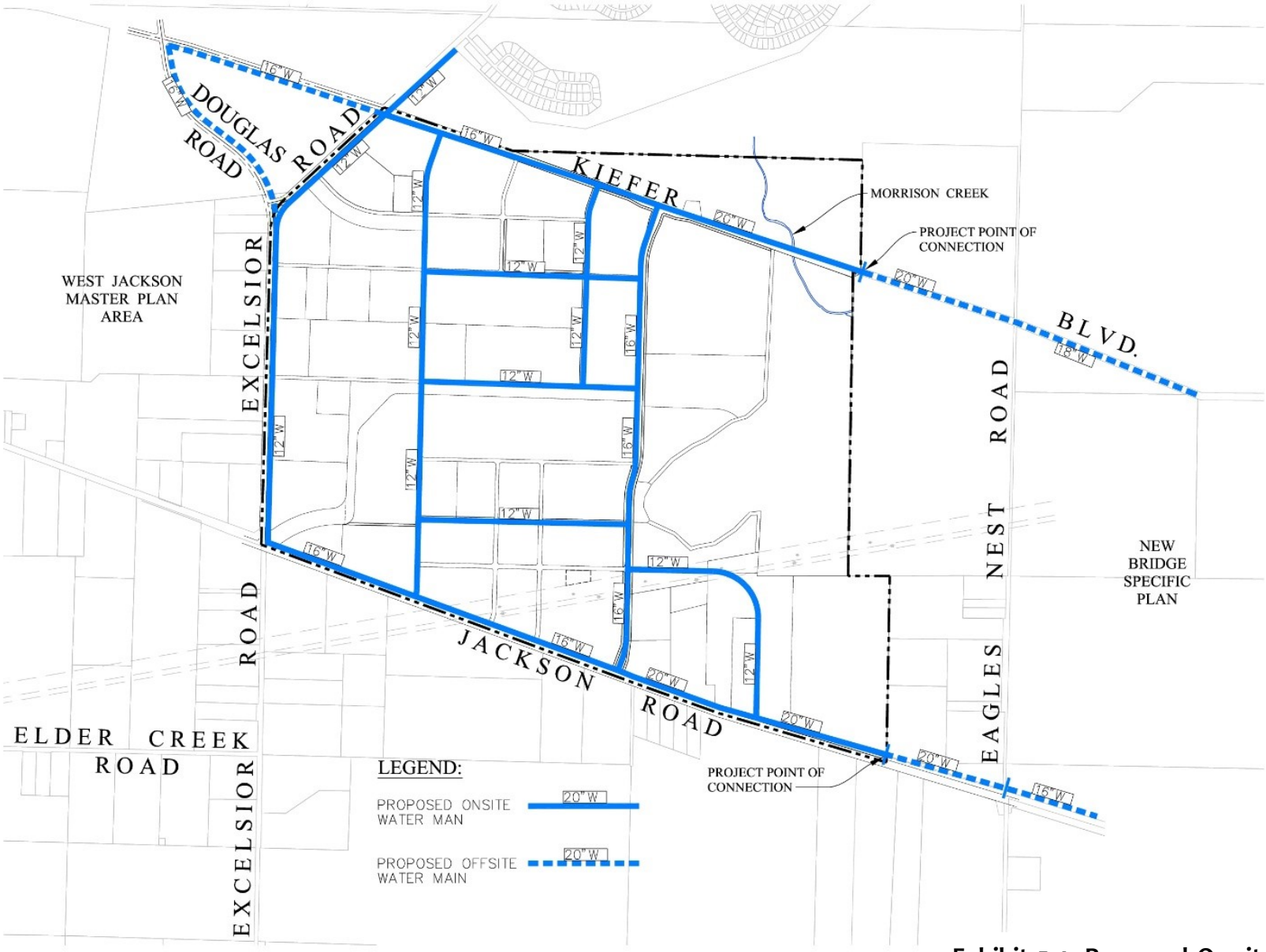

Exhibit 5.4: Proposed On-site Potable Water Distribution System

5.2.3 Water Supply Assessment

The California Water Code requires coordination between land use lead agencies and public water suppliers to ensure that prudent water supply planning has been conducted and that planned water supplies are available to meet both existing and planned future project demands. California Water Code Sections 10910-10915 require land use lead agencies to identify the public water system that may supply water for a proposed development project and to request from said public water system a water supply assessment (WSA) for the project. The WSA documents that the public water system has sufficient supplies to meet the water demands associated with the Plan Area, in addition to meeting the existing and planned future water demands projected through 2040. The Plan Area WSA is an appendix to the EIR.

5.3 WASTEWATER SYSTEM

Wastewater Goals and Policies

Goal 5.2: Design the wastewater system consistent with the Sacramento Area Sewer District's (SASD's) long-term infrastructure master plan as identified for the Plan Area.

> ***Policy 5.2.1****: Adequate wastewater infrastructure shall be installed to meet the needs of the Plan Area.*
>
> ***Policy 5.2.2:*** *The Plan Area shall be annexed into the SASD service area.*

5.3.1 Wastewater Overview

No wastewater collection or treatment facilities were existing in the general vicinity of the Plan Area prior to the Specific Plan. The designated sewer trunk interceptor to serve the Plan Area is the Bradshaw Interceptor, located at the intersection of Jackson Road and Bradshaw Road, approximately 2 miles to the west of the Plan Area. It is estimated that the Plan Area will generate an average daily wastewater flow of approximately 5.96 million gallons per day (MGD) at build out, as shown in Appendix D, Wastewater Master Plan.

5.3.2 Planned Off-Site Wastewater System

In order to serve the Plan Area, an offsite sewer trunkline must be extended from the Bradshaw Interceptor to the intersection of Jackson Road and Excelsior Road, in the southwest corner of the Plan Area. The wastewater trunkline is shown on Exhibit 5.5, Off-site Wastewater System.

5.3.3 Planned Onsite Wastewater Collection System

The proposed layout of the on-site wastewater collection system is shown in Exhibit 5.6, Proposed Wastewater System. A larger version of this exhibit is provided in Appendix D, Wastewater Master Plan.

The majority of the Plan Area will be served by an onsite gravity collection system, excepting a 237 acre potion at the northwest corner, which requires a sewer pump station. A force main will be extended from the pump station south along Excelsior Road for approximately 2,600 lineal feet to a discharge manhole in Excelsior Road, where it enters the gravity system and continues to the trunkline at the intersection of Jackson Road.

5.4 DRAINAGE AND FLOOD CONTROL

This section identifies the existing drainage conditions for the runoff from the Plan Area, provides runoff impacts from the proposed development, provides storm water quality treatment and provides for mitigation of the hydrologic impacts from within the Plan Area. Moreover, the proposed drainage infrastructure elements which occur within the greenbelts have been creatively planned to provide aesthetic benefits and

CHAPTER 5: PUBLIC UTILITIES

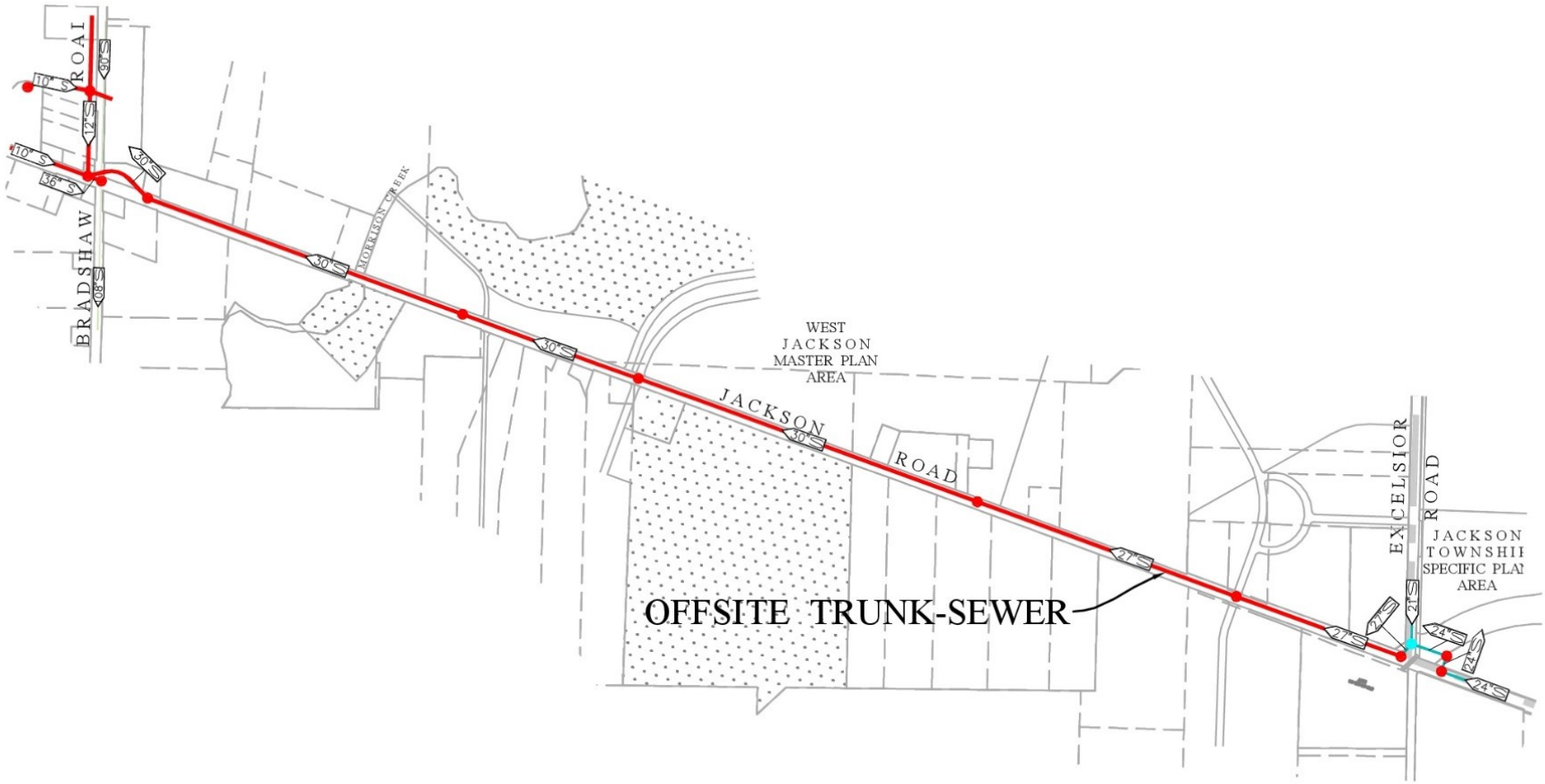

Exhibit 5.5: Off-Site Wastewater Trunkline

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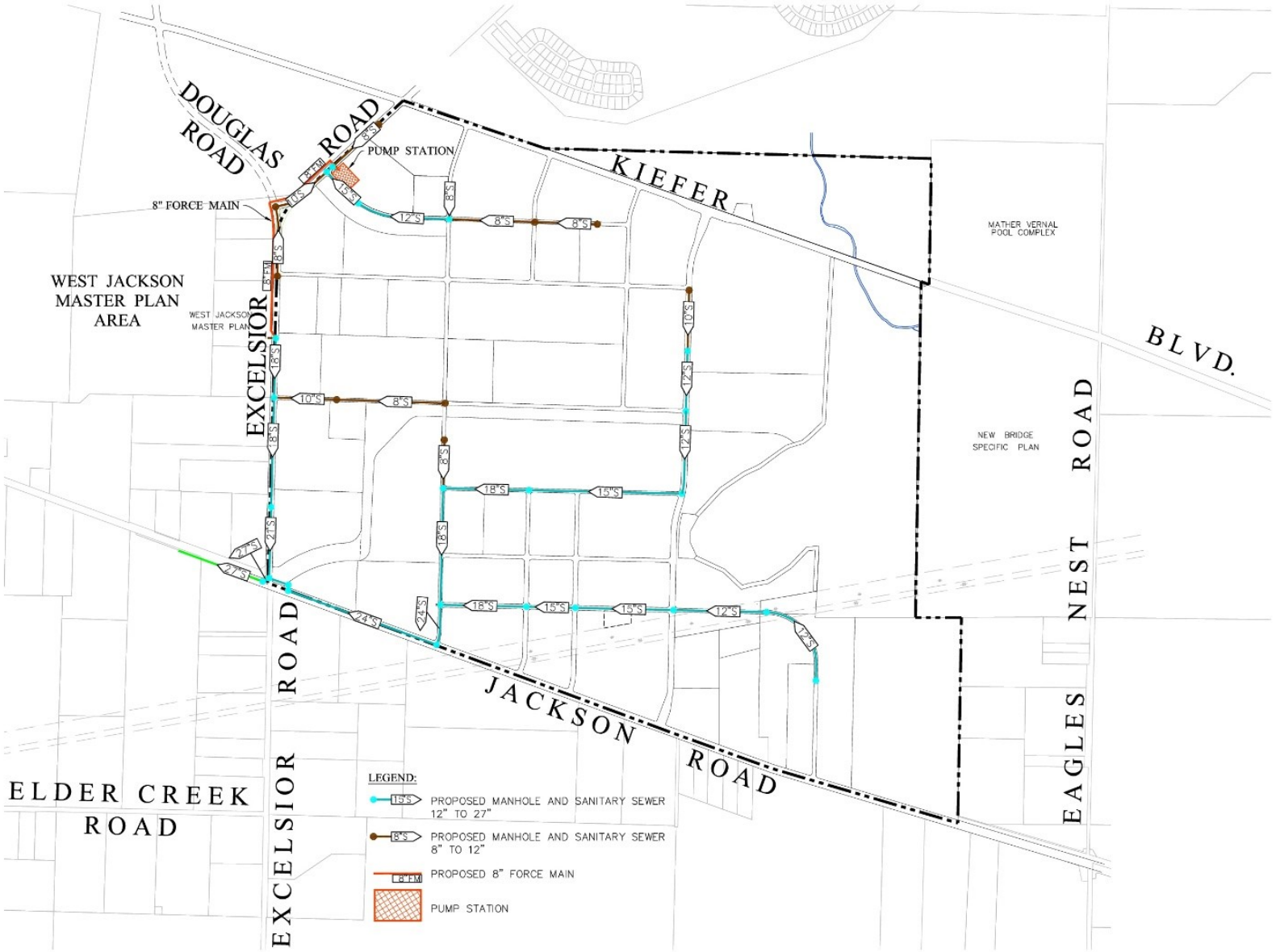

Exhibit 5.6: Proposed On-site Wastewater System

integrate elements of sustainability though the integration of open space, pedestrian and bikeway corridors as part of the multi-purpose drainage corridors, adding long term value to the community.

Drainage Goals and Policies

Goal 5.3: Design and implement the drainage system to provide adequate facilities that ensure safe stormwater conveyance, detention and water quality treatment which provide community benefit.

> ***Policy 5.3.1:*** *Construct the storm water conveyance system, detention/water quality basins as multi-purpose facilities to provide recreation opportunities in conjunction with drainage functions.*

Goal 5.4: Incorporate low impact design (LID) features as design elements for storm water improvements within the land plan.

> ***Policy 5.4.1:*** *Construct integrated LID facilities, where feasible, such as local surface infiltration, street tree plantings, reduction of directly connected impervious surfaces, vegetated buffers and swales and increased surface drainage flow paths.*

5.4.1 Drainage Shed Description

The Plan Area is tributary to two watersheds. The two drainage tributaries are the Elder Creek Watershed and the Morrison Creek Watershed, as shown in Exhibit 5.7, Plan Area Watersheds.

Morrison Creek enters and exits the north east corner of the Plan Area. The Morrison Creek watershed is located in the northwest quadrant of the Plan Area, however it does not flow directly into Morrison Creek. This watershed flows west to a low lying pond created from surface aggregate mining on properties to the west of Excelsior Road.

The majority of the Plan Area falls within the Elder Creek watershed, draining in a northeast to southwest direction. The primary discharge is through a double box culvert located at the intersection of Jackson Road and Excelsior Road.

5.4.2 Planned Drainage Improvements

The planned drainage system improvements includes the storm water pipe collection network and constructed drainageways, which provide flood control and water quality treatment. Exhibit 5.8, On-site Drainage Collection System, illustrates the preliminary drainage system to convey the storm water runoff generated within Plan Area.

5.4.2.1 Drainageways

Two constructed drainageways are provided within the greenbelts to convey the flows from the watersheds to the existing points of discharge. Generally, these drainageways are designed as wide, integrated drainage corridors, with meandering low flow swales to provide conveyance of small storm events, water quality and detention basins to provide treatment and peak flow attenuation. At-grade, flat benches are provided on both sides of the channelized drainageway, with a Class I trail along one side, which also provides access to the drainage facilities for maintenance. The drainage corridors were analyzed for the 10, 100 and 200-year level of protection in accordance with the County Department of Water Resources and the Regional Water Quality Control Board standards.

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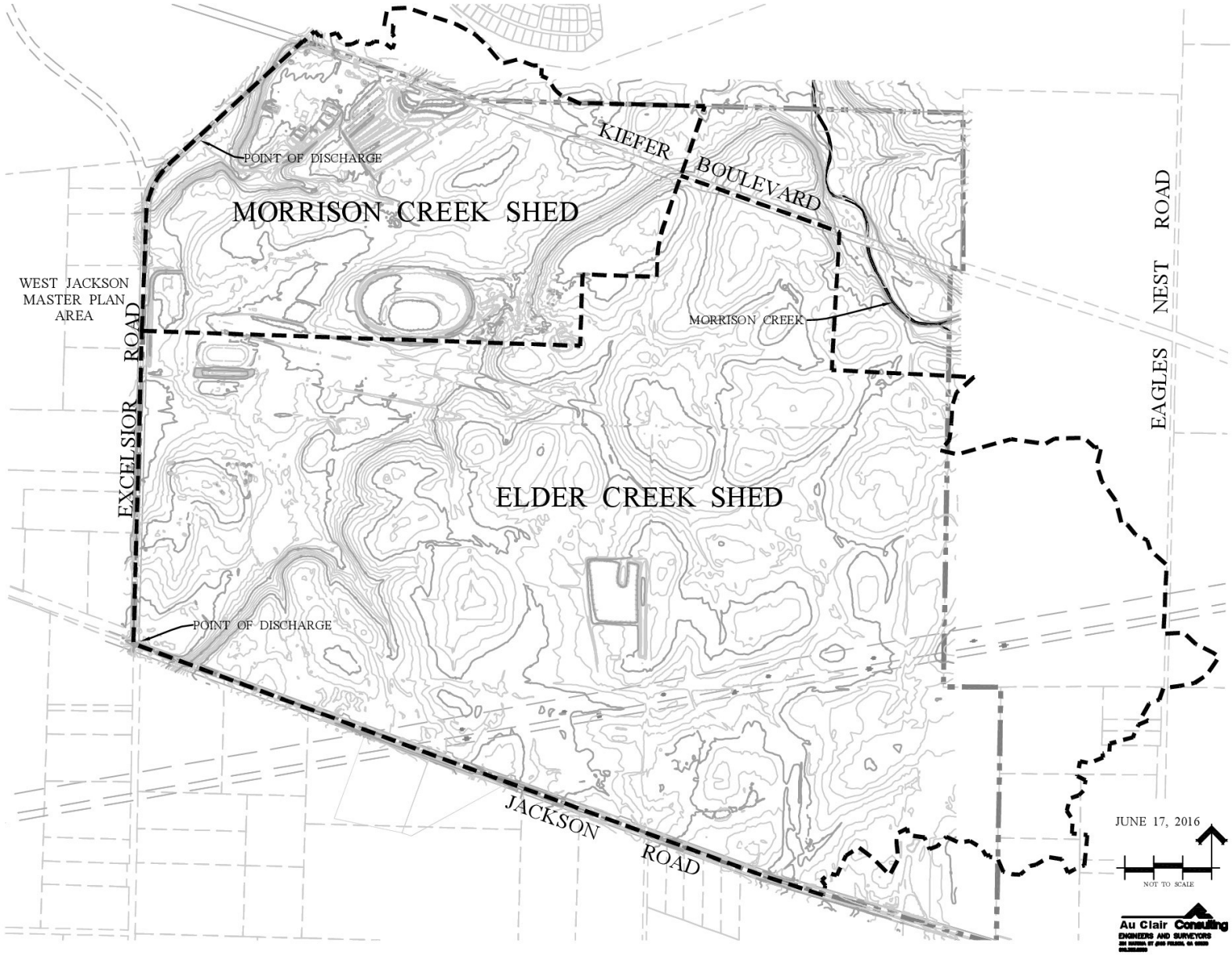

Exhibit 5.7: Plan Area Watersheds

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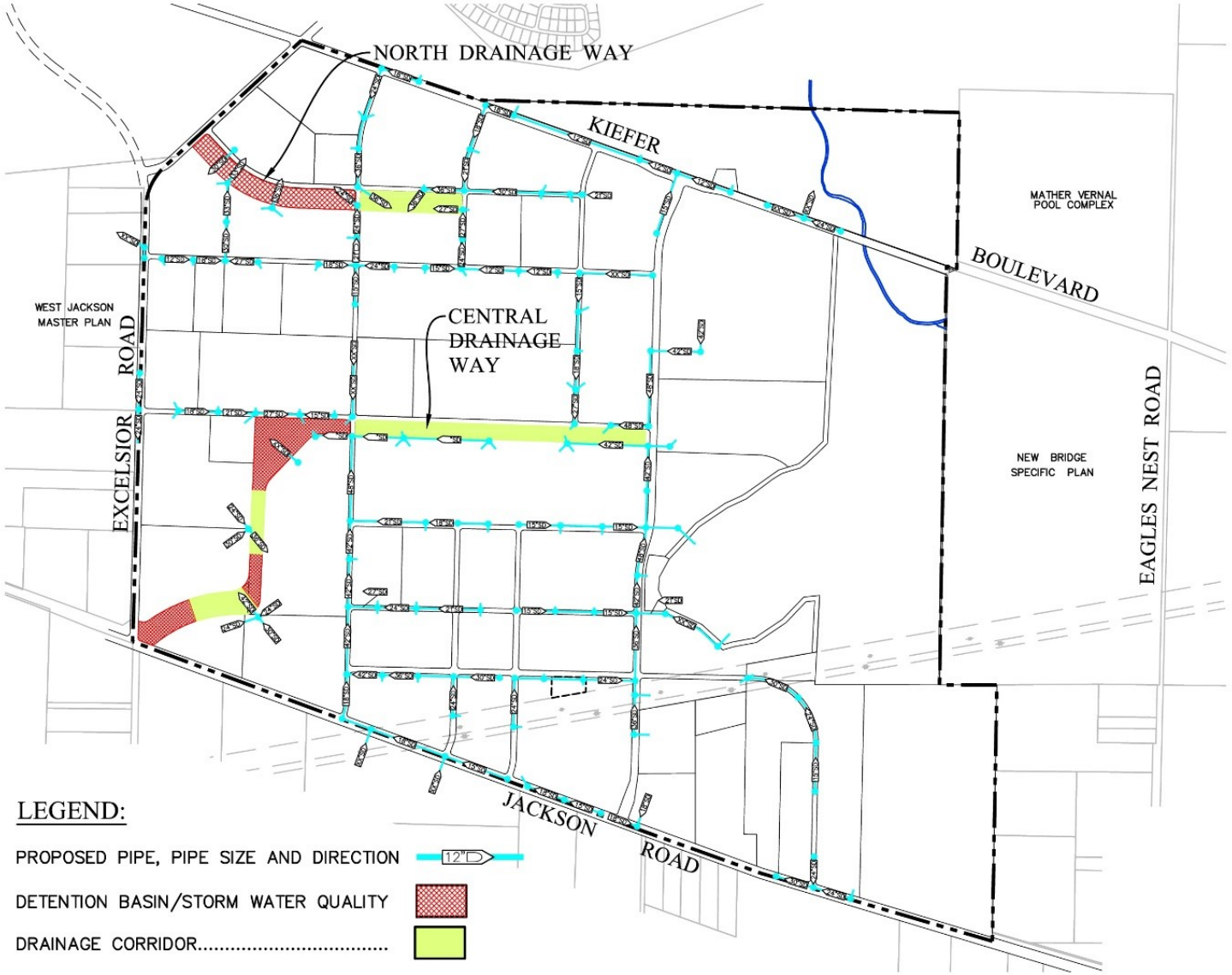

Exhibit 5.8: On-site Drainage Collection System

The North Drainage Way (Morrison Creek tributary) extends through the northwest quadrant of the Plan Area to the discharge point at Excelsior Road. A small tributary shed area north of Kiefer Boulevard will be piped to the North Drainage Way.

The Central Drainage Way (Elder Creek tributary) accepts the majority of drainage collection for the Plan Area, as shown on Exhibit 5.7. The flows enter the Plan Area from the east and the drainageway extends the length of the Plan Area, with the discharge point located at the intersection of Excelsior and Jackson Roads. The Central Drainage Way varies in width, getting progressively larger in size as it extends from east to west. An illustrative cross section of the North and Central Drainage Ways are shown in Exhibit 5.9.

5.4.2.2 Detention Basins

Detention basins are located within the North and Central drainageways, with one within the North Drainage and three in the Central Drainage. The Central Drainage basins may be constructed as part of the initial phase of development or may be sequenced, as needed, as development progresses. The Master Drainage Study, Appendix E, includes the analysis and calculations for the alternative development scenarios.

5.4.3 Storm Water Quality/ Treatment / Water Conservation

DWR requires new development to implement storm water quality treatment and mitigation measures. A variety of systems and facilities are integrated into the overall storm water management plan, which will provide storm water quality treatment. The drainage study includes a variety of treatment measures to be implemented within each development area. The onsite design of the local drainage facilities will include storm water quality features in the site design of each sub area. The detailed design for the majority of these facilities will be completed as a part of the tentative map process and included in the civil engineering improvement plans, since the facility design is dependent on the layout of each development area.

Detailed hydrologic/hydraulic models, as required by Sacramento County Department of Water Resources (DWR), were used to generate preliminary design flows and for the sizing of the onsite detention facilities. Refer to Appendix E, Master Drainage Study, for technical information on the modeling and sizing of the backbone drainage system.

5.4.3.1 Open Space Drainage Corridors

The primary drainage conveyance through the Plan Area watershed will be in naturalized drainage corridors, with many corridors having pedestrian and bikeway facilities adjacent to the drainageway. Exhibit 5.9, Illustrative Drainageway Corridors, provides a conceptual cross section of the drainageways. The hydraulic characteristics are a key design factor, providing forms and characteristics of natural stream geometry. Recreating these landforms with the drainageway geometry increases long-term stability and opportunity for successful establishment of riverine habitat. These drainageways will function to convey the normal, as well as the 100-year and 200 year storm events, in a stabilized corridor.

5.4.3.2 Low Impact Development (LID)

The DWR policies and adopted design standards incorporate the use of Low Impact Design (LID) measures at a local level and

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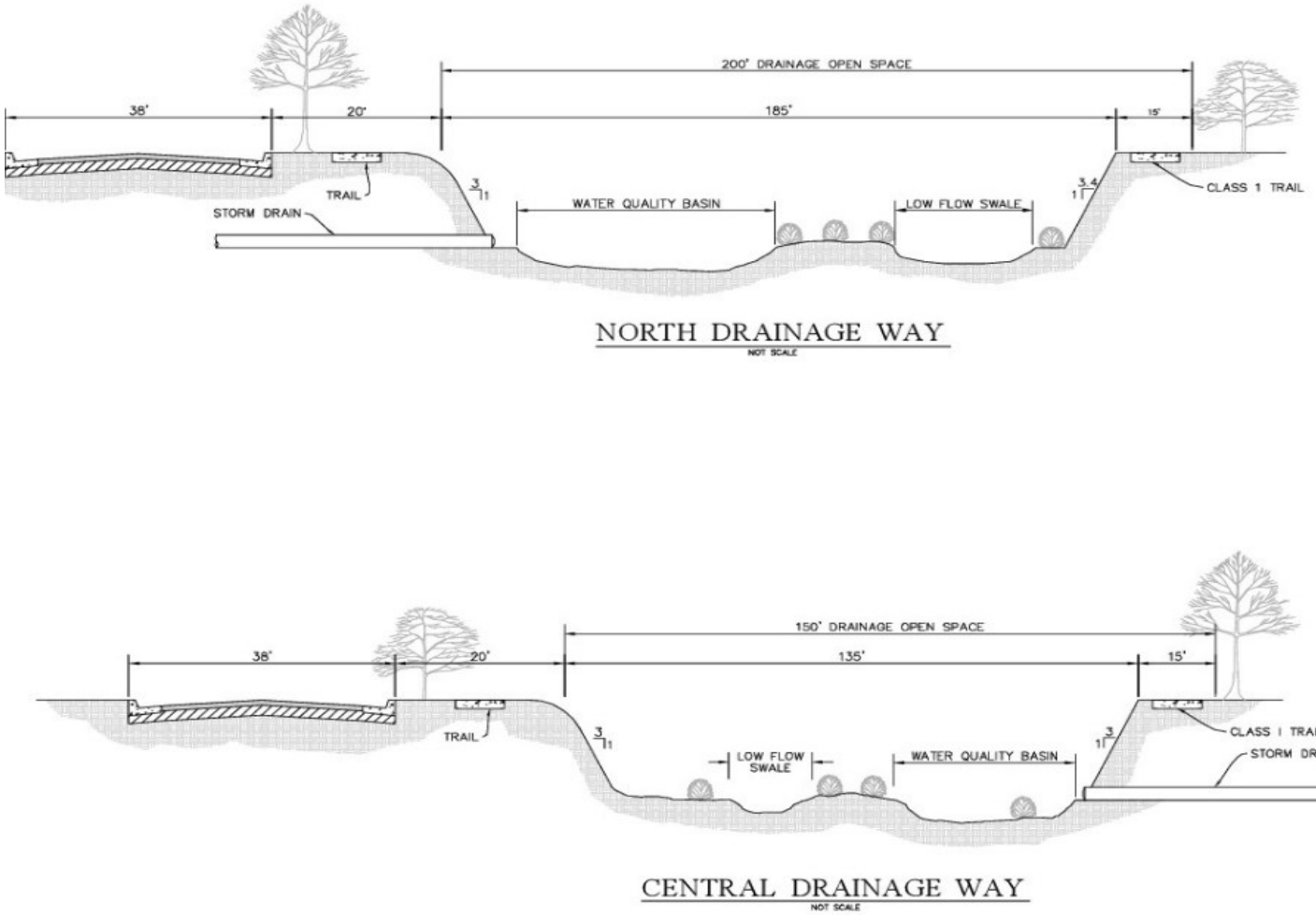

Exhibit 5.9: Illustrative Cross Sections of North and Central Drainage Ways

requires that new development provide onsite mitigation. The available LID techniques will be evaluated and implemented as part of the final onsite design process, based on hydrologic suitability and physical constraints (i.e. infiltration).

5.5 DRY UTILITIES

Dry utilities include electricity, natural gas and communication facilities.

Dry Utility Goals and Policies

Goal 5.5: Ensure that adequate dry utilities are in place to serve the Plan Area.

> ***Policy 5.5.1****: Project proponents shall coordinate with local service purveyors to ensure the provision of services in conjunction with project phasing.*

5.5.1 Existing Electrical Facilities

The Plan Area is within the service area of Sacramento Municipal Utility District (SMUD). A SMUD/ PG&E transmission corridor traverses the southern portion of the Plan Area and contains two SMUD transmission circuits (the Cordova - Hedge 230 kV & the Cordova - Pocket 230 kV lines) and two PG&E transmission circuits. Additionally, SMUD has 12 kV distribution facilities running along Jackson Highway and Excelsior Road which will likely be relocated, converted to underground and/or removed as the Plan Area develops.

5.5.2 Proposed Electrical Facilities

Peak electric demand at buildout is estimated at 44 megavolt amperes (MVA). Planned electric backbone facilities include a new substation at the northwest corner of the General Commercial site located at Jackson Road and Grenville Drive, just north of and adjacent to the SMUD/PG&E transmission corridor. Overhead 69 kV sub-transmission facilities will extend to and from the substation, in addition to running along Jackson Highway, Excelsior Road and Kiefer Boulevard. The new 69 kV facilities require a 20' non-exclusive easement, which can also include the joint trench facilities (underground electric, natural gas, telephone and cable television/broadband). Should the developer make the decision to underground the 69 kV, SMUD will request a total of 37.5' exclusive easement. Underground electric main line facilities will extend from the new substation to the individual parcels in conjunction with roadway improvements. The substation and 69 KV alignments are shown in Exhibit 5.10, Electric Facilities.

SMUD is planning to construct a bulk substation near the Plan Area, which will serve new growth in the vicinity, including the Plan Area.

5.5.3 Existing Natural Gas Facilities

The Plan Area is within the service area of Pacific Gas & Electric Company (PG&E) for natural gas. An existing 6" steel main line traverses the northern portion of the Plan Area within the Kiefer Boulevard right of way.

5.5.4 Proposed Gas Facilities

PG&E will supply natural gas service upon request and in accordance with the tariffs on file with the California Public Utilities Commission (CPUC). Service will be extended from the existing gas main to individual parcels in conjunction with roadway improvements. Joint trenches will be placed in franchise or in public utility easements (PUE's) parallel and

adjacent to the road rights of way. PUEs along both sides of public roadways will typically be a minimum of 12.5' wide for the local streets and 18' wide for the larger collectors, arterials and thoroughfare roads. In some cases, the PUE's may be narrower with provision for transformer cubicles where needed to serve power in the local development area. These modified setbacks will be coordinated with the utility companies.

5.5.5 Existing Telephone /Communications Facilities

Both AT&T and Comcast serve the Plan Area. Together these two providers will offer dial tone, video and internet within the Plan Area. AT&T has fiber optic and copper overhead facilities on Jackson Highway and copper facilities on Excelsior Road (joint poles with SMUD). Comcast's closest existing facilities are at Sunrise Boulevard and Jackson Highway, to the east of the Plan Area.

5.7.2 Proposed Facilities

Underground phone and cable/broadband facilities will be extended to individual parcels in conjunction with roadway improvements. Joint trenches will be placed in franchise or in PUE's parallel and adjacent to the road rights of way. PUE's along both sides of public roadways will typically be a minimum of 12.5' wide for the local streets and 18' wide for the larger collectors, arterials and thoroughfare roads. AT&T can serve the Plan Area from existing facilities. Comcast anticipates extending facilities northwest along Jackson Highway to serve the Plan Area.

CHAPTER 5: PUBLIC UTILITIES

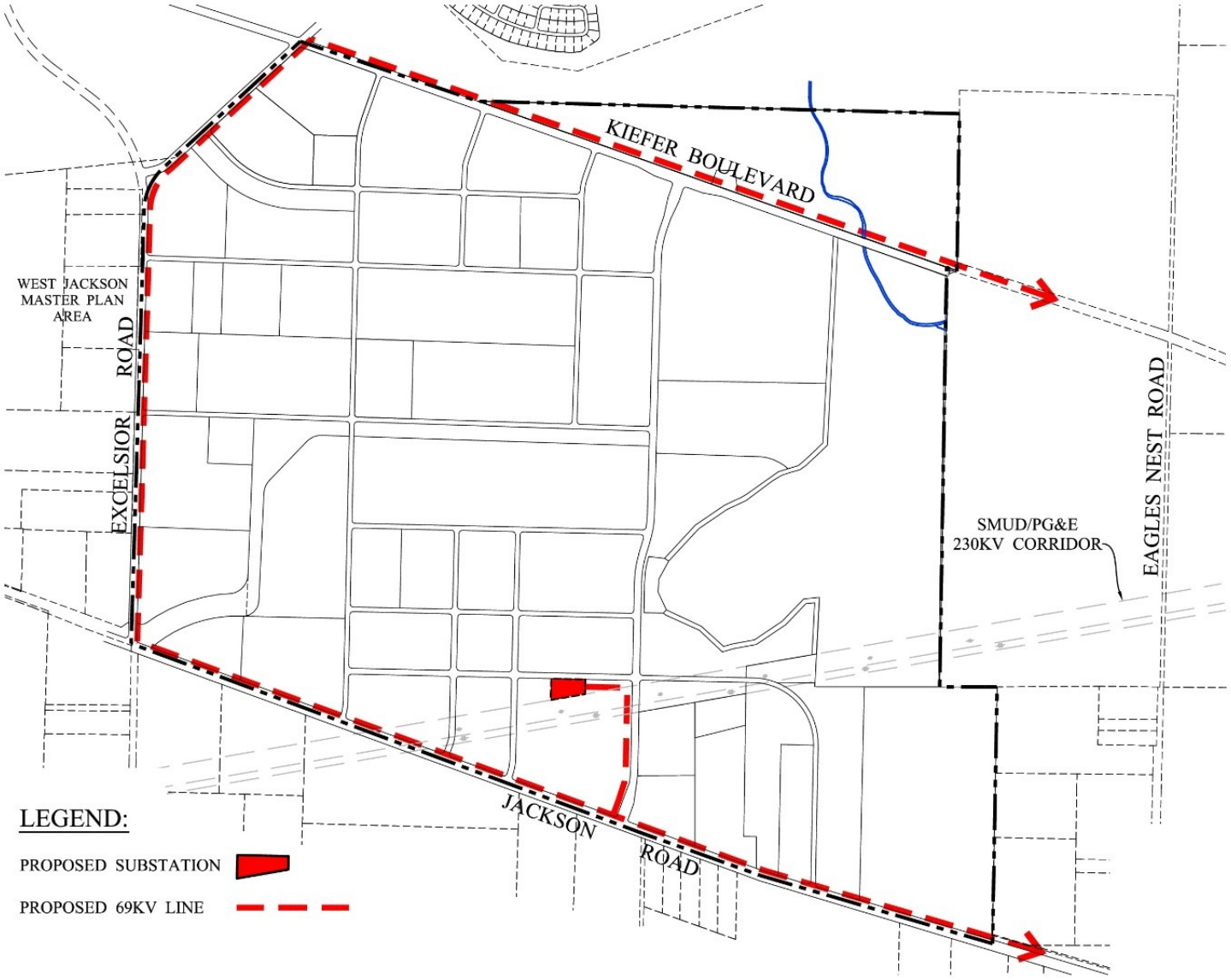

Exhibit 5.8: Electric Facilities

CHAPTER 6: PUBLIC SERVICES

6.1 OVERVIEW

This chapter describes the services necessary to meet the needs of Plan Area. The coordinated delivery of public services is essential to ensure a complete community, one that provides recreational, educational, public safety and library services for the residents. Goals and policies for each public service are addressed in the corresponding subsection. Phasing and financing obligations relating to public services are outlined in the Specific Plan development agreements and in Chapter 8, Implementation, of the Specific Plan. Table 6-1 summarizes the public service providers to the Plan Area. Most public service demands are based upon a per capita or population factor. Table 6.2 shows the projected population for the Plan Area, which is used in determining the demand for the public services addressed in this chapter.

6.2 PARKS, RECREATION AND OPEN SPACE

The parks and open space system in the Plan Area is a key feature required in order to meet the health, wellness and support of community values envisioned for the Plan Area. The intent of this section is to ensure sufficient and timely improvement of the parks and open space system, which is an integral part of the community framework. Park services for the Plan Area are provided by the Cordova Recreation and Parks District (CRPD).

Table 6.1: Service Providers

Service	Provider/Authority
Parks and Recreation	Cordova Recreation & Parks District (CRPD)
Trail Maintenance	Sacramento County Parks Department
School District	Elk Grove Unified School District
Library	Sacramento County Library
Law Enforcement and Protection	Sacramento County Sheriff's Department
Fire Protection	Sacramento Metropolitan Fire District
Solid Waste	Sacramento County Department of Waste Management and Recycling

Table 6.2: Population Projection

Zoning Category	D.U.	PPH	Total Population
LDR	2,295	3.10	7,114
MDR	1,245	2.80	3,486
HDR and MU	2,150	2.20	4,730
TOTAL	**5,690**		**15,330**

Parks, Recreation and Open Space Goals and Policies

Goal 6.1: Provide a coordinated parks and open space system to support a full range of passive and active recreation opportunities to serve as unifying elements of the community.

> ***Policy 6.1.1:*** *Design the park sites in conjunction with CRPD to ensure a balanced set of facilities that meets the needs of the Plan Area residents.*
>
> ***Policy 6.1.2:*** *Locate parks within approximately ¼ mile walking distance of residents.*
>
> ***Policy 6.1.3****: Design parks to function as both recreation and social gathering spaces for the community.*

Goal 6.2: Provide adequate park sites in size and location to meet CRPD and Title 22 land dedication requirement and 2010 Parks Master Plan.

> ***Policy 6.2.1:*** *Prepare a JTSP Parks Master Plan to identify the park sizes, location and types and a preliminary list of facilities and amenities to comply with the 2010 Master Plan.*

Goal 6.3: Designate open space land use to provide protection of Plan Area floodplains, habitat and other sensitive resources, where feasible.

> ***Policy 6.3.1:*** *Designate open space land uses, including greenbelts and wetland preserves, to provide passive recreation opportunities, resource protection, wildlife habitat, corridors for pedestrian and bicycle trails, storm water conveyance and water quality treatment.*

6.2.1 Proposed Parks and Open Space System

Table 6.3 provides the calculations of the acreage needed to meet the minimum acreage requirement, using the park demand factors pursuant to Title 22.40.045.The park system includes active community and neighborhood park sites and greenbelts, as depicted in the Public Facilities Exhibit 6.1. The system is comprised of two community parks, six neighborhood parks, numerous greenbelts and open spaces.

Table 6.3: Parkland Calculations

Zoning Category	**D.U.**	**Factor**	**Acres Reqd.**
Single family: LDR/MDR	3,540	0.0142	50.3
Multi family: HDR/MU	2,150	0.0119	25.6
TOTAL REQUIRED	**5,690**		**75.9 acres**
Parkland Provided			
Facility Type	**#**	**% Credit**	**Acres Credit**
Community Park	2	100%	40.6
Neighborhood Parks	6	100%	38.2
TOTAL PROVIDED			**78.8 acres**
DIFFERENCE			**+2.99 acres**

1. Actual yields of residential units will be tracked as part of the Specific Plan Implementation process. Adjustments to park acreage, if needed to satisfy obligations, will be identified at the time of Tentative Subdivision maps.

CHAPTER 6-PUBLIC SERVICES

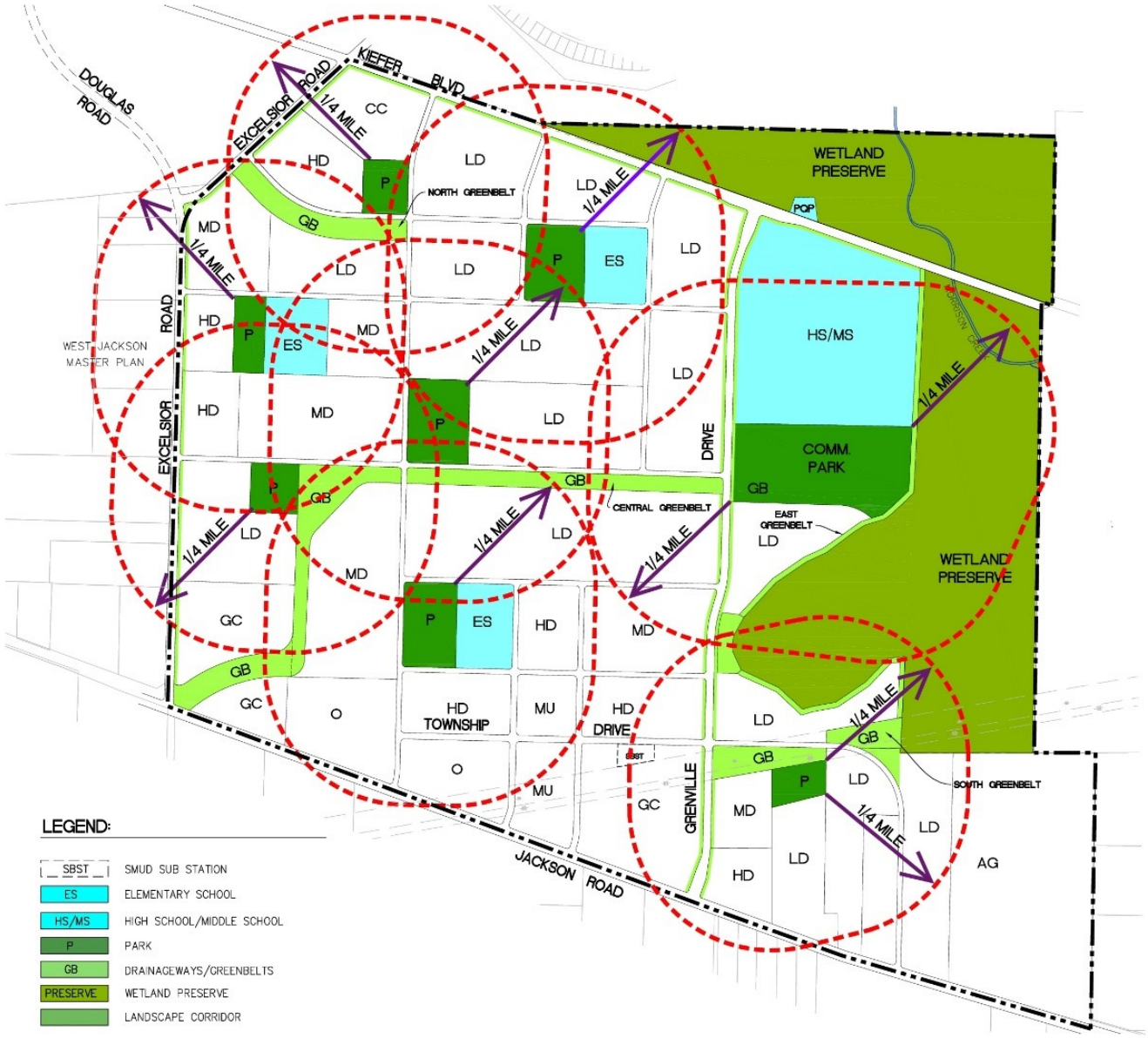

Exhibit 6.1: Public Facilities

The placement and sizing of parks is reflective of community need, CRPD policy, proximity to users, ability to promote joint-use activities and existence of natural resources. Parks are generally located within neighborhoods to create a local focal point, are adjacent to or connected with open space areas to create the desired interconnectivity within the community. Construction of park and recreation facilities shall be performed in accordance with the Development Agreement and consultation with the CRPD. All parks depicted on the Public Facilities Exhibit 6.1 will be owned and maintained by the CRPD.

6.2.2 Community Parks

Two Community Park sites are provided. The larger of the two Community Parks (Park A) is approximately 30 acres, located in the eastern quadrant of the Plan Area, directly adjacent to the joint High School/Middle School site and the wetland preserve. The placement of Community Park A is intended to create a prominent community gathering area of complementary public uses, which is easily accessible for the entire Plan Area. The Community Park A is envisioned to provide for large active facilities, such as lighted softball, baseball and soccer fields, basketball courts, parking, restrooms, large covered picnic area and playgrounds, water playground, and an off-leash dog area. This park is strategically located adjacent to the primary Central Greenbelt and the East Greenbelt along the wetland preserve, making a convenient biking, walking or running circuit and a good location for amenities such as a trailhead and nature/wildlife interpretive facilities.

The second Community Park (Park B) is approximately 10.6 acres in size and is located near the center of the Plan Area. The facilities in this park may include soccer fields, basketball courts, large covered picnic area, restrooms, playground and parking.



Depiction of possible Community Park amenities

6.2.3 Neighborhood Parks

The 6 neighborhood parks are planned to provide a balance between passive and active recreation uses as well as creating a sense of place for the Plan Area. All of the neighborhood parks will be easily accessible to the surrounding neighborhood through the use of the greenbelt trails, bikeways, sidewalks or residential streets. A range of recreation elements are planned for the 4 smaller neighborhood parks (approximately 5 acres each), including play areas for children, multi-purpose turf areas for youth sports and practice fields, half- basketball courts, picnic areas and covered spaces for small groups of people to gather. Three of the neighborhood parks are located adjacent to the elementary schools to provide joint-use facilities and to reinforce them as focal points for the neighborhoods. Two of these joint located parks are larger in size (9.5 acres) and may accommodate soccer and baseball fields, a restroom and parking lot in addition to the type of facilities in the smaller neighborhood parks.



Example of a neighborhood park play area and shelter

6.2.4 Open Space

The Open Space Element of the General Plan identifies four components that serve as the basis for the County-wide open space vision: greenbelts/parkways, floodplain protection, habitat protection and agriculture protection. The JTSP land plan incorporates these open space principles by designating approximately 290 acres of open space. Open space within the Plan Area is organized into three categories: wetland preserve, multi-functional greenbelts, and landscape corridors. All open space and park lands contribute to the overall open space requirement. Open space allows for multi-use functions including passive recreation opportunities, wildlife habitat, corridors for pedestrian and bicycle trails, storm water conveyance and water quality treatment. The entire open space system for the Plan Area will enhance by the cultural, community and recreational opportunities within the JTSP.

6.2.4.1 Wetland Preserve

The land plan has been designed to preserve two (2) large open space areas in the eastern quadrant of the Plan Area. The wetland preserve parcels, totaling approximately 260 acres, allow for the preservation of wetlands and other waters, while also providing visual open space for the adjacent community. The wetland preserves are situated to protect the areas with the greatest concentration of the highest quality wetlands and to ensure consistency with the Draft South Sacramento Habitat Conservation Plan (SSHCP). If the SSHCP is not in place at the time of Specific Plan adoption, approval of an individual 404 permit and Section 7 consultation by the USACE is required. These open space areas will preserve the resources in a natural condition and setting, with all operations, management and monitoring performed consistent with the SSHCP or the USACE, as applicable. Sections 7.2 and 7.3 provides detail on the open space and preservation strategies.

6.2.4.2 Multi-functional Greenbelts

The proposed greenbelts are multi-functional facilities that provide trails, passive recreation and drainage conveyance within linear corridors, with drainage ways being a primary function in two of the four designated greenbelts. The objective is to create multifunctional facilities for stormwater conveyance and water quality treatment in a naturalized corridor which provide trails, landscaping, passive and active amenities in the upland portions.

Four primary greenbelts are depicted on the Public Services Exhibit 6.1. The largest greenbelt is the Central Greenbelt, which provides the majority of the drainage conveyance for the Plan



Area and traverses nearly the width of the Plan Area east to west. This greenbelt/drainage corridor has a length of approximately 1.5miles and the widths vary from 100 to 200 feet. The North Greenbelt is also a multi-purpose greenbelt, providing drainage conveyance from a neighborhood park west to Excelsior Road, approximately 0.5 mile in length and 200 feet wide. The North Greenbelt is aligned to continue to the west to link with the planned West Jackson Plan Area. The East Greenbelt is adjacent to the wetland preserve south of Kiefer Road. This greenbelt serves as a transition and buffer between the habitat area and the adjacent land uses, including simple features such as a Class I trail, post and cable fencing and minimal landscaping. The South Greenbelt is located under a large powerline corridor in the southeast quadrant of the Plan Area. This greenbelt provides a linkage from the Town Center to the East Greenbelt, which leads to the Community Park and High School/Middle School. The South Greenbelt trail is

designated to continue beyond the Plan Area boundary to the east, to link to the planned NewBridge Plan Area.

The greenbelts include a pedestrian and/or bicycle circulation trail system that connects the open space network, parks, schools, commercial and employment areas to the residential neighborhoods, as depicted on the Mobility Exhibit 4.3. Examples of active recreation envisioned to be accommodated within the upland portion of the greenbelts are disc golf, par-course and water stations. The portion of the greenbelts that directly abut a park site are granted park credit by CRPD. Table 6.3 details the park credit calculations.

The Class 1 trails within the greenbelts are designed to function as maintenance/service access where appropriate. Sacramento County Parks Department will maintain trails within the greenbelts. Trail alignments shall meander to create a natural appearance. Pedestrian/bicycle trail nodes will be integrated at important/appropriate locations. Additional greenbelts and linear parkways will be used to extend the trail/pathway system into individual neighborhoods and non-residential developments. They may also be used as access into and as connections between greenbelts. Additional trail corridors, greenbelts and linear parkways will be designated at the neighborhood level.

6.2.4.3 Landscape Corridors

Landscape corridors are separate parcels that parallel larger roadways which act to buffer adjacent land uses and enhance the Plan Area aesthetics. Landscape corridors are designated along primary street corridors to provide pedestrian friendly streets with large, shaded walkways that are accessible to residents, encouraging use of non-vehicular modes of transportation. The JTSP Design Guidelines provide detail on the desired form, function and plant palette for the landscape corridors within the Plan Area.

6.3 SCHOOLS

The Plan Area is located in the Elk Grove Unified School District (EGUSD). The Elk Grove Unified School District's boundaries cover 320 square miles, stretching almost from the Sacramento River to the foothills of Amador County. The JTSP land plan provides school sites to serve the students living within the Plan Area as well as students from surrounding neighborhoods. The demand for school facilities, sizing, locations and generation rates have been based on information provided by the EGUSD and State of California criteria. Table 6.4 summarizes the anticipated number of students and number of sites necessary for each school within the Plan Area, based on student generation factors provided by the District.

School Goals and Policies

Goal 6.4: Coordinate with EGUSD for the provision of adequate school facilities, based on the phasing and buildout of the JTSP.

Policy 6.4.1: *Design the land plan to ensure school sites meet the EGUSD sizing and spacing requirements.*

Policy 6.4.2: *Locate a joint High School/Middle School site within the Plan Area to accommodate students generated from the northern portion of the EGUSD territory, including the Plan Area students.*

Policy 6.4.3*: Locate the elementary school sites adjacent to or near neighborhood parks sites to allow shared use and to serve as neighborhood amenities.*

Three sites are designated for elementary schools of approximately 12 acres each. One site, approximately 80 acres in size, is designated for a joint high school, grades 9-12, and middle school, grades 7-8. The school locations are depicted on Exhibit 6.1, Public Facilities.

Table 6.4: Student Yields and School Site Requirements		
Single-Family (LD, MD)		3,540
Multifamily (HD and MU)		2,150
Total Residential Units		**5,590**
Student Generation		
Elementary (K-6) Students	***Yield Rate***	
Students from Single-Family	0.402	1,423
Students from Multifamily [2]	0.252	543
Subtotal K-6		**1,966**
Site Needs: Elementary School capacity-850 students per school. 1,966 student yield /850=2.3 K-6 sites needed, 3 K-6 sites are provided		
Middle School (7-8) Students	***Yield Rate***	
Students from Single-Family	0.107	377
Students from Multifamily [2]	0.060	128
Subtotal 7-8		**505**
Site Needs: Middle School 7-8 capacity-1,200 students per school. 505 student yield/1,200=0.4 Middle school site needed, 1 is provided		
High School (9-12) Students	***Yield Rate***	
Students from Single-Family	0.195	691
Students from Multifamily [2]	0.101	218
Subtotal 9-12		**909**
Site Needs: High School capacity-2,200 students. 909 student yield/2,200=0.4 High School site needed, 1 is provided.		
Total Students		**3,380**

The elementary school sites are co-located with neighborhood park sites to encourage shared use of the facilities. In addition, the school sites are centrally located to serve as a focal point and gathering area for the neighborhood and each school is situated approximately ½ mile walking distance from most of the residences. The middle school and high school will serve students from outside the Plan Area, influencing the location selected for optimum access for all residents. School sites can serve as a community resource for neighborhood meetings and functions and provide a safe and secure educational atmosphere. The sites are also linked on the greenway system to maximize the non-vehicular modes of travel to these frequented locations, as depicted on the Mobility Exhibit 4.3.

6.4 LIBRARY SERVICES

Library Goals and Policies

Goal 6.5: Facilitate the provision of adequate library services for Plan Area residents.

> ***Policy 6.5.1:*** *Satisfy the increased demand for library services through the assessment of the County Public Facilities Fee on Plan Area residents.*

The Sacramento Public Library system operates library facilities that serve the unincorporated County as well as the Cities of Sacramento, Citrus Heights, Elk Grove, Galt and Rancho Cordova. The Central Library, located in downtown Sacramento at 828 I Street, functions as the main Library. A total of 27 facilities were in operation at the time of Specific Plan preparation and the closest library to the Plan Area was the Rancho Cordova Branch, located at 9845 Folsom Boulevard, approximately 8 miles from the Plan Area.

The Sacramento Public Library Authority prepared a Facility Master Plan for the 2007-2025 time frame. Based on the master plan, a library site is not needed in the Plan Area. New library facilities planned in surrounding areas will accommodate the Plan area residents. The increased demand of library services for the Plan Area is satisfied via the assessment of the County Public Facilities Fee, a portion of which contributes to the provision of additional library services.

6.5 Law Enforcement

Law Enforcement Goals and Policies

Goal 6.6: Enhance community safety by increasing crime prevention awareness.

> ***Policy 6.6.1:*** *The Design Guidelines shall incorporate crime prevention through environmental design (CPTED) principles, including natural surveillance, opportunity for "eyes on the street", lighting and access control through building and landscape design.*

The Sacramento County Sheriff's Department provides law enforcement for the Plan Area. The department's main office and jail are located in downtown Sacramento. Eight substations are located throughout the County, with the closest substation to the Plan Area at 2897 Kilgore Road in Rancho Cordova, approximately 7 miles north. The Department anticipates that service to the Plan Area will be accommodated from existing stations or new substations in the vicinity, therefore a station is not required to be located within the Plan Area. The increased demand for law enforcement services associated with the Plan Area is satisfied via the assessment of the County Public Facilities Fee, a portion of which contributes to the provision of additional law enforcement services.

6.6 Fire Protection

Fire Protection Goals and Policies

Goal 6.7: Provide for adequate fire protection resources to serve the Plan Area.

> ***Policy 6.7.1:*** *Identify a fire station site in conjunction with Sac Metro to serve the Plan Area with the appropriate level of fire protection and emergency response times.*

Sacramento Metropolitan Fire District (Sac Metro) provides fire protection and emergency medical services to all areas of unincorporated Sacramento County, as well as multiple contract cities. At the time of Specific Plan preparation, a total of 42 stations were in operation. In 2015, Sac Metro completed a Department Growth Analysis study. The study provided an update to the District's needs for fire stations, apparatus and crews to account for expected growth proposals being processed by the Sacramento County Department of Community Development and the City of Rancho Cordova Planning Department. The study identified the need for one "superstation" to serve both the Plan Area and surrounding areas. The station would include a fire truck, fire engine, wildland fire rig, a battalion chief and a medic. Sac Metro economic development staff identified the MU site adjacent to Jackson Road as an optimal location for a fire station Public facility uses such as a fire station are permitted uses in all commercial and office zones within the Plan Area. A final location will be determined in conjunction with Sac Metro representatives at the time of the first Tentative Map.

6.7 SOLID WASTE

Solid Waste Goals and Policies

Goal 6.8: Provide for an enhanced program to increase recycling in the Plan Area.

> ***Policy 6.8.1:*** *The Plan Area CSA will prepare and implement a community based program in cooperation with County Waste Management to elevate the recycling and re-use effort.*

Sacramento County Department of Waste Management and Recycling provides solid waste and recycling services for the single family uses within the Plan Area. The Waste Management and Recycling Department operates the Kiefer Landfill and the North Area Recovery Station. Services for residential homes include weekly garbage collection, bi-weekly collection of mixed recyclables, bi-weekly collection of green waste, monthly street sweeping and one annual appointment-based bulky waste collection.

Solid waste and recycling services for multi-family apartments (5 units or more), commercial and business solid waste services are performed on a contract basis with franchised haulers that are permitted to provide services in Sacramento County.

Projected solid waste generation from Plan Area can be accommodated within the approved and permitted landfill expansion capacity. Fees will be collected from residential accounts to cover collection costs and disposal methods.

CHAPTER 7: RESOURCES MANAGEMENT AND SUSTAINABILITY

7.1 OVERVIEW

This chapter identifies the environmental conditions and sensitive resources found in the Plan Area and describes the project's sustainability features. The JTSP implements sustainable practices through compliance with established policies, actions, design requirements and implementation strategies as presented in various chapters in the Specific Plan. This chapter addresses wetland resources, vegetation and wildlife, cultural resources, air quality and sustainability features of water quality, water conservation and energy efficiency.

The existing environmental conditions in the Plan Area were taken into account during the development of the land use plan, as described in Chapter 2, Plan Area Setting. The land use plan is designed to protect sensitive resources, where feasible, to minimize the impacts of development on the existing and natural communities in the Plan Area and to utilize these features in the overall sustainability program.

7.2 WETLAND RESOURCES

Wetlands (including both depressional "wetland features" as well as other waters of the U.S./State), are an important environmental component that shaped the planning, character, and function of the Plan Area. The Plan Area contained a wide variety of uses, including cattle grazing, cropland, rural residential dwellings and the Sacramento Raceway. Refer to



Section 2.2.2 for a complete description of the pre-Specific Plan conditions on the site. Wetland features occurring within the Plan Area were identified in the pre-development condition. The primary types of wetlands typical to Plan Area are generally described below. The Environmental Impact Report (EIR) and supporting studies should be referenced for more detail.

7.2.1 Wetland Resources Goals and Policies

Goal 7.1: Identify and preserve the best quality wetlands and species habitat to avoid and minimize impacts to protected resources.

> ***Policy 7.1.1:*** *Set aside the eastern portion of the Plan Area as a wetland preserve (Preserve), consistent with the* South Sacramento Habitat Conservation Plan *(SSHCP). Enhance the public enjoyment of passive open space by providing adjacent trails, viewing areas and interpretive signage, where feasible.*

Policy 7.1.2: Include specific avoidance and mitigation measures in the Development Standards for all land uses which abut the Preserve, including but not limited to buffers, special setbacks and lot orientation.

7.2.1 Vernal Pools

The vernal pools within the Plan Area can be best characterized as Northern Hardpan Vernal Pools. Northern hardpan vernal pools are seasonally flooded depressions found on soils with an impermeable hardpan layer. The impermeable layer allows the pools to retain water much longer than the surrounding uplands; nonetheless, the pools are shallow enough to dry up each season. Vernal pools are scattered throughout the Plan Area, with the highest density of pools occurring in the east – central portion. Some vernal pools on site are inter-connected by riverine seasonal wetlands. This typically occurs where one pool overflows into another relatively regularly.

Vernal pools typically support a predominance of native plants. Plant species observed within the vernal pools throughout the site are typical of species which are adapted to seasonally inundated conditions. Plant species observed within the vernal pool habitat on site include manna grass, coyote thistle, spikerush, hedge-hyssop, white-headed navarretia, annual hairgrass, woolly marbles and popcorn flower. Vernal pools play a valuable role in the food chain for a wide array of animals, including birds of prey, migratory waterfowl, shorebirds, frogs, toads, salamanders and pollinating insects. They are also home for listed vernal pool crustaceans, including tadpole shrimp and fairy shrimp.

7.2.3 Seasonal Wetlands/Seasonal Wetland Swales

Seasonal wetland habitat is typically associated with shallow drainages and swales (riverine features) or depressions, that inundate long enough to support hydric soils and hydrophytic vegetation, but do not inundate sufficiently to support vernal pool species. Riverine seasonal wetlands are characterized by the seasonal flow of water induced by the onset of heavy rains. A depressional seasonal wetland is characterized by shallow land depressions that remain saturated for extended periods. Dominant plant species observed within the seasonal wetland habitat include quaking grass, Mediterranean barley, Italian ryegrass, annual beard grass, annual hairgrass, toad rush, and curly dock.

7.2.4 Marsh

Both perennial and seasonal marsh habitat occur within the Plan Area. Aside from perennial marshes remaining inundated or saturated throughout the year, both support perennial herbaceous plant species that tolerate high soil moisture and seasonal to permanent soil saturation or inundation. For both aquatic habitat types, inundation/saturation persists well into the warm season.

Plant species observed within the marsh habitat on site include broad-leaved cattail, narrow-leaved cattail, bulrush, water primrose, pennyroyal, nutsedge, creeping spikerush and four angled spikerush. In addition, wildlife species observed within the marsh habitat include: black phoebe, Brewer's blackbird, red-winged blackbird, ring-necked pheasant, and song sparrow.

Marshes provide shelter and foraging habitat for several species of wildlife on the site including resident and migratory bird species, amphibians, reptiles, aquatic invertebrates, and foraging

mammals. Wildlife expected to occur in the marsh habitat include egret, heron, waterfowl, bullfrog, pacific tree frog, opossum and raccoon.

7.2.5 Irrigated Pasture, Ditch, Drainages and Farm Ponds

Due to the historical farming use of the Plan Area, a variety of habitats occur throughout the Plan Area. Irrigated pasture habitat is found mainly in the south-central portion of the Plan Area. Irrigated pasture vegetation is typically a mix of warm-season plants dependent on summer irrigation. The abundance of the vegetation can vary, according to season and livestock stocking levels, from a few inches to a foot or more. Irrigation ditches and drainages occur on site in association with the pastures.

A number of farm ponds and other impoundments are found in the Plan Area, primarily associated with rural residences. The largest pond is located in the central portion of the Plan Area, near the end of existing Tree View Lane. This pond serves as the irrigation water supply for irrigated pastures located in the south-central portion of the site. The pond is located at a relatively high elevation and appears to have been excavated solely for the purpose of irrigation supply. The other ponds were constructed by excavation, damming a drainage swale, or some combination of the two. Water supply is assumed to be derived from runoff, although groundwater pumping could also play a role in filling these ponds.

7.3 WETLAND PRESERVATION AND COMPENSATION PROGRAM

A primary goal of the JTSP is to preserve the highest quality wetland and species habitat present within the Plan Area while also meeting the County's General Plan objectives regarding smart growth and reduction of GHG emissions. To this end, the applicant engaged in early consultation with the Federal, State and local resource agencies about the proposed Project. These agencies included the U.S. Army Corps of Engineers (USACE), the U.S. Fish & Wildlife Service (USFWS), and the Central Valley Regional Water Quality Control Board, as well as the County of Sacramento. Much of this coordination was accomplished through discussions with the County and the resource agencies regarding the (SSHCP), under development in 2017.

The SSHCP is a regional approach for addressing impacts to, and mitigation for, species protected under the Federal and State Endangered Species Acts (ESA). It identifies urban development projects, such as the JTSP, within an Urban Development Area (UDA) and defines measures to avoid, minimize and mitigate impacts to protected species that will be affected by such development. The Plan also consolidates mitigation in areas of high habitat value, primarily located outside the UDA, thereby enhancing the long-term viability of species populations and habitat. The overall goal of the SSHCP is to implement this regional conservation strategy which will provide private and public projects with streamlined and more predictable permitting processes, should it be finalized and implemented prior to or concurrently with the development of the Plan Area. Alternatively, applicants may choose to opt out of the SSHCP process and instead address impacts to endangered species through a Section 7 consultation as part of an individual Clean Water Act Section 404 permitting process.

The Plan Area contains vernal pools and wetlands, which serve as habitat for vernal pool crustacean species protected under the Federal ESA. The Land Plan sets aside approximately 214 acres of open space which is dedicated as a Wetland Preserve

(Preserve) in the eastern portion of the Plan Area. The resulting Preserve will protect, in perpetuity, the highest quality resources within the Plan Area. Consistent with the conservation strategy in the SSHCP, the Preserve will be contiguous with a wetland preserve located on the Mather Field property to the north as well as a large, proposed preserve located on the neighboring NewBridge Specific Plan to the east.

The SSHCP further requires that projects include a variety of measures to minimize the impact of development on sensitive resources, such as vernal pools. Examples of resource avoidance and minimization measures incorporated into the design of the Plan Area include the following:

- Inclusion of a minimum 50-foot wide setback between development and the Preserve
- Controlling public access to the Preserve through permanent fencing along the boundaries
- Educational signage provided in key areas of Preserve
- Control of invasive species and management of non-native vegetation within the setback area and Preserve
- Minimization of road and trail crossings of wetlands and other waters within the Preserve
- Compliance with State and local stormwater regulations

During the Specific Plan preparation process, several development alternatives were explored to avoid impacts to the wetlands and other aquatic resources located within the Plan Area. However, because these resources are not confined to specific areas but are rather broadly distributed throughout the Plan Area, the participating landowner determined it was not feasible to avoid all resources and design the project to be consistent with County land use policies. Tsakopoulos Family Trust (TFT), the owner of a portion of the Plan Area, has applied for a permit from the USACE pursuant to Section 404 of the Clean Water Act to allow impacts to some of these wetlands and waters. This permit will include requirements to mitigate for the loss of any wetlands or waters within the TFT subject site, thereby ensuring no net loss of these resources due to development of the Specific Plan land uses. The applicant expects to mitigate for the wetland impacts on the TFT property through a combination of on-site wetland restoration within the Preserve and the payment of in-lieu fees through the SSHCP.

7.3.1 Resource Preservation Measures

The applicant intends to dedicate the Preserve to the SSHCP implementing entity, the South Sacramento Conservation Agency (SSCA). The SSCA will implement measures identified in the SSHCP to ensure the long-term viability of the protected and restored vernal pool and wetland resources within the Preserve. These measures include both routine management activities as well as adaptive management practices. Detailed avoidance and minimization measures which apply to all lands abutting the Preserve are included in the Development Standards and Regulations, Appendix A.

Routine management activities may include such common open space management activities as controlling public access to sensitive areas, fencing along Preserve boundaries, educational signage in key areas of the preserve and trash removal. Because the Preserve will protect vernal pool habitat, other management activities could include invasive species control, thatch management activities, and hydrology studies. Adaptive

management may include pilot programs and research. Pursuant to the SSHCP, the Preserve will be routinely monitored to ensure habitat health and functionality. At the time of Preserve dedication, the applicant will pay a fee to help fund these long-term maintenance and monitoring activities in perpetuity.

7.4 VEGETATION AND WILDLIFE RESOURCES

7.4.1 Annual Grasslands

The biological community covering the majority of the Plan Area is annual grassland. Central Valley annual grassland communities are composed largely of non-native annual grasses and forbs. The dominant plant species observed in the annual grassland consists of soft brome, wild oat, medusa head, long-beaked filaree, hawkbit, mouse-tail grass, Spanish clover, tarplant, Fitch's tarweed, barley and Italian ryegrass. Annual grassland typically supports breeding, foraging, and shelter habitat for several species of wildlife including raptors and migratory birds.

7.4.2 Native and Non-native Trees

Historically the Plan Area supported few or no trees, due to the presence of hardpan soils and the absence of summer water. Growth of trees within the Plan Area was promoted by the development of irrigation facilities, the establishment of rural residential uses, and tree planting. While the pre-development condition of the Plan Area was mostly treeless, considerable areas of non-native tree species existed on site, mostly associated with rural residential parcels. The dominant tree species found within the Plan Area is eucalyptus, in addition to other typical landscape and ornamental species, such as mulberry and palm.

7.4.1 Vegetation and Wildlife Goals

Goal 7.2: Support the preservation of grasslands and native trees, where feasible, to provide habitat and foraging for wildlife.

> ***Policy 7.2.1:*** *Preserve grassland habitat as part of the on-site Preserve.*
>
> ***Policy 7.2.2****: The development standards shall include measures to actively manage grassland to ensure long-term habitat through the operation and maintenance plans.*
>
> ***Policy 7.2.3****: Preserve native trees where feasible and remove non-native trees that are potential fire hazards and high voc-emitting species, such as eucalyptus.*

7.5 AIR QUALITY

The Plan is within the Sacramento Metropolitan Air Quality Management District (SMAQMD), which is a special district created by state law to enforce local, state and federal air pollution regulations. The Specific Plan incorporates strategies to address projected air emissions associated with construction and build out of the development to help reduce and mitigate These elements, in combination with the significant natural open space areas within the Plan Area, will result in a pedestrian and bicycle friendly environment that will promote non-vehicular use as a primary choice becoming a way of life for residents. In addition, the Plan Area employment and commercial land uses include the designation of carpool/ vanpool/rideshare spaces, both proven strategies to reduce potential air emissions.

7.5.1 Air Quality Goals and Policies

Goal 7.3: Reduce and mitigate potential impacts to air quality associated with the construction and buildout of the Plan Area.

Policy 7.3.1: The Design Guidelines shall provide specific strategies to reduce air quality impacts at the building level, such as use of photo-voltaic systems and low emitting products for furnaces and air conditioners for residential and commercial uses. Coordinated tree plantings and building orientation may also be used to reduce anticipated heating and cooling needs.

Policy 7.3.2: Use native and drought-resistant species to reduce the demand for irrigation and gas powered landscape maintenance equipment. Maximize selection of low-VOC emitting species and long-lived and evergreen species for maximum emissions removal.

Policy 7.3.3: Monitor dust and exhaust emissions during construction. Prior to the issuance of grading permits, a Construction Emission/Dust Control Plan will be submitted to the SMAQMD for review and approval. All construction activities will be required by contract specification to implement all measures from the approved Construction Emission/Dust Control Plan as applicable.

An Air Quality Mitigation Plan is in place for the JTSP. All development projects are required to follow the measures during construction and post-construction.

7.6 CULTURAL RESOURCES

The 883-acre portion of the Plan Area owned by Excelsior Estates, LLC has been subject to numerous cultural resource surveys pursuant to Section 106 of the National Historic Preservation Act (NHPA), as required for the Section 404 permit associated with that property, as well as for CEQA. In 2008, the applicants property was subjected to an intensive pedestrian survey by archaeologists Sean Michael Jensen and Robert McCann. A second pedestrian survey was performed in 2013 by archaeologists Ric Windmiller and Steven Laumann. These two surveys identified a total of six historic-era resources located within the applicant-owned portion of the site. In 2015, ECORP Consulting completed a targeted cultural resource evaluation and testing program of these six resources. This evaluation compared the resources against the eligibility criteria for inclusion on the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). ECORP concluded that none of the resources were eligible for listing on either the NRHP or the CRHR. The remaining portion of the Plan Area (i.e., the non-participating properties) will be subject to an on-the-ground cultural resource survey and an associated records search prior to the issuance of entitlements to develop those properties.

7.7 SUSTAINABILITY

The JTSP incorporates sustainability concepts and practices in the approach to land use, circulation, public utilities, public services and environmental resources. The sustainability elements of energy efficiency, water conservation and water quality build upon the foundation of the "smart growth" land use plan. The addition of the following goals and policies will result in a sustainable, eco-aware community which grows responsibly while enhancing and respecting the local, County-wide, State and global efforts to reduce the impacts of climate change.

CHAPTER 7: RESOURCES AND SUSTAINABILITY

General Sustainability Goals and Policies

Goal 7.4: Promote the Plan Area as an eco-aware community by supporting community engagement, education and activities as part of the Jackson Township Community Association.

> ***Policy 7.4.1:*** *The Community Association shall sponsor activities such as electronic waste collection drives, "free-cycle" fairs, water conservation challenges, energy saving day party and other collaborative events to highlight awareness.*
>
> ***Policy 7.4.2:*** *The Community Association shall create and manage a community website for residents, business owners, workers and students to share and obtain information such as community activities, carpools, bike-pools, ride-sharing and transit schedules in coordination with the TMA and/or transportation coordinator.*

Energy Efficiency Goals and Policies

The JTSP incorporates energy efficiency measures and promotes renewable energy resources, which will reduce dependence on non-renewable energy and energy-related greenhouse gas (GHG) emissions. Specifically, GHG emissions will be reduced by lowering energy demand, improving water and energy efficiency, and increasing the amount of electricity and heat generated from renewable energy sources.

Goal 7.5: Encourage the incorporation of alternative energy technology and innovative, cost-effective construction techniques to improve the efficiency of buildings, site design and landscaping.

> ***Policy 7.5.1:*** *All new buildings constructed in the Plan Area will feature smart energy meters, solar hot water heaters, Energy Star appliances and be "solar- ready".*
>
> ***Policy 7.5.2:*** *Any codes, covenants and restrictions (CC&R's) shall permit the installation of facilities to collect, store or utilize solar energy on buildings.*
>
> ***Policy 7.5.3:*** *Shopping centers, office complexes, parks and public places will have preferentially located parking spaces and charging stations for electric vehicles.*



NEV Charging Station

Goal 7.6: Promote environmentally responsible and efficient outdoor lighting.

> ***Policy 7.6.1:*** *All lighting applications shall be subject to the 2016 Building Efficiency Standards Section 140.7 and use fixtures approved by the International Dark Sky Association.*



Bio Swale example

Water conservation and quality is an important element of sustainability for the Plan Area. The Public Services Chapter describes specific design techniques for water quality, which include water quality basins, storm water retention/detention basins, bio-swales and other low impact design (LID) techniques. Section 5.4.3 provides more information on water quality management treatment methods. Refer to Chapter 4 of the Design Guidelines, Appendix B, for details on water conservation and best management practices.

Water Quality and Conservation Goals and Policies

Goal 7.6: Promote water conservation at all levels within the Plan Area, such as in publicly maintained facilities, private homes and businesses.

> ***Policy 7.6.1:*** *All buildings and landscaping shall be designed to conserve water in compliance with the water agency's methods, including use of advanced plumbing fixtures, high efficiency irrigation systems, low water use plant palette, water use monitoring systems and rain water harvesting systems.*

Goal 7.7: Protect surface and groundwater quality throughout the Plan Area, in accordance with the State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES) Phase II requirements.

> ***Policy 7.7.1:*** *Employ Best Management Practices (BMP) and other techniques to treat and protect surface and groundwater quality. Incorporate bio-filtration of surface runoff within the multi-functional open space system and within landscaped areas.*

CHAPTER EIGHT: IMPLEMENTATION

8.1 OVERVIEW

California Government Code Section 65451 requires that Specific Plans include programs of implementation strategies related to regulatory changes, programs, financing strategies and public works projects needed to carry out the proposed land use, infrastructure and development standards outlined in the Specific Plan.

This chapter provides a summary of the methods by which the Specific Plan will be implemented and provides discussion on the sequencing and financing programs that demonstrate compliance with County General Plan policies and the vision, goals and policies of the Specific Plan.

The Specific Plan is anticipated to be built-out over a 15 to 25 year period. The goal of this chapter is to describe how infrastructure and public facilities will be constructed and how public services will be delivered in a timely manner.

8.2 IMPLEMENTATION AND SEQUENCING

Implementation Goals and Policies

Goal 8.1: Provide clear implementation strategies and actions to ensure development in the Plan Area occurs in an efficient and orderly manner.

Policy 8.1.1: Provide an Infrastructure Master Plan which identifies the infrastructure that must be constructed in sequences to match the development as it progresses.

Policy 8.1.2: Provide a Phasing/Sequencing Plan to direct development in logical increments and infrastructure extensions, yet provide flexibility for individual development areas to progress independently, where feasible.

Policy 8.1.3: Identify sequencing policies and/or timing, if required, to ensure that backbone infrastructure and public facility improvements in each Area will support the associated development in compliance with County policies and standards.

8.2.1 Implementation Approach

The current and proposed public utility providers for community infrastructure, both pre- and post-Specific Plan, are identified in Chapter 5, Public Services. The public services and service levels required for the build-out of the community are discussed in Chapter 6. Given the diversity and number of public entities that serve the Plan Area, coordination is essential to successful implementation.

A Fiscal Impact Analysis, an Infrastructure Master Plan, a Public Facilities Financing Plan and an Urban Services Plan were prepared to comply with General Plan Policy LU-120, sub-policies PC-6 and PC-7. These plans and programs demonstrate that the infrastructure needs and the associated costs are reasonably balanced throughout each development phase and that the provision of services, as well as the operations and maintenance costs, are cost-neutral to the County's General Fund and existing ratepayers.

The Infrastructure Master Plan, Appendix F, describes how the infrastructure will be constructed in sequences to match the development as it progresses. The Public Facilities Financing Plan (PFFP), Appendix G, describes the methods by which the

infrastructure identified in Appendix F will be financed and funded. The Urban Services Plan (USP), Appendix H, addresses the manner in which the public services delivery will be managed and funded.

8.2.2 Sequencing by Area Plans

The Specific Plan provides for a comprehensively planned infrastructure system with coordinated sequencing and construction of facilities. In general, the development sequencing plan has been structured to ensure that the backbone infrastructure and public facility improvements in each Area can support associated development in compliance with County policies and standards, and that the development in each Area of the Specific Plan can reasonably support the costs of the required improvements.

The geographic boundaries of each Area are reflected on the Sequencing Exhibit 8.1. Appendix J, Planning Area Detail, provides maps and statistical summaries of each Planning Area. The Sequencing Exhibit breaks the Plan Area into 4 Areas, Area 1A/B, Area 2, Area 3 and Area 4. The non-phased areas include the wetland preserve and Ag parcels, for which no development is proposed. These areas were selected based on infrastructure service, logical development areas and property ownership in the Plan Area. Area 1A /1B was identified as the first logical area to begin development. This sequencing facilitates the completion of major backbone infrastructure improvements, provides internal access from both Jackson Road and Kiefer Boulevard and provides early access to the High School/ Middle School site. Table 8.1 provides the Land Use Summary by Area.

8.2.3 Sequencing Approach

Development for Areas 2, 3 and 4 may move forward independently and in any order after Area 1A/B commences development, provided that parcels can meet the public services requirements and the sequencing policies outlined in the Infrastructure Master Plan, described in Section 8.2.4.Areas may also proceed with development of smaller sub-Areas. The Area boundaries are conceptual and may be adjusted as development progresses, pursuant to the process outlined in Section 9.4, Specific Plan Amendments and Minor Revisions.

8.2.4 Infrastructure Master Plan

An Infrastructure Master Plan (IMP), Appendix F, is an important element of project implementation. The IMP identifies the infrastructure requirements for each Area of development, including on-site and off-site facilities necessary for each Area to proceed. Identified improvements for each Area includes roadways, wastewater, water, storm drainage and dry utilities.

The IMP itemizes each facility which must be constructed to support each Area, along with any over sizing of infrastructure which may be required for adjacent Areas which are served by the same facilities. The infrastructure required to initiate development of Area 1A/B is a significant portion of the overall Plan Area backbone facilities, approximately 80%, while the proportional land of Area 1A/B is approximately 45% of the 4 Areas. In broad terms, the following percentages of the overall backbone infrastructure facilities are installed in order to facilitate initial development:

- Off-site water infrastructure- 100%
- On-site water infrastructure- 50%
- Off-site wastewater infrastructure-100%
- On-site wastewater infrastructure-65%
- On-site drainage improvements- 65%
- Off-site major roadways (Kiefer Blvd)-100%
- On-site major roadways frontage improvements- 70%

This approach provides the ability for the Plan Area to develop in logical increments and infrastructure extensions, yet provides flexibility for individual development areas to progress independently, where feasible. The development of Area 1A/B requires the installation of significant off-site and internal infrastructure which serves the entire Plan Area. The costs for these backbone facilities in Area 1A/B are out of balance with the other Areas, requiring Developer funding of the difference of which the Area 1 A/B development can support.

8.3 FINANCING AND MAINTENANCE OF PUBLIC FACILITIES

The construction of public facility improvements to serve the Plan Area will be funded by a variety of mechanisms. Financing methods may include, but are not limited to, the mechanisms outlined in this section and shown in Table 8.2. Specific financing requirements, improvement obligations, fees, reimbursements, land and easement dedications and conveyances, maintenance, and other financing and improvement related obligations are detailed in the JTSP development agreement, USP, PFFP and any reimbursement agreements.

8.3.1 County Impact Fees

Sacramento County has a number of fee programs for capital improvement projects designed to serve the Plan Area. These include the Transportation Development Fee administered by the County Department of Transportation and various impact fees administered by the Sacramento Area Sewer District (SASD), Sacramento County Department of Water Resources (DWR), the Sacramento Regional County Sanitation District (SRCSD) and the Sacramento County Water Agency (SCWA). To the extent that Jackson Township is served by these agencies, all new development will pay the appropriate fee(s).

8.3.2 School Impact Fees

The Elk Grove Unified School District (EGUSD) has established fees, in accordance with Section 17620 of the California Education Code, to be used to construct school facilities. Pursuant to Section 65995 of the California Government Code, these school impact fees will be collected by the County at the issuance of a building permit, and are forwarded to the school district, as required by law.

8.3.3 Other Agency Fees

In addition to County and School District fee programs, a number of other public agencies and Special Districts serving the Plan Area have established fees that may have capital improvement projects designed to serve Jackson Township. These may include the Sacramento Metropolitan Fire District (SMFD), Sacramento County Library System, Cordova Recreation and Parks District (CRPD) and Sacramento Transportation Authority (STA).

8.3.4 Special Financing District/Specific Plan Fee

The Applicant/master developer and/or subsequent builders expects to construct and/or finance major backbone infrastructure and public facilities, meaning facilities that are sized to serve the entire Plan Area. As described in Section 8.2.4, some facilities are required to be constructed up-front but are sized to serve subsequent Areas. In some cases, the facility is included within the capital improvement program for an existing fee program, and the cost to construct the facility would be repaid to the developer/builder through fee credits and/or reimbursements. In other cases, a portion or all of the costs for a facility may be outside of existing fee programs. A Special Financing District is created to proportionately allocate the cost of backbone infrastructure and public facilities not currently included in public fee programs. The Special Financing District would be managed by the County to ensure that all development within the Specific Plan pays its proportionate share of costs and that initial developers/builders are repaid for any oversizing.

The Special Financing District could include a Specific Plan Fee, a Community Facilities District, and/or other funding mechanisms deemed appropriate. The purpose of the Specific Plan Fee is to reimburse the participating landowner (Excelsior Estates, LLC) and the County for costs associated with the preparation, adoption and administration of this Specific Plan and other costs incurred pursuant to CEQA. Properties owned by non-participating landowners will be required to annex into the CFD and/or other overlapping special districts (including any zones of benefit), which have been established to fund services or improvements that benefit the property. Non-participating landowners will also be required to consent to any applicable provisions of the Specific Plan, which may involve the execution of a Development Agreement.

8.3.5 Fee Credits within Specific Plan Area

To the extent authorized by the utility providers' respective ordinances, where the Applicant/master developer and/or subsequent builders have advance funded major backbone infrastructure and/or public facilities, such as but not limited to sewer and water, subsequent builders may be required to purchase credits at the corresponding fee levels for such infrastructure or facilities from the developer/builder that advanced such funding when such credits are available.

8.3.6 Community Facilities Districts

Another funding and/or financing mechanism that may be utilized to help fund the construction and/or acquisition of backbone infrastructure and facilities within the Plan Area are Community Facilities Districts (CFDs). The 1982 Mello-Roos Community Facilities Act enables cities and other entities to establish a CFD to fund various facilities and services. The proceeds of the Mello-Roos special tax can be used for direct funding of facility construction, acquisition and/or to pay off bonds.

Several existing CFDs are applicable to the Plan Area; EGUSD CFD No. 1 and Police Services CFD No. 2005-1. The EGUSD CFD funds future elementary and secondary schools and additions to existing schools. The Police Services CFD provides supplemental funding for sheriff services.

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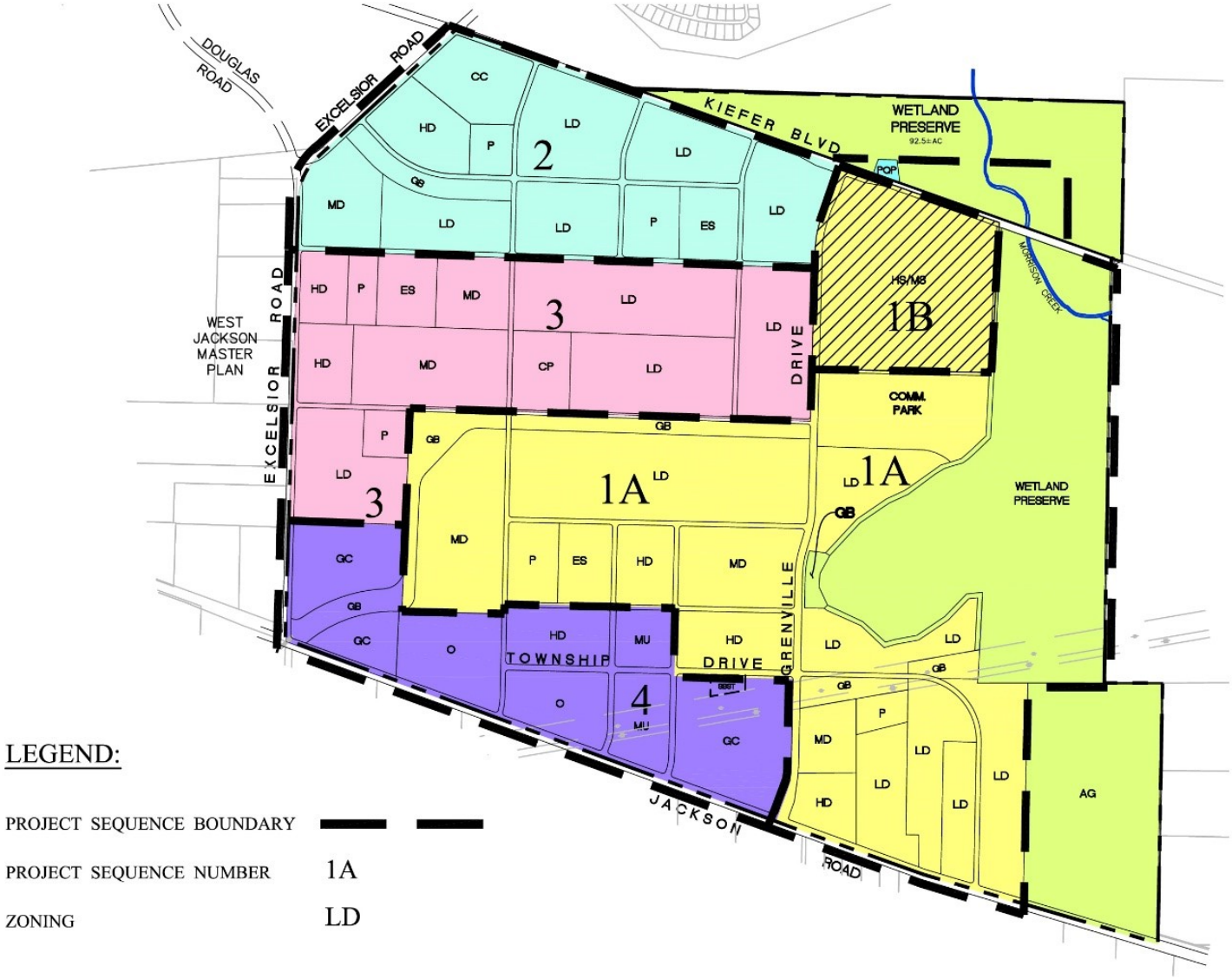

Exhibit 8.1: Plan Area Sequencing

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Table 8.1: Land Use Summary by Areas	Total Acres	Ave. Density	Density Range	Total DU's	Area A/B Acres	Area 1A/B DU's	Area 2 Acres	Area 2 DU/SF	Area 3 Acres	Area 3 DU/SF	Area 4 Acres	Area 4 DU	Area 4 SF	Non-Phase
Residential Designations														
LD- Low Density Residential	382.6	6.0	1.0-8.9	2295	163.5	980.4	96.3	577.8	122.6	736.8	0.0	0.0	0.0	0.0
MD- Medium Density Residential	124.5	10.0	9.0-15.9	1245	66.1	661.0	17.2	172.0	41.2	412.0	0.0	0.0	0.0	0.0
HD- High Density Residential	82.0	25.0	16.0-30.0	2050	35.0	875.0	14.8	370.0	17.8	457.5	13.9	347.5	0.0	0.0
Subtotal	589.1			5590	264.6	2516.4	128.3	1,119.8	181.6	1606.3	13.9	347.5	0.0	**0.0**
Commercial + Office Zones		***f.a.r.***	***Total S.F.***											
GC- General Commercial	59.7	0.25	649,900	0	0.0	0.0	0.0	0.0	0.0	0.0	59.7	0.0	649,900	0.0
CC- Community Commercial	16.2	0.25	176,400	0	0.0	0.0	16.2	176,400	0.0	0.0	0.0	0.0	0.0	0.0
MU- Mixed Use	19.7	0.50	429,100	100	0.0	0.0	0.0	0.0	0.0	0.0	19.7	100.0	429,100	0.0
O- Office	35.2	0.50	766,700	0	0.0	0.0	0.0	0.0	0.0	0.0	35.2	0.0	766,700	0.0
Subtotal	130.8		2,022,100	100	0.0	0.0	16.2	176,400	0.0	0.0	114.6	100.0	1,845,700	0.0
Public/Quasi Public Zones														
PQP- Tank Site	1.0				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
PQP- High/Middle School	70.0				70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PQP- Elementary School	30.0				10.0	0.0	10.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0
Subtotal	101.0				80.0	0.0	10.0	0.0	10.0	0.0	0.0	0.0	0.0	1.0
Park + Open Space Zones														
CP- Community Park	40.6				30.0	0.0	0.0	0.0	10.6	0.0	0.0	0.0	0.0	0.0
P- Neighborhood Park	38.2				13.6	0.0	14.6	0.0	10.0	0.0	0.0	0.0	0.0	0.0
OS- Wetland Preserve	259.8				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	259.8
OS- Greenbelt Drainage Corridor	55.6				40.7	0.0	8.5	0.0	0.0	0.0	6.4	0.0	0.0	0.0
OS- Landscape Corridor	14.5				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5
Subtotal	408.7				84.3	0.0	23.1	0.0	20.6	0.0	0.0	0.0	0.0	274.3
Ag and Roads														
AG- Agriculture	74.7													74.7
RW- Primary Roadways	86.7													86.7
Subtotal	161.4													161.4
TOTAL	**1,391.0**		**2,022,100**	**5,690**	**428.9**	**2,516.4**	**177.6**	**177,519.8**	**212.2**	**1,606.3**	**128.5**	**447.5**	**1,845,700**	**436.7**

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One or more CFDs for Services can also be established for maintenance of certain facilities that provide special benefit to the Plan Area. Such facilities may include landscape corridors, medians, open space, bike paths/trails, detention/retention facilities and parks. The CFD for Services may be used to fund governmental services that benefit residents of the Plan Area, including law enforcement and fire services, to the extent that service levels exceed current levels.

8.3.7 Landscape and Lighting Assessment District

A Landscape and Lighting Assessment District (LLD) is a similar financing mechanism to a CFD for services. This mechanism may be established and, through annual assessments to property owners, would create a fund to maintain public facilities within the Plan Area. These facilities could include landscape corridors, medians, open space areas, parks, linear parkways, pedestrian/bike trails, storm water facilities and street lights.

8.3.8 County Services Area (CSA)

County Service Law (Government Code 2521.1 et seq.) provides a means to deliver and fund expanded services in unincorporated areas. A CSA can provide expanded services for police protection, fire protection, park and recreation facilities, library, water, etc. These expanded services can be funded through ad valorem taxes (based on assessed value), special taxes, assessments, and/or standby charges. Sacramento County CSA 1 provides funds for the maintenance and operation of street and safety lights, via a service charge. The JTSP is expected to annex into CSA 1.

8.3.9 Measure M School Bond

The EGUSD Measure M General Obligation bonds was passed by voters in 2016. Measure M provides proceeds to be used for construction, reconstruction, rehabilitation, or replacement of school facilities, including the furnishing and equipping of school facilities, or the acquisition or lease of real property for school facilities. The Measure M general obligation tax is an ad-valorem tax based on the assessed value of the property being taxed. The JTSP is expected to participate in Measure M.

8.3.10 Developer Financing

Direct developer/merchant builder financing may be used to contribute towards backbone improvements and facilities, shortfall financing and in-tract subdivision improvements. Table 8.2 identifies some possible options for funding and/or financing mechanisms for Plan Area improvements and facilities.

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Table 8.2: Funding/Financing Mechanisms		
Improvement	**Facility Funding Options**	**Maintenance Funding Options**
Roads	Fees, Special Financing District	Property Tax
Transit	Fees	Property Assesmt, Farebox Revenue
Trails/Paths	Fees, Special Financing District	TBD
Fire	Fees	Property Tax
Schools	Fees, CFD, Ad Valorem taxes	District Sources
Parks	Fees	Property Tax
Library	Fees	Property Tax
Water Improvements	Fees, Special Financing District	Customer Rates
Sewer Improvements	Fees, Special Financing District	Customer Rates
Drainage Facilities	Fees, Special Financing District	TBD
Electric Facilities	User Rates	User Rates
Open Space	Special Financing District	CSA Service Charge, SFD
Public Protection	General Fund	Existing CFD

CHAPTER NINE: ADMINISTRATION

9.1 OVERVIEW

This chapter of the Jackson Township Specific Plan (JTSP) outlines the Specific Plan process and its relationship to the subsequent entitlement processes that are necessary to allow construction of individual projects. This chapter also describes the administrative procedures that will occur to implement, amend, interpret and enforce the Specific Plan.

9.2 SPECIFIC PLAN PROCESS AND SUBSEQUENT ENTITLEMENTS

This section describes the project entitlements and the relationship between the concurrent approvals which occurred with the adoption of the JTSP and the subsequent entitlement process to occur after Specific Plan adoption.

9.2.1 Specific Plan and Concurrent Approvals/Actions

Approval of the JTSP included the following entitlements and related actions:

- **General Plan Amendments**
  The General Plan was amended for items specific to the Plan Area, including amending the Urban Policy Area (UPA) boundary, amending the Land Use Diagram designations and amending the Transportation Diagram and the Bicycle Master Plan accordingly.

- **Community Plan Amendments**
  The Vineyard Community Plan and the Cordova Community Plan were amended to include the Jackson Township Specific Plan designations.

- **Specific Plan (JTSP)**
  The Sacramento County Board of Supervisors (the Board) adopted the Jackson Township Specific Plan and Appendices A-J by ordinance.

- **Development Agreement** for the Jackson Township Specific Plan by and between the County of Sacramento and the participating landowner.

- **Public Facilities Financing Plan** for the Jackson Township Specific Plan that describes a Capital Improvement Program and a funding and financing strategy for planned improvements.

- **Urban Services Plan** for the Jackson Township Specific Plan that describes the cost to provide annual public services and the funding sources identified to cover projected costs.

- **Water Supply Master Plan Amendment** to amend the existing Zone 40 Water Supply Master Plan to include provision of water service to the Jackson Township Specific Plan Area. This action requires Sacramento County Water Agency Board of Directors approval.

- **Water Supply Assessment** for the Jackson Township Specific Plan required by the California Water Code to

link land use and water supply planning activities. This action requires Sacramento County Water Agency Board of Directors approval.

- **Final Environmental Impact Report (FEIR)**
  The Sacramento County Board of Supervisors certified the FEIR addressing the Jackson Township Specific Plan and other related entitlements. The FEIR includes the Draft EIR and all appendices.

9.2.2 Subsequent Plan Approvals

Additional actions or approvals must occur following the adoption of the Specific Plan, and prior to the development of the first Phase. Rezoning will occur in phases as portions of the Plan Area become ready for development. One or more special districts (or financing districts) must be created or expanded to provide public services within the Plan Area, which may require action by County Local Agency Formation Commission (LAFCO). Several plans and programs must be reviewed and accepted by the County for each Phase of development and prior to the recordation of the first large lot final map or the approval of the first tentative subdivision map or development permit for any development application within the Plan Area:

- **Rezoning**
  The Specific Plan and the Development Standards (Appendix A) constitute the zoning for the Plan Area. Prior to the start of each phase/area of development, the subject property must be rezoned to "Jackson Township SPA" and affected landowners must consent to the Zoning by accepting the conditions, policies and requirements of the Specific Plan and any Mitigation Measures. This requires non-participating landowners to participate in financing policies of the Specific Plan, including the requirement to pay the Specific Plan Fee, as described in Section 9.2.4.
- **Large Lot Tentative Subdivision Map**
  A large lot tentative subdivision map for a portion of the Plan Area will be processed concurrently with the Rezoning in order to create legal parcels which conform to the parcel configurations defined by the Land Use Plan.
- Sphere of Influence Amendment (SOIA) and concurrent Annexation to County Service Area (CSA) 10 or creation of a new CSA. Note: a separate subsequent action may be required by the Sacramento County Board of Supervisors to establish a Benefit Zone, to implement funding and service provision.
- Annexation to Sacramento Regional County Sanitation District (SRCSD).
- Annexation to Sacramento Area Sewer District (SASD).
- Formation of new funding and/or financing mechanisms (CFDs, assessments, specific plan fees, etc.).

9.2.3 Administration of New Funding Mechanisms

The County and other Special Agencies may need to implement a series of new funding and/or financing mechanisms to implement the Specific Plan. Implementation would include formation of one or more financing districts, such as community facilities districts, assessment districts, and or development impact fee programs. It could also include issuance of bonds to provide upfront funding for capital project investments.

Each of these formation processes should include, to the extent necessary, identification of rules and procedures regarding required nexus studies, credit and reimbursement policies, exemptions and/or offsets, administration and accounting procedures, and other items as required by California State Law, depending on the nature of the district and/or mechanism.

9.2.4 Subsequent Entitlements

Individual development projects within the JTSP are subject to review and approval of subsequent permits by Sacramento County. Subsequent entitlements include subdivision or parcel maps, Rezoning, Site Plan Reviews, Use Permits, Lot Line Adjustments or Lot Mergers, building and grading permits, etc. Once the plans and programs described in Section 9.2.1 are completed, individual developers may submit and process applications for subsequent entitlements.

Application and processing requirements shall be in accordance with the Sacramento Zoning Code and Sacramento County Code Title 22 (Land Development) and other regulations, as otherwise modified by this Specific Plan. Any application for a subsequent entitlement shall be subject to the Planning Application Fee Schedule, Plan Area Fees, Specific Plan Fee and any other fees in effect at the time of the application submission.

All subsequent development projects, public improvements and other activities shall be consistent with this Specific Plan, Development Standards and Regulations, Design Guidelines, the Specific Plan Development Agreements, and all applicable County policies, requirements and standards.

9.3 ENVIRONMENTAL REVIEW

An Environmental Impact Report (EIR) was prepared and was certified by the Board of Supervisors concurrently with the approval of the Specific Plan. Section 65457(a) of the California Government Code and Section 15182(a) of the California Environmental Quality Act provides that no EIR or negative declaration is required for any residential project undertaken in conformity with an adopted Specific Plan for which an EIR has been certified. The EIR certified for this project has been written to qualify all residential projects for this exemption, assuming they are consistent with the adopted Specific Plan and fulfill all conditions and CEQA mitigation measures. Non-residential land uses may be able to rely on the EIR, pursuant to Section 15183 of the CEQA Guidelines, assuming the proposed projects are found consistent with the Specific Plan and fulfill all conditions and CEQA mitigation measures.

9.4 SPECIFIC PLAN AMENDMENTS AND MINOR REVISIONS

During the long-term build out of the Plan Area, amendments to the adopted Specific Plan may be necessary because of changing circumstances. Additionally, because of unforeseen circumstances, some design guidelines or development standards may not be feasible on a particular parcel. In these situations, the procedures listed below will be followed to amend the adopted Specific Plan.

9.4.1 Scope of Amendment

Any proposed changes to the Specific Plan can include but are not limited to changing land use designations, design criteria, development standards or policies. Changes proposed to this

adopted Specific Plan shall be categorized by the Planning Director as either an amendment or a minor revision. Amendments require Planning Commission and Board of Supervisors approval. Minor revisions may be reviewed and acted upon by the Planning Director without Planning Commission or Board of Supervisors review, unless appealed. A request to change the Specific Plan shall be accompanied by an application filing fee, a detailed justification statement which explains why an amendment or minor revision is warranted, and demonstrates compliance with General Plan Policies LU-119 and 120 and provides any exhibits deemed necessary by the Planning Director. All requirements of CEQA will be applicable.

9.4.2 Specific Plan Amendments

An amendment is required when one of the following criteria is met:

- A new type of land use not specifically discussed in this Specific Plan is introduced.
- Significant changes to the distribution of land uses beyond that allowed by Section 9.5, Density Transfers, or other changes affecting land use are proposed which may substantially affect the Specific Plan or which results in non-compliance with General Plan Policies LU-119 and/or 120.
- Changes to design guidelines and/or development standards, which, if adopted, would substantially change the physical character of the Plan Area as envisioned by the Specific Plan as determined by the Planning Director.
- Changes to the approved Phasing Plan are proposed which significantly increases or alters the area boundaries or units allocated by the proposed phasing schedule.
- Any change that would trigger the preparation of any form of negative declaration or environmental impact report.

9.4.3 Minor Revisions

A minor revision to the Specific Plan may be processed if determined by the Planning Director to be in substantial conformance with all of the applicable criteria:

- The Planning Director determines that the modification does not have a significant impact on the character of the Plan.
- The proposed adjustments to the development standards or design guidelines are offset by the merits of the design and do not significantly change the anticipated physical characteristics of the development.
- The proposed changes to the alignment of streets, which if adopted, would not substantially alter the land use or circulation concepts set forth in this Specific Plan.
- Adverse environmental impacts are not significantly increased, as defined by the CEQA guidelines, as a result of the proposed minor revision.
- The proposed change to the approved Phasing Plan boundaries will not result in increase of more than 10% in the total number of units proposed for a particular phase.
- The request is in compliance with Section 9.5, Density Transfer Provisions and with General Plan Policies LU-119 and 120.

9.5 Density Transfer provisions

Dwelling units have been allocated to all residentially zoned parcels (LD, MD and HD) and the MU parcel. Each parcel has been allocated a certain number dwelling units, based on the average density per the parcel zoning. The Land Use Plan, Exhibit 3-2, in conjunction with Land Use Detail by Parcel/Node Table J-2, found in Appendix J, Planning Area Detail, provides a detailed summary of the land use, zoning and unit allocation on a parcel-by-parcel basis.

It is the intent of the Specific Plan to permit limited flexibility in transferring units between certain parcels in response to market demand, subdivision design, permanent open space preservation or other considerations. Pursuant to the transfer process detailed below, allocated dwelling units may be transferred between any LD, MD and HD parcel and from the MU parcel.

9.5.1 Density Transfer Process

Density transfers, if consistent with the following criteria, are consistent with the Specific Plan and the JTSP EIR and do not require an amendment to the Specific Plan or the General Plan. Requests for transfers which exceed the following criteria require a Specific Plan Amendment (SPA), as described in Section 9.4.2.

- A density transfer may involve two parcels or more, provided that the transferring and receiving parcels are within the Plan Area and the total maximum number of approved units for the entire Plan Area is not increased.

- The cumulative increase or decrease in units resulting from the density transfer does not change by more than twenty percent (20%) the number of pre-transfer units allocated to any one parcel as established by Parcel Summary Table J-2 found in Appendix J.

- The increase or decrease of units does not impact the overall Plan Area's compliance with General Plan Policies LU-119 and 120.

- The transfer of units from any parcel is reflected in the subsequent entitlements for that parcel (i.e.; tentative subdivision map or site plan review).

- The transfers will not have a materially adverse impact on planned infrastructure, roadways, schools, other public facilities or Plan Area fee programs and assessment districts.

- To request a density transfer, the owner or owners of both the transferring and receiving parcels shall submit a Density Transfer application to the Office of Planning and Environmental Review, identifying the impacted parcels, designating the number of units being transferred and providing other documentation as required by the Planning Director (Director) to determine compliance with the above criteria. The applicant shall also provide a revised Table J-1 and J-2, reflecting the adjusted unit counts and densities. The revised table will be the official record used for tracking unit allocations to each large lot residential parcel.

- If, in the opinion of the Director, such a density transfer satisfies the above criteria, it is consistent with the intent of this Specific Plan and EIR and will not require an amendment to the Specific Plan. If the Director determines that the density transfer *is* not consistent with the criteria, the transfer shall require an amendment to the Specific Plan. The applicant may appeal such a determination to the Planning Commission.

CHAPTER 9: ADMINISTRATION

9.6 INTERPRETATIONS

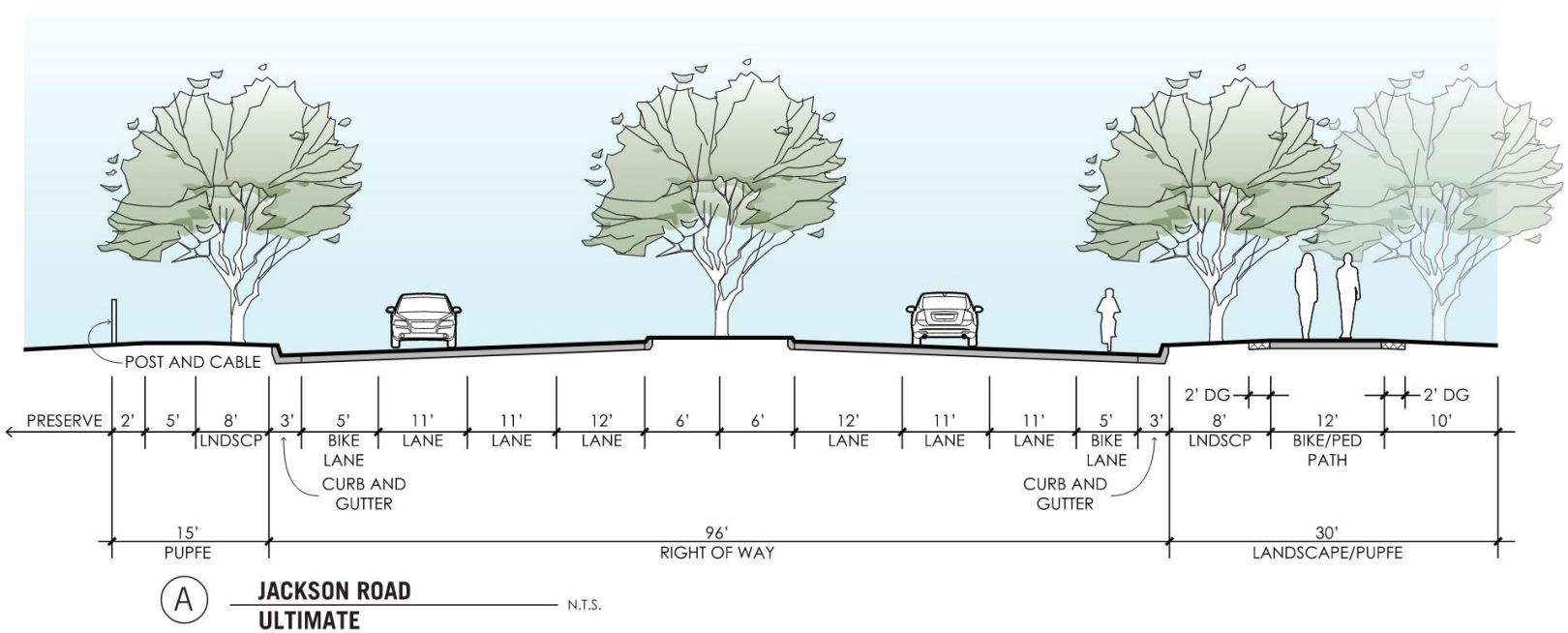
In the event that the requirements and guidelines of the Specific Plan may appear to provide alternative guidance or differ from other adopted County policies, interpretations may be necessary. These would typically arise regarding specific issues and situations in the land use development process. Interpretations may be needed when the County is considering a discretionary development application, such as a subdivision map, or a ministerial application, such as a building permit. Whenever the Planning Director determines that the meaning or applicability of any of the requirements of this Specific Plan is ambiguous, misleading, or unclear, the Director may issue an official interpretation or refer the question to the Planning Commission for a determination. The Planning Department shall keep records of the official determinations on file for future reference and to ensure consistency of interpretations over time.

9.7 SEVERABILITY

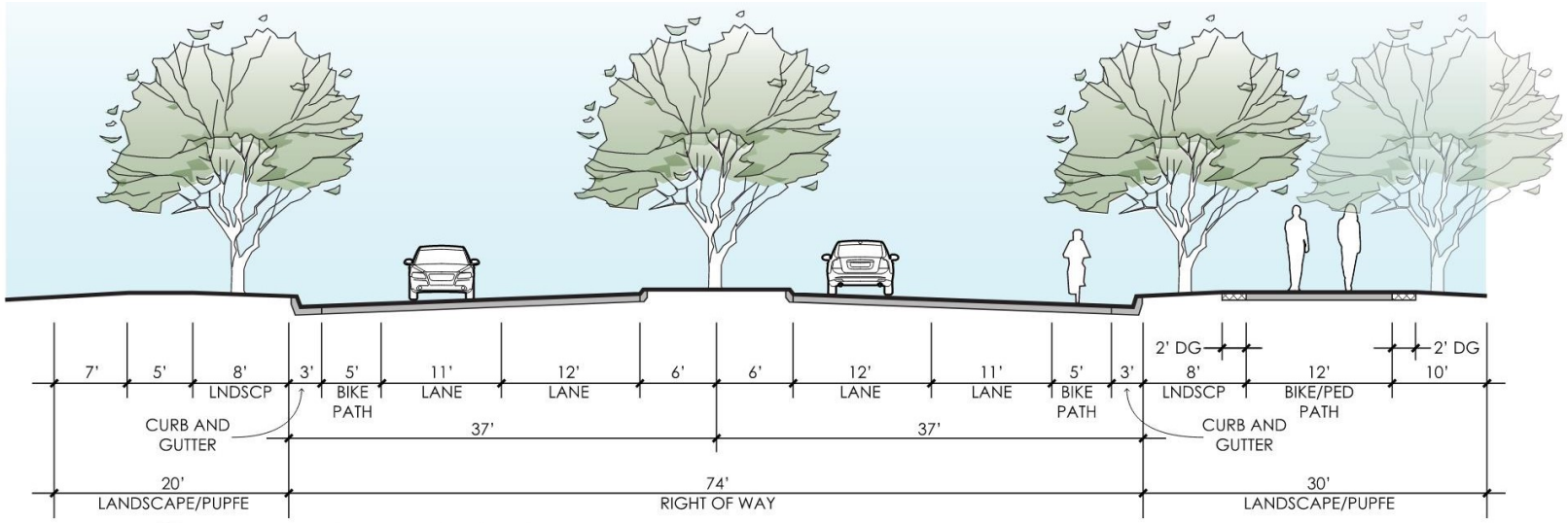
If any regulation, condition, program or portion of the Specific Plan is held invalid by a California or Federal Court of competent jurisdiction, such portions shall be deemed separate, distinct, and independent provisions, and the invalidity of such provisions shall not affect the validity of the remaining provisions thereof.

Ultimate Street Sections A-A, C-C and M-M

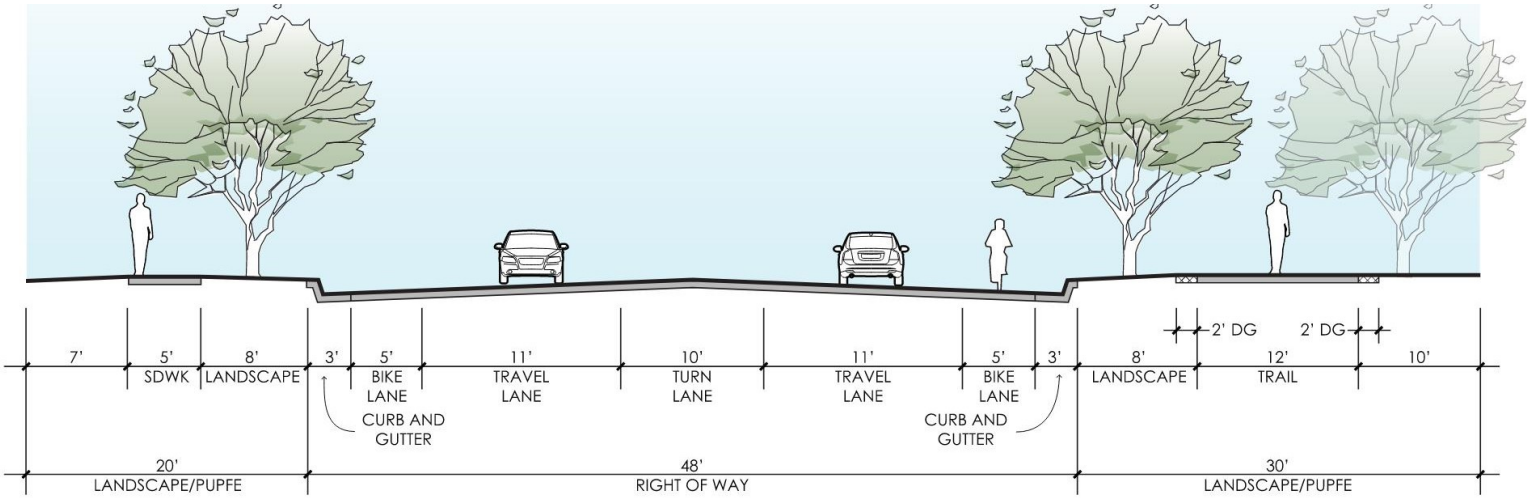
Chapter 4 of the Specific Plan provides cross sections for the proposed Plan Area roadways. The cross sections shown and number of lanes demonstrate the Plan Area obligations. Jackson Road (Section A-A), Excelsior Road (Section C-C) and Excelsior Road between Kiefer and Douglas Road (Section M-M) occur on the Plan Area boundaries. The completion of the ultimate frontage improvements for Sections A-A, C-C and M-M will be done by others. The ultimate street sections for these three roads are provided herein for reference.



STREET SECTION APPENDIX



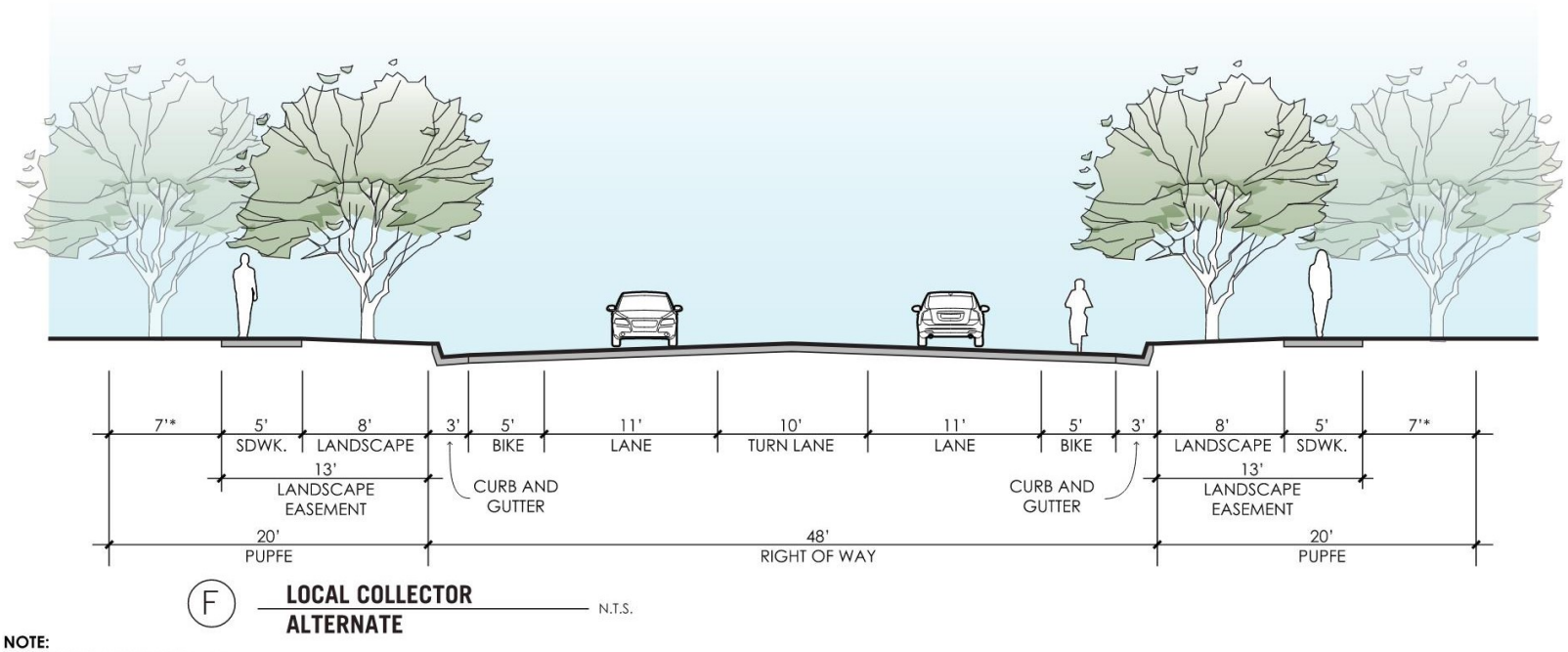
Ⓒ **EXCELSIOR ROAD - ULTIMATE**
JACKSON RD TO DOUGLAS RD N.T.S.



Ⓜ **EXCELSIOR RD**
KIEFER BLVD TO DOUGLAS RD
ULTIMATE N.T.S.

Alternative Street Section F

Street section F is a local collector which has a wide variation of fronting land uses. The primary configuration of Section F is shown on page 4-8. This street is a 2 lane roadway with Class II bike lanes and on-street parking. However, an alternative striping may be considered in certain areas. If conditions warrant and with DOT approval, the striping may be revised to delete the on-street parking and add a 2-way center turn lane instead. See Section F Alternative below.



F **LOCAL COLLECTOR ALTERNATE** N.T.S.

NOTE:
* 7' PUPFE BEHIND SIDEWALK MAY BE MODIFIED SUBJECT TO FINAL UTILITIES

APPENDIX A

DEVELOPMENT STANDARDS AND REGULATIONS

Sacramento County, CA

September, 2021

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CHAPTER 1: GENERAL PROVISIONS

1.1 PURPOSE AND INTENT

This document, Jackson Township Development Standards (DS), define the development regulations for the Applicant owned portion of the overall Jackson Township Specific Plan Area, shown in Exhibit 1.1. The DS is used in concert with the Jackson Township Specific Plan (JTSP), which is the primary land use and policy document guiding long term development of the Plan Area.

The DS outlines the permitted uses, the development standards and regulations for all development within the Plan Area, initially applicable to a portion of the Applicant's property which is included in the first SPA, as shown on Exhibit 1.2. The intent is to provide a clear and concise set of regulations that builders, developers, property owners and County staff can rely on to implement development within the Plan Area in an efficient manner. Specifically, the DS contains the following chapters:

Chapter 1, General Provisions, describes the purpose and intent and the overall administrative applications.

Chapter 2, Land Use Designations, describes the categories of land uses found within the Plan Area.

Chapter 3, Use Regulations, sets forth the uses and use standards allowed in each of the land use designations.

Chapter 4, Development Standards, contains the standards that apply to all development within each land use designation.

Chapter 5, Administration, describes the review and enforcement of the DS and the administration of the various applications for development as required by Sacramento County.

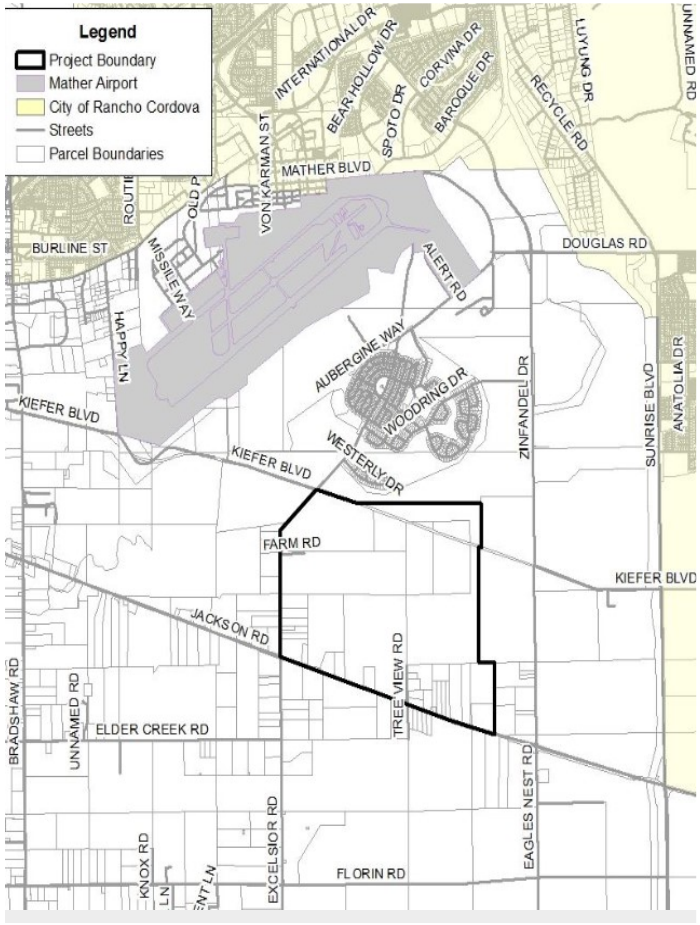


Exhibit 1.1 Plan Area Location

These standards and regulations are adopted to implement the Jackson Township Specific Plan, the applicable policies of the General Plan and is specifically intended to:

- Promote a balanced mix of land uses that are consistent with the Specific Plan;
- Ensure greater public safety, promote health and healthy communities, convenience, and accessibility through the physical design of the built environment and location of land use activities;
- Encourage sustainable and efficient use of land in the Plan Area;
- Enhance the character and quality of residential neighborhoods;
- Promote a balanced supply of commercial, institutional, and transportation land uses that is compatible with adjacent land uses and has good access to multi-modal transportation networks;
- Ensure the protection, preservation and provision of adequate open space for light, air, fire, safety and recreation.

1.2 APPLICABILITY AND JURISDICTION

Rezoning of the Plan Area to the Jackson Township Special Planning Area (SPA) will occur in phases as areas are ready for development, as shown on Exhibit 1.2. The initial phase to be rezoned subsequent to the Specific Plan approval is a portion of Area 1A/1B, which is owned by the participating landowner and Applicant Excelsior Estates LLC. The remaining portions of the Applicant owned property and properties not owned by the applicant, herein referred to as non-participating property, will be the subject of future entitlement applications for rezoning consistent with the adopted Land Use Plan, adoption of an SPA and other approvals required for development to commence.

Pursuant to County Zoning Ordinance Chapter 1.7.3, the SPA zoning of the Plan Area allows the uses and standards to be defined by the Development Standards and Regulations contained herein, as incorporated into the SPA, which was adopted by Ordinance_____.

It is the County's intent that all future entitlement applications will include rezoning consistent with the adopted Land Use Plan, amendment(s) to the JTSPA to include the additional properties and the adoption of these Development Standards.

1.2.1 Applicability

These standards and regulations apply to all land, buildings, structures, and uses thereof located within the JTSPA, as shown on Exhibit 1.2. The standards and regulations contained in the DS supersede the County of Sacramento Zoning Code (the Code) except where the Code is specifically referenced, wherein that section of Code shall be applicable as referenced. For clarity, the portions of the DS which defer to the Code are noted in BOLD.

When conflicts occur between the provisions in the DS and Code or the County Improvement Standards, the provisions of the DS shall apply. Where the DS does not address a specific provision, the Code and/or Improvement Standards requirements shall govern development in the Plan Area. Notwithstanding any other provision of the DS or the Code, any land use, activity or establishment that contravenes either state or federal law, or both, is prohibited.

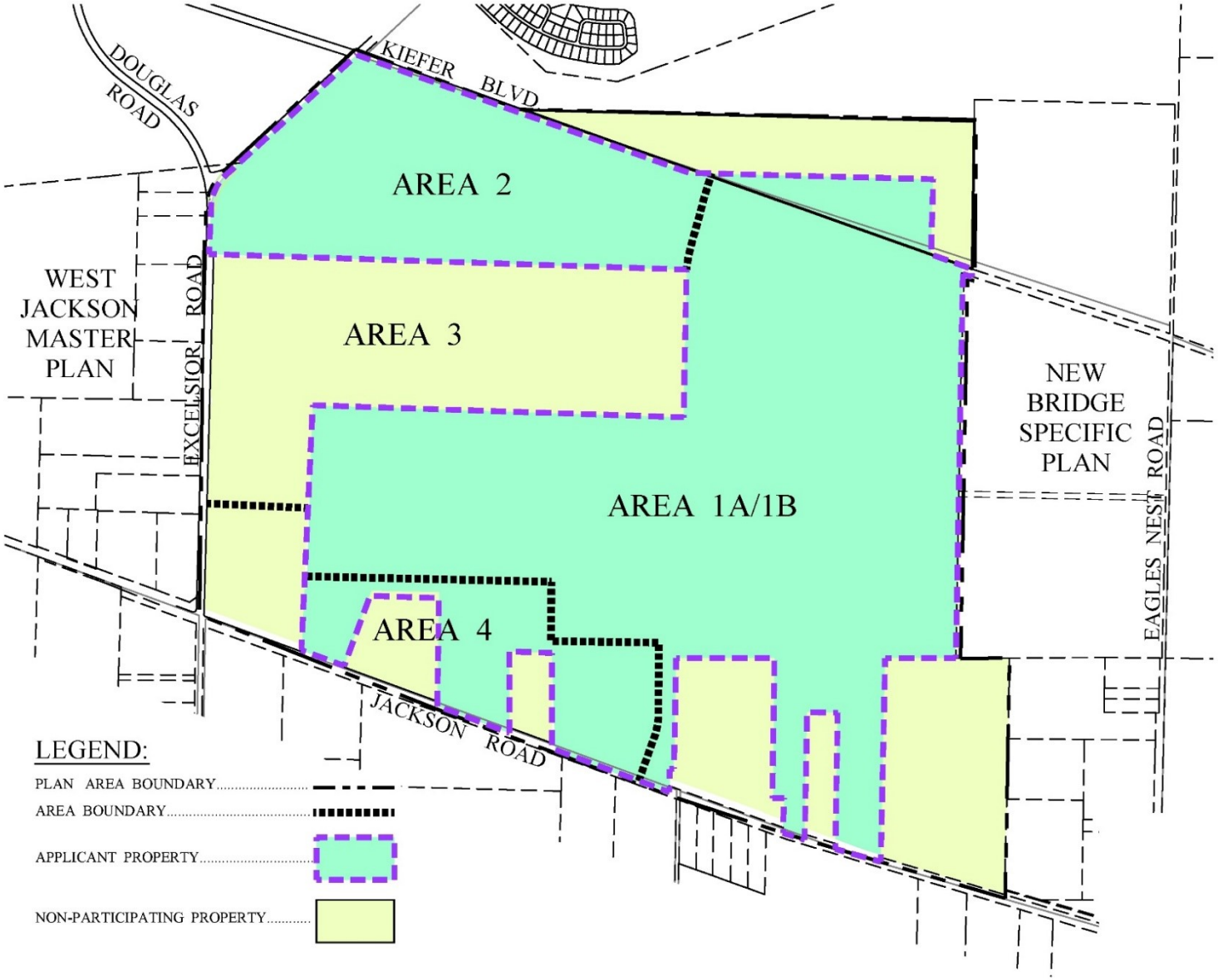


Exhibit 1.2: Area Boundaries

1.3 Delegation of Assigned Authority

Whenever a provision of the DS authorizes the Planning Director, another head of a department, or another officer of the County to perform an act or duty, that provision shall be construed as authorizing the department head or officer to delegate that responsibility to others. Whenever a provision appears requiring a public hearing body to perform an act or duty, if that body is lapsed or otherwise unable to act in a timely manner as determined by the Board of Supervisors, then that provision shall be construed as authorizing the Board of Supervisors to delegate that responsibility to another public hearing body.

1.4 Relationship to Other Plans

1.4.1 Relationship to Other Public Laws, Ordinances, Regulations and Permits

The DS are intended to complement other county, municipal, state, and federal regulations that affect land use. The DSR is not intended to revoke or repeal any other public law, ordinance, regulation, or permit. However, where conditions, standards, or requirements imposed by any provision of the DS are either more restrictive or less restrictive than comparable standards imposed by any other public law, ordinance, or regulation, the provisions that are more restrictive or that impose higher standards or requirements shall govern, as determined by the Planning Director.

1.4.2 Relationship to General Plan

It is the intent of the DS to implement the planning policies adopted by the Board of Supervisors for the County, as reflected in the Sacramento County General Plan.

1.4.3 Relationship to Private Agreements

The DS is not intended to revoke or repeal any easement, covenant, or other private agreement. However, where the regulations of the DS are more restrictive or impose higher standards or requirements than such easement, covenant, or other private agreement, then the requirements of the DS shall govern. Nothing in the DS shall modify or repeal any private covenant or deed restriction, but such covenant or restriction shall not excuse any failure to comply with the DS. In no case shall the County be obligated to enforce the provisions of any easements, covenants, or agreements between private parties.

1.4.4 Consistency with State and Federal Law

Notwithstanding any other provision of the DS, any land use, activity or establishment that contravenes either state or federal law, or both, is prohibited.

1.5 Severability

If any court invalidates any provision of the DS, then such judgment shall not affect the validity and continued enforcement of any other provision of this Code.

If any court invalidates the application of any provision of the DS, then such judgment shall not affect the application of that provision to any other building, structure, or use not specifically included in that judgment.

CHAPTER 2: LAND USE DESIGNATIONS

2.1. Purpose

To carry out the purpose and provisions of the DS, the Plan Area is divided into land use designations. This chapter contains general information such as statements of purpose and expectations for each land use type. The precise use regulations for each land use designation are found in Chapter 3. The Development Standards are found in Chapter 4.

The Land Use Plan, Exhibit 2.1, depicts the land uses assigned to all portions of the SPA. Thirteen (13) land use classifications are broken down into four sub-categories; Residential, Commercial, Public/Quasi-Public, Parks and Open Space. The land use plan identifies approximately 110 acres of AG (Agriculture) to reflect existing uses, however a future master planning effort will be required. Therefore, AG uses are not addressed in these development standards. A summary of the land use designations is presented in Table 2.1.

2.1.2 Applicability

No building, structure, vehicle, sign, or area shall be used, altered, moved, enlarged, or stored in any zoning district except as specifically allowed in underlying zoning district and by the regulations of any applicable combining district.

2.1.3 Prohibition

No property in any zoning district shall be used in any manner so as to create problems contrary to public health, safety, or general welfare or so as to constitute a public nuisance.

Table 2.1: Land Use Designations

SYM	Residential Uses	Density Range
LD	Low Density Residential	1.0-10.9
MD	Medium Density Residential	11.0-19.9
HD	High Density Residential	20.0-30.0
	Commercial + Office Uses	**Floor Area Ratio (far)**
GC	General Commercial	0.25
CC	Community Commercial	0.25
MU	Mixed Use	0.50
O	Office	0.50
	Public/Quasi Public Uses	
P/QP	Public-Quasi Public	
P/QP	High School/Middle School	
P/QP	Elementary School	
	Parks, Open Space	
P	Park	
OS	Greenbelt/Drainage Corridor	
WP	Wetland Preserve	

2.2 Residential Land Uses

The residential land use designations include low density, medium density and high density residential categories.

2.1.1 Low Density Residential (LD)

The LD land use designation provides for single family detached homes on standard suburban size lots. Alternative lot configurations such as alley, cluster or halfplex lots may also occur. The density range is 1.0 to 10.9 dwelling units per gross acre (du/ac) and the projected average density is 6.0 du/ac.

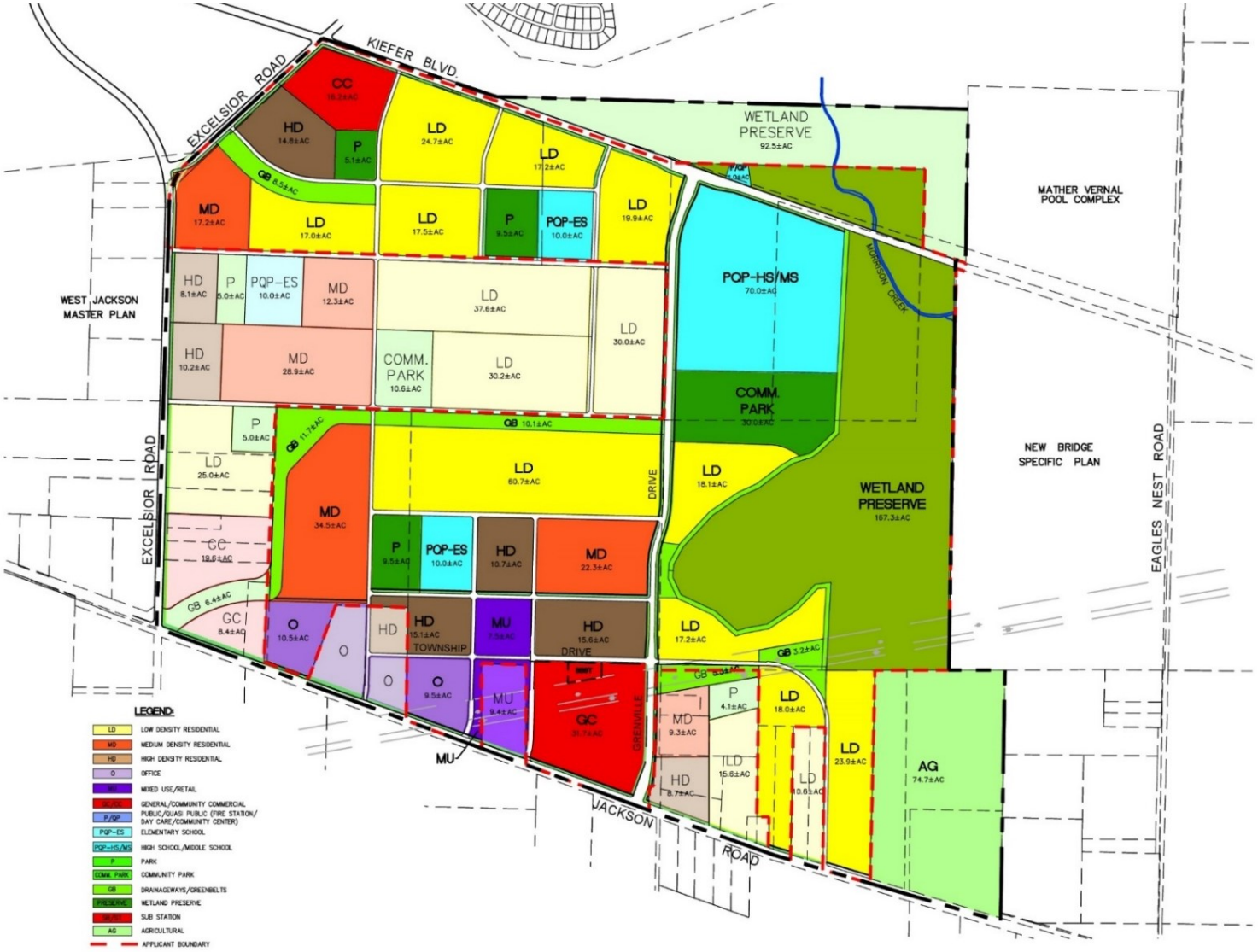


Exhibit 2.1: SPA Land Use Exhibit

2.1.2 Medium Density Residential (MD)

The MD land use designation accommodates a variety of housing types. This density allows for single family detached housing, as well as detached and attached housing types. MD housing types may include, but are not limited to, lot configurations such as standard, halfplex, cluster, alley, courtyard, zero-lot line, townhomes or condominiums. The density range is 11.0 to 19.9 du/ac and the projected average density is 13.0 du/ac.

2.1.3 High Density Residential (HD)

The HD land use designation anticipates a variety of attached housing types, providing rental and for-sale housing opportunities such as, but not limited to, apartments, brownstones, townhomes or condominiums. The density range is 20.0 to 30.0 du/ac and the projected average density is 25 du/ac.

2.2 Commercial and Office Uses

The commercial and office uses include General Commercial, Community Commercial, Mixed Use and Office.

2.2.1 General Commercial (GC)

GC sites are targeted to serve the immediate region and the Plan Area community with uses such as shopping centers, larger format retailers and a range of freestanding uses such as banks, restaurants, entertainment and offices. The target floor area ratio (f.a.r.) is 0.25.

2.2.2 Community Commercial (CC)

The CC land use designation provides the opportunity for both community and local oriented uses, including retail and services such as a grocery store, restaurants, professional and personal services. The target f.a.r. is 0.35.

2.2.3 Mixed Use (MU)

The MU land use designation provides the opportunity for development of a compatible mix of uses in the Town Center. Anticipated uses include retail commercial, offices, civic and quasi-public uses in a compact, urban style setting. Residential uses in MU will meet the requirements for HD. The target floor area ratio (f.a.r.) for the non-residential uses is 0.50.

2.2.4 Office (O)

Uses anticipated within Office generally include professional offices, research/development campuses, medical offices and clinics; hospitals, law firms; accountant offices; insurance, real estate, and financial; governmental offices; social services; and non-profit organizations. Retail commercial activities that are accessory to the primary uses of the zone are also appropriate. The target f.a.r. is 0.50.

2.3 Public/Quasi-Public Uses (PQP)

The P/QP category provides for the establishment of public and quasi-public uses, such as fire and police facilities, utilities, local government offices/facilities, public schools, community centers and other similar uses. The intent of this land use is to identify appropriate locations for these uses without impacting,

disrupting, or otherwise removing other lands for residential or other uses.

2.4 Parks, and Open Space

The Parks and Open Space category includes parks, open space of various types and a wetland preserve.

2.3.1 Parks (P)

Parks provide locations in the Plan Area for recreation and community gathering. This zone is intended to provide locations for parks and other related compatible public services/uses. Both active and passive recreational activities are permitted.

2.4.2 Open Space (OS)

The open space designation is to provide for open space uses, including the greenbelts and detention basins. The larger greenbelts are multi use corridors, combining drainage, water quality basins, trails and nodes. The greenbelts form the overall pedestrian and bikeway trail network and provide passive recreation opportunities.

2.4.3 Wetland Preserve (WP)

The wetland preserve designation is to preserve and protect existing natural resources, while also providing visual open space for the Plan Area. The wetland preserve abuts the east and north boundaries of the Plan Area. Uses within and access into the Preserve are restricted pursuant to the South Sacramento Habitat Conservation Plan (SSHCP) and the U.S. Army Corps of Engineers (USACE).

CHAPTER 3: USE REGULATIONS

3.1 Purpose

This chapter describes the land uses allowed within the Plan Area and the applicable use regulations. Section 3.2 contains tables that list the allowed uses, accessory uses and temporary uses in all land use designations, along with the approval process required for each use.

3.2 Permitted Uses

Use regulations are addressed in three tables: Tables 3.2 Allowed Uses, 3.3 Accessory Uses, and 3.4 Temporary Uses. The land uses and activities in the tables are classified into general use categories, use subcategories, and specific use types based on common functional, product, or physical characteristics such as the type and amount of activity, the type of customers or residents, how goods or services are sold or delivered and site conditions. Certain uses may be listed in one category when they may reasonably have been listed in one or more other categories.

3.2.1 Table Legend

The table lists the individual land use designations along the top of the table and into 3 subsections of Residential, Commercial/Employment and Public/Parks/Open Space. The far right column is the Use Standard. The use standards provide more specific detail for certain situations or are too lengthy to provide in a footnote. Users should refer to the referenced section of the document for more information. The use standards shall be in addition to, and not in lieu of, other development standards contained within this document.

"P" in a cell indicates that the use is a "Permitted Primary Use" and is allowed by right, subject to complying with the regulations of the respective zoning district in which the use is located, including Design Review, as provided by Section 6.3.2 of the County Zoning Code.

"UPM" indicates that the decision authority for the Minor Use Permit shall be the Planning Director.

"UPZ" indicates a Conditional Use that is allowed, if reviewed and approved by the Zoning Administrator.

"UPP" indicates a Conditional Use that is allowed, if reviewed and approved by the Planning Commission.

"UPB" indicates a Conditional Use that is allowed, if reviewed and approved by the Board of Supervisors.

Conditional Uses are subject to all other applicable regulations of the DS, including the use-specific standards in this Chapter and the requirements of Chapter 4, "Development Standards." A "UPZ", "UPP" or "UPB" designation in a given district does not constitute an authorization or an assurance that such use will be permitted. Rather, each Conditional Use Permit application shall be evaluated as to its probable effect on adjacent properties and surrounding areas, among other factors, and may be approved or denied based on appropriate findings.

"A" in a cell indicates that in the respective zoning district the use is allowed by right as an accessory use, without special conditions other than those imposed upon other accessory uses by right in the zoning district.

"TUZ" in a cell indicates that in the respective zoning district the use is allowed only if reviewed and approved in accordance with the procedures of Section 3.3 "Temporary Use Permit".

3.2.2 Use for Other Purposes

Approval of a use listed in Table 3.2, 3.3, and 3.4, and compliance with the applicable use-specific standards for that use, does not prohibit additional uses as long as those additional uses are specifically allowed in Table 3.2, 3.3 and 3.4 and approved under the appropriate process.

3.2.3 Uses Not Provided for in the Tables

If a use is not listed in Table 3.2, 3.3, or 3.4, included in a use definition, or shown as a permitted or conditionally permitted use in any JTSPA zoning district, the compatible County Zoning District as provided in the Code, may be utilized by County staff to determine allowance of the intended use. Table 3.1 identifies the JTSP land use categories and the compatible County Zoning designation. If the intended use is still not determined to be addressed in the Code, then the Planning Director may make a determination that either:

1. The use is substantially similar in characteristics, intensity, and compatibility to a use or uses within the zoning district, applicable to the property; or

2. The use would be appropriate in the zoning district, applicable to the property as a permitted or conditional use.

Table 3.1 Compatible Zoning Categories

	JTSP Land Use Designation	Compatible County Zone
SYM	**Residential Uses**	
LD	Low Density Residential	RD-1 through RD-7
MD	Medium Density Residential	RD-7, RD-10, RD-15
HD	High Density Residential	RD-20 through RD-40
	Commercial + Office Uses	
GC	General Commercial	GC, CMC
CC	Community Commercial	LC, NMC
MU	Mixed Use	CMC
O	Office	BP
	Public/Quasi Public Uses	
P/QP	Public-Quasi Public	BP
P/QP	High School/Middle School	BP
P/QP	Elementary School	BP
	Parks, Open Space	
P	Park	O
OS	Greenbelt/Drainage Corridor	O
WP	Wetland Preserve	O

In those cases where the Planning Director makes a determination that the use meets either of the above, the use shall conform to all the regulations, conditions of approval, and use standards applicable to the similar described use(s). If the use would be appropriate in the zoning district as a conditional use, a Conditional Use Permit shall be heard by the designated hearing body for the similar use.

Table 3.2: Allowed Uses **LEGEND** P Permitted Primary Use A Permitted Accessory Use UPM Minor Use Permit UPZ Conditionally Permitted Use by Zoning Administrator UPP Conditionally Permitted Use by Planning Commission UPB Conditionally Permitted Use by Board of Supervisors	RESIDENTIAL USES			COMMERCIAL/ EMPLOYMENT USES				PARKS/OPEN SPACE/PUBLIC USES				USE STANDARD
	LD	MD	HD	MU	GC	CC	O	PQP	PARK	OS	WP	
Dwelling, Single family detached	P	P										
Dwelling, Single family attached	UPZ	P	P									
Dwelling, Duplex/halfplex		P	P									
Dwelling, Multiple family		UPZ	P	P	P	P	P					
Family Day Care home[1]	P	P	P	P								3.3.1
Residential Care Home[1]	P	P	P									3.3.2
Places of Worship, Religious Institution	UPZ	UPZ	UPZ	P	P	P	P	P				
Private Social Club, Hall, Lodge				P	P	P	UPM	P				
Art Gallery, Studio	UPZ	UPZ	UPZ	P	P	P	P	P				
College, University	UPP	UPP	UPP	UPP	UPP	UPP	UPP					
School, K-12 Public	P	P	P	P	P	P	P	P				
School, K-12 Private	UPZ	UPZ	UPZ	UPZ	UPZ	UPZ	UPZ	P				
Government, Local Agency Buildings/Uses				P	P	P	P	P				3.3.3
Cemetery								UPP				
Community Garden	UPZ	UPZ	UPZ	UPZ	UPZ	UPZ	UPZ	P	P			
Public Park	P	P	P	P	P	P	P	P	P	P		
Open Space	P	P	P	P	P	P	P	P	P	P		

1. **This use shall follow the adopted Zoning Code standards- see corresponding use standard for Code reference.**

Table 3.2: Allowed Uses		LD	MD	HD	MU	GC	CC	O	PQP	PARK	OS	WP	USE STANDARD
Wetland Preserve												P	
Water Impoundment/Lake/Pond/Basin											P		
Adult Day Care Center		UPP	UPP	UPP	P	P	P	P	P				
Child Day Care Center		UPP	UPP	UPP	P	P	P	P	P				
Congregate Care Facility		UPP	UPP	UPM	UPZ	P	P	P					
Hospital/Convalescent Hospital						UPP	UPP	UPP					
Major Utility[1]		UPZ	UPZ	UPZ	UPZ	UPZ	UPZ	UPZ	UPZ				3.3.4
Minor Utility1		P	P	P	P	P	P	P	P	P	P		3.3.4
Solar Energy Facility1		UPM	UPM	UPM	UPM	UPM	UPM	UPM	UPM	UPM	UPM		3.3.5
Wind Turbine Facility1		UPM	UPM	UPM	UPM	UPM	UPM	UPM	UPM	UPM	UPM		3.3.5
Wireless Communication Facility1		UPZ	UPZ	UPZ	UPZ	UPZ	UPZ	UPZ	UPZ	UPZ	UPZ		3.3.6
Animal and Pet Services	a. Grooming and Short Term Boarding					P	P						
	b. Kennel, Cattery, Boarding & Training					UPZ	UPZ	UPZ					
	c. Vet Hospital					P	UPZ	UPZ					
General Business Services		P	P	P	P	P	P	P					
Personal Services	General				P	P	P	P					
	Beauty, Barber, Spa				P	P	P	P					
	Driving Instruction				P	P	P						
	Self Service laundry				P	P	P	P					
General Repair Services					UPZ	P	UPZ						
Bar/tavern					P	P	P						
Catering Service					P	P	P						
Restaurant, Carryout, Drive-thru, Sit Down					P	P	P						3.3.7.3

1. **This use shall follow the adopted Zoning Code standards- see corresponding use standard for Code reference.**

Table 3.2: Allowed Uses	LD	MD	HD	MU	GC	CC	O	PQP	PARK	OS	WP	USE STANDARD
On Sale Alcoholic Beverages				UPM	UPM	UPM						3.3.7.4
General Recreation Facility/Indoor				P	P	P	UPZ					3.3.7.5
Arcade, Video or Computer Gaming Center				UPZ		UPZ						
Dancing in a Bar/Restaurant, Incidental				UPZ	UPZ	UPZ	UPZ					
Live/Motion Picture and Performing Arts				UPZ	UPZ	P						
General Financial Institutions				P	P	P	P					
Payday Loan/Check Cashing					UPM	UPZ						
Bed and Breakfast Inn					UPZ	UPZ						3.3.7.6A
Hotel, Motel				UPP	UPP	P						
Office Use, General				P	P	P	P					
Laboratory- Medical, Dental or Optical				UPM	P	P	P					3.3.7.7
Assembly and Light Manufacturing							UPZ					
General Retail Sales up to 49,999 s.f.				P	P	P	P					
General Retail Sales 50,000-350,000 s.f.					P	P						
General Retail Sales over 350,000 s.f.					UPP							
Neighborhood Convenience Store/Market up to 6,000.s.f.				P	P	P						3.3.7.8
Liquor Store/Off-Sale Alcoholic Beverages				P	P	P						
Wholesale					P							
Nursery					P							
Convenience Recycling Facilities					P	UPZ		P				3.3.7.10
Auto Sales, New and Used					P							3.3.7.9A
Auto Service Station					P	P						3.3.7.9B
Automobile Wash					UPZ	UPZ						
Parking Lot or Garage			UPM	P	P	P	P					3.3.7.9C

TABLE 3.3 Allowed Accessory Uses LEGEND A Permitted Accessory Use UPM Minor Use Permit	LD	MD	HD	MU	GC	CC	O	PQP	PARK	OS	WP	
A. Coin Operated Dispenser or Amusement					A	A						3.3.9.1
B. Dish Antenna	A	A	A	A	A	A	A	A				3.3.9.2
C. Dwelling, Residential Accessory	A	A	A									3.3.9.3
D. General Accessory Structures	A	A	A									
E. Home Occupation[1]	A	A	A									3.3.9.4
F. Residential Garage Sales	A	A	A	A								3.3.8.6
G. Residential Swimming Pools and Spa Equipment	A	A	A									3.3.9.10
H. Outdoor Display, Storage and Comfort Features					UPM	UPM						3.3.9.5
I. Parking and storage of commercial vehicles					A							

1. **This use shall follow the adopted Zoning Code standards- see corresponding use standard for Code reference.**

Table 3.4: Allowed Temporary Uses	RESIDENTIAL USES			COMMERCIAL/ EMPLOYMENT USES				PARKS/OPEN SPACE/PUBLIC USES			
LEGEND TUZ Temporary Use Permit by the Zoning Administrator	LD	MD	HD	MU	GC	CC	O	PQP	PARK	OS	WP
A. Farmers Market				TUZ	TUZ	TUZ	TUZ	TUZ	TUZ		
B. Community Stand	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ			
C. Promotional Sale/Display				TUZ	TUZ	TUZ	TUZ				
D. Seasonal Sale/Display				TUZ	TUZ	TUZ	TUZ				
E. Temporary Concession				TUZ	TUZ	TUZ	TUZ				
F. Temporary Construction Buildings	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ		
G. Temporary Sales/Construct.Office	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ		
H. Temporary Use of Mobile Homes and Commercial Coaches	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ		
I. Temporary Uses, General	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ	TUZ		

3.3 Use Standards

The use standards of this Chapter apply to the named use in every land use designation where the use is allowed per Table 3.2, unless otherwise specified in the use standard or as specified in a Conditional Use Permit approval. The use standards shall be in addition to, and not in lieu of, all other generally applicable development standards in the DS.

Where the provisions of the use standards or requirements conflict with other provisions of this DS, the more restrictive standards or requirements shall apply.

The use standards are not intended to replace or otherwise limit in any manner other County regulations or to preclude the imposition of reasonable use permit conditions, as authorized in the DS. Chapter 7 of the Code shall be utilized to clarify interpretation of common wording and language issues that may occur in the DS.

3.3.1 Family Day Care Home

Family day care homes shall be regulated in accordance with the **Zoning Code, Section 3.5.1.F.**

3.3.2 Residential Care Homes

Residential care homes shall be regulated in accordance with the **Zoning Code, Section 3.5.1.I.**

3.3.3 Government and Local Agency Uses and Buildings

1. State and Federal Government Uses and Facilities

a. A government use or building owned by a state or federal government entity and located on federal or state owned property shall be permitted by right in any district.

b. A federal or state government use within a privately-owned building, facility, or premises shall be permitted in any zoning district and shall be regulated as set forth the DS for the proposed use to the extent permitted by law.

2. Government Uses and Facilities Other than Federal and State

a. A government use or building owned by a government entity other than state or federal government within a privately-owned building, facility, or premises shall be permitted in any land use designation and shall be regulated as set forth in DS for the proposed use to the extent permitted by law.

b. If not permitted by paragraph 2.a. above, a government use or building owned by and located on property owned by a government entity other than state or federal government may be allowed by Conditional Use Permit in any use designation.

3.3.4 Public Utilities

Public utilities within the Plan Area shall be regulated in accordance with the Zoning Code, Section 3.6.6.A and B.3.3.5.

3.3.5 Solar Energy and Wind Turbines

Solar energy facilities within the Plan Area shall be regulated in accordance with the **Zoning Code, Section 3.6.6.C.** Wind turbine facilities shall be regulated in accordance with the **Zoning Code Section 3.6.6.D.**

3.3.6 Wireless Communication Facilities

Wireless communication facilities shall be regulated in accordance with the **Zoning Code, Section 3.6.7.**

3.3.7 Commercial Use Standards

1. General Standards for All Uses in Commercial Zoning Districts

a. Conduct of Business on Lot

The entire business operation shall be conducted within a completely enclosed building or completely fenced within the buildable area of the lot. The sale, lease, and rental of merchandise which is specifically allowed in this zoning district may be displayed in the required yard areas provided no merchandise, in combination with display platforms, shall exceed six (6) feet in height when displayed within 25 feet of a street right-of-way and no merchandise shall exceed 10 feet in height when displayed within 50 feet of a street right-of-way. Such merchandise shall not project over required landscaped areas.

2. Commercial Service Uses

A. Kennel, Cattery, Animal Boarding and Training

A kennel, cattery, or animal boarding and training use shall comply with the following minimum standards:

a. Every lot or parcel used for a kennel shall have a net lot area of not less than one acre, except in commercial and mixed-use zoning districts.

b. Small animal training shall be permitted by right in the agricultural zoning districts, on the condition that the owner of each animal shall be present during such training.

c. Cattery facilities, fully operated indoors, shall be permitted by right in the commercial zoning districts.

3. Eating/Drinking Uses

a. Restaurant, Carry-out/Drive-through/Sit-down

For drive-through windows, a Conditional Use Permit from the Zoning Administrator is required when the design standards for drive-through windows are not met, or if the drive-through window and/or order station with amplified sound is located within 300 feet of a residential zoning district (RD-1 through RD-40), or if the drive-through window or order station without amplified sound is located within 75 feet of a residential zoning district (LD, MD, HD). If the building size is 100 square feet, or less, then a Minor Use Permit by the Planning Director is required.

4. On Sale of Alcoholic Beverages.

1. A Minor Use Permit shall be required for any new restaurant or similar establishment that serves beer, wine and/or distilled spirits in conjunction with the business, and requires or obtains a special license #23, #41, #47, or #75 from the Department of Alcoholic Beverage Control (ABC).

2. A Minor Use Permit shall be required for any existing restaurant or similar establishment that serves beer, wine and/or distilled spirits in conjunction with the business, and requires or obtains a special license #41, #47, or #75 from ABC in the event of any of the following:

a. The type of ABC license for the address of the establishment is changed.

b. The ABC license is transferred to a different address.

c. The use itself is expanded in any way, including, but not limited to those operational standards such as hours of operation or restrictions on amplified music that are applied by ABC.

3. Uses such as places of worship, social centers, art galleries, fraternal halls or private clubs that sell or serve beer, wine and/or distilled spirits only to members and their guests or at special events are permitted to serve alcoholic beverages by right and not subject to the restrictions in Section 3.7.3.B.

5. Entertainment/Recreation Uses

A. Recreation Facility, Indoor

An indoor recreation facility with capacity exceeding 300 persons or a theater with four or more screens shall be subject to a Conditional Use Permit by the Zoning Administrator. Indoor shooting ranges shall require a conditional Use Permit by the Zoning Administrator. In the MU, GC and CC zoning districts, the use shall be permitted, regardless of size or location, subject to a finding that the use is incidental to the business center and intended to serve its employees and customers; otherwise, the use is subject to a Conditional Use Permit by the Zoning Administrator.

6. Lodging Uses

A. Bed and Breakfast Inn

Permitted subject to issuance of a Conditional Use Permit by the Zoning Administrator. The use permit may authorize limited ancillary social gatherings such as conferences, weddings, fundraisers, and other similar events attended by any non-lodger, subject to any conditions imposed including, but not limited to, restrictions on the frequency and timing of events and the maximum number of persons per event. Except as expressly authorized in the use permit, such activities are prohibited.

7. Office Uses, General

A. Medical, Dental, or Optical Laboratory

Permitted in the listed zoning districts, if in compliance with the following standards.

1. Outdoor storage of materials shall be prohibited unless fully enclosed in a structure or screened from public view with landscaping.

2. The use shall not create adverse levels of noise or vibration beyond ambient levels in the surrounding neighborhood. The applicant shall be required to take all measures necessary to reduce noise levels to ambient levels and to demonstrate there shall be no vibration affecting properties beyond the limits of the lot.

3. The location, arrangement, size, and intensity of operations and design of the use shall be compatible with the neighborhood in which it is location and shall safeguard surrounding properties from glare, unsightly view, odors, or other undesirable characteristics, as determined by the Planning Director.

8. Neighborhood Convenience Store, Food Market (Up to 6,000 square feet)

1. In commercial and mixed-use zoning districts, the use is permitted if located 500 feet or more from a residential zoning district, and 1,000 feet or more from the property line of any public or private school (kindergarten through twelfth grade). If located less than 500 feet from a residential zoning district, or less than 1,000 feet from the property line of any public or private school (kindergarten through twelfth grade), the hours of operation shall be limited to between 6:00 a.m. and 11:00 p.m., unless a Conditional Use Permit is approved by the Board of Supervisors for extended hours. The distance shall be measured from the entrance of the commercial structure to the zone district boundary or the school property line.

2. The use shall comply with all of the following standards:

a. The use shall be consistent with all applicable development requirements of Chapter 4, "Development Standards."

b. Signs shall be posted prohibiting consumption of alcoholic beverages in the business or in the parking areas.

c. All illegal activities observed on or around the business shall be promptly reported to authorities.

d. Business policies shall be posted on the interior in a conspicuous place.

e. At least two toilet facilities shall be available to the public at all times.

f. Signs shall be posted prohibiting loitering in parking areas.

g. Bicycle security racks shall be provided.

3. The use shall comply with all of the following additional standards, unless the Sheriff's Department waives the standard in writing:

a. Project lighting levels shall be 1.5 foot-candles of minimum maintained illumination per square foot of parking surface during business hours and 0.25 foot-candles of minimum maintained illumination per square foot of surface on any walkway, alcove, passageway, etc., from one-half (½) hour before dusk to one-half (½) hour after dawn.

b. All light fixtures shall be vandal resistant.

c. Management shall be responsible for the removal of litter from adjacent property and streets that results from this project (with adjacent property owner consent).

d. Store windows shall be left unobstructed to all viewing of the interior of the business by patrolling police. Design to allow for window surveillance by employees of all outside areas from the employees primary work positions.

e. Building security to resist crime attempts by both hardware and electronic systems:

(i) Raised cashier stations to give an advantage of height against would-be criminals.
(ii) Display counter height that is low enough that the cashier has visibility throughout the store and mirrors that allow monitoring of any corners or hidden areas.
(iii) Buzzers on doors of the coldbox, so that the clerks will know when someone has removed merchandise from the refrigerator areas.
(iv) Cashier station that is visible from the parking area, with no blocking of windows or doors (such as with posters or signs) and counters that are clean of excess displays that impair the visibility.
(v) Two-way mirrors on inside doors to storage, utility, and office areas that create uncertainty as to how many people are actually in the store so as to deter criminals.
(vi) Timed drop safe adjacent to cashier so that no more than $30.00 is available and premised posted that no more than $30.00 is available.
(vii) Height tape installed next to exit.
(viii) A prominently-displayed video camera for identifying robbers or shoplifters.

9. Vehicle-related Uses

A. New and Used Auto Sales

The sale, lease, and rental of merchandise, which is specifically allowed, may be displayed in the required yard areas, provided no merchandise, in combination with display platforms, shall exceed six (6) feet in height when displayed within 25 feet of a street right-of-way and no merchandise shall exceed 10 feet in height when displayed within 50 feet of a street right-of-way. Such merchandise shall not project over required landscaped areas.

B. Automobile Service Station

The following requirements apply to all automobile service stations.

a. Location

Appropriate sites for an automobile service station shall consider locations that will most likely reduce the danger from fire and explosion, to provide for the free flow of traffic to reduce the danger of traffic accidents arising from ingress to and egress from automobile service station sites.

b. Public Street Frontage

The minimum public street frontage shall be 135 feet on each public street for all new primary service stations.

c. Setback Requirements

Setback requirements for the main building on an automobile service station site shall be the same as those required for other structures located in the same zoning district in which the automobile service station is located.

d. Pump Islands

Service station pump islands may be placed in required yards provided they are at least 15 feet from the street right-of-way.

e. Landscaping

Landscaped areas shall be established and maintained on all automobile service station sites. The landscaped area shall comprise a minimum of 20 percent of the lot area. Not less than 70 percent of the landscaped area as required in this Section shall be covered with live landscaping such as lawn, ground cover, trees, or shrubs, and not more than 30 percent shall be covered with hard surfaces such as gravel, landscaping rock, concrete, artificial materials, or other impervious materials.

f. On-site Lighting

Lighting shall be designed, controlled, and maintained so that no source of light is visible from off the property; lighting does not unreasonably disturb occupants of adjacent properties; and does not interfere with traffic. There shall be no flashing, moving, or animated lights on automobile service station sites.

g. Architecture

The design of every structure including signs on an automobile service station site shall consistent with the JT Design Guidelines and Countywide Design Guidelines.

h. Refuse Areas

Any refuse area on an automobile service station site shall be fenced or screened from the view of any pedestrian or vehicle traffic. The design of such fences and screens shall be compatible with the design of the main building. All discarded parts and materials shall be deposited into a completely enclosed container concealed from adjacent properties.

j. Fences and Walls

Where an existing or a proposed automobile service station site abuts property that is zoned or used residentially, there shall be a solid masonry wall of at least six (6) feet in height along the property line between the automobile service station site and the abutting property, except that within the first 25 feet from the street right-of-way line the fence or wall shall not exceed 2.5 feet in height.

k. Structure Height

Structures located within the buildable area of the lot shall be subject to height limits of the zoning district classification of the site. Canopies constructed over pump islands that are located outside the buildable area of the lot shall not exceed the design clearance height plus the allowable roof structure height as described in Sections 3.3.7.9.B.k.

(i) The design clearance height is the vertical distance between the finish grade and a height equal to the vehicle height for which unencumbered clearance will be provided by the design of the service station. The maximum allowable design clearance height is 16 feet, however lower design clearance heights are permitted at the option of the owner.

(ii) The allowable roof structure height shall not extend higher than two and one-half (2½) feet above the design clearance height. For purposes of this Section, the allowable roof height is the vertical distance above the design clearance height measured to the highest point of the coping of a flat roof or to the highest part of a mansard roof on to the average height of the highest gable of a pitched or hipped roof.

(iii) Deviations from the design clearance height or allowable roof structure height may be permitted in conjunction with a Conditional Use Permit hearing if the final approving body finds that the overall architectural character of the service station is aesthetically enhanced by such deviation and total service station design is aesthetically compatible and complementary of the surrounding structures.

l. Automobile Service Stations Within or Adjacent to Shopping Centers

The site design and architectural style of an automobile service station located within a shopping center shall be consistent where possible with the site design and architectural style of the shopping center. Internal circulation of traffic within a shopping center shall be designed so as not to create traffic hazards between an automobile service station and other parts of the shopping center.

C. Parking Lot or Garage

1. In residential zoning districts, a parking lot shall be allowed as a primary use only when the parking lot is intended to serve as off-street parking for a business on an adjacent parcel.

2. In commercial and mixed use zoning districts, ground level and underground facilities are permitted by right. Multi-story parking structures are permitted subject to approval of a Conditional Use Permit by the appropriate authority.

10. Convenience Recycling Facilities

Convenience Recycling Facilities are permitted in the GC and CC zoning districts, subject to the Locational, Operational and Design Standards in Section 3.3.7.10.a.

Facilities are permitted if located more than 500 feet from a residential zone or property lines to the nearest solid building wall when all operations (including materials storage) is conducted completely indoors or measured from property line to property line when self-contained movable bins are used for outdoor storage.

a. Locational Standards

(i) The facility shall be operated only in a convenience zone as defined under the California Beverage Container Recycling and Litter Reduction Act (Public Resources Code Section 14500 et seq.).

(ii) The facility shall be located within a shopping center, which may consist of multiple parcels with a minimum size of five acres. The Convenience Recycling Facility must be located on a site under the same management as the shopping center.

(iii) The facility shall not be located on a property where there is a service station or liquor store, or convenience store that is not part of and integral to a shopping center over five acres.

(iv)There shall be a half mile distance between convenience recycle centers.

(v) The facility shall be located at least 100 feet from a property zoned or occupied for residential use. The distance is measured from the front door of the Convenience Recycling Facility to the nearest property zoned or occupied for residential use.

b. Operational Standards:

(i) Written proof of legal access to on-site restroom facilities for employees and customers shall be provided and posted in a visible location on the interior of the recycling facility.

(ii) Materials at a convenience recycling facility may be processed on site and all crushing of materials and weighing of the material shall occur within the kiosk.

iii. No bags or trash blowing on the premises shall be permitted. Repeat violations may result in additional operational restrictions for the subject property and or revocation of permit.

iv. The facility shall provide spill buckets and insure the employees and customers use them to prevent excessive waste. If material is spilled on the pavement, it must be cleaned up immediately. The waste within the spill buckets must be disposed of in a sewage disposal area and shall not be deposited in the storm drain. The facility will be cited for excessive buildup of spilled materials on the pavement.

v. Hours of operation: Operating hours shall not exceed 8:00 a.m. to 6:00 p.m. for the kiosk. The hours of operation for the reverse vending operation shall be from 7:00 a.m. to 7:00 p.m. Collection and transportation of receptacles may occur from 7:00 a.m. to 8:00 p.m.

vi. The operator cannot serve customers transporting materials using any of the following: shopping carts, flat beds with wheels, wagons, or make shift carts with wheels. Only customers arriving on a bicycle without a trailer, with two wheel carts, in a motor vehicle (truck/car) or walking on site and hand carrying recyclable materials will be served. If shopping carts are abandoned on the property, the operator shall pay for a daily cart retrieval service and remove them from the property as soon as possible.

vii. The use of a roll up door is permitted but the size of the door shall be limited to 100 square feet of open door area.

viii. The facility shall be clearly marked to identify the name and telephone number of the facility operator and the hours of operation and shall display a notice stating that no material shall be left outside the collection receptacles.

ix. No outside storage of materials shall be permitted. Overflow bags of material left outside are prohibited.

x. Convenience Recycling Facilities shall be located within a fully enclosed structure or kiosk that meets the Community Design Guidelines and shall not be located within a cargo container, unless the cargo container is ancillary to the structure or kiosk.

b. Design Standards for Permanent, Enclosed Buildings:

i. Convenience Recycling Facility structures shall meet the Community Design Guidelines and be reviewed by the Design Review Administrator.

ii. Design Review is required for new facilities in order to accomplish the following objectives: a) the orientation of the proposed facility shall minimize visual and acoustical impacts to surrounding properties; b) the architectural design, signage and color of the facility shall not intentionally detract from the existing commercial use or community service facility on the site. Improvements may be required to ensure compatibility, including but not limited to landscaping, screening, and parking lot improvements.

iii. The facility shall provide best management practices for review by the Office of Planning and Environmental Review. This shall include a brief description of the business including the following: number of employees on site, amount of material accepted on a weekly and monthly basis, square footage of facility, materials accepted, how material is stored and collected and how the facility is cleaned.

c. Design Standards for Kiosks:

i. The minimum size of any freestanding kiosk structure shall be 400 square feet. It may have no more than two other temporary components that attach to it, for temporary storage. The kiosk will be manned by one or two individuals to serve the customers.

ii. The facility, shall occupy no more than six (6) parking spaces not including spaces that will be periodically needed for removal of materials or exchange of the collection receptacles. No parking spaces required for the primary host use may be occupied by the facility.

iii. The facility shall be located within the buildable portion of the property and not be located in any required setback, and shall not obstruct pedestrian or vehicular circulation.

iv. Outdoor customer staging areas are only permitted with the issuance of a Minor Use Permit by the Zoning

Administrator. The number of sorting bins and barrels shall be determined by the minor use permit. The outdoor staging area shall not exceed 100 square feet in size within a controlled designated area. Unused barrels shall be stored indoors at all times. The facility shall be clearly marked with signage indicating the staging areas where the customers line up to drop off the materials. The facility shall not impair the landscaping required for any host use.

vi. No parking spaces are required for customers. One space shall be provided for the facility attendant, if needed, as determined by the Design Review Administrator.

vii. Design Review is required for new facilities in order to accomplish the following objectives: a) the orientation of the proposed facility shall minimize visual and acoustical impacts to surrounding properties; b) the architectural design, signage and color of the facility shall not intentionally detract from the existing commercial use or community service facility on the site. No standalone cargo containers are permitted. Any proposed kiosk must be compatible with the shopping center. Improvements may be required to ensure compatibility, including but not limited to landscaping, screening, and parking lot improvements. The landscaping may consist of landscape planters in portable containers. The free-standing structure used for recycling must be architecturally compatible with the shopping center.

viii. Signage must be painted on the building and cannot be on the roof.

ix. The facility shall not be located in the rear of a shopping center between commercial buildings and adjacent residential zones, and shall be visible from the street.

x. The facility shall provide best management practices for review by the Office of Planning and Environmental Review. This shall include a brief description of the business including the following: number of employees on site, amount of material accepted on a weekly and monthly basis, square footage of facility, materials accepted, how material is stored and collected and how the facility is cleaned as part of the Design Review application.

3.3.8. Specifically Prohibited Uses

A. Cannabis

No commercial or industrial cannabis growing, processing and/or sales is permitted within the Plan Area.

3.3.9 Use-Specific Standards for Accessory Uses

The specific standards of this Section shall apply in addition to the general standards of Section 3.3. In the event of conflict, the more restrictive standard in the opinion of the Planning Director shall apply.

1. Coin-Operated Dispenser or Amusement

Coin operated dispensers are permitted by-right as an ancillary use and shall occupy no more than 25 percent of the gross floor area of structure(s) committed to the primary use.

2. Dish Antenna

A dish antenna less than three (3) feet in diameter that receives signals only is not subject to this Section. A dish antenna greater than three (3) feet in diameter or that sends signals shall comply with the standards of this Section.

a. In a Commercial or Office Zoning District

(i) A dish antenna is permitted to send or receive signals to or from satellites if the power output of the associated transceiver does not exceed two (2) watts of power and the dish is six (6) feet in diameter or less. The signal intensity must be maintained below applicable ANSI standards.

(ii) Dish antenna(s) may be installed on the roof of a commercial or industrial structure provided that the antenna is enclosed on all sides by a solid screening structure that is installed to the maximum attainable height of the dish and is composed of materials that are similar in style and color to the predominant composition of the building. Both the antenna and the screening structure are subject to all applicable building code requirements including building structure and wind load integrity.

(iii) Dish antenna(s) installed directly on the ground shall be located within the buildable portion of the lot with respect to applicable building setback requirements. The maximum attainable height of the dish shall not exceed the diameter of the dish plus three (3) feet.

b. In Any Other Zoning District

(i) The dish antenna is permitted to receive signals only.

(ii) Only one dish antenna is permitted on each lot.

(iii) The distribution of signals to more than one dwelling unit is permitted, provided the distribution is limited to the same parcel or same project as the antenna site.

(iv) The location of the antenna on the lot shall meet all accessory structure requirements applicable to zoning district.

(v) The dish antenna shall be installed directly on the ground. The maximum attainable height of the dish shall not exceed the diameter of the dish plus three (3) feet.

c. Exceptions

In any situation where the standards of Section 3.9.2.B do not allow reasonable access to customarily received satellite signals, a Conditional Use Permit shall be considered by the Planning Commission with the objective of ascertaining the most aesthetically acceptable alternative siting solution. In no case may the final decision result in denial of reasonable access to satellite signals.

(i) The decision on the use permit application must provide for a reasonable quality of signal reception, taking into consideration the particular circumstances of the property and its surroundings.

(ii) The decision on the use permit application may take into consideration all the alternative site locations and reception solutions on the property and the use permit may be conditional for the purpose of reducing the visual impact of the dish antenna as seen from adjacent properties or for the purpose of reducing the potential of safety or health accident. Such conditions may include, but are not limited to: partitions, screening, landscaping, mountings, fencing, height of antenna, and site location within the parcel.

(iii) To assure that a property is not denied reasonable access to the satellite signals, because the filing fee of a Conditional Use Permit may be excessive in light of the purchase and installation cost of the equipment, a Conditional Use Permit for a home video satellite antenna shall be one-half the normal fee for a Conditional Use Permit.

(iv) To assure that property is not denied reasonable access to satellite signals by the imposition of conditions that are unreasonably out of proportion in light of the purchase and installation cost of the equipment, the Commission shall give consideration to the costs incurred toward satisfying the conditions as they relate to the cost of the system.

3. Dwelling, Residential Accessory

Residential accessory units within the Plan Area shall be regulated in accordance with the **Zoning Code, Section 3.9.3.D**

4. Home Occupation

Home occupations within the Plan Area shall be regulated in accordance with the **Zoning Code, Section 3.9.3.F.**

5. Outdoor Display, Storage and Comfort Features

1. Accessory comfort features and customer conveniences, not used for advertising, including but not limited to tables, benches, litter receptacles, bicycle racks, and mailboxes may be permitted in the yard areas. This provision does not include amusement machines, telephone booths, sales booths and playground equipment.

2. In any zoning district, no equipment, material, goods, furniture, or appliances may be stored or displayed outside an enclosed building or outside of a solid screen fenced area and be visible from a public street, unless that equipment, material, good, furniture, or appliance is normally used out of doors. No equipment or goods may be displayed within required yard areas unless located within the buildable portion of the lot. Display of new goods is allowed with a setback of 25 feet upon issuance of a minor use permit.

6. Garage Sales

Garage sales are permitted on any parcel where the sale operator resides, not to exceed three sales per calendar year and two consecutive days for each sale. Signs shall not exceed a total of 12 square feet. All signs and merchandise must be displayed within the property boundaries.

7. Bus Shelter

Bus shelters, whether owned and maintained by a public agency or other person, shall be a permitted use in any zoning district and shall comply with the standards in Section 3.3.9.7.1-4.

1. Shelters shall be installed at a location approved by the Sacramento Regional Transit District or other transit providers to provide temporary shelter for persons waiting to utilize the transit district's transportation facilities.

2. The shelters shall be constructed of aluminum frames and panels with Alcoa bronze duranodic finish or equal. The roofs shall be of bubble type construction, and the wall panels shall be of transparent materials, either tempered glass or plastic. Security lights may be installed. Shelters of other designs and constructed of other materials may be constructed provided the design and materials are first approved by the Design Review Administrator.

3. The size of such shelters shall be approximately six (6) feet in width, 10.5 feet in length, and eight (8) feet in height; however, shelters may be sized in multiples of the length and width dimensions but may not exceed the eight (8) foot height dimension.

4. Advertising signs are subject to the provisions of Section 4.13.4.H, "Mass Transit Shelter Signs."

8. Storage of Flammable and Combustible Liquids

The storage of flammable and combustible liquids is limited to volumes as established by the local Fire Districts. Storage of flammable liquids in the fuel tank of a motor vehicle, motorboat, mobile power plant, or mobile heating plant, and the storage or use of paints, oils, varnishes, or similar flammable mixtures when such liquids are stored for maintenance, painting, or similar purposes is excluded from this requirement. Additional permitting may be required by the Environmental Management Department.

9. Storage of Unregistered or Inoperable Private Vehicles

Storage of not more than two unregistered or inoperable vehicles may be allowed outside a fully enclosed building on a parcel of land located in any residential zoning district, and shall comply with the following standards:

1. The parcel size is 10,000 square feet, or larger, for the first vehicle and that 5,000 additional square feet is provided for the second vehicle.
2. Vehicles are the legal property of persons who reside in the on-site dwelling, as evidenced by a certificate of ownership issued by the Department of Motor Vehicles.
3. Vehicles shall not be stored in the front yard or side street yard.
4. Vehicles shall be stored behind a six (6) foot high solid wood fence and not be visible from any public street.

5. For purposes of this Section, "unregistered vehicles" includes any vehicle that is considered non-operational pursuant to a current certificate of non-operation issued by the Department of Motor Vehicles of the State of California.

10. Residential Swimming Pool and Spa Equipment

An accessory swimming pool or spa shall comply with the standards in Section 3.3.9.10, items 1-2.

1. Swimming pool and spa equipment may encroach into a front or side street yard not to exceed five (5) feet providing said equipment is within a solid fenced yard or enclosure.
2. Swimming pools and spas shall not be located:
    a. Within a recorded setback except rear yards of through lots unless otherwise prohibited by recorded subdivision map.
    b. Within a public utility easement.
    c. Within a public easement.
    d. Within the required front or side street yards.
    e. Within three (3) feet of side or rear property lines except that the Chief Building Inspection Division may approve setbacks less than three (3) feet from side or rear property lines as provided for in the Swimming Pool Code, County Code Section 16.36. For the purpose of this Section, setback shall be from the right-of-way line or property line to the water line.
    f. The provisions herein shall not alter the regulations of a special planning area.

11. Cargo Containers

1. In commercial and office zoning districts, cargo containers shall comply with the following standards:
    a. Cargo containers shall be located in the buildable portion of the lot.
    b. Cargo containers shall not occupy required parking areas or required landscaping areas.
    c. In commercial zones, cargo containers shall not be visible from public view.
2. In all zoning districts where cargo containers are permitted, cargo containers shall be painted a solid neutral color, or a color(s) that match the adjacent structures. Acceptable neutral colors include, but are not limited to: beige, taupe, and browns. Colors shall be maintained for the life of the container.
3. Cargo containers shall not display signage and shall be kept free of graffiti.
4. Cargo containers used on school or park sites located in residential zones must be screened from public view and located at least 25 feet from a property used for residential purposes. Cargo containers on school or park sites in must be painted in a neutral color and kept graffiti-free.

12. Loading Dock

Permitted provided it is setback at least 75 feet from the boundary of an adjacent residential property, unless a reduced setback is allowed upon approval of a Special Development Permit by the Zoning Administrator. Also, limited hours for loading and unloading may apply.

13. Dwelling, Caretaker

Permanent living quarters (does not include the temporary use of a mobile home) for a caretaker or night watchman shall be accessory to a permitted primary use, and permitted in any commercial, mixed-use or industrial zoning district, subject to the standards items 1-4 below.. A Minor Use Permit for a caretaker shall be required in the GC and O zoning districts.

1. The caretaker living quarters shall be located within the principle building.
2. The caretaker living quarters shall be occupied by the owners or an employee of the business.
3. A minimum of one parking space shall be provided for the caretaker living quarters, in addition to parking spaces required for the primary use.
4. The caretaker living quarters shall have no more than two bedrooms, and shall provide no more than 650 square feet of habitable living area.

14. Dwelling, Live-Work Units.

Any live-work units shall be accessory to a permitted primary use, and shall comply with the following standards. Exceptions to any of the standards in items 1-2 below shall be permitted by a Minor Use Permit.

1. All living space within the live-work unit shall be contiguous with, and an integral part of the working space of the primary use. Access to individual units shall be from common access areas, corridors, or hallways.
2. The live-work unit shall be occupied by the owner or an employee of the business, and shall not be rented separately from the working space.

15. Prohibited Accessory Uses

A. Minor Repair and Maintenance of Personal Vehicles

It shall be unlawful for any person to engage in or permit others to engage in minor vehicle repair or maintenance in any residential zoning district under any of the following circumstances:

1. Using tools not normally found in a residence;
2. Conducted on vehicles registered to persons not currently residing on the lot or parcel; and
3. Conducted outside a fully enclosed garage and resulting in any vehicle being inoperable for a period in excess of 24 hours.

3.3.10 Use Standards for Temporary Uses

The DS allows for the establishment of certain temporary uses for limited duration, provided that such uses comply with the general and specific standards of this Section.

1. General Requirements for all Temporary Uses and Structures

All temporary uses or structures shall meet the following general requirements, unless otherwise specified in the DS:

a. The temporary use or structure shall not be detrimental to property or improvements in the surrounding area or to the public health, safety, or general welfare.

b. The temporary use shall comply with all applicable general and specific regulations of Section 3.3.10, unless otherwise expressly stated.
c. Permanent alterations to the site are prohibited.
d. All temporary signs associated with the temporary use or structure shall be properly permitted and removed when the activity ends or permit expires, whichever occurs first.
e. The temporary use or structure shall not violate any applicable conditions of approval that apply to a principal use on the site.
f. The temporary use regulations of this Section do not exempt the applicant or operator from any other required permits, such as Environmental Management Department permits.
g. If the property is undeveloped, it shall contain sufficient land area to allow the temporary use or structure to occur, as well as any parking and traffic circulation as required that may be associated with the temporary use, without disturbing sensitive or protected resources, including required buffers, 100-year floodplains, river protection setbacks, and required landscaping. At the conclusion of the temporary use or at expiration of the permit, whichever occurs first, all disturbed areas of the site shall be restored or improved to the condition that existed prior to the use.
h. If the property is developed, the temporary use shall be located in an area that is not actively used by an existing approved principal use, and that would support the proposed temporary use without encroaching or creating a negative impact on existing buffers, open space, landscaping, traffic movements, pedestrian circulation, or parking space availability.
i. Tents and other temporary structures shall be located so as not to interfere with the normal operations of any permanent use located on the property, shall be anchored, and meet the requirements of the Building Official, including fire rating.
j. Off-street parking shall be adequate to accommodate the proposed temporary use.
k. Applications for temporary structures to be located in the 100-year floodplain shall be required to submit a plan to the Building Department for the removal of such structure(s) in the event of notification by the Sacramento County Department of Water Resources. The plan shall include the following information:
1. The name, address, and phone number of the individual responsible for the removal of the temporary structures and the property owner;

2. The time frame prior to the event at which a structure will be removed; and

3. A plan to remove the temporary use earlier than the scheduled removal date, if required.

l. The Zoning Administrator may approve a temporary use permit to allow the use of property in any zone for a period not to exceed 10 days within a given year for an exposition, concert, carnival, vaccination clinic, amusement ride, sale of old clothes and second hand

merchandise, or other similar activity, unless specifically allowed as a promotional display per 3.3.10.2.B. Temporary use permits are not required when these uses are conducted within mall areas or in a completely enclosed building. The temporary use, if located in a zone other than a commercial or industrial zone, shall be under the supervision of a public agency or an organization, school or place of worship that qualifies for an exempt fee license pursuant to the business license ordinance. The permit shall be issued annually, and shall list all dates for the temporary event and uses permitted during the year.

2. Additional Standards for Specific Temporary Uses

A. Community Stands

Community stands are permitted as a temporary use, subject to the issuance of a Temporary Use Permit by the Zoning Administrator and complying with following standards:

1. Community stands shall be operated by nonprofit organizations.
2. In the LD, MD and HD zoning districts, community stands shall be supervised by a public agency or nonprofit organization.
3. Community stands shall obtain a license from the State of California Department of Food and Agriculture (CDFA) and a permit from the EMD before operating. There shall be no annual limit to the number of occurrences and the temporary use permits shall be valid for up to three (3) years.
4. Products sold shall be limited to shell eggs and crops that are locally grown; nonpotentially hazardous prepackaged food products from an approved source that were locally grown or produced; nonpotentially hazardous prepackaged food products, including bottled water and soft drinks, from an approved source that have not been locally grown or produced; and agricultural and food preparation related items.
5. Non-potentially hazardous prepackaged food products, including bottled water and soft drinks, from an approved source that have not been locally grown or produced shall be limited to a 50-square-foot storage and sales area.
6. Agricultural and food preparation related items shall be limited to 25 percent of the total storage and sales area of the farm stand.
7. No activities related to the sale of products from Community Stands shall take place on public right-of-way.
8. No part of this use, including merchandise or parking area, shall be located within the triangular clear visibility area defined in this Code.
9. Hours of operation, stand size (up to a maximum of 1,500 square feet of indoor sales area and 3,000 square feet of total enclosed area), setbacks, signs and parking requirements shall be regulated by the temporary use permit for the Community Stand.

B. Promotional Displays and Sales

Promotional displays and activities including, but not limited to, amusement rides, street dances, concerts, live entertainment, and promotional out of door "parking lot" sales may be conducted in the commercial and industrial zoning districts for the purpose of promoting a use regularly and lawfully in operation on the premises. The activities shall be conducted only within the buildable portion of the lot or parcel and subject to first obtaining approval of a Temporary Use Permit by the Zoning Administrator. Temporary signs are permitted only with the approval of the Zoning Administrator. Time limits of use shall not exceed 30 days within a given year. Promotional displays and sales are permitted for 30 consecutive days within the first 90 days of the grand opening of a business and may be permitted for an additional period of up to 30 days within a given calendar year, annually. Beyond the grand opening display period, temporary signs may have their display time split up into as many as 10 three-day periods, or may join the time allotments as the business sees fit and described in detail in the application for a Temporary Use Permit. Businesses that violate the provisions of this Code may have the Temporary Use Permit denied by the Zoning Administrator. Temporary signs, in conjunction with promotional display and sales are further regulated by Section 4.13.7.

C. Seasonal Display and Sales

Seasonal display and sale of items such as flowers, pumpkin, plants, and Christmas trees may be sold as a temporary use in the CC, GC and MU zoning districts subject to obtaining a business license. Seasonal items may be sold as a temporary use in zoning districts other than commercial or industrial, upon securing approval of a Temporary Use Permit by the Zoning Administrator and obtaining a general business license. The Zoning Administrator shall specify the period of sale, and the period permitted to clear the lot of all seasonal items and other evidence of the temporary use. Temporary signs are permitted, subject to provisions of Section 4.13, "Sign Regulations" for commercial and office zoning districts and subject to approval by the Planning Director in all other zoning districts. The sale of seasonal items or plants in connection with and on the same premises as a supermarket, hardware, home maintenance or repair store, or other established business, if a temporary structure and electrical wiring are not employed in connection with such sales is exempt from the regulations and requirements for a Temporary Use Permit.

D. Temporary Concessions

Temporary concessions shall comply with the standard of this Section. Temporary concessions are allowed only in specified commercial and industrial zoning districts subject to the conditional approval of a Temporary Use Permit by the Zoning Administrator. The permit shall include any conditions appropriate to assure compliance of the requirements of this Section, shall include time limits as to when the Temporary Use Permit is valid and may include additional conditions and requirements that are found appropriate to assure the use will not be detrimental to health, safety, peace, morals, comfort, or general welfare of persons residing or working in the neighborhood:

1. Every temporary concession shall be a temporary day-to-day use and all equipment, including any stand, cart, table, or vehicle, shall be removed at the end of each sales day.

2. Every operator of a temporary concession shall have notarized written permission (on a form provided by the County) from the property owner or lessee of property on which the concession is located, a copy of which shall be filed with the operator's application. The operator shall also have a copy of the permission statement required by these provisions at the concession location for inspection upon request by any person authorized to enforce the provisions of this Section.

3. No activities relating to the operation of a temporary concession, including customer parking, shall occur on public property. All parking areas shall be maintained or surfaced so as to be dust-free.

4. All stands, carts, vehicles, and displays of merchandise shall be set back not less than 25 feet from the right-of-way line of any public street, provided, however, that a table, stand, or cart of 16 square feet in size may be located at not less than 12.5 feet setback from a County right-of-way line.

5. No concession stand, cart, vehicle, merchandise, or parking area shall be located within the triangular clear visibility area defined in this Code.

6. No additional signs beyond the signs otherwise permitted in the zoning district in which the temporary concession is located shall be permitted, except temporary signs flat against the table, cart, stand, or vehicle that shall not exceed two (2) square feet per each lineal foot of such equipment parallel to the street where the setback is 25 feet or more from the right-of-way line. Where the table, stand, or cart is set back less than 25 feet, the area of the signs shall not exceed a total of six (6) square feet, and shall be placed flat against such equipment.

7. Only one temporary concession vendor at a time may conduct business on any parcel of property.

8. At least one trash receptacle shall be provided on site.

9. Every operator of a temporary concession stand shall have legal access to restroom facilities within 1,000 feet of the concession. (May be public restroom assigned permitted access to private restrooms, or a self-contained recreational vehicle.)

10. Sale of produce is permitted only in accordance with state food and agricultural regulations, in Title 3 of the California Code of Regulations; as such, sale must take place at a producer's "roadside stand", or authorized by a "Direct Marketing Certificate" or "Produce Dealer's License".

11. The area used for sales or display of merchandise by the temporary concession shall be limited to 200 square feet. Such area shall be identified on the use permit and the use permit shall be valid only for the area so identified.

12. Notwithstanding provisions elsewhere in this Code or the Sacramento County Code, the following uses are

exempt from the regulations and requirements for a Temporary Use Permit:

a. The sale from stands of fireworks preceding and in connection with the celebration of the Fourth of July;

b. Temporary concessions attendant to certain permitted retail uses: stands, carts, vehicles, and displays of merchandise are permitted within the pedestrian circulation areas of shopping centers, malls, and large retail buildings with over 60,000 square feet of gross floor area; and

(i) The temporary concessions shall be located within the buildable portion of the lot, and when located outside, no more than 25 feet from the entrance.

(ii) The use shall be subordinate and incidental to the primary use and have access to the restrooms.

c. Sales of products by nonprofit organizations within the buildable area of a commercial lot.

14. Temporary Concessions for the Preparation and Sale of Food for Immediate Consumption

The Planning Commission may consider a Temporary Use Permit for a temporary concession for the sale of food intended for immediate consumption. This provision is intended to be applied only in unusual situations where a convenience to customers can be demonstrated because of the locational factors or temporary circumstances and where a permanent facility or a mobile vendor service would be infeasible or inappropriate. The development standards for such concessions are those of Sections 3.10.3.E.1 through 3.10.3.E.11, with the additional requirement that appropriate licensing must be secured from the Environmental Management Department.

E. Temporary Construction Buildings

Temporary buildings for commerce or industry incidental to residential development, and temporary structures and trailers for the housing of tools, equipment, building assembly operations, and supervisory offices in connection with major construction projects may be authorized in any zoning district by the Chief Building Inspector.

F. Temporary Sales/Construction Offices

A temporary office established to handle sales or construction of lots and homes may be authorized by the Zoning Administrator in any zoning district by Temporary Use Permit. Parking shall be provided in accordance with Section 5.9, "Off-Street Parking." Conditions of approval may regulate hours of operation, landscaping, or other aspects deemed necessary by the Zoning Administrator. Temporary signs may be permitted subject to approval by the Zoning Administrator.

1. Use of Mobile Home at Construction Sites

A commercial coach, mobile home, or other licensed vehicle used for the temporary housing of tools, equipment, or building assembly operations in connection with major construction projects or for providing public utility services during an emergency shall be permitted in any zoning district, with authorization by the Chief Building Inspector.

2. Use of Commercial Coaches as Temporary Offices

a. A commercial coach may be used for a temporary office where such use is authorized in Table 3.2-B, "Allowed Uses in the Mixed Use, Commercial, and Industrial Zoning Districts," and provided that a permit is secured from the Chief Building Inspector.

b. A commercial coach may be used for a temporary office in any other zoning district, where such use is incidental to a use other than a residential use permitted in said zoning district, provided that a Temporary Use Permit is first obtained from the Zoning Administrator and further provided that a permit is obtained from the Chief Building Inspector.

3. Use of Commercial Coach for Temporary Classrooms

Commercial coaches may be used as temporary classrooms for private schools in any zoning district where private schools are permitted, provided that a Temporary Use Permit is obtained from the Zoning Administrator and further provided that a permit is obtained from the Chief Building Inspector.

CHAPTER 4: Development Standards

4.1 Overview

The development standards contained in this chapter seek to promote coordinated, sound development, effective use of land, and high quality site planning that considers the unique character and context of the Jackson Township community. These development standards implement the goals and policies of the JTSP and the 2030 General Plan. These standards also seek to encourage innovation in development, to provide a quality community that meet anticipated demands for housing, services and employment while allowing a variety of approaches to design that establishes a sense of place in a healthy, safe and sustainable manner.

4.2 Format and Use of Development Standards

Development standards set the specific requirements for each project or design solution. They define the dimensional requirements that apply to structures built within each of the land use designations, including required lot sizes, lot coverage; setbacks; building and structure heights; and other requirements related to the building envelope, location, and configuration of buildings and structures which are unique to the Plan Area.

The development standards contained herein set the basic, quantitative requirements for development that support the goals and policies of the JTSP. These standards shall be used in conjunction with the JTSP Design Guidelines for expectations on the qualitative design criteria that will be used to evaluate development projects during the Design Review process. Development examples illustrate typical or possible building types and designs that are encouraged, but are not intended to encompass all possible solutions that may be allowed within the Plan Area.

Development standards in this Chapter are structured by topic areas and ensure projects within each of the Plan Area land use zoning districts are compatible and sensitive to the context of the existing community. To understand the complete application of all development and design requirements, the user of this code should review the development standards Section for the applicable land use zoning district of the project, including Section 4.12 "Off-Street Parking" and Section 4.13, "Sign Standards." Additional standards apply to certain uses and in special zoning districts, as specified in Chapters 3, "Use Standards". Chapter 7 of the County Code, "Definitions" should be consulted for the terms used in this chapter.

The standards are organized as follows:

4.3: Development Standards for LD and MD Detached
4.4: Development Standards for MD and HD Attached
4.5: Development Standards for GC, CC, MU O and PQP
4.6: Wetland Preserve Interface Standards
4.7: General Setback Standards for All Districts
4.8 General Height Standards
4.9 Density Bonuses
4.10: Landscape Standards
4.11: Wall and Fence Standards
4.12: Off Street Parking Standards
4.13: Signage Standards
4.14: Prohibited Activities

4.3 Development Standards for LD and MD Detached

The residential development standards in this section apply to all detached residential homes and halfplexes within the LD and MD land use designations. These standards apply to new construction, retrofitting, and remodeling of existing construction within the Plan Area. The development standards in this section are to be used in close concert with the Design Guidelines to achieve high quality projects that fit within the community. All detached residential projects shall be subject to the development standards, summarized in Table 4.1, and Design Review. Refer to the Countywide Design Guidelines Chapter 2, for the applicable Design Review process.

Where exact dimensions for setbacks, heights, and other standards are too difficult to meet due to site restrictions, alternative and creative solutions that meet the intent and purpose of this document may be approved by the County through the Design Review process, for those projects subject to Design Review.

The development standards for all detached residential products are summarized in Table 4.1 and corresponding Exhibits 4.1 through 4.6. For the creation of new lots, the lot area and width requirements regulate minimum lot size and configuration for each zoning district and are not necessarily as optimum project design standards. Refer to the Design Guidelines for ways to provide compatibility, access and connectivity with surrounding neighborhoods.

4.4.1 Lighting for Subdivision Developments

Site and street lighting shall comply with Section 5, "Street Light Design" of the *Sacramento County Improvement Standards* and the following standards:

1. Lighting fixtures shall provide pedestrian safety and be adequately spaced and scaled without interference from landscaping, and directed away from adjacent areas to minimize light pollution caused by glare or spillage into neighboring properties.

2. Nighttime pollution of the sky is discouraged by following illumination levels required for safety per Illuminating Engineering Society of North America (IESNA).

4.4.2. Landscaping.

Landscaping shall be provided in conformance with Section 4.10, Landscaping Standards.

4.4.3 Walls and Fences

Walls and fences shall be located and constructed in conformance with Section 4.11, Wall and Fence Standards.

4.4.4 Parking

Parking shall be provided in conformance with Section 4.12 Parking Regulations.

4.4.5. Signage for Subdivision Developments

Signs shall be integrated and designed at a quality consistent with the design of the project and shall comply with Section 4.13, Sign Regulations.

4.4.6 Number of Kitchens

Any single-family dwelling shall have no more than one kitchen. For purposes of this Section, a kitchen is an area within a dwelling that has noncommercial appliances to cook food. Exceptions to this requirement may be granted by the Planning Director (no fee) for dwellings of developmentally disabled persons. Outdoor kitchens are exempt.

Table 4.1: Detached Residential Standards

	LD STANDARD Exhibit 4.1	LD ALLEY Exhibit 4.2	LD/MD DUPLEX Exhibit 4.3	MD STANDARD/ZLL Exhibit 4.4	MD CLUSTER Exhibit 4.5	MD ALLEY Exhibit 4.6
Density range[1]	1.0-6.0 du/ac	6.1-10.9 du/ac	6.1-19.9 du/ac	11.0-19.9 du/ac	11.0-19.9 du/ac	11.0-19.9 du/ac
Minimum net lot area in s.f.[2]	5,000	4,000	3,000 each side	3,500	3,500	3,000
Minimum setbacks from property line[3]						
Living area at front[4,6]	20'	15'	15’	15’	12.5	15’
Porch at front	15'	10'	10’	10’	8’	10’
Porch at alley/private drive	n/a	12.5’	n/a	n/a	4’	12.5’
Garages at front (min)	18’	n/a	18’	18’	18’	n/a
Garage at alley/rear (max)	n/a	5'	5’	n/a	5’	5’
Interior side yard	5'/5'	5'/5'	0’/4’	0’/4’	4’	5’/5’
Side at corner	12.5’	10'	10’	10’	12.5’	10’
Rear[5] (1story/2+ stories if appl)	10’/15’	10’/15'	10’/15’	10’/15’	10’/15’	10/15’
Maximum building heights[7]						
Main building	36'	36'	36’	36’	36’	40’
Front or rear porch	16'	16'	16’	16’	16’	16’
Detached garage	24'	24'	n/a	n/a	n/a	n/a
Parking						
Refer to Section 4-12. “Off-Street Parking;” Table 4-6, “Parking Requirements for Residential Uses.”						

Footnotes for Table 4.1:

1. Density bonuses or increases may be allowed for the provision of affordable housing, project amenities, proximity to transit, and/or other special project considerations, as noted in Code Section 5.2.3.
2. Unless otherwise noted, lot area standards are based on net acreage calculations.
3. Cornices, sills, eaves, canopies, awnings, window bays, and similar features may encroach into any required yard area a distance not to exceed 24 inches. Accessory structures must maintain a minimum three (3) foot setback from property lines for any portion of the structure.
4. The setback for all residential structures in each category shall be the minimum distances measured from the street right-of-way. Front setbacks shall be measured from front property line if street dedication is required for future right-of-way. Setbacks shall allow enough room for utilities, if greater than those outlined.
5. The main building may project into the required rear yard provided that an equal area is provided as a yard or court within the buildable portion of the lot.
6. As part of Design Review for single-family subdivisions, front yard setbacks may be varied up to 25 percent.
7. Refer to Section 4.7 for detailed height and setback requirements.



Exhibit 4.1: LD Standard Setbacks

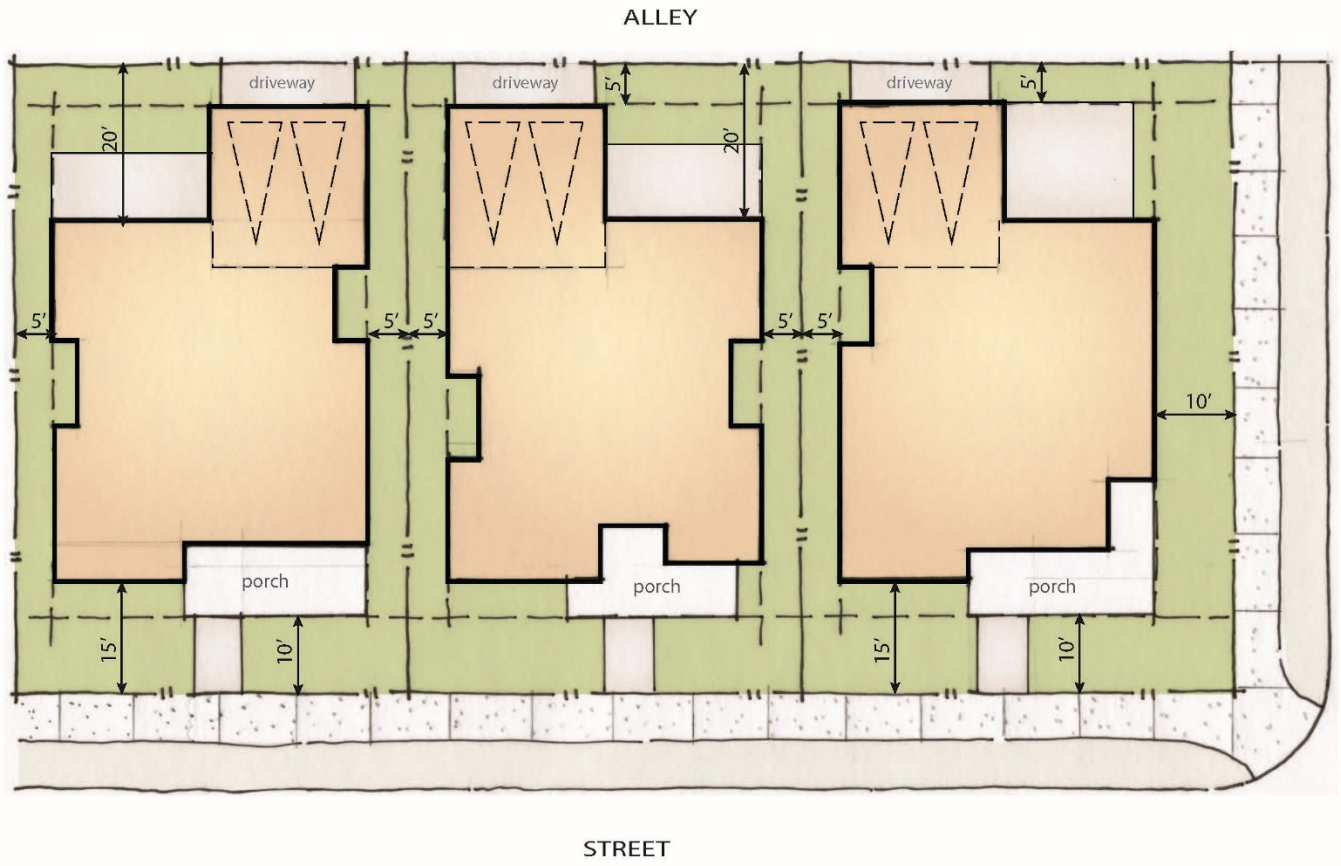


Exhibit 4.2: LD Alley Setbacks

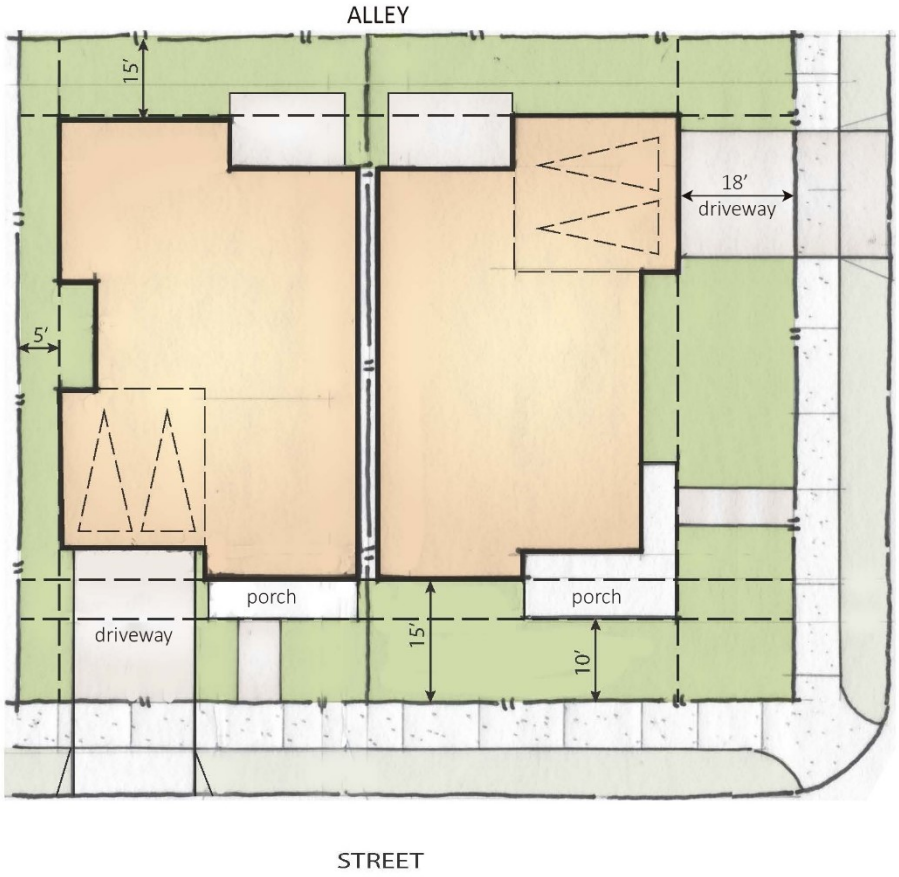


Exhibit 4.3: LD and MD Halfplex Setbacks



Exhibit 4.4: MD Standard/Zero Lot Line Setbacks

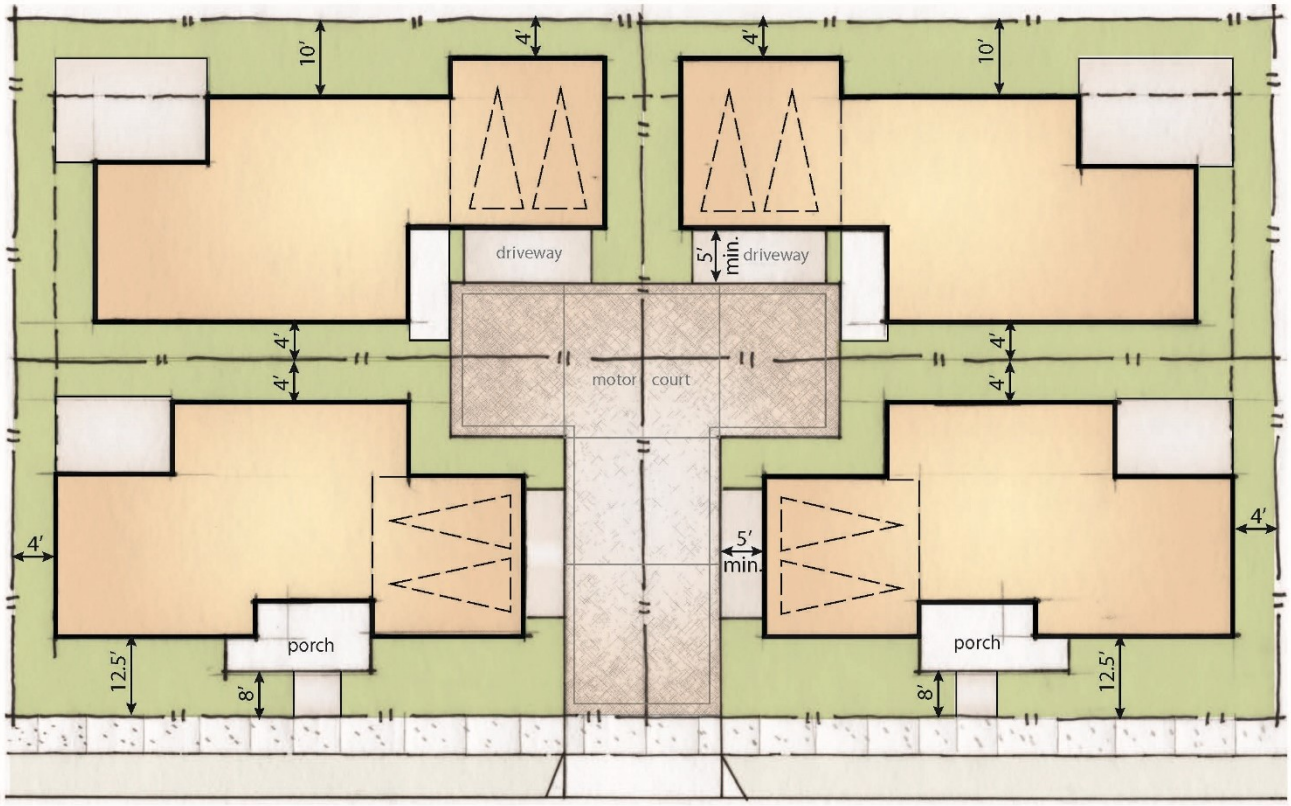


Exhibit 4.5: MD Cluster Setbacks



Exhibit 4.6: MD Alley Setbacks

4.5 Standards for MD and HD Attached

The development standards in this Section apply to all attached residential projects in the MD and HD land use designations. The development standards in this section are to be used in close concert with the Design Guidelines to achieve high quality projects that fit within the community. All attached residential projects shall be subject to the development standards summarized in Table 4.2.

Where exact dimensions for setbacks, heights, and other standards are too difficult to meet due to site restrictions, alternative and creative solutions that meet the intent and purpose of the standards and guidelines are met.

4.5.1 Multifamily Development Noise Standards

For projects that include the construction of residential units within 25 feet of an arterial or thoroughfare right-of-way (as identified by the roadway classifications in the General Plan), project applicants shall submit an acoustical analysis demonstrating façade construction will be such that interior noise levels will not exceed 45 d under future (cumulative case) traffic conditions.

4.5.2 Landscaping

Landscaping shall be provided in conformance with Section 4.10, Landscaping Standards.

4.5.3 Walls and Fences

Walls and fences shall be located and constructed in conformance with Section 4.11, Wall and Fence Standards.

4.5.4 Parking

Parking shall be provided in conformance with Section 4.12 Parking Regulations.

4.5.5 Signage

Signs shall be integrated and designed at a quality consistent with the design of the project and shall comply with Section 4.13, Sign Regulations.

4.5.6 Driveway Dimensions

1. Street design and width shall be confirmed with the Fire Department and DOT.
2. For driveway access with 10 or fewer units, a T-shaped turnaround shall be allowed. A dimension of 20 feet by 80 feet will accommodate most vehicles.

3. Dead end driveways shall be less than 150 feet long, and have appropriate turnarounds as needed.

4. Circular cul-de-sacs shall be designed with a radius of 40 feet or less to the greatest extent possible.

5. The minimum widths for internal streets or driveways, per Fire Department Standards, shall be according to items a.-d below.

a. For uncurbed driveways with no parallel parking when a fire lane is not necessary: 16 feet.

b. For curbed internal streets with no parallel parking: 19 feet.

c. For curbed internal street with parallel parking on one side: 28 feet.

d. For curbed internal street with parallel parking on both sides: 36 feet.

4.5.7 Lighting for Multifamily Housing

Site and street lighting shall comply with Section 5, "Street Light Design" of the Sacramento County Improvement Standards and the following standards.

1. Lighting fixtures shall provide for pedestrian safety and be adequately spaced and scaled without interference from landscaping, and directed away from adjacent areas to minimize light pollution caused by glare or stray light into neighboring properties.

2. Illumination shall be 0.25 foot-candles at grade level for surface areas of alcoves, walkways, and yards other than required for exits.

3. Illumination shall be one (1) foot-candle at floor level for open parking areas and carports.

4. All lights shall be placed on a timer or photo electronic cell capable of turning the lights on and off one-half (½) hour prior to dawn and one-half (½) hour past dusk.

4.5.8 Trash and Recycling Enclosures

a. All trash and recycling containers and enclosures shall be located within an enclosed masonry area with a surrounding wall at least six (6) feet high and no taller than eight (8) feet in height, with an appropriate solid gate; and shall be located a minimum of 25 feet from any residentially zoned property, and property used for residential purposes.

4.5.9 Maintenance

All development standards shall be continuously met for every project. Buildings and premises, including paint/siding, roofs, windows, fences, parking lots, and landscaping shall be kept in good repair. Premises shall be kept free of junk, debris, and abandoned vehicles.

Table 4.2: Attached Residential Standards			
	MD Townhouse[2] Exhibit 5.7	HD Townhouse[2] Exhibit 5.8	HD Condo/ Apartments[2] Exhibit 5.9
Density range[1]	11.0-19.9 du/ac	20.0-30.0 du/ac	20.0-30.0 du/ac
Minimum net lot area in s.f.	2,500	n/a	n/a
MINIMUM SETBACKS FROM PROPERTY LINE[3]			
Living area from public street	12.5'	12.5'	25.0'
Porch at front	8.0'	8.0'	8.0'
Living area from alley/private drive	12.5'	12.5'	12.5'
Garage/carports at alley/rear	n/a	5'	5'
Separation between buildings	12'	20'	20'
Side at corner	12.5	12.5'	12.5
Rear	15'	15'	15'
Rear abutting LDR or AG	20'	20'	25'
MAXIMUM BUILDING HEIGHTS[5]			
Main building	40'	50'	50'
Front or rear porch	16'	16'	16'
Detached garage/carport	16'	16'	16'
OPEN SPACE REQUIREMENTS[4]			
Min. Open Space/Landscaping	20%	20%	30%
Common Outdoor Amenities	Required for projects with 10 units or more		
Min. Private Open Space/Unit	50 s.f.	40 s.f.	40 s.f.

Table 4.2 Footnotes:

1. See Code Section 5.2.3 for density bonuses or intensity increases. Density bonuses are automatic when State Density Bonus or County Housing Incentive Programs (HIP) are used. A Special Development Permit is required for density bonus projects not using the above criteria as noted in Code Section 6.4.6.G.
2. Other creative housing types may be permitted with variations in these development standards upon review and approval in the Design Review process.
3. Setback requirements, encroachments, and internal street widths are subject to review by local service providers and may be restricted based on the County Access Drive Standards or other guidelines used for multifamily residential developments to ensure adequate spacing is available for all necessary utilities.
4. Common open space and outdoor amenities include common patios, common greens, community gardens, pools, pedestrian walkways, tot-lots and recreation areas. It does not include areas used for vehicular access and parking. Public parks and open space within a project may be counted up to one-half (½) of the common open space requirement.

5. Refer to Section 4.7 for detailed setback and height requirements.

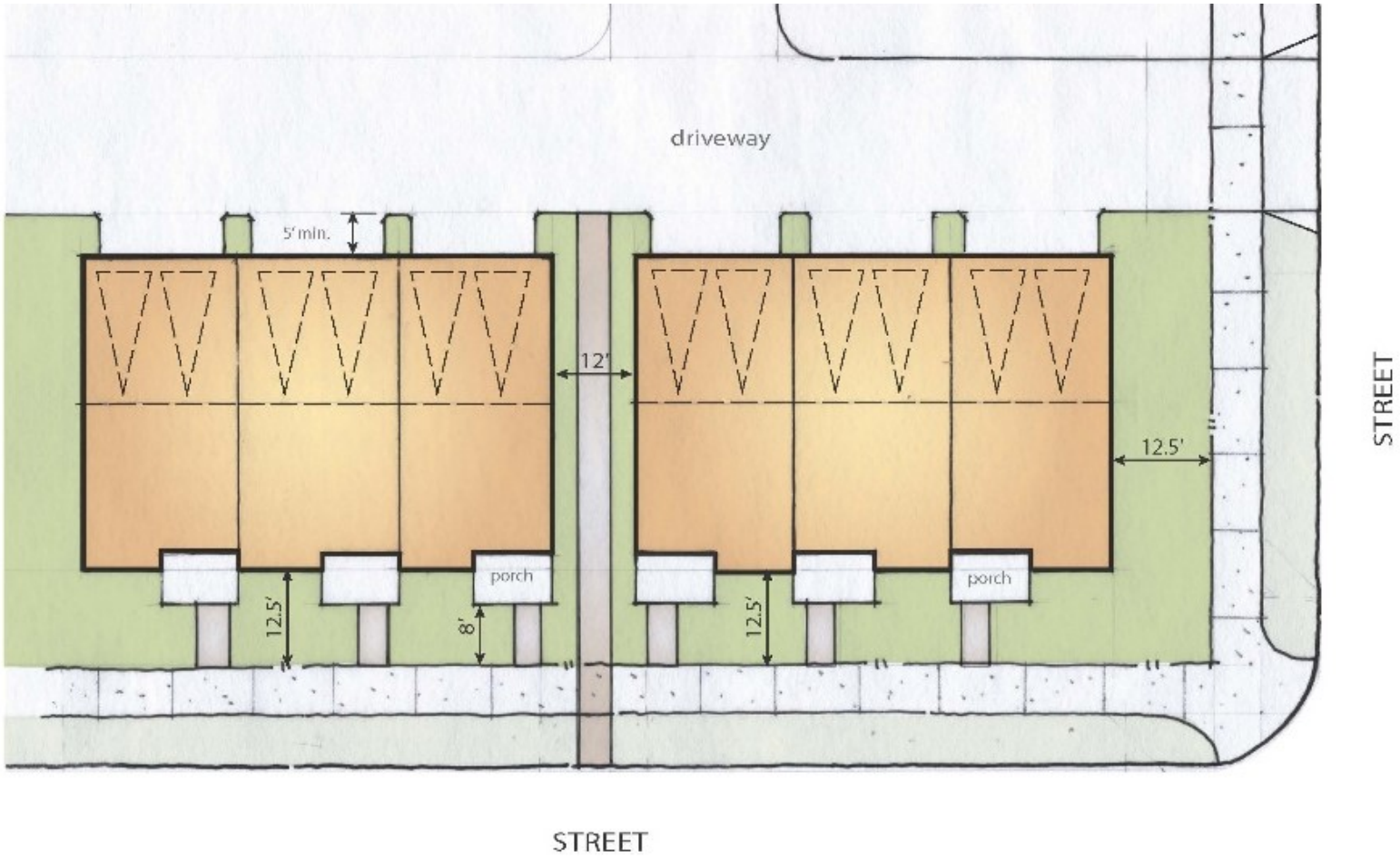


Exhibit 4.7: MD Townhouse Setbacks

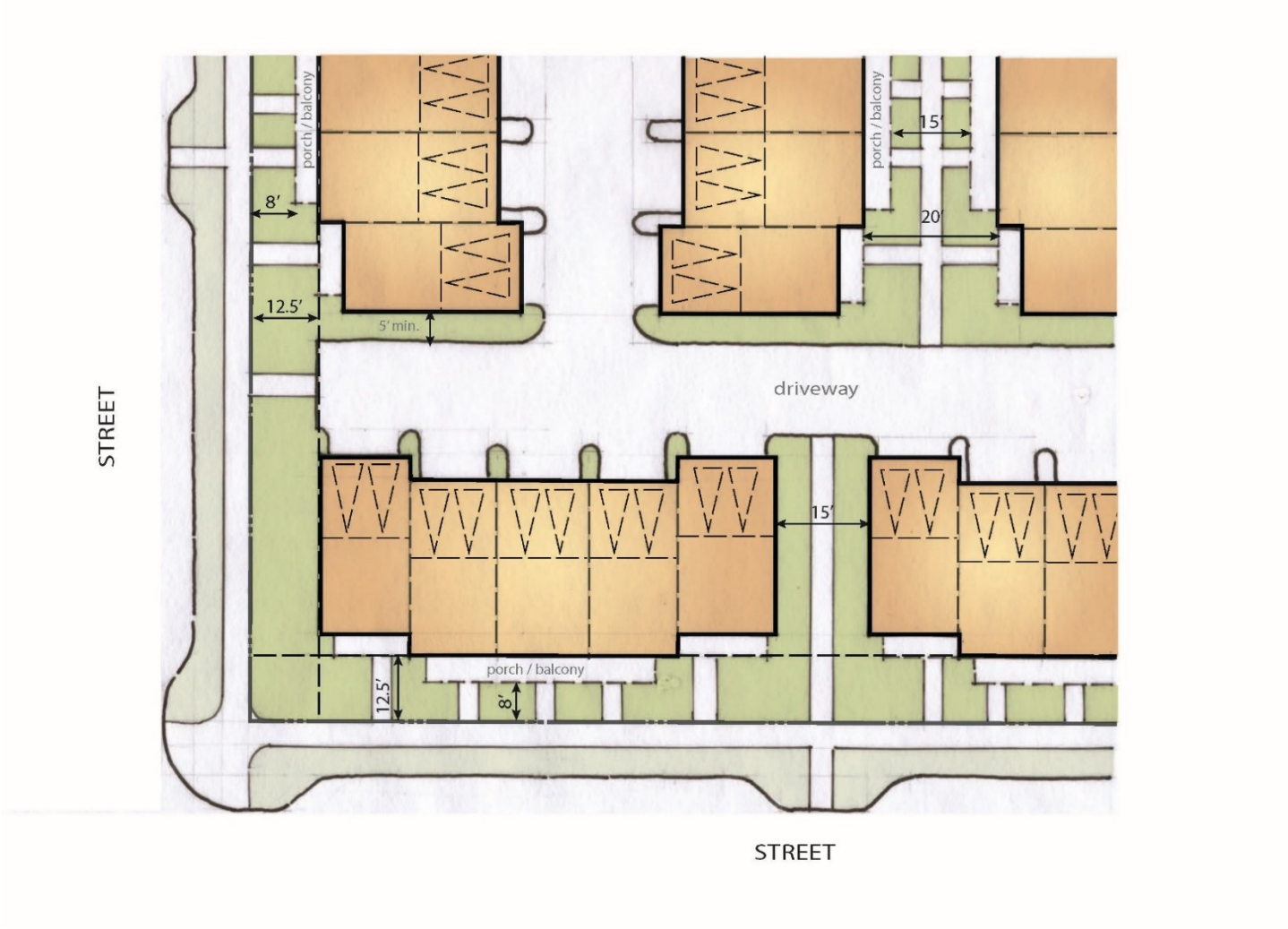


Exhibit 4.8: HD Townhouse Setbacks

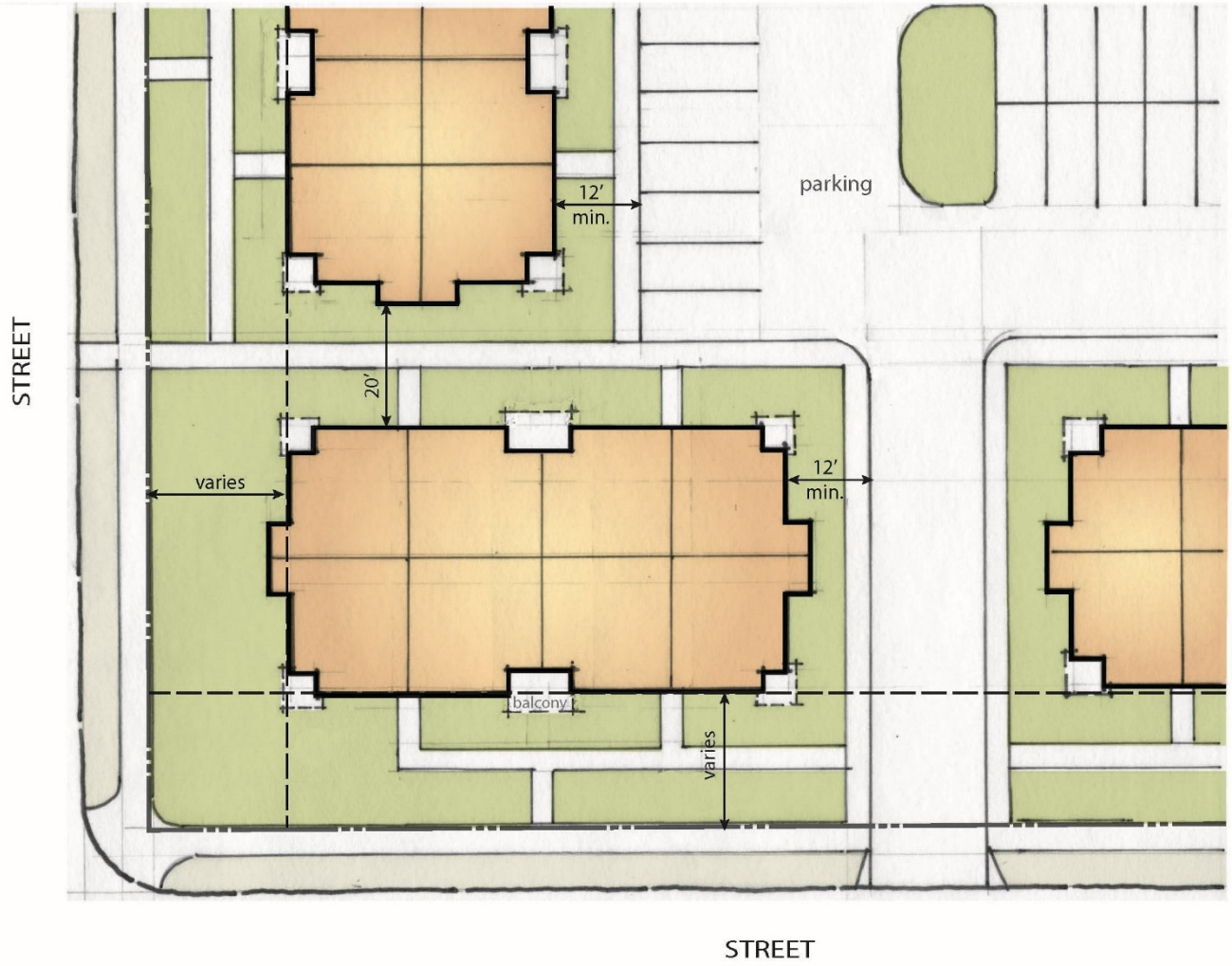


Exhibit 4.9: HD Apartment/Condo Setbacks

4.6 Mixed Use, Commercial, Office, and Public Quasi Public Standards (GG, CC, MU, O and PQP)

The commercial development standards in this section apply to all projects in the MU, GC, CC, O and PQP land use designations. The development standards in this section are to be used in close concert with the Design Guidelines to achieve high quality projects that fit within the community. All commercial projects shall be subject to the development standards applicable to commercial land use designations, summarized in Table 4.3, the applicable section references from the Code and Design Review. Alternatives to these standards may be approved as part of the Design Review process if the intent and purpose of the standards and guidelines are met.

4.6.1 Landscaping

Landscaping shall be provided in conformance with Section 4.10, Landscaping Standards.

4.6.2 Walls and Fences

Walls and fences shall be located and constructed in conformance with Section 4.11, Wall and Fence Standards.

4.6.3 Parking

Parking shall be provided in conformance with Section 4.12 Parking Regulations.

4.6.4 Signage

Signs shall be integrated and designed at a quality consistent with the design of the project and shall comply with Section 4.13, Sign Regulations.

4.6.5 Services and Utilities

1. Trash and Recycling Enclosures

a. All trash and recycling containers and enclosures shall be located within an enclosed masonry area with a surrounding wall at least six (6) feet high and no taller than eight (8) feet in height, with an appropriate solid gate.

b. Trash and recycling enclosure areas shall be designed to the County's latest stormwater quality source control design standards.

c. There shall be adequate area provided for recycling containers and enclosures. Recycling enclosures shall be located for functional use by occupants and by the disposal and hauling companies, providing collection services. The appropriate authority can allow flexibility on the requirements in subsections a-b to facilitate the siting and provision of adequate space allocation for recycling collection and storage areas.

2. Compliance with Noise Ordinance (County Code Section 6.68)

All commercial activities, including truck loading, operation of machinery, and human activity areas, located within proximity of a residential or agricultural residential zone shall comply with the County Noise Ordinance. If complaints are received and non-compliance verified by the Environmental Management Department, then the Planning Director may require the property owner to submit an acoustical study prepared by a qualified acoustical engineer. Said study shall provide

recommended physical and operational measures to bring the property into compliance. The Planning Director may require compliance with such measures as a condition of the business license as provided for in County Code Section 4.06.090. This requirement shall be applicable to existing and new commercial uses.

3. Shopping Carts

All businesses shall comply with Chapter 9.76 of the Sacramento County Code relating to Unauthorized Use of Shopping Carts.

4.6.6 Circulation, Access, and Pedestrian Facilities

1. Circulation

Incorporate attractive and well-marked pedestrian networks that provide connectivity and safe travel from the public rights of way and through parking areas. Design shall reflect the need for safely mixing and separating modes (i.e. trucks, autos, transit, pedestrians and bicyclists), while enhancing the pedestrian linkages to other buildings, transit and parking areas.

2. Access

Provide cross-access between projects to the extent practicable to support mixed use development, active design and walkability, while maintaining security and visibility.

4.6.8 Maintenance.

All development standards shall be continuously met for every project. Buildings and premises, including paint/siding, roofs, windows, fences, parking lots, and landscaping shall be kept in good repair. Premises shall be kept free of junk, debris, and abandoned vehicles.

4.6.9 Illustration of Standards and Setbacks

Exhibits 4.10 through 4.14 are provided to help illustrate the standards and setbacks contained within Table 4.3. The exhibits should be considered guidance only in execution of the development standards for each individual site.

Table 4.3: Mixed Use, Commercial, Office and PQP Standards					
	Mixed Use (MU)	General Commercial (GC)	Community Commercial (CC)	O (Office)	Public Quasi Public (PQP)
Average Lot Coverage Floor area Ratio (FAR)	50%	25%	25%	50%	50%
Maximum Structure Height	50'	50'	50'	50'	50'
Feature Structure Height (non-occupied)	55'	Up to 60 ft. for tower structure	55'	N/A	N/A
Setbacks	See Exhibit 4.11	See Exhibit 4.12, 4.13	See Exhibit 4.14	See Exhibit 4.15	See Exhibit 4.15
Front	0'	50'/30/20'0' [1]	30/20' [1]	25'	25'
Side (non-residential)	0'	0'	0'	0'	0'
Rear (abutting LD or MD)	N/A	25/100'[2]	25'[2]	25/100'[2]	25'
Projections[3]					
Roof overhangs, eaves	3' into setback	3' into setback	3' into setback	N/A	N/A
Canopies, awnings	6'into setback, 10 ft. clear height	6' into setback, 10 ft. clear height	6' into setback, 10 ft. clear height	N/A	N/A
Balconies	6' into setback, 12' height to bottom	6' into setback, 12' height to bottom	N/A	N/A	N/A
Off-street Parking	Parking requirements are per Section 4.12 AND Table 4.9 "Parking for Commercial Uses."				
Loading, Trash, Recycling					
Setback for Trash and Recycling Enclosures	31' from Public Street, 15' from edge of Private street, 25' from LD,MD, HD				
Setback for Loading Docks	75' from LD,MD,HD				
Loading, Delivery, Service	Internal only, no street loading	Screened, away from pedestrian zones	Screened, away from pedestrian zones	Provide delivery/drop off	Screened, away from pedestrian zones

Footnotes:

1. Setback is 50 feet along Jackson Highway and varies on all other street frontages- see Exhibits 5.
2. Setback is 25 feet for single story structures / 100 feet for multi-story structures

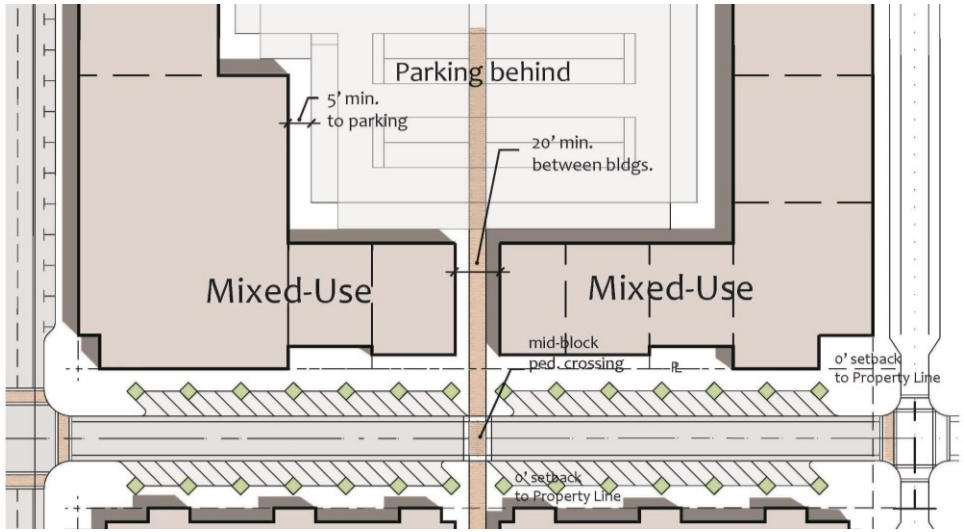


Exhibit 4.11: Illustration of MU Setbacks and Standards

4.6.2.1 Mixed Use (MU)

. The lot frontage on Township Drive is intended as an active pedestrian zone with zero (0') setback and buildings placed at the back of a 16 foot pedestrian walkway.

The northern MU site, MU1, is allocated with high density residential units. The high density uses are integrated into the MU site, following the MU standards in Table 4.3. The southern site, MU2, is partially encumbered by powerlines, therefore making residential uses infeasible.

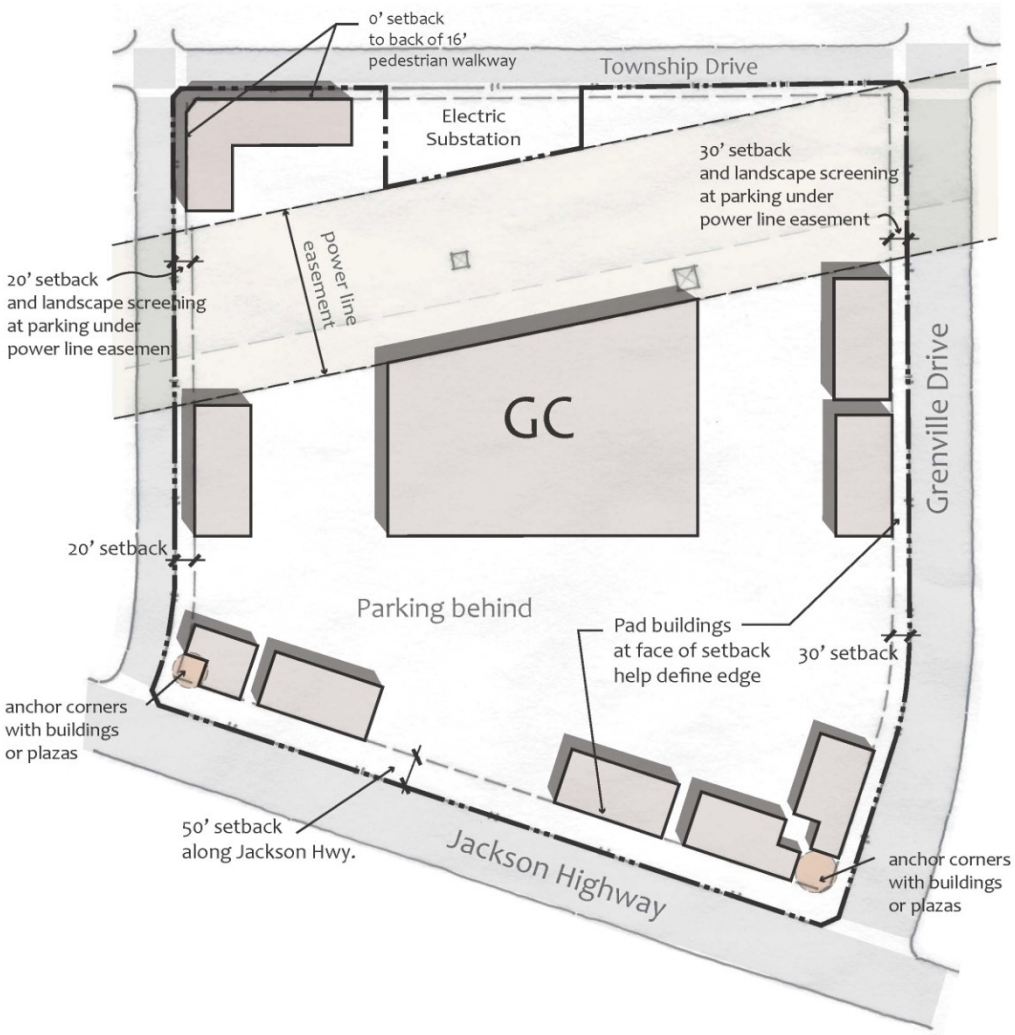


Exhibit 4.12: Illustration of Setbacks for GC Site

4.6.2.2 GC Site

This site, located at the northwest corner of Jackson Highway and Grenville Drive, acts as a gateway to Jackson Township. The back half of the site is divided by a 275 foot power line easement, which may function as parking for large format retail, park-n-ride, or other compatible uses.

Development of the GC site along Township Drive on the north is restricted due to the power line easement and the location of an Electrical Substation. The northwest corner of GC site has reduced setbacks to allow this portion be developed similar to the adjacent MU block with zero (0') setback and buildings placed at the back of a 16 foot pedestrian walkway.

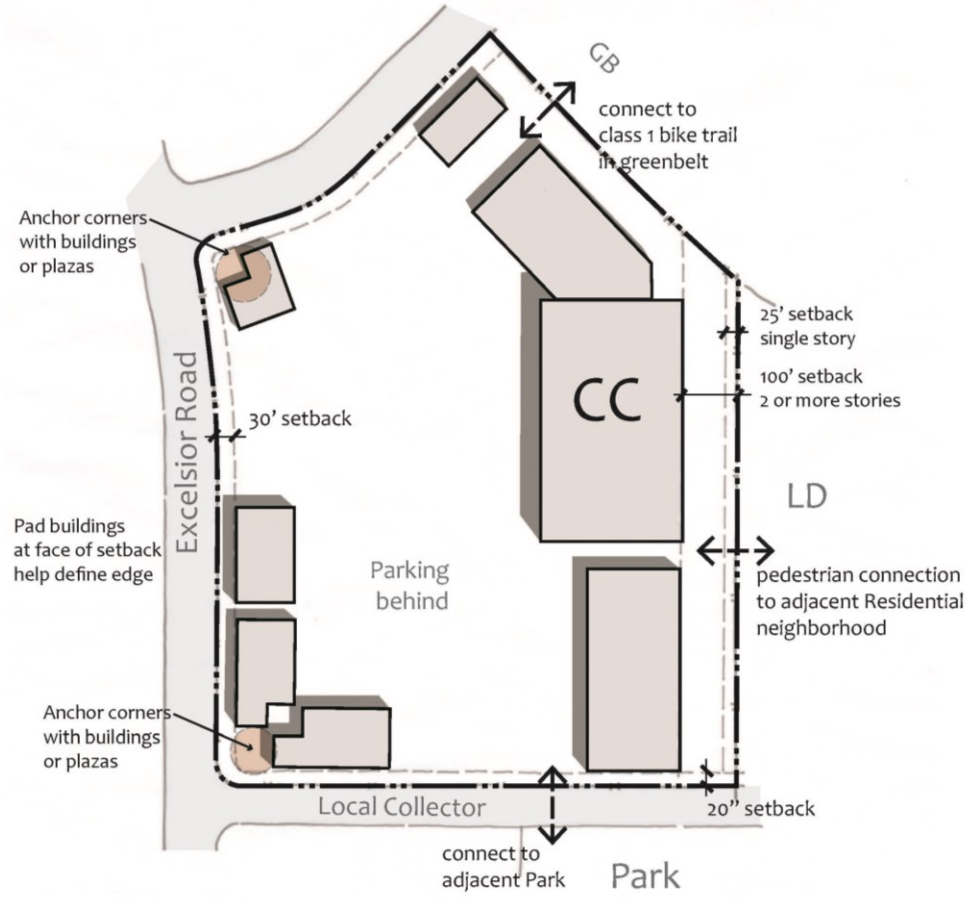


Exhibit 4.13: Illustration of Setbacks for CC

4.6.2.4 Community Commercial (CC)

The CC site is located at the corner of Excelsior Road with the intersection of new Douglas Road.

Setbacks along Excelsior Road are 30 feet while setbacks from the local collector are 20 feet. The north side is adjacent to a greenbelt/drainage corridor with a class 1 bike trail. LD designated property abuts the CC site on the east, therefore setbacks shall be 25 feet for single story structures or 100 feet for two or more stories to provide appropriate building separation.

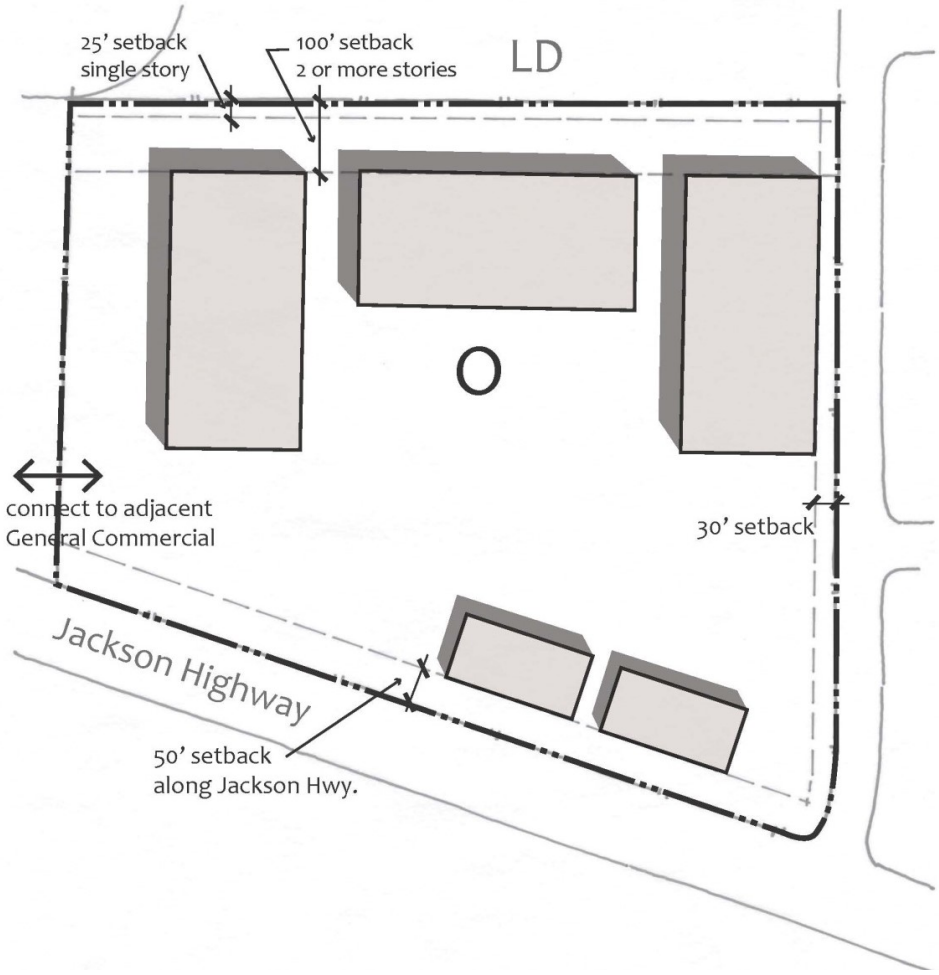


Exhibit 4.14: Illustration of O and PQP Setbacks

4.6.2.5 Office (O) and Public Quasi Public (PQP)

The setback standards for both O and PQP sites are depicted in Exhibit 4.14. PQP uses are similar in scale and density to Office uses.

The two O sites are located on Jackson Road. The western O site, depicted in Exhibit 5.15, abuts MD designated property on the north, therefore setbacks shall be 25 feet for single story structures or 100 feet for two or more stories to provide appropriate building separation.

4.7: Setback and Height Standards for All Zoning Districts

A. Measuring Setbacks

Street right-of-way dimensions and width are described in the adopted County Improvement Standards.

Where there is no street right-of-way, access easement, or future street right-of-way, as identified through an official control or private road, a setback is measured from the property line. The descriptions and accompanying diagrams in Figures 4-1 through 4-8 define the front, side, and rear yard areas and the methods for measuring setbacks.

1. Front Yard Setback. The front yard setback is the depth, measured perpendicularly from the nearest point of the front lot line, at the back of the sidewalk, to the nearest part of the main building. Where a PUPF is required, setbacks shall be measured from the back of the curb to the main building.

2. Front Yard Setback on a Curved Street. For lots fronting on a curved streets or the curved portion of a cul-de-sac street, the setback is measured along a chord from the center point along an arc coincidental with the edge of the street right-of-way to the nearest part of the main building (Figure 4-6). Where a PUPF is required, setbacks shall be measured from the back of the curb.

3. Side Yard Setback. The side yard setback is the depth, measured perpendicularly, from the nearest point of the side lot line to the nearest part of the closest building.

4. Corner Street Side Yard Setback. The corner street setback is the depth, measured horizontally, from the nearest part of the closest building to the nearest point of the side lot line at the back of the sidewalk. Where a PUPF is required, setbacks shall be measured from the main building to the street right-of-way line, at the back of curb.

5. Rear Yard Setback. The rear yard setback is the depth, measured perpendicularly from the nearest point of the rear lot line to the nearest part of the main building. For irregularly shaped lots, the rear lot line is defined as the point where the width of the lot is a minimum of 10 feet (as shown in Figure 4-7).

B. Use of Setback Areas

Except as otherwise permitted in the DS, every part of a required setback shall be open from its lowest point to the sky (refer to Section 4.7.C for a description of allowed encroachments into setbacks). For nonresidential development, all setback areas visible from public streets and areas shall be landscaped, as required in Section 4.10.B.

C. Allowed Encroachments into Setbacks

Refer to the Development Standards tables, found under the applicable land use district in this chapter for allowed encroachments into setback areas. Where not otherwise provided in the Zoning Code, the following setback encroachment standards shall apply.

1. Cornices, sills, eaves, canopies, awnings, and similar features may encroach into any required yard area a distance not to exceed 24 inches.

2. Window bays, having a minimum of 50 percent glass, may encroach 24 inches into a required yard area when the finished floor of the window bay is at least 15inches above the finished floor of the room. The roof overhang above the window bay may not encroach 24 inches into the yard area.

3. Accessory structures must maintain a minimum three (3) foot setback from property lines for any portion of the structure, including the encroachment described by this Section, except for small accessory structures or sheds as noted in Table 4.8.

4. Fire escapes, outdoor stairways, balconies, and mechanical equipment shall not encroach more than 36 inches into a yard or court. Ordinary projections of chimneys and flues may be permitted by the Chief Building Official where the same are so placed as not to obstruct the light and ventilation.

5. Except as otherwise restricted in these standards, bus shelters may be located within the front or side yard setback of any lot.

6. Lot Area or Setback Reduction for Dedications.

Where a lot area or a lot width, depth, or setback has been reduced for an existing legally created lot by not more than 15 percent as a result of acquisition or dedication for an existing or future highway, road, drain, or other public purpose, as a result of a dedication pursuant to a result of a Rezoning, Variance, or Conditional Use Permit, the lot area or yard so reduced may be included in determining compliance with lot area or yard requirements in the same manner as if the acquisition or dedication has not taken place.

E. Accessibility Accommodations-Federal Fair Housing Amendments Act of 1988 and the California Fair Employment and Housing Act

1. During the building permit review process, staff may approve reduced setbacks for structures relating to disability access (as defined by the Federal Fair Housing Amendments Act of 1988 and the California Fair Employment and Housing Act), such as ramps or handrails, as follows:

a. Accessibility structures must be clearly labeled as such on building plans.

b. Staff may deny or approve modified reduced setbacks if it is determined that the structures can accommodate accessibility needs within or closer to standard requirements.

c. In no case shall reduced setbacks result in structures contrary to the public health, safety, or welfare, or be injurious to the property or improvements of adjacent properties.

d. In no case shall accessibility related structures encroach onto public utility, road, or other recorded easements.

2. Applicants are not required to provide documentation of disability nor are they required to remove the accessibility structures should an immediate need no longer be present.

F. Building Attachments

When the subordinate building is connected to the primary dwelling by a continuous roof structure as specified herein, it shall be considered as a portion of the primary dwelling.

1. The continuous roof structure shall consist of a design that is compatible to the primary dwelling as it relates to slope of roof, roof covering and overall appearance. The area spanned by this roof area shall be equal in width to minimum 30 percent of the adjacent accessory building wall, with length not exceeding three times its width.

2. The connecting structure may be open or enclosed. If enclosed, it may have a connecting door to the accessory building, but not necessarily to the main building.

3. When the subordinate "building" is connected to the main building by a roof structure without walls for the purpose of a pedestrian walkway except as specified herein, it shall be considered as a separate building used for non-habitable purposes.

G. Building Height Standards and Exceptions

Building heights shall be defined in accordance with Zoning Code Section 7.3, Definitions and Acronyms. In addition to the height regulations in Tables 4.1, 4.2 and 4.3, some uses may be eligible for height exceptions pursuant to the **Zoning Code Section 5.2.2.** The maximum height of any building shall comply with the Mather Airport Comprehensive Land Use Plan (CLUP). The height provision for buildings or structures shall be interpreted so that both the limitation as to the number of stories and the limitation of the height in feet apply.

4.8 Density Bonuses and Intensity Increases

Density bonus and intensity increases within the Plan Area shall be in accordance with the **Zoning Code, Section 5.2.3.4.9.**

4.9 Preserve Interface Standards

The Land Plan sets aside approximately 260 acres of open space which is dedicated as a Wetland Preserve (Preserve), as shown on Exhibit 4.1. The Preserve is owned and managed by the South Sacramento Habitat Conservation Plan (SSHCP) implementing entity (IE). The IE is responsible for managing the Preserve and monitoring the Preserve Setback areas. The IE will implement measures identified in the SSHCP to ensure the long-term viability of the protected and restored vernal pool and wetland resources within the Preserve. This section of the DS incorporates avoidance and minimization measures from the SSHCP, which are implemented to further minimize impacts to protected species and resources. These measures include standards that are applicable to the designated Preserve Setback Areas, section 4.5.1 and for the Abutting Setback Areas, section 4.5.2. Refer to Exhibit 4.15 which identifies the Preserve

Setback Area, Abutting Setback Area and Exception Area. These standards are subject to modification as the SSHCP is implemented. Additional measures which are applicable at the time of construction are provided in the mitigation and monitoring program (MMP) as a part of the EIR.

4.9.1 Standards for Preserve Setback Areas

The following standards apply to the Preserve Setback areas as shown on Exhibit 4.15.

1. Project construction activities adjacent to the Preserve must establish a minimum 50-foot-wide setback outward from the boundary of any existing preserve or planned SSHCP preserve (hereinafter "Preserve Setback"). This minimum 50-foot-wide Preserve Setback will function as a transition area between urban development and the Preserve, and must be managed to maintain the natural community of vegetation.
2. Certain types of recreational trails or facilities (e.g., benches, trash receptacles, shade structures, fencing) that can be constructed with minimum ground-disturbance and in compliance with EDGE-7 may be allowed within the Preserve Setback, as specified in Section 5.2.5 of the SSHCP, "Covered Activities in UDA Preserve Setbacks". Preserve Setback design must locate trails on the side nearest Project development, away from the Preserve boundary. Trails may be permeable or semi-permeable hiking trails or paved community trails. The maximum trail width will be 16 feet total, including 2-foot shoulders. Post and cable fencing, split rail, or other open fencing will be installed adjacent to recreation trails to keep pedestrians on the trail. (EDGE-3a)

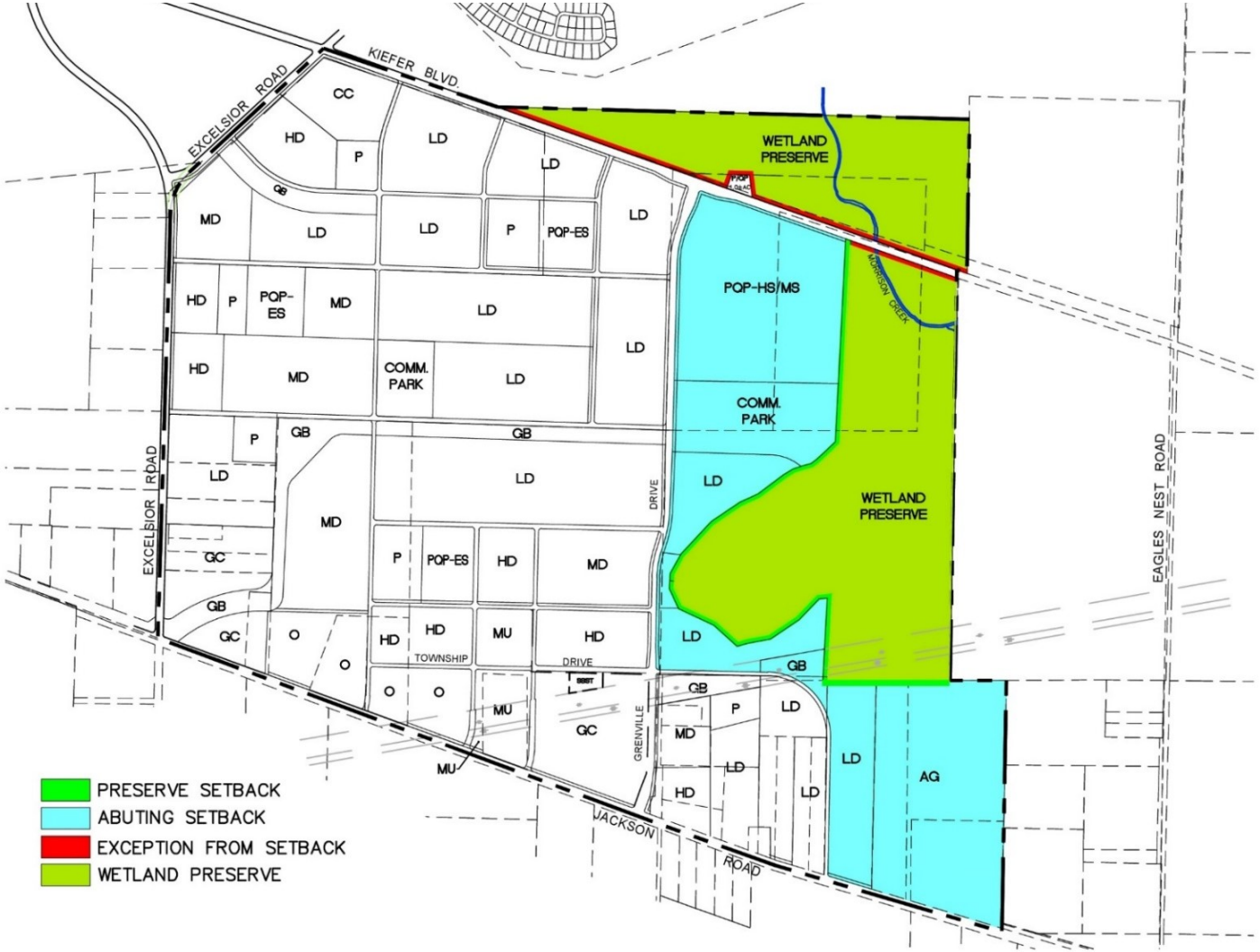


Exhibit 4.15: Preserve Setback Area

3. If approved by the SSHCP Implementing Entity and the Cordova Recreation and Park District, the Preserve Setback trail may also be used as a firebreak. In instances where a trail cannot act as a firebreak, the firebreak should be located between the trail and the Preserve boundary (see SSHCP Section 5.2.7). Firebreaks allowed inside the Preserve Setback must be created by methods that will avoid disturbance to the soil's restrictive layer, such as frequent mowing, minor scraping of surface vegetation or shallow tilling. Firebreak width within Preserve Setback shall be the minimum width needed to comply with applicable local codes. (EDGE-3b)
4. To prevent potential impacts from irrigation water or from accumulation of leaf litter onto the grasslands or vernal pools of the Preserve, the planting of any shade trees or landscaping vegetation is limited to the area of the Preserve Setback located between the recreation trail and the adjacent urban development (i.e. away from the Preserve). (EDGE-3c)
5. The Design Guidelines, Appendix B, provide a plant list for the landscaping within the Preserve Setback Area. The landscaping shall not include invasive plant species listed on the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory Database, or listed on the Cal-IPC California Invasive Plant Watch List (see http://www.cal-ipc.org/paf/). Any shade trees planted along Preserve Setback trails shall be native species that are found in California grasslands and that can survive in the vernal pool-grassland border without long-term irrigation or fertilization (e.g., valley oak, black oak, blue oak, oracle oak). In general, no more than 30% of any 1,000-foot segment of a Preserve Setback trail shall have canopy cover from tree plantings (to be consistent with maximum tree densities generally naturally found within native California grasslands or savanna).
6. Drip irrigation will be allowed for a maximum of five years to establish shade trees or landscape vegetation between the recreation trail and the adjacent Project development. The SSHCP Implementing Entity has the discretion to allow irrigation to continue past five years if extenuating circumstances necessitate it (e.g. during a drought) and the continuance of irrigation does not affect the Preserve. Any irrigation systems located within Preserve Setback shall be inspected quarterly to determine if such systems are affecting soils or vegetation away from the intended plantings. Irrigation system repairs shall be completed immediately if it is determined that the irrigation system is affecting vegetation or soil moisture away from intended tree planting.
7. If annual monitoring of the adjacent Preserve detects adverse indirect effects of the Preserve Setback planted vegetation (e.g., leaf litter accumulation, irrigation runoff, plant encroachment), then the SSHCP

Implementing Entity shall identify appropriate adaptive management of the Preserve Setback tree or landscape plantings, in accordance with the terms and conditions of the Preserve's conservation easement.

8. If trails are established in the Preserve Setback, the trail must be sloped to direct rainwater leaving the trail surface into adjacent low-velocity bio-retention swales or cells, to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features that will be placed on one or both sides of trail. Trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development. (EDGE-5)
9. Activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) shall be avoided within the Preserve Setback, in order to protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology. However, in certain circumstances, the SSHCP covered activities may result in punctures or other minor disruption of the soil hardpan or duripan, if approved by the SSHCP Implementing Entity and the SSHCP Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP.

4.9.2 Standards for Land Uses Abutting Preserve Setback Areas

The following standards apply to the Abutting Setback Land Use areas, as shown on Exhibit 4.15.

1. The Land Use Plan was designed to locate compatible land uses in areas immediately adjacent to the Preserve Setback, which includes the High School /Middle School, Community Park, Low Density Residential (LD), Greenbelt, Agriculture and Preserve Setback. Compatible uses are generally described as open space such as parks, ball fields, detention basins, and agriculture and low density residential neighborhoods. In the case of the High School/Middle School and Community Park, measures shall be taken to locate less intensive activities closer to the boundary with the Preserve Setback and locate more intensive activity (e.g., buildings, classrooms and driveways) away from the Preserve.
2. The compatible land use will provide minimize potential indirect effects of adjacent urban development upon the Preserve. The soil surfaces in a compatible land use area may be re-contoured, provided that the soil restrictive layer remains undamaged and most of the soil-profile above the restrictive layer remains intact, to the maximum extent possible.

3. To the maximum extent practicable, the subdivision layout for the adjacent LD neighborhood will be designed to minimize lot configurations which back on to the Preserve Setback. The subdivision layout for the adjacent LD neighborhoods shall strive to provide approximately five (5) total access points along the entire Preserve Setback boundary to provide access to the trails as well as a visual connection to the Preserve. (EDGE-2)
4. The roads, sidewalks, and other impermeable surfaces adjacent to the Preserve will be designed to slope away from the Preserve. Stormwater flows will be directed away from the Preserve and the Preserve Setback area, and directed into the Project's stormwater control facilities inside the development area. (EDGE-4)
5. To the maximum extent practicable, outdoor lighting will be designed to minimize light pollution into the Preserve, except where necessary for public safety or security. Minimization measures may include light fixture placement (e.g., as low to the ground as possible), lamp designs (e.g., shielding, low glare, or no lighting), directing light away from preserves, or other means to avoid or minimize light pollution. (EDGE-8)
6. The owner/applicant of Abutting Setback properties, as shown in Exhibit 4.15, will coordinate with the IE during the development design process to identify vehicular access points and facilities for delivery and pickup of grazing animals (livestock), such that these activities will not significantly alter the Preserve's habitat and are consistent with protection of the livestock, protection of adjacent public property, and include adequate public safety. (EDGE-9)

4.10 Landscape Standards

A. Purpose

Landscape standards in this Section apply to all new development, buildings, or structures that may be erected or enlarged, and/or the maintenance of existing landscaping for all land use zoning districts in the Plan Area, unless otherwise noted in this Section. Landscape standards are provided to:

1. Ensure the use of native and/or drought tolerant landscaping which is appropriate to the climate and conditions in Sacramento County, provide shade, screen loading and services facilities, help frame views and edges, and provide natural transitions that enhance the quality, walkability, safety and aesthetics of the surrounding built environment;
2. Ensure the healthy establishment and appropriate long term care and maintenance of all existing and new landscaping provided for all types of development;
3. Promote sustainable landscaping practices that lower urban heat island temperatures, improve air quality, conserve water and energy, restore, and enhance

environmentally sensitive areas; and emphasize the use of river friendly landscaping practices and stormwater best management practices.

4. Set provisions for the removal and replacement of unhealthy trees and/or hazardous conditions and proper pruning of trees to remove hazardous obstructions; and
5. Protect the function of trees for shading, carbon and particulate capture, water quality, energy conservation, and aesthetics while ensuring adequate clearance and visibility for safety, lighting of merchant signage, and balancing other needs and functions of the property.

B. General Requirements for all Land Use Districts Except Residential Zones (See Section 4.10.C for Residential Districts)

1. General Requirements

a. Unless otherwise indicated, the minimum container sizes for trees shall be 24- inch box for 35 percent of the trees, and the remainder shall be 15-gallon.

The minimum container sizes for shrubs shall be five (5) gallon for 70 percent of the shrubs, and the remainder shall be one (1) gallon. The minimum container sizes for groundcovers shall be one (1) gallon. The required percentages may be considered for adjustment as part of the Design Review process.

b. Unless otherwise indicated, tree plantings for all projects shall include 40 percent evergreen species. The required percentage may be considered for adjustment as part of the Design Review process.

c. Varied tree and plant species shall be used throughout the site. No one species shall comprise more than 75 percent of trees, shrubs, or groundcovers proposed for the site.

d. All landscape and streetscape improvements must meet the County's Improvement Standards, unless otherwise approved by an adopted streetscape plan, corridor plan, or other special area zoning code; and shall be consistent with the current edition of the County's Design Guidelines and the following standards.

e. Use of irrigation may be waived in the event of mandatory water conservation measures by the water purveyor for the community in which the property is located. Trees and shrubs shall be watered in a manner to keep them alive.

2. Landscaping of Setback and Frontage Areas. All areas between the edge of the street right-of-way and the building or parking lot, and visible from the public street, except for driveways and screen areas, shall be landscaped. See Section 4.10.F for parking lot landscaping requirements.

a. Frontage Landscaping Adjacent to Parking Lots and Driveways

(i) A planter at least 25 feet wide in the O zone and eight (8) feet wider all other zones, excluding curbing, shall be

provided between the edge of parking areas and: 1) sidewalks, where sidewalks are detached from curb and gutter, and 2) street right-of-way where sidewalks are attached. In addition, where the right-of-way is located behind a public sidewalk or curb, any area within the street right-of-way shall be developed as a planter or landscaped area in conjunction with the required eight (8) foot area in this subsection. The planter shall be designed to comply with parking lot shading and street tree requirements in this Chapter.

(ii) Within this planter, trees approved by the Planning Director shall be planted no further than 30 feet on center and at least four (4) feet but not further than 10 feet from the back of the sidewalk. The planter shall also include shrubs, ground covers, and other natural growth, or stormwater quality features and drainage treatments. Nothing in this Section shall preclude the installation of additional landscaping and the planting of additional trees so long as it is consistent with the visibility regulations for the County.

(iii) Bus shelters may be located within this planter if approved by the Director of the Department of Transportation or his or her designee and the regional transit agency, but shall not be placed so as to reduce the number of trees which are otherwise required by this Section.

b. Frontage Landscaping Adjacent to Buildings. Within the area between the right-of-way and buildings, trees approved by the Planning Director shall be planted no further than 30 feet on center and at least four (4) feet but not further than 10 feet from the back of the sidewalk. The planter shall also include shrubs, ground covers, and other natural growth, or stormwater quality features and drainage treatments. Nothing in this Section shall preclude the installation of additional landscaping and the planting of additional trees so long as it is consistent with the visibility regulations for the County.

c. Landscaped Parkways. When required by the County's Improvement Standards, a six (6) to eight (8) foot landscaped parkway shall be provided between the curb (i.e., edge of the street right-of-way) and detached sidewalk.

(i) Landscape parkways may include earth berms, hedges, fences, or walls, in combination with trees and plantings, and may be used for stormwater purposes.

(ii) Alternative landscaping methods and landscape parkway requirements may be considered as part of the Design Review process.

(iii) Street Trees. Approved trees for planting in County right-of-way and public easements shall be subject to the County's Improvement Standards. Trees not listed in the Improvement Standards, may be planted with the approval of the Office of Planning and Environmental

Review of tree selections that can provide the greatest benefits (i.e., benefits to shading, health, air quality, water and energy conservation) is recommended. The planting of street trees applies tone construction or major reconstruction.

d. Clustering and Alternative Design. Alternative design approaches, such as clustering of trees, may also be approved during Design Review.

e. Pedestrian Walks and Connections. Required landscape areas should include pedestrian walks and well-marked paths of travel and connections, steps, and similar hard surface areas, provided that such hard surface areas do not cover more than 25 percent of the required landscape areas. Barrier free, four (4) foot wide paved walk may be provided through the required planter at street and driveway intersections to provide unencumbered access for the disabled from the sidewalk to the parking lot.

Such walk shall be located so as to facilitate the most direct movement of persons using sidewalk curb ramps, if such are provided.

3. Landscape Screening Adjacent to Residential Parcels. For all uses except single-family uses, a minimum seven (7) foot wide continuous landscaped planter area shall be provided adjacent to the interior property lines of all adjoining parcels zoned for residential purposes. Landscaping shall consist of screen trees approved by the Office of Planning and Environmental Review, spaced 30 feet on center, in combination with other plant materials to provide a dense visual screen.

Trees shall be planted a minimum of five (5) feet and no further than 10 feet from the required fencing. Fencing requirements for specific uses can be found in Section 4.11.

4. Landscape Screening. Shrubs and other natural growth, combined with berms and other landscape features, at least three (3) feet in height, shall be designed to enhance, soften, and visually screen loading and parking areas, trash enclosures, mechanical equipment, walls, and other unsightly uses visible to public right-of way, except near street and driveway intersections where landscaping shall not exceed 2.5 feet in height in accordance with the visibility regulations of the Sacramento County Improvement Standards. Consideration shall be given to public safety as part of the design and maintenance of these areas. A five (5) foot landscape planter shall be installed around the perimeter of trash enclosures.

5. Landscape Maintenance. All landscaped areas shall be mowed, trimmed, and/or maintained as often as necessary to prevent overgrowth and blight. No junk, debris, or other similar materials may be stored in the landscaped areas. Refer to Section4.10.G for additional standards on landscape care and maintenance.

6. Stormwater Quality Landscaping.

a. On-site storm water quality landscaping, approved in setback areas or public right-of-way or integrated into the project may count toward required landscaping.

b. Pervious pavement and permeable pavers may be a substitute for impermeable hard surfaces but may not substitute for required landscaped planting areas. Ornamental or landscape rock and gravel areas, artificial turf, or areas covered with other artificial materials may be combined with landscape areas, provided that they are approved through the design review process.

7. Disabled Access. The design of landscaping shall provide for the access needs, safety, and comfort of the disabled in conformance with the standards of the Americans with Disabilities Act (ADA).

8. Tree Preservation. Existing mature and native trees and shrubs shall be preserved and incorporated within the project site design to the extent feasible. Removal of protected trees shall be consistent with the County General Plan, the County Tree Ordinance, Section 4.10.H of the DS, and applicable project-specific CEQA mitigation measures.

9. Sustainable Design. Landscaping for projects shall be designed to integrate principles of sustainability to the greatest extent feasible. This includes principles of water conservation, the use of trees for energy conservation and to improve air quality, and the use of storm water control features for treatment and run-off reduction, with an emphasis on the use of drought-tolerant and/or native plants.

Landscaping plans shall cohesively incorporate the following requirements and guidelines:

a. The County of Sacramento Water Efficient Landscape Ordinance.

b. The JTSP and the County Wide Design Guidelines.

c. The Sacramento Stormwater Quality Partnerships River-Friendly Landscape Guidelines - Sustainable Practices for the Landscape Professional.

d. The Stormwater Quality Design Manual for the Sacramento and South Placer Regions.

f. The integration of these practices shall not compromise requirements for landscaping as established by the County Zoning Code and the Water Efficient Landscape Ordinance.

10. Irrigation

a. All landscaped areas shall be provided with a permanent or temporary irrigation system, demonstrated on site plans, to ensure the establishment and ongoing maintenance of landscaping. Alternative and innovative methods of irrigation such as use of cisterns for rainwater harvesting and other techniques that recycle water on- site, is encouraged when feasible.

b. Drip irrigation systems are recommended for water conservation and run-off reduction for more efficient means of watering trees, shrubs, groundcovers, perennials, and ornamental grasses than a conventional spray system. However, if proper maintenance of drip irrigation systems cannot be provided, a conventional spray or bubbler system is preferred.

c. Turf and groundcover areas are more effectively irrigated with efficient, low angle spray heads. Head-to-head spray coverage is recommended. Avoid overspray onto sidewalks and adjacent properties.

d. All trees, shrub and groundcover areas, and lawn areas shall be irrigated separately to allow individual control of the irrigation needs for these plant types. Tree irrigation systems shall include bubblers, drip, or similar application, located within a watering basin for each tree.

11. Design Review. Landscape Plans shall be required and reviewed as part of the Design Review process. For existing buildings and uses, additional landscaping may be required in order to meet the intent of these requirements.

C. Requirements for Residential Zoning Districts

The following landscape requirements address required front and side-street yard areas that apply to all new single-family and duplex units for lots sizes of 10,000 square feet or less.

1. Trees for Single-family Housing. The developer/home builder of new single family homes shall plant a minimum of one (1) tree in the front yard of each newly constructed single-family home. For lots of 7,500 square feet or more that meet or exceed the minimum street frontage requirements measured at the public rights-of way line, a minimum of two trees shall be planted in the front yard.

2. Reduction of Street Trees for Single-family Housing. One (1) street tree in planted landscape areas between the curb and sidewalk, in the front yard of the lot may count toward the minimum street tree requirements for single-family or multifamily housing.

3. Required Yard Area Hardscape Restrictions. The maximum amount of paving and hardscape is regulated by Table 4.2.

4. Landscape and Maintenance Requirements. The remaining unpaved or uncovered portion of the required setback area shall be landscaped, irrigated, and maintained. The landscaping may consist of a combination of grass, annuals, perennials, groundcover, shrubs, trees, edible gardens, and any other recognized landscape material as approved by the Planning Director. Landscape design elements such as rocks, planters, and mulch may be used, provided that living vegetation is the primary groundcover. Use of irrigation may be waived in the event of mandatory water conservation measures by the water purveyor for the community in which the property is located.

5. Irrigation. An automatic irrigation system shall be installed in the front yard of new construction to provide consistent coverage of all planted areas. A home on a corner lot shall have an automatic irrigation system that covers the yard fronting both streets. Automatic controllers with rain shut-off valves or microclimate sensing capabilities provide greater water conservation.

6. Vehicle Parking Requirements. Vehicles, including, but not limited to, automobiles, boats, campers, trailers and other recreational vehicles must be parked on a surfaced area in conformance to the DS (See Section 4.12 for parking standards) and may not be parked within the required landscaped area.

7. Landscape Alternatives. In the case of a circular driveway that may exceed the maximum hardscape restriction for the yard area, off-setting landscaping may be provided in the area between the required yard area and the dwelling. Other options for landscaping the required yard areas, including the use of additional hardscape materials, artificial turf, or other landscape elements may be approved through the Design Review process.

8. Multifamily Residential. Multifamily residential open space and landscaping requirements can be found in Table 4.4.

9. Landscaping Adjacent to Soundwalls.

a. Earthmounds. When the sound and visual attenuation requires a wall exceeding six (6) feet above the grade of the adjacent roadway, earthmounds or terraced landscaping shall be used such that no more than six (6) feet of the wall is visible from the roadway. The mounds shall not exceed a 3:1 slope. The mounds may support the wall or be placed against the wall on the street side. Drainage shall be contained.

b. Landscaping. All setback areas shall be landscaped with groundcover, shrubs, vines, mounds and trees such that at least 50 percent of the wall shall be screened from the adjacent public street within five (5) years. Trees shall be placed so as to cover the 50 percent of the total landscaped area with shade canopy within 15 years of planting. Thirty percent of the trees shall be evergreen.

c. Maintenance. An automatic sprinkler system shall be installed and maintenance program shall be established to provide ongoing maintenance of the wall and landscaped area. The proposed maintenance program shall be submitted with the application and may consist of one, or a combination, of the following:

1. A homeowners association agreement;
2. An assessment district, Lighting and Landscape Act District, or similar district;
3. Other viable alternative presented in public hearing and found acceptable to the appropriate authority. The proposed maintenance program shall be submitted with the application.

F. Parking Lot Landscaping

1. General Landscaping in Parking Lots

a. No Planter shall be less than five (5) feet wide or have an area less than 40 square feet, excluding curbing. Smaller planter sizes may be considered through the Design Review process.

b. Each Planter shall include an irrigation system.

c. Not more than 25 percent of the parking landscaped area may be covered with hard surfaces such as gravel, landscaping rock, concrete, or other impervious materials. Pervious pavement and permeable pavers may be considered a substitute for impermeable hard surface areas described in Section 4.10.C 7.

d. All landscaping shall be within planters bound by a curb at least six (6) inches high. Curbs separating stormwater management landscaping or other landscaped area intended to filter runoff, from parking areas, shall provide curb cuts to allow stormwater run-off to pass through them.

2. Interior Parking Lot Landscaping. The standards for interior landscaping are applicable to all zoning districts where there are more than five (5) parking spaces on the entire site, except for existing parking lots where compliance with interior landscaping standards would result in the loss of existing required parking spaces.

a. Landscaping shall be dispersed throughout the parking area.

b. The layout of interior landscaped areas shall meet the criteria described in subsections i-iv and illustrated in Exhibit 4.15.

(i) Interior landscaping is arranged in landscape strips at least five (5) feet wide between rows of parking stalls, exclusive of landscaped bumper overhang areas and curbing. Stormwater management planters provided in landscaping strips shall be at least eight (8) feet wide to count toward required parking area landscaping and may include bumper overhang areas.

(ii) Interior landscaping is arranged in areas at the ends of rows of parking or within islands between parking spaces with rows of parking. Landscaped areas at the end of aisles shall be a minimum of eight (8) feet in width, excluding curbing, and shall not obstruct the driver's vision of vehicle and pedestrian cross traffic. Landscape islands or tree wells shall be located no more than eight (8) parking spaces apart, unless an interior landscape strip between the adjacent rows of stalls, wide enough to accommodate large shade trees, is provided.

(iii) Interior landscaping may be combined with perimeter landscaped areas as long as the interior landscape areas extend at least five (5) feet into the parking area from the perimeter landscaping.

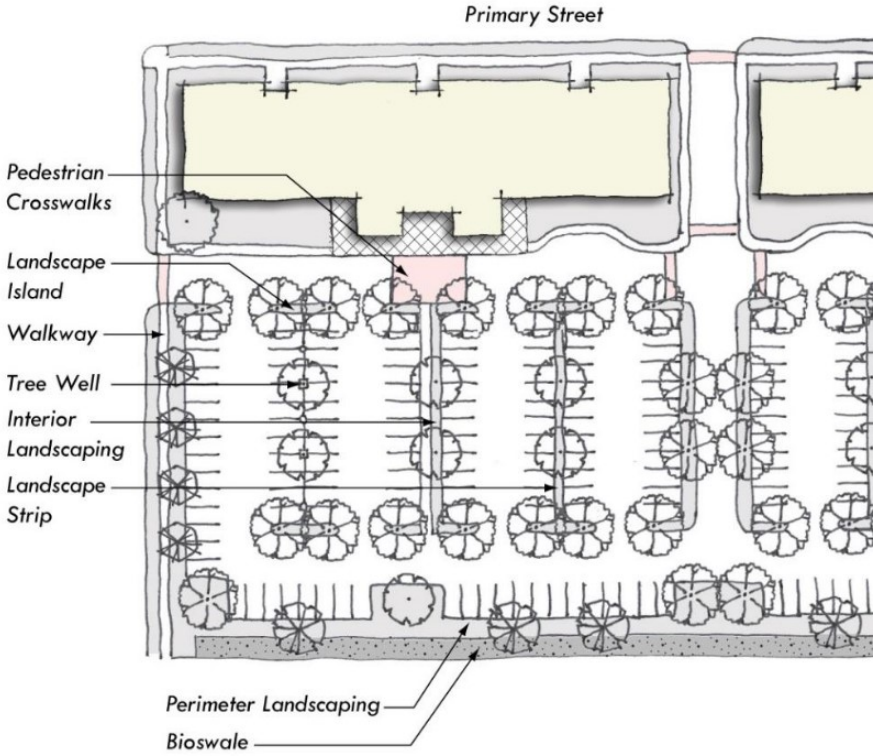


Exhibit 4.16: Parking Lot Landscaping

(iv) Individual tree planting spaces, where an individual tree is planted in space surrounded by pavement and tree well planters shall have minimum planting area of 40 square feet, excluding curbing. Shade trees having larger canopies that provide urban heat island reduction benefits may require larger planter areas.

3. Parking Lot Shading. Parking lot landscaping, including perimeter and interior landscaping requirements, shall include shade trees approved by the Planning Director, placed so as to cover a percentage of the total parking area with tree canopies within 15 years of securing a building permit, per Table 4.4.

Table 4.4 Parking Lot Landscaping Requirements

Parking Spaces Required[1]	Minimum % of Total Parking
5-24	30%
25-29	40%
50+	50%

[1] The percentage of area required to be shaded shall be based on the number of above ground and uncovered parking spaces provided.

a. Tree selection, planting approach, and irrigation shall be designed to provide for the rapid growth and sustained health of shade trees and shall comply with the County's water efficient landscape ordinance. Small ornamental trees are appropriate for accent planting but shall not be used to meet shading requirements.

b. Minor exceptions to parking lot shading standards may be permitted through the Design Review process for parking layouts incorporating stormwater quality features, or alternative shading mechanisms.

4. Additional Standards for Large Parking Areas.

a. Solutions that minimize the visual impact of residential and commercial driveways shall be used whenever possible, including shared driveways, alley access, or other design approaches that minimize the number and width of driveways and curb cuts.

b. Surface parking shall be divided into smaller, landscaped lots or courts with well-defined and safe pedestrian connections from the public street to the buildings, landscaping, shade trees, and lighting as needed. Refer to Parking Lot and Driveways Sections of the County-Wide Design Guidelines for additional information.

(i) Parking rows in single or double set configurations shall be limited in length to no more than 270 feet (or approximately 30 adjacent parking spaces).

c. Reduction of parking stall sizes shall be allowed to be reduced by two (2) feet, provided the bumper overhang area is incorporated into adjacent sidewalk or landscape areas.

G. Landscape Care and Maintenance for Commercial. Multi-family and Institutional Developments

This Section addresses the appropriate long-term care and maintenance of all landscaping provided for commercial, multifamily and institutional developments. It is also intended to set provisions for the removal and replacement of unhealthy trees and or hazardous conditions and provide adequate clearance and visibility of merchant signage, when the aesthetics of the tree and shading requirements will not be reduced.

1. Care and Maintenance

a. All landscaping and irrigation, required to be installed as part of development project, shall be maintained for the life span of the project and in such a manner so as to not create hiding places or hinder visibility.

b. All plant materials (trees, shrubs, and groundcovers) shall be maintained free from physical damage or injury arising from vehicle encroachment, lack of water, weather events, chemical damage, insects and other pests, and diseases. Plant materials showing such damage shall be replaced with the same or similar species. Planting areas shall be kept free from weeds, debris, and undesirable materials which may be detrimental to safety, drainage, or appearance.

c. It is the responsibility of the property owners to seek professional advice and spray and treat trees, shrubs, and groundcover for diseases which can be successfully controlled

if such untreated diseases are capable of destroying an infected tree or other trees within a project.

d. Property owners may refer to the integrated pest management strategies in the Sacramento Stormwater Quality Partnership's River-friendly Landscape Guidelines and can cooperate with the University of California Agricultural Extension Service and the County Agricultural Commission on methods and procedures by which infestations can be reduced or retarded.

2. Tree Pruning

a. Prior to pruning any tree within a landscaped area previously required to be installed as part of a development approval, a County Tree Pruning Permit shall be approved by the Planning Director or his or her designee, and the County Tree Coordinator. Tree Pruning shall be performed by a California Landscape Contractor (C-27 or C-61). The licensed contractor shall also be certified by the International Society of Arboriculture as a Certified Tree Trimmer or Certified Arborist or other qualified tree expert. The Planning Director or his or her designee shall require the following information upon submitting the Tree Pruning Permit request:

(i) A site plan indicating the type of tree, size, and location of the trees Tobe pruned;

(ii) Reasons for pruning;

(iii) Evidence that the pruning shall be performed by a certified arborist, certified tree trimmer, or other qualified tree expert;

(iv) Number of trees to be pruned.

b. Tree pruning is limited to:

(i) Removal of dead wood and diseased, crowded, and weakly attached trunks and branches which create a hazard to private property and citizens;

(ii) Providing adequate clearance and visibility for safe use of parking stalls, travel ways, and walkways for the passage of persons and vehicles;

(iii) Removing visibility obstructions to traffic signs;

(iv) Providing adequate visibility for security patrols;

(v) Repair of split trees and limbs in order to save the tree and its appearance;

(vi) Removing or pruning roots of trees which are causing damage to public or private property such as curbs, gutters, sidewalk, drainage lines, and parking lot surfaces; and

(vii) Providing visibility for merchant signage and parking lot lighting only when the aesthetics of the tree and the parking lot shading requirements will not be reduced.

H. Removal and Replacement of Landscaping

1. All plant material removed from a project in which the Planning Director has approved the landscape plan shall be replaced with the following replacement sizes: shrubs (5-gallon size), groundcover (flats). Replacement of trees shall be as specified in Section 4.10.I.

2. Tree removal shall be limited to trees which are in poor health, structurally distressed, or unsafe and shall be in compliance with the regulations and procedures for tree preservation and protection in Title 19 of the Sacramento County Code. The removal of a tree shall be the final recourse upon determining that it is infeasible to save the tree by any other method (e.g., pruning, treatment of diseases, fertilizing). Prior to the removal of any tree, a Tree Removal Permit shall be approved by the Planning Director and the County Tree Coordinator or his/her designee.

3. The following information shall be required:

a. A statement of the health and condition of the trees to be removed by a Certified Arborist or licensed Landscape Architect;

b. Reasons for removal; and

c. Landscape Plan indicating size, quantity, species, and location of the trees to be removed and replaced.

4. Failure to obtain an approved tree removal permit prior to removing a tree shall require the owner of the project to replace the removed tree as stated in the Replanting Requirements in Section 4.10.I.

I. Replanting Requirements and Replacement Fee

1. Replacement trees shall be required for trees removed with or without a Tree Removal Permit, as set forth in Table 4.5.

2. Trees removed with a Tree Removal Permit shall be replaced by 24-inch box specimen trees. A 15-gallon size tree may be used as a replacement tree with an additional replacement fee. The replacement fee is based on the difference of the wholesale value between a 24-inch box and a 15-gallon tree as set forth in a fee schedule approved by the Board of Supervisors. The replacement fee may be waived by the Planning Director if the loss of the tree resulted from causes completely out of the control of the property owner.

3. Trees removed without a Tree Removal Permit or severely and improperly trimmed with or without a Tree Pruning Permit shall be replaced and a replacement fee may be required. The replacement tree is based according to the size of the tree removed or damaged as indicated in Table 4.5.

Table 4.5 Size of Replacement Trees	
Size of Damaged/ Removed tree	Size of Replacement Tree
2 inches	24 inch box
4 inches	36 inch box
6 inches or greater	48 inch box

4. A 15-gallon size tree may be used as a replacement with an additional replacement fee, as set forth in a fee schedule approved by the Board of Supervisors. Replacement fees shall be deposited into a Parking Lot Shade Tree Violation account. Fees shall be used for tree planting/tree care on public property and for public education on tree planting and care, as determined byte Board of Supervisors.

5. Mitigation Monitoring and Reporting Program (MMRP). Prior to accepting an application for tree removal or pruning, the County Tree Coordinator, or his or her designee shall determine if there is an active MMRP that affects the proposal. If there is an active MMRP an application will not be required and the applicant is Tobe referred to the Sacramento County Division of Planning and Environmental Review.

4.11 Development Standards for Walls and Fences

All proposed walls and fences shall comply with the requirements of this section.

A. General Standards

1. All Fences Adjacent to Drives and Street Intersections. When fences, walls, and/or landscape screening are adjacent to street intersections and points of ingress and egress the visibility requirements of the Sacramento County Improvement Standards shall be adhered to. Application of CPTED strategies shall be considered in the design of these features.

2. Perimeter Fences for Swimming Pools. Perimeter fences shall be required around private pools, not otherwise restricted from unauthorized access from the public, subject to the construction requirements contained in the California Building Code Section 3109.4.3.

3. Masonry Walls. A graffiti-resistant aesthetic surface treatment, appropriate to the location, shall be required. Long spans of masonry walls or fences shall provide breaks for pedestrian connections at least every 300 feet. Application opted strategies shall be considered in the design of these features.

4. Vacant Property. A Temporary Use Permit is required from the Zoning Administrator for security fencing, including chain link, which may be erected on all property lines and to the edge of the sidewalk. The vacant property shall be maintained in a weed and litter free condition.

5. Permitted Materials. A fence may be constructed of permanent material, such as wood, chain link, stone, rock, concrete block, masonry brick, brick, decorative wrought iron or other material approved by the Planning Director.

6. Prohibited Materials. Fencing materials prohibited include, but are not limited to, the following. This Section shall only apply to fences located in the front yard, street side yard, and fences abutting any alley or other public right-of-way.

a. Cast-off, secondhand, or other items not originally intended to be used for constructing or maintaining a fence.

b. Plywood less than five-eighths inches thick, plywood not of a grade approved the Planning Director, particle board, paper, and visqueen plastic, plastic tarp, cloth, or similar material.

7. Maintenance. All fences shall be properly maintained so as not to create a hazard, public nuisance, or blight.

8. Exceptions. Fences deviating from the standards in this Section are permitted with Special Development Permit from the Zoning Administrator. Fence standards may be modified by a condition of approval by the appropriate authority as part of a separate entitlement.

B. Residential Fences. Applicable to LD and MD zones.

1. Front Yards. Fences in the front yard shall be limited to:

a. Solid walls or fences as defined in Chapter 7 of the Code not exceeding three (3) feet,

b. Fences constructed of chain link or similar woven wire materials, not exceeding four (4) feet, or

c. Open fencing not exceeding seven (7) feet. Fences exceeding these heights up to seven (7) feet may be allowed with the issuance of a UPM.

Fence height for fences within five (5) feet of a public right-of-way or right-of-way with PUPF shall be measured from the grade of the right-of-way or right of-way with PUPF. Beyond five (5) feet, fence height shall be measured from highest elevation of the ground on either side of the fence.

2. Side Street Yards. Fences shall not exceed seven (7) feet in height. Retaining wall and fence combinations that exceed seven (7) feet in height may be permitted with the issuance of a Minor Use Permit. Fence height for fences within five (5) feet of a public right-of-way or right-of-way with PUPF shall be measured from the grade of the right-of-way or right-of-way with PUPF. Beyond five (5) feet, fence height shall be measured from highest elevation of the ground on either side of the fence.

3. Interior Yards. Fences shall not exceed seven (7) feet and may be located on a retaining wall not to exceed four (4) feet in height. Fence height for interior property lines shall be measured from the highest elevation at the interior property line or at the finished grade of the rear or side yard setback, whichever is higher.

4. Corner Lot Exceptions to yard locations. Regardless of which street frontage of the lot determines where the front lot line is, as defined in the Zoning Code Chapter 7, Section 3, for purposes

of measuring fence height, the frontage with the primary entrance to the main dwelling shall be considered the front yard and the other frontage(s) shall be considered the side street yard(s). In the case of a corner lot with a duplex, or two or more dwellings, where primary entrances face both frontages, both frontages shall be considered the front yard. Where a home demonstrates multiple established primary entrances on both frontages, both frontages shall be considered the front yard.

C. Multi-Family and Institutional Use Fences

1. Front and Side Street Yards.

a. Multi Family Uses. Only open ornamental security fences may be located directly outside and adjacent to the back of the sidewalk. All other fences along a public right-of-way in the multifamily zoning district shall be subject to the requirements for sound walls in Section 4.11.E.

b. Institutional Uses. Fences are not permitted, except that open ornamental fences such as wrought iron are permitted on the property line along a public right-of-way. Any fence located along a public right-of-way shall be placed behind sidewalks and required landscaping.

2. Adjacent to Residential Zoning Districts. Either a solid wood fence or masonry wall of at least six (6) feet in height shall be provided along the interior property lines when located adjacent to residential districts, except where pedestrian connections are needed.

D. Commercial Fences

1. Front and Side Street Yards. Fences are not permitted, except that open ornamental fences such as wrought iron are permitted on the property line along public right-of-way. Any fence located along a public right-of-way shall be placed behind sidewalks and required landscaping.

2. Adjacent to Residential Zones. A masonry wall of at least six (6) feet in height shall be provided along the interior property lines for all industrial, commercial, and mixed-use projects when located adjacent to residential zoning districts, except where pedestrian connections are needed.

3. No fencing requirements for interior yards for commercial and industrial uses not located adjacent to Residential Zones.

5. Screen Fences

a. Outdoor storage of materials and equipment shall be located within the buildable portion of the lot, and screened from view with solid wood fencing, masonry wall, or chain-link fencing with slats. Screen fencing shall also be located within the buildable portion of the lot, unless otherwise noted in this Code.

b. Outdoor storage areas, abutting a public street frontage, shall be screened with a six (6) foot high fence, constructed of wood, brick, rock, or other masonry material and designed to shield stored materials from public view.

Outdoor storage yards along a scenic corridor shall not be permitted, unless conditional Use Permit is issued by the appropriate authority.

E. Sound Walls Adjacent to Streets

1. Whenever sound walls are required by a condition of approval to mitigate sound impacts adjacent to street, the following standards shall apply. These standards shall not preclude the use of other innovative methods of project design, utilizing greater setbacks, building design, mounding, terracing, or single-story structures.

Application of CPTED strategies shall be considered in the design of these features.

a. Setbacks. Walls shall be located behind the sidewalk and required landscaping, unless otherwise approved, and have an average setback of 19feet from the ultimate public street right-of-way, but can vary in setback to minimum of 13 feet.

b. Height. Maximum height of a wall shall not exceed six (6) feet above the finished grade at the base of the wall on the roadway side, in Section 4.10.9.a. unless otherwise approved through a use permit, as described in this Section.

c. Type of Wall. Walls shall be constructed of graffiti resistant solid brick or masonry material that requires minimum maintenance and provides the required sound and visual attenuation. An aesthetic surface treatment appropriate to the location shall be required.

d. Landscaping. Provide landscaping and maintenance per Section 4.10.9.

F. Non-Conforming Fences

1. Continuation and Maintenance. A non-conforming fence may be continued, and may be maintained, except as provided in subsection 2-5.

2. Maintenance or Repair of Existing Nonconforming Fence. Maintenance or repair, including structural repairs, may be made to any non-conforming fence or portions thereof if the repairs do not result in a different condition of conformity, or if the repairs bring the fence into compliance with this Section.

3. Reconstruction of Damaged Nonconforming Fences. A property owner may reconstruct a non-conforming fence damaged by fire or other calamity if the constructed fence is in conformity with this Section.

4. Removal of Worn Nonconforming Fence. If because of normal wear and tear anon-conforming fence is no longer fully upright or is no longer serviceable, the property owner either shall remove it or shall replace it with a new fence in conformity with this chapter.

5. Non-conforming Commercial Fences Adjacent to Residential Zones. Existing wood fences and chain link fences with slats

shall be maintained with metal posts, minimal gaps, no broken boards and no sections that lean. Nonconforming fencing shall be the responsibility of the commercial property owner where the fence is located and activities on the premises shall comply with the County's Noise Ordinance.

4.12 Parking Regulations

4.12.1. Purpose

The purpose of these regulations is to require off-street parking and loading spaces for all land uses in the Plan Area, sufficient in number to accommodate all vehicles which will be congregated at a given location at any given point in time by drivers and passengers who use or occupy the facility. Specifically, the off-street parking standards are provided to:

1. Ensure off-street parking and loading facilities adequately serve a majority of the traffic generated by development or land uses on site over time;
2. Maintain efficient use of land by avoiding excessive amounts of parking;
3. Provide adequate off-street parking, circulation, and access to support the viability of businesses and preserve surrounding neighborhood property values;
4. Allow parking alternatives, including shared parking and reductions to off-street parking requirements for sites in close proximity to transit, providing good connectivity to the surrounding area and bicycle and pedestrian facilities, and/or other transportation demand management measures, as appropriate; and
5. Ensure off-street parking and loading facilities are designed in a manner that promotes the general welfare of the community, protects public safety, and minimizes adverse impacts to adjacent land uses.

4.12.2 Applicability

The standards of this Chapter shall be applied to new construction, establishment, change, or expansion of any land use or building in the County, including increases in floor area, seating capacity, dwelling units, occupants, employees, and other units of measurement used to generate the vehicular requirements in this Chapter. Operations associated with a land use shall not commence, nor a building occupied, unless off-street parking and loading facilities conform to the requirements of this Chapter. Exceptions to the standards in this Chapter are permitted when a deviation has been granted through a Conditional Use Permit or Special Development Permit, in accordance with the provisions and references in Chapter 5.

4.12.3 General Provisions

Accessible off-street parking areas shall be provided and maintained as set forth in this Chapter. The parking access area shall provide parking and maneuvering room for motor vehicles and for pedestrian safety and walkability based on the anticipated occupancy of a given building, structure, or area of

land or water. In addition, every use shall provide at least the minimum number of vehicular off-street parking spaces required by Section 4.12.9; motorcycle parking spaces required by Section 4.12.14; and bicycle parking spaces required by Section 4.12.15 in accordance with the following methods.

1. Parking requirements for uses not specifically listed in the tables will be determined by the Planning Director, based on comparable uses in the table or through a parking analysis of similar facilities in the region.
2. Where there is a combination of principal uses in any one facility, the sum of the parking requirements of these uses shall be provided unless otherwise indicated or a reduction of parking is permitted.
3. Calculations
    a. Rounding. If the calculation of parking needs results in the requirement for a fraction of a parking space, such a parking space need not be provided unless the fraction exceeds 50 percent.
    b. Gross Floor Area. Where the standards for parking set forth in this Chapter are based upon gross floor area, gross floor area shall be defined by the area within the surrounding exterior walls of a building (or portion thereof) including shared bathroom spaces, storage areas, and circulation areas, but exclusive of courts, vent shafts, and parking areas.
    c. Seating Capacity. Where the standards for parking set forth in this Chapter are based upon seating capacity, the capacity shall be determined by reference to the building occupancy permitted or actual seating capacity of an area based upon the number of seats or one (1) seat per 18 inches of bench or pew length and one (1) seat per 24 inches of booth length for dining, but in no case shall seating be less than determined, as required by the Uniform Building Code, Section 3301. For other areas where seats are not fixed, the seating capacity shall be determined as indicated by the Uniform Building Code.

4.12.4 Building Permit for New Construction

Plans submitted for a building permit to construct a building which has parking areas shall include the design of the required parking area, drawn to scale. Such plans shall include all parking spaces and maneuvering areas, curb cuts, landscaping and other improvements. The building permit shall not be issued until such parking plans have been approved by the Planning Director or his or her designee, and no final completion inspection approved until the parking spaces and required landscaping are installed. No business license shall be approved until final completion inspection is obtained, except that a business license may be issued providing a cash bond is posted by the property owner to assure completion.

4.12.5 Change of Occupancy or Use

For a change of occupancy where the parking demand is increased and where no new construction requiring a building permit is anticipated, but a new business license is required, the Planning Director or his or her designee shall review the parking requirements of the proposed use. No new business license shall be issued until the Director or designee has approved the parking plan. Two copies of such plan drawn to scale shall be submitted for approval. The plan shall show the whole property in question and shall show the means of ingress and egress, location of the building, parking spaces, and landscaping, pedestrian paths of travel, pedestrian access and connections from the public street through parking lot to building entry, barrier curbs, irrigation system, lights and any other proposed facilities. If the plan conforms to the intent and provisions of this Section, the Director or designee shall approve both copies, keeping one copy on file and returning the other copy to the Tax Collector for issuance of any business license.

4.12.6 Nonconforming Use of Existing Facilities

Any building or use for which parking facilities become substandard by the adoption of this section shall be considered a nonconforming use. Such nonconforming use may continue, but no enlargement or expansion shall be made in such use or building, unless the required number of parking spaces or parking area as designated by this regulation are provided. Any change of occupancy or use in an existing building or lot which requires more parking spaces shall provide the additional parking areas required in this section.

4.12.7 Parking of Inoperable or Unregistered Vehicles

1. It shall be unlawful for any person to park or store, or permit others to park or store, any automotive vehicle or any trailer without current registration from the Department of Motor Vehicles or in an inoperable condition on any lot in a residential zoning district.
2. An automotive vehicle or a trailer without current registration from the Department of Motor Vehicles in an inoperable condition may be parked or stored in a fully enclosed building.

4.12.8 Change of Parking Requirements

When parking requirements as set forth in this Chapter are amended, such amendment shall not invalidate a previously approved development plan, Conditional Use Permit, or building permit.

4.12.9 Vehicle Parking Requirements

Parking requirements shall be applied uniformly in accordance with the general provisions, based on land uses, regardless of the zoning district in which a land use is to be located; unless otherwise specified in these standards. On-street parking may count toward satisfying off-street parking requirements for commercial service and retail uses and visitor parking at a 1:1

ratio. Motorcycle and bicycle parking spaces shall also be required and provided in accordance with Sections 4.12.14-15.

1. Vehicle parking requirements for Single family residential uses in the LD and MD zones are provided in Table 4.6.
2. Vehicle parking requirements for attached housing uses in MD, HD and MU zones are provided in Table 4.7.

Table 4.6: Single Family Residential and Group Living Parking Requirements in LD and MD Zones

Unit Type	Minimum parking required
1. Dwelling, Duplex or Halfplex	Two spaces per dwelling unit, 9' wide x 19' long within the buildable lot area or property driveway of the front yard
2.Dwelling, single family	
3. Family Day Care Home, Foster Home	Standard is the same as 1 and 2 above, plus one additional space for every 10 or more persons receiving care in the home
4. Residential Care Home	Standard is the same as 1 and 2, plus 1.5 additional space for every 6 or more persons receiving care in the home

Table 4.7: Attached Housing Parking Requirements in MD, HD or MU Zones

Unit Type	Minimum stalls required
Studio	1
1 bedroom	1.5
2-3 bedroom	2.0
4 plus bedrooms	2.0
Visitor	0.5

1) One (1) parking space per unit shall be covered (carport or garage). Exceptions may be approved for affordable housing projects as part of the Design Review.
2) Condominiums, townhouses, or similarly owned units where certain parking spaces are deeded, granted by easement, or otherwise permanent assigned spaces shall be located to be visible from a window(s) of the unit to which it is assigned, whenever possible, unless such spaces are contained within a garage. The location and regulation of unassigned spaces shall be placed under the control of the project homeowners' association.
3) Permanent, assigned, covered or uncovered spaces must be standard spaces, a minimum of nine (9) foot wide by 19-foot long. For projects with assigned spaces for each unit, up to 50 percent of the unassigned spaces may be compact spaces, and for projects with no assigned spaces, up to 30 percent of the spaces may be compact spaces. Unassigned standard and compact spaces shall be evenly distributed throughout the project.
4) Visitor parking may be satisfied with on-street parking spaces on the property or on adjacent street frontages, at a 1:1 ratio. Visitor parking

need not be in addition to required parking, where one or none of the parking spaces are not assigned. For townhomes and other attached housing, street parking and private driveways may be counted toward visitor parking.

5) The American with Disabilities Act (ADA) requirements and standards shall be met.
6) Parking and paving directly touching against residential buildings shall be avoided. Paved surface parking areas shall be separated from the primary residential building by a minimum four (4) foot wide walkway and/or a minimum seven (7) foot wide landscape strip.
7) Tuck under and subterranean parking may be permitted for projects in the HD and MU zones.
8) Off-site parking is allowed in HD and MU zones up to 25% of required spaces, pursuant to Section 4.12.9E.

C. Vehicle parking requirements for Public, Civic and Institutional Uses are provide in Table 4.8.

Table 4.8 Public/Service and Institutional Uses Parking Requirements

Use Type	Minimum parking requirements
Place of worship or other Religious Institution	One space per four fixed seats within the main assemble room or one space per 50 square feet of the seating area used for assembly
Social Club, Fraternal Hall/Lodge	Ten spaces per 1,000 square feet of seating area used for assembly
Business, Trade, or Vocational School	One space per three persons (using maximum building occupancy)
College, University	One space for every three employees, plus one space for every three students
School, K-12, Public or Private	Elementary and Junior High Schools: one space per employee, plus one space for every 10 seats in the Auditorium or multi-purpose room whichever is greater, plus loading space for two buses. High Schools: one space per employee, plus one space for every five students
Public Park and Ancillary Uses	None required for sites up to 5 acres in size. Sites above 5 acres provide one space per 20,000 s.f of useable park area
Convalescent Hospitals, Congregate Care Facilities	One space for every three beds licensed by the County or State, plus one space for every three employees

Table 4.8 (Continued)	
Adult Day Health Center/Child Day Care Center	One space per employee, plus one parking space for every eight children enrolled or adults
Hospital	Two parking spaces for each bed licensed by the State, plus one space for every three employees; outpatient facilities shall provide additional parking as required for a medical office
Utility, Major or Minor	One space for every two employees on the premises at any one time including overlaps in shifts
Other Institutional Use Not Specified Above	One space for every three occupants based upon the maximum occupant load of the institution at any one time, as determined by the UBC

D. Vehicle parking requirements for Commercial and Office uses are provided in Table 4.9.

Table 4.9 Commercial/Office Parking Requirements	
Use Type	**Minimum stalls required based on gross floor area (s.f.) or # of employees/occupants**
Commercial Services	
Veterinarian, Animal Hospital	1 space/250 s.f.
Banks, Savings and Loans, and Credit Unions	1 space/300 s.f.
Physical Fitness Centers, Health Studios and Similar Uses	1 space/200 s.f.
Beauty/ Barber Shop and Similar Uses	1 space/250 s.f.
Eating and Drinking Uses	
Bar, Restaurant (Sit down, carry out and drive thru)	1 space/3 seats, based on the capacity of fixed and movable seating, as determined under the UBC. Outdoor seating which is less than 25 percent of indoor seating is exempt. Any additional outdoor seating beyond 25% shall provide 1 space/1.5 seats.
Entertainment/Recreation	
General Recreation Facility/Indoor	1 space/3 occupants who would use the premises at any one time based on the maximum occupant load, as determined by the UBC.
Dance Halls, Ballrooms, Skating	1 space/ 100 square feet of dance or skating floor area. Incidental areas in restaurants, bars and other recreational uses shall provide parking according to the specified area standard above.
Batting Cages, Driving Ranges	1½ spaces for each station
Motion or Live Theater	One space per three seats
Other Recreation Uses not listed	One space for every three occupants who would use the premises at any one time based on the maximum occupant load, as determined by the UBC.

Table 4.9 (Continued)	
Lodging	
Bed and Breakfast Inn	One space per guest room and two spaces for the resident owner or manager
Hotel or Motel	One space per sleep room, suite, or housekeeping unit. For other principal uses on the premises such as restaurants, bars and meeting rooms, refer to applicable standards for such uses. For secondary or other accessory uses, 70 percent of the requirement specified for the use is applicable.
Use Type	**Minimum stalls required**
Office Uses	
Office Use, General	1 space/300 square feet of gross floor area[1,2,3]
Medical and Dental Offices	1 spaces/250 square feet of gross floor area[3]
Retail Uses	
Retail Furniture, Major Appliance & Floor Covering Sales	1 space/ 1,000 square feet of gross floor area plus 1 parking space for each employee[3]
General Retail Activities[1]	1 space/300 square feet of gross floor area
Building Material Sales	1 space/300 square feet of gross floor area in the main retail building, plus parking required in the uncovered sales area per requirement
Uncovered Sales Areas (auto, boat or trailer sales; lumber or building material yards; plant nurseries; or other similar uses	1 customer space/1000 square feet of uncovered sales area, up to a maximum of 20 customer spaces, plus one parking space for each employee
Other Commercial Uses not specified	One space for every two occupants based on maximum load, as determined by the UBC

Table 4.9 Footnotes

1) Interior hallways used for access to office suites are not counted in the floor area
2) Medical and dental offices and complexes exceeding 10 percent of the gross floor area of the office complex shall comply with the medical/dental parking requirements
3) For services located in a commercial or mixed-use center, parking equal to the number of spaces required for each use, unless mutual parking agreements allow a shared parking reduction.
4) Applies to stand-alone uses, shopping centers and mixed-use retail developments that utilize a common parking area through mutual parking agreements
5) Up to 10 percent of the required number of spaces may be contractually committed to be used for park-and ride purposes without affecting the total parking requirement of the center.

E. General Requirements for Shared and Off-site Parking

The following guidelines are intended to serve as criteria for evaluating proposals for shared parking. Shared Parking is parking that can be used to serve two or more individual land uses without conflict or encroachment. Off-site parking, where allowed in parking tables, may be provided on parcels within 300-feet of site to meet minimum parking requirements.

1. Site Plan: All requests for shared parking must be accompanied by a site plan which includes sufficient information to identify the type and intensity of the uses which are proposing to share parking.

2. Ownership: When first approved, the shared parking facility must be under common ownership or under the control of a single site plan through lease arrangements. All requirements and conditions imposed upon the shared parking facility shall be listed on the site plan and shall be binding upon all subsequent purchasers.

3. Time of submittal: All requests for shared parking must be submitted in writing at the same time as an application for site plan review.

4. Shared parking arrangements may be approved by the Planning Director if the above criteria is met.

4.12.11 Vehicle Parking Size, Location, and Configuration

Every use shall provide the required off-street parking spaces in accordance with the dimensional and location requirements in this Section.

A. Off-Street Parking Space and Driveway Sizes

1. Table 4.10 provides the parking dimensions that regulate the dimensions and drive aisle requirements for various angles of parking and one-way and two-way aisles, except for residential garages. Vertical clearance of all enclosed parking spaces shall be a minimum of seven (7) feet.

2. Special Provision for 90 Degree Single loaded Parking Aisles. Parking lot aisles which serve as access to parking spaces on one (1) side only may be reduced to a width of 20 feet provided either a landscaped planter or pedestrian sidewalk at least five (5) feet in width is installed adjacent to said aisle.

3. Residential Garages and Accessory Dwellings. Parking within enclosed garages, carports or outdoor spaces shall be required as provided in Table 4.11.

4. Shared Driveways. Shared driveway access with adjacent lots is encouraged, subject to compliance with the following requirements; the driveway is directly adjacent to a shared property line; an easement for the use of the driveway is obtained; and the driveway width is adequate to serve the additional number of vehicles to be served.

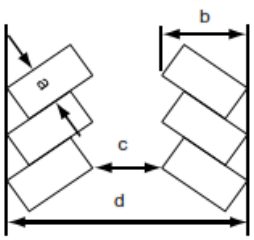
Table 4.10 Parking Dimensions

Angle	Stall Width a	Stall to Curb b	Aisle c	Two Rows+ Aisle d
90°	9'-0"	19'-0"	25'-0"**	63'-0"
	9'-6"	19'-0"	24'-8"**	62'-6"
	10'-0"	19'-0"	24'-0"**	62'-0"
60°	9'-0"	21'-0"	20'-0"**	62'-0"
	9'-0"	21'-0"	19'-0"*	61'-0"
	9'-6"	21'-3"	18'-6"*	61'-0"
	10'-0"	21'-6"	18'-0"*	61'-0"
45°	9'-0"	19'-10"	20'-0"**	59'-8"
	9'-0"	19'-10"	16'-4"*	56'-0"
	9'-6"	20'-2"	15'-2"*	55'-6"
	10'-0"	20'-6"	14'-0"*	55'-0"

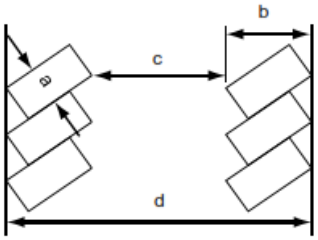
**Two-way aisle

* One-way aisle

Key Diagram:



One-Way Aisle



Two-Way Aisle

Table 4.10 (continued) Parallel Parking Dimensions			
9'-0"	20'-0"	12'-0"	30'-0"

Key Diagram:

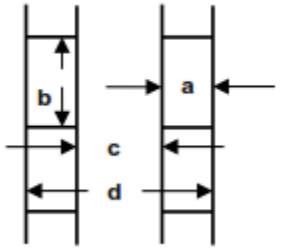


Table 4.11 Garage Parking

Unit Type	Garage Space Type	Minimum Dimension Requirements	Additional Regulations
Single-family or Multifamily	Attached or Detached Two Car	20' x 20' (400 sf) minimum interior, 19' driveway	Constructed of the same materials as the principal dwelling
Single-family	Attached or Detached	20' depth; 640 sf minimum	Third space may be tandem
Multifamily Rental	Single Unit-Assigned Parking	9' x 19'	Space shall be covered and assigned
Multifamily Ownership	Single Enclosed Garage	12' x 20'; 10' driveway	Automatic garage door required

5. Compact Car Spaces. Up to 50 percent of the required number of parking spaces may be sized for compact cars. Compact car parking spaces shall be at least eight (8) feet in width and 16 feet in length, and shall be clearly marked, "COMPACT". Compact parking spaces shall be distributed throughout the parking lot. Where an entire section of the parking lot is restricted to compact car parking with an angle of 90 degrees, the aisle width may be reduced from the standard 25 feet to 23 feet; such compact sections, if used, should be located so as to minimize the distance from the section to the appropriate building or activity.

6. Parking Spaces for the Disabled. Parking spaces shall be provided for the disabled in accordance with the Uniform Building Code and American with Disabilities Act and subject to approval by the Chief Building Inspector. Designated spaces are to be incorporated into the overall parking requirement for the project.

7. Employee Parking. Parking spaces for all commercial business and industrial uses designated for employees, where employee parking is required, shall be identified by the employer as "employee parking."

8. Electric Vehicle Parking. Parking spaces providing electric vehicle charging stations shall be designed to comply with the California Building Standards Code and other federal and state regulations. Electric vehicle charging station may qualify for parking reductions, as addressed in Section 4.12.13. Parking spaces designated for electric vehicle charging stations shall be counted toward meeting the minimum parking requirement.

B. Vehicular Maneuvering Area, Access, and Circulation

All parking areas shall be designed so that the parking spaces have suitable maneuvering space and access to and from a public street or alley.

1. Access to Parking Areas. Access to parking areas and curb cuts for driveways shall be approved by the Sacramento County Engineering Division to insure an efficient and safe traffic flow into the parking areas and along the public streets.

2. Where two way access driveways are used, the design shall include either a) planter with lawn or other low groundcover separating the entrance and exit lanes, including small signs denoting "enter only" and "exit only" appropriately placed, when approved by the Engineering Division; or b) painted line separating entrance and exit lanes, with stenciled enter/exit markings appropriately painted on the pavement. Provide well-marked pedestrian paths of travel to entry/exit points and at potential conflict points.

3. Back out Parking. Parking areas for commercial, industrial, and multiple family residential uses, not including duplexes and single-family residences, shall be designed so that vehicles are not permitted to back out of the parking area onto a public street, enter and exit a facility or lot without reentering a public right-of-way, or make other hazardous turning movements.

4.Dead-end Aisles. Dead-end aisles are discouraged. When used, 90-degree angle stalls are required.

C. Vehicle Parking Location

Off-street parking shall be located in a parking area or building, as follows:

1. Residential Development. All off-street parking for residential uses such as a single-family detached dwelling, duplex or halfplex, shall be located on the same parcel as the development they are intended to serve, but shall not be located within a required corner setback area, except as otherwise provided in this Chapter.

a. No more than 40 percent of the land area between the front lot line and the front wall of the primary dwelling that is furthest from the front lot line (Exhibit 4-17, Example 1), or the area leading directly to a carport or enclosed garage (Exhibit 4-17, Example 2), whichever is greater, may be paved or used for vehicle parking. Use of permeable paving is encouraged for vehicular areas on lots that exceed 15,000 square feet. On lots of 15,000 square feet or less, impervious surfacing is required for vehicle parking. A Minor Use Permit may be issued for alternatives to these requirements.

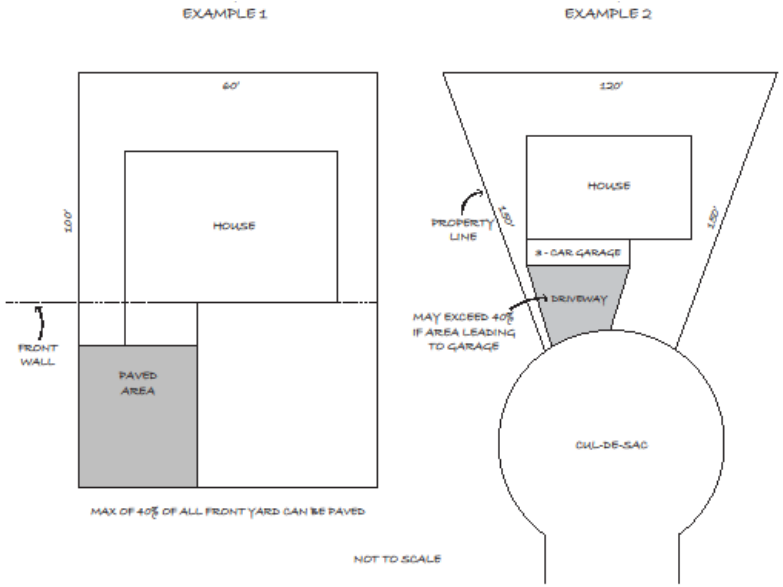


Exhibit 4.17: Off-street Vehicle Parking Location

2. Multifamily Residential or Mixed-Use Development. At least one (1) space for each residential unit shall be located on-site; other required parking spaces may be located off-site, subject to standards for off-site parking in Section 4.12.9E and the following standards.

a. Residential parking garages shall be located adjacent and behind the building elevation.

b. Surface parking for commercial uses shall be located to the side or behind buildings, when feasible, and is

discouraged at street corners, and in the front setback, but may be permitted subject to approval by the County at the time of Design Review.

3. Non-residential Development. Parking required to serve non-residential uses may be located on the same or different site as the uses served, subject to complying with the standards for off-site parking in Section 4.12.9E. The owners of adjoining buildings or lots may provide parking space in common if the total parking space provided is equal to the sum of the individual parking needs or a shared parking reduction is granted.

a. Surface parking areas may be permitted in the front, side, or rear setback areas, but discouraged at street corners and shall be subject to approval by the County at the time of Design Review. All parking areas shall be screened from public view.

4. Places of Public Assembly. The parking for places of public assembly requiring more than 50 parking spaces may be located on the premises, within 600 feet of the premises, or a combination of both.

D. Vehicle Parking Configuration

1. Tandem Parking. The minimum dimension for two parking spaces in tandem shall be nine (9) feet in width by 34 feet in length. Tandem parking shall be permitted for multifamily housing, the residential components of mixed-use projects, day care homes, and non-residential uses, subject to the following conditions.

a. For day-care homes and non-residential uses, a full-time parking attendant shall be on duty at all times when the parking facility is available for use.

b. For multifamily housing and the residential components of mixed-use projects; tandem spaces are required to be assigned for the same dwelling unit. Up to 10 percent of the total off-street parking spaces provided may be tandem parking.

2. Tuck Under Parking. Tuck under parking, defined as parking below the unit and accessible from outside the unit, shall be permitted when parking access is restricted to an alley, the rear 40 percent of the site, or designed such that parking areas shall not to be visible from the street or from an adjacent property.

3. Parking Structures. Parking structures, buildings or structures use for motor vehicle parking, shall be permitted, subject to the following standards.

a. Parking structures shall not exceed the height of the main structure on the same property, if applicable, unless approved during Design Review.

b. In addition to the standards herein, parking structures shall be subject to applicable regulations, including setback requirements, of the base zoning district.

c. All setback areas not occupied by the parking structure shall be fully and permanently landscaped and lit for security.

d. Parking structures, with at grade parking shall be screened by the architecture of the building and/or landscaping at the street level, or other standard establish during Design Review, unless the parking structure contains ground floor commercial uses adjoining the street.

4. Valet Parking. Valet parking may be authorized through a special development permit as a mean of satisfying applicable off-street parking requirements, subject to satisfying the criteria for off-site parking in Section 4.12.9E.

E. Parking Restrictions

No motor vehicle or equipment used for, or designed primarily for, commercial, industrial or agricultural purposes with a manufacturer's gross vehicle weight rating of 10,000 pounds or more, and no trailer used for, or designed primarily for, commercial, industrial or agricultural purposes, shall be parked or stored on any residential zoned property except when loading, unloading, or rendering service. The parking of commercial vehicles is prohibited in required yards of any commercial/office zone/PQP zone as identified in Table 4.3.

F. Truck Loading and Unloading Areas

All retail and wholesale stores, warehouses, supply houses, buildings devoted to manufacturing trade, hotels, hospitals or other buildings where large amounts of goods are received or shipped shall provide loading and unloading space adequate to handle the volume and frequency of truck traffic to the building or shopping center. The minimum number of spaces shall be determined in accordance with the estimated volume of truck traffic and loading requirements. Each required loading space shall be not less than 10 feet wide, 35 feet long, and 14 feet high, exclusive of driveways.

4.12.12 Improvement Requirements for Parking and Loading Areas

A. Drainage and Stormwater Quality Facilities

Drainage facilities shall be provided in all parking areas adequate to handle the drainage requirements of the subject property in accordance with the County Improvement Standards, to alleviate the creation of flooding and drainage problems for the subject property or any surrounding properties. Stormwater quality control facilities in parking areas must satisfy the County's stormwater management requirements and shall be designed in accordance with the current edition of the Stormwater Quality Design Manual for the Sacramento and South Placer Region.

1. All surface water runoff shall be conveyed into a public right-of-way or storm drain, directed into planting areas, and/or a

stormwater quality source control or treatment facility, as addressed in the standards that follow.

a. Drainage Systems shall be provided in accordance with Section 9 of the County's Improvement Standards.

b. Runoff shall be treated per the requirements of the latest National Pollutant Discharge Elimination System (NPDES) permit prior to entering the public right of-way or storm drain, and shall comply with the source control measures in the Stormwater Quality Design Manual for:

(i) Loading and unloading areas: to minimize the chance of spills and leaks of pollutants that may include toxic compounds, oils and greases, nutrients, suspended solids, fluid from delivery vehicles, and other contaminants, into the storm drain system;

(ii) Wash areas in parking lot for vehicles and equipment: to minimize the chance of wash water that may contain oils and greases, metals, suspended solids, soluble organics, food waste, and/or detergents, from entering the storm drain (iii) Waste and recycling storage areas in parking areas: to keep rain, run-off, and other site water from leaching pollutants into the storm drain system.

B. Surfacing Requirements

1. Surfacing shall be provided for all parking and loading areas, aisles, and driveways, in accordance with specifications of the Sacramento County Engineering Division to eliminate dust and maintain a passable surface, strong enough to bear vehicle loads at all times. Alternative paving materials, such as pervious or porous pavements and light-colored or high-albedo surfaces are encouraged, per the requirements of the Stormwater Quality Design Manual and must be approved by the Planning Director and/or Engineering Division. The Engineering Division may specify an appropriate surface where a paved surface is not required.

2. Parking areas using porous pavements, excluding single-family dwellings or duplexes, shall be identified on parking area plans and provide documentation that the paving surface has been designed to support anticipated vehicle weights and traffic volumes that may result in maintenance issues such as surface cracking, crumbling, and erosion.

3. At a minimum, vehicle storage areas must consist of a gravel surface.

C. Marking of Parking Spaces

Parking spaces shall be marked or maintained on the pavement in a visible manner; and when required, aisles, loading zones, pedestrian walks, crossings, fire lanes, and any other directional markings or signs shall be installed as permitted or required by the Sacramento County Engineering Division to ensure the proper utilization of space, adequate traffic flow, and general safety.

D. Bumper Curbs, Wheel Stops

To ensure the proper maintenance and utilization of these facilities, parking areas shall be designed so that a parked vehicle does not overhang required sidewalks, planters or landscaped areas. A permanent curb, bumper, wheel stop, or similar device shall be installed which shall be adequate to protect the required sidewalks, planters, and landscaped areas from vehicular overhang and to protect any structure from vehicular damage. If such protection is provided by means of a method designed to stop the wheel, rather than the bumper of the vehicle, the stopping edge shall be placed no closer than two (2) feet from the edges of the required sidewalks, planter or landscaped areas and from any building. The Sacramento County Engineering Division may require other barrier curbs or wheel stops as deemed necessary to protect areas within or adjacent to the parking area from vehicular encroachment.

The innermost two (2) feet of each parking space (between the curb and any planter or sidewalk or bumper or wheel stop) may remain unpaved, and may be planted with low ground cover, and added to any required or proposed landscaping to allow for bumper overhang and reduce impervious surfaces. This additional planting area is considered to be part of the parking space and may not count toward satisfying any landscaping requirement.

F. Additional Standards for Multifamily Residential and Mixed-Use Developments

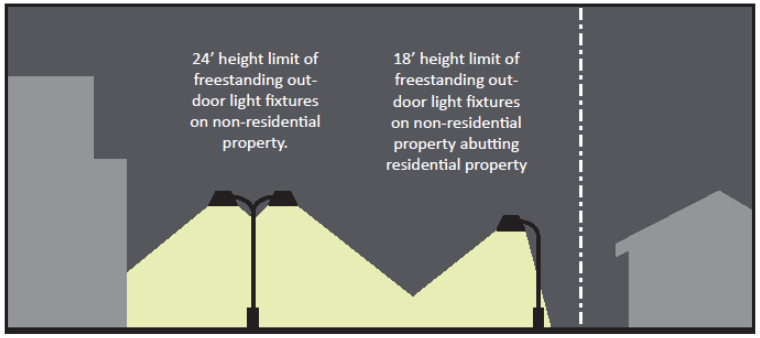


Exhibit 4.18: Shielding Provisions for Outdoor Lighting

Parking improvements in multifamily residential and residential portions of mixed-use developments shall comply with the following standards:

1. The design and materials used for covered parking structures shall be compatible with the design of the main structure on the property.

2. Metal carports with decking for roofs shall be prohibited. Metal posts painted to match the color scheme of the project may be acceptable, but shall not intrude in the minimum required designated area for the parking space. Trees, lattice/trellis structures, and/or decorative masonry walls shall be incorporated as part of carports to minimize visual impact.

3. Rows of parking stalls, either open or covered, shall be broken up by a tree planting approximately every seven spaces.

4. Units and parking/driveway areas shall have a minimum five (5) foot landscaped separation, but in general are encouraged to be located as far apart as possible.

G. Parking Area Screening

1. Parking lots and loading areas shall be screened from major public streets and adjacent residential uses with plants, trees, low walls, fences, berms, or grade changes that are a minimum of 30 inches tall. On that portion of any parking area located between the building line and the street where such a fence would interfere with visibility, the fence shall conform to the visibility requirements of the County's Improvement Standards.

2. A six (6) foot high wall and landscaping shall be provided adjacent to properties zoned for residential uses. The height of the fence shall be measured from the paved surface of the parking lot and may be modified with approval of a special development plan, where the appropriate authority finds that due to a significant difference in elevation between parcels, different screening requirements are necessary.

H. Parking Area Lighting

1. Lighting shall be constructed with full shielding and/or recessed to reduce light trespass to adjoining properties, as illustrated in Exhibit 4.18. Each fixture shall be directed downward and away from adjoining properties and public right-of-way, so that no light fixture directly illuminates an area outside of the site, and the light source is not visible from residential properties. New light fixtures, serving uncovered parking lots shall be full cut-off fixtures as defined by the Illuminating Engineering Society of North America. New light fixtures, installed for parking area canopies or similar structures, shall be recessed or flush-mounted, using flat lenses.

2. The minimum lighting level shall be one (1) foot-candle of maintained illumination on the parking surface during the hours of use between one-half (½) hour before dusk and one-half (½) hour after dawn.

3. Light poles shall be located so as not to interfere with motor vehicle door opening, vehicular movements, or pedestrian travel paths; be away from trees that may obstruct the lighting; and placed in perimeter planters and landscape islands between rows of parking. Light poles are discouraged within end row planters, planting islands parallel to parking spaces, tree wells, and in the required clear path of pedestrian walkways.

I. Alternative Energy Systems

Alternative energy systems (solar and wind), including provision of solar panels on parking lot shade-structures or carports and solar lighting fixtures or parking meters are permitted as an accessory use in all non-residential, multifamily residential, and mixed-use parking areas, subject to Design Review approval.

J. Trash and Recyclable Receptacles. One (1) trash and one (1) recyclable receptacle shall be provided in parking areas with 40

vehicular parking spaces or more. An additional set of receptacles shall be required for 100 vehicular parking spaces or more.

4.12.13 Parking Reductions

Reductions to required parking shall follow the standards and processes set forth in the **Zoning Code, Section 5.9.5.**

4.12.14 Motorcycle Parking Requirements

As defined in the DS, motorcycle parking includes parking for all two-wheeled motorized vehicles, including scooters, mopeds, and similar vehicles.

A. Motorcycle Parking Requirements. Parking areas with 40 or more automobile parking spaces must provide motorcycle parking according to the following standards.

1. One (1) motorcycle space must be provided for each 40 automobile parking spaces. For each one (1) required motorcycle space provided, the number of required vehicle spaces is reduced by one (1).

2. Motorcycle parking spaces shall be a minimum dimension of four (4) feet by seven (7) feet, with up to four (4) motorcycle spaces permitted for each vehicular space.

4.12.15 Bicycle Parking Requirements

A. Bicycle Parking Facility Classifications. Bicycle parking facilities and terms used in this Section are defined as follows:

1. Class I Bicycle Facility. Includes the following: a) an enclosed box with a lockable storage compartment, or bicycle locker, accessible only to the bicycle owner/operator; or b) a locked room in a structure designated for storing and securing bicycles.

2. Class II Bicycle Facility. A stationary bicycle rack designed to secure the frame and both wheels of the bicycle, where the bicyclist supplies only the locking device.

3. Class III Bicycle Facility. A stationary bicycle rack, typically with a cement slab and vertical metal bar, where the bicyclist supplies a padlock and chain or cable to secure the bicycle to the stationary object.

4. Short-Term Parking. Easily accessible bicycle spaces provided for the convenience of shoppers, customers, and other visitors, visiting for a short duration of less than two (2) hours. Short-term bicycle parking should be in proximity to the main entrance of a building, within 100 feet and visible to pedestrian and bicyclists; or located in a common bicycle parking facility along a pedestrian access route.

5. Long Term Parking. Bicycle parking in a secure and weather-protected place to serve employees, students, residents, commuters, and others who generally stay on the site for several hours. Long-term parking does not have to be provided onsite, but should be within a reasonable distance, no greater than 400 feet from the site, to encourage bicycle use. Bicycle parking must be provided in racks or lockers.

Table 4.12 Bicycle Parking Facility Requirements [1]

Use	Bicycle Spaces		Bicycle Facility Class	
	Long Term	Short-Term	Long Term	Short Term
Dinner restaurants, cocktail lounges	One bicycle space for every 50 vehicle spaces required or two spaces, whichever is greater	One bicycle space for every 30 vehicle spaces required or two spaces, whichever is greater	Class I lockers, or Class II racks in an enclosed lockable area	Class II or Class III racks
All commercial, mixed-use, and service uses not otherwise listed	One bicycle space for every 30 vehicle spaces required or two spaces, whichever is greater	One bicycle space for every 30 vehicle spaces required or two spaces, whichever is greater	Class I lockers, or Class II racks in an enclosed lockable area	Class II or Class III racks
Industrial	One bicycle space for every 50 vehicle spaces required or two spaces	None required	Class I lockers, or Class II racks in an enclosed lockable area	N/A
Office and institutional uses within commercial and industrial zoning districts	One bicycle space for every 30 vehicle spaces required or two spaces, whichever is greater	One bicycle space for every 60 vehicle spaces required or two spaces, whichever is greater	Class I lockers, or Class II racks in an enclosed lockable area	Class II or Class III racks
Institutional uses in other zoning districts	Bicycle parking shall be determined at the time of issuance of a Conditional Use Permit.			
Multiple Family	For multifamily housing, a minimum of one (1) bicycle parking space per unit shall be provided on-site, with guest bicycle parking spaces provided at one (1) space per 10 units on-site.	Class I lockers or Class II racks shall be located close to and with direct access to multifamily buildings entries. Bicycle parking for guests shall be clustered in common areas for easy convenience.		

[1] Where the application of the above table results in the requirement for a fraction of a bicycle parking space, such a space need not be provided unless the fraction exceeds fifty (50) percent.

B. Minimum Bicycle Parking Requirements

Bicycle parking spaces shall be provided in compliance with the minimum requirements in Table 4.12 and the standards in Section 4.12.15.C.

C. Design Standards

Bicycle parking facilities shall be installed in a manner which allows adequate spacing for access to the bicycle and the locking device when the facilities are occupied. Each bicycle parking space shall be at least two (2) feet wide by six (6) feet long, with a five (5) foot maneuvering space behind the bicycle. The facilities shall be located on a hard, dust free surface, preferably asphalt or concrete slab and/or may also be mounted on a flat wall surface, with appropriate maneuvering space behind the bicycle.

4.13 Permits and entitlements for signs

4.13.1 Sign Permit Required

A sign permit shall be required for all permanent signs (building attached or freestanding) prior to erection, relocation, alteration, or replacement of a sign, unless otherwise exempted by this chapter. The process for application, review, and decision regarding a sign permit shall be as established in Section 4.13.1.A. A sign permit shall not be required for general maintenance of existing signs or the replacement of the sign face (including message) when the area of the sign is not being changed and a building permit is not required (e.g., the replacement of a sign face on a can sign). A sign permit is also not required for the establishment of temporary and special event signs; however, such signs shall be consistent with the development standards and time duration limits established in this Section 4.13.7.

A. Uniform Sign Program Required

In order to provide for the integration of project signage and ensure compatibility with the architecture of related buildings, a uniform sign program (either major or minor) shall be required as part of Design Review for all new multi-tenant shopping centers, office parks, and other multi-tenant, mixed-use, or otherwise integrated developments of three (3) or more separate tenants/uses that share buildings, public spaces, landscape, and/or parking facilities. There are two (2) types of uniform sign programs: major and minor. Both programs provide a process for the County's review of and decisions related to requests for signs for multi-tenant projects. The intent of the uniform sign programs is to allow for the integration of a project's signs with the design of the structures involved to achieve a unified architectural statement and to approve common sign regulations for multi-tenant projects. This section also describes the allowed deviations and the standards for approval of a major uniform sign program.

The differences between the programs are as follows:

1. Minor Uniform Sign Program. A minor uniform sign program does not allow for deviations from the signage standards in this title.

2. Major Uniform Sign Program. The intent of the major uniform sign program is to:

a. Provide a process for the application of sign regulations in ways that will allow creatively designed

signs that make a positive visual contribution to the overall image of the County, while mitigating the impacts of large or unusually designed signs; and

b. Allow for the installation of signs larger, taller, and/or more numerous than otherwise permitted by this title.

4.13.2 Exempt signs

The signs listed in this section are not subject to the sign permit requirement, but still must satisfy all other applicable permit requirements (e.g., building, electrical, plumbing, grading, encroachment, etc.). Any exception to the limitations for exempt signs listed herein shall require a Special Development Permit pursuant to Section 4.13.1.C. However, consideration of the request shall not evaluate the message or graphic design of a sign.

A. Exempt Signs without Limitations

The following signs are exempt from a sign permit:

1. All devices which are excluded from the definition of a "sign"
2. Official or legal notice required by a court or government agency (government/civic signs)
3. Signs erected and maintained in compliance with a government function or required by a law, ordinance, or government regulation, including signs erected by a public utility (government/civic signs)
4. Signs on licensed commercial vehicles, including trailers, which are not used for the display of off-site commercial messages, or general advertising; provided, that the vehicles/trailers shall not be used as parked or stationary outdoor display signs.
5. Change of copy that does not alter the size, location, or illumination of a sign

B. Exempt Signs with Limitations

The following signs are exempt from a sign permit; provided, that they meet the size, height, duration, and/or maximum number limitations listed:

1. Construction signs not to exceed one sign per street frontage and a maximum of twenty (20 ft2) square feet in area or a maximum of thirty-two (32 ft2) square feet if combined with a future tenant sign. Construction signs may not be illuminated. Such signs shall be removed at the earliest time following final building inspection approval, issuance of a valid certificate of occupancy, or the opening for business to the public.
2. Directional signs, signs whose function is guiding traffic, parking, and loading on private property, with no advertising. Sign area shall not exceed twenty-four (24 ft2) square feet in residential districts and thirty-six (36 ft2) square feet in nonresidential districts. The maximum height for freestanding directional signs shall be six (6' 0") feet unless the Director allows additional height upon a written finding that the visibility would be impaired without the additional height. The area and number of directional signs do not count towards the total allowed as described in Table 4.14.
3. Pedestrian signs that are solely oriented to the pedestrian user which identify or list the names and locations of tenants at a multi-tenant site.
4. Flags, provided they meet the standards listed in Table 4.13.

Table 4.13 Standards for Flags

Site	Maximum Number of Poles	Maximum Height	Maximum Number	Maximum Area of All Flags	Image Types	Illumination	Minimum Setback from ROW[1]
Commercial, office, and industrial zones	2	Tallest building	Not limited	24 sf.	Commercial and noncommercial	3, 4	5 ft.
Residential	1	20 ft.	Not limited	15 sf.	Noncommercial	4	10 ft.
Residential subdivision entryway[6]	1	30 ft.	Not limited	40 sf.	Noncommercial	4	10 ft.
Agricultural residential and agricultural zones	1	25 ft.	Not limited	24 sf.	Noncommercial	4	10 ft.
All other properties	2	20 ft.	Not limited	15 sf.	Noncommercial	4	10 ft.

Footnotes:

1. No flag may be placed within the clear-vision triangle.
2. The pole may be a maximum of twenty-five (25' 0") feet tall when all on-site buildings are less than twenty-five (25' 0") feet tall.
3. Illumination of commercial flags not allowed.
4. Noncommercial flags may be illuminated only in times of officially declared or commemorated emergency, mourning, or memorial.
5. Pole must be set back from right-of-way a distance equal to that of the pole height. Minimum setback is ten (10' 0") feet.
6. "Residential subdivision entryway" means any common area maintained by a private entity (such as a homeowners association) on private property when such entryway is located adjacent to a four (4) lane public road or wider.

5. Future tenant signs identifying or announcing the future use of a project while under construction. One sign shall be allowed per street frontage and the sign shall be removed upon occupancy of the site. In an integrated development, one sign per establishment is allowed. The maximum size of the sign shall be thirty-two (32 ft2) square feet and the maximum height shall be six (6' 0") feet. Future tenant signs may not be illuminated.

6. Gas pricing signs, as required by State law, which identify the brand, types, octane rating, etc., provided the signs do not exceed three (3 ft2) square feet.

7. Garage, Yard, Estate, and Other Home-Based Sales Signs. Signs advertising the one (1) day sale of items from a garage, yard, estate, or other home-based sale.

9. Name plates, as described below. Name plates may only be lit by either an indirect light (e.g., porch light) source, low-wattage spotlight without glare to the adjoining property, or internal light source with opaque (nontransparent) background.

a. Residential, Individual Unit. Occupant name, street number, and street name signs not exceeding two square feet in area per single-family or multifamily unit;

b. Residential, Multifamily Site. Building number, building name, the units located in the building, and other directional signs not exceeding fifteen (15 ft2) square feet in area;

c. Nonresidential. Signs for commercial, office, and industrial uses not exceeding two square feet, with copy limited to business identification, hours of operation, address, and emergency information;

10. Noncommercial signs as defined in the DS, consistent with the following requirements and not located within or over a public right-of-way or over the roofline of any building, and outside of any clear-vision triangle:

a. Signs shall measure no more than six (6 ft2) square feet.

b. During the time period beginning ninety (90) calendar days before a special, general, or primary election and ending twenty-one (21) calendar days after such election, the total allowed sign area for noncommercial signs may be increased by an additional forty-two (42 ft2) square feet in area (for a total of forty-eight (48 ft2) square feet).

11. Public Notice. Any public notice or warning required by a Federal, State, or local law or regulation.

12. Real Estate Signs. Real estate signs are allowed on private property set back five (5' 0") feet from the public right-of-way and out of any required clear-vision triangle, with the following limitations:

a. For residential property, one sign with a maximum sign area of six (6 ft2) square feet (each side). Additionally, a maximum of three (3) attached rider signs are permitted on each real estate sign identifying. On weekends and holidays, signs needed to direct traffic from major collector and arterial streets to the subject

property. One (1) sign may be placed for each change in direction to a maximum of five (5) signs, each with a maximum sign area of six (6 ft2) square feet.

b. For commercial property, one (1) on-site sign per street frontage with a maximum sign area of thirty-two (32 ft2) square feet for parcels with less than one (1) acre and forty-eight (48 ft2) square feet for parcels larger than one (1) acre with an eight (8' 0") foot height limit.

c. Removal. All real estate signs must be removed not later than the close of the transaction proposed by the sign.

13. Window Signage. Temporary window signage, provided that is consistent with the regulations in Table 4.15 (Temporary Sign Standards); for the purposes of this section, temporary window signage shall mean signage painted on or affixed to windows for a period of less than three (3) months. Permanent window signage, provided it does not exceed the overall sign area permitted for the facade, and is consistent with the regulations in Table 4.14 (Signs Permitted by Type and Development Characteristics); for the purposes of this section, permanent window signage shall mean signage not including directory and hours of operation which is painted on or affixed to windows for a period exceeding three (3) months.

4.13.3 Prohibited signs

The signs listed in this section are inconsistent with the purposes and standards of this chapter as described below and as such are prohibited in all zoning districts, unless specifically authorized by another provision of this chapter.

1. Abandoned signs;

2. Animated, moving, flashing, blinking (intermittent light), fluctuating, reflecting, revolving, or other similar signs;

3. Inflated signs, balloons, and figures, but not including "party jumps" or other inflatable party devices intended for short-term use;

4. Pole signs (not including ground-mounted freestanding signs, commonly called "monuments" or signs constructed with poles as the substructure; provided, that the poles are covered with architectural cladding or coverings);

5. Electronic readerboard signs other than time/temperature signs, except pursuant to a Planning Commission Conditional Use Permit as provided for to Section 4.13.4.E;

6. Roof signs erected and constructed on and/or over the roofline of a building and supported by the roof structure;

7. Signs affixed to trees or utility poles;

8. Signs emitting audible sounds, smoke, fumes, odors, or visible matter. Only menu/order board signs may emit sounds, but only as part of their primary function;

9. Signs erected in a manner that a portion of its surface or supports will interfere with the use of fire escapes, standpipes, or emergency exits from a structure or site;

10. Signs which imitate or resemble official traffic warning devices or signs, that by color, location, content, or lighting may confuse or disorient vehicular or pedestrian traffic, excluding

on-site direction signs as specified in Section 4.13.2, Exempt signs;

11. Vehicle signs where the primary purpose of the vehicle is general advertising. This does not apply to signs maintained on vehicles when such advertising is incidental to the primary purpose for which the vehicle is being used (e.g., delivery service).

4.13.4 Standards for Special Category Signs

A. Awning and Canopy Signs

Awning and canopy signs may be permitted only as an integral part of the awning or canopy to which they are attached or applied, as follows:

1. Location. Signs may be placed only on awnings that are located on first- and second-story building frontages, including those fronting a parking lot or pedestrian way.
2. Maximum Area and Height. Sign area shall comply with the requirements established by Table 4.14 and Section, General development, maintenance, and removal. Sign area shall be calculated so as to only include the copy area. Copy area shall occupy a maximum of seventy-five (75%) percent of the awning face. No structural elements of an awning or canopy shall be located less than eight (8' 0") feet above the finished grade.
3. Illumination. Awnings shall not be illuminated from under the awning (back-lit) so that the awning appears internally illuminated. Lighting directed downwards that does not illuminate the awning is allowed.
4. Required Maintenance. Awning and canopy signs shall be regularly cleaned and kept free of dust and visible defects.
5. The style of the awning/canopy shall complement the architectural style of the building to which it is attached. Awnings shall have a simple horizontal valance if located over rectangular or square window/door openings. Domed or barrel shaped awnings shall be allowed for buildings with arched window/door openings.

B. Blade/Bracket Signs.

1. Location. Blade or bracket signs shall be placed only on ground floor facade, except for businesses located above the ground level with direct exterior pedestrian access.
2. Maximum Area, Height, and Projection. The maximum sign area shall be four (4 ft2) square feet. The lowest point of a blade or bracket sign shall be a minimum eight (8' 0") feet above grade. The sign may project a maximum of five (5' 0") feet from the building.
3. Sign Structure. Sign supports and brackets shall be compatible with the design and scale of the sign.
4. Encroachment. Any blade or bracket sign which encroaches into the public right-of-way, or above it, or into County-owned property, is subject to an encroachment permit.

C. Menu/Order Board Sign.

1. Location. Menu/order board signs shall not face onto the public right-of-way.

2. Illumination. Menu/order board signs shall only be illuminated by internal light source with opaque (nontransparent) background.

3. A maximum of two (2) menu/order board signs shall be permitted for each drive-in or drive-through business; provided, that each sign not exceed a maximum of forty (40 ft2) square feet in sign area and that each sign be limited in height to eight (8' 0") feet. The area and number of menu/order board signs do not count towards the total allowed sign area as described in Table 4.14.

D. Freestanding Signs (Monument and Pylon).

1. Location. A freestanding sign may be located only along a site frontage adjoining a public street and not within the clear-vision triangle. It shall be set back a minimum of ten (10' 0") feet from the right-of-way. See Section 4.13.5, General development, maintenance, and removal.

2. Maximum Area and Height. The sign shall comply with the height and area requirements established in Table 4.14.

3. Design. The mass/scale of a freestanding sign shall be consistent with the overall design of the building. The design and placement of the sign shall not interfere with the required clear-vision triangle.

4. Landscape Requirements. Landscaping shall be provided at the base of the supporting structure equal to twice (2) the area of one (1) face of the sign. For example, twenty (20 ft2) square feet of sign area requires forty (40 ft2) square feet of landscaped area.

5. Construction. Freestanding signs may be constructed with poles as a substructure; provided, that the poles are covered with architectural cladding or coverings so they appear as a solid structure.

6. Materials and design for freestanding signs shall be complementary to the materials and design of the buildings for the related development. For example, if the facade of the building is made of brick or brick veneer, a complementary freestanding sign would also include brick.

7. A business may be advertised on a directory pole sign that is located on a nonadjacent parcel when the project utilizes common facilities, such as driveways and parking areas.

E. Readerboard Signs

On-site electronic reader/video boards or digital signs are permitted subject to obtaining a Conditional Use Permit from the Planning Commission, and provided that the message shall be for on-site advertising or for public information messages. A time interval of four (4) seconds minimum for changing copy or display shall be adhered to, consistent with and pursuant to standards adopted by the State of California, Department of

Transportation. If the electronic reader/video board or digital sign portion of any permitted sign for on-site advertising or for public information messages is 50 percent or less than the total sign area, the sign is permitted and a Conditional Use Permit shall not be required. If any on-site digital display exceeds 200 square feet, the sign must be located at least 500 feet from a residential zone and at least 2,500 feet from another onsite or off-site digital sign.

F. Time and/or Temperature Signs

A time and/or temperature sign does not count towards the otherwise applicable limits as to number and size, provided:

1. Maximum Area and Height. The sign shall have a maximum area of ten (10 ft2) square feet and shall comply with the height requirements established by Table 4.14.
2. Design. The sign shall be designed in a manner that is architecturally compatible with other signs and with the structure on which it is placed.

G. Billboard Signs

Billboard signs, including digital and static billboards may be located in any commercial or office zoning district located within 1,000 feet of Jackson Highway, subject to the standards in Sections 4.13.4.G.1-11, and subject to securing a Conditional Use Permit from the Board of Supervisors, after a recommendation from the Planning Commission.

1. Area

The total area of any off-site sign shall not exceed 720 square feet, nor shall the sign exceed the length of 50 feet.

2. Location

Except for digital billboards, each off-site sign shall be located not less than 300 feet from any other off-site sign; nor closer than 75 feet from any on-site freestanding sign. No off-site sign shall be located within 300 feet of a parcel located within any Agricultural or Residential zone; nor shall any such off-site sign be located more than 1,000 feet from a parcel lawfully used for commercial or industrial purposes.

Each off-site sign shall be so located that the part of the sign closest to the street right-of-way shall be not less than 50 feet from the right-of-way. An off-site sign may be permitted with a setback the same as the building on the parcel with a minimum setback of 25 feet (If PUPF easement: 31 feet). See Section 4.13.4.D for separation requirements for digital sign requirements.

3. Height

The maximum height for off-site signs shall be 50 feet.

4. Measurement

The following methods shall be used to measure the spacing of off-site signs regulated by this Section:

a. When measuring the separation of signs or uses along a public street, the location of each sign shall be projected at right angles to the center line of the street

and distance measured along the street center line between the two points projected thereto.

b. When measuring distance between signs located on parcels located at intersecting streets, the sign location is to be projected at right angles to the street center line and the distance is measured on the center line of the two streets between the two projected points. Only one (1) off-site sign shall be permitted per corner parcel.

c. Any measurement from a sign to another land use zone shall be by straight line measurements from the closest point of the sign to the zoning boundary.

5. Aesthetics

a. The sign will not require removal or substantial trimming of existing vegetation or landscaping.

b. The sign will not obstruct or obscure on-site signs on the same or adjacent properties.

6. Traffic Safety

a. The sign will not be a visibility hazard to traffic on adjacent streets or parking areas.

b. The sign will not reduce parking availability as required by Section 4.11.

c. The sign will not interfere with on-site vehicular circulation.

7. Compatibility

The sign will not have substantial detrimental effects on views from and light striking adjacent or surrounding properties.

8. Digital Billboards

The following additional development standards shall apply to all digital billboard signs:

a. Digital billboard signs may be located in any commercial, office or mixed-use zoning district, subject to a Conditional Use Permit, or an amendment to an existing Conditional Use Permit in the case of the conversion of a static billboard sign, from the Board of Supervisors, after a recommendation from the Planning Commission.

b. Illumination. Digital billboards may be internally or externally lit; the light cast through reflection or glare onto surrounding objects, or illuminance, is measured in foot-candles. Signs shall not be illuminated at more than 0.3 foot-candles above ambient light, as measured using a foot candle meter at a distance of 250 feet from the sign face. Each display must have a light sensing device that will adjust the illuminance of the sign as ambient light conditions change.

c. Luminance. Through LED technology, digital billboards directly emit light, or luminance, the intensity of which is measured in nits. Luminance levels shall not exceed 7,500 nits during daylight hours and 300 nits at night. Each display must have a light sensing device that will adjust the luminance of the sign from dawn to dusk.

d. Location. No digital billboard shall be located within 2,500 feet of any other digital billboard or on-site digital sign with over 200 square feet of digital display. Digital

billboards shall be located at least 500 feet from a parcel located within any Residential zone.

e. Operational Limitations. Digital displays shall contain static messages only, and shall not have movement, or the appearance or optical illusion of movement during the static display period, of any part of the sign structure, design, or pictorial segment of the sign, including the movement or appearance of movement. Each static message shall not include flashing lighting or the varying of light intensity.

f. Minimum Display Time. Each message or display on the sign must remain fixed for a minimum of eight (8) seconds, and the maximum time allowed for transitions between message displays shall be one (1) second.

g. Future Technologies. The technology currently being deployed for digital billboards is LED (light emitting diode), but there may be alternate, preferred and superior technology available in the future. Any other technology that operates under the maximum brightness stated herein and does not result in a physical change in the appearance of the sign may be approved administratively by the Planning Director.

h. Community Messaging. The County shall be provided with access to a portion of the total available display time to allow for messages of community interest. This access shall also include other appropriate agencies for the purpose of displaying public safety messages such as Amber Alerts and other emergency management information.

9. Guidelines for Off-site Signs

The following guidelines are not mandatory, but should be considered by the hearing bodies during public hearings on any application for a Conditional Use Permit.

a. All off-site signs should be freestanding and should be built with a single supporting post, if at all possible, and should be located on no more than two (2) supporting posts.

b. Double paneled signs should not have an interior angle between the face of the panels greater than 20 degrees.

10. Development Agreement

The County and applicant shall enter into a Development Agreement in conjunction with the issuance of a Conditional Use Permit for a billboard sign.

11. Removal of Existing Billboards

For any billboard sign, the applicant must propose, as part of the application for a Conditional Use Permit, the removal of a sum total of at least four (4) square feet of legally existing billboard display surface, excluding the billboard support structure and frame, for each square foot of display surface proposed. The computation of display surface for an existing back-to-back billboard sign shall be limited to one (1) display surface, and must result in the removal of the entire advertising display,

including the support structure itself. The billboard signs proposed for removal may be located along any arterial, thoroughfare, highway or freeway within the unincorporated County jurisdiction. At least 50 percent of removed signage shall be from the same community or within one mile of the new billboard sign. Alternatively, if 100 percent of the removed signage is within the same community or within one (1) mile of the new billboard sign, then the ratio of removed signage may be reduced to three (3) square feet of existing billboard display. In addition, at least 25 percent of removed signage shall be from a site located within a Special Sign Corridor.

H. Mass Transit Shelter Signs. A sign shall be permitted upon a mass transit shelter in any zoning district, provided:

1. There is no more than one (1) single-faced or two-faced sign upon or within any mass transit shelter.
2. Each face of such sign does not exceed 30 square feet in area, for each basic size of a mass transit shelter, or multiple thereof.
3. The brightness of the light source shall not exceed the lighting criteria as set forth in Sections 21466 and 21466.5 of the Vehicle Code of the State of California or five (5) foot-candles, whichever is less. Certification of the light source shall be provided from a licensed Professional Engineer prior to the issuance of any building permits.
4. Such sign does not project above the top of, nor exceed, the width of the bus shelter.

I. Gateway Signs

A gateway sign may be located along any thoroughfare or highway at a key entrance to a major retail commercial or office district to advertise the businesses or products available within the district, subject to a Conditional Use Permit by the Board of Supervisors and the following provisions:

1. Gateway signs may be located on- or off-site and within or adjacent to the right-of-way in any commercial, industrial or mixed-use zoning district along a thoroughfare, or key entrance to a major retail commercial or office district.
2. Gateway signs may be either a monument or pylon sign, and shall advertise the businesses or products available at the major retail commercial or office district for which the sign is intended, and must include a logo and identification, through text, architecture or iconic signage, for that district.
3. The maximum height allowed shall be 30 feet, and the maximum allowed area for all signage on each gateway sign shall be 400 square feet.
4. In addition to other signs as may be permitted by this Code, there shall be no more than one (1) gateway sign per major retail commercial or office district.

4.13.5 General development, maintenance, and removal

This section describes the standards applied to the development, maintenance, and removal of signs.

A. Illumination Standards. The artificial illumination of signs, either from an internal or external source, shall be designed to minimize negative impacts on surrounding rights-of-way and properties. The following standards shall apply to all illuminated signs:

1. External light sources shall be directed and shielded to limit direct illumination of an object other than the sign;
2. The light from an illuminated sign shall not be of an intensity or brightness that will create glare or other negative impact on residential properties in direct line of sight to the sign;
3. Unless otherwise permitted by another provision of this chapter, signs shall not have blinking, flashing, or fluttering lights, or other illumination devices that have a changing light intensity, brightness, or color;
4. Colored lights shall not be used at a location or in a manner so as to be confused or constructed as traffic control devices;
5. Reflective-type bulbs and incandescent lamps that exceed fifteen (15) watts shall not be used on the exterior surface of signs so that the face of the bulb or lamp is exposed to a public right-of-way or adjacent property; and
6. Light sources shall utilize energy-efficient fixtures to the greatest extent possible.

B. Sign Removal or Replacement

When a sign is removed or replaced, all brackets, poles, and other structural elements that support the sign shall also be removed. Affected building surfaces shall be restored to match the adjacent portion of the structure. This provision does not apply to routine maintenance.

C. Sign Setback

Except as provided herein, setback for signs shall be measured from the future right-of-way to the closest edge of the sign. For streets which are improved to a width less than the future right-of way, setback for signs may be measured from the existing improvements meeting current County standards, provided that a relocation agreement shall be recorded at the owner's expense which guarantees that the property owner agrees to relocate the sign at his/her own expense to the required setback from the right-of way at such time that the County widens (or causes to be widened) the street to the future right-of-way. For parcels where improvements are not complete to meet present County standards, setback shall be measured from that point which would abut County standard improvements if they were installed. For parcels that do not have existing improvements and where other parcels within the same block have improvements, the setback may be measured from a projection of existing street improvements within the same block. In no case shall a sign be located within the dedicated right-of-way.

D. Protruding Signs

All signs projecting over walks, halls, corridors, passageways or aisles shall be installed in compliance with the Handicapped Access Regulations, California Code of Regulations, Title 24, State Building Code, Part 2, Section 2-1721, and "Protruding Objects."

H. Location of Building Signs

Building signs may be located along any public frontage, which includes that area of a building that faces directly onto a public right-of-way, an internal circulation path of the site, or a parking lot. In no case shall signs face directly onto residential property. A building may have multiple public frontages, as shown in Exhibit 4.19. Orientation of signs such that they face directly onto residential property is to be avoided, and allowed only when there is no practical alternative, and the visibility of the sign from the residence is minimized.

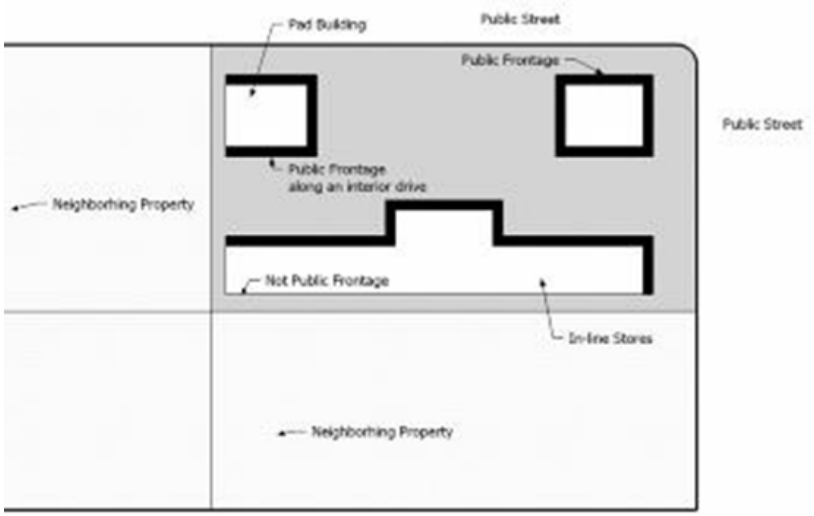


Exhibit 4.19: Allowed Locations for Building Signs

4.13.6 Permitted signs by type and development characteristics

Signs permitted within the JTSPA are regulated by sign and corresponding development type and/or zoning district. The standards for their development are described in Table 4.14. Zoning clearance (administrative plan check) is required to determine compliance with applicable provisions of this chapter. Only those signs that may be permitted are listed. The goal of these standards is to regulate permanent signs that have a commercial message so that they comply with the purpose of this chapter. Noncommercial signs and signs that are exempt

from these standards are described in Section 4.13.2, Exempt signs. Temporary signs are listed in Section 4.13.7 Temporary and special event signs. The following general standards apply to permanent signs regulated in this section:

A. Sign Types

1. Building signs are those signs that are permanently attached to a building (e.g., wall signs, blade/bracket signs, etc.) See Exhibit 4.20.

2. Freestanding signs are those that have their own unique foundation or are otherwise not attached to a building. See Exhibit 4.20.

B. Maximum Sign Area

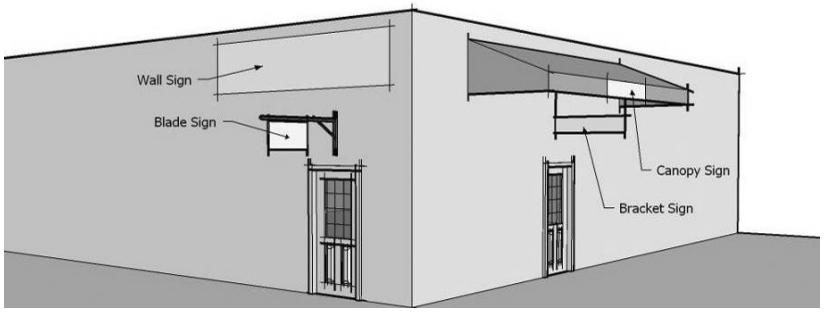
The total allowed sign area is identified in Table 4.14 with the following requirements.

1. The total allowed sign area may be distributed among the maximum number of signs permitted for each sign type.

2. Allowable sign area is either a set square footage per business or is based on a ratio of sign area to primary building frontage. It is calculated as described in Section 4.13.5.4, General development, maintenance, and removal. Where a ratio is described, it applies up to the listed maximum sign area.

C. Public frontage is that area of the building that faces onto a public right-of-way, an internal circulation aisle, or a parking lot. In no case shall signs face directly onto residential property.

D. Illumination standards refer to whether or not the sign may be illuminated and how. Signs may be illuminated through an "indirect or background" light source (an indirect light source is a low-wattage spotlight glare to the adjoining property, or internal light source with opaque, nontransparent background), or by any method that minimizes glare onto adjoining residential property.



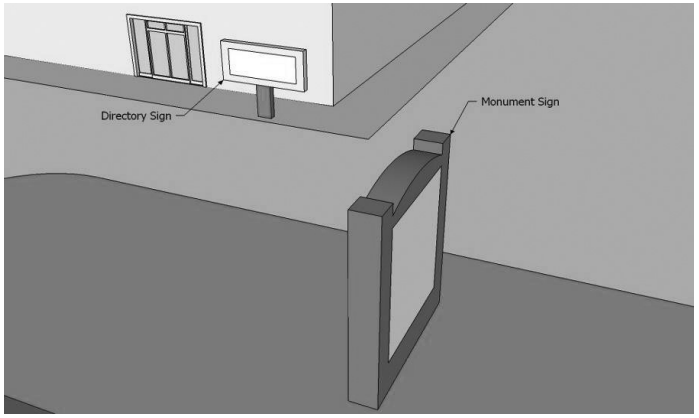


Exhibit 4.20: Sign Types

Table 4.14: Maximum Sign Area

Sign Type	Maximum Number Permitted	Maximum Area	Maximum Height	Minimum Setback from ROW	Illumination Standards	Other Standards (See Notes)
Residential Dwellings/Uses						
1. Building signs[1]	1/home	2 sf.	Roofline	–	No illumination	2
Single-Family Subdivisions						
1. Freestanding signs: entry monument	1/project entrance[3]	24 sf. each[3]	6 ft.	10 ft.	Indirect or background	
Multifamily Dwellings and Complexes						
1. Building signs	1/complex	6 sf.	Roofline	–	No illumination	4
2. Freestanding signs	1/vehicle entrance	25 sf. each	6 ft.	10 ft.	Indirect or background	4
Agricultural Uses						
1. Building signs	1/ establishment	20 sf. each	6 ft.	–	No illumination	
2. Freestanding signs	1/ establishment	20 sf. each	8 ft.	10 ft.	No illumination	

Table 4.14: Maximum Sign Area (Continued)

Sign Type	Maximum Number Permitted	Maximum Area	Maximum Height	Minimum Setback from ROW	Illumination Standards	Other Standards (See Notes)
Permitted Nonresidential Uses in Agricultural and Residential Zoning Districts						
1. Building signs	1/ establishment	20 sf.	Roofline	–	No illumination	2
2. Freestanding signs	1/ establishment	20 sf.	10 ft.	10 ft.	No illumination	
Commercial Zoning Districts						
1. Building signs: pad buildings and in-line stores > 50k sf.	1/public frontage[6]	2.5:1 with max 250 sf. total for all signs[7]	Roofline	–	5	2
2. Building signs: in- line stores < 50k sf.	1/public frontage[6]	2:1 with max 200 sf. total for all signs	Roofline	–	5	2
3. Freestanding signs: individual establishments	1/project entrance	50 sf.	10 ft.	10 ft.	Indirect or background	
4. Freestanding signs: integrated development	1/project entrance	150 sf./sign	20 ft.	10 ft.	Indirect or background	

Table 4.14: Maximum Sign Area (Continued)						
Sign Type	**Maximum Number Permitted**	**Maximum Area**	**Maximum Height**	**Minimum Setback from ROW**	**Illumination Standards**	**Other Standards (See Notes)**
Office and Industrial Zoning Districts						
1. Building signs	1/public frontage[6]	1:1 with max 150 sf.	Roofline	–	5	
2. Freestanding signs, standalone project	1/ establishment	25 sf.	10 ft.	10 ft.	5	
3. Freestanding signs, integrated development	1/project entrance	50 sf./sign	10 ft.	10 ft.	5	
Permitted Uses in the Open Space Zoning District						
1. Building signs	1/ establishment	20 sf.	6 ft.	–	No illumination	
2. Freestanding signs	1/ establishment	16 sf.	10 ft.	10 ft.	5	

Table 4.14 Footnotes:

1. Excludes name plates as described in Section 4.13.2.B.9
2. Must be attached to the front of main building.
3. Sign area may be distributed on up to two (2) signs at any one (1) intersection with combined square footage not to exceed total.
4. Excludes on-site directional signs or name plates.
5. Minimize glare onto residential property.
6. Additional signs for each public frontage are allowed as long as the cumulative sign area does not exceed the maximum square footage allowed, as identified in Table 4.14.

4.13.7 Temporary and Special Event Signs

This section describes standards for temporary signs, special event signs, and signs for subdivisions.

A. Temporary Signs. Temporary commercial signs for grand openings, special product, sale, or event advertising are allowed with the development standards described below.

1. Time Duration. Each establishment may display a maximum of two (2) weeks temporary promotional signs per calendar quarter or season, not to exceed a total of eight (8) weeks per calendar year. Temporary advertising periods may be combined, but may never be longer than four (4) consecutive weeks (thirty (30) consecutive days) at any one (1) time.

2. Illumination. No temporary signs may be illuminated.

3. Table 4.15 and 4.16 describe temporary signs development standards with regards to maximum number, area, height, and setback from the public right-of-way. In no case may a temporary sign be placed within a required clear-vision triangle.

B. Special Event Signs. Signs not otherwise permitted in this chapter (e.g., beacons, pennants, freestanding banners, inflatable signs), are not regulated by this chapter, but instead by public assembly, parades, and street closures provisions not adopted as part of this title.

C. Subdivision Signs. Temporary and limited-term subdivision signs for both on-site identification and off-site directional signs are allowed in accordance with the following standards. Single-family subdivision sign provisions shall apply to integrated developments only and not to any single residential lot.

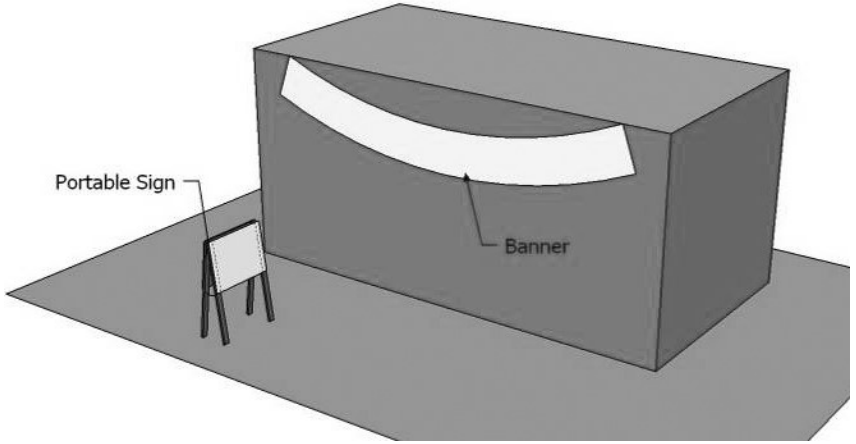


Exhibit 4.21: Temporary Sign Types

Table 4.15 Temporary Sign Standards for Non-residential Uses				
Use Type	**Maximum Temporary Number Permitted**	**Maximum Area**	**Maximum Height**	**Minimum Setback from ROW**
Commercial uses, building signs	1/establishment	36 sf. each	Roofline	–
Commercial uses, freestanding signs	1/establishment	6 sf.	5 ft.	10 ft.
Auto dealerships	3/establishment	36 sf. each	10 ft.	10 ft.
Office and industrial uses	3/establishment	10 sf. each	10 ft.	10 ft.
Permitted uses in the open space zoning district	1/establishment	10 sf.	8 ft.	10 ft.
Noncommercial and public/quasi-public uses	2/use	5 sf. total	5 ft.	10 ft.
Temporary window signs	N/A	25% of total window area	N/A	N/A

1. On-Site Signs. On-site directional/identification signs shall be permitted in accordance with the provisions listed in Table 4.16

2. Off-Site Signs. Off-site directional signs may be posted on private land only, through either co-located directory kiosks or weekend directional signs (for a limited period) as described below:

b. Weekend Directional Signs. For the interim period of five (5) months from the effective date of this section, subdivisions may display temporary weekend directional signage in accordance with Table 4.16 and the standards below.

i. Weekend directional signs are prohibited on publicly owned land.

ii. Weekend directional signs may not be erected before noon on Friday and must be removed no later than noon the following Monday. In the event that Friday is a nationally recognized holiday, the weekend directional signs may be erected on Thursday after noon. In the event that Monday is a nationally recognized holiday, the weekend directional signs may remain in place until Tuesday by noon.

3. Standards Applicable to All Subdivision Signs.

a. Sign Removal. Signs are to be permanently removed when the last home in the subdivision is sold or the sign permit expires, whichever occurs first.

4.13.8 Signs on residential uses

A. Signs with Two (2) Faces. Only one (1) side of a two (2) faced sign shall be counted in the calculation of sign area.

B. Noncommercial Message Signs. During the time period beginning sixty (60) days before a special, general or primary election, and ending seven (7) days after such election, the total allowed sign area may be increased by an additional five (5 ft2) square feet over the maximum sign area listed in Table 4.17.

C. Illumination of signs is prohibited.

Table 4.16: Temporary Subdivision Signs Standards

Sign Type	Maximum Temporary Number Permitted	Maximum Area	Maximum Height	Minimum Setback from ROW	Illumination Standards	Other Standards (See Notes)
1. On-site (freestanding)	1/project entrance, max. 6	32 sf. each	10 ft.	5 ft.	No Illumination	
2. Off-site joint use kiosk (freestanding)	1/major intersection[1]	100 sf per sign face on kiosk	18 ft.	10 ft.	No Illumination	[2]
3. Individual project nameplate (on joint use kiosk)	8/kiosk face; 6 nameplates/ project throughout City	12.5 sf. each	n/a	n/a	No Illumination	[3]
4. Off-site weekend directional signs[4]	25/project 5/block	4 sf. each	4 ft.	5 ft.	No Illumination	

1. A major intersection is defined as the intersection of two (2) or more arterial or collector roads.

2. Only one (1) off-site freestanding kiosk sign is permitted at each major intersection.

3. Must be co-located with other projects on directional kiosks.

Table 4.17: Signs on Residential Uses				
Sign Type	**Maximum Number**	**Maximum Total Area, All Signs[1]**	**Maximum Height**	**Minimum Setback from ROW**
Single-Family Residential Districts and Uses				
A-frame signs	1	8 sf.	4 ft.[2]	5 ft.[3]
All others	Not limited	5 sf.	Roofline of dwelling	5 ft.[3]
Multifamily Residential Districts and Uses[4]				
All sign types[5]	Not limited	5 sf.	Roofline of dwelling	5 ft.[3]

Footnotes:

1. Maximum sign area does not include flags or signs indicating the address and/or residents or home occupation.

2. Maximum width is thirty (30") inches.

3. May not be located within any required clear-vision triangle.

4. Includes multifamily residential units and mobile home parks, but not including units in transient occupancy facilities (hotels, motels, etc.). Standards listed are per dwelling unit.

5. Freestanding yard signs or signs on fences require the consent of the landowner.

4.14 Prohibited Activities

A. Storage and Accumulation of Junk, Garbage, and Rubbish.

It shall be unlawful for any person to store or keep, or permit others to store or keep, junk, garbage, and/or rubbish including, but not limited to, scrap metals or other scrap materials, on any lot or parcel, or any portion thereof, in any zone.

B. Minor Repair and Maintenance of Personal Vehicles.

It shall be unlawful for any person to engage in or permit others to engage in minor vehicle repair or maintenance in any residential zoning district under any of the circumstances described in Section 3.3.9.15.

1. Using tools not normally found in a residence;

2. Conducted on vehicles registered to persons not currently residing on the lot or parcel; and

3. Conducted outside a fully enclosed garage and resulting in any vehicle being inoperable for a period in excess of 24 hours.

C. Cannabis

1. No commercial or industrial cannabis growing, processing and/or sales is permitted within the Plan Area.

Chapter 5: Administration

5.1 General Provisions

5.1.1 Purpose and Overview

This Chapter describes the review and enforcement of the regulations of the DS and the administration processes for development within the Plan Area.

The DS does not establish separate processes for the administration of the development of the Plan Area, rather it follows the processes set forth in Chapter 6 of the Sacramento County Zoning Code (the Code). The Zoning Code User Guide is a recommended companion document for Plan Area applicants to familiarize themselves with the development application and review process.

5.1.2 Definitions and Acronyms

Chapter 7 of the Code shall be utilized to clarify interpretation of common wording and language issues that may occur in the DS.

5.1.3 Advisory, Decision and Appeal Bodies

Section 6.1.2 of the Code provides general information about the decision bodies and the decision-making responsibilities of those regularly involved in the application process, including the Planning Director, the Community Planning Advisory Councils (CPAC), Project Review Committee (PRC), Subdivision Review Committee (SRC), County Planning Commission(PC) and the Board of Supervisors(BOS).

5.1.4 Appeals

Any person dissatisfied with the act or determination of the Appeal body may appeal such act or determination as provided in Section 6.1.3 of the Code.

5.1.5 Fees

Application and petition fees shall be paid in accordance with Section 6.1.4 of the Code.

5.1.6 Life of Permits

Any entitlement, permit or approval issued pursuant to provisions of the DS shall be valid for the time period set forth in Section 6.1.5 of the Code.

5.2 Zoning/SPA Amendment

The process of amending the DS shall follow the procedures for amending an SPA zoning district per Section 6.2 of the Code, "Zoning Amendments."

5.3 Development Plan or Design Review

When a Development Plan Review or Design Review is required by provisions of the Code or by the action of the Board of Supervisors, Planning Commission, Zoning Administrator, Planning Director, or Board of Zoning Appeals, the procedures in this Section 6.3 of the Code shall apply.

5.4 Special Permits

When a Special Development Permit, Conditional Use Permit or Minor Use Permit is required by the provisions of the DS or the Code, the procedures in Section 6.4 of the Code shall apply.

5.6 Other Applications

When other applications, such as a Variance, Certificate of Non-Conforming Use, Interpretation, Density Bonuses for Affordable Housing and Childcare Facilities, Housing Incentive Program, Temporary Permits and Vacation Rental Permits are required by the provisions of the DS or the Code, the procedures in Section 6.5 of the Code shall apply.

5.7 Enforcement

The DS shall be enforced by the Director of the Office of Planning and Environmental Review or his or her successor, pursuant to the process in Section 6.6 of the Code.

Appendix AQ-1

Air Quality Mitigation Plan and Greenhouse Gas Reduction Plan

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

August 30, 2022

Todd Smith
Planning Director
Sacramento County Department of Planning and Environmental Review
827 7th Street, Room 225
Sacramento, CA 95814

Subject: Verification of Technical Adequacy for the August 24, 2022 Jackson Township Air Quality Mitigation Plan and August 25, 2022 Jackson Township Greenhouse Gas Reduction Plan (PLNP2011-00095) (SAC201101396)

Dear Todd Smith:

The Sacramento Metropolitan Air Quality Management District (Sac Metro Air District) has reviewed the August 24, 2022 Air Quality Mitigation Plan (AQMP, Attachment 1)[1] and the August 25, 2022 Greenhouse Gas Reduction Plan (GHGRP, Attachment 2)[2] for the Jackson Township Specific Plan and verifies their technical adequacy for purposes of the California Environmental Quality Act (CEQA). This verification supersedes the verifications of the June 2019 AQMP and January 2021 GHGRP.

Please ensure the emission reduction features described in these plans are implemented via mitigation measures, conditions of approval, finance plans, or other enforceable mechanism.

Please let me know if you have questions. I can be reached at 279-207-1127 or rdubose@airquality.org.

Sincerely,

RDuBose

Rachel DuBose
Air Quality Planner / Analyst
CEQA and Land Use

cc: Paul Philley, CEQA and Land Use Program Supervisor, Sac Metro Air District

Enclosures: Attachment 1 AQMP, Attachment 2 GHGRP. (Appendices excluded.)

[1] Revision 3 – Updated Air Quality Mitigation Plan for the Proposed Jackson Township Specific Plan Kleinfelder Project No. 20221505.001A
[2] Revision 4 – Updated Greenhouse Gas Reduction Plan for the Proposed Jackson Township Specific Plan Kleinfelder Project No. 20221505.001A

Attachment 1

REVISION 3 - UPDATED AIR QUALITY MITIGATION PLAN FOR THE PROPOSED JACKSON TOWNSHIP SPECIFIC PLAN KLEINFELDER PROJECT NO. 20221505.001A

AUGUST 24, 2022

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A Report Prepared for:

Mr. Angelo Tsakopoulos
Tsakopoulos Investments
7423 Fair Oaks Blvd., Suite 10
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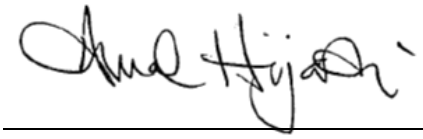
REVISION 3 - UPDATED AIR QUALITY MITIGATION PLAN FOR THE PROPOSED JACKSON TOWNSHIP SPECIFIC PLAN

Prepared by:



Russell E. Erbes, CCM
Senior Principal Air Quality Scientist

Reviewed by:



Amal Hijazi
Air Quality Project Manager

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August 24, 2022
Kleinfelder Project No.: 20221505.001A

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REVISION 3 - UPDATED AIR QUALITY MITIGATION PLAN FOR THE PROPOSED JACKSON TOWNSHIP SPECIFIC PLAN

1 EXECUTIVE SUMMARY

1.1 INTRODUCTION AND METHODOLOGY

Tsakopoulos Investments (the Applicant) is proposing the Jackson Township Specific Plan (Jackson Township) encompassing approximately 1,391 acres of land located in southeastern Sacramento County, east of Excelsior Road, north of Jackson Highway, and west of Eagles Nest Road. The proposed project is located approximately 10 miles southeast of the Sacramento central business district. The Jackson Township project is a mixed-use development that includes a mix of different housing types and commercial and retail land uses. The Proposed Project (formerly referred to as the California Environmental Quality Act, CEQA, Alternative 2) is evaluated in this report.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) recommends that projects that emit more than 65 pounds per day (lb/day) of nitrogen oxides (NO_x) or reactive organic gases (ROG) and that are outside of the State Implementation Plan (SIP) reduce emissions by 35 percent from business as usual (BAU). The reductions are achieved through a series of mitigation measures and documented in an Air Quality Mitigation Plan (AQMP).

In August 2015, an AQMP and a Greenhouse Gas Reduction Plan (GHGRP) were prepared for the Jackson Township Specific Plan. The 2015 AQMP/GHGRP was based on then-current emission models and Guidance and was for the Jackson Township project-alone alternatives. Since that time, there have been new models, data, and Guidance published, and the Sacramento County Planning Division (PER) wishes to also evaluate the CEQA cumulative project scenarios. Project-alone scenarios, referred to herein as Project-Related vehicle miles traveled (VMT), assume that Jackson Township is the only project developed in the area. Cumulative scenarios (Cumulative VMT) are based on the assumption that there will be other projects developed in the area, and thus the VMT associated with Jackson Township is less because drivers can make combined trips (e.g., stopping by a supermarket on the way home from work). The proposed land uses for the Jackson Township Project-Related scenario are the same as for the Cumulative scenario; only the VMT is different.

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In February 2019, an update to the August 2015 AQMP/GHGRP based on the then current (as of January 2019) models, data, and Guidance was submitted to PER and the SMAQMD. In March 2019, the SMAQMD requested that the Applicant submit a revision to the February 2019 AQMP/GHGRP to refine some of the mitigation calculations, and Revision 1 was submitted April 16, 2019. In May 2019, SMAQMD requested additional changes to clarify some of the mitigation measures, and Revision 2 to the AQMP/GHGRP was submitted.

Since May 2019 there have been a number of additional changes to the traffic and emission models and significance thresholds, and updated Guidance has been published by the California Air Pollution Control Officers Association (CAPCOA) and SMAQMD. Thus, in April through June 2022, this revised AQMP was prepared. The AQMP and GHGRP were separated into two separate documents, and this revised AQMP is termed Revision 3.

This Revision 3 to the AQMP addresses the following:

- Updated SMAQMD Guidance for AQMP and GHGRPs (Version 4.3)[1].
- Updated CAPCOA mitigation measures (CAPCOA 2022 Handbook)[2].
- New California Emissions Estimator Model (CalEEMod) version (Version 2020.4.0).
- Only the Proposed Project (Alternative 2) now requires evaluation.
- Updated 2022 Traffic Study completed by PER with more current Project-Related and Cumulative VMT than examined in 2019.
- Change in Operational Year to 2040 (from 2035) and start of construction to 2025 (from 2020).
- Additional transportation related VMT reductions that were not analyzed as part of the updated Traffic Study.
- Additional non-transportation mitigation commitments made in the previous AQMPs and GHGRPs and in Revision 4 to the GHGRP.

Kleinfelder, Inc. (Kleinfelder) prepared this AQMP and GHGRP consistent with SMAQMD Guidance and PER direction. PER staff reviewed the calculations, methodology, and document.

[1] *SMAQMD, 2021. Recommended Guidance for Land Use Emission Reductions Version 4.3 (Operational Emissions.* Available at https://www.airquality.org/residents/ceqa-land-use-planning/mitigation. Accessed April 2022.

[2] CAPCOA, 2021. *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*. Available at https://www.airquality.org/residents/climate-change/ghg-handbook-caleemod. Accessed April, 2022.

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To estimate emissions of NO_x, ROG, and particulate matter (PM), Kleinfelder used the current (as of April 2022) version of CalEEMod (Version 2020.4.0). The CalEEMod model uses details regarding specific land uses (e.g., strip mall) and various additional parameters (e.g., vehicle trip frequency and length associated with a land use and emission factors for vehicles) to calculate peak daily (pounds per day, lb/day) and annual emissions (tons per year, tpy). AQMP Guidance Version 4.3 focuses on NO_x and ROG emissions from annual transportation (annual mobile-only) and PM emissions from all sectors.

Kleinfelder ran the CalEEMod with detailed land uses for Alternative 2, including parking lot areas, as provided by the Applicant. The detailed land uses entered into CalEEMod are shown in Appendix A and discussed in Section 2. One of the key inputs in CalEEMod is the amount of traffic (VMT) associated with a project. The CalEEMod model contains default VMT values calculated from local district provided information and/or California statewide averages based on typical projects, (the default parameters are termed business as usual, BAU).

For Jackson Township, in early 2022, PER had a comprehensive Traffic Study completed that calculated the amount of traffic associated with the Jackson Township and other Jackson Highway projects and included induced VMT that is the result of additional vehicle travel associated with improved roads in the proposed Jackson Township area, but the VMT is not caused by the project itself. The Traffic Study analyzed effects of Jackson Township and the other projects on a regional Project-Related and on a regional Cumulative basis, starting with the existing conditions and then adding Jackson Township and the other projects. The Traffic Study also accounted for most of the large number of design features incorporated into Jackson Township that greatly reduces the amount of VMT. These measures include, but are not limited to, the location, density/mix of land uses, internal proximity, multi-modal efficiency, and transit supportive measures. Accordingly, in order to estimate emissions for the Jackson Township project as designed and planned, Kleinfelder used the Jackson Township incremental VMT calculated by the PER Traffic Study in the CalEEMod runs. Kleinfelder adjusted the default annual VMT calculated by CalEEMod such that the annual VMT matched the Traffic Study. This results in emissions estimates for the Jackson Township project considering most of the design features that reduce VMT. The incremental VMT associated with the project is shown in Appendix B and the emission calculations methodology and results are discussed in Section 3.

Kleinfelder calculated annual, summer peak daily, and winter peak daily operational emissions. The results are shown in Section 3 and the CalEEMod output reports are in Appendix C. BAU annual, summer peak daily, and winter peak daily operational emissions were also calculated and are shown in

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Appendix D. The BAU emissions are discussed in Sections 3, 4, and 5. Construction emissions were calculated and discussed in Section 6 with the CalEEMod reports shown in Appendix E.

The BAU scenario uses the same land use detail as the planned and designed project but uses typical VMT instead of the greatly reduced VMT associated with the project. Table 1-1 shows the default CalEEMod VMT compared to the VMT associated with Alternative 2. The Project-Related VMT is 43 percent less than BAU and the Cumulative VMT is 61 percent less than BAU. (Dividing the difference between the default VMT and project VMT by the default VMT value calculates the percent reduction.)

Table 1-1: CalEEMod Default VMT Compared to Project VMT

Scenario	CalEEMod BAU Annual VMT (miles/yr)	Traffic Study VMT (miles/yr)	Percent Reduction of Traffic Study VMT Compared to BAU
Alternative 2 Project-Related VMT	211,550,554	120,083,520	- 43.2%
Alternative 2 Cumulative VMT	211,550,554	81,557,862	- 61.4%

Note that the Traffic Study and CalEEMod modeled adjusted VMT shown in the CalEEMod runs do not match exactly, as discussed in Section 3. The above Project-Related and Cumulative VMT values are the values from the Traffic Study.

1.2 OPERATIONAL ROG AND NO_X MOBILE EMISSIONS

For the AQMP, the annual ROG and NO_x mobile-only emissions for the Jackson Township project as designed and planned were compared to the annual mobile-only emissions that would occur under the BAU scenario. Table 1-2 shows the BAU mobile-only emissions and the Alternative 2 emissions under the Project-Related and Cumulative VMT scenarios in terms of annual tons per year. The table shows that the percent reductions for ROG for both the Project-Related and Cumulative VMT are more than the SMAQMD 35 percent reduction target even if only accounting for the mitigation accounted for in the Traffic Study.

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Table 1-2: Comparison of BAU and Jackson Township Alternative 2 ROG and NO_x Annual Mobile-Only Emissions for BAU, Project-Related and Cumulative VMT Prior to Additional Mitigation

VMT Scenario	Mobile-Only ROG	Mobile-Only NO_x
BAU Alternative 2 Annual Mobile-Only Emissions	32.6 tpy	34.9 tpy
Project-Related VMT Alternative 2 Annual Mobile-Only Emissions	20.3 tpy	21.1 tpy
Project-Related Mobile Percent Reduction from BAU	**- 37.7 %**	**- 39.5 %**
Cumulative VMT Alternative 2 Annual Mobile-Only Emissions	15.3 tpy	15.3 tpy
Cumulative Mobile Percent Reduction from BAU	**- 53.1 %**	**- 56.2 %**

Table 1-3 compares the Alternative 2 Project-Related VMT scenario and emissions to the Cumulative VMT scenario. The Cumulative VMT scenario mobile-only emissions are from about 25 to 28 percent less than the Project-Related VMT scenario mobile-only emissions.

Table 1-3: Comparison of Cumulative VMT to Project-Related VMT Mobile-Only Annual Emissions for Alternative 2 Prior to Additional Mitigation (VMT from Traffic Study)

VMT Scenario	VMT (miles/yr)	ROG Emissions (tpy)	NO_x Emissions (tpy)
Project-Related VMT Scenario for Alternative 2	120,083,520	20.3	21.1
Cumulative VMT Scenario for Alternative 2	81,557,862	15.3	15.3
Difference between Project-Related and Cumulative Scenarios	- 38,525,658	- 5.0	- 5.8
Percent Reduction Cumulative from Project-Related	**- 32.1%**	**- 24.6%**	**- 27.5%**

The reduction in vehicle travel and emissions of ROG and NO_x are accomplished through a large number of Jackson Township project design features proposed by the Applicant. The features that reduce emissions include, but are not limited to, those listed immediately below. Where applicable, the related current (as of April 2022) CAPCOA[3] greenhouse gas mitigation measures (T-xx), the SMAQMD[4] land use

[3] CAPCOA, 2021. Op cit.

[4] SMAQMD, 2021, Op cit.

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emission reduction measures (LUT-xx), and the Sacramento County Revised Final Draft Community Wide Climate Action Plan (CAP)[5] measures (GHG-xx) are noted. However, the CAPCOA, SMAQMD, and Sacramento County emission reduction percentages for the noted measures were not used, rather the Traffic Study VMT was used to calculate emissions. Note that the Traffic Study is SMAQMD pre-requisite measure TS – Traffic Study. The figures and exhibits in Appendix H further illustrate some of the measures noted below.

LOCATION (T-1, T-2, GHG-22):

- Project is located in a suburban center within approximately 10 miles of the Sacramento downtown central business district and less than 5 miles from other existing high-density commercial/job center areas (LUT-2 and LUT-3).
- Project is located adjacent to other planned developments such that single-use trips are minimized, i.e., there are more pass-by and diverted trips (LUT-3 and LUT-4).

DENSITY/MIX (T-1, T-2, T-3, T-4, GHG-22):

- Project provides a compact mix of land uses in close proximity to each other with a highly connected street and trail network (LUT-3).
- Project design is for high and medium density housing for over half of the total project dwelling units (LUT-1).
- Housing density is better than 9.5 dwelling units per acre (LUT-1).
- Project includes below market rate housing (LUT-6).
- Approximately 15 percent of the total commercial square footage is dedicated to a mixed-use facility that combines residences and commercial/retail uses (LUT-3).

INTERNAL PROXIMITY (T-31-A, GHG-15, GHG-22):

- Most residential units are within 1,320 feet (one-quarter mile) of a neighborhood park, open space, school, and/or bicycle/pedestrian trail (LUT-3).
- Most residential units are less than one-half mile from shopping and services (LUT-4).

[5] Sacramento County, 2022. *Revised Final Draft Community Wide Climate Action Plan, February 2022.* Available at https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/CAP.aspx. Accessed April 2022.

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- Project design includes locating at least four schools within the project boundaries such that most students can walk to a local school (LUT-3 and LUT-4).
- Project design includes at least eight parks within the project boundaries such that residents can walk/bike to enjoy the parks (LUT -3 and LUT-4).

MULTI-MODAL EFFICIENCY (T-10, T-17, T-18, T-29, T-25, T-26, T-32, T-37, T-47, GHG-14, GHG-17):

- Project design is based on a network of streets in a grid pattern (LUT-8).
- Project design includes access to high frequency bus service that connects to the Watt/Manlove light rail station (LUT-5).
- Bus routes are signalized in order to avoid traffic delays (T-27).
- Project design promotes a multi-modal system that makes public transit, walking, and bicycling viable and attractive travel choices for residents and employees. Features include:
    - Adequate bike parking at non-residential locations, including the transit center and park and ride locations (T-34, T-47).
    - Showers/lockers and other end of trip facilities at non-residential buildings (T-10).
    - Long-term bike parking facilities (T-34, T-47).
- Project includes an extensive pedestrian path and trail system that is convenient and accessible from homes, school, parks, employment, and shopping (LUT-8).
- Pedestrian and bike paths minimize any barriers to pedestrian/bicycle use (e.g., fences, berms and other impediments are eliminated where possible) (LUT-8, T-18, T-20).

TRANSIT SUPPORTIVE (T-3, T-5, T-6, T-9, T-25, T-27, T-28, T-32, T-38; GHG-14, GHG-22):

- Project includes an on-site transit center and park and ride facilities along the designated transit route of Jackson Highway (LUT-5, T-3).
- Project subsidizes bus rapid transit lanes on Jackson Highway (T-27).
- Project funding and design will result in bus headways of 15 minutes or better (T-26).
- Project includes joining a Transportation Management Association (TMA) funded through assessments. Although the project will include a TMA, no VMT reduction from the TMA has been calculated or included in the Traffic Study.
- Project includes assessments for regional transportation improvements (T-27).

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1.3 ADDITIONAL QUANTIFIED EMISSION REDUCTIONS NOT INCLUDED IN THE TRAFFIC STUDY

Even though the measures listed above that are included in the Traffic Study more than achieve the AQMP emission reduction targets, there are additional transportation related mitigation measures that are incorporated into the project design and operation and for which emission reductions have been quantified. These measures are discussed in Section 4.2 and include the following (where applicable the CAPCOA mitigation measure has been cited, T-xx):

- For Residents:
  - Mandatory Community-Wide TMA participation that was not included in the Traffic Study (M-3[6]).
  - Electric bike share and scooter share (T-22-B, T-22-C).
  - Additional sidewalks within the Project (T-18).
- For Employees:
  - Mandatory Community-Wide TMA participation that was not included in the Traffic Study (M-3).
  - Carpooling/rideshare (T-8).

Furthermore, the Applicant has committed to the following quantified non-transportation related measures that will reduce ROG and NO_x emissions:

- Installation of a total of 805 non-residential electric vehicle (EV) charging stations at parking lots within the Project serving 1,610 parking spaces.
- Pre-wiring an additional 57 percent of multi-family housing for EV chargers. The Project is required by Sacramento County GHG reduction measures to pre-wire all of single-family housing and 20 percent of multi-family housing. The 57 percent of multi-family housing pre-wiring is in addition to that required, so there will be a total of 77 percent of multi-family housing pre-wired. The magnitude of emission reductions associated with this non-transportation related mitigation is discussed in Section 4.3.

[6] Measure M-3 is a Miscellaneous measure that is a mandatory TMA program for residents and employees that is paid annually as an assessment on both residential and non-residential properties. It is most analogous to T-6, which is normally a project/site-scale measure and allows up to 26% reduction; however, for Jackson Township it is applied community-wide, includes carpooling and rideshare, and totals 12.3% reduction. See Section 4.2.

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Note that the 2022 version of California Green Building Code (CCR Title 24), effective January 1, 2023, also requires EV chargers for non-residential and multi-family housing. Should Title 24 mandate more EV chargers than committed to herein, the number of EV chargers will be increased to meet the Title 24 requirements.

All of the Jackson Township mitigation measures will be documented and made compulsory through the approved Final Environmental Impact Report (FEIR) under CEQA and the financing plan. Appendix H provides land use and other exhibits supporting the planned mitigation measures.

In addition, with full build out of Jackson Township, the existing Sacramento Raceway will cease operations. Thus, the existing emissions at the Raceway will be eliminated as discussed in Section 4.4.

Table 1-4a summarizes the quantified emission reduction measures and resulting percent reduction from BAU for Alternative 2 mobile-only annual emissions of ROG and NO_x for the Project-Related VMT scenario and Table 1-4b summarizes the reduction for the Cumulative VMT scenario.

Table 1-4A: Quantified Mobile-Only Emission Reductions
Compared to BAU for Alternative 2 Project-Related VMT Scenario

Index	VMT Scenario	Mobile-Only ROG	Mobile-Only NO_x
1	BAU Alternative 2 Annual Mobile-Only Emissions (from Table 3-3)	32.6 tpy	34.9 tpy
2	Project-Related VMT Alternative 2 Annual Mobile-Only Emissions based on the Traffic Study (from Table 3-3)	20.3 tpy	21.1 tpy
3	Emission Reduction for Project-Related VMT (Row 2 minus Row 1)	- 12.3 tpy	- 13.8 tpy
4	**Project-Related Mobile Percent Reduction from BAU based Only on the Traffic Study (Row 3 / Row 1)**	**- 37.7 %**	**- 39.5 %**
5	Additional Emission Reductions from Transportation-Related Measures for Project-Related VMT Alternative 2 (from Table 4-5)	- 1.6 tpy	- 1.7 tpy
6	Emission Reductions from Committed Non-Transportation Related Mitigation for Project-Related VMT Alternative 2 (from Table 4-7)	- 0.5 tpy	- 2.9 tpy
7	Elimination of Sacramento Raceway (Section 4.4)	- 0.9 tpy	- 2.6 tpy
8	Total Emission Reductions for the Project-Related VMT Scenario (Rows 3 + 5 + 6 + 7)	- 15.3 tpy	- 21.0 tpy
9	**Total Percent Reduction for Project-Related VMT Scenario (Row 8 / Row 1)**	**- 46.9 %**	**- 60.2 %**

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Table 1-4B: Quantified Mobile-Only Emission Reductions
Compared to BAU for Alternative 2 Cumulative VMT Scenario

Index	VMT Scenario	Mobile-Only ROG	Mobile-Only NO_x
1	BAU Alternative 2 Annual Mobile-Only Emissions (from Table 3-3)	32.6 tpy	34.9 tpy
2	Cumulative VMT Alternative 2 Annual Mobile-Only Emissions based on the Traffic Study (from Table 3-3)	15.3 tpy	15.3 tpy
3	Emission Reduction for Cumulative VMT (Row 2 minus Row 1)	- 17.3 tpy	- 19.6 tpy
4	**Cumulative Mobile Percent Reduction from BAU based Only on the Traffic Study (Row 3 / Row 1)**	**- 53.1 %**	**- 56.2 %**
5	Additional Emission Reductions from Transportation-Related Measures for Cumulative VMT Alternative 2 (from Table 4-5)	- 1.2 tpy	- 1.3 tpy
6	Emission Reductions from Committed Non-Transportation Related Mitigation for Cumulative VMT Alternative 2 (from Table 4-7)	- 0.4 tpy	- 2.3 tpy
7	Elimination of Sacramento Raceway (Section 4.4)	- 0.9 tpy	- 2.6 tpy
8	Total Emission Reductions for the Cumulative VMT Scenario (Rows 3 + 5 + 6 + 7)	- 19.8 tpy	- 25.8 tpy
9	**Total Percent Reduction for Cumulative VMT Scenario (Row 8 / Row 1)**	**- 60.7 %**	**- 73.9 %**

Note that the NO_x and ROG emissions shown in Tables 1-4A and 1-4B are mobile-only emissions and reductions. Because natural gas infrastructure will be eliminated from the Jackson Township, there are other NO_x and ROG emissions from residential hot water heaters and commercial boilers that will also be eliminated. Those emission reductions are not shown in the Tables, so the total reduction from all sources is greater than shown.

1.4 OPERATIONAL PM EMISSIONS

Because there are no sources of operational PM emissions that are not also sources of NO_x, ROG, and GHG, the design features that greatly reduce NO_x and ROG will also greatly reduce potential PM emissions as discussed in Section 6. PM emissions under the Project-Related and Cumulative VMT scenarios compared to BAU are shown in Table 1-5 in units of tons per year (tpy).

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Table 1-5: Comparison of BAU and Jackson Township PM Annual Emissions for Alternative 2 BAU, Project-Related VMT and Cumulative VMT Scenarios

VMT Scenario	Fugitive PM_{10} (tpy)	Exhaust PM_{10} (tpy)	Total PM_{10} (tpy)	Fugitive $PM_{2.5}$ (tpy)	Exhaust $PM_{2.5}$ (tpy)	Total $PM_{2.5}$ (tpy)
BAU Original Project Annual Emissions	78.2	1.1	79.4	20.9	1.1	22.0
Project-Related VMT Annual Emissions	44.6	1.0	45.6	11.9	1.0	12.9
Percent Reduction for Project-Related VMT from BAU	**- 43.0%**	**- 9.1%**	**- 42.6%**	**- 43.1%**	**- 9.1%**	**- 41.4%**
Cumulative VMT Annual Emissions	30.2	1.0	31.1	8.1	1.0	9.0
Percent Reduction for Cumulative VMT from BAU	**- 61.4%**	**- 9.1%**	**- 60.8%**	**- 61.2%**	**- 9.1%**	**- 59.1%**

Note that the total PM may not exactly equal the sum of fugitive plus exhaust emissions due to round off differences.

There are no thresholds for PM reductions, but the design features built into the proposed project result in a reduction of total PM emissions ranging from 41 to 61 percent. The significant reduction in emissions of NO_x, ROG, and PM emissions for the planned and designed project compared to BAU is the result of the large number of design features incorporated into the project that greatly reduce the VMT. These design features are discussed in Section 4 and include locating the project close to the Sacramento central business district, incorporating a high density of mixed-use buildings, designing the project in a gridded street pattern with schools and parks located within the development, and incorporating multi-modal transportation systems. The multi-modal transportation systems include extensive bike and pedestrian paths, on-site transit center and park and ride facilities, bus rapid transit subsidies, and assessments for regional transportation improvements, among other features as detailed in Section 4.

1.5 CONSTRUCTION EMISSIONS

Although not part of the AQMP, SMAQMD recommends that construction emissions of ROG, NO_x, and PM emissions be quantified with CalEEMod if possible. To estimate construction emissions, CalEEMod was first run with default parameters and then the default parameters were adjusted as necessary to meet planned project constraints. The methodology is discussed in Section 6 and the results are shown in Table 1-6. The values shown in the table are the maximum annual and daily emissions during the 15-year construction period. The values come from construction CalEEMod runs shown in Appendix E. The emissions are compared to the current (as of April 2022) SMAQMD significance thresholds and all of the emissions are less than thresholds.

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Table 1-6: Maximum Construction Emissions for Alternative 2

Alternative	ROG (lb/day)	NO_x (lb/day)	Total PM_{10} (lb/day)	Total PM_{10} (tpy)	Total $PM_{2.5}$ (lb/day)	Total $PM_{2.5}$ (tpy)
Alternative 2 Emissions	57.3 (Summer)	68.5 (Winter)	45.4 (Winter)	5.7 (2027)	12.9 (Winter)	1.6 (2027)
SMAQMD Significance Thresholds	None	85	80	14.6	82	15
Exceed Threshold?	**N/A**	**No**	**No**	**No**	**No**	**No**

1.6 SUMMARY

In summary, incorporation of the planned and designed VMT reduction features of the Jackson Township greatly mitigates potential emissions of NO_x, ROG, and PM. The emission reductions are much greater than the SMAQMD 35 percent reduction target for NO_x and ROG. Table 1-7 summarizes the various reduction targets and how Alternative 2 meets those targets.

Table 1-7: Summary of Jackson Township Emissions Compared to Reduction Requirements and Thresholds

Scenario	Meets SMAQMD ROG 35% Reduction?	Meets SMAQMD NO_x 35% Reduction?	Below SMAQMD Construction Significance Criteria?	Achieves Meaningful PM Emission Reductions?
Alternative 2 Project-Related VMT Emissions Based on Traffic Study	Yes	Yes	Yes	Yes
Alternative 2 Project-Related VMT when Additional Quantified Mitigation is Credited	Yes	Yes	Yes	Yes
Alternative 2 Cumulative VMT Emissions Based on Traffic Study	Yes	Yes	Yes	Yes
Alternative 2 Cumulative VMT when Additional Quantified Mitigation is Credited	Yes	Yes	Yes	Yes

In addition to all of the design features that reduce VMT and the additional mitigation, there are more emission reductions associated with other design and mitigation measures that have not been quantified but will also occur. For example, the following features, among others, will occur but the benefits of those features have not been quantified. It is recognized that some of the following measures only indirectly reduce ROG and NO_x, as they are primarily GHG reduction measures.

- An over-statement of VMT because the VMT per resident and per employee values do not account for the mutually beneficial interaction of the Jackson Township Specific Plan with other

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existing and/or approved land uses that result in reduced VMT. For example, Jackson Township schools and retail will serve not only Jackson Township residences but existing residences in the area, thus reducing the distance traveled by existing persons.

- An over-statement of employee VMT because the VMT per employee does not account for the current shift to work-from-home and remote working/learning that is occurring.
- Low flow bathroom fixtures, kitchen fixtures, showers, and toilets in all residential units and commercial buildings.
- Reduced square footage of residential turf due to the increased housing density.
- Water efficient irrigation systems and water efficient landscaping for the non-residential areas.
- Some of the existing homes located within the Jackson Township Specific Plan will be replaced with more modern and energy efficient homes.

And most significantly, all of the mobile-source emission estimates are over-stated and the benefit of EV charging stations under-stated because they do not account for the much larger electric vehicle penetration and other changes in transportation that will have to occur if California is to reach the 2050 GHG reduction goals. For example, the new (April 1, 2022) Federal passenger car and light duty truck fleet wide average fuel economy standard of approximately 49 miles per gallon (mpg) for new vehicles by calendar year 2026 has not been accounted for. Thus, prior to full development of Jackson Township in 2040 there will be greater ROG and NOx emission reductions and much lower total emissions than stated herein.

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2 PROPOSED JACKSON TOWNSHIP SPECIFIC PLAN

The proposed Jackson Township Specific Plan consists of approximately 1,391 acres located in southeastern Sacramento County. This AQMP focuses only on CEQA Alternative 2. Table 2-1 presents the summary land uses proposed by the Applicant by major category. The proposed land uses are shown in Appendix H.

Table 2-1: Alternative 2 Summary Land Use

Land Use Index	Residential Designations	Acres	Ave. Density	Dwelling Units
1	LD-Low Density Residential	382.6	6.0	2,295
2	MD-Medium Density Residential	124.5	10.0	1,245
3	HD-High Density Residential	82.0	25.0	2,050
	Subtotal	**589.1**		**5,590**
	Commercial + Office Zones		**Approx. Bldg. Square Footage**	
4	GC-General Commercial	59.7	650,100	
5	CC-Community Commercial	16.2	176,400	
6	MU-Mixed Use	19.7	429,000	100
7	O-Office	35.2	766,600	
	Subtotal	**130.8**	**2,022,100**	**100**
	Public/Quasi Public Zones			
8	PQP-Tank Site	1.0		
9	PQP-High School/Middle School	70.0		
10	PQP-Elementary School	30.0		
	Subtotal	**101.0**		
	Park + Open Space Zones			
11	CP-Community Park	40.6		
12	P-Neighborhood Park	38.2		
13	OS-Wetland Preserve	259.8		
14	OS-Greenbelt/Drainage Corridor	55.6		
15	OS-Landscape Corridor	14.5		
	Subtotal	**408.7**		
16	AG-Agriculture	74.7		
17	RW-Primary Roadways	86.7		
	TOTAL	**1,391**		**5,690**

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The summary land uses are as planned as of December 1, 2014. The Land Use Index in Table 2-1 is used to reference the subcategory land uses in the following detailed land use descriptions. The land use data in Table 2-1 does not provide all of the detail necessary to estimate operational emissions. Appendix A provides the additional detail developed by Kleinfelder and the Applicant and is summarized in Table 2-2. The detail in Table 2-2 is based on the anticipated and typical land uses for a development like the Jackson Township. Detailed land use for the schools was derived from information provided by the Elk Grove Unified School District for average building sizes and parking lots. The gasoline pump numbers are based on the CalEEMod User Guide Appendix D that uses 7.1 pumps per 1,000 square feet (sf). The detailed land use information is used for the emission calculations discussed in Section 3.

As shown in Table 2-2 and Appendix A, one of the detailed land use categories inputs to the CalEEMod model is parking lot area. The parking lot area was planned by the Applicant through experience with other typical projects, usually as a fraction of the total acreage for the land use category.

Table 2-2: Detail Land Use for Emission Calculations for Alternative 2

Index	Residential Designations	Acres	Detailed Land Use for Emission Estimates
1	LD-Low Density Residential	382.6	Single Family Housing, 2,295 dwelling units
2	MD-Medium Density Residential	124.5	Single Family Housing, 1,245 dwelling units
3	HD-High Density Residential	82.0	Mid-Rise Apartments, 2,050 dwelling units
	Subtotal	**589.1**	
	Commercial + Office Zones		**Approx. Bldg. Square Footage**
4	GC-General Commercial	59.7	-195,000 sf Discount Club, 468,300 sf parking lot. -162,500 sf Home Improvement Store, 390,300 sf parking lot. -65,000 sf Grocery Store, 156,800 sf parking lot. -32,500 sf Pharmacy with Drive-Thru, 78,000 sf parking lot. -32,500 sf Hardware Store, 78,000 sf parking lot. -39,000 sf Restaurants with Drive-Thru, 93,700 sf parking lot. -113,800 sf Strip Mall (Miscellaneous in-line Retail), 273,100 sf parking lot. -3,300 sf Convenience Store, 7,800 sf parking lot. -6,500 sf Gasoline Service Stations (2 Stations), 15,700 sf parking lot. 24 pumps per station.
5	CC-Community Commercial	16.2	-3,000 sf Gasoline Service Station, 7, 400 sf parking lot. 24 pumps at the station. -173,400 sf Strip Mall, 416,000 sf parking lot
6	MU-Mixed Use	19.7	-178,600 sf Mid-rise Apartments, 100 Dwelling Units in Apartments. -250,400 sf Retail (Strip Mall style). -343,200 sf parking lot for both Apartments and Retail combined.
7	O-Office	35.2	-766,600 sf General Office Building, 613,300 sf surface parking lot
	Subtotal	**130.8**	**2,022,100 sf**

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Table 2-2 (cont.): Detail Land Use for Emission Calculations for Alternative 2

Index	Public/Quasi Public Zones	Acres	Detailed Land Use for Emission Estimates
8	PQP-Tank Site	1.0	1 acre allotted for possible water storage tank 90 feet diameter by 24 feet high.
9	PQP-High School/Middle School	70.0	250,000 sf building; 609,800 sf parking lot
10	PQP-Elementary School	30.0	225,000 sf buildings (3 schools); 136,800 sf parking lot
	Subtotal	**101.0**	
	Park + Open Space Zones		
11	CP-Community Park	40.6	Community Park and Neighborhood Park acreage used for Operational emissions. Remaining land uses do not cause operational emissions.
12	P-Neighborhood Park	38.2	
13	OS-Wetland Preserve	259.8	
14	OS-Greenbelt/Drainage Corridor	55.6	
15	OS-Landscape Corridor	14.5	
	Subtotal	**408.7**	
16	AG-Agriculture	74.7	
17	RW-Primary Roadways	86.7	
	TOTAL	**1,391**	

The data in Table 2-2 and Appendix A were entered into CalEEMod to calculate the emissions. The CalEEMod reports show where the data were used, but there is one land use subcategory that requires additional explanation: the possible water storage tank. Although a water use study has not been completed for the Project, it is possible that an approximately 1-million-gallon water storage tank may need to be located within the Project. This tank would be located at the PQP-Tank Site (Land use category 8) on a 1-acre parcel. The tank would be approximately 90 feet in diameter and 24 feet high. To account for painting the tank, the surface area of the tank was calculated (13,148 square feet for the sides and top). CalEEMod assumes that all coatings have a volatile organic compound (VOC) content of 150 grams per liter (g/l). However, rust preventative coatings are allowed to contain up 400 g/l per SMAQMD Rule 440. Also, it is possible that the tank would need two coats of paint. Accordingly, Kleinfelder entered the tank into CalEEMod as a "User Defined" industrial land use with a 1-acre lot size and 70,123 square feet (13,148 square feet x 2 coatings x 400 g/l divided by 150 g/l).

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3 OPERATIONAL EMISSION ESTIMATING METHODOLOGY AND RESULTS

3.1 OPERATIONAL ROG, NO_X, AND PM EMISSIONS ESTIMATING METHODOLOGY

Kleinfelder calculated operational emission estimates for Alternative 2 with the CalEEMod emissions model, Version 2020.4.0. CalEEMod calculates emissions of criteria pollutants and GHG based on detailed land use metrics (e.g., acreage, dwelling units, square feet, number of fueling pumps) and vehicle emissions associated with each land use. The detailed land uses shown in Appendix A were used to estimate emissions. CalEEMod Version 2020.4.0 is based on EMFAC 2017 and 2019 Title 24 Energy Standards that were promulgated in March 2018 and became effective January 1, 2020.

Except for the CO_2 intensity for electrical generation, the mobile source emissions category, the number of fireplaces and hearths, and the additional mitigation calculations as explained below, CalEEMod default input factors were used to calculate emissions. CalEEMod was run for a full build-out year of 2040 and start of construction 2025.

For electrical generation greenhouse gas (CO_2, CH_4, N_2O) intensity, zero was entered. This is because the Sacramento Municipal Utility District (SMUD) has committed to 100 percent renewable energy by 2030.

CalEEMod includes emissions from mobile sources, and uses typical trip frequencies, trip types, trip lengths (depending on the specific land use subcategory), and standard California emission factors (EMFAC 2017 in the CalEEMod 2020.4.0 version) to calculate mobile source emissions. However, as discussed in Section 4, Alternative 2 incorporates a number of features that significantly reduce the VMT of the mobile sources. Accordingly, to estimate emissions for Alternative 2, Kleinfelder adjusted the trip frequency in CalEEMod such that the annual VMT matched the annual VMT forecast by the Traffic Study prepared for PER for the Project-Related VMT and Cumulative VMT scenarios. The vehicle travel mileage forecast by the Traffic Study is shown in Appendix B and includes changes in traffic patterns as the result of the Project. Trip lengths were not changed in CalEEMod because the CAPCOA 2022 Handbook for mitigation measures states that none of the included measures (which are the measures used to reduce VMT) reduce trip lengths[7].

[7] *CAPCOA, 2021, op cit., Page 67.*

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The Traffic Study VMT data provided by PER forecasts peak daily VMT that will occur in calendar year 2040 as the result of the Project, both as a stand-alone project (project-related) and cumulative with other projects in the area. The Traffic Study data included the induced VMT potentially caused by road improvements in the area, but not caused by the Jackson Township project itself. The VMT used in CalEEMod is the incremental increase in VMT forecast by the Traffic Study. The peak daily VMT forecast for calendar year 2040 is as follows (see Appendix B):

- Alternative 2 Project-Related VMT: 375,261 miles per day.
- Alternative 2 Cumulative VMT: 254,868 miles per day.

Kleinfelder converted the peak daily VMT to annual VMT by multiplying the peak daily calendar year 2040 VMT by 320 days per year. The 320 value is approximately 52 weeks per year, 6 days per week. The assumption is that the peak daily VMT occurs on each of 5 days and about one-half of the peak daily VMT occurs on Saturday and Sunday. Accordingly, the calendar year 2040 annual incremental VMT is as shown in Appendix C and repeated here:

- Alternative 2 Project-Related VMT: 120,083,520 miles per year.
- Alternative 2 Cumulative VMT: 81,557,862 miles per year.

As discussed in Section 4, the default CalEEMod parameters yields emission estimates and VMT based on BAU. Appendix D shows the annual VMT for BAU, which is 211,550,554 miles per year. If one compares the business-as-usual VMT to the VMT forecast by the Traffic Study, the Traffic Study VMT for Alternative 2 is about 43 (Project-Related VMT) to 61 (Cumulative VMT) percent less than BAU (see Table 1-1).

The CalEEMod BAU default trip frequency is based on each individual land use and the Institute of Traffic Engineers Trip Generation handbook. There are separate frequencies for weekdays, Saturday, and Sunday. The CalEEMod default trip type and trip length are from information provided by the air district or California statewide averages. The CalEEMod model calculates the mileage per trip type by considering whether the trip was a primary trip, diverted trip, or pass-by trip. An example pass-by trip is a person stopping to shop on their way home from work. A diverted trip example is a person going home from work but traveling a short additional distance to shop. CalEEMod assumes that a pass-by trip is 0.1 miles, and a diverted trip will be 25 percent of the primary trip length.

In order to match the Alternative 2 VMT in CalEEMod to the VMT forecast by the Traffic Study, Kleinfelder adjusted the default trip frequencies as described below. The default CalEEMod pass-by and

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diverted trip frequencies were not changed, and the emission factors were not changed. Tables 3-1 and 3-2 show the default trip frequencies and the adjusted trip frequencies for Alternative 2. For most of the land uses, the trip frequencies were reduced by about 50 to 60 percent. However, trip frequencies for land uses not likely to be greatly affected by design and mitigation in the Proposed Project were not changed. The un-changed land use trip frequencies were for the discount club, fast food restaurants, gasoline stations, hardware/paint store, home improvement store, hospital, and pharmacy. Note that the trip frequencies are in terms of the land use metric (which varies among different land uses) in CalEEMod and the frequency numbers in Tables 3-1 and 3-2 cannot be compared across land uses.

Table 3-1: BAU and Adjusted Trip Frequencies for Alternative 2

Project-Related VMT

	Business-As-Usual			Adjusted for Alternative 2		
Land Use	**Weekday**	**Sat**	**Sun**	**Weekday**	**Sat**	**Sun**
Apartments Mid-Rise	5.44	4.91	4.09	2.5	2.4	2.0
City Park	0.78	1.96	2.19	0.4	0.8	0.9
Convenience Market	762.28	1084.17	901.17	350.0	410.0	400.0
Discount Club	41.8	53.75	33.67	41.8	53.75	33.67
Elementary School	19.52	0	0	8.0	0	0
Fast Food Restaurants with drive-thru	470.95	616.12	472.58	470.95	616.12	472.58
Gasoline Stations	172.01	182.17	166.88	172.01	182.17	166.88
General Office Building	9.74	2.21	0.7	4.0	2.0	0.3
Hardware/Paint Store	9.14	9.14	9.14	9.14	9.14	9.14
High School	14.07	3.98	1.71	6.0	2.0	0.8
Home Improvement Store	30.74	56.72	55.8	30.74	56.72	55.8
Parking Lot	0	0	0	0	0	0
Pharmacy	109.16	114.89	45.57	109.16	114.89	45.57
Single Family Housing	9.44	9.54	8.55	4.9	5.0	4.1
Strip Mall	44.32	42.04	20.43	20.0	15.0	10.0
Supermarket	106.78	177.62	166.47	45.0	75.0	70.0

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Table 3-2: BAU and Adjusted Trip Frequencies for Alternative 2

Cumulative VMT

	Business-As-Usual			Adjusted for Alternative 2		
Land Use	**Weekday**	**Sat**	**Sun**	**Weekday**	**Sat**	**Sun**
Apartments Mid-Rise	5.44	4.91	4.09	1.6	1.5	0.8
City Park	0.78	1.96	2.19	0.2	0.6	0.7
Convenience Market	762.28	1084.17	901.17	180.0	240.0	220.0
Discount Club	41.8	53.75	33.67	41.8	53.75	33.67
Elementary School	19.52	0	0	5.1	0	0
Fast Food Restaurants with drive-thru	470.95	616.12	472.58	470.95	616.12	472.58
Gasoline Stations	172.01	182.17	166.88	172.01	182.17	166.88
General Office Building	9.74	2.21	0.7	2.3	0.7	0.2
Hardware/Paint Store	9.14	9.14	9.14	9.14	9.14	9.14
High School	14.07	3.98	1.71	3.9	1.0	0.5
Home Improvement Store	30.74	56.72	55.8	30.74	56.72	55.8
Parking Lot	0	0	0	0	0	0
Pharmacy	109.16	114.89	45.57	109.16	114.89	45.57
Single Family Housing	9.44	9.54	8.55	2.1	2.2	1.9
Strip Mall	44.32	42.04	20.43	15.0	10.0	7.0
Supermarket	106.78	177.62	166.47	30.0	25.0	20.0

The CalEEMod trip frequency reductions from BAU made to match the VMT calculated by the Traffic Study resulted in the following annual VMT used in CalEEMod:

- Alternative 2 Project-related VMT: 120,642,549 miles per year.
- Alternative 2 Cumulative VMT: 81,606,212 miles per year.

Note that the modeled adjusted CalEEMod annual VMT is slightly greater (less than 0.5 percent) than the Traffic Study VMT. It was not reasonably feasible to adjust the CalEEMod trip lengths to exactly

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match the Traffic Study VMT, and thus the slight over-estimate in VMT was used for the emission calculations.

3.2 OPERATIONAL ROG AND NO_X EMISSION RESULTS

The detailed land use subcategories of Appendix A and the traffic data of Appendix B were used to estimate annual ROG and NO_x emissions with the CalEEMod emissions model. The CalEEMod reports are shown in Appendices C and D and the results for total and mobile-only annual NO_x and ROG emissions are summarized in Table 3-3 (in terms of tons per year, tpy). Although this AQMP focuses on annual emissions, maximum daily total (mobile plus non-mobile) ROG and NO_x emissions for the Project-Related and Cumulative VMT scenarios are shown in Table 3-4 as a point of information, not as part of the AQMP.

Table 3-3: Total and Mobile-Only Annual BAU and Jackson Township Emissions of ROG and NO_x

VMT Scenario	Annual Total ROG	Annual Total NO_x	Annual Mobile-Only ROG	Annual Mobile-Only NO_x
BAU Alternative 2 Annual Mobile-Only Emissions	84.8 tpy	41.9 tpy	32.6 tpy	34.9 tpy
Project-Related VMT Alternative 2 Annual Mobile-Only Emissions	72.6 tpy	28.1 tpy	20.3 tpy	21.1 tpy
Cumulative VMT Alternative 2 Annual Mobile-Only Emissions	67.5 tpy	22.3 tpy	15.3 tpy	15.3 tpy

Table 3-4: Maximum Total Daily Emissions of ROG and NO_x Under BAU Project-Related, and Cumulative VMT Scenarios

VMT Scenario	Maximum Total Daily Summer ROG (lb/day)	Maximum Total Daily Winter ROG (lb/day)	Maximum Total Daily Summer NO_x (lb/day)	Maximum Total Daily Winter NO_x (lb/day)
BAU Alternative 2 Daily Total Emissions	559.4	482.5	242.3	274.0
Project-Related VMT Alternative 2 Daily Total Emissions	462.9	411.2	164.4	183.7
Cumulative VMT Alternative 2 Daily Total Emissions	424.7	382.7	132.8	147.1

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3.3 OPERATIONAL PM EMISSION RESULTS

Appendices C and D contain the CalEEMod reports that show the total operational PM emissions. The results are summarized in Table 3-5.

Table 3-5: Total Operational PM Annual Emissions

VMT Scenario	Fugitive PM_{10} (tpy)	Exhaust PM_{10} (tpy)	Total PM_{10} (tpy)	Fugitive $PM_{2.5}$ (tpy)	Exhaust $PM_{2.5}$ (tpy)	Total $PM_{2.5}$ (tpy)
BAU Original Project Annual Emissions	78.2	1.1	79.4	20.9	1.1	22.0
Project-Related VMT Annual Emissions	44.6	1.0	45.6	11.9	1.0	12.9
Cumulative VMT Annual Emissions	30.2	1.0	31.1	8.1	1.0	9.0

Note that the total may not exactly equal the sum of fugitive plus exhaust emissions due to round off differences.

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4 AIR QUALITY MITIGATION PLAN

This Section describes the calculations for the total ROG and NOx emission reductions that will be achieved by the proposed Jackson Township Specific Plan. There are four categories of emission reductions discussed below:

- Transportation-related reductions based on the Traffic Study.
- Additional emission reductions related to transportation that were not included in the Traffic Study.
- Reductions from changes in land use (elimination of the Sacramento Raceway).
- Non-quantified emission reductions.

4.1 OPERATIONAL ROG AND NO_X EMISSIONS BASED ON THE TRAFFIC STUDY

SMAQMD Guidance recommends that a project that emits more than 65 lb/day of NO_x or ROG reduce emissions by least 35 percent from BAU if the project is not part of the SIP (which is the case for the Jackson Township Specific Plan). Version 4.3 of the Guidance specifies that the percent reduction is applied to annual mobile-only emissions.

To evaluate the Jackson Township Specific Plan, the annual mobile-only emissions as planned (based on the Traffic Study) were compared to emissions that would occur with a typical development with the same detailed land uses as proposed. Emissions that would occur with a typical development instead of the mitigation measures designed into the planned project are termed BAU emissions. To calculate the BAU emissions, the detailed land uses were entered into CalEEMod, and the emissions model run with the CalEEMod default vehicle trip frequency and mileage that that are typical of projects in Sacramento County. The BAU emissions reports are shown in Appendix D. Emissions calculated by CalEEMod for BAU were then compared to emissions from the project as proposed based on the Traffic Study. The results for mobile-only annual emissions are shown in Table 4-1 for the BAU, Project-Related VMT, and Cumulative VMT Traffic Study scenarios.

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Table 4-1: Comparison of BAU and Jackson Township ROG and NO_x Annual Mobile-Only Emissions Based on the Traffic Study for Alternative 2

VMT Scenario	ROG	NO_x
BAU Alternative 2 Annual Mobile-Only Emissions	32.6 tpy	34.9 tpy
Project-Related VMT Alternative 2 Annual Mobile-Only Emissions based on the Traffic Study	20.3 tpy	21.1 tpy
Project-Related Mobile Percent Reduction from BAU	**- 37.7 %**	**- 39.5 %**
Cumulative VMT Alternative 2 Annual Mobile-Only Emissions based on the Traffic Study	15.3 tpy	15.3 tpy
Cumulative Mobile Percent Reduction from BAU	**- 53.1 %**	**- 56.2 %**

As shown in Table 4-1, under the Project-Related VMT scenario Alternative 2 achieves approximately 38 to 40 percent reduction of ROG and NO_x from business-as-usual mobile-only annual emissions. Under the Cumulative VMT scenario, Alternative 2 achieves about a 53 to 56 percent reduction in ROG and NO_x. Percent reduction was calculated per SMAQMD Guidance as follows:

Percent Reduction = [(BAU emissions – Mitigated Emissions) / BAU Emissions] x 100

The difference between BAU emissions and the proposed project emissions is related to the difference in vehicle travel. The VMT projected in the Traffic Study under the Project-Related scenario for Alternative 2 as proposed is about 43 percent less than the VMT calculated by CalEEMod for BAU; and under the Cumulative VMT scenario the VMT projected for Alternative 2 as proposed is about 61 percent less than the VMT calculated by CalEEMod for BAU. The reduction in vehicle travel and emissions of NO_x and ROG are accomplished through a large number of Jackson Township project design features proposed by the Applicant. The features that reduce emissions include, but are not limited to, those listed immediately below. Where applicable, the related CAPCOA[8] greenhouse gas mitigation measures (T-xx), the SMAQMD[9] land use emission reduction measures (LUT-xx), and the Sacramento County Revised Final Draft Community Wide Climate Action Plan (CAP)[10] measures (GHG-xx) are noted. However, the CAPCOA, SMAQMD, and Sacramento County emission reduction percentages for the noted measures were not used, rather the Traffic Study VMT was used to calculate emissions. Note that

[8] CAPCOA, 2021. Op cit.

[9] SMAQMD, 2021, Op cit.

[10] Sacramento County, 2022. *Revised Final Draft Community Wide Climate Action Plan, February 2022.* Available at https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/CAP.aspx. Accessed April 2022.

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the Traffic Study is SMAQMD pre-requisite measure TS – Traffic Study. Appendix H includes a land use diagram and exhibits supporting the VMT reduction measures incorporated into the Traffic Study. The FEIR contains additional supporting exhibits.

LOCATION (T-1, T-2, GHG-22):

- Project is located in a suburban center within approximately 10 miles of the Sacramento downtown central business district and less than 5 miles from other existing high-density commercial/job center areas (LUT-2 and LUT-3).
- Project is located adjacent to other planned developments such that single-use trips are minimized, i.e., there are more pass-by and diverted trips (LUT-3 and LUT-4).

DENSITY/MIX (T-1, T-2, T-3, T-4, GHG-22):

- Project provides a compact mix of land uses in close proximity to each other with a highly connected street and trail network (LUT-3).
- Project design is for high and medium density housing for over half of the total project dwelling units (LUT-1).
- Housing density is better than 9.5 dwelling units per acre (LUT-1).
- Project includes below market rate housing (LUT-6).
- Approximately 15 percent of the total commercial square footage is dedicated to a mixed-use facility that combines residences and commercial/retail uses (LUT-3).

INTERNAL PROXIMITY (T-31-A, GHG-15, GHG-22):

- Most residential units are within 1,320 feet (one-quarter mile) of a neighborhood park, open space, school, and/or bicycle/pedestrian trail (LUT-3).
- Most residential units are less than one-half mile from shopping and services (LUT-4).
- Project design includes locating at least four schools within the project boundaries such that most students can walk to a local school (LUT-3 and LUT-4).
- Project design includes at least eight parks within the project boundaries such that residents can walk/bike to enjoy the parks (LUT -3 and LUT-4).

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MULTI- MODAL EFFICIENCY (T-10, T-17, T-18, T-29, T-25, T-26, T-32, T-37, T-47, GHG-14, GHG-17):

- Project design is based on a network of streets in a grid pattern (LUT-8).
- Project design includes access to high frequency bus service that connects to the Watt/Manlove light rail station (LUT-5).
- Bus routes are signalized in order to avoid traffic delays (T-27).
- Project design promotes a multi-modal system that makes public transit, walking, and bicycling viable and attractive travel choices for residents and employees. Features include:
    - Adequate bike parking at non-residential locations, including the transit center and park and ride locations (T-34, T-47).
    - Showers/lockers and other end of trip facilities at non-residential buildings (T-10).
    - Long-term bike parking facilities (T-34, T-47).
- Project includes an extensive pedestrian path and trail system that is convenient and accessible from homes, school, parks, employment, and shopping (LUT-8).
- Pedestrian and bike paths minimize any barriers to pedestrian/bicycle use, (e.g., fences, berms and other impediments are eliminated where possible) (LUT-8, T-18, T-20).

TRANSIT SUPPORTIVE (T-3, T-5, T-6, T-9, T-25, T-27, T-28, T-32, T-38; GHG-14, GHG-22):

- Project includes an on-site transit center and park and ride facilities along the designated transit route of Jackson Highway (LUT-5, T-3).
- Project subsidizes bus rapid transit lanes on Jackson Highway (T-27).
- Project funding and design will result in bus headways of 15 minutes or better (T-26).
- Project includes joining a TMA funded through assessments. Although the project will include a TMA, no VMT reduction from the TMA has been calculated or included in the Traffic Study.
- Project includes assessments for regional transportation improvements (T-27).

4.2 ADDITIONAL QUANTIFIED TRANSPORTATION MITIGATION

In addition to all of the mitigation measures incorporated into the Traffic Study, there are additional transportation mitigation measures that are part of the proposed Jackson Township Alternative 2 project. The benefit of these additional measures was documented in a memorandum prepared by Kimley-Horn dated August 4, 2022 (the K-H Memo) and shown in Appendix F.

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The additional measures quantified in the K-H Memo and the percentage reduction in VMT are shown in Table 4-2. The measures are separated by those that benefit residential-related transportation (VMT per capita) and those that benefit employee-related transportation (VMT per employee). Where applicable, the CAPCOA mitigation measure (T-xx) is also noted in the Table. The K-H Memo in Appendix F describes each mitigation measure in detail.

CAPCOA Measure T-6, Mandatory Trip Reduction Program, is normally applied as a Project/Site-scale measure and thus is not combinable with the Plan/Community-scale measures T-18 and T-22. However, in the case of the Jackson Township, measure M-3 has been created that is allowed at the Plan/Community scale level and consists of a community-wide mandatory trip reduction program that will be required of all residents and employers within Jackson Township. Under this program, both residential and non-residential property will be subject to an annual County Service Area (CSA) fee that will be used for the TMA services and programs. Rideshare and carpool programs will be part of the M-3 measure. As measure M-3 is considered a Plan/ Community measure it can be combined with T-18 and T-22.

CAPCOA establishes emission reduction caps on measures for which CAPCOA establishes a percent reduction (i.e., the T-xx measures) calculation. The cap for measures T-5 through T-13 is 45 percent and the cap for measures T-18 through 22-C is 10 percent. As shown in Table 4-2, the caps are not exceeded.

Table 4-2: Additional Transportation Mitigation Included in the Alternative 2 Project

Measure	VMT per Capita % Reduction	VMT per Employee % Reduction
Mandatory Community-Wide TMA Participation (M-3)	- 2.08 %	- 12.3 %
Electric Bike share (T-22-B)	- 0.05 %	NA
Electric Scooter Share (T-22-C)	- 0.06 %	NA
Adding Sidewalks (T-18)	- 1.0 %	NA
Total Percent Reduction*	**- 3.0 %**	**- 12.3 %**
Total Percent Reduction for Combined Measures T-8 through 22-C	- 1.1 %	NA

* Reported total reduction may not sum to table entries due to roundoff differences.

The percentage benefit on total VMT (and thus emissions) of the measures shown in Table 4-2 is not simply the sum of residential (VMT per capita) and employee (VMT per employee) percentages because

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some of the measures that reduce residential VMT also reduce employee VMT. Thus, in order to calculate the benefit of these measures on total VMT forecast by the Traffic Study, the VMT reduction (in terms of VMT, not percentage) was calculated for residents and employees separately and then added together. The calculations are shown in Tables 4-3 and 4-4. The percent VMT reduction shown in Tables 4-3 and 4-4 translates directly into a similar percent reduction in ROG and NO_x emissions as shown in Table 4-5.

Table 4-3: Calculation of VMT Benefit from Additional Transportation Mitigation for Alternative 2 Project-Related VMT

Index	Measure	Residents	Employees
1	Daily VMT per capita/employee (from K-H Memo Table 1)	17.46	16.48
2	Number of Residents/Employees (from K-H Memo Page 3)	15,893	7,130
3	Residential and Employee VMT (Row 1 x Row 2)	277,492	117,502
4	Annual VMT (Row 3 x 320 days/year)	88,797,440	37,600,768
5	Total VMT Analyzed: Residential + Employee (Note that some of the VMT is double counted in Resident and Employee)	126,398,208	
6	Percent of VMT Analyzed for Residents versus Employees (Row 4 / Row 5)	70.3 %	29.7 %
7	Total Forecast Project-Related VMT from Traffic Study (Shown in Table 1-1)	120,083,520	
8	Residential and Employee VMT in Traffic Study (Row 6 x Row 7)	84,418,715	35,664,805
9	Percent Resident and Employee VMT Reduction (K-H Memo Table 2 and also shown in Table 4-2)	- 3.0 %	- 12.3 %
10	VMT Reduction (Row 8 x Row 9)	- 2,532,561	- 4,386,771
11	Total VMT Reduction (Sum of Row 10 Resident and Employee)	- 6,919,332	
12	Percent Total VMT Reduction for Project-Related VMT (Row 11 / Row 7)	**- 5.8 %**	

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Table 4-4: Calculation of VMT Benefit from Additional Transportation Mitigation for Alternative 2 Cumulative VMT

Index	Measure	Residents	Employees
1	Daily VMT per capita/employee (from K-H Memo Table 1)	13.97	13.31
2	Number of Residents/Employees (from K-H Memo Page 3)	15,893	7,130
3	Residential and Employee VMT (Row 1 x Row 2)	222,025	94,900
4	Annual VMT (Row 3 x 320 days/year)	71,048,000	30,368,000
5	Total VMT Analyzed: Residential + Employee (Note that some of the VMT is double counted in Resident and Employee)	101,416,000	
6	Percent of VMT Analyzed for Residents versus Employees (Row 4 / Row 5)	70.1 %	29.9 %
7	Total Forecast Cumulative VMT from Traffic Study (Shown in Table 1-1)	81,557,862	
8	Residential and Employee VMT in Traffic Study (Row 6 x Row 7)	57,172,061	24,385,801
9	Percent Resident and Employee VMT Reduction (K-H Memo Table 2 and also shown in Table 4-3)	- 3.0 %	- 12.3 %
10	VMT Reduction (Row 8 x Row 9)	- 1,715,162	- 2,999,454
11	Total VMT Reduction (Sum of Row 10 Resident and Employee)	- 4,714,616	
12	**Percent Total VMT Reduction for Cumulative VMT (Row 11 / Row 7)**	**- 5.8 %**	

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Table 4-5: Comparison of BAU and Jackson Township ROG and NO_x Annual Mobile-Only Emissions for Alternative 2 When Additional Transportation Mitigation is Included

Index	VMT Scenario	ROG	NO_x
1	BAU Alternative 2 Annual Mobile-Only Emissions	32.6 tpy	34.9 tpy
2	Project-Related VMT Alternative 2 Annual Mobile-Only Emissions	20.3 tpy	21.1 tpy
3	Percentage Reduction in Emissions due to Additional Transportation Mitigation (From Table 4-3)	- 8.1%	- 8.2%
4	Emission Reduction from Additional Transportation Mitigation (Row 2 x Row 3)	- 1.6 tpy	- 1.7 tpy
5	Net Emissions (Row 2 less Row 4)	18.7 tpy	19.4 tpy
6	**Project-Related Mobile Percent Reduction from BAU ((Row 5 – Row 1) / Row 1))**	**- 42.6 %**	**- 44.4 %**
7	Cumulative VMT Alternative 2 Annual Mobile-Only Emissions	15.3 tpy	15.3 tpy
8	Percentage Reduction in Emissions due to Additional Transportation Mitigation (From Table 4-4)	- 5.8 %	- 5.8 %
9	Emission Reduction from Additional Transportation Mitigation (Row 7 x Row 8)	- 0.9 tpy	- 0.9 tpy
10	Net Emissions (Row 7 less Row 9)	14.4 tpy	14.4 tpy
11	**Cumulative Mobile Percent Reduction from BAU ((Row 10 – Row 1) / Row 1))**	**- 55.8 %**	**- 58.7 %**

4.3 ADDITIONAL QUANTIFIED NON-TRANSPORTATION RELATED EMISSION REDUCTIONS

The previous AQMP and GHGRP Revision 2 prepared in May 2019 included the following non-transportation mitigation measures for which emission reductions were quantified:

- High efficacy public outdoor lighting (GHGRP).
- Energy efficient appliances (GHGRP).
- Energy efficient boilers (AQMP and GHGRP).
- Residential electric hot water heaters (AQMP and GHGRP).
- Non-residential electric vehicle charging stations (AQMP and GHGRP).
- Residential electric vehicle charging stations (AQMP and GHGRP).

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However, since May 2019, SMAQMD and Sacramento County adopted Best Management Practices (BMPs) to reduce GHG emissions. BMP1 eliminated natural gas infrastructure for new projects and BMP2 requires all projects to meet CalGreen Tier 2 standards except EV-capable spaces shall be EV-ready. The newly adopted BMPs were the impetus for Revision 3 to the GHGRP (prepared in January 2021). Furthermore, after May 2019 SMUD committed to 100 percent renewable energy by 2030.

Although the BMPs are not optional, credit for ROG and NO_x emission reductions that would occur under the BMPs are creditable because applicants can choose not to implement the BMPs and achieve emission reductions equivalent to the BMPs through other measures. However, because SMUD committed to 100 percent renewable energy, additional ROG and NOx emission reductions from electricity generation cannot be taken. This eliminates credits taken in the previous AQMP from high efficacy public outdoor lighting and electric appliances. There will be non-mobile emission reductions from elimination of natural gas infrastructure, which would eliminate emissions from natural gas-fueled appliances, boilers, and residential hot water heaters. Credit for these reductions is not shown herein and would result in greater total NO_x and ROG reductions.

Credit is shown for non-residential and residential EV charging stations. Revision 3 to the GHGRP committed to installing a total of 690 non-residential EV charging stations and to pre-wiring a total of 77 percent of multi-family housing for EV charging. (BMP2 requires only 20 percent of multi-family housing be pre-wired). As part of Revision 4 to the GHGRP, the Applicant has committed to installing another 115 non-residential EV charging stations for a total of 805 stations serving 1,610 parking spaces. ROG and NO_x emission reductions resulting from this additional mitigation are calculated as described below and shown in Appendix G.

4.3.1 Non-residential Electric Vehicle Charging Stations

A total of 805 non-residential EV charging stations will be installed at Jackson Township parking spaces at commercial, retail, office, and school parking lots. Each electric vehicle charging station has two connections, so, as incorporated in Appendix G, a total of 1,610 parking spaces will be served by the 805 EV charging stations.

For the emission reduction calculation, it was assumed that each EV connection would be used an average of 4 hours per day at a charging rate of 6 kWh per hour. The 4-hour per day value is based on the average observed actual session length (one vehicle in a session) of 4 hours and 19 minutes for the period April 21, 2009 through June 23, 2022 at EV charging stations located at the Applicant's current properties. The 4 hours per EV charging station is a conservatively low value because it is likely that the

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stations will be used by more than one vehicle per day (so total charging at the station will be multiples of 4 hours). Nevertheless, it was assumed that charging would occur at the stations only 4 hours per day. The VMT from the amount of electrical energy charged would offset an equivalent VMT of gasoline-fueled driving. EMFAC 2021 includes electric efficiency of EVs (see Appendix G) and was used in the emission calculations. Only light duty autos and light and medium duty trucks were included in the calculations assuming that only those vehicle types would use the non-residential charging stations in the Jackson Township parking lots. The non-residential EV charging stations offset about 43.3 million miles of gasoline-fueled travel. EMFAC 2021 was used to determine emission factors (grams per mile) for calendar year 2040 from those same gasoline-fueled vehicle types (see Appendix G).

4.3.2 Residential Electric Vehicle Charging Stations.

All residential low density and medium density single-family dwelling units (3,540 dwelling units for Alternative 2) and 20 percent of high density multi-family dwelling units (20 percent of 2,150 dwelling units) must be pre-wired for EV charging per BMP2. However, the Applicant has committed to pre-wiring an additional 57 percent of multi-family dwelling units (for a total of 77%) and credit can be taken for the entire 77% of multi-family and all of the single-family housing pre-wiring . As noted below, by 2040, most of the homeowners will take advantage of the pre-wiring and install charging stations for EVs. The following discussion and Appendix G show the calculations for the emission reductions that would result from the pre-wiring.

It is difficult to predict actual EV use 18 years into the future (calendar year 2040), because consumers choose their vehicle types based on a myriad of factors, some of which are legislatively and regulatorily driven, some are market driven, and some are individual choice. The major regulatory driver is the commitment that by calendar year 2035, one hundred percent of all new light duty vehicles (light duty autos and light duty trucks) sold in California must be zero emission vehicles (ZEV); either EV, plug-in hybrid EV (PHEV), or fuel cell electric vehicles (FCEV). In April 2022 CARB published a proposed Advanced Clean Cars II (ACC II) regulation that will require ZEVs for at least 35 percent of new light duty vehicle sales in 2026 and increasing by about 8 percentage points per year until 2035 where 100 percent of light duty vehicle sales must be ZEV[11]. The proposed regulations allow manufacturers to meet their ZEV requirement with up to 20 percent PHEVs. There is no cap on FCEVs, but CARB forecasts FCEV to be a small percentage of the ZEV fleet, with only 0.2% of ZEVs being FCEVs in 2021[12]. Accordingly, it was

[11] CARB, 2021. Advanced Clean Cars II Regulations Initial Statement of Reasons, April 12, 2022. Page 9, ES-Figure 1.

[12] Ibid. Page 19, Figure 2.

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assumed that in 2040, 100 percent of new light duty vehicle sales would be EV or PHEV. For purposes of ACC II, CARB defines light duty vehicles as automobiles and light duty trucks with a gross vehicle weight rating of 8,500 pounds or less[13], which is equivalent to the LDA, LDT1, and LDT2 vehicle categories in EMFAC 2021 (categories based on EMFAC 2007).

To estimate the number of homes that would actually have an EV and charge it at home, the EMFAC 2021 forecast vehicle type and model year population distribution for Sacramento County in 2040 was used along with the percent ZEV requirements from the proposed ACC II. EMFAC 2021 does not account for ACC II because it includes only regulations that are in place when the model was developed. Table 4-6 shows the EMFAC 2021 forecast of the number of light duty vehicles in 2040. To estimate the number of EVs, a percent EV assumption by model year was made as follows:

- Model years 1966 to 2012: zero percent EV is assumed. EMFAC does show some EV for those model years, but the quantity is in the 0.01 percent range, thus zero was assumed.
- Model years 2013 to 2020: EMFAC percent EV is used, which is based on actual California sales data.
- Model years 2021 to 2025: 12 percent EV sales are assumed, which is the same assumption EMFAC 2021 uses for all model years after 2020.
- Model years 2026 to 2034: the percent EVs is based on the ACC II ZEV requirements, which is 35 percent in 2026 increasing by 8 percent each year.
- Model years 2035 to 2040: 100 percent EV is assumed based on the ACC II ZEV requirements.

ACC II allows up to 20 percent PHEV to provide manufacturers flexibility, but notes that the PHEV share of the market has declined in recent years[14], PHEVs will likely be more expensive than EVs and that manufacturers are not planning to use the 20 percent PHEV allowance[15]. Furthermore, ACC II requires PHEVs to have 4 to 5 times greater EV-only mileage range than current EVs[16]. ACC II also requires more convenient EV charging capability than current PHEV models[17]. All of these features encourage PHEV drivers to charge their vehicle batteries rather than relying on the auxiliary engine. So, it was assumed that if a person purchased a PHEV, they would, in fact, use their home charger (especially as it will already be pre-wired).

[13] Ibid., Page 65, Footnote 328.
[14] Ibid., Page 56.
[15] Ibid., Page 59.
[16] Ibid., Page 59, Table III-4.
[17] Ibid., Pages 50 - 53.

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Table 4-6: Light Duty Vehicle Counts by Model Year in Sacramento County

Forecast by EMFAC for Calendar Year 2040

Model Year	Number of Light Duty Vehicles	% EV Sales	Number of EVs	Model Year	Number of Light Duty Vehicles	% EV Sales	Number of EVs
1996	1,478	0%	0	2019	12,157	6.7%	816
1997	1,876	0%	0	2020	11,129	8.6%	958
1998	2,037	0%	0	2021	15,486	12%	1,858
1999	2,099	0%	0	2022	20,646	12%	2,478
2000	2,462	0%	0	2023	23,417	12%	2,810
2001	2,454	0%	0	2024	26,413	12%	3,170
2002	2,452	0%	0	2025	29,841	12%	3,581
2003	2,429	0%	0	2026	33,073	35%	11,576
2004	2,442	0%	0	2027	36,546	43%	15,715
2005	2,744	0%	0	2028	39,495	51%	20,142
2006	2,776	0%	0	2029	42,605	59%	25,137
2007	2,864	0%	0	2030	45,191	68%	30,730
2008	2,343	0%	0	2031	47,921	76%	36,420
2009	1,656	0%	0	2032	49,690	82%	40,746
2010	1,999	0%	0	2033	51,756	88%	45,546
2011	2,392	0%	0	2034	53,102	94%	49,916
2012	3,350	0%	0	2035	54,362	100%	54,362
2013	4,897	1.7%	82	2036	54,942	100%	54,942
2014	5,511	2.0%	112	2037	54,447	100%	54,447
2015	7,729	1.6%	126	2038	52,923	100%	52,923
2016	9,052	1.9%	171	2039	49,671	100%	49,671
2017	10,888	3.7%	400	2040	39,774	100%	39,774
2018	12,282	5.3%	648			**Total**	**599,255**

Table 4-6 shows an estimated number of 599,255 EVs in 2040 in Sacramento County out of a total 934,801 light duty vehicles forecast by EMFAC, or 64.1 percent EV. It was assumed that each of single-family and multi-family home will have a light duty vehicle, and therefore, that 64.1 percent of the homes will have an EV or PHEV and will use a home charger by 2040.

The above analysis assumes that the model year distribution in 2040 does not change from that forecast by EMFAC 2021. It is possible that Sacramento County drivers will more rapidly embrace ZEV technology and replace their conventional-fueled cars more frequently than required by the ACC II regulations. But it is also possible that after 2035 drivers hold on to their conventional fueled vehicles longer because they do not want ZEVs. Considering that by 2035 consumers will have no choice but to purchase a ZEV, that all Jackson Township single-family and 77 percent of multi-family homes will be pre-wired for EV

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charging, and that by 2040 EV charging will likely become simply a matter of plugging in a 110-volt or 220-volt cord;[18] it is reasonable to assume that residents of Jackson Township will embrace ZEVs at a higher frequency than required and the percentage of ZEVs will be greater than the 64.1 percent calculated.

The 64.1 percent value is also an underestimate because there are electrically powered medium duty trucks that will also be owned and charged at home by Jackson Township residents, but the above ACC II calculations only accounted for light duty autos and light duty trucks. But to be conservative, it was assumed that if a resident owned an electric medium duty truck, they would not purchase an EV light duty auto or light duty truck.

In light of the above, it is reasonable that residents of Jackson Township will embrace ZEVs at a much higher frequency than required and the percentage of ZEVs will be greater than the 64.1 percent calculated. Accordingly, a reasonably conservative assumption of 75 percent residential ZEVs was made

Appendix G-1 shows the calculations for the emission reductions that would result from the pre-wiring and the 75 percent actual EV assumption. To calculate the emission reduction, an average light duty VMT per Jackson Township household was first calculated from the Project-Related VMT and from the Cumulative VMT scenarios and the EMFAC forecasted VMT for Sacramento County that 77.1 percent of total VMT is produced in 2040 by light duty autos and trucks. Then 75 percent of the light duty vehicle VMT associated with the pre-wired households for which credit can be taken was calculated (i.e., 75 percent of all single-family housing plus 75 percent of 77 percent of the 2,150 multi-family dwelling units times the average light duty VMT per household) to represent the amount of electric VMT that would offset conventionally fueled VMT. The amount of emission reductions was calculated using EMFAC 2021 emission factors for only gasoline and diesel-fueled light duty automobiles and light and medium duty trucks.

Table 4-7 summarizes the magnitude of the emission reductions achieved through the 805 non-residential EV charging stations and the single-family and multi-family pre-wiring.

[18] Ibid.

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Table 4-7: Emission Reductions from Non-Residential and Residential EV Charging Stations

	ROG	NO_x
805 Non-residential EV Charging Stations (Applies to both Project-Related and Cumulative VMT Scenarios)	- 0.20 tpy	- 1.17 tpy
77% Pre-wiring for EV Chargers for Project-Related VMT	- 0.29 tpy	- 1.71 tpy
Total for Project-Related or Cumulative VMT	**- 0.49 tpy**	**- 2.88 tpy**
77% Pre-wiring for EV Chargers for Cumulative VMT	- 0.20 tpy	- 1.16 tpy
Total for Cumulative VMT	**- 0.40 tpy**	**- 2.33 tpy**

Note that the 2022 version of California Green Building Code (CCR Title 24), effective January 1, 2023, also requires EV chargers for non-residential and multi-family housing. Should Title 24 mandate more EV chargers than committed to herein, the number of EV chargers will be increased to meet the Title 24 requirements. If this occurs, the emission reductions will be greater than shown in Table 4-7.

4.4 EMISSION REDUCTIONS ASSOCIATED WITH THE SACRAMENTO RACEWAY

The Jackson Township Specific Plan includes land owned and operated by the Sacramento Raceway. If Jackson Township is completely developed, the Sacramento Raceway will cease operations and emissions associated with the Raceway will be eliminated. In April 2021, a study was conducted to assess the potential health effects of Raceway operations[19]. This study estimated the ROG and NO_x emissions from the Raceway, including spectators, race vehicle transport, and racing vehicle emissions. The study found annual ROG emissions of 1,888 pounds per year (lb/yr) or 0.94 tpy and annual NO_x emissions of 5,236 lb/yr or 2.62 tpy associated with Raceway operations.

4.5 ADDITIONAL NON-QUANTIFIED MITIGATION

The project includes a number of additional features that also reduce potential emissions, but the benefit of those measures is not incorporated into the emission estimates and calculated reductions. Among the additional measures proposed by the Applicant are the following. It is recognized that some of the following measures only indirectly reduce ROG and NO_x, as they are primarily GHG reduction measures.

[19] Kleinfelder, 2021. *Air Quality Health Effects Assessment of the Sacramento Raceway, April 19, 2021.*

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- An over-statement of VMT because the VMT per resident and per employee values do not account for the mutually beneficial interaction of the Jackson Township Specific Plan with other existing and/or approved land uses that result in reduced VMT. For example, Jackson Township schools and retail will serve not only Jackson Township residences but existing residences in the area, thus reducing the distance traveled by existing persons.
- An over-statement of employee VMT because the VMT per employee does not account for the current shift to work-from-home and remote working/learning that is occurring.
- Low flow bathroom fixtures, kitchen fixtures, showers, and toilets in all residential units and commercial buildings.
- Reduced square footage of residential turf due to the increased housing density.
- Water efficient irrigation systems and water efficient landscaping for the non-residential areas.
- Some of the existing homes located within the Jackson Township Specific Plan will be replaced with more modern and energy efficient homes.

And most significantly, all of the mobile-source emission estimates are over-stated and the benefit of EV charging stations under-stated because they do not account for the much larger electric vehicle penetration and other changes in transportation that will have to occur if California is to reach the 2050 GHG reduction goals. For example, the new (April 1, 2022) Federal passenger car and light duty truck fleet wide average fuel economy standard of approximately 49 miles per gallon (mpg) for new vehicles by calendar year 2026 has not been accounted for. Thus, prior to full development of Jackson Township in 2040 there will be greater ROG and NO_x emission reductions and much lower total emissions than stated herein.

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5 PARTICULATE MATTER REDUCTIONS

The mitigation measures that reduce NO_x and ROG emissions also greatly reduce operational particulate matter (PM) emissions because for the Jackson Township Specific Plan, NO_x, ROG, and PM emissions are all associated with the same sources.

Operational annual PM emissions associated with BAU were estimated with the CalEEMod emissions model and compared to PM emissions for Alternative 2 for the Project-Related and Cumulative VMT scenarios. The CalEEMod reports are shown in Appendix C for the proposed project and Appendix D for BAU. The results are shown in Table 5-1 for fugitive and exhaust PM_{10} and $PM_{2.5}$. PM_{10} is particulate matter with a mean aerodynamic diameter of 10 microns or less and $PM_{2.5}$ is particulate matter with a mean aerodynamic diameter of 2.5 microns or less. Fugitive PM emissions are primarily due to re-suspension of road dust by vehicle traffic. Exhaust PM emissions are associated with combustion of fossil fuels in both mobile and non-mobile equipment.

Table 5-1: Comparison of BAU and Jackson Township PM Annual Emissions for Alternative 2

VMT Scenario	Fugitive PM_{10} (tpy)	Exhaust PM_{10} (tpy)	Total PM_{10} (tpy)	Fugitive $PM_{2.5}$ (tpy)	Exhaust $PM_{2.5}$ (tpy)	Total $PM_{2.5}$ (tpy)
BAU Original Project Annual Emissions	78.2	1.1	79.4	20.9	1.1	22.0
Project-Related VMT Annual Emissions	44.6	1.0	45.6	11.9	1.0	12.9
Percent Reduction for Project-Related VMT from BAU	**- 43.0%**	**- 9.1%**	**- 42.6%**	**- 43.1%**	**- 9.1%**	**- 41.4%**
Cumulative VMT Annual Emissions	30.2	1.0	31.1	8.1	1.0	9.0
Percent Reduction for Cumulative VMT from BAU	**- 61.4%**	**- 9.1%**	**- 60.8%**	**- 61.2%**	**- 9.1%**	**- 59.1%**

Note that the total PM may not exactly equal the sum of fugitive plus exhaust emissions due to round off differences.

There are no thresholds for PM reductions, but the mitigation built into the proposed project results in a reduction of total PM emissions ranging from 41 to 61 percent from BAU. The reduction is due to reduced vehicle travel that result from the mitigation measures designed into the Project. The VMT projected in the Traffic Study for Alternative 2 as proposed is about 43 to 61 percent less than the VMT calculated by CalEEMod for BAU. The reduction in vehicle travel and emissions of PM are the same measures that result in large reductions of NO_x and ROG emissions. The features that reduce emissions

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include, but are not limited to, those listed immediately below. Where applicable, the related CAPCOA[20] greenhouse gas mitigation measures (T-xx), the SMAQMD[21] land use emission reduction measures (LUT-xx), and the Sacramento County Revised Final Draft Community Wide Climate Action Plan (CAP)[22] measures (GHG-xx) are noted. However, the CAPCOA, SMAQMD, and Sacramento County emission reduction percentages for the noted measures were not used, rather the Traffic Study VMT was used to calculate emissions.

LOCATION (T-1, T-2, GHG-22):

- Project is located in a suburban center within approximately 10 miles of the Sacramento downtown central business district and less than 5 miles from other existing high-density commercial/job center areas (LUT-2 and LUT-3).
- Project is located adjacent to other planned developments such that single-use trips are minimized, i.e., there are more pass-by and diverted trips (LUT-3 and LUT-4).

DENSITY/MIX (T-1, T-2, T-3, T-4, GHG-22):

- Project provides a compact mix of land uses in close proximity to each other with a highly connected street and trail network (LUT-3).
- Project design is for high and medium density housing for over half of the total project dwelling units (LUT-1).
- Housing density is better than 9.5 dwelling units per acre (LUT-1).
- Project includes below market rate housing (LUT-6).
- Approximately 15 percent of the total commercial square footage is dedicated to a mixed-use facility that combines residences and commercial/retail uses (LUT-3).

INTERNAL PROXIMITY (T-31-A, GHG-15, GHG-22):

- Most residential units are within 1,320 feet (one-quarter mile) of a neighborhood park, open space, school, and/or bicycle/pedestrian trail (LUT-3).
- Most residential units are less than one-half mile from shopping and services (LUT-4).

[20] CAPCOA, 2021. Op cit.

[21] SMAQMD, 2021, Op cit.

[22] Sacramento County, 2022. Op. cit.

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- Project design includes locating at least four schools within the project boundaries such that most students can walk to a local school (LUT-3 and LUT-4).
- Project design includes at least eight parks within the project boundaries such that residents can walk/bike to enjoy the parks (LUT -3 and LUT-4).

MULTI- MODAL EFFICIENCY (T-10, T-17, T-18, T-29, T-25, T-26, T-32, T-37, T-47, GHG-14, GHG-17):

- Project design is based on a network of streets in a grid pattern (LUT-8).
- Project design includes access to high frequency bus service that connects to the Watt/Manlove light rail station (LUT-5).
- Bus routes are signalized in order to avoid traffic delays (T-27).
- Project design promotes a multi-modal system that makes public transit, walking, and bicycling viable and attractive travel choices for residents and employees. Features include:
    - Adequate bike parking at non-residential locations, including the transit center and park and ride locations (T-34, T-47).
    - Showers/lockers and other end of trip facilities at non-residential buildings (T-10).
    - Long-term bike parking facilities (T-34, T-47).
- Project includes an extensive pedestrian path and trail system that is convenient and accessible from homes, school, parks, employment, and shopping (LUT-8).
- Pedestrian and bike paths minimize any barriers to pedestrian/bicycle use (e.g., fences, berms and other impediments are eliminated where possible) (LUT-8, T-18, T-20).

TRANSIT SUPPORTIVE (T-3, T-5, T-6, T-9, T-25, T-27, T-28, T-32, T-38; GHG-14, GHG-22):

- Project includes an on-site transit center and park and ride facilities along the designated transit route of Jackson Highway (LUT-5, T-3).
- Project subsidizes bus rapid transit lanes on Jackson Highway (T-27).
- Project funding and design will result in bus headways of 15 minutes or better (T-26).
- Project includes joining a Transportation Management Association (TMA) funded through assessments. Although the project will include a TMA, no VMT reduction from the TMA has been calculated or included in the Traffic Study.
- Project includes assessments for regional transportation improvements (T-27).

Elimination of the Sacramento Raceway will also reduce PM_{10} emissions by 3745 lb/yr (1.9 tpy) and $PM_{2.5}$ emissions by 977 lb/yr (0.5 tpy).

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6 CONSTRUCTION EMISSIONS

Although not part of an AQMP, the SMAQMD requests that construction emissions of ROG, NO_x, and PM be estimated where possible. To estimate construction emissions CalEEMod was run for Alternative 2 with default parameters. The default parameters were then adjusted as needed to match project constraints.

For the CalEEMod emission model, construction was assumed to start on January 1, 2025 and be complete by December 31, 2039. When CalEEMod was run with default parameters, the model estimated total construction duration of 18,765 days. That is obviously an over-estimate. The planned construction duration is 3900 days (260 days per year times 15 years), or 21 percent of the default. Accordingly, the individual CalEEMod default construction phase durations were adjusted by a factor of approximately 0.21 and such that the total construction duration (not including architectural coating) equaled 3900 days. Architectural coating was assumed to occur during the entire construction period. The resulting adjusted construction durations are shown in Table 6-1.

Table 6-1: Default and Adjusted Construction Duration for Alternative 2

Construction Phase	Default Duration (days)	Adjusted Duration (days)	Rationale for Adjustment
Demolition	900	0	There is essentially no demolition required at the proposed location
Site Preparation	540	125	Applied factor of 0.23 to reflect the ratio of planned versus default total construction duration
Site Grading	1,395	322	
Building Construction	13,950	3,224	
Paving	990	229	
Architectural Coating	990	3,224	Assumed architectural coating could occur over approximately the same duration as building construction

The CalEEMod default construction worker and vendor trip frequencies were also adjusted to match the proposed project as shown in Table 6-2. The trip lengths were not adjusted.

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Table 6-2: Default and Adjusted Worker and Vendor Construction Trips for Alternative 2

Construction Phase	Default Trips per Day		Adjusted Trips per Day		Rationale for Adjustment
	Worker	Vendor	Worker	Vendor	
Demolition	15	0	0	0	There is essentially no demolition required at the proposed location
Site Preparation	18	0	18	0	No change
Site Grading	20	0	20	0	No change
Building Construction	6,636	2,167	4,193	1,018	Trip frequencies are a function of the number of dwelling units and square feet of building. CalEEMod trip frequency functions and planned dwelling units/square footage were used to calculate project-specific trip frequencies
Paving	15	0	15	0	No change
Architectural Coating	1,327	0	839	0	Per CalEEMod, assumed architectural coating trips are 20% of Building Construction

Finally, the acreage of site preparation and grading were changed from the default to reflect the project-specific acreage of land that would be prepared and graded. It was assumed that all of the project area would be prepared and graded except for the parks, open space, and agricultural area: 907.6 acres prepared and graded for Alternative 2. In the absence of a detailed construction plan, the remainder of the construction parameters in CalEEMod were left at their default settings.

Table 6-3 lists the CalEEMod default numbers of equipment and hours of usage for each construction phase. The data in Table 6-3 were provided to a design engineer/construction manager for reasonableness evaluation. He concluded that the default parameters were conservative over-estimates of the duration and/or numbers and usage of construction equipment. Specifically, he concluded the following[23]:

- There is essentially no Demolition, consistent with Table 6-2.
- Multiple teams will likely be working on Site Preparation simultaneously, and thus on average the modeled 7 pieces of equipment operating a total of 8 hours per day, are sufficient to complete the site preparation in the modeled 0.5 years shown in Table 6-2.
- The modeled equipment list for Grading is typical and sufficient to complete grading in the modeled time period (1.2 years). More equipment could possibly be used to shorten the time

[23] *Personal Communication to Kleinfelder, Mr. Steve AuClair, PE, April 13, 2019.*

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period to less than 1.2 years; but given the limited amount of grading equipment in the Sacramento area, the modeled duration, equipment numbers and usage are reasonable.

- The default equipment usage rates for Building Construction equipment are an over-estimate. For example, a crane would not normally be used continuously for 7 hours per day; it would be used to load materials for a brief period and then left idle for the rest of the day. Thus, the emissions for Building Construction are likely over-stated.
- The amount of Paving equipment and use duration shown in Table 6-2 is a large over-estimate.
- Architectural Coating is an on-going activity during Building Construction as there are coating applications other than the finish coats on building surfaces; thus, assuming a duration equivalent to the Building Construction duration is reasonable.

Table 6-3: CalEEMod Default Construction Equipment and Hours of Usage

Construction Phase	Equipment List	Number of Pieces of Equipment	Usage Hours Per Day	Total Construction Days (Years)*
Demolition				
There is essentially no demolition needed				
Site Preparation				
	Rubber Tired Dozers	3	8	125 (0.5 yrs)
	Tractors/Loaders/Backhoes	4	8	125 (0.5 yrs)
Grading				
	Excavators	2	8	322 (1.2 yrs)
	Graders	1	8	322 (1.2 yrs)
	Rubber Tired Dozers	1	8	322 (1.2 yrs)
	Scrapers	2	8	322 (1.2 yrs)
	Tractors/Loaders/Backhoes	2	8	322 (1.2 yrs)
Building Construction				
	Cranes	1	7	3,224 (12.4 yrs)
	Forklifts	3	8	3,224 (12.4 yrs)
	Generator Sets	1	8	3,224 (12.4 yrs)
	Tractors/Loaders/Backhoes	3	7	3,224 (12.4 yrs)
	Welders	1	8	3,224 (12.4 yrs)
Paving				
	Pavers	2	8	229 (0.9 yrs)
	Paving Equipment	2	8	229 (0.9 yrs)
	Rollers	2	8	229 (0.9 yrs)
Architectural Coating				
	Compressors	1	6	3,224 (12.4 yrs)

* From Table 6-1 and assuming 260 construction days per year.

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Table 6-4 below presents the construction emissions compared to the current (as of April 2022) SMAQMD significance thresholds[24]. The Alternative 2 values in Table 6-4, along with their corresponding season or year of the maxima, were taken from the CalEEMod reports in Appendix E and depict the maximum annual and maximum daily emissions during the construction period. All of the emissions are less than the significance thresholds, except for daily NO_x that has no threshold.

Table 6-4: Maximum Daily Construction Emissions Compared to Significance Thresholds

	ROG (lb/day)	NO_x (lb/day)	Total PM_{10} (lb/day)	Total PM_{10} (tpy)	Total $PM_{2.5}$ (lb/day)	Total $PM_{2.5}$ (tpy)
Alternative 2 Emissions	57.3 (Summer)	68.5 (Winter)	45.4 (Winter)	5.7 (2027)	12.9 (Winter)	1.6 (2027)
SMAQMD Significance Thresholds	None	85	80	14.6	82	15
Exceed Threshold?	**N/A**	**No**	**No**	**No**	**No**	**No**

[24] *http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable4-2020.pdf*

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AUGUST 25, 2022

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REVISION 4 - UPDATED GREENHOUSE GAS REDUCTION PLAN FOR THE PROPOSED JACKSON TOWNSHIP SPECIFIC PLAN

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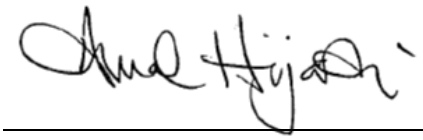

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REVISION 4 - UPDATED GREENHOUSE GAS REDUCTION PLAN FOR THE PROPOSED JACKSON TOWNSHIP SPECIFIC PLAN

1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

Tsakopoulos Investments (the Applicant) is proposing the Jackson Township Specific Plan (Jackson Township) encompassing approximately 1,391 acres of land located in southeastern Sacramento County, east of Excelsior Road, north of Jackson Highway, and west of Eagles Nest Road. The proposed project is located approximately ten miles southeast of the Sacramento central business district. The Jackson Township project is a mixed-use development that includes a mix of different housing types and commercial and retail land uses. The Proposed Project (formerly referred to as the California Environmental Quality Act, CEQA, Alternative 2) is evaluated in this report.

In August 2015, an Air Quality Mitigation Plan (AQMP) and a Greenhouse Gas Reduction Plan (GHGRP) were prepared for the Jackson Township Specific Plan. The 2015 AQMP/GHGRP was based on then-current emission models and Guidance and was for the Jackson Township project-alone scenarios. Since that time, there have been new models, data, and Guidance published, and the Sacramento County Planning Division (PER) wishes to also evaluate the CEQA cumulative scenarios. Project-alone scenarios, referred to herein as Project-Related vehicle miles traveled (VMT), assume that Jackson Township is the only project developed in the area. Cumulative scenarios (Cumulative VMT) are based on the assumption that there will be other projects developed in the area, and thus the VMT associated with Jackson Township is less because drivers can make combined trips (e.g., stopping by a supermarket on the way home from work). The proposed land uses for the Jackson Township Project-Related scenario are the same as for the Cumulative scenario; only the VMT is different.

In February 2019 an update to the August 2015 AQMP/GHGRP that was based on the then current (as of January 2019) models, data, and Guidance was submitted to PER and the Sacramento Metropolitan Air Quality Management District (SMAQMD). In March 2019, the SMAQMD requested that the Applicant submit a revision to the February 2019 AQMP/GHGRP to refine some of the mitigation calculations, and Revision 1 was submitted April 16, 2019. In May 2019, SMAQMD requested some additional changes to further clarify some of the mitigation measures, and Revision 2 to the AQMP/GHGRP was submitted. Then on November 25, 2020, Revision 3 to the GHGRP (alone, not the AQMP) was prepared and

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submitted in response to comments made on the Draft Environmental Impact Report and newly adopted GHG thresholds and standards. In January 2021, GHGRP Revision 3a was prepared to address the GHG significance thresholds published by the SMAQMD[1] and adopted by the County of Sacramento on December 16, 2020. Revision 3a incorporated comments made by the SMAQMD and PER on the Revision 3 GHGRP.

The December 2020 SMAQMD GHG thresholds (which are still in effect as of April 2022) require that the Jackson Township Specific Plan Alternative 2 meet both Tier 1 and Tier 2 Best Management Practices (BMPs). Those BMPs are addressed below in Section 1.2. The third BMP was promulgated considering implementation of Senate Bill 743 (SB 743) requirements by the local jurisdiction, the County in this case. SB 743 states that transportation impacts under CEQA may no longer be measured with automobile delay and level of service (LOS) after July 1, 2020. SB 743 is designed to encourage reduction of GHG emissions from transportation, and since the third BMP published by SMAQMD is aimed at meeting SB 743, the thresholds established by the third BMP for the project will be referred to as the SB 743 'target level.'

Since January 2021 there have been a number of additional changes to the traffic and emission models, and updated Guidance has been published by the California Air Pollution Control Officers Association (CAPCOA) and SMAQMD. Thus, in April through June 2022, revised AQMP and GHGRP documents were prepared. The plans were separated into two individual documents, and this revised GHGRP is termed Revision 4.

This Revision 4 to the GHGRP addresses the following:

- Updated SMAQMD Guidance for AQMP and GHGRPs (Version 4.3)[2].
- Updated CAPCOA mitigation measures (CAPCOA 2021 Handbook)[3].
- New California Emissions Estimator Model (CalEEMod) version (Version 2020.4.0).
- Only the Proposed Project (Alternative 2) now requires evaluation.

[1] Greenhouse Gas Thresholds for Sacramento County, *SMAQMD, June 2020.*

[2] *SMAQMD, 2021. Recommended Guidance for Land Use Emission Reductions Version 4.3 (Operational Emissions.* Available at https://www.airquality.org/residents/ceqa-land-use-planning/mitigation. Accessed April 2022.

[3] CAPCOA, 2021. *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*. Available at https://www.airquality.org/residents/climate-change/ghg-handbook-caleemod. Accessed April, 2022.

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- Updated 2022 Traffic Study completed by PER with more current Project-Related and Cumulative VMT than examined in 2019.
- Change in Operational Year to 2040 (from 2035) and start of construction to 2025 (from 2020).
- Additional transportation related VMT reductions that were not analyzed as part of the updated Traffic Study.
- Additional non-transportation mitigation commitments made in the previous GHGRPs.
- Additional mitigation beyond that included in previous GHGRPs.

Kleinfelder, Inc. (Kleinfelder) prepared this GHGRP consistent with SMAQMD Guidance and PER direction. PER staff reviewed the calculations, methodology, and document.

For the GHGRP, the SB 743 requirement that new development VMT per resident and per employee are less than 85 percent of regional values was used. The VMT per resident and per employee are the metrics that must be used to determine significance under CEQA. If the SB 743 metrics cannot be met, then additional offsetting GHG emission reductions must be implemented to achieve an equivalent reduction to the SB 743 target level. This GHGRP demonstrates that the Jackson Township Specific Plan GHG emissions are less than significant. In addition, the GHGRP provides an assessment of total (mobile plus non-mobile) GHG emissions as a point of information and shows that with the planned mitigation, net GHG emissions are less than zero (a net positive benefit for GHG emissions).

VMT per resident and per employee were calculated as part of the 2022 Traffic Study prepared for PER. Mobile GHG emissions were calculated with VMT data provided in the Traffic Study and emission factors (gram per mile, g/mile) obtained from the current (as of April 2022) EMFAC 2021 (Version 1.0.1) emissions model. Non-mobile and construction GHG emissions were calculated from the current (as of April 2022) version of CalEEMod (Version 2020.4.0). The CalEEMod model uses details regarding specific land uses (e.g., strip mall) and various additional parameters (e.g., vehicle trip frequency and length associated with a land use and emission factors for vehicles) to calculate annual GHG emissions (metric tons per year, MT/yr).

For Jackson Township, in early 2022, PER had a comprehensive Traffic Study completed that calculated the amount of traffic associated with both Jackson Township and other Jackson Highway projects and included induced VMT that is the result of additional vehicle travel that is the result of improved roads in the proposed Jackson Township area, but the VMT is not caused by the project itself. The Traffic Study analyzed effects of Jackson Township and the other projects on a regional Project-Related and a regional Cumulative basis, starting with the existing conditions and then adding Jackson Township and the other

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projects. The Traffic Study also accounted for most of the large number of design features incorporated into Jackson Township that greatly reduce the amount of VMT. These features include, but are not limited to, the location, density/mix of land uses, internal proximity, multi-modal efficiency, and transit supportive measures. Although the Traffic Study accounted for most of the VMT mitigations included in the Project, it did not account for all. The added benefit of these study-omitted measures is evaluated after the Traffic Study and are discussed in Section 2.2.

For non-mobile and construction GHG emissions, Kleinfelder ran CalEEMod with detailed land uses for Alternative 2, including parking lot areas, as provided by the Applicant. The detailed land uses entered into CalEEMod are discussed in Section 3. VMT was not used in the CalEEMod runs because mobile GHG emissions are calculated from the Traffic Study and EMFAC 2021 emission factors.

1.2 SB 743 TRANSPORTATION TARGET LEVEL

The SMAQMD GHG rules for large projects such as the Jackson Township Specific Plan require implementation of three BMPs:

- BMP 1 specifies that projects shall be designed and built without natural gas infrastructure.
- BMP 2 specifies that projects shall meet current CalGreen Voluntary Tier 2 standards, except that all electric vehicle (EV) capable (EV Capable) spaces shall instead be EV Ready. EV Capable means that the parking space will be installed with a raceway and electrical panel capable of supporting an EV charging station. EV Ready means that in addition to the raceway and panel, dedicated branch circuits, circuit breakers, and other electrical components will be installed to support future installation of charging stations but does not include installation of the charger itself. Current CalGreen Voluntary Tier 2 standards require 100 percent of single family and 20 percent of multi-family housing to be pre-wired to EV Ready.
- BMP 3 specifies that a project shall comply with the local jurisdiction's SB 743 requirements if they have been adopted. Sacramento County adopted SB 743 requirements on October 6, 2020. The Sacramento County program requires VMT per capita for a proposed project achieve a 15 percent reduction in regional VMT per resident and VMT per employee and that there shall be no net increase in retail VMT. The County program provides that if the VMT reduction standard cannot be met the County can find a significant and unavoidable impact and override such impact.

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The SMAQMD Guidance allows project proponents to demonstrate equivalent GHG emission reductions if the BMPs cannot be met, and if a Jackson Township entity requires natural gas access in the future, equivalent emission reductions will be needed to meet the BMP 3 requirement. The BMPs are not optional, but because applicants can use other measures to achieve emission reductions equivalent to the BMPs, all of the emission reductions are creditable.

On August 4, 2022, Kimley-Horn (K-H) prepared a memorandum for PER that evaluated Jackson Township Alternative 2 with respect to the SB 743 BMP 3 target level. The K-H memo also described the amount of VMT reduction that was not accounted for in the Traffic Study and that would occur from the additional mitigation planned for Jackson Township. The K-H memo is shown in Appendix A.

Table 1-1 shows the per capita VMT values for Jackson Township Alternative 2 when only the Traffic Study VMT is considered and when the additional transportation-related mitigation evaluated by K-H is included. Table 1-2 shows the additional transportation-related mitigation evaluated by K-H. Both Project-Related VMT and Cumulative VMT were evaluated. (The VMT mitigation shown in Table 1-2 is included in the results of Table 1-1.)

Table 1-1: Regional VMT Per Resident and Per Employee
When Additional Transportation Mitigation is Included

Land Use	VMT Per Resident	VMT Per Employee
Regional VMT No Project	20.20	16.04
Significance Target Level (15% below regional average)	*17.17*	*13.64*
Jackson Township Project-Related VMT based on Traffic Study	17.46	16.48
Additional Mitigation Reduction in VMT (Table 1-2, - 3.0% and -12.3%)	- 0.52	- 2.03
Jackson Township Project-Related VMT After Additional Transportation Mitigation	**16.94**	**14.45**
Below Significance Target Level?	Yes	No
Regional VMT Super Cumulative No Project	18.40	13.31
Significance Target Level (15% below regional average)	*15.64*	*11.31*
Jackson Township Cumulative VMT based on Traffic Study	13.97	12.68
Additional Mitigation Reduction in VMT (Table 1-2, - 3.0% and -12.3%)	- 0.42	- 1.56
Jackson Township Project-Related VMT After Additional Transportation Mitigation	**13.55**	**11.12**
Below Significance Target Level?	Yes	Yes

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Table 1-2: Additional Transportation Mitigation Included in the Alternative 2 Project

Measure	VMT per Resident % Reduction	VMT per Employee % Reduction
Mandatory Community-Wide TMA* Participation (M-3)	- 2.08 %	- 12.3%
Electric Bike Share (T-22-B)	- 0.05 %	NA
Electric Scooter Share (T-22-C)	- 0.06 %	NA
Adding Sidewalks (T-18)	- 1.0 %	NA
Total Percent Reduction**	**- 3.0 %**	**- 12.3 %**

* Transportation Management Association

** Reported total reduction may not sum to table entries due to roundoff differences.

With the additional transportation mitigation, the Jackson Township VMT per resident for both the Project-Related VMT and Cumulative VMT scenarios and VMT per employee for the Cumulative scenario are less than the significance target levels. However, the VMT per employee for the Project-Related scenario is greater than the significance target level, so additional mitigation of GHG will be implemented to meet that level as described in Section 2.3. The amount of required equivalent emission reductions is shown in Table 2-4 and amounts to 391 metric tons per year (MT/yr) GHG emissions[4]. Tables 1-4 and 5-6 shows that the proposed Jackson Township project includes more than 40,000 MT/yr of GHG emission reductions, thus, the SB 743 VMT per employee target level is easily met.

Note that the two VMT metrics (residential and employee) calculated by K-H are evaluated independently. Some of the same VMT is counted in both metrics, so if one adds the K-H memo residential VMT to the employee VMT, the total is greater than when the project VMT is evaluated as a whole single entity. For example, some of the Jackson Township residents work at businesses within Jackson Township, but that VMT is counted twice: once for the residential metric and once for the employee metric. There are other duplications in the VMT analysis between the two metrics, so they are evaluated separately. Furthermore, the VMT used in the two metrics do not account for mutually beneficial land uses that result in less VMT. The issues with the VMT are an inherent feature of the current VMT modeling and future modeling may be able to refine those limitations. This GHGRP is based on the only currently available VMT modeling and thus provides a conservative overestimate of the mitigation needed.

[4] Note that unless otherwise stated GHG emissions are in terms of carbon dioxide equivalent emissions (CO_2e).

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With respect to the no net increase in retail VMT requirement of BMP 3, PER distinguishes between local serving and regional serving retail. Local serving retail can be screened out of the VMT analysis and PER concluded that the Jackson Township meets the no net increase in retail VMT requirement.

1.3 CONSTRUCTION EMISSIONS

GHG emissions from construction activities are not generally considered a meaningful GHG impact because they are typically a one-time activity over a relatively short period of time compared to the operational life of a project, and because projects do not typically create "new" construction equipment or emissions (i.e., the construction equipment will be used somewhere else even if the proposed project is not constructed). However, as construction of the Jackson Township will occur over about a 15-year period, the associated GHG emissions are also assessed herein. The total construction emissions for the 15-year period estimated with the CalEEMod model were amortized over the life of the project assuming a 50-year lifetime[5] and added to the operational emissions, for a total of 65 years. Sixty-five years was used because there are operational emissions during the construction period. Section 4 discusses construction GHG emissions.

1.4 OPERATIONAL GHG EMISSIONS

Non-mobile operational GHG emissions were calculated from the CalEEMod emissions model for operational year 2040 and are discussed in Section 3.1. GHG emissions from mobile sources were calculated using EMFAC 2021 emission factors for calendar year 2040 (all model years, all vehicle types, and all fuel types) and the total Project VMT (for both the Project-Related and the Cumulative scenarios) as discussed in Section 3.2.

Table 1-3 shows the calculated mobile and non-mobile GHG emissions for Jackson Township when only the Traffic Study and no additional mitigation is considered. Table 1-3 shows GHG emissions calculated by CalEEMod for business as usual (BAU), which are the emissions that a typical project in Sacramento County would have when no mitigation is included. With only the Traffic Study mitigation, total emissions from the Jackson Township are from 41 to 66 percent less than BAU.

[5] *According to the NewBridge Specific Plan Greenhouse Gas Reduction Plan dated July 10, 2020, Footnote 15 on Page 23; 50 years is the most commonly used duration for building life-cycle analyses and is used by the European Union for building life spans for modern buildings.*

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Table 1-3: Total and Mobile-Only Annual BAU and Jackson Township GHG Emissions

VMT Scenario	Annual Non-Mobile GHG (MT/yr)	Annual Mobile GHG (MT/yr)	Total Operational GHG (MT/yr)
BAU Alternative 2 Annual Mobile-Only Emissions	12,890	63,703	76,593
Project-Related VMT Alternative 2 Annual Emissions	12,890	32,497	45,387
Percent Reduction from BAU for Project-Related VMT	**--**	**- 49.0 %**	**- 40.7 %**
Cumulative VMT Alternative 2 Annual Emissions	12,890	21,381	34,271
Percent Reduction from BAU for Cumulative VMT	**--**	**- 66.4 %**	**- 55.3 %**

The large reduction from BAU in vehicle travel and emissions of GHG are accomplished through a large number of Jackson Township project design features proposed by the Applicant. The features that reduce emissions include, but are not limited to, those listed immediately below. Where applicable, the related current (as of April 2022) CAPCOA[6] 2021 Handbook greenhouse gas mitigation measures (T-xx), the SMAQMD[7] land use emission reduction measures (LUT-xx), and the Sacramento County Revised Final Draft Community Wide Climate Action Plan (CAP)[8] measures (GHG-xx) are noted. However, the CAPCOA, SMAQMD, and Sacramento County emission reduction percentages for the noted measures were not used, rather the Traffic Study VMT was used to calculate emissions. Note that the Traffic Study is SMAQMD pre-requisite measure TS – Traffic Study. The figures and exhibits in Appendix L further illustrate some of the measures noted below.

LOCATION (T-1, T-2, GHG-22):

- Project is located in a suburban center within approximately ten miles of the Sacramento downtown central business district and less than five miles from other existing high-density commercial/job center areas (LUT-2 and LUT-3).
- Project is located adjacent to other planned developments such that single-use trips are minimized, i.e., there are more pass-by and diverted trips (LUT-3 and LUT-4).

[6] CAPCOA, 2021. Op cit.

[7] SMAQMD, 2021, Op cit.

[8] Sacramento County, 2022. *Revised Final Draft Community Wide Climate Action Plan, February 2022.* Available at https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/CAP.aspx. Accessed April 2022.

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DENSITY/MIX (T-1, T-2, T-3, T-4, GHG-22):

- Project provides a compact mix of land uses in close proximity to each other with a highly connected street and trail network (LUT-3).
- Project design is for high and medium density housing for over half of the total project dwelling units (LUT-1).
- Housing density is better than 9.5 dwelling units per acre (LUT-1).
- Project includes below market rate housing (LUT-6).
- Approximately 15 percent of the total commercial square footage is dedicated to a mixed-use facility that combines residences and commercial/retail uses (LUT-3).

INTERNAL PROXIMITY (T-31-A, GHG-15, GHG-22):

- Most residential units are within 1,320 feet (one-quarter mile) of a neighborhood park, open space, school, and/or bicycle/pedestrian trail (LUT-3).
- Most residential units are less than one-half mile from shopping and services (LUT-4).
- Project design includes locating at least four schools within the project boundaries such that most students can walk to a local school (LUT-3 and LUT-4).
- Project design includes at least eight parks within the project boundaries such that residents can walk/bike to enjoy the parks (LUT -3 and LUT-4).

MULTI- MODAL EFFICIENCY (T-10, T-17, T-18, T-29, T-25, T-26, T-32, T-37, T-47, GHG-14, GHG-17):

- Project design is based on a network of streets in a grid pattern (LUT-8).
- Project design includes access to high frequency bus service that connects to the Watt/Manlove light rail station (LUT-5).
- Bus routes are signalized in order to avoid traffic delays (T-27).
- Project design promotes a multi-modal system that makes public transit, walking, and bicycling viable and attractive travel choices for residents and employees. Features include:
    - Adequate bike parking at non-residential locations, including the transit center and park and ride locations (T-34, T-47).
    - Showers/lockers and other end of trip facilities at non-residential buildings (T-10).
    - Long-term bike parking facilities (T-34, T-47).

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- Project includes an extensive pedestrian path and trail system that is convenient and accessible from homes, school, parks, employment, and shopping (LUT-8).
- Pedestrian and bike paths minimize any barriers to pedestrian/bicycle use (e.g., fences, berms and other impediments are eliminated where possible) (LUT-8, T-18, T-20).

TRANSIT SUPPORTIVE (T-3, T-5, T-6, T-9, T-25, T-27, T-28, T-32, T-38; GHG-14, GHG-22):

- Project includes an on-site transit center and park and ride facilities along the designated transit route of Jackson Highway (LUT-5, T-3).
- Project subsidizes bus rapid transit lanes on Jackson Highway (T-27).
- Project funding and design will result in bus headways of 15 minutes or better (T-26).
- Project includes joining a Transportation Management Association (TMA) funded through assessments. Although the project will include a TMA, no VMT reduction from the TMA has been calculated or included in the Traffic Study.
- Project includes assessments for regional transportation improvements (T-27).

1.5 ADDITIONAL MITIGATION

Additional VMT mitigation analyzed by Kimley-Horn beyond that incorporated into the Traffic Study include the following features noted in Table 1-2. Where applicable, the CAPCOA 2021 Handbook mitigation measure number (T-xx) is noted:

- Mandatory Community-Wide Transportation Management Association Participation (M-3[9]),
- Electric Bike Share (T-22-B),
- Electric Scooter Share (T-22-C),
- Adding Sidewalks (T-18), and
- Carpooling/Rideshare (T-8).

Additional non-transportation mitigation or GHG reductions not directly related to reducing VMT are discussed in Section 5.2 and include the following:

[9] Measure M-3 is a Miscellaneous measure that is a mandatory TMA program for residents and employees that is paid annually as an assessment on both residential and non-residential properties. It is most analogous to T-6, which is normally a project/site-scale measure and allows up to 26% reduction; however, for Jackson Township it is applied community-wide, includes carpooling and rideshare, and totals 12.3% reduction. See Section 2.2.

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- Elimination of all natural gas emissions because natural gas infrastructure is prohibited under BMP-2.
- Preservation of 1,368.9 acres of vegetated land.
- Elimination of cattle grazing that currently occurs on portions of the property.
- Planting of over 20,000 new trees as part of the Project.
- All electric landscaping equipment.
- All landfills capture landfill gas for energy recovery.
- Installation of 805 non-residential electric vehicle (EV) charging stations serving 1,610 parking spaces.
- Pre-wiring all single-family housing (3,540 units) and 77 percent of high-density multi-family housing (77 percent of 2,150 units) for EV chargers. (Note that the 2022 version of California Green Building Code (CCR Title 24), effective January 1, 2023, also requires EV chargers for non-residential and multi-family housing. Should Title 24 mandate more EV chargers than committed to herein, the number of EV chargers will be increased to meet Title 24 requirements.)
- Redevelopment of the Sacramento Raceway which will cease operations with the full build out of the Jackson Township.
- Electrification of construction equipment where feasible and improved fuel efficiency for equipment, thus reducing construction GHG emissions by more than 67 percent.

All of the Jackson Township mitigation measures will be documented and made compulsory through the approved Final Environmental Impact Report (FEIR) under CEQA and the financing plan. Appendix L provides land use and other exhibits supporting the planned mitigation measures.

Although there are a large number of mitigation measures to reduce GHG emissions, there are two activities associated with the Project that will increase emissions (described in Section 5.2):

- Elimination of about 180 existing trees that cannot be preserved, and
- Redevelopment of 1,316.3 acres of existing grassland.

To calculate total GHG emissions associated with the Project, all of the above features have been assessed, and the results are shown in Table 1-4.

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Table 1-4: Net Annual GHG Emissions for Alternative 2 GHG Emissions

Description	Project-Related VMT Scenario Annual GHG Emissions (MT/yr)	Cumulative VMT Scenario Annual GHG Emissions (MT/yr)
Annual Non-Mobile Operational Emissions from CalEEMod (Table 2-3)	12,890	12,890
Amortized Annual Construction Emissions (Section 4)	1,129	1,129
Annual Mobile Emissions from Traffic Study (Table 3-2)	32,497	21,381
Total Annual Operational Non-Mobile plus Construction plus Mobile Emissions	*46,516*	*35,400*
Penalty for Removal of Grassland (Section 5.3.1)	322	322
Penalty for Removal of Trees (Section 5.3.2)	7	7
Total Equivalent Project Emissions (including penalties)	**46,845**	**35,729**
Reduced VMT (Table 5-3)	- 1,885	- 1,240
Eliminate Natural Gas Emissions (Section 5.2.1)	- 7,431	- 7,431
Reduction from Jackson Township Vegetation Preserve (Section 5.2.2)	- 2,905	- 2,905
Reduction from Elimination of Cattle (Section 5.2.3)	- 168	- 168
Reduction from Jackson Township Trees (Section 5.2.4)	- 730	- 730
Reduction from Electric Landscaping Equipment (Section 5.2.5)	- 98	- 98
Reduction from Landfill Gas Energy Recovery (Section 5.2.6)	- 1,183	- 1,183
Reduction from 805 Non-residential EV Charging Stations (Section 5.2.7)	- 12,250	- 12,250
Reduction from Residential Housing EV Charging (Section 5.2.8)	- 17,898	- 12,156
Redevelop Sacramento Raceway (Section 5.2.9)	- 1,610	- 1,610
Reduction from Electrified Construction Equipment (Section 5.2.10)	- 756	- 756
Total GHG Reductions	*- 46,914*	*- 40,527*
Net GHG After Reductions	**- 69**	**- 4,798**

1.6 NON-QUANTIFIED MITIGATION

The preceding deals only with quantified GHG emission reductions. There are numerous other project design features that also result in reduced GHG emissions, but the benefit of those features has not been quantified. Some of those features are:

- An over-statement of VMT because the VMT per resident and per employee values do not account for the mutually beneficial interaction of the Jackson Township Specific Plan with other

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existing and/or approved land uses that result in reduced VMT. For example, Jackson Township schools and retail will serve not only Jackson Township residences but existing residences in the area, thus reducing the distance traveled by existing persons.

- An over-statement of employee VMT because the VMT per employee does not account for the current shift to work-from-home and remote working/learning that is occurring.
- Participation in the Sacramento County affordable housing program. Providing affordable (below market rate) housing allows residents to live closer to job or schools, reducing commute distances and emissions.
- Low flow bathroom fixtures, kitchen fixtures, showers, and toilets in all residential units and commercial buildings.
- Reduced square footage of residential turf due to the increased housing density.
- Water efficient irrigation systems and water efficient landscaping for the non-residential areas.
- Some of the existing homes located within the Jackson Township Specific Plan will be replaced with more modern and energy efficient homes and existing sources of natural gas combustion will be removed.
- Increased landfill gas capture efficiency to more than 90 percent. Many existing landfills in California capture well in excess of 90 percent, and by 2040 that should be standard for all landfills.
- More efficient water treatment digester gas capture and energy recovery.
- Additional electric construction equipment that will be developed and implemented by 2040.
- Increased fuel efficiency of non-electric construction equipment that will occur before 2040.
- There may be additional GHG reduction measures that could be implemented as the result of the Final Draft Sacramento County Climate Action Plan but have not been accounted for herein.

And most significantly, all of the mobile-source emission estimates are over-stated and the benefit of EV charging stations under-stated because they do not account for more electric vehicle penetration than assumed, and other changes in transportation that will have to occur if California is to reach the 2050 GHG reduction goals. For example, the new (April 1, 2022) Federal passenger car and light duty truck fleet wide average fuel economy standard of approximately 49 miles per gallon (mpg) for new vehicles by calendar year 2026 has not been accounted for. Thus, prior to full development of Jackson Township in 2040, there will be greater GHG emission reductions and even lower GHG emissions than stated herein.

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2 SB 743 SIGNIFICANCE TARGET LEVELS BASED ON THE TRAFFIC STUDY

In response to SB 743, SMAQMD and Sacramento County PER established VMT per resident and VMT per employee metrics of significance that replaced previously used emissions metrics. This and the following sections discuss how the proposed Jackson Township VMT more than meets the adopted metrics in response to SB 743. The significance metrics are that the Project VMT per resident and VMT per employee must both be 15 percent less than regional values.

2.1 VMT PER RESIDENT AND EMPLOYEE BASED ON THE TRAFFIC STUDY

The Traffic Study prepared for PER provided data that were used to calculate the regional and Project VMT per resident and per employee. The results of the Traffic Study-based calculations were summarized in the K-H Memo included in Appendix A and are shown in Table 2-1. The VMT data from the Traffic Study include induced VMT that is the result of improved roads but not part of the project itself.

Table 2-1: Regional VMT Per Resident and Per Employee Based on Traffic Study

Land Use	VMT Per Resident	VMT Per Employee
Regional VMT No Project	20.20	16.04
Significance Target Level (15% below regional average)	*17.17*	*13.64*
Jackson Township **Project-Related VMT based on Traffic Study**	**17.46**	**16.48**
Regional VMT Super Cumulative No Project	18.40	13.31
Significance Target Level (15% below regional average)	*15.64*	*11.31*
Jackson Township **Cumulative VMT based on Traffic Study**	**13.97**	**12.68**

Table 2-1 shows that the Project-Related scenario VMT per resident, the Project-Related scenario VMT per employee, and the Cumulative scenario VMT per employee exceed the significance target levels; but

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the Cumulative scenario VMT per resident does not. However, the Traffic Study does not include all of the Project's mitigation as discussed below.

2.2 VMT PER RESIDENT AND EMPLOYEE WHEN ADDITIONAL TRANSPORTATION MITIGATION IS CREDITED

Kimley-Horn analyzed the Traffic Study prepared for PER and identified additional transportation related mitigation that is included in the Jackson Township design and operations but not accounted for in the Traffic Study. The results of the analysis are reported in the K-H Memo (Appendix A) and are repeated in Table 2-2. Table 2-2 also shows, where applicable, the CAPCOA 2021 Handbook mitigation measure number (T-xx). The K-H Memo in Appendix A describes each mitigation measure in detail.

Table 2-2: Additional Transportation Mitigation Included in the Alternative 2 Project

Measure	VMT per Resident % Reduction	VMT per Employee % Reduction
Mandatory Community-Wide TMA Participation (M-3)	- 2.08 %	- 12.3%
Electric Bike Share (T-22-B)	- 0.05 %	NA
Electric Scooter Share (T-22-C)	- 0.06 %	NA
Adding Sidewalks (T-18)	- 1.0 %	NA
Total Percent Reduction*	**- 3.0 %**	**- 12.3 %**
Total Percent Reduction for Combined Measures T-18 through 22-C	- 1.1 %	NA

* Reported total reduction may not sum to table entries due to roundoff differences.

CAPCOA Measure T-6, Mandatory Trip Reduction Program, is normally applied as a Project/Site-scale measure and thus is not combinable with the Plan/Community-scale measures T-18 and T-22. However, in the case of the Jackson Township measure M-3 has been created that is allowed at the Plan/Community-scale level and consists of a community-wide mandatory trip reduction program that will be required of all residents and employers within Jackson Township. Under this program, both residential and non-residential property will be subject to an annual assessment through a County Service Area (CSA) fee that will be used for the TMA services and programs. Rideshare and carpool programs will be part of the M-3 measure. As measure M-3 is considered a Plan/Community scale measure it can be combined with T-18 and T-22.

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CAPCOA establishes emission reduction caps on measures for which CAPCOA establishes a percent reduction (i.e., the T-xx measures) calculation. The cap for measures T-18 through 22-C is 10 percent. As shown in Table 2-2, the cap is not exceeded.

The total percent reductions shown in Table 2-2 can be applied directly to the VMT per resident and per employee metrics and the results are shown in Table 2-3.

Table 2-3: Regional VMT Per Resident and Per Employee
When Additional Transportation Mitigation is Included

Land Use	VMT Per Resident	VMT Per Employee
Regional VMT No Project	20.20	16.04
Significance Target Level (15% below regional average)	*17.17*	*13.64*
Jackson Township Project-Related VMT based on Traffic Study	17.46	16.48
Additional Mitigation Reduction in VMT (- 3.0% and -12.3%)	- 0.52	- 2.03
Jackson Township Project-Related VMT After Additional Transportation Mitigation	**16.94**	**14.45**
Less than Significance Target Levels	**Yes**	No
Regional VMT Super Cumulative No Project	18.40	13.31
Significance Target Level (15% below regional average)	*15.64*	*11.31*
Jackson Township Cumulative VMT based on Traffic Study	13.97	12.68
Additional Mitigation Reduction in VMT (- 3.0% and -12.3%)	- 0.42	- 1.56
Jackson Township Cumulative VMT After Additional Transportation Mitigation	**13.55**	**11.12**
Less than Significance Target Levels	**Yes**	**Yes**

With the additional transportation mitigation, the Jackson Township VMT per resident for both the Project-Related VMT and Cumulative VMT scenarios and VMT per employee for the Cumulative VMT scenario are less than the significance target levels. However, the VMT per employee for the Project-Related VMT scenario is greater than the significance target level, so additional mitigation will be implemented as described in Section 2.3 to meet the target level.

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2.3 ADDITIONAL GHG MITIGATION NEEDED TO ACHIEVE THE VMT PER EMPLOYEE SIGNIFICANCE TARGET

The difference between the Project-Related 14.45 VMT per employee value and the significance target level of 13.64 can be converted into equivalent GHG emissions as shown in Table 2-4.

Table 2-4: Equivalent GHG Emissions for the Project-Related VMT per Employee

Index		VMT Per Employee
1	Project-Related VMT per Employee (from Table 2-3)	14.45
2	Significance Target Level VMT per Employee (from Table 2-3: 15% below regional average)	13.64
3	Difference in VMT per Employee	0.81
4	Number of Employees (Note 1)	7,130
5	Excess Daily VMT (miles/day) (Line 3 x Line 4)	5,775
6	Excess Annual VMT (miles/year) (Line 5 x 240, Note 2)	1,386,000
7	GHG Emission Factor (grams/mile) (from Appendix AJ-3, light, and medium duty vehicles)	282.1
8	Excess GHG Emissions (MT/yr) (Line 6 x Line 7 converted to MT)	391

Note 1: Reported by Kimley-Horn, personal communication April 15, 2022.
Note 2: 240 days per year was used because the metric is employee travel, and employees were assumed to work 5 days per week, 52 weeks per year, less 2 weeks of vacation, and 10 holidays.

The excess emissions of 391 MT/yr shown in Table 2-4 must be offset in accordance with County and SMAQMD requirements in order to meet SB 743. As shown in Section 3, the 391 MT/yr excess emissions will be much more than offset through the additional committed mitigation discussed in Section 5.

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3 PROPOSED JACKSON TOWNSHIP OPERATIONAL GHG EMISSIONS

VMT per resident and per employee metrics do not indicate the magnitude of GHG emissions; thus, this and following sections discuss GHG emissions for informational purposes and to show that the planned mitigation more than achieves the emission reductions needed to meet the Project-Related VMT per employee target level shown in Section 2.3.

GHG operational emissions are calculated using two different sources, one for non-mobile emissions (CalEEMod) and one for mobile emissions (EMFAC 2021). Sacramento County does not use CalEEMod for transportation related GHG emissions because it cannot adequately capture the trip redistribution of a project, as it does not consider regional travel dynamics. Accordingly, it is the County's practice to calculate emissions directly from the VMT data in the traffic study using the most recent California EMFAC model, which (as of April 2022) is EMFAC 2021. Therefore, transportation-related GHG emissions were calculated with EMFAC 2021 for both the Project-Related and the Cumulative VMT scenarios.

3.1 OPERATIONAL GHG NON-MOBILE EMISSIONS ESTIMATING METHODOLOGY

Kleinfelder calculated operational non-mobile emission estimates for Alternative 2 with the CalEEMod emissions model, Version 2020.4.0. CalEEMod calculates emissions for criteria pollutants and GHG based on detailed land use parameters (e.g., acreage, dwelling units, square feet, number of fueling pumps) and vehicle emissions associated with each land use. The detailed land uses shown in Appendix B were used to estimate emissions. CalEEMod Version 2020.4.0 is based on EMFAC 2017 and the 2019 Title 24 Energy Standards that were promulgated in March 2018 and became effective January 1, 2020.

Except for the CO_2 intensity for electrical generation, the mobile source emissions category, the number of fireplaces and hearths, and the additional mitigation calculations as explained below, CalEEMod default input factors were used to calculate emissions. CalEEMod was run for a full build-out year of 2040 and start of construction in 2025. Three CalEEMod scenarios were run: business as usual (BAU), Project-Related VMT, and Cumulative VMT.

For all three CalEEMod scenarios, electrical generation greenhouse gas intensity was entered as zero. This is because the Sacramento Municipal Utility District (SMUD) has committed to 100 percent renewable energy by 2030.

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CalEEMod includes emissions from mobile sources, but these were not used, rather the Traffic Study VMT and EMFAC emissions were used.

Appendix D contains the CalEEMod runs for BAU, Project-Related and Cumulative VMT. Appendix D shows the annual VMT for BAU, which is 211,550,554 miles per year. If one compares the business-as-usual VMT to the VMT forecast by the Traffic Study (Appendix C), the Traffic Study VMT for Alternative 2 is about 43 (Project-Related VMT) to 61 (Cumulative VMT) percent less than BAU (the annual VMT shown in Appendix C are also reported in Section 3.2).

Table 3-1 shows the non-mobile GHG emissions estimated with CalEEMod when electrical energy generation GHGs are zero (taken from the reports in Appendix D). These emissions include GHG from natural gas combustion, digester gas emissions from wastewater treatment, landfill gas emissions from solid waste disposal, and GHG emissions from landscaping equipment. Because the non-mobile GHG emissions are only related to land uses, there is no difference between BAU, Project-Related VMT, and Cumulative VMT scenario GHG emissions.

Table 3-1: Non-Mobile Jackson Township GHG Emissions

VMT Scenario	Annual GHG
BAU Alternative 2 Annual Non-Mobile Emissions	12,890* MT/yr
Project-Related VMT Alternative 2 Annual Non-Mobile Emissions	12,890* MT/yr
Cumulative VMT Alternative 2 Annual Non-Mobile Emissions	12,890* MT/yr

* Non-mobile emissions equal total emissions minus mobile, e.g., for BAU 70,714 – 57,824 = 12,890 MT/yr shown in Appendix D-1.

3.2 OPERATIONAL MOBILE GHG EMISSIONS

The PER Traffic Study VMT data forecasts peak daily VMT (including induced VMT) that will occur in calendar year 2040 as the result of Project, both as a stand-alone project (project-related) and cumulative. The peak daily incremental VMT forecast for calendar year 2040 is as follows (see Appendix C):

- Alternative 2 Project-Related VMT: 375,261 miles per day.
- Alternative 2 Cumulative VMT: 254,868 miles per day.

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Kleinfelder converted the peak daily VMT to annual VMT by multiplying the peak daily calendar year 2040 VMT by 320 days per year. The 320 value is approximately 52 weeks per year, 6 days per week. The assumption is that the peak daily VMT occurs on each of 5 days and about one-half of the peak daily VMT occurs on Saturday and Sunday. Accordingly, the calendar year 2040 annual incremental VMT is:

- Alternative 2 Project-Related VMT: 120,083,520 miles per year.
- Alternative 2 Cumulative VMT: 81,557,862 miles per year.

The Traffic Study VMT and EMFAC 2021 emission factors shown in Appendix E were used to calculate GHG emissions for the Project-Related and Cumulative VMT scenarios presented in Appendix F. For these calculations EMFAC 2021 emission factors for calendar year 2040 were used for all models and vehicle types with emission factors stratified by speed bin. All fuel types were used, including the amount of EV penetration included in EMFAC 2021, to calculate GHG emissions. The results are shown in Table 3-2.

Table 3-2: Mobile-Only Jackson Township **GHG Emissions**

VMT Scenario	Annual GHG
BAU Alternative 2 Annual Mobile-Only Emissions	63,703 MT/yr
Project-Related VMT Alternative 2 Annual Mobile-Only Emissions	32,497 MT/yr
Cumulative VMT Alternative 2 Annual Mobile-Only Emissions	21,381 MT/yr

3.3 TOTAL ALTERNATIVE 2 OPERATIONAL GHG EMISSIONS

Total operational (mobile plus non-mobile) GHG emissions for Alternative 2 are shown in Table 3-3. The individual mobile and non-mobile emission values come from Tables 3-1 and 3-2 above.

Table 3-3: Total and Mobile-Only Annual BAU and Jackson Township **GHG Emissions**

VMT Scenario	Annual Non-Mobile GHG (MT/yr)	Annual Mobile GHG (MT/yr)	Total Operational GHG (MT/yr)
BAU Alternative 2 Annual Mobile-Only Emissions	12,890	63,703	76,593
Project-Related VMT Alternative 2 Annual Emissions	12,890	32,497	45,387
Percent Reduction from BAU for Project-Related VMT	--	**- 49.0 %**	**- 40.7 %**
Cumulative VMT Alternative 2 Annual Emissions	12,890	21,381	34,271
Percent Reduction from BAU for Cumulative VMT	--	**- 66.4 %**	**- 55.3 %**

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Table 3-3 shows the very large reduction in GHG emissions from BAU that are accomplished through only those mitigation measures included in the Traffic Study. The reduction in vehicle travel and emissions of GHG are accomplished through a large number of Jackson Township project design features proposed by the Applicant. The features that reduce emissions include, but are not limited to, those listed immediately below. Where applicable, the related current (as of April 2022) CAPCOA[10] 2021 Handbook greenhouse gas mitigation measures (T-xx), the SMAQMD[11] land use emission reduction measures
(LUT-xx), and the Sacramento County Revised Final Draft Community Wide Climate Action Plan (CAP)[12] measures (GHG-xx) are noted. However, the CAPCOA, SMAQMD, and Sacramento County emission reduction percentages for the noted measures were not used, rather the Traffic Study VMT was used to calculate emissions. Note that the Traffic Study is SMAQMD pre-requisite measure TS – Traffic Study. The figures and exhibits in Appendix L further illustrate some of the measures noted below.

LOCATION (T-1, T-2, GHG-22):

- Project is located in a suburban center within approximately ten miles of the Sacramento downtown central business district and less than five miles from other existing high-density commercial/job center areas (LUT-2 and LUT-3).
- Project is located adjacent to other planned developments such that single-use trips are minimized, i.e., there are more pass-by and diverted trips (LUT-3 and LUT-4).

DENSITY/MIX (T-1, T-2, T-3, T-4, GHG-22):

- Project provides a compact mix of land uses in close proximity to each other with a highly connected street and trail network (LUT-3).
- Project design is for high and medium density housing for over half of the total project dwelling units (LUT-1).
- Housing density is better than 9.5 dwelling units per acre (LUT-1).
- Project includes below market rate housing (LUT-6).

[10] CAPCOA, 2021. Op cit.

[11] SMAQMD, 2021, Op cit.

[12] Sacramento County, 2022. *Revised Final Draft Community Wide Climate Action Plan, February 2022.* Available at https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/CAP.aspx. Accessed April 2022.

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- Approximately 15 percent of the total commercial square footage is dedicated to a mixed-use facility that combines residences and commercial/retail uses (LUT-3).

INTERNAL PROXIMITY (T-31-A, GHG-15, GHG-22):

- Most residential units are within 1,320 feet (one-quarter mile) of a neighborhood park, open space, school, and/or bicycle/pedestrian trail (LUT-3).
- Most residential units are less than one-half mile from shopping and services (LUT-4).
- Project design includes locating at least four schools within the project boundaries such that most students can walk to a local school (LUT-3 and LUT-4).
- Project design includes at least eight parks within the project boundaries such that residents can walk/bike to enjoy the parks (LUT -3 and LUT-4).

MULTI- MODAL EFFICIENCY (T-10, T-17, T-18, T-29, T-25, T-26, T-32, T-37, T-47, GHG-14, GHG-17):

- Project design is based on a network of streets in a grid pattern (LUT-8).
- Project design includes access to high frequency bus service that connects to the Watt/Manlove light rail station (LUT-5).
- Bus routes are signalized in order to avoid traffic delays (T-27).
- Project design promotes a multi-modal system that makes public transit, walking, and bicycling viable and attractive travel choices for residents and employees. Features include:
    - Adequate bike parking at non-residential locations, including the transit center and park and ride locations (T-34, T-47).
    - Showers/lockers and other end of trip facilities at non-residential buildings (T-10).
    - Long-term bike parking facilities (T-34, T-47).
- Project includes an extensive pedestrian path and trail system that is convenient and accessible from homes, school, parks, employment, and shopping (LUT-8).
- Pedestrian and bike paths minimize any barriers to pedestrian/bicycle use (e.g., fences, berms and other impediments are eliminated where possible) (LUT-8, T-18, T-20).

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TRANSIT SUPPORTIVE (T-3, T-5, T-6, T-9, T-25, T-27, T-28, T-32, T-38; GHG-14, GHG-22):

- Project includes an on-site transit center and park and ride facilities along the designated transit route of Jackson Highway (LUT-5, T-3).
- Project subsidizes bus rapid transit lanes on Jackson Highway (T-27).
- Project funding and design will result in bus headways of 15 minutes or better (T-26).
- Project includes joining a TMA funded through assessments. Although the project will include a TMA, no VMT reduction from the TMA has been calculated or included in the Traffic Study.
- Project includes assessments for regional transportation improvements (T-27).

As discussed in Section 5, there are additional mitigation measures beyond those in the Traffic Study that need to be accounted for.

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4 CONSTRUCTION GHG EMISSIONS

GHG emissions from construction activities are not generally considered a meaningful GHG impact because they are typically a one-time activity over a relatively short period of time compared to the operational life of a project, and because projects do not typically create "new" construction equipment or emissions (i.e., the construction equipment will be used somewhere else even if the proposed project is not constructed). However, construction of the Jackson Township will occur over an approximately 15-year period, thus construction emissions were added to the operational emissions.

Appendix G shows the CalEEMod emission estimates for construction of the Jackson Township Alternative 2. For the CalEEMod emission model, construction was assumed to start on January 1, 2025 and be complete by December 31, 2039. When CalEEMod was run with default parameters, the model estimated total construction duration of 18,765 days. That is obviously an over-estimate. The planned construction duration is 3900 days (260 days per year times 15 years), or 21 percent of the default. Accordingly, the individual CalEEMod default construction phase durations were adjusted by a factor of approximately 0.21 and such that the total construction duration (not including architectural coating) equaled 3900 days. Architectural coating was assumed to occur during the entire construction period. The resulting adjusted construction durations are shown in Table 4-1.

Table 4-1: Default and Adjusted Construction Duration for Alternative 2

Construction Phase	Default Duration (days)	Adjusted Duration (days)	Rationale for Adjustment
Demolition	900	0	There is essentially no demolition required at the proposed location
Site Preparation	540	125	Applied factor of 0.23 to reflect the ratio of planned versus default total construction duration
Site Grading	1,395	322	
Building Construction	13,950	3,224	
Paving	990	229	
Architectural Coating	990	3,224	Assumed architectural coating could occur over approximately the same duration as building construction

The CalEEMod default construction worker and vendor trip frequencies were also adjusted to match the proposed project as shown in Table 4-2. The trip lengths were not adjusted.

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Table 4-2: Default and Adjusted Worker and Vendor Construction Trips for Alternative 2

Construction Phase	Default Trips per Day		Adjusted Trips per Day		Rationale for Adjustment
	Worker	Vendor	Worker	Vendor	
Demolition	15	0	0	0	There is essentially no demolition required at the proposed location
Site Preparation	18	0	18	0	No change
Site Grading	20	0	20	0	No change
Building Construction	6,636	2,167	4,193	1,018	Trip frequencies are a function of the number of dwelling units and square feet of building. CalEEMod trip frequency functions and planned dwelling units/square footage were used to calculate project-specific trip frequencies
Paving	15	0	15	0	No change
Architectural Coating	1,327	0	839	0	Per CalEEMod, assumed architectural coating trips are 20% of Building Construction

Finally, the acreage of site preparation and grading were changed from the default to reflect the project-specific acreage of land that would be prepared and graded. It was assumed that all of the project area would be prepared and graded except for the parks, open space, and agricultural area; so, 907.6 acres are prepared and graded for Alternative 2. In the absence of a detailed construction plan, the remainder of the construction parameters in CalEEMod were left at their default settings.

Table 4-3 lists the CalEEMod default numbers of equipment and hours of usage for each construction phase. The data in Table 4-3 were provided to a design engineer/construction manager for reasonableness evaluation. He concluded that the default parameters were conservative over-estimates of the duration and/or numbers and usage of construction equipment. Specifically, he concluded the following[13]:

- There is essentially no Demolition, consistent with Table 4-2.
- Multiple teams will likely be working on Site Preparation simultaneously, and thus on average the modeled seven pieces of equipment operating a total of eight hours per day, are sufficient to complete the site preparation in the modeled 0.5 years shown in Table 4-2.
- The modeled equipment list for Grading is typical and sufficient to complete grading in the modeled time period (1.2 years). More equipment could possibly be used to shorten the time

[13] *Personal Communication to Kleinfelder, Mr. Steve AuClair, PE, April 13, 2019.*

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period to less than 1.2 years; but given the limited amount of grading equipment in the Sacramento area, the modeled duration, equipment numbers and usage are reasonable.

- The default equipment usage rates for Building Construction equipment are an over-estimate. For example, a crane would not normally be used continuously for seven hours per day; it would be used to load materials for a short period and then left idle for the rest of the day. Thus, the emissions for Building Construction are likely over-stated.
- The amount of Paving equipment and use duration shown in Table 4-2 is a large over-estimate.
- Architectural Coating is an on-going activity during Building Construction as there are coating applications other than the finish coats on building surfaces; thus, assuming a duration equivalent to the Building Construction duration is reasonable.

Table 4-3: CalEEMod Default Construction Equipment and Hours of Usage

Construction Phase	Equipment List	Number of Pieces of Equipment	Usage Hours Per Day	Total Construction Days (Years)*
Demolition				
There is essentially no demolition needed				
Site Preparation				
	Rubber Tired Dozers	3	8	125 (0.5 yrs)
	Tractors/Loaders/Backhoes	4	8	125 (0.5 yrs)
Grading				
	Excavators	2	8	322 (1.2 yrs)
	Graders	1	8	322 (1.2 yrs)
	Rubber Tired Dozers	1	8	322 (1.2 yrs)
	Scrapers	2	8	322 (1.2 yrs)
	Tractors/Loaders/Backhoes	2	8	322 (1.2 yrs)
Building Construction				
	Cranes	1	7	3,224 (12.4 yrs)
	Forklifts	3	8	3,224 (12.4 yrs)
	Generator Sets	1	8	3,224 (12.4 yrs)
	Tractors/Loaders/Backhoes	3	7	3,224 (12.4 yrs)
	Welders	1	8	3,224 (12.4 yrs)
Paving				
	Pavers	2	8	229 (0.9 yrs)
	Paving Equipment	2	8	229 (0.9 yrs)
	Rollers	2	8	229 (0.9 yrs)
Architectural Coating				
	Compressors	1	6	3,224 (12.4 yrs)

* From Table 4-1 and assuming 260 construction days per year.

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The CalEEMod reports for construction are shown in Appendix G and summarized in Table 4-4.

Table 4-4: Construction GHG Emissions for the Jackson Township Alternative 2

Construction Year	GHG Emissions (MT/yr)	Construction Year	GHG Emissions (MT/yr)
2025	596	2033	5,699
2026	2,334	2034	5,638
2027	6,251	2035	5,607
2028	6,015	2036	5,628
2029	6,017	2037	5,607
2030	5,956	2038	5,607
2031	5,867	2039	693
2032	5,812	**Total 2025 to 2039**	**73,417**

*Note that the individual years may not sum exactly due to roundoff differences.

The construction emissions were amortized over 65 years, which includes the anticipated 50-year life of Jackson Township facilities plus the 15-year construction period. Sixty-five years was used because there are operational emissions during the construction period as most of the residential and some of the commercial buildings will be completed before the end of the 15-year construction period). So, the annual GHG emissions are 1,129 metric tons per year (MT/yr).

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5 PROPOSED JACKSON TOWNSHIP ADDITIONAL MITIGATION AND GHG EMISSION REDUCTIONS

Mitigation measures that reduce GHG emissions beyond those accounted for in the Traffic Study include transportation-related and non-transportation related measures.

5.1 ADDITIONAL QUANTIFIED TRANSPORTATION-RELATED GHG EMISSION REDUCTIONS

In addition to all of the mitigation measures incorporated into the Traffic Study, the additional transportation mitigation measures that are part of the Proposed Project that were analyzed by Kimley-Horn (Appendix A) also reduce GHG emissions.

The additional measures quantified in the K-H Memo and the percentage reduction in VMT are shown in Table 2-2. The measures are separated by those that benefit residential-related transportation (VMT per resident) and those that benefit employee-related transportation (VMT per Employee).

The percentage benefit on total VMT (and thus total emissions) of the measures shown in Table 2-2 is not simply the sum of residential (VMT per resident) and employee (VMT per employee) percentages because some of the measures that reduce residential VMT also reduce employee VMT. Thus, in order to calculate the benefit of these measures on total VMT forecast by the Traffic Study, the VMT reduction (in terms of VMT, not percentage) was calculated for residents and employees separately and then added together. The calculations are shown in Tables 5-1 and 5-2. The percent VMT reduction shown in the last row of Tables 5-1 and 5-2 translate directly into a similar percent reduction in GHG emissions as shown in Table 5-3.

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Table 5-1: Calculation of VMT Benefit from Additional Transportation Mitigation for Alternative 2 Project-Related VMT

Index	Measure	Residents	Employees
1	Daily VMT per resident/employee prior to additional mitigation (from K-H Memo Table 1)	17.46	16.48
2	Number of Residents/Employees (Note 1)	15,893	7,130
3	Residential and Employee VMT prior to additional mitigation (Row 1 x Row 2)	277,492	117,502
4	Annual VMT prior to additional mitigation (Row 3 x 320 days/year)	88,797,440	37,600,768
5	Total VMT Analyzed: Residential + Employee (Note that some of the VMT is double counted in Resident and Employee)	126,398,208	
6	Percent of VMT Analyzed for Residents versus Employees (Row 4 / Row 5)	70.3 %	29.7 %
7	Total Forecast Project-Related VMT from Traffic Study (Shown in Table 1-1)	120,083,520	
8	Residential and Employee VMT in Traffic Study (Row 6 x Row 7)	84,418,715	35,664,805
9	Percent Resident and Employee VMT Reduction (K-H Memo Table 2 and also shown in Table 2-2)	- 3.0 %	- 12.3 %
10	VMT Reduction (Row 8 x Row 9)	- 2,532,561	- 4,386,771
11	Total VMT Reduction (Sum of Row 10 Resident and Employee)	- 6,919,332	
12	**Percent Total VMT Reduction from Project-Related VMT** (Row 11 / Row 7)	**- 5.8 %**	

Note 1: Reported by Kimley-Horn, personal communication April 15, 2022.

Table 5-2: Calculation of VMT Benefit from Additional Transportation Mitigation for Alternative 2 Cumulative VMT

Index	Measure	Residents	Employees
1	Daily VMT per resident/employee prior to additional mitigation (from K-H Memo Table 1)	13.97	13.31
2	Number of Residents/Employees (from K-H Memo Page 5)	15,893	7,130
3	Residential and Employee VMT prior to additional mitigation (Row 1 x Row 2)	222,025	94,900
4	Annual VMT prior to additional mitigation (Row 3 x 320 days/year)	71,048,000	30,368,000
5	Total VMT Analyzed: Residential + Employee (Note that some of the VMT is double counted in Resident and Employee)	101,416,000	

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Table 5-2 (cont.): Calculation of VMT Benefit from Additional Transportation Mitigation for Alternative 2 Cumulative VMT

Index	Measure	Residents	Employees
6	Percent of VMT Analyzed for Residents versus Employees (Row 4 / Row 5)	70.1 %	29.9 %
7	Total Forecast Cumulative VMT from Traffic Study (Shown in Table 1-1)	81,557,862	
8	Residential and Employee VMT in Traffic Study (Row 6 x Row 7)	57,172,061	24,385,801
9	Percent Resident and Employee VMT Reduction (K-H Memo Table 2 and also shown in Table 2-2)	- 3.0 %	- 12.3 %
10	VMT Reduction (Row 8 x Row 9)	- 1,715,162	- 2,999,454
11	Total VMT Reduction (Sum of Row 10 Resident and Employee)	- 4,714,616	
12	**Percent Total VMT Reduction from Cumulative VMT (Row 11 / Row 7)**	**- 5.8 %**	

Table 5-3: GHG Reductions from Additional Transportation-Related Mitigation

VMT Scenario	GHG
Project-Related VMT GHG Emissions from Traffic Study (from Table 3-3)	32,497 MT/yr
Project-Related VMT Reduction from Additional Transportation-Related Mitigation	- 5.8 %
Project-Related GHG Emissions Reduction from Additional Transportation Mitigation	- 1,885 MT/yr
Project-Related GHG Emissions after Additional Transportation-Related Mitigation	30,612 MT/yr
Cumulative VMT GHG Emissions from Traffic Study (from Table 3-3)	21,381 MT/yr
Cumulative VMT Reduction from Additional Transportation-Related Mitigation	- 5.8 %
Cumulative GHG Emissions Reduction from Additional Transportation Mitigation	- 1,240 MT/yr
Project-Related GHG Emissions after Additional Transportation-Related Mitigation	20,141 MT/yr

5.2 ADDITIONAL NON-TRANSPORTATION MITIGATION

There are a number of non-transportation mitigation measures designed into the Jackson Township Project that reduce GHG emissions and can be credited. These measures, such as elimination of GHG from natural gas combustion, and their benefit are described in the following subsections.

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5.2.1 Elimination of GHG from Electrical Energy Generation and Natural Gas Combustion

The previous GHGRP prepared in May 2019 included the following non-transportation mitigation measures for which emission reductions were quantified:

- High efficacy public outdoor lighting (GHGRP),
- Energy efficient appliances (GHGRP),
- Energy efficient boilers (AQMP and GHGRP),
- Residential electric hot water heaters (AQMP and GHGRP),
- Non-residential electric vehicle charging stations (AQMP and GHGRP), and
- Residential electric vehicle charging stations (AQMP and GHGRP).

However, since May 2019, SMAQMD and Sacramento County adopted BMPs to reduce GHG emissions. BMP 1 eliminated natural gas infrastructure for new projects, and BMP 2 requires all projects to meet CalGreen Tier 2 standards except EV-capable spaces shall be EV-ready. The newly adopted BMPs were the impetus for Revision 3a to the GHGRP (prepared in January 2021). Furthermore, after May 2019 SMUD committed to 100 percent renewable energy by 2030.

The CalEEMod emission estimates shown in Appendix D already accounted for the fact that SMUD committed to 100 percent renewables because zero GHG intensity was entered into the model and thus there is no additional credit for high efficacy public lighting and energy efficient appliances. However, although BMP-1 eliminates natural gas infrastructure , the CalEEMod model still contains GHG emissions from combustion of natural gas. The amount of GHG emissions from natural gas combustion was 7,527 MT/yr for both the Project-Related and the Cumulative VMT scenarios as shown in Appendix D-2 and D-3. All of these emissions are eliminated and thus there is no additional credit for energy efficient boilers or residential electric hot water heaters.

Emission reductions associated with the EV charging stations are discussed in Sections 5.2.7 and 5.2.8.

5.2.2 Vegetative Preserve

Jackson Township has committed to preserving a total of 1,131.2 acres of vegetative land. In addition, there will be another 88.8 acres of landscaped area associated with the buildings and another 148.9 acres of land vegetated in the parks and the greenbelt and landscape corridors. Table 5-4 shows the source and acreage of vegetated land associated with Jackson Township. Although there will be landscaping associated with residential housing, to be conservative, no credit is taken for that private

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landscaping. There is also no credit taken for agricultural land because that portion of Jackson Township will remain unchanged. The landscaped area associated with the buildings is the difference between the square footage of buildings plus parking lots (as shown in Appendix B) and the lot size.

Table 5-4: Alternative 2 Vegetated Area

Description	AGT Lands Only (acres)	Non-participant Jackson Township Lands (acres)	Total for Jackson Township (acres)
Vegetative Preserves			
On-site Acreage Preserved (Appendix B, Item 13)	191.3	68.5	259.8
Werre (offsite) Acreage Preserved	129.0	--	129.0
Additional Preserve Acreage to be Purchased by SSCA with Fees Paid from Development	372.1	370.3	742.4
Subtotal Acres Preserved	**692.4**	**438.8**	**1,131.2**
Community and Neighborhood Parks (Appendix B, Items 11 and 12)	--	--	78.8
Greenbelt Corridor (Appendix B, Item 14)	--	--	55.6
Landscape Corridor (Appendix B, Item 15)	--	--	14.5
Subtotal Parks and Corridors	--	--	**148.9**
Commercial and Office Landscaping (Appendix B, Items 4 – 7)[14]	--	--	16.8
School Landscaping (Appendix B, Items 9 and 10)[15]	--	--	72.0
Subtotal Landscaping Associated with Buildings	--	--	**88.8**
Total Vegetated Area			**1,368.9**

The amount of GHG reduced per acre of vegetation is per the CAPCOA 2021 Handbook mitigation measure N-1. This measure calculates the amount of sequestration as a function of vegetative sequestration plus sequestration that occurs when soil is converted to crop land, grazing land, or forest land. None of those soil conversions will occur at Jackson Township; thus, only the vegetative sequestration factor is considered. The amount of vegetative sequestration in measure N-1 is the area (hectares, ha) multiplied by carbon accumulation (MT C per ha per yr) multiplied by the molecular

[14] Landscape area = 130.8 acres – (2,022,100 total sf building + 1,561,700 sf General Commercial parking + 423,400 sf Community Commercial parking + 343,200 sf Mixed Use parking + 613,300 sf Office parking) = 16.8 acres.

[15] Landscape area = 100 acres – (250,000 sf high school + 609,800 sf parking + 225,000 sf elementary schools + 136,800 sf parking) = 72.0 acres.

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weight of
CO_2 to C (44/12).

Table N-1.1 from the CAPCOA 2021 Handbook lists 0.33 MT C/ha-yr sequestration for grassland, 1.87 MT C/ha-yr for broadleaf forest, and 2.10 MT C/yr for shrubland. The Jackson vegetative preserve will be a mix of grassland, broadleaf trees, and shrubland. Thus, an average carbon sequestration value of 1.43 MT C/ha-yr was used. Therefore, the amount of CO_2 sequestered by 1,368.9 acres is:

1,368.9 acres x 0.4047 ha/acre x 1.43 MT C/ha-yr x 44/12 = 2,905 MT CO_2/yr.

Note that the CAPCOA 2010 Handbook listed a CO_2 sequestration value of 4.31 MT CO_2 per acre, which for 1,368.9 acres would be 5,900 MT/yr. The amount of sequestration calculated by the 2021 Handbook appears to be low but will nevertheless be used herein.

5.2.3 Elimination of Existing Cattle Grazing

There are approximately 125 head of cattle that graze on the Jackson Township property from November through May and 85 head from June to October, for an average of approximately 105 per year. When Jackson Township is developed, those cattle will be removed. The Intergovernmental Panel on Climate Change (IPCC) publishes emission factors for various GHG-producing activities. The IPCC 2019 Refinement[16] of emission factors provided emission factors for cattle in Chapters 10 and 11.

There are three sources of GHG associated with cattle: methane (CH_4) belched from cattle due to enteric fermentation, CH_4 from manure, and nitrous oxide (N_2O) from manure. Chapter 10 of the Refinement presented a CH_4 emission factor from enteric fermentation of 64 kilograms (kg) per head per year (head-yr). Chapter 10 and 11 also discuss GHG emissions from manure, but on an individual cow basis, the amount of GHG from manure is less than about 2 percent of the GHG from enteric fermentation. Thus, the 64 kg CH_4 per year emission factor was used. The global warming potential (GWP) of CH_4 is 25, so the emission factor in terms of carbon dioxide equivalent (CO_2e) is 25 x 64 kg/head-year = 1.6 MT CO_2e/head-yr, and the total reduction for 105 head is 168 MT/yr.

[16] *2019 Refinement of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.*

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5.2.4 CO_2 Sequestration from Planting Trees

Jackson Township is required to plant a minimum number of trees per the Design Standards and County ordinances. The number of additional trees was estimated as follows:

- One tree is required per each single-family lot. There will be 3,540 lots for low density (LD) and medium density (MD) single family housing, equating to 3,540 trees.
- It was assumed that on average each single-family homeowner would plant at least one tree in their back yard, so that amounts to an additional 3,540 trees.
- For multi-family housing, (82 acres), the stormwater model for the development assumed a minimum of 10 trees per acre, or 820 trees.
- For commercial land uses (total of 130.8 acres), the stormwater model assumed a minimum of 10 trees per acre, or 1,308 trees.
- For the community and school sites (101.0 acres), the stormwater model assumed a minimum of 10 trees per acre, or 1,010 trees.
- The preliminary park design plans indicate approximately 7 trees per acre for the interior of the parks (78.8 acres), or a minimum of 552 trees.
- The Design Standards require a minimum of one tree per 30 linear feet per side or median of street within Jackson Township. There are three major categories of streets for calculating the minimum number of trees (the street lengths are shown in Appendix H):
    - Grenville: 5,956 feet in length, minimum of 3 trees per 30 feet, or 596 trees, accounting for trees in the median plus each side of Greenville.
    - Excelsior, Jackson, and Keifer: total of 19,615 linear feet, with a minimum of 2 trees per 30 feet (one in the median and on one side), or 1,308 trees.
    - Other interior two-lane streets: total of 35,335 linear feet, with a minimum of 2 trees per 30 feet (one on each side), or 2,356 trees.
- There are three main drainage corridors/greenbelts with the following planned trees:
    - Central Drainage (Elder Creek), 6,500 linear feet with a minimum of 1 tree per 7 linear feet (accounting for trees on both sides), or 929 trees.
    - Western Drainage (Morrison Creek), 1,850 linear feet with a minimum of 1 tree per 7 linear feet, or 264 trees.

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- Greenbelts total 8,500 linear feet with a minimum of 1 tree per 15 linear feet (a minimum of 1 tree every 30 feet on both sides of the greenbelt), or 567 trees.

The above totals to a minimum of 16,790 trees. An approximately 20 percent increase to the minimum number of trees was added to account for the fact that there will be more trees actually planted than the minimum required (e.g., some people will plant several trees in their back yard rather than just one, parking lots may use trees instead of canopies to achieve the 50 percent shade requirement, the stormwater model assumes the smallest number of trees in order to ensure adequate drainage capacity, etc.). Thus, a total of 20,000 trees was assumed.

The CAPCOA 2021 Handbook measure N-2 discussed the amount of CO_2 that can be sequestered by trees. The method in measure N-2 is quite complex, involving parameters for tree species, tree trunk diameter, amount of sun the tree receives, where the tree is planted with respect to buildings, tree mortality, among other variables. Measure N-2 suggests using an "iTree" web-based tool to calculate CO_2 sequestration per tree. However, that tool (available at https://planting.itreetools.org/) requires several parameters that are not yet known for the Jackson Township project (e.g., the number of each species of tree and the amount of sun each tree is exposed to).

The CAPCOA 2010 Handbook provided a CO_2 sequestration rate of an average 0.0312 MT/yr per tree for evergreen trees and 0.0418 MT/yr per tree for deciduous, or an average of 0.0365 MT/yr per tree, assuming 50 percent evergreen[17]. To evaluate the 0.0365 MT/yr per tree value for consistency with the CAPCOA 2021 Handbook, the "iTree" tool sequestration rates for Japanese Maple, Mayten, and three types of Cedar trees with a 10-inch diameter trunk were compared to the 2010 Handbook average value. (Even though the "iTree" tool lists about 200 species for Sacramento County, only a few of the species recommended by the County in its suggested landscape tree list are included in the "iTree" tool). The "iTree" tool Japanese Maple sequestration rate ranged from 0.0246 to 0.0308 MT/yr per tree (depending on if the tree were planted in shade or full sun), the Mayten from 0.0752 to 0.1857 MT/yr per tree, and the three Cedars from 0.0668 to 0.2073 MT/yr per tree. It appears that the 2010 Handbook average value is less than the value for typical Sacramento tree species listed in the "iTree" tool; therefore, the 2010 Handbook average value of 0.0365 MT/yr per tree was used as a conservatively low value and for 20,000 trees, CO_2 sequestration will be at least 730 MT/yr.

[17] The stormwater plan was based on 50 percent of the trees being evergreen and 50 percent deciduous.

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5.2.5 Reduction from Electric Landscaping Equipment

CalEEMod assumes that most landscaping equipment will be fossil-fuel powered. However, by 2040 it can be reasonably expected that all landscaping equipment will be electrically powered due to availability of electrically powered equipment of various horsepower ratings, including, as discussed below, construction equipment. Thus, the CalEEMod landscaping GHG emissions shown in Appendix D are eliminated. CalEEMod calculated 98 MT/yr from landscaping equipment.

5.2.6 Reduction from Landfill Gas Energy Recovery

CalEEMod estimates the amount of CO_2 and CH_4 emissions generated from landfill gas that is not captured and not used for energy recovery (e.g., generating electricity). CalEEMod assumes that 94 percent of landfills recover the landfill gas. However, it can be reasonably assumed that by 2040 all landfills will recover landfill gas. To calculate the emission reduction that would be achieved if 100 percent of landfills recover the gas, CalEEMod was run with 100 percent of landfills recovering landfill gas and compared to the 94-percent assumption. The 100 percent of landfills capturing landfill gas for energy recovery CalEEMod report is shown in Appendix I. GHG emissions from solid waste with 94 percent of landfills recovering (Appendix D) were 5,158 MT/yr. GHG emissions from solid waste with 100 percent of landfills recovering energy (Appendix I) were 4,770 MT/yr.

The CalEEMod emission GHG emission estimates for landfills recovering energy are over estimated because CalEEMod assumes that only 75 percent of landfill gas is captured (the rest of the CO_2 and CH_4 is emitted to the atmosphere). Landfill gas recovery systems can capture a much higher percentage, at least 60 to 90 percent according to USEPA[18]. This is especially the case for California, which has had landfill gas capture system requirements in place for decades. So, the CalEEMod GHG emissions were reduced by the ratio of 0.75 to 0.90, equals 3,975 MT/yr. The difference between BAU 5,158 MT/yr and 3,975 MT/yr can be credited, or 1,183 MT/yr.

5.2.7 Reduction from 805 Non-Residential EV Charging Stations

The January 2021 Revision 3a of the GHGRP committed to installing a total of 690 non-residential EV charging stations at Jackson Township parking spaces at commercial, retail, office, and school parking lots. Each electric vehicle charging station has 2 connections; so, a total of 1,380 parking spaces would be served by the 690 EV charging stations. In order to achieve net zero GHG emissions, the Applicant is

[18] See for example, https://www.epa.gov/lmop/benefits-landfill-gas-energy-projects.

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now committing to install an additional 115 non-residential EV charging stations, for a total of 805 stations serving 1,610 parking spaces.

For the emission reduction calculation shown in Appendix J-1, it was assumed that each EV connection would be used an average of 4 hours per day at a charging rate of 6 kWh per hour. The 4-hour per day value is based on the average observed actual session length (one vehicle in a session) of 4 hours and 19 minutes for the period April 21, 2009 through June 23, 2022 at EV charging stations located at the Applicant's current properties. The 4 hours per EV charging station is a conservatively low value because it is likely that the stations will be used by more than one vehicle per day (so total charging at the station will be multiples of 4 hours). Nevertheless, it was assumed that charging would occur at the stations only 4 hours per day.

The VMT from the amount of electrical energy charged would offset an equivalent VMT of gasoline-fueled driving. The EMFAC 2021 electric efficiency of EVs (see Appendix J-2) value of 32.5 kilowatt hours per 100 miles was used in the emission calculations. Only light duty autos and light and medium duty trucks were included in the calculations on the assumption that only those vehicle types would use the non-residential charging stations in the Jackson Township parking lots. The non-residential EV charging stations offset approximately 43.3 million miles of gasoline-fueled travel. EMFAC 2021 (version 1.0.1) was used to determine emission factors (grams per mile) for calendar year 2040 from those same gasoline-fueled vehicle types (see Appendix J-3). The emission reduction associated with non-residential charging stations shown in Appendix J-1 is 11,527 MT/yr.

5.2.8 Reduction from Residential Pre-Wiring for EV Chargers

All single-family housing and 20 percent of multi-family housing must be pre-wired for EV chargers (not actual chargers, just the pre-wiring) per BMP 2. However, Jackson Township has committed to pre-wiring an additional 57 percent of multi-family housing, for a total of 77 percent. By 2040, most of the homeowners will take advantage of the pre-wiring and install charging stations for EVs.

It is difficult to predict actual EV use 18 years into the future (calendar year 2040), because consumers choose their vehicle types based on a myriad of factors, some of which are legislatively and regulatorily driven, some are market driven, and some are individual choice. The major regulatory driver is the commitment that by calendar year 2035, one hundred percent of all new light duty vehicles (light duty autos and light duty trucks) sold in California must be zero emission vehicles (ZEV); either EV, plug-in hybrid EV (PHEV), or fuel cell electric vehicles (FCEV). In April 2022 CARB published a proposed Advanced Clean Cars II (ACC II) regulation that will require ZEVs for at least 35 percent of new light duty vehicle

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sales in 2026 and increasing by about 8 percentage points per year until 2035 where 100 percent of light duty vehicle sales must be ZEV[19]. The proposed regulations allow manufacturers to meet their ZEV requirement with up to 20 percent PHEVs. There is no cap on FCEVs, but CARB forecasts FCEVs to be a small percentage of the ZEV fleet, with only 0.2% of ZEVs being FCEVs in 2021[20]. Accordingly, it was assumed that in 2040, 100 percent of new light duty vehicle sales would be EV or PHEV. For purposes of ACC II, CARB defines light duty vehicles as automobiles and light duty trucks with a gross vehicle weight rating of 8,500 pounds or less[21], which is equivalent to the LDA, LDT1, and LDT2 vehicle categories in EMFAC 2021 (categories based on EMFAC 2007).

For an initial estimate of the number of homes that would actually have an EV and charge it at home, the EMFAC 2021 forecast vehicle type and model year population distribution for Sacramento County in 2040 was used along with the percent ZEV requirements from the proposed ACC II. EMFAC 2021 does not account for ACC II because it includes only regulations that are in place when the model was developed. Table 5-5 shows the EMFAC 2021 forecast of the number of light duty vehicles in 2040. To estimate the number of EVs, a percent EV assumption by model year was made as follows:

- Model years 1966 to 2012: zero percent EV is assumed. EMFAC does show some EV for those model years, but the quantity is in the 0.01 percent range, thus zero was assumed.
- Model years 2013 to 2020: EMFAC percent EV is used, which is based on actual California sales data.
- Model years 2021 to 2025: 12 percent EV sales are assumed, which is the same assumption EMFAC 2021 uses for all model years after 2020[22].
- Model years 2026 to 2034: the percent EVs is based on the ACC II ZEV requirements, which is 35 percent in 2026 increasing by 8 percent each year.
- Model years 2035 to 2040: 100 percent EV is assumed based on the ACC II ZEV requirements.

ACC II allows up to 20 percent PHEV to provide manufacturers flexibility, but notes that the PHEV share of the market has declined in recent years[23], PHEVs will likely be more expensive than EVs and that

[19] CARB, 2021. Advanced Clean Cars II Regulations Initial Statement of Reasons, April 12, 2022. Page 9, ES-Figure 1.

[20] Ibid., Page 19, Figure 2.

[21] Ibid., Page 65, Footnote 328.

[22] CARB 2021a, EMFAC 2021 Volume III Technical Document, April 2021. Page 11.

[23] CARB 2021. Op cit., Page 56.

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manufacturers are not planning to use the 20 percent PHEV allowance[24]. Furthermore, ACC II requires PHEVs to have 4 to 5 times greater EV-only mileage range than current EVs[25]. ACC II also requires more convenient EV charging capability than current PHEV models[26]. All of these features encourage PHEV drivers to charge their vehicle batteries rather than relying on the auxiliary engine. So, it was assumed that if a person purchased a PHEV, they would, in fact, use their home charger (especially as it will already be pre-wired).

Table 5-5: Light Duty Vehicle Counts by Model Year in Sacramento County

Forecast by EMFAC for Calendar Year 2040

Model Year	Number of Light Duty Vehicles	% EV Sales	Number of EVs	Model Year	Number of Light Duty Vehicles	% EV Sales	Number of EVs
1996	1,478	0%	0	2019	12,157	6.7%	816
1997	1,876	0%	0	2020	11,129	8.6%	958
1998	2,037	0%	0	2021	15,486	12%	1,858
1999	2,099	0%	0	2022	20,646	12%	2,478
2000	2,462	0%	0	2023	23,417	12%	2,810
2001	2,454	0%	0	2024	26,413	12%	3,170
2002	2,452	0%	0	2025	29,841	12%	3,581
2003	2,429	0%	0	2026	33,073	35%	11,576
2004	2,442	0%	0	2027	36,546	43%	15,715
2005	2,744	0%	0	2028	39,495	51%	20,142
2006	2,776	0%	0	2029	42,605	59%	25,137
2007	2,864	0%	0	2030	45,191	68%	30,730
2008	2,343	0%	0	2031	47,921	76%	36,420
2009	1,656	0%	0	2032	49,690	82%	40,746
2010	1,999	0%	0	2033	51,756	88%	45,546
2011	2,392	0%	0	2034	53,102	94%	49,916
2012	3,350	0%	0	2035	54,362	100%	54,362
2013	4,897	1.7%	82	2036	54,942	100%	54,942
2014	5,511	2.0%	112	2037	54,447	100%	54,447
2015	7,729	1.6%	126	2038	52,923	100%	52,923
2016	9,052	1.9%	171	2039	49,671	100%	49,671
2017	10,888	3.7%	400	2040	39,774	100%	39,774
2018	12,282	5.3%	648			**Total**	**599,255**

[24] Ibid., Page 59.

[25] Ibid., Page 59, Table III-4.

[26] Ibid., Pages 50 - 53.

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Table 5-5 shows an estimated number of 599,255 EVs in 2040 in Sacramento County out of a total 934,801 light duty vehicles forecast by EMFAC, or 64.1 percent EV. It was assumed that each of single-family and multi-family homes will have a light duty vehicle. Thus, at least 64.1 percent of the homes will have an EV or PHEV and will use a home charger by 2040. The 64.1 percent value is an underestimate because there are electrically powered medium duty trucks that will also be owned and charged at home by Jackson Township residents, but the above ACC II calculations only accounted for light duty autos and light duty trucks.

However, the above analysis assumes that the model year distribution in 2040 does not change from that forecast by EMFAC 2021. It is likely that by 2040 the number of Jackson Township residents owning an EV will be much greater than the 64.1% value estimated by EMFAC 2021 for a number of reasons:

- After 2035, drivers will not have a choice but to purchase an EV if they want a new vehicle.
- Jackson Township residents will already have a pre-wired home so that installing a charger is simple and relatively inexpensive.
- By 2040, EV charging will likely simply become a matter of plugging in a 110-volt or 220-volt cord provided with the vehicle.[27]
- Jackson Township homes will be equipped with solar power, eliminating the cost of charging during the day; and by 2040 home battery storage will be prevalent allowing for "solar" charging even at night.
- Because California is a dominant market, vehicle manufacturers are likely to offer many more EV models and options than currently available and will not want to maintain dual manufacturing lines (internal combustion engines and EVs). Furthermore, other states will also likely adopt comparable requirements for EVs as required by the California ACC II. Therefore, there will be limited options for drivers to purchase non-EV vehicles.
- Vehicle repair shops are already switching to EV capabilities and by 2040 it will be even more difficult to find internal combustion engine repair and service opportunities.

In light of the above, it is reasonable that residents of Jackson Township will embrace ZEVs at a much higher frequency than required and the percentage of ZEVs will be greater than the 64.1 percent calculated. Accordingly, a reasonably conservative assumption of 75 percent residential ZEVs was made.

[27] Ibid.

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Appendix J-1 shows the calculations for the emission reductions that would result from the pre-wiring and the 75 percent actual EV assumption. To calculate the emission reduction, an average light duty VMT per Jackson Township household was first calculated from the Project-Related VMT and from the Cumulative VMT scenarios and the EMFAC forecasted VMT for Sacramento County that 77.1 percent of total VMT is produced in 2040 by light duty autos and trucks. Then 75 percent of the light duty vehicle VMT associated with the pre-wired households was calculated (i.e., 75 percent of the single-family housing units plus 75 percent of 77 percent of the 2,150 multi-family dwelling units times the average light duty VMT per household) to represent the amount of electric VMT that would offset conventionally fueled VMT. The amount of emission reductions was calculated using EMFAC 2021 emission factors for only gasoline and diesel-fueled light duty automobiles and light and medium duty trucks. The emission reductions associated with dwelling unit charging stations shown in Appendix J-1 are 17,898 MT/yr for the Project-Related VMT scenario and 12,156 MT/yr for the Cumulative VMT scenario.

Note that the 2022 version of California Green Building Code (CCR Title 24), effective January 1, 2023, also requires EV chargers for non-residential and multi-family housing. Should Title 24 mandate more EV chargers than committed to herein, the number of EV chargers will be increased to meet Title 24 requirements. If this occurs, the emission reductions will be greater than shown in Appendix J-1.

5.2.9 Emission Reductions Associated with the Sacramento Raceway

The Jackson Township Specific Plan includes land owned and operated by the Sacramento Raceway. If Jackson Township is completely developed, the Sacramento Raceway will cease operations. In April 2021 a study was conducted to assess the potential health effects of Raceway operations[28]. This study estimated the GHG emissions from the Raceway, including spectators, race vehicle transport, and racing vehicle emissions. The study estimated annual GHG emissions of 1,610 MT/yr.

5.2.10 Reduction for Electrified Construction Equipment

Electrification of construction equipment has not progressed as rapidly as passenger vehicles. However, both Caterpillar and Volvo are currently (in 2022) selling fully electric backhoes and dozers and are producing other heavier equipment with electric drive motors that, according to Caterpillar, result in 35 percent less fuel use[29].

[28] Kleinfelder, 2021. Letter to Mr. Angelo Tsakopoulos dated *April 19, 2021.*

[29] See for example, https://www.equipmentworld.com/equipment/article/14970340/caterpillars-d6-xe-electric-drive-dozer-explained. Accessed April 2022.

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Appendix K shows the type and numbers of equipment, usage, horsepower, and load factor assumed by the CalEEMod model to estimate the construction emissions. The CalEEMod model does not account for any electrification of construction equipment. Thus, the CalEEMod assumptions were adjusted as shown in Appendix K to account for fully electric small dozers and backhoes and 35 percent better fuel economy from heavier equipment. Overall, construction emissions would be reduced by about 67 percent if currently available electrified construction equipment were used. The actual reduction by 2040 would likely be greater than 67 percent because by then there would be more electrified construction equipment available than there was in 2021. Thus, the emission reduction associated with electrified construction equipment is at least 756 MT/yr (0.67 x 1,129 MT/yr, refer to Section 4 herein).

5.3 POTENTIAL DISBENEFITS OF JACKSON TOWNSHIP

If Jackson Township is fully developed, the existing grassland and some of the existing trees on the site would have to be removed. The effect of this disbenefit is calculated as follows.

5.3.1 Redevelopment of Existing Grassland

The entire Jackson Township Specific Plan covers 1,391.0 acres of land. However, 74.7 of those acres are agricultural land that will remain agricultural. The remaining 1,316.3 acres of grassland could be removed and replaced with buildings, landscaping, roads, etc. as discussed above. The existing grassland sequesters CO_2. The existing grassland could be categorized as more like a desert grassland than a typical grassland (which, per IPCC definition includes pastures, woody vegetation, herbs, and brushes). Unfortunately, no CO_2 sequestration factors for desert grassland could be found, thus it was assumed that desert grassland sequestered one-half the amount of the traditional grassland value discussed in Section 5.2.2, i.e., one-half of 0.33 MT C/ha/yr. Thus, it was assumed that 1,316.3 acres of desert grassland sequestered 322 MT/yr of GHG:

1,316.3 acres x 0.4047 ha/acre x 0.33 MT C/ha-yr x 44/12 x 0.5 = 322 MT CO_2/yr

Note that as discussed above, cattle currently graze on the site. The cattle will be removed, but this is a benefit as discussed in Section 5.2.3.

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5.3.2 Removal of Trees

There are only a few trees on-site, as most of the property is desert grassland without shrubs or trees. A Google Earth view of the site was examined and an approximate count of trees shown in Google Earth calculated. Over the entire 1,391.0 acres, there appear to be about 280 trees; however, about 100 of those trees are on agricultural land that will not be affected by the Project. The amount of GHG sequestered by the 180 existing trees that could be removed if the Project is fully developed was calculated as 7 MT/yr using the average CO_2 sequestration value of 0.0365 MT/yr per tree discussed in Section 5.2.4 (180 trees x 0.0365 MT/yr per tree = 7 MT/yr).

5.4 SUMMARY OF THE BENEFIT OF ADDITIONAL MITIGATION

Table 5-6 summarizes the benefits and disbenefits of the measures and shows the net GHG emissions after accounting for all of the quantified mitigation. The corresponding Section of this GHGRP that discusses each line item in Table 5-6 is also noted.

Table 5-6: Net Annual GHG Emissions for Alternative 2 GHG Emissions

Description	Project-Related VMT Scenario Annual GHG Emissions (MT/yr)	Cumulative VMT Scenario Annual GHG Emissions (MT/yr)
Annual Non-Mobile Operational Emissions from CalEEMod (Table 2-3)	12,890	12,890
Amortized Annual Construction Emissions (Section 4)	1,129	1,129
Annual Mobile Emissions from Traffic Study (Table 3-2)	32,497	21,381
Total Annual Operational Non-Mobile plus Construction plus Mobile Emissions	*46,516*	*35,400*
Penalty for Removal of Grassland (Section 5.3.1)	322	322
Penalty for Removal of Trees (Section 5.3.2)	7	7
Total Equivalent Project Emissions (including penalties)	**46,845**	**35,729**
Reduced VMT (Table 5-3)	- 1,885	- 1,240
Eliminate Natural Gas Emissions (Section 5.2.1)	- 7,431	- 7,431
Reduction from Jackson Township Vegetation Preserve (Section 5.2.2)	- 2,905	- 2,905
Reduction from Elimination of Cattle (Section 5.2.3)	- 168	- 168
Reduction from Jackson Township Trees (Section 5.2.4)	- 730	- 730

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Table 5-6 (cont): Net Annual GHG Emissions for Alternative 2 GHG Emissions

Reduction from Electric Landscaping Equipment (Section 5.2.5)	- 98	- 98
Reduction from Landfill Gas Energy Recovery (Section 5.2.6)	- 1,183	- 1,183
Reduction from 805 Non-residential EV Charging Stations (Section 5.2.7)	- 12,250	- 12,250
Reduction from Residential Housing EV Charging (Section 5.2.8)	- 17,898	- 12,156
Redevelop Sacramento Raceway (Section 5.2.9)	- 1,610	- 1,610
Reduction from Electrified Construction Equipment (Section 5.2.10)	- 756	- 756
Total GHG Reductions	*- 46,914*	*- 40,527*
Net GHG After Reductions	**- 69**	**- 4,798**

5.5 NON-QUANTIFIED MITIGATION

The preceding sections of the GHGRP deal only with quantified VMT and associated emission reductions. There are numerous other project design features that would also result in reduced GHG emissions, but the benefit of those features has not been quantified. Some of said features are:

- An over-statement of VMT because the VMT per resident and per employee values do not account for the mutually beneficial interaction of the Jackson Township Specific Plan with other existing and/or approved land uses that result in reduced VMT. For example, Jackson Township schools and retail will serve not only Jackson Township residences but existing residences in the area, thus reducing the distance traveled by existing persons.
- An over-statement of employee VMT because the VMT per employee does not account for the current shift to work-from-home and remote working/learning that is occurring.
- Participation in the Sacramento County affordable housing program. Providing affordable (below market rate) housing allows residents to live closer to job or schools, reducing commute distances and emissions.
- Low flow bathroom fixtures, kitchen fixtures, showers, and toilets in all residential units and commercial buildings.
- Reduced square footage of residential turf due to the increased housing density.
- Water efficient irrigation systems and water efficient landscaping for the non-residential areas.
- Some of the existing homes located within the Jackson Township Specific Plan will be replaced with more modern and energy efficient homes and existing sources of natural gas combustion will be removed.

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- Increased landfill gas capture efficiency to more than 90 percent. Many existing landfills in California capture well in excess of 90 percent and by 2040 that should be standard for all landfills.
- More efficient water treatment digester gas capture and energy recovery.
- Additional electric construction equipment that will be developed and implemented by 2040.
- Increased fuel efficiency of non-electric construction equipment that will occur before 2040.
- There may be additional GHG reduction measures that could be implemented as the result of the Final Draft Sacramento County Climate Action Plan but have not been accounted for herein.

And most significantly, all of the mobile-source emission estimates are over-stated and the benefit of EV charging stations under-stated because they do not account for more electric vehicle penetration than assumed and other changes in transportation that will have to occur if California is to reach the 2050 GHG reduction goals. For example, the new (April 1, 2022) Federal passenger car and light duty truck fleet wide average fuel economy standard of approximately 49 miles per gallon (mpg) for new vehicles by calendar year 2026 has not been accounted for. Thus, prior to full development of Jackson Township in 2040 there will be greater GHG emission reductions and even lower GHG emissions than stated herein.

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September 14, 2022
Kleinfelder Project Number: 20221505.001A

Mr. Jim Wiley
Taylor & Wiley
500 Capital Mall, Suite 1150
Sacramento, California 95814

SUBJECT: Analysis of Potential Health Effects Related to the Air Quality Effects of the Jackson Township Specific Plan

Dear Mr. Wiley:

Tsakopoulos Investments is proposing the Jackson Township Specific Plan (Jackson Township) encompassing approximately 1,391 acres of land located in southeastern Sacramento County, east of Excelsior Road, north of Jackson Highway, and west of Eagles Nest Road. The Jackson Township project is a mixed-use development that includes a mix of different housing types and commercial and retail land uses. One of the project alternatives (the Proposed Project) is evaluated in this report: the California Environmental Quality Act (CEQA) Alternative 2. There are two scenarios for Alternative 2: one with Project-Related vehicle miles traveled (VMT) and one with Cumulative VMT, as explained further below.

In October 2020, the Sacramento Metropolitan Air Quality Management District (SMAQMD or District) published final Guidance[1] for applicants to use in addressing an issue raised by the California Supreme Court in the case of *Sierra Club v. County of Fresno* (2018) 6 Cal. 5th 502 regarding the proposed Friant Ranch Project, where the Court determined that a CEQA air quality analysis must "make a reasonable effort to substantively connect the Project's air quality effects to the likely health consequences." The SMAQMD October 2020 Final Guidance is the most current (as of August 2022) guidance and is the best currently available methodology to estimate potential health effects.

This letter report implements the SMAQMD October 2020 Final Guidance for the proposed Jackson Township Specific Plan.

[1] *Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District*, Final October 2020. Available at www.airquality.org/Businesses/CEQA-Land-Use-Planning/SMAQMDFriantRanchFinalOct2020.pdf. Accessed August 22, 2022.

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1.0 SUMMARY

The District's October 2020 Final Guidance is based on extensive air quality and health effects modeling that yields an estimate of incremental health effects as the result of a proposed project's emissions of criteria air pollutants: oxides of nitrogen (NO_x), volatile organic compounds (VOCs, also termed reactive organic gases, ROG), particulate matter (PM_{10} and $PM_{2.5}$), carbon monoxide (CO), and oxides of sulfur (SO_x). The health effect modeling is based on a photochemical grid model (PGM) that accounts for reactions in the atmosphere of NO_x and ROG (and to a much lesser extent, CO) to create ozone and conversion in the atmosphere of NO_x and SO_x into $PM_{2.5}$. The PGM model calculates concentrations of ozone and $PM_{2.5}$, and the concentrations are then input into the United States Environmental Protection Agency (USEPA) BenMAP health effects model. The BenMAP model relates ozone and $PM_{2.5}$ concentrations to incremental health effects: mortality (all causes), hospital admissions (respiratory, asthma, cardiovascular), emergency room visits (asthma), and acute myocardial infarction (non-fatal) for $PM_{2.5}$, and mortality, emergency room visits (respiratory) and hospital admissions (respiratory) for ozone. The BenMAP model accounts for PM_{10} health effects by using $PM_{2.5}$ as a surrogate. Thus, all of the criteria pollutant emissions are accounted for in the District's Final Guidance methodology. The BenMAP model is used by the USEPA in evaluating health effects and establishing the National Ambient Air Quality Standards (NAAQS) that are set to protect the public health and safety[2].

The District Final Guidance includes screening tools that use proposed project emissions of NO_x, ROG, and $PM_{2.5}$ to estimate potential health effects in relation to those emissions. Although only three of the criteria pollutant emissions are entered into the screening tool, the tool accounts for the remaining criteria pollutant emissions through surrogates. Two screening tools are published: Minor Projects and Strategic Area Projects. Strategic Area Projects have emissions from two to eight times greater than the maximum Thresholds of Significance (TOS) from the five air districts in the Sacramento region, while Minor Projects have emissions less than the TOS. The TOS were adopted by the SMAQMD as a single set of thresholds triggering additional analyses. Any relatively large project will exceed the TOS and require additional analyses such as conducted herein.

Potential emissions from the proposed Jackson Township Project were estimated in Revision 3 to the Air Quality Mitigation Plan (AQMP)[3] completed in August 2022 and Revision 4 to the Greenhouse Gas Reduction Plan (GHGRP) also completed in August 2022[4]. The Updated AQMP evaluated the Proposed Project or Alternative 2 associated vehicle travel [Business as Usual (BAU), Project-Related VMT, or Cumulative VMT], additional mitigation for NO_x and ROG to achieve SMAQMD emission reduction targets for Alternative 2, and additional mitigation for greenhouse gases (GHG) that also result in reductions of NO_x and ROG. The Updated GHGRP included emission reduction measures aimed at meeting SB 743 targets for Alternative 2 plus additional mitigation that resulted in "net zero" GHG emissions, i.e., emission reductions more than offset potential GHG emissions from Jackson Township.

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[2] *PGM models and the BenMAP health effects model are the most sophisticated models currently available for conducting air quality effect studies. PGM models are specified by the USEPA for regional modeling of ozone (40 CFR Part 51 Appendix W) and are used throughout the US to develop State Implementation Plans to bring areas into attainment and assess effects of emitting sources. The BenMAP model has been used since 2003. The BenMAP and PGM models are routinely updated to incorporate state of the science and are currently in use by the USEPA.*

[3] *Revision 3 – Updated Air Quality Mitigation Plan for the Jackson Township Specific Plan, August 24, 2022* .

[4] *Revision 4 – Updated Greenhouse Gas Reduction Plan for the Proposed Jackson Township Specific Plan, August 25, 2022.*

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BAU VMT is a default VMT based solely on land uses and does not incorporate any of the project design elements that reduce VMT. Project-Related VMT is the amount of vehicle travel expected for the Jackson Township as if it were the only project in the region but including all of the VMT mitigation in the project design. Cumulative VMT is the amount of travel expected for the Jackson Township accounting for other projects in the region and including all of the VMT mitigation in the project design. BAU VMT for Jackson Township is greater than Project-Related VMT and Project-Related VMT for Jackson Township is greater than Cumulative VMT.

Based on the magnitude of the Jackson Township operational emissions, the Jackson Township project would qualify to use the Strategic Area Project Health Effects Tool discussed in the Final Guidance. Construction emissions associated with the Jackson Township project were also calculated and reported[5] but are much less than the operational emissions. Also, maximum operational emissions do not occur at the same time as maximum construction emissions. Thus, only operational emissions are evaluated herein. Emissions were calculated using the California Emissions Estimator Model (CalEEMod) emissions model based on anticipated land uses, VMT, and mitigation.

The Final Guidance screening tools use emission estimates in terms of pounds per day (lbs/day). The AQMP reported emissions for Jackson Township in terms of annual [tons per year (tpy)], summer peak daily (lb/day), and winter peak daily (lb/day). Winter peak daily NO_x emissions are slightly larger than summer peak daily, while summer peak daily ROG emissions are slightly larger than winter. Changes in $PM_{2.5}$ peak daily emissions summer to winter are de minimis. As explained below, peak winter NO_x and $PM_{2.5}$ and peak summer ROG emissions were combined into a single assessment in order to calculate maximum possible health effects, even though peak winter and peak summer emissions cannot both occur at the same time. Furthermore, peak daily emissions were used, even though the average daily emissions are much less. Accordingly, the potential health effects are over-stated.

Peak daily emissions of NO_x, ROG, and $PM_{2.5}$ for the emission scenarios evaluated herein are shown in Table 1-1. The emissions shown represent the Jackson Township project at full build out after mitigation, estimated to occur by 2040. The source of the emission values shown in Table 1-1 are discussed in Section 3 below.

Table 1-1: Jackson Township Peak Daily Emissions After Mitigation[a]

Scenario	Alternative	NO_x (lb/day)	ROG (lb/day)	$PM_{2.5}$ (lb/day)
1	Alternative 2, Project-Related VMT, with Additional Mitigation	90.9	427.7	75.6
2	Alternative 2, Cumulative VMT, with Additional Mitigation	60.0	393.3	51.4

[a] Peak daily emissions are the winter peak daily for NO_x and $PM_{2.5}$ and the summer peak daily for ROG.

Jackson Township emissions from Table 1-1 were input into the Final Guidance screening tool for Strategic Area Project II, "Rancho Cordova," to estimate the incremental health effects. The results are shown in Table 1-2. The method for arriving at the values shown in Table 1-2 are discussed in Section 4 below.

[5] *AQMP Appendix E.*

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Table 1-2: Summary of Jackson Township Potential Incremental Annual Health Incidences

Scenario	Alternative	Total Number of Annual Health Incidences	Percent of Background Incidences
1	Alternative 2, Project-Related VMT, with Additional Mitigation	9.25	0.0050%
2	Alternative 2, Cumulative VMT, with Additional Mitigation	9.23	0.0050%

Table 1-2 shows that there is not much difference in potential health effects between the Project-Related VMT and Cumulative VMT. The relatively small number of health effects is due to the extensive mitigation built into the project design that reduces the amount of vehicle travel, reduces emissions from vehicles (enhancing electric vehicle penetration), and reduces emissions through a variety of other mitigation measures such as a mandatory Transportation Management Association for both employers and residents and non-residential and residential electric vehicle charging stations as discussed in the AQMP[6] and GHGRP[7].

In addition to conservatism that is inherent in any screening tool, the potential health effects are over-stated for Alternative 2 because peak daily emissions were used instead of average daily emissions, peak winter and peak summer emissions have been comingled, the CalEEMod model itself includes conservative over-estimates of emissions, some of the health incidences may be double counted, and, as explained in the AQMP and GHGRP, not all of the mitigation measures designed into the proposed Jackson Township project have been accounted for in the emission reductions.[8]

2.0 TECHNICAL BASIS FOR THE GUIDANCE METHODOLOGY

The SMAQMD Final Guidance and screening tools are based on sophisticated air quality and health effects models. PGM modeling was conducted with the USEPA-approved Comprehensive Air Quality Model with Extensions (CAMx) model and health effects modeling was conducted with the USEPA BenMAP model. Both of these models are used extensively by federal, state, and local regulatory agencies as well as applicants to assess proposed projects' potential air quality and health effects and are the currently most sophisticated models available for this type of assessment. CAMx and BenMAP are used throughout the US to assess the benefits of reducing emissions in a region. BenMAP has been in use by the USEPA since 2003, and CAMx has been in use since 1997. Both models are routinely updated to the state of the science.

In order to create the screening tools, the District retained a consultant (Ramboll) to perform the modeling. Ramboll modeled two sets of projects: Minor Projects and Strategic Area Projects. Minor projects are those with emissions less than the TOS, and Strategic Area Projects are those with emissions from two to eight times the TOS. Forty-one example minor projects were modeled at locations throughout Sacramento and surrounding counties and six example Strategic Area Projects were modeled. The center of one of the hypothetical modeled Strategic Area Projects (Source II) is located only about six kilometers (km) north of the center of the proposed Jackson Township project.

[6] *AQMP Pages 31 to 36.*

[7] *GHGRP Pages 36 to 41.*

[8] *AQMP Pages 36-37.*

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The PGM modeling was conducted with a four km grid, so Source II adequately represents potential health effects from Jackson Township and is essentially within one grid cell as suggested by the Final Guidance for representative Strategic Area Projects.

After Ramboll modeled the hypothetical projects with PGM to calculate ozone and $PM_{2.5}$ concentrations, the concentrations were input to the BenMAP model to calculate potential health effects. Although ozone and $PM_{2.5}$ concentrations and associated health effects are not necessarily linear with respect to emissions, within a relatively small range of emissions linearity can be used. That is why the Final Guidance based emissions for the Strategic Area Projects from two to eight times the TOS. Linearity allows one to take the PGM and BenMAP results for the hypothetical projects and scale those results by emissions for an actual proposed project[9].

3.0 EMISSIONS FOR THE JACKSON TOWNSHIP PROJECT

The SMAQMD Final Guidance screening tool for Strategic Area Projects was used to assess the potential health effects of the Jackson Township project. Two emission scenarios were assessed and the potential health effects as calculated by the Final Guidance screening tool for Strategic Area Projects are reported in Attachments 1 and 2. Table 3-1 shows emissions for Alternative 2 prior to additional mitigation. The emissions in Table 3-1 came from the AQMP as noted and were estimated with CalEEMod as described in the AQMP and noted below the Table.

Table 3-1: Alternative 2 Peak Daily Emissions Prior to Additional Mitigation

Scenario	Alternative		NO_x (lb/day)	ROG (lb/day)	$PM_{2.5}$ (lb/day)
1	Alternative 2 Project-Related VMT, prior to Additional Mitigation	Summer	164.4	462.9	84.0
		Winter	183.7	411.2	84.0
2	Alternative 2 Cumulative VMT, prior to Additional Mitigation	Summer	132.8	424.7	60.1
		Winter	147.1	382.7	60.1

Source, AQMP:
Alternative 2 Project-Related VMT, Appendix C-2, Page 7, Summer
Alternative 2 Project-Related VMT, Appendix C-3, Page 7, Winter
Alternative 2 Cumulative VMT, Appendix C-5, Page 7, Summer
Alternative 2 Cumulative VMT, Appendix C-6, Page 7, Winter

As shown in Table 3-1, summer emissions of NO_x are less than winter, but winter emissions of ROG are less than summer. In order to yield a maximum possible estimate of health effects, the peak winter and peak summer daily emissions were comingled, i.e., peak daily winter NO_x and $PM_{2.5}$ were used along with peak daily summer ROG even though this combination could not occur. Nevertheless, because models are used to estimate emissions, pollutant concentrations, and potential health effects; the analysis uses this most conservative hypothetical worst-case approach.

[9] *See Final Guidance Appendix C, Page C-4.*

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Note that the emissions shown in Table 3-1 are peak daily emissions, not an average over the year. For example, Table 3-2 shows the annual emissions (in terms of tons per year) and the annual average daily emissions (calculated by taking the annual emissions and dividing by 365). The peak daily NO_x and $PM_{2.5}$ emissions shown in Table 3-1 are on the order of 20 percent greater than the annual average daily emissions shown in Table 3-2; while ROG peak daily emissions are a few percent greater than average daily.

Table 3-2: Alternative 2 Average Daily Emissions Prior to Additional Mitigation

Scenario	Alternative		NO_x	ROG	$PM_{2.5}$
1	Alternative 2 Project-Related VMT, prior to Additional Mitigation	Annual (tpy)	28.1	72.6	12.9
		Average Daily (lb/day)	154.0	397.8	70.7
2	Alternative 2 Cumulative VMT, prior to Additional Mitigation	Annual (tpy)	22.3	67.5	9.0
		Average Daily (lb/day)	122.2	369.9	49.3

Source, AQMP:
Annual Alternative 2 Project-Related VMT, Appendix C-1, Page 8.
Annual Alternative 2 Cumulative VMT, Appendix C-4, Page 8.
Average Daily emissions are annual divided by 365 days per year.

Emissions for the two scenarios evaluated herein, Alternative 2 with Project-Related VMT and Alternative 2 with Cumulative VMT, are reported in the AQMP without and with additional mitigation. The additional mitigation in the AQMP is mitigation not included in the initial project design but has been committed to by the Jackson Township Applicant. The magnitude of the emission reductions in the AQMP and GHGRP are in terms of tons per year. Accordingly, in order to obtain peak daily emissions after additional mitigation was applied, a three-step process was completed.

The first step to calculate peak daily emissions including the additional mitigation was to obtain from the AQMP the peak daily emissions for Alternative 2 when Project-Related and Cumulative VMT were accounted for with CalEEMod. These values are the maximum peak summer or winter daily emissions (in terms of pounds per day) as shown in Table 3-1 and repeated in the first row of Tables 3-3 and 3-4.

The second step was to calculate the annual percent reduction in ROG and NO_x (in terms of tpy) that were not accounted for in the CalEEMod emissions model but were included in the AQMP and GHGRP. These reductions are shown in Tables 3-3 and 3-4.

The third step was to apply the annual percent reduction to the peak daily emissions. The calculations and the source of the emission values for Alternative 2 Project-Related VMT are shown in Table 3-3 and Alternative 2 Cumulative VMT in Table 3-4.

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Table 3-3: Peak Daily Emissions for Alternative 2 Project-Related VMT with Additional Mitigation

Scenario	Alternative	Emission Type	NO_x	ROG	$PM_{2.5}$	Source of Values
1	Alternative 2 Project-Related VMT	Winter Peak Daily NO_x and $PM_{2.5}$ and Summer Peak Daily ROG (lb/day) when only accounting for Traffic Study VMT	183.7	462.9	84.0	*a*
		AQMP Annual when only accounting for Traffic Study VMT (tpy)	28.1	72.6	12.9	*b*
		AQMP Annual Additional Mitigation (tpy)	- 7.2	- 3.0	- 0.5	*c*
		BMP 1 GHG Eliminate Natural Gas (tpy)	- 6.3	- 0.7	- 0.50	*d*
		GHGRP Electric Landscaping (tpy)	- 0.7	- 1.8	- 0.3	*e*
		Total Annual Reductions in Addition to Traffic Study (tpy)	- 14.2	- 5.5	- 1.3	*f*
		Percent Reduction from Annual Emissions with Additional Mitigation	- 50.5%	- 7.6%	- 10.0%	*g*
		Winter Peak Daily NO_x and $PM_{2.5}$ and Summer Peak Daily ROG with Additional Mitigation (lb/day)	**90.9**	**427.7**	**75.6**	*h*

Source of Values:

a. AQMP Appendix C-3, Page 7 for winter and Appendix C-2, Page 7 for summer.
b. AQMP Appendix C-1, Page 8.
c. AQMP Table 1-4A. Sum of additional transportation mitigation (Row 5) plus electric vehicle charging stations (Row 6) plus redevelopment of Sacramento Raceway (Row 7). $PM_{2.5}$ reduction is only from redevelopment of the Sacramento Raceway (AQMP Section 5) and does not include possible $PM_{2.5}$ reductions from reduced VMT beyond the Traffic Study nor the reduced exhaust $PM_{2.5}$ from electric vehicles replacing gasoline fueled.
d. AQMP Appendix C-1, Page 18, emissions due to natural gas usage.
e. The GHGRP requires only electric landscaping equipment. Reductions from AQMP Appendix C-1, Page 33.
f. Item c plus Item d plus Item e.
g. Item f / Item b.
h. Item a x (1 – Item g).

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Table 3-4: Peak Daily Emissions for Alternative 2 Cumulative VMT with Additional Mitigation

Scenario	Alternative	Emission Type	NO_x	ROG	$PM_{2.5}$	Source of Values
2	Alternative 2 Cumulative VMT	Winter Peak Daily NO_x and $PM_{2.5}$ and Summer Peak Daily ROG (lb/day) when only accounting for Traffic Study VMT	147.1	424.7	60.1	*a*
		AQMP Annual when only accounting for Traffic Study VMT (tpy)	22.3	67.5	9.0	*b*
		AQMP Annual Additional Mitigation (tpy)	- 6.2	- 2.5	- 0.5	*c*
		BMP 1 GHG Eliminate Natural Gas (tpy)	- 6.3	- 0.7	- 0.5	*d*
		GHGRP Electric Landscaping (tpy)	- 0.7	- 1.8	- 0.3	*e*
		Total Annual Reductions in Addition to Traffic Study (tpy)	- 13.2	- 5.0	- 1.3	*f*
		Percent Reduction from Annual Emissions with Additional Mitigation	- 59.2%	- 7.4%	- 14.4%	*g*
		Winter Peak Daily NO_x and $PM_{2.5}$ and Summer Peak Daily ROG with Additional Mitigation (lb/day)	**60.0**	**393.3**	**51.4**	*h*

Source of Values:

a. AQMP Appendix C-6, Page 7 for winter and Appendix C-5, Page 7 for summer.
b. AQMP Appendix C-4, Page 8.
c. AQMP Table 1-4B. Sum of additional transportation mitigation (Row 5) plus electric vehicle charging stations (Row 6) plus elimination of Sacramento Raceway (Row 7). $PM_{2.5}$ reduction is only from redevelopment of the Sacramento Raceway (AQMP Section 5) and does not include possible $PM_{2.5}$ reductions from reduced VMT beyond the Traffic Study nor the reduced exhaust $PM_{2.5}$ from electric vehicles replacing gasoline fueled.
d. AQMP Appendix C-4, Page 18, emissions due to natural gas usage.
e. The GHGRP requires only electric landscaping equipment. Reductions from AQMP Appendix C-4, Page 33.
f. Item c plus Item d plus Item e.
g. Item f / Item b.
h. Item a x (1 – Item g).

4.0 RESULTS OF THE HEALTH EFFECTS SCREENING CALCULATIONS FOR THE JACKSON TOWNSHIP PROJECT

The peak daily emissions after mitigation shown in Tables 3-3 and 3-4 were entered into the Final Guidance screening tool for Strategic Area Projects to estimate the potential health effects related to the emissions. The screening tool output is shown in Attachments 1 and 2 and summarized in Table 4-1. The screening tool reports the projected number of health incidences per year in model year 2035[10] in terms of both the number of incidences and in terms of the percent increase above background in both the four km modeling domain and in the 5-Air-District region. The four km modeling domain is most of northern California as shown in the Final Guidance Appendix B, Figure B-2. The 5-Air-District region includes the air districts of Sacramento Metropolitan, Yolo-Solano, Placer County, El Dorado County, and Feather River as shown in the Final Guidance Figure 3, Page 13. The 5-Air-District Region has an

[10] The SMAQMD Screening Tool uses calendar year 2035 for the baseline. Maximum Jackson Township emissions will not occur until 2040 (anticipated full buildout). To be conservative, 2040 emissions were used coupled with the 2035 baseline. The SMAQMD Screening Tool does not offer a 2040 baseline option.

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estimated 2035 population of 3,271,451 persons per Footnote 3 of the Guidance screening tool. Tables 4-1 and 4-2 show the results for the 5-Air-District Region.

Table 4-1: Potential Annual Incremental Health Incidences for the Jackson Township Alternative 2

Scenario		1	2
Description		Alternative 2 Project Related VMT after Additional Mitigation	Alternative 2 Cumulative VMT after Additional Mitigation
$PM_{2.5}$ Health Endpoint	Age Range	Annual Incidences (mean)	Annual Incidences (mean)
Respiratory			
Emergency Room Visits, Asthma	0 - 99	1.7	1.7
Hospital Admissions, Asthma	0 - 64	0.11	0.11
Hospital Admissions, All Respiratory	65 - 99	0.64	0.64
Cardiovascular			
Hospital Admissions, All Cardiovascular (less Myocardial Infarctions)	65 - 99	0.37	0.37
Acute Myocardial Infarction, Nonfatal	18 - 24	0.00014	0.00014
Acute Myocardial Infarction, Nonfatal	25 - 44	0.013	0.013
Acute Myocardial Infarction, Nonfatal	45 - 54	0.033	0.033
Acute Myocardial Infarction, Nonfatal	55 - 64	0.053	0.053
Acute Myocardial Infarction, Nonfatal	65 - 99	0.24	0.24
Mortality			
Mortality, All Causes	30 - 99	4.3	4.3
Ozone Health Endpoint	**Age Range**	**Incidences (mean)**	**Incidences (mean)**
Respiratory			
Hospital Admissions, All Respiratory	65 - 99	0.14	0.14
Emergency Room Visits, Asthma	0 - 17	0.57	0.56
Emergency Room Visits, Asthma	18 - 99	0.99	0.98
Mortality			
Mortality, Non-Accidental	0 - 99	0.094	0.093
TOTAL INCIDENCES	0 - 99	**9.25**	**9.23**

Note: Total incidences are not reported in the screening tool, but the Total incidences shown in the table are the sum of the screening tool incidences for both health endpoints. The Total Incidences comes from adding the screening tool values and may not match exactly the sum of values shown in the table due to round-off differences.

The total number of incidences shown in Table 4-1 was calculated by summing the values from the screening tool results (Attachments 1 and 2) for all health endpoints. The total number of incidences are over-stated because there may be double counting. For example, an individual admitted for $PM_{2.5}$ may be the same individual admitted for ozone.

The total background number of health incidences in the 5-Air-District Region shown in the screening tool and Table 4-2 is 184,505 incidences out of the projected 2035 population of about 3.3 million

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persons. This helps put the roughly nine additional incidences associated with the Jackson Township shown in Table 4-1 in perspective. The background number of health incidences and the incremental percentage increase are shown in Table 4-2.

Table 4-2: Annual Background Number of Health Incidences and Percent Above Background for the Jackson Township

Scenario		Background	1	2
Description		Annual Number of Background Health Incidences Projected for 2035	Alternative 2 Project Related VMT after Additional Mitigation	Alternative 2 Cumulative VMT after Additional Mitigation
$PM_{2.5}$ Health Endpoint	Age Range		% Increase above Background	% Increase above Background
Respiratory				
Emergency Room Visits, Asthma	0 - 99	18,419	0.0092%	0.0092%
Hospital Admissions, Asthma	0 - 64	1,846	0.0060%	0.0060%
Hospital Admissions, All Respiratory	65 - 99	19,644	0.0033%	0.0033%
Cardiovascular				
Hospital Admissions, All Cardiovascular (less Myocardial Infarctions)	65 - 99	24,037	0.0015%	0.0015%
Acute Myocardial Infarction, Nonfatal	18 - 24	4	0.0037%	0.0037%
Acute Myocardial Infarction, Nonfatal	25 - 44	308	0.0042%	0.0042%
Acute Myocardial Infarction, Nonfatal	45 - 54	741	0.0045%	0.0045%
Acute Myocardial Infarction, Nonfatal	55 - 64	1,239	0.0043%	0.0043%
Acute Myocardial Infarction, Nonfatal	65 - 99	5,052	0.0048%	0.0048%
Mortality				
Mortality, All Causes	30 - 99	44,766	0.0096%	0.0096%
Ozone Health Endpoint	**Age Range**		**% Increase above Background**	**% Increase above Background**
Respiratory				
Hospital Admissions, All Respiratory	65 - 99	19,644	0.0007%	0.0007%
Emergency Room Visits, Asthma	0 - 17	5,859	0.0097%	0.0096%
Emergency Room Visits, Asthma	18 - 99	12,560	0.0079%	0.0078%
Mortality				
Mortality, Non-Accidental	0 - 99	30,386	0.0003%	0.0003%
TOTAL INCIDENCES	0 - 99	**184,505**	**0.0050%**	**0.0050%**

Note: Total incidences are not reported in the screening tool, but the Total Incidences shown in the table are the sum of the screening tool incidences for both health endpoints. Total percent increase is not the sum of the individual percentages because the background for each effect is different. The number of background incidences was calculated from the screening tool and differs slightly for each scenario due to round off differences. Sum of the values in the table may not match exactly the sum calculated from the screening tool because of round off differences.

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5.0 ADDITIONAL CONTEXT FOR THE RESULTS

The approximately nine incremental health incidences calculated by the screening model includes about four deaths (projected for 2035) out of approximately 21,000 deaths per year from all causes for the period 2018-2020 in the 5-Air-District region.[11] For the projected health incidences in 2035, the data in Tables 4-1 and 4-2 can be used to establish additional context. For example, Table 4-1 shows a possible 1.7 additional emergency room visits for asthma due to Project-related $PM_{2.5}$ out of an estimated background value of 18,419 visits shown in Table 4-2.

The number of projected health incidences is a conservative upper bound estimate because (a) it is based on continuous exposure to the maximum daily average pollutant concentrations; (b) the emission rates used in the assessment were a combination of maximum summer and winter daily rates, which could not occur; (c) health incidences were counted separately for $PM_{2.5}$ and ozone, when a person could experience both so there is potential for double counting; and (d) other conservative assumptions and methods used in the CalEEMod, PGM, and BenMAP models. On the other hand, the health incidences were calculated only for those health effects that have been researched sufficiently to be quantifiable.[12] There could be additional non-quantifiable health effects, for example changes in metabolism, weight gain, diabetes, or nervous system issues, among others.

The health incidence models and screening tools used in the Guidance represent regional average values for the 5-Air-District region. Within the region it is possible that there are subgroups of the population that could experience higher health incidences than average and other subgroups that could experience lower than average incidences. For example, vulnerable populations (populations defined by age, race/ethnicity, levels of education and income, and linguistic isolation) have been linked to increased health effects from air pollution. It has also been reported that increased ozone and $PM_{2.5}$ concentrations lead to a greater risk of death for racial minorities and people with low income.[13] This is especially the case for populations located close to freeways and major roadways.

According to Section 22 of the Recirculated Draft Environmental Impact Report (DEIR) for the Jackson Township Specific Plan[14], the Jackson Township project area (Census Tract 90.05) total population is slightly lower and the portion of households that primarily speak a language other than English is slightly higher than the County overall, but the race, culture, and income of the occupants of the area is comparable to the average demographics of the remainder of the County.

---

[11] The California Department of Public Health annually publishes County Health Status Profiles (https://www.cdph.ca.gov/Programs/CHSI/Pages/County-Health-Status-Profiles.aspx). The 2022 Profile showed an average number of deaths per County for the period 2018-2020. The county average annual death numbers were 12,414.3 for Sacramento County; 3,394.0 for Placer County; 1,668.0 for El Dorado County; 1,391.0 for Yolo County; 884.7 for Sutter County; and 653.0 for Yuba County; or a total of 20,405.0 for those 6 counties. The 5-Air District region includes a portion of Solano County, and the average total deaths for Solano County were 3,585.0. Assuming about one-fourth of the deaths in Solano County were in the 5-Air District region, that would add another about 896 deaths; for a total in the 5-Air District region of 21,301 average deaths per year.

[12] *See Final Guidance, Page 20.*

[13] *See Final Guidance, Pages 21 and 22.*

[14] *Recirculated Draft Environmental Impact Report, Jackson Township Specific Plan, May 2021. Available at https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/JacksonTownshipSpecificPlan.aspx*

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Other than vehicle traffic associated with the Project, Jackson Township does not contain sources of primary $PM_{2.5}$ emissions. Thus, the ozone and $PM_{2.5}$ concentrations and health effects modeled are a regional issue, not a local Jackson Township issue. Potential health effects are related to respiratory issues, and one indicator of respiratory issues is asthma. Sacramento County hosts a web site that shows various health (as well as other) data trends.[15] According to the web site, 18.72 percent of the population in the County had asthma in 2020. This compares to 23.5 percent in 2017, 16.1 percent in 2020 for California overall, and 14.2 percent in 2020 for the United States as a whole. Prior to 2018, the data showed a gradual increase in the percent of persons with asthma in Sacramento County, from about 17 percent in 2009 to 23.5 percent in 2017.

Although the percentage of persons with asthma in Sacramento County is greater than California as a whole, the County is in general a healthy environment as reported by the Healthy Places Index published by the Public Health Alliance of Southern California.[16] The Healthy Places Index (HPI) for Sacramento County in 2022 is 60.7, indicating that the County is healthier than 61 percent of other California Counties. Jackson Township is located in a census tract that has an HPI of 49.6, less healthy than the County in general. The HPI is based on an assessment of economic, education, transportation, social, neighborhood, healthcare access, housing, and environment criteria. The environment criterion includes clean water and air criteria. Although Jackson Township will cause emissions and thus slightly impact clean air, all of the other criteria would be improved by the presence of Jackson Township. For example, the Project will provide employment opportunities, improve multi-modal transportation options, improve access the healthcare and other neighborhood services, and provide affordable housing opportunities for all income levels,

The proposed Jackson Township includes numerous features designed to reduce potential health effects from air pollution. For example, the Project reduces VMT by more than 43 to 61 percent from a typical (business as usual) project.[17] Reducing VMT encourages physical activity, which reduces obesity, diabetes, high blood pressure, heart disease, and other chronic conditions associated with a sedentary lifestyle[18]. The benefit of reduced VMT through increased physical activity is not accounted for in the health effects models. The reduction in Jackson Township VMT is accomplished through the following measures:

- Location in a suburban center within approximately ten miles of the Sacramento downtown central business district, less than five miles from other existing high-density commercial/job center areas, and adjacent to other planned developments such that single-use trips are minimized, i.e., there are more pass-by and diverted trips.
- A compact mix of land uses in close proximity to each other with a highly connected street and trail network and the streets are designed in a grid pattern.
- High and medium density housing for over half of the total project dwelling units with a housing density better than 9.5 dwelling units per acre.

[15] *www.behealthysacramento.org.*

[16] *Healthy Places Index website: www.healthyplacesindex.org for Sacramento County. Accessed August 21, 2022.*

[17] *See AQMP, Table 1-1.*

[18] *Final Guidance, Page 24.*

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- Below market rate housing to help provide affordable housing for all income levels.
- Approximately 15 percent of the total commercial square footage is dedicated to a mixed-use facility that combines residences and commercial/retail uses.
- Most residential units are within 1,320 feet (one-quarter mile) of a neighborhood park, open space, school, and/or bicycle/pedestrian trail.
- Most residential units are less than one-half mile from shopping and services.
- At least four schools located within the project boundaries such that most students can walk to a local school.
- At least eight parks located within the project boundaries such that residents can walk/bike to enjoy the parks.
- Access to high frequency bus service that connects to the Watt/Manlove light rail station.
- Signalized bus routes in order to avoid traffic delays.
- Multi-modal system that makes public transit, walking, and bicycling viable and attractive travel choices for residents and employees with:
    - Adequate bike parking at non-residential locations, including the transit center and park and ride locations;
    - Showers/lockers and other end of trip facilities at non-residential buildings; and
    - Long-term bike parking facilities.
- An extensive pedestrian path and trail system that is convenient and accessible from homes, schools, parks, employment, and shopping.
- Pedestrian and bike paths minimize barriers to pedestrian/bicycle use, e.g., fences, berms and other impediments are eliminated where possible.
- An on-site transit center and park and ride facilities along the designated transit route of Jackson Highway.
- Subsidized bus rapid transit lanes on Jackson Highway.
- Funding and design that will result in bus headways of 15 minutes or better.
- A mandatory Transportation Management Association (TMA) for employers and residents funded through assessments and assessments for regional transportation improvements.

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6.0 CONCLUSION

Potential health effects related to the proposed Jackson Township possibly caused by emissions from the proposed project result in about nine additional health incidences per year (e.g., hospital admissions, emergency room visits) compared to a background number of incidences in the 5-Air-District Region of about 185,000 incidences per year, or an increase of about 0.005 percent. The nine incremental incidences per year projected for 2035 are from a modeled population of about 3.3 million persons.

The potential health effect incidences were calculated from a screening tool developed by the SMAQMD to attempt to substantively connect the Project's air quality effects to the likely health consequences. In addition to conservatism that is inherent in any screening tool, the potential health effects are over-stated because peak daily emissions were used instead of average daily emissions, peak daily winter was combined with peak daily summer even though that cannot occur, the CalEEMod model itself includes conservative over-estimates of emissions, some of the health incidences may be double counted, the health benefits from increased physical activity resulting from reduced VMT have also not been accounted for, and, as explained in the AQMP and GHGRP, not all of the mitigation measures designed into the proposed Jackson Township project have been accounted for in the emission estimates[19].

If you have additional questions or concerns, please feel free to contact the undersigned at rerbes@kleinfelder.com or by phone at 303.748.7190. Alternatively, you may contact Ms. Amal Hijazi at ahijazi@kleinfelder.com or by phone at 303.237.6601.

Sincerely,

KLEINFELDER



Russell E. Erbes, CCM
Senior Principal Air Quality Scientist

Attachments 1 and 2

[19] *Ibid. Pages 21-22.*

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ATTACHMENT 1

JACKSON TOWNSHIP ALTERNATIVE 2 PROJECT-RELATED VMT WITH ADDITIONAL MITIGATION HEALTH SCREENING RESULTS

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Strategic Area Project Health Effects Tool

Strategic Area Location	II. Rancho Cordova	**<-- Step 1: Input the area**
NOx Emissions	90.9	**<-- Step 2: Input NOx emissions in lbs./day**
ROG Emissions	427.7	**<-- Step 3: Input ROG emissions in lbs./day**
PM25 Emissions	75.6	**<-- Step 4: Input PM2.5 emissions in lbs./day**

PM2.5 Health Endpoint	Age Range1	Incidences Across the Reduced Sacramento 4-km Modeling Domain Resulting from Project Emissions (per year)[2,5] (Mean)	Incidences Across the 5-Air-District Region Resulting from Project Emissions (per year)[2] (Mean)	Percent of Background Health Incidences Across the 5-Air-District Region[3]	Total Number of Health Incidences Across the 5-Air-District Region (per year)[4]
Respiratory					
Emergency Room Visits, Asthma	0 - 99	1.9	1.7	0.0093%	18419
Hospital Admissions, Asthma	0 - 64	0.12	0.11	0.0060%	1846
Hospital Admissions, All Respiratory	65 - 99	0.72	0.64	0.0033%	19644
Cardiovascular					
Hospital Admissions, All Cardiovascular (less Myocardial Infarctions)	65 - 99	0.40	0.37	0.0015%	24037
Acute Myocardial Infarction, Nonfatal	18 - 24	0.00015	0.00014	0.0037%	4
Acute Myocardial Infarction, Nonfatal	25 - 44	0.013	0.013	0.0041%	308
Acute Myocardial Infarction, Nonfatal	45 - 54	0.035	0.033	0.0044%	741
Acute Myocardial Infarction, Nonfatal	55 - 64	0.056	0.053	0.0043%	1239
Acute Myocardial Infarction, Nonfatal	65 - 99	0.25	0.24	0.0047%	5052
Mortality					
Mortality, All Cause	30 - 99	4.7	4.3	0.0096%	44766

Ozone Health Endpoint	Age Range1	Incidences Across the Reduced Sacramento 4-km Modeling Domain Resulting from Project Emissions (per year)[2,5] (Mean)	Incidences Across the 5-Air-District Region Resulting from Project Emissions (per year)[2] (Mean)	Percent of Background Health Incidences Across the 5-Air-District Region[3]	Total Number of Health Incidences Across the 5-Air-District Region (per year)[4]
Respiratory					
Hospital Admissions, All Respiratory	65 - 99	0.18	0.14	0.00072%	19644
Emergency Room Visits, Asthma	0 - 17	0.70	0.57	0.0097%	5859
Emergency Room Visits, Asthma	18 - 99	1.2	0.99	0.0079%	12560
Mortality					
Mortality, Non-Accidental	0 - 99	0.11	0.094	0.00031%	30386

1. Affected age ranges are shown. Other age ranges are available, but the endpoints and age ranges shown here are the ones used by the USEPA in their health assessments. The age ranges are consistent with the epidemiological study that is the basis of the health function.
2. Health effects are shown in terms of incidences of each health endpoint and how it compares to the base (2035 base year health effect incidences, or "background health incidence") values. Health effects are shown for the Reduced Sacramento 4-km Modeling Domain and the 5-Air-District Region.
3. The percent of background health incidence uses the mean incidence. The background health incidence is an estimate of the average number of people that are affected by the health endpoint in a given population over a given period of time. In this case, the background incidence rates cover the 5-Air-District Region (estimated 2035 population of 3,271,451 persons). Health incidence rates and other health data are typically collected by the government as well as the World Health Organization. The background incidence rates used here are obtained from BenMAP.

4. The total number of health incidences across the 5-Air-District Region is calculated based on the modeling data. The information is presented to assist in providing overall health context.

5. The technical specifications and map for the Reduced Sacramento 4-km Modeling Domain are included in Appendix A, Table A-1 and Appendix B, Figure B-2 of the *Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District.*

Sac Metro Air District Strategic Area Project Health Effects Tool, version 2, published September 2020

ATTACHMENT 2

JACKSON TOWNSHIP ALTERNATIVE 2 CUMULATIVE VMT WITH ADDITIONAL MITIGATION HEALTH SCREENING RESULTS

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Strategic Area Project Health Effects Tool

Strategic Area Location	II. Rancho Cordova	**<-- Step 1: Input the area**
NOx Emissions	60	**<-- Step 2: Input NOx emissions in lbs./day**
ROG Emissions	393.3	**<-- Step 3: Input ROG emissions in lbs./day**
PM25 Emissions	51.4	**<-- Step 4: Input PM2.5 emissions in lbs./day**

PM2.5 Health Endpoint	Age Range1	Incidences Across the Reduced Sacramento 4-km Modeling Domain Resulting from Project Emissions (per year)[2,5] (Mean)	Incidences Across the 5-Air-District Region Resulting from Project Emissions (per year)[2] (Mean)	Percent of Background Health Incidences Across the 5-Air-District Region[3]	Total Number of Health Incidences Across the 5-Air-District Region (per year)[4]
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1. Affected age ranges are shown. Other age ranges are available, but the endpoints and age ranges shown here are the ones used by the USEPA in their health assessments. The age ranges are consistent with the epidemiological study that is the basis of the health function.
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3. The percent of background health incidence uses the mean incidence. The background health incidence is an estimate of the average number of people that are affected by the health endpoint in a given population over a given period of time. In this case, the background incidence rates cover the 5-Air-District Region (estimated 2035 population of 3,271,451 persons). Health incidence rates and other health data are typically collected by the government as well as the World Health Organization. The background incidence rates used here are obtained from BenMAP.

4. The total number of health incidences across the 5-Air-District Region is calculated based on the modeling data. The information is presented to assist in providing overall health context.

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Sac Metro Air District Strategic Area Project Health Effects Tool, version 2, published September 2020

Appendix AQ-3

Air Quality Health Effects Assessment of the Sacramento Raceway

AIR QUALITY HEALTH EFFECTS ASSESSMENT OF THE SACRAMENTO RACEWAY

KLF Project #20214197.001A

APRIL 19, 2021

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20214197.001A

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1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

Tsakopoulos Investments is proposing the Jackson Township Specific Plan (Jackson Township) encompassing approximately 1,391 acres of land located in southeastern Sacramento County, east of Excelsior Road, north of Jackson Highway, and west of Eagles Nest Road. The proposed project could include housing, parks, and schools built near the existing Sacramento Raceway (Raceway) operation if the Raceway continues operations at its current location. This study assesses the potential air quality-related health effects from Raceway operations on the future housing, parks, and schools that could be located on property owned by Tsakopoulos Investments.

Raceway operations include Drag Racing and Motocross. Some of the Drag Racing events are National Hot Rod Association (NHRA) sanctioned, but it appears that none of the Motocross events are nationally sanctioned. For this assessment, the calendar of events available from the Raceway web site[1] in 2019 were used. Calendar year 2019 was used because 2020 activities were affected by the corona virus shutdowns. There were approximately 133 drag racing events scheduled in 2019, including 9 NHRA, 74 non-NHRA, and 50 test and tune and private rental drag racing events plus 9 Motocross events. A plan view of the Raceway is shown in Appendix A.

Although approximately 133 Drag Racing and 9 Motocross events were scheduled, not all of the scheduled events may have actually occurred. For example, some events could be rained out, some of the sanctioned events could be re-located, and for some of the local events there may be no or only a few participants. Thus, this analysis is a conservative over-estimate of potential effects.

Raceway operations are related to seven sets of emissions as follows:

- Spectators traveling to and from the Raceway
- Trailered race vehicles traveling to and from the Raceway

[1] *www.sacramentoraceway.com. Accessed September, 27, 2020.*

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- Non-trailered (street legal) race vehicles traveling to and from the Raceway for racing
- Spectators traveling on-site at the Raceway for parking
- Trailered race vehicles traveling on-site at the Raceway
- Street legal race vehicles traveling on-site at the Raceway
- Race vehicles (drag racers, street legal, motorcycle) racing on-site

In the absence of detailed on-site observations, reasonable assumptions based on aerial photos and other publicly available data (such as racing web sites) were made regarding the amount of vehicle travel associated with the Raceway events. The assumptions were used to estimate the number of vehicles and vehicle miles traveled (VMT) both off and on-site. Total VMT was then coupled with standard California vehicle-specific emission factors (grams per mile) from the EMFAC 2017 database for tailpipe emissions and the USEPA *Compilation of Air Pollutant Emissions Factors* (AP-42) for fugitive emissions from paved and unpaved roads.

Emission estimates were made for nitrogen oxides (NO_x), reactive organic gases (ROG), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), particulate matter less than 10 microns in diameter (PM_{10}), total organic gases (TOG), the major speciated organic gases associated with vehicle emissions (acetaldehyde, benzene, 1,3-butadiene, ethylbenzene, formaldehyde, naphthalene), and diesel particulate matter (DPM). NO_x, ROG, $PM_{2.5}$, and PM_{10} are termed criteria pollutants. The emission estimates were then coupled with two different health effects evaluation methods, one for vehicle travel to/from the Raceway and one for vehicle travel on-site. Section 2 presents the emission estimating methodology and emission estimates.

Potential health effects of vehicle travel to/from the Raceway were assessed using the Sacramento Metropolitan Air Quality Management District (SMAQMD) Guidance for associating emissions of NO_x, ROG, and $PM_{2.5}$ with regional health effects[2]. Potential effects from on-site operations (local effects) were assessed using an ambient air quality effect dispersion model (AERMOD), California and National Ambient Air Quality Standards (CAAQS and NAAQS) which are designed to protect the public health and welfare with an adequate margin of safety, and the

[2] *Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District, Final October 2020.* Sacramento Metropolitan Air Quality Management District. Available at www.airquality.org/LandUseTransportation/Documents/SMAQMDFriantRanchFinalOct2020.pdf Accessed April 4, 2021.

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California Office of Environmental Health Hazard Assessment (OEHHA) guidance[3] for calculating cancer and non-cancer health risks. Section 3 discusses the potential regional health effects methodology and Section 4 discusses the local effects methodology.

1.2 POTENTIAL EMISSIONS AND HEALTH EFFECTS

1.2.1 Potential Emissions

Table 1-1 shows the total annual and maximum daily and hourly emissions from the Raceway operations and the source of the emissions. The data in Table 1-1 come from the emission estimates presented in Section 2.2. The number of vehicles and amount of racing operations for NHRA drag racing events are much greater than for non-NHRA or Test and Tune events, thus the maximum daily and hourly emissions for drag racing shown in Table 1-1 are for NHRA events. Motocross events have lower emissions than Drag Racing, but because the Motocross tracks are nearer to the property boundary than Drag Racing, Motocross events have to be assessed as well as Drag Racing. On an annual basis both Drag Racing and Motocross can occur, but Drag Racing and Motocross do not occur on the same day. No speciated organic gases are shown in Table 1-1 because the speciation factors (percentage of TOG) are the same for all sources, and the speciation can be applied after the dispersion modeling assessment (discussed in Section 4.1.3).

Table 1-1

Summary of Raceway Emissions

Parameter	NO_x	ROG	$PM_{2.5}$ Total	PM_{10} Total	TOG	DPM
Annual (lb/year)	5235.96	1888.18	976.88	3744.66	1112.88	2.69
Daily NHRA (lb/day)	180.70	40.98	42.43	162.41	18.51	0.085
Hourly NHRA (lb/hour)	1.56	1.76	0.02	0.05	1.91	0
Annual Motocross (lb/year)	108.06	58.13	18.81	53.01	59.55	0.11
Daily Motocross (lb/day)	71.85	11.06	4.82	14.58	6.62	0.012
Hourly Motocross (lb/hour)	0.76	1.76	0.0013	0.0013	2.14	0

[3] *Guidance Manual for the Preparation of Health Risk Assessments, February 2015.* California Office of Environmental Health Hazard Assessment. Available at www.oehha.ca.gov/air-toxics-hot-spots.

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1.2.2 Potential Regional Health Effects

The SMAQMD "Friant Ranch" regional health effects screening methodology was used to assess potential health effects of spectators and race vehicles traveling to and from the Raceway. The Friant Ranch screening methodology uses emissions of NO_x, ROG, and $PM_{2.5}$ and photochemical modeling to assess the potential health effects of ozone and fine particulate ($PM_{2.5}$) created through regional-scale photochemical transformation of NO_x and ROG into ozone and particulate. The methodology is discussed further in Section 3, and the results are reported in terms of incremental increases in hospitalizations and mortality.

As shown in Table 3-1, Raceway operations could result in an increase in mortality from all causes of about 9 additional incidences or 0.005 percent above background for the 5-air district region used in the SMAQMD methodology. The health incidences are mainly due to $PM_{2.5}$ emissions.

1.2.3 Potential Local Health Effects from Criteria Pollutants

The potential for local health effects from criteria pollutants emitted during Raceway operations was assessed by comparing modeled off-site concentrations of the criteria pollutants to CAAQS and NAAQS. The assessment uses a dispersion model (AERMOD) and receptor locations to calculate ambient concentrations. AERMOD is a USEPA- and California-approved dispersion model that used SMAQMD-provided meteorological data from the Sacramento Executive (SacEx) Airport. Section 4.1 discusses the assessment methodology. The purpose of this assessment is to evaluate the potential for health effects in actual exposed persons off-site. If housing were built near to the Raceway, the center of the nearest home would be about 60 meters away from the property boundary. Thus, for this assessment model receptors were placed on a 20-meter spacing with the first row of receptors placed about 60 meters from the property boundary.

Table 1-2 shows the modeled maximum concentrations of the criteria pollutants along with an estimate of the regional background. The total effect values in Table 1-2 are an overestimate because it was assumed that the regional background does not include any emissions from Raceway operations, which is not the case. None of the criteria pollutant effects cause an exceedance of the CAAQS/NAAQS.

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Table 1-2

Modeled Criteria Pollutant Concentrations Compared to Standards

Raceway Operation	Pollutant	Averaging Time	Modeled Concentration (ug/m^3)	Background (ug/m^3)	Total (ug/m^3)	CAAQS/ NAAQS/ SIL (ug/m^3)	Exceed Standards?
DR	NO_2	1-hour	75	73	148	188	No
MX	NO_2	1-hour	104	73	177	188	No
DR MX	NO_2	Annual	0.14	11.3	11.4	57	No
DR	$PM_{2.5}$	24-hour	0.5	NA	0.5	1.2	No
MX	$PM_{2.5}$	24-hour	1.0	NA	1.0	1.2	No
DR MX	$PM_{2.5}$	Annual	0.007	NA	0.007	0.2	No
DR	PM_{10}	24-hour	1.43	NA	1.43	5	No
MX	PM_{10}	24-hour	1.12	NA	1.12	5	No
DR MX	PM_{10}	Annual	0.018	NA	0.018	1	No

DR = Drag Racing, MX = Motocross, DR MX = both Drag Racing and Motocross for annual averages.
PM concentrations are not added to background because the background is greater than the CAAQS/NAAQS, so the modeled concentrations are compared to the SIL. The SIL is the level below which the modeled concentrations are not considered to cause or contribute to an AAQS exceedance.

1.2.4 Potential Local Health Effects from Speciated Organics and DPM

The potential health effects of the speciated organic compounds were assessed by calculating an incremental potential cancer risk and a health hazard index (HHI). Incremental cancer risk is expressed in terms of the number of excess cancer incidences per one million persons exposed. A cancer risk of 10 in one million is used as a threshold for unacceptable risk, e.g., the Proposition 65 cancer risk threshold is 10 in one million. Health hazard indices are used to assess potential non-cancer health effects of individual compounds. An HHI greater than 1.0 means that the modeled ambient concentration is greater than a concentration that could cause a direct health effect, such as headaches. An HHI of less than 1.0 indicates that there is not a potential for direct health effects.

Table 1-3 shows the modeled excess cancer risk results and HHI for possible nearby future residents when the effects from all of the speciated compounds and DPM are added together. The primary contributor to the local speciated organic and DPM health effects is DPM. None of the results exceed the acceptable health thresholds. As discussed in Section 4.1.6, the potential health effects for possible future schools are less than about 2 percent of the values shown in Table 1-3.

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Table 1-3

Summary of Speciated Organic Potential Health Effects

Potential Health Effect	Potential Effect	Threshold	Exceed Thresholds?
Cancer Risk	1.97 in 1 million	10 in 1 million	No
Acute 1-Hour HHI	0.11	1.0	No
Acute 8-Hour HHI	0.16	1.0	No
Chronic HHI	0.0011	1.0	No

See Sections 4.2 and 4.3 for discussion of Thresholds.

1.3 SUMMARY

Raceway operations can result in emissions of criteria pollutants, speciated organic gases, and DPM. The emissions are associated with vehicle travel to and from the Raceway as well as travel on-site. Several assumptions regarding vehicle travel and emission factors for operations on-site were made in order to assess the potential for adverse health effects from Raceway operations both regionally and locally near the Raceway.

Regional and local health effects appear to not be adverse when compared to regional background incidences of pollution-related health effects; vehicle travel to and from the Raceway could cause an increase of 0.005% above background health incidences. Local potential health effects from criteria pollutants can be assessed by comparing modeled ambient concentrations of Raceway-related emissions to National and California ambient air quality standards and Significant Impact Levels. The modeled off-site concentrations were less than the standards.

Adverse health effects from speciated organic gases can be evaluated by comparing potential cancer and non-cancer health effects to established thresholds for cancer risk and non-cancer effects. The modeled organic gases and DPM concentrations were much less than the relevant thresholds.

The fact that potential health effects are less than accepted thresholds does not mean that the Raceway may not be a nuisance to nearby housing, parks, or schools. For example, there will be increased traffic on nearby roads during NHRA-sanctioned events and burnout can result in short bursts of visible smoke. It is also recognized that more specific information regarding Raceway operations and emissions from race vehicles could yield a different result; but the analysis herein is based on reasonable assumptions and methodology in the absence of additional data.

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2 EMISSION ESTIMATES

2.1 EMISSION ESTIMATING METHODOLOGY

The following data and assumptions were used to estimate emissions associated with the Sacramento Raceway. It is recognized that the following methodology contains a number of assumptions, simplifications, and approximations, but they are deemed necessary given the absence of actual counting and detailed observations for a year. The methodology and assumptions are discussed in the following subsections.

2.1.1 Number of Events

The Sacramento Raceway website includes a published calendar of events for 2019 (www.sacramentoraceway.com, accessed September 27, 2020). There are numerous different kinds of events, but for purposes of this assessment they were grouped into the categories bulleted below. Each day of activity at the Raceway was categorizes as an “event”; e.g., if a NHRA event was scheduled for a Friday, Saturday, and Sunday, that was counted as 3 events. The categories and approximate number of events in 2019 were as follows:

- NHRA events. This includes all of the events noted as “NHRA”. There were 9 such events in 2019.
- Test and Tune events. This includes all events listed as Test and Tune plus all events listed as Private Rental. There were approximately 41 Test and Tune events and 9 Private Rental for a total of 50 events.
- Non-NHRA events. This includes all events (except Motocross and Chassis Certification) not listed as NHRA, Test and Tune, or Private Rental. There was a total of 74 such events in 2019. Some of the non-NHRA events were specialty events with specialty vehicles (e.g., Nite of Fire) but the numbers of those events and specialty vehicles were relatively small, thus all the Non-NHRA events were categorized and treated the same. It was assumed that there would be no racing during Chassis Certification and vehicle travel for that event would be de minimis.

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- Motocross events. There were 9 Motocross events in 2019. The number of motocross events and emissions from motocross at the Raceway are relatively very small compared to the number of drag race vents. Motocross events are discussed in Section 2.1.7 below.

It appeared from the Raceway website and other web sites (e.g., NHRA schedules) that the NHRA events were scheduled for about 10 hours (e.g., from 8:00 AM to 6:00 PM) while the Test and Tune events were scheduled for 4 hours (e.g., 5:00 PM to 9:00 PM). In addition, some of the non-NHRA events also appear to be scheduled for 4 hours per event, but most appeared to be scheduled for 10 hours. (The Sacramento Raceway web site did not list scheduled times for all events.) Thus, it was assumed that NHRA events operated 10 hours per event-day, Test and Tune 4 hours per event-day, and non-NHRA 8 hours per event-day. The 8-hour assumption for non-NHRA events is calculated from approximately two-thirds of the non-NHRA events at 10 hours and one-third at 4 hours. The fraction of 10-hour and 4-hour events is an assumption, recognizing that not all non-NHRA events are scheduled for a full day.

It was further assumed that racing occurred during all but one of the scheduled hours, i.e., there might be a total of an hour lost each day due to breaks between racing classes, vehicle breakdowns, equipment failures, or other problems that prevent racing; so racing occurs for 9 hours per day for NHRA events, 3 hours for Test and Tune events, and 7 hours for non-NHRA events. It was also assumed that each drag race could occur within a 3-minute time frame, so that there were approximately 20 races per hour of racing, 2 cars per race or 40 vehicles per hour. Actual cycle times would typically be less than 3 minutes as race vehicles can travel one quarter-mile in less than 10 seconds, but in order to not over-estimate the number of races and vehicles, 3 minutes was assumed. Accordingly, the following number of races and vehicles were used in the emission calculations:

- Race Vehicles per Hour:
    - NHRA: 20 races per hour, 2 vehicles per race; or 40 vehicles per hour.
    - Test and Tune: 20 races per hour, 2 vehicles per race; or 40 vehicles per hour.
    - Non-NHRA: 20 races per hour, 2 vehicles per race; or 40 vehicles per hour.
- Race Vehicles per Day:
    - NHRA: 40 vehicles per hour, 9 hours per day: 360 race vehicles per day.
    - Test and Tune: 40 vehicles per hour, 3 hours per day: 120 race vehicles per day.
    - Non-NHRA: 40 vehicles per hour, 7 hours per day: 280 race vehicles per day.
- Race Vehicles per Year:

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- NHRA: 9 hours racing per event-day, 40 vehicles per hour of racing: 360 race vehicles per event-day, 9 event days: 3,240 vehicles per year.
- Test and Tune: 3 hours racing per event-day, 40 vehicles per hour of racing: 120 race vehicles per event-day, 50 event days: 6,000 vehicles per year.
- Non-NHRA: 7 hours racing per event-day, 40 vehicles per hour of racing: 280 race vehicles per event-day, 74 event days: 20,720 vehicles per year.
- Total: 29,960 vehicles per year.

2.1.2 Spectator Vehicles

In 2020, the Raceway announced that due to Covid-19 restrictions, the Raceway would be limited to 50% capacity and only the first 2,000 spectators could attend. Thus, it was assumed that the Raceway capacity was 4,000 spectators. It was further assumed that NHRA events were sold out (4,000 spectators), non-NHRA events were sold to an average of 30 percent capacity (1,200 spectators), and Test and Tune had 100 spectators. The 30 percent and 100 spectator values are estimates based on photos that have been published on social media, but the actual numbers could be much different. It was further assumed that all of the spectator vehicles arrived and departed in a 2-hour period for NHRA events and 1 hour for all other events. Therefore, the following number of spectator vehicles were used in the emission calculations:

- Spectator Vehicles per Hour:
  - NHRA: 4,000 spectators, 2 spectators per vehicle, arrive over a 2-hour period; or 1,000 vehicles per hour.
  - Test and Tune: 100 spectators, 2 spectators per vehicle, arrive over a 1-hour period; or 50 vehicles per hour.
  - Non-NHRA: 1,200 spectators, 2 spectators per vehicle, arrive over a 1-hour period; or 600 vehicles per hour.
- Spectator Vehicles per Day:
  - NHRA: 4,000 spectators, 2 spectators per vehicle, 2,000 vehicles per day.
  - Test and Tune: 100 spectators, 2 spectators per vehicle, 50 vehicles per day.
  - Non-NHRA: 1,200 spectators, 2 spectators per vehicle, 600 vehicles per day.
- Spectator Vehicles per Year:
  - NHRA: 4,000 spectators, 2 spectators per vehicle times 9 events; 18,000 vehicles per year.

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- Test and Tune: 100 spectators, 2 spectators per vehicle times 50 events; 2,500 vehicles per year.
- Non-NHRA: 1,200 spectators, 2 spectators per vehicle times 74 events; 44,400 vehicles per year.
- Total: 64,900 vehicles per year.

2.1.3 Trailered Race Vehicles (Tow Vehicles)

Many of the race vehicles cannot be driven on streets and are trailered to and from the Raceway. The following number of trailer tow vehicles were assumed for the emission calculations:

- Tow Vehicles per Hour:
  - NHRA: 360 race vehicles per day, one-half of the vehicles only race once, so 180 individual vehicles per event-day. Of the 9 event-days, 1 was a 3-day event, 1 was a 2-day event, and 4 were 1-day events, for a weighted average of 1 day per event. Thus, it was assumed that 180 tow vehicles arrive for each event and all arrive in one hour: 180 tow vehicles per hour.
  - Test and Tune: 120 race vehicles per day, one-half of the vehicles only race once, so 60 individual vehicles per event-day, assume about one-fourth of vehicles are towed and arrive in one hour: 15 tow vehicles per hour. The one-fourth value is assumed because most of the Test and Tune vehicles are street legal.
  - Non-NHRA: 280 race vehicles per day, one-half of the vehicles only race once, so 140 individual vehicles per event-day, assume one-fourth of vehicles are towed and arrive in one hour: 35 tow vehicles per hour. The one-fourth value is assumed because most of the non-NHRA vehicles are street legal.
- Tow Vehicles per Day:
  - NHRA: 360 race vehicles per day, one-half of the vehicles only race once, so 180 individual vehicles per event-day. Of the 9 event-days, 1 was a 3-day event, 1 was a 2-day event, and 4 were 1-day events, for a weighted average of 1 day per event. Thus, it was assumed that 180 tow vehicles arrive for each event and all are towed: 180 tow vehicles per day.
  - Test and Tune: 120 race vehicles per day, one-half of the vehicles only race once, so 60 individual vehicles per event-day, one-fourth of vehicles are towed: 15 tow vehicles per day.

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- Non-NHRA: 280 race vehicles per day, one-half of the vehicles only race once, so 140 individual vehicles per event-day, one-fourth of vehicles are towed: 35 tow vehicles per day.

- Tow Vehicles per Year:
  - NHRA: 180 vehicles per event day for 9 event days per year: 1,620 tow vehicles per year.
  - Test and Tune: 15 towed vehicles per event day for 50 event-days per year: 750 tow vehicles per year.
  - Non-NHRA: 35 towed vehicles per event day for 74 events per year: 2,590 tow vehicles per year.
  - Total: 4,960 tow vehicles per year.

2.1.4 Non-Trailered (Street Legal) Race Vehicles

Race vehicles that are not trailered to the Raceway will drive to the Raceway. The number of street legal race vehicles driven to the Raceway are as follows:

- Race Vehicles Driven to Raceway per Hour:
  - NHRA: Zero, all NHRA vehicles are trailered to the race.
  - Test and Tune: 120 race vehicles per day, one-half of the vehicles only race once, so 60 individual vehicles per event-day, three-fourths of vehicles are driven and arrive in one hour: 45 driven race vehicles per hour.
  - Non-NHRA: 280 race vehicles per day, one-half of the vehicles only race once, so 140 individual vehicles per event-day, three-fourth of vehicles are towed and arrive in one hour: 105 driven race vehicles per hour.
- Race Vehicles Driven to Raceway per Day:
  - NHRA: Zero, all NHRA vehicles are trailered to the race.
  - Test and Tune: 120 race vehicles per day, one-half of the vehicles only race once, so 60 individual vehicles per event-day, three-fourths of vehicles are driven: 45 driven race vehicles per day.
  - Non-NHRA: 280 race vehicles per day, one-half of the vehicles only race once, so 140 individual vehicles per event-day, three-fourth of vehicles are driven: 105 driven race vehicles per day.
- Race Vehicles Driven to Raceway per Year:
  - NHRA: Zero, all NHRA vehicles are trailered to the race.

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- Test and Tune: 45 race vehicles driven per event day for 50 event-days per year: 2,250 driven race vehicles per year.
- Non-NHRA: 105 driven race vehicles per event day for 74 events per year: 7,770 driven race vehicles per year.
- Total: 10,020 driven race vehicles per year.

2.1.5 Race Vehicle Mileage

Appendix A shows the layout of the Raceway (taken from Google Earth). The drag strip is approximately 0.75 miles long in total, with 0.25 miles for racing and 0.5 miles for slowdown. There are off-ramps in the slow down area that allow race vehicles to return to race car parking at 0.5, 0.63, and 0.75 miles from the starting line. The spectator parking area is approximately 0.0 to 0.25 miles from the entrance and the race car parking area is about 0.2 to 0.5 miles from the entrance. The following mileage per vehicle values were used in the emission calculations:

- Race Vehicles Racing On-Site:
  - NHRA Racing: 0.25 mile race, 0.5 mile roll-out; or 0.75 miles per race.
  - NHRA Staging and Return to parking: 0.1 mile to staging and 0.75 miles return to parking; 0.85 miles per race.
  - Test and Tune Racing: 0.25 mile race, 0.25 mile roll-out; or 0.50 miles per race.
  - Test and Tune Staging and Return to parking: 0.1 mile to staging and 0.50 miles return to parking; 0.60 miles per race.
  - Non-NHRA Racing: 0.25 mile race, 0.25 mile roll-out; or 0.50 miles per race.
  - Non-NHRA Staging and Return to parking: 0.1 mile to staging and 0.50 miles return to parking; 0.60 miles per race.
- Spectator Vehicles On-Site:
  - A total of 0.5 miles per vehicle on-site for all events.
  - Tow Vehicles On-Site (for trailered race vehicles): A total of 1.0 miles per vehicle on-site for all events. For a total of 3,880 miles per year.
  - Non-Trailered Race Vehicles Arriving and Departing On-Site: A total of 1.0 miles per vehicle on-site for all events. For a total of 10,020 miles per year.

To estimate the travel distance for race spectators and tow vehicles to and from the Raceway, it was assumed that NHRA events will draw spectators and race vehicles from as far as the Bay Area (about 110 miles one way to San Francisco), non-NHRA events would draw from a shorter

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distance (as far as 60 miles one way), and Test and Tune events would draw from mainly local racers and spectators (as far as 30 miles one way). Thus, the following mileage assumptions were used:

- Spectator Vehicles to/from Raceway:
  - NHRA events: 55 miles per vehicle one-way; 110 miles per vehicle.
  - Test and Tune events: 15 miles per vehicle one-way; 30 miles per vehicle.
  - Non-NHRA events: 30 miles per vehicle one-way; 60 miles per vehicle.
  - Total Mileage: 18,000 * 110 + 2,500 * 30 + 44,400 * 60 = 4,719,000 miles per year.
- Tow Vehicles to/from Raceway:
  - NHRA events: 55 miles per vehicle one-way; 110 miles per vehicle.
  - Test and Tune events: 15 miles per vehicle one-way; 30 miles per vehicle.
  - Non-NHRA events: 30 miles per vehicle one-way; 60 miles per vehicle.
  - Total Mileage: 540 * 110 + 750 * 30 + 2,590 * 60 = 237,300 miles per year.
- Race Vehicles Driven to/from Raceway:
  - NHRA events: Zero, all NHRA race vehicles are trailered.
  - Test and Tune events: 15 miles per vehicle one-way; 30 miles per vehicle.
  - Non-NHRA events: 30 miles per vehicle one-way; 60 miles per vehicle.
  - Total Mileage: 0 * 110 + 2,250 * 30 + 7,770 * 60 = 533,700 miles per year.

Tables 2-1 and 2-2 summarize the assumptions used for the effect assessment.

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Table 2-1

Summary of Assumptions

Type of Vehicle Travel	Number of Vehicles per Year	Mileage	NOx, ROG, TOG, and $PM_{2.5}$ Tailpipe	$PM_{2.5}$ Fugitive
Spectators to/from the Raceway for Drags	64,900 vehicles; see Text	4,719,000 miles; see Text	EMFAC 2017 for Calendar year 2021; Aggregate Model Years, Fuels, and Speeds; LD, MDV, MCY, MH; see Text	AP-42 for paved roads; see Text
Spectators On-Site at Raceway for Drags	64,900 vehicles; see Text	Total of 0.5 miles per vehicle on site	EMFAC 2017 for Calendar year 2021; Aggregate Model Years and Fuels; 5 mph speed; LD, MDV, MCY, MH; see Text	AP-42 for paved roads; see Text
NHRA Events Professional Race Vehicles Racing	3,240 race vehicles; see Text	0.25 mile race, 0.50 mile slowdown = 0.75 mile per vehicle	EMFAC 2017 for Calendar year 2021; Model year 1977; 50 mph Speed; Gasoline Fuel; MDV; see Text	AP-42 for paved roads; see Text
NHRA Events Professional Race Vehicles Staging and Return to Parking	3,240 race vehicles; see Text	0.1 mile to staging, 0.75 mile return to parking = 0.85 mile per vehicle	EMFAC 2017 for Calendar year 2021; Model year 1977; 15 mph Speed; Gasoline Fuel; MDV; see Text	AP-42 for paved roads; see Text
Non-NHRA Vehicles Racing	20,720 race vehicles; see Text	0.25 mile race, 0.25 mile slowdown = 0.5 mile per vehicle	Same as NHRA	AP-42 for paved roads; see Text
Non-NHRA Vehicles Staging and Return to Parking	20,720 race vehicles; see Text	0.1 mile to staging, 0.5 mile return to parking = 0.6 mile per vehicle	Same as NHRA	AP-42 for paved roads; see Text
Test & Tune Racing	6,000 race vehicles; see Text	0.25 mile race, 0.25 mile slowdown = 0.5 mile per vehicle	Same as NHRA	AP-42 for paved roads; see Text
Test & Tune Staging and Return to Parking	6,000 race vehicles; see Text	0.1 mile to staging, 0.5 mile return to parking = 0.6 mile per vehicle	Same as NHRA	AP-42 for paved roads; see Text
Tow Vehicles Traveling to/from the Raceway for Drags	3,880 vehicles; see Text	237,700 miles; see Text	EMFAC 2017 for Calendar year 2021; Aggregate Model Years and Speed; Diesel fuel only; LHD2 (Ram 2500) trucks	AP-42 for paved roads; see Text
Tow Vehicles On-Site at Raceway for Drags	3,880 vehicles; see Text	1.0 mile per vehicle on site	EMFAC 2017 for Calendar year 2021; Aggregate Model Years; Diesel LHD2 (Ram 2500) trucks; 15 mph speed	AP-42 for paved roads; see Text

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Type of Vehicle Travel	Number of Vehicles per Year	Mileage	NOx, ROG, TOG, and $PM_{2.5}$ Tailpipe	$PM_{2.5}$ Fugitive
Non-Trailered Race Vehicles Driven to/from the Raceway for Drags	10,020 vehicles; see Text	533,700 miles; see Text	EMFAC 2017 for Calendar year 2021; 1977 through 1999 Model Years; all Speeds; Gasoline fuel only, MDV only	AP-42 for paved roads; see Text
Non-Trailered Race Vehicles Driven On-Site at Raceway Arriving and Departing for Drags	10,020 vehicles; see Text	1.0 mile per vehicle on site	EMFAC 2017 for Calendar year 2021; 1977 through 1999 Model Years; 15 mph Speed only; Gasoline fuel only, MDV only	AP-42 for paved roads; see Text
Spectators to/from Raceway for Motocross	900 vehicles; see Text	54,000 miles per year; see Text	Same as for Drag Racing	AP-42 for paved roads; see Text
Spectators On-Site at Raceway for Motocross	900 vehicles; see Text	Total of 1.5 miles per vehicle on site	Same as for Drag Racing	AP-42 for paved roads; see Text
Motocross Race Motorcycles	540 motorcycles; see Text	30 miles per race; see Text	EMFAC 2017 for Calendar year 2021; Aggregate Model Years; MCYs, 30 mph speed	De minimis; see Text
Tow Vehicles to/from Raceway for Motocross	135 vehicles; see Text	8,100 per year; see Text	Same as for Drag Racing	AP-42 for paved roads; see Text
Tow Vehicles On-Site at Raceway for Motocross	135 vehicles; see Text	1.5 miles per vehicle on site	Same as for Drag Racing	AP-42 for unpaved roads, 15 mph; see Text

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Table 2-2

Summary of Numbers of Vehicles

Type of Drag Racing Event:	NHRA Events			Non-NHRA Events			Test and Tune Events			Annual Total
Type of Vehicle (Number of Vehicles)	**Annual**	**Max Day**	**Max Hour**	**Annual**	**Max Day**	**Max Hour**	**Annual**	**Max Day**	**Max Hour**	
Spectator Vehicles to & from Raceway for Drags	18,000	2,000	1,000	44,400	600	600	2,500	50	50	64,900
Tow Vehicles to/from Raceway for Drags	1,620	180	180	2,590	35	35	750	15	15	4,960
Non-Trailered Race Vehicles Driven to/from Raceway for Drags	0	0	0	7,770	105	105	2,250	45	45	10,020
Spectator Vehicles On-Site at Raceway for Drags	18,000	2,000	1,000	44,400	600	600	2,500	50	50	64,900
Tow Vehicles On-Site at Raceway for Drags	1,620	180	180	2,590	35	35	750	15	15	4,960
Non-Trailered Race Vehicles On-Site at Raceway for Drags	0	0	0	7,770	105	105	2,250	45	45	10,020
Race Vehicles Racing for Drags	3,240	360	40	20,720	280	40	6,000	120	40	29,960
Race Vehicles Staging and Return to Parking for Drags	3,240	360	40	20,720	280	40	6,000	120	40	29,960
Motocross Events	**Motocross Events**			--			--			**Annual Total**
Spectator Vehicles to & from Raceway for Motocross	900	100	100	--	--	--	--	--	--	900
Tow Vehicles to/from Raceway for Motocross	135	15	15	--	--	--	--	--	--	135
Spectator Vehicles On-Site at Raceway for Motocross	900	100	100							900
Tow Vehicles On-Site at Raceway for Motocross	135	15	15							135
Race Motorcycles Racing for Motocross	540	60	20	--	--	--	--	--	--	540

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2.1.6 Emission Factors

Several sources of information were consulted to develop emission factors (grams per mile) for emissions from race, spectator, and tow vehicles.

Although several sources were consulted for engine emissions, none of them are as complete or rigorous as the California- and USEPA-approved EMFAC 2017 emission factor database[4] for motor vehicles. The database was accessed for emissions in calendar year 2021 for the various vehicle categories and speeds as noted below. Appendix B shows the EMFAC 2017 emission factors. EMFAC emission factors vary by speed, and the following on-site speed assumptions were used:

- Spectator Vehicles On-Site: Average speed of 5 miles per hour (mph). The 5 mph value accounts for the fact that there will be a large amount of stop and go, idling, and slow speed travel while parking and leaving the Raceway.
- Tow Vehicles On-Site: Average speed of 15 mph. It was assumed that tow vehicles would arrive and depart on-site during hours when spectators are not present, and thus higher speeds could occur for vehicles on-site.
- Non-Trailered Race Vehicles Arriving and Departing On-Site: Average speed of 15 mph. It was assumed that non-trailered race vehicles would arrive and depart on-site during hours when spectators are not present, and thus higher speeds could occur for vehicles on-site.

USEPA AP-42, Chapter 13.2.1 (dated 01/11) Equation 1 was used to calculate fugitive $PM_{2.5}$ emissions from travel on paved roads to and from the Raceway. A silt loading (sL) of 0.1 grams per square meter and an average vehicle weight (W) of 2.4 tons was used, consistent with the parameters used in the California Emissions Estimator Model[5] (CalEEMod, version 201.3.2) that is used to calculate emissions from land use projects. The emission factor for paved road $PM_{2.5}$ emissions is 0.0751 grams per mile (g/mi) calculated as follows for $PM_{2.5}$ (particle size multiplier k = 0.25 g/VMT):

[4] *www.arb.ca.gov/emfac. Accessed March 13, 2021. Note that a newer version of EMFAC was released in January 2021 (EMFAC 2021), but it has not yet been approved by USEPA. Thus, EMFAC 2107 was used.*

[5] *www.caleemod.com*

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E (g/mile) = k * (sL)0.91 *(W)1.02 = 0.0751 g/mile

AP-42 provides for a precipitation correction factor that reduces the emissions based on the fact that there will be no particulate emissions during rain. However, Raceway operations are canceled if there is rain, so the precipitation correction factor was not applied to the above equation.

The same emission factor was also used for spectator vehicles, tow vehicles, and race vehicles traveling on-site, and race vehicles racing on the paved drag strip. Although this is probably a slight underestimate for drag racing on the paved drag strip (because of increased tire wear), the number of miles racing is small compared to all the other mileage to/from and on-site at the Raceway. Spectator vehicles enter the Raceway on a paved road and travel to parking on pavement. Although the spectator vehicle parking area is unpaved, spectator vehicle speeds while parking will be very small and thus fugitive dust from parking vehicles is assumed de minimis. Furthermore, as discussed in Section 2.1.7, the USEPA emission factors for unpaved roads do not apply to low speeds.

Race cars use specialty fuels, including nitromethane mixed with methanol, pure methanol, methanol mixed with gasoline, pure ethanol, ethanol mixed with gasoline, as well as leaded and unleaded gasoline, among other possibilities. (Although leaded fuels can be used for racing, it was assumed that lead emissions would be de minimis and are not estimated herein.) Emission factors for specialty fuels from race vehicles were not generally available, thus EMFAC 2017 weighted average (weighted by Sacramento County VMT) vehicle exhaust values were used as follows:

- NHRA, Test and Tune, and Non-NHRA Race Vehicles: EMFAC 2017 for MDV (medium duty vehicles) for model year 1977 and 50 mph, gasoline fuel. MDV was chosen because this vehicle category had the largest emission factors and race vehicles typically have higher horsepower than traditional passenger cars. Model year 1977 was chosen as it is the oldest year in the EMFAC 2017 database and race vehicles are typically not tuned and controlled like modern vehicles. An average speed of 50 mph was chosen assuming the race vehicles reach a top speed of 100 mph. NHRA dragsters can clearly reach speeds much greater than 100 mph and even some “club cars” can exceed 100 mph; but, to be conservative, an average speed of 50 mph was chosen. Tire wear particulate emissions from burnout were not included in this assessment even though burnout is visible. However, the vast majority of the particulate from burnout will of a size be much larger

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than PM_{10} and $PM_{2.5}$ (that is why tire wear emissions are visible during burnout). Furthermore, burnout is of less duration than a race.

- Spectator Vehicles to/from the Raceway: EMFAC 2017 for calendar year 2021, all speeds, all model years, and all fuels aggregated. However, emission factors were aggregated only for light duty autos, light duty trucks, light heavy-duty trucks, medium duty trucks (e.g., Ram 1500, Ram 2500, RAM 3500), motorcycles, and motor homes. None of the other heavy heavy-duty trucks (e.g., 18-wheelers) or bus emission factors were included in the spectator vehicle emissions.
- Tow Vehicles to/from the Raceway: EMFAC 2017 for calendar year 2021, all speeds, all model years, but diesel fueled vehicles only and only for a medium duty truck (e.g., Ram 2500).
- Non-Trailered Race Vehicles Driven to/from the Raceway: EMFAC 2017 for MDV, calendar year 2021, all speeds, 1977 through 1999 model years, gasoline fuel. The 1977 through 1999 model years were chosen for the emission factors because street-legal race vehicles tend to not be as tuned and controlled as modern vehicles.

The SMAQMD Mobile Source Protocol[6] stated that the speciated organic compounds of interest from motor vehicles are acetaldehyde, benzene, 1,3-butadiene, ethylbenzene, formaldehyde, naphthalene, and DPM. Emission factors for the individual speciated organic toxic compounds were calculated from a Total Organic Gases (TOG) speciation profile used in the Bay Area Air Quality Management District publication, *Recommended Methods for Screening and Modeling Local Risks and Hazards*, dated May 2011, Table 14. The TOG emission factor came from EMFAC 2017 and the speciation is based on the percentage of TOG as follows.

- Acetaldehyde: 0.28%
- Benzene: 2.47%
- 1,3-Butadiene: 0.55%
- Ethylbenzene: 1.05%
- Formaldehyde: 1.58%
- Naphthalene: 0.05%

[6] *Mobile Sources Air Toxics Protocol Guidance Document, September 2020*. Sacramento Metropolitan Air Quality Management District. Available at www.airquality.org/Residents/CEQA-Land-Use-Planning/Mobile-Sources-Air-Toxics-Protocol.

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DPM emission factors are from EMFAC 2017 for diesel-fueled vehicle $PM_{2.5}$ exhaust emissions, assuming that all DPM is less than 2.5 microns in mean aerodynamic diameter.

PM_{10} tailpipe emissions were assumed equal to $PM_{2.5}$ emissions because tailpipe emissions are almost entirely $PM_{2.5}$ or smaller. The USEPA unpaved road emission factor is the same for both PM_{10} and $PM_{2.5}$. The USEPA paved road emission factor for PM_{10} is 4 times greater than the $PM_{2.5}$ factor because the “k factor” changes from 0.25 to 1.0 for PM_{10}.

Table 2-3 summarizes the emission factors used in the assessment.

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Table 2-3

Emission Factors Summary

Type of Vehicle Travel	NO_x (g/mi)	ROG (g/mi)	$PM_{2.5}$ Tailpipe (g/mi)	$PM_{2.5}$ Fugitive (g/mi)	PM_{10} Tailpipe (g/mi)	PM_{10} Fugitive (g/mi)	TOG (g/mi)	DPM (g/mi)
Spectator Vehicles to & from Raceway	0.133	0.0340	0.00210	0.0751	0.00210	0.300	NA	NA
Spectator Vehicles at Raceway	1.166	0.424	0.0362	0.0751	0.0362	0.300	0.526	0.0852
Race Vehicles Racing	12.916	6.791	0.0447	0.0751	0.0447	0.300	7.383	0
Race Vehicles Staging and Return to Parking	9.469	17.469	0.115	0.0751	0.115	0.300	18.992	0
Tow Vehicles to/from Raceway	2.262	0.174	0.0279	0.0751	0.0279	0.300	NA	NA
Tow Vehicles at Raceway	2.0461	0.323	0.0415	0.0751	0.0415	0.300	0.368	0.0415
Non-Trailered Race Vehicles Driven to/from Raceway	1.426	0.365	0.00686	0.0751	0.00686	0.300	NA	0
Non-Trailered Race Vehicles Driven On-Site Arriving and Departing Raceway	1.882	0.909	0.0175	0.0751	0.0175	0.300	1.252	0
Motorcycle Race Vehicles	1.149	2.660	0.00198	0	0.00198	0	3.238	0
Motorcycle Tow Vehicles at Raceway	2.0461	0.323	0.0415	13.828	0.0415	13.828	0.368	0.0415

NA = Not Assessed. Although spectator, tow, and street-legal vehicles do emit toxic organic compounds while driving on streets, the potential health effects of those emissions on residences, businesses, schools, etc. near public streets is not assessed herein.

Race Vehicles include NHRA, Non-NHRA, Test & Tune, and Motocross. Assumed that none of the race vehicles are diesel-fueled, so DPM emissions for race vehicles are zero.

Tow vehicles for Drag Racing are on paved roads, but tow vehicles for Motocross are on unpaved roads, thus fugitive $PM_{2.5}$ emission factor is different.

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2.1.7 Motocross Events and Emission Factors

As indicated, there were approximately 9 Motocross events in 2019. The emissions associated with Motocross are relatively small compared to drag racing. Motocross events are scheduled in the afternoon, and thus it was assumed that the events last 4 hours. Each 'moto' is 30 minutes long plus two laps and there are 2 motos per race.

A study of motocross event racing speeds[7] indicate that the motorbikes travel at speeds ranging from 14 to 48 mph, with jump speeds of about 30 mph. It was assumed that the average speed for the race is, therefore, 30 mph. This means that each moto is about 15 miles long (30 mph x 0.5 hrs per moto) and each race about 30 miles long (2 motos per race). Each race will take at least an hour (30 minutes per moto, 2 motos per race, and setup time in between). Thus, it was assumed that there were 3 races per day.

It was assumed that each moto had an average of 10 motorcycles racing per moto, or 20 per hour, 60 per day, and 540 per year. The starting area of the motocross track is about 80 feet wide, which could accommodate a maximum of about 20 motorcycles, thus, an average of 10 motorcycles per moto was used.

Racing vehicle mileage is 300 vehicle miles per hour (10 motorcycles x 30 miles per race), 900 vehicle miles per day (3 races per day), and 8,100 miles per year (9 events per year).

The following additional assumptions were made:

- All race motorcycles were towed to the site.
- There are 10 motorcycles per moto, and the same motorcycles race in both motos per standard racing procedure.
- Each race (set of 2 motos) has a different set of motorcycles, so there are 30 different motorcycles arriving for each event.
- All tow vehicles arrive in one hour, but most tow vehicles bring 2 motorcycles or approximately 15 tow vehicles per hour, 15 per day, and 135 per year.

Motocross events at the Raceway do not draw many spectators, so it was assumed that each event drew 200 spectators, 2 spectators per vehicle, or 100 spectator vehicles. It was assumed that all spectators arrive in 1 hour, so 100 spectator vehicles per hour, 100 per day, and 900 per

[7] *www.dirtrider.com/speed-supercross. Accessed March 22, 2021.*

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year. These motocross events do not appear to be nationally sanctioned, so it was assumed that spectators and tow vehicles travel only 30 miles one way to the Raceway, or 54,000 vehicle miles per year (30 mi one-way x 2 round trip x 900 vehicles per year) for spectators and 8,100 vehicle miles per year (30 mi one-way x 2 round trip x 135 vehicles per year) for tow vehicles.

Tailpipe emission factors for racing motorcycles were derived from EMFAC 2107 for all model years, calendar year 2021, motorcycles, gasoline fuel. The same organic speciation used for race vehicles was used for motorcycles.

$PM_{2.5}$ and PM_{10} fugitive emissions from motocross racing were assumed de minimis because the track is heavily watered prior to each moto, the size of particles (essentially small clumps of mud) is very large compared to $PM_{2.5}$ and PM_{10}, and the large particles will settle out of the atmosphere.

The Motocross area is not paved, so the emission factor for tow vehicles on-site at the Raceway during Motocross events was calculated per USEPA AP-42, Chapter 13.2.2 (dated 11/06) Equation 1b for $PM_{2.5}$ emissions from travel on unpaved roads at the Raceway. The calculations used constants for public roads in Table 13.2.2-2 along with an average speed on-site (S) of 15 mph for tow vehicles, a surface soil moisture content (M) of 6.5% (average of values shown in Table 13.2.2-3), and from Table 13.2.2-1 a surface material silt content (s) of 4.8% for sand and gravel processing. The calculation is as follows for 15 mph and $PM_{2.5}$ (constant k = 0.18 lb/mi). No correction for brake or tire wear was applied because the EMFAC 2017 emission factors were only for exhaust.

$$E = k * (s/12)1.0 * (S/30)0.5 / (M/0.5)0.2 = 0.0305 \text{ lb/mi} \times 453.6 \text{ g/ lb} = 13.828 \text{ g/mi}$$

As is the case for Drag Racing, it was assumed that fugitive dust emissions from spectator vehicles on unpaved areas will be de minimis because of the amount of stop and go and low speeds and the USEPA emission factors do not apply to speeds less than 10 mph[8].

The Motocross area is farther from the Raceway entry than the drag racing area. Thus, spectators and tow vehicles each travel a total of about 1.5 miles on-site (0.75 mile each way).

[8] *AP-42, Chapter 13.2.2, Table 13.2.2-3.*

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2.2 EMISSION ESTIMATES

The assumptions regarding operations and the emission factors discussed in Section 2.1 were combined to estimate annual, maximum daily, and maximum hourly emissions. The results are shown in Appendix C and summarized in Table 2-4. Maximum daily and hourly emissions occur during NHRA events because of the much greater number of vehicles associated with NHRA events compared to non-NHRA, Test and Tune, and Private Rental events. Note that Motocross and Drag Racing events do not occur on the same day and spectators do not arrive at the same time as race vehicles, tow vehicles for trailered race vehicles, and racing, so daily and hourly emissions from all source categories are not summed.

Table 2-4

Summary of Raceway Emissions

Parameter	NO_x	ROG	$PM_{2.5}$ Total	PM_{10} Total	TOG	DPM
Annual (lb/year)	5235.96	1888.18	976.88	3744.66	1112.88	2.69
Daily NHRA (lb/day)	180.70	40.98	42.43	162.41	18.51	0.085
Hourly NHRA (lb/hour)	1.56	1.76	0.02	0.05	1.91	0
Annual Motocross (lb/year)	108.06	58.13	18.81	53.01	59.55	0.11
Daily Motocross (lb/day)	71.85	11.06	4.82	14.58	6.62	0.012
Hourly Motocross (lb/hour)	0.76	1.76	0.0013	0.0013	2.14	0

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3 POTENTIAL REGIONAL HEALTH EFFECTS

Regional health effects arise from the sum total of NO_x, ROG, and $PM_{2.5}$ emissions from vehicles traveling to and from the raceway plus emissions on-site. The SMAQMD methodology for assessing regional health effects is based on the maximum daily emission rate. Table 2-4 shows the maximum daily emission rates for NHRA events, which are 180.70 pounds per day (lb/day) NOx, 40.98 lb/day ROG, and 42.43 lb/day $PM_{2.5}$. It is recognized that NHRA events do not occur every day, but the regional potential health effects are related to daily ozone and $PM_{2.5}$ concentrations.

These calculated emission rates are then entered into the SMAQMD screening tool for strategic area projects, using the tool's setting location for Rancho Cordova (which is approximately 4 miles north of the Raceway). The results are shown in Appendix D and summarized in Table 3-1 and 3-2.

The total number of incidences shown in Table 3-1 was calculated by summing the values from the screening tool results (Appendix D) for all health endpoints. The total number of incidences are over-stated because there may be double counting. For example, an individual admitted to the hospital for $PM_{2.5}$ may be the same individual admitted for ozone.

The total background number of health incidences in the 5-Air-District Region provided by the screening tool and shown in Table 3-2 is 184,505 incidences out of the 5-Air-District region's projected 2035 population of about 3.3 million persons. This helps put the roughly 9 additional incidences associated with the Raceway shown in Table 4-1 in perspective. The background number of health incidences and the incremental percentage increase are shown in Table 3-2.

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Table 3-1

Potential Annual Incremental Health Incidences from Maximum Daily (Drag Racing) Raceway Operations

Description		Alternative 2 Project Related VMT after Additional Mitigation
$PM_{2.5}$ Health Endpoint	**Age Range**	**Annual Incidences (mean)**
Respiratory		
Emergency Room Visits, Asthma	0 - 99	1.7
Hospital Admissions, Asthma	0 - 64	0.11
Hospital Admissions, All Respiratory	65 - 99	0.65
Cardiovascular		
Hospital Admissions, All Cardiovascular (less Myocardial Infarctions)	65 - 99	0.37
Acute Myocardial Infarction, Nonfatal	18 - 24	0.00014
Acute Myocardial Infarction, Nonfatal	25 - 44	0.013
Acute Myocardial Infarction, Nonfatal	45 - 54	0.033
Acute Myocardial Infarction, Nonfatal	55 - 64	0.053
Acute Myocardial Infarction, Nonfatal	65 - 99	0.24
Mortality		
Mortality, All Causes	30 - 99	4.3
Ozone Health Endpoint	**Age Range**	**Incidences (mean)**
Respiratory		
Hospital Admissions, All Respiratory	65 - 99	0.14
Emergency Room Visits, Asthma	0 - 17	0.55
Emergency Room Visits, Asthma	18 - 99	0.96
Mortality		
Mortality, Non-Accidental	0 - 99	0.092
TOTAL INCIDENCES	0 - 99	**9.21**

Note: Total incidences are not reported in the screening tool, but the Total incidences shown in the table are the sum of the screening tool incidences for both health endpoints. The Total Incidences comes from adding the screening tool values and may not match exactly the sum of values shown in the table due to round-off differences.

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Table 3-2

Annual Background Number of Health Incidences and Percent Above Background for Maximum Daily Raceway (Drag Racing) Operations

Description		Annual Number of Background Health Incidences Projected for 2035	% Increase above Background
$PM_{2.5}$ Health Endpoint	**Age Range**		
Respiratory			
Emergency Room Visits, Asthma	0 - 99	18,419	0.0093%
Hospital Admissions, Asthma	0 - 64	1,846	0.0060%
Hospital Admissions, All Respiratory	65 - 99	19,644	0.0033%
Cardiovascular			
Hospital Admissions, All Cardiovascular (less Myocardial Infarctions)	65 - 99	24,037	0.0015%
Acute Myocardial Infarction, Nonfatal	18 - 24	4	0.0037%
Acute Myocardial Infarction, Nonfatal	25 - 44	308	0.0041%
Acute Myocardial Infarction, Nonfatal	45 - 54	741	0.0044%
Acute Myocardial Infarction, Nonfatal	55 - 64	1,239	0.0043%
Acute Myocardial Infarction, Nonfatal	65 - 99	5,052	0.0047%
Mortality			
Mortality, All Causes	30 - 99	44,766	0.0096%
Ozone Health Endpoint	**Age Range**		**% Increase above Background**
Respiratory			
Hospital Admissions, All Respiratory	65 - 99	19,644	0.00071%
Emergency Room Visits, Asthma	0 - 17	5,859	0.0094%
Emergency Room Visits, Asthma	18 - 99	12,560	0.0077%
Mortality			
Mortality, Non-Accidental	0 - 99	30,386	0.00030%
TOTAL INCIDENCES	0 - 99	**184,505**	**0.0050%**

Note: Total incidences are not reported in the screening tool, but the Total Incidences shown in the table are the sum of the screening tool incidences for both health endpoints. Total percent increase is not the sum of the individual percentages because the background for each effect is different. The number of background incidences was calculated from the screening tool and differs slightly for each scenario due to round off differences. Sum of the values in the table may not match exactly the sum calculated from the screening tool because of round off differences.

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4 POTENTIAL LOCAL HEALTH EFFECTS

4.1 ASSESSMENT METHODOLOGY

4.1.1 Dispersion Model Setup

The current (as of March 29, 2021) version of AERMOD (version 19191) as implemented by BEEST (Version 12.04) with regulatory defaults was used for the dispersion calculations. AERMOD is a USEPA- and California-approved dispersion model that uses meteorological data to calculate the dispersion of emitted constituents and resultant concentrations at receptors.

SMAQMD-provided meteorological data from SacEx (the nearest source of meteorological data) were evaluated for meteorological calendar years 2014 through 2018. Calendar year 2018 data were incomplete and could not be used. A test model was run for each year, 2014, 2015, 2016, and 2017. Calendar year 2014 consistently produced the highest concentrations, and therefore was used for this assessment.

Five polygonal area sources were established for the following on-site activities:

- Spectator travel and parking on-site for Drag Races (Drag Race Spectators)
- Tow vehicle for trailered race vehicles and street legal race vehicle travel on-site, drag racing staging and return to parking, and drag racing (Drag Racing)
- Spectator and tow vehicle for trailered motorcycles travel and parking on-site for Motocross races (Motocross Spectators)
- Motocross races on the short track (MX1)
- Motocross races on the long track (MX2)

Appendix E shows the source configurations. The Motocross area includes two tracks, one about 0.4 miles long and one about 0.8 miles long. Emissions were calculated based on the speed of the motorcycles and the duration of motos, not the length of the track. However, it appears from aerial photos that the short Motocross track is used extensively and the long track is not. Therefore, the Motocross race vehicle emissions were apportioned between the two tracks in a 90/10 ratio for short versus long track.

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The health effects analysis requires calculations for 1-hour, 8-hour, 24-hour, and annual averaging periods. The annual, maximum daily, and maximum hourly emissions must be treated differently depending on the averaging time of interest.

Race activities do not occur continuously and Drag Racing and Motocross racing do not occur on the same days. Motocross races were generally scheduled from 5 to 9 pm (4 hours) on Fridays, while Drag Races were generally scheduled on Wednesdays from 5 to 9 pm (4 hours) and Saturday and Sundays from 8 am to 6 pm (10 hours). AERMOD allows the user to enter hourly scalars for emissions (i.e., turn on or turn off the model for specific hours of the day and week). If the model is turned on for a specific hour of the week, it must be turned on for all weeks of the year. The model inputs for time turned on and emissions were as follows:

For annual average concentrations:

- Drag Racing: Turn on the model 4 hours on Wednesday, 10 hours on Saturday and Sunday, 52 weeks per year, or a total of 1248 hours per year and divide the annual emissions by 1248.
- Motocross Racing: Turn on the model 4 hours on Friday, 52 weeks per year, for a total of 208 hours per year and divide the annual emission by 208.

Emissions entered in the model (in terms of grams per second) have to be calculated consistent with the hours that the model is turned on and the averaging time of interest. Accordingly, the emissions shown in Appendix C were divided by the following hours for dispersion modeling:

- Annual average: Annual emissions divided by 1248 hours per year for Drag Racing and 208 hours per year for Motocross
- 24-hour average: Maximum daily emissions divided by 10 hours per day for Drag Racing and 4 hours per day for Motocross
- 8-hour average: Maximum daily emissions divided by 10 hours per day for Drag Racing and 4 hours per day for Motocross
- 1-hour average: Maximum hourly emissions, no divisor except to convert pounds per hour to grams per second

It was assumed that all emissions were ground level (zero release height) and had an initial vertical plume dimension (sigma-z) of zero. A non-zero sigma-z accounts for initial turbulence created by vehicle motion, which can be important when the receptors are close to the source.

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However, for simplicity, the zero sigma-z assumption was used even though it results in an over-estimate of concentrations.

The terrain near the Raceway is all approximately the same elevation, thus flat terrain was assumed in the AERMOD model.

Receptors were placed at 20-meter spacing, starting 60 meters from the Raceway property out to 80 meters from the Raceway property. As shown in Appendix E, receptors were placed only on property owned by Tsakopoulos Investments. Because all of the releases were ground level and the terrain near the property is flat, the maximum effect will always be at the closest receptor and there is no reason to place receptors further out from the property. The 60-meter distance was chosen to reflect the fact that there would likely be a road between the Raceway and development property and houses would not likely face the Raceway, so the center of the nearest house would be about 60 meters away from the Raceway boundary.

Emissions of NOx are a mix of nitrogen oxide (NO) and nitrogen dioxide (NO_2). NO does not pose a health effect, however, given enough time, NO can be converted to NO_2 in the atmosphere through interactions with ozone. There are various schemes within AERMOD to account for the NO to NO_2 conversion. The most conservative (over-estimate) method is the Ambient Ratio Method 2 (ARM2). ARM2 assumes a ratio of NO_2 to NO_x concentrations based on nationally-monitored data obtained by the USEPA. The ratio varies from 0.5 to 0.9, depending on the NOx concentration. For this assessment, ARM2 was used, however, it results in an overestimate of ambient NO_2 concentrations because (1) ARM2 is a conservative method and (2) there is not enough time to convert meaningful amounts of NO to NO_2 when the receptor is only 60 meters (at most 30 to 60 seconds of travel time) away from the source.

4.1.2 Background Concentrations of Criteria Pollutants

In order to compare criteria pollutant concentrations to the CAAQS/NAAQS, modeled ambient Raceway-related concentrations must be added to an existing background concentration.

Background concentrations were obtained from the California Air Resources Board (CARB) iADAM web site[9] for Sacramento County for calendar years 2017 through 2019. There are no monitoring stations at the Raceway. The nearest monitoring stations with NO_2, $PM_{2.5}$, and PM_{10}

[9] *www.arb.ca.gov/adam*

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data are shown in Table 4-1. Not all stations collect the same data. The closest station to the Raceway with available data was used for the background value. The Sloughhouse station is located in an area similar to the Raceway, but the other stations are located in areas of dense housing and commercial establishments, so the background concentration for those stations is over stated.

Table 4-1

Background Ambient Air Quality Data

	2017	2018	2019	Three Year Average	CAAQS or NAAQS (Note 1)
Sloughhouse … located about 4.8 miles southeast of the Raceway					
NO_2 1-hour	36 ppb	41 ppb	40 ppb	39 ppb = **73 ug/m^3**	188 ug/ m^3
NO_2 Annual	6 ppb	6 ppb	6 ppb	6 ppb = **11.3 ug/ m^3**	57 ug/ m^3
$PM_{2.5}$ 24-hour	34 ug/m^3	37 ug/ m^3	37 ug/ m^3	**36 ug/ m^3**	35 ug/ m^3
Sacramento Del Paso Manor … located about 7.9 miles northwest of the Raceway					
$PM_{2.5}$ Annual	No Data	12 ug/ m^3	12 ug/ m^3	**12 ug/ m^3**	12 ug/ m^3
Sacramento Branch Center Road #2 … located about 3.0 miles northwest of the Raceway					
PM_{10} 24-hour	21 ug/ m^3	27 ug/ m^3	27 ug/ m^3	**25 ug/ m^3**	50 ug/ m^3
PM_{10} Annual	81 ug/ m^3	212 ug/ m^3	55 ug/ m^3	**68 ug/ m^3** (Note 2)	20 ug/ m^3

Note 1: The most stringent of CAAQS or NAAQS is reported.
Note 2: Average is only for 2017 and 2019. The very high value for 2018 was the result of nearby forest fires and is not representative.

Note that the background concentrations of $PM_{2.5}$ and PM_{10} are equal to or exceed the CAAQS/NAAQS. This is consistent with the fact that the Sacramento Air Basin is designated as nonattainment for the 24-hour $PM_{2.5}$ NAAQS and for the 24-hour and annual PM_{10} CAAQS.

4.1.3 Model Setup for Speciated Organics and DPM

The speciation factors shown in Section 2.1.6 for the speciated organics (i.e., percentage of TOG) are the same for all sources; thus, there was one set of dispersion model runs for TOG and the organic speciation was applied to the modeled TOG concentration (instead of speciating prior to modeling. Potential health effects for organic gases can occur for acute 1-hour exposures, acute 8-hour exposures, and chronic (annual) exposures, so the TOG modeling set included the 3 applicable averaging times. Unlike the organics, DPM emission factors are different based on source type and a separate DPM dispersion model run is necessary for each. Potential DPM

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health effects are associated only with chronic exposures and only annual average model runs are required.

Non-criteria pollutant potential health effects are assessed using the California OEHHA risk assessment methodology[10] for cancer and non-cancer health effects.

4.1.4 Potential Cancer Risk Methodology

The cancer risk methodology is to calculate the 30-year exposure[11] (intake factor) of an individual to a specific compound coupled with both the cancer potency factor and the maximum modeled concentration (Point of Maximum Impact, PMI) of that compound. For purposes of this assessment, the inhalation route of exposure was evaluated. Other potential routes of exposure (e.g., gardens, soil, etc.) are much less than the inhalation route and are negligible for the compounds of interest.

The calculations are as follows:

Inhalation intake Factor:

IF = DBR * FAH * EF * ED * CF / AT

Where:

IF = Intake Factor (m^3/kg-day)

DBR = Daily Breathing Rate (L/kg-day)

FAH = Fraction of Time at Home (unitless)

EF = Exposure Frequency, 350 days per year

ED = Exposure Duration, 30 years

AT = Averaging Time, 365 days

[10] *Ibid.*

[11] *Note that 30-year exposure is a default methodology for assessing potential cancer risks. It does not mean that the Raceway will actually be operating at 2019 levels for 30 years.*

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CF = Conversion Factor, 0.001 m^3/L.

Then the potential cancer risk is calculated as follows:

Cancer Risk (inhalation) = C * CF * IF * CPF * ASF

Where:

C = Ambient Concentration of Compound of Interest (ug/m^3)

CF = Conversion Factor, 0.001 mg/ug

CPF = Cancer Potency Factor (mg chemical/kg body weight-day)$^{-1}$

ASF = Age Sensitivity Factor (unitless).

The OEHHA Guidance specifies the various factors to be used in the above formulae as shown in Table 4-2. The daily breathing rates used for the risk calculation are based on the 95th percentile for all ages from the OEHHA Guidance.

Table 4-2

Parameters Used for Potential Risk Calculation

Parameter	Period of Exposure	Value	Units
Daily Breathing Rate (DBR)	3rd Trimester	361	L/kg-day
Daily Breathing Rate (DBR)	Age 0 to <2 years	1090	L/kg-day
Daily Breathing Rate (DBR)	Age 2 to <16 years	745	L/kg-day
Daily Breathing Rate (DBR)	Age 16 to <30 years	335	L/kg-day
Fraction of Time at Home (FAH)	3rd Trimester to <16 years	1.0	Unitless
Fraction of Time at Home (FAH)	Age 16 to <30 years	0.73	Unitless
Age Sensitivity Factor (ASF)	3rd Trimester to <16 years	10	Unitless
Age Sensitivity Factor (ASF)	Age 2 to <16 years	3	Unitless
Age Sensitivity Factor (ASF)	Age 16 to <30 years	1	Unitless

The cancer potency factors (CPF) are also specified by OEHHA:

- Acetaldehyde: 0.01 (mg/kg-day)$^{-1}$
- Benzene: 0.1 (mg/kg-day)$^{-1}$

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- 1,3-Butadiene: 0.6 $(mg/kg\text{-}day)^{-1}$
- Ethylbenzene: 0.0087 $(mg/kg\text{-}day)^{-1}$
- Formaldehyde: 0.021 $(mg/kg\text{-}day)^{-1}$
- Naphthalene: 0.12 $(mg/kg\text{-}day)^{-1}$
- DPM: 1.1 $(mg/kg\text{-}day)^{-1}$

4.1.5 Potential Non-Cancer Risk Methodology

Non-cancer health effects are evaluated by comparing the modeled PMI ambient concentration to health effects thresholds, termed reference exposure levels (REL). There are RELs for different averaging times and compounds. The RELs for the compounds of interest in this assessment as specified by OEHHA are shown in Table 4-3.

Table 4-3

Reference Exposure Levels

Compound	Averaging Time	REL (ug/m^3)
Acetaldehyde	1-hour Acute	470
Acetaldehyde	8-hour Acute	300
Acetaldehyde	Chronic	140
Benzene	1-hour Acute	1300
Benzene	Chronic	60
1,3-Butadiene	1-hour Acute	660
1,3-Butadiene	8-hour Acute	9
1,3-Butadiene	Chronic	2
Ethylbenzene	Chronic	2000
Formaldehyde	1-hour Acute	55
Formaldehyde	8-hour Acute	9
Formaldehyde	Chronic	9
Naphthalene	Chronic	9
DPM	Chronic	5

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4.1.6 Potential Cancer and Non-Cancer Risk Methodology for Schools

The health effects methodology described above accounts for potential school health effects because of the following:

- As Table 4-2 shows, there are factors (Age Sensitivity Factors and Daily Breathing Rates) that account for the age of school students.
- The Cancer Potency Factors and RELs are established taking into account the most sensitive individuals, adults or children.
- Specifically related to Raceway operations, nearly all of the Raceway events are scheduled on evenings and weekends when there is no school and thus no exposure to school students, teachers, or workers.
    - There are a few NHRA events that include Friday qualification or testing races, but the number of those Friday events (and resultant exposure) is small. There were less than 6 events in 2019 that could have occurred on Friday during school hours, so the exposure to school students, teachers, and workers is less than about 2 percent of the exposure for residents. Six out of the 142 events (133 Drag Racing plus 9 Motocross) equals 4.2 percent. But several of the Friday events do not start until 2:00 PM, so the exposure is less than about one-half of 4.2 percent. Accordingly, potential school health effects are less than 2 percent of the effects calculated for residents.
- The modeled concentrations at the sites where schools may be located are less than the PMI maximum impact concentrations used to assess the potential health effects on residents, so exposure at schools will be even less.

4.1.7 Potential Cancer and Non-Cancer Risk Methodology for Parks

The potential cancer risk for visitors to local parks that could be built near the Raceway is negligible because cancer risks assume 30-year continuous exposure (more than 250,000 hours) and the exposure to park visitors will be much less than 250,000 hours.

The potential for non-cancer effects is assessed by evaluating both the 1-hour and 8-hour modeled maximum concentrations to the REL, as is done for possible residents. There is no difference for a 1-hour or 8-hour exposure to a park visitor or a resident.

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4.2 POTENTIAL LOCAL HEALTH EFFECTS OF CRITERIA POLLUTANTS

Appendices F-1 through F-9 provide the AERMOD model output for the criteria pollutant and averaging time scenarios modeled. The modeled concentrations for the criteria pollutants are shown in Table 4-4 compared to the CAAQS/NAAQS or Significant Effect Level (SIL). As the Sacramento Air Basin is already non-attainment for $PM_{2.5}$ and PM_{10}, instead of comparing the potential effects to the AAQS for those pollutants, the effects are compared to the SILs. If the modeled concentrations are less than the SIL, then the concentrations do not cause or contribute to the exceedances and thus do not pose an unacceptable health effect. None of the modeled effects exceed the AAQS or SIL. As noted, Drag Racing and Motocross do not occur on the same day, so the modeled concentrations are reported separately for 1-hour and 24-hour averages.

Table 4-4

Modeled Criteria Pollutant Concentrations Compared to Standards

Raceway Operation	Pollutant	Averaging Time	Modeled Concentration (ug/m^3)	Background (ug/m^3)	Total (ug/m^3)	CAAQS/ NAAQS/ SIL (ug/m^3)	Exceed Standards?
DR	NO_2	1-hour	75	73	148	188	No
MX	NO_2	1-hour	104	73	177	188	No
DR MX	NO_2	Annual	0.14	11.3	11.4	57	No
DR	$PM_{2.5}$	24-hour	0.5	NA	0.5	1.2	No
MX	$PM_{2.5}$	24-hour	1.0	NA	1.0	1.2	No
DR MX	$PM_{2.5}$	Annual	0.007	NA	0.007	0.2	No
DR	PM_{10}	24-hour	1.43	NA	1.43	5	No
MX	PM_{10}	24-hour	1.12	NA	1.12	5	No
DR MX	PM_{10}	Annual	0.018	NA	0.018	1	No

DR = Drag Racing, MX = Motocross, DR MX = both Drag Racing and Motocross for annual averages.
$PM_{2.5}$ and PM_{10} concentrations are not added to background because the background is greater than the CAAQS/NAAQS, so the modeled concentrations are compared to the SIL. The SIL is the level below which the modeled concentrations are not considered to cause or contribute to an AAQS exceedance.

4.3 POTENTIAL CANCER RISK FROM SPECIATED ORGANIC COMPOUNDS

4.3.1 Potential Cancer Risk

Appendices F-14 and F-15 provide the annual average model output for TOG and DPM. As noted in Section 4.1.3, the uniformity of organics speciation across the sources allows for modeling only total TOG concentrations followed by speciation, whereas DPM concentrations necessitated

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separate modeling for different sources. Only annual average TOG and DPM concentrations are modeled for potential cancer risk because cancer is related to only chronic exposure.

The potential cancer risk calculations are shown in Appendix G. The total 30-year potential cancer risk from all of the speciated organics plus DPM is 1.97 in one million, which is much less than the threshold of 10 in one million used to assess adverse health effects.

4.3.2 Potential Non-Cancer Risk

Appendices F-10 to F-13 provide the 1-hour, 8-hour, and annual average model output for TOG. Non-cancer health risks could occur for acute and chronic exposures, thus different averaging times are modeled. The potential non-cancer health risk calculations and resultant HHI are shown in Appendix G . All of the effects for all of the speciated compounds and DPM were added together to yield a maximum HHI for the respective exposure periods; however, not all of the compounds affect the same toxic end point, so the reported HHIs are overestimates. For the 1-hour and 8-hour acute exposures, the modeled TOG concentration from Motocross daily operations was greater than from Drag Racing. This is because even though Drag Racing emissions are greater than Motocross, the presence of Motocross operations near the northern property boundary cause greater off-site concentrations. Thus, the acute HHI is calculated for Motocross operations. For chronic exposures, both Drag Racing and Motocross operations could occur within one year, so the modeled concentrations include both operations.

The total HHIs shown in Appendix G are much less than 1.0, so modeled Raceway operations do not pose adverse non-cancer health effects.

4.3.3 Summary of Potential Health Effects from Speciated Organics

The results shown in Appendix G are summarized in Table 4-5. None of the health effects are greater than thresholds.

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Table 4-5

Summary of Speciated Organic Potential Health Effects

Potential Health Effect	Potential Effect	Threshold	Exceed Standards?
Cancer Risk	1.97 in 1 million	10 in 1 million	No
Acute 1-Hour HHI	0.11	1.0	No
Acute 8-Hour HHI	0.16	1.0	No
Chronic HHI	0.0011	1.0	No

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5 LIMITATIONS

This analysis was limited by the amount of specific information available regarding Raceway operations, emissions from race vehicles, and future operations at the Raceway, if any. As stated, numerous assumptions had to be made.

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

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APPENDIX A

SACRAMENTO RACEWAY PLAN VIEW

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Feet

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Sacramento Raceway Plan View

Appendix A Sacramento Raceway
Plan View
Sacramento, California

APPENDIX
A

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APPENDIX B

VEHICLE EMISSION FACTORS

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APPENDIX B-1

Spectator Travel Emission Factors

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EMFAC2017 (v1.0.2) Emission Rates **Spectators to/from Raceway:** ALL SPEEDS, ALL FUELS, ALL YEARS ... LD autos and trucks, LHD trucks, MD trucks, Motorcycles, Motor Homes
Region Type: County
Region: SACRAMENTO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Yea	Vehicle Cate	Model Year	Speed	Fuel	VMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
SACRAMENT	2021	MDV	1977	5	GAS	0.08227208	8.628385285	0.227256434	0.238160777	2583.110965	3.844763188	0.242726586	34.80304655	37.83762975	600.1125488	0.025561977
SACRAMENT	2021	MDV	1977	10	GAS	6.27132623	9.021884528	0.158202353	0.165793305	1986.421413	2.654372933	0.253796181	24.0275565	26.12259204	424.7599859	0.01965725
SACRAMENT	2021	MCY	1977	5	GAS	0.00208908	0.619207375	0.225342508	0.236155017	575.5143342	2.076713279	0.034971377	19.28884422	20.97069707	180.5382996	0.005695181
SACRAMENT	2021	MCY	1978	5	GAS	0.00313649	0.931515709	0.227256434	0.238160777	623.572673	1.932964331	0.046567453	17.72612197	19.27171631	132.9520974	0.006170757
SACRAMENT	2021	MCY	1979	5	GAS	0.00393066	0.931515709	0.227256434	0.238160777	623.572673	1.943426074	0.046861145	17.72612197	19.27171631	132.9520974	0.006170757
SACRAMENT	2021	MDV	1977	15	GAS	19.8858003	9.469128132	0.115246832	0.120776669	1568.087611	1.929831196	0.266377667	17.46895755	18.99212895	316.3879042	0.015517498
SACRAMENT	2021	MCY	1980	5	GAS	0.00389182	1.077553766	0.088772044	0.093031554	588.7822361	1.829701061	0.051833285	16.40291271	17.83313243	126.6446603	0.005826478
SACRAMENT	2021	MCY	1981	5	GAS	0.00527582	1.077553766	0.088772044	0.093031554	588.7822361	1.838423807	0.052126823	16.40291271	17.83313243	126.6446603	0.005826478
SACRAMENT	2021	MCY	1985	5	GAS	0.00848632	0.974162775	0.088772044	0.093031554	604.0594458	1.862548501	0.049469932	16.24405612	17.66042465	113.6174948	0.005977658
SACRAMENT	2021	MCY	1986	5	GAS	0.0101679	0.974162775	0.088772044	0.093031554	604.0594458	1.871061563	0.049729371	16.24405612	17.66042465	113.6174948	0.005977658
SACRAMENT	2021	MCY	1987	5	GAS	0.00924411	0.974162775	0.088772044	0.093031554	604.0594458	1.87934765	0.049977981	16.24405612	17.66042465	113.6174948	0.005977658
SACRAMENT	2021	MCY	1982	5	GAS	0.00746204	1.028152602	0.088772044	0.093031554	591.2845609	1.776596555	0.051135397	15.88444251	17.26945524	109.1681077	0.00585124
SACRAMENT	2021	MCY	1983	5	GAS	0.00609281	1.028152602	0.088772044	0.093031554	591.2845609	1.785732362	0.051401746	15.88444251	17.26945524	109.1681077	0.00585124
SACRAMENT	2021	MCY	1984	5	GAS	0.00568483	1.028152602	0.088772044	0.093031554	591.2845609	1.794520879	0.051652803	15.88444251	17.26945524	109.1681077	0.00585124
SACRAMENT	2021	MCY	2004	5	GAS	0.22880492	1.335587589	0.001075872	0.001134592	566.4163596	1.953287968	0.074247932	15.0276168	16.92688969	83.0746649	0.005605149
SACRAMENT	2021	MCY	2005	5	GAS	0.33114225	1.335585044	0.001075906	0.001134617	566.4162994	1.957027733	0.074369736	15.03266073	16.92665763	83.07464334	0.005605148
SACRAMENT	2021	MCY	2006	5	GAS	0.418465	1.335536325	0.00107594	0.00113464	566.4151463	1.960665629	0.07448558	15.03742861	16.9262729	83.07423063	0.005605137
SACRAMENT	2021	MCY	2007	5	GAS	0.41577692	1.33547926	0.00107597	0.00113466	566.4137957	1.964118658	0.074594198	15.04171222	16.92587982	83.07374724	0.005605124
SACRAMENT	2021	MCY	1994	5	GAS	0.01989406	0.892531396	0.014330515	0.015025906	575.876144	1.820801815	0.0489603	15.05102764	16.4185656	112.6422957	0.005698761
SACRAMENT	2021	MCY	1988	5	GAS	0.00837398	0.862428088	0.014203527	0.014885049	576.5956332	1.779483111	0.046281105	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	1989	5	GAS	0.0106885	0.862428088	0.014203527	0.014885049	576.5956332	1.786639475	0.046486523	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	1990	5	GAS	0.01112094	0.862428088	0.014203527	0.014885049	576.5956332	1.792937949	0.046664841	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	1991	5	GAS	0.01468234	0.862428088	0.014203527	0.014885049	576.5956332	1.799323143	0.04684325	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	1992	5	GAS	0.01440528	0.862428088	0.014203527	0.014885049	576.5956332	1.805691958	0.047018828	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	1993	5	GAS	0.02017426	0.862428088	0.014203527	0.014885049	576.5956332	1.811700526	0.047182305	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	2008	5	GAS	0.2989415	1.703248588	0.001387156	0.001488615	538.1834066	1.89574431	0.097874611	12.50614155	15.91437979	42.91541106	0.005325761
SACRAMENT	2021	MCY	2009	5	GAS	0.31174046	1.701524113	0.001557235	0.001671235	538.1425907	1.898428706	0.097938549	12.50759917	15.9081583	42.90080271	0.005325357
SACRAMENT	2021	MCY	2010	5	GAS	0.13369106	1.699580861	0.001897477	0.002036533	538.0965965	1.900832365	0.097983341	12.51005278	15.90111167	42.88434098	0.005324902
SACRAMENT	2021	MCY	2011	5	GAS	0.15926836	1.697570582	0.002578026	0.002767176	538.0490158	1.903093593	0.09801921	12.51151955	15.89386936	42.86731138	0.005324431
SACRAMENT	2021	MCY	2012	5	GAS	0.24695736	1.695004541	0.003769827	0.004046392	537.9882808	1.904947291	0.098021381	12.51110438	15.88472598	42.84557364	0.00532383
SACRAMENT	2021	MCY	2013	5	GAS	0.32518115	1.691961349	0.005641249	0.006055598	537.9162519	1.906495129	0.09799638	12.5094372	15.87393437	42.8197936	0.005323117
SACRAMENT	2021	MCY	2014	5	GAS	0.38091932	1.688006323	0.007854066	0.008430914	537.8226407	1.907556663	0.097924363	12.50506352	15.8600069	42.78628872	0.005322191
SACRAMENT	2021	MCY	2015	5	GAS	0.46649149	1.683515184	0.00989713	0.010623841	537.7163399	1.908316192	0.097823689	12.49893695	15.84424296	42.74824169	0.005321139
SACRAMENT	2021	MCY	2016	5	GAS	0.4405184	1.678177816	0.011430024	0.012268956	537.5900093	1.908593402	0.097678098	12.49054557	15.82555813	42.70302503	0.005319889
SACRAMENT	2021	MCY	2017	5	GAS	0.54891288	1.671882114	0.012282333	0.013183403	537.4409959	1.90843202	0.097485991	12.47933421	15.80357703	42.64968864	0.005318414
SACRAMENT	2021	MCY	2018	5	GAS	0.63982894	1.664660539	0.01279436	0.013732524	537.2700688	1.907779492	0.097246166	12.4655615	15.77840465	42.58850705	0.005316723
SACRAMENT	2021	MCY	2019	5	GAS	0.73849574	1.656280414	0.013136212	0.014098958	537.0717229	1.906615879	0.096950806	12.44845768	15.7492453	42.51750862	0.00531476
SACRAMENT	2021	MCY	2020	5	GAS	0.82871936	1.646860254	0.013137581	0.014099924	536.8487673	1.904938577	0.09660316	12.4283175	15.71651058	42.43769726	0.005312554
SACRAMENT	2021	MCY	2021	5	GAS	0.66342361	1.636057988	0.013139017	0.014100936	536.5931141	1.902642763	0.096188662	12.40450025	15.6790104	42.34617521	0.005310024
SACRAMENT	2021	MCY	1997	5	GAS	0.03702004	1.035651049	0.014598152	0.015419852	559.8606978	1.72233089	0.057045389	13.37957845	15.24432393	96.48449908	0.005540275
SACRAMENT	2021	MCY	1998	5	GAS	0.04719498	1.035651049	0.014598583	0.015420156	559.8606978	1.727227869	0.057180658	13.3850389	15.24408253	96.48449908	0.005540275
SACRAMENT	2021	MCY	1999	5	GAS	0.07108994	1.035651049	0.014598994	0.015420446	559.8606978	1.731992734	0.057310518	13.39016262	15.24385602	96.48449908	0.005540275
SACRAMENT	2021	MCY	2000	5	GAS	0.10315028	1.035651049	0.014599417	0.015420744	559.8606978	1.736653114	0.057435865	13.39534125	15.24362709	96.48449908	0.005540275
SACRAMENT	2021	MCY	2001	5	GAS	0.15278706	1.035651049	0.014599851	0.01542105	559.8606978	1.740832836	0.057546892	13.40056406	15.2433962	96.48449908	0.005540275
SACRAMENT	2021	MCY	2002	5	GAS	0.18880744	1.035651049	0.014600285	0.015421356	559.8606978	1.745054094	0.057657694	13.4056915	15.24316953	96.48449908	0.005540275
SACRAMENT	2021	MCY	2003	5	GAS	0.23554577	1.035651049	0.014600767	0.015421696	559.8606978	1.748970553	0.057759309	13.41127886	15.24292253	96.48449908	0.005540275
SACRAMENT	2021	MCY	1996	5	GAS	0.02931584	1.01169442	0.014488156	0.015303803	559.6172745	1.704977938	0.055619214	13.28709354	15.14259805	97.64319785	0.005537867
SACRAMENT	2021	MCY	1995	5	GAS	0.02347327	0.94514283	0.014111856	0.014922992	556.1222374	1.636476931	0.051898758	12.70248966	14.57343605	99.2019751	0.00550328
SACRAMENT	2021	MDV	1977	20	GAS	74.566892	9.951364707	0.087853614	0.092069054	1276.701901	1.473573479	0.279943547	13.33888302	14.50194069	248.9144945	0.012634
SACRAMENT	2021	MCY	1977	10	GAS	0.15924325	0.646343082	0.156869992	0.164397015	428.8734672	1.430948502	0.036503938	13.29087796	14.44974993	127.2303976	0.004244051
SACRAMENT	2021	MCY	1978	10	GAS	0.23908434	0.972337797	0.158202353	0.165793305	476.5834483	1.331899036	0.048608193	12.21409231	13.27907606	93.69506778	0.00471618
SACRAMENT	2021	MCY	1979	10	GAS	0.29962119	0.972337797	0.158202353	0.165793305	476.5834483	1.339107646	0.048914754	12.21409231	13.27907606	93.69506778	0.00471618
SACRAMENT	2021	MCY	1980	10	GAS	0.29666011	1.124775722	0.061797794	0.06476301	449.9385851	1.260746016	0.05410479	11.30234184	12.28782731	89.25004014	0.004452507
SACRAMENT	2021	MCY	1981	10	GAS	0.40215789	1.124775722	0.061797794	0.06476301	449.9385851	1.266756379	0.054411192	11.30234184	12.28782731	89.25004014	0.004452507
SACRAMENT	2021	MCY	1985	10	GAS	0.6468836	1.016853797	0.061797794	0.06476301	464.6141278	1.283379374	0.051637867	11.19288253	12.16882391	80.0694316	0.004597733
SACRAMENT	2021	MCY	1986	10	GAS	0.77506538	1.016853797	0.061797794	0.06476301	464.6141278	1.289245256	0.051908676	11.19288253	12.16882391	80.0694316	0.004597733
SACRAMENT	2021	MCY	1987	10	GAS	0.70464795	1.016853797	0.061797794	0.06476301	464.6141278	1.29495474	0.052168181	11.19288253	12.16882391	80.0694316	0.004597733
SACRAMENT	2021	LHD1	1977	5	GAS	7.79518137	3.191421174	0.048610849	0.052868734	2218.775888	1.372655355	0.127796207	8.235251236	12.01685927	122.9637738	0.021956586
SACRAMENT	2021	LHD1	1978	5	GAS	10.7798618	3.158631072	0.048610849	0.052868734	2217.329674	1.365201118	0.12684889	8.183312535	11.94107044	122.192682	0.021942275
SACRAMENT	2021	MCY	1982	10	GAS	0.56880623	1.073209636	0.061797794	0.06476301	455.1419639	1.224154632	0.053376318	10.94509264	11.89942847	76.93382387	0.004503999
SACRAMENT	2021	MCY	1983	10	GAS	0.46443483	1.073209636	0.061797794	0.06476301	455.1419639	1.230449612	0.05365434	10.94509264	11.89942847	76.93382387	0.004503999
SACRAMENT	2021	MCY	1984	10	GAS	0.43333547	1.073209636	0.061797794	0.06476301	455.1419639	1.236505294	0.053916399	10.94509264	11.89942847	76.93382387	0.004503999
SACRAMENT	2021	LHD1	1979	5	GAS	11.8607343	3.128238561	0.048610849	0.052868734	2215.806171	1.358608736	0.126044721	8.137388335	11.87405796	121.3564681	0.021927198
SACRAMENT	2021	LHD2	1979	5	GAS	0.18459731	3.128238561	0.048610849	0.052868734	2505.063001	1.35870714	0.126070479	8.137388335	11.87405796	121.3564681	0.024789629
SACRAMENT	2021	LHD1	1980	5	GAS	25.0172067	3.097370176	0.048610849	0.052868734	2214.152714	1.351520306	0.125174943	8.088076757	11.80210262	120.4474832	0.021910836
SACRAMENT	2021	LHD1	1981	5	GAS	19.4403628	3.058249017	0.048610849	0.052868734	2212.28197	1.337490657	0.124021766	7.990886165	11.66028233	119.5316726	0.021892323
SACRAMENT	2021	LHD2	1981	5	GAS	2.64645799	3.058249017	0.048610849	0.052868734	2501.538799	1.337574755	0.124046905	7.990886165	11.66028233	119.5316726	0.024754754
SACRAMENT	2021	MDV	1977	25	GAS	240.832422	10.44587944	0.070082295	0.073445023	1078.864546	1.178076128	0.293854826	10.66402177	11.59385017	206.6647989	0.010676239
SACRAMENT	2021	LHD1	1982	5	GAS	11.0990081	3.03493858	0.048610849	0.052868734	2210.555267	1.327177897	0.123414763	7.919477874	11.55608352	118.6365939	0.021875236
SACRAMENT	2021	LHD2	1982	5	GAS	0.7663886	3.03493858	0.048610849	0.052868734	2499.812097	1.327255374	0.123435862	7.919477874	11.55608352	118.6365939	0.024737667
SACRAMENT	2021	LHD1	1983	5	GAS	12.0161888	3.077770654	0.048610849	0.052868734	2208.977236	1.317339489	0.124772742	7.851428542	11.4567861	117.826171	0.02185962
SACRAMENT	2021	LHD2	1983	5	GAS	2.84027095	3.077770654	0.048610849	0.052868734	2498.234066	1.317410677	0.124786349	7.851428542	11.4567861	117.826171	0.024722051
SACRAMENT	2021	MCY	1988	10	GAS	0.63832043	0.900222529	0.009887647	0.010362082	442.6367013	1.226143598	0.048309295	10.39205389	11.29816859	80.67482613	0.004380249
SACRAMENT	2021	MCY	1989	10	GAS	0.81474883	0.900222529	0.009887647	0.010362082	442.6367013	1.231074654	0.048523715	10.39205389	11.29816859	80.67482613	0.004380249
SACRAMENT	2021	MCY	1990	10	GAS	0.84771244	0.900222529	0.009887647	0.010362082	442.6367013	1.235414584	0.048709849	10.39205389	11.29816859	80.67482613	0.004380249
SACRAMENT	2021	MCY	1991	10	GAS	1.11918596	0.900222529	0.009887647	0.010362082	442.6367013	1.23981427	0.048896075	10.39205389	11.29816859	80.67482613	0.004380249
SACRAMENT	2021	MCY	1992	10	GAS	1.09806638	0.900222529	0.009887647	0.010362082	442.6367013	1.244202669	0.049079348	10.39205389	11.29816859	80.67482613	0.004380249
SACRAMENT	2021	MCY	1993	10	GAS	1.53781635	0.900222529	0.009887647	0.010362082	442.6367013	1.248342841	0.049249989	10.39205389	11.29816859	80.67482613	0.004380249
SACRAMENT	2021	MCY	1994	10	GAS	1.51645794	0.923098903	0.009947058	0.010429741	442.44175	1.252279979	0.050637097	10.35153877	11.29208067	79.47545699	0.00437832
SACRAMENT	2021	MCY	2004	10	GAS	17.4410358	1.26374385	0.00072047	0.000759793	441.658431	1.297325413	0.070253998	9.980970289	11.24242023	60.68829326	0.004370568
SACRAMENT	2021	MCY	2005	10	GAS	25.2418696	1.263741652	0.000720493	0.000759809	441.6583834	1.299809305	0.070369262	9.984320599	11.24226638	60.68827356	0.004370568
SACRAMENT	2021	MCY	2006	10	GAS	31.898191	1.263699568	0.000720515	0.000759824	441.6574706	1.302226143	0.070479097	9.98749219	11.24201636	60.68789645	0.004370559
SACRAMENT	2021	MCY	2007	10	GAS	31.6932877	1.263650275	0.000720535	0.000759839	441.6564016	1.304520307	0.070582136	9.990342977	11.24176172	60.68745475	0.004370548
SACRAMENT	2021	MDV	1977	70	GAS	7.75349114	14.97909391	0.064178868	0.067258334	1239.087363	1.100686038	0.42137946	9.963481632	10.83222782	344.0711782	0.012261774
SACRAMENT	2021	MH	1977	5	GAS	0.11764358	3.678548283	0.048610849	0.052868734	4503.305323	1.298131356	0.136856904	7.357222927	10.73564242	168.4550942	0.044563857
SACRAMENT	2021	MH	1978	5	GAS	0.23615802	3.67690147	0.048610849	0.052868734	4502.873062	1.282768379	0.136814289	7.256750982	10.589034	168.4557271	0.044559579
SACRAMENT	2021	MCY	1977	15	GAS	0.50494575	0.678508618	0.114276238	0.119759503	332.1782851	1.04056143	0.038320572	9.664900565	10.50761256	94.81087605	0.003287173
SACRAMENT	2021	MH	1979	5	GAS	0.19857027	3.677025015	0.048610849	0.052868734	4502.806192	1.267242338	0.136817592	7.155398113	10.44114013	168.6892755	0.044558917
SACRAMENT	2021	MCY	1997	10	GAS	2.8219144	1.037313001	0.010020615	0.010584654	433.3189012	1.174303194	0.057136933	9.122336363	10.39373931	68.6960233	0.004288042
SACRAMENT	2021	MCY	1998	10	GAS	3.59751595	1.037313001	0.01002091	0.010584863	433.3189012	1.177642005	0.057272418	9.126059352	10.39357473	68.6960233	0.004288042
SACRAMENT	2021	MCY	1999	10	GAS	5.41894918	1.037313001	0.010021193	0.010585062	433.3189012	1.18089074	0.057402487	9.129552761	10.39342029	68.6960233	0.004288042
SACRAMENT	2021	MCY	2000	10	GAS	7.86280163	1.037313001	0.010021483	0.010585267	433.3189012	1.184068236	0.057528035	9.133083607	10.3932642	68.6960233	0.004288042
SACRAMENT	2021	MCY	2001	10	GAS	11.6464477	1.037313001	0.010021781	0.010585477	433.3189012	1.186918014	0.057639239	9.136644569	10.39310678	68.6960233	0.004288042
SACRAMENT	2021	MCY	2002	10	GAS	14.3921618	1.037313001	0.010022079	0.010585687	433.3189012	1.189796112	0.057750219	9.140140517	10.39295223	68.6960233	0.004288042
SACRAMENT	2021	MCY	2003	10	GAS	17.9548683	1.037313001	0.01002241	0.010585921	433.3189012	1.192466394	0.057851998	9.143950035	10.39278382	68.6960233	0.004288042
SACRAMENT	2021	MCY	1996	10	GAS	2.23464848	1.019014171	0.009965307	0.010526329	432.8546284	1.164987008	0.056021627	9.078880735	10.3467204	69.40151735	0.004283447
SACRAMENT	2021	MH	1980	5	GAS	0.0159363	3.675703666	0.048610849	0.052868734	4502.929496	1.251579109	0.13678339	7.053310058	10.29217348	169.0448018	0.044560138
SACRAMENT	2021	MCY	2008	10	GAS	22.7873136	1.515301318	0.000891645	0.000956861	426.3119364	1.22345425	0.087074505	8.071073693	10.27064435	33.12533685	0.004218702
SACRAMENT	2021	MCY	2009	10	GAS	23.7629355	1.513811702	0.00100097	0.001074247	426.2796287	1.225196639	0.087133953	8.07208004	10.26671269	33.11198869	0.004218382

SACRAMENT	2021 MCY	2010	10 GAS	10.1908238	1.512133105	0.001219672	0.001309056	426.2432223	1.22675915	0.087176702	8.073737585	10.2622591	33.09694704	0.004218022
SACRAMENT	2021 MCY	2011	10 GAS	12.1404957	1.510396608	0.00165712	0.001778703	426.20556	1.228230163	0.087211621	8.074760882	10.25768246	33.08138649	0.00421765
SACRAMENT	2021 MCY	2012	10 GAS	18.8247358	1.508180041	0.002423193	0.002600966	426.1574854	1.229441431	0.087217401	8.074590905	10.25190583	33.06152397	0.004217174
SACRAMENT	2021 MCY	2013	10 GAS	24.7874743	1.505551306	0.003626118	0.003892455	426.1004712	1.230458123	0.087199733	8.073631226	10.24508858	33.03796785	0.00421661
SACRAMENT	2021 MCY	2014	10 GAS	29.0362092	1.502134921	0.005048486	0.005419276	426.0263734	1.231166325	0.08714162	8.070959773	10.23629168	33.00735328	0.004215876
SACRAMENT	2021 MDV	1980	5 GAS	0.05133564	3.252330566	0.20651089	0.223529709	1902.611411	1.191298671	0.123912276	7.259769387	10.23241775	193.6470099	0.018827882
SACRAMENT	2021 MCY	2015	10 GAS	35.5590906	1.498255437	0.00636174	0.00682886	425.9422311	1.231682809	0.087058837	8.067177671	10.22633553	32.97258838	0.004215044
SACRAMENT	2021 MCY	2016	10 GAS	33.5792482	1.493644973	0.007347064	0.007886317	425.842234	1.231893023	0.08693739	8.06196643	10.21453528	32.93127234	0.004214054
SACRAMENT	2021 MCY	2017	10 GAS	41.8417983	1.488206693	0.007894916	0.008474111	425.7242818	1.231825863	0.086776037	8.054972075	10.2006541	32.88253703	0.004212887
SACRAMENT	2021 MCY	2018	10 GAS	48.772026	1.481968636	0.00822404	0.008827079	425.5889829	1.231447232	0.086573668	8.046360321	10.18475815	32.82663328	0.004211548
SACRAMENT	2021 MCY	2019	10 GAS	56.2930669	1.474729812	0.008443777	0.009062618	425.4319793	1.230745652	0.086323694	8.035643324	10.16634519	32.76175954	0.004209994
SACRAMENT	2021 MCY	2020	10 GAS	63.1705128	1.466592599	0.008444658	0.009063238	425.2554938	1.229718755	0.086028841	8.023006781	10.14567507	32.68883313	0.004208248
SACRAMENT	2021 MH	1981	5 GAS	0.25302288	3.673732171	0.048610849	0.052868734	4503.171999	1.236012216	0.1367323	6.952060514	10.14443038	169.4732486	0.044562537
SACRAMENT	2021 MCY	2021	10 GAS	50.5705687	1.45726151	0.008445581	0.009063889	425.0531232	1.228300923	0.085676691	8.008050384	10.12199627	32.60520625	0.004206245
SACRAMENT	2021 MCY	1995	10 GAS	1.78928891	0.969389526	0.009767324	0.010328741	429.7283901	1.125303483	0.053230169	8.734712715	10.02124627	70.22700318	0.004252511
SACRAMENT	2021 MH	1982	5 GAS	0.38057826	3.67041422	0.048610849	0.052868734	4503.375025	1.220930601	0.136646242	6.854158527	10.00157203	169.8676817	0.044564547
SACRAMENT	2021 MH	1983	5 GAS	0.31113535	3.665171693	0.048610849	0.052868734	4503.353325	1.206659874	0.136510152	6.761684971	9.866634837	170.1055708	0.044564332
SACRAMENT	2021 MH	1984	5 GAS	1.32738299	3.657328971	0.048610849	0.052868734	4502.992041	1.192742212	0.136306491	6.671642838	9.735245568	170.1226069	0.044560757
SACRAMENT	2021 MDV	1977	65 GAS	29.3059002	14.4174698	0.058912792	0.061739578	1157.945481	0.985294585	0.405580315	8.918950691	9.696621058	296.8821777	0.011458909
SACRAMENT	2021 MDV	1977	30 GAS	168.198072	10.93730281	0.058502445	0.061309542	951.628487	0.984419618	0.307679141	8.911030437	9.688010213	180.8955176	0.009417135
SACRAMENT	2021 MCY	1978	15 GAS	0.75811451	1.020726597	0.115246832	0.120776669	375.3702439	0.968534342	0.0510272	8.881880335	9.656318424	69.82066885	0.003714593
SACRAMENT	2021 MCY	1979	15 GAS	0.95007132	1.020726597	0.115246832	0.120776669	375.3702439	0.973776321	0.051349018	8.881880335	9.656318424	69.82066885	0.003714593
SACRAMENT	2021 MCY	1980	15 GAS	0.94068199	1.18075066	0.045018294	0.047178387	354.3600324	0.916793075	0.056797338	8.218870891	8.935499176	66.50827675	0.00350668
SACRAMENT	2021 MCY	1981	15 GAS	1.27520577	1.18075066	0.045018294	0.047178387	354.3600324	0.921163709	0.057118988	8.218870891	8.935499176	66.50827675	0.00350668
SACRAMENT	2021 MDV	1978	5 GAS	0.05510704	3.27136782	0.206503946	0.223524812	1908.160071	1.058931339	0.124596335	6.371907047	8.92933085	199.4021851	0.018882791
SACRAMENT	2021 MDV	1979	5 GAS	0.03881512	3.22221858	0.206504322	0.223525077	1904.868986	1.055222504	0.123277297	6.346432046	8.893422243	197.7730858	0.018850223
SACRAMENT	2021 MCY	1985	15 GAS	2.05120855	1.067457955	0.045018294	0.047178387	367.4500508	0.933251669	0.054207647	8.139273941	8.848961927	59.66697502	0.003636216
SACRAMENT	2021 MCY	1987	15 GAS	2.23437403	1.067457955	0.045018294	0.047178387	367.4500508	0.941669078	0.054764352	8.139273941	8.848961927	59.66697502	0.003636216
SACRAMENT	2021 MCY	1986	15 GAS	2.45766123	1.067457955	0.045018294	0.047178387	367.4500508	0.937517238	0.054491933	8.139273941	8.848961927	59.66697502	0.003636216
SACRAMENT	2021 MH	1985	5 GAS	1.22745814	3.746549064	0.048610849	0.052868734	4489.578931	1.095412831	0.138678535	6.049237747	8.82703352	163.3537773	0.044428023
SACRAMENT	2021 LDT1	1977	5 GAS	0.00698086	2.792879985	0.206502532	0.223523815	1522.682608	1.041802135	0.111389473	6.297080918	8.826028241	197.540935	0.015068179
SACRAMENT	2021 LDT2	1977	5 GAS	0.01094678	2.792753953	0.206502994	0.223524141	1558.512504	1.041783839	0.111385554	6.297529978	8.825947983	197.5298799	0.015422745
SACRAMENT	2021 LDT2	1978	5 GAS	0.01322136	2.745223251	0.206503417	0.223524439	1555.43337	1.039973939	0.110097332	6.275255343	8.794421243	195.3499528	0.015392274
SACRAMENT	2021 LDT1	1978	5 GAS	0.00747572	2.744937463	0.206502793	0.223523999	1519.579893	1.039984125	0.110089868	6.274638758	8.794363185	195.3551026	0.015037475
SACRAMENT	2021 MDV	1981	5 GAS	0.01272802	2.252513006	0.080354962	0.087080403	1575.45001	1.039003779	0.09698149	6.132193594	8.791431912	96.65291725	0.015590355
SACRAMENT	2021 MCY	1982	15 GAS	1.80363237	1.126618366	0.045018294	0.047178387	360.1375219	0.890184443	0.056032613	7.959085346	8.653062141	57.33035012	0.003563853
SACRAMENT	2021 MCY	1983	15 GAS	1.47268026	1.126618366	0.045018294	0.047178387	360.1375219	0.894762045	0.056324471	7.959085346	8.653062141	57.33035012	0.003563853
SACRAMENT	2021 MCY	1984	15 GAS	1.37406702	1.126618366	0.045018294	0.047178387	360.1375219	0.899165635	0.056599571	7.959085346	8.653062141	57.33035012	0.003563853
SACRAMENT	2021 MDV	1982	5 GAS	0.0108684	2.36687125	0.079935886	0.086763178	1571.598601	1.018234001	0.101965817	5.948032594	8.593942023	93.46938625	0.015552242
SACRAMENT	2021 MDV	1977	60 GAS	199.905562	14.03102506	0.05135982	0.053824195	1040.222739	0.86813847	0.394709172	7.858445921	8.543647659	237.9234546	0.010293847
SACRAMENT	2021 LHD1	1984	5 GAS	22.5053233	3.082420049	0.048610849	0.052868734	2191.473395	0.991793806	0.125330317	5.803122529	8.467902772	112.355805	0.021686406
SACRAMENT	2021 LHD2	1984	5 GAS	2.10117869	3.082420049	0.048610849	0.052868734	2480.730225	0.992683239	0.125331272	5.803122529	8.467902772	112.355805	0.024548837
SACRAMENT	2021 MDV	1977	35 GAS	298.972689	11.42312572	0.051104175	0.053556284	877.7182525	0.858754424	0.321345909	7.773500921	8.451296047	165.9461309	0.008685734
SACRAMENT	2021 LHD1	1985	5 GAS	26.8447134	3.086132799	0.048610849	0.052868734	2190.272828	0.98559539	0.125436136	5.75786912	8.401869104	111.7215004	0.021674525
SACRAMENT	2021 LHD2	1985	5 GAS	3.59312285	3.086132799	0.048610849	0.052868734	2479.529658	0.986404651	0.125437007	5.75786912	8.401869104	111.7215004	0.024536956
SACRAMENT	2021 LHD1	1977	10 GAS	20.3265659	3.35111009	0.033839969	0.036804054	1777.295977	0.955682849	0.134190737	5.733623035	8.366489273	87.35386014	0.017587784
SACRAMENT	2021 LHD1	1986	5 GAS	36.4293725	2.913456971	0.048610849	0.052868734	2189.182723	0.980171089	0.120498979	5.717963422	8.343638803	111.1423363	0.021663738
SACRAMENT	2021 LHD2	1986	5 GAS	7.57444165	2.913456971	0.048610849	0.052868734	2478.439553	0.98090492	0.120499783	5.717963422	8.343638803	111.1423363	0.024526169
SACRAMENT	2021 LHD1	1978	10 GAS	28.1093614	3.316679272	0.033839969	0.036804054	1776.271756	0.950492991	0.133196018	5.697461791	8.313722871	86.80607405	0.017577649
SACRAMENT	2021 LHD1	1987	5 GAS	33.0633761	2.969307099	0.048610849	0.052868734	2188.099184	0.975138205	0.122106012	5.680912978	8.289574882	110.5595466	0.021653015
SACRAMENT	2021 LHD2	1987	5 GAS	3.38915254	2.969307099	0.048610849	0.052868734	2477.356014	0.975801279	0.122106735	5.680912978	8.289574882	110.5595466	0.024515446
SACRAMENT	2021 LHD1	1979	10 GAS	30.9278238	3.284766013	0.033839969	0.036804054	1775.192262	0.945903182	0.132351612	5.665488018	8.267066817	86.21202502	0.017566967
SACRAMENT	2021 LHD2	1979	10 GAS	0.48135242	3.284766013	0.033839969	0.036804054	2010.005269	0.945971693	0.132378659	5.665488018	8.267066817	86.21202502	0.019890632
SACRAMENT	2021 LHD1	1980	10 GAS	65.2343898	3.252353068	0.033839969	0.036804054	1774.020655	0.940968009	0.131438313	5.631155853	8.216969403	85.56627921	0.017555372
SACRAMENT	2021 MCY	1988	15 GAS	2.02405554	0.945022482	0.007202927	0.007548542	349.643043	0.891630785	0.050713428	7.556924967	8.215836179	60.11810924	0.003460001
SACRAMENT	2021 MCY	1989	15 GAS	2.58349382	0.945022482	0.007202927	0.007548542	349.643043	0.895216565	0.050938519	7.556924967	8.215836179	60.11810924	0.003460001
SACRAMENT	2021 MCY	1990	15 GAS	2.68801838	0.945022482	0.007202927	0.007548542	349.643043	0.898372489	0.051133915	7.556924967	8.215836179	60.11810924	0.003460001
SACRAMENT	2021 MCY	1991	15 GAS	3.54883602	0.945022482	0.007202927	0.007548542	349.643043	0.901571865	0.051329409	7.556924967	8.215836179	60.11810924	0.003460001
SACRAMENT	2021 MCY	1992	15 GAS	3.48186778	0.945022482	0.007202927	0.007548542	349.643043	0.904763034	0.051521803	7.556924967	8.215836179	60.11810924	0.003460001
SACRAMENT	2021 MCY	1993	15 GAS	4.87627458	0.945022482	0.007202927	0.007548542	349.643043	0.907773697	0.051700936	7.556924967	8.215836179	60.11810924	0.003460001
SACRAMENT	2021 MCY	1994	15 GAS	4.80854904	0.962185466	0.007228577	0.007579345	349.6915774	0.909093788	0.052781212	7.514708971	8.197496219	59.29338863	0.003460482
SACRAMENT	2021 LHD1	1981	10 GAS	50.6923183	3.211274407	0.033839969	0.036804054	1772.697612	0.931200157	0.130227434	5.563488918	8.118229969	84.91568442	0.01754228
SACRAMENT	2021 LHD2	1981	10 GAS	6.90085326	3.211274407	0.033839969	0.036804054	2007.510619	0.931258708	0.130253831	5.563488918	8.118229969	84.91568442	0.019865945
SACRAMENT	2021 LHD1	1982	10 GAS	28.9415614	3.186797587	0.033839969	0.036804054	1771.475322	0.924020111	0.129590059	5.513772375	8.045683706	84.27981765	0.017530184
SACRAMENT	2021 LHD2	1982	10 GAS	1.99842026	3.186797587	0.033839969	0.036804054	2006.288329	0.924074052	0.129612213	5.513772375	8.045683706	84.27981765	0.019853849
SACRAMENT	2021 MCY	1977	20 GAS	1.8934232	0.713548819	0.087113722	0.09129366	267.5295968	0.795161727	0.04029956	7.385588969	8.029560876	74.72018219	0.002647422
SACRAMENT	2021 LHD1	1983	10 GAS	31.3331841	3.231772847	0.033839969	0.036804054	1770.358443	0.917170324	0.131015986	5.466394438	7.976549931	83.70409061	0.017519132
SACRAMENT	2021 LHD2	1983	10 GAS	7.40623622	3.231772847	0.033839969	0.036804054	2005.171449	0.917219887	0.131030275	5.466394438	7.976549931	83.70409061	0.019842797
SACRAMENT	2021 MCY	2004	15 GAS	55.3039248	1.222889586	0.000507522	0.000535222	352.8387359	0.912731427	0.067982829	7.022097283	7.909588574	46.78182528	0.003491625
SACRAMENT	2021 MCY	2005	15 GAS	80.0396532	1.222887647	0.000507538	0.000535233	352.8386965	0.914478992	0.068094377	7.024454583	7.909480555	46.78180728	0.003491625
SACRAMENT	2021 MCY	2006	15 GAS	101.146238	1.222850521	0.000507553	0.000535244	352.8379414	0.916179839	0.068200863	7.026689672	7.909308836	46.78146285	0.003491617
SACRAMENT	2021 MCY	2007	15 GAS	100.496508	1.222807036	0.000507568	0.000535254	352.837057	0.917794465	0.068300806	7.028699698	7.909134587	46.78105943	0.003491609
SACRAMENT	2021 MDV	1977	40 GAS	366.315963	11.93566294	0.046714957	0.04895646	848.2330339	0.785969254	0.335764181	7.114644826	7.734992291	160.7285475	0.008393953
SACRAMENT	2021 MDV	1977	55 GAS	258.949393	13.38954738	0.046855045	0.04910327	950.3523573	0.782413733	0.376663654	7.082460021	7.700001195	197.8003129	0.009404507
SACRAMENT	2021 LDT2	1980	5 GAS	0.00858253	2.821151386	0.205316827	0.222549067	1372.805635	0.919376365	0.116444134	5.328754716	7.646659156	92.91082139	0.013585025
SACRAMENT	2021 MCY	1997	15 GAS	8.94803174	1.054056112	0.007213591	0.007619629	344.1540705	0.844981522	0.058059171	6.564067701	7.478918314	51.65788237	0.003405684
SACRAMENT	2021 MCY	1998	15 GAS	11.4073931	1.054056112	0.007213803	0.007619779	344.1540705	0.847383997	0.058196843	6.566746614	7.478799885	51.65788237	0.003405684
SACRAMENT	2021 MCY	1999	15 GAS	17.1829908	1.054056112	0.007214007	0.007619922	344.1540705	0.849721656	0.058329012	6.569260331	7.47868876	51.65788237	0.003405684
SACRAMENT	2021 MCY	2000	15 GAS	24.9322228	1.054056112	0.007214216	0.00762007	344.1540705	0.852008055	0.058456586	6.571800987	7.478576444	51.65788237	0.003405684
SACRAMENT	2021 MCY	2001	15 GAS	36.9298173	1.054056112	0.00721443	0.007620221	344.1540705	0.854058641	0.058569586	6.574363312	7.478463169	51.65788237	0.003405684
SACRAMENT	2021 MCY	2002	15 GAS	45.6362249	1.054056112	0.007214645	0.007620372	344.1540705	0.856129605	0.058682357	6.576878856	7.478351963	51.65788237	0.003405684
SACRAMENT	2021 MCY	2003	15 GAS	56.9332407	1.054056112	0.007214883	0.00762054	344.1540705	0.858051033	0.058785778	6.579620033	7.478230782	51.65788237	0.003405684
SACRAMENT	2021 MH	1977	10 GAS	0.5913953	3.875367904	0.033839969	0.036804054	3624.727538	0.902619552	0.144179392	5.115640438	7.464730519	119.5428327	0.035869617
SACRAMENT	2021 MCY	1996	15 GAS	7.08586537	1.040178987	0.007186233	0.007590799	343.6160269	0.839814774	0.05718519	6.544775279	7.458734381	52.10055666	0.003400359
SACRAMENT	2021 MDV	1977	45 GAS	141.941818	12.44833814	0.044686112	0.046830266	854.9350789	0.752672119	0.350186335	6.813236993	7.407303794	164.2924128	0.008460276
SACRAMENT	2021 MDV	1977	50 GAS	142.292912	12.91633894	0.044730715	0.046877009	890.5423385	0.750235611	0.363351746	6.791181567	7.383325289	175.9624802	0.008812638
SACRAMENT	2021 MCY	1978	20 GAS	2.84274418	1.073439951	0.087853614	0.092069054	305.3102334	0.740121071	0.053662396	6.787231486	7.379030789	55.02547086	0.003021292
SACRAMENT	2021 MCY	1979	20 GAS	3.5625353	1.073439951	0.087853614	0.092069054	305.3102334	0.744126813	0.054000834	6.787231486	7.379030789	55.02547086	0.003021292
SACRAMENT	2021 MH	1978	10 GAS	1.18716846	3.873632978	0.033839969	0.036804054	3624.426992	0.891937332	0.144134496	5.045780065	7.362790426	119.5432819	0.035866643
SACRAMENT	2021 MCY	1995	15 GAS	5.67367101	1.003905821	0.007080911	0.007487915	340.8272873	0.815378384	0.055125494	6.329044605	7.261247933	52.49962433	0.003372762
SACRAMENT	2021 MH	1979	10 GAS	0.99821451	3.873763134	0.033839969	0.036804054	3624.385796	0.881141731	0.144137976	4.975307164	7.259956535	119.7090176	0.035866236
SACRAMENT	2021 MH	1980	10 GAS	0.08011191	3.872371086	0.033839969	0.036804054	3624.479602	0.870250741	0.144101944	4.904323074	7.156376717	119.9613141	0.035867164
SACRAMENT	2021 MDV	1980	10 GAS	3.91314438	3.383554311	0.143760544	0.15560803	1512.926526	0.831651379	0.128911839	5.068080212	7.14330045	138.1192467	0.014971634
SACRAMENT	2021 MH	1981	10 GAS	1.27194823	3.870294107	0.033839969	0.036804054	3624.657945	0.859426734	0.144048121	4.833922018	7.053647661	120.265358	0.035868929
SACRAMENT	2021 LDT2	1979	5 GAS	0.01483604	2.835345468	0.205313033	0.222546384	1393.990578	0.852540065	0.117145235	4.904410521	7.026017727	95.32453628	0.013794667
SACRAMENT	2021 MDV	1984	5 GAS	0.02942563	2.230203504	0.079575377	0.086545483	1590.463049	0.853218953	0.095001922	4.798225669	7.001559633	103.9330724	0.015738921
SACRAMENT	2021 MCY	2008	15 GAS	72.2564814	1.379988274	0.000604535	0.000648752	344.00728	0.833599208	0.079298945	5.499217185	6.997892233	26.7958948	0.003404231
SACRAMENT	2021 MCY	2009	15 GAS	75.3500887	1.378674159	0.000678657	0.00072834	343.9805529	0.834794194	0.079355529	5.499954324	6.995278861	26.78370325	0.003403966
SACRAMENT	2021 MCY	2010	15 GAS	32.3141676	1.377193328	0.000826938	0.00088754	343.9504349	0.83586764	0.079397225	5.501141755	6.992318171	26.76996496	0.003403668
SACRAMENT	2021 MCY	2011	15 GAS	38.4963985	1.375661419	0.001123528	0.001205961	343.919278	0.836879077	0.079431893	5.501899105	6.989276185	26.75575274	0.00340336
SACRAMENT	2021 MCY	2012	15 GAS	59.6915104	1.373705999	0.001642925	0.001763455	343.8795073	0.837716093	0.079440825	5.501860093	6.98543768	26.7376113	0.003402966
SACRAMENT	2021 MCY	2013	15 GAS	78.5988076	1.371386972	0.002458508	0.002639085	343.8323411	0.838422743	0.079429095	5.501297371	6.980908256	26.71609632	0.0034025
SACRAMENT	2021 MCY	2014	15 GAS	92.0711561	1.368373093	0.003422874	0.003674269	343.771042	0.838923403	0.079381849	5.499595711	6.975064605	26.68813451	0.003401893
SACRAMENT	2021 MCY	2015	15 GAS	112.754615	1.364950676	0.00431326	0.004629967	343.7014333	0.839295935	0.079312924	5.49715347	6.96845144	26.65638199	0.003401204
SACRAMENT	2021 MCY	2016	15 GAS	106.476716	1.360883399	0.00498131	0.005346924	343.6187081	0.839463712	0.079210022	5.493762966	6.960613908	26.61864599	0.003400386
SACRAMENT	2021 MH	1982	10 GAS	1.91317026	3.86679863	0.033839969	0.036804054	3624.808066	0.848940152	0.143957458	4.765848593	6.954315079	120.5452643	0.035870414
SACRAMENT	2021 MCY	2017	15 GAS	132.676505	1.356085837	0.005352753	0.005745448	343.5211289	0.839446954	0.079072185	5.489186399	6.951394892	26.57413359	0.00339942
SACRAMENT	2021 MCY	2018	15 GAS	154.651621	1.350582725	0.005575899	0.00598476	343.4091987	0.839222288	0.078898363	5.483535746	6.94083824	26.52307392	0.003398312

SACRAMENT	2021	MCY	2019	15	GAS	178.500152	1.344196753	0.005724882	0.006144455	343.2793118	0.83878298	0.078682907	5.476485612	6.928610554	26.46382149	0.003397027
SACRAMENT	2021	LDA	1977	5	GAS	0.02641262	2.109884413	0.20799056	0.22539083	1413.250985	0.712535031	0.084626355	4.92381114	6.917977265	98.98366357	0.013985264
SACRAMENT	2021	MCY	2020	15	GAS	200.307902	1.337018236	0.005725478	0.006144876	343.1333067	0.838126882	0.07842814	5.468158987	6.914884384	26.39721415	0.003395582
SACRAMENT	2021	MCY	2021	15	GAS	160.354635	1.328786501	0.005726104	0.006145317	342.9658853	0.837210876	0.078123267	5.458293444	6.899160622	26.32083355	0.003393925
SACRAMENT	2021	MH	1983	10	GAS	1.56408014	3.861275604	0.033839969	0.036804054	3624.798378	0.839017399	0.143814087	4.701549676	6.860490251	120.7140805	0.035870318
SACRAMENT	2021	MDV	1983	5	GAS	0.01788595	3.348015781	0.078691268	0.085583934	1530.42468	0.8314297	0.157635151	4.680582286	6.829894684	70.73181573	0.015144793
SACRAMENT	2021	MCY	1980	20	GAS	3.52732761	1.241728132	0.034317818	0.035964474	288.2168018	0.700582151	0.059730521	6.280582173	6.828205185	52.41498405	0.002852139
SACRAMENT	2021	MCY	1981	20	GAS	4.78171005	1.241728132	0.034317818	0.035964474	288.2168018	0.703922041	0.060068782	6.280582173	6.828205185	52.41498405	0.002852139
SACRAMENT	2021	LDA	1978	5	GAS	0.03385674	2.187459634	0.206895655	0.224564332	1409.687763	0.728696953	0.090795862	4.756359817	6.793766126	97.12375126	0.013950003
SACRAMENT	2021	LDA	1979	5	GAS	0.03381935	2.40457728	0.210670729	0.228387371	1403.193454	0.750551669	0.101225055	4.807330571	6.779700783	93.23892161	0.013885737
SACRAMENT	2021	MH	1984	10	GAS	6.67276601	3.853013258	0.033839969	0.036804054	3624.547555	0.82934014	0.143599528	4.638941382	6.769132375	120.72617	0.035867836
SACRAMENT	2021	MCY	1985	20	GAS	7.69153088	1.122584655	0.034317818	0.035964474	299.5824512	0.713159249	0.057007091	6.219756886	6.762076356	47.02337359	0.002964611
SACRAMENT	2021	MCY	1986	20	GAS	9.2156291	1.122584655	0.034317818	0.035964474	299.5824512	0.716418852	0.057306058	6.219756886	6.762076356	47.02337359	0.002964611
SACRAMENT	2021	MCY	1987	20	GAS	8.37835664	1.122584655	0.034317818	0.035964474	299.5824512	0.719591548	0.057592546	6.219756886	6.762076356	47.02337359	0.002964611
SACRAMENT	2021	MCY	1982	20	GAS	6.76318069	1.184800286	0.034317818	0.035964474	293.7030541	0.680248737	0.058926304	6.082062877	6.612376389	45.18188613	0.00290643
SACRAMENT	2021	MCY	1983	20	GAS	5.52219113	1.184800286	0.034317818	0.035964474	293.7030541	0.683746785	0.059233234	6.082062877	6.612376389	45.18188613	0.00290643
SACRAMENT	2021	MCY	1984	20	GAS	5.15241558	1.184800286	0.034317818	0.035964474	293.7030541	0.687111859	0.059522542	6.082062877	6.612376389	45.18188613	0.00290643
SACRAMENT	2021	MCY	1977	25	GAS	6.11528364	0.749349617	0.069492071	0.072826478	224.5692356	0.636038728	0.042321505	5.907629172	6.42273328	62.11016198	0.002222295
SACRAMENT	2021	LDT2	1981	5	GAS	0.00867474	3.893667426	0.079174399	0.086109382	1499.562665	0.778837377	0.172946912	4.337780204	6.329678691	72.62157989	0.014839388
SACRAMENT	2021	MCY	1989	20	GAS	9.68747057	0.993826251	0.005490851	0.005754316	284.8767834	0.684094114	0.053569135	5.774745566	6.278263149	47.37891118	0.002819087
SACRAMENT	2021	MCY	1990	20	GAS	10.0794121	0.993826251	0.005490851	0.005754316	284.8767834	0.686505764	0.053774622	5.774745566	6.278263149	47.37891118	0.002819087
SACRAMENT	2021	MCY	1991	20	GAS	13.3072679	0.993826251	0.005490851	0.005754316	284.8767834	0.688950619	0.053980212	5.774745566	6.278263149	47.37891118	0.002819087
SACRAMENT	2021	MCY	1988	20	GAS	7.58971369	0.993826251	0.005490851	0.005754316	284.8767834	0.681353983	0.05333242	5.774745566	6.278263149	47.37891118	0.002819087
SACRAMENT	2021	MCY	1992	20	GAS	13.0561534	0.993826251	0.005490851	0.005754316	284.8767834	0.691389202	0.054182542	5.774745566	6.278263149	47.37891118	0.002819087
SACRAMENT	2021	MCY	1993	20	GAS	18.2848382	0.993826251	0.005490851	0.005754316	284.8767834	0.693689848	0.054370926	5.774745566	6.278263149	47.37891118	0.002819087
SACRAMENT	2021	LDT1	1980	5	GAS	0.0078923	2.116154042	0.205318632	0.222550254	1349.425902	0.774443848	0.095291005	4.369487787	6.270089616	92.94223111	0.013353663
SACRAMENT	2021	MCY	1994	20	GAS	18.030884	1.006359899	0.005499181	0.00576603	285.0259138	0.693672942	0.055204425	5.734007146	6.254999638	46.77698147	0.002820562
SACRAMENT	2021	MDV	1978	10	GAS	4.20062585	3.403974376	0.14375571	0.155604621	1517.110818	0.739257726	0.129646911	4.448335168	6.233715615	142.2800588	0.015013041
SACRAMENT	2021	MDV	1979	10	GAS	2.9587472	3.352510863	0.143755972	0.155604805	1514.537899	0.736584825	0.128262086	4.430047237	6.207941777	141.0852837	0.01498758
SACRAMENT	2021	LDT1	1977	10	GAS	0.532128	2.905833985	0.143754726	0.155603927	1203.846954	0.727227326	0.115894459	4.395661288	6.160986522	140.9197958	0.011913042
SACRAMENT	2021	LDT2	1977	10	GAS	0.8344366	2.90570289	0.143755047	0.155604153	1232.981515	0.727214568	0.115890384	4.395974836	6.160930615	140.9118748	0.012201352
SACRAMENT	2021	MDV	1981	10	GAS	0.97021427	2.312671258	0.055971232	0.060655836	1263.300745	0.726421558	0.099571591	4.287335345	6.146547102	69.17488797	0.012501385
SACRAMENT	2021	MH	1985	10	GAS	6.17044286	3.945515638	0.033839969	0.036804054	3615.144134	0.762167417	0.146043284	4.208944591	6.141682066	115.9635315	0.035774782
SACRAMENT	2021	LDT2	1978	10	GAS	1.00782026	2.856520445	0.143755342	0.155604361	1230.975538	0.726024348	0.114560912	4.380867633	6.13954226	139.3899411	0.012181501
SACRAMENT	2021	LDT1	1978	10	GAS	0.56984924	2.856223359	0.143754907	0.155604054	1201.820172	0.726031393	0.114553157	4.380436788	6.139501174	139.393633	0.011892985
SACRAMENT	2021	LHD1	1977	15	GAS	46.2863313	3.509230093	0.024651651	0.02681092	1441.992455	0.69942352	0.140522442	4.196194175	6.12307669	65.55112499	0.014269684
SACRAMENT	2021	LHD1	1978	15	GAS	64.0088061	3.473174679	0.024651651	0.02681092	1441.226763	0.695625284	0.139480788	4.169729303	6.08445921	65.14006136	0.014262107
SACRAMENT	2021	LHD1	1979	15	GAS	70.4268252	3.439755613	0.024651651	0.02681092	1440.419259	0.692266198	0.138596539	4.146329062	6.050313634	64.69428161	0.014254116
SACRAMENT	2021	LHD2	1979	15	GAS	1.09610437	3.439755613	0.024651651	0.02681092	1632.445826	0.692316339	0.138624862	4.146329062	6.050313634	64.69428161	0.016154375
SACRAMENT	2021	MCY	1977	70	GAS	0.1968788	1.078957762	0.063638361	0.066691892	282.7408563	0.597018779	0.060936998	5.545205658	6.028708961	104.4933235	0.00279795
SACRAMENT	2021	MDV	1982	10	GAS	0.82846206	2.38789288	0.055727003	0.060486624	1261.639504	0.712976976	0.102871437	4.164868087	6.017558632	67.24373278	0.012484946
SACRAMENT	2021	LHD1	1980	15	GAS	148.547502	3.405813284	0.024651651	0.02681092	1439.542821	0.688654356	0.137640146	4.121202815	6.013649473	64.20970812	0.014245443
SACRAMENT	2021	LHD1	1981	15	GAS	115.433244	3.362796353	0.024651651	0.02681092	1438.555411	0.681505681	0.136372133	4.07168027	5.941386292	63.72149592	0.014235672
SACRAMENT	2021	LHD2	1981	15	GAS	15.7141734	3.362796353	0.024651651	0.02681092	1630.581978	0.681548532	0.136399775	4.07168027	5.941386292	63.72149592	0.016135931
SACRAMENT	2021	MCY	1978	25	GAS	9.18135312	1.127297523	0.070082295	0.073445023	257.7017455	0.592012478	0.056354793	5.429011402	5.902383375	45.73919399	0.002550168
SACRAMENT	2021	MCY	1979	25	GAS	11.5060985	1.127297523	0.070082295	0.073445023	257.7017455	0.595216615	0.056710211	5.429011402	5.902383375	45.73919399	0.002550168
SACRAMENT	2021	LHD1	1984	10	GAS	58.6844508	3.237464336	0.033839969	0.036804054	1758.04892	0.690600581	0.131634373	4.040799372	5.896324958	79.81661824	0.017397319
SACRAMENT	2021	LHD2	1984	10	GAS	5.47899338	3.237464336	0.033839969	0.036804054	1992.861927	0.691219906	0.131635376	4.040799372	5.896324958	79.81661824	0.019720984
SACRAMENT	2021	LHD1	1982	15	GAS	65.9038377	3.337164609	0.024651651	0.02681092	1437.642171	0.676250912	0.135704684	4.035294853	5.888292777	63.24433576	0.014226635
SACRAMENT	2021	LHD2	1982	15	GAS	4.5506724	3.337164609	0.024651651	0.02681092	1629.668738	0.67629039	0.135727883	4.035294853	5.888292777	63.24433576	0.016126893
SACRAMENT	2021	MCY	2004	20	GAS	207.376205	1.20278444	0.000375859	0.000396373	289.7013877	0.677473417	0.066865145	5.212140283	5.870879249	37.94744	0.00286683
SACRAMENT	2021	MCY	2005	20	GAS	300.129142	1.202782698	0.000375871	0.000396382	289.701354	0.678770562	0.066974868	5.213890124	5.870799229	37.94742354	0.00286683
SACRAMENT	2021	MCY	2006	20	GAS	379.273677	1.202749338	0.000375883	0.00039639	289.7007083	0.68003336	0.067079779	5.215551776	5.870674766	37.94710848	0.002866823
SACRAMENT	2021	MCY	2007	20	GAS	376.83735	1.202710265	0.000375893	0.000396398	289.699952	0.681232221	0.067178286	5.217046833	5.870548939	37.94673946	0.002866816
SACRAMENT	2021	LHD1	1985	10	GAS	69.9997614	3.241363835	0.033839969	0.036804054	1757.198794	0.686284533	0.131745515	4.009288759	5.850344746	79.36601359	0.017388907
SACRAMENT	2021	LHD2	1985	10	GAS	9.36935842	3.241363835	0.033839969	0.036804054	1992.011801	0.686848033	0.13174643	4.009288759	5.850344746	79.36601359	0.019712572
SACRAMENT	2021	LHD1	1983	15	GAS	71.3498852	3.384261998	0.024651651	0.02681092	1436.807845	0.671237845	0.137197893	4.000620961	5.837696715	62.81230499	0.014218378
SACRAMENT	2021	LHD2	1983	15	GAS	16.8649985	3.384261998	0.024651651	0.02681092	1628.834412	0.671274118	0.137212855	4.000620961	5.837696715	62.81230499	0.016118637
SACRAMENT	2021	LHD1	1986	10	GAS	94.992535	3.060002494	0.033839969	0.036804054	1756.426815	0.682507512	0.126560021	3.981501836	5.809798133	78.95458031	0.017381267
SACRAMENT	2021	LHD2	1986	10	GAS	19.7509692	3.060002494	0.033839969	0.036804054	1991.239822	0.683018489	0.126560866	3.981501836	5.809798133	78.95458031	0.019704932
SACRAMENT	2021	LHD1	1987	10	GAS	86.2154274	3.118661857	0.033839969	0.036804054	1755.659328	0.679003041	0.128247887	3.955703068	5.772152631	78.54057139	0.017373672
SACRAMENT	2021	LHD2	1987	10	GAS	8.83748936	3.118661857	0.033839969	0.036804054	1990.472334	0.679464749	0.128248647	3.955703068	5.772152631	78.54057139	0.019697337
SACRAMENT	2021	LDT1	1979	5	GAS	0.01145024	2.126620559	0.205314813	0.222547561	1351.568322	0.71813585	0.095857883	4.021519551	5.761185184	95.3158327	0.013374864
SACRAMENT	2021	MCY	1997	20	GAS	33.5529326	1.080485122	0.005444105	0.005750543	281.3544254	0.639470385	0.059514925	4.967596085	5.659942437	41.01184127	0.00278423
SACRAMENT	2021	MCY	1998	20	GAS	42.7749368	1.080485122	0.005444266	0.005750656	281.3544254	0.641288545	0.059656049	4.96962345	5.659852812	41.01184127	0.00278423
SACRAMENT	2021	MCY	1999	20	GAS	64.432017	1.080485122	0.005444419	0.005750764	281.3544254	0.643057654	0.059791532	4.971525797	5.659768714	41.01184127	0.00278423
SACRAMENT	2021	MCY	2000	20	GAS	93.4897434	1.080485122	0.005444577	0.005750875	281.3544254	0.644787969	0.059922305	4.97344853	5.659683714	41.01184127	0.00278423
SACRAMENT	2021	MCY	2001	20	GAS	138.477791	1.080485122	0.005444739	0.00575099	281.3544254	0.646339824	0.060038138	4.975387662	5.65959799	41.01184127	0.00278423
SACRAMENT	2021	MCY	2002	20	GAS	171.124693	1.080485122	0.005444901	0.005751104	281.3544254	0.647907101	0.060153736	4.977291391	5.659513831	41.01184127	0.00278423
SACRAMENT	2021	MCY	2003	20	GAS	213.485741	1.080485122	0.005445081	0.005751231	281.3544254	0.649361212	0.060259751	4.979365876	5.659422123	41.01184127	0.00278423
SACRAMENT	2021	MCY	1996	20	GAS	26.5702637	1.070169788	0.005431482	0.005737261	280.8144666	0.636549943	0.058833974	4.960708548	5.653457272	41.3019457	0.002778887
SACRAMENT	2021	MCY	1978	70	GAS	0.29558952	1.623149442	0.064178868	0.067258334	293.8203517	0.555693468	0.081142954	5.095950316	5.540281683	76.95102124	0.002907591
SACRAMENT	2021	MCY	1979	70	GAS	0.37043365	1.623149442	0.064178868	0.067258334	293.8203517	0.558701037	0.081654705	5.095950316	5.540281683	76.95102124	0.002907591
SACRAMENT	2021	LDT2	1982	5	GAS	0.01276309	4.625798021	0.079865942	0.086861499	1485.309921	0.693471374	0.204060186	3.789049788	5.528972557	63.9485664	0.014698346
SACRAMENT	2021	MCY	1995	20	GAS	21.2748799	1.044735797	0.005375961	0.005684967	278.3307088	0.620635718	0.05736751	4.817433504	5.526992027	41.45803556	0.002754308
SACRAMENT	2021	MH	1977	15	GAS	0.74703367	4.030562378	0.024651651	0.02681092	2950.139334	0.663558891	0.149953255	3.760752456	5.487681156	90.00950347	0.02919402
SACRAMENT	2021	MCY	1980	25	GAS	11.3923865	1.304029206	0.027375897	0.028689462	243.278804	0.56038585	0.062727373	5.023749713	5.46178569	43.56926139	0.002407441
SACRAMENT	2021	MCY	1981	25	GAS	15.4437282	1.304029206	0.027375897	0.028689462	243.278804	0.563057381	0.063082606	5.023749713	5.46178569	43.56926139	0.002407441
SACRAMENT	2021	MH	1978	15	GAS	1.49959732	4.028757975	0.024651651	0.02681092	2949.918401	0.65570588	0.149906562	3.709394747	5.412740108	90.00984164	0.029191834
SACRAMENT	2021	MCY	1985	25	GAS	24.8417221	1.178907958	0.027375897	0.028689462	253.205071	0.570446095	0.059867301	4.975096417	5.408890166	39.08755659	0.002505669
SACRAMENT	2021	MCY	1986	25	GAS	29.7641784	1.178907958	0.027375897	0.028689462	253.205071	0.573053406	0.060181268	4.975096417	5.408890166	39.08755659	0.002505669
SACRAMENT	2021	MCY	1987	25	GAS	27.0599977	1.178907958	0.027375897	0.028689462	253.205071	0.5755912	0.06048213	4.975096417	5.408890166	39.08755659	0.002505669
SACRAMENT	2021	MH	1979	5	DSL	0.01559023	26.72699033	1.991987749	2.082056596	2340.526571	0.22005544	0.367898183	4.737664061	5.393515552	7.673640332	0.022126393
SACRAMENT	2021	MCY	1977	65	GAS	0.74414354	1.033792893	0.058416636	0.061219615	255.5009841	0.531681289	0.058386193	4.938340628	5.368929528	89.12078959	0.002528389
SACRAMENT	2021	MCY	1977	30	GAS	4.27093208	0.784547356	0.058009745	0.060793201	197.0760769	0.531444803	0.044309391	4.936144107	5.366541485	54.35662394	0.001950228
SACRAMENT	2021	LDT2	1980	10	GAS	0.65421758	2.809221591	0.143235177	0.155256905	1100.062932	0.643690585	0.115951727	3.730865151	5.353718774	66.95396249	0.010886014
SACRAMENT	2021	MH	1979	15	GAS	1.26091608	4.028893343	0.024651651	0.02681092	2949.892792	0.647769516	0.149910181	3.657586741	5.337141986	90.13463198	0.029191581
SACRAMENT	2021	MCY	1983	25	GAS	17.835297	1.244245126	0.027375897	0.028689462	248.2728426	0.546919477	0.062205136	4.864956908	5.289147259	37.55684453	0.002456861
SACRAMENT	2021	MCY	1982	25	GAS	21.8433831	1.244245126	0.027375897	0.028689462	248.2728426	0.544121437	0.061882806	4.864956908	5.289147259	37.55684453	0.002456861
SACRAMENT	2021	MCY	1984	25	GAS	16.6410144	1.244245126	0.027375897	0.028689462	248.2728426	0.549611152	0.062508959	4.864956908	5.289147259	37.55684453	0.002456861
SACRAMENT	2021	MH	1982	5	DSL	0.12624437	26.68621955	1.957441304	2.045948114	2340.526571	0.215419561	0.367898183	4.637856322	5.279891077	7.511916004	0.022126393
SACRAMENT	2021	MH	1980	15	GAS	0.10119507	4.027445549	0.024651651	0.02681092	2949.968871	0.639763027	0.149872706	3.605402934	5.260995498	90.32459806	0.029192333
SACRAMENT	2021	MH	1983	5	DSL	0.02254942	26.67172236	1.945157362	2.033108746	2340.526571	0.213771147	0.367898183	4.602366927	5.239488761	7.454410458	0.022126393
SACRAMENT	2021	MH	1984	5	DSL	0.12181469	26.6567717	1.932489189	2.019867775	2340.526571	0.212071171	0.367898183	4.565767459	5.197822699	7.395106195	0.022126393
SACRAMENT	2021	LDT1	1981	5	GAS	0.0192611	2.595980895	0.079175849	0.08611096	1073.87227	0.65607914	0.130360154	3.557135878	5.190564322	72.63679184	0.010626837
SACRAMENT	2021	MH	1981	15	GAS	1.60668871	4.025285394	0.024651651	0.02681092	2950.108559	0.631805781	0.149816727	3.553647744	5.185474445	90.55352717	0.029193716
SACRAMENT	2021	MDV	1980	15	GAS	12.4082219	3.549745764	0.104726302	0.113356927	1219.239967	0.603071207	0.135243656	3.675113547	5.17995753	102.954053	0.012065368
SACRAMENT	2021	MH	1985	5	DSL	0.07760805	26.64136757	1.919436786	2.0062252	2340.526571	0.210319635	0.367898183	4.528057917	5.154892892	7.334003213	0.022126393
SACRAMENT	2021	MCY	1980	70	GAS	0.36677274	1.87761814	0.02506987	0.026272787	277.8391143	0.526007082	0.09031857	4.715550777	5.126713954	73.30035505	0.002749443
SACRAMENT	2021	MCY	1981	70	GAS	0.49720386	1.87761814	0.02506987	0.026272787	277.8391143	0.528514719	0.090830056	4.715550777	5.126713954	73.30035505	0.002749443
SACRAMENT	2021	MH	1982	15	GAS	2.41666208	4.021649936	0.024651651	0.02681092	2950.226817	0.624096592	0.149722433	3.503603706	5.112450304	90.76428204	0.029194886
SACRAMENT	2021	MH	1986	5	DSL	0.10771271	26.62550997	1.906000153	1.992181022	2340.526571	0.208516538	0.367898183	4.4892383	5.11069934	7.271101515	0.022126393
SACRAMENT	2021	MCY	1985	70	GAS	0.79976803	1.697461189	0.02506987	0.026272787	281.668654	0.535450148	0.08620047	4.669882283	5.077063485	65.76039356	0.00278734
SACRAMENT	2021	MCY	1986	70	GAS	0.95824429	1.697461189	0.02506987	0.026272787	281.668654	0.537897504	0.086652538	4.669882283	5.077063485	65.76039356	0.00278734
SACRAMENT	2021	MCY	1987	70	GAS	0.87118441	1.697461189	0.02506987	0.026272787	281.668654	0.540279609	0.087085737	4.669882283	5.077063485	65.76039356	0.00278734
SACRAMENT	2021	MH	1983	15	GAS	1.9757014	4.015905732	0.024651651	0.02681092	2950.224457	0.616801901	0.149573321	3.456334491	5.043475176	90.89139176	0.029194863
SACRAMENT	2021	MCY	2008	20	GAS	270.94415	1.281570552	0.00043219	0.000463802	284.0887272	0.599306375	0.073643519	3.953597705	5.031052555	22.57284345	0.002811288
SACRAMENT	2021	MCY	2009	20	GAS	282.544421	1.280389755	0.000485182	0.0005207	284.0658721	0.600171267	0.073698347	3.954165683	5.02922206	22.56169155	0.002811062

SACRAMENT	2021	MCY	2010	20	GAS	121.170233	1.279059156	0.000591189	0.000634514	284.0401173	0.600949532	0.073739645	3.955062267	5.027147997	22.5491248	0.002810807
SACRAMENT	2021	MCY	2011	20	GAS	144.352088	1.27768266	0.000803225	0.000862158	284.0134742	0.601683462	0.073774514	3.955651173	5.025017365	22.53612454	0.002810544
SACRAMENT	2021	MCY	2012	20	GAS	223.828579	1.275925619	0.00117455	0.001260718	283.9794652	0.602293883	0.073786228	3.955679862	5.022329666	22.51953012	0.002810207
SACRAMENT	2021	MCY	1988	25	GAS	24.5128781	1.043689374	0.004380143	0.004590314	240.7015888	0.545005507	0.056008261	4.619138095	5.021894758	39.38309251	0.002381937
SACRAMENT	2021	MCY	1989	25	GAS	31.2881084	1.043689374	0.004380143	0.004590314	240.7015888	0.5471973	0.056256853	4.619138095	5.021894758	39.38309251	0.002381937
SACRAMENT	2021	MCY	1990	25	GAS	32.5539817	1.043689374	0.004380143	0.004590314	240.7015888	0.549126345	0.05647265	4.619138095	5.021894758	39.38309251	0.002381937
SACRAMENT	2021	MCY	1991	25	GAS	42.9791491	1.043689374	0.004380143	0.004590314	240.7015888	0.55108195	0.056688555	4.619138095	5.021894758	39.38309251	0.002381937
SACRAMENT	2021	MCY	1992	25	GAS	42.168112	1.043689374	0.004380143	0.004590314	240.7015888	0.553032539	0.056901036	4.619138095	5.021894758	39.38309251	0.002381937
SACRAMENT	2021	MCY	1993	25	GAS	59.0554568	1.043689374	0.004380143	0.004590314	240.7015888	0.554872793	0.057098872	4.619138095	5.021894758	39.38309251	0.002381937
SACRAMENT	2021	MCY	2013	20	GAS	294.726323	1.273841859	0.001757621	0.001886718	283.939132	0.60281221	0.073779398	3.955342641	5.019158615	22.49984985	0.002809808
SACRAMENT	2021	MCY	2014	20	GAS	345.244338	1.27113374	0.00244706	0.002626786	283.8867133	0.603185546	0.073740815	3.954206816	5.015068279	22.47427249	0.002809289
SACRAMENT	2021	MCY	2015	20	GAS	422.802255	1.268058531	0.003083609	0.003310027	283.8271888	0.60346861	0.07368283	3.952550495	5.010439738	22.44522769	0.0028087
SACRAMENT	2021	MCY	2016	20	GAS	399.261669	1.264403883	0.003561207	0.003822589	283.7564479	0.603607366	0.073594446	3.950231257	5.004954672	22.41070966	0.002808
SACRAMENT	2021	MCY	2017	20	GAS	497.504474	1.260093037	0.003826757	0.0041075	283.6730046	0.603616742	0.073474928	3.94708063	4.998503263	22.36999308	0.002807174
SACRAMENT	2021	MCY	1994	25	GAS	58.2352481	1.052413243	0.004379319	0.004591826	240.8847139	0.554173513	0.057730706	4.580883428	4.997102978	38.91287139	0.00238375
SACRAMENT	2021	MCY	2018	20	GAS	579.90579	1.255148219	0.003986287	0.004278587	283.577289	0.603479831	0.073323269	3.943178434	4.991116121	22.32328755	0.002806227
SACRAMENT	2021	MCY	2019	20	GAS	669.331954	1.24941011	0.004092797	0.004392756	283.4662175	0.603192595	0.073134546	3.938295898	4.982560067	22.26908792	0.002805128
SACRAMENT	2021	MH	1984	15	GAS	8.42884759	4.00731251	0.024651651	0.02681092	2950.040407	0.609687683	0.14935017	3.410308134	4.976313623	90.90049453	0.029193041
SACRAMENT	2021	MCY	2020	20	GAS	751.105688	1.242959859	0.004093223	0.004393056	283.3413621	0.602753094	0.07291077	3.93251883	4.972955818	22.20816056	0.002803892
SACRAMENT	2021	MCY	1982	70	GAS	0.70323786	1.791537496	0.02506987	0.026272787	275.2600349	0.510740465	0.089102513	4.566499655	4.964666612	63.18514363	0.002723921
SACRAMENT	2021	MCY	1983	70	GAS	0.57419934	1.791537496	0.02506987	0.026272787	275.2600349	0.51336685	0.089566623	4.566499655	4.964666612	63.18514363	0.002723921
SACRAMENT	2021	MCY	1984	70	GAS	0.53574995	1.791537496	0.02506987	0.026272787	275.2600349	0.515893395	0.090004084	4.566499655	4.964666612	63.18514363	0.002723921
SACRAMENT	2021	MCY	2021	20	GAS	601.290699	1.23556324	0.004093671	0.004393372	283.1981915	0.602131502	0.072642398	3.92566619	4.961954112	22.13829337	0.002802476
SACRAMENT	2021	MH	1987	5	DSL	0.11289775	26.53057598	1.912538712	1.999015226	2267.723958	0.201852825	0.356454626	4.345772486	4.947373049	7.036074311	0.021438147
SACRAMENT	2021	MCY	1978	65	GAS	1.11724084	1.555204862	0.058912792	0.061739578	272.6501803	0.494878603	0.077746332	4.538251606	4.93395553	65.63037277	0.002698095
SACRAMENT	2021	MCY	1979	65	GAS	1.40012948	1.555204862	0.058912792	0.061739578	272.6501803	0.497557025	0.078236662	4.538251606	4.93395553	65.63037277	0.002698095
SACRAMENT	2021	LDA	1980	5	GAS	0.03850966	3.49133372	0.214921427	0.233746661	1349.118478	0.577263403	0.15695822	3.380418997	4.932699466	61.85920448	0.013350621
SACRAMENT	2021	MCY	1978	30	GAS	6.41228403	1.180247872	0.058502445	0.061309542	226.871279	0.494658487	0.059001837	4.53623304	4.93176096	40.02932995	0.002245075
SACRAMENT	2021	MCY	1979	30	GAS	8.03589304	1.180247872	0.058502445	0.061309542	226.871279	0.497335717	0.059373949	4.53623304	4.93176096	40.02932995	0.002245075
SACRAMENT	2021	LDT2	1979	10	GAS	1.13090218	2.817871594	0.143232547	0.155255051	1117.088528	0.596917746	0.116423283	3.43389102	4.919363719	68.67350192	0.011054497
SACRAMENT	2021	MDV	1984	10	GAS	2.24301742	2.320838987	0.055395623	0.060247795	1276.630208	0.597108205	0.0988628	3.357942183	4.899901351	74.37522	0.012633291
SACRAMENT	2021	MH	1988	5	DSL	0.11670133	26.50817133	1.899891357	1.985796014	2267.723958	0.199586407	0.356454626	4.296977844	4.891823592	6.957069921	0.021438147
SACRAMENT	2021	MH	1989	5	DSL	0.15057393	26.4851606	1.886901907	1.972219238	2267.723958	0.197258685	0.356454626	4.24686335	4.834771574	6.875928559	0.021438147
SACRAMENT	2021	LDA	1977	10	GAS	2.01334568	2.18069815	0.144371465	0.156449428	1133.424177	0.497713667	0.087466657	3.439337005	4.832284287	71.02705399	0.011216151
SACRAMENT	2021	MDV	1983	10	GAS	1.36338637	2.835847905	0.055519429	0.060382445	1236.568108	0.587584161	0.133520671	3.307839511	4.82679165	53.59472443	0.012236844
SACRAMENT	2021	MH	1990	5	DSL	0.18677912	26.46154378	1.873570361	1.958284898	2267.723958	0.194869658	0.356454626	4.195429004	4.776216991	6.792650227	0.021438147
SACRAMENT	2021	LDA	1978	10	GAS	2.58078674	2.21994825	0.143733647	0.156008353	1131.29257	0.509704421	0.092144382	3.32694904	4.752061358	69.98638149	0.011195057
SACRAMENT	2021	MCY	1977	60	GAS	5.07605747	1.008104816	0.050927274	0.053370895	223.2424354	0.469531693	0.056935391	4.361085269	4.741341523	71.78850751	0.002209165
SACRAMENT	2021	LDA	1979	10	GAS	2.57793617	2.367099292	0.14589335	0.15816245	1127.26154	0.524099655	0.099647351	3.356891203	4.734169532	67.66428123	0.011155167
SACRAMENT	2021	MCY	1988	70	GAS	0.78918105	1.502765499	0.004011179	0.004203646	270.4211547	0.511570299	0.080643997	4.335761429	4.713809621	66.25759932	0.002676037
SACRAMENT	2021	MCY	1989	70	GAS	1.00730653	1.502765499	0.004011179	0.004203646	270.4211547	0.513627629	0.081001934	4.335761429	4.713809621	66.25759932	0.002676037
SACRAMENT	2021	MCY	1990	70	GAS	1.04806075	1.502765499	0.004011179	0.004203646	270.4211547	0.51543833	0.081312651	4.335761429	4.713809621	66.25759932	0.002676037
SACRAMENT	2021	MCY	1991	70	GAS	1.38369431	1.502765499	0.004011179	0.004203646	270.4211547	0.517273962	0.081623524	4.335761429	4.713809621	66.25759932	0.002676037
SACRAMENT	2021	MCY	1992	70	GAS	1.35758333	1.502765499	0.004011179	0.004203646	270.4211547	0.519104885	0.081929467	4.335761429	4.713809621	66.25759932	0.002676037
SACRAMENT	2021	MCY	1993	70	GAS	1.90126378	1.502765499	0.004011179	0.004203646	270.4211547	0.520832243	0.082214322	4.335761429	4.713809621	66.25759932	0.002676037
SACRAMENT	2021	MCY	1977	35	GAS	7.59159741	0.81950357	0.050673782	0.05310524	181.0088249	0.463669394	0.046283635	4.306635298	4.682143894	49.88030787	0.001791229
SACRAMENT	2021	MCY	1994	70	GAS	1.87485753	1.498885562	0.003986598	0.004180049	269.3908008	0.517882394	0.08222219	4.280895458	4.66985807	65.104224	0.00266584
SACRAMENT	2021	LHD1	1977	20	GAS	53.4834964	3.702544532	0.018792158	0.020438186	1192.458984	0.530345947	0.148263461	3.18181261	4.642893491	51.43716985	0.011800348
SACRAMENT	2021	MDV	1994	5	GAS	0.47826962	3.757593003	0.061118742	0.066472208	1175.931352	0.604629836	0.179206551	3.164441727	4.617545939	27.79437101	0.011636794
SACRAMENT	2021	LHD1	1978	20	GAS	73.9616784	3.664502918	0.018792158	0.020438186	1191.861171	0.527465891	0.147164425	3.161745315	4.613611342	51.11461322	0.011794432
SACRAMENT	2021	LHD1	1979	20	GAS	81.3776496	3.629242882	0.018792158	0.020438186	1191.230199	0.524918826	0.146231465	3.144001813	4.587720065	50.76481528	0.011788188
SACRAMENT	2021	LHD2	1979	20	GAS	1.26654009	3.629242882	0.018792158	0.020438186	1350.846678	0.524956845	0.146261348	3.144001813	4.587720065	50.76481528	0.013367723
SACRAMENT	2021	MCY	2004	25	GAS	669.773304	1.196107569	0.000292489	0.000308453	245.9749207	0.528519602	0.066493964	4.066164427	4.58006866	32.22211279	0.002434121
SACRAMENT	2021	MCY	2005	25	GAS	969.342107	1.196105978	0.000292498	0.00030846	245.9748911	0.52953156	0.066603086	4.067529632	4.580006341	32.22209769	0.002434121
SACRAMENT	2021	MCY	2006	25	GAS	1224.95917	1.196075518	0.000292508	0.000308466	245.9743251	0.530516951	0.066707567	4.068827777	4.579911308	32.22180869	0.002434115
SACRAMENT	2021	MCY	2007	25	GAS	1217.09045	1.19603984	0.000292516	0.000308472	245.973662	0.531452503	0.066805704	4.069996269	4.579815563	32.22147018	0.002434109
SACRAMENT	2021	MCY	1980	65	GAS	1.38629233	1.799021572	0.023012809	0.024117023	257.7370426	0.468441083	0.08653786	4.199482836	4.565648484	62.51677429	0.002550517
SACRAMENT	2021	MCY	1981	65	GAS	1.87928333	1.799021572	0.023012809	0.024117023	257.7370426	0.470674286	0.087027935	4.199482836	4.565648484	62.51677429	0.002550517
SACRAMENT	2021	MCY	1980	30	GAS	7.95647622	1.365280828	0.022852518	0.02394904	214.1833658	0.468232726	0.065673744	4.197614952	4.563617733	38.13028145	0.002119518
SACRAMENT	2021	MCY	1981	30	GAS	10.7859452	1.365280828	0.022852518	0.02394904	214.1833658	0.470464935	0.066045662	4.197614952	4.563617733	38.13028145	0.002119518
SACRAMENT	2021	LHD1	1980	20	GAS	171.645485	3.593430757	0.018792158	0.020438186	1190.545332	0.522180105	0.145222387	3.124949546	4.559919043	50.38457636	0.011781411
SACRAMENT	2021	MDV	1993	5	GAS	0.22888823	3.799196538	0.060161224	0.06543082	1175.525018	0.59348344	0.180813421	3.113412691	4.54308449	28.06220485	0.011632773
SACRAMENT	2021	LDT1	1982	5	GAS	0.02754989	3.0837195	0.079862855	0.086858142	1059.454893	0.584261632	0.15379895	3.107668113	4.534702015	63.95317863	0.010484165
SACRAMENT	2021	MCY	1985	65	GAS	3.0228863	1.62640594	0.023012809	0.024117023	263.1957845	0.476850703	0.082592143	4.158812283	4.521431742	56.08605413	0.002604536
SACRAMENT	2021	MCY	1986	65	GAS	3.62187962	1.62640594	0.023012809	0.024117023	263.1957845	0.479030222	0.083025287	4.158812283	4.521431742	56.08605413	0.002604536
SACRAMENT	2021	MCY	1987	65	GAS	3.29281906	1.62640594	0.023012809	0.024117023	263.1957845	0.481151631	0.083440352	4.158812283	4.521431742	56.08605413	0.002604536
SACRAMENT	2021	MDV	1978	15	GAS	13.3197993	3.571130419	0.104722781	0.113354443	1222.422531	0.536080431	0.13601337	3.225756525	4.52044373	106.0517225	0.012096862
SACRAMENT	2021	MCY	1985	30	GAS	17.3495318	1.234282504	0.022852518	0.02394904	223.0857314	0.476638605	0.062679331	4.156962488	4.519420658	34.20805142	0.002207614
SACRAMENT	2021	MCY	1986	30	GAS	20.7873898	1.234282504	0.022852518	0.02394904	223.0857314	0.478817155	0.063008046	4.156962488	4.519420658	34.20805142	0.002207614
SACRAMENT	2021	MCY	1987	30	GAS	18.898782	1.234282504	0.022852518	0.02394904	223.0857314	0.48093762	0.063323039	4.156962488	4.519420658	34.20805142	0.002207614
SACRAMENT	2021	LHD1	1981	20	GAS	133.382217	3.548044134	0.018792158	0.020438186	1189.776167	0.51675954	0.143884522	3.087398506	4.505124653	50.0014822	0.0117738
SACRAMENT	2021	LHD2	1981	20	GAS	18.1576053	3.548044134	0.018792158	0.020438186	1349.392646	0.516792032	0.143913687	3.087398506	4.505124653	50.0014822	0.013353334
SACRAMENT	2021	MDV	1979	15	GAS	9.38191598	3.517172484	0.104722971	0.113354578	1220.478275	0.534149269	0.134561795	3.212537666	4.501813574	105.1639892	0.012077622
SACRAMENT	2021	MH	1985	15	GAS	7.79432733	4.11572398	0.024651651	0.02681092	2942.548096	0.557448682	0.152343547	3.07841894	4.49202169	87.07663783	0.029118899
SACRAMENT	2021	MCY	1996	25	GAS	85.8153103	1.104774685	0.004301742	0.004543919	237.6970905	0.505653302	0.060736423	3.940615635	4.490911309	34.47704651	0.002352205
SACRAMENT	2021	MCY	1997	25	GAS	108.367585	1.112162747	0.004306332	0.004548726	238.2097421	0.507303269	0.061259782	3.940882633	4.49013335	34.27322921	0.002357279
SACRAMENT	2021	MCY	1998	25	GAS	138.152354	1.112162747	0.004306459	0.004548816	238.2097421	0.508745648	0.061405043	3.942490978	4.490062249	34.27322921	0.002357279
SACRAMENT	2021	MCY	1999	25	GAS	208.099309	1.112162747	0.00430658	0.004548902	238.2097421	0.510149113	0.061544498	3.944000143	4.489995533	34.27322921	0.002357279
SACRAMENT	2021	MCY	2000	25	GAS	301.948502	1.112162747	0.004306705	0.00454899	238.2097421	0.511521803	0.061679105	3.945525481	4.489928101	34.27322921	0.002357279
SACRAMENT	2021	MCY	2001	25	GAS	447.248652	1.112162747	0.004306833	0.00454908	238.2097421	0.512752918	0.061798334	3.94706383	4.489860094	34.27322921	0.002357279
SACRAMENT	2021	MCY	2002	25	GAS	552.689982	1.112162747	0.004306961	0.00454917	238.2097421	0.513996267	0.061917321	3.948574092	4.489793329	34.27322921	0.002357279
SACRAMENT	2021	MCY	2003	25	GAS	689.50558	1.112162747	0.004307103	0.004549271	238.2097421	0.515149839	0.062026444	3.950219818	4.489720575	34.27322921	0.002357279
SACRAMENT	2021	LDT2	1981	10	GAS	0.66124618	3.325101185	0.055747336	0.060630315	1211.216494	0.550227547	0.14769263	3.064524421	4.471746841	55.09019128	0.011985969
SACRAMENT	2021	LDT1	1977	15	GAS	1.68732906	3.048558725	0.104722064	0.113353938	966.4799545	0.527361734	0.121586803	3.187591385	4.467748144	105.0406439	0.009564103
SACRAMENT	2021	LDT2	1977	15	GAS	2.64592193	3.048421194	0.104722298	0.113354103	990.3021469	0.52735248	0.121582527	3.187818746	4.467707582	105.0347372	0.009799843
SACRAMENT	2021	LHD1	1982	20	GAS	76.1513727	3.521000404	0.018792158	0.020438186	1189.063705	0.51277505	0.143180305	3.059808844	4.464865882	49.62706042	0.011766749
SACRAMENT	2021	LHD2	1982	20	GAS	5.25826662	3.521000404	0.018792158	0.020438186	1348.680184	0.512804985	0.143204782	3.059808844	4.464865882	49.62706042	0.013346284
SACRAMENT	2021	MDV	1981	15	GAS	3.07646045	2.404001827	0.040788039	0.044201861	1023.49467	0.526872684	0.10350381	3.109599178	4.458083233	51.6891795	0.010128309
SACRAMENT	2021	LDT2	1978	15	GAS	3.1957056	2.996794818	0.104722512	0.113354254	988.8291952	0.526483923	0.120186624	3.17683062	4.452151372	103.8975929	0.009785266
SACRAMENT	2021	LDT1	1978	15	GAS	1.80693966	2.996483169	0.104722196	0.113354031	964.9907512	0.526489044	0.120178489	3.176518255	4.452121672	103.9003459	0.009549366
SACRAMENT	2021	LHD1	1983	20	GAS	82.4442383	3.570692266	0.018792158	0.020438186	1188.412971	0.508973834	0.144755771	3.033516966	4.426500836	49.28805114	0.01176031
SACRAMENT	2021	LHD2	1983	20	GAS	19.4873748	3.570692266	0.018792158	0.020438186	1348.02945	0.509001339	0.144771558	3.033516966	4.426500836	49.28805114	0.013339844
SACRAMENT	2021	MCY	1982	65	GAS	2.65803083	1.716544239	0.023012809	0.024117023	257.4425581	0.454845238	0.085372707	4.066743808	4.421335537	53.88966206	0.002547603
SACRAMENT	2021	MCY	1983	65	GAS	2.17030344	1.716544239	0.023012809	0.024117023	257.4425581	0.457184193	0.085817389	4.066743808	4.421335537	53.88966206	0.002547603
SACRAMENT	2021	MCY	1984	65	GAS	2.02497613	1.716544239	0.023012809	0.024117023	257.4425581	0.459434234	0.086236539	4.066743808	4.421335537	53.88966206	0.002547603
SACRAMENT	2021	MCY	1982	30	GAS	15.255483	1.302688627	0.022852518	0.02394904	218.7572529	0.454642928	0.064789507	4.064934964	4.419368974	32.86842619	0.00216478
SACRAMENT	2021	MCY	1983	30	GAS	12.4562239	1.302688627	0.022852518	0.02394904	218.7572529	0.456980842	0.065126977	4.064934964	4.419368974	32.86842619	0.00216478
SACRAMENT	2021	MCY	1984	30	GAS	11.6221334	1.302688627	0.022852518	0.02394904	218.7572529	0.459229882	0.06544507	4.064934964	4.419368974	32.86842619	0.00216478
SACRAMENT	2021	MCY	1995	25	GAS	68.7125443	1.088300563	0.004273935	0.004519597	235.4760546	0.494758325	0.059759696	3.840361196	4.406006994	34.50484335	0.002330226
SACRAMENT	2021	LDT1	1980	10	GAS	0.60160399	2.107150707	0.143236625	0.155257938	1081.508259	0.542218421	0.094885583	3.059249257	4.389934916	66.97679988	0.010702401
SACRAMENT	2021	MDV	1982	15	GAS	2.6269772	2.451275646	0.040630716	0.044100969	1022.653694	0.517358238	0.105601994	3.022157638	4.366527438	50.43074856	0.010119987
SACRAMENT	2021	MH	1979	10	DSL	0.07760229	23.52003075	1.748208791	1.827255035	2125.208186	0.177987679	0.334053132	3.831969929	4.362442997	7.174288815	0.02009086
SACRAMENT	2021	MCY	1978	60	GAS	7.62108167	1.516560544	0.05135982	0.053824195	246.133633	0.437030968	0.075814462	4.007763684	4.357212757	52.86652564	0.002435692
SACRAMENT	2021	MCY	1979	60	GAS	9.55076178	1.516560544	0.05135982	0.053824195	246.133633	0.439396302	0.076292608	4.007763684	4.357212757	52.86652564	0.002435692
SACRAMENT	2021	MDV	1992	5	GAS	0.2006712	3.926853868	0.057288669	0.062306655	1364.517351	0.563548401	0.18626977	2.963369536	4.324141871	28.9212232	0.013503005
SACRAMENT	2021	LHD1	1984	15	GAS	133.632407	3.394692473	0.024651651	0.02681092	1427.516049	0.50401971	0.138027224	2.94908893	4.303303644	59.81100909	0.014126429
SACRAMENT	2021	LHD2	1984	15	GAS	12.4764067	3.394692473	0.024651651	0.02681092	1619.542616	0.504471711	0.138028276	2.94908893	4.303303644	59.81100909	0.016026687
SACRAMENT	2021	MCY	1978	35	GAS	11.3978583	1.232834879	0.051104175	0.053556284	208.9112509	0.431574454	0.061630717	3.95772508	4.302811135	36.73287921	0.002067346

SACRAMENT	2021	MCY	1979	35	GAS	14.2838293	1.232834879	0.051104175	0.053556284	208.9112509	0.433910256	0.062019409	3.95772508	4.302811135	36.73287921	0.002067346
SACRAMENT	2021	MCY	1977	40	GAS	9.30159651	0.856618644	0.04632153	0.048544155	174.6110317	0.424564132	0.048379808	3.94341939	4.287258089	48.36158959	0.001727918
SACRAMENT	2021	MH	1982	10	DSL	0.62839693	23.48415204	1.717890131	1.7955655	2125.208186	0.174238036	0.334053132	3.751242327	4.27053999	7.023088474	0.02009086
SACRAMENT	2021	LHD1	1985	15	GAS	159.398895	3.398781352	0.024651651	0.02681092	1426.881656	0.500869737	0.138143764	2.926091599	4.269745993	59.47334609	0.014120151
SACRAMENT	2021	LHD2	1985	15	GAS	21.3352925	3.398781352	0.024651651	0.02681092	1618.908223	0.501280995	0.138144723	2.926091599	4.269745993	59.47334609	0.016020409
SACRAMENT	2021	MCY	1977	55	GAS	6.57531478	0.960296806	0.046460438	0.048689728	198.4804272	0.42230371	0.054235306	3.922424223	4.26443229	59.40874884	0.001964125
SACRAMENT	2021	LHD1	1986	15	GAS	216.310811	3.208612159	0.024651651	0.02681092	1426.305509	0.498113161	0.132706435	2.905811922	4.240153935	59.16503636	0.014114449
SACRAMENT	2021	LHD2	1986	15	GAS	44.9756201	3.208612159	0.024651651	0.02681092	1618.332076	0.498486087	0.132707321	2.905811922	4.240153935	59.16503636	0.016014708
SACRAMENT	2021	MH	1983	10	DSL	0.11224254	23.47139436	1.707109495	1.784297411	2125.208186	0.172904747	0.334053132	3.722537402	4.237861341	6.969325022	0.02009086
SACRAMENT	2021	MDV	1990	5	GAS	0.14898775	3.975970341	0.100196759	0.108973117	1362.902828	0.548801066	0.18792338	2.89902231	4.230246549	29.21053585	0.013487028
SACRAMENT	2021	MDV	1987	5	GAS	0.06537609	3.967675948	0.100546752	0.109353767	1356.265906	0.545213348	0.18672693	2.897592848	4.228160682	28.89610686	0.013421351
SACRAMENT	2021	LHD1	1987	15	GAS	196.324153	3.270120326	0.024651651	0.02681092	1425.73256	0.4955555	0.134476273	2.886983256	4.21267919	58.85479657	0.014108779
SACRAMENT	2021	LHD2	1987	15	GAS	20.1241549	3.270120326	0.024651651	0.02681092	1617.759127	0.495892467	0.134477069	2.886983256	4.21267919	58.85479657	0.016009038
SACRAMENT	2021	MH	1984	10	DSL	0.60634765	23.45823763	1.69599165	1.772676866	2125.208186	0.171529754	0.334053132	3.692934615	4.204160536	6.913879901	0.02009086
SACRAMENT	2021	MCY	1990	65	GAS	3.96135922	1.439860157	0.003682049	0.003858724	252.0508684	0.459028971	0.077908926	3.861257479	4.197932231	56.51011348	0.002494248
SACRAMENT	2021	MCY	1988	65	GAS	2.98287062	1.439860157	0.003682049	0.003858724	252.0508684	0.455584256	0.077268261	3.861257479	4.197932231	56.51011348	0.002494248
SACRAMENT	2021	MCY	1989	65	GAS	3.80732035	1.439860157	0.003682049	0.003858724	252.0508684	0.457416432	0.077611215	3.861257479	4.197932231	56.51011348	0.002494248
SACRAMENT	2021	MCY	1991	65	GAS	5.22995468	1.439860157	0.003682049	0.003858724	252.0508684	0.460663712	0.078206786	3.861257479	4.197932231	56.51011348	0.002494248
SACRAMENT	2021	MCY	1992	65	GAS	5.13126293	1.439860157	0.003682049	0.003858724	252.0508684	0.46229426	0.078499922	3.861257479	4.197932231	56.51011348	0.002494248
SACRAMENT	2021	MCY	1993	65	GAS	7.18621399	1.439860157	0.003682049	0.003858724	252.0508684	0.463832576	0.078772854	3.861257479	4.197932231	56.51011348	0.002494248
SACRAMENT	2021	MCY	1988	30	GAS	17.1198662	1.092712561	0.003656403	0.003831846	212.0451994	0.455381617	0.058639028	3.859540033	4.196065036	34.46669404	0.002098359
SACRAMENT	2021	MCY	1989	30	GAS	21.851707	1.092712561	0.003656403	0.003831846	212.0451994	0.457212978	0.058899296	3.859540033	4.196065036	34.46669404	0.002098359
SACRAMENT	2021	MCY	1990	30	GAS	22.7357966	1.092712561	0.003656403	0.003831846	212.0451994	0.4588248	0.059125229	3.859540033	4.196065036	34.46669404	0.002098359
SACRAMENT	2021	MCY	1991	30	GAS	30.0167642	1.092712561	0.003656403	0.003831846	212.0451994	0.460458814	0.059351276	3.859540033	4.196065036	34.46669404	0.002098359
SACRAMENT	2021	MCY	1992	30	GAS	29.4503334	1.092712561	0.003656403	0.003831846	212.0451994	0.462088636	0.059573737	3.859540033	4.196065036	34.46669404	0.002098359
SACRAMENT	2021	MCY	1993	30	GAS	41.2445048	1.092712561	0.003656403	0.003831846	212.0451994	0.463626269	0.059780866	3.859540033	4.196065036	34.46669404	0.002098359
SACRAMENT	2021	MH	1977	20	GAS	0.77485737	4.229403493	0.018792158	0.020438186	2444.919158	0.506004136	0.157350951	2.867803177	4.184691664	70.91602416	0.024194457
SACRAMENT	2021	MDV	1991	5	GAS	0.13967551	4.008724336	0.055398184	0.06025058	1363.483969	0.543191206	0.18966747	2.86290396	4.177542739	29.44508336	0.013492779
SACRAMENT	2021	MCY	1994	30	GAS	40.6716686	1.09828608	0.003650528	0.003827671	212.2313032	0.462575839	0.060247086	3.82372298	4.171146852	34.06978591	0.002100201
SACRAMENT	2021	MH	1985	10	DSL	0.38630363	23.44468183	1.684536596	1.760703866	2125.208186	0.170113057	0.334053132	3.662433965	4.169437574	6.856753112	0.02009086
SACRAMENT	2021	MCY	1994	65	GAS	7.08640619	1.436093257	0.003659654	0.003837239	251.3467243	0.461355521	0.078777684	3.813619111	4.160124944	55.55619688	0.00248728
SACRAMENT	2021	MH	1986	10	DSL	0.53615328	23.43072698	1.672744335	1.748378411	2125.208186	0.168654656	0.334053132	3.631035453	4.133692455	6.797944654	0.02009086
SACRAMENT	2021	MH	1978	20	GAS	1.5554507	4.227510072	0.018792158	0.020438186	2444.750696	0.500015735	0.157301954	2.828639791	4.127544543	70.9162906	0.02419279
SACRAMENT	2021	MCY	1977	45	GAS	3.604226	0.893399763	0.044309772	0.046435867	176.0675457	0.406572606	0.050457119	3.776311222	4.105579253	49.43255278	0.001742331
SACRAMENT	2021	MCY	1996	70	GAS	2.76278519	1.520274003	0.003840364	0.004056566	258.0644995	0.461784296	0.083579037	3.598739314	4.101292941	55.89848919	0.002553757
SACRAMENT	2021	MCY	1977	50	GAS	3.61314108	0.926413827	0.044353999	0.046482217	183.9620985	0.404969342	0.052321675	3.76141985	4.089389457	52.85974221	0.001820454
SACRAMENT	2021	MCY	1997	70	GAS	3.48884551	1.518185754	0.003827091	0.00404251	257.5428445	0.461085368	0.083624207	3.58184823	4.08105942	55.11744009	0.002548595
SACRAMENT	2021	MCY	1998	70	GAS	4.44775268	1.518185754	0.003827203	0.004042589	257.5428445	0.462396338	0.0838225	3.583310046	4.080994796	55.11744009	0.002548595
SACRAMENT	2021	MCY	1999	70	GAS	6.69966334	1.518185754	0.003827311	0.004042665	257.5428445	0.463671941	0.084012866	3.584681719	4.080934158	55.11744009	0.002548595
SACRAMENT	2021	MCY	2000	70	GAS	9.72109576	1.518185754	0.003827422	0.004042743	257.5428445	0.464919572	0.084196614	3.586068091	4.08087287	55.11744009	0.002548595
SACRAMENT	2021	MCY	2001	70	GAS	14.3989685	1.518185754	0.003827536	0.004042824	257.5428445	0.466038525	0.084359371	3.587466288	4.080811059	55.11744009	0.002548595
SACRAMENT	2021	MCY	2002	70	GAS	17.7936045	1.518185754	0.00382765	0.004042904	257.5428445	0.467168599	0.084521798	3.588838958	4.080750376	55.11744009	0.002548595
SACRAMENT	2021	MCY	2003	70	GAS	22.198321	1.518185754	0.003827776	0.004042993	257.5428445	0.468217074	0.084670759	3.59033475	4.080684251	55.11744009	0.002548595
SACRAMENT	2021	MCY	1995	70	GAS	2.21216935	1.534438829	0.003867477	0.004089776	257.9620574	0.457323569	0.084257604	3.549789061	4.072636565	57.06416279	0.002552744
SACRAMENT	2021	MH	1979	20	GAS	1.30787964	4.227652118	0.018792158	0.020438186	2444.736175	0.493963774	0.157305751	2.789133025	4.069896363	71.01460949	0.024192646
SACRAMENT	2021	LDT1	1979	10	GAS	0.87281395	2.113477644	0.143233962	0.155256059	1083.01979	0.50281314	0.095265463	2.815724726	4.033776629	68.66764968	0.010717359
SACRAMENT	2021	MCY	1980	60	GAS	9.45637387	1.754318804	0.02006243	0.021025076	232.5720929	0.413683798	0.084387535	3.708594468	4.03195807	50.35846227	0.002301489
SACRAMENT	2021	MCY	1981	60	GAS	12.819234	1.754318804	0.02006243	0.021025076	232.5720929	0.415655956	0.084865432	3.708594468	4.03195807	50.35846227	0.002301489
SACRAMENT	2021	LDA	1996	5	GAS	1.9732807	2.159103204	0.019159598	0.020837811	845.7663915	0.538939178	0.118098084	2.756818764	4.022743469	21.93435649	0.008369544
SACRAMENT	2021	MDV	1989	5	GAS	0.12013424	4.080318502	0.094310565	0.102571345	1364.423735	0.519813388	0.191935503	2.753624325	4.018082151	31.25351987	0.013502079
SACRAMENT	2021	MH	1980	20	GAS	0.10496414	4.2261329	0.018792158	0.020438186	2444.801811	0.487858337	0.157266427	2.749339689	4.011830221	71.16427857	0.024193296
SACRAMENT	2021	MDV	1988	5	GAS	0.07767762	4.093210608	0.095154882	0.103489616	1359.013265	0.517542083	0.192670336	2.745422443	4.006113985	29.89578513	0.013448538
SACRAMENT	2021	MH	1987	10	DSL	0.56196249	23.34718407	1.678482707	1.754376247	2059.103101	0.163264838	0.323662333	3.514995844	4.001589075	6.57821152	0.019465929
SACRAMENT	2021	MCY	1985	60	GAS	20.6201407	1.585992391	0.02006243	0.021025076	239.5606123	0.421110396	0.080539862	3.672678001	3.992909937	45.17839369	0.002370646
SACRAMENT	2021	MCY	1986	60	GAS	24.7060789	1.585992391	0.02006243	0.021025076	239.5606123	0.423035145	0.080962244	3.672678001	3.992909937	45.17839369	0.002370646
SACRAMENT	2021	MCY	1987	60	GAS	22.4614444	1.585992391	0.02006243	0.021025076	239.5606123	0.424908577	0.081366995	3.672678001	3.992909937	45.17839369	0.002370646
SACRAMENT	2021	MCY	1981	35	GAS	19.1720571	1.426112146	0.019962568	0.020920423	197.2377625	0.410466318	0.068988386	3.662291117	3.981617389	34.99021904	0.001951828
SACRAMENT	2021	MCY	1980	35	GAS	14.1426656	1.426112146	0.019962568	0.020920423	197.2377625	0.408518783	0.068599896	3.662291117	3.981617389	34.99021904	0.001951828
SACRAMENT	2021	MH	1988	10	DSL	0.58089525	23.32746775	1.667383132	1.742774799	2059.103101	0.161431689	0.323662333	3.475529221	3.956658949	6.504348231	0.019465929
SACRAMENT	2021	MH	1981	20	GAS	1.66653077	4.223866177	0.018792158	0.020438186	2444.917516	0.481790452	0.157207687	2.709873199	3.954240611	71.34464555	0.024194441
SACRAMENT	2021	MCY	1985	35	GAS	30.8388563	1.289277073	0.019962568	0.020920423	205.5553422	0.415852657	0.065472065	3.626823082	3.943056789	31.39098812	0.002034137
SACRAMENT	2021	MCY	1986	35	GAS	36.9496614	1.289277073	0.019962568	0.020920423	205.5553422	0.417753375	0.065815426	3.626823082	3.943056789	31.39098812	0.002034137
SACRAMENT	2021	MCY	1987	35	GAS	33.5926541	1.289277073	0.019962568	0.020920423	205.5553422	0.419603416	0.066144454	3.626823082	3.943056789	31.39098812	0.002034137
SACRAMENT	2021	MCY	1979	40	GAS	17.5012464	1.288669606	0.046714957	0.04895646	201.6493063	0.39731484	0.06482825	3.623935797	3.939917752	35.614464	0.001995483
SACRAMENT	2021	MCY	1978	40	GAS	13.9652136	1.288669606	0.046714957	0.04895646	201.6493063	0.395176037	0.064421954	3.623935797	3.939917752	35.614464	0.001995483
SACRAMENT	2021	MDV	1980	20	GAS	46.5278003	3.735972281	0.079833726	0.086412923	1004.240075	0.458081804	0.142338799	2.791548698	3.934600527	80.81991341	0.00993777
SACRAMENT	2021	LDT2	1982	10	GAS	0.97288784	3.832339929	0.056298516	0.061229773	1203.575968	0.49194122	0.169057965	2.687911637	3.922194351	50.11997898	0.01191036
SACRAMENT	2021	MCY	1978	55	GAS	9.87203381	1.444639707	0.046855045	0.04910327	224.5525783	0.39307208	0.072219064	3.604641593	3.918941229	43.74981808	0.00222213
SACRAMENT	2021	MCY	1979	55	GAS	12.3716616	1.444639707	0.046855045	0.04910327	224.5525783	0.395199496	0.072674534	3.604641593	3.918941229	43.74981808	0.00222213
SACRAMENT	2021	MH	1989	10	DSL	0.74950028	23.30721806	1.655983327	1.730859545	2059.103101	0.159548955	0.323662333	3.434995061	3.910513503	6.428487032	0.019465929
SACRAMENT	2021	MCY	2004	70	GAS	21.5630493	1.47467254	0.000244438	0.00025778	252.430575	0.451232914	0.081979937	3.471559455	3.91031424	45.92908252	0.002498005
SACRAMENT	2021	MCY	2005	70	GAS	31.2075317	1.474671135	0.000244446	0.000257785	252.4305584	0.452096934	0.082114504	3.472725356	3.910261409	45.92907444	0.002498005
SACRAMENT	2021	MCY	2006	70	GAS	39.4370077	1.474644231	0.000244454	0.00025779	252.4302426	0.45293906	0.082243911	3.473840047	3.910187451	45.92891981	0.002498002
SACRAMENT	2021	MCY	2007	70	GAS	39.1836776	1.474612719	0.00024446	0.000257795	252.4298726	0.453738782	0.082365602	3.474845141	3.910114114	45.92873869	0.002497998
SACRAMENT	2021	MCY	1982	60	GAS	18.1313369	1.673890899	0.02006243	0.021025076	234.5778909	0.401677206	0.083251334	3.591371647	3.904514235	43.4091577	0.002321338
SACRAMENT	2021	MCY	1983	60	GAS	14.8043816	1.673890899	0.02006243	0.021025076	234.5778909	0.403742754	0.083684966	3.591371647	3.904514235	43.4091577	0.002321338
SACRAMENT	2021	MCY	1984	60	GAS	13.8130544	1.673890899	0.02006243	0.021025076	234.5778909	0.405729782	0.084093701	3.591371647	3.904514235	43.4091577	0.002321338
SACRAMENT	2021	MH	1982	20	GAS	2.50667208	4.22005137	0.018792158	0.020438186	2445.016151	0.475911725	0.157108742	2.671711568	3.898555248	71.51069354	0.024195417
SACRAMENT	2021	LDT2	1980	15	GAS	2.07446395	2.85726033	0.104476164	0.113244847	891.0521254	0.46738341	0.117934545	2.708979307	3.887332505	50.36468414	0.008817683
SACRAMENT	2021	LDT2	1992	5	GAS	0.27870055	4.355339195	0.061118742	0.066472208	1274.966248	0.517317298	0.198696438	2.651058953	3.868419001	26.77515488	0.012616825
SACRAMENT	2021	MH	1990	10	DSL	0.92971611	23.28643502	1.644283293	1.718630487	2059.103101	0.157616636	0.323662333	3.393393364	3.863152736	6.350627921	0.019465929
SACRAMENT	2021	MCY	1982	35	GAS	27.1166768	1.360731092	0.019962568	0.020920423	201.5790143	0.396662099	0.067676262	3.546531872	3.855764744	30.16168222	0.001994788
SACRAMENT	2021	MCY	1983	35	GAS	22.1409836	1.360731092	0.019962568	0.020920423	201.5790143	0.398701858	0.068028768	3.546531872	3.855764744	30.16168222	0.001994788
SACRAMENT	2021	MCY	1984	35	GAS	20.6583847	1.360731092	0.019962568	0.020920423	201.5790143	0.400664077	0.068361034	3.546531872	3.855764744	30.16168222	0.001994788
SACRAMENT	2021	LDA	1981	5	GAS	0.05497572	3.069573673	0.084375673	0.091766243	986.8224771	0.470968087	0.14911525	2.640599342	3.853156361	44.85798015	0.009765408
SACRAMENT	2021	MH	1983	20	GAS	2.04928756	4.214023786	0.018792158	0.020438186	2445.019451	0.470349078	0.156952273	2.635665908	3.845957505	71.61083981	0.02419545
SACRAMENT	2021	LDT2	1993	5	GAS	0.42677828	4.360993638	0.061118742	0.066472208	1159.79842	0.514823063	0.199186444	2.630717686	3.838737072	27.1089746	0.011477146
SACRAMENT	2021	MDV	1986	5	GAS	0.04943582	4.19177737	0.09090069	0.098862795	1355.765385	0.491400796	0.196598184	2.616532606	3.818038236	30.46762932	0.013416398
SACRAMENT	2021	MCY	2008	25	GAS	875.081877	1.209331818	0.000325696	0.000349519	241.9713289	0.454149713	0.069492429	2.996005612	3.812492524	19.67124308	0.002394502
SACRAMENT	2021	MCY	2009	25	GAS	912.547855	1.208253644	0.00036563	0.000392397	241.951292	0.454809227	0.069546243	2.99646307	3.81113979	19.66101344	0.002394304
SACRAMENT	2021	MCY	2010	25	GAS	391.349564	1.207038688	0.000445517	0.000478167	241.928713	0.455403631	0.069587559	2.997173008	3.809606845	19.64948595	0.002394081
SACRAMENT	2021	MCY	2011	25	GAS	466.221161	1.205781824	0.000605306	0.000649717	241.9053552	0.455964613	0.069622897	2.997650875	3.808032368	19.6375608	0.00239385
SACRAMENT	2021	MCY	2012	25	GAS	722.910361	1.204177488	0.000885134	0.00095007	241.8755397	0.456433345	0.069637064	2.997712978	3.806046835	19.62233874	0.002393555
SACRAMENT	2021	MDV	1995	5	GAS	0.54535	3.233409118	0.061118742	0.066472208	1163.983827	0.512825415	0.161636319	2.608173173	3.805840172	21.18698177	0.011518564
SACRAMENT	2021	LDT2	1991	5	GAS	0.24412707	4.424204566	0.060161224	0.06543082	1273.799723	0.507663639	0.201179509	2.607089382	3.804258706	27.00543938	0.012605281
SACRAMENT	2021	MCY	2013	25	GAS	951.892353	1.202274829	0.001324534	0.001421821	241.8401799	0.456833448	0.069634322	2.997505339	3.803704537	19.6042861	0.002393205
SACRAMENT	2021	MCY	2014	25	GAS	1115.05291	1.199802073	0.001844091	0.001979531	241.7942249	0.457125886	0.069602733	2.996706913	3.800683798	19.5808239	0.00239275
SACRAMENT	2021	MCY	2015	25	GAS	1365.5456	1.196994131	0.002323791	0.002494419	241.74204	0.45735123	0.069553505	2.99552255	3.797265902	19.55418109	0.002392233
SACRAMENT	2021	MH	1984	20	GAS	8.74278497	4.205006631	0.018792158	0.020438186	2444.879467	0.464924053	0.156718114	2.600568002	3.794742724	71.61801163	0.024194064
SACRAMENT	2021	MCY	2016	25	GAS	1289.51539	1.19365711	0.002683706	0.002880683	241.6800218	0.457469279	0.06947664	2.993849224	3.793215811	19.52251768	0.00239162
SACRAMENT	2021	MCY	2017	25	GAS	1606.81509	1.189720921	0.002883823	0.00309539	241.6068674	0.457491625	0.069371592	2.991561044	3.788452541	19.48516835	0.002390896
SACRAMENT	2021	MCY	2018	25	GAS	1872.95075	1.18520586	0.003004044	0.00322432	241.5229537	0.457405383	0.069237375	2.988718009	3.782998636	19.44232534	0.002390065
SACRAMENT	2021	MCY	2019	25	GAS	2161.7749	1.179966451	0.003084309	0.003310357	241.4255773	0.457208062	0.069069644	2.985150433	3.776682029	19.39260799	0.002389102
SACRAMENT	2021	MCY	1978	45	GAS	5.4113061	1.344001942	0.044686112	0.046830266	202.8731172	0.378429874	0.067188076	3.470366214	3.772957972	36.40314321	0.002007594
SACRAMENT	2021	MCY	1979	45	GAS	6.78146459	1.344001942	0.044686112	0.046830266	202.8731172	0.380478043	0.067611817	3.470366214	3.772957972	36.40314321	0.002007594
SACRAMENT	2021	MCY	2020	25	GAS	2425.88362	1.174076794	0.003084631	0.003310583	241.316116	0.456897913	0.068870159	2.980921484	3.769591826	19.3367193	0.002388019
SACRAMENT	2021	LDA	1982	5	GAS	0.06764123	3.041368009	0.084628875	0.092041623	984.7140898	0.467610245	0.148972219	2.581923123	3.767536161	43.92900855	0.009744544
SACRAMENT	2021	MCY	2021	25	GAS	1942.01866	1.167323018	0.003084968	0.003310821	241.190597	0.456453169	0.068630354	2.975899396	3.761470163	19.27263009	0.002386776

SACRAMENT	2021	MCY	1978	50	GAS	5.42469099	1.39366724	0.044730715	0.046877009	210.7630828	0.376937587	0.069670896	3.456681295	3.758079823	38.92699562	0.002085672
SACRAMENT	2021	MCY	1979	50	GAS	6.79823857	1.39366724	0.044730715	0.046877009	210.7630828	0.378977679	0.070110296	3.456681295	3.758079823	38.92699562	0.002085672
SACRAMENT	2021	MCY	2004	30	GAS	467.771646	1.198401981	0.000239064	0.000252112	217.2193097	0.432427756	0.066621515	3.326882018	3.747351673	28.53075535	0.002149561
SACRAMENT	2021	MCY	2005	30	GAS	676.991379	1.198400506	0.000239072	0.000252117	217.2192833	0.433255736	0.066730853	3.327999077	3.747300758	28.53074145	0.002149561
SACRAMENT	2021	MCY	2006	30	GAS	855.515089	1.19837228	0.000239079	0.000252123	217.2187775	0.434062133	0.066835662	3.329062455	3.747224414	28.53047543	0.002149556
SACRAMENT	2021	MCY	2007	30	GAS	850.019547	1.198339218	0.000239086	0.000252127	217.2181851	0.434827781	0.066934138	3.330019969	3.747147729	28.53016385	0.00214955
SACRAMENT	2021	MCY	1996	30	GAS	59.9336651	1.141335077	0.003569401	0.00377035	209.6083828	0.420203344	0.062746378	3.274694067	3.731995704	30.24380817	0.002074245
SACRAMENT	2021	MCY	1997	30	GAS	75.6842404	1.146299601	0.003569429	0.003770345	210.0838374	0.421105678	0.063140096	3.271274117	3.727199812	30.0836533	0.00207895
SACRAMENT	2021	MCY	1998	30	GAS	96.4860102	1.146299601	0.003569534	0.003770419	210.0838374	0.422302978	0.063289817	3.272609182	3.727140792	30.0836533	0.00207895
SACRAMENT	2021	MCY	1999	30	GAS	145.33717	1.146299601	0.003569635	0.00377049	210.0838374	0.423467976	0.063433552	3.27386192	3.727085412	30.0836533	0.00207895
SACRAMENT	2021	MCY	2000	30	GAS	210.881722	1.146299601	0.003569738	0.003770563	210.0838374	0.424607427	0.06357229	3.275128083	3.727029437	30.0836533	0.00207895
SACRAMENT	2021	MCY	2001	30	GAS	312.359774	1.146299601	0.003569844	0.003770638	210.0838374	0.425629359	0.063695179	3.276405046	3.726972986	30.0836533	0.00207895
SACRAMENT	2021	MCY	2002	30	GAS	386.000309	1.146299601	0.003569951	0.003770713	210.0838374	0.426661446	0.063817819	3.277658694	3.726917565	30.0836533	0.00207895
SACRAMENT	2021	MCY	2003	30	GAS	481.552726	1.146299601	0.003570068	0.003770796	210.0838374	0.427619011	0.063930291	3.27902479	3.726857173	30.0836533	0.00207895
SACRAMENT	2021	LDT2	1994	5	GAS	0.55287322	4.263181973	0.061806191	0.067219872	1156.414664	0.503154611	0.195809708	2.552860929	3.725128676	24.52641014	0.011443661
SACRAMENT	2021	MCY	1988	60	GAS	20.3471801	1.404081968	0.003209989	0.003364012	228.7196195	0.402329838	0.075348271	3.409905144	3.707225117	45.51998164	0.002263366
SACRAMENT	2021	MCY	1989	60	GAS	25.9710335	1.404081968	0.003209989	0.003364012	228.7196195	0.403947847	0.075682703	3.409905144	3.707225117	45.51998164	0.002263366
SACRAMENT	2021	MCY	1990	60	GAS	27.0217854	1.404081968	0.003209989	0.003364012	228.7196195	0.405371892	0.075973015	3.409905144	3.707225117	45.51998164	0.002263366
SACRAMENT	2021	MCY	1991	60	GAS	35.6753086	1.404081968	0.003209989	0.003364012	228.7196195	0.406815544	0.076263474	3.409905144	3.707225117	45.51998164	0.002263366
SACRAMENT	2021	MCY	1992	60	GAS	35.0020984	1.404081968	0.003209989	0.003364012	228.7196195	0.408255493	0.076549326	3.409905144	3.707225117	45.51998164	0.002263366
SACRAMENT	2021	MCY	1993	60	GAS	49.0196221	1.404081968	0.003209989	0.003364012	228.7196195	0.409613992	0.076815476	3.409905144	3.707225117	45.51998164	0.002263366
SACRAMENT	2021	LDT2	1996	5	GAS	0.86983972	3.268687196	0.017855326	0.019419296	1156.294292	0.499051312	0.160963336	2.539838475	3.70612634	23.84301469	0.011442469
SACRAMENT	2021	MCY	1996	65	GAS	10.4425097	1.455927071	0.003525949	0.003724451	242.9314517	0.413819119	0.080041481	3.224941052	3.675294822	48.05664408	0.002404004
SACRAMENT	2021	MCY	1994	60	GAS	48.3387989	1.400376457	0.003191064	0.003345911	228.3689862	0.40742734	0.076818419	3.367857008	3.67386085	44.79785706	0.002259896
SACRAMENT	2021	MCY	1995	30	GAS	47.989043	1.132311878	0.003557634	0.003762124	207.6057248	0.412393429	0.062176402	3.201037037	3.672516946	30.21843845	0.002054427
SACRAMENT	2021	LDT1	1981	10	GAS	1.46820905	2.216909409	0.055748059	0.0606311	865.3856225	0.463502118	0.111324645	2.513020018	3.666992911	55.10135359	0.008563692
SACRAMENT	2021	MCY	1988	35	GAS	30.4306248	1.141399353	0.003194011	0.003347268	195.3697353	0.397306582	0.061251743	3.367331054	3.660938863	31.62833129	0.001933342
SACRAMENT	2021	MCY	1989	35	GAS	38.8414891	1.141399353	0.003194011	0.003347268	195.3697353	0.398904389	0.061523607	3.367331054	3.660938863	31.62833129	0.001933342
SACRAMENT	2021	MCY	1990	35	GAS	40.4129616	1.141399353	0.003194011	0.003347268	195.3697353	0.400310655	0.061759607	3.367331054	3.660938863	31.62833129	0.001933342
SACRAMENT	2021	MCY	1991	35	GAS	53.3549082	1.141399353	0.003194011	0.003347268	195.3697353	0.401736282	0.061995726	3.367331054	3.660938863	31.62833129	0.001933342
SACRAMENT	2021	MCY	1992	35	GAS	52.3480755	1.141399353	0.003194011	0.003347268	195.3697353	0.403158252	0.062228099	3.367331054	3.660938863	31.62833129	0.001933342
SACRAMENT	2021	MCY	1993	35	GAS	73.3122582	1.141399353	0.003194011	0.003347268	195.3697353	0.40449979	0.062444456	3.367331054	3.660938863	31.62833129	0.001933342
SACRAMENT	2021	MCY	1997	65	GAS	13.1868027	1.453804197	0.003513888	0.003711678	242.6430588	0.413220591	0.080077963	3.210020413	3.657409026	47.42281748	0.00240115
SACRAMENT	2021	MCY	1998	65	GAS	16.8111878	1.453804197	0.003513992	0.003711751	242.6430588	0.414395471	0.080267847	3.21133048	3.657351111	47.42281748	0.00240115
SACRAMENT	2021	MCY	1999	65	GAS	25.3227432	1.453804197	0.003514091	0.003711821	242.6430588	0.415538655	0.08045014	3.212559761	3.657296767	47.42281748	0.00240115
SACRAMENT	2021	MCY	2000	65	GAS	36.7428629	1.453804197	0.003514193	0.003711892	242.6430588	0.41665677	0.080626097	3.213802215	3.657241841	47.42281748	0.00240115
SACRAMENT	2021	MCY	2001	65	GAS	54.4238364	1.453804197	0.003514297	0.003711966	242.6430588	0.417659567	0.080781951	3.215055267	3.657186447	47.42281748	0.00240115
SACRAMENT	2021	MCY	2002	65	GAS	67.2545552	1.453804197	0.003514402	0.00371204	242.6430588	0.418672328	0.08093749	3.216285441	3.657132064	47.42281748	0.00240115
SACRAMENT	2021	MCY	2003	65	GAS	83.9030788	1.453804197	0.003514518	0.003712122	242.6430588	0.419611963	0.081080134	3.217625957	3.657072803	47.42281748	0.00240115
SACRAMENT	2021	MCY	1995	65	GAS	8.36134497	1.46971854	0.003550466	0.003754544	242.5357397	0.410182773	0.080703747	3.183877718	3.652830237	49.01475277	0.002400088
SACRAMENT	2021	LHD1	1977	25	GAS	41.198781	3.948727003	0.014990818	0.016303883	1015.509881	0.416831002	0.15812151	2.500779244	3.649131203	42.20935579	0.010049294
SACRAMENT	2021	MCY	1980	40	GAS	17.3282857	1.490700343	0.01824803	0.019123617	190.3949701	0.374064851	0.071706765	3.353418343	3.645813061	33.92486304	0.001884113
SACRAMENT	2021	MCY	1981	40	GAS	23.4905422	1.490700343	0.01824803	0.019123617	190.3949701	0.375848133	0.07211285	3.353418343	3.645813061	33.92486304	0.001884113
SACRAMENT	2021	MCY	1994	35	GAS	72.2940398	1.144376587	0.003185133	0.003339692	195.5455551	0.403255552	0.062775406	3.333372371	3.636242935	31.26543929	0.001935082
SACRAMENT	2021	MCY	1980	55	GAS	12.2493954	1.671122602	0.018302752	0.019180965	212.1101479	0.372073292	0.08038557	3.335564402	3.62640238	41.67426432	0.002099002
SACRAMENT	2021	MCY	1981	55	GAS	16.6055052	1.671122602	0.018302752	0.019180965	212.1101479	0.373847079	0.080840803	3.335564402	3.62640238	41.67426432	0.002099002
SACRAMENT	2021	LHD1	1978	25	GAS	56.9732944	3.908155999	0.014990818	0.016303883	1015.022313	0.414567391	0.156949399	2.485007142	3.626116588	41.94466573	0.010044469
SACRAMENT	2021	LDT2	1995	5	GAS	0.79557513	3.099217788	0.062149866	0.06759365	1154.023245	0.492423299	0.156545286	2.482080826	3.621846515	22.49162476	0.011419996
SACRAMENT	2021	LDT2	1990	5	GAS	0.19933295	4.639388246	0.102301184	0.111261872	1274.272844	0.482248231	0.209404198	2.482025554	3.621765861	27.8462952	0.012609963
SACRAMENT	2021	MCY	1985	40	GAS	37.7852753	1.34766805	0.01824803	0.019123617	198.4440694	0.380780195	0.068437276	3.320941635	3.61050461	30.43521881	0.001963765
SACRAMENT	2021	MCY	1987	40	GAS	41.1593631	1.34766805	0.01824803	0.019123617	198.4440694	0.38421462	0.069140117	3.320941635	3.61050461	30.43521881	0.001963765
SACRAMENT	2021	MCY	1986	40	GAS	45.2725326	1.34766805	0.01824803	0.019123617	198.4440694	0.382520609	0.068796187	3.320941635	3.61050461	30.43521881	0.001963765
SACRAMENT	2021	LHD1	1979	25	GAS	62.6858786	3.87055152	0.014990818	0.016303883	1014.507188	0.412565498	0.155954406	2.471061449	3.605767065	41.65762144	0.010039371
SACRAMENT	2021	LHD2	1979	25	GAS	0.97562634	3.87055152	0.014990818	0.016303883	1150.937004	0.41259538	0.155986277	2.471061449	3.605767065	41.65762144	0.011389455
SACRAMENT	2021	MCY	1985	55	GAS	26.710477	1.510778842	0.018302752	0.019180965	219.9291841	0.378752883	0.076720368	3.303260603	3.591281915	37.38748634	0.002176378
SACRAMENT	2021	MCY	1986	55	GAS	32.0032322	1.510778842	0.018302752	0.019180965	219.9291841	0.380484031	0.077122719	3.303260603	3.591281915	37.38748634	0.002176378
SACRAMENT	2021	MCY	1987	55	GAS	29.0956255	1.510778842	0.018302752	0.019180965	219.9291841	0.382169023	0.077508275	3.303260603	3.591281915	37.38748634	0.002176378
SACRAMENT	2021	LHD1	1980	25	GAS	132.219941	3.832358245	0.014990818	0.016303883	1013.948032	0.410412971	0.154878235	2.456087119	3.583916558	41.34559728	0.010033838
SACRAMENT	2021	LDT2	1979	15	GAS	3.58598709	2.861805021	0.104474252	0.113243503	904.8807056	0.43342751	0.118238438	2.493380112	3.571995613	51.63700429	0.008954528
SACRAMENT	2021	LDT2	1984	5	GAS	0.03313687	5.099161885	0.081255295	0.088372547	1449.705169	0.461581119	0.224826417	2.435708694	3.554180409	41.1685772	0.014346008
SACRAMENT	2021	LDA	1983	5	GAS	0.07621547	2.951929087	0.087141173	0.094773976	978.8037372	0.449069869	0.147569089	2.435091966	3.553280481	39.93430455	0.009686056
SACRAMENT	2021	MDV	1984	15	GAS	7.1124025	2.434506029	0.040354458	0.043889155	1033.761708	0.432794491	0.103704775	2.433895342	3.55153437	55.4321026	0.01022991
SACRAMENT	2021	LHD1	1981	25	GAS	102.745428	3.783953862	0.014990818	0.016303883	1013.322464	0.406152621	0.153451415	2.426573482	3.540850328	41.0312301	0.010027647
SACRAMENT	2021	LHD2	1981	25	GAS	13.986954	3.783953862	0.014990818	0.016303883	1149.75228	0.406178159	0.153482519	2.426573482	3.540850328	41.0312301	0.011377731
SACRAMENT	2021	MCY	1983	40	GAS	27.1282161	1.422358201	0.01824803	0.019123617	194.6055315	0.365075872	0.07110977	3.247422078	3.53057466	29.24334189	0.001925779
SACRAMENT	2021	MCY	1984	40	GAS	25.3116635	1.422358201	0.01824803	0.019123617	194.6055315	0.3668726	0.071457085	3.247422078	3.53057466	29.24334189	0.001925779
SACRAMENT	2021	MCY	1982	40	GAS	33.224679	1.422358201	0.01824803	0.019123617	194.6055315	0.363208144	0.070741299	3.247422078	3.53057466	29.24334189	0.001925779
SACRAMENT	2021	MDV	1983	15	GAS	4.32317312	2.510218835	0.040765086	0.04433575	1006.882743	0.428837649	0.118189026	2.414166706	3.522746391	42.01248718	0.009963921
SACRAMENT	2021	MCY	1982	55	GAS	23.4865835	1.594508882	0.018302752	0.019180965	215.5312538	0.361274386	0.079303252	3.230132472	3.511777521	35.92335092	0.002132856
SACRAMENT	2021	MCY	1983	55	GAS	19.1769833	1.594508882	0.018302752	0.019180965	215.5312538	0.363132171	0.079716319	3.230132472	3.511777521	35.92335092	0.002132856
SACRAMENT	2021	MCY	1984	55	GAS	17.892859	1.594508882	0.018302752	0.019180965	215.5312538	0.364919333	0.08010567	3.230132472	3.511777521	35.92335092	0.002132856
SACRAMENT	2021	LHD1	1982	25	GAS	58.6600341	3.755111992	0.014990818	0.016303883	1012.741939	0.40302097	0.152700374	2.404889095	3.509208522	40.72397949	0.010021902
SACRAMENT	2021	LHD2	1982	25	GAS	4.0504864	3.755111992	0.014990818	0.016303883	1149.171754	0.403044497	0.15272648	2.404889095	3.509208522	40.72397949	0.011371986
SACRAMENT	2021	MCY	2004	65	GAS	81.5019399	1.410560054	0.000224547	0.000236802	240.2229522	0.404210804	0.078415798	3.109794954	3.502827951	39.96011966	0.002377201
SACRAMENT	2021	MCY	2005	65	GAS	117.955227	1.410558708	0.000224554	0.000236807	240.2229354	0.404984782	0.078544515	3.110839321	3.502780583	39.96011125	0.002377201
SACRAMENT	2021	MCY	2006	65	GAS	149.060209	1.410532943	0.000224561	0.000236812	240.2226143	0.405739057	0.078668294	3.111837134	3.502713524	39.95995022	0.002377198
SACRAMENT	2021	MCY	2007	65	GAS	148.102696	1.410502764	0.000224567	0.000236817	240.2222383	0.406455332	0.078784692	3.112736649	3.502646883	39.95976161	0.002377194
SACRAMENT	2021	LDT2	1989	5	GAS	0.14911669	4.776869494	0.098925319	0.10759031	1273.733699	0.464996935	0.214516372	2.398436939	3.499793551	28.36509806	0.012604628
SACRAMENT	2021	LDA	1977	15	GAS	6.3841345	2.27257364	0.104916453	0.113693652	917.1689731	0.36044126	0.091151735	2.490747284	3.499511373	52.99140175	0.00907613
SACRAMENT	2021	LDT2	1988	5	GAS	0.11650015	4.764624021	0.099056846	0.107733358	1270.447242	0.463672307	0.213756261	2.396571716	3.497071822	28.21225836	0.012572105
SACRAMENT	2021	LDA	1978	5	DSL	0.0011141	1.430442975	2.142354163	2.239221912	954.9215097	0.142676911	0.150100363	3.071749896	3.496983032	6.021397126	0.009027442
SACRAMENT	2021	LDA	1979	5	DSL	0.00261209	1.430442975	2.142354163	2.239221912	954.9215097	0.142676911	0.150100363	3.071749896	3.496983032	6.021397126	0.009027442
SACRAMENT	2021	MDV	1978	5	DSL	0.00034003	1.430442975	2.142354163	2.239221912	1356.797493	0.142676911	0.213269671	3.071749896	3.496983032	6.021397126	0.012826616
SACRAMENT	2021	LDA	1977	5	DSL	0.00070543	1.430442975	2.142354163	2.239221912	954.9215097	0.142676911	0.150100363	3.071749896	3.496983032	6.021397126	0.009027442
SACRAMENT	2021	LDT2	1978	5	DSL	0.00080872	1.430442975	2.142354163	2.239221912	1274.64369	0.142676911	0.200356238	3.071749896	3.496983032	6.021397126	0.012049967
SACRAMENT	2021	LDT2	1979	5	DSL	0.00132409	1.430442975	2.142354163	2.239221912	1274.64369	0.142676911	0.200356238	3.071749896	3.496983032	6.021397126	0.012049967
SACRAMENT	2021	MCY	1980	45	GAS	6.71444498	1.554707386	0.017455513	0.018293073	191.5694412	0.358213305	0.074785679	3.211312333	3.491316397	34.67612618	0.001895735
SACRAMENT	2021	MCY	1981	45	GAS	9.10222488	1.554707386	0.017455513	0.018293073	191.5694412	0.359921018	0.0752092	3.211312333	3.491316397	34.67612618	0.001895735
SACRAMENT	2021	MDV	1985	5	GAS	0.03824957	4.390720014	0.082922133	0.090185386	1467.220199	0.44737992	0.205145252	2.386309623	3.4820974	31.8127784	0.014519333
SACRAMENT	2021	LDA	1995	5	GAS	1.60560283	1.925395689	0.067008992	0.072878393	841.2871879	0.476268638	0.109826445	2.385131845	3.480378789	19.5866048	0.008325219
SACRAMENT	2021	LHD1	1983	25	GAS	63.5074807	3.80810787	0.014990818	0.016303883	1012.211874	0.400033364	0.154380593	2.384224716	3.479055108	40.44578838	0.010016657
SACRAMENT	2021	LHD2	1983	25	GAS	15.0112865	3.80810787	0.014990818	0.016303883	1148.641689	0.400054981	0.15439743	2.384224716	3.479055108	40.44578838	0.011366741
SACRAMENT	2021	MCY	1980	50	GAS	6.7310532	1.612158945	0.017472936	0.018311332	199.0459782	0.35680074	0.077549256	3.198648958	3.477548863	37.08024343	0.001969721
SACRAMENT	2021	MCY	1981	50	GAS	9.12473928	1.612158945	0.017472936	0.018311332	199.0459782	0.358501718	0.077988428	3.198648958	3.477548863	37.08024343	0.001969721
SACRAMENT	2021	MCY	1985	45	GAS	14.6412147	1.405533634	0.017455513	0.018293073	199.5489324	0.364644077	0.071375806	3.180211873	3.457504193	31.10920408	0.001974698
SACRAMENT	2021	MCY	1986	45	GAS	17.5424121	1.405533634	0.017455513	0.018293073	199.5489324	0.366310739	0.071750128	3.180211873	3.457504193	31.10920408	0.001974698
SACRAMENT	2021	MCY	1987	45	GAS	15.948622	1.405533634	0.017455513	0.018293073	199.5489324	0.367932964	0.072108825	3.180211873	3.457504193	31.10920408	0.001974698
SACRAMENT	2021	LDA	1980	10	GAS	2.93546289	2.956059839	0.148995106	0.162045772	1093.945524	0.403611166	0.132894168	2.363522175	3.448846009	48.32966739	0.010825478
SACRAMENT	2021	MCY	1985	50	GAS	14.6774299	1.457472732	0.017472936	0.018311332	207.037357	0.363206153	0.074013377	3.167671138	3.443869993	33.26602442	0.002048802
SACRAMENT	2021	MCY	1986	50	GAS	17.5858034	1.457472732	0.017472936	0.018311332	207.037357	0.364866242	0.074401531	3.167671138	3.443869993	33.26602442	0.002048802
SACRAMENT	2021	MCY	1987	50	GAS	15.988071	1.457472732	0.017472936	0.018311332	207.037357	0.36648207	0.074773484	3.167671138	3.443869993	33.26602442	0.002048802
SACRAMENT	2021	LDA	1978	15	GAS	8.18343803	2.284411288	0.10450591	0.113430608	915.8753371	0.369253626	0.094820078	2.410196862	3.44261461	52.40457368	0.009063329
SACRAMENT	2021	MDV	1978	20	GAS	49.9459927	3.758225748	0.079831042	0.08641103	1006.763705	0.407198163	0.143139255	2.450233312	3.433657105	83.23887052	0.009962743
SACRAMENT	2021	LDA	1979	15	GAS	8.17439915	2.379558616	0.105765458	0.114659948	913.4044848	0.379353018	0.100171849	2.429779903	3.426679416	51.02576048	0.009038878
SACRAMENT	2021	MH	1985	20	GAS	8.08463163	4.319081446	0.018792158	0.020438186	2438.99926	0.424994518	0.159870825	2.346962543	3.424682233	68.59823053	0.024135875
SACRAMENT	2021	MDV	1979	20	GAS	35.1798925	3.701580981	0.079831187	0.086411132	1005.26053	0.405749957	0.14161699	2.440304789	3.419663321	82.54974422	0.009947868
SACRAMENT	2021	LDT1	1977	20	GAS	6.3270717	3.208390274	0.079830495	0.086410644	794.2849589	0.40059131	0.127961424	2.421338767	3.393763653	82.4529024	0.007860094
SACRAMENT	2021	LDT2	1977	20	GAS	9.92156071	3.208245522	0.079830674	0.08641077	814.0740448	0.400584278	0.127956924	2.421511452	3.393732811	82.44827175	0.008055923

SACRAMENT	2021	LDA	1994	5	GAS	1.14753271	1.969104543	0.065242036	0.070956667	842.2976046	0.462378753	0.111944585	2.324430331	3.391803282	19.99335526	0.008335218
SACRAMENT	2021	MDV	1981	20	GAS	11.535975	2.513928308	0.031096153	0.033698797	845.5713655	0.400082802	0.108236673	2.361286115	3.385262677	40.64684836	0.008367614
SACRAMENT	2021	LDT2	1978	20	GAS	11.9831152	3.15379429	0.079830837	0.086410886	812.8993686	0.399908522	0.126483096	2.413068249	3.381780901	81.54790107	0.008044298
SACRAMENT	2021	LDT1	1978	20	GAS	6.77558223	3.153466222	0.079830596	0.086410715	793.0977398	0.399912429	0.126474531	2.412831085	3.381758486	81.55005896	0.007848345
SACRAMENT	2021	MCY	1982	45	GAS	12.8740536	1.483430799	0.017455513	0.018293073	195.6726164	0.347816667	0.073778759	3.109807815	3.380961392	29.89093315	0.001936339
SACRAMENT	2021	MCY	1983	45	GAS	10.5117677	1.483430799	0.017455513	0.018293073	195.6726164	0.349605247	0.074163051	3.109807815	3.380961392	29.89093315	0.001936339
SACRAMENT	2021	MCY	1984	45	GAS	9.80788144	1.483430799	0.017455513	0.018293073	195.6726164	0.351325837	0.074525279	3.109807815	3.380961392	29.89093315	0.001936339
SACRAMENT	2021	MCY	1982	50	GAS	12.9058976	1.538248453	0.017472936	0.018311332	202.9776265	0.346445099	0.076505127	3.097544709	3.367629029	31.96329002	0.002008628
SACRAMENT	2021	MCY	1983	50	GAS	10.5377687	1.538248453	0.017472936	0.018311332	202.9776265	0.348226626	0.07690362	3.097544709	3.367629029	31.96329002	0.002008628
SACRAMENT	2021	MCY	1984	50	GAS	9.83214128	1.538248453	0.017472936	0.018311332	202.9776265	0.349904431	0.077279233	3.097544709	3.367629029	31.96329002	0.002008628
SACRAMENT	2021	MCY	1988	40	GAS	37.28509	1.193092992	0.002919685	0.003059779	188.6287063	0.363798272	0.064025816	3.08333482	3.352180136	30.66533553	0.001866634
SACRAMENT	2021	MCY	1989	40	GAS	47.5904925	1.193092992	0.002919685	0.003059779	188.6287063	0.365261322	0.064309993	3.08333482	3.352180136	30.66533553	0.001866634
SACRAMENT	2021	MCY	1990	40	GAS	49.5159375	1.193092992	0.002919685	0.003059779	188.6287063	0.366548985	0.064556681	3.08333482	3.352180136	30.66533553	0.001866634
SACRAMENT	2021	MCY	1991	40	GAS	65.3730435	1.193092992	0.002919685	0.003059779	188.6287063	0.367854377	0.064803494	3.08333482	3.352180136	30.66533553	0.001866634
SACRAMENT	2021	MCY	1992	40	GAS	64.1394228	1.193092992	0.002919685	0.003059779	188.6287063	0.36915642	0.065046391	3.08333482	3.352180136	30.66533553	0.001866634
SACRAMENT	2021	MCY	1993	40	GAS	89.825765	1.193092992	0.002919685	0.003059779	188.6287063	0.370384814	0.065272547	3.08333482	3.352180136	30.66533553	0.001866634
SACRAMENT	2021	LDT2	1983	5	GAS	0.01500488	5.394842656	0.078528772	0.085407205	1444.144358	0.434668685	0.236197524	2.292282741	3.344893595	39.35423757	0.014290979
SACRAMENT	2021	MH	1977	25	GAS	0.86337027	4.426903374	0.014990818	0.016303883	2086.320222	0.404169777	0.164698747	2.290651972	3.342513981	58.88217186	0.02064583
SACRAMENT	2021	LDT2	1987	5	GAS	0.07304336	5.099307805	0.092734141	0.100856839	1271.026342	0.440625009	0.225283919	2.286181567	3.335990775	30.00462914	0.012577836
SACRAMENT	2021	MCY	1988	55	GAS	26.3568951	1.337495275	0.00292844	0.003068954	209.4911313	0.361861373	0.07177498	3.066918831	3.334332788	37.67016825	0.002073085
SACRAMENT	2021	MCY	1989	55	GAS	33.6418021	1.337495275	0.00292844	0.003068954	209.4911313	0.363316634	0.072093553	3.066918831	3.334332788	37.67016825	0.002073085
SACRAMENT	2021	MCY	1990	55	GAS	35.0029025	1.337495275	0.00292844	0.003068954	209.4911313	0.364597441	0.072370098	3.066918831	3.334332788	37.67016825	0.002073085
SACRAMENT	2021	MCY	1991	55	GAS	46.2123184	1.337495275	0.00292844	0.003068954	209.4911313	0.365895883	0.072646782	3.066918831	3.334332788	37.67016825	0.002073085
SACRAMENT	2021	MCY	1992	55	GAS	45.3402698	1.337495275	0.00292844	0.003068954	209.4911313	0.367190994	0.072919078	3.066918831	3.334332788	37.67016825	0.002073085
SACRAMENT	2021	MCY	1993	55	GAS	63.4979898	1.337495275	0.00292844	0.003068954	209.4911313	0.368412848	0.073172606	3.066918831	3.334332788	37.67016825	0.002073085
SACRAMENT	2021	MCY	1994	40	GAS	88.578194	1.193943326	0.002908766	0.003049915	188.7762238	0.368988651	0.065494416	3.050116898	3.327250841	30.30161109	0.001868094
SACRAMENT	2021	MDV	1982	20	GAS	9.8505226	2.540731099	0.03098069	0.033626739	845.0503305	0.392811253	0.109455772	2.294614143	3.315345133	39.75973565	0.008362458
SACRAMENT	2021	MCY	1994	55	GAS	62.6160797	1.334428957	0.002912107	0.003053417	209.3877128	0.36657885	0.073200833	3.030197116	3.305521145	37.11735801	0.002072061
SACRAMENT	2021	LDT2	1986	5	GAS	0.06342044	5.182090796	0.090042108	0.097929008	1270.913433	0.434139915	0.228166426	2.260826968	3.298993405	31.11279485	0.012576719
SACRAMENT	2021	MH	1978	25	GAS	1.73313171	4.424921536	0.014990818	0.016303883	2086.185677	0.399386555	0.164647462	2.259370297	3.296867834	58.88239308	0.020644498
SACRAMENT	2021	LHD1	1984	20	GAS	154.411209	3.575746573	0.018792158	0.020438186	1181.39024	0.383346917	0.145388832	2.243015753	3.273003321	47.00812399	0.011690814
SACRAMENT	2021	LHD2	1984	20	GAS	14.4163911	3.575746573	0.018792158	0.020438186	1341.006719	0.383690699	0.14538994	2.243015753	3.273003321	47.00812399	0.013270349
SACRAMENT	2021	LDT2	1981	15	GAS	2.096751	2.967636844	0.040868521	0.044448245	986.3310705	0.401578403	0.131814963	2.236614339	3.263662394	43.26736201	0.009760546
SACRAMENT	2021	MH	1979	25	GAS	1.45728031	4.425070216	0.014990818	0.016303883	2086.178996	0.394552563	0.164651436	2.227814348	3.250821467	58.96402808	0.020644432
SACRAMENT	2021	LHD1	1985	20	GAS	184.184186	3.58005353	0.018792158	0.020438186	1180.894158	0.380951113	0.145511588	2.225524461	3.247480669	46.74273967	0.011685905
SACRAMENT	2021	LHD2	1985	20	GAS	24.6527648	3.58005353	0.018792158	0.020438186	1340.510637	0.381263907	0.145512597	2.225524461	3.247480669	46.74273967	0.013265439
SACRAMENT	2021	MCY	1996	35	GAS	106.532309	1.179909571	0.003102444	0.003277104	193.2317299	0.365065964	0.064867061	2.845001979	3.242298348	27.76757172	0.001912185
SACRAMENT	2021	MCY	1996	60	GAS	71.2319285	1.419817225	0.003076395	0.003249588	222.4622068	0.364752149	0.078056296	2.842556383	3.239511231	38.8768182	0.002201444
SACRAMENT	2021	MCY	1997	35	GAS	134.529014	1.182879371	0.003099721	0.003274198	193.668444	0.365510007	0.065154971	2.839390408	3.235123386	27.6217057	0.001916506
SACRAMENT	2021	MCY	1998	35	GAS	171.504236	1.182879371	0.003099812	0.003274262	193.668444	0.366549235	0.065309469	2.840549214	3.235072158	27.6217057	0.001916506
SACRAMENT	2021	MCY	1999	35	GAS	258.337351	1.182879371	0.0030999	0.003274324	193.668444	0.367560426	0.065457791	2.841636562	3.235024089	27.6217057	0.001916506
SACRAMENT	2021	MCY	2000	35	GAS	374.843033	1.182879371	0.003099989	0.003274387	193.668444	0.368549444	0.065600957	2.842735562	3.234975504	27.6217057	0.001916506
SACRAMENT	2021	MCY	2001	35	GAS	555.220642	1.182879371	0.003100082	0.003274452	193.668444	0.369436457	0.065727767	2.843843936	3.234926506	27.6217057	0.001916506
SACRAMENT	2021	MCY	2002	35	GAS	686.116962	1.182879371	0.003100174	0.003274517	193.668444	0.370332285	0.065854321	2.844932074	3.234878402	27.6217057	0.001916506
SACRAMENT	2021	MCY	2003	35	GAS	855.961733	1.182879371	0.003100276	0.003274589	193.668444	0.371163429	0.065970382	2.846117813	3.234825983	27.6217057	0.001916506
SACRAMENT	2021	MH	1986	5	GAS	1.10117519	4.212690032	0.062269787	0.067724075	4238.725081	0.484680021	0.197191602	2.210992387	3.2262749	15.53624935	0.041945621
SACRAMENT	2021	LHD1	1986	20	GAS	249.945462	3.379741765	0.018792158	0.020438186	1180.443557	0.378854519	0.139784261	2.21010016	3.224972965	46.50042538	0.011681446
SACRAMENT	2021	LHD2	1986	20	GAS	51.9689797	3.379741765	0.018792158	0.020438186	1340.060036	0.379138158	0.139785194	2.21010016	3.224972965	46.50042538	0.01326098
SACRAMENT	2021	MCY	1997	60	GAS	89.9516889	1.417757174	0.00306632	0.003238917	222.4462356	0.364275735	0.078092433	2.829802221	3.224198869	38.42442246	0.002201286
SACRAMENT	2021	MCY	1998	60	GAS	114.674859	1.417757174	0.003066411	0.003238981	222.4462356	0.365311454	0.078277609	2.830957114	3.224147814	38.42442246	0.002201286
SACRAMENT	2021	MCY	1999	60	GAS	172.735087	1.417757174	0.003066497	0.003239042	222.4462356	0.366319231	0.078455382	2.83204079	3.224099907	38.42442246	0.002201286
SACRAMENT	2021	MCY	2000	60	GAS	250.635627	1.417757174	0.003066586	0.003239104	222.4462356	0.367304909	0.078626976	2.833136079	3.224051487	38.42442246	0.002201286
SACRAMENT	2021	MCY	2001	60	GAS	371.243591	1.417757174	0.003066677	0.003239169	222.4462356	0.368188926	0.078778966	2.834240711	3.224002654	38.42442246	0.002201286
SACRAMENT	2021	MCY	2002	60	GAS	458.76631	1.417757174	0.003066768	0.003239233	222.4462356	0.369081729	0.078930648	2.835325174	3.223954712	38.42442246	0.002201286
SACRAMENT	2021	MCY	2003	60	GAS	572.331581	1.417757174	0.00306687	0.003239304	222.4462356	0.369910067	0.079069755	2.836506909	3.223902471	38.42442246	0.002201286
SACRAMENT	2021	MCY	1995	60	GAS	57.0355922	1.433295589	0.003096445	0.003274425	221.5544186	0.361245356	0.078703725	2.804020827	3.217024323	39.47719444	0.002192461
SACRAMENT	2021	LDT1	1982	10	GAS	2.10003653	2.554771431	0.056297034	0.061228161	857.4509268	0.41447211	0.127417933	2.204563317	3.216893617	50.12359346	0.008485172
SACRAMENT	2021	MCY	2004	35	GAS	831.465813	1.208685685	0.000205151	0.000216348	200.2034138	0.370749903	0.067193206	2.852363586	3.21286099	26.20921466	0.001981175
SACRAMENT	2021	MCY	2005	35	GAS	1203.35465	1.208684297	0.000205157	0.000216352	200.2033899	0.371459793	0.067303488	2.853321362	3.212817389	26.20920183	0.001981175
SACRAMENT	2021	MCY	2006	35	GAS	1520.6812	1.20865774	0.000205164	0.000216357	200.2029314	0.372151286	0.067409303	2.854233949	3.212752924	26.20895624	0.00198117
SACRAMENT	2021	MCY	2007	35	GAS	1510.91286	1.208626634	0.00020517	0.000216361	200.2023944	0.372807864	0.067508749	2.855055922	3.212688337	26.20866858	0.001981165
SACRAMENT	2021	MCY	1988	45	GAS	14.4474006	1.2443215	0.002792882	0.002926892	189.7410363	0.348381788	0.066774928	2.952673995	3.210126597	31.34441672	0.001877641
SACRAMENT	2021	MCY	1989	45	GAS	18.440586	1.2443215	0.002792882	0.002926892	189.7410363	0.349782839	0.067071308	2.952673995	3.210126597	31.34441672	0.001877641
SACRAMENT	2021	MCY	1990	45	GAS	19.1866664	1.2443215	0.002792882	0.002926892	189.7410363	0.351015935	0.067328588	2.952673995	3.210126597	31.34441672	0.001877641
SACRAMENT	2021	MCY	1991	45	GAS	25.3310518	1.2443215	0.002792882	0.002926892	189.7410363	0.352266009	0.067585998	2.952673995	3.210126597	31.34441672	0.001877641
SACRAMENT	2021	MCY	1992	45	GAS	24.8530428	1.2443215	0.002792882	0.002926892	189.7410363	0.353512876	0.067839325	2.952673995	3.210126597	31.34441672	0.001877641
SACRAMENT	2021	MCY	1993	45	GAS	34.8061064	1.2443215	0.002792882	0.002926892	189.7410363	0.354689216	0.068075191	2.952673995	3.210126597	31.34441672	0.001877641
SACRAMENT	2021	LDT2	1985	5	GAS	0.04181872	5.193187564	0.085556834	0.093050863	1436.797927	0.420675365	0.228655561	2.199302584	3.209217168	32.6422592	0.01421828
SACRAMENT	2021	MH	1980	25	GAS	0.11695433	4.423480054	0.014990818	0.016303883	2086.238911	0.389675858	0.164610276	2.196029501	3.204441093	59.08829958	0.020645025
SACRAMENT	2021	LHD1	1987	20	GAS	226.851035	3.444530437	0.018792158	0.020438186	1179.995311	0.376909215	0.141648492	2.195779468	3.204076245	46.25659418	0.01167701
SACRAMENT	2021	LHD2	1987	20	GAS	23.2533047	3.444530437	0.018792158	0.020438186	1339.61179	0.377165505	0.141649331	2.195779468	3.204076245	46.25659418	0.013256545
SACRAMENT	2021	MCY	1995	35	GAS	85.3006997	1.17705547	0.003100432	0.003278641	191.4083845	0.359198049	0.064633318	2.788129433	3.19879229	27.74297062	0.001894141
SACRAMENT	2021	MCY	1992	50	GAS	24.9145169	1.290303278	0.00279567	0.002929813	196.9808327	0.352118846	0.070346211	2.941030525	3.197467898	33.5175445	0.001949285
SACRAMENT	2021	MCY	1988	50	GAS	14.4831363	1.290303278	0.00279567	0.002929813	196.9808327	0.347007992	0.069242482	2.941030525	3.197467898	33.5175445	0.001949285
SACRAMENT	2021	MCY	1989	50	GAS	18.4861989	1.290303278	0.00279567	0.002929813	196.9808327	0.348403518	0.069549814	2.941030525	3.197467898	33.5175445	0.001949285
SACRAMENT	2021	MCY	1990	50	GAS	19.2341248	1.290303278	0.00279567	0.002929813	196.9808327	0.349631751	0.069816601	2.941030525	3.197467898	33.5175445	0.001949285
SACRAMENT	2021	MCY	1991	50	GAS	25.3937083	1.290303278	0.00279567	0.002929813	196.9808327	0.350876896	0.070083523	2.941030525	3.197467898	33.5175445	0.001949285
SACRAMENT	2021	MCY	1993	50	GAS	34.8921995	1.290303278	0.00279567	0.002929813	196.9808327	0.353290547	0.070590794	2.941030525	3.197467898	33.5175445	0.001949285
SACRAMENT	2021	LDT1	1980	15	GAS	1.90763109	2.143142568	0.104477302	0.11324569	876.1400058	0.393704952	0.096506306	2.221321771	3.187533013	50.38200544	0.008670116
SACRAMENT	2021	MCY	1994	45	GAS	34.3226918	1.243465411	0.002780277	0.002915191	189.839562	0.353156223	0.068210978	2.919243615	3.184486397	30.94930262	0.001878616
SACRAMENT	2021	LHD1	1991	5	GAS	76.2146512	4.807563212	0.034871081	0.037925482	2025.910915	0.435240915	0.202117924	2.178442497	3.178778178	17.76622253	0.020048031
SACRAMENT	2021	LHD2	1991	5	GAS	5.97313165	4.807563212	0.034871081	0.037925482	2315.167745	0.435561886	0.20223329	2.178442497	3.178778178	17.76622253	0.022910462
SACRAMENT	2021	LDT1	1992	5	GAS	0.29641803	2.134116365	0.061118742	0.066472208	1000.259636	0.435769552	0.120826795	2.173868689	3.172104088	26.77515488	0.00989838
SACRAMENT	2021	MCY	1994	50	GAS	34.4075892	1.288154823	0.002781354	0.00291632	197.0049036	0.351630865	0.07066244	2.906634772	3.170731913	33.06264319	0.001949523
SACRAMENT	2021	LHD1	1992	5	GAS	70.2713006	4.819702518	0.034871081	0.037925482	2025.746319	0.433864097	0.202621876	2.168620522	3.164445975	17.68910259	0.020046402
SACRAMENT	2021	LHD2	1992	5	GAS	4.06783084	4.819702518	0.034871081	0.037925482	2315.003149	0.434144688	0.202722337	2.168620522	3.164445975	17.68910259	0.022908833
SACRAMENT	2021	MH	1981	25	GAS	1.8569006	4.421107483	0.014990818	0.016303883	2086.340353	0.384829147	0.164548793	2.164505723	3.158441669	59.2380598	0.020646029
SACRAMENT	2021	LDA	1993	5	GAS	0.83287704	2.067494268	0.061123027	0.066476869	844.0742271	0.429220526	0.117080384	2.164279298	3.158111271	20.86727367	0.008352799
SACRAMENT	2021	LHD1	1993	5	GAS	84.0678311	4.810999549	0.034871081	0.037925482	2025.598348	0.432726838	0.202487692	2.16019193	3.152146993	17.61868055	0.020044938
SACRAMENT	2021	LHD2	1993	5	GAS	11.3198663	4.810999549	0.034871081	0.037925482	2314.855178	0.432968982	0.202574165	2.16019193	3.152146993	17.61868055	0.022907369
SACRAMENT	2021	LDA	1992	5	GAS	0.70788983	2.064552328	0.061118491	0.066471936	901.4701672	0.425405572	0.116570154	2.153997157	3.143107595	20.79626621	0.008920778
SACRAMENT	2021	LDA	1991	5	GAS	0.68260288	2.063655793	0.061122401	0.066476188	900.9582151	0.423053917	0.116095571	2.153131076	3.141843812	20.77417155	0.008915712
SACRAMENT	2021	LDA	1990	5	GAS	0.4769095	2.063735274	0.109141385	0.118701214	900.9589213	0.420659631	0.115614903	2.153017758	3.141678459	20.77491608	0.008915719
SACRAMENT	2021	LHD1	1994	5	GAS	97.621494	4.806342331	0.034871081	0.037925482	2025.465684	0.431782409	0.202470178	2.152883972	3.141483239	17.55486647	0.020043625
SACRAMENT	2021	LHD2	1994	5	GAS	16.116161	4.806342331	0.034871081	0.037925482	2314.722514	0.431988001	0.202543439	2.152883972	3.141483239	17.55486647	0.022906056
SACRAMENT	2021	MDV	1980	25	GAS	150.273165	3.926893472	0.063684697	0.068933032	854.0076613	0.3651231	0.149612807	2.225058724	3.136150637	66.96458699	0.008451098
SACRAMENT	2021	LDT1	1991	5	GAS	0.34336729	2.167860394	0.060161224	0.06543082	999.4268828	0.427634941	0.122336227	2.137813635	3.119492638	27.00543938	0.009890139
SACRAMENT	2021	MH	1982	25	GAS	2.79301226	4.417114536	0.014990818	0.016303883	2086.427444	0.380133525	0.164445227	2.134024197	3.113963099	59.37593085	0.020646891
SACRAMENT	2021	MCY	2004	60	GAS	555.952591	1.37570812	0.000196348	0.000207064	223.3576362	0.357234736	0.076478311	2.748384673	3.09574065	33.19928841	0.002210305
SACRAMENT	2021	MCY	2005	60	GAS	804.612923	1.37570681	0.000196354	0.000207069	223.357619	0.357918765	0.076603847	2.749307673	3.095698793	33.19927948	0.002210305
SACRAMENT	2021	MCY	2006	60	GAS	1016.79064	1.375681735	0.00019636	0.000207073	223.3572902	0.358585394	0.076724571	2.750189625	3.095639642	33.19910854	0.002210301
SACRAMENT	2021	MCY	2007	60	GAS	1010.25912	1.375652364	0.000196366	0.000207077	223.3569051	0.359218441	0.076838097	2.750984719	3.095580879	33.19890832	0.002210298
SACRAMENT	2021	LDA	1989	5	GAS	0.38618342	2.083211792	0.107470729	0.116884223	898.8626563	0.410841496	0.116141158	2.115612335	3.087096553	20.89510971	0.008894975
SACRAMENT	2021	MH	1983	25	GAS	2.28338015	4.410805483	0.014990818	0.016303883	2086.43509	0.375690372	0.164281452	2.105232799	3.071950758	59.45908314	0.020646967
SACRAMENT	2021	LDA	1984	5	GAS	0.1038308	3.111315341	0.087551198	0.095219916	967.0883786	0.398360284	0.159747581	2.100108046	3.06447273	32.48154039	0.009570123
SACRAMENT	2021	LHD1	1977	30	GAS	36.4332434	4.126819585	0.012513853	0.013609957	899.6115517	0.348001575	0.16525299	2.087836828	3.046566599	36.87985945	0.008902386
SACRAMENT	2021	MCY	2008	30	GAS	611.159757	1.156652922	0.00025864	0.000277558	214.0145179	0.362426138	0.066465316	2.39090924	3.042492165	17.65534808	0.002117847
SACRAMENT	2021	MCY	2009	30	GAS	637.326107	1.155653812	0.000290353	0.000311608	213.9966142	0.362955341	0.066518633	2.391293341	3.04143685	17.64593192	0.00211767

SACRAMENT	2021	MCY	2010	30	GAS	273.319687	1.154527949	0.000353792	0.000379719	213.9764392	0.363432961	0.066560237	2.39188137	3.040240792	17.63532113	0.00211747
SACRAMENT	2021	MCY	2011	30	GAS	325.61023	1.153363252	0.000480683	0.000515951	213.9555681	0.363884032	0.066596203	2.392284962	3.03901253	17.62434429	0.002117264
SACRAMENT	2021	MCY	2012	30	GAS	504.882722	1.151876563	0.000702899	0.000754465	213.928927	0.36426243	0.066612525	2.392362928	3.037464033	17.61033272	0.002117
SACRAMENT	2021	MCY	2013	30	GAS	664.804419	1.150113427	0.001051833	0.001129089	213.8973317	0.364586877	0.066613195	2.392230941	3.035637523	17.59371559	0.002116687
SACRAMENT	2021	MCY	2014	30	GAS	778.756235	1.147822001	0.001464421	0.001571976	213.8562693	0.364826956	0.066587273	2.39163761	3.033282394	17.57211924	0.002116281
SACRAMENT	2021	MH	1984	25	GAS	9.74148386	4.401367255	0.014990818	0.016303883	2086.323636	0.371357145	0.164036358	2.077198418	3.031043055	59.46503796	0.020645864
SACRAMENT	2021	MCY	2015	30	GAS	953.701063	1.145219967	0.001845358	0.001980856	213.8096403	0.365014417	0.066545074	2.390742267	3.030617843	17.54759513	0.00211582
SACRAMENT	2021	MCY	2016	30	GAS	900.601341	1.142127653	0.002131172	0.002287594	213.7542247	0.365117703	0.066477375	2.389466139	3.027460657	17.51844967	0.002115271
SACRAMENT	2021	LHD1	1978	30	GAS	50.3830903	4.084418778	0.012513853	0.013609957	899.1881888	0.346111745	0.164028016	2.074669102	3.027352284	36.64859006	0.008898196
SACRAMENT	2021	MCY	2017	30	GAS	1122.20439	1.138480108	0.002290088	0.002458096	213.6888585	0.365146262	0.066383784	2.387710012	3.023747779	17.48407044	0.002114624
SACRAMENT	2021	MCY	2018	30	GAS	1308.07431	1.134296139	0.002385558	0.002560482	213.6138783	0.365089759	0.06626333	2.385521422	3.01949674	17.44463441	0.002113882
SACRAMENT	2021	MDV	1994	10	GAS	36.4568977	3.150826762	0.039529464	0.042991899	961.3192763	0.394818178	0.150268748	2.06635373	3.015218513	25.01633749	0.009513034
SACRAMENT	2021	MCY	2019	30	GAS	1509.78995	1.129440941	0.002449297	0.002628805	213.5268685	0.36494661	0.06611212	2.382767541	3.014573488	17.3988707	0.002113021
SACRAMENT	2021	LHD1	1979	30	GAS	55.4348895	4.04511829	0.012513853	0.013609957	898.7404421	0.344440415	0.162988147	2.063026199	3.010362986	36.39778895	0.008893765
SACRAMENT	2021	LHD2	1979	30	GAS	0.86277387	4.04511829	0.012513853	0.013609957	1019.797884	0.344465363	0.163021455	2.063026199	3.010362986	36.39778895	0.010091727
SACRAMENT	2021	MCY	2020	30	GAS	1694.24426	1.123983177	0.002449552	0.002628985	213.4290601	0.364715218	0.065931718	2.379497474	3.009047462	17.34742641	0.002112054
SACRAMENT	2021	MCY	2021	30	GAS	1356.31154	1.117724661	0.00244982	0.002629174	213.3169031	0.364378803	0.065714321	2.375609883	3.002717667	17.28843372	0.002110944
SACRAMENT	2021	LDT1	1993	5	GAS	0.41413104	2.136887042	0.061118742	0.066472208	926.1414083	0.415493105	0.121124803	2.052943565	2.995650431	21.05111019	0.00916492
SACRAMENT	2021	LDA	1997	5	GAS	2.93636529	1.672201607	0.019187832	0.020868518	834.0790876	0.417218062	0.098361665	2.052764241	2.995388762	17.1858619	0.008253889
SACRAMENT	2021	LHD1	1980	30	GAS	116.925821	4.00520245	0.012513853	0.013609957	898.2543964	0.342643325	0.161863439	2.050524512	2.992120555	36.12516202	0.008888955
SACRAMENT	2021	MDV	1993	10	GAS	17.4473866	3.173447059	0.039075486	0.042498156	960.8463873	0.389145674	0.151032413	2.041457268	2.978889653	25.17124873	0.009508354
SACRAMENT	2021	LDT1	1990	5	GAS	0.21812114	2.273300389	0.102301184	0.111261872	1000.068653	0.40623045	0.127338534	2.03526128	2.969848481	27.8462952	0.00989649
SACRAMENT	2021	MCY	1996	40	GAS	130.528596	1.22362329	0.002824333	0.002983335	186.4741294	0.332940488	0.067270279	2.594644369	2.956979016	26.85485451	0.001845313
SACRAMENT	2021	LHD2	1981	30	GAS	12.3690577	3.954614967	0.012513853	0.013609957	1018.770203	0.339107788	0.160404775	2.025884329	2.956165658	35.85048791	0.010081557
SACRAMENT	2021	LHD1	1981	30	GAS	90.8606786	3.954614967	0.012513853	0.013609957	897.7127611	0.339086468	0.160372268	2.025884329	2.956165658	35.85048791	0.008883596
SACRAMENT	2021	LDT2	1980	20	GAS	7.77873294	2.942174883	0.079671799	0.086358652	736.1649469	0.355051347	0.121439427	2.057896649	2.953041581	39.82273722	0.007284949
SACRAMENT	2021	MCY	1997	40	GAS	164.831529	1.224972479	0.002819786	0.002978506	186.8684146	0.333089192	0.06747353	2.587535877	2.948167255	26.69920062	0.001849214
SACRAMENT	2021	MCY	1998	40	GAS	210.13538	1.224972479	0.00281987	0.002978565	186.8684146	0.33403624	0.067633526	2.588591897	2.948120571	26.69920062	0.001849214
SACRAMENT	2021	MCY	1999	40	GAS	316.52756	1.224972479	0.002819949	0.002978621	186.8684146	0.334957738	0.067787125	2.589582796	2.948076766	26.69920062	0.001849214
SACRAMENT	2021	MCY	2000	40	GAS	459.27602	1.224972479	0.002820031	0.002978679	186.8684146	0.33585903	0.067935386	2.590584315	2.948032491	26.69920062	0.001849214
SACRAMENT	2021	MCY	2001	40	GAS	680.28349	1.224972479	0.002820115	0.002978738	186.8684146	0.336667365	0.068066709	2.591594376	2.947987839	26.69920062	0.001849214
SACRAMENT	2021	MCY	2002	40	GAS	840.664065	1.224972479	0.002820199	0.002978797	186.8684146	0.337483733	0.068197766	2.592585996	2.947944001	26.69920062	0.001849214
SACRAMENT	2021	MCY	2003	40	GAS	1048.76619	1.224972479	0.002820292	0.002978863	186.8684146	0.338241154	0.068317957	2.59366656	2.947896232	26.69920062	0.001849214
SACRAMENT	2021	LDA	1988	5	GAS	0.27714696	2.155016257	0.102302538	0.111263344	899.7489947	0.388477804	0.119297802	2.014343058	2.939324661	21.57295033	0.008903746
SACRAMENT	2021	LHD1	1982	30	GAS	51.8747217	3.924472292	0.012513853	0.013609957	897.2091688	0.336471932	0.159587354	2.007780588	2.92974872	35.5820318	0.008878612
SACRAMENT	2021	LHD2	1982	30	GAS	3.5819593	3.924472292	0.012513853	0.013609957	1018.266611	0.336491574	0.159614637	2.007780588	2.92974872	35.5820318	0.010076574
SACRAMENT	2021	LDT1	1979	15	GAS	2.76761298	2.146400959	0.104475359	0.113244319	877.2658507	0.365097608	0.096749489	2.044525652	2.92896522	51.63290888	0.008681257
SACRAMENT	2021	MCY	1996	55	GAS	92.2708923	1.354263319	0.002810433	0.002968654	205.492302	0.329377871	0.074452384	2.566880475	2.925337974	32.48012657	0.002033513
SACRAMENT	2021	MCY	1995	40	GAS	104.51459	1.225855768	0.002828679	0.002991268	184.7922186	0.328252424	0.067312993	2.547926547	2.923209983	26.86772977	0.001828669
SACRAMENT	2021	LDT1	1984	5	GAS	0.06800902	5.098801617	0.081258098	0.088375596	1022.941245	0.388877213	0.224810206	1.997611197	2.91490957	41.17448745	0.010122833
SACRAMENT	2021	MCY	1997	55	GAS	116.519695	1.352627449	0.002801926	0.00295964	205.6603703	0.329037321	0.074504979	2.556059745	2.912304216	32.15792589	0.002035176
SACRAMENT	2021	MCY	1998	55	GAS	148.545066	1.352627449	0.002802008	0.002959698	205.6603703	0.329972849	0.074681648	2.557102919	2.9122581	32.15792589	0.002035176
SACRAMENT	2021	MCY	1999	55	GAS	223.753884	1.352627449	0.002802087	0.002959754	205.6603703	0.330883138	0.074851254	2.558081765	2.912214827	32.15792589	0.002035176
SACRAMENT	2021	MCY	2000	55	GAS	324.663019	1.352627449	0.002802168	0.002959811	205.6603703	0.331773466	0.075014965	2.559071101	2.912171091	32.15792589	0.002035176
SACRAMENT	2021	MCY	2001	55	GAS	480.893585	1.352627449	0.002802252	0.00295987	205.6603703	0.332571968	0.075159973	2.560068875	2.912126982	32.15792589	0.002035176
SACRAMENT	2021	MCY	2002	55	GAS	594.266893	1.352627449	0.002802335	0.002959929	205.6603703	0.333378405	0.075304688	2.561048432	2.912083678	32.15792589	0.002035176
SACRAMENT	2021	MCY	2003	55	GAS	741.374645	1.352627449	0.002802428	0.002959994	205.6603703	0.334126613	0.075437404	2.562115851	2.91203649	32.15792589	0.002035176
SACRAMENT	2021	LDT1	1994	5	GAS	0.58720002	1.762352103	0.061806191	0.067219872	923.4543655	0.406331575	0.105646641	1.993636355	2.909109489	18.98984694	0.00913833
SACRAMENT	2021	LHD2	1983	30	GAS	13.2749038	3.979858352	0.012513853	0.013609957	1017.806937	0.333995704	0.161360949	1.990528424	2.904574404	35.33896604	0.010072025
SACRAMENT	2021	LHD1	1983	30	GAS	56.1614554	3.979858352	0.012513853	0.013609957	896.7494944	0.333977656	0.161343353	1.990528424	2.904574404	35.33896604	0.008874063
SACRAMENT	2021	MCY	1995	55	GAS	73.8815458	1.366071791	0.00282667	0.002989144	204.3002462	0.326128408	0.075012398	2.531439735	2.904294833	32.85427267	0.002021717
SACRAMENT	2021	MCY	2004	40	GAS	1018.75259	1.229279543	0.000184776	0.000194861	192.8103898	0.33444014	0.068338059	2.5730145	2.89820623	25.14310343	0.001908015
SACRAMENT	2021	MCY	2005	40	GAS	1474.40899	1.229278215	0.000184782	0.000194865	192.8103679	0.335080511	0.068450225	2.573878514	2.898166941	25.14309157	0.001908015
SACRAMENT	2021	MCY	2006	40	GAS	1863.213	1.229252785	0.000184788	0.000194869	192.8099478	0.335704377	0.06855793	2.574702452	2.898109609	25.1428644	0.001908011
SACRAMENT	2021	MCY	2007	40	GAS	1851.24434	1.229223	0.000184793	0.000194873	192.8094558	0.336296764	0.068659174	2.575444778	2.898052306	25.14259832	0.001908006
SACRAMENT	2021	LDT1	1996	5	GAS	0.79500209	1.867834996	0.017855326	0.019419296	923.3321297	0.403157855	0.108957706	1.984266452	2.895436949	18.42421787	0.00913712
SACRAMENT	2021	MH	1991	5	DSL	0.29211382	28.19118238	1.829292237	1.912004715	2180.980418	0.117717162	0.34281975	2.534381192	2.88522449	4.807960908	0.020618108
SACRAMENT	2021	MDV	1992	10	GAS	15.2964964	3.244284625	0.037713552	0.041016929	1114.902105	0.374481709	0.153892192	1.96917902	2.873421404	25.69725658	0.01103286
SACRAMENT	2021	LDT1	1989	5	GAS	0.24310084	3.343808851	0.098925319	0.10759031	999.8179269	0.391698453	0.167281534	1.966718605	2.869831171	28.36509806	0.009894009
SACRAMENT	2021	LDT2	1982	15	GAS	3.0849381	3.314647555	0.04126609	0.044880638	982.084775	0.359853039	0.146220737	1.966196632	2.86906951	40.3850406	0.009718525
SACRAMENT	2021	LDT1	1988	5	GAS	0.1510786	4.764624021	0.099056846	0.107733358	997.2108361	0.390587258	0.213758311	1.965189121	2.867599353	28.21225836	0.00986821
SACRAMENT	2021	MCY	2008	70	GAS	28.1728661	1.23542187	0.000237436	0.000254802	228.2392027	0.341175653	0.070991655	2.250720725	2.864098753	22.00057346	0.002258612
SACRAMENT	2021	MCY	2009	70	GAS	29.3790664	1.23446958	0.000266548	0.000286061	228.2280212	0.341685804	0.071055214	2.25116122	2.863205686	21.99510006	0.002258501
SACRAMENT	2021	MCY	2010	70	GAS	12.5993226	1.233396478	0.000324786	0.000348588	228.215421	0.34214896	0.071107124	2.251803801	2.862192857	21.98893225	0.002258377
SACRAMENT	2021	MCY	2011	70	GAS	15.0097799	1.232286361	0.000441274	0.00047365	228.2023863	0.342587634	0.071153292	2.252275925	2.86115361	21.98255167	0.002258248
SACRAMENT	2021	MCY	2012	70	GAS	23.2737728	1.230869342	0.000645271	0.00069261	228.1857478	0.342961815	0.071180643	2.252467081	2.859845245	21.97440706	0.002258083
SACRAMENT	2021	MCY	2013	70	GAS	30.6457447	1.229188829	0.000965598	0.001036521	228.1660154	0.343288594	0.071193148	2.252482604	2.858302932	21.9647479	0.002257888
SACRAMENT	2021	MCY	2014	70	GAS	35.8986253	1.227004784	0.00134436	0.001443097	228.1403703	0.343542393	0.071180813	2.25210581	2.856316054	21.95219443	0.002257634
SACRAMENT	2021	MCY	2015	70	GAS	43.9631243	1.224524687	0.001694065	0.001818455	228.1112488	0.343750488	0.071153218	2.251469487	2.854069088	21.93793913	0.002257346
SACRAMENT	2021	MDV	1980	70	GAS	4.83797672	5.699997584	0.058320175	0.063126414	863.3144448	0.332168082	0.217167246	2.024230975	2.853090209	109.2550486	0.008543196
SACRAMENT	2021	MCY	2016	70	GAS	41.515366	1.221577284	0.001956447	0.002100045	228.0766398	0.343885359	0.07110173	2.250513777	2.851407603	21.92099753	0.002257003
SACRAMENT	2021	MCY	2017	70	GAS	51.7306867	1.218100671	0.002102334	0.002256568	228.0358164	0.343956712	0.07102639	2.24915046	2.848278759	21.90101367	0.002256599
SACRAMENT	2021	MH	1992	5	DSL	0.53408994	28.14620612	1.812209575	1.894149651	2180.980418	0.116188913	0.34281975	2.501478894	2.847767411	4.74558444	0.020618108
SACRAMENT	2021	MCY	2018	70	GAS	60.298804	1.214112772	0.002189977	0.00235056	227.9889889	0.343954602	0.070926059	2.247422862	2.844697157	21.8780904	0.002256136
SACRAMENT	2021	MCY	2019	70	GAS	69.5973674	1.209485097	0.00224849	0.002413281	227.9346487	0.343879207	0.070797525	2.245216668	2.840550126	21.851489	0.002255598
SACRAMENT	2021	LDA	1987	5	GAS	0.29162922	2.200624043	0.098908467	0.107571982	899.3929725	0.372493007	0.120971501	1.946148141	2.839814799	21.97725947	0.008900223
SACRAMENT	2021	MCY	2020	70	GAS	78.1002284	1.204283095	0.002248725	0.002413446	227.8735649	0.343728201	0.07064203	2.242572681	2.835896113	21.82158561	0.002254994
SACRAMENT	2021	MCY	2021	70	GAS	62.5224143	1.198317866	0.002248971	0.00241362	227.8035207	0.343488225	0.070452632	2.239411338	2.830565758	21.7872945	0.002254301
SACRAMENT	2021	LDT1	1995	5	GAS	0.54615492	1.770978179	0.062149915	0.067593704	921.5780788	0.397801172	0.105966651	1.939122572	2.829563105	17.37984082	0.009119762
SACRAMENT	2021	LHD1	1988	5	GAS	45.6028761	2.744500975	0.062269787	0.067724075	2019.031296	0.397253349	0.130489355	1.938663247	2.828892859	14.07831333	0.019979951
SACRAMENT	2021	LHD2	1988	5	GAS	1.29930894	2.744500975	0.062269787	0.067724075	2308.288126	0.397549573	0.13074999	1.938663247	2.828892859	14.07831333	0.022842382
SACRAMENT	2021	MDV	1990	10	GAS	11.3568391	3.270040862	0.066347875	0.072159368	1113.20237	0.366729388	0.154557776	1.93723508	2.826808881	25.84513058	0.01101604
SACRAMENT	2021	MCY	1996	45	GAS	50.5778294	1.268665832	0.002692692	0.002844283	187.292123	0.317841638	0.069746551	2.476977255	2.822880027	27.32146962	0.001853407
SACRAMENT	2021	MDV	1987	10	GAS	4.98340111	3.262501891	0.066513814	0.072339841	1106.552843	0.36364729	0.153539999	1.932641216	2.820105525	25.53297875	0.010950237
SACRAMENT	2021	MCY	1997	45	GAS	63.8696898	1.268717251	0.002686758	0.00283799	187.6346893	0.317785199	0.069883065	2.468649912	2.812711854	27.13425004	0.001856797
SACRAMENT	2021	MCY	1998	45	GAS	81.4242372	1.268717251	0.002686838	0.002838046	187.6346893	0.318688735	0.070048774	2.469657412	2.812667315	27.13425004	0.001856797
SACRAMENT	2021	MCY	1999	45	GAS	122.649575	1.268717251	0.002686913	0.0028381	187.6346893	0.319567894	0.070207859	2.470602784	2.812625523	27.13425004	0.001856797
SACRAMENT	2021	MCY	2000	45	GAS	177.962415	1.268717251	0.002686991	0.002838155	187.6346893	0.320427775	0.070361415	2.471558288	2.812583282	27.13425004	0.001856797
SACRAMENT	2021	MCY	2001	45	GAS	263.59942	1.268717251	0.002687071	0.002838211	187.6346893	0.321198971	0.070497427	2.472521941	2.812540681	27.13425004	0.001856797
SACRAMENT	2021	MCY	2002	45	GAS	325.744434	1.268717251	0.002687151	0.002838267	187.6346893	0.32197783	0.070633164	2.473468	2.812498858	27.13425004	0.001856797
SACRAMENT	2021	MCY	2003	45	GAS	406.380814	1.268717251	0.00268724	0.00283833	187.6346893	0.322700451	0.070757648	2.474498917	2.812453284	27.13425004	0.001856797
SACRAMENT	2021	LHD1	1989	5	GAS	68.8821368	2.74227162	0.062269787	0.067724075	2018.921022	0.395432503	0.130601301	1.926927745	2.811768442	14.04067006	0.01997886
SACRAMENT	2021	LHD2	1989	5	GAS	1.68754633	2.74227162	0.062269787	0.067724075	2308.177852	0.395696581	0.130836088	1.926927745	2.811768442	14.04067006	0.022841291
SACRAMENT	2021	MH	1993	5	DSL	0.59160543	28.10013214	1.794709961	1.875858781	2180.980418	0.114623363	0.34281975	2.467773518	2.809396081	4.681685471	0.020618108
SACRAMENT	2021	MCY	1996	50	GAS	50.702934	1.310037543	0.002688322	0.002839668	193.9985661	0.316166351	0.072021015	2.463921551	2.80800113	29.06774392	0.001919773
SACRAMENT	2021	MCY	2004	55	GAS	720.157979	1.316802409	0.000180041	0.000189868	208.7534521	0.323686193	0.073203627	2.490279034	2.8050142	28.50507743	0.002065785
SACRAMENT	2021	MCY	2005	55	GAS	1042.26228	1.316801136	0.000180047	0.000189872	208.7534341	0.324305981	0.073323787	2.491115327	2.804976245	28.50506784	0.002065784
SACRAMENT	2021	MCY	2006	55	GAS	1317.10852	1.316776756	0.000180053	0.000189876	208.7530892	0.324909941	0.07343932	2.491913958	2.804922091	28.50488438	0.002065781
SACRAMENT	2021	MCY	2007	55	GAS	1308.64785	1.316748201	0.000180058	0.000189879	208.7526853	0.325483461	0.07354796	2.492633803	2.804868193	28.50466949	0.002065777
SACRAMENT	2021	MDV	1991	10	GAS	10.6469985	3.288745221	0.036817237	0.040042104	1113.738138	0.364324604	0.155602614	1.920182691	2.801926076	25.99908585	0.011021342
SACRAMENT	2021	MCY	1997	50	GAS	64.0276719	1.309096786	0.002681137	0.002832053	194.2720812	0.315955827	0.072107237	2.454438808	2.796520114	28.82702017	0.00192248
SACRAMENT	2021	MCY	1998	50	GAS	81.6256405	1.309096786	0.002681216	0.002832108	194.2720812	0.316854162	0.072278221	2.455440509	2.796475831	28.82702017	0.00192248
SACRAMENT	2021	MCY	1999	50	GAS	122.95295	1.309096786	0.002681292	0.002832162	194.2720812	0.31772826	0.072442369	2.456380439	2.796434279	28.82702017	0.00192248
SACRAMENT	2021	MCY	2000	50	GAS	178.402606	1.309096786	0.002681369	0.002832216	194.2720812	0.318583191	0.072600811	2.457330441	2.796392281	28.82702017	0.00192248
SACRAMENT	2021	MCY	2001	50	GAS	264.251435	1.309096786	0.002681449	0.002832273	194.2720812	0.319349947	0.072741152	2.458288547	2.796349926	28.82702017	0.00192248
SACRAMENT	2021	MCY	2002	50	GAS	326.550164	1.309096786	0.002681529	0.002832329	194.2720812	0.320124323	0.07288121	2.45922916	2.796308344	28.82702017	0.00192248
SACRAMENT	2021	MCY	2003	50	GAS	407.385999	1.309096786	0.002681617	0.002832391	194.2720812	0.320842784	0.073009655	2.460254142	2.796263032	28.82702017	0.00192248
SACRAMENT	2021	LHD1	1990	5	GAS	89.9603563	2.737559067	0.062269787	0.067724075	2018.816296	0.39368921	0.13073905	1.915934303	2.795726837	14.00450857	0.019977824

SACRAMENT	2021	LHD2	1990	5	GAS	6.81487138	2.737559067	0.062269787	0.067724075	2308.073126	0.393923952	0.130946781	1.915934303	2.795726837	14.00450857	0.022840255
SACRAMENT	2021	MCY	1995	45	GAS	40.4978008	1.275021051	0.002701617	0.002856903	185.7399452	0.31388693	0.070012709	2.436420217	2.795279915	27.40810522	0.001838047
SACRAMENT	2021	MH	1977	65	GAS	0.31612736	6.178103944	0.012601627	0.013705419	1963.54562	0.337485439	0.229850505	1.912715223	2.791029564	84.65735562	0.019430876
SACRAMENT	2021	MCY	1995	50	GAS	40.5979724	1.319555783	0.002701004	0.002856255	192.5997921	0.312696421	0.072458156	2.427179377	2.784677994	29.27286476	0.001905931
SACRAMENT	2021	MH	1977	30	GAS	0.97616307	4.655007896	0.012513853	0.013609957	1849.119496	0.335769734	0.173185159	1.902991385	2.776840562	51.26105076	0.018298536
SACRAMENT	2021	MH	1978	65	GAS	0.63459488	6.175338129	0.012601627	0.013705419	1963.433485	0.333491404	0.229778933	1.88659474	2.752914616	84.65767369	0.019429766
SACRAMENT	2021	LDT1	1983	5	GAS	0.02978578	5.394144291	0.078534325	0.085413244	1018.132129	0.366215452	0.23616894	1.880047858	2.743361421	39.36105186	0.010075243
SACRAMENT	2021	MCY	2004	45	GAS	394.751005	1.255697243	0.000174628	0.000184159	192.9040356	0.316411997	0.069806671	2.434315026	2.741977152	25.17388811	0.001908942
SACRAMENT	2021	MCY	2005	45	GAS	571.310872	1.255695952	0.000174634	0.000184163	192.9040153	0.317017852	0.069921251	2.435132493	2.741940015	25.1738771	0.001908942
SACRAMENT	2021	MCY	2006	45	GAS	721.966464	1.255671225	0.000174639	0.000184167	192.9036263	0.317608162	0.07003134	2.435912576	2.741886402	25.17366631	0.001908938
SACRAMENT	2021	MCY	2007	45	GAS	717.328793	1.255642262	0.000174644	0.00018417	192.9031707	0.318168702	0.070134842	2.436615541	2.741832925	25.17341942	0.001908933
SACRAMENT	2021	LDA	1986	5	GAS	0.18322561	2.25124206	0.095337356	0.103688074	900.5988549	0.356254468	0.122742949	1.877196395	2.739200573	22.47204864	0.008912156
SACRAMENT	2021	MH	1978	30	GAS	1.95955227	4.652923941	0.012513853	0.013609957	1849.007735	0.331796005	0.173131232	1.877003693	2.738919382	51.26124335	0.01829743
SACRAMENT	2021	MDV	1978	25	GAS	161.313072	3.950093242	0.063682556	0.068931522	856.1299953	0.324563875	0.150446898	1.95299805	2.736851874	68.96155732	0.0084721
SACRAMENT	2021	LDT1	1987	5	GAS	0.16929974	5.099119607	0.092734278	0.100856989	998.275052	0.371173108	0.225278487	1.874693635	2.735548551	30.0049661	0.009878741
SACRAMENT	2021	MH	1985	25	GAS	9.00814887	4.522630114	0.014990818	0.016303883	2081.434708	0.339211607	0.16740518	1.873240478	2.733428108	56.93556982	0.020597484
SACRAMENT	2021	MDV	1989	10	GAS	9.15743234	3.326611935	0.063537137	0.069102434	1113.861141	0.353441493	0.156481641	1.872297086	2.732051513	27.12559795	0.011022559
SACRAMENT	2021	MDV	1979	25	GAS	113.622259	3.890656708	0.063682672	0.068931604	854.9008791	0.323419475	0.148850747	1.945143996	2.725781471	68.39485699	0.008459937
SACRAMENT	2021	LDA	1981	10	GAS	4.1906161	2.51407386	0.058629305	0.063764718	802.698045	0.332001559	0.122129909	1.86144905	2.716222084	36.28960309	0.007943348
SACRAMENT	2021	MDV	1988	10	GAS	5.92110571	3.331441885	0.063957423	0.069559534	1109.11041	0.350824538	0.156813341	1.861030417	2.715611216	26.19327225	0.010975547
SACRAMENT	2021	MH	1979	65	GAS	0.53359051	6.175545623	0.012601627	0.013705419	1963.505899	0.329454977	0.22978448	1.860245236	2.714465481	84.77504374	0.019430483
SACRAMENT	2021	LDT2	1979	20	GAS	13.4465754	2.943613928	0.079670343	0.086357629	747.6193451	0.329255813	0.121618458	1.894111189	2.713487938	40.81341017	0.007398299
SACRAMENT	2021	MCY	2004	50	GAS	395.727423	1.282760326	0.000173134	0.000182583	198.6667915	0.312440901	0.071311161	2.403763401	2.707564246	26.1900535	0.001965969
SACRAMENT	2021	MCY	2005	50	GAS	572.724013	1.282759054	0.000173139	0.000182587	198.6667725	0.313039154	0.071428213	2.404570627	2.707527595	26.19004324	0.001965969
SACRAMENT	2021	MCY	2006	50	GAS	723.752252	1.282734705	0.000173145	0.000182591	198.6664081	0.313622099	0.071540726	2.405341258	2.707475036	26.1898468	0.001965965
SACRAMENT	2021	MCY	2007	50	GAS	719.10311	1.282706185	0.000173149	0.000182594	198.6659813	0.314175656	0.071646518	2.406035797	2.707422676	26.18961671	0.001965961
SACRAMENT	2021	LDT1	1986	5	GAS	0.16894675	5.181880006	0.090043277	0.097930279	998.5760404	0.365720277	0.22815928	1.853959061	2.705292709	31.11377399	0.009881719
SACRAMENT	2021	LDT1	1977	25	GAS	20.4348601	3.372267067	0.06368212	0.068931215	674.6586565	0.319306324	0.134497384	1.930018854	2.70512657	68.31460504	0.006676294
SACRAMENT	2021	LDT2	1977	25	GAS	32.044161	3.372114911	0.063682262	0.068931315	691.5659952	0.319300717	0.134492653	1.930156489	2.705101973	68.31077289	0.006843606
SACRAMENT	2021	MH	1979	30	GAS	1.64766297	4.653080282	0.012513853	0.013609957	1849.007336	0.327780098	0.173135411	1.850788144	2.700665715	51.33231234	0.018297426
SACRAMENT	2021	MDV	1981	25	GAS	37.2583156	2.630684236	0.024802079	0.02687793	720.2178644	0.318765558	0.113263576	1.881352265	2.69720453	33.71664735	0.00712714
SACRAMENT	2021	LDT2	1978	25	GAS	38.7024666	3.314798317	0.063682393	0.068931407	690.5805389	0.318753418	0.132940172	1.923374246	2.695501999	67.5604607	0.006833854
SACRAMENT	2021	LDT1	1978	25	GAS	21.8834369	3.314453412	0.0636822	0.068931271	673.663	0.318756539	0.132931166	1.923185257	2.695484198	67.56224623	0.006666441
SACRAMENT	2021	MDV	1984	20	GAS	26.6697715	2.561785938	0.030762537	0.033457066	853.3703328	0.32838256	0.109126628	1.84671663	2.694724571	43.46313576	0.008444791
SACRAMENT	2021	MDV	1983	20	GAS	16.2108429	2.305344071	0.031145062	0.033873096	834.5048965	0.326097679	0.108542876	1.83578602	2.678774651	34.26158239	0.008258102
SACRAMENT	2021	LDT1	1981	15	GAS	4.65555624	1.978581496	0.040868873	0.044448629	703.7835775	0.33828254	0.099356736	1.834103364	2.676319323	43.27589554	0.006964509
SACRAMENT	2021	MH	1980	65	GAS	0.04282341	6.173326423	0.012601627	0.013705419	1963.674654	0.325382884	0.229727037	1.8337046	2.675737448	84.95371405	0.019432153
SACRAMENT	2021	MH	1980	30	GAS	0.13223352	4.651408184	0.012513853	0.013609957	1849.064952	0.323728707	0.17309213	1.824382435	2.662134566	51.44049936	0.018297997
SACRAMENT	2021	MH	1994	5	DSL	1.10103448	27.90236901	1.046000458	1.093295957	2091.138895	0.108498113	0.328697914	2.335900485	2.659267401	4.433917932	0.019768783
SACRAMENT	2021	LDA	1977	20	GAS	23.9389444	2.378095115	0.079816419	0.086493776	756.7932232	0.273311578	0.095384145	1.888657448	2.653572388	41.5730431	0.007489082
SACRAMENT	2021	LDA	1982	10	GAS	5.15606561	2.499799342	0.058754022	0.06390036	800.9124501	0.329186582	0.122445115	1.817612972	2.652256582	35.52400442	0.007925678
SACRAMENT	2021	LDA	1985	5	GAS	0.18677726	2.294917503	0.092208202	0.100284833	951.9945985	0.341378814	0.123992244	1.81600639	2.649912261	22.88768856	0.009420758
SACRAMENT	2021	MDV	1982	25	GAS	31.8147257	2.642273473	0.024704427	0.026814422	719.8522612	0.312845781	0.113830261	1.82749437	2.640432851	33.03609365	0.007123522
SACRAMENT	2021	MH	1981	65	GAS	0.67991348	6.170015307	0.012601627	0.013705419	1963.902437	0.321335836	0.229641233	1.807381958	2.63732751	85.16903057	0.019434407
SACRAMENT	2021	MH	1979	15	DSL	0.10473616	18.53356674	1.341686198	1.402351294	1744.980144	0.107512578	0.274286578	2.314682499	2.635112135	6.242042637	0.016496338
SACRAMENT	2021	LDT1	1985	5	GAS	0.09616054	5.192991591	0.085557189	0.093051249	1009.706881	0.354382119	0.228649473	1.80352445	2.631698644	32.6441823	0.009991868
SACRAMENT	2021	MDV	1980	65	GAS	18.2861191	5.40724207	0.053534823	0.057946695	839.3775708	0.305793381	0.206013398	1.863503655	2.626550082	96.56975221	0.008306322
SACRAMENT	2021	MH	1981	30	GAS	2.09949063	4.648913362	0.012513853	0.013609957	1849.158675	0.319702233	0.173027479	1.798193612	2.623919897	51.57087612	0.018298924
SACRAMENT	2021	MDV	1980	30	GAS	104.95122	4.112636293	0.053161936	0.057543078	756.0568626	0.30543781	0.156689522	1.861336806	2.623495976	58.5962587	0.007481796
SACRAMENT	2021	MDV	1986	10	GAS	3.76832799	3.383033969	0.061940429	0.067365868	1105.693873	0.337519196	0.15866738	1.7971684	2.622423911	26.48275383	0.010941737
SACRAMENT	2021	MH	1995	5	DSL	0.72618792	27.84565081	1.034133412	1.080892336	2091.138895	0.10661127	0.328697914	2.295277877	2.613021263	4.356804866	0.019768783
SACRAMENT	2021	LDA	1978	20	GAS	30.685893	2.369608365	0.079515447	0.086305985	755.9682245	0.279948543	0.098356391	1.827283611	2.610008068	41.22821151	0.007480918
SACRAMENT	2021	MCY	2008	65	GAS	106.48509	1.182464203	0.000218383	0.000234356	222.2516908	0.310861553	0.067948522	2.050739945	2.609618178	19.7631388	0.002199361
SACRAMENT	2021	MCY	2009	65	GAS	111.04417	1.181552203	0.000245159	0.000263106	222.2403262	0.311324497	0.068009326	2.051128918	2.608788713	19.75743894	0.002199248
SACRAMENT	2021	MCY	2010	65	GAS	47.6217078	1.180524502	0.000298724	0.000320616	222.2275198	0.311744376	0.068058977	2.051700435	2.607848129	19.75101593	0.002199121
SACRAMENT	2021	MCY	2011	65	GAS	56.7325225	1.179461354	0.000405864	0.000435642	222.2142716	0.312141868	0.06810313	2.052116143	2.606882863	19.74437134	0.00219899
SACRAMENT	2021	MCY	2012	65	GAS	87.9679682	1.178104287	0.000593492	0.000637032	222.1973607	0.312479982	0.068129262	2.052271837	2.605667316	19.73588975	0.002198823
SACRAMENT	2021	MCY	2013	65	GAS	115.831839	1.176494875	0.000888114	0.000953345	222.1773052	0.312774376	0.068141177	2.052264048	2.604234251	19.72583093	0.002198625
SACRAMENT	2021	LHD1	1977	35	GAS	13.6137796	4.427554278	0.01093134	0.01188883	831.9972281	0.29729754	0.17729551	1.783637768	2.602680044	33.38330156	0.008233287
SACRAMENT	2021	MCY	2014	65	GAS	135.686172	1.174403235	0.001236482	0.001327296	222.1512403	0.313001262	0.0681293	2.051892215	2.602387796	19.71275805	0.002198367
SACRAMENT	2021	MCY	2015	65	GAS	166.167589	1.172028068	0.001558126	0.001672533	222.1216419	0.313185906	0.068102807	2.051280025	2.600299468	19.69791292	0.002198074
SACRAMENT	2021	MH	1982	65	GAS	1.02267547	6.164442824	0.012601627	0.013705419	1964.106878	0.31741495	0.229496698	1.781929607	2.600187499	85.36725353	0.01943643
SACRAMENT	2021	MCY	2016	65	GAS	156.915788	1.169205367	0.001799452	0.001931527	222.0864662	0.313302886	0.06805343	2.050370695	2.597825728	19.68027035	0.002197726
SACRAMENT	2021	LDA	1979	20	GAS	30.6519994	2.424972591	0.080245707	0.086994079	754.4061432	0.287331359	0.102083633	1.840375396	2.595451744	40.38508492	0.00746546
SACRAMENT	2021	MCY	2017	65	GAS	195.526675	1.165875846	0.001933633	0.002075491	222.0449743	0.313360922	0.067981206	2.049083033	2.594917405	19.65945964	0.002197315
SACRAMENT	2021	LHD1	1984	25	GAS	118.944235	3.795044823	0.014990818	0.016303883	1006.90232	0.30379943	0.154305436	1.777572423	2.593829507	38.74650609	0.009964115
SACRAMENT	2021	LHD2	1984	25	GAS	11.1050656	3.795044823	0.014990818	0.016303883	1143.332135	0.304071875	0.154306612	1.777572423	2.593829507	38.74650609	0.011314198
SACRAMENT	2021	MCY	2018	65	GAS	227.91162	1.16205667	0.002014243	0.00216194	221.9973799	0.313350985	0.067885045	2.047456736	2.591588104	19.63558791	0.002196844
SACRAMENT	2021	MCY	2019	65	GAS	263.057436	1.157624788	0.002068061	0.002219628	221.9421498	0.313272974	0.067761869	2.045385964	2.587733043	19.60788585	0.002196297
SACRAMENT	2021	MH	1982	30	GAS	3.15789821	4.64471467	0.012513853	0.013609957	1849.239726	0.31580128	0.172918577	1.772870655	2.586968698	51.69090251	0.018299726
SACRAMENT	2021	LHD1	1978	35	GAS	18.8263307	4.382063586	0.01093134	0.01188883	831.6168937	0.295683059	0.175981268	1.772388587	2.586265266	33.17395868	0.008229523
SACRAMENT	2021	MCY	2020	65	GAS	295.195732	1.152642877	0.002068277	0.00221978	221.8800654	0.313124901	0.067612867	2.042908748	2.58340656	19.57674517	0.002195683
SACRAMENT	2021	MH	1982	15	DSL	0.84811775	18.50529464	1.318417737	1.378030737	1744.980144	0.105247625	0.274286578	2.265919391	2.579598578	6.11048967	0.016496338
SACRAMENT	2021	MCY	2021	65	GAS	236.316209	1.146930031	0.002068503	0.00221994	221.8088736	0.31289421	0.06743139	2.039950106	2.57845123	19.54103524	0.002194979
SACRAMENT	2021	LHD1	1985	25	GAS	141.878606	3.799615923	0.014990818	0.016303883	1006.495819	0.301900775	0.15443572	1.763710711	2.57360253	38.52776272	0.009960092
SACRAMENT	2021	LHD2	1985	25	GAS	18.9902292	3.799615923	0.014990818	0.016303883	1142.925635	0.302148662	0.154436792	1.763710711	2.57360253	38.52776272	0.011310176
SACRAMENT	2021	LHD1	1979	35	GAS	20.7140045	4.339899145	0.01093134	0.01188883	831.2141527	0.294255243	0.17486562	1.762442061	2.571751319	32.94693588	0.008225538
SACRAMENT	2021	LHD2	1979	35	GAS	0.32238726	4.339899145	0.01093134	0.01188883	943.4324799	0.294276556	0.174901356	1.762442061	2.571751319	32.94693588	0.009336029
SACRAMENT	2021	LDA	1996	10	GAS	150.416606	1.85717377	0.012098761	0.013158506	692.4888976	0.343762281	0.101583224	1.75843647	2.56590637	20.1847925	0.006852739
SACRAMENT	2021	MH	1996	5	DSL	0.47856292	27.78764263	1.021996478	1.068206624	2091.138895	0.104681515	0.328697914	2.253731386	2.565723345	4.277938058	0.019768783
SACRAMENT	2021	MH	1983	65	GAS	0.83607111	6.155638027	0.012601627	0.013705419	1964.192704	0.313704877	0.229268136	1.757888528	2.565106813	85.48680505	0.019437279
SACRAMENT	2021	MH	1983	15	DSL	0.15148847	18.49524171	1.310143994	1.369382891	1744.980144	0.104442258	0.274286578	2.248580323	2.559859201	6.063712384	0.016496338
SACRAMENT	2021	LHD1	1980	35	GAS	43.6909319	4.297074508	0.01093134	0.01188883	830.7769323	0.29271999	0.173658951	1.751761878	2.55616682	32.70015655	0.008221211
SACRAMENT	2021	LHD1	1986	25	GAS	192.535063	3.587019166	0.014990818	0.016303883	1006.126523	0.30023924	0.148357141	1.751487073	2.555765826	38.32803486	0.009956438
SACRAMENT	2021	LHD2	1986	25	GAS	40.0321362	3.587019166	0.014990818	0.016303883	1142.556339	0.300464022	0.148358131	1.751487073	2.555765826	38.32803486	0.011306521
SACRAMENT	2021	MCY	2008	35	GAS	1086.33871	1.120712039	0.00021637	0.000232195	197.4108781	0.304309944	0.064400027	2.007519269	2.55461878	16.24729437	0.001953541
SACRAMENT	2021	MCY	2009	35	GAS	1132.84949	1.119772015	0.000242899	0.000260681	197.39465	0.304756366	0.064453301	2.007855473	2.553750107	16.23860132	0.00195338
SACRAMENT	2021	MCY	2010	35	GAS	485.826743	1.118712735	0.00029597	0.00031766	197.3763629	0.305159747	0.064495438	2.008364659	2.552765467	16.22880539	0.001953199
SACRAMENT	2021	MH	1983	30	GAS	2.58168652	4.638080531	0.012513853	0.013609957	1849.251325	0.312110068	0.172746363	1.748951795	2.552066354	51.7632924	0.018299841
SACRAMENT	2021	MCY	2011	35	GAS	578.773376	1.117616917	0.000402123	0.000431626	197.3574451	0.305540926	0.064532178	2.008719534	2.551754464	16.21867153	0.001953012
SACRAMENT	2021	MCY	2012	35	GAS	897.430887	1.11621815	0.000588021	0.00063116	197.3332971	0.305861765	0.064550414	2.008805433	2.550480188	16.20573598	0.001952773
SACRAMENT	2021	MCY	2013	35	GAS	1181.69229	1.114559284	0.000879927	0.000944557	197.3046586	0.306137892	0.064553942	2.008718865	2.548977298	16.19039497	0.00195249
SACRAMENT	2021	MCY	2014	35	GAS	1384.24206	1.11240337	0.001225084	0.001315061	197.2674388	0.306344297	0.064532573	2.008252217	2.547039763	16.17045712	0.001952121
SACRAMENT	2021	MCY	2015	35	GAS	1695.20713	1.109955218	0.001543763	0.001657116	197.2251735	0.306507186	0.064495952	2.007536284	2.544847835	16.14781635	0.001951703
SACRAMENT	2021	MCY	2016	35	GAS	1600.82218	1.107045779	0.001782865	0.001913722	197.1749438	0.306600442	0.06443544	2.006507406	2.542250811	16.12090913	0.001951206
SACRAMENT	2021	MH	1984	15	DSL	0.81835888	18.48487433	1.301611455	1.360464549	1744.980144	0.1036117	0.274286578	2.230698905	2.539502397	6.01547195	0.016496338
SACRAMENT	2021	LHD1	1987	25	GAS	174.745234	3.655781286	0.014990818	0.016303883	1005.759017	0.298697602	0.150335704	1.740138037	2.539205339	38.12705668	0.009952801
SACRAMENT	2021	LHD2	1987	25	GAS	17.9122135	3.655781286	0.014990818	0.016303883	1142.188832	0.29890071	0.150336594	1.740138037	2.539205339	38.12705668	0.011302884
SACRAMENT	2021	MCY	2017	35	GAS	1994.72241	1.103613947	0.001915809	0.002056359	197.1156946	0.306632139	0.064350769	2.005083177	2.539196876	16.08917007	0.00195062
SACRAMENT	2021	MCY	2018	35	GAS	2325.10688	1.099677414	0.001995675	0.002142011	197.0477311	0.30659356	0.064240973	2.003303264	2.535700421	16.05276255	0.001949947
SACRAMENT	2021	MH	1994	5	GAS	3.32403853	4.017028446	0.009963166	0.010835852	4229.810154	0.393383606	0.190954939	1.737055737	2.534707653	11.201335	0.0418574
SACRAMENT	2021	MCY	2019	35	GAS	2683.65717	1.095109347	0.002048998	0.002199168	196.9688636	0.306483667	0.064102511	2.001057999	2.531651236	16.01051328	0.001949167
SACRAMENT	2021	MH	1984	65	GAS	3.56689325	6.142466212	0.012601627	0.013705419	1964.105328	0.310086592	0.228926088	1.734479565	2.530948509	85.49536654	0.019436414
SACRAMENT	2021	MCY	2020	35	GAS	3011.52537	1.08997435	0.002049211	0.002199318	196.8802078	0.306300975	0.063936795	1.998387671	2.527106423	15.96301967	0.001948289
SACRAMENT	2021	LDT2	1997	5	GAS	1.62718181	2.48527679	0.017995549	0.019571802	1144.496927	0.35543218	0.132288736	1.731492775	2.526590192	18.09943285	0.011325725
SACRAMENT	2021	LDT2	1992	10	GAS	21.2444131	3.643025124	0.039529464	0.042991899	1042.115894	0.337733513	0.166199711	1.730758777	2.525519145	24.08823517	0.010312582
SACRAMENT	2021	LHD1	1981	35	GAS	33.9513351	4.242800552	0.01093134	0.01188883	830.2920566	0.289681369	0.172059114	1.730711784	2.525450573	32.45152413	0.008216413
SACRAMENT	2021	LHD2	1981	35	GAS	4.62186755	4.242800552	0.01093134	0.01188883	942.5103838	0.289699583	0.17209399	1.730711784	2.525450573	32.45152413	0.009326904

SACRAMENT	2021	MCY	2021	35	GAS	2410.84873	1.084085956	0.002049435	0.002199476	196.778546	0.306031817	0.063736602	1.995209941	2.521900663	15.90855736	0.001947283
SACRAMENT	2021	MH	1987	5	GAS	1.03832429	4.541357891	0.034871081	0.037925482	4234.055723	0.391289691	0.207964652	1.726782836	2.519717461	13.90774462	0.041899414
SACRAMENT	2021	LDT2	1984	10	GAS	2.5259134	4.096243848	0.057206375	0.062217153	1179.443202	0.327099697	0.180606902	1.72606622	2.518671776	33.51076548	0.011671547
SACRAMENT	2021	MH	1985	15	DSL	0.52137582	18.47419249	1.292820121	1.35127571	1744.980144	0.102755952	0.274286578	2.212275138	2.518528163	5.965768367	0.016496338
SACRAMENT	2021	MH	1984	30	GAS	11.0141351	4.628155981	0.012513853	0.013609957	1849.159109	0.308510178	0.17248864	1.725661839	2.518081704	51.76847649	0.018298928
SACRAMENT	2021	MH	1997	5	DSL	1.32065142	27.72834443	1.009589656	1.05523882	2091.138895	0.102708847	0.328697914	2.211261012	2.517373647	4.197317509	0.019768783
SACRAMENT	2021	LDT2	1993	10	GAS	32.5318847	3.648071487	0.039529464	0.042991899	948.3281829	0.336510663	0.166624042	1.71955108	2.509164899	24.36328049	0.009384476
SACRAMENT	2021	LHD1	1982	35	GAS	19.3836991	4.210461283	0.01093134	0.01188883	829.8401826	0.287447772	0.171217001	1.715245769	2.502882599	32.20852019	0.008211941
SACRAMENT	2021	LHD2	1982	35	GAS	1.33844807	4.210461283	0.01093134	0.01188883	942.0585098	0.287464553	0.171246272	1.715245769	2.502882599	32.20852019	0.009322433
SACRAMENT	2021	MH	1986	15	DSL	0.72362084	18.46319619	1.283769993	1.341816375	1744.980144	0.101875012	0.274286578	2.193309022	2.496936501	5.914601637	0.016496338
SACRAMENT	2021	LDT2	1981	10	GAS	18.6089925	3.685537702	0.039075486	0.042498156	1040.867632	0.332769747	0.167590502	1.708927736	2.493663341	24.20707955	0.010300229
SACRAMENT	2021	LDA	1980	15	GAS	9.30808359	2.602513666	0.107808862	0.117251974	892.1280502	0.291604835	0.116999962	1.707619985	2.491755073	38.77556601	0.00882833
SACRAMENT	2021	MDV	1978	70	GAS	5.19340154	5.7312138	0.058318214	0.063125031	867.2873597	0.295256049	0.2182843	1.776644082	2.489716611	112.402538	0.008582511
SACRAMENT	2021	MDV	1995	10	GAS	41.5702115	2.711660778	0.039529464	0.042991899	951.2625599	0.334922859	0.13555441	1.703380508	2.485568839	19.0757143	0.009413514
SACRAMENT	2021	LDA	1983	10	GAS	5.80965097	2.420706887	0.059989029	0.065243543	796.9888563	0.314110549	0.121012903	1.703271867	2.48541031	32.69404638	0.007886851
SACRAMENT	2021	LDT2	1981	20	GAS	7.86230391	2.746091725	0.031187548	0.033919304	817.6501867	0.305323122	0.121974486	1.700514942	2.481387411	35.34797395	0.008091311
SACRAMENT	2021	LHD1	1983	35	GAS	20.9854958	4.269883504	0.01093134	0.01188883	829.4278758	0.285316914	0.173100965	1.700507256	2.481376196	31.98849935	0.008207861
SACRAMENT	2021	LHD2	1983	35	GAS	4.96034934	4.269883504	0.01093134	0.01188883	941.6462031	0.285332332	0.173119844	1.700507256	2.481376196	31.98849935	0.009318353
SACRAMENT	2021	MH	1988	5	GAS	1.17300667	4.487741607	0.034871081	0.037925482	4233.587946	0.3860435	0.206254194	1.699987967	2.480618451	13.68552813	0.041894785
SACRAMENT	2021	MDV	1979	70	GAS	3.65801735	5.646261403	0.05831832	0.063125106	865.7706032	0.294297458	0.216017574	1.769995247	2.48034092	111.5422993	0.008567502
SACRAMENT	2021	MH	1998	5	DSL	1.13863939	27.48586949	1.021982279	1.068191782	2142.255624	0.101057669	0.336732751	2.175712108	2.476903583	4.127113111	0.02025202
SACRAMENT	2021	MDV	1985	10	GAS	2.91563685	3.494010204	0.05815764	0.06325174	1196.309483	0.316260954	0.163248761	1.686925416	2.461557608	27.31773316	0.011838452
SACRAMENT	2021	LDT1	1977	70	GAS	0.6578911	4.893865603	0.058317815	0.063124749	699.3018625	0.29054451	0.195183865	1.756170606	2.461459772	111.4111643	0.006920159
SACRAMENT	2021	LDT2	1977	70	GAS	1.0316473	4.893644651	0.058317945	0.063124841	714.9045862	0.290539394	0.195176994	1.756295763	2.461437278	111.4049875	0.00707456
SACRAMENT	2021	LDT2	1978	70	GAS	1.24600845	4.809387123	0.058318065	0.063124925	712.9317832	0.289969198	0.192880739	1.749688806	2.452091518	110.1161466	0.007055038
SACRAMENT	2021	LDT1	1978	70	GAS	0.70452738	4.808885541	0.058317889	0.063124801	697.320835	0.289972101	0.192867627	1.749517269	2.452075866	110.1190206	0.006900555
SACRAMENT	2021	MH	1989	5	GAS	2.19837137	4.429509834	0.034871081	0.037925482	4228.108419	0.380760954	0.204373489	1.673068698	2.441337917	10.30181809	0.04184056
SACRAMENT	2021	LDA	1977	10	DSL	0.05377253	1.504236021	1.491378981	1.558812521	795.5397539	0.099323142	0.125047771	2.138368766	2.434390672	4.276692926	0.007520712
SACRAMENT	2021	LDA	1978	10	DSL	0.08492407	1.504236021	1.491378981	1.558812521	795.5397539	0.099323142	0.125047771	2.138368766	2.434390672	4.276692926	0.007520712
SACRAMENT	2021	LDA	1979	10	DSL	0.1991111	1.504236021	1.491378981	1.558812521	795.5397539	0.099323142	0.125047771	2.138368766	2.434390672	4.276692926	0.007520712
SACRAMENT	2021	LDT2	1978	10	DSL	0.06164589	1.504236021	1.491378981	1.558812521	1072.952391	0.099323142	0.168653174	2.138368766	2.434390672	4.276692926	0.010143259
SACRAMENT	2021	LDT2	1979	10	DSL	0.10093116	1.504236021	1.491378981	1.558812521	1072.952391	0.099323142	0.168653174	2.138368766	2.434390672	4.276692926	0.010143259
SACRAMENT	2021	MDV	1978	10	DSL	0.025919	1.504236021	1.491378981	1.558812521	1152.25134	0.099323142	0.181117865	2.138368766	2.434390672	4.276692926	0.010892919
SACRAMENT	2021	LDT2	1994	10	GAS	42.1436816	3.575499741	0.039855397	0.043346381	945.5324288	0.328035552	0.164224179	1.664357489	2.428626542	22.08974933	0.00935681
SACRAMENT	2021	MDV	1981	70	GAS	1.19951465	3.805727559	0.022512006	0.024396185	700.8482743	0.287002988	0.163854827	1.693889782	2.428448557	54.13562951	0.006935462
SACRAMENT	2021	MH	1999	5	DSL	1.56123273	27.41495429	1.010276073	1.055956274	2142.255624	0.099013727	0.336732751	2.131707252	2.42680698	4.043678594	0.02025202
SACRAMENT	2021	LDT1	1980	20	GAS	7.15315046	2.206803463	0.079672685	0.086359314	723.9238332	0.299081086	0.099372974	1.687444679	2.421434703	39.83652416	0.007163813
SACRAMENT	2021	MH	1977	35	GAS	1.2132226	4.885622364	0.01093134	0.01188883	1712.902255	0.292392398	0.181764952	1.65714821	2.418106777	47.05056481	0.016950556
SACRAMENT	2021	MH	1987	15	DSL	0.75845431	18.39736515	1.288173983	1.346419495	1690.702138	0.098619319	0.265754832	2.12321587	2.417140107	5.723421211	0.015983215
SACRAMENT	2021	LDT2	1996	10	GAS	66.3049803	2.744869437	0.01148038	0.012485961	945.9212478	0.32506569	0.135168437	1.654367653	2.414049395	21.52818773	0.009360658
SACRAMENT	2021	LDT2	1990	10	GAS	15.1944862	3.822288008	0.067345622	0.073244509	1041.114363	0.320373626	0.172523426	1.648892571	2.406060169	24.72828105	0.010302671
SACRAMENT	2021	MH	1990	5	GAS	2.15363422	4.367291719	0.034871081	0.037925482	4227.921248	0.375333001	0.202368707	1.645479495	2.401079817	10.25879283	0.041838708
SACRAMENT	2021	LDT2	1983	10	GAS	1.14377175	4.291655165	0.05597015	0.060872645	1175.273071	0.311362041	0.187897663	1.642008859	2.396015473	32.41281371	0.01163028
SACRAMENT	2021	MH	1977	60	GAS	2.02305121	6.080231186	0.010986023	0.011948303	1879.851553	0.289503733	0.226209242	1.640776559	2.394217304	66.66377077	0.018602655
SACRAMENT	2021	MH	1988	15	DSL	0.78400697	18.38182887	1.279655466	1.337515808	1690.702138	0.097512014	0.265754832	2.099376251	2.390000286	5.659155915	0.015983215
SACRAMENT	2021	MH	1978	35	GAS	2.43542618	4.883435167	0.01093134	0.01188883	1712.804946	0.288932025	0.181708353	1.634517809	2.38508455	47.05074158	0.016949593
SACRAMENT	2021	MH	2000	5	DSL	2.69159725	27.34256065	0.998325837	1.043465702	2142.255624	0.096927178	0.336732751	2.086785085	2.37566608	3.958504802	0.02025202
SACRAMENT	2021	MH	1989	15	DSL	1.01156523	18.36587231	1.270906533	1.328371287	1690.702138	0.096374758	0.265754832	2.074891792	2.362126357	5.593152321	0.015983215
SACRAMENT	2021	MH	1978	60	GAS	4.06107824	6.077509187	0.010986023	0.011948303	1879.755325	0.286077547	0.226138803	1.618369734	2.361521316	66.66402123	0.018601703
SACRAMENT	2021	MH	1991	5	GAS	2.07727749	4.30171151	0.034871081	0.037925482	4227.733976	0.369687355	0.200246075	1.616861719	2.359320825	10.21850213	0.041836855
SACRAMENT	2021	LDT2	1995	10	GAS	60.6440383	2.606587354	0.04001834	0.043523596	943.6169212	0.320563916	0.131661919	1.61581621	2.357795221	20.29440837	0.009337854
SACRAMENT	2021	LDT1	1982	15	GAS	6.6590232	2.209661803	0.0412654	0.044879888	699.2788015	0.30318645	0.110205764	1.612638608	2.353158471	40.38792913	0.006919931
SACRAMENT	2021	LDT2	1980	25	GAS	25.123363	3.045463425	0.063519818	0.068851035	627.065936	0.282781984	0.125702702	1.639019546	2.351961103	33.15268728	0.006205326
SACRAMENT	2021	MH	1979	35	GAS	2.0477951	4.883599253	0.01093134	0.01188883	1712.809898	0.285434925	0.18171274	1.611688988	2.351772788	47.11597309	0.016949642
SACRAMENT	2021	LHD1	1977	50	GAS	36.5286909	4.856270248	0.009568037	0.010406114	835.8028167	0.268362999	0.19446287	1.610044872	2.349373698	36.25645539	0.008270946
SACRAMENT	2021	LDT2	1989	10	GAS	11.366668	3.908501875	0.065745059	0.07150375	1040.422891	0.311813617	0.175520316	1.608323066	2.346861242	25.03421187	0.010295828
SACRAMENT	2021	MDV	1982	70	GAS	1.02426074	3.805081889	0.022132619	0.024022957	697.2292373	0.277868717	0.16392454	1.623175207	2.345224812	51.77426922	0.006899649
SACRAMENT	2021	LDT2	1988	10	GAS	8.88041781	3.897860719	0.065807418	0.071571572	1037.128875	0.31066039	0.174870489	1.605702762	2.343037701	24.87946003	0.010263231
SACRAMENT	2021	LHD1	1978	50	GAS	50.5150835	4.806374735	0.009568037	0.010406114	835.3986448	0.266905647	0.19302137	1.59989052	2.334556492	36.02909529	0.008266947
SACRAMENT	2021	MH	1990	15	DSL	1.25479405	18.34949546	1.261927185	1.318985933	1690.702138	0.09520755	0.265754832	2.049762492	2.33351832	5.525410431	0.015983215
SACRAMENT	2021	LHD1	1977	55	GAS	10.047115	5.37723343	0.010022438	0.010900316	872.4629205	0.266083744	0.215324146	1.596370476	2.329420051	39.42228829	0.008633728
SACRAMENT	2021	MH	1979	60	GAS	3.4147026	6.077713394	0.010986023	0.011948303	1879.804351	0.282614995	0.226144263	1.595766448	2.328538655	66.75644474	0.018602188
SACRAMENT	2021	LHD1	1977	40	GAS	4.01847729	4.765093	0.009992473	0.010867726	803.989222	0.265421494	0.190811798	1.592397306	2.323622411	31.78905575	0.007956125
SACRAMENT	2021	MH	2001	5	DSL	2.22359288	27.26868859	0.986131571	1.030720065	2142.255624	0.094798022	0.336732751	2.040945607	2.323480883	3.871591735	0.02025202
SACRAMENT	2021	LHD1	1979	50	GAS	55.5801174	4.76012755	0.009568037	0.010406114	834.9691077	0.265616794	0.191797696	1.590912042	2.321455117	35.78253364	0.008262696
SACRAMENT	2021	LHD2	1979	50	GAS	0.86503416	4.76012755	0.009568037	0.010406114	947.187435	0.265636032	0.191836892	1.590912042	2.321455117	35.78253364	0.009373188
SACRAMENT	2021	MH	1980	35	GAS	0.16434621	4.881844318	0.01093134	0.01188883	1712.868139	0.281906923	0.181667314	1.588694573	2.318219391	47.21527384	0.016950219
SACRAMENT	2021	MH	1992	5	GAS	2.7648857	4.233759539	0.034871081	0.037925482	4227.54472	0.363693829	0.198036215	1.586624247	2.315198377	10.18136601	0.041834982
SACRAMENT	2021	LHD1	1978	55	GAS	13.8940335	5.321985306	0.010022438	0.010900316	872.0276527	0.26463877	0.213728008	1.586302367	2.31472869	39.17507562	0.008629421
SACRAMENT	2021	LHD1	1978	40	GAS	5.5571035	4.716134284	0.009992473	0.010867726	803.6299353	0.263980117	0.189397363	1.582354255	2.308967615	31.5897102	0.00795257
SACRAMENT	2021	LHD1	1980	50	GAS	117.232142	4.713156244	0.009568037	0.010406114	834.502704	0.26423096	0.190474186	1.58127131	2.307387383	35.5145151	0.008258081
SACRAMENT	2021	LHD1	1979	55	GAS	15.287157	5.270776889	0.010022438	0.010900316	871.564319	0.263360863	0.212373062	1.577400144	2.301738588	38.90698475	0.008624835
SACRAMENT	2021	LHD2	1979	55	GAS	0.23792524	5.270776889	0.010022438	0.010900316	988.3943583	0.263379938	0.212416462	1.577400144	2.301738588	38.90698475	0.009780963
SACRAMENT	2021	MCY	2008	60	GAS	726.371198	1.151974949	0.000191916	0.000205954	211.983518	0.273995364	0.066196503	1.807535321	2.300134175	17.2913979	0.002097749
SACRAMENT	2021	MCY	2009	60	GAS	757.470239	1.151087361	0.000215447	0.00023122	211.9718802	0.274403666	0.066255791	1.807879881	2.299405262	17.28534723	0.002097634
SACRAMENT	2021	MCY	2010	60	GAS	324.843947	1.150087168	0.000262521	0.000281759	211.9587658	0.274774044	0.06630422	1.808385557	2.298578686	17.2785289	0.002097504
SACRAMENT	2021	MCY	2011	60	GAS	386.991928	1.149052477	0.000356676	0.000382846	211.9451991	0.275124702	0.066347295	1.80875397	2.29773044	17.27147536	0.00209737
SACRAMENT	2021	MCY	2012	60	GAS	600.059581	1.147731735	0.000521565	0.000559828	211.9278816	0.275423109	0.066372831	1.808893762	2.296662298	17.26247175	0.002097198
SACRAMENT	2021	LHD1	1979	40	GAS	6.11430178	4.670755396	0.009992473	0.010867726	803.2489781	0.26270539	0.188196664	1.57347419	2.296009844	31.37352906	0.0079488
SACRAMENT	2021	LHD2	1979	40	GAS	0.09516137	4.670755396	0.009992473	0.010867726	911.8804182	0.262724418	0.188235123	1.57347419	2.296009844	31.37352906	0.009023796
SACRAMENT	2021	MCY	2013	60	GAS	790.128565	1.146165403	0.000780481	0.000837807	211.9073438	0.275683054	0.066384531	1.808889938	2.295403038	17.25179384	0.002096995
SACRAMENT	2021	MH	1980	60	GAS	0.27404765	6.07552935	0.010986023	0.011948303	1879.929184	0.279121849	0.22608773	1.572999204	2.295316746	66.89713939	0.018603423
SACRAMENT	2021	MCY	2014	60	GAS	925.561758	1.144129749	0.00108663	0.001166438	211.880652	0.275883638	0.066373079	1.808566156	2.293780569	17.23791637	0.002096731
SACRAMENT	2021	MDV	1978	65	GAS	19.6295197	5.439493772	0.053533023	0.057945426	843.104479	0.271831041	0.207173581	1.635688794	2.292187613	99.46055619	0.008343202
SACRAMENT	2021	MCY	2015	60	GAS	1133.48593	1.141818159	0.001369293	0.001469835	211.8503419	0.276047072	0.066347406	1.80803106	2.291945589	17.22215756	0.002096431
SACRAMENT	2021	MH	1985	65	GAS	3.29837896	6.298766554	0.012601627	0.013705419	1957.89477	0.284343629	0.233148881	1.570241065	2.291292076	82.02404409	0.019374956
SACRAMENT	2021	MCY	2016	60	GAS	1070.37623	1.139071013	0.001581372	0.001697441	211.8143203	0.276150999	0.066299464	1.807234914	2.289771975	17.20342915	0.002096074
SACRAMENT	2021	MDV	1978	30	GAS	112.661524	4.136947329	0.053160149	0.057541817	757.9636176	0.271506661	0.157563595	1.633736902	2.289452312	60.34450724	0.007500664
SACRAMENT	2021	LHD1	1980	55	GAS	32.2443753	5.21876667	0.010022438	0.010900316	871.0611731	0.261986799	0.210907571	1.567841292	2.287790333	38.61556343	0.008619856
SACRAMENT	2021	MCY	2017	60	GAS	1333.75428	1.135830613	0.001699291	0.001823957	211.7718304	0.276203119	0.066229295	1.806106266	2.287216531	17.1813376	0.002095654
SACRAMENT	2021	MDV	1980	60	GAS	124.735869	5.29549926	0.046671339	0.050517583	785.2936859	0.266090412	0.201756049	1.62155392	2.285529503	76.59588017	0.007771118
SACRAMENT	2021	MH	1981	35	GAS	2.60934833	4.879225899	0.01093134	0.01188883	1712.959478	0.278400621	0.181599461	1.565889025	2.284941589	47.3349417	0.016951123
SACRAMENT	2021	MDV	1980	35	GAS	186.551178	4.294097587	0.046439031	0.05026613	699.4693976	0.265963197	0.163603113	1.620778671	2.284436813	53.77449834	0.006921817
SACRAMENT	2021	MCY	2018	60	GAS	1554.66307	1.132113666	0.001770132	0.001899929	211.7230914	0.276195472	0.066135834	1.804680075	2.284291205	17.15599663	0.002095172
SACRAMENT	2021	MDV	1979	65	GAS	13.8262222	5.357506351	0.053533121	0.057945494	841.4831943	0.270864924	0.204970235	1.629064796	2.28285137	98.63758062	0.008327158
SACRAMENT	2021	LHD1	1980	40	GAS	12.8965668	4.624665984	0.009992473	0.010867726	802.8353761	0.261334747	0.186898003	1.563939128	2.282096305	31.13853486	0.007944707
SACRAMENT	2021	MCY	2019	60	GAS	1794.40469	1.127800412	0.001817428	0.001950626	211.6665327	0.276128004	0.066016091	1.802863286	2.280903937	17.1265896	0.002094612
SACRAMENT	2021	MDV	1979	30	GAS	79.35412	4.074685209	0.053160245	0.057541885	756.8818951	0.270547923	0.155891404	1.627158254	2.280179683	59.84799089	0.00748996
SACRAMENT	2021	LHD1	1981	50	GAS	91.0987148	4.653626991	0.009568037	0.010406114	833.9927443	0.261488073	0.188719438	1.562269921	2.279660601	35.24448398	0.008253034
SACRAMENT	2021	LHD2	1981	50	GAS	12.4014621	4.653626991	0.009568037	0.010406114	946.2110715	0.261504514	0.188757691	1.562269921	2.279660601	35.24448398	0.009363526
SACRAMENT	2021	LDT2	1987	10	GAS	5.56785156	4.130627054	0.062788546	0.068288273	1036.871272	0.300941347	0.182488268	1.561433299	2.278439805	25.96455531	0.010260682
SACRAMENT	2021	MCY	2020	60	GAS	2013.631	1.122951853	0.001817617	0.00195076	211.6029547	0.275998945	0.065871222	1.800689301	2.277102469	17.09353231	0.002093983
SACRAMENT	2021	MH	1985	30	GAS	10.1849955	4.748391396	0.012513853	0.013609957	1845.070008	0.282581188	0.175761735	1.560508275	2.277090012	49.63803693	0.018258463
SACRAMENT	2021	MCY	2021	60	GAS	1611.99364	1.117391922	0.001817816	0.0019509	211.5300499	0.275797282	0.065694758	1.798092377	2.272748479	17.05562454	0.002093261
SACRAMENT	2021	LDT2	1986	10	GAS	4.83432845	4.176980581	0.061494574	0.06688096	1036.141284	0.299037155	0.183911623	1.557265851	2.272358675	26.62624018	0.010253458
SACRAMENT	2021	MH	2002	5	DSL	2.67223371	27.19333811	0.973693274	1.017719363	2142.255624	0.092626259	0.336732751	1.99418882	2.270251389	3.782939392	0.02025202
SACRAMENT	2021	MH	1993	5	GAS	2.6099238	4.164561395	0.034871081	0.037925482	4227.350916	0.357267732	0.195774704	1.554210729	2.267900648	10.14728067	0.041833064
SACRAMENT	2021	LDT1	1977	65	GAS	2.4866335	4.643690842	0.053532657	0.057945167	675.8356238	0.267420624	0.185206052	1.616400324	2.265556866	98.52188535	0.006687941

SACRAMENT	2021	LDT2	1977	65	GAS	3.89932126	4.643481344	0.053532777	0.057945251	691.3649662	0.267415929	0.185199538	1.616515598	2.265536271	98.51634661	0.006841617
SACRAMENT	2021	LDT1	1977	30	GAS	14.2717664	3.531774348	0.053159785	0.05754156	596.9412145	0.267107555	0.140859072	1.614508009	2.262904585	59.77776546	0.005907217
SACRAMENT	2021	LDT2	1977	30	GAS	22.3797363	3.531614992	0.053159904	0.057541644	611.9447175	0.267102865	0.140854117	1.614623147	2.262884013	59.77441278	0.006055689
SACRAMENT	2021	MH	1981	60	GAS	4.35109378	6.072270688	0.010986023	0.011948303	1880.100565	0.275650186	0.226003285	1.550418962	2.262367709	67.06669124	0.018605119
SACRAMENT	2021	LHD1	1981	55	GAS	25.0564486	5.152851334	0.010022438	0.010900316	870.5145355	0.259267208	0.20896458	1.549001285	2.260299039	38.32195379	0.008614447
SACRAMENT	2021	LHD2	1981	55	GAS	3.41098771	5.152851334	0.010022438	0.010900316	987.3445749	0.25928351	0.209006937	1.549001285	2.260299039	38.32195379	0.009770575
SACRAMENT	2021	MCY	2008	40	GAS	1331.03532	1.10189399	0.00019063	0.000204573	189.93024	0.269195344	0.063318676	1.775869803	2.259839006	15.38846628	0.001879514
SACRAMENT	2021	LHD1	1982	50	GAS	52.0106228	4.618156341	0.009568037	0.010406114	833.5142105	0.259471861	0.187795784	1.548309138	2.25928906	34.98056576	0.008248299
SACRAMENT	2021	LHD2	1982	50	GAS	3.59134329	4.618156341	0.009568037	0.010406114	945.7325378	0.259487009	0.187827889	1.548309138	2.25928906	34.98056576	0.00935879
SACRAMENT	2021	MCY	2009	40	GAS	1388.02261	1.100993877	0.000214003	0.000229669	189.9153718	0.269592008	0.063372445	1.776178776	2.259085278	15.38042538	0.001879367
SACRAMENT	2021	LHD1	1977	45	GAS	4.94709919	4.86991176	0.009558497	0.010395737	808.0707828	0.25800667	0.195009126	1.547912039	2.258709614	32.81843492	0.007996515
SACRAMENT	2021	MCY	2010	40	GAS	595.258691	1.099979571	0.00026076	0.00027987	189.8986173	0.269950827	0.063415443	1.776642254	2.258230831	15.37136434	0.001879201
SACRAMENT	2021	LDT2	1978	65	GAS	4.70954289	4.564671587	0.053532886	0.057945329	689.8609721	0.266964676	0.183066409	1.610878359	2.257556399	97.44025687	0.006826734
SACRAMENT	2021	LDT1	1978	65	GAS	2.66290482	4.564196848	0.053532724	0.057945215	674.3202108	0.266967288	0.183054016	1.610720057	2.257541465	97.44283809	0.006672945
SACRAMENT	2021	MCY	2011	40	GAS	709.141453	1.098930279	0.000354285	0.000380279	189.8812848	0.270290081	0.063453195	1.77696969	2.257353634	15.36199072	0.001879029
SACRAMENT	2021	MCY	2012	40	GAS	1099.57622	1.0975909	0.000518068	0.000556075	189.8591604	0.270576531	0.063473208	1.777062935	2.256248283	15.35002559	0.00187881
SACRAMENT	2021	MDV	1981	30	GAS	26.0213172	2.746798702	0.02069563	0.022427785	638.0769601	0.266571952	0.11826286	1.573305937	2.25557328	29.51909557	0.006314289
SACRAMENT	2021	MCY	2013	40	GAS	1447.8672	1.096002466	0.000775248	0.00083219	189.8329219	0.270823925	0.063479153	1.777006839	2.254944766	15.33583546	0.001878551
SACRAMENT	2021	LDT2	1978	30	GAS	27.0299165	3.471599508	0.053160013	0.057541721	611.0894829	0.266646093	0.139228692	1.608956011	2.254862336	59.11846227	0.006047226
SACRAMENT	2021	LDT1	1978	30	GAS	15.2834567	3.471238271	0.053159852	0.057541608	596.0769127	0.266648702	0.13921926	1.608797902	2.254847424	59.1200244	0.005898664
SACRAMENT	2021	LHD1	1981	40	GAS	10.0216599	4.566254402	0.009992473	0.010867726	802.3790538	0.258621924	0.185176201	1.545146012	2.254673433	30.90177608	0.007940191
SACRAMENT	2021	LHD2	1981	40	GAS	1.36426991	4.566254402	0.009992473	0.010867726	911.0104939	0.258638185	0.185213736	1.545146012	2.254673433	30.90177608	0.009015187
SACRAMENT	2021	MCY	2014	40	GAS	1696.04108	1.093938087	0.001079344	0.001158617	189.7988213	0.271010587	0.063461368	1.776620671	2.253264533	15.31739333	0.001878213
SACRAMENT	2021	MH	1982	35	GAS	3.92478837	4.874819199	0.01093134	0.01188883	1713.03901	0.275003623	0.181485163	1.543837484	2.252764033	47.44510935	0.01695191
SACRAMENT	2021	MCY	2015	40	GAS	2077.0507	1.091593878	0.001360112	0.00145998	189.7600978	0.271159314	0.063429033	1.776017615	2.251363833	15.29645106	0.00187783
SACRAMENT	2021	MCY	2016	40	GAS	1961.40564	1.088807967	0.00157077	0.00168606	189.7140775	0.271247325	0.063373911	1.775143451	2.249111996	15.27156241	0.001877375
SACRAMENT	2021	MCY	2017	40	GAS	2444.03147	1.085521842	0.001687898	0.001811727	189.6597934	0.271281881	0.063295834	1.77392604	2.246464141	15.2422044	0.001876837
SACRAMENT	2021	LHD1	1978	45	GAS	6.84128345	4.819876088	0.009558497	0.010395737	807.7024742	0.256605559	0.193563577	1.538149551	2.244464215	32.61263425	0.007992871
SACRAMENT	2021	LDT2	1985	10	GAS	3.18770121	4.170525877	0.059350375	0.064548948	1170.864174	0.294121748	0.183627863	1.537676731	2.243774276	27.58400258	0.01158665
SACRAMENT	2021	MCY	2018	40	GAS	2848.83468	1.081752445	0.001758263	0.00188719	189.5975253	0.27125524	0.063193832	1.772400262	2.243432721	15.20852816	0.001876221
SACRAMENT	2021	MDV	1981	65	GAS	4.53381013	3.607666159	0.020679398	0.022410194	687.9905049	0.265050315	0.155327334	1.564325249	2.242698099	48.01155815	0.006808224
SACRAMENT	2021	LHD1	1982	55	GAS	14.3053774	5.11357552	0.010022438	0.010900316	869.9999854	0.257268121	0.20794184	1.535159074	2.240100517	38.03499082	0.008609355
SACRAMENT	2021	LHD2	1982	55	GAS	0.987789	5.11357552	0.010022438	0.010900316	986.8300247	0.257283139	0.207977389	1.535159074	2.240100517	38.03499082	0.009765483
SACRAMENT	2021	MCY	2019	40	GAS	3288.14804	1.077378327	0.001805242	0.001937547	189.5252669	0.271166726	0.063064621	1.770470678	2.239922222	15.16944841	0.001875506
SACRAMENT	2021	LHD1	1983	50	GAS	56.3085868	4.68333236	0.009568037	0.010406114	833.078074	0.257548389	0.189862171	1.535005054	2.239875771	34.74160869	0.008243983
SACRAMENT	2021	LHD2	1983	50	GAS	13.3096813	4.68333236	0.009568037	0.010406114	945.2964013	0.257562307	0.189882877	1.535005054	2.239875771	34.74160869	0.009354474
SACRAMENT	2021	MCY	2020	40	GAS	3689.8682	1.072461349	0.00180543	0.00193768	189.4440404	0.271014907	0.0629095	1.768172132	2.235982146	15.12551776	0.001874702
SACRAMENT	2021	LHD1	1982	40	GAS	5.72162597	4.531449719	0.009992473	0.010867726	801.9527253	0.256627812	0.184269889	1.531338252	2.234525183	30.67037698	0.007935972
SACRAMENT	2021	LHD2	1982	40	GAS	0.39507935	4.531449719	0.009992473	0.010867726	910.5841654	0.256642793	0.184301391	1.531338252	2.234525183	30.67037698	0.009010968
SACRAMENT	2021	LHD1	1979	45	GAS	7.52724356	4.773498992	0.009558497	0.010395737	807.3114907	0.255366443	0.192336466	1.529517559	2.231868432	32.38945282	0.007989002
SACRAMENT	2021	LHD2	1979	45	GAS	0.11715202	4.773498992	0.009558497	0.010395737	916.3272401	0.25538494	0.192375771	1.529517559	2.231868432	32.38945282	0.009067801
SACRAMENT	2021	MCY	2021	40	GAS	2953.8898	1.066822962	0.001805628	0.001937819	189.3508976	0.270788049	0.06272166	1.765434106	2.231469157	15.07514118	0.001873781
SACRAMENT	2021	MH	1982	60	GAS	6.54459279	6.066786484	0.010986023	0.011948303	1880.253829	0.272286749	0.22586104	1.528585277	2.230508048	67.22278269	0.018606636
SACRAMENT	2021	LDT1	1979	20	GAS	10.3778724	2.20773795	0.079671203	0.086358269	724.8158335	0.277348714	0.099514267	1.553136884	2.225007013	40.81037239	0.00717264
SACRAMENT	2021	MH	1983	35	GAS	3.20864465	4.867856397	0.01093134	0.01188883	1713.054508	0.27178927	0.181304417	1.523008648	2.222370644	47.51155327	0.016952063
SACRAMENT	2021	LHD1	1983	55	GAS	15.4875205	5.185743388	0.010022438	0.010900316	869.5312632	0.255360985	0.210229901	1.521967984	2.220852109	37.77516856	0.008604717
SACRAMENT	2021	LHD2	1983	55	GAS	3.66079089	5.185743388	0.010022438	0.010900316	986.3613025	0.255374785	0.210252829	1.521967984	2.220852109	37.77516856	0.009760845
SACRAMENT	2021	LDA	1995	10	GAS	122.389749	1.655703712	0.042322146	0.046029195	688.6708599	0.303828192	0.094442952	1.521557875	2.22025368	18.01894225	0.006814956
SACRAMENT	2021	LHD1	1980	45	GAS	15.8768086	4.726395741	0.009558497	0.010395737	806.8869758	0.25403409	0.191009238	1.52024887	2.218343583	32.14684916	0.007984801
SACRAMENT	2021	LHD1	1983	40	GAS	6.19443982	4.595402048	0.009992473	0.010867726	801.5638878	0.254725423	0.186297479	1.518179993	2.215324681	30.46086341	0.007932124
SACRAMENT	2021	LHD2	1983	40	GAS	1.46418201	4.595402048	0.009992473	0.010867726	910.1953279	0.254739188	0.186317796	1.518179993	2.215324681	30.46086341	0.009007121
SACRAMENT	2021	MDV	1982	30	GAS	22.219498	2.747140841	0.020602061	0.022361675	637.8152659	0.2614807	0.118347992	1.527444303	2.206909189	28.94638146	0.006311699
SACRAMENT	2021	MH	1977	40	GAS	1.51033708	5.11767977	0.009992473	0.010867726	1657.71196	0.266784439	0.190398428	1.51201385	2.206327061	45.51982298	0.016404404
SACRAMENT	2021	MH	1983	60	GAS	5.35042165	6.058121171	0.010986023	0.011948303	1880.314117	0.269104152	0.225636099	1.507962218	2.200414929	67.31692401	0.018607232
SACRAMENT	2021	MH	1984	35	GAS	13.6888989	4.857440174	0.01093134	0.01188883	1712.974592	0.268654442	0.181033926	1.502727469	2.192776395	47.51631154	0.016951272
SACRAMENT	2021	LHD1	1981	45	GAS	12.3375453	4.666699268	0.009558497	0.010395737	806.4207653	0.251397053	0.189249561	1.501980759	2.191686797	31.90242375	0.007980187
SACRAMENT	2021	LHD2	1981	45	GAS	1.67953631	4.666699268	0.009558497	0.010395737	915.4365147	0.25141286	0.189287921	1.501980759	2.191686797	31.90242375	0.009058986
SACRAMENT	2021	LDT2	1982	20	GAS	11.5677641	2.975858697	0.031439798	0.034193649	815.143878	0.273528612	0.131275571	1.49452965	2.180814158	33.60737969	0.008066509
SACRAMENT	2021	MH	1977	55	GAS	1.75314663	5.8782974	0.010022438	0.010900316	1793.144675	0.263414776	0.218696486	1.492916121	2.1784597	55.82991528	0.01774462
SACRAMENT	2021	LDA	1994	10	GAS	87.4725909	1.680117356	0.041484398	0.045118067	689.3660104	0.296934592	0.095515518	1.492723804	2.178179071	18.27126929	0.006821836
SACRAMENT	2021	MH	1991	10	DSL	1.45403253	22.77489519	1.478272574	1.545113501	1980.339594	0.088853018	0.311281806	1.912953164	2.177769995	4.17757456	0.018721331
SACRAMENT	2021	MH	1978	40	GAS	3.03185455	5.115388686	0.009992473	0.010867726	1657.623189	0.263627129	0.190339141	1.491365438	2.176196946	45.519994	0.016403525
SACRAMENT	2021	MDV	1982	65	GAS	3.87140223	3.602580402	0.020352178	0.022090449	685.6927234	0.257363588	0.15520069	1.503394123	2.17216058	46.15416103	0.006785485
SACRAMENT	2021	LHD1	1982	45	GAS	7.04382509	4.631128978	0.009558497	0.010395737	805.984223	0.249458649	0.188323312	1.488558733	2.172101409	31.66353159	0.007975867
SACRAMENT	2021	LHD2	1982	45	GAS	0.48637745	4.631128978	0.009558497	0.010395737	914.9999725	0.249473211	0.188355508	1.488558733	2.172101409	31.66353159	0.009054666
SACRAMENT	2021	MH	1984	60	GAS	22.8262675	6.045158023	0.010986023	0.011948303	1880.238209	0.266000294	0.225299469	1.487881404	2.171113053	67.3236658	0.018606481
SACRAMENT	2021	LHD1	1984	30	GAS	105.18574	3.966883274	0.012513853	0.013609957	892.2109119	0.253645422	0.161292339	1.484114392	2.165616237	33.85337361	0.00882915
SACRAMENT	2021	LHD2	1984	30	GAS	9.82052259	3.966883274	0.012513853	0.013609957	1013.268354	0.253872889	0.161293567	1.484114392	2.165616237	33.85337361	0.010027112
SACRAMENT	2021	LDT2	1979	25	GAS	43.4290773	3.044550888	0.063518655	0.068850217	636.8487533	0.26223449	0.125788773	1.508557362	2.161146731	33.96892298	0.006302135
SACRAMENT	2021	LHD1	1983	45	GAS	7.62590054	4.696488081	0.009558497	0.010395737	805.586217	0.247609405	0.190395504	1.475768063	2.153437294	31.44723365	0.007971929
SACRAMENT	2021	LHD2	1983	45	GAS	1.80253691	4.696488081	0.009558497	0.010395737	914.6019664	0.247622785	0.190416268	1.475768063	2.153437294	31.44723365	0.009050728
SACRAMENT	2021	MH	1992	10	DSL	2.65849851	22.73856009	1.464467874	1.530684613	1980.339594	0.087699494	0.311281806	1.888118479	2.149497358	4.12337646	0.018721331
SACRAMENT	2021	LHD1	1985	30	GAS	125.467251	3.971661352	0.012513853	0.013609957	891.8580658	0.252060213	0.161428522	1.472541099	2.148728515	33.66225442	0.008825659
SACRAMENT	2021	LHD2	1985	30	GAS	16.793595	3.971661352	0.012513853	0.013609957	1012.915508	0.252267177	0.161429642	1.472541099	2.148728515	33.66225442	0.01002362
SACRAMENT	2021	MH	1978	55	GAS	3.51927108	5.875665802	0.010022438	0.010900316	1793.05709	0.260297345	0.218628387	1.472528512	2.148710148	55.83012503	0.017743753
SACRAMENT	2021	MDV	1984	25	GAS	86.1366954	2.692497288	0.02453979	0.02668926	726.5156477	0.261568816	0.114694653	1.470977879	2.146447468	35.98021875	0.007189461
SACRAMENT	2021	MH	1979	40	GAS	2.54929381	5.115560565	0.009992473	0.010867726	1657.633399	0.260436307	0.190343736	1.470535983	2.145802654	45.58310327	0.016403626
SACRAMENT	2021	LDA	1984	10	GAS	7.91467587	2.494733274	0.060334678	0.065619467	789.8909098	0.278877805	0.128089751	1.470210623	2.145327889	27.87663955	0.007816611
SACRAMENT	2021	LHD1	1986	30	GAS	170.264184	3.74943828	0.012513853	0.013609957	891.537452	0.25067298	0.155074706	1.462335452	2.133836459	33.48774934	0.008822486
SACRAMENT	2021	LHD2	1986	30	GAS	35.4015465	3.74943828	0.012513853	0.013609957	1012.594894	0.250860653	0.155075741	1.462335452	2.133836459	33.48774934	0.010020447
SACRAMENT	2021	MDV	1983	25	GAS	52.3569704	2.179424888	0.024758633	0.026927272	712.1273473	0.259086699	0.102614203	1.458543774	2.128303651	29.09152063	0.007047077
SACRAMENT	2021	MH	1993	10	DSL	2.94478894	22.70133816	1.45032623	1.515903546	1980.339594	0.086517816	0.311281806	1.862677632	2.120534645	4.067855479	0.018721331
SACRAMENT	2021	LHD1	1987	30	GAS	154.532136	3.821313927	0.012513853	0.013609957	891.2182556	0.24938585	0.157142858	1.452860019	2.12000993	33.31215185	0.008819327
SACRAMENT	2021	LHD2	1987	30	GAS	15.8402754	3.821313927	0.012513853	0.013609957	1012.275698	0.249555427	0.157143789	1.452860019	2.12000993	33.31215185	0.010017289
SACRAMENT	2021	MH	1979	55	GAS	2.95913139	5.875863227	0.010022438	0.010900316	1793.091092	0.257146825	0.218633665	1.451962147	2.118699757	55.90752835	0.01774409
SACRAMENT	2021	MH	1977	45	GAS	1.3773242	5.304752532	0.009558497	0.010395737	1664.715309	0.256176964	0.197358293	1.451895468	2.118602458	46.5774203	0.016473707
SACRAMENT	2021	MH	1980	40	GAS	0.20459409	5.113722274	0.009992473	0.010867726	1657.695204	0.257217291	0.190296153	1.449555437	2.115187891	45.67917337	0.016404238
SACRAMENT	2021	MCY	2008	55	GAS	940.91119	1.111704887	0.00017746	0.00019044	201.9920893	0.251880964	0.063882445	1.661647602	2.114488382	15.70768925	0.001998875
SACRAMENT	2021	MCY	2009	55	GAS	981.1956	1.110841945	0.000199219	0.000213803	201.979882	0.252255033	0.063939293	1.661955925	2.113807582	15.70119518	0.001998755
SACRAMENT	2021	MCY	2010	55	GAS	420.789406	1.109869526	0.000242746	0.000260536	201.966126	0.252594071	0.063985614	1.66241128	2.113035642	15.69387721	0.001998619
SACRAMENT	2021	MCY	2011	55	GAS	501.293329	1.108863566	0.00032981	0.000354008	201.9518955	0.252914927	0.064026752	1.662740113	2.112243364	15.68630679	0.001998478
SACRAMENT	2021	LDA	1977	25	GAS	77.3168067	2.488762659	0.063562897	0.068880502	644.1443386	0.217555736	0.099822963	1.503369393	2.112240902	34.43451501	0.00637433
SACRAMENT	2021	MCY	2012	55	GAS	777.292348	1.107579499	0.000482278	0.00051766	201.9337307	0.25318733	0.064050844	1.662856046	2.111245485	15.67664339	0.001998298
SACRAMENT	2021	MCY	2013	55	GAS	1023.49985	1.10605666	0.000721692	0.0007747	201.912188	0.253424015	0.06406148	1.662837604	2.110068949	15.66518301	0.001998085
SACRAMENT	2021	MCY	2014	55	GAS	1198.9344	1.104077533	0.00100478	0.001078577	201.8841903	0.253605441	0.064049576	1.662520547	2.108552851	15.65028859	0.001997808
SACRAMENT	2021	MCY	2015	55	GAS	1468.27076	1.101830131	0.001266152	0.001359121	201.8523972	0.253752306	0.064023829	1.662006585	2.106838065	15.63337498	0.001997493
SACRAMENT	2021	MH	1995	5	GAS	4.79456942	3.941013412	0.009963166	0.010835852	4228.488778	0.335055787	0.18842833	1.443144555	2.105833146	11.16730155	0.041844324
SACRAMENT	2021	MCY	2016	55	GAS	1386.52107	1.099159268	0.001462257	0.001569582	201.814613	0.253843825	0.063976407	1.66124847	2.104806719	15.61327416	0.001997119
SACRAMENT	2021	MCY	2008	45	GAS	515.755776	1.095606439	0.000176835	0.000189769	189.4391261	0.250603648	0.062957372	1.653221209	2.103765585	15.01637619	0.001874654
SACRAMENT	2021	MCY	2009	45	GAS	537.837475	1.094731189	0.000198517	0.000213049	189.4253577	0.250974293	0.063011969	1.653517903	2.103075435	15.00891508	0.001874517
SACRAMENT	2021	MCY	2017	55	GAS	1727.6901	1.096008847	0.001571294	0.001686569	201.7700442	0.25388699	0.063907322	1.660179964	2.102418406	15.58956374	0.001996678
SACRAMENT	2021	MCY	2010	45	GAS	230.653614	1.0937449	0.000241891	0.000259618	189.4098425	0.251309885	0.063056005	1.653959592	2.102292983	15.00050737	0.001874364
SACRAMENT	2021	MCY	2011	45	GAS	274.781438	1.092724592	0.000328647	0.00035276	189.393792	0.251627321	0.063094873	1.654274998	2.1014898	14.99180963	0.001874205
SACRAMENT	2021	MCY	2012	45	GAS	426.068924	1.09142221	0.000480578	0.000515835	189.3733042	0.251896051	0.063116475	1.654375322	2.100477933	14.98070724	0.001874002
SACRAMENT	2021	MH	1996	5	GAS	3.42367069	3.867003229	0.009963166	0.010835852	4228.419727	0.334290097	0.185953223	1.439266397	2.100174148	11.13428905	0.041843641
SACRAMENT	2021	MCY	2018	55	GAS	2013.8462	1.092395112	0.001636798	0.001756818	201.7189203	0.253874505	0.063815555	1.658833357	2.099684315	15.56236579	0.001996172
SACRAMENT	2021	MCY	2013	45	GAS	561.026336	1.089877651	0.000719147	0.000771968	189.3490066	0.252128811	0.063124411	1.654339146	2.099284773	14.96754027	0.001873762
SACRAMENT	2021	MCY	2014	45	GAS	657.189911	1.087870296	0.001001237	0.001074774	189.3174284	0.252305772	0.063109364	1.654000514	2.097747006	14.9504279	0.001873449

SACRAMENT	2021	MCY	2019	55	GAS	2324.39758	1.088201629	0.001680531	0.001803697	201.659594	0.253806144	0.063698166	1.657121959	2.09651837	15.53080381	0.001995585
SACRAMENT	2021	MCY	2015	45	GAS	804.825294	1.085590839	0.001261688	0.001354329	189.2815693	0.252447858	0.063080216	1.653462816	2.09600758	14.93099566	0.001873095
SACRAMENT	2021	MH	1997	5	GAS	5.92726127	3.798416036	0.009963166	0.010835852	4228.349726	0.333525488	0.183622833	1.435397117	2.094528104	11.10065303	0.041842948
SACRAMENT	2021	MCY	2016	45	GAS	760.014608	1.082881881	0.001457101	0.001564048	189.2389531	0.252534112	0.063028984	1.652677219	2.093946919	14.90790158	0.001872673
SACRAMENT	2021	MCY	2020	55	GAS	2608.37426	1.083487704	0.001680706	0.00180382	201.5929049	0.253680366	0.063556295	1.655077055	2.092965202	15.49532409	0.001994925
SACRAMENT	2021	MH	1977	50	GAS	1.34041951	5.606144954	0.009568037	0.010406114	1715.930128	0.25305884	0.208571313	1.434223349	2.092815344	49.56728065	0.01698052
SACRAMENT	2021	MCY	2017	45	GAS	947.024714	1.079686527	0.001565753	0.001680622	189.1886844	0.252571386	0.062955582	1.651577161	2.091523991	14.88066041	0.001872175
SACRAMENT	2021	MH	1978	45	GAS	2.76484416	5.302377699	0.009558497	0.010395737	1664.630085	0.25314519	0.197296838	1.432068046	2.089670331	46.5775953	0.016472864
SACRAMENT	2021	MCY	2021	55	GAS	2088.10985	1.078082162	0.00168089	0.00180395	201.5164323	0.253486787	0.063383622	1.652636517	2.088895531	15.45463844	0.001994168
SACRAMENT	2021	MCY	2018	45	GAS	1103.87975	1.076021249	0.001631027	0.001750624	189.1310223	0.252552449	0.062859027	1.650194951	2.088750169	14.84941237	0.001871605
SACRAMENT	2021	MH	1980	55	GAS	0.23748569	5.873751719	0.010022438	0.010900316	1793.18853	0.253968467	0.21857901	1.4312466	2.088471678	56.02535802	0.017745054
SACRAMENT	2021	MCY	2019	45	GAS	1274.10694	1.071767954	0.001674606	0.001797337	189.0641088	0.252476863	0.062736216	1.648442969	2.085538091	14.81315044	0.001870943
SACRAMENT	2021	MH	1981	40	GAS	3.2483697	5.110979485	0.009992473	0.010867726	1657.788984	0.254018073	0.190225076	1.428747217	2.084824586	45.79494796	0.016405166
SACRAMENT	2021	MDV	1980	40	GAS	228.571629	4.491041851	0.042450492	0.04594889	676.4224862	0.242696051	0.171106597	1.478988775	2.084588393	52.00521165	0.006693749
SACRAMENT	2021	MCY	2020	45	GAS	1429.76734	1.066986795	0.001674781	0.00179746	188.9888907	0.2523432	0.062588368	1.646353033	2.081933042	14.77238737	0.001870198
SACRAMENT	2021	MDV	1980	55	GAS	161.577683	5.02061674	0.042577792	0.046086681	740.7562031	0.242187116	0.191283153	1.475887326	2.080216997	64.35194811	0.007330383
SACRAMENT	2021	MCY	2021	45	GAS	1144.587	1.061504153	0.001674964	0.001797589	188.9026376	0.252140817	0.062408952	1.643861311	2.077803867	14.72564316	0.001869345
SACRAMENT	2021	LDA	1978	25	GAS	99.1077642	2.464740641	0.063308661	0.068715156	643.5652395	0.222752377	0.102305088	1.453952088	2.07675845	34.21148625	0.0063686
SACRAMENT	2021	LDT2	1980	70	GAS	0.80883533	4.373698432	0.056302295	0.061027746	611.2994179	0.249011126	0.180526125	1.443281838	2.071081307	51.28899062	0.006049303
SACRAMENT	2021	LDT1	1992	10	GAS	22.5949581	1.785082446	0.039529464	0.042991899	818.2779715	0.284494608	0.101065619	1.419222424	2.07092603	24.08823517	0.008097524
SACRAMENT	2021	LDT1	1984	10	GAS	5.18410043	4.096011352	0.0572076	0.062218485	832.103069	0.275574548	0.180596389	1.415590281	2.065626016	33.51457938	0.008234334
SACRAMENT	2021	MH	1978	50	GAS	2.69076159	5.603635193	0.009568037	0.010406114	1715.845962	0.250063968	0.208506366	1.414637262	2.064235372	49.56746688	0.016979687
SACRAMENT	2021	LDA	1993	10	GAS	63.4874391	1.734065821	0.039531496	0.042994109	690.5154384	0.280345114	0.098198624	1.413597648	2.06271837	18.79229691	0.00683321
SACRAMENT	2021	LDA	1979	25	GAS	98.9982963	2.489114895	0.063708448	0.069066097	642.4870483	0.22831895	0.10478382	1.46239721	2.062395203	33.65104976	0.00635793
SACRAMENT	2021	MH	1979	45	GAS	2.32478175	5.302555861	0.009558497	0.010395737	1664.646191	0.250081236	0.197301601	1.41206678	2.060484531	46.64217084	0.016473024
SACRAMENT	2021	LDA	1998	5	GAS	3.92730869	1.212265312	0.019271907	0.020959958	818.7317835	0.300859245	0.077879792	1.412004648	2.060393867	12.69460263	0.008102015
SACRAMENT	2021	MH	1981	55	GAS	3.77059431	5.870601282	0.010022438	0.010900316	1793.325009	0.250809658	0.21849737	1.410701201	2.058491881	56.16735517	0.017746405
SACRAMENT	2021	MCY	2008	50	GAS	517.031501	1.097363664	0.000172676	0.000185306	194.0923015	0.244986531	0.063058348	1.616165335	2.056611053	15.08615702	0.001920701
SACRAMENT	2021	MCY	2009	50	GAS	539.167819	1.096501791	0.000193848	0.000208039	194.0794026	0.245349714	0.063113883	1.616460957	2.055943466	15.07920372	0.001920573
SACRAMENT	2021	MH	1982	40	GAS	4.88595695	5.106363476	0.009992473	0.010867726	1657.871163	0.250918587	0.190105349	1.408626968	2.055465165	45.90153142	0.016405979
SACRAMENT	2021	MCY	2010	50	GAS	231.224137	1.095530576	0.000236202	0.000253512	194.0648673	0.245678741	0.063158952	1.616899038	2.055186546	15.07136825	0.001920429
SACRAMENT	2021	MCY	2011	50	GAS	275.461111	1.094525861	0.000320918	0.000344464	194.0498305	0.245990056	0.06319888	1.61721389	2.054409634	15.06326248	0.00192028
SACRAMENT	2021	MCY	2012	50	GAS	427.122808	1.093243384	0.000469276	0.000503703	194.0306365	0.246254032	0.063221793	1.617320289	2.053431002	15.05291573	0.00192009
SACRAMENT	2021	LDA	1992	10	GAS	53.9600808	1.731410965	0.039529345	0.04299177	737.2134071	0.277829847	0.0977601	1.406762721	2.05274486	18.72391746	0.007295324
SACRAMENT	2021	MCY	2013	50	GAS	562.414037	1.091722431	0.000702234	0.000753813	194.0078733	0.246483084	0.063231259	1.617294802	2.052277104	15.04064492	0.001919865
SACRAMENT	2021	LDA	1991	10	GAS	52.0325411	1.730526831	0.039531199	0.042993786	736.6991118	0.27626058	0.097354657	1.406027024	2.051671332	18.70011485	0.007290235
SACRAMENT	2021	LDA	1990	10	GAS	36.3532205	1.73057138	0.070588693	0.076771644	736.6996339	0.274700934	0.096950343	1.405972777	2.051592176	18.70058257	0.00729024
SACRAMENT	2021	MDV	1994	15	GAS	115.601479	2.714330173	0.026916994	0.029274687	787.428322	0.268559243	0.12945142	1.405554313	2.050981554	22.34130008	0.007792242
SACRAMENT	2021	MCY	2014	50	GAS	658.815473	1.089745755	0.00097769	0.001049497	193.9782893	0.246658043	0.063218163	1.616976605	2.050790072	15.02469724	0.001919572
SACRAMENT	2021	MCY	2015	50	GAS	806.816034	1.087501135	0.001232015	0.001322477	193.9446948	0.24679918	0.063191217	1.616465555	2.049108105	15.00658757	0.00191924
SACRAMENT	2021	MCY	2016	50	GAS	761.894508	1.08483358	0.001422833	0.001527265	193.9047699	0.246886161	0.063142582	1.615714925	2.047115583	14.9850653	0.001918845
SACRAMENT	2021	LDT1	1991	10	GAS	26.1737432	1.805913606	0.039075486	0.042498156	817.3464216	0.280311529	0.101910925	1.401320968	2.044804267	24.20707955	0.008088305
SACRAMENT	2021	MCY	2017	50	GAS	949.367185	1.081687061	0.00152893	0.001641097	193.8576759	0.246925742	0.063072231	1.614660009	2.044772854	14.95967819	0.001918379
SACRAMENT	2021	MCY	2018	50	GAS	1106.6102	1.0780778	0.001592668	0.001709453	193.8036553	0.24691084	0.062979166	1.613332292	2.042090903	14.93055692	0.001917844
SACRAMENT	2021	MCY	2019	50	GAS	1277.25845	1.07388951	0.001635222	0.001755067	193.7409676	0.246841143	0.062860402	1.611646875	2.03898528	14.89676301	0.001917224
SACRAMENT	2021	MCY	2020	50	GAS	1433.30388	1.069181423	0.001635393	0.001755187	193.6704997	0.246715199	0.062717103	1.609634482	2.035499766	14.85877432	0.001916527
SACRAMENT	2021	MH	1979	50	GAS	2.26249042	5.603823478	0.009568037	0.010406114	1715.869688	0.247037308	0.2085114	1.394879447	2.035404814	49.6361876	0.016979922
SACRAMENT	2021	LDT1	1981	20	GAS	17.4571983	1.830872357	0.031187708	0.033919478	583.0827064	0.257198519	0.091939352	1.394481282	2.034823814	35.35481272	0.005770076
SACRAMENT	2021	MDV	1993	15	GAS	55.3240626	2.725699665	0.026709459	0.029048973	787.0161451	0.265714824	0.129722976	1.393939323	2.034032988	22.42110302	0.007788163
SACRAMENT	2021	MCY	2021	50	GAS	1147.41814	1.063782574	0.001635572	0.001755313	193.5896939	0.246522774	0.062542907	1.607233829	2.03150755	14.81521156	0.001915727
SACRAMENT	2021	MH	1980	45	GAS	0.18657583	5.300650373	0.009558497	0.010395737	1664.715131	0.24699021	0.197252279	1.391920431	2.031087025	46.74047301	0.016473706
SACRAMENT	2021	MH	1982	55	GAS	5.67144851	5.865299217	0.010022438	0.010900316	1793.446548	0.24774932	0.218359849	1.390835084	2.029503289	56.29807944	0.017747607
SACRAMENT	2021	MH	1986	10	GAS	5.53561736	3.663675818	0.03918	0.042611825	3441.594572	0.304802116	0.171492822	1.390433129	2.028916757	14.14180145	0.034057368
SACRAMENT	2021	MH	1983	40	GAS	3.99443185	5.099069955	0.009992473	0.010867726	1657.891102	0.24798575	0.189916019	1.389622338	2.027733654	45.96581365	0.016406176
SACRAMENT	2021	LDA	1989	10	GAS	29.4374743	1.739765201	0.069796604	0.075910175	734.5385435	0.269276497	0.096993665	1.386628867	2.023365588	18.73130151	0.007268854
SACRAMENT	2021	MH	1994	10	DSL	5.48053484	22.54157067	0.845285274	0.883505323	1898.763105	0.081894471	0.298459118	1.76313975	2.007217384	3.852573494	0.01795014
SACRAMENT	2021	MH	1980	50	GAS	0.18157662	5.601809728	0.009568037	0.010406114	1715.949687	0.243983905	0.208459275	1.374978314	2.006365128	49.74079991	0.016980713
SACRAMENT	2021	MH	1983	55	GAS	4.63659725	5.856921693	0.010022438	0.010900316	1793.490601	0.244853527	0.218142379	1.372070495	2.002122045	56.37692139	0.017748043
SACRAMENT	2021	MH	1981	45	GAS	2.96229118	5.297807323	0.009558497	0.010395737	1664.816743	0.243918195	0.197178604	1.371939556	2.001930979	46.85893748	0.016474711
SACRAMENT	2021	MH	1984	40	GAS	17.0412681	5.088158981	0.009992473	0.010867726	1657.8186	0.245125472	0.18963268	1.3711174	2.000731292	45.97041712	0.016405459
SACRAMENT	2021	LHD1	1991	10	GAS	198.735867	4.16987814	0.0219408	0.023862622	1645.671834	0.27392115	0.175308587	1.3710142	2.000580702	16.18300642	0.016285257
SACRAMENT	2021	LHD2	1991	10	GAS	15.5754239	4.16987814	0.0219408	0.023862622	1880.48484	0.274123155	0.17540865	1.3710142	2.000580702	16.18300642	0.018608922
SACRAMENT	2021	MDV	1980	50	GAS	88.7870745	4.850795243	0.040647385	0.043997187	704.0406824	0.232608256	0.184813033	1.417513792	1.997941328	57.10837472	0.006967053
SACRAMENT	2021	MDV	1980	45	GAS	88.5680011	4.685594458	0.040606854	0.043953315	680.043328	0.232569479	0.178518961	1.417277483	1.997608258	53.13155258	0.00672958
SACRAMENT	2021	MDV	1978	60	GAS	133.899664	5.325942178	0.04666977	0.050516476	788.1057786	0.23653106	0.202848751	1.423278238	1.994524117	78.85142202	0.007798946
SACRAMENT	2021	MDV	1978	35	GAS	200.256271	4.319447322	0.04643747	0.050265029	701.2623291	0.236419817	0.164514458	1.422608855	1.993586071	55.37741125	0.006939559
SACRAMENT	2021	LHD1	1992	10	GAS	183.2381	4.180407264	0.0219408	0.023862622	1645.533829	0.273054643	0.175745694	1.364832688	1.991560655	16.11275893	0.016283891
SACRAMENT	2021	LHD2	1992	10	GAS	10.6071979	4.180407264	0.0219408	0.023862622	1880.346836	0.273231234	0.175832829	1.364832688	1.991560655	16.11275893	0.018607556
SACRAMENT	2021	MDV	1979	60	GAS	94.3133877	5.246256911	0.046669855	0.050516536	786.8712529	0.235722092	0.200713997	1.41770502	1.986667354	78.22022173	0.007786729
SACRAMENT	2021	MH	1985	35	GAS	12.6584041	4.978228572	0.01093134	0.01188883	1709.331803	0.246489962	0.18426916	1.361200399	1.986260427	45.60316593	0.016915224
SACRAMENT	2021	MDV	1979	35	GAS	141.052239	4.254466787	0.046437555	0.050265088	700.2748139	0.23558725	0.16276958	1.416894035	1.985530899	54.92282604	0.006929787
SACRAMENT	2021	MDV	1992	15	GAS	48.5037872	2.762336647	0.026086853	0.028371833	912.828025	0.258763663	0.131031057	1.360685885	1.985509649	22.71435864	0.009033173
SACRAMENT	2021	LHD1	1993	10	GAS	219.213669	4.172858674	0.0219408	0.023862622	1645.409277	0.272338903	0.175629309	1.359528109	1.983820226	16.04861247	0.016282659
SACRAMENT	2021	LHD2	1993	10	GAS	29.5174668	4.172858674	0.0219408	0.023862622	1880.222284	0.272491297	0.175704311	1.359528109	1.983820226	16.04861247	0.018606324
SACRAMENT	2021	MH	1985	60	GAS	21.1079153	6.16591684	0.010986023	0.011948303	1875.844441	0.246100345	0.228231448	1.359048804	1.983120825	64.90220366	0.018563001
SACRAMENT	2021	MH	1981	50	GAS	2.88291812	5.59880515	0.009568037	0.010406114	1716.064402	0.240949282	0.208381415	1.355240641	1.977563962	49.86686875	0.016981848
SACRAMENT	2021	LHD1	1994	10	GAS	254.555941	4.1688192	0.0219408	0.023862622	1645.297308	0.271744521	0.175614117	1.354928808	1.977108936	15.99048511	0.016281551
SACRAMENT	2021	LHD2	1994	10	GAS	42.0241932	4.1688192	0.0219408	0.023862622	1880.110314	0.271873912	0.17567766	1.354928808	1.977108936	15.99048511	0.018605216
SACRAMENT	2021	MH	1984	55	GAS	19.78091	5.84438907	0.010022438	0.010900316	1793.42076	0.242029376	0.217816929	1.353799287	1.975460741	56.38256753	0.017747352
SACRAMENT	2021	LDA	1981	15	GAS	13.2880593	2.142417435	0.042457209	0.046176089	655.7691367	0.241258279	0.104075401	1.352674351	1.973819238	29.90362111	0.006489367
SACRAMENT	2021	MH	1982	45	GAS	4.45565885	5.29302258	0.009558497	0.010395737	1664.906297	0.240941946	0.197054501	1.352619297	1.973738903	46.96799727	0.016475597
SACRAMENT	2021	LDT1	1990	10	GAS	16.6266469	1.872921249	0.067345622	0.073244509	817.7113498	0.269872472	0.104911364	1.352092125	1.972969654	24.72828105	0.008091917
SACRAMENT	2021	MH	1995	10	DSL	3.61468989	22.49574957	0.835695374	0.873481811	1898.763105	0.080470281	0.298459118	1.73247777	1.972310758	3.785570956	0.01795014
SACRAMENT	2021	LDT1	1977	60	GAS	16.9621771	4.547220418	0.046669451	0.050516251	626.4794111	0.232720883	0.181358486	1.406660809	1.971584642	78.12838401	0.006199522
SACRAMENT	2021	LDT2	1977	60	GAS	26.5986032	4.547015204	0.046669555	0.050516324	641.5210849	0.232716792	0.181352105	1.406761095	1.971566677	78.12401764	0.006348371
SACRAMENT	2021	LDT2	1981	25	GAS	25.3932763	2.612767043	0.024771754	0.026941543	697.8611665	0.242459457	0.116052539	1.350392088	1.970488964	30.05009681	0.006905902
SACRAMENT	2021	LDT1	1977	35	GAS	25.368117	3.687603461	0.046437152	0.050264805	552.0365449	0.232590906	0.147074062	1.405875172	1.970483488	54.85838206	0.005462849
SACRAMENT	2021	LDT2	1977	35	GAS	39.7800633	3.687437077	0.046437256	0.050264878	565.9426974	0.232586821	0.14706889	1.405975427	1.970465568	54.85530463	0.005600462
SACRAMENT	2021	LDT1	1997	5	GAS	0.98872176	1.406639595	0.017995621	0.01957188	914.1957264	0.286679922	0.089074895	1.350032375	1.969964073	13.98587644	0.009046708
SACRAMENT	2021	LDT1	1983	10	GAS	2.27047032	4.291189311	0.055972632	0.060875344	828.638083	0.262321002	0.187878851	1.346682767	1.965076333	32.41714147	0.008200046
SACRAMENT	2021	LDT2	1980	30	GAS	17.5462306	3.155712147	0.052946709	0.057390525	555.5296568	0.236216679	0.130253261	1.369124536	1.964667024	29.06505495	0.005497416
SACRAMENT	2021	LDT2	1978	60	GAS	32.1254019	4.469346778	0.046669651	0.050516392	640.2767553	0.232296243	0.179243402	1.401687276	1.964386735	77.24878893	0.006336058
SACRAMENT	2021	LDT1	1978	60	GAS	18.164584	4.46888139	0.04666951	0.050516292	625.2264628	0.232298539	0.179231246	1.401549676	1.964373942	77.25082241	0.006187123
SACRAMENT	2021	LDT2	1978	35	GAS	48.0457755	3.624749236	0.046437351	0.050264945	565.1556145	0.232187324	0.145370771	1.401030053	1.963465674	54.25230884	0.005592673
SACRAMENT	2021	LDT1	1978	35	GAS	27.1664003	3.624372084	0.046437211	0.050264846	551.2411946	0.232189599	0.145360923	1.400892398	1.963452719	54.25374271	0.005454978
SACRAMENT	2021	MDV	1990	15	GAS	36.011495	2.774625055	0.046127545	0.050167914	911.4242139	0.25470729	0.131142054	1.345482293	1.963324604	22.77620998	0.009019281
SACRAMENT	2021	MDV	1981	35	GAS	46.2529865	2.862080608	0.018066918	0.019579059	590.5795585	0.231967573	0.123226299	1.369071118	1.962771613	27.08215779	0.005844263
SACRAMENT	2021	LDT1	1993	10	GAS	31.5678276	1.787555164	0.039529464	0.042991899	757.2301858	0.271584298	0.101323683	1.341892876	1.958086935	18.91897831	0.007493407
SACRAMENT	2021	MDV	1987	15	GAS	15.8019078	2.769740454	0.046203403	0.050250417	906.0913244	0.252378537	0.13034964	1.341291895	1.957209985	22.51777123	0.008966508
SACRAMENT	2021	LDA	1988	10	GAS	21.1259886	1.780187989	0.067346266	0.073245209	735.2612497	0.258104795	0.098547987	1.338330264	1.952888379	19.16172832	0.007276006
SACRAMENT	2021	MDV	1991	15	GAS	33.7606558	2.784668584	0.025677104	0.027926193	911.830938	0.253829976	0.131752897	1.33781776	1.952140535	22.86940659	0.009023306
SACRAMENT	2021	MDV	1981	60	GAS	30.9266687	3.526588428	0.018053534	0.019564554	652.2972608	0.230676684	0.151836549	1.3614523	1.951848879	38.14449388	0.00645501
SACRAMENT	2021	MH	1982	50	GAS	4.33627177	5.593748559	0.009568037	0.010406114	1716.166066	0.238009259	0.20825026	1.336155544	1.949715033	49.98292922	0.016982854
SACRAMENT	2021	MH	1983	45	GAS	3.64264888	5.28546245	0.009558497	0.010395737	1664.931861	0.238125719	0.196858249	1.3343703	1.947110009	47.03377302	0.01647585
SACRAMENT	2021	MDV	1984	70	GAS	2.77313204	3.90571103	0.022472664	0.024441073	707.6890319	0.236518941	0.166374976	1.330105537	1.940886877	58.20979996	0.007003157
SACRAMENT	2021	MH	1996	10	DSL	2.38210593	22.44888632	0.825887375	0.863230338	1898.763105	0.0790137	0.298459118	1.701118442	1.936610248	3.717044614	0.01795014
SACRAMENT	2021	LDT1	1980	25	GAS	23.102888	2.28425302	0.063520502	0.068851539	616.6982174	0.238204185	0.102860549	1.343971265	1.928560207	33.16421521	0.006102729
SACRAMENT	2021	MDV	1989	15	GAS	29.037378	2.804699486	0.044829594	0.048756274	911.6896722	0.249184127	0.131931222	1.320011162	1.926157189	23.56322201	0.009021908

SACRAMENT	2021	LDA	1982	15	GAS	16.3494111	2.138097765	0.042517268	0.046241408	654.3097257	0.238965687	0.104728256	1.319455762	1.92534675	29.26648277	0.006474925
SACRAMENT	2021	LDT1	1989	10	GAS	18.5307662	2.735951484	0.065745059	0.07150375	817.274993	0.262661755	0.136872106	1.318825125	1.924426526	25.03421187	0.008087599
SACRAMENT	2021	MH	1983	50	GAS	3.54504598	5.585758895	0.009568037	0.010406114	1716.199281	0.235227311	0.208042859	1.318128669	1.92341026	50.0529272	0.016983183
SACRAMENT	2021	LDT1	1988	10	GAS	11.5162178	3.897860719	0.065807418	0.071571572	814.6612135	0.261693416	0.174872166	1.316676476	1.921291223	24.87946003	0.008061733
SACRAMENT	2021	MH	1984	45	GAS	15.540472	5.274152634	0.009558497	0.010395737	1664.862702	0.235379168	0.196564554	1.316601127	1.921181274	47.03848345	0.016475166
SACRAMENT	2021	MDV	1982	35	GAS	39.4952391	2.854022945	0.017968545	0.019503232	590.3172116	0.227344051	0.122952518	1.328034445	1.918794298	26.54526836	0.005841667
SACRAMENT	2021	LDT2	1980	65	GAS	3.05715801	4.133501244	0.051817961	0.056167042	599.3443299	0.230342101	0.170611891	1.335075172	1.91580685	45.59099619	0.005930998
SACRAMENT	2021	LDA	1997	10	GAS	223.829332	1.437469625	0.012112147	0.013173065	682.7897322	0.266337383	0.084554341	1.310412724	1.912151171	15.8100094	0.006756758
SACRAMENT	2021	MDV	1988	15	GAS	18.7752831	2.80390336	0.045034754	0.048979404	908.0468135	0.246798603	0.131981727	1.309200635	1.910382494	22.92083847	0.008985859
SACRAMENT	2021	LDA	1977	70	GAS	2.4891797	3.560836481	0.057864166	0.062705021	629.3324013	0.196407816	0.14282328	1.357231503	1.906916495	55.16672147	0.006227754
SACRAMENT	2021	LDA	1987	10	GAS	22.2299229	1.805157901	0.065737071	0.071495062	734.7935935	0.249821463	0.099232153	1.305231415	1.904590617	19.40031075	0.007271378
SACRAMENT	2021	LDT2	1979	70	GAS	1.39817954	4.369255545	0.056301163	0.061026911	621.3497755	0.230850506	0.180520318	1.328014595	1.902502665	52.65336228	0.00614876
SACRAMENT	2021	MH	1997	10	DSL	6.57370524	22.40098091	0.815861277	0.852750903	1898.763105	0.077524729	0.298459118	1.669061766	1.900115853	3.64699447	0.01795014
SACRAMENT	2021	MH	1984	50	GAS	15.1240731	5.573806506	0.009568037	0.010406114	1716.131534	0.23251419	0.207732476	1.300575779	1.897797123	50.05793999	0.016982513
SACRAMENT	2021	LDT1	1994	10	GAS	44.7602987	1.479496333	0.039855397	0.043346381	755.0065916	0.264910648	0.088690459	1.299764849	1.896613817	17.10314019	0.007471402
SACRAMENT	2021	MDV	1982	60	GAS	26.4081579	3.512685786	0.017804874	0.019325581	650.5536047	0.224219112	0.151327992	1.309780058	1.892419671	36.76232353	0.006437755
SACRAMENT	2021	LDT1	1996	10	GAS	60.600358	1.568508192	0.01148038	0.012485961	755.2909426	0.262603868	0.091496869	1.292486406	1.885993129	16.63548022	0.007474216
SACRAMENT	2021	LDA	1980	20	GAS	34.9030391	2.369872886	0.081350325	0.088475901	739.9400377	0.219586473	0.106541242	1.285884888	1.876360209	32.16213465	0.007322307
SACRAMENT	2021	LHD1	1984	35	GAS	39.3040902	4.226276805	0.01093134	0.01188883	825.8241326	0.219400382	0.171839205	1.283741934	1.873233217	30.84878799	0.008172199
SACRAMENT	2021	LHD2	1984	35	GAS	3.66957256	4.226276805	0.01093134	0.01188883	938.0424599	0.219597138	0.171840514	1.283741934	1.873233217	30.84878799	0.009282691
SACRAMENT	2021	MH	1998	10	DSL	5.66771795	22.20509195	0.825875901	0.863218344	1945.177314	0.076278418	0.305754786	1.642229421	1.869569014	3.585994784	0.018388921
SACRAMENT	2021	LDT1	1987	10	GAS	12.9051547	4.130475866	0.062788605	0.068288337	814.8373389	0.253506506	0.182483924	1.28039188	1.868344826	25.96477513	0.008063476
SACRAMENT	2021	MDV	1986	15	GAS	11.9490224	2.828527765	0.044112689	0.047976574	905.2279235	0.240166177	0.132660533	1.278798567	1.866019867	23.04107401	0.008957964
SACRAMENT	2021	LDT1	1986	10	GAS	12.8782472	4.176826438	0.061495103	0.066881536	814.504497	0.251908514	0.183906558	1.277008967	1.863408487	26.62686788	0.008060182
SACRAMENT	2021	LHD1	1985	35	GAS	46.8825541	4.231367321	0.01093134	0.01188883	825.5049113	0.218029195	0.171984293	1.273731169	1.858625532	30.67463118	0.00816904
SACRAMENT	2021	LHD2	1985	35	GAS	6.27515643	4.231367321	0.01093134	0.01188883	937.7232386	0.218208216	0.171985487	1.273731169	1.858625532	30.67463118	0.009279532
SACRAMENT	2021	LDA	1986	10	GAS	13.9666773	1.834102304	0.064043938	0.069653626	735.88889	0.241533881	0.09999952	1.272704121	1.857126866	19.72604436	0.007282217
SACRAMENT	2021	LDA	1978	70	GAS	3.19072974	3.513705198	0.056879079	0.061736494	626.7162334	0.198621828	0.145844928	1.29644687	1.851785224	53.6520631	0.006201865
SACRAMENT	2021	LHD1	1986	35	GAS	63.6215406	3.994613136	0.01093134	0.01188883	825.2147888	0.216829254	0.165215003	1.264903401	1.845744074	30.51561394	0.008166169
SACRAMENT	2021	LHD2	1986	35	GAS	13.228272	3.994613136	0.01093134	0.01188883	937.433116	0.216991589	0.165216106	1.264903401	1.845744074	30.51561394	0.009276661
SACRAMENT	2021	LDT1	1995	10	GAS	41.6315681	1.489475698	0.040018363	0.043523621	753.5038025	0.258965595	0.089122923	1.262354326	1.842024469	15.68199698	0.007456531
SACRAMENT	2021	LDT1	1985	10	GAS	7.32999701	4.170382214	0.059350509	0.064549094	823.1620652	0.247771348	0.183623577	1.26096002	1.839989901	27.58525845	0.008145856
SACRAMENT	2021	LDT2	1984	15	GAS	8.00943972	3.422318256	0.041843559	0.045508689	964.1236241	0.238832024	0.150892945	1.2602882	1.839009583	27.77511238	0.009540785
SACRAMENT	2021	LHD1	1987	35	GAS	57.7430459	4.071188715	0.01093134	0.01188883	824.9258121	0.215715901	0.167418391	1.25670726	1.833784284	30.35560124	0.00816331
SACRAMENT	2021	LHD2	1987	35	GAS	5.9189355	4.071188715	0.01093134	0.01188883	937.1441394	0.215862583	0.167419383	1.25670726	1.833784284	30.35560124	0.009273801
SACRAMENT	2021	MH	1999	10	DSL	7.77122837	22.14780147	0.816415978	0.853330686	1945.177314	0.074735649	0.305754786	1.609014517	1.831756053	3.51349962	0.018388921
SACRAMENT	2021	MDV	1978	40	GAS	245.363779	4.517371463	0.042449064	0.045947883	678.189768	0.21573725	0.17205278	1.298155654	1.819182428	53.55041927	0.006711238
SACRAMENT	2021	MDV	1978	55	GAS	173.448083	5.05048514	0.04257636	0.046085671	743.1425792	0.215291932	0.19235744	1.295476038	1.815427323	66.27528083	0.007353998
SACRAMENT	2021	LDA	1985	10	GAS	14.2374072	1.858770145	0.062560346	0.068040084	777.7547763	0.233771549	0.100427611	1.243576374	1.814623726	19.99204057	0.007696514
SACRAMENT	2021	MH	1985	40	GAS	15.7584083	5.210731992	0.009992473	0.010867726	1654.370527	0.225105703	0.192875275	1.243109336	1.813942225	44.14333588	0.016371337
SACRAMENT	2021	MDV	1979	40	GAS	172.824103	4.449512994	0.042449142	0.045947937	677.253323	0.214983424	0.170231758	1.292976301	1.811881718	53.11377196	0.006701971
SACRAMENT	2021	MDV	1979	55	GAS	122.169659	4.974417314	0.042576438	0.046085726	741.9930379	0.214530095	0.190313818	1.29024984	1.808061057	65.72894376	0.007342623
SACRAMENT	2021	LDA	1979	70	GAS	3.18720547	3.476099693	0.055711646	0.060396792	622.0558222	0.200070734	0.14633274	1.281465612	1.807230288	50.83346932	0.006155747
SACRAMENT	2021	MH	1985	55	GAS	18.2918111	5.955267284	0.010022438	0.010900316	1789.775288	0.224231191	0.220434253	1.238279988	1.806895252	54.396974	0.017711277
SACRAMENT	2021	LDT2	1979	30	GAS	30.3309953	3.153059458	0.052945735	0.057389839	564.2220313	0.21904991	0.130271917	1.260129265	1.805250705	29.77829587	0.005583434
SACRAMENT	2021	LDT2	1998	5	GAS	2.08148929	1.863810936	0.018493671	0.020113555	1136.698326	0.264385104	0.106608418	1.236030556	1.803612886	13.7562341	0.011248551
SACRAMENT	2021	MDV	1984	65	GAS	10.4816178	3.707372449	0.020628712	0.022435607	697.1220746	0.219160689	0.157926174	1.232488378	1.798444148	51.94584956	0.006898588
SACRAMENT	2021	LDT1	1977	40	GAS	31.0822579	3.856656224	0.042448774	0.045947678	533.8112514	0.212248311	0.153816457	1.282916152	1.798143352	53.05144162	0.005282495
SACRAMENT	2021	LDT2	1977	40	GAS	48.7404795	3.856482203	0.042448869	0.045947745	547.2677172	0.212244582	0.153811046	1.283007633	1.798126991	53.04846813	0.005415658
SACRAMENT	2021	MDV	1984	30	GAS	60.1581215	2.820019593	0.020485027	0.022279336	643.7243731	0.218852945	0.120126832	1.230757727	1.795918787	31.48533572	0.006370175
SACRAMENT	2021	LDA	1983	15	GAS	18.4218704	2.062933228	0.043110459	0.046886557	651.468781	0.226787764	0.103127537	1.229762005	1.79446583	27.18593624	0.006446812
SACRAMENT	2021	LDT1	1977	55	GAS	21.9721023	4.311644753	0.042576069	0.046085465	587.6148268	0.211801421	0.171962934	1.280214969	1.794357357	65.65184929	0.005814925
SACRAMENT	2021	LDT2	1977	55	GAS	34.4547299	4.311450238	0.042576164	0.046085533	602.0952592	0.211797701	0.171956886	1.280306262	1.794341038	65.64815812	0.005958221
SACRAMENT	2021	MH	2000	10	DSL	13.3977571	22.08931661	0.806758852	0.843236908	1945.177314	0.07316072	0.305754786	1.575107226	1.793154856	3.439493223	0.018388921
SACRAMENT	2021	MDV	1985	15	GAS	9.24521704	2.886449075	0.042383393	0.046095807	979.1541213	0.230282762	0.134862009	1.228320599	1.792362535	23.51688926	0.009689524
SACRAMENT	2021	LDT2	1978	40	GAS	58.8680345	3.790836627	0.042448956	0.045947806	546.493158	0.211874938	0.152031715	1.278464094	1.791696301	52.46234037	0.005407993
SACRAMENT	2021	LDT1	1978	40	GAS	33.2856025	3.790442122	0.042448827	0.045947716	533.0289882	0.21187702	0.152021413	1.278338512	1.791684523	52.46372565	0.005274754
SACRAMENT	2021	MDV	1981	40	GAS	56.6714217	2.989372282	0.016501162	0.017882254	571.0564228	0.211461836	0.128706817	1.248046387	1.78926426	26.15770674	0.005651066
SACRAMENT	2021	LDT1	1982	20	GAS	24.9697099	1.983817286	0.031439504	0.03419333	580.3770755	0.230456647	0.098941883	1.225791212	1.788671659	33.60975153	0.005743302
SACRAMENT	2021	LDT2	1978	55	GAS	41.6139162	4.238227602	0.042576251	0.046085594	601.1406229	0.211437663	0.169974355	1.275825553	1.787998533	64.92907199	0.005948774
SACRAMENT	2021	LDT1	1978	55	GAS	23.5296504	4.237786833	0.042576122	0.046085503	586.6509858	0.211439736	0.169962849	1.275700205	1.787986743	64.93079214	0.005805387
SACRAMENT	2021	MDV	1981	55	GAS	40.0611268	3.340736428	0.016492627	0.017873005	620.5166027	0.210420117	0.143834728	1.241898173	1.78044986	32.16345296	0.006140515
SACRAMENT	2021	LHD1	1988	10	GAS	118.913188	2.380464721	0.03918	0.042611825	1639.696386	0.250013476	0.113180979	1.220107872	1.780378543	12.82374093	0.016226125
SACRAMENT	2021	LHD2	1988	10	GAS	3.38805315	2.380464721	0.03918	0.042611825	1874.509393	0.250199907	0.113407043	1.220107872	1.780378543	12.82374093	0.01854979
SACRAMENT	2021	LDA	1977	15	DSL	0.17050775	1.58021348	1.086435825	1.135559632	654.3291837	0.07235466	0.102851436	1.557753237	1.773398494	3.198840917	0.006185764
SACRAMENT	2021	LDA	1978	15	DSL	0.26928645	1.58021348	1.086435825	1.135559632	654.3291837	0.07235466	0.102851436	1.557753237	1.773398494	3.198840917	0.006185764
SACRAMENT	2021	LDA	1979	15	DSL	0.63136302	1.58021348	1.086435825	1.135559632	654.3291837	0.07235466	0.102851436	1.557753237	1.773398494	3.198840917	0.006185764
SACRAMENT	2021	LDT2	1978	15	DSL	0.19547345	1.58021348	1.086435825	1.135559632	889.654364	0.07235466	0.139841277	1.557753237	1.773398494	3.198840917	0.008410433
SACRAMENT	2021	LDT2	1979	15	DSL	0.32004346	1.58021348	1.086435825	1.135559632	889.654364	0.07235466	0.139841277	1.557753237	1.773398494	3.198840917	0.008410433
SACRAMENT	2021	MDV	1978	15	DSL	0.08218677	1.58021348	1.086435825	1.135559632	977.1865139	0.07235466	0.153600112	1.557753237	1.773398494	3.198840917	0.009237927
SACRAMENT	2021	LDT1	1979	25	GAS	33.5179338	2.283425978	0.06351932	0.068850706	617.450129	0.220893244	0.102925921	1.236989492	1.772097696	33.96650499	0.00611017
SACRAMENT	2021	LHD1	1989	10	GAS	179.615743	2.378531073	0.03918	0.042611825	1639.610186	0.248867517	0.113278076	1.212722072	1.769601201	12.7894522	0.016225272
SACRAMENT	2021	LHD2	1989	10	GAS	4.40041354	2.378531073	0.03918	0.042611825	1874.423193	0.249033716	0.11348172	1.212722072	1.769601201	12.7894522	0.018548937
SACRAMENT	2021	MDV	1983	30	GAS	36.5662621	2.107895067	0.020480175	0.022274059	631.4239924	0.215260063	0.099246353	1.211819157	1.768283669	25.70872725	0.006248452
SACRAMENT	2021	LDA	1977	30	GAS	53.9982852	2.598947601	0.052985278	0.05741797	570.6856727	0.181879877	0.104242423	1.256839488	1.765865253	30.15210996	0.005647397
SACRAMENT	2021	LDA	1977	65	GAS	9.40836203	3.394604287	0.053118663	0.057562514	619.6751502	0.181789533	0.136155794	1.256215189	1.764988111	49.42711451	0.006132188
SACRAMENT	2021	LDT2	1983	15	GAS	3.62679532	3.552615979	0.041315242	0.044934095	961.1636557	0.229234478	0.155540977	1.208898308	1.764021573	27.09032289	0.009511494
SACRAMENT	2021	LDT2	1979	65	GAS	5.28470457	4.129331229	0.051816927	0.056166282	609.1368722	0.213560025	0.170607596	1.228547583	1.760007051	46.81439217	0.006027903
SACRAMENT	2021	LHD1	1990	10	GAS	234.578905	2.374443603	0.03918	0.042611825	1639.528139	0.247770367	0.113397553	1.205803292	1.759505333	12.75651319	0.01622446
SACRAMENT	2021	LHD2	1990	10	GAS	17.7703283	2.374443603	0.03918	0.042611825	1874.341146	0.247918103	0.113577731	1.205803292	1.759505333	12.75651319	0.018548125
SACRAMENT	2021	MH	2001	10	DSL	11.0682077	22.02963736	0.796904522	0.832937008	1945.177314	0.071553631	0.305754786	1.540507548	1.753765423	3.363975591	0.018388921
SACRAMENT	2021	MDV	1982	40	GAS	48.3914989	2.975344031	0.016390982	0.01779093	570.6906787	0.206980738	0.128179082	1.209081781	1.746926998	25.59057493	0.005647447
SACRAMENT	2021	MDV	1978	50	GAS	95.3098694	4.879561875	0.040646018	0.043996223	706.1074305	0.206771477	0.185847498	1.244205913	1.743579459	58.81391659	0.006987505
SACRAMENT	2021	MDV	1978	45	GAS	95.0747017	4.713055468	0.040605489	0.043952352	681.8971467	0.206734106	0.179505782	1.243981037	1.743264327	54.71029908	0.006747925
SACRAMENT	2021	MH	1985	45	GAS	14.3705915	5.408698629	0.009558497	0.010395737	1661.277747	0.215716268	0.200203011	1.191257721	1.738280469	45.11779628	0.01643969
SACRAMENT	2021	MDV	1979	50	GAS	67.132332	4.806091629	0.040646092	0.043996275	705.0680598	0.206040228	0.183873927	1.239189176	1.736508403	58.32935218	0.00697722
SACRAMENT	2021	MDV	1979	45	GAS	66.9666895	4.642255581	0.040605563	0.043952405	680.9448442	0.206011423	0.177605803	1.239015934	1.736265634	54.264032	0.006738501
SACRAMENT	2021	LDA	1978	30	GAS	69.217154	2.562845686	0.05274193	0.057246037	570.2130846	0.186135617	0.106377178	1.214946717	1.735374145	29.97897449	0.005642721
SACRAMENT	2021	MDV	1982	55	GAS	34.2080349	3.323249968	0.01629836	0.017690396	619.56735	0.205073317	0.143167017	1.197939541	1.73082827	31.16884653	0.006131121
SACRAMENT	2021	MH	1985	50	GAS	13.9855389	5.69140715	0.009568037	0.010406114	1712.697639	0.214675329	0.210667469	1.185509306	1.729892397	48.204595	0.016948532
SACRAMENT	2021	LDT2	1982	25	GAS	37.3609865	2.755303472	0.024891544	0.027071825	696.2401713	0.216639267	0.121546106	1.183692648	1.727241534	28.90017181	0.006889861
SACRAMENT	2021	LDT1	1977	50	GAS	12.0736889	4.165736096	0.04064574	0.043996027	556.7972573	0.20341997	0.166143604	1.229554028	1.723350663	58.26092118	0.00550996
SACRAMENT	2021	LDT2	1977	50	GAS	18.9329034	4.165548147	0.040645831	0.043996091	570.7060956	0.203416398	0.166137761	1.229641712	1.723334994	58.25765001	0.005647599
SACRAMENT	2021	LDT1	1977	45	GAS	12.0438983	4.023715458	0.040605211	0.043952156	536.992226	0.203390631	0.160479342	1.229376691	1.723102107	54.20034879	0.005313973
SACRAMENT	2021	LDT2	1977	45	GAS	18.8861883	4.023533896	0.040605301	0.04395222	550.4965096	0.203387058	0.160473698	1.229464355	1.72308643	54.19731176	0.005447609
SACRAMENT	2021	LDA	1979	30	GAS	69.1407013	2.563016169	0.052920135	0.057370526	569.3416093	0.190436603	0.107894828	1.219758403	1.720205606	29.54093096	0.005634097
SACRAMENT	2021	LDA	1978	65	GAS	12.0600134	3.341956282	0.052269037	0.056732759	617.4853201	0.184327298	0.138716069	1.203143433	1.718514876	48.20586432	0.006110518
SACRAMENT	2021	LDT2	1992	15	GAS	67.3640855	3.132720918	0.026916994	0.029274687	853.5723949	0.229735561	0.142918946	1.177309394	1.717927104	21.51358122	0.008446791
SACRAMENT	2021	LDT2	1978	50	GAS	22.8668824	4.094785323	0.040645914	0.04399615	569.8709707	0.203069792	0.164221594	1.225333395	1.717236582	57.61910084	0.005639335
SACRAMENT	2021	LDT1	1978	50	GAS	12.929563	4.094359342	0.040645791	0.043996063	555.9535469	0.20307178	0.164210473	1.225212991	1.717225237	57.62062512	0.005501611
SACRAMENT	2021	LDT2	1978	45	GAS	22.8104606	3.955046743	0.040605385	0.043952279	549.7040055	0.203032994	0.158617371	1.225111357	1.716925408	53.598621	0.005439767
SACRAMENT	2021	LDT1	1978	45	GAS	12.8976605	3.954635121	0.040605262	0.043952193	536.1919332	0.203034988	0.158606622	1.224991009	1.716914113	53.60003586	0.005306054
SACRAMENT	2021	MH	2002	10	DSL	13.3013727	21.96876375	0.786852988	0.822430989	1945.177314	0.069914382	0.305754786	1.505215483	1.713587754	3.286946726	0.018388921
SACRAMENT	2021	MDV	1981	45	GAS	21.9593068	3.11679406	0.015768209	0.017087955	573.5187216	0.0224516	0.134192935	1.194868036	1.713025009	26.67510625	0.005675433
SACRAMENT	2021	MDV	1981	50	GAS	22.0136233	3.226445024	0.015765288	0.017084789	592.3960397	0.202337037	0.138913935	1.194191886	1.712055644	28.61425028	0.005862239
SACRAMENT	2021	LDT2	1993	15	GAS	103.155622	3.137020022	0.026916994	0.029274687	776.9134939	0.229128261	0.143281994	1.170832879	1.708476588	21.73608514	0.007688189
SACRAMENT	2021	LDT2	1980	35	GAS	31.1884891	3.271181889	0.046143905	0.050016763	514.0978892	0.205257771	0.13501932	1.189685045	1.707174852	26.64809827	0.005087415
SACRAMENT	2021	LDA	1996	15	GAS	476.957262	1.631097104	0.008058404	0.00876425	567.6414335	0.228706689	0.089217339	1.169896189	1.707109773	18.33494539	0.005617272

SACRAMENT	2021	LDT2	1991	15	GAS	59.0074085	3.15951685	0.026709459	0.029048973	852.5341475	0.227229177	0.143671035	1.166927723	1.702778194	21.56399678	0.008436517
SACRAMENT	2021	LHD1	1984	55	GAS	29.0068391	5.095419761	0.010022438	0.010900316	866.2738081	0.198989094	0.207178309	1.164312671	1.698962317	36.69311282	0.008572482
SACRAMENT	2021	LHD2	1984	55	GAS	2.70818381	5.095419761	0.010022438	0.010900316	983.1038474	0.199167546	0.207179887	1.164312671	1.698962317	36.69311282	0.00972861
SACRAMENT	2021	LDT1	1980	70	GAS	0.74378705	3.280472199	0.05630175	0.061026944	601.7927971	0.209752634	0.147720576	1.183444834	1.698209384	51.30599525	0.005955228
SACRAMENT	2021	LHD1	1984	40	GAS	11.6016712	4.516036348	0.009992473	0.010867726	798.6339197	0.198438652	0.183620745	1.161091955	1.694262655	29.58387068	0.00790313
SACRAMENT	2021	LHD2	1984	40	GAS	1.08317414	4.516036348	0.009992473	0.010867726	907.2653598	0.19861661	0.183622144	1.161091955	1.694262655	29.58387068	0.008978126
SACRAMENT	2021	MDV	1995	15	GAS	131.815328	2.335970118	0.026916994	0.029274687	778.6925035	0.227813492	0.116773844	1.158634152	1.690676235	17.0352432	0.007705794
SACRAMENT	2021	LHD1	1985	55	GAS	34.5998265	5.101557152	0.010022438	0.010900316	865.9063046	0.197745472	0.207353235	1.155233229	1.685713616	36.48596189	0.008568845
SACRAMENT	2021	LHD2	1985	55	GAS	4.63113259	5.101557152	0.010022438	0.010900316	982.736344	0.197907838	0.207354673	1.155233229	1.685713616	36.48596189	0.009724973
SACRAMENT	2021	LHD1	1985	40	GAS	13.8386609	4.521475877	0.009992473	0.010867726	798.330142	0.197198469	0.183775781	1.152037628	1.681050603	29.41685497	0.007900124
SACRAMENT	2021	LHD2	1985	40	GAS	1.85228308	4.521475877	0.009992473	0.010867726	906.9615821	0.197360386	0.183777056	1.152037628	1.681050603	29.41685497	0.00897512
SACRAMENT	2021	LDA	1979	65	GAS	12.0466927	3.301539976	0.051274523	0.055586524	613.3411451	0.185632727	0.138984331	1.188989273	1.676812398	45.75960275	0.006069508
SACRAMENT	2021	LHD1	1986	55	GAS	46.9533777	4.816113957	0.010022438	0.010900316	865.5719717	0.196657164	0.199191825	1.147226727	1.674030547	36.29681872	0.008565536
SACRAMENT	2021	LHD2	1986	55	GAS	9.76260626	4.816113957	0.010022438	0.010900316	982.4020111	0.196804397	0.199193155	1.147226727	1.674030547	36.29681872	0.009721664
SACRAMENT	2021	LDT2	1980	60	GAS	20.8539198	4.023857238	0.04541029	0.049221575	567.7723086	0.201209996	0.166086292	1.166223924	1.6735086	36.49692958	0.005618567
SACRAMENT	2021	MDV	1982	45	GAS	18.7509637	3.099227606	0.01563928	0.016975025	573.0249101	0.197885619	0.133516039	1.155952473	1.670163769	26.02531531	0.005670546
SACRAMENT	2021	LHD1	1986	40	GAS	18.779628	4.268489488	0.009992473	0.010867726	798.0539917	0.196113172	0.176542379	1.144053274	1.669399852	29.26435804	0.007897391
SACRAMENT	2021	LHD2	1986	40	GAS	3.90468423	4.268489488	0.009992473	0.010867726	906.6854318	0.196259997	0.176543557	1.144053274	1.669399852	29.26435804	0.008972387
SACRAMENT	2021	MDV	1982	50	GAS	18.7973443	3.207805162	0.015609292	0.016942475	591.7659313	0.197519438	0.138193606	1.153813421	1.667073186	27.8335718	0.005856004
SACRAMENT	2021	LHD1	1987	55	GAS	42.6149857	4.908437469	0.010022438	0.010900316	865.2382323	0.195647389	0.201848345	1.139793091	1.663183403	36.10649149	0.008562234
SACRAMENT	2021	LHD2	1987	55	GAS	4.36823773	4.908437469	0.010022438	0.010900316	982.0682717	0.195780425	0.20184954	1.139793091	1.663183403	36.10649149	0.009718362
SACRAMENT	2021	LDT2	1990	15	GAS	48.1803221	3.247794038	0.046583661	0.050663982	852.6273006	0.221382532	0.146592971	1.139407189	1.662620295	21.85931622	0.008437438
SACRAMENT	2021	LHD1	1984	50	GAS	105.461305	4.6794187	0.009568037	0.010406114	828.9174022	0.19460329	0.190263825	1.138650726	1.661516466	33.19501073	0.00820281
SACRAMENT	2021	LHD2	1984	50	GAS	9.84625033	4.6794187	0.009568037	0.010406114	941.1357295	0.194777809	0.190265275	1.138650726	1.661516466	33.19501073	0.009313301
SACRAMENT	2021	LDT2	1997	10	GAS	124.034642	2.075401019	0.011546863	0.012558267	936.1289996	0.233371942	0.110471469	1.136874638	1.658924804	16.2736862	0.009263755
SACRAMENT	2021	LHD1	1987	40	GAS	17.0444304	4.350315198	0.009992473	0.010867726	797.7787918	0.19510619	0.178896834	1.136640201	1.658582713	29.11090646	0.007894668
SACRAMENT	2021	LHD2	1987	40	GAS	1.74713479	4.350315198	0.009992473	0.010867726	906.4102319	0.195238858	0.178897893	1.136640201	1.658582713	29.11090646	0.008969664
SACRAMENT	2021	MDV	1983	70	GAS	1.68560903	2.914530603	0.018160888	0.019751623	668.1874593	0.201558245	0.137225301	1.134683969	1.655728185	34.72757166	0.006612257
SACRAMENT	2021	LHD2	1995	5	GAS	22.2697462	2.728057821	0.022419216	0.024382943	2296.911565	0.241822394	0.132613276	1.131746829	1.651442317	9.096282567	0.022729802
SACRAMENT	2021	LHD1	1995	5	GAS	198.065318	2.728000109	0.02241887	0.024382567	2007.654242	0.241661652	0.132524584	1.131718261	1.65140063	9.09604927	0.019867366
SACRAMENT	2021	LDT2	1994	15	GAS	133.633749	3.080671285	0.027065994	0.029436738	774.4094919	0.222813662	0.141496504	1.130492058	1.649611357	19.73848407	0.00766341
SACRAMENT	2021	LHD1	1985	50	GAS	125.795949	4.685055021	0.009568037	0.010406114	828.5820646	0.193387078	0.190424469	1.129771398	1.648559772	33.00760833	0.008199491
SACRAMENT	2021	LHD2	1985	50	GAS	16.8375908	4.685055021	0.009568037	0.010406114	940.8003919	0.193545865	0.190425791	1.129771398	1.648559772	33.00760833	0.009309983
SACRAMENT	2021	LDT2	1996	15	GAS	210.247011	2.36685672	0.007775712	0.008456797	774.6597224	0.220556226	0.116553567	1.122484151	1.637926238	19.26626266	0.007665886
SACRAMENT	2021	LHD1	1986	50	GAS	170.710241	4.422916025	0.009568037	0.010406114	828.2770745	0.192322757	0.182929375	1.121941363	1.637134203	32.83649694	0.008196473
SACRAMENT	2021	LHD2	1986	50	GAS	35.4942912	4.422916025	0.009568037	0.010406114	940.4954017	0.192466744	0.182930596	1.121941363	1.637134203	32.83649694	0.009306964
SACRAMENT	2021	LDT2	1981	30	GAS	17.7347389	2.539714806	0.02048001	0.022273879	618.7895959	0.201260612	0.112807743	1.120932719	1.635662392	26.5667698	0.006123425
SACRAMENT	2021	LDT2	1989	15	GAS	36.0426616	3.302753173	0.045851967	0.049868197	852.003004	0.217250426	0.14831777	1.120569636	1.635132583	22.02185927	0.00843126
SACRAMENT	2021	LHD1	1984	45	GAS	14.2826782	4.638101152	0.009558497	0.010395737	802.3791404	0.191193345	0.188583865	1.118698665	1.632402466	30.39536692	0.007940192
SACRAMENT	2021	LHD2	1984	45	GAS	1.33348269	4.638101152	0.009558497	0.010395737	911.3948899	0.191364805	0.188585302	1.118698665	1.632402466	30.39536692	0.009018991
SACRAMENT	2021	LDT2	1988	15	GAS	28.1589904	3.29460365	0.045880474	0.049899202	849.3602907	0.216388824	0.147806449	1.118443621	1.632030306	21.892541	0.008405109
SACRAMENT	2021	LHD1	1987	50	GAS	154.936978	4.507702046	0.009568037	0.010406114	827.9728023	0.191335237	0.185369011	1.114671567	1.626526134	32.66431437	0.008193462
SACRAMENT	2021	LHD2	1987	50	GAS	15.8817736	4.507702046	0.009568037	0.010406114	940.1911296	0.191465341	0.185370109	1.114671567	1.626526134	32.66431437	0.009303953
SACRAMENT	2021	LDT2	1986	15	GAS	15.3292121	3.490559096	0.043883578	0.047727395	848.1194521	0.213325989	0.153688622	1.110916395	1.621046596	22.91963115	0.00839283
SACRAMENT	2021	LDT2	1985	15	GAS	10.1079082	3.475383332	0.042891858	0.046648809	958.0155342	0.212387798	0.153020802	1.110369354	1.620248355	23.50840895	0.00948034
SACRAMENT	2021	LHD1	1985	45	GAS	17.0366094	4.643687706	0.009558497	0.010395737	802.0695266	0.189998443	0.188743091	1.109974926	1.619672806	30.2237699	0.007937128
SACRAMENT	2021	LHD2	1985	45	GAS	2.28032348	4.643687706	0.009558497	0.010395737	911.085276	0.190154449	0.188744401	1.109974926	1.619672806	30.2237699	0.009015927
SACRAMENT	2021	LDT1	1981	25	GAS	56.382387	1.741980823	0.024771811	0.026941604	497.5438502	0.204242967	0.087475562	1.107366384	1.615866429	30.05584657	0.0049236
SACRAMENT	2021	LDT2	1987	15	GAS	17.6551466	3.464573863	0.044486609	0.048383246	848.8827792	0.213118695	0.153062495	1.105765726	1.613530752	22.52700868	0.008400383
SACRAMENT	2021	LDT1	1980	30	GAS	16.1351249	2.366928564	0.052947231	0.057390893	546.3944248	0.198979229	0.106583452	1.122660233	1.610985226	29.07517874	0.005407016
SACRAMENT	2021	LHD1	1986	45	GAS	23.1193747	4.383863301	0.009558497	0.010395737	801.788003	0.188952772	0.181314176	1.102282093	1.608447442	30.06708993	0.007934342
SACRAMENT	2021	LHD2	1986	45	GAS	4.80700991	4.383863301	0.009558497	0.010395737	910.8037524	0.189094236	0.181315386	1.102282093	1.608447442	30.06708993	0.009013141
SACRAMENT	2021	LDT2	1995	15	GAS	192.296683	2.250537725	0.027140483	0.029517751	772.6628776	0.217411482	0.113677416	1.09587193	1.599093748	18.15593397	0.007646126
SACRAMENT	2021	LHD1	1987	45	GAS	20.9831938	4.467900693	0.009558497	0.010395737	801.5072982	0.187982556	0.18373227	1.095139682	1.598025254	29.90942911	0.007931564
SACRAMENT	2021	LHD2	1987	45	GAS	2.15087667	4.467900693	0.009558497	0.010395737	910.5230477	0.188110381	0.183733359	1.095139682	1.598025254	29.90942911	0.009010364
SACRAMENT	2021	MH	1994	10	GAS	16.709971	3.493513613	0.0062688	0.006817892	3434.054856	0.247388278	0.166068946	1.092387227	1.594008878	10.19596506	0.033982757
SACRAMENT	2021	MH	1987	10	GAS	5.21966537	3.949510398	0.0219408	0.023862622	3437.931831	0.246071471	0.180861887	1.085926879	1.584581953	12.65946231	0.034021122
SACRAMENT	2021	LDT1	1980	65	GAS	2.81129477	3.100307787	0.051817546	0.056166398	589.957124	0.194027158	0.139607722	1.094720165	1.57089203	45.60616358	0.005838104
SACRAMENT	2021	LDT2	1979	35	GAS	53.9134552	3.267211673	0.046143051	0.050016158	522.1727294	0.190338209	0.134988234	1.094959353	1.568629663	27.30294638	0.005167322
SACRAMENT	2021	MDV	1984	35	GAS	106.931281	2.944174649	0.017894472	0.019461872	595.8044602	0.190506509	0.125415573	1.071346594	1.563306434	28.89115933	0.005895968
SACRAMENT	2021	MDV	1984	60	GAS	71.4986977	3.629721199	0.017983988	0.019559228	658.7855414	0.190162128	0.154618396	1.069409907	1.560480426	41.03267784	0.006519217
SACRAMENT	2021	MH	1988	10	GAS	5.89671487	3.902881598	0.0219408	0.023862622	3437.53855	0.242772284	0.179374342	1.069076313	1.559993646	12.45719074	0.034017231
SACRAMENT	2021	LDT1	1979	70	GAS	1.07909475	3.276942186	0.056300702	0.061026206	603.4871494	0.194453914	0.14770888	1.088930759	1.559990366	52.64786637	0.005971995
SACRAMENT	2021	LDT2	1981	5	DSL	0.00027092	1.253835211	1.097691325	1.147324056	1274.64369	0.063630622	0.200356238	1.369929838	1.559574042	4.191945321	0.012049967
SACRAMENT	2021	MDV	1980	5	DSL	0.00066371	1.253835211	1.097691325	1.147324056	1356.797493	0.063630622	0.213269671	1.369929838	1.559574042	4.191945321	0.012826616
SACRAMENT	2021	LDA	1980	5	DSL	0.00447963	1.253835211	1.097691325	1.147324056	954.9215097	0.063630622	0.150100363	1.369929838	1.559574042	4.191945321	0.009027442
SACRAMENT	2021	LDA	1981	5	DSL	0.00718741	1.253835211	1.097691325	1.147324056	954.9215097	0.063630622	0.150100363	1.369929838	1.559574042	4.191945321	0.009027442
SACRAMENT	2021	LDA	1982	5	DSL	0.01295979	1.253835211	1.097691325	1.147324056	954.9215097	0.063630622	0.150100363	1.369929838	1.559574042	4.191945321	0.009027442
SACRAMENT	2021	LDT1	1981	5	DSL	0.00102495	1.253835211	1.097691325	1.147324056	1091.414005	0.063630622	0.171555083	1.369929838	1.559574042	4.191945321	0.010317787
SACRAMENT	2021	LDT1	1982	5	DSL	0.00502769	1.253835211	1.097691325	1.147324056	1091.414005	0.063630622	0.171555083	1.369929838	1.559574042	4.191945321	0.010317787
SACRAMENT	2021	LDT2	1980	5	DSL	0.00055426	1.253835211	1.097691325	1.147324056	1274.64369	0.063630622	0.200356238	1.369929838	1.559574042	4.191945321	0.012049967
SACRAMENT	2021	LDT2	1982	5	DSL	0.00271372	1.253835211	1.097691325	1.147324056	1274.64369	0.063630622	0.200356238	1.369929838	1.559574042	4.191945321	0.012049967
SACRAMENT	2021	MDV	1982	5	DSL	0.00713583	1.253835211	1.097691325	1.147324056	1356.797493	0.063630622	0.213269671	1.369929838	1.559574042	4.191945321	0.012826616
SACRAMENT	2021	MDV	1983	65	GAS	6.37110291	2.691836405	0.016998095	0.018486979	661.3381283	0.189482333	0.126740155	1.066701913	1.556528927	31.91172142	0.006544477
SACRAMENT	2021	LDT2	1980	40	GAS	38.2136626	3.405521608	0.042050299	0.04557958	496.9873243	0.186727139	0.140564245	1.082280512	1.553051441	25.66598687	0.004918092
SACRAMENT	2021	LDA	1984	15	GAS	25.0967112	2.073603105	0.043367087	0.047165664	646.8529665	0.201303231	0.106467215	1.061246695	1.548568687	23.95400225	0.006401134
SACRAMENT	2021	LDA	1984	5	DSL	0.01712812	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1985	5	DSL	0.02474328	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1986	5	DSL	0.00602994	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1987	5	DSL	0.01412294	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1988	5	DSL	0.00050474	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1989	5	DSL	0.00073429	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1990	5	DSL	0.00885615	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1991	5	DSL	0.0047786	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1992	5	DSL	0.00219434	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDT1	1984	5	DSL	0.0022666	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1985	5	DSL	0.00240932	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1986	5	DSL	0.00516375	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1987	5	DSL	0.00521865	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1988	5	DSL	0.00491993	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1989	5	DSL	0.00496502	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1990	5	DSL	0.00204107	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1992	5	DSL	0.00632541	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT2	1984	5	DSL	0.00027428	0.910209245	0.840502778	0.878506584	1141.838743	0.062974637	0.179481149	1.35580685	1.543495959	6.465598553	0.010794482
SACRAMENT	2021	LDT2	1990	5	DSL	0.0002832	0.910209245	0.840502778	0.878506584	1141.838743	0.062974637	0.179481149	1.35580685	1.543495959	6.465598553	0.010794482
SACRAMENT	2021	MDV	1984	5	DSL	0.00399902	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1985	5	DSL	0.00111786	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1986	5	DSL	0.00192161	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1987	5	DSL	0.00113128	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1988	5	DSL	0.00057282	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1989	5	DSL	0.00029304	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1992	5	DSL	0.00029283	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	LDT2	1979	60	GAS	36.0487763	4.01820138	0.045409397	0.049220923	576.9509086	0.186552882	0.166016152	1.073183485	1.537433736	37.45291484	0.005709397
SACRAMENT	2021	LDA	1977	35	GAS	95.9821496	2.707128029	0.046230557	0.050098156	528.1303298	0.158265843	0.108581483	1.093660084	1.536597441	27.66279148	0.005226278
SACRAMENT	2021	MH	1989	10	GAS	11.0512322	3.852238817	0.0219408	0.023862622	3432.583499	0.239450234	0.177738738	1.052147515	1.535291183	9.377183819	0.033968196
SACRAMENT	2021	LDA	1977	60	GAS	64.1776535	3.317099321	0.046317207	0.050192056	584.603568	0.157833278	0.133047111	1.090670944	1.532397685	39.03360083	0.005785126
SACRAMENT	2021	LDT2	1980	55	GAS	27.0133047	3.801927358	0.041637133	0.045131737	539.7723764	0.184204067	0.156926048	1.067656648	1.532066481	30.99301432	0.005341485
SACRAMENT	2021	MDV	1983	35	GAS	64.9966648	2.078075216	0.017631338	0.019175689	584.3218948	0.185666756	0.097842341	1.045221896	1.525185337	23.47554193	0.005782339

SACRAMENT	2021	LDT2	1981	70	GAS	0.81752507	3.504488214	0.018216322	0.019811912	655.4336078	0.186115268	0.155660551	1.036579842	1.512574873	35.58035224	0.006486047
SACRAMENT	2021	MH	1990	10	GAS	10.8263382	3.798129209	0.0219408	0.023862622	3432.446603	0.236036741	0.175995227	1.034797414	1.509973957	9.338020267	0.033966842
SACRAMENT	2021	LDA	1978	35	GAS	123.033745	2.661714791	0.045974902	0.049901112	527.6828682	0.16183713	0.110480982	1.056345326	1.508835195	27.49419823	0.00522185
SACRAMENT	2021	LDT1	1984	15	GAS	16.438307	3.422171919	0.041844052	0.045509224	680.2963687	0.201209052	0.150886274	1.033584488	1.508204059	27.77768963	0.006732084
SACRAMENT	2021	LDA	1978	60	GAS	82.2654739	3.258829861	0.045671568	0.049571873	583.076166	0.160182197	0.135265704	1.045543228	1.493405975	38.19658891	0.005770011
SACRAMENT	2021	LDA	1979	35	GAS	122.89785	2.643081799	0.045990547	0.049858184	526.8605541	0.165303293	0.111265336	1.058777975	1.493177504	27.08059536	0.005213712
SACRAMENT	2021	LDA	1981	20	GAS	49.8269755	1.89243292	0.032009479	0.034813229	544.4705783	0.182116172	0.091931531	1.021079469	1.489956764	25.27213811	0.005387978
SACRAMENT	2021	MH	1991	10	GAS	10.4424922	3.741095669	0.0219408	0.023862622	3432.310863	0.232486348	0.174149224	1.01680047	1.483712859	9.301345843	0.033965498
SACRAMENT	2021	LDT2	1980	45	GAS	14.8072082	3.544568606	0.040072514	0.0434358	498.9919589	0.178291276	0.146303465	1.033385796	1.482888475	26.04705096	0.00493793
SACRAMENT	2021	LDT1	1979	30	GAS	23.4090236	2.364796541	0.052946246	0.057390199	547.0678587	0.184516554	0.106593717	1.033282112	1.480268719	29.77621353	0.00541368
SACRAMENT	2021	LDT2	1980	50	GAS	14.8438339	3.66798811	0.039939072	0.043291158	515.2922776	0.177668213	0.151397653	1.029774491	1.477706324	27.76550973	0.005099235
SACRAMENT	2021	LDA	1995	15	GAS	388.086668	1.453914898	0.028193663	0.030663181	564.3659914	0.202174862	0.082932721	1.012482585	1.477412212	16.36537267	0.005584859
SACRAMENT	2021	LDA	1980	25	GAS	112.728092	2.218206517	0.063977114	0.069580948	631.7539039	0.172862008	0.099722849	1.01226929	1.477100972	27.61808996	0.006251717
SACRAMENT	2021	MDV	1994	20	GAS	433.477298	2.397251709	0.019276712	0.020965183	654.7445837	0.191596657	0.114329362	1.002756429	1.463219828	20.02413997	0.006479228
SACRAMENT	2021	LDA	1979	60	GAS	82.1746089	3.208130264	0.044945495	0.048725248	580.272438	0.161817371	0.135052079	1.036450421	1.461689316	36.55267483	0.005742266
SACRAMENT	2021	LDA	1994	15	GAS	277.367563	1.466670296	0.027810688	0.030246661	564.8890754	0.198835221	0.083380945	0.999567164	1.458566059	16.50858595	0.005590035
SACRAMENT	2021	MH	1992	10	GAS	13.8991048	3.681999465	0.0219408	0.023862622	3432.175282	0.228717183	0.172227362	0.997784944	1.455965449	9.267542856	0.033964157
SACRAMENT	2021	MDV	1993	20	GAS	207.451717	2.401984829	0.019190563	0.020871488	654.3979122	0.190194582	0.114316564	0.997760319	1.455929515	20.0552839	0.006475798
SACRAMENT	2021	LDA	1982	20	GAS	61.3062969	1.895462179	0.032036233	0.034842327	543.2682792	0.180260891	0.092843486	0.995315582	1.452362161	24.73180972	0.00537608
SACRAMENT	2021	LDT1	1983	15	GAS	7.19945312	3.552305009	0.041316278	0.044935222	677.8877287	0.193125379	0.155528674	0.99145176	1.446724081	27.09321405	0.006708249
SACRAMENT	2021	LDT1	1979	65	GAS	4.07865857	3.096996157	0.051816582	0.056165718	591.4314348	0.179889586	0.139597773	1.007371358	1.443149255	46.809578	0.005852693
SACRAMENT	2021	MDV	1996	5	GAS	0.62278508	2.475311371	0.017462498	0.01899206	1133.255733	0.213347576	0.13338368	0.986135201	1.43896617	10.97542998	0.011214484
SACRAMENT	2021	MDV	1992	20	GAS	181.87735	2.41825297	0.018932114	0.020590402	758.6769437	0.187093533	0.114709495	0.983814832	1.435580293	20.19360588	0.007507723
SACRAMENT	2021	MDV	1997	5	GAS	0.96342229	2.47671666	0.017462498	0.01899206	1133.905152	0.213303863	0.133727013	0.982811023	1.434115538	10.9891148	0.011220911
SACRAMENT	2021	LDT2	1979	40	GAS	66.0574026	3.400526458	0.042049513	0.045579021	504.828234	0.173149996	0.140496272	0.99608065	1.426976856	26.30036898	0.004995685
SACRAMENT	2021	LDT2	1982	30	GAS	26.0930229	2.61747686	0.020477629	0.02227129	617.5766019	0.178959776	0.115466091	0.977816139	1.426827014	25.67014914	0.006111421
SACRAMENT	2021	MH	1993	10	GAS	13.1201099	3.621819493	0.0219408	0.023862622	3432.038202	0.224675984	0.17026058	0.977400963	1.42622119	9.236516822	0.0339628
SACRAMENT	2021	MDV	1990	20	GAS	135.034307	2.422723303	0.033618007	0.03656265	757.5608308	0.184959657	0.114509494	0.977042877	1.425698673	20.20242805	0.007496679
SACRAMENT	2021	MDV	1984	40	GAS	131.017436	3.078925331	0.016357558	0.017790337	576.0160441	0.173729441	0.131155665	0.976997825	1.425632934	27.91985686	0.005700146
SACRAMENT	2021	MDV	1984	55	GAS	92.6164541	3.441852864	0.016406611	0.017843686	627.1446231	0.173489998	0.146615605	0.975651279	1.423668056	34.60672225	0.006206104
SACRAMENT	2021	LDT2	1981	65	GAS	3.09000264	3.240434164	0.017041025	0.018533669	647.9934939	0.175018609	0.143931934	0.974776355	1.422391369	32.65127396	0.006412421
SACRAMENT	2021	MDV	1991	20	GAS	126.59421	2.427536348	0.018762024	0.020405413	757.8526587	0.184795488	0.11485566	0.973969623	1.421214188	20.25367287	0.007499566
SACRAMENT	2021	MDV	1987	20	GAS	59.2532933	2.420081311	0.033649497	0.036596898	753.4610144	0.183205374	0.113893967	0.973663949	1.420768149	19.99707521	0.007456108
SACRAMENT	2021	LDT1	1982	25	GAS	80.6459215	1.836792313	0.024891448	0.027071721	495.7622034	0.182526087	0.091609087	0.970850164	1.416662281	28.90218029	0.004905969
SACRAMENT	2021	MDV	1989	20	GAS	108.883072	2.43894803	0.033071415	0.035968181	757.6223126	0.18322728	0.114726514	0.970615817	1.416320322	20.68045456	0.007497287
SACRAMENT	2021	LDT2	1981	35	GAS	31.5235633	2.513214461	0.017626359	0.019170273	572.6299399	0.173424733	0.111630664	0.96589917	1.409437801	24.26013891	0.005666637
SACRAMENT	2021	LDT1	1992	15	GAS	71.6465396	1.535033367	0.026916994	0.029274687	670.8184208	0.193521003	0.086908645	0.965393858	1.408700451	21.51358122	0.006638292
SACRAMENT	2021	LDT2	1979	55	GAS	46.696093	3.79622791	0.041636326	0.045131152	548.4294276	0.170797076	0.156845088	0.982544999	1.407585795	31.79574883	0.005427154
SACRAMENT	2021	LDA	1993	15	GAS	201.312846	1.493823074	0.026917923	0.029275697	565.7224225	0.190684334	0.084593888	0.961496787	1.403013854	16.78189659	0.005598282
SACRAMENT	2021	LDT1	1998	5	GAS	1.25757791	1.039906198	0.018493197	0.02011304	908.1806022	0.212777016	0.071176354	0.961097233	1.402430827	10.63288231	0.008987183
SACRAMENT	2021	MDV	1988	20	GAS	70.402724	2.433359777	0.033164381	0.036069291	754.8772891	0.181134673	0.114539977	0.960871035	1.402100759	20.22180733	0.007470123
SACRAMENT	2021	LDA	1977	40	GAS	117.602025	2.825165313	0.042219393	0.045751423	510.5217338	0.14428798	0.113315896	0.997069244	1.400886868	26.71078691	0.005052026
SACRAMENT	2021	LDT1	1980	35	GAS	28.6802436	2.453524393	0.046144294	0.050017011	505.691238	0.17290049	0.110482886	0.975521443	1.399845284	26.6573722	0.005004225
SACRAMENT	2021	LDA	1977	55	GAS	83.1330764	3.152143552	0.042268182	0.045804294	556.1521607	0.143980905	0.126430822	0.994947268	1.397905481	33.00515118	0.005503576
SACRAMENT	2021	LDT1	1991	15	GAS	82.994539	1.548163371	0.026709459	0.029048973	670.0279093	0.1914085	0.087365619	0.956880886	1.396278343	21.56399678	0.006630469
SACRAMENT	2021	LDA	1992	15	GAS	171.102467	1.491529151	0.02691694	0.029274628	603.8965403	0.188979189	0.084215731	0.956876597	1.396272084	16.7210654	0.005976046
SACRAMENT	2021	LDA	1991	15	GAS	164.990415	1.490800025	0.026917787	0.029275549	603.4831614	0.187911278	0.083868289	0.956373636	1.395538164	16.70042992	0.005971955
SACRAMENT	2021	LDA	1990	15	GAS	115.272728	1.49082337	0.048066225	0.052276405	603.4834927	0.186852783	0.083519142	0.956348864	1.395502017	16.70069893	0.005971958
SACRAMENT	2021	LDT2	1984	20	GAS	30.0334419	2.963720688	0.031776815	0.034560186	800.7981137	0.180918743	0.130672985	0.954686698	1.393076589	23.57355032	0.007924547
SACRAMENT	2021	MDV	1983	60	GAS	43.4594708	2.508000929	0.015388515	0.016736414	633.3022232	0.168444315	0.1180846	0.948267156	1.383709208	26.80887377	0.006267039
SACRAMENT	2021	MDV	1986	20	GAS	44.8059144	2.442332406	0.032781625	0.035653008	752.6382035	0.177912497	0.114547619	0.947320094	1.382327258	20.23794492	0.007447965
SACRAMENT	2021	LDA	1989	15	GAS	93.3435309	1.494445166	0.047704124	0.051882587	601.7205024	0.183856777	0.083316825	0.946763334	1.381514834	16.68712066	0.005954512
SACRAMENT	2021	LDA	1978	40	GAS	150.746962	2.772773917	0.041933185	0.045514236	510.0248307	0.147367837	0.115090763	0.961901181	1.373935512	26.50428687	0.005047109
SACRAMENT	2021	MDV	1983	40	GAS	79.6370931	2.09187927	0.015801819	0.01718592	564.2735017	0.167056279	0.098492279	0.940453126	1.372306993	22.22107637	0.005583944
SACRAMENT	2021	LDT1	1980	60	GAS	19.1768026	3.018056999	0.045410075	0.049221173	558.7740775	0.169488543	0.135903946	0.956270904	1.372221313	36.50919008	0.005529522
SACRAMENT	2021	MDV	1984	50	GAS	50.8928205	3.325893633	0.015662762	0.017034683	598.3254909	0.166661043	0.141675989	0.937247459	1.367629291	30.69828942	0.005920916
SACRAMENT	2021	LHD1	1991	5	DSL	26.6923981	6.751893377	0.170097781	0.177788848	1316.983587	0.055747484	0.20701148	1.200210511	1.366359871	3.910217077	0.012450231
SACRAMENT	2021	LHD1	1992	5	DSL	35.3520517	6.751893377	0.170097781	0.177788848	1316.983587	0.055747484	0.20701148	1.200210511	1.366359871	3.910217077	0.012450231
SACRAMENT	2021	LHD1	1993	5	DSL	41.892636	6.751893377	0.170097781	0.177788848	1316.983587	0.055747484	0.20701148	1.200210511	1.366359871	3.910217077	0.012450231
SACRAMENT	2021	LHD2	1991	5	DSL	5.73169002	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	LHD2	1992	5	DSL	8.4285365	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	LHD2	1993	5	DSL	20.0786239	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	MDV	1984	45	GAS	50.7672474	3.212447217	0.015647144	0.017017697	578.6862609	0.166497467	0.136843413	0.936327559	1.366286976	28.5230493	0.00572657
SACRAMENT	2021	LDA	1978	55	GAS	106.56329	3.091422791	0.041763765	0.045330348	555.0583241	0.146470469	0.128317064	0.956043869	1.365569196	32.44180886	0.005492752
SACRAMENT	2021	LHD1	1994	5	DSL	37.1419156	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD1	1995	5	DSL	61.8414684	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD1	1996	5	DSL	50.303048	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD1	1997	5	DSL	109.036421	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD2	1994	5	DSL	20.262235	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1995	5	DSL	11.45379	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1996	5	DSL	24.8618081	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1997	5	DSL	16.4203643	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LDT1	1990	15	GAS	52.7215723	1.591419186	0.046583661	0.050663982	670.1996698	0.186485548	0.089143074	0.934314044	1.36334886	21.85931622	0.006632169
SACRAMENT	2021	LDT2	1979	45	GAS	25.5962305	3.538925368	0.040071758	0.043435259	506.9022684	0.165322543	0.146214367	0.951051631	1.362468657	26.69857501	0.005016209
SACRAMENT	2021	LHD1	1998	5	DSL	44.7543985	6.756998998	0.17124926	0.178992391	1316.983587	0.055521889	0.20701148	1.195353583	1.360830582	3.885874313	0.012450231
SACRAMENT	2021	LHD2	1998	5	DSL	12.9531186	6.756998998	0.17124926	0.178992391	1389.089524	0.055521889	0.218345529	1.195353583	1.360830582	3.885874313	0.013131891
SACRAMENT	2021	LDT2	1979	50	GAS	25.6595429	3.662174615	0.039938308	0.043290608	523.5042365	0.16474121	0.151306537	0.947707395	1.357677733	28.47222305	0.005180499
SACRAMENT	2021	LDA	1979	40	GAS	150.580457	2.739542092	0.041815445	0.045331972	509.1200207	0.150240913	0.115326008	0.962302479	1.357119668	26.03443108	0.005038155
SACRAMENT	2021	LHD1	1999	5	DSL	184.039174	6.754523283	0.170740313	0.178460432	1316.983587	0.055293058	0.20701148	1.190426987	1.35522198	3.869868888	0.012450231
SACRAMENT	2021	LHD2	1999	5	DSL	52.1041106	6.754523283	0.170740313	0.178460432	1389.089524	0.055293058	0.218345529	1.190426987	1.35522198	3.869868888	0.013131891
SACRAMENT	2021	MH	1979	20	DSL	0.1110765	15.51167408	1.043210702	1.09038006	1431.963737	0.055251372	0.225084758	1.189529517	1.35420027	5.398405598	0.013537207
SACRAMENT	2021	MH	1986	15	GAS	6.99243388	3.211304623	0.026006749	0.028284713	2815.795285	0.203131872	0.150317801	0.926638198	1.352148283	12.96435247	0.027864577
SACRAMENT	2021	LDA	1977	20	DSL	0.63936241	1.658330079	0.828199017	0.865646501	536.762389	0.055156556	0.084371573	1.187488178	1.351876342	2.519727722	0.005074335
SACRAMENT	2021	LDA	1978	20	DSL	1.00975839	1.658330079	0.828199017	0.865646501	536.762389	0.055156556	0.084371573	1.187488178	1.351876342	2.519727722	0.005074335
SACRAMENT	2021	LDA	1979	20	DSL	2.36745707	1.658330079	0.828199017	0.865646501	536.762389	0.055156556	0.084371573	1.187488178	1.351876342	2.519727722	0.005074335
SACRAMENT	2021	LDT2	1978	20	DSL	0.73297766	1.658330079	0.828199017	0.865646501	730.9189808	0.055156556	0.114890285	1.187488178	1.351876342	2.519727722	0.006909813
SACRAMENT	2021	LDT2	1979	20	DSL	1.20008477	1.658330079	0.828199017	0.865646501	730.9189808	0.055156556	0.114890285	1.187488178	1.351876342	2.519727722	0.006909813
SACRAMENT	2021	MDV	1978	20	DSL	0.30818031	1.658330079	0.828199017	0.865646501	811.5495306	0.055156556	0.127564285	1.187488178	1.351876342	2.519727722	0.007672062
SACRAMENT	2021	MDV	1985	20	GAS	34.6673049	2.468560008	0.032063781	0.034872287	813.8636841	0.173667043	0.115337203	0.926334235	1.351704741	20.47272098	0.008053841
SACRAMENT	2021	LDA	1988	15	GAS	66.9885721	1.515761056	0.046583957	0.050664304	602.2225505	0.178351063	0.083909791	0.924789584	1.34945079	16.9381741	0.00595948
SACRAMENT	2021	LDA	1983	20	GAS	69.0775126	1.820577045	0.032299609	0.035128772	541.0615803	0.170272697	0.091011975	0.923307721	1.347288459	23.12757256	0.005354243
SACRAMENT	2021	LHD1	2000	5	DSL	175.360492	6.750687322	0.169951733	0.177636196	1316.983587	0.054938499	0.20701148	1.182793545	1.346531813	3.845069517	0.012450231
SACRAMENT	2021	LHD2	2000	5	DSL	42.7327783	6.750687322	0.169951733	0.177636196	1389.089524	0.054938499	0.218345529	1.182793545	1.346531813	3.845069517	0.013131891
SACRAMENT	2021	LDT2	1983	20	GAS	13.5995963	3.050453754	0.031579563	0.034345656	798.6538378	0.174625529	0.133555262	0.920910801	1.343790879	23.11194021	0.007903327
SACRAMENT	2021	LDA	1977	50	GAS	45.6816963	3.046961105	0.040370282	0.043747617	530.397137	0.13829987	0.122212009	0.955689771	1.342748517	29.32296018	0.00524871
SACRAMENT	2021	LDA	1977	45	GAS	45.5689812	2.943799237	0.040354555	0.043730574	512.8895612	0.138216355	0.118074241	0.955112661	1.341937676	27.2659583	0.005075458
SACRAMENT	2021	LDT1	1981	30	GAS	39.3776249	1.693273725	0.020480009	0.022273878	441.0882036	0.169537462	0.08502968	0.91919976	1.341294132	26.57183826	0.004364925
SACRAMENT	2021	LDT1	1989	15	GAS	58.75936	2.311927368	0.045851967	0.049868197	669.7687947	0.183004767	0.115659349	0.918867249	1.340808932	22.02185927	0.006627905
SACRAMENT	2021	LDA	1979	55	GAS	106.445588	3.040117907	0.041235505	0.044703261	552.992851	0.148287094	0.127979294	0.949788151	1.339470914	31.26940858	0.005472313
SACRAMENT	2021	LDT1	1988	15	GAS	36.5168704	3.29460365	0.045880474	0.049899202	667.6699873	0.182281141	0.147807866	0.917123916	1.338265065	21.892541	0.006607136
SACRAMENT	2021	LHD1	2001	5	DSL	294.522075	6.745491115	0.16888352	0.176519683	1316.983587	0.054458213	0.20701148	1.172453256	1.334760082	3.811476202	0.012450231
SACRAMENT	2021	LHD2	2001	5	DSL	83.8697837	6.745491115	0.16888352	0.176519683	1389.089524	0.054458213	0.218345529	1.172453256	1.334760082	3.811476202	0.013131891
SACRAMENT	2021	LDT1	1993	15	GAS	100.098686	1.537139928	0.026916994	0.029274687	620.3121567	0.184920256	0.08712944	0.913687483	1.33325063	16.87886505	0.006138492
SACRAMENT	2021	LHD1	1991	15	GAS	452.548367	3.674013962	0.01456378	0.015839439	1347.392618	0.182159458	0.154461635	0.911733918	1.330399993	14.8051526	0.013333542
SACRAMENT	2021	LHD2	1991	15	GAS	35.4673403	3.674013962	0.01456378	0.015839439	1539.419185	0.182293793	0.154549799	0.911733918	1.330399993	14.8051526	0.015233801
SACRAMENT	2021	LDT1	1986	15	GAS	40.8357407	3.490442869	0.043883804	0.047727641	667.0691056	0.179705018	0.153684943	0.910985163	1.329307412	22.92005719	0.00660119
SACRAMENT	2021	LDT1	1985	15	GAS	23.2427482	3.475275494	0.042891897	0.046648852	673.8989043	0.178917571	0.153017754	0.910548799	1.328670671	23.50926462	0.006668776
SACRAMENT	2021	LDA	1987	15	GAS	70.4890466	1.52844809	0.045848317	0.049864228	601.7951683	0.174063585	0.084021013	0.909422499	1.327027175	17.06500997	0.005955251

SACRAMENT	2021	MH	1982	20	DSL	0.89945969	15.48801175	1.025118612	1.071469927	1431.963737	0.054087399	0.225084758	1.164469857	1.325671513	5.284632542	0.013537207
SACRAMENT	2021	LHD1	1992	15	GAS	417.257861	3.683291007	0.01456378	0.015839439	1347.273024	0.181583225	0.154846763	0.90762317	1.3244016	14.74088613	0.013332359
SACRAMENT	2021	LHD2	1992	15	GAS	24.1540199	3.683291007	0.01456378	0.015839439	1539.299591	0.181700659	0.154923537	0.90762317	1.3244016	14.74088613	0.015232617
SACRAMENT	2021	MH	1995	10	GAS	24.1023427	3.427405156	0.0062688	0.006817892	3433.2087	0.210707494	0.163871614	0.907554458	1.324301335	10.16498627	0.033974383
SACRAMENT	2021	LDT1	1987	15	GAS	40.9210618	3.464448294	0.044486632	0.048383271	667.5215819	0.179526568	0.153058906	0.90673949	1.323112135	22.52715871	0.006605667
SACRAMENT	2021	MH	1996	10	GAS	17.2108227	3.363040268	0.0062688	0.006817892	3433.150552	0.210225973	0.161719072	0.905115591	1.320742545	10.13493679	0.033973808
SACRAMENT	2021	LHD1	1993	15	GAS	499.179082	3.676640063	0.01456378	0.015839439	1347.164792	0.181107252	0.154744218	0.904095589	1.319254161	14.68220122	0.013331288
SACRAMENT	2021	LHD2	1993	15	GAS	67.215252	3.676640063	0.01456378	0.015839439	1539.191359	0.181208596	0.154810301	0.904095589	1.319254161	14.68220122	0.015231546
SACRAMENT	2021	MH	1997	10	GAS	29.7963946	3.303391626	0.0062688	0.006817892	3433.091529	0.209745131	0.159692388	0.902682305	1.317191901	10.10431975	0.033973224
SACRAMENT	2021	MH	1983	20	DSL	0.16065903	15.47959794	1.01868547	1.064745907	1431.963737	0.053673516	0.225084758	1.155559203	1.315527326	5.244177393	0.013537207
SACRAMENT	2021	LDA	1998	10	GAS	299.365642	1.04258825	0.012152009	0.013216418	670.0631899	0.192031637	0.066979196	0.901250562	1.315102705	11.68473696	0.006630818
SACRAMENT	2021	LHD1	1994	15	GAS	579.658202	3.673080946	0.01456378	0.015839439	1347.067311	0.180711985	0.154730833	0.901037022	1.314791107	14.62902294	0.013330323
SACRAMENT	2021	LHD2	1994	15	GAS	95.6947545	3.673080946	0.01456378	0.015839439	1539.093878	0.18079803	0.15478682	0.901037022	1.314791107	14.62902294	0.015230582
SACRAMENT	2021	LDA	1978	45	GAS	58.4121362	2.886462741	0.040019726	0.04343737	512.2700513	0.140990365	0.119809696	0.920274064	1.314477247	26.98337633	0.005069327
SACRAMENT	2021	LDA	1978	50	GAS	58.5566189	2.986739873	0.039965213	0.043378202	529.5831821	0.140909606	0.123971943	0.919746933	1.313724319	28.92712892	0.005240655
SACRAMENT	2021	LDA	1986	15	GAS	44.2870528	1.544014129	0.045074304	0.049022418	602.6207337	0.169818826	0.084183238	0.894819059	1.30571787	17.26276983	0.005963421
SACRAMENT	2021	MH	1984	20	DSL	0.86789933	15.47092095	1.012051105	1.057811565	1431.963737	0.053246688	0.225084758	1.146369833	1.305065839	5.202456846	0.013537207
SACRAMENT	2021	LDA	1979	45	GAS	58.347618	2.842743044	0.03977767	0.043122827	511.1377843	0.14339991	0.11967044	0.918485428	1.295325188	26.37490053	0.005058123
SACRAMENT	2021	MDV	1983	55	GAS	56.2955999	2.313136426	0.014545825	0.015819911	607.0040331	0.157648158	0.108909765	0.887489554	1.295022674	24.0323368	0.006006797
SACRAMENT	2021	MH	1985	20	DSL	0.552938	15.46198079	1.005215518	1.050666903	1431.963737	0.052806913	0.225084758	1.136901747	1.294287052	5.159470902	0.013537207
SACRAMENT	2021	LDT1	1997	10	GAS	75.3669618	1.174265978	0.011546897	0.012558304	747.7182736	0.188242009	0.074359927	0.886468802	1.293533195	12.57509093	0.007399278
SACRAMENT	2021	MDV	1983	45	GAS	30.8581523	2.138633825	0.014749307	0.016041217	565.4207787	0.157338682	0.100693631	0.885747345	1.292480447	21.91251796	0.005595297
SACRAMENT	2021	LDA	1979	50	GAS	58.4919412	2.937189467	0.039591715	0.042921235	528.063779	0.142963042	0.123646334	0.915687264	1.291378982	28.0886616	0.005225619
SACRAMENT	2021	LDT1	1994	15	GAS	141.930802	1.275711424	0.027065994	0.029436738	618.3176136	0.179936703	0.07647429	0.882846363	1.288247341	15.28258724	0.006118754
SACRAMENT	2021	MDV	1998	5	GAS	1.24501659	2.049769575	0.017995621	0.01957188	1134.942175	0.193066474	0.115212206	0.882371719	1.287554741	9.777603535	0.011231173
SACRAMENT	2021	LDA	1985	15	GAS	45.1455124	1.557073553	0.044396082	0.04828479	636.7906664	0.165726196	0.084127226	0.881600787	1.286429798	17.41923298	0.00630156
SACRAMENT	2021	LDT1	1979	35	GAS	41.6096251	2.450402785	0.046143436	0.050016406	506.3289324	0.160331113	0.110452437	0.897845031	1.28624303	27.30101959	0.005010535
SACRAMENT	2021	MH	1986	20	DSL	0.7674262	15.45277743	0.998178708	1.043311919	1431.963737	0.052354193	0.225084758	1.127154943	1.283190965	5.11521956	0.013537207
SACRAMENT	2021	LDT1	1996	15	GAS	192.158177	1.352499244	0.007775712	0.008456797	618.4922779	0.178176065	0.07889627	0.876948779	1.279641599	14.8876218	0.006120482
SACRAMENT	2021	LDT1	1980	40	GAS	35.1404374	2.554276891	0.042050573	0.045579719	488.9050934	0.15729077	0.115019799	0.887449877	1.273465113	25.67488777	0.004838112
SACRAMENT	2021	LDA	1997	15	GAS	709.742283	1.261793711	0.008064523	0.008770905	559.360549	0.17731109	0.074220794	0.872392397	1.272992938	14.35458531	0.005535326
SACRAMENT	2021	MDV	1983	50	GAS	30.9344801	2.206932236	0.014344831	0.015601313	582.1916464	0.154538931	0.103909336	0.869985979	1.269481498	22.51255591	0.005761258
SACRAMENT	2021	LDT2	1981	60	GAS	21.0779643	3.032827514	0.015413042	0.01676309	620.631957	0.156006528	0.134710569	0.868887458	1.26787854	27.5252143	0.006141656
SACRAMENT	2021	LDT2	1981	40	GAS	38.6242118	2.536356932	0.015796793	0.017180454	552.9779699	0.155851653	0.112658594	0.868024871	1.266619855	22.95585495	0.005472165
SACRAMENT	2021	LDT1	1979	60	GAS	27.8219243	3.013639555	0.045409231	0.049220577	559.8939705	0.157140942	0.135840456	0.879980256	1.260650148	37.44933118	0.005540605
SACRAMENT	2021	LDT1	1980	55	GAS	24.8408364	2.851594875	0.041637069	0.045131512	531.1501595	0.155164174	0.128408111	0.875451415	1.256247664	31.0035221	0.005256161
SACRAMENT	2021	LDT1	1995	15	GAS	132.009884	1.286019204	0.027140493	0.029517763	616.9448294	0.175634522	0.076949084	0.856148475	1.249289845	14.02954447	0.006105169
SACRAMENT	2021	MH	1987	20	DSL	0.80436836	15.39768013	1.001602973	1.046891015	1387.422178	0.050681072	0.218083445	1.091133643	1.242183109	4.949877933	0.013116129
SACRAMENT	2021	LDT1	1981	70	GAS	1.8152055	2.336483442	0.018216192	0.019811771	470.7762663	0.156773655	0.117329192	0.849996837	1.240313389	35.58853781	0.004658713
SACRAMENT	2021	MH	1988	20	DSL	0.83146788	15.38467703	0.994979511	1.039968069	1387.422178	0.050112021	0.218083445	1.078882317	1.228235789	4.894298349	0.013116129
SACRAMENT	2021	LDT2	1992	20	GAS	252.598861	2.763204996	0.019276712	0.020965183	709.70319	0.163912745	0.126061132	0.839991917	1.225714234	19.28574106	0.007023088
SACRAMENT	2021	LDT2	1982	35	GAS	46.3804436	2.54340798	0.017505998	0.01903937	571.4576912	0.153287383	0.112198653	0.837545062	1.222143788	23.39609555	0.005655037
SACRAMENT	2021	LDT2	1993	20	GAS	386.808379	2.766890171	0.019276712	0.020965183	646.0731218	0.163611877	0.126376477	0.836047742	1.219958902	19.46734905	0.006393417
SACRAMENT	2021	LDT2	1991	20	GAS	221.263364	2.780523124	0.019190563	0.020871488	708.8733875	0.162667785	0.126437254	0.835374889	1.218977078	19.29384558	0.007014877
SACRAMENT	2021	MH	2003	5	DSL	3.10808751	15.63375435	0.294435299	0.307748357	2118.933317	0.04972095	0.33306681	1.070462786	1.218650713	2.23068304	0.02003154
SACRAMENT	2021	LDA	1980	30	GAS	78.7296309	2.123626916	0.052419773	0.057011286	560.4413546	0.142391438	0.095470879	0.833835509	1.216730817	24.54800848	0.005546022
SACRAMENT	2021	LDT1	1980	45	GAS	13.6163806	2.658563375	0.040072681	0.043435831	490.9213102	0.150184385	0.119715848	0.847354959	1.215930056	26.05603056	0.004858064
SACRAMENT	2021	LDT2	1985	20	GAS	37.9021858	2.995819444	0.032252809	0.035077872	796.1574477	0.159314043	0.131905649	0.832898277	1.215363211	20.34781878	0.007878623
SACRAMENT	2021	MH	1989	20	DSL	1.07280169	15.37132218	0.988176892	1.032857866	1387.422178	0.049527578	0.218083445	1.066299603	1.213911206	4.837215405	0.013116129
SACRAMENT	2021	LDT1	1980	50	GAS	13.6500608	2.751132285	0.03993913	0.043291071	507.0064593	0.149659125	0.123884252	0.844391394	1.211677425	27.77500746	0.00501724
SACRAMENT	2021	MDV	1995	20	GAS	494.275271	2.062977238	0.019276712	0.020965183	647.0100571	0.162517379	0.103127082	0.826545364	1.206093055	15.2663553	0.006402689
SACRAMENT	2021	LDT2	1986	20	GAS	57.4807997	3.01464956	0.03267137	0.035533096	705.0870933	0.158453426	0.13273442	0.825162039	1.204074511	19.98997907	0.006977408
SACRAMENT	2021	LDT2	1990	20	GAS	180.664435	2.838968302	0.033807343	0.036768571	708.8557802	0.160082844	0.128140144	0.823911179	1.202249258	19.43784998	0.007014703
SACRAMENT	2021	MH	1990	20	DSL	1.33075469	15.35761557	0.981195116	1.025560405	1387.422178	0.048927743	0.218083445	1.053385502	1.199209361	4.778629102	0.013116129
SACRAMENT	2021	LDT2	1982	70	GAS	1.2028201	3.583312159	0.016544502	0.017993655	644.1088399	0.150133663	0.158072476	0.820313491	1.196999521	28.77963634	0.006373979
SACRAMENT	2021	LDA	1996	20	GAS	1788.47319	1.46104512	0.005660323	0.006156118	472.2474701	0.160003775	0.079915879	0.818462316	1.19429829	16.64823457	0.004673272
SACRAMENT	2021	LDT2	1987	20	GAS	66.2024859	2.999839809	0.032928578	0.035812833	705.759551	0.157321687	0.132530864	0.816263112	1.191089217	19.75763466	0.006984063
SACRAMENT	2021	LDT2	1981	45	GAS	14.9662898	2.596048168	0.014747325	0.016039061	554.0366323	0.146546379	0.115309929	0.816198608	1.190995093	22.61220956	0.005482642
SACRAMENT	2021	LDT2	1989	20	GAS	135.151174	2.874840883	0.033503611	0.036438234	708.3163902	0.158177943	0.129101379	0.815875962	1.190524289	19.5066103	0.007009365
SACRAMENT	2021	LDT2	1981	55	GAS	27.3035226	2.803116887	0.014557944	0.015833092	594.6175812	0.146291496	0.124507401	0.814779019	1.188923631	24.70591004	0.005884223
SACRAMENT	2021	LDT2	1988	20	GAS	105.589333	2.868695591	0.033515445	0.036451104	706.2838611	0.157538504	0.128698852	0.814265412	1.188174178	19.40306767	0.006989251
SACRAMENT	2021	LHD1	1988	15	GAS	270.781362	2.097389978	0.026006749	0.028284713	1342.088523	0.16626069	0.099721978	0.811380168	1.183964036	11.73190175	0.013281054
SACRAMENT	2021	LHD2	1988	15	GAS	7.71505386	2.097389978	0.026006749	0.028284713	1534.11509	0.166384667	0.099921159	0.811380168	1.183964036	11.73190175	0.015181312
SACRAMENT	2021	LDT2	1998	10	GAS	158.664986	1.563415937	0.011783032	0.012815122	929.7290134	0.173096104	0.089426077	0.809244058	1.180847029	12.41827386	0.009200422
SACRAMENT	2021	LHD1	1989	15	GAS	409.009266	2.095686271	0.026006749	0.028284713	1342.01762	0.165498619	0.099807529	0.80646856	1.176797029	11.70053243	0.013280352
SACRAMENT	2021	LHD2	1989	15	GAS	10.020335	2.095686271	0.026006749	0.028284713	1534.044187	0.165609143	0.099986956	0.80646856	1.176797029	11.70053243	0.015180611
SACRAMENT	2021	LDT2	1994	20	GAS	501.093906	2.721132349	0.019338563	0.021032452	643.779567	0.158764982	0.124982732	0.805527587	1.175423963	17.69900276	0.006370721
SACRAMENT	2021	LDA	1981	25	GAS	160.928676	1.724342896	0.025105356	0.027304365	465.1579468	0.143237131	0.083765972	0.803094486	1.171873589	21.94900488	0.004603115
SACRAMENT	2021	LDT1	1982	30	GAS	56.3233488	1.744917485	0.020477631	0.022271292	439.7262786	0.150780083	0.087026877	0.80199423	1.170268097	25.67190682	0.004351448
SACRAMENT	2021	LDT1	1979	40	GAS	50.9821481	2.550383153	0.042049791	0.045579168	489.5450961	0.145852439	0.114959074	0.816765289	1.170089073	26.29844702	0.004844446
SACRAMENT	2021	LHD1	1990	15	GAS	534.167797	2.092084865	0.026006749	0.028284713	1341.950014	0.164769007	0.099912798	0.801867523	1.170083207	11.67039792	0.013279683
SACRAMENT	2021	LHD2	1990	15	GAS	40.4654337	2.092084865	0.026006749	0.028284713	1533.97658	0.164867252	0.10007155	0.801867523	1.170083207	11.67039792	0.015179942
SACRAMENT	2021	LDT2	1981	50	GAS	15.003309	2.678178612	0.014348468	0.015605268	570.3431395	0.143669404	0.118957957	0.800175128	1.167613669	23.18811646	0.005644008
SACRAMENT	2021	LDT1	1981	65	GAS	6.86093919	2.160437145	0.017040903	0.018533537	464.165508	0.147427002	0.108488826	0.799321068	1.166367426	32.65863729	0.004593294
SACRAMENT	2021	LDT2	1996	20	GAS	788.374919	2.09170679	0.005542975	0.006028492	643.8320547	0.156996869	0.103004075	0.799009399	1.16591264	17.29368503	0.00637124
SACRAMENT	2021	MDV	1999	5	GAS	2.38565673	1.656247634	0.018493671	0.020113555	1135.318659	0.175858721	0.09705728	0.798007736	1.164451015	8.624776586	0.011234898
SACRAMENT	2021	LDA	1984	20	GAS	94.1065349	1.782887028	0.03246521	0.035308878	537.8000098	0.150787106	0.09154067	0.794931694	1.159962462	20.82256328	0.005321967
SACRAMENT	2021	LDA	1999	5	GAS	5.05814111	0.762193646	0.019356313	0.021051756	803.4790067	0.180805548	0.055136151	0.794668797	1.159578844	8.344912004	0.007951076
SACRAMENT	2021	LDT1	1981	35	GAS	69.9938725	1.675603448	0.017626325	0.019170236	407.9853676	0.146088735	0.084142346	0.792065239	1.155779738	24.26478785	0.004037346
SACRAMENT	2021	LDT1	1979	55	GAS	36.0393694	2.847156676	0.041636295	0.045130966	532.0493516	0.143869544	0.128336205	0.805661193	1.154181465	31.79290189	0.00526506
SACRAMENT	2021	LDT1	1984	20	GAS	61.6396345	2.963633875	0.031776979	0.034560364	565.2471027	0.152417987	0.130668968	0.782951195	1.142480545	23.57541735	0.005593578
SACRAMENT	2021	LDA	1982	25	GAS	198.004014	1.73290679	0.0251146	0.027314419	464.1367726	0.141724996	0.084881201	0.782538552	1.141878418	21.48017495	0.00459301
SACRAMENT	2021	LDT2	1982	65	GAS	4.54630373	3.291085287	0.015625097	0.016993719	639.1633235	0.142920337	0.145181323	0.780900689	1.139488452	27.04450419	0.006325039
SACRAMENT	2021	LDT2	1995	20	GAS	721.065575	1.990900163	0.019369484	0.021066081	642.1396221	0.154707732	0.100562805	0.77981098	1.137898351	16.29375558	0.006354492
SACRAMENT	2021	LDT2	1997	15	GAS	393.302474	1.781555438	0.007806105	0.008489851	766.2472462	0.159467384	0.09483037	0.776847562	1.133574139	14.51060855	0.007582638
SACRAMENT	2021	MH	2004	5	DSL	4.25124825	14.85205575	0.249555564	0.260839359	2117.471756	0.04617686	0.332837072	0.99416061	1.131785758	2.093999848	0.020017723
SACRAMENT	2021	LDT1	1979	45	GAS	19.7548006	2.654178906	0.040071936	0.043435305	491.6015464	0.139258728	0.11963769	0.779840885	1.117191574	26.69650939	0.004864796
SACRAMENT	2021	LDT1	1979	50	GAS	19.8036642	2.746615134	0.039938387	0.043290547	507.7687906	0.138768735	0.123804273	0.777096952	1.113260644	28.469857	0.005024784
SACRAMENT	2021	MH	2005	5	DSL	4.00278778	14.78878583	0.246390122	0.25753079	2117.471756	0.045164022	0.332837072	0.972354798	1.106961291	2.048077872	0.020017723
SACRAMENT	2021	LDT2	1999	5	GAS	2.69044002	1.258277384	0.018984706	0.0206476	1128.498209	0.171339088	0.07871716	0.758497699	1.106798062	9.54364827	0.011167405
SACRAMENT	2021	MH	1991	15	DSL	1.96243924	15.02293254	0.913296792	0.95459202	1626.030472	0.045053255	0.255589346	0.969970053	1.104246417	3.091488924	0.015371836
SACRAMENT	2021	LDT1	1983	20	GAS	26.9961901	3.050248232	0.031579934	0.034346059	563.521001	0.14711673	0.13354739	0.755256207	1.102068084	23.11402471	0.005576497
SACRAMENT	2021	MDV	1994	25	GAS	1400.02332	2.164356721	0.014505207	0.015775736	559.9753658	0.143801509	0.10322217	0.752611713	1.098209246	18.10616026	0.00554141
SACRAMENT	2021	LDT2	1984	25	GAS	97.00051	2.649752884	0.025042632	0.027236147	684.2336525	0.142580592	0.116829875	0.752380835	1.097872348	20.5204319	0.006771047
SACRAMENT	2021	MDV	1993	25	GAS	670.017189	2.165337822	0.014478175	0.015746336	559.6661707	0.143126792	0.103053931	0.750842803	1.095628056	18.10653704	0.00553835
SACRAMENT	2021	MH	1992	15	DSL	3.58805026	14.99896493	0.904768062	0.945677658	1626.030472	0.044468356	0.255589346	0.957377533	1.089910671	3.051381243	0.015371836
SACRAMENT	2021	MDV	1992	25	GAS	587.418379	2.17004805	0.014397079	0.015658137	648.5964246	0.141919758	0.102935929	0.746272526	1.088959118	18.14622179	0.006418387
SACRAMENT	2021	LDT2	1982	40	GAS	56.8275884	2.533159698	0.015554629	0.016917078	551.5221596	0.136579744	0.111746565	0.746256398	1.088935584	21.93475464	0.005457759
SACRAMENT	2021	MDV	1989	25	GAS	351.665107	2.180308548	0.025474513	0.027705857	647.591162	0.140854468	0.102560283	0.746152942	1.088784622	18.41303692	0.00640844
SACRAMENT	2021	LDA	1980	10	DSL	0.34146746	1.318517495	0.764147123	0.798698465	795.5397539	0.044295838	0.125047771	0.953663312	1.085682277	2.977326113	0.007520712
SACRAMENT	2021	LDA	1981	10	DSL	0.54787203	1.318517495	0.764147123	0.798698465	795.5397539	0.044295838	0.125047771	0.953663312	1.085682277	2.977326113	0.007520712
SACRAMENT	2021	LDA	1982	10	DSL	0.98788148	1.318517495	0.764147123	0.798698465	795.5397539	0.044295838	0.125047771	0.953663312	1.085682277	2.977326113	0.007520712
SACRAMENT	2021	LDT1	1981	10	DSL	0.07812885	1.318517495	0.764147123	0.798698465	918.7157756	0.044295838	0.144409326	0.953663312	1.085682277	2.977326113	0.008685168
SACRAMENT	2021	LDT1	1982	10	DSL	0.38324369	1.318517495	0.764147123	0.798698465	918.7157756	0.044295838	0.144409326	0.953663312	1.085682277	2.977326113	0.008685168
SACRAMENT	2021	LDT2	1980	10	DSL	0.04224915	1.318517495	0.764147123	0.798698465	1072.952391	0.044295838	0.168653174	0.953663312	1.085682277	2.977326113	0.010143259
SACRAMENT	2021	LDT2	1981	10	DSL	0.02065136	1.318517495	0.764147123	0.798698465	1072.952391	0.044295838	0.168653174	0.953663312	1.085682277	2.977326113	0.010143259
SACRAMENT	2021	LDT2	1982	10	DSL	0.20685779	1.318517495	0.764147123	0.798698465	1072.952391	0.044295838	0.168653174	0.953663312	1.085682277	2.977326113	0.010143259
SACRAMENT	2021	MDV	1980	10	DSL	0.05059204	1.318517495	0.764147123	0.798698465	1152.25134	0.044295838	0.181117865	0.953663312	1.085682277	2.977326113	0.010892919

SACRAMENT	2021	MDV	1982	10	DSL	0.5439409	1.318517495	0.764147123	0.798698465	1152.25134	0.044295838	0.181117865	0.953663312	1.085682277	2.977326113	0.010892919
SACRAMENT	2021	MDV	1990	25	GAS	436.127058	2.170121394	0.025649659	0.027896344	647.6581899	0.140775109	0.102570319	0.743639558	1.085117098	18.1218639	0.006409103
SACRAMENT	2021	MDV	1991	25	GAS	408.867654	2.171951786	0.014343708	0.015600091	647.8736422	0.14093091	0.102763016	0.742780175	1.083863087	18.14617742	0.006411235
SACRAMENT	2021	MH	2006	5	DSL	3.72472632	14.72434361	0.243166029	0.254160918	2117.471756	0.044132417	0.332837072	0.95014495	1.081676855	2.001305011	0.020017723
SACRAMENT	2021	MDV	1987	25	GAS	191.373326	2.168755961	0.025659539	0.02790709	644.3444193	0.139396465	0.102066083	0.740836959	1.081027552	17.95273471	0.00637631
SACRAMENT	2021	LDA	1977	25	DSL	2.06498076	1.738107056	0.660668191	0.690540675	449.9365938	0.043999306	0.070723767	0.947279158	1.078414342	2.090208299	0.004253519
SACRAMENT	2021	LDA	1978	25	DSL	3.2612672	1.738107056	0.660668191	0.690540675	449.9365938	0.043999306	0.070723767	0.947279158	1.078414342	2.090208299	0.004253519
SACRAMENT	2021	LDA	1979	25	DSL	7.64629454	1.738107056	0.660668191	0.690540675	449.9365938	0.043999306	0.070723767	0.947279158	1.078414342	2.090208299	0.004253519
SACRAMENT	2021	LDT2	1978	25	DSL	2.36733464	1.738107056	0.660668191	0.690540675	612.8492172	0.043999306	0.096331363	0.947279158	1.078414342	2.090208299	0.005793629
SACRAMENT	2021	LDT2	1979	25	DSL	3.87597382	1.738107056	0.660668191	0.690540675	612.8492172	0.043999306	0.096331363	0.947279158	1.078414342	2.090208299	0.005793629
SACRAMENT	2021	MDV	1978	25	DSL	0.99534537	1.738107056	0.660668191	0.690540675	686.2486351	0.043999306	0.107868729	0.947279158	1.078414342	2.090208299	0.006487518
SACRAMENT	2021	MDV	1988	25	GAS	227.3832	2.170268741	0.02550732	0.027741538	645.4036187	0.138997532	0.102156094	0.73734476	1.075931742	18.06277678	0.006386792
SACRAMENT	2021	MH	1993	15	DSL	3.97444297	14.97441235	0.896031162	0.936545715	1626.030472	0.043869182	0.255589346	0.944477656	1.075225019	3.010294604	0.015371836
SACRAMENT	2021	LDA	1984	10	DSL	1.30561981	0.957164708	0.585107821	0.6115638	712.6525791	0.04383918	0.112019061	0.943831731	1.074489676	4.592186666	0.00673713
SACRAMENT	2021	LDA	1985	10	DSL	1.88609763	0.957164708	0.585107821	0.6115638	712.6525791	0.04383918	0.112019061	0.943831731	1.074489676	4.592186666	0.00673713
SACRAMENT	2021	LDA	1986	10	DSL	0.45964246	0.957164708	0.585107821	0.6115638	712.6525791	0.04383918	0.112019061	0.943831731	1.074489676	4.592186666	0.00673713
SACRAMENT	2021	LDA	1987	10	DSL	1.07654429	0.957164708	0.585107821	0.6115638	712.6525791	0.04383918	0.112019061	0.943831731	1.074489676	4.592186666	0.00673713
SACRAMENT	2021	LDA	1988	10	DSL	0.03847431	0.957164708	0.585107821	0.6115638	712.6525791	0.04383918	0.112019061	0.943831731	1.074489676	4.592186666	0.00673713
SACRAMENT	2021	LDA	1989	10	DSL	0.0559723	0.957164708	0.585107821	0.6115638	712.6525791	0.04383918	0.112019061	0.943831731	1.074489676	4.592186666	0.00673713
SACRAMENT	2021	LDA	1990	10	DSL	0.67507444	0.957164708	0.585107821	0.6115638	712.6525791	0.04383918	0.112019061	0.943831731	1.074489676	4.592186666	0.00673713
SACRAMENT	2021	LDA	1991	10	DSL	0.36425675	0.957164708	0.585107821	0.6115638	712.6525791	0.04383918	0.112019061	0.943831731	1.074489676	4.592186666	0.00673713
SACRAMENT	2021	LDA	1992	10	DSL	0.16726688	0.957164708	0.585107821	0.6115638	712.6525791	0.04383918	0.112019061	0.943831731	1.074489676	4.592186666	0.00673713
SACRAMENT	2021	LDT1	1984	10	DSL	0.17277518	0.957164708	0.585107821	0.6115638	822.9949086	0.04383918	0.129363339	0.943831731	1.074489676	4.592186666	0.007780262
SACRAMENT	2021	LDT1	1985	10	DSL	0.18365451	0.957164708	0.585107821	0.6115638	822.9949086	0.04383918	0.129363339	0.943831731	1.074489676	4.592186666	0.007780262
SACRAMENT	2021	LDT1	1986	10	DSL	0.39361577	0.957164708	0.585107821	0.6115638	822.9949086	0.04383918	0.129363339	0.943831731	1.074489676	4.592186666	0.007780262
SACRAMENT	2021	LDT1	1987	10	DSL	0.39780061	0.957164708	0.585107821	0.6115638	822.9949086	0.04383918	0.129363339	0.943831731	1.074489676	4.592186666	0.007780262
SACRAMENT	2021	LDT1	1988	10	DSL	0.3750301	0.957164708	0.585107821	0.6115638	822.9949086	0.04383918	0.129363339	0.943831731	1.074489676	4.592186666	0.007780262
SACRAMENT	2021	LDT1	1989	10	DSL	0.3784671	0.957164708	0.585107821	0.6115638	822.9949086	0.04383918	0.129363339	0.943831731	1.074489676	4.592186666	0.007780262
SACRAMENT	2021	LDT1	1990	10	DSL	0.15558402	0.957164708	0.585107821	0.6115638	822.9949086	0.04383918	0.129363339	0.943831731	1.074489676	4.592186666	0.007780262
SACRAMENT	2021	LDT1	1992	10	DSL	0.48216523	0.957164708	0.585107821	0.6115638	822.9949086	0.04383918	0.129363339	0.943831731	1.074489676	4.592186666	0.007780262
SACRAMENT	2021	LDT2	1984	10	DSL	0.0209077	0.957164708	0.585107821	0.6115638	961.1616326	0.04383918	0.151081224	0.943831731	1.074489676	4.592186666	0.009086434
SACRAMENT	2021	LDT2	1990	10	DSL	0.02158717	0.957164708	0.585107821	0.6115638	961.1616326	0.04383918	0.151081224	0.943831731	1.074489676	4.592186666	0.009086434
SACRAMENT	2021	MDV	1984	10	DSL	0.3048317	0.957164708	0.585107821	0.6115638	1032.198436	0.04383918	0.16224722	0.943831731	1.074489676	4.592186666	0.009757987
SACRAMENT	2021	MDV	1985	10	DSL	0.08521105	0.957164708	0.585107821	0.6115638	1032.198436	0.04383918	0.16224722	0.943831731	1.074489676	4.592186666	0.009757987
SACRAMENT	2021	MDV	1986	10	DSL	0.14647805	0.957164708	0.585107821	0.6115638	1032.198436	0.04383918	0.16224722	0.943831731	1.074489676	4.592186666	0.009757987
SACRAMENT	2021	MDV	1987	10	DSL	0.08623378	0.957164708	0.585107821	0.6115638	1032.198436	0.04383918	0.16224722	0.943831731	1.074489676	4.592186666	0.009757987
SACRAMENT	2021	MDV	1988	10	DSL	0.04366379	0.957164708	0.585107821	0.6115638	1032.198436	0.04383918	0.16224722	0.943831731	1.074489676	4.592186666	0.009757987
SACRAMENT	2021	MDV	1989	10	DSL	0.02233768	0.957164708	0.585107821	0.6115638	1032.198436	0.04383918	0.16224722	0.943831731	1.074489676	4.592186666	0.009757987
SACRAMENT	2021	MDV	1992	10	DSL	0.0223213	0.957164708	0.585107821	0.6115638	1032.198436	0.04383918	0.16224722	0.943831731	1.074489676	4.592186666	0.009757987
SACRAMENT	2021	MDV	1986	25	GAS	144.711903	2.170428016	0.025387219	0.027610917	643.522763	0.137488103	0.101795055	0.732074726	1.068241722	18.0135657	0.006368179
SACRAMENT	2021	LDA	1980	70	GAS	3.62923004	2.78013032	0.044065074	0.047924789	584.6062477	0.125006428	0.124984989	0.732029955	1.068176392	28.43831285	0.005785153
SACRAMENT	2021	LHD1	1987	5	DSL	7.03173077	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD1	1988	5	DSL	10.3408602	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD1	1989	5	DSL	15.2087378	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD1	1990	5	DSL	26.3661154	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD2	1987	5	DSL	5.24451979	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1988	5	DSL	2.09792394	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1989	5	DSL	6.86468866	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1990	5	DSL	4.75760896	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	MH	1994	15	GAS	21.1075585	3.062153142	0.00416108	0.004525554	2809.205029	0.164869078	0.145563636	0.728008928	1.062308918	9.34704714	0.027799361
SACRAMENT	2021	LDT2	1983	25	GAS	43.9232965	2.706956051	0.024991015	0.027180009	682.5482293	0.138045471	0.118516212	0.728001028	1.062297392	20.16837023	0.006754368
SACRAMENT	2021	MDV	1985	25	GAS	111.966729	2.178635671	0.025161974	0.027365943	695.6791343	0.135996446	0.101791224	0.72540052	1.058502736	18.09422755	0.006884309
SACRAMENT	2021	MH	1987	15	GAS	6.59333233	3.461845871	0.01456378	0.015839439	2812.766179	0.163991507	0.158530023	0.723703503	1.056026452	11.60543316	0.027834602
SACRAMENT	2021	LDA	1983	25	GAS	223.103099	1.656242477	0.025205228	0.027412985	462.3344653	0.133331036	0.08279677	0.722990692	1.05498632	20.17595697	0.004575174
SACRAMENT	2021	LDA	1980	35	GAS	139.942207	2.072382101	0.044740508	0.048659384	518.5635208	0.121872748	0.093167091	0.713679321	1.04139919	22.40031086	0.005131606
SACRAMENT	2021	LDT1	1981	60	GAS	46.8008115	2.022025797	0.015412936	0.016762974	442.6914709	0.131412934	0.101538341	0.712495846	1.039672266	27.53119357	0.004380791
SACRAMENT	2021	MH	1988	15	GAS	7.44856194	3.420974546	0.01456378	0.015839439	2812.423831	0.161792802	0.157226153	0.712473636	1.039639858	11.42000276	0.027831214
SACRAMENT	2021	LHD2	1995	10	GAS	58.0701644	2.366202621	0.014106117	0.015341689	1865.126271	0.15219219	0.115023178	0.712270797	1.039343875	8.285678001	0.018456936
SACRAMENT	2021	LHD1	1995	10	GAS	516.471337	2.366152564	0.014105899	0.015341452	1630.31285	0.152091027	0.114946251	0.712252817	1.039317639	8.285465494	0.016133267
SACRAMENT	2021	MDV	2000	5	GAS	3.08874007	1.26565802	0.018984706	0.0206476	1270.14318	0.158162663	0.077839248	0.712152851	1.039171769	7.473628788	0.012569096
SACRAMENT	2021	LDT1	1981	40	GAS	85.7599165	1.69103079	0.015796738	0.017180394	393.7164299	0.131285134	0.084917048	0.711802937	1.038661175	22.96030857	0.003896143
SACRAMENT	2021	LDA	1995	20	GAS	1455.23018	1.302200193	0.019806668	0.021541558	469.3869472	0.141467072	0.074278767	0.708460712	1.033784209	14.85881062	0.004644964
SACRAMENT	2021	LDT2	1982	60	GAS	31.0118918	3.034052845	0.014387307	0.015647509	614.5115049	0.129510402	0.13384272	0.707630305	1.03257248	23.69196887	0.006081089
SACRAMENT	2021	LHD1	2002	5	DSL	290.207704	5.191248086	0.17058653	0.178299696	1316.983587	0.04211872	0.20701148	0.906791242	1.032321542	3.833006677	0.012450231
SACRAMENT	2021	LHD2	2002	5	DSL	44.4456053	5.191248086	0.17058653	0.178299696	1389.089524	0.04211872	0.218345529	0.906791242	1.032321542	3.833006677	0.013131891
SACRAMENT	2021	LDA	1994	20	GAS	1040.06059	1.30799974	0.019647692	0.021368657	469.7934048	0.139913475	0.074360444	0.703360879	1.026342543	14.92908647	0.004648987
SACRAMENT	2021	MH	1989	15	GAS	13.9596012	3.376584866	0.01456378	0.015839439	2807.899611	0.15957886	0.155792504	0.701191633	1.023177185	8.596437775	0.027786443
SACRAMENT	2021	LHD1	2003	5	DSL	405.067849	5.186655723	0.169522409	0.17718746	1316.983587	0.041692838	0.20701148	0.897622262	1.021883267	3.79430036	0.012450231
SACRAMENT	2021	LHD2	2003	5	DSL	58.0602084	5.186655723	0.169522409	0.17718746	1389.089524	0.041692838	0.218345529	0.897622262	1.021883267	3.79430036	0.013131891
SACRAMENT	2021	MH	1994	15	DSL	7.39681981	14.86902542	0.522228676	0.545841539	1559.049103	0.041524898	0.245060808	0.894006601	1.017767078	2.85098162	0.014738621
SACRAMENT	2021	LDA	1980	65	GAS	13.7174147	2.581284812	0.041360749	0.044983589	581.8598018	0.118594061	0.116045587	0.694479529	1.013382898	26.79255162	0.005757974
SACRAMENT	2021	LDT2	1982	45	GAS	22.019819	2.572982778	0.014369549	0.015628196	552.0569214	0.127024382	0.113503301	0.694046973	1.012751714	21.2587032	0.005463051
SACRAMENT	2021	MH	1990	15	GAS	13.6755214	3.329156425	0.01456378	0.015839439	2807.79284	0.157303977	0.154264273	0.689628858	1.00630481	8.560534988	0.027785386
SACRAMENT	2021	LDT1	1992	20	GAS	268.657017	1.353970552	0.019276712	0.020965183	558.2212592	0.138074222	0.076657452	0.688793482	1.005085833	19.28574106	0.005524052
SACRAMENT	2021	LDT1	1982	35	GAS	100.114959	1.695545947	0.017506043	0.019039419	406.676105	0.12915027	0.084564496	0.686945972	1.00238995	23.39767796	0.00402439
SACRAMENT	2021	MH	2007	5	DSL	4.65241715	12.77216972	0.137070374	0.143268088	2146.902599	0.040835913	0.337463191	0.879173174	1.000880207	2.149176387	0.02029595
SACRAMENT	2021	LDA	1993	20	GAS	754.873983	1.319213557	0.019277098	0.020965603	470.4184897	0.136022575	0.074705905	0.685873169	1.000824518	15.03811105	0.004655172
SACRAMENT	2021	MH	1995	15	DSL	4.87857674	14.83880059	0.516303906	0.539648878	1559.049103	0.040802757	0.245060808	0.87845933	1.000067543	2.801398398	0.014738621
SACRAMENT	2021	LDT1	1991	20	GAS	311.209242	1.362456433	0.019190563	0.020871488	557.5787504	0.137024643	0.076885846	0.685007519	0.999561364	19.29384558	0.005517694
SACRAMENT	2021	LDT1	1985	20	GAS	87.1546266	2.995736699	0.032252812	0.035077876	560.39011	0.134207685	0.131903471	0.683010874	0.996647863	20.34844033	0.005545514
SACRAMENT	2021	LDA	1992	20	GAS	641.592443	1.317220991	0.01927669	0.020965159	502.1160373	0.134813914	0.074373825	0.682616324	0.996072138	14.98479249	0.004968845
SACRAMENT	2021	LDA	1991	20	GAS	618.673743	1.316637292	0.019277041	0.020965541	501.797477	0.134055962	0.074070375	0.682277239	0.995577345	14.9677697	0.004965693
SACRAMENT	2021	LDA	1990	20	GAS	432.244563	1.316647947	0.034422767	0.037437899	501.7976558	0.133302283	0.073761459	0.682266995	0.995562398	14.96790473	0.004965695
SACRAMENT	2021	LDA	1989	20	GAS	350.015433	1.317172675	0.034272456	0.037274423	500.4165722	0.131608454	0.073433705	0.677712626	0.988916672	14.93111389	0.004952028
SACRAMENT	2021	MH	1991	15	GAS	13.1906582	3.279165083	0.01456378	0.015839439	2807.687827	0.154937858	0.152646205	0.677635001	0.988803403	8.526914083	0.027784347
SACRAMENT	2021	LDA	1977	70	DSL	0.06648112	2.456756739	0.605016378	0.632372534	439.6704789	0.040292996	0.069110077	0.867484483	0.98757341	3.449056889	0.004156467
SACRAMENT	2021	LDA	1978	70	DSL	0.10499503	2.456756739	0.605016378	0.632372534	439.6704789	0.040292996	0.069110077	0.867484483	0.98757341	3.449056889	0.004156467
SACRAMENT	2021	LDA	1979	70	DSL	0.246169	2.456756739	0.605016378	0.632372534	439.6704789	0.040292996	0.069110077	0.867484483	0.98757341	3.449056889	0.004156467
SACRAMENT	2021	LDT2	1978	70	DSL	0.07621527	2.456756739	0.605016378	0.632372534	591.7205213	0.040292996	0.093010226	0.867484483	0.98757341	3.449056889	0.005593887
SACRAMENT	2021	LDT2	1979	70	DSL	0.12478523	2.456756739	0.605016378	0.632372534	591.7205213	0.040292996	0.093010226	0.867484483	0.98757341	3.449056889	0.005593887
SACRAMENT	2021	MDV	1978	70	DSL	0.03204469	2.456756739	0.605016378	0.632372534	672.0409521	0.040292996	0.105635479	0.867484483	0.98757341	3.449056889	0.006353204
SACRAMENT	2021	LDT1	1986	20	GAS	153.12405	3.014559172	0.032671455	0.035533188	554.8829563	0.133480332	0.132731682	0.676656688	0.987375851	19.99029285	0.005491017
SACRAMENT	2021	LDT2	1982	55	GAS	40.1715213	2.782500954	0.013810576	0.015020261	590.6356983	0.123652103	0.122745883	0.675621218	0.985864895	22.06240941	0.005844819
SACRAMENT	2021	LDT1	1990	20	GAS	197.693014	1.391094563	0.033807343	0.036768571	557.6139208	0.134848656	0.077921925	0.675607275	0.98584455	19.43784998	0.005518042
SACRAMENT	2021	MH	1996	15	DSL	3.2150162	14.80788833	0.510244392	0.533315379	1559.049103	0.040064192	0.245060808	0.862558465	0.981965466	2.750687531	0.014738621
SACRAMENT	2021	LDT1	1982	70	GAS	2.59635905	2.388829106	0.016544352	0.017993493	459.4899791	0.126491118	0.119141643	0.672802035	0.981751151	28.78145782	0.004547026
SACRAMENT	2021	LDT2	1982	50	GAS	22.0742852	2.649460831	0.013808285	0.01501777	567.5979393	0.123053697	0.116877016	0.672351597	0.981093872	21.31616011	0.005616842
SACRAMENT	2021	MH	2008	5	DSL	4.1217575	12.70185424	0.13505604	0.141162674	2146.902599	0.039888015	0.337463191	0.858765477	0.977647401	2.099859437	0.02029595
SACRAMENT	2021	LDT1	1987	20	GAS	153.443983	2.999732268	0.032928585	0.035812841	555.3210122	0.132524382	0.132527808	0.669344333	0.97670568	19.75774422	0.005495352
SACRAMENT	2021	LDT1	1981	45	GAS	33.2306525	1.730825736	0.014747255	0.016038986	394.2503916	0.123446087	0.086915397	0.669301122	0.976642626	22.61668403	0.003901427
SACRAMENT	2021	LDT1	1989	20	GAS	220.333243	2.012388748	0.033503611	0.036438234	557.2178162	0.133244009	0.100674258	0.669018396	0.976230073	19.5066103	0.005514122
SACRAMENT	2021	LDA	1988	20	GAS	251.190777	1.327029267	0.033807468	0.036768706	500.7351869	0.12896076	0.07346194	0.668689974	0.97575084	15.06050632	0.004955181
SACRAMENT	2021	MH	1979	25	DSL	0.11568177	14.09421096	0.910888163	0.952074484	1284.413273	0.039801298	0.20189188	0.856898519	0.975521993	4.6433777	0.012142324
SACRAMENT	2021	LDT1	1981	55	GAS	60.6238344	1.868877106	0.014557851	0.015832991	423.3085205	0.123230213	0.093847804	0.668130697	0.974934745	24.7110844	0.004188981
SACRAMENT	2021	LDT1	1988	20	GAS	136.929341	2.868695591	0.033515445	0.036451104	555.6021683	0.132706938	0.128700086	0.667697745	0.974302982	19.40306767	0.005498134
SACRAMENT	2021	MH	1992	15	GAS	17.5569525	3.227365764	0.01456378	0.015839439	2807.58406	0.152425941	0.150961644	0.664962322	0.97031146	8.495925539	0.02778332
SACRAMENT	2021	LDA	1987	20	GAS	264.316701	1.332446001	0.033502098	0.036436588	500.3612044	0.126733006	0.073246493	0.662136468	0.966187979	15.1142366	0.00495148
SACRAMENT	2021	MH	1997	15	DSL	8.87222042	14.77628864	0.504050132	0.526841043	1559.049103	0.039309204	0.245060808	0.846304008	0.963460847	2.69884902	0.014738621

SACRAMENT	2021	LDA	1981	30	GAS	112.393061	1.614523547	0.020474147	0.022267503	412.7775223	0.117509282	0.078431114	0.658844919	0.96138496	19.59573044	0.004084768
SACRAMENT	2021	LDA	1986	20	GAS	166.065627	1.339927493	0.033180799	0.036087146	500.9499851	0.12455158	0.073055961	0.656294298	0.957663099	15.22349847	0.004957306
SACRAMENT	2021	LDT1	1981	50	GAS	33.3128487	1.785581197	0.014348386	0.015605179	405.7879426	0.121022056	0.089665005	0.656158489	0.957464926	23.19282459	0.004015601
SACRAMENT	2021	MDV	1996	10	GAS	47.4728297	2.026405242	0.011294133	0.0122834	926.2758757	0.141834711	0.109194096	0.655588425	0.956633091	9.815148946	0.009166251
SACRAMENT	2021	MH	1982	25	DSL	0.9367516	14.07271089	0.895090903	0.935562942	1284.413273	0.03896281	0.20189188	0.838846352	0.954970801	4.545517088	0.012142324
SACRAMENT	2021	MH	2009	5	DSL	0.46743493	12.63030451	0.133006347	0.139020304	2146.902599	0.038923479	0.337463191	0.83799958	0.954006807	2.049676804	0.02029595
SACRAMENT	2021	MDV	1997	10	GAS	73.4384678	2.027744065	0.011294133	0.0122834	926.9316936	0.141815403	0.109485337	0.653423427	0.953473931	9.829547249	0.009172741
SACRAMENT	2021	LDT1	1993	20	GAS	375.345614	1.355776288	0.019276712	0.020965183	515.8056522	0.132044603	0.076849235	0.652429882	0.952024152	15.11710852	0.005104315
SACRAMENT	2021	LHD1	1991	10	DSL	88.7643894	7.100741256	0.118411913	0.123765974	1107.130193	0.038808068	0.174025449	0.835514855	0.951178114	2.777228833	0.010466362
SACRAMENT	2021	LHD1	1992	10	DSL	117.561685	7.100741256	0.118411913	0.123765974	1107.130193	0.038808068	0.174025449	0.835514855	0.951178114	2.777228833	0.010466362
SACRAMENT	2021	LHD1	1993	10	DSL	139.312109	7.100741256	0.118411913	0.123765974	1107.130193	0.038808068	0.174025449	0.835514855	0.951178114	2.777228833	0.010466362
SACRAMENT	2021	LHD2	1991	10	DSL	19.0604817	7.100741256	0.118411913	0.123765974	1234.527259	0.038808068	0.194050493	0.835514855	0.951178114	2.777228833	0.011670722
SACRAMENT	2021	LHD2	1992	10	DSL	28.0287254	7.100741256	0.118411913	0.123765974	1234.527259	0.038808068	0.194050493	0.835514855	0.951178114	2.777228833	0.011670722
SACRAMENT	2021	LHD2	1993	10	DSL	66.7705757	7.100741256	0.118411913	0.123765974	1234.527259	0.038808068	0.194050493	0.835514855	0.951178114	2.777228833	0.011670722
SACRAMENT	2021	MH	1993	15	GAS	16.5729484	3.174616494	0.01456378	0.015839439	2807.480395	0.14973273	0.149237709	0.651377652	0.95048874	8.467482738	0.027782294
SACRAMENT	2021	LDA	1985	20	GAS	169.284641	1.346014284	0.032899264	0.035780951	529.2542378	0.122357077	0.072723892	0.650893448	0.949782191	15.30537725	0.0052374
SACRAMENT	2021	LDT2	1985	25	GAS	122.414586	2.661941053	0.025211017	0.027419281	680.5033196	0.124433528	0.117205015	0.650541969	0.949269314	17.93628758	0.006734132
SACRAMENT	2021	LHD1	1994	10	DSL	123.513798	7.10728377	0.119373138	0.124770662	1107.130193	0.038722796	0.174025449	0.83367901	0.949088126	2.765061351	0.010466362
SACRAMENT	2021	LHD1	1996	10	DSL	167.280562	7.10728377	0.119373138	0.124770662	1107.130193	0.038722796	0.174025449	0.83367901	0.949088126	2.765061351	0.010466362
SACRAMENT	2021	LHD1	1997	10	DSL	362.595797	7.10728377	0.119373138	0.124770662	1107.130193	0.038722796	0.174025449	0.83367901	0.949088126	2.765061351	0.010466362
SACRAMENT	2021	LHD2	1994	10	DSL	67.3811663	7.10728377	0.119373138	0.124770662	1234.527259	0.038722796	0.194050493	0.83367901	0.949088126	2.765061351	0.011670722
SACRAMENT	2021	LHD2	1997	10	DSL	54.6051955	7.10728377	0.119373138	0.124770662	1234.527259	0.038722796	0.194050493	0.83367901	0.949088126	2.765061351	0.011670722
SACRAMENT	2021	LHD1	1995	10	DSL	205.651068	7.10728377	0.119373138	0.124770662	1107.130193	0.038722796	0.174025449	0.83367901	0.949088126	2.765061351	0.010466362
SACRAMENT	2021	LHD2	1995	10	DSL	38.089072	7.10728377	0.119373138	0.124770662	1234.527259	0.038722796	0.194050493	0.83367901	0.949088126	2.765061351	0.011670722
SACRAMENT	2021	LHD2	1996	10	DSL	82.6768434	7.10728377	0.119373138	0.124770662	1234.527259	0.038722796	0.194050493	0.83367901	0.949088126	2.765061351	0.011670722
SACRAMENT	2021	MH	1998	15	DSL	7.64945204	14.64707501	0.510237302	0.533307969	1597.159192	0.038677257	0.251051183	0.832698567	0.947971957	2.65370803	0.015098898
SACRAMENT	2021	MH	1983	25	DSL	0.16732001	14.06506595	0.889473751	0.929691808	1284.413273	0.038664662	0.20189188	0.832427406	0.947663258	4.510720048	0.012142324
SACRAMENT	2021	LHD1	1998	10	DSL	148.828773	7.106110667	0.119213504	0.12460381	1107.130193	0.038651022	0.174025449	0.832133752	0.947328953	2.759939403	0.010466362
SACRAMENT	2021	LHD2	1998	10	DSL	43.0750229	7.106110667	0.119213504	0.12460381	1234.527259	0.038651022	0.194050493	0.832133752	0.947328953	2.759939403	0.011670722
SACRAMENT	2021	MH	1986	20	GAS	7.25287118	2.881239752	0.018211402	0.019806561	2341.761562	0.142260121	0.134867811	0.648956075	0.946955182	11.87204047	0.023173629
SACRAMENT	2021	LHD1	1999	10	DSL	612.014133	7.10350704	0.118859206	0.124233491	1107.130193	0.038491724	0.174025449	0.82870415	0.943424579	2.748571561	0.010466362
SACRAMENT	2021	LHD2	1999	10	DSL	173.269916	7.10350704	0.118859206	0.124233491	1234.527259	0.038491724	0.194050493	0.82870415	0.943424579	2.748571561	0.011670722
SACRAMENT	2021	MH	1984	25	DSL	0.90388273	14.05718187	0.8836809	0.923637029	1284.413273	0.038357188	0.20189188	0.825807681	0.940127142	4.47483459	0.012142324
SACRAMENT	2021	LHD1	2000	10	DSL	583.153559	7.099472887	0.118310243	0.123659707	1107.130193	0.038244901	0.174025449	0.823390204	0.937375004	2.730957826	0.010466362
SACRAMENT	2021	LHD2	2000	10	DSL	142.105964	7.099472887	0.118310243	0.123659707	1234.527259	0.038244901	0.194050493	0.823390204	0.937375004	2.730957826	0.011670722
SACRAMENT	2021	LDA	1982	30	GAS	138.286586	1.627264209	0.02047401	0.022267354	411.8739753	0.116259577	0.079706619	0.641930526	0.936703516	19.17884572	0.004075827
SACRAMENT	2021	LDT1	1982	65	GAS	9.81346823	2.194012775	0.015624995	0.016993608	455.201128	0.12041402	0.109425277	0.640478151	0.934584214	27.0462377	0.004504584
SACRAMENT	2021	LDT2	1986	25	GAS	185.648615	2.681384965	0.025345564	0.027565613	602.840843	0.12280829	0.118060846	0.639536437	0.933210068	17.71771901	0.005965599
SACRAMENT	2021	MH	1985	25	DSL	0.575863	14.04905865	0.87771235	0.917398608	1284.413273	0.038040389	0.20189188	0.818987179	0.932362453	4.437860715	0.012142324
SACRAMENT	2021	LHD1	1991	20	GAS	522.916124	3.308718632	0.010198385	0.011091674	1121.392805	0.127269063	0.139104014	0.63699971	0.929508481	13.52595553	0.011097091
SACRAMENT	2021	LHD2	1991	20	GAS	40.9822363	3.308718632	0.010198385	0.011091674	1281.009285	0.127362919	0.139183413	0.63699971	0.929508481	13.52595553	0.012676625
SACRAMENT	2021	LDA	1980	40	GAS	171.464038	2.065956303	0.039779473	0.043263806	500.3545479	0.108756986	0.092878209	0.636874223	0.929325371	21.0380599	0.004951414
SACRAMENT	2021	LHD2	2001	10	DSL	278.905257	7.09400821	0.117566617	0.122882458	1234.527259	0.037910554	0.194050493	0.816191913	0.929180228	2.707098198	0.011670722
SACRAMENT	2021	LHD1	2001	10	DSL	979.420135	7.09400821	0.117566617	0.122882458	1107.130193	0.037910554	0.174025449	0.816191913	0.929180228	2.707098198	0.010466362
SACRAMENT	2021	MH	1999	15	DSL	10.488461	14.60928468	0.504392835	0.52719924	1597.159192	0.03789499	0.251051183	0.815856826	0.928798754	2.600060155	0.015098898
SACRAMENT	2021	LHD1	1992	20	GAS	482.138218	3.317073291	0.010198385	0.011091674	1121.287354	0.126866467	0.13945085	0.63412766	0.925317593	13.46724181	0.011096047
SACRAMENT	2021	LHD2	1992	20	GAS	27.9097825	3.317073291	0.010198385	0.011091674	1280.903834	0.126948515	0.13951999	0.63412766	0.925317593	13.46724181	0.012675582
SACRAMENT	2021	MH	1986	25	DSL	0.79924395	14.0406963	0.8715681	0.910976542	1284.413273	0.037714264	0.20189188	0.811965897	0.924369191	4.399798422	0.012142324
SACRAMENT	2021	LHD1	1993	20	GAS	576.797554	3.311083629	0.010198385	0.011091674	1121.191743	0.126533921	0.139358501	0.63166305	0.92172124	13.41362741	0.011095101
SACRAMENT	2021	LHD2	1993	20	GAS	77.6667018	3.311083629	0.010198385	0.011091674	1280.808223	0.126604726	0.139418013	0.63166305	0.92172124	13.41362741	0.012674636
SACRAMENT	2021	LHD1	2010	5	DSL	76.1059211	0.888395474	0.034030116	0.035568807	1316.983587	0.037573022	0.20701148	0.808925051	0.920907389	4.387591862	0.012450231
SACRAMENT	2021	LHD2	2010	5	DSL	35.7832114	0.888395474	0.034030116	0.035568807	1389.089524	0.037573022	0.218345529	0.808925051	0.920907389	4.387591862	0.013131891
SACRAMENT	2021	LDT2	1992	25	GAS	815.831179	2.492546177	0.014505207	0.015775736	606.9361705	0.123030426	0.113713312	0.630485223	0.920002558	17.44058341	0.006006125
SACRAMENT	2021	LHD1	1994	20	GAS	669.790551	3.307878383	0.010198385	0.011091674	1121.10552	0.12625776	0.139346447	0.629526126	0.918603045	13.36504385	0.011094248
SACRAMENT	2021	LHD2	1994	20	GAS	110.574546	3.307878383	0.010198385	0.011091674	1280.721999	0.126317877	0.139396867	0.629526126	0.918603045	13.36504385	0.012673782
SACRAMENT	2021	LDT2	1987	25	GAS	213.817481	2.672182259	0.025429478	0.027656878	603.4482555	0.12131374	0.118055178	0.629435984	0.91847151	17.57909411	0.00597161
SACRAMENT	2021	LDT1	1998	10	GAS	95.8609699	0.871655588	0.011782807	0.012814878	742.7898896	0.139329081	0.059660445	0.629338623	0.918329441	9.598657354	0.007350508
SACRAMENT	2021	LDT1	1994	20	GAS	532.205826	1.127467649	0.019338563	0.021032452	513.9767015	0.128213036	0.067587612	0.629067945	0.917934469	13.70346237	0.005086216
SACRAMENT	2021	LDT2	1991	25	GAS	714.625357	2.504242918	0.014478175	0.015746336	606.2355367	0.122422384	0.113874111	0.628695999	0.917391726	17.42223729	0.005999192
SACRAMENT	2021	LDT2	1993	25	GAS	1249.29437	2.495805583	0.014505207	0.015775736	552.5987243	0.122885236	0.11399481	0.627936833	0.916283953	17.5927401	0.005468412
SACRAMENT	2021	MH	2003	10	DSL	15.4708888	13.44625641	0.273366619	0.285727045	1924.00056	0.03737209	0.302426095	0.804599084	0.915982564	1.762525783	0.018188724
SACRAMENT	2021	LDT2	1990	25	GAS	583.500966	2.544903805	0.025709067	0.027960956	606.1364737	0.121439314	0.1148672	0.625021434	0.912029809	17.46972729	0.005998212
SACRAMENT	2021	LDT1	1996	20	GAS	720.54621	1.19526951	0.005542975	0.006028492	513.9948566	0.126829734	0.06972448	0.624231883	0.910877699	13.36335113	0.005086396
SACRAMENT	2021	MH	2000	15	DSL	18.082322	14.57070649	0.498426531	0.520963167	1597.159192	0.037096417	0.251051183	0.798664007	0.909225873	2.545293937	0.015098898
SACRAMENT	2021	LDT2	1989	25	GAS	436.504509	2.569431875	0.025613762	0.027857303	605.643966	0.120638298	0.115386281	0.622247864	0.907982622	17.47896934	0.005993338
SACRAMENT	2021	LHD1	2011	5	DSL	167.751733	0.863717157	0.032416633	0.033882369	1316.983587	0.037015503	0.20701148	0.796921976	0.907242687	4.188812639	0.012450231
SACRAMENT	2021	LHD2	2011	5	DSL	90.7681191	0.863717157	0.032416633	0.033882369	1389.089524	0.037015503	0.218345529	0.796921976	0.907242687	4.188812639	0.013131891
SACRAMENT	2021	LDA	1977	65	DSL	0.25127896	2.40650132	0.555372902	0.5804844	407.1619107	0.03698683	0.064000182	0.796304683	0.90653994	3.019647265	0.003849144
SACRAMENT	2021	LDA	1978	65	DSL	0.3968501	2.40650132	0.555372902	0.5804844	407.1619107	0.03698683	0.064000182	0.796304683	0.90653994	3.019647265	0.003849144
SACRAMENT	2021	LDA	1979	65	DSL	0.93044592	2.40650132	0.555372902	0.5804844	407.1619107	0.03698683	0.064000182	0.796304683	0.90653994	3.019647265	0.003849144
SACRAMENT	2021	LDT2	1978	65	DSL	0.28807115	2.40650132	0.555372902	0.5804844	548.4457405	0.03698683	0.086208033	0.796304683	0.90653994	3.019647265	0.005184785
SACRAMENT	2021	LDT2	1979	65	DSL	0.4716512	2.40650132	0.555372902	0.5804844	548.4457405	0.03698683	0.086208033	0.796304683	0.90653994	3.019647265	0.005184785
SACRAMENT	2021	MDV	1978	65	DSL	0.12111946	2.40650132	0.555372902	0.5804844	624.2736119	0.03698683	0.098127118	0.796304683	0.90653994	3.019647265	0.005901631
SACRAMENT	2021	LDA	1980	60	GAS	93.5711745	2.410531689	0.037672003	0.040971741	557.8283755	0.106049565	0.10836912	0.621019732	0.906190535	23.17928892	0.005520164
SACRAMENT	2021	LDT2	1988	25	GAS	341.027153	2.564523829	0.025617475	0.027861342	604.000326	0.120140829	0.115052735	0.620968965	0.906116456	17.39305564	0.005977073
SACRAMENT	2021	MDV	1995	25	GAS	1596.38557	1.862488368	0.014505207	0.015775736	553.0411944	0.121971158	0.093104755	0.620331778	0.905186674	13.80285295	0.005472791
SACRAMENT	2021	MDV	2001	5	GAS	4.59285916	0.889561317	0.019440667	0.021143499	1270.690268	0.139003493	0.057998468	0.619888985	0.904540552	6.408879776	0.01257451
SACRAMENT	2021	LDA	1983	5	DSL	0.01713166	1.072432666	1.002239879	1.047556719	942.0054588	0.036899201	0.14807014	0.794418076	0.904392164	4.066910846	0.008905339
SACRAMENT	2021	LDT1	1983	5	DSL	0.00183321	1.072432666	1.002239879	1.047556719	1076.651788	0.036899201	0.169234668	0.794418076	0.904392164	4.066910846	0.010178231
SACRAMENT	2021	MDV	1983	5	DSL	0.00484993	1.072432666	1.002239879	1.047556719	1338.445759	0.036899201	0.210385034	0.794418076	0.904392164	4.066910846	0.012653126
SACRAMENT	2021	LDA	1984	25	GAS	303.940584	1.580984958	0.025284715	0.027499434	459.830568	0.117542088	0.081174197	0.619667911	0.904217962	18.39601627	0.004550396
SACRAMENT	2021	LDT2	1984	30	GAS	67.7454415	2.438993294	0.020474745	0.022268154	607.1904727	0.117022916	0.107537304	0.617516018	0.901077925	18.32409564	0.006008642
SACRAMENT	2021	LDT1	1984	25	GAS	199.080612	2.649707669	0.025042664	0.027236182	483.119411	0.120119191	0.116827712	0.617036514	0.900378233	20.52190464	0.004780858
SACRAMENT	2021	LDA	1979	30	DSL	5.3401946	1.819087476	0.55150455	0.576441139	389.7276509	0.036729205	0.061259759	0.790758164	0.900225596	1.825987333	0.003684328
SACRAMENT	2021	LDA	1977	30	DSL	1.44218864	1.819087476	0.55150455	0.576441139	389.7276509	0.036729205	0.061259759	0.790758164	0.900225596	1.825987333	0.003684328
SACRAMENT	2021	LDA	1978	30	DSL	2.2776786	1.819087476	0.55150455	0.576441139	389.7276509	0.036729205	0.061259759	0.790758164	0.900225596	1.825987333	0.003684328
SACRAMENT	2021	LDT2	1978	30	DSL	1.65335348	1.819087476	0.55150455	0.576441139	529.9411371	0.036729205	0.083299367	0.790758164	0.900225596	1.825987333	0.00500985
SACRAMENT	2021	LDT2	1979	30	DSL	2.70699152	1.819087476	0.55150455	0.576441139	529.9411371	0.036729205	0.083299367	0.790758164	0.900225596	1.825987333	0.00500985
SACRAMENT	2021	MDV	1978	30	DSL	0.69515213	1.819087476	0.55150455	0.576441139	592.7051097	0.036729205	0.093164989	0.790758164	0.900225596	1.825987333	0.005603195
SACRAMENT	2021	MH	1987	25	DSL	0.83771774	13.99063382	0.874558026	0.91410166	1244.461305	0.036509002	0.195611987	0.78601732	0.894828461	4.257581687	0.011764635
SACRAMENT	2021	LDT1	1982	40	GAS	122.665745	1.688719665	0.015554689	0.016917143	392.1380722	0.11507345	0.084224039	0.61207184	0.893133793	21.93622436	0.003880524
SACRAMENT	2021	LHD1	2012	5	DSL	169.120485	0.837253142	0.0306864	0.032073903	1316.983587	0.036417641	0.20701148	0.784050369	0.892589218	3.975650038	0.012450231
SACRAMENT	2021	LHD2	2012	5	DSL	114.904333	0.837253142	0.0306864	0.032073903	1389.089524	0.036417641	0.218345529	0.784050369	0.892589218	3.975650038	0.013131891
SACRAMENT	2021	LDA	1997	20	GAS	2661.36014	1.129761845	0.005662863	0.00615888	465.019469	0.124115847	0.066454461	0.61066525	0.8910813	13.02859039	0.004601745
SACRAMENT	2021	MH	2001	15	DSL	14.9382387	14.53134046	0.492338393	0.51459975	1597.159192	0.036281536	0.251051183	0.781120111	0.889253314	2.489409376	0.015098898
SACRAMENT	2021	LDT1	1995	20	GAS	495.004808	1.137655191	0.019369489	0.021066086	512.68555	0.124979679	0.068071709	0.609226249	0.888981512	12.59059273	0.005073439
SACRAMENT	2021	MH	1988	25	DSL	0.86594083	13.97881895	0.868774695	0.908056831	1244.461305	0.036099076	0.195611987	0.777191861	0.884781263	4.209775534	0.011764635
SACRAMENT	2021	MH	2010	5	DSL	0.7075079	10.66018942	0.032159454	0.033613562	2176.333443	0.036066278	0.34208931	0.776485741	0.883977392	2.191552259	0.020574178
SACRAMENT	2021	LDT1	1997	15	GAS	238.981723	1.007742203	0.00780612	0.008489868	611.9905574	0.128636509	0.063814875	0.605774731	0.883945065	11.21272616	0.006056143
SACRAMENT	2021	MH	1995	15	GAS	30.4453915	3.004207406	0.00416108	0.004525554	2808.628827	0.140423591	0.14363762	0.604829251	0.882565423	9.318647648	0.027793659
SACRAMENT	2021	LDA	1996	25	GAS	5776.32136	1.331804967	0.004192256	0.004559461	404.1214407	0.118186238	0.072846733	0.604554378	0.882164329	15.20112614	0.003999109
SACRAMENT	2021	LDT2	1994	25	GAS	1618.40806	2.456979966	0.014524614	0.015796843	550.5023303	0.119041869	0.112850104	0.603984004	0.88133204	16.00901833	0.005447667
SACRAMENT	2021	MH	1996	15	GAS	21.7402201	2.947789952	0.00416108	0.004525554	2808.578153	0.140102687	0.141750862	0.603203895	0.880193708	9.291100094	0.027793158
SACRAMENT	2021	MH	1997	15	GAS	37.6379554	2.895506407	0.00416108	0.004525554	2808.52667	0.139782235	0.139974422	0.60158226	0.877827422	9.263032238	0.027792648
SACRAMENT	2021	LHD2	2007	5	DSL	110.634772	2.626517293	0.1008126	0.105370899	1389.089524	0.035798412	0.218345529	0.770718739	0.877412043	4.235206679	0.013131891
SACRAMENT	2021	LHD1	2007	5	DSL	279.878411	2.626857126	0.100825311	0.105384184	1316.983587	0.035797762	0.20701148	0.770704737	0.877396103	4.235072267	0.012450231
SACRAMENT	2021	LHD1	2013	5	DSL	208.445889	0.809003429	0.028839418	0.030143409	1316.983587	0.035779437	0.20701148	0.770310223	0.876946975	3.748104058	0.012450231
SACRAMENT	2021	LHD2	2013	5	DSL	83.2194418	0.809003429	0.028839418	0.030143409	1389.089524	0.035779437	0.218345529	0.770310223	0.876946975	3.748104058	0.013131891

SACRAMENT	2021	MDV	1989	30	GAS	245.603945	1.999436669	0.020468637	0.02226151	574.9807758	0.113271738	0.094052188	0.600038055	0.875574121	16.65562165	0.005689901
SACRAMENT	2021	LDA	1998	15	GAS	949.260994	0.915462308	0.008082746	0.008790724	548.6356022	0.127819275	0.05881222	0.599886538	0.875353028	10.61263642	0.005429194
SACRAMENT	2021	MH	1989	25	DSL	1.11728042	13.96668447	0.862834931	0.901848498	1244.461305	0.035678063	0.195611987	0.768127682	0.874462298	4.160676284	0.011764635
SACRAMENT	2021	LDT2	1996	25	GAS	2546.25392	1.889327987	0.004155435	0.004519415	550.4592204	0.117621526	0.093038127	0.598615153	0.873497826	15.65509574	0.00544724
SACRAMENT	2021	LDT2	1983	30	GAS	30.6761595	2.476549202	0.020475203	0.022268651	605.694248	0.113382885	0.108428517	0.597939625	0.872512098	18.01163424	0.005993836
SACRAMENT	2021	LDT1	1983	25	GAS	87.1909458	2.706822922	0.024991104	0.027180106	481.7691596	0.116298471	0.118511383	0.597043871	0.871205016	20.17001919	0.004767496
SACRAMENT	2021	MDV	2002	5	GAS	6.23282962	0.865616373	0.019440667	0.021143499	1270.552123	0.13444662	0.057154575	0.595599275	0.869097064	6.38780783	0.012573143
SACRAMENT	2021	MH	2002	15	DSL	17.9522364	14.49118659	0.486128419	0.508108989	1597.159192	0.035450349	0.251051183	0.763225138	0.868881077	2.432406472	0.015098898
SACRAMENT	2021	LDA	1980	45	GAS	66.4396852	2.094529774	0.036852402	0.04008035	500.924173	0.101579385	0.094162773	0.594842635	0.867992977	20.46214438	0.004957051
SACRAMENT	2021	MDV	1994	30	GAS	977.780405	1.993968734	0.011459298	0.012463032	497.4542142	0.113650297	0.095096052	0.594809785	0.867945043	16.55057842	0.004922713
SACRAMENT	2021	MDV	1993	30	GAS	467.941976	1.993127995	0.011459647	0.012463412	497.1533831	0.113331114	0.094858028	0.594534749	0.867543711	16.53245368	0.004919736
SACRAMENT	2021	MDV	1992	30	GAS	410.254724	1.992250941	0.011460696	0.012464553	576.0111706	0.113018096	0.094502148	0.594295685	0.867194869	16.5137549	0.005700097
SACRAMENT	2021	MDV	1991	30	GAS	285.554373	1.990570043	0.011461387	0.012465304	575.316886	0.112653824	0.094181179	0.593745028	0.866391351	16.47751712	0.005693227
SACRAMENT	2021	MDV	1990	30	GAS	304.592421	1.990172277	0.020466297	0.022258966	575.1404583	0.112368968	0.094065063	0.593585117	0.86615801	16.46881256	0.005691481
SACRAMENT	2021	LHD2	2008	5	DSL	131.094339	2.613053542	0.099183039	0.103667655	1389.089524	0.035253113	0.218345529	0.75897876	0.864046858	4.121505585	0.013131891
SACRAMENT	2021	LHD1	2008	5	DSL	313.209347	2.613632879	0.099204506	0.103690093	1316.983587	0.03525197	0.20701148	0.758954167	0.86401886	4.121291695	0.012450231
SACRAMENT	2021	MH	1990	25	DSL	1.38592823	13.95423038	0.856738735	0.895476659	1244.461305	0.035245961	0.195611987	0.758824782	0.863871565	4.110283936	0.011764635
SACRAMENT	2021	MDV	1988	30	GAS	158.805096	1.985183786	0.020468138	0.022260968	573.0490434	0.111575732	0.093444014	0.591879438	0.863669086	16.36096022	0.005670785
SACRAMENT	2021	MH	2011	5	DSL	0.97935919	10.58245683	0.03143599	0.032857386	2176.333443	0.03519609	0.34208931	0.757751106	0.862649255	2.138751596	0.020574178
SACRAMENT	2021	MDV	1987	30	GAS	133.655694	1.989142301	0.02046617	0.022258827	572.1696089	0.11122	0.093613097	0.591090221	0.862517463	16.31726907	0.005662082
SACRAMENT	2021	LDA	1983	30	GAS	155.81586	1.547636834	0.020472674	0.022265901	410.3436858	0.108993999	0.077367494	0.591022533	0.862418693	18.05677578	0.004060683
SACRAMENT	2021	MDV	1986	30	GAS	101.067219	1.98102638	0.020469692	0.022262657	571.304418	0.110891682	0.092911945	0.590458348	0.861595435	16.27108296	0.00565352
SACRAMENT	2021	MDV	1985	30	GAS	78.197893	1.980530923	0.020472605	0.022265826	617.484841	0.110685948	0.092535282	0.590395166	0.861503241	16.26084565	0.006110513
SACRAMENT	2021	LHD1	2014	5	DSL	313.815634	0.778968013	0.026875687	0.028090886	1286.692964	0.035100891	0.202250216	0.755701526	0.860315945	3.5061747	0.012163876
SACRAMENT	2021	LHD2	2014	5	DSL	125.997343	0.778968013	0.026875687	0.028090886	1357.140465	0.035100891	0.213323582	0.755701526	0.860315945	3.5061747	0.012829858
SACRAMENT	2021	LDA	1980	55	GAS	121.208227	2.237314936	0.035840492	0.038979805	536.54815	0.100327049	0.100581897	0.58750903	0.857291797	21.48298329	0.005309579
SACRAMENT	2021	LDT1	1999	5	GAS	1.24039146	0.681076815	0.018984067	0.020646905	901.8310906	0.137046509	0.051522524	0.585434672	0.854264899	7.378587846	0.00892435
SACRAMENT	2021	MH	1979	30	DSL	0.13909796	13.12166794	0.824617657	0.861903209	1205.616077	0.034786528	0.189506058	0.748933468	0.852610961	3.976958941	0.011397408
SACRAMENT	2021	LDT2	1995	25	GAS	2328.86157	1.799506777	0.014534317	0.015807396	548.9804496	0.115875189	0.090895291	0.584073873	0.852279225	14.74755381	0.005432607
SACRAMENT	2021	MH	2004	10	DSL	21.1611123	12.86227961	0.238856146	0.249656161	1922.673455	0.034690671	0.302217492	0.746869721	0.850261522	1.636687426	0.018176179
SACRAMENT	2021	LHD1	2009	5	DSL	80.0811653	2.598602216	0.097412474	0.101817034	1316.983587	0.034656926	0.20701148	0.74614321	0.849434437	3.997194604	0.012450231
SACRAMENT	2021	LHD2	2009	5	DSL	40.6702329	2.598602216	0.097412474	0.101817034	1389.089524	0.034656926	0.218345529	0.74614321	0.849434437	3.997194604	0.013131891
SACRAMENT	2021	MDV	1998	10	GAS	94.9034624	1.689046467	0.011546897	0.012558304	927.9052276	0.127290421	0.0949369	0.58175542	0.848896143	8.798219801	0.009182374
SACRAMENT	2021	LDT1	1982	60	GAS	66.9410213	2.022658232	0.014387274	0.015647473	436.4882426	0.10911627	0.100879056	0.580385796	0.846897592	23.6935123	0.004319405
SACRAMENT	2021	LHD1	1982	5	DSL	2.55951098	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1984	5	DSL	8.0344509	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD2	1985	5	DSL	2.13710524	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD1	1981	5	DSL	0.33767963	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1983	5	DSL	6.79398423	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1985	5	DSL	13.4574359	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1986	5	DSL	18.4382858	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD2	1983	5	DSL	0.50910836	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD2	1984	5	DSL	0.68807138	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD2	1986	5	DSL	5.24880799	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LDA	1980	50	GAS	66.6040241	2.147115101	0.035586953	0.038704058	515.4022723	0.099052274	0.096526826	0.580044024	0.846398878	20.63316906	0.005100323
SACRAMENT	2021	LHD1	2015	5	DSL	442.440956	0.747146894	0.024795206	0.025916335	1277.474079	0.034382002	0.200801135	0.740224265	0.842696112	3.249861964	0.012076724
SACRAMENT	2021	LHD2	2015	5	DSL	245.443939	0.747146894	0.024795206	0.025916335	1347.416838	0.034382002	0.211795163	0.740224265	0.842696112	3.249861964	0.012737935
SACRAMENT	2021	MH	2012	5	DSL	1.29568786	10.50342814	0.030700462	0.032088601	2176.333443	0.034311392	0.34208931	0.738704072	0.840965474	2.085070477	0.020574178
SACRAMENT	2021	LHD1	2004	5	DSL	501.654045	4.318299509	0.16827545	0.175884119	1316.983587	0.034195977	0.20701148	0.736219247	0.838136665	3.748943547	0.012450231
SACRAMENT	2021	LHD2	2004	5	DSL	70.3112489	4.318299509	0.16827545	0.175884119	1389.089524	0.034195977	0.218345529	0.736219247	0.838136665	3.748943547	0.013131891
SACRAMENT	2021	MH	1982	30	DSL	1.1263679	13.10165145	0.810316561	0.84695548	1205.616077	0.034053685	0.189506058	0.733155786	0.834649119	3.893143309	0.011397408
SACRAMENT	2021	MH	2005	10	DSL	19.9243696	12.80748617	0.23582642	0.246489444	1922.673455	0.03392977	0.302217492	0.730487961	0.831611977	1.600794434	0.018176179
SACRAMENT	2021	LDT1	1982	45	GAS	47.531095	1.715272808	0.014369606	0.015628257	392.1468476	0.107022592	0.085548363	0.569249596	0.830647675	21.26011802	0.003880611
SACRAMENT	2021	MH	1983	30	DSL	0.20118875	13.09453403	0.805231411	0.841640403	1205.616077	0.033793102	0.189506058	0.727545596	0.828262291	3.86334035	0.011397408
SACRAMENT	2021	LHD1	1988	20	GAS	312.885762	1.888853274	0.018211402	0.019806561	1116.640007	0.116161096	0.089806944	0.566885712	0.8271983	10.71824017	0.011050058
SACRAMENT	2021	LHD2	1988	20	GAS	8.91468483	1.888853274	0.018211402	0.019806561	1276.256487	0.116247715	0.089986322	0.566885712	0.8271983	10.71824017	0.012629593
SACRAMENT	2021	LHD1	2005	5	DSL	446.113303	4.313141992	0.166845654	0.174389674	1316.983587	0.033722584	0.20701148	0.726027372	0.826533894	3.696936247	0.012450231
SACRAMENT	2021	LHD2	2005	5	DSL	142.862697	4.313141992	0.166845654	0.174389674	1389.089524	0.033722584	0.218345529	0.726027372	0.826533894	3.696936247	0.013131891
SACRAMENT	2021	LHD1	2016	5	DSL	807.025426	0.625757431	0.022597976	0.023619756	1237.964571	0.033622769	0.194590791	0.723878419	0.824087453	2.979165851	0.011703217
SACRAMENT	2021	LHD2	2016	5	DSL	191.624062	0.625780743	0.022597976	0.023619756	1305.744152	0.033622769	0.205244797	0.723878419	0.824087453	2.979165851	0.012343978
SACRAMENT	2021	LHD1	1989	20	GAS	472.60703	1.887318961	0.018211402	0.019806561	1116.579783	0.115628661	0.089883989	0.563454126	0.822190938	10.68958123	0.011049462
SACRAMENT	2021	LHD2	1989	20	GAS	11.5784193	1.887318961	0.018211402	0.019806561	1276.196262	0.11570588	0.090045577	0.563454126	0.822190938	10.68958123	0.012628997
SACRAMENT	2021	MH	1984	30	DSL	1.08684575	13.08719397	0.799987203	0.836159074	1205.616077	0.033524369	0.189506058	0.721759925	0.821675689	3.832605182	0.011397408
SACRAMENT	2021	MH	2013	5	DSL	2.16173147	10.42310337	0.02995287	0.031307206	2176.333443	0.033412184	0.34208931	0.719344642	0.81892605	2.030508901	0.020574178
SACRAMENT	2021	LDA	1981	35	GAS	199.779077	1.549043606	0.017357131	0.018877463	381.7971128	0.099981954	0.075250197	0.560573614	0.817987702	17.84857279	0.003778192
SACRAMENT	2021	LHD1	1990	20	GAS	617.226742	1.884075631	0.018211402	0.019806561	1116.522282	0.115118904	0.089978792	0.560239527	0.817500203	10.6620504	0.011048893
SACRAMENT	2021	LHD2	1990	20	GAS	46.7574944	1.884075631	0.018211402	0.019806561	1276.138761	0.115187545	0.09012176	0.560239527	0.817500203	10.6620504	0.012628428
SACRAMENT	2021	MH	1985	30	DSL	0.6924286	13.07963129	0.794583936	0.830511495	1205.616077	0.033247485	0.189506058	0.715798773	0.814889313	3.800937807	0.011397408
SACRAMENT	2021	LHD1	2006	5	DSL	555.171527	4.307324936	0.165233021	0.172704125	1316.983587	0.033188655	0.20701148	0.714532199	0.813447403	3.638278465	0.012450231
SACRAMENT	2021	LHD2	2006	5	DSL	165.562302	4.307324936	0.165233021	0.172704125	1389.089524	0.033188655	0.218345529	0.714532199	0.813447403	3.638278465	0.013131891
SACRAMENT	2021	MH	2006	10	DSL	18.5402845	12.75167747	0.232740556	0.243264051	1922.673455	0.033154769	0.302217492	0.713802666	0.812616878	1.564236383	0.018176179
SACRAMENT	2021	LDT2	1997	20	GAS	1474.78818	1.569086283	0.005555592	0.006042213	636.4356356	0.114199827	0.083520854	0.556326032	0.81178964	12.98616963	0.006298047
SACRAMENT	2021	LDT1	1982	55	GAS	86.7126287	1.854956773	0.013810588	0.015020274	419.1790904	0.104180855	0.092515031	0.554134492	0.80859175	22.063862	0.004148117
SACRAMENT	2021	MH	1986	30	DSL	0.9610261	13.07184596	0.78902161	0.824697666	1205.616077	0.03296245	0.189506058	0.709662139	0.807903163	3.768338224	0.011397408
SACRAMENT	2021	LDT2	1998	15	GAS	503.112119	1.346723629	0.007914069	0.008607272	760.7871335	0.117964645	0.077031459	0.551498187	0.80474486	11.10713374	0.007528605
SACRAMENT	2021	LDT1	1982	50	GAS	47.6486634	1.766261409	0.013808326	0.015017814	402.8979399	0.103676955	0.088091394	0.551454261	0.804680762	21.31757159	0.003987002
SACRAMENT	2021	LHD2	2017	5	DSL	162.744697	0.511307625	0.020283996	0.021201148	1264.071467	0.03282319	0.198694431	0.70666396	0.804489937	2.694086361	0.011950021
SACRAMENT	2021	LHD1	2017	5	DSL	417.954321	0.511290531	0.020283996	0.021201148	1198.455064	0.03282319	0.188380447	0.70666396	0.804489937	2.694086361	0.01132971
SACRAMENT	2021	LDA	1982	35	GAS	245.804913	1.564909671	0.017351866	0.018871738	380.982639	0.098932295	0.07665237	0.546257449	0.797097587	17.4711375	0.003770132
SACRAMENT	2021	MH	2014	5	DSL	2.21729654	10.34148255	0.029193215	0.030513202	2060.724018	0.032498465	0.323917118	0.699672815	0.796530983	1.975066869	0.019481253
SACRAMENT	2021	LDA	1980	15	DSL	1.08276199	1.385114497	0.55666388	0.58183375	654.3291837	0.032268515	0.102851436	0.694722133	0.790894961	2.226952638	0.006185764
SACRAMENT	2021	LDT1	1982	15	DSL	1.21523058	1.385114497	0.55666388	0.58183375	761.7667904	0.032268515	0.119739131	0.694722133	0.790894961	2.226952638	0.007201436
SACRAMENT	2021	LDT2	1980	15	DSL	0.13396819	1.385114497	0.55666388	0.58183375	889.654364	0.032268515	0.139841277	0.694722133	0.790894961	2.226952638	0.008410433
SACRAMENT	2021	LDA	1981	15	DSL	1.73725195	1.385114497	0.55666388	0.58183375	654.3291837	0.032268515	0.102851436	0.694722133	0.790894961	2.226952638	0.006185764
SACRAMENT	2021	LDA	1982	15	DSL	3.13248156	1.385114497	0.55666388	0.58183375	654.3291837	0.032268515	0.102851436	0.694722133	0.790894961	2.226952638	0.006185764
SACRAMENT	2021	LDT1	1981	15	DSL	0.24773941	1.385114497	0.55666388	0.58183375	761.7667904	0.032268515	0.119739131	0.694722133	0.790894961	2.226952638	0.007201436
SACRAMENT	2021	LDT2	1981	15	DSL	0.06548355	1.385114497	0.55666388	0.58183375	889.654364	0.032268515	0.139841277	0.694722133	0.790894961	2.226952638	0.008410433
SACRAMENT	2021	LDT2	1982	15	DSL	0.65592707	1.385114497	0.55666388	0.58183375	889.654364	0.032268515	0.139841277	0.694722133	0.790894961	2.226952638	0.008410433
SACRAMENT	2021	MDV	1980	15	DSL	0.1604227	1.385114497	0.55666388	0.58183375	977.1865139	0.032268515	0.153600112	0.694722133	0.790894961	2.226952638	0.009237927
SACRAMENT	2021	MDV	1982	15	DSL	1.7247867	1.385114497	0.55666388	0.58183375	977.1865139	0.032268515	0.153600112	0.694722133	0.790894961	2.226952638	0.009237927
SACRAMENT	2021	LDA	1977	60	DSL	1.71405966	2.324500902	0.484170779	0.506062834	362.1784792	0.032244898	0.056929413	0.694213668	0.790316106	2.40615789	0.003423889
SACRAMENT	2021	LDA	1978	60	DSL	2.70705019	2.324500902	0.484170779	0.506062834	362.1784792	0.032244898	0.056929413	0.694213668	0.790316106	2.40615789	0.003423889
SACRAMENT	2021	LDA	1979	60	DSL	6.34688967	2.324500902	0.484170779	0.506062834	362.1784792	0.032244898	0.056929413	0.694213668	0.790316106	2.40615789	0.003423889
SACRAMENT	2021	LDT2	1978	60	DSL	1.96503178	2.324500902	0.484170779	0.506062834	488.2776994	0.032244898	0.076750455	0.694213668	0.790316106	2.40615789	0.00461598
SACRAMENT	2021	LDT2	1979	60	DSL	3.21729408	2.324500902	0.484170779	0.506062834	488.2776994	0.032244898	0.076750455	0.694213668	0.790316106	2.40615789	0.00461598
SACRAMENT	2021	MDV	1978	60	DSL	0.82619721	2.324500902	0.484170779	0.506062834	555.9675317	0.032244898	0.087390354	0.694213668	0.790316106	2.40615789	0.005255893
SACRAMENT	2021	LDA	1977	35	DSL	2.56349558	1.900968941	0.481760805	0.503543891	352.3059461	0.032084398	0.055377589	0.690758199	0.786382285	1.679894731	0.003330558
SACRAMENT	2021	LDA	1978	35	DSL	4.04858205	1.900968941	0.481760805	0.503543891	352.3059461	0.032084398	0.055377589	0.690758199	0.786382285	1.679894731	0.003330558
SACRAMENT	2021	LDT2	1978	35	DSL	2.93884186	1.900968941	0.481760805	0.503543891	478.2922434	0.032084398	0.07518088	0.690758199	0.786382285	1.679894731	0.004521582
SACRAMENT	2021	LDT2	1979	35	DSL	4.81168733	1.900968941	0.481760805	0.503543891	478.2922434	0.032084398	0.07518088	0.690758199	0.786382285	1.679894731	0.004521582
SACRAMENT	2021	MDV	1978	35	DSL	1.23563546	1.900968941	0.481760805	0.503543891	537.7979246	0.032084398	0.084534344	0.690758199	0.786382285	1.679894731	0.005084124
SACRAMENT	2021	LDA	1979	35	DSL	9.49221545	1.900968941	0.481760805	0.503543891	352.3059461	0.032084398	0.055377589	0.690758199	0.786382285	1.679894731	0.003330558
SACRAMENT	2021	LHD1	2018	5	DSL	470.007977	0.394590728	0.016641008	0.017393441	1119.436049	0.031983265	0.175959758	0.688580854	0.783903523	2.3946235	0.010582696
SACRAMENT	2021	LHD2	2018	5	DSL	179.65561	0.39484915	0.017853267	0.018660512	1180.726095	0.031983265	0.1855937	0.688580854	0.783903523	2.3946235	0.011162108
SACRAMENT	2021	MDV	1985	15	DSL	0.27019641	1.005510142	0.426237802	0.445510384	875.3735888	0.03193585	0.137596538	0.687560049	0.782741404	3.434820984	0.008275428
SACRAMENT	2021	LDA	1984	15	DSL	4.14000068	1.005510142	0.426237802	0.445510384	586.1547183	0.03193585	0.092135359	0.687560049	0.782741404	3.434820984	0.00554127
SACRAMENT	2021	LDA	1985	15	DSL	5.98064259	1.005510142	0.426237802	0.445510384	586.1547183	0.03193585	0.092135359	0.687560049	0.782741404	3.434820984	0.00554127
SACRAMENT	2021	LDA	1986	15	DSL	1.45748407	1.005510142	0.426237802	0.445510384	586.1547183	0.03193585	0.092135359	0.687560049	0.782741404	3.434820984	0.00554127

SACRAMENT	2021	LDA	1987	15	DSL	3.41362321	1.005510142	0.426237802	0.445510384	586.1547183	0.03193585	0.092135359	0.687560049	0.782741404	3.434820984	0.00554127
SACRAMENT	2021	LDA	1988	15	DSL	0.1219985	1.005510142	0.426237802	0.445510384	586.1547183	0.03193585	0.092135359	0.687560049	0.782741404	3.434820984	0.00554127
SACRAMENT	2021	LDA	1989	15	DSL	0.17748302	1.005510142	0.426237802	0.445510384	586.1547183	0.03193585	0.092135359	0.687560049	0.782741404	3.434820984	0.00554127
SACRAMENT	2021	LDA	1990	15	DSL	2.14059912	1.005510142	0.426237802	0.445510384	586.1547183	0.03193585	0.092135359	0.687560049	0.782741404	3.434820984	0.00554127
SACRAMENT	2021	LDA	1991	15	DSL	1.15502473	1.005510142	0.426237802	0.445510384	586.1547183	0.03193585	0.092135359	0.687560049	0.782741404	3.434820984	0.00554127
SACRAMENT	2021	LDA	1992	15	DSL	0.53038794	1.005510142	0.426237802	0.445510384	586.1547183	0.03193585	0.092135359	0.687560049	0.782741404	3.434820984	0.00554127
SACRAMENT	2021	LDT1	1984	15	DSL	0.54785424	1.005510142	0.426237802	0.445510384	682.398416	0.03193585	0.107263528	0.687560049	0.782741404	3.434820984	0.006451119
SACRAMENT	2021	LDT1	1985	15	DSL	0.58235161	1.005510142	0.426237802	0.445510384	682.398416	0.03193585	0.107263528	0.687560049	0.782741404	3.434820984	0.006451119
SACRAMENT	2021	LDT1	1986	15	DSL	1.24811952	1.005510142	0.426237802	0.445510384	682.398416	0.03193585	0.107263528	0.687560049	0.782741404	3.434820984	0.006451119
SACRAMENT	2021	LDT1	1987	15	DSL	1.26138925	1.005510142	0.426237802	0.445510384	682.398416	0.03193585	0.107263528	0.687560049	0.782741404	3.434820984	0.006451119
SACRAMENT	2021	LDT1	1988	15	DSL	1.18918604	1.005510142	0.426237802	0.445510384	682.398416	0.03193585	0.107263528	0.687560049	0.782741404	3.434820984	0.006451119
SACRAMENT	2021	LDT1	1989	15	DSL	1.20008445	1.005510142	0.426237802	0.445510384	682.398416	0.03193585	0.107263528	0.687560049	0.782741404	3.434820984	0.006451119
SACRAMENT	2021	LDT1	1990	15	DSL	0.49334267	1.005510142	0.426237802	0.445510384	682.398416	0.03193585	0.107263528	0.687560049	0.782741404	3.434820984	0.006451119
SACRAMENT	2021	LDT1	1992	15	DSL	1.52890171	1.005510142	0.426237802	0.445510384	682.398416	0.03193585	0.107263528	0.687560049	0.782741404	3.434820984	0.006451119
SACRAMENT	2021	LDT2	1984	15	DSL	0.06629641	1.005510142	0.426237802	0.445510384	796.9614013	0.03193585	0.125271234	0.687560049	0.782741404	3.434820984	0.007534151
SACRAMENT	2021	LDT2	1990	15	DSL	0.06845094	1.005510142	0.426237802	0.445510384	796.9614013	0.03193585	0.125271234	0.687560049	0.782741404	3.434820984	0.007534151
SACRAMENT	2021	MDV	1984	15	DSL	0.96659337	1.005510142	0.426237802	0.445510384	875.3735888	0.03193585	0.137596538	0.687560049	0.782741404	3.434820984	0.008275428
SACRAMENT	2021	MDV	1986	15	DSL	0.46446846	1.005510142	0.426237802	0.445510384	875.3735888	0.03193585	0.137596538	0.687560049	0.782741404	3.434820984	0.008275428
SACRAMENT	2021	MDV	1987	15	DSL	0.27343939	1.005510142	0.426237802	0.445510384	875.3735888	0.03193585	0.137596538	0.687560049	0.782741404	3.434820984	0.008275428
SACRAMENT	2021	MDV	1988	15	DSL	0.13845389	1.005510142	0.426237802	0.445510384	875.3735888	0.03193585	0.137596538	0.687560049	0.782741404	3.434820984	0.008275428
SACRAMENT	2021	MDV	1989	15	DSL	0.07083073	1.005510142	0.426237802	0.445510384	875.3735888	0.03193585	0.137596538	0.687560049	0.782741404	3.434820984	0.008275428
SACRAMENT	2021	MDV	1992	15	DSL	0.07077879	1.005510142	0.426237802	0.445510384	875.3735888	0.03193585	0.137596538	0.687560049	0.782741404	3.434820984	0.008275428
SACRAMENT	2021	MH	1987	30	DSL	1.00728772	13.02523794	0.791728359	0.827526803	1168.115114	0.031909045	0.183611429	0.686982956	0.782084421	3.646532471	0.011042889
SACRAMENT	2021	LDT1	1985	25	GAS	281.487658	2.661876116	0.025211011	0.027419275	479.2173479	0.104824079	0.117203458	0.533471581	0.778440478	17.93677626	0.004742244
SACRAMENT	2021	MH	2015	5	DSL	4.00149819	10.2585657	0.028421496	0.02970659	2060.724018	0.031570236	0.323917118	0.679688593	0.773780275	1.918744379	0.019481253
SACRAMENT	2021	MH	1988	30	DSL	1.04122369	13.01423833	0.786492769	0.822054482	1168.115114	0.031550768	0.183611429	0.679269462	0.773303122	3.605587469	0.011042889
SACRAMENT	2021	LDT2	1985	30	GAS	85.4947069	2.432726341	0.020472178	0.022265362	604.031277	0.10127673	0.107112712	0.529477577	0.772612438	16.1152418	0.005977379
SACRAMENT	2021	LDT2	1984	35	GAS	120.41777	2.307691162	0.0173646	0.018885587	562.0193725	0.099530264	0.101748081	0.52520937	0.76638428	16.67773029	0.005561637
SACRAMENT	2021	LDT1	1986	25	GAS	494.552405	2.681312319	0.025345586	0.027565637	474.6275419	0.103452982	0.118058752	0.524437954	0.765258631	17.71797272	0.004696824
SACRAMENT	2021	MH	1989	30	DSL	1.34343919	13.00294117	0.781115562	0.816434141	1168.115114	0.0311828	0.183611429	0.671347326	0.764284296	3.563534956	0.011042889
SACRAMENT	2021	LDA	1995	25	GAS	4700.02972	1.186928594	0.014671496	0.015956591	401.572875	0.104509189	0.067703563	0.523377304	0.763710934	13.56649803	0.003973889
SACRAMENT	2021	LHD1	2019	5	DSL	529.350188	0.319370247	0.012249333	0.012803193	1119.436049	0.03110299	0.175959758	0.669629054	0.762328158	2.080777274	0.010582696
SACRAMENT	2021	LHD2	2019	5	DSL	199.245042	0.319556459	0.015305788	0.015997848	1180.726095	0.03110299	0.1855937	0.669629054	0.762328158	2.080777274	0.011162108
SACRAMENT	2021	LDA	1994	25	GAS	3359.13572	1.188776647	0.014621613	0.015902338	401.8897239	0.103842801	0.067582551	0.522029514	0.761744242	13.59027402	0.003977025
SACRAMENT	2021	MDV	1999	10	GAS	181.850655	1.377271606	0.011783032	0.012815122	928.207611	0.114788227	0.080709088	0.520883427	0.760071874	7.813764403	0.009185367
SACRAMENT	2021	LDT2	1986	30	GAS	129.657539	2.450857734	0.020470372	0.022263398	535.1836966	0.099371374	0.107910778	0.517486355	0.755114874	15.97367934	0.005296077
SACRAMENT	2021	MH	1990	30	DSL	1.66646642	12.99134645	0.775596739	0.810665782	1168.115114	0.030805141	0.183611429	0.663216546	0.755027944	3.520374931	0.011042889
SACRAMENT	2021	LDT1	1992	25	GAS	867.695011	1.221347721	0.014505207	0.015775736	477.7081777	0.103636422	0.069148774	0.516997966	0.754402218	17.44058341	0.00472731
SACRAMENT	2021	LDT1	1987	25	GAS	495.585709	2.672087561	0.025429479	0.027656879	475.0480909	0.102192093	0.118052505	0.516144251	0.753156479	17.57918093	0.004700986
SACRAMENT	2021	LDT1	1991	25	GAS	1005.12806	1.227079122	0.014478175	0.015746336	477.1571618	0.103123575	0.069246263	0.515530802	0.752261336	17.42223729	0.004721857
SACRAMENT	2021	LDA	1993	25	GAS	2438.05427	1.190986382	0.014505328	0.015775867	402.3512483	0.102082501	0.067444512	0.514735504	0.751100839	13.59577346	0.003981592
SACRAMENT	2021	MH	1979	35	DSL	0.16401481	12.36194727	0.751785801	0.785778219	1140.224173	0.030638812	0.179227362	0.659635582	0.750951255	3.399149323	0.010779219
SACRAMENT	2021	MH	2016	5	DSL	1.83940483	10.17435287	0.027637713	0.028887368	2060.724018	0.030627497	0.323917118	0.659391976	0.750673926	1.861541432	0.019481253
SACRAMENT	2021	MH	2007	10	DSL	23.1579799	10.86962239	0.130898756	0.136817417	1949.396788	0.030626872	0.306418028	0.659378522	0.750658609	1.64110997	0.01842881
SACRAMENT	2021	LDA	1981	70	GAS	5.18102609	2.157443816	0.015478505	0.016834287	423.4462219	0.091611761	0.10480536	0.51364405	0.749508192	18.68242366	0.004190344
SACRAMENT	2021	LDT1	1990	25	GAS	638.499019	1.247002951	0.025709067	0.027960956	477.0963567	0.102296585	0.069850658	0.512517658	0.747864563	17.46972729	0.004721255
SACRAMENT	2021	LDA	1992	25	GAS	2072.18322	1.189207391	0.0145052	0.015775728	429.4247777	0.101179458	0.067145834	0.512311732	0.747564076	13.54827637	0.004249506
SACRAMENT	2021	LDA	1991	25	GAS	1998.16154	1.188717245	0.014505531	0.015775848	429.166662	0.100612343	0.066873947	0.512066085	0.74720563	13.53378327	0.004246952
SACRAMENT	2021	LDA	1990	25	GAS	1396.04189	1.188720689	0.025902174	0.028170977	429.1667339	0.100047564	0.066594698	0.512062879	0.747200951	13.53383279	0.004246953
SACRAMENT	2021	LDT1	1989	25	GAS	711.621298	1.798602429	0.025613762	0.027857303	476.7165819	0.101621819	0.089979118	0.51024333	0.744545869	17.47896934	0.004717497
SACRAMENT	2021	LDA	1989	25	GAS	1130.46236	1.187533853	0.02585501	0.028119683	428.0262003	0.099041325	0.06620621	0.51000946	0.744204607	13.48321578	0.004235666
SACRAMENT	2021	MH	1994	20	GAS	21.8937218	2.747418385	0.002913824	0.00316905	2335.911078	0.115463392	0.130602289	0.509849279	0.743970871	8.559511335	0.023115734
SACRAMENT	2021	LDT1	1988	25	GAS	442.247545	2.564523829	0.025617475	0.027861342	475.4092921	0.101203967	0.115053838	0.509194633	0.743015613	17.39305564	0.00470456
SACRAMENT	2021	LDT2	1983	35	GAS	54.5269857	2.333345851	0.017367554	0.0188888	560.6206819	0.096348218	0.102158774	0.508105055	0.741425704	16.36784801	0.005547796
SACRAMENT	2021	LDT2	1987	30	GAS	149.330758	2.443628939	0.020469221	0.022262146	535.7814872	0.097769704	0.107957849	0.507277824	0.74021861	15.88608498	0.005301992
SACRAMENT	2021	LDA	1988	25	GAS	811.283421	1.190871115	0.025709108	0.027961	428.2190675	0.097827061	0.065924471	0.507254881	0.740185131	13.53479683	0.004237575
SACRAMENT	2021	LHD1	1988	10	DSL	34.3880734	4.021607395	0.442747467	0.462766543	1107.130193	0.030196241	0.174025449	0.650107292	0.74010393	2.595668803	0.010466362
SACRAMENT	2021	LHD1	1989	10	DSL	50.5759851	4.021607395	0.442747467	0.462766543	1107.130193	0.030196241	0.174025449	0.650107292	0.74010393	2.595668803	0.010466362
SACRAMENT	2021	LHD2	1987	10	DSL	17.4404186	4.021607395	0.442747467	0.462766543	1234.527259	0.030196241	0.194050493	0.650107292	0.74010393	2.595668803	0.011670722
SACRAMENT	2021	LHD2	1988	10	DSL	6.9765533	4.021607395	0.442747467	0.462766543	1234.527259	0.030196241	0.194050493	0.650107292	0.74010393	2.595668803	0.011670722
SACRAMENT	2021	LHD2	1989	10	DSL	22.8282186	4.021607395	0.442747467	0.462766543	1234.527259	0.030196241	0.194050493	0.650107292	0.74010393	2.595668803	0.011670722
SACRAMENT	2021	LHD2	1990	10	DSL	15.8212182	4.021607395	0.442747467	0.462766543	1234.527259	0.030196241	0.194050493	0.650107292	0.74010393	2.595668803	0.011670722
SACRAMENT	2021	LHD1	1987	10	DSL	23.3837097	4.021607395	0.442747467	0.462766543	1107.130193	0.030196241	0.174025449	0.650107292	0.74010393	2.595668803	0.010466362
SACRAMENT	2021	LHD1	1990	10	DSL	87.6793509	4.021607395	0.442747467	0.462766543	1107.130193	0.030196241	0.174025449	0.650107292	0.74010393	2.595668803	0.010466362
SACRAMENT	2021	LHD1	2020	5	DSL	605.717162	0.249152374	0.008427707	0.00880877	1119.436049	0.030182363	0.175959758	0.649808501	0.739763776	1.752547695	0.010582696
SACRAMENT	2021	LHD2	2020	5	DSL	225.629637	0.249358941	0.01264156	0.013213156	1180.726095	0.030182363	0.1855937	0.649808501	0.739763776	1.752547695	0.011162108
SACRAMENT	2021	LDA	1999	10	GAS	385.565226	0.656161829	0.012192027	0.013259942	657.3734553	0.115342998	0.04746594	0.5069506	0.739741125	7.688380954	0.006505243
SACRAMENT	2021	MH	1987	20	GAS	6.83890486	3.106029826	0.010198385	0.011091674	2339.176183	0.1148488	0.142235963	0.506834044	0.739571047	10.62761695	0.023148045
SACRAMENT	2021	LDT1	1984	30	GAS	139.038485	2.43897675	0.020474745	0.022268154	428.7492143	0.098587927	0.107536419	0.506433238	0.738986192	18.325372	0.004242821
SACRAMENT	2021	LDA	1987	25	GAS	853.676875	1.192170366	0.025613289	0.027856788	427.8732826	0.096655909	0.065535337	0.504993956	0.736885995	13.54213657	0.004234153
SACRAMENT	2021	LDA	1982	70	GAS	6.37464989	2.172463151	0.0154665	0.01682123	422.7875661	0.091334981	0.106411541	0.504308667	0.735886023	18.34257956	0.004183826
SACRAMENT	2021	MH	1982	35	DSL	1.32813611	12.34308969	0.738747806	0.772150703	1140.224173	0.029993348	0.179227362	0.645739127	0.735131064	3.327511206	0.010779219
SACRAMENT	2021	LDA	1986	25	GAS	536.350464	1.195041002	0.025512472	0.027747141	428.3050743	0.095530485	0.065156413	0.503374687	0.734523161	13.59457666	0.004238426
SACRAMENT	2021	LDA	1984	30	GAS	212.272998	1.443106782	0.020471083	0.022264171	408.2559478	0.09544543	0.07409497	0.503176957	0.734234634	16.54705717	0.004040024
SACRAMENT	2021	MH	2008	10	DSL	20.5165561	10.81002582	0.1289767	0.134808454	1949.396788	0.029915858	0.306418028	0.644070801	0.733231786	1.603391425	0.01842881
SACRAMENT	2021	MDV	1989	35	GAS	436.561912	1.878266934	0.017143374	0.018644983	532.1842683	0.094842523	0.088352443	0.502412376	0.73311896	15.2017248	0.005266395
SACRAMENT	2021	LDA	1985	25	GAS	546.747074	1.197159405	0.025424132	0.027651063	452.4276265	0.094321347	0.064681402	0.501753952	0.73215819	13.62872741	0.004477138
SACRAMENT	2021	LDA	1983	35	GAS	276.963262	1.481407738	0.017300866	0.01881627	379.6003141	0.09248832	0.074056654	0.501520098	0.73181695	16.45228637	0.003756453
SACRAMENT	2021	MH	1983	35	DSL	0.23722804	12.33638436	0.734111787	0.767305064	1140.224173	0.029763836	0.179227362	0.640797859	0.729505759	3.302038298	0.010779219
SACRAMENT	2021	MH	1988	20	GAS	7.725988	3.069359345	0.010198385	0.011091674	2338.873111	0.113308972	0.141066107	0.498969389	0.728094961	10.45781	0.023145045
SACRAMENT	2021	MH	2017	5	DSL	3.82224233	10.08884408	0.026841866	0.028055536	1982.813834	0.029670248	0.311670722	0.638782967	0.727211938	1.803458026	0.018744721
SACRAMENT	2021	LDT2	1992	30	GAS	569.778895	2.295092715	0.011459298	0.012463032	539.1510857	0.097233323	0.10470522	0.498284654	0.727095797	15.94184134	0.005335337
SACRAMENT	2021	LDT2	1991	30	GAS	499.096451	2.303741485	0.011459647	0.012463412	538.4988211	0.096935364	0.104756815	0.497808273	0.726400663	15.90712825	0.005328882
SACRAMENT	2021	LDT2	1990	30	GAS	407.518791	2.33489099	0.020465527	0.022258128	538.341423	0.096707187	0.105388027	0.497730618	0.726287349	15.89768951	0.005327325
SACRAMENT	2021	MDV	1985	35	GAS	138.997041	1.853197309	0.017264387	0.018776596	571.5539526	0.093284712	0.086585942	0.497577553	0.726063997	14.77760467	0.00565599
SACRAMENT	2021	LDT2	1989	30	GAS	304.856033	2.353341703	0.020466759	0.022259468	537.854176	0.096431813	0.105682252	0.497391715	0.725792823	15.87131883	0.005322503
SACRAMENT	2021	LDT2	1993	30	GAS	872.510866	2.298100476	0.011459298	0.012463032	490.9260528	0.097167387	0.104964717	0.496520034	0.724520868	16.07411614	0.004858111
SACRAMENT	2021	LDT2	1988	30	GAS	238.174367	2.348963857	0.020466711	0.022259416	536.3800117	0.096017748	0.105382026	0.496284584	0.7241773	15.79386629	0.005307915
SACRAMENT	2021	MH	1984	35	DSL	1.28153429	12.32946928	0.729330757	0.762307858	1140.224173	0.029527144	0.179227362	0.635702033	0.7237045	3.275768621	0.010779219
SACRAMENT	2021	LDA	1981	40	GAS	244.779097	1.526844266	0.015295248	0.016634978	368.0056183	0.088392598	0.074171787	0.495595012	0.723171078	16.61676075	0.003641714
SACRAMENT	2021	MDV	1991	35	GAS	507.573942	1.866219238	0.009564915	0.010402718	532.5165433	0.093946528	0.088297686	0.49514772	0.722518391	15.06063099	0.005269683
SACRAMENT	2021	MDV	1986	35	GAS	179.647352	1.85553165	0.017172561	0.018676727	528.8125381	0.092973805	0.087026128	0.495052093	0.722378851	14.83092404	0.005233029
SACRAMENT	2021	MDV	1988	35	GAS	282.276639	1.860364132	0.0171236	0.018623477	530.428528	0.093283281	0.087568664	0.494842877	0.722073565	14.9350322	0.00524902
SACRAMENT	2021	LDA	1981	65	GAS	19.5827442	1.981529545	0.014689948	0.015976659	423.2473642	0.088222736	0.096259711	0.494642639	0.721781378	18.08923637	0.004188376
SACRAMENT	2021	MDV	1990	35	GAS	541.414142	1.866153201	0.017065572	0.018560367	532.3657927	0.093631255	0.088203328	0.494603808	0.721724716	15.05994222	0.005268191
SACRAMENT	2021	MDV	1992	35	GAS	729.229273	1.868568009	0.009543157	0.010379054	533.1725238	0.094039819	0.088635265	0.494500091	0.721573372	15.1121184	0.005276174
SACRAMENT	2021	LDA	1979	55	DSL	8.22149822	2.236103833	0.441704114	0.461676014	334.0759796	0.029416695	0.052512092	0.63332412	0.720997404	2.019131079	0.003158219
SACRAMENT	2021	MDV	1978	55	DSL	1.07022167	2.236103833	0.441704114	0.461676014	513.4541571	0.029416695	0.080707843	0.63332412	0.720997404	2.019131079	0.004853988
SACRAMENT	2021	LDA	1977	55	DSL	2.22032195	2.236103833	0.441704114	0.461676014	334.0759796	0.029416695	0.052512092	0.63332412	0.720997404	2.019131079	0.003158219
SACRAMENT	2021	LDA	1978	55	DSL	3.50660078	2.236103833	0.441704114	0.461676014	334.0759796	0.029416695	0.052512092	0.63332412	0.720997404	2.019131079	0.003158219
SACRAMENT	2021	LDT2	1978	55	DSL	2.54542084	2.236103833	0.441704114	0.461676014	450.7713969	0.029416695	0.070854986	0.63332412	0.720997404	2.019131079	0.004261411
SACRAMENT	2021	LDT2	1979	55	DSL	4.16754961	2.236103833	0.441704114	0.461676014	450.7713969	0.029416695	0.070854986	0.63332412	0.720997404	2.019131079	0.004261411
SACRAMENT	2021	LDT2	1999	10	GAS	205.083269	1.064642283	0.012015841	0.013068324	922.8814715	0.111426568	0.066603452	0.493272123	0.719781524	8.677765274	0.00913266
SACRAMENT	2021	MDV	1993	35	GAS	831.768575	1.870591659	0.009510097	0.010343098	460.1383971	0.093981313	0.089026212	0.493025739	0.719422	15.15776697	0.004553442
SACRAMENT	2021	MDV	1994	35	GAS	1738.00825	1.871772647	0.009499077	0.010331113	460.4245281	0.094138783	0.089268295	0.492692678	0.718935999	15.18371009	0.004556274
SACRAMENT	2021	LDA	1977	40	DSL	3.14092018	1.984276196	0.440383496	0.460295684	329.6795307	0.029328744	0.051821031	0.631430593	0.71884175	1.627575016	0.003116657
SACRAMENT	2021	LDA	1978	40	DSL	4.96052078	1.984276196	0.440383496	0.460295684	329.6795307	0.029328744	0.051821031	0.631430593	0.71884175	1.627575016	0.003116657
SACRAMENT	2021	LDA	1979	40	DSL	11.6303267	1.984276196	0.440383496	0.460295684	329.6795307	0.029328744	0.051821031	0.631430593	0.71884175	1.627575016	0.003116657

SACRAMENT	2021	LDT2	1978	40	DSL	3.6008128	1.984276196	0.440383496	0.460295684	446.399969	0.029328744	0.070167859	0.631430593	0.71884175	1.627575016	0.004220085
SACRAMENT	2021	LDT2	1979	40	DSL	5.8955147	1.984276196	0.440383496	0.460295684	446.399969	0.029328744	0.070167859	0.631430593	0.71884175	1.627575016	0.004220085
SACRAMENT	2021	MDV	1978	40	DSL	1.51396101	1.984276196	0.440383496	0.460295684	503.0359839	0.029328744	0.079070251	0.631430593	0.71884175	1.627575016	0.004755499
SACRAMENT	2021	LHD1	2002	10	DSL	965.072885	5.459462612	0.118752151	0.124121597	1107.130193	0.029320537	0.174025449	0.63125389	0.718640585	2.722390202	0.010466362
SACRAMENT	2021	LHD2	2002	10	DSL	147.801895	5.459462612	0.118752151	0.124121597	1234.527259	0.029320537	0.194050493	0.63125389	0.718640585	2.722390202	0.011670722
SACRAMENT	2021	MDV	1987	35	GAS	237.573485	1.865363463	0.017061544	0.018555986	529.6696948	0.092659989	0.087787813	0.492451116	0.718583512	14.92581227	0.005241511
SACRAMENT	2021	MH	1985	35	DSL	0.81646452	12.32234446	0.724404717	0.757159084	1140.224173	0.029283274	0.179227362	0.630451649	0.717727287	3.248702177	0.010779219
SACRAMENT	2021	MH	1989	20	GAS	14.4795347	3.029532133	0.010198385	0.011091674	2334.740559	0.111758474	0.139779812	0.49106822	0.716565594	7.872144591	0.023104151
SACRAMENT	2021	LHD1	2021	5	DSL	549.436711	0.186481005	0.005265064	0.005503127	1091.450147	0.029221381	0.171560764	0.62911912	0.716210292	1.409934777	0.010318129
SACRAMENT	2021	LHD2	2021	5	DSL	205.828631	0.186289139	0.009860583	0.010306435	1151.207943	0.029221381	0.180953857	0.62911912	0.716210292	1.409934777	0.010883055
SACRAMENT	2021	LDT1	1983	30	GAS	60.894413	2.4764648	0.020475202	0.02226865	427.5517365	0.095521078	0.108425736	0.49037854	0.715559215	18.01307644	0.004230971
SACRAMENT	2021	MH	2009	10	DSL	2.32671499	10.74938315	0.127020905	0.132764227	1949.396788	0.029192363	0.306418028	0.628494394	0.715499082	1.56501079	0.01842881
SACRAMENT	2021	MDV	1995	30	GAS	1114.92038	1.715874177	0.011459298	0.012463032	491.1787183	0.096397921	0.085775593	0.490269136	0.715399572	12.61719045	0.004860612
SACRAMENT	2021	LDT1	1993	25	GAS	1212.27251	1.222944831	0.014505207	0.015775736	441.1512759	0.099175759	0.069319973	0.490025549	0.715044131	13.66140611	0.004365549
SACRAMENT	2021	MH	1986	35	DSL	1.13317634	12.31500989	0.719333667	0.751858743	1140.224173	0.029032225	0.179227362	0.625046707	0.71157412	3.220838965	0.010779219
SACRAMENT	2021	LHD1	2003	10	DSL	1347.03522	5.454632977	0.118011373	0.123347324	1107.130193	0.029024063	0.174025449	0.624870993	0.711374082	2.694899069	0.010466362
SACRAMENT	2021	LHD2	2003	10	DSL	193.076656	5.454632977	0.118011373	0.123347324	1234.527259	0.029024063	0.194050493	0.624870993	0.711374082	2.694899069	0.011670722
SACRAMENT	2021	LDA	1982	65	GAS	24.0942886	1.997751689	0.01467781	0.015963457	422.4870269	0.087859846	0.097853828	0.485120609	0.707886854	17.7513716	0.004180852
SACRAMENT	2021	MDV	2003	5	GAS	6.86819104	0.732105908	0.019440667	0.021143499	1270.12146	0.111385021	0.051194659	0.483638533	0.705724212	6.420704863	0.012568881
SACRAMENT	2021	LDA	1982	40	GAS	301.172204	1.545045675	0.015287105	0.016626122	367.258111	0.087501813	0.075679392	0.483143719	0.705002181	16.26832098	0.003634317
SACRAMENT	2021	MH	1990	20	GAS	14.1848743	2.98697849	0.010198385	0.011091674	2334.653525	0.110165296	0.138408655	0.482970417	0.704749299	7.839266794	0.023103289
SACRAMENT	2021	MH	2018	5	DSL	4.20191146	10.00203937	0.026033956	0.027211096	1982.813834	0.028698489	0.311670722	0.617861565	0.703394313	1.74449416	0.018744721
SACRAMENT	2021	MH	1986	25	GAS	8.08137542	2.624658595	0.013453499	0.014631908	2002.464392	0.105151082	0.122857516	0.479673665	0.699938685	10.90573481	0.019816008
SACRAMENT	2021	LDT2	1994	30	GAS	1130.30095	2.263662871	0.011459047	0.012462759	489.0276084	0.094014242	0.10397097	0.477001067	0.696038837	14.63695999	0.004839325
SACRAMENT	2021	LHD1	1991	15	DSL	192.238238	7.470250807	0.086260398	0.090160711	723.0486622	0.028270799	0.113653181	0.608653658	0.692911723	2.077285739	0.00683541
SACRAMENT	2021	LHD1	1992	15	DSL	254.60493	7.470250807	0.086260398	0.090160711	723.0486622	0.028270799	0.113653181	0.608653658	0.692911723	2.077285739	0.00683541
SACRAMENT	2021	LHD1	1993	15	DSL	301.710117	7.470250807	0.086260398	0.090160711	723.0486622	0.028270799	0.113653181	0.608653658	0.692911723	2.077285739	0.00683541
SACRAMENT	2021	LHD2	1991	15	DSL	41.2795429	7.470250807	0.086260398	0.090160711	821.7876738	0.028270799	0.129173578	0.608653658	0.692911723	2.077285739	0.007768849
SACRAMENT	2021	LHD2	1992	15	DSL	60.7021896	7.470250807	0.086260398	0.090160711	821.7876738	0.028270799	0.129173578	0.608653658	0.692911723	2.077285739	0.007768849
SACRAMENT	2021	LHD2	1993	15	DSL	144.605939	7.470250807	0.086260398	0.090160711	821.7876738	0.028270799	0.129173578	0.608653658	0.692911723	2.077285739	0.007768849
SACRAMENT	2021	MH	1991	20	GAS	13.681952	2.942125367	0.010198385	0.011091674	2334.568502	0.108508223	0.136956896	0.474570714	0.692492472	7.80847862	0.023102448
SACRAMENT	2021	LHD1	1994	15	DSL	267.495502	7.477133782	0.086960629	0.090892603	723.0486622	0.028208681	0.113653181	0.607316286	0.691389214	2.06818482	0.00683541
SACRAMENT	2021	LHD1	1995	15	DSL	445.3813	7.477133782	0.086960629	0.090892603	723.0486622	0.028208681	0.113653181	0.607316286	0.691389214	2.06818482	0.00683541
SACRAMENT	2021	LHD1	1996	15	DSL	362.281774	7.477133782	0.086960629	0.090892603	723.0486622	0.028208681	0.113653181	0.607316286	0.691389214	2.06818482	0.00683541
SACRAMENT	2021	LHD1	1997	15	DSL	785.27862	7.477133782	0.086960629	0.090892603	723.0486622	0.028208681	0.113653181	0.607316286	0.691389214	2.06818482	0.00683541
SACRAMENT	2021	LHD2	1994	15	DSL	145.928303	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1995	15	DSL	82.4900182	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1996	15	DSL	179.054358	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1997	15	DSL	118.25921	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1995	15	GAS	132.233595	2.084823866	0.009363304	0.010183447	1526.078026	0.101208859	0.101345111	0.473665003	0.69117086	7.580218658	0.015101779
SACRAMENT	2021	LHD1	1995	15	GAS	1176.07487	2.084779762	0.009363159	0.01018329	1334.051099	0.101141584	0.101277331	0.473653046	0.691153413	7.580024244	0.013201517
SACRAMENT	2021	LHD1	1998	15	DSL	322.320486	7.475899633	0.086844339	0.090771054	723.0486622	0.028156395	0.113653181	0.6061906	0.690107696	2.064353752	0.00683541
SACRAMENT	2021	LHD2	1998	15	DSL	93.2881596	7.475899633	0.086844339	0.090771054	821.7876738	0.028156395	0.129173578	0.6061906	0.690107696	2.064353752	0.007768849
SACRAMENT	2021	LDT2	1996	30	GAS	1778.31123	1.741099385	0.003273942	0.00356071	489.0031341	0.092844033	0.085738753	0.472514234	0.689491662	14.32327332	0.004839082
SACRAMENT	2021	LHD1	2010	10	DSL	253.086875	0.737725902	0.03198527	0.033431502	1107.130193	0.028126933	0.174025449	0.605556316	0.689385606	3.284524273	0.010466362
SACRAMENT	2021	LHD2	2010	10	DSL	118.995487	0.737725902	0.03198527	0.033431502	1234.527259	0.028126933	0.194050493	0.605556316	0.689385606	3.284524273	0.011670722
SACRAMENT	2021	LDA	1996	30	GAS	4034.19983	1.2336504	0.003273465	0.003560192	359.2101803	0.092323039	0.067477899	0.472257159	0.689116538	13.99181602	0.003554676
SACRAMENT	2021	MH	1987	35	DSL	1.18772489	12.27110038	0.721801351	0.754438005	1104.75724	0.028104421	0.173652454	0.60507164	0.688833834	3.116730286	0.010443929
SACRAMENT	2021	LDA	1977	50	DSL	1.2200688	2.152069701	0.421677981	0.440744388	319.2557279	0.028082991	0.050182555	0.604610253	0.688308576	1.784362141	0.003018115
SACRAMENT	2021	LDA	1979	50	DSL	4.51772028	2.152069701	0.421677981	0.440744388	319.2557279	0.028082991	0.050182555	0.604610253	0.688308576	1.784362141	0.003018115
SACRAMENT	2021	LDT2	1978	50	DSL	1.39871092	2.152069701	0.421677981	0.440744388	431.1203021	0.028082991	0.067766108	0.604610253	0.688308576	1.784362141	0.004075637
SACRAMENT	2021	LDT2	1979	50	DSL	2.29007206	2.152069701	0.421677981	0.440744388	431.1203021	0.028082991	0.067766108	0.604610253	0.688308576	1.784362141	0.004075637
SACRAMENT	2021	MDV	1978	50	DSL	0.58808772	2.152069701	0.421677981	0.440744388	486.5253034	0.028082991	0.076475002	0.604610253	0.688308576	1.784362141	0.004599414
SACRAMENT	2021	LDA	1978	50	DSL	1.92688012	2.152069701	0.421677981	0.440744388	319.2557279	0.028082991	0.050182555	0.604610253	0.688308576	1.784362141	0.003018115
SACRAMENT	2021	LDT1	1994	25	GAS	1718.89179	1.018417323	0.014524614	0.015796843	439.4782631	0.096133956	0.061050439	0.471674272	0.688265991	12.39495705	0.004348994
SACRAMENT	2021	LDT2	1978	45	DSL	1.39525974	2.068384086	0.421257508	0.440304903	430.4053017	0.028054988	0.06765372	0.604007371	0.687622235	1.660635806	0.004068878
SACRAMENT	2021	LDT2	1979	45	DSL	2.28442154	2.068384086	0.421257508	0.440304903	430.4053017	0.028054988	0.06765372	0.604007371	0.687622235	1.660635806	0.004068878
SACRAMENT	2021	MDV	1978	45	DSL	0.58663667	2.068384086	0.421257508	0.440304903	484.0994939	0.028054988	0.076093699	0.604007371	0.687622235	1.660635806	0.004576481
SACRAMENT	2021	LDA	1977	45	DSL	1.2170584	2.068384086	0.421257508	0.440304903	318.4451003	0.028054988	0.050055135	0.604007371	0.687622235	1.660635806	0.003010451
SACRAMENT	2021	LDA	1978	45	DSL	1.92212573	2.068384086	0.421257508	0.440304903	318.4451003	0.028054988	0.050055135	0.604007371	0.687622235	1.660635806	0.003010451
SACRAMENT	2021	LDA	1979	45	DSL	4.50657325	2.068384086	0.421257508	0.440304903	318.4451003	0.028054988	0.050055135	0.604007371	0.687622235	1.660635806	0.003010451
SACRAMENT	2021	LHD1	1999	15	DSL	1325.44728	7.473160518	0.086586241	0.090501286	723.0486622	0.028040349	0.113653181	0.603692213	0.687263448	2.05585094	0.00683541
SACRAMENT	2021	LHD2	1999	15	DSL	375.252999	7.473160518	0.086586241	0.090501286	821.7876738	0.028040349	0.129173578	0.603692213	0.687263448	2.05585094	0.007768849
SACRAMENT	2021	LHD1	2000	15	DSL	1262.94355	7.468916435	0.086186334	0.090083297	723.0486622	0.027860545	0.113653181	0.599821123	0.68285647	2.042676383	0.00683541
SACRAMENT	2021	LHD2	2000	15	DSL	307.760809	7.468916435	0.086186334	0.090083297	821.7876738	0.027860545	0.129173578	0.599821123	0.68285647	2.042676383	0.007768849
SACRAMENT	2021	LDT1	1996	25	GAS	2327.18415	1.079623612	0.004155435	0.004519415	439.4215582	0.095020419	0.062978428	0.467672468	0.682426568	12.09716353	0.004348433
SACRAMENT	2021	LHD1	1991	25	GAS	402.806628	3.054947571	0.00753396	0.008193868	959.3952369	0.093403043	0.128435058	0.467495475	0.6821683	12.33918253	0.009493994
SACRAMENT	2021	LHD2	1991	25	GAS	31.5689566	3.054947571	0.00753396	0.008193868	1095.825053	0.093471924	0.128508367	0.467495475	0.6821683	12.33918253	0.010844077
SACRAMENT	2021	LDT2	1984	70	GAS	3.12288764	3.277153802	0.014738649	0.016029625	624.7317673	0.088529719	0.144492519	0.467160806	0.681679952	16.68291803	0.006182227
SACRAMENT	2021	MH	1988	35	DSL	1.22773986	12.26073763	0.717028178	0.74944901	1104.75724	0.027788863	0.173652454	0.598277853	0.681099559	3.081734156	0.010443929
SACRAMENT	2021	MH	1992	20	GAS	18.2108715	2.895650094	0.010198385	0.011091674	2334.485249	0.106749042	0.135445478	0.465695608	0.679541938	7.780101017	0.023101624
SACRAMENT	2021	MH	2019	5	DSL	4.58074988	9.913938802	0.025213982	0.026354046	1982.813834	0.02771222	0.311670722	0.596627773	0.679221053	1.684649835	0.018744721
SACRAMENT	2021	LHD1	2011	10	DSL	557.85097	0.717232963	0.03046874	0.031846402	1107.130193	0.027709577	0.174025449	0.596570888	0.679156294	3.13571937	0.010466362
SACRAMENT	2021	LHD2	2011	10	DSL	301.845366	0.717232963	0.03046874	0.031846402	1234.527259	0.027709577	0.194050493	0.596570888	0.679156294	3.13571937	0.011670722
SACRAMENT	2021	LHD1	1992	25	GAS	371.395069	3.062661446	0.00753396	0.008193868	959.3012473	0.093107577	0.128755293	0.465387672	0.679092598	12.28562038	0.009493064
SACRAMENT	2021	LHD2	1992	25	GAS	21.499137	3.062661446	0.00753396	0.008193868	1095.731063	0.093167792	0.12881913	0.465387672	0.679092598	12.28562038	0.010843147
SACRAMENT	2021	LHD1	2001	15	DSL	2121.14343	7.463167386	0.085644619	0.089517089	723.0486622	0.027616981	0.113653181	0.594577331	0.676886761	2.024830081	0.00683541
SACRAMENT	2021	LHD2	2001	15	DSL	604.028885	7.463167386	0.085644619	0.089517089	821.7876738	0.027616981	0.129173578	0.594577331	0.676886761	2.024830081	0.007768849
SACRAMENT	2021	LDT2	1984	40	GAS	147.541743	2.251949794	0.015276477	0.016614562	542.444399	0.087863992	0.099290396	0.463647843	0.676553844	15.49840498	0.005367927
SACRAMENT	2021	LHD1	1993	25	GAS	444.311941	3.057131178	0.00753396	0.008193868	959.2159208	0.09286352	0.128670026	0.463578889	0.676453227	12.23671013	0.009492219
SACRAMENT	2021	LHD2	1993	25	GAS	59.8273047	3.057131178	0.00753396	0.008193868	1095.645736	0.092915484	0.128724975	0.463578889	0.676453227	12.23671013	0.010842303
SACRAMENT	2021	LHD1	1994	25	GAS	515.945218	3.054171767	0.00753396	0.008193868	959.1389059	0.092660845	0.128658897	0.462010596	0.674164777	12.19238931	0.009491457
SACRAMENT	2021	LHD2	1994	25	GAS	85.1764899	3.054171767	0.00753396	0.008193868	1095.568722	0.092704965	0.12870545	0.462010596	0.674164777	12.19238931	0.010841541
SACRAMENT	2021	MH	1989	35	DSL	1.58409174	12.25009456	0.712125896	0.744325069	1104.75724	0.027464769	0.173652454	0.591300299	0.673156079	3.045791423	0.010443929
SACRAMENT	2021	LDT2	1995	30	GAS	1626.48377	1.658935726	0.011458921	0.012462622	487.6467054	0.091445205	0.083794875	0.460933491	0.672593067	13.49074626	0.004825659
SACRAMENT	2021	MH	1979	40	DSL	0.20359886	11.80829831	0.692392595	0.723699515	1088.237562	0.02735815	0.17105579	0.58900486	0.670542874	2.909948844	0.010287759
SACRAMENT	2021	MDV	2000	10	GAS	235.444354	1.067662112	0.012015841	0.013068324	1038.357306	0.101981495	0.0656623	0.459188097	0.670046193	6.829755028	0.010275387
SACRAMENT	2021	MDV	1994	70	GAS	45.073119	2.137144067	0.009053215	0.009846197	500.3261012	0.087657739	0.101924348	0.458772942	0.6694404	9.855613056	0.004951132
SACRAMENT	2021	LHD1	2012	10	DSL	562.402693	0.695257177	0.028842476	0.030146605	1107.130193	0.027262022	0.174025449	0.586935282	0.668186797	2.976147158	0.010466362
SACRAMENT	2021	LHD2	2012	10	DSL	382.10928	0.695257177	0.028842476	0.030146605	1234.527259	0.027262022	0.194050493	0.586935282	0.668186797	2.976147158	0.011670722
SACRAMENT	2021	LDA	1981	45	GAS	94.8481465	1.539999958	0.01401202	0.01523935	367.9323283	0.081513142	0.074810871	0.457023639	0.666887821	15.90564002	0.003640989
SACRAMENT	2021	LDA	1983	70	GAS	7.18270358	2.034257883	0.015366471	0.016712439	419.4481463	0.084238949	0.101694036	0.456787692	0.666543528	16.22652053	0.004150779
SACRAMENT	2021	LDT1	1995	25	GAS	1598.7418	1.02828776	0.014534318	0.015807397	438.2788092	0.093609046	0.061527698	0.456306885	0.665841936	11.395804	0.004337124
SACRAMENT	2021	MH	1993	20	GAS	17.1902176	2.848322509	0.010198385	0.011091674	2334.402937	0.104862896	0.133898733	0.456181804	0.665659417	7.754054665	0.023100809
SACRAMENT	2021	MH	1990	35	DSL	1.96498339	12.23917115	0.707094507	0.739066183	1104.75724	0.027132139	0.173652454	0.58413898	0.665003393	3.008902088	0.010443929
SACRAMENT	2021	MDV	1993	70	GAS	21.570901	2.169416113	0.008961157	0.009746075	500.2761011	0.086543366	0.103248028	0.454006292	0.662484915	9.917275953	0.004950638
SACRAMENT	2021	MH	2010	10	DSL	3.52170781	8.857098576	0.030227015	0.031593747	1976.12012	0.026998994	0.310618564	0.581272448	0.661740037	1.640582537	0.018681442
SACRAMENT	2021	MDV	1996	15	GAS	150.531989	1.711852623	0.00769057	0.008364196	757.6932382	0.097999397	0.092244234	0.45297283	0.66097689	8.714513038	0.007497989
SACRAMENT	2021	LDA	1981	60	GAS	133.580592	1.812269345	0.013657023	0.014853259	406.8879062	0.080657314	0.088037306	0.452225228	0.659885992	16.39948197	0.004026486
SACRAMENT	2021	MDV	1997	15	GAS	232.866645	1.712968871	0.00769057	0.008364196	758.2201624	0.097981825	0.09248947	0.451457451	0.658765652	8.727057476	0.007503203
SACRAMENT	2021	LDA	1997	25	GAS	8595.528	1.029531367	0.004193053	0.004560328	397.6954431	0.091720567	0.060558738	0.451276484	0.658501586	11.89250464	0.003935519
SACRAMENT	2021	LDT2	1984	65	GAS	11.8035904	2.9826881	0.01409055	0.015324759	623.5861639	0.085448606	0.131509274	0.450902134	0.657955335	16.19566431	0.006170891
SACRAMENT	2021	LHD1	2013	10	DSL	693.177587	0.671798542	0.027106478	0.028332113	1107.130193	0.026784267	0.174025449	0.576649493	0.65647711	2.805807638	0.010466362
SACRAMENT	2021	LHD2	2013	10	DSL	276.742574	0.671798542	0.027106478	0.028332113	1234.527259	0.026784267	0.194050493	0.576649493	0.65647711	2.805807638	0.011670722
SACRAMENT	2021	MH	1982	40	DSL	1.64867422	11.7902853	0.680384638	0.711148612	1088.237562	0.026781799	0.17105579	0.576596373	0.656416636	2.848620778	0.010287759
SACRAMENT	2021	MH	2020	5	DSL	4.82215547	9.824542415	0.024381944	0.025484388	1982.813834	0.026711441	0.311670722	0.575081592	0.654692159	1.62392505	0.018744721
SACRAMENT	2021	LDT2	1983	40	GAS	66.8091303	2.2721799	0.01525266	0.01658866	541.0700679	0.084797244	0.099480801	0.44718947	0.652537825	15.15798853	0.005354327
SACRAMENT	2021	LDT2	1985	35	GAS	151.967154	2.284350801	0.017262464	0.018774505	559.1574245	0.085518191	0.100579751	0.447091496	0.652394862	14.67053862	0.005533316

SACRAMENT	2021	MH	1983	40	DSL	0.29448168	11.78388027	0.676114877	0.706685792	1088.237562	0.026576862	0.17105579	0.572184193	0.651393663	2.826813892	0.010287759
SACRAMENT	2021	LDA	1982	45	GAS	116.69961	1.559738502	0.014002191	0.01522866	367.2190003	0.080749056	0.076399076	0.445858182	0.650595213	15.57586763	0.00363393
SACRAMENT	2021	MH	1984	40	DSL	1.59082532	11.77727489	0.671711563	0.702083379	1088.237562	0.026365515	0.17105579	0.567634005	0.646213576	2.804324908	0.010287759
SACRAMENT	2021	LDA	1982	60	GAS	164.355378	1.831501375	0.013645006	0.014840189	406.2081955	0.080190794	0.089710559	0.442775726	0.6460973	16.08085895	0.004019759
SACRAMENT	2021	MH	2011	10	DSL	4.87488109	8.792513871	0.029547023	0.030883009	1976.12012	0.026347577	0.310618564	0.567247816	0.645773925	1.601056286	0.018681442
SACRAMENT	2021	LDA	1983	40	GAS	339.348937	1.456541302	0.015208868	0.016541032	365.9157458	0.081588393	0.072813562	0.442414987	0.645570911	15.28630612	0.003621033
SACRAMENT	2021	LHD1	2014	10	DSL	1043.58001	0.646857055	0.025260746	0.026402925	1081.666198	0.026276311	0.170022863	0.565713513	0.644027223	2.624700809	0.010225635
SACRAMENT	2021	LHD2	2014	10	DSL	418.998591	0.646857055	0.025260746	0.026402925	1206.133132	0.026276311	0.189587332	0.565713513	0.644027223	2.624700809	0.011402296
SACRAMENT	2021	LDA	1983	65	GAS	27.1484922	1.871174865	0.014573466	0.015849974	419.820557	0.081188957	0.093541397	0.440249036	0.64241036	15.8718868	0.004154465
SACRAMENT	2021	MDV	1992	70	GAS	18.9116696	2.267009208	0.008684982	0.009445711	581.980963	0.083659393	0.107535268	0.439915536	0.641923717	10.11190806	0.005759173
SACRAMENT	2021	LDA	1981	50	GAS	95.0827539	1.580826083	0.01334908	0.014518342	378.018456	0.078334136	0.076794142	0.439199754	0.64087925	15.67300368	0.003740799
SACRAMENT	2021	MH	1985	40	DSL	1.0135136	11.77046917	0.667174694	0.697341373	1088.237562	0.026147757	0.17105579	0.562945807	0.640876375	2.781153826	0.010287759
SACRAMENT	2021	MDV	1994	65	GAS	170.36304	2.004600098	0.008441241	0.0091806	504.0017295	0.083889039	0.095603081	0.439048753	0.64065891	10.43120689	0.004987506
SACRAMENT	2021	MDV	1989	40	GAS	534.89701	1.814499875	0.014960802	0.016271238	513.2873489	0.082636983	0.085352883	0.43775557	0.6387719	14.01080531	0.005079394
SACRAMENT	2021	LDA	1981	55	GAS	173.034771	1.659855493	0.013232234	0.014391261	392.7169656	0.078038269	0.080633271	0.437540902	0.638458657	15.8246022	0.003886253
SACRAMENT	2021	LHD2	2007	10	DSL	367.911042	2.65694517	0.074831424	0.078214969	1234.527259	0.02594351	0.194050493	0.558548496	0.635870328	3.101938039	0.011670722
SACRAMENT	2021	LHD1	2007	10	DSL	930.723279	2.657323928	0.074839328	0.078223231	1107.130193	0.02594285	0.174025449	0.55853428	0.635854144	3.101823518	0.010466362
SACRAMENT	2021	MH	1986	40	DSL	1.40666202	11.76346309	0.662504271	0.692459774	1088.237562	0.025923589	0.17105579	0.558119601	0.63538206	2.757300646	0.010287759
SACRAMENT	2021	LDT2	1986	35	GAS	230.46675	2.299790385	0.017201962	0.018708703	495.3851498	0.083578298	0.101259313	0.435242336	0.635104596	14.56204509	0.004902238
SACRAMENT	2021	MDV	1993	65	GAS	81.5316172	2.029632567	0.008371181	0.009104424	503.7630117	0.082954884	0.096595373	0.435181121	0.635015271	10.4760538	0.004985143
SACRAMENT	2021	LDT1	1985	30	GAS	196.591809	2.432673929	0.020472178	0.022265362	425.4335689	0.085316698	0.107111595	0.434194456	0.633575531	16.1156619	0.00421001
SACRAMENT	2021	MDV	1987	70	GAS	6.16117787	2.303989504	0.015340221	0.016683889	580.3250126	0.081673227	0.108430449	0.434060831	0.633380546	10.12456944	0.005742786
SACRAMENT	2021	MDV	1985	40	GAS	170.305974	1.792248658	0.015086831	0.016408306	551.5076126	0.081366517	0.083738271	0.434006295	0.633300967	13.59134825	0.005457615
SACRAMENT	2021	MDV	1990	70	GAS	14.0409138	2.306132359	0.015306571	0.016647293	581.6909952	0.082146064	0.108998848	0.433933692	0.633195024	10.18112472	0.005756304
SACRAMENT	2021	LDT1	1997	20	GAS	896.123068	0.887381935	0.005555598	0.00604222	508.2798512	0.092125244	0.056193109	0.433835973	0.633052433	10.03475964	0.005029841
SACRAMENT	2021	LHD1	2015	10	DSL	1471.31783	0.620432715	0.02330528	0.024359041	1073.916287	0.025738155	0.168804685	0.55412733	0.630837125	2.432826672	0.010152371
SACRAMENT	2021	LHD2	2015	10	DSL	816.212966	0.620432715	0.02330528	0.024359041	1197.491441	0.025738155	0.188228979	0.55412733	0.630837125	2.432826672	0.011320601
SACRAMENT	2021	MH	2021	5	DSL	4.07747662	9.733850268	0.023537843	0.02460212	1793.244351	0.025696152	0.28187304	0.553223026	0.629807634	1.562319804	0.016952608
SACRAMENT	2021	LDT1	1983	10	DSL	0.13973977	1.127756838	0.697699528	0.729246405	906.2894352	0.025687019	0.142456078	0.553026405	0.629583794	2.888520468	0.008567694
SACRAMENT	2021	MDV	1983	10	DSL	0.36969396	1.127756838	0.697699528	0.729246405	1136.666251	0.025687019	0.178668106	0.553026405	0.629583794	2.888520468	0.010745584
SACRAMENT	2021	LDA	1983	10	DSL	1.30588907	1.127756838	0.697699528	0.729246405	784.7796643	0.025687019	0.123356403	0.553026405	0.629583794	2.888520468	0.007418988
SACRAMENT	2021	MH	2012	10	DSL	6.44944606	8.72685229	0.028855693	0.030160419	1976.12012	0.025685297	0.310618564	0.552989324	0.62954158	1.56087093	0.018681442
SACRAMENT	2021	MDV	1986	40	GAS	220.112723	1.790848262	0.014983917	0.016296377	510.1673773	0.080971782	0.083992418	0.431145633	0.629126696	13.6510683	0.00504852
SACRAMENT	2021	LDT1	1984	35	GAS	247.141416	2.307693451	0.01736462	0.018885608	396.6883802	0.0838513	0.101748034	0.430733121	0.62852476	16.67893307	0.003925553
SACRAMENT	2021	MDV	1988	40	GAS	345.859147	1.793373778	0.014929043	0.016236697	511.6500491	0.081164814	0.08441538	0.430557648	0.62826871	13.74897216	0.005063192
SACRAMENT	2021	MDV	1991	70	GAS	13.1633096	2.330630226	0.008503227	0.009248035	581.8346175	0.081683736	0.110270675	0.430516342	0.628208436	10.23306767	0.005757725
SACRAMENT	2021	MDV	1991	40	GAS	621.904424	1.797038582	0.008333029	0.009062929	513.5624811	0.081669055	0.085024495	0.430438968	0.628095532	13.86489573	0.005082117
SACRAMENT	2021	MDV	1990	40	GAS	663.367092	1.796413553	0.014864009	0.016165966	513.4274658	0.081376029	0.084907099	0.429866008	0.627259469	13.86641321	0.005080781
SACRAMENT	2021	MDV	1992	40	GAS	893.487378	1.797677819	0.008308644	0.009036408	514.1676701	0.081692614	0.085272599	0.429573403	0.626832501	13.91549199	0.005088106
SACRAMENT	2021	MDV	1989	70	GAS	11.3216994	2.433274774	0.014896186	0.016200962	582.9383808	0.081090391	0.114459648	0.429562757	0.626816966	11.12320837	0.005768648
SACRAMENT	2021	LHD2	2008	10	DSL	435.948427	2.644908562	0.073543704	0.076869024	1234.527259	0.025552601	0.194050493	0.55013245	0.626289219	3.018211333	0.011670722
SACRAMENT	2021	LHD1	2008	10	DSL	1041.56383	2.64555339	0.073557097	0.076883023	1107.130193	0.025551457	0.174025449	0.550107822	0.626261182	3.018028079	0.010466362
SACRAMENT	2021	LDT1	1998	15	GAS	303.966343	0.750402842	0.007913966	0.008607161	607.7876243	0.094965602	0.051361304	0.42895224	0.625926101	8.585181072	0.006014551
SACRAMENT	2021	LDA	1982	50	GAS	116.988267	1.601158563	0.013338199	0.014506508	377.3073377	0.077671079	0.078427912	0.42886305	0.625795956	15.35285249	0.003733762
SACRAMENT	2021	MDV	1987	40	GAS	291.086656	1.795858432	0.014859495	0.016161056	510.9683647	0.080543937	0.084516764	0.428059104	0.62462284	13.74985605	0.005056446
SACRAMENT	2021	MDV	1993	40	GAS	1019.12355	1.797239402	0.008271591	0.00899611	443.5505146	0.081558187	0.085535192	0.42785405	0.624323625	13.96393057	0.004389292
SACRAMENT	2021	LDA	1982	55	GAS	212.899156	1.679927393	0.013220656	0.01437867	392.0062633	0.077465618	0.082286166	0.427728589	0.624140553	15.50784939	0.00387922
SACRAMENT	2021	MDV	1994	40	GAS	2129.49273	1.797553193	0.008259241	0.008982678	443.8148265	0.081665421	0.085728632	0.42741104	0.623677187	13.9894562	0.004391907
SACRAMENT	2021	LDT2	1984	45	GAS	57.1701627	2.258616703	0.013943069	0.01516436	542.989449	0.08078892	0.099584346	0.426313527	0.622075698	14.77840194	0.005373321
SACRAMENT	2021	LDT2	1983	70	GAS	1.41409071	3.399921799	0.014036913	0.015266423	621.6417031	0.080767599	0.148855706	0.425938607	0.621528615	15.11704995	0.006151649
SACRAMENT	2021	LDT2	1987	35	GAS	265.435969	2.291685473	0.017162106	0.018665356	495.9430433	0.081990166	0.101245091	0.425405738	0.620751054	14.49275394	0.004907758
SACRAMENT	2021	LDT1	1986	30	GAS	345.396855	2.450797034	0.020470372	0.022263397	421.4369614	0.08370989	0.107909115	0.42435358	0.619215748	15.97390484	0.00417046
SACRAMENT	2021	MDV	1992	65	GAS	71.48051	2.106422337	0.008161001	0.008875834	585.6849729	0.080639668	0.099917852	0.42403658	0.618753182	10.63377493	0.005795828
SACRAMENT	2021	LDA	1984	35	GAS	377.316032	1.354001321	0.017220016	0.018728339	377.6639793	0.080365122	0.069519934	0.423675365	0.618226098	15.04986099	0.003737291
SACRAMENT	2021	MH	1995	20	GAS	31.5793479	2.695428437	0.002913824	0.00316905	2335.497848	0.098343391	0.128874233	0.423582384	0.618090421	8.533504644	0.023111644
SACRAMENT	2021	LHD1	2016	10	DSL	2683.72736	0.519653432	0.021240079	0.022200462	1040.702381	0.025169798	0.163583922	0.541890931	0.616906797	2.230185226	0.00983838
SACRAMENT	2021	LHD2	2016	10	DSL	637.237343	0.519672784	0.021240079	0.022200462	1160.455624	0.025169798	0.182407464	0.541890931	0.616906797	2.230185226	0.010970479
SACRAMENT	2021	MH	1996	20	GAS	22.5499474	2.644809692	0.002913824	0.00316905	2335.452953	0.098118651	0.1271814	0.422444093	0.616429428	8.50827811	0.0231112
SACRAMENT	2021	LHD1	2009	10	DSL	266.306374	2.632045688	0.072142943	0.075404927	1107.130193	0.025125065	0.174025449	0.540927861	0.615810407	2.926660022	0.010466362
SACRAMENT	2021	LHD2	2009	10	DSL	135.247061	2.632045688	0.072142943	0.075404927	1234.527259	0.025125065	0.194050493	0.540927861	0.615810407	2.926660022	0.011670722
SACRAMENT	2021	MH	1987	40	DSL	1.47437555	11.72152014	0.664777001	0.694835267	1054.387685	0.02509513	0.165735061	0.540283372	0.615076699	2.668175132	0.009967755
SACRAMENT	2021	MH	1997	20	GAS	39.0398031	2.597899963	0.002913824	0.00316905	2335.407314	0.097894228	0.125587547	0.421308407	0.614772238	8.482575112	0.023110749
SACRAMENT	2021	MH	2013	10	DSL	10.7602849	8.660113851	0.028153023	0.029425978	1976.12012	0.025012155	0.310618564	0.538496973	0.613043002	1.520026471	0.018681442
SACRAMENT	2021	LDA	1998	20	GAS	3559.49678	0.819846914	0.005670428	0.006167107	455.8051706	0.089455971	0.052669582	0.419838345	0.612627128	9.634469779	0.004510562
SACRAMENT	2021	MDV	1988	70	GAS	7.32049952	2.399706826	0.014821833	0.016120096	580.9926289	0.079104325	0.112955908	0.419627307	0.612319181	10.34607595	0.005749393
SACRAMENT	2021	MDV	1990	65	GAS	53.0704957	2.135968385	0.014419239	0.015682238	584.8641018	0.079322263	0.100956085	0.41901706	0.61142871	10.67318889	0.005787704
SACRAMENT	2021	MH	1979	45	DSL	0.16672047	11.43805284	0.646438038	0.675667097	1049.656244	0.024944542	0.164991344	0.537041303	0.611385818	2.509357505	0.009923026
SACRAMENT	2021	LDT2	1997	25	GAS	4763.19716	1.413951995	0.004159394	0.00452372	543.8502894	0.085974203	0.075263215	0.418824517	0.611147751	11.72933401	0.005381839
SACRAMENT	2021	MDV	1987	65	GAS	23.2874276	2.130225749	0.014444847	0.015710089	581.7360792	0.078637094	0.100252772	0.417924989	0.609835163	10.55934055	0.00575675
SACRAMENT	2021	MH	1988	40	DSL	1.52404791	11.7116215	0.660380922	0.690240417	1054.387685	0.02481336	0.165735061	0.534217032	0.608170574	2.638215592	0.009967755
SACRAMENT	2021	MDV	1989	65	GAS	42.7926706	2.240305464	0.014119767	0.015356535	585.5965158	0.078673593	0.105382498	0.416760175	0.608135469	11.47151505	0.005794952
SACRAMENT	2021	LDT1	1983	35	GAS	108.240042	2.333292202	0.017367566	0.018888813	395.5609399	0.081170261	0.102157287	0.416705452	0.608055617	16.36922375	0.003914396
SACRAMENT	2021	MDV	1991	65	GAS	49.7534117	2.15566682	0.008022678	0.008725394	585.1041168	0.079009319	0.101992514	0.416420757	0.607640191	10.72113273	0.00579008
SACRAMENT	2021	LHD1	1988	25	GAS	241.018498	1.743982599	0.013453499	0.014631908	955.113378	0.085250881	0.082918959	0.41603866	0.607082635	9.777817296	0.009451621
SACRAMENT	2021	LHD2	1988	25	GAS	6.86705568	1.743982599	0.013453499	0.014631908	1091.543194	0.085314452	0.083084579	0.41603866	0.607082635	9.777817296	0.010801705
SACRAMENT	2021	LDT1	1987	30	GAS	346.118517	2.443543317	0.020469221	0.022262146	421.8681111	0.08235914	0.107955448	0.415973443	0.606987472	15.88616024	0.004174727
SACRAMENT	2021	LDT2	1984	60	GAS	80.5163247	2.692407261	0.013267298	0.014429397	601.5463294	0.078774976	0.118710543	0.415686185	0.606568306	14.90777538	0.005952789
SACRAMENT	2021	LDT2	1989	35	GAS	541.882715	2.206008438	0.017080204	0.01857628	497.8656487	0.080419852	0.099065911	0.414802611	0.605278997	14.50712797	0.004926784
SACRAMENT	2021	LDT2	1983	65	GAS	5.34484406	3.078252152	0.013520184	0.014704434	620.3080772	0.078613619	0.134772334	0.414579309	0.604953154	14.8520162	0.006138451
SACRAMENT	2021	LDT2	1990	35	GAS	724.366143	2.189627679	0.017041351	0.018534024	498.3332157	0.08046976	0.098831398	0.41416015	0.604341519	14.54905317	0.004931411
SACRAMENT	2021	LDT2	1988	35	GAS	423.355809	2.202009696	0.01707869	0.018574633	496.5275378	0.080071017	0.098789192	0.413861106	0.603905154	14.43832188	0.004913543
SACRAMENT	2021	LHD1	1989	25	GAS	364.053116	1.742565965	0.013453499	0.014631908	955.0610769	0.084860126	0.082990095	0.413520211	0.603407722	9.751672899	0.009451104
SACRAMENT	2021	LHD2	1989	25	GAS	8.91895241	1.742565965	0.013453499	0.014631908	1091.490893	0.084916798	0.083139289	0.413520211	0.603407722	9.751672899	0.010801187
SACRAMENT	2021	LDA	1980	20	DSL	4.06009288	1.453586533	0.42434948	0.443536681	536.762389	0.024598556	0.084371573	0.529592429	0.602905771	1.754171103	0.005074335
SACRAMENT	2021	LDA	1981	20	DSL	6.51427032	1.453586533	0.42434948	0.443536681	536.762389	0.024598556	0.084371573	0.529592429	0.602905771	1.754171103	0.005074335
SACRAMENT	2021	LDA	1982	20	DSL	11.7460405	1.453586533	0.42434948	0.443536681	536.762389	0.024598556	0.084371573	0.529592429	0.602905771	1.754171103	0.005074335
SACRAMENT	2021	LDT1	1981	20	DSL	0.92896225	1.453586533	0.42434948	0.443536681	625.8495755	0.024598556	0.098374838	0.529592429	0.602905771	1.754171103	0.005916529
SACRAMENT	2021	LDT1	1982	20	DSL	4.55681773	1.453586533	0.42434948	0.443536681	625.8495755	0.024598556	0.098374838	0.529592429	0.602905771	1.754171103	0.005916529
SACRAMENT	2021	LDT2	1980	20	DSL	0.50234799	1.453586533	0.42434948	0.443536681	730.9189808	0.024598556	0.114890285	0.529592429	0.602905771	1.754171103	0.006909813
SACRAMENT	2021	LDT2	1981	20	DSL	0.24554733	1.453586533	0.42434948	0.443536681	730.9189808	0.024598556	0.114890285	0.529592429	0.602905771	1.754171103	0.006909813
SACRAMENT	2021	LDT2	1982	20	DSL	2.45956624	1.453586533	0.42434948	0.443536681	730.9189808	0.024598556	0.114890285	0.529592429	0.602905771	1.754171103	0.006909813
SACRAMENT	2021	MDV	1980	20	DSL	0.60154594	1.453586533	0.42434948	0.443536681	811.5495306	0.024598556	0.127564285	0.529592429	0.602905771	1.754171103	0.007672062
SACRAMENT	2021	MDV	1982	20	DSL	6.46752869	1.453586533	0.42434948	0.443536681	811.5495306	0.024598556	0.127564285	0.529592429	0.602905771	1.754171103	0.007672062
SACRAMENT	2021	LDT2	1991	35	GAS	887.145769	2.161847306	0.009510097	0.010343098	498.5141674	0.080387176	0.098304537	0.412825613	0.602394165	14.58529114	0.004933202
SACRAMENT	2021	LDT2	1992	35	GAS	1012.78407	2.154190169	0.009499077	0.010331113	499.1194885	0.080541782	0.098277056	0.41274671	0.60227903	14.6258156	0.004939192
SACRAMENT	2021	LHD1	2017	10	DSL	1389.88861	0.424620396	0.019065145	0.019927186	1007.488475	0.024571238	0.158363158	0.529004293	0.602236217	2.016776475	0.009524389
SACRAMENT	2021	LHD2	2017	10	DSL	541.200291	0.424634587	0.019065145	0.019927186	1123.419806	0.024571238	0.176585949	0.529004293	0.602236217	2.016776475	0.010620357
SACRAMENT	2021	MH	1989	40	DSL	1.96640329	11.70145509	0.655865935	0.685521282	1054.387685	0.024523969	0.165735061	0.527986603	0.601077645	2.607445684	0.009967755
SACRAMENT	2021	LDT2	1993	35	GAS	1550.89126	2.156997639	0.009499077	0.010331113	454.421911	0.080510278	0.098519907	0.411403116	0.60031846	14.74321697	0.004496873
SACRAMENT	2021	LHD1	1990	25	GAS	475.454879	1.739571391	0.013453499	0.014631908	955.0110937	0.084486015	0.083077627	0.41116101	0.599965181	9.72655764	0.009450609
SACRAMENT	2021	LHD2	1990	25	GAS	36.0176858	1.739571391	0.013453499	0.014631908	1091.440909	0.08453639	0.083209629	0.41116101	0.599965181	9.72655764	0.010800693
SACRAMENT	2021	MH	1982	45	DSL	1.35004558	11.42060463	0.635227057	0.663949206	1049.656244	0.024419039	0.164991344	0.525727525	0.598505835	2.456472025	0.009923026
SACRAMENT	2021	LDA	1994	30	GAS	2346.03027	1.099333633	0.011457792	0.012461394	357.1440677	0.081405982	0.062497671	0.409237086	0.597157795	12.48266997	0.00353423
SACRAMENT	2021	LDT2	1983	45	GAS	25.8875134	2.279159767	0.01387099	0.015085967	541.4969226	0.077554301	0.099786394	0.408992853	0.596801412	14.36901512	0.005358551
SACRAMENT	2021	LDA	1984	20	DSL	15.523991	1.055216737	0.324924602	0.339616251	480.8371914	0.024344963	0.07558091	0.524132713	0.596690247	2.705609275	0.004545641
SACRAMENT	2021	LDA	1985	20	DSL	22.4259484	1.055216737	0.324924602	0.339616251	480.8371914	0.024344963	0.07558091	0.524132713	0.596690247	2.705609275	0.004545641
SACRAMENT	2021	LDA	1986	20	DSL	5.46520915	1.055216737	0.324924602	0.339616251	480.8371914	0.024344963	0.07558091	0.524132713	0.596690247	2.705609275	0.004545641
SACRAMENT	2021	LDA	1987	20	DSL	12.800253	1.055216737	0.324924602	0.339616251	480.8371914	0.024344963	0.07558091	0.524132713	0.596690247	2.705609275	0.004545641

SACRAMENT	2021	LDA	1988	20	DSL	0.45746455	1.055216737	0.324924602	0.339616251	480.8371914	0.024344963	0.07558091	0.524132713	0.596690247	2.705609275	0.004545641
SACRAMENT	2021	LDA	1989	20	DSL	0.66551795	1.055216737	0.324924602	0.339616251	480.8371914	0.024344963	0.07558091	0.524132713	0.596690247	2.705609275	0.004545641
SACRAMENT	2021	LDA	1990	20	DSL	8.02672367	1.055216737	0.324924602	0.339616251	480.8371914	0.024344963	0.07558091	0.524132713	0.596690247	2.705609275	0.004545641
SACRAMENT	2021	LDA	1991	20	DSL	4.33106052	1.055216737	0.324924602	0.339616251	480.8371914	0.024344963	0.07558091	0.524132713	0.596690247	2.705609275	0.004545641
SACRAMENT	2021	LDA	1992	20	DSL	1.98882519	1.055216737	0.324924602	0.339616251	480.8371914	0.024344963	0.07558091	0.524132713	0.596690247	2.705609275	0.004545641
SACRAMENT	2021	LDT1	1984	20	DSL	2.05431952	1.055216737	0.324924602	0.339616251	560.6423965	0.024344963	0.088125177	0.524132713	0.596690247	2.705609275	0.005300087
SACRAMENT	2021	LDT1	1985	20	DSL	2.18367623	1.055216737	0.324924602	0.339616251	560.6423965	0.024344963	0.088125177	0.524132713	0.596690247	2.705609275	0.005300087
SACRAMENT	2021	LDT1	1986	20	DSL	4.68014322	1.055216737	0.324924602	0.339616251	560.6423965	0.024344963	0.088125177	0.524132713	0.596690247	2.705609275	0.005300087
SACRAMENT	2021	LDT1	1987	20	DSL	4.72990146	1.055216737	0.324924602	0.339616251	560.6423965	0.024344963	0.088125177	0.524132713	0.596690247	2.705609275	0.005300087
SACRAMENT	2021	LDT1	1988	20	DSL	4.45915709	1.055216737	0.324924602	0.339616251	560.6423965	0.024344963	0.088125177	0.524132713	0.596690247	2.705609275	0.005300087
SACRAMENT	2021	LDT1	1989	20	DSL	4.50002347	1.055216737	0.324924602	0.339616251	560.6423965	0.024344963	0.088125177	0.524132713	0.596690247	2.705609275	0.005300087
SACRAMENT	2021	LDT1	1990	20	DSL	1.84991446	1.055216737	0.324924602	0.339616251	560.6423965	0.024344963	0.088125177	0.524132713	0.596690247	2.705609275	0.005300087
SACRAMENT	2021	LDT1	1992	20	DSL	5.73300783	1.055216737	0.324924602	0.339616251	560.6423965	0.024344963	0.088125177	0.524132713	0.596690247	2.705609275	0.005300087
SACRAMENT	2021	LDT2	1984	20	DSL	0.24859534	1.055216737	0.324924602	0.339616251	654.7646353	0.024344963	0.102919883	0.524132713	0.596690247	2.705609275	0.00618988
SACRAMENT	2021	LDT2	1990	20	DSL	0.25667429	1.055216737	0.324924602	0.339616251	654.7646353	0.024344963	0.102919883	0.524132713	0.596690247	2.705609275	0.00618988
SACRAMENT	2021	MDV	1984	20	DSL	3.62448895	1.055216737	0.324924602	0.339616251	726.9942995	0.024344963	0.11427338	0.524132713	0.596690247	2.705609275	0.006872711
SACRAMENT	2021	MDV	1985	20	DSL	1.01317052	1.055216737	0.324924602	0.339616251	726.9942995	0.024344963	0.11427338	0.524132713	0.596690247	2.705609275	0.006872711
SACRAMENT	2021	MDV	1986	20	DSL	1.74164322	1.055216737	0.324924602	0.339616251	726.9942995	0.024344963	0.11427338	0.524132713	0.596690247	2.705609275	0.006872711
SACRAMENT	2021	MDV	1987	20	DSL	1.02533091	1.055216737	0.324924602	0.339616251	726.9942995	0.024344963	0.11427338	0.524132713	0.596690247	2.705609275	0.006872711
SACRAMENT	2021	MDV	1988	20	DSL	0.51916824	1.055216737	0.324924602	0.339616251	726.9942995	0.024344963	0.11427338	0.524132713	0.596690247	2.705609275	0.006872711
SACRAMENT	2021	MDV	1989	20	DSL	0.26559791	1.055216737	0.324924602	0.339616251	726.9942995	0.024344963	0.11427338	0.524132713	0.596690247	2.705609275	0.006872711
SACRAMENT	2021	MDV	1992	20	DSL	0.26540318	1.055216737	0.324924602	0.339616251	726.9942995	0.024344963	0.11427338	0.524132713	0.596690247	2.705609275	0.006872711
SACRAMENT	2021	LDA	1995	30	GAS	3282.51458	1.099399577	0.011457147	0.012460693	356.8978372	0.081646706	0.062710822	0.408883018	0.59664114	12.48644227	0.003531793
SACRAMENT	2021	MH	2014	10	DSL	11.0368669	8.592298577	0.027439015	0.028679686	1871.146266	0.024328151	0.294118136	0.523770765	0.596278193	1.478522907	0.017689061
SACRAMENT	2021	LDT1	1992	30	GAS	606.000748	1.124595518	0.011459298	0.012463032	424.5032084	0.081905866	0.063670976	0.408593481	0.596218649	15.94184134	0.004200803
SACRAMENT	2021	LDT1	1991	30	GAS	701.984395	1.128833413	0.011459647	0.012463412	423.9842135	0.081654359	0.063702082	0.408202849	0.595648639	15.90712825	0.004195667
SACRAMENT	2021	LDT1	1990	30	GAS	445.929593	1.144096664	0.020465527	0.022258128	423.8586197	0.081463034	0.06408638	0.408139172	0.595555722	15.89768951	0.004194425
SACRAMENT	2021	LDT2	1984	50	GAS	57.3115734	2.31660958	0.013206674	0.014363463	558.2454215	0.07731642	0.102141302	0.407989558	0.595337406	14.47331346	0.005524291
SACRAMENT	2021	LDT1	1989	30	GAS	496.998408	1.6473393	0.020466759	0.022259468	423.47078	0.081231056	0.082411841	0.407861271	0.59515021	15.87131883	0.004190587
SACRAMENT	2021	MDV	1986	70	GAS	4.65893442	2.478522824	0.014412825	0.015675262	580.4111342	0.076547966	0.116244982	0.407590404	0.594754961	10.48467636	0.005743639
SACRAMENT	2021	LDA	1983	45	GAS	131.492509	1.465572362	0.013908748	0.015127032	365.8509025	0.075111195	0.073265032	0.407292228	0.594319863	14.570075	0.003620391
SACRAMENT	2021	MDV	1988	65	GAS	27.6693201	2.206464725	0.014050333	0.015281019	582.8894476	0.076730685	0.103859865	0.407035778	0.593945651	10.76589831	0.005768164
SACRAMENT	2021	MH	1983	45	DSL	0.24114145	11.41440043	0.631240683	0.659782586	1049.656244	0.024232181	0.164991344	0.521704599	0.593926001	2.437667133	0.009923026
SACRAMENT	2021	LDT1	1988	30	GAS	308.866986	2.348963857	0.020466711	0.022259416	422.2981517	0.080883219	0.105383036	0.406953424	0.593825481	15.79386629	0.004178983
SACRAMENT	2021	MH	1990	40	DSL	2.43922099	11.69102091	0.651232039	0.680677862	1054.387685	0.024226955	0.165735061	0.521592085	0.593797911	2.575865407	0.009967755
SACRAMENT	2021	LDA	1993	30	GAS	1702.74428	1.097241007	0.011459296	0.01246303	357.4716083	0.080679002	0.062135794	0.406811611	0.593618548	12.42809249	0.003537471
SACRAMENT	2021	MDV	1995	35	GAS	1981.77506	1.610703947	0.009499077	0.010331113	454.7037424	0.079847184	0.080518192	0.406093921	0.592571297	11.57483393	0.004499662
SACRAMENT	2021	LDA	1992	30	GAS	1447.21885	1.095593306	0.011459298	0.012463032	381.4960977	0.07996558	0.061860132	0.404897449	0.590825407	12.38447836	0.003775213
SACRAMENT	2021	LDA	1990	30	GAS	974.999765	1.095141631	0.020463028	0.02225541	381.2642466	0.079070485	0.061352197	0.40469811	0.590534533	12.37115289	0.003772919
SACRAMENT	2021	LDA	1991	30	GAS	1395.5219	1.095141665	0.011459296	0.01246303	381.2642411	0.07951634	0.061609643	0.404698069	0.590534473	12.37115362	0.003772919
SACRAMENT	2021	LDT2	1984	55	GAS	104.297515	2.442952053	0.012987217	0.014124783	580.2405453	0.076654202	0.10771185	0.404495111	0.590238317	14.50463924	0.005741951
SACRAMENT	2021	LDA	1985	30	GAS	381.849765	1.093462004	0.020469214	0.022262138	401.7259596	0.075968101	0.059078728	0.404121615	0.589693313	12.32238974	0.003975404
SACRAMENT	2021	LDA	1986	30	GAS	374.588742	1.093254427	0.020468072	0.022260896	380.3487174	0.076671061	0.059606772	0.403999536	0.589515175	12.31612027	0.003763859
SACRAMENT	2021	LDA	1988	30	GAS	566.602728	1.093295032	0.020465528	0.02225813	380.342728	0.077904057	0.060522836	0.403949712	0.589442471	12.31699325	0.0037638
SACRAMENT	2021	LHD1	1981	10	DSL	1.12293866	3.946831456	0.390183778	0.407826157	1107.130193	0.024044648	0.174025449	0.517667113	0.589329591	2.065130608	0.010466362
SACRAMENT	2021	LHD1	1982	10	DSL	8.51154056	3.946831456	0.390183778	0.407826157	1107.130193	0.024044648	0.174025449	0.517667113	0.589329591	2.065130608	0.010466362
SACRAMENT	2021	LHD1	1986	10	DSL	61.3157042	3.946831456	0.390183778	0.407826157	1107.130193	0.024044648	0.174025449	0.517667113	0.589329591	2.065130608	0.010466362
SACRAMENT	2021	LHD1	1983	10	DSL	22.5930941	3.946831456	0.390183778	0.407826157	1107.130193	0.024044648	0.174025449	0.517667113	0.589329591	2.065130608	0.010466362
SACRAMENT	2021	LHD1	1984	10	DSL	26.7182112	3.946831456	0.390183778	0.407826157	1107.130193	0.024044648	0.174025449	0.517667113	0.589329591	2.065130608	0.010466362
SACRAMENT	2021	LHD1	1985	10	DSL	44.752108	3.946831456	0.390183778	0.407826157	1107.130193	0.024044648	0.174025449	0.517667113	0.589329591	2.065130608	0.010466362
SACRAMENT	2021	LHD2	1983	10	DSL	1.69301734	3.946831456	0.390183778	0.407826157	1234.527259	0.024044648	0.194050493	0.517667113	0.589329591	2.065130608	0.011670722
SACRAMENT	2021	LHD2	1984	10	DSL	2.28815095	3.946831456	0.390183778	0.407826157	1234.527259	0.024044648	0.194050493	0.517667113	0.589329591	2.065130608	0.011670722
SACRAMENT	2021	LHD2	1985	10	DSL	7.10684896	3.946831456	0.390183778	0.407826157	1234.527259	0.024044648	0.194050493	0.517667113	0.589329591	2.065130608	0.011670722
SACRAMENT	2021	LHD2	1986	10	DSL	17.4546789	3.946831456	0.390183778	0.407826157	1234.527259	0.024044648	0.194050493	0.517667113	0.589329591	2.065130608	0.011670722
SACRAMENT	2021	LDA	1989	30	GAS	789.518235	1.093099323	0.02046364	0.022256075	380.2223373	0.07841851	0.06094139	0.403813074	0.589243089	12.31097831	0.003762608
SACRAMENT	2021	MH	1984	45	DSL	1.302675	11.40800216	0.62712962	0.655485638	1049.656244	0.02403948	0.164991344	0.517554841	0.589202915	2.418274043	0.009923026
SACRAMENT	2021	LDA	1987	30	GAS	596.210441	1.092597763	0.020466768	0.022259477	379.997474	0.077263436	0.060061687	0.403674942	0.589041527	12.29658151	0.003760383
SACRAMENT	2021	MH	1979	65	DSL	0.05170728	12.06501911	0.597006306	0.624000282	1029.383896	0.023960651	0.161804813	0.515858719	0.587270855	1.793083551	0.00973138
SACRAMENT	2021	LDA	1983	60	GAS	185.189145	1.713733114	0.013537329	0.014723081	404.0520066	0.074169016	0.085670769	0.402183241	0.586864842	14.59823557	0.003998422
SACRAMENT	2021	LHD1	2018	10	DSL	1562.99074	0.327727834	0.015641062	0.016348281	941.0606637	0.023942475	0.147921631	0.515467391	0.586825354	1.792600419	0.008896408
SACRAMENT	2021	LHD2	2018	10	DSL	597.436787	0.32794239	0.016780477	0.017539215	1049.34817	0.023942475	0.164942919	0.515467391	0.586825354	1.792600419	0.009920114
SACRAMENT	2021	MH	1985	45	DSL	0.82993325	11.40140983	0.622893866	0.651058362	1049.656244	0.023840933	0.164991344	0.513281248	0.584336576	2.398292754	0.009923026
SACRAMENT	2021	LHD1	2004	10	DSL	1668.22834	4.541411685	0.117143315	0.122440016	1107.130193	0.023805196	0.174025449	0.512511857	0.583460675	2.662684426	0.010466362
SACRAMENT	2021	LHD2	2004	10	DSL	233.816949	4.541411685	0.117143315	0.122440016	1234.527259	0.023805196	0.194050493	0.512511857	0.583460675	2.662684426	0.011670722
SACRAMENT	2021	MDV	1998	15	GAS	300.930174	1.4342916	0.00780612	0.008489868	758.9709064	0.087291786	0.080617793	0.398949656	0.582146401	7.84848134	0.007510632
SACRAMENT	2021	MDV	1989	45	GAS	207.264388	1.798423832	0.013602514	0.014793975	513.4475858	0.07519283	0.084596676	0.398321416	0.581229675	13.1073827	0.00508098
SACRAMENT	2021	MH	1986	45	DSL	1.15186967	11.39462342	0.618533422	0.646500758	1049.656244	0.023636542	0.164991344	0.508880823	0.579326984	2.377723267	0.009923026
SACRAMENT	2021	MDV	1986	65	GAS	17.6093923	2.265700389	0.013739061	0.014942482	581.2417036	0.074557274	0.106263416	0.396990683	0.579287872	10.84314939	0.005751858
SACRAMENT	2021	MH	2015	10	DSL	19.9179506	8.523406491	0.026713668	0.027921542	1871.146266	0.023633284	0.294118136	0.508810699	0.579247153	1.436360237	0.017689061
SACRAMENT	2021	LDT2	1994	35	GAS	2009.11408	2.124963322	0.009491165	0.010322508	452.6910365	0.077840347	0.097600443	0.3949394	0.576294645	13.42989138	0.004479745
SACRAMENT	2021	LHD1	2005	10	DSL	1483.53006	4.535987696	0.116147977	0.121399673	1107.130193	0.023475648	0.174025449	0.505416883	0.575383518	2.625746278	0.010466362
SACRAMENT	2021	LHD2	2005	10	DSL	475.083582	4.535987696	0.116147977	0.121399673	1234.527259	0.023475648	0.194050493	0.505416883	0.575383518	2.625746278	0.011670722
SACRAMENT	2021	LDT2	1998	20	GAS	1886.54751	1.189179019	0.005600408	0.006090955	631.6627447	0.084283582	0.06802004	0.394035373	0.574975492	9.964030744	0.006250815
SACRAMENT	2021	MH	1982	65	DSL	0.41870795	12.04661448	0.586652605	0.613178433	1029.383896	0.023455876	0.161804813	0.504991191	0.574898897	1.755293764	0.00973138
SACRAMENT	2021	MDV	2001	10	GAS	350.098335	0.768585572	0.012232021	0.013303439	1038.813005	0.088343935	0.050110976	0.393971625	0.574882471	5.919868009	0.010279897
SACRAMENT	2021	MDV	1985	45	GAS	65.9909533	1.786831754	0.013661285	0.014857894	551.8147952	0.073682733	0.08348518	0.39302125	0.573495685	12.70227682	0.005460655
SACRAMENT	2021	MH	1979	50	DSL	0.18658731	11.30120499	0.61392213	0.641680965	1024.480218	0.023397988	0.161034024	0.50374491	0.573480089	2.197375307	0.009685022
SACRAMENT	2021	MDV	1994	60	GAS	1162.10453	1.890616834	0.007621427	0.008288997	486.8577365	0.074893184	0.090167009	0.391967287	0.571957745	10.7645841	0.004817852
SACRAMENT	2021	LDT2	1985	40	GAS	186.197591	2.212587327	0.015111781	0.016435441	539.6423844	0.074940145	0.097420012	0.391789175	0.571697845	13.54675297	0.005340199
SACRAMENT	2021	MDV	1991	45	GAS	240.978427	1.773639775	0.007577867	0.008241622	513.6670375	0.074274023	0.083917411	0.391463251	0.571222256	12.92280797	0.005083152
SACRAMENT	2021	MDV	1986	45	GAS	85.2903048	1.776510713	0.013596782	0.014787741	510.2973955	0.073480369	0.083319974	0.39125655	0.57092064	12.74055152	0.005049806
SACRAMENT	2021	MDV	1988	45	GAS	134.015116	1.774249177	0.013562388	0.014750335	511.7663338	0.073739902	0.083515172	0.391170472	0.570795034	12.82276391	0.005064343
SACRAMENT	2021	LDT2	1996	35	GAS	3160.95472	1.634485309	0.002709501	0.002946829	452.6611666	0.076845105	0.080488646	0.391090352	0.570678123	13.14643779	0.004479449
SACRAMENT	2021	LHD1	2019	10	DSL	1760.33064	0.265264407	0.011513279	0.012033858	941.0606637	0.023283507	0.147921631	0.50128019	0.570674169	1.557657066	0.008896408
SACRAMENT	2021	LHD2	2019	10	DSL	662.580577	0.265418958	0.014386074	0.015036549	1049.34817	0.023283507	0.164942919	0.50128019	0.570674169	1.557657066	0.009920114
SACRAMENT	2021	MDV	1990	45	GAS	257.044575	1.771591097	0.013521627	0.014706003	513.5272644	0.074032844	0.083733871	0.391075893	0.570657025	12.9213933	0.005081769
SACRAMENT	2021	LDA	1983	50	GAS	131.817757	1.50118283	0.01323618	0.014395553	375.856935	0.072114291	0.075045225	0.391041447	0.570606762	14.26423465	0.003719409
SACRAMENT	2021	MDV	1992	45	GAS	346.212657	1.770469424	0.007562584	0.008225	514.2605114	0.074363463	0.083981972	0.391033707	0.570595467	12.9625764	0.005089025
SACRAMENT	2021	MH	1983	65	DSL	0.07478847	12.04007021	0.582971061	0.609330426	1029.383896	0.023276389	0.161804813	0.501126943	0.570499707	1.741856563	0.00973138
SACRAMENT	2021	MDV	1993	45	GAS	394.894746	1.764254602	0.00753936	0.008199742	443.3687536	0.074344781	0.083965361	0.390012543	0.569105387	12.99639	0.004387493
SACRAMENT	2021	MDV	1993	60	GAS	556.155031	1.906720161	0.007583603	0.00824786	486.6747045	0.07431767	0.09074566	0.389870319	0.568897854	10.78960768	0.004816041
SACRAMENT	2021	MDV	1994	45	GAS	825.145775	1.762633802	0.007531619	0.008191323	443.6268206	0.074477429	0.084063262	0.389791357	0.568782632	13.01641131	0.004390047
SACRAMENT	2021	MDV	1987	45	GAS	112.791615	1.770716547	0.013518797	0.014702926	511.0645158	0.073281713	0.083333535	0.389463257	0.568303871	12.81165495	0.005057398
SACRAMENT	2021	LDA	1983	55	GAS	239.886355	1.573003358	0.013114117	0.014262799	390.3367977	0.071815448	0.078635585	0.389420963	0.568242155	14.26978137	0.003862699
SACRAMENT	2021	LDT2	1983	50	GAS	25.9515463	2.343306724	0.013065033	0.014209415	556.4762039	0.073692792	0.102594882	0.388628674	0.567086049	13.95148992	0.005506783
SACRAMENT	2021	LDA	1996	35	GAS	7170.80496	1.159565649	0.00269449	0.002930504	332.4639069	0.075933838	0.06342563	0.388421992	0.566784459	12.88559394	0.00329
SACRAMENT	2021	LHD1	2006	10	DSL	1846.19836	4.529870092	0.115025358	0.120226294	1107.130193	0.023103959	0.174025449	0.497414629	0.566273485	2.584084632	0.010466362
SACRAMENT	2021	LHD2	2006	10	DSL	550.570114	4.529870092	0.115025358	0.120226294	1234.527259	0.023103959	0.194050493	0.497414629	0.566273485	2.584084632	0.011670722
SACRAMENT	2021	MH	1984	65	DSL	0.40401627	12.03332122	0.579174362	0.605362056	1029.383896	0.023091287	0.161804813	0.497141824	0.565962914	1.727999059	0.00973138
SACRAMENT	2021	LDT2	1983	60	GAS	36.4590083	2.755410319	0.012893285	0.014022624	599.2313833	0.073515999	0.120637642	0.387696334	0.56572558	13.97946862	0.00592988
SACRAMENT	2021	LDT1	1993	30	GAS	846.654687	1.126069321	0.011459298	0.012463032	391.9055087	0.078419912	0.063828795	0.387471302	0.565397214	12.48213907	0.003878223
SACRAMENT	2021	LDA	1996	70	GAS	185.966059	1.195548021	0.002749796	0.002990654	358.4806918	0.075622676	0.065393785	0.386830314	0.564461886	7.961071106	0.003547457
SACRAMENT	2021	MDV	1985	70	GAS	3.60471831	2.630319328	0.013645747	0.014840995	628.7604626	0.072338991	0.122894997	0.385853772	0.563036919	10.79028515	0.006222094
SACRAMENT	2021	MH	2016	10	DSL	9.15586432	8.453437622	0.025976982	0.027151546	1871.146266	0.022927556	0.294118136	0.493616777	0.561949882	1.393538463	0.017689061
SACRAMENT	2021	MH	1979	60	DSL	0.32856812	11.63526391	0.589206265	0.615847558	1014.344044	0.022906043	0.159440758	0.493153618	0.561422607	1.839238329	0.009589199
SACRAMENT	2021	MH	1982	50	DSL	1.51092055	11.28396553	0.603275063	0.630552485	1024.480218	0.022905066	0.161034024	0.493132583	0.56139866	2.151064947	0.009685022
SACRAMENT	2021	MH	1985	65	DSL	0.25739846	12.02636754	0.575262507	0.601273325	1029.383896	0.022900572	0.161804813	0.493035835	0.561288518	1.713721252	0.00973138
SACRAMENT	2021	LDT2	1992	70	GAS	26.2653166	2.483813538	0.009053215	0.009846197	544.1552962	0.075035852	0.113314918	0.384530865	0.561106535	9.504189569	0.005384858

SACRAMENT	2021	MH	1987	45	DSL	1.20731808	11.35399558	0.620655309	0.648718588	1017.006447	0.022881172	0.159859251	0.492618153	0.560813015	2.300867009	0.009614368
SACRAMENT	2021	MDV	1992	60	GAS	487.592993	1.956237078	0.007470129	0.008124447	565.6677325	0.073004382	0.092793835	0.383887098	0.560167152	10.88296672	0.005597741
SACRAMENT	2021	LDT1	1984	70	GAS	6.40931045	3.27706282	0.014739727	0.016030798	439.9824676	0.07459228	0.144488298	0.383170751	0.559121861	16.68711756	0.004353983
SACRAMENT	2021	MDV	1989	60	GAS	291.903434	2.051764147	0.013118082	0.014267111	565.5606495	0.072267769	0.096513638	0.382826396	0.558619378	11.45515616	0.005596681
SACRAMENT	2021	LDT2	1993	70	GAS	40.2204686	2.48655416	0.009053215	0.009846197	494.1624243	0.074764074	0.113572255	0.38204033	0.557472352	9.602922295	0.004890138
SACRAMENT	2021	LDT2	1983	55	GAS	47.2274906	2.482827616	0.012748993	0.013865693	578.1596577	0.072414951	0.108703399	0.381889811	0.557252716	13.81964023	0.005721359
SACRAMENT	2021	MH	1983	50	DSL	0.26987649	11.27783555	0.599489205	0.626595446	1024.480218	0.022729794	0.161034024	0.489359077	0.557102775	2.134598021	0.009685022
SACRAMENT	2021	MH	1979	55	DSL	0.2734268	11.37325525	0.594844873	0.621741118	1012.709485	0.022718489	0.159183828	0.489115682	0.556825685	1.974002248	0.009573747
SACRAMENT	2021	LDT2	1995	35	GAS	2891.08085	1.557507302	0.00948721	0.010318206	451.4306769	0.075678189	0.078671601	0.381459167	0.556624321	12.38147749	0.004467273
SACRAMENT	2021	MH	1986	65	DSL	0.35724497	12.01920915	0.571235497	0.597064231	1029.383896	0.022704243	0.161804813	0.488808976	0.556476521	1.699023144	0.00973138
SACRAMENT	2021	MDV	1990	60	GAS	362.011992	1.975199087	0.013256385	0.014417528	565.0573781	0.072148837	0.093357359	0.38112369	0.556134793	10.90166557	0.005591701
SACRAMENT	2021	LDT1	1999	10	GAS	94.5509041	0.575569504	0.012015538	0.013067994	737.4929484	0.089152755	0.043541041	0.380842343	0.555724253	6.709045258	0.007298091
SACRAMENT	2021	LDT2	1986	40	GAS	282.379136	2.224287436	0.015035498	0.016352476	477.942325	0.07306075	0.097934933	0.380471154	0.555182614	13.43600494	0.004729627
SACRAMENT	2021	LDT2	1991	70	GAS	23.0070409	2.533948037	0.008961157	0.009746075	543.9450005	0.074082948	0.115224876	0.380450464	0.555152424	9.55889901	0.005382777
SACRAMENT	2021	MDV	1987	60	GAS	158.851504	1.972904541	0.013270211	0.014432565	562.7716114	0.071549775	0.092848915	0.380258695	0.554872595	10.81520635	0.005569081
SACRAMENT	2021	LDT1	1984	40	GAS	302.809752	2.251962892	0.015276549	0.016614641	382.5544896	0.074023394	0.09929083	0.380248457	0.554857656	15.49964085	0.003785687
SACRAMENT	2021	MDV	1985	65	GAS	13.6247676	2.385280623	0.013155283	0.01430757	629.4040261	0.071245965	0.111446185	0.38002361	0.554529559	11.09644081	0.006228463
SACRAMENT	2021	MH	1988	45	DSL	1.24799316	11.34440731	0.616551001	0.644428701	1017.006447	0.02262426	0.159859251	0.487087001	0.554516167	2.27503178	0.009614368
SACRAMENT	2021	MDV	1991	60	GAS	339.385028	1.987939425	0.00739545	0.008043226	565.2268338	0.072052291	0.094056715	0.37975355	0.554135489	10.93172853	0.005593378
SACRAMENT	2021	LHD1	2020	10	DSL	2014.28563	0.20695462	0.007921292	0.008279457	941.0606637	0.022594331	0.147921631	0.486442646	0.553782611	1.311946422	0.008896408
SACRAMENT	2021	LHD2	2020	10	DSL	750.321378	0.207126176	0.011881938	0.012419186	1049.34817	0.022594331	0.164942919	0.486442646	0.553782611	1.311946422	0.009920114
SACRAMENT	2021	MDV	1989	50	GAS	207.777058	1.821001446	0.012887482	0.014016312	527.613813	0.071517064	0.085658712	0.378849664	0.552816541	12.45201059	0.005221166
SACRAMENT	2021	MH	1984	50	DSL	1.45790516	11.27151384	0.595584928	0.622514635	1024.480218	0.022549039	0.161034024	0.48546754	0.552672519	2.117616026	0.009685022
SACRAMENT	2021	MDV	2002	10	GAS	475.107814	0.747897017	0.012232021	0.013303439	1038.715582	0.085447805	0.049381848	0.378534254	0.552356294	5.9004039	0.010278933
SACRAMENT	2021	MDV	1995	70	GAS	51.3949131	1.838460796	0.009053215	0.009846197	496.4471766	0.074321092	0.09190363	0.377988827	0.55156041	7.506795163	0.004912747
SACRAMENT	2021	LDT2	1985	70	GAS	3.94108235	3.152693419	0.014338293	0.015594202	617.2242865	0.072165109	0.138812795	0.377281212	0.55052786	11.97733297	0.006107935
SACRAMENT	2021	MH	1994	25	GAS	24.3946681	2.502754334	0.00215256	0.002341105	1997.197752	0.085344372	0.118971849	0.376853351	0.549903526	7.862823664	0.019763891
SACRAMENT	2021	MH	1982	60	DSL	2.6606328	11.61751486	0.578987838	0.605167098	1014.344044	0.022423484	0.159440758	0.482764416	0.549595191	1.800475816	0.009589199
SACRAMENT	2021	MDV	1994	55	GAS	1505.34212	1.790148592	0.007231302	0.007864701	472.3225183	0.071776963	0.085375493	0.375657968	0.548159225	11.51044794	0.004674014
SACRAMENT	2021	MH	1985	50	DSL	0.92883027	11.26500038	0.591562233	0.618310052	1024.480218	0.022362803	0.161034024	0.481457971	0.548107891	2.100118961	0.009685022
SACRAMENT	2021	MH	1989	45	DSL	1.61022355	11.33455966	0.612335676	0.640022779	1017.006447	0.0223604	0.159859251	0.481406237	0.548048995	2.248497739	0.009614368
SACRAMENT	2021	MDV	1993	55	GAS	720.420211	1.799380748	0.007215058	0.007847034	472.0593483	0.071412016	0.085637104	0.374627263	0.546655223	11.51461439	0.00467141
SACRAMENT	2021	MH	1987	25	GAS	7.62012123	2.829430585	0.00753396	0.008193868	2000.199432	0.084890098	0.129569517	0.374624651	0.546651411	9.762599148	0.019793595
SACRAMENT	2021	MDV	1989	55	GAS	378.119628	1.892930941	0.012729372	0.013844353	547.6098394	0.070701566	0.089042229	0.3745297	0.546512859	11.92317862	0.005419043
SACRAMENT	2021	MDV	1988	60	GAS	188.74189	2.020486023	0.013057217	0.014200915	563.5898555	0.070601186	0.095105715	0.374520427	0.546499327	10.94563343	0.005577178
SACRAMENT	2021	MDV	1994	50	GAS	827.186777	1.757587887	0.007204275	0.007835307	455.5565577	0.071487812	0.083822613	0.374144644	0.545950987	12.23401631	0.004508101
SACRAMENT	2021	MDV	1993	50	GAS	395.87152	1.762269925	0.007202614	0.0078335	455.2848224	0.071268107	0.083870906	0.373872315	0.545553605	12.22343685	0.004505412
SACRAMENT	2021	MH	1983	60	DSL	0.47523495	11.61120369	0.575354394	0.601369366	1014.344044	0.022251897	0.159440758	0.479070249	0.545389628	1.786692736	0.009589199
SACRAMENT	2021	MH	1982	55	DSL	2.21411715	11.35590588	0.584528657	0.610958449	1012.709485	0.022239881	0.159183828	0.478811547	0.545095112	1.932399544	0.009573747
SACRAMENT	2021	MDV	1992	50	GAS	347.069016	1.777776967	0.007197629	0.007828078	528.4191158	0.071015265	0.084328605	0.373427506	0.54490454	12.21831007	0.005229136
SACRAMENT	2021	MH	2017	10	DSL	19.0256824	8.382391999	0.025228958	0.026369699	1800.403484	0.022210965	0.282998356	0.478188999	0.544386383	1.350057582	0.017020288
SACRAMENT	2021	MH	1986	30	GAS	9.13714606	2.439219479	0.010484805	0.011403182	1777.150895	0.081779731	0.114177305	0.373059246	0.544367176	10.01947445	0.017586349
SACRAMENT	2021	MDV	1991	50	GAS	241.574488	1.786970601	0.007194349	0.007824511	527.7886978	0.070749216	0.084548142	0.372885659	0.544113878	12.19703967	0.005222897
SACRAMENT	2021	MDV	1990	50	GAS	257.680376	1.782574182	0.012849258	0.01397474	527.6230968	0.070583881	0.084252984	0.372856865	0.544071862	12.18835095	0.005221258
SACRAMENT	2021	LDT1	1994	30	GAS	1200.47908	0.93849408	0.011459047	0.012462759	390.3896857	0.075922491	0.056259329	0.372508186	0.54356307	11.33262154	0.003863222
SACRAMENT	2021	MH	1986	50	DSL	1.28912949	11.25829517	0.58742112	0.613981696	1024.480218	0.022171083	0.161034024	0.477330371	0.543408892	2.082106827	0.009685022
SACRAMENT	2021	MDV	1992	55	GAS	631.607785	1.828570674	0.007166327	0.007794034	548.2641099	0.070726913	0.086737997	0.371911233	0.542691998	11.55217457	0.005425518
SACRAMENT	2021	MDV	1988	50	GAS	134.346603	1.794002945	0.012840509	0.013965225	525.7109072	0.0700297	0.084444995	0.371488844	0.542075649	12.11636048	0.005202336
SACRAMENT	2021	MDV	1987	50	GAS	113.070606	1.780672848	0.012849865	0.0139754	524.8879655	0.069863217	0.083802099	0.371295311	0.541793246	12.07451685	0.005194192
SACRAMENT	2021	LDT2	1986	70	GAS	5.97687338	3.113395184	0.014632175	0.015913826	544.9502297	0.071281512	0.13708217	0.371205593	0.541662329	11.25647253	0.005392724
SACRAMENT	2021	LDT2	1987	40	GAS	325.225133	2.212928316	0.014982362	0.016294686	478.4291475	0.071515192	0.097765654	0.371056363	0.541444574	13.35832921	0.004734444
SACRAMENT	2021	MH	1990	45	DSL	1.99739855	11.32445264	0.608009335	0.63550082	1017.006447	0.02208959	0.159859251	0.47557586	0.541411498	2.221264887	0.009614368
SACRAMENT	2021	MH	1984	60	DSL	2.56727615	11.60469511	0.571607299	0.597452845	1014.344044	0.022074943	0.159440758	0.475260532	0.541052518	1.772478533	0.009589199
SACRAMENT	2021	MH	1983	55	DSL	0.39547955	11.34973683	0.580860441	0.607124373	1012.709485	0.022069699	0.159183828	0.475147627	0.540923984	1.917606555	0.009573747
SACRAMENT	2021	MDV	1990	55	GAS	468.935353	1.838914561	0.012761311	0.01387909	547.4600832	0.070120882	0.0869159	0.370411089	0.540502991	11.54109043	0.005417561
SACRAMENT	2021	MDV	1986	50	GAS	85.5012709	1.803631395	0.012833127	0.013957196	524.1157452	0.069553493	0.084591958	0.370347349	0.540409982	12.05637075	0.00518655
SACRAMENT	2021	MDV	1991	55	GAS	439.625321	1.846720226	0.007134256	0.007759154	547.6460765	0.070178428	0.087375116	0.369877307	0.539724098	11.55982377	0.005419402
SACRAMENT	2021	MDV	1985	50	GAS	66.1541822	1.828370313	0.012819282	0.013942139	566.9517096	0.069339533	0.085425964	0.369854764	0.539691204	12.06224018	0.005610447
SACRAMENT	2021	LDT1	1984	65	GAS	24.2252953	2.982623837	0.014091437	0.015325724	438.9422528	0.071995021	0.13150625	0.369828971	0.539653567	16.19926907	0.004343689
SACRAMENT	2021	LDA	1984	40	GAS	462.306059	1.310924578	0.015045601	0.016363464	363.8990149	0.070139869	0.067308199	0.36976905	0.53956613	13.85196636	0.003601076
SACRAMENT	2021	LHD1	1987	15	DSL	50.6424163	4.230884468	0.322531507	0.33711495	723.0486622	0.021997278	0.113653181	0.473588445	0.539148959	1.94148416	0.00683541
SACRAMENT	2021	LHD1	1988	15	DSL	74.4747155	4.230884468	0.322531507	0.33711495	723.0486622	0.021997278	0.113653181	0.473588445	0.539148959	1.94148416	0.00683541
SACRAMENT	2021	LHD1	1989	15	DSL	109.533095	4.230884468	0.322531507	0.33711495	723.0486622	0.021997278	0.113653181	0.473588445	0.539148959	1.94148416	0.00683541
SACRAMENT	2021	LHD1	1990	15	DSL	189.888356	4.230884468	0.322531507	0.33711495	723.0486622	0.021997278	0.113653181	0.473588445	0.539148959	1.94148416	0.00683541
SACRAMENT	2021	LHD2	1987	15	DSL	37.7709505	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LHD2	1988	15	DSL	15.1092158	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LHD2	1989	15	DSL	49.4393816	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LHD2	1990	15	DSL	34.2642262	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LDT2	1994	70	GAS	52.1039172	2.424206311	0.009119308	0.009918079	492.9003022	0.072794237	0.111344797	0.369336899	0.538935536	8.703876883	0.004877648
SACRAMENT	2021	MH	1987	65	DSL	0.37444194	11.97635432	0.573195128	0.599112468	997.3646751	0.021978667	0.156771838	0.473187756	0.538692801	1.644104826	0.009428683
SACRAMENT	2021	LDT1	1996	30	GAS	1625.31225	0.994920931	0.003273942	0.00356071	390.3492644	0.075003954	0.058037408	0.369155227	0.538670441	11.06802406	0.003862822
SACRAMENT	2021	MDV	1987	55	GAS	205.769664	1.836173034	0.012767249	0.013885548	544.6142817	0.06943325	0.086414051	0.369010203	0.538458822	11.4300776	0.0053894
SACRAMENT	2021	MDV	1986	60	GAS	120.119684	2.058590398	0.012889165	0.014018143	562.3657416	0.069296438	0.096549768	0.368978626	0.538412745	10.98252211	0.005565065
SACRAMENT	2021	MH	1988	25	GAS	8.60853694	2.796025696	0.00753396	0.008193868	1999.927115	0.083751939	0.128503839	0.368811518	0.538168901	9.606613357	0.0197909
SACRAMENT	2021	LDT2	1990	70	GAS	18.7855503	2.686401138	0.015508895	0.016867339	544.1287362	0.071633876	0.121253848	0.368683799	0.537982534	9.748913375	0.005384595
SACRAMENT	2021	LDT2	1992	65	GAS	99.2751178	2.325317955	0.008441241	0.00918062	547.6905745	0.071768139	0.106084136	0.367785049	0.53667108	10.04662507	0.005419842
SACRAMENT	2021	MH	1984	55	DSL	2.1364279	11.34337481	0.577077488	0.603170371	1012.709485	0.021894194	0.159183828	0.471369104	0.536622386	1.902350856	0.009573747
SACRAMENT	2021	MH	1985	60	DSL	1.63560968	11.59798911	0.567746554	0.593417533	1014.344044	0.021892622	0.159440758	0.471335265	0.536583862	1.75783321	0.009589199
SACRAMENT	2021	LHD1	2021	10	DSL	1827.12749	0.154910564	0.00494869	0.005172448	917.5341471	0.021874946	0.144223591	0.470954703	0.536150618	1.0554685	0.008673997
SACRAMENT	2021	LHD2	2021	10	DSL	684.474011	0.154751277	0.009268067	0.009687128	1023.114466	0.021874946	0.160819346	0.470954703	0.536150618	1.0554685	0.009672111
SACRAMENT	2021	MDV	1988	55	GAS	244.488434	1.863583068	0.012675778	0.013786065	545.5279374	0.069150629	0.087720181	0.366825607	0.535271064	11.51394438	0.005398441
SACRAMENT	2021	LDT1	1983	40	GAS	132.620994	2.272142081	0.015252746	0.016588753	381.4293182	0.07143958	0.099479884	0.366750853	0.535161984	15.15942097	0.003774552
SACRAMENT	2021	LDT2	1996	70	GAS	81.9754959	1.85584994	0.0026244	0.002854275	492.3636647	0.072046192	0.091389533	0.366667085	0.53503975	8.47034206	0.004872338
SACRAMENT	2021	LDA	1996	65	GAS	702.896626	1.140814667	0.002535957	0.002758085	362.2492045	0.071675562	0.062399994	0.366639766	0.534999886	8.522357732	0.00358475
SACRAMENT	2021	LDT1	1985	35	GAS	349.442659	2.284306853	0.017262477	0.018774519	393.6825423	0.072041682	0.100578934	0.366635134	0.534993127	14.67093051	0.003895808
SACRAMENT	2021	LDT2	1985	65	GAS	14.896124	2.872378373	0.013718624	0.014920256	617.4207109	0.070122472	0.12647055	0.366602247	0.534945138	12.04271815	0.006109878
SACRAMENT	2021	LDT2	1993	65	GAS	152.021459	2.328443944	0.008441241	0.00918062	497.6944558	0.071564161	0.106350641	0.36568895	0.533612457	10.15210142	0.00492509
SACRAMENT	2021	MH	1988	65	DSL	0.38705705	11.96624048	0.569404667	0.59515062	997.3646751	0.021731889	0.156771838	0.46787477	0.53264432	1.625644035	0.009428683
SACRAMENT	2021	MH	1985	55	DSL	1.36111659	11.33681982	0.573179796	0.599096442	1012.709485	0.021713366	0.159183828	0.467475977	0.53219032	1.886632446	0.009573747
SACRAMENT	2021	MH	1986	60	DSL	2.27007316	11.5910857	0.563772157	0.589263433	1014.344044	0.021704934	0.159440758	0.467294447	0.531983661	1.742756765	0.009589199
SACRAMENT	2021	LHD1	1991	30	GAS	356.213256	2.826564455	0.005871491	0.006385782	851.7301511	0.07280488	0.118833454	0.364398747	0.531729797	11.36095603	0.00842856
SACRAMENT	2021	LHD2	1991	30	GAS	27.9173182	2.826564455	0.005871491	0.006385782	972.7875932	0.07285857	0.118901282	0.364398747	0.531729797	11.36095603	0.009626522
SACRAMENT	2021	LDT2	1991	65	GAS	86.9598004	2.365395979	0.008371181	0.009104424	547.0822126	0.070949262	0.107560398	0.364357526	0.531669647	10.07842075	0.005413822
SACRAMENT	2021	MDV	1986	55	GAS	155.598068	1.884331762	0.012603608	0.013707573	543.9160298	0.068328236	0.088376879	0.363823298	0.530890102	11.49133519	0.00538249
SACRAMENT	2021	MH	1989	25	GAS	16.1335495	2.759745191	0.00753396	0.008193868	1996.13704	0.082605894	0.127332092	0.362971396	0.529647009	7.231404031	0.019753394
SACRAMENT	2021	LHD1	1992	30	GAS	328.435129	2.833701653	0.005871491	0.006385782	851.6448967	0.0725745	0.119129748	0.362755777	0.529332379	11.31164018	0.008427717
SACRAMENT	2021	LHD2	1992	30	GAS	19.0122929	2.833701653	0.005871491	0.006385782	972.7023388	0.072621509	0.119188813	0.362755777	0.529332379	11.31164018	0.009625678
SACRAMENT	2021	LDT2	1987	70	GAS	6.88375731	3.028379875	0.014753773	0.016046074	544.3172708	0.069880929	0.133791744	0.362576994	0.529071499	10.64941048	0.005386461
SACRAMENT	2021	LHD1	1991	20	DSL	210.755202	7.834905486	0.065757015	0.068730255	616.2897993	0.021551064	0.096872174	0.463981718	0.528212338	1.636278452	0.005826155
SACRAMENT	2021	LHD1	1992	20	DSL	279.12924	7.834905486	0.065757015	0.068730255	616.2897993	0.021551064	0.096872174	0.463981718	0.528212338	1.636278452	0.005826155
SACRAMENT	2021	LHD1	1993	20	DSL	330.77174	7.834905486	0.065757015	0.068730255	616.2897993	0.021551064	0.096872174	0.463981718	0.528212338	1.636278452	0.005826155
SACRAMENT	2021	LHD2	1991	20	DSL	45.2557123	7.834905486	0.065757015	0.068730255	700.9244292	0.021551064	0.110175559	0.463981718	0.528212338	1.636278452	0.006626257
SACRAMENT	2021	LHD2	1992	20	DSL	66.5492065	7.834905486	0.065757015	0.068730255	700.9244292	0.021551064	0.110175559	0.463981718	0.528212338	1.636278452	0.006626257
SACRAMENT	2021	LHD2	1993	20	DSL	158.534816	7.834905486	0.065757015	0.068730255	700.9244292	0.021551064	0.110175559	0.463981718	0.528212338	1.636278452	0.006626257
SACRAMENT	2021	MDV	1995	65	GAS	194.25755	1.725076583	0.008441241	0.00918062	500.1840212	0.071156709	0.086235617	0.361895128	0.528076522	7.952683149	0.004949726
SACRAMENT	2021	MH	1986	55	DSL	1.88910244	11.33007186	0.569167365	0.594902588	1012.709485	0.021527214	0.159183828	0.463468246	0.527627784	1.870451326	0.009573747
SACRAMENT	2021	LHD1	1993	30	GAS	392.917574	2.828584819	0.005871491	0.006385782	851.5674365	0.072384338	0.119050856	0.361345885	0.527275068	11.26660744	0.00842695
SACRAMENT	2021	LHD2	1993	30	GAS	52.906972	2.828584819	0.005871491	0.006385782	972.6248786	0.072424842	0.119101696	0.361345885	0.527275068	11.26660744	0.009624912

SACRAMENT	2021	LHD1	1994	20	DSL	293.261471	7.842124448	0.066290807	0.069288183	616.2897993	0.021503711	0.096872174	0.462962228	0.527051717	1.629109656	0.005826155
SACRAMENT	2021	LHD1	1995	20	DSL	488.281762	7.842124448	0.066290807	0.069288183	616.2897993	0.021503711	0.096872174	0.462962228	0.527051717	1.629109656	0.005826155
SACRAMENT	2021	LHD1	1996	20	DSL	397.177841	7.842124448	0.066290807	0.069288183	616.2897993	0.021503711	0.096872174	0.462962228	0.527051717	1.629109656	0.005826155
SACRAMENT	2021	LHD1	1997	20	DSL	860.919011	7.842124448	0.066290807	0.069288183	616.2897993	0.021503711	0.096872174	0.462962228	0.527051717	1.629109656	0.005826155
SACRAMENT	2021	LHD2	1994	20	DSL	159.984555	7.842124448	0.066290807	0.069288183	700.9244292	0.021503711	0.110175559	0.462962228	0.527051717	1.629109656	0.006626257
SACRAMENT	2021	LHD2	1995	20	DSL	90.4357041	7.842124448	0.066290807	0.069288183	700.9244292	0.021503711	0.110175559	0.462962228	0.527051717	1.629109656	0.006626257
SACRAMENT	2021	LHD2	1996	20	DSL	196.30141	7.842124448	0.066290807	0.069288183	700.9244292	0.021503711	0.110175559	0.462962228	0.527051717	1.629109656	0.006626257
SACRAMENT	2021	LHD2	1997	20	DSL	129.650292	7.842124448	0.066290807	0.069288183	700.9244292	0.021503711	0.110175559	0.462962228	0.527051717	1.629109656	0.006626257
SACRAMENT	2021	MH	2018	10	DSL	20.9155323	8.310269658	0.024469594	0.025576001	1800.403484	0.021483512	0.282998356	0.462527366	0.526556655	1.305917595	0.017020288
SACRAMENT	2021	LDT2	1989	70	GAS	14.0530657	2.784974117	0.015184331	0.016514346	544.0755306	0.069959172	0.125065704	0.360846815	0.526546826	9.868165737	0.005384068
SACRAMENT	2021	LDT2	1988	70	GAS	10.9792153	2.779662415	0.015196977	0.016528099	543.4002602	0.069801964	0.124704539	0.360783703	0.526454733	9.841158786	0.005377386
SACRAMENT	2021	MH	1989	65	DSL	0.49940048	11.95585305	0.56551168	0.591081608	997.3646751	0.021478436	0.156771838	0.462418073	0.526432233	1.606683902	0.009428683
SACRAMENT	2021	LDT2	1989	40	GAS	663.94121	2.12500228	0.014880407	0.016183801	480.1639529	0.069913685	0.095428142	0.360612191	0.526204463	13.3568032	0.004751612
SACRAMENT	2021	LHD1	1998	20	DSL	353.367362	7.840830055	0.066202158	0.069195526	616.2897993	0.021463853	0.096872174	0.462104109	0.526074806	1.626091923	0.005826155
SACRAMENT	2021	LHD2	1998	20	DSL	102.273955	7.840830055	0.066202158	0.069195526	700.9244292	0.021463853	0.110175559	0.462104109	0.526074806	1.626091923	0.006626257
SACRAMENT	2021	MH	1987	50	DSL	1.35118526	11.21815341	0.589436276	0.616087969	992.6135272	0.021462546	0.156025024	0.462075981	0.526042784	2.014805917	0.009383767
SACRAMENT	2021	LHD1	1994	30	GAS	456.2649	2.825846649	0.005871491	0.006385782	851.4974825	0.072226359	0.119040558	0.360123448	0.525491289	11.22580029	0.008426258
SACRAMENT	2021	LHD2	1994	30	GAS	75.323971	2.825846649	0.005871491	0.006385782	972.5549246	0.072260749	0.119083631	0.360123448	0.525491289	11.22580029	0.009624219
SACRAMENT	2021	LDT1	1995	30	GAS	1116.56597	0.9479616	0.011458921	0.012462622	389.3009246	0.073873434	0.056721374	0.360103624	0.525462363	10.42463739	0.003852448
SACRAMENT	2021	MDV	1985	60	GAS	92.9391972	2.135882258	0.012573991	0.013675362	608.8520607	0.06747048	0.099793679	0.359885297	0.52514378	11.13542231	0.006025085
SACRAMENT	2021	LDT2	1988	40	GAS	518.716247	2.121288204	0.014878711	0.016181956	478.9434841	0.069616659	0.095167768	0.359825921	0.525057139	13.29693286	0.004739534
SACRAMENT	2021	MDV	1985	55	GAS	120.38959	1.930239753	0.012468255	0.013560365	588.6013575	0.06745925	0.090185555	0.3598254	0.525056378	11.56175598	0.005824688
SACRAMENT	2021	LDT2	1990	40	GAS	887.528833	2.107340977	0.014836863	0.016136442	480.5970933	0.069908716	0.095117292	0.35980478	0.525026291	13.39884274	0.004755898
SACRAMENT	2021	LDT2	1986	65	GAS	22.5908112	2.843083216	0.013930935	0.015151163	545.4166126	0.069091234	0.125180388	0.359799502	0.525018589	11.43286562	0.00539734
SACRAMENT	2021	LHD1	1999	20	DSL	1453.11834	7.837957232	0.066005407	0.068989879	616.2897993	0.02137539	0.096872174	0.460199568	0.523906612	1.619394256	0.005826155
SACRAMENT	2021	LHD2	1999	20	DSL	411.398494	7.837957232	0.066005407	0.068989879	700.9244292	0.02137539	0.110175559	0.460199568	0.523906612	1.619394256	0.006626257
SACRAMENT	2021	LHD1	2002	15	DSL	2090.0714	5.743563034	0.086508254	0.090419773	723.0486622	0.021359347	0.113653181	0.459854168	0.523513397	2.036268051	0.00683541
SACRAMENT	2021	LHD2	2002	15	DSL	320.096562	5.743563034	0.086508254	0.090419773	821.7876738	0.021359347	0.129173578	0.459854168	0.523513397	2.036268051	0.007768849
SACRAMENT	2021	LDT2	1991	40	GAS	1086.97439	2.077800762	0.008271591	0.00899611	480.7721925	0.069766339	0.094482733	0.358282667	0.522805227	13.43874322	0.004757631
SACRAMENT	2021	LDT2	1995	70	GAS	74.9766471	1.75706897	0.009152349	0.009954015	491.9580323	0.07106248	0.088751705	0.358193486	0.522675093	7.990091819	0.004868324
SACRAMENT	2021	LDT2	1992	40	GAS	1240.91259	2.06940739	0.008259241	0.008982678	481.3277831	0.069873566	0.094409151	0.358076063	0.522503751	13.47690837	0.004763129
SACRAMENT	2021	LDT2	1985	45	GAS	72.1487113	2.204381552	0.013734027	0.014937008	540.0750585	0.068376234	0.097058713	0.357472865	0.521623565	12.74508322	0.005344481
SACRAMENT	2021	MH	1990	25	GAS	15.8052296	2.72098105	0.00753396	0.008193868	1996.063357	0.081428302	0.12608304	0.356985933	0.520913035	7.201202269	0.019752665
SACRAMENT	2021	LDT2	1993	40	GAS	1900.22784	2.072060765	0.008259241	0.008982678	438.0845268	0.069850604	0.094640453	0.356932764	0.520835452	13.58343883	0.004335202
SACRAMENT	2021	LDT1	1986	35	GAS	613.944173	2.299737214	0.017201961	0.018708702	390.0097549	0.070405968	0.101257919	0.356911529	0.520804465	14.56226151	0.003859463
SACRAMENT	2021	LHD1	2000	20	DSL	1384.59406	7.833505978	0.065700555	0.068671243	616.2897993	0.021238324	0.096872174	0.457248604	0.520547136	1.609016654	0.005826155
SACRAMENT	2021	LHD2	2000	20	DSL	337.405253	7.833505978	0.065700555	0.068671243	700.9244292	0.021238324	0.110175559	0.457248604	0.520547136	1.609016654	0.006626257
SACRAMENT	2021	MH	1988	50	DSL	1.39670729	11.20867985	0.585538415	0.612013864	992.6135272	0.021221563	0.156025024	0.456887759	0.520136338	1.992182718	0.009383767
SACRAMENT	2021	MH	1990	65	DSL	0.61948032	11.94519201	0.561516165	0.586905434	997.3646751	0.021218307	0.156771838	0.456817664	0.520056539	1.587224428	0.009428683
SACRAMENT	2021	LHD1	2003	15	DSL	2917.29238	5.738482073	0.085968614	0.089855733	723.0486622	0.021143373	0.113653181	0.455204373	0.518219914	2.01570549	0.00683541
SACRAMENT	2021	LHD2	2003	15	DSL	418.148724	5.738482073	0.085968614	0.089855733	821.7876738	0.021143373	0.129173578	0.455204373	0.518219914	2.01570549	0.007768849
SACRAMENT	2021	LDT2	1990	65	GAS	71.0038163	2.490749104	0.014573215	0.015849701	547.138225	0.068998054	0.112422865	0.355117803	0.518187065	10.2358946	0.005414376
SACRAMENT	2021	MDV	1999	15	GAS	576.631749	1.178192844	0.007914069	0.008607272	759.1808667	0.078014417	0.069042932	0.354012061	0.516573568	7.009187422	0.00751271
SACRAMENT	2021	LHD1	2001	20	DSL	2325.45833	7.827476293	0.065287601	0.068239617	616.2897993	0.021052653	0.096872174	0.453251218	0.515996377	1.594959118	0.005826155
SACRAMENT	2021	LHD2	2001	20	DSL	662.210759	7.827476293	0.065287601	0.068239617	700.9244292	0.021052653	0.110175559	0.453251218	0.515996377	1.594959118	0.006626257
SACRAMENT	2021	LDT2	1994	65	GAS	196.937375	2.274135066	0.008491541	0.009235326	496.6565817	0.06961521	0.104451962	0.353207435	0.51539946	9.214736377	0.004914819
SACRAMENT	2021	MH	1987	60	DSL	2.37934935	11.54975736	0.565706185	0.591284909	982.7926412	0.021011294	0.154481317	0.452360783	0.514982676	1.686424826	0.009290925
SACRAMENT	2021	LDA	1997	30	GAS	6003.14204	0.953519372	0.003273455	0.003560181	353.4045149	0.07167582	0.056087587	0.35265386	0.514591685	10.9447052	0.003497224
SACRAMENT	2021	MH	1989	50	DSL	1.80210202	11.19895003	0.581535122	0.60782956	992.6135272	0.020974062	0.156025024	0.451559201	0.514070128	1.968947588	0.009383767
SACRAMENT	2021	MDV	1995	40	GAS	2428.16775	1.546786043	0.008259241	0.008982678	438.5607107	0.069264823	0.077322972	0.352273206	0.514036236	10.66356418	0.004339914
SACRAMENT	2021	LDT2	1987	65	GAS	26.0185639	2.774974838	0.01401214	0.015239481	545.4381619	0.067736509	0.122596484	0.35145068	0.512836007	10.93629568	0.005397553
SACRAMENT	2021	MH	1991	25	GAS	15.2448579	2.680122202	0.00753396	0.008193868	1995.991754	0.080203482	0.124760563	0.350777321	0.511853443	7.172920049	0.019751956
SACRAMENT	2021	LDT2	1996	65	GAS	309.843096	1.743140747	0.002440526	0.002654295	496.8516876	0.068913706	0.085839278	0.350724824	0.511776839	8.988747151	0.00491675
SACRAMENT	2021	MH	1987	55	DSL	1.98003956	11.28967418	0.571119902	0.596943409	981.2089253	0.020839253	0.154232379	0.448656858	0.510766004	1.809991856	0.009275953
SACRAMENT	2021	LDT1	1984	45	GAS	117.334135	2.258633057	0.013943219	0.015164523	382.5574682	0.068063598	0.099584923	0.349633767	0.510184772	14.77977626	0.003785716
SACRAMENT	2021	LDT1	1983	70	GAS	2.80707315	3.39966748	0.014038623	0.015268283	437.0589211	0.068055106	0.148845826	0.349375908	0.509808505	15.12218729	0.004325052
SACRAMENT	2021	MH	1988	60	DSL	2.45951068	11.54000378	0.561965248	0.587374823	982.7926412	0.020775377	0.154481317	0.447281644	0.509200414	1.667488845	0.009290925
SACRAMENT	2021	LDT1	1987	35	GAS	615.226931	2.29160601	0.017162108	0.018665358	390.4164737	0.06906683	0.101242876	0.348837627	0.509023047	14.49282458	0.003863488
SACRAMENT	2021	LDT2	1989	65	GAS	53.1164262	2.570872247	0.014326209	0.015581059	546.7731618	0.067629248	0.115450964	0.348829152	0.50901068	10.32575686	0.005410764
SACRAMENT	2021	MH	2019	10	DSL	22.8012473	8.237070637	0.023698892	0.024770451	1800.403484	0.020745197	0.282998356	0.44663188	0.508460701	1.261118502	0.017020288
SACRAMENT	2021	LDT2	1988	65	GAS	41.4981821	2.563505793	0.014335832	0.015591526	545.223786	0.06737789	0.115007063	0.348254454	0.508172081	10.26905206	0.005395431
SACRAMENT	2021	MH	1990	50	DSL	2.2354138	11.18896392	0.577426396	0.603535056	992.6135272	0.020720042	0.156025024	0.446090305	0.507844154	1.94510053	0.009383767
SACRAMENT	2021	LDT2	1986	45	GAS	109.417585	2.211354063	0.01366836	0.014865588	478.1072003	0.066593287	0.097365479	0.346791193	0.506036895	12.60236974	0.004731258
SACRAMENT	2021	MH	1988	55	DSL	2.04674797	11.28014023	0.567343164	0.592995905	981.2089253	0.020605269	0.154232379	0.443619307	0.505031087	1.789668406	0.009275953
SACRAMENT	2021	MH	1989	60	DSL	3.17338442	11.52998634	0.558123123	0.583358974	982.7926412	0.02053308	0.154481317	0.442065119	0.503261747	1.64804067	0.009290925
SACRAMENT	2021	MH	1992	25	GAS	20.2911213	2.637785662	0.00753396	0.008193868	1995.922146	0.07890319	0.12338374	0.344217317	0.502281101	7.146852195	0.019751268
SACRAMENT	2021	LDT2	1994	40	GAS	2461.66485	2.040657384	0.008250373	0.008973034	436.4919901	0.067517894	0.093728236	0.342566261	0.499871884	12.37401792	0.004319442
SACRAMENT	2021	LDT2	1995	65	GAS	283.38952	1.651647772	0.008516687	0.009262674	495.9799226	0.067938661	0.083426752	0.342447743	0.499698943	8.472249128	0.004908123
SACRAMENT	2021	MH	1989	55	DSL	2.6408172	11.27034837	0.563464271	0.588941625	981.2089253	0.020364955	0.154232379	0.438445495	0.499141046	1.768795232	0.009275953
SACRAMENT	2021	LDT1	1984	60	GAS	165.24902	2.692382051	0.013267898	0.01443005	423.065556	0.066370492	0.11870926	0.340936503	0.497493745	14.91039986	0.004186577
SACRAMENT	2021	LDA	1984	70	GAS	9.78522995	1.880972955	0.014228517	0.01547481	411.4065416	0.064659063	0.0965768	0.340874894	0.497403844	11.26593388	0.004071201
SACRAMENT	2021	MH	1990	60	DSL	3.93641828	11.51970505	0.554179811	0.579237363	982.7926412	0.020284401	0.154481317	0.436711207	0.497166675	1.6280803	0.009290925
SACRAMENT	2021	LDT2	1985	60	GAS	101.611554	2.59525446	0.012944156	0.01407795	596.7171551	0.065131112	0.11426881	0.340507279	0.496867423	11.70659715	0.005905
SACRAMENT	2021	LDT1	1989	35	GAS	883.416489	1.544206007	0.017080204	0.01857628	391.9127605	0.067743095	0.077252367	0.340138196	0.496328857	14.50712797	0.003878294
SACRAMENT	2021	LDT1	1983	65	GAS	10.6099051	3.078052496	0.013521582	0.014705955	436.0001391	0.066238475	0.134764729	0.340049832	0.496199916	14.85639905	0.004314575
SACRAMENT	2021	LDT2	1985	50	GAS	72.3271715	2.248875822	0.01296065	0.01409589	555.0599006	0.064974065	0.099017791	0.339686233	0.495669354	12.22293918	0.005492768
SACRAMENT	2021	LDT1	1990	35	GAS	792.641484	1.072917637	0.017041351	0.018534024	392.290637	0.067785146	0.060099299	0.339611378	0.495560125	14.54905317	0.003882034
SACRAMENT	2021	LDT1	1988	35	GAS	549.012198	2.202009696	0.01707869	0.018574633	390.8488984	0.067450047	0.09879014	0.339366161	0.495202305	14.43832188	0.003867767
SACRAMENT	2021	LDT2	1996	40	GAS	3872.95635	1.569370162	0.002354716	0.002560968	436.4298503	0.066644084	0.077282114	0.339173956	0.49492184	12.11244925	0.004318827
SACRAMENT	2021	LDT1	1991	35	GAS	1247.77983	1.05930526	0.009510097	0.010343098	392.4437476	0.067714846	0.059778485	0.338517057	0.493963294	14.58529114	0.003883549
SACRAMENT	2021	LDA	1985	35	GAS	678.739355	1.024274269	0.017157513	0.018660361	371.7888834	0.063631363	0.05534058	0.338494827	0.493930857	11.23443248	0.003679152
SACRAMENT	2021	LDT1	1992	35	GAS	1077.16855	1.055553265	0.009499077	0.010331113	392.9282341	0.067845511	0.059762026	0.338452356	0.493868884	14.6258156	0.003888343
SACRAMENT	2021	MH	1990	55	DSL	3.27579636	11.2602986	0.559483221	0.58478057	981.2089253	0.020118312	0.154232379	0.433135421	0.49309588	1.747372334	0.009275953
SACRAMENT	2021	LDT2	1987	45	GAS	126.019752	2.194751365	0.013617216	0.014809965	478.5544346	0.065092726	0.096962609	0.33773342	0.492819813	12.49597789	0.004735684
SACRAMENT	2021	LDA	1986	35	GAS	665.83286	1.024489578	0.0171215	0.018621193	351.9975456	0.064089245	0.055857553	0.337702713	0.492775006	11.24193211	0.003483301
SACRAMENT	2021	LDA	1994	35	GAS	4170.07739	1.032899414	0.009451622	0.010279501	330.5789107	0.067099322	0.058720852	0.337315885	0.492210548	11.48225858	0.003271346
SACRAMENT	2021	LDA	1999	15	GAS	1222.59197	0.5765854	0.008101041	0.008810621	537.9544245	0.076735725	0.041709479	0.337265572	0.492137131	6.988213139	0.005323495
SACRAMENT	2021	MH	1993	25	GAS	19.1538769	2.594672709	0.00753396	0.008193868	1995.853896	0.077509051	0.121974737	0.337185221	0.492019883	7.122925845	0.019750592
SACRAMENT	2021	LDA	1993	35	GAS	3026.63419	1.029982099	0.009499027	0.010331059	330.8510523	0.066826127	0.058326981	0.336960594	0.491692107	11.40116967	0.003274039
SACRAMENT	2021	LDA	1987	35	GAS	1059.76624	1.024348107	0.017080399	0.018576493	351.6988473	0.064434385	0.056309904	0.336647551	0.491235316	11.2393597	0.003480345
SACRAMENT	2021	LDA	1995	35	GAS	5834.68169	1.033369004	0.009431286	0.010257384	330.3650726	0.06715704	0.058944374	0.336319425	0.490756516	11.49897285	0.00326923
SACRAMENT	2021	LDA	1996	40	GAS	8786.02102	1.11047985	0.002337892	0.002542671	320.2593812	0.065727145	0.060740748	0.336212012	0.490599779	11.88170846	0.003169226
SACRAMENT	2021	LDA	1988	35	GAS	1007.13842	1.025431838	0.017041337	0.018534009	352.0317196	0.064823068	0.056766052	0.336121898	0.490468284	11.27190044	0.003483639
SACRAMENT	2021	MH	2020	10	DSL	24.0028733	8.162794976	0.022916851	0.023953049	1800.403484	0.01999602	0.282998356	0.430502542	0.490098522	1.215660301	0.017020288
SACRAMENT	2021	LDA	1984	45	GAS	179.136508	1.306666162	0.013653348	0.014849261	363.5814933	0.063687262	0.067089554	0.335751671	0.489928051	12.97089056	0.003597934
SACRAMENT	2021	LDT1	1983	45	GAS	51.3886015	2.279123966	0.013871196	0.015086192	381.3164323	0.065338531	0.099785668	0.335429772	0.489458335	14.3706274	0.003773435
SACRAMENT	2021	LDA	1992	35	GAS	2572.43681	1.028441588	0.00949908	0.010331116	353.1184639	0.066236161	0.058068567	0.335379957	0.489385645	11.36134524	0.003494393
SACRAMENT	2021	LDA	1990	35	GAS	1733.06565	1.028024806	0.016962626	0.018448403	352.9078306	0.065495303	0.057592168	0.33521769	0.489148867	11.34934552	0.003492309
SACRAMENT	2021	LDA	1991	35	GAS	2480.54528	1.028025585	0.009499035	0.010331067	352.9078584	0.065864362	0.057833878	0.335216384	0.489146961	11.34937034	0.003492309
SACRAMENT	2021	LDA	1989	35	GAS	1403.37155	1.025922572	0.016981854	0.018469316	351.951743	0.065029685	0.057196218	0.334867841	0.488638367	11.28813837	0.003482848
SACRAMENT	2021	LDA	1995	70	GAS	151.315336	1.066496133	0.009619517	0.010462103	357.3353881	0.066853318	0.060833978	0.334798401	0.488537041	7.109198218	0.003536123
SACRAMENT	2021	LDT1	1984	50	GAS	117.624362	2.316621186	0.013206931	0.014363743	392.9362769	0.06513898	0.102141665	0.334610389	0.488262695	14.47493824	0.003888423
SACRAMENT	2021	LDA	1984	65	GAS	36.9852711	1.716428213	0.013610172	0.014802303	413.3255624	0.06346481	0.088128404	0.334578931	0.488216791	11.5948122	0.004090192
SACRAMENT	2021	LDT2	1985	55	GAS	131.623402	2.361932255	0.012704762	0.013817587	576.4960372	0.06398707	0.103995655	0.334526194	0.488139836	11.88675076	0.005704896
SACRAMENT	2021	LDT2	1999	15	GAS	650.300236	0.923315048	0.008020497	0.008723023	754.9814774	0.075476842	0.057762096	0.334126975	0.487557297	7.807250697	0.007471154
SACRAMENT	2021	MH	1991	20	DSL	2.08123813	11.43005089	0.5310724	0.555085138	1334.351385	0.019824859	0.209741456	0.426817538	0.48590339	2.238319367	0.012614419
SACRAMENT	2021	LDT2	2000	5	GAS	4.09173523	0.702942003	0.019440667	0.021143499	1135.158508	0.081148924	0.049328229	0.332574664	0.48529217	5.71915155	0.011233314
SACRAMENT	2021	LDT2	1986	60	GAS	154.099645	2.578715971	0.013038135	0.014180161	527.3437289	0.063820887	0.113540351	0.332353646	0.48496966	11.28439967	0.005218494

SACRAMENT	2021	LDT2	1997	30	GAS	3326.63091	1.301318799	0.00327389	0.003560655	483.0255875	0.068104554	0.069267866	0.331772277	0.484121328	10.71534888	0.00477993
SACRAMENT	2021	LDT1	1984	55	GAS	214.056742	2.442950369	0.012987617	0.014125219	408.1435969	0.06458215	0.107711619	0.331750026	0.484088859	14.5066538	0.004038912
SACRAMENT	2021	LHD2	1995	20	GAS	152.794892	1.87753657	0.006556717	0.007131028	1269.226849	0.070711435	0.091268694	0.330934786	0.482899263	6.925271439	0.012560029
SACRAMENT	2021	LHD1	1995	20	GAS	1358.94538	1.877496851	0.006556615	0.007130918	1109.610052	0.070664432	0.091207654	0.330926432	0.482887073	6.925093823	0.010980491
SACRAMENT	2021	LDT2	1995	40	GAS	3542.29369	1.49521368	0.00824594	0.008968212	435.3311347	0.065631201	0.075525074	0.33081689	0.482727229	11.40800471	0.004307954
SACRAMENT	2021	LDT2	1986	50	GAS	109.68823	2.249985733	0.012925659	0.014057834	491.1229858	0.063321212	0.099066424	0.329751538	0.48117267	12.02065737	0.00486006
SACRAMENT	2021	LDA	1980	25	DSL	13.1130851	1.52351395	0.33851067	0.35381662	449.9365938	0.019622679	0.070723767	0.422464728	0.480948005	1.455150477	0.004253519
SACRAMENT	2021	LDA	1981	25	DSL	21.0394648	1.52351395	0.33851067	0.35381662	449.9365938	0.019622679	0.070723767	0.422464728	0.480948005	1.455150477	0.004253519
SACRAMENT	2021	LDA	1982	25	DSL	37.9367746	1.52351395	0.33851067	0.35381662	449.9365938	0.019622679	0.070723767	0.422464728	0.480948005	1.455150477	0.004253519
SACRAMENT	2021	LDT1	1981	25	DSL	3.00031587	1.52351395	0.33851067	0.35381662	524.7523084	0.019622679	0.082483755	0.422464728	0.480948005	1.455150477	0.004960796
SACRAMENT	2021	LDT1	1982	25	DSL	14.7173822	1.52351395	0.33851067	0.35381662	524.7523084	0.019622679	0.082483755	0.422464728	0.480948005	1.455150477	0.004960796
SACRAMENT	2021	LDT2	1980	25	DSL	1.62245843	1.52351395	0.33851067	0.35381662	612.8492172	0.019622679	0.096331363	0.422464728	0.480948005	1.455150477	0.005793629
SACRAMENT	2021	LDT2	1981	25	DSL	0.79305648	1.52351395	0.33851067	0.35381662	612.8492172	0.019622679	0.096331363	0.422464728	0.480948005	1.455150477	0.005793629
SACRAMENT	2021	LDT2	1982	25	DSL	7.94378415	1.52351395	0.33851067	0.35381662	612.8492172	0.019622679	0.096331363	0.422464728	0.480948005	1.455150477	0.005793629
SACRAMENT	2021	MDV	1980	25	DSL	1.94284303	1.52351395	0.33851067	0.35381662	686.2486351	0.019622679	0.107868729	0.422464728	0.480948005	1.455150477	0.006487518
SACRAMENT	2021	MDV	1982	25	DSL	20.888501	1.52351395	0.33851067	0.35381662	686.2486351	0.019622679	0.107868729	0.422464728	0.480948005	1.455150477	0.006487518
SACRAMENT	2021	LDA	1994	70	GAS	108.145858	1.099748091	0.009449638	0.010277344	357.8410071	0.065489446	0.062521233	0.329222857	0.48040122	7.201568772	0.003541127
SACRAMENT	2021	MH	1992	20	DSL	3.8052577	11.41181537	0.526113034	0.549901531	1334.351385	0.019567485	0.209741456	0.42127643	0.479595207	2.209280351	0.012614419
SACRAMENT	2021	LDT2	1992	60	GAS	677.189513	2.188191895	0.007621427	0.008288997	529.1165357	0.064088084	0.09982826	0.328427619	0.47924081	10.37328904	0.005236037
SACRAMENT	2021	LDT2	1989	45	GAS	257.267037	2.099000054	0.013531905	0.014717181	480.2323553	0.063582873	0.094260452	0.3279581	0.47855569	12.44915773	0.004752288
SACRAMENT	2021	LDT2	1990	45	GAS	343.903812	2.07709229	0.013504612	0.014687498	480.6537594	0.063636504	0.093751982	0.327523087	0.47792092	12.48120496	0.004756459
SACRAMENT	2021	MDV	1996	20	GAS	564.458176	1.489358303	0.005507632	0.005990052	628.9249121	0.070841985	0.080254991	0.327445835	0.477808194	7.772905001	0.006223722
SACRAMENT	2021	LDT2	1988	45	GAS	200.994591	2.095150756	0.013530841	0.014716024	479.010377	0.063314507	0.093995159	0.327252143	0.47752556	12.3928935	0.004740196
SACRAMENT	2021	LDT2	1993	60	GAS	1036.99034	2.190889294	0.007621427	0.008288997	480.7962663	0.063954022	0.100067894	0.326801554	0.476868061	10.47015425	0.004757869
SACRAMENT	2021	LDT1	1997	25	GAS	2894.25351	0.799537524	0.004159396	0.004523722	434.3159101	0.069358229	0.050630397	0.326621599	0.476605471	9.063574194	0.004297908
SACRAMENT	2021	LDT2	1991	45	GAS	421.185908	2.041122311	0.00753936	0.008199742	480.8105964	0.063595543	0.092814873	0.326592752	0.476563377	12.50747001	0.004758011
SACRAMENT	2021	LDT2	1992	45	GAS	480.834598	2.030550619	0.007531619	0.008191323	481.3604433	0.06372325	0.092636453	0.326557983	0.476512643	12.53943269	0.004763452
SACRAMENT	2021	LDT2	1991	60	GAS	593.182524	2.217111736	0.007583603	0.00824786	528.663098	0.063585929	0.100817547	0.326543378	0.476491331	10.38847609	0.00523155
SACRAMENT	2021	MDV	1997	20	GAS	873.193021	1.49027618	0.005507632	0.005990052	629.3303646	0.070824506	0.080465475	0.326328384	0.476177612	7.783392435	0.006227734
SACRAMENT	2021	LDA	1984	25	DSL	50.1386103	1.105979853	0.259197783	0.270917557	403.0577635	0.019420383	0.063355068	0.418109421	0.475989779	2.244403993	0.003810345
SACRAMENT	2021	LDA	1985	25	DSL	72.4302076	1.105979853	0.259197783	0.270917557	403.0577635	0.019420383	0.063355068	0.418109421	0.475989779	2.244403993	0.003810345
SACRAMENT	2021	LDA	1986	25	DSL	17.6512595	1.105979853	0.259197783	0.270917557	403.0577635	0.019420383	0.063355068	0.418109421	0.475989779	2.244403993	0.003810345
SACRAMENT	2021	LDA	1987	25	DSL	41.3416174	1.105979853	0.259197783	0.270917557	403.0577635	0.019420383	0.063355068	0.418109421	0.475989779	2.244403993	0.003810345
SACRAMENT	2021	LDA	1988	25	DSL	1.47749616	1.105979853	0.259197783	0.270917557	403.0577635	0.019420383	0.063355068	0.418109421	0.475989779	2.244403993	0.003810345
SACRAMENT	2021	LDA	1989	25	DSL	2.14945664	1.105979853	0.259197783	0.270917557	403.0577635	0.019420383	0.063355068	0.418109421	0.475989779	2.244403993	0.003810345
SACRAMENT	2021	LDA	1990	25	DSL	25.924311	1.105979853	0.259197783	0.270917557	403.0577635	0.019420383	0.063355068	0.418109421	0.475989779	2.244403993	0.003810345
SACRAMENT	2021	LDA	1991	25	DSL	13.9882429	1.105979853	0.259197783	0.270917557	403.0577635	0.019420383	0.063355068	0.418109421	0.475989779	2.244403993	0.003810345
SACRAMENT	2021	LDA	1992	25	DSL	6.42340823	1.105979853	0.259197783	0.270917557	403.0577635	0.019420383	0.063355068	0.418109421	0.475989779	2.244403993	0.003810345
SACRAMENT	2021	LDT1	1984	25	DSL	6.63493853	1.105979853	0.259197783	0.270917557	470.0784394	0.019420383	0.073889784	0.418109421	0.475989779	2.244403993	0.004443932
SACRAMENT	2021	LDT1	1985	25	DSL	7.05272837	1.105979853	0.259197783	0.270917557	470.0784394	0.019420383	0.073889784	0.418109421	0.475989779	2.244403993	0.004443932
SACRAMENT	2021	LDT1	1986	25	DSL	15.1156927	1.105979853	0.259197783	0.270917557	470.0784394	0.019420383	0.073889784	0.418109421	0.475989779	2.244403993	0.004443932
SACRAMENT	2021	LDT1	1987	25	DSL	15.2763994	1.105979853	0.259197783	0.270917557	470.0784394	0.019420383	0.073889784	0.418109421	0.475989779	2.244403993	0.004443932
SACRAMENT	2021	LDT1	1988	25	DSL	14.4019628	1.105979853	0.259197783	0.270917557	470.0784394	0.019420383	0.073889784	0.418109421	0.475989779	2.244403993	0.004443932
SACRAMENT	2021	LDT1	1989	25	DSL	14.5339509	1.105979853	0.259197783	0.270917557	470.0784394	0.019420383	0.073889784	0.418109421	0.475989779	2.244403993	0.004443932
SACRAMENT	2021	LDT1	1990	25	DSL	5.97476129	1.105979853	0.259197783	0.270917557	470.0784394	0.019420383	0.073889784	0.418109421	0.475989779	2.244403993	0.004443932
SACRAMENT	2021	LDT1	1992	25	DSL	18.5161822	1.105979853	0.259197783	0.270917557	470.0784394	0.019420383	0.073889784	0.418109421	0.475989779	2.244403993	0.004443932
SACRAMENT	2021	LDT2	1984	25	DSL	0.80290081	1.105979853	0.259197783	0.270917557	548.9965437	0.019420383	0.086294611	0.418109421	0.475989779	2.244403993	0.005189992
SACRAMENT	2021	LDT2	1990	25	DSL	0.82899379	1.105979853	0.259197783	0.270917557	548.9965437	0.019420383	0.086294611	0.418109421	0.475989779	2.244403993	0.005189992
SACRAMENT	2021	MDV	1984	25	DSL	11.7061933	1.105979853	0.259197783	0.270917557	614.7484866	0.019420383	0.096629901	0.418109421	0.475989779	2.244403993	0.005811584
SACRAMENT	2021	MDV	1985	25	DSL	3.27228753	1.105979853	0.259197783	0.270917557	614.7484866	0.019420383	0.096629901	0.418109421	0.475989779	2.244403993	0.005811584
SACRAMENT	2021	MDV	1986	25	DSL	5.62507224	1.105979853	0.259197783	0.270917557	614.7484866	0.019420383	0.096629901	0.418109421	0.475989779	2.244403993	0.005811584
SACRAMENT	2021	MDV	1987	25	DSL	3.31156253	1.105979853	0.259197783	0.270917557	614.7484866	0.019420383	0.096629901	0.418109421	0.475989779	2.244403993	0.005811584
SACRAMENT	2021	MDV	1988	25	DSL	1.67678365	1.105979853	0.259197783	0.270917557	614.7484866	0.019420383	0.096629901	0.418109421	0.475989779	2.244403993	0.005811584
SACRAMENT	2021	MDV	1989	25	DSL	0.85781487	1.105979853	0.259197783	0.270917557	614.7484866	0.019420383	0.096629901	0.418109421	0.475989779	2.244403993	0.005811584
SACRAMENT	2021	MDV	1992	25	DSL	0.85718592	1.105979853	0.259197783	0.270917557	614.7484866	0.019420383	0.096629901	0.418109421	0.475989779	2.244403993	0.005811584
SACRAMENT	2021	LDT2	1986	55	GAS	199.614303	2.355583483	0.012720876	0.013835114	509.8041624	0.062502895	0.103715872	0.325490068	0.474954342	11.59452224	0.005044925
SACRAMENT	2021	LDT2	1993	45	GAS	736.309146	2.033158202	0.007531619	0.008191323	437.9524373	0.063694601	0.092863596	0.325475926	0.474933708	12.64003272	0.004333894
SACRAMENT	2021	LHD1	1988	30	GAS	213.139452	1.61360518	0.010484805	0.011403182	847.819093	0.066450514	0.076720067	0.324289698	0.473202766	9.002650871	0.008389857
SACRAMENT	2021	LHD2	1988	30	GAS	6.07273091	1.61360518	0.010484805	0.011403182	968.8765351	0.066500064	0.076873305	0.324289698	0.473202766	9.002650871	0.009587819
SACRAMENT	2021	MH	1993	20	DSL	4.21504121	11.39313478	0.52103262	0.544591403	1334.351385	0.019303829	0.209741456	0.415600076	0.473133055	2.179532542	0.012614419
SACRAMENT	2021	LDT2	1987	60	GAS	177.481518	2.529069022	0.01306135	0.01420541	527.3780435	0.062417683	0.111732534	0.323853963	0.472566942	10.94076675	0.005218833
SACRAMENT	2021	MH	2021	10	DSL	20.2961426	8.087442723	0.022123471	0.023123796	1628.273578	0.019235981	0.255941931	0.414139353	0.47147012	1.169542993	0.015393041
SACRAMENT	2021	MDV	1995	60	GAS	1325.09715	1.626722926	0.007621427	0.008288997	482.8243767	0.063514321	0.081318972	0.323026793	0.471359938	8.203549255	0.004777939
SACRAMENT	2021	LHD1	1989	30	GAS	321.942433	1.612294451	0.010484805	0.011403182	847.7724722	0.066145932	0.076785885	0.322326643	0.47033828	8.978579151	0.008389396
SACRAMENT	2021	LHD2	1989	30	GAS	7.88728103	1.612294451	0.010484805	0.011403182	968.8299143	0.066190105	0.076923926	0.322326643	0.47033828	8.978579151	0.009587357
SACRAMENT	2021	LDT2	1990	60	GAS	484.341302	2.307512195	0.013339514	0.014507939	528.679264	0.062484596	0.104152253	0.32159447	0.469269896	10.48283943	0.00523171
SACRAMENT	2021	LDT1	1985	40	GAS	428.15424	2.212548319	0.015111812	0.016435475	379.6207385	0.063130807	0.097419377	0.321285829	0.468819528	13.54715142	0.003756655
SACRAMENT	2021	MDV	1995	45	GAS	940.877765	1.516739623	0.007531619	0.008191323	438.7702921	0.063168459	0.075820968	0.321267778	0.468793187	9.921901792	0.004341988
SACRAMENT	2021	LDT1	1993	35	GAS	1504.9318	1.056928925	0.009499077	0.010331113	362.7732549	0.064976625	0.059909721	0.321048276	0.46847289	11.44864718	0.003589935
SACRAMENT	2021	LDT2	1987	50	GAS	126.331462	2.226133216	0.012887594	0.014016434	491.5720175	0.061872579	0.098349038	0.321025694	0.468439939	11.86631037	0.004864504
SACRAMENT	2021	LDA	1996	60	GAS	4794.69815	1.105030715	0.002244591	0.002441197	349.7870682	0.062694561	0.060442692	0.320699532	0.467964005	8.910842309	0.003461427
SACRAMENT	2021	LHD1	1990	30	GAS	420.458152	1.609523747	0.010484805	0.011403182	847.7278886	0.065854323	0.076866873	0.320487716	0.467654922	8.955454982	0.008388955
SACRAMENT	2021	LHD2	1990	30	GAS	31.8514549	1.609523747	0.010484805	0.011403182	968.7853307	0.065893589	0.076989007	0.320487716	0.467654922	8.955454982	0.009586916
SACRAMENT	2021	MH	2003	15	DSL	20.8803301	9.985680741	0.23598852	0.246658874	1579.771241	0.018986269	0.248318039	0.408763188	0.465349713	1.052751245	0.014934519
SACRAMENT	2021	LDT1	1983	50	GAS	51.5157115	2.343258665	0.013065409	0.014209824	391.4479535	0.062086423	0.102593643	0.318734355	0.465096423	13.95341512	0.003873695
SACRAMENT	2021	LDT2	1989	60	GAS	362.325299	2.365149069	0.013206159	0.014362903	528.3960179	0.061689742	0.106212489	0.318193398	0.46430706	10.53429583	0.005228907
SACRAMENT	2021	LDT1	1983	60	GAS	72.3737897	2.755285558	0.012894217	0.014023638	420.9966306	0.061941008	0.120633197	0.317987834	0.464007101	13.98263696	0.004166103
SACRAMENT	2021	LDT2	1988	60	GAS	283.073285	2.360171843	0.013211354	0.014368553	527.2635955	0.061478149	0.105884852	0.317760605	0.463675528	10.49103974	0.005217701
SACRAMENT	2021	LDA	1984	50	GAS	179.579603	1.335003408	0.012870207	0.013997524	373.1643305	0.060216454	0.068544504	0.317453985	0.46322811	12.36140564	0.003692764
SACRAMENT	2021	LDA	1995	65	GAS	571.927154	1.017396644	0.008872221	0.00964935	360.9400496	0.063360251	0.058033295	0.317305276	0.463011114	7.607489187	0.003571794
SACRAMENT	2021	LDT2	1987	55	GAS	229.902213	2.321483838	0.012706622	0.013819611	510.1693286	0.061104159	0.102561563	0.317038752	0.462622203	11.36554414	0.005048539
SACRAMENT	2021	LDT1	1992	70	GAS	27.9350493	1.217068723	0.009053215	0.009846197	426.0904198	0.063207513	0.068906511	0.315315359	0.460107432	9.504189569	0.00421651
SACRAMENT	2021	LDT2	1994	60	GAS	1343.37715	2.145306363	0.007648583	0.008318532	479.5946777	0.062071257	0.098534807	0.314931602	0.459547455	9.513658514	0.004745978
SACRAMENT	2021	LDT2	1992	55	GAS	877.203271	2.067433555	0.007231302	0.007864701	512.9688856	0.061407964	0.094319102	0.314693002	0.459199289	11.08677657	0.005076243
SACRAMENT	2021	LDA	1983	15	DSL	4.14085446	1.184718709	0.508258312	0.531239497	645.4788761	0.018712412	0.101460291	0.402867216	0.458637542	2.160528619	0.006102097
SACRAMENT	2021	LDT1	1983	15	DSL	0.44310199	1.184718709	0.508258312	0.531239497	751.4633063	0.018712412	0.118119567	0.402867216	0.458637542	2.160528619	0.007104031
SACRAMENT	2021	MDV	1983	15	DSL	1.17226564	1.184718709	0.508258312	0.531239497	963.9693116	0.018712412	0.151522552	0.402867216	0.458637542	2.160528619	0.009112977
SACRAMENT	2021	LDT2	1991	55	GAS	768.384093	2.087309862	0.007215058	0.007847034	512.3686345	0.061079712	0.094915135	0.313672788	0.457710596	11.07861456	0.005070303
SACRAMENT	2021	LDA	1993	70	GAS	78.4920571	1.175289058	0.009053627	0.009846645	358.8039744	0.062188094	0.066555587	0.313574018	0.457566471	7.389781226	0.003550656
SACRAMENT	2021	LDT2	1992	50	GAS	482.023945	2.026782131	0.007204275	0.007835307	494.5186071	0.06116073	0.09246453	0.313426017	0.457350508	11.78379948	0.004893663
SACRAMENT	2021	LDT2	1993	55	GAS	1343.27437	2.070172673	0.007231302	0.007864701	466.3726368	0.061330004	0.094554216	0.313392963	0.457302275	11.18538622	0.004615135
SACRAMENT	2021	LDT1	1983	55	GAS	93.750012	2.482751493	0.012749601	0.013866354	406.3583409	0.061011272	0.108700983	0.31321483	0.457042345	13.82204882	0.004021245
SACRAMENT	2021	MH	1995	25	GAS	35.186695	2.455394213	0.00215256	0.002341105	1996.884916	0.072690181	0.11739768	0.313089471	0.456859421	7.838933745	0.019760795
SACRAMENT	2021	LDA	1984	60	GAS	252.289177	1.544716758	0.012840281	0.013964977	399.2832028	0.059382317	0.07931204	0.313056515	0.456811331	11.49178377	0.003951231
SACRAMENT	2021	LDT2	1991	50	GAS	422.227714	2.040981554	0.007202614	0.0078335	493.922815	0.060956842	0.092808472	0.313041792	0.456789848	11.76072868	0.004887767
SACRAMENT	2021	LDA	1994	65	GAS	408.759315	1.043675835	0.008742936	0.009508741	361.2918621	0.062252854	0.059333497	0.312952143	0.456659032	7.683879798	0.003575276
SACRAMENT	2021	LDT2	1990	50	GAS	344.75446	2.088150233	0.012852908	0.01397871	493.7907316	0.060765573	0.094251095	0.312747036	0.456359741	11.7621846	0.00488646
SACRAMENT	2021	LDT2	1994	45	GAS	953.857379	2.000897419	0.007526061	0.008185279	436.4984055	0.061586104	0.091902044	0.312470074	0.455955599	11.51264561	0.004319506
SACRAMENT	2021	LDT2	1989	50	GAS	257.903389	2.117319884	0.01284705	0.013972339	493.3508166	0.060560872	0.095083146	0.312370728	0.455810633	11.74807159	0.004882106
SACRAMENT	2021	LDT2	1996	60	GAS	2113.54567	1.645767461	0.002193068	0.002385162	479.4670647	0.061369084	0.081044225	0.312327726	0.455747885	9.286705801	0.004744715
SACRAMENT	2021	LDT2	1993	50	GAS	738.130411	2.029455621	0.007204275	0.007835307	449.7720299	0.061115343	0.092694483	0.312296059	0.455701676	11.88282072	0.004450859
SACRAMENT	2021	MH	1996	25	GAS	25.1258551	2.409283186	0.00215256	0.002341105	1996.844556	0.072524065	0.115855598	0.312248107	0.455631705	7.815760484	0.019760396
SACRAMENT	2021	LDA	1992	70	GAS	66.7130035	1.173870111	0.009053191	0.009846171	383.7807726	0.061651882	0.06627985	0.312167934	0.455514717	7.368352528	0.003797822
SACRAMENT	2021	LDA	1991	70	GAS	64.3299091	1.173576782	0.009053566	0.00984658	383.6758887	0.061324576	0.066022186	0.312111163	0.455431876	7.364497851	0.003796784
SACRAMENT	2021	LDA	1990	70	GAS	44.9449387	1.173637072	0.016166528	0.017582575	383.6761107	0.060978634	0.065749681	0.312100501	0.455416318	7.364665003	0.003796786
SACRAMENT	2021	LDT1	1986	40	GAS	752.234434	2.22423794	0.015035509	0.016352488	376.0528671	0.061546174	0.09793367	0.311998253	0.455267118	13.43622926	0.003721348
SACRAMENT	2021	LDT1	1991	70	GAS	32.3596443	1.241634626	0.008961157	0.009746075	425.9456859	0.062404424	0.070067656	0.31196943	0.45522506	9.55889901	0.004215078
SACRAMENT	2021	LDT2	1988	50	GAS	201.491752	2.112835918	0.012847278	0.013972587	491.9942183	0.060300818	0.094788572	0.311675362	0.454795956	11.68996935	0.004868682

SACRAMENT	2021	LDT2	1990	55	GAS	627.395678	2.151570464	0.012797011	0.013917917	512.2868787	0.060518659	0.097113642	0.311476225	0.454505377	11.12081329	0.005069494
SACRAMENT	2021	MH	1997	25	GAS	43.499367	2.366550878	0.00215256	0.002341105	1996.803511	0.072358184	0.114403681	0.311408668	0.454406798	7.79214954	0.019759989
SACRAMENT	2021	LDA	1984	55	GAS	326.804959	1.404480574	0.012606926	0.013711182	386.9012203	0.058937045	0.072111744	0.310709094	0.453385981	11.89378338	0.003828701
SACRAMENT	2021	LDA	1998	25	GAS	11496.2849	0.74721967	0.004195427	0.004562909	389.6026181	0.066097524	0.048003776	0.310211546	0.452659959	8.795841292	0.003855434
SACRAMENT	2021	LDT2	1989	55	GAS	469.341199	2.191901055	0.012739741	0.01385563	511.8662982	0.060072138	0.098432386	0.309849858	0.452132185	11.13422813	0.005065332
SACRAMENT	2021	MDV	1995	55	GAS	1716.47601	1.540501903	0.007231302	0.007864701	468.1036218	0.060881572	0.077008831	0.309636923	0.451821471	8.775075238	0.004632265
SACRAMENT	2021	LDT2	2001	5	GAS	4.61044755	0.670204954	0.019440667	0.021143499	1134.614219	0.076295153	0.04792401	0.309594134	0.451759033	5.438288104	0.011227927
SACRAMENT	2021	LDT2	1996	45	GAS	1500.71119	1.538341406	0.002148715	0.002336924	436.4680403	0.060797363	0.075754133	0.309418048	0.45150209	11.26741483	0.004319205
SACRAMENT	2021	LDT1	1985	70	GAS	9.06236812	3.152615377	0.014338592	0.015594527	432.435057	0.060795529	0.138810901	0.309401118	0.451477385	11.97863079	0.004279295
SACRAMENT	2021	LDT2	1988	55	GAS	366.681419	2.186827144	0.012741972	0.013858057	510.4554437	0.059823274	0.098108055	0.309207094	0.451194265	11.07793475	0.00505137
SACRAMENT	2021	LDA	1989	70	GAS	36.3947254	1.190166854	0.016005908	0.017407885	383.269667	0.059945863	0.066353002	0.308688893	0.450438108	7.396739593	0.003792764
SACRAMENT	2021	MDV	2000	15	GAS	746.57245	0.923759101	0.008020497	0.008723023	849.1538471	0.068538792	0.056812119	0.308606945	0.450318529	6.169508389	0.008403066
SACRAMENT	2021	LDT1	1994	35	GAS	2133.85596	0.881038607	0.009491165	0.010322508	361.3908052	0.062861015	0.052815081	0.308423005	0.450050125	10.39804105	0.003576255
SACRAMENT	2021	MDV	1995	50	GAS	943.205031	1.512473687	0.007204275	0.007835307	451.048706	0.060636205	0.075607716	0.308389014	0.450000526	9.326641306	0.004463493
SACRAMENT	2021	LDA	1996	45	GAS	3404.44841	1.081504012	0.002138171	0.002325456	319.8822785	0.060117946	0.059155835	0.307519453	0.448731664	11.03564215	0.003165494
SACRAMENT	2021	MDV	2003	10	GAS	523.539295	0.632543286	0.012232021	0.013303439	1038.456899	0.070790962	0.04423245	0.307377391	0.448524367	5.930790816	0.010276373
SACRAMENT	2021	MH	1994	20	DSL	7.84459623	11.31295217	0.303670437	0.317401067	1279.385205	0.01827227	0.201101538	0.393391214	0.447849742	2.064185748	0.012094791
SACRAMENT	2021	LDT1	1998	20	GAS	1139.79951	0.662326666	0.005600366	0.006090909	504.6058235	0.067859205	0.045332932	0.30651475	0.447265604	7.701602338	0.004993484
SACRAMENT	2021	MH	1986	35	GAS	11.3560863	2.303247698	0.008620274	0.009375335	1647.137813	0.067139798	0.107812609	0.306275431	0.44691639	9.235953034	0.016299764
SACRAMENT	2021	LDT1	1996	35	GAS	2888.99848	0.933998168	0.002709501	0.002946829	361.3475416	0.062079238	0.054483559	0.305542231	0.445846506	10.15864774	0.003575827
SACRAMENT	2021	LDT2	1995	60	GAS	1933.09679	1.562300856	0.007662159	0.008333297	478.7436086	0.060485343	0.078913729	0.304878974	0.444878683	8.752713578	0.004737556
SACRAMENT	2021	LDT1	1986	70	GAS	15.9218915	3.113291593	0.014632478	0.015914155	427.3268797	0.060049371	0.137078892	0.304410452	0.444195017	11.25722977	0.004228746
SACRAMENT	2021	LDT1	1987	40	GAS	753.806131	2.212852261	0.014982367	0.016294691	376.4014849	0.060242978	0.097763545	0.30427077	0.443991194	13.35840124	0.003724798
SACRAMENT	2021	LDA	1996	55	GAS	6210.85357	1.069180806	0.002094877	0.00227837	340.0275004	0.059132729	0.058481783	0.302479801	0.441377816	9.642615574	0.003364848
SACRAMENT	2021	LDT1	1990	70	GAS	20.5561878	1.316336642	0.015508895	0.016867339	426.1534659	0.06034208	0.073734373	0.302320763	0.441145748	9.748913375	0.004217134
SACRAMENT	2021	LDT2	2003	5	GAS	5.97561144	0.666667834	0.019440667	0.021143499	1134.478737	0.075001092	0.048079452	0.301877138	0.440498411	5.373809218	0.011226587
SACRAMENT	2021	LDA	1980	70	DSL	0.42216986	2.153436494	0.309996004	0.324012647	439.6704789	0.01796975	0.069110077	0.386878137	0.440435038	2.401146708	0.004156467
SACRAMENT	2021	LDA	1981	70	DSL	0.67735607	2.153436494	0.309996004	0.324012647	439.6704789	0.01796975	0.069110077	0.386878137	0.440435038	2.401146708	0.004156467
SACRAMENT	2021	LDA	1982	70	DSL	1.22135734	2.153436494	0.309996004	0.324012647	439.6704789	0.01796975	0.069110077	0.386878137	0.440435038	2.401146708	0.004156467
SACRAMENT	2021	LDT1	1981	70	DSL	0.09659382	2.153436494	0.309996004	0.324012647	506.6608568	0.01796975	0.079640031	0.386878137	0.440435038	2.401146708	0.004789767
SACRAMENT	2021	LDT1	1982	70	DSL	0.47381948	2.153436494	0.309996004	0.324012647	506.6608568	0.01796975	0.079640031	0.386878137	0.440435038	2.401146708	0.004789767
SACRAMENT	2021	LDT2	1980	70	DSL	0.05223432	2.153436494	0.309996004	0.324012647	591.7205213	0.01796975	0.093010226	0.386878137	0.440435038	2.401146708	0.005593887
SACRAMENT	2021	LDT2	1981	70	DSL	0.0255321	2.153436494	0.309996004	0.324012647	591.7205213	0.01796975	0.093010226	0.386878137	0.440435038	2.401146708	0.005593887
SACRAMENT	2021	LDT2	1982	70	DSL	0.25574655	2.153436494	0.309996004	0.324012647	591.7205213	0.01796975	0.093010226	0.386878137	0.440435038	2.401146708	0.005593887
SACRAMENT	2021	MDV	1980	70	DSL	0.06254895	2.153436494	0.309996004	0.324012647	672.0409521	0.01796975	0.105635479	0.386878137	0.440435038	2.401146708	0.006353204
SACRAMENT	2021	MDV	1982	70	DSL	0.67249586	2.153436494	0.309996004	0.324012647	672.0409521	0.01796975	0.105635479	0.386878137	0.440435038	2.401146708	0.006353204
SACRAMENT	2021	LDT2	1995	45	GAS	1372.58448	1.464965075	0.007523283	0.008182257	435.4494988	0.059876466	0.07399718	0.301809905	0.440400305	10.61250363	0.004309126
SACRAMENT	2021	LDT1	1992	65	GAS	105.586213	1.139405882	0.008441241	0.00918062	429.0251856	0.060454908	0.064509491	0.301583788	0.440070356	10.04662507	0.004245552
SACRAMENT	2021	MH	1995	20	DSL	5.17390793	11.28995591	0.300225247	0.3138001	1279.385205	0.017954505	0.201101538	0.386549922	0.440061386	2.02828619	0.012094791
SACRAMENT	2021	LDT2	1994	55	GAS	1740.15517	2.031655913	0.007242964	0.007877385	465.1763956	0.059427119	0.093314795	0.301516008	0.43997145	10.1764813	0.004603298
SACRAMENT	2021	LDT1	1985	65	GAS	34.2530675	2.872311585	0.013718874	0.014920527	432.5965037	0.059074327	0.126469015	0.30064156	0.438695458	12.04383663	0.004280893
SACRAMENT	2021	LDA	1993	65	GAS	296.676729	1.103083105	0.008441555	0.009180961	361.8904519	0.059557082	0.062466627	0.30030754	0.438208057	7.833661001	0.003581199
SACRAMENT	2021	LDT2	1994	50	GAS	956.21675	1.994974558	0.007205468	0.007836604	448.467413	0.059142312	0.091630005	0.30007098	0.437862869	10.81895001	0.004437949
SACRAMENT	2021	LDA	1988	70	GAS	26.1189036	1.244481734	0.015509026	0.016867481	383.5210612	0.057690745	0.068892258	0.299139231	0.436503264	7.548669025	0.003795252
SACRAMENT	2021	LDA	1992	65	GAS	252.155395	1.101472814	0.008441223	0.0091806	386.7967764	0.059026948	0.062192105	0.29887685	0.436120397	7.806014598	0.003827668
SACRAMENT	2021	LDT2	1996	55	GAS	2737.79959	1.56033002	0.00207275	0.002254305	465.2974463	0.058726007	0.076836941	0.298876223	0.436119483	9.949924837	0.004604495
SACRAMENT	2021	LDT1	1991	65	GAS	122.309871	1.159044113	0.008371181	0.009104424	428.5632788	0.059764736	0.065406926	0.298773219	0.43596918	10.07842075	0.004240981
SACRAMENT	2021	LDA	1991	65	GAS	243.148004	1.100937718	0.008441509	0.009180911	386.554928	0.058696116	0.061935713	0.29873363	0.435911412	7.797087969	0.003825274
SACRAMENT	2021	LDA	1990	65	GAS	169.878557	1.10098553	0.015073701	0.016394025	386.5551245	0.058365368	0.061679585	0.298725301	0.435899257	7.797230173	0.003825276
SACRAMENT	2021	LDA	1984	70	DSL	1.61418993	1.563265881	0.23736409	0.248096641	393.8612738	0.01778495	0.061909507	0.382889703	0.435894471	3.703495511	0.003723405
SACRAMENT	2021	LDA	1985	70	DSL	2.33185785	1.563265881	0.23736409	0.248096641	393.8612738	0.01778495	0.061909507	0.382889703	0.435894471	3.703495511	0.003723405
SACRAMENT	2021	LDA	1986	70	DSL	0.56827433	1.563265881	0.23736409	0.248096641	393.8612738	0.01778495	0.061909507	0.382889703	0.435894471	3.703495511	0.003723405
SACRAMENT	2021	LDA	1987	70	DSL	1.33097472	1.563265881	0.23736409	0.248096641	393.8612738	0.01778495	0.061909507	0.382889703	0.435894471	3.703495511	0.003723405
SACRAMENT	2021	LDA	1988	70	DSL	0.04756732	1.563265881	0.23736409	0.248096641	393.8612738	0.01778495	0.061909507	0.382889703	0.435894471	3.703495511	0.003723405
SACRAMENT	2021	LDA	1989	70	DSL	0.06920079	1.563265881	0.23736409	0.248096641	393.8612738	0.01778495	0.061909507	0.382889703	0.435894471	3.703495511	0.003723405
SACRAMENT	2021	LDA	1990	70	DSL	0.83462149	1.563265881	0.23736409	0.248096641	393.8612738	0.01778495	0.061909507	0.382889703	0.435894471	3.703495511	0.003723405
SACRAMENT	2021	LDA	1991	70	DSL	0.45034517	1.563265881	0.23736409	0.248096641	393.8612738	0.01778495	0.061909507	0.382889703	0.435894471	3.703495511	0.003723405
SACRAMENT	2021	LDA	1992	70	DSL	0.20679873	1.563265881	0.23736409	0.248096641	393.8612738	0.01778495	0.061909507	0.382889703	0.435894471	3.703495511	0.003723405
SACRAMENT	2021	LDT1	1984	70	DSL	0.21360885	1.563265881	0.23736409	0.248096641	453.8719336	0.01778495	0.071342347	0.382889703	0.435894471	3.703495511	0.004290722
SACRAMENT	2021	LDT1	1985	70	DSL	0.22705941	1.563265881	0.23736409	0.248096641	453.8719336	0.01778495	0.071342347	0.382889703	0.435894471	3.703495511	0.004290722
SACRAMENT	2021	LDT1	1986	70	DSL	0.48664291	1.563265881	0.23736409	0.248096641	453.8719336	0.01778495	0.071342347	0.382889703	0.435894471	3.703495511	0.004290722
SACRAMENT	2021	LDT1	1987	70	DSL	0.49181679	1.563265881	0.23736409	0.248096641	453.8719336	0.01778495	0.071342347	0.382889703	0.435894471	3.703495511	0.004290722
SACRAMENT	2021	LDT1	1988	70	DSL	0.46366469	1.563265881	0.23736409	0.248096641	453.8719336	0.01778495	0.071342347	0.382889703	0.435894471	3.703495511	0.004290722
SACRAMENT	2021	LDT1	1989	70	DSL	0.46791399	1.563265881	0.23736409	0.248096641	453.8719336	0.01778495	0.071342347	0.382889703	0.435894471	3.703495511	0.004290722
SACRAMENT	2021	LDT1	1990	70	DSL	0.19235474	1.563265881	0.23736409	0.248096641	453.8719336	0.01778495	0.071342347	0.382889703	0.435894471	3.703495511	0.004290722
SACRAMENT	2021	LDT1	1992	70	DSL	0.59612013	1.563265881	0.23736409	0.248096641	453.8719336	0.01778495	0.071342347	0.382889703	0.435894471	3.703495511	0.004290722
SACRAMENT	2021	LDT2	1984	70	DSL	0.02584903	1.563265881	0.23736409	0.248096641	530.0692436	0.01778495	0.083319503	0.382889703	0.435894471	3.703495511	0.005011061
SACRAMENT	2021	LDT2	1990	70	DSL	0.02668908	1.563265881	0.23736409	0.248096641	530.0692436	0.01778495	0.083319503	0.382889703	0.435894471	3.703495511	0.005011061
SACRAMENT	2021	MDV	1984	70	DSL	0.37687561	1.563265881	0.23736409	0.248096641	602.0211001	0.01778495	0.094629333	0.382889703	0.435894471	3.703495511	0.005691264
SACRAMENT	2021	MDV	1985	70	DSL	0.10534982	1.563265881	0.23736409	0.248096641	602.0211001	0.01778495	0.094629333	0.382889703	0.435894471	3.703495511	0.005691264
SACRAMENT	2021	MDV	1986	70	DSL	0.18109666	1.563265881	0.23736409	0.248096641	602.0211001	0.01778495	0.094629333	0.382889703	0.435894471	3.703495511	0.005691264
SACRAMENT	2021	MDV	1987	70	DSL	0.10661426	1.563265881	0.23736409	0.248096641	602.0211001	0.01778495	0.094629333	0.382889703	0.435894471	3.703495511	0.005691264
SACRAMENT	2021	MDV	1988	70	DSL	0.05398329	1.563265881	0.23736409	0.248096641	602.0211001	0.01778495	0.094629333	0.382889703	0.435894471	3.703495511	0.005691264
SACRAMENT	2021	MDV	1989	70	DSL	0.02761696	1.563265881	0.23736409	0.248096641	602.0211001	0.01778495	0.094629333	0.382889703	0.435894471	3.703495511	0.005691264
SACRAMENT	2021	MDV	1992	70	DSL	0.02759671	1.563265881	0.23736409	0.248096641	602.0211001	0.01778495	0.094629333	0.382889703	0.435894471	3.703495511	0.005691264
SACRAMENT	2021	LDT1	1993	70	GAS	39.0285663	1.218411628	0.009053215	0.009846197	394.7390651	0.060339094	0.069063018	0.298134323	0.435036904	7.457020361	0.003906263
SACRAMENT	2021	LDT1	1995	35	GAS	1984.70011	0.890002605	0.009487209	0.010318205	360.3968818	0.061136148	0.053253392	0.298014418	0.434861939	9.567477661	0.003566419
SACRAMENT	2021	LDA	1996	50	GAS	3412.86933	1.06656922	0.002061309	0.002241862	328.2858074	0.058167898	0.058338935	0.297544436	0.434176142	10.3276246	0.003248654
SACRAMENT	2021	LDT1	1987	70	GAS	15.9551582	3.028275486	0.014753836	0.016046142	426.6178973	0.058866868	0.133788844	0.297320416	0.433849254	10.64964408	0.00422173
SACRAMENT	2021	LDT2	1996	50	GAS	1504.42321	1.5331791	0.002059046	0.0022394	448.5534051	0.058411127	0.07549992	0.297273694	0.433781076	10.58582849	0.0044388
SACRAMENT	2021	LHD1	1991	35	GAS	133.103954	2.712244597	0.004827353	0.005250187	789.1347063	0.059271948	0.114027257	0.296664505	0.432892149	10.38741321	0.007809128
SACRAMENT	2021	LHD2	1991	35	GAS	10.4316877	2.712244597	0.004827353	0.005250187	901.3530335	0.059315658	0.114092342	0.296664505	0.432892149	10.38741321	0.008919619
SACRAMENT	2021	MH	1996	20	DSL	3.40964152	11.26643662	0.296701703	0.310117238	1279.385205	0.017629513	0.201101538	0.379553038	0.432095899	1.991570187	0.012094791
SACRAMENT	2021	LDT2	1998	25	GAS	6093.0769	1.073512284	0.004173456	0.004539014	539.6128728	0.063335383	0.061404	0.296100149	0.432068642	9.016042912	0.005339907
SACRAMENT	2021	MH	2004	15	DSL	28.5601568	9.665483405	0.217995669	0.227852466	1578.681573	0.01762812	0.248146759	0.379523043	0.432061752	0.949496498	0.014924218
SACRAMENT	2021	LDT1	1989	70	GAS	22.9103265	1.949482	0.015184331	0.016514346	426.1528935	0.058931355	0.097527207	0.295894436	0.431768466	9.868165737	0.004217128
SACRAMENT	2021	LDT1	1988	70	GAS	14.2379601	2.779662415	0.015196977	0.016528099	425.6188286	0.058799625	0.124705735	0.295842684	0.43169295	9.841158786	0.004211843
SACRAMENT	2021	LDT1	1989	40	GAS	1082.4051	1.487501693	0.014880407	0.016183801	377.7463056	0.058893038	0.074415607	0.295702044	0.431487728	13.3568032	0.003738106
SACRAMENT	2021	LDA	1989	65	GAS	137.561283	1.112717719	0.014951462	0.01626108	385.5245193	0.057407616	0.062035135	0.29561829	0.431365515	7.798988109	0.003815078
SACRAMENT	2021	LHD1	1992	35	GAS	122.724277	2.719093132	0.004827353	0.005250187	789.0574673	0.05908445	0.114311568	0.295326929	0.430940362	10.34232334	0.007808363
SACRAMENT	2021	LHD2	1992	35	GAS	7.10420321	2.719093132	0.004827353	0.005250187	901.2757946	0.059122662	0.114368244	0.295326929	0.430940362	10.34232334	0.008918855
SACRAMENT	2021	LDT2	2002	5	GAS	4.97759638	0.651332596	0.019440667	0.021143499	1134.283621	0.073317306	0.047164974	0.295298397	0.430898728	5.268611403	0.011224656
SACRAMENT	2021	LDT1	1988	40	GAS	672.676602	2.121288204	0.014878711	0.016181956	376.7770097	0.058643528	0.095168681	0.295057302	0.430546923	13.29693286	0.003728514
SACRAMENT	2021	LDT1	1986	65	GAS	60.1800342	2.842993959	0.013931181	0.015151431	427.74922	0.058203911	0.125177629	0.295055194	0.430543847	11.43351472	0.004232925
SACRAMENT	2021	LDT1	1990	40	GAS	971.183121	1.03259715	0.014836863	0.016136442	378.0974524	0.058888861	0.057840753	0.295039967	0.430521627	13.39884274	0.003741581
SACRAMENT	2021	LDA	1985	40	GAS	831.62466	0.987969504	0.014967052	0.016278035	358.4948477	0.055385632	0.053379067	0.29463065	0.429924353	10.33490777	0.003547597
SACRAMENT	2021	LHD1	1981	15	DSL	2.43196345	4.152217327	0.284240049	0.297092123	723.0486622	0.017515982	0.113653181	0.377108773	0.429313266	1.544657145	0.00683541
SACRAMENT	2021	LHD1	1982	15	DSL	18.4335585	4.152217327	0.284240049	0.297092123	723.0486622	0.017515982	0.113653181	0.377108773	0.429313266	1.544657145	0.00683541
SACRAMENT	2021	LHD1	1983	15	DSL	48.9301694	4.152217327	0.284240049	0.297092123	723.0486622	0.017515982	0.113653181	0.377108773	0.429313266	1.544657145	0.00683541
SACRAMENT	2021	LHD1	1984	15	DSL	57.8639912	4.152217327	0.284240049	0.297092123	723.0486622	0.017515982	0.113653181	0.377108773	0.429313266	1.544657145	0.00683541
SACRAMENT	2021	LHD1	1985	15	DSL	96.9202454	4.152217327	0.284240049	0.297092123	723.0486622	0.017515982	0.113653181	0.377108773	0.429313266	1.544657145	0.00683541
SACRAMENT	2021	LHD1	1986	15	DSL	132.79225	4.152217327	0.284240049	0.297092123	723.0486622	0.017515982	0.113653181	0.377108773	0.429313266	1.544657145	0.00683541
SACRAMENT	2021	LHD2	1983	15	DSL	3.66659055	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD2	1984	15	DSL	4.95547945	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD2	1985	15	DSL	15.3913989	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD2	1986	15	DSL	37.801834	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD1	1993	35	GAS	146.819024	2.714183247	0.004827353	0.005250187	788.9872539	0.058929576	0.114235867	0.294179107	0.429265462	10.30114954	0.007807668
SACRAMENT	2021	LHD2	1993	35	GAS	19.7694136	2.714183247	0.004827353	0.005250187	901.2055812	0.058962552	0.114284651	0.294179107	0.429265462	10.30114954	0.00891816

SACRAMENT	2021	LDT1	1991	40	GAS	1528.84089	1.01812245	0.008271591	0.00899611	378.2472789	0.058768291	0.057454465	0.293791834	0.428700355	13.43874322	0.003743063
SACRAMENT	2021	LDA	1986	40	GAS	815.810991	0.987401737	0.01492669	0.016234137	339.3594781	0.055751473	0.053835437	0.293768848	0.428666813	10.3453591	0.003358237
SACRAMENT	2021	LDT1	1992	40	GAS	1319.7996	1.0140097	0.008259241	0.008982678	378.6922802	0.058858988	0.057409963	0.293622419	0.428453145	13.47690837	0.003747467
SACRAMENT	2021	LHD1	1994	35	GAS	170.489619	2.711555822	0.004827353	0.005250187	788.9238225	0.058800962	0.114225986	0.293183895	0.427813252	10.26383924	0.007807041
SACRAMENT	2021	LHD2	1994	35	GAS	28.1458318	2.711555822	0.004827353	0.005250187	901.1421498	0.05882896	0.114267316	0.293183895	0.427813252	10.26383924	0.008917532
SACRAMENT	2021	LDT1	1985	45	GAS	165.903202	2.204344333	0.013734081	0.014937066	379.5075893	0.057601526	0.097058152	0.293146168	0.427758201	12.74552213	0.003755535
SACRAMENT	2021	MH	1994	30	GAS	27.5816472	2.325928079	0.001677569	0.001824509	1772.374768	0.066375349	0.110566171	0.293092237	0.427679504	7.223847102	0.017539085
SACRAMENT	2021	LDA	1987	70	GAS	27.4837417	1.279717914	0.015182712	0.016512584	383.4943549	0.056031786	0.070347953	0.292746856	0.427175525	7.641538839	0.003794988
SACRAMENT	2021	LDA	1987	40	GAS	1298.47744	0.986401291	0.014880626	0.016184039	339.092468	0.056015337	0.054223912	0.292660916	0.427050122	10.34756282	0.003355595
SACRAMENT	2021	LDA	1993	40	GAS	3708.38026	0.98908603	0.008259185	0.008982618	318.8551126	0.057967929	0.056011073	0.292294477	0.426515414	10.50301237	0.00315533
SACRAMENT	2021	LDA	1994	40	GAS	5109.3828	0.99001212	0.008206055	0.008924833	318.5712644	0.058118907	0.056282688	0.292170324	0.42633425	10.58488515	0.003152521
SACRAMENT	2021	LDA	1988	40	GAS	1233.99526	0.986560611	0.014836847	0.016136425	339.4011265	0.056314085	0.054614211	0.292000948	0.426087097	10.38020638	0.003358649
SACRAMENT	2021	LDT2	1995	55	GAS	2504.05358	1.483133833	0.007248795	0.007883726	464.3555374	0.057856003	0.074914906	0.291625675	0.4255395	9.373358067	0.004595174
SACRAMENT	2021	MH	1987	30	GAS	8.6156325	2.629523783	0.005871491	0.006385782	1775.133871	0.066022044	0.120415085	0.291358897	0.425150219	8.969236317	0.017566389
SACRAMENT	2021	LHD1	2004	15	DSL	3612.90468	4.777738419	0.085336253	0.08919478	723.0486622	0.017341546	0.113653181	0.373353285	0.425037893	1.991609881	0.00683541
SACRAMENT	2021	LHD2	2004	15	DSL	506.380528	4.777738419	0.085336253	0.08919478	821.7876738	0.017341546	0.129173578	0.373353285	0.425037893	1.991609881	0.007768849
SACRAMENT	2021	LDT1	1990	65	GAS	77.6963016	1.220467141	0.014573215	0.015849701	428.6608088	0.058121748	0.068364259	0.291196645	0.424913461	10.2358946	0.004241946
SACRAMENT	2021	MH	1986	65	GAS	2.95903621	2.239338274	0.008188717	0.008905977	1831.955664	0.063821331	0.104821076	0.291137392	0.424826998	6.050947534	0.018128686
SACRAMENT	2021	LDA	1995	40	GAS	7148.93742	0.989658252	0.008183263	0.008900045	318.3574719	0.058131846	0.05645107	0.29112166	0.424804042	10.6033082	0.003150405
SACRAMENT	2021	LDA	1992	40	GAS	3151.87542	0.987629836	0.008259244	0.008982681	340.4024938	0.0574577	0.055764226	0.290931178	0.424526093	10.46688267	0.003368559
SACRAMENT	2021	LDA	1990	40	GAS	2123.43681	0.987250697	0.014748632	0.016040482	340.2104048	0.056816465	0.055307914	0.290797713	0.42433134	10.45639545	0.003366658
SACRAMENT	2021	LDA	1991	40	GAS	3039.28542	0.987250002	0.008259193	0.008982626	340.2104389	0.057136556	0.055539956	0.290796252	0.424329209	10.45642431	0.003366658
SACRAMENT	2021	LDA	1989	40	GAS	1719.47948	0.985746958	0.014770182	0.016063921	339.3359698	0.056437455	0.054956387	0.290622484	0.424075647	10.40082073	0.003358005
SACRAMENT	2021	MH	1997	20	DSL	9.40931219	11.2423943	0.293099807	0.30635248	1279.385205	0.017297294	0.201101538	0.372400562	0.423953281	1.954037741	0.012094791
SACRAMENT	2021	LDA	1997	35	GAS	10670.607	0.896219194	0.002694165	0.00293015	327.1604496	0.058964606	0.052717096	0.290113125	0.423332391	10.07825133	0.003237518
SACRAMENT	2021	LDT2	1995	50	GAS	1375.97958	1.458891309	0.007206064	0.007837253	447.5528106	0.057532548	0.073690387	0.289995281	0.423160434	9.970763686	0.004428898
SACRAMENT	2021	MH	2005	15	DSL	26.8909835	9.624308344	0.215230543	0.224962313	1578.681573	0.017241467	0.248146759	0.371198625	0.422584956	0.928673786	0.014924218
SACRAMENT	2021	LHD1	1991	25	DSL	225.564292	8.235844229	0.052455469	0.054827273	546.5903577	0.017191644	0.085916393	0.370125968	0.421363806	1.357354118	0.005167245
SACRAMENT	2021	LHD1	1992	25	DSL	298.742754	8.235844229	0.052455469	0.054827273	546.5903577	0.017191644	0.085916393	0.370125968	0.421363806	1.357354118	0.005167245
SACRAMENT	2021	LHD1	1993	25	DSL	354.014007	8.235844229	0.052455469	0.054827273	546.5903577	0.017191644	0.085916393	0.370125968	0.421363806	1.357354118	0.005167245
SACRAMENT	2021	LHD2	1991	25	DSL	48.4356856	8.235844229	0.052455469	0.054827273	624.6333349	0.017191644	0.098183662	0.370125968	0.421363806	1.357354118	0.005905031
SACRAMENT	2021	LHD2	1992	25	DSL	71.2254052	8.235844229	0.052455469	0.054827273	624.6333349	0.017191644	0.098183662	0.370125968	0.421363806	1.357354118	0.005905031
SACRAMENT	2021	LHD2	1993	25	DSL	169.674548	8.235844229	0.052455469	0.054827273	624.6333349	0.017191644	0.098183662	0.370125968	0.421363806	1.357354118	0.005905031
SACRAMENT	2021	LDT1	1994	70	GAS	55.3389453	1.00116737	0.009119308	0.009918079	393.7332129	0.058786189	0.060016366	0.288430164	0.420876619	6.739028487	0.003896309
SACRAMENT	2021	LDA	1997	70	GAS	276.729145	0.926451203	0.00275251	0.002993606	354.7234669	0.058583472	0.054495392	0.288237898	0.420596065	6.230297571	0.003510276
SACRAMENT	2021	LDA	1988	65	GAS	98.7217199	1.155901987	0.014573315	0.01584981	385.8207684	0.055584048	0.063988643	0.288215544	0.420563446	7.930757056	0.003818009
SACRAMENT	2021	LDT1	1987	65	GAS	60.3057727	2.774879482	0.014012192	0.015239537	427.5879099	0.057060349	0.122593839	0.288196186	0.420535198	10.93649724	0.004231329
SACRAMENT	2021	LHD1	1994	25	DSL	313.868011	8.243432609	0.052881284	0.055272341	546.5903577	0.017153869	0.085916393	0.369312704	0.4204379	1.351407334	0.005167245
SACRAMENT	2021	LHD1	1995	25	DSL	522.591751	8.243432609	0.052881284	0.055272341	546.5903577	0.017153869	0.085916393	0.369312704	0.4204379	1.351407334	0.005167245
SACRAMENT	2021	LHD1	1996	25	DSL	425.08625	8.243432609	0.052881284	0.055272341	546.5903577	0.017153869	0.085916393	0.369312704	0.4204379	1.351407334	0.005167245
SACRAMENT	2021	LHD1	1997	25	DSL	921.41302	8.243432609	0.052881284	0.055272341	546.5903577	0.017153869	0.085916393	0.369312704	0.4204379	1.351407334	0.005167245
SACRAMENT	2021	LHD2	1994	25	DSL	171.226155	8.243432609	0.052881284	0.055272341	624.6333349	0.017153869	0.098183662	0.369312704	0.4204379	1.351407334	0.005905031
SACRAMENT	2021	LHD2	1995	25	DSL	96.7903301	8.243432609	0.052881284	0.055272341	624.6333349	0.017153869	0.098183662	0.369312704	0.4204379	1.351407334	0.005905031
SACRAMENT	2021	LHD2	1996	25	DSL	210.094879	8.243432609	0.052881284	0.055272341	624.6333349	0.017153869	0.098183662	0.369312704	0.4204379	1.351407334	0.005905031
SACRAMENT	2021	LHD2	1997	25	DSL	138.760401	8.243432609	0.052881284	0.055272341	624.6333349	0.017153869	0.098183662	0.369312704	0.4204379	1.351407334	0.005905031
SACRAMENT	2021	LHD1	1998	25	DSL	378.19735	8.242071978	0.052810567	0.055198427	546.5903577	0.017122074	0.085916393	0.368628168	0.419658661	1.348904012	0.005167245
SACRAMENT	2021	LHD2	1998	25	DSL	109.460417	8.242071978	0.052810567	0.055198427	624.6333349	0.017122074	0.098183662	0.368628168	0.419658661	1.348904012	0.005905031
SACRAMENT	2021	LHD1	2005	15	DSL	3212.90112	4.772032177	0.084611172	0.088436913	723.0486622	0.017101478	0.113653181	0.368184757	0.419153867	1.96398123	0.00683541
SACRAMENT	2021	LHD2	2005	15	DSL	1028.89494	4.772032177	0.084611172	0.088436913	821.7876738	0.017101478	0.129173578	0.368184757	0.419153867	1.96398123	0.007768849
SACRAMENT	2021	MH	1988	30	GAS	9.73317726	2.598479039	0.005871491	0.006385782	1774.887218	0.065136858	0.119424701	0.286837817	0.418553069	8.825926795	0.017563948
SACRAMENT	2021	MDV	1998	20	GAS	1128.41462	1.252820497	0.005555598	0.00604222	629.8827678	0.062700712	0.070417775	0.286561067	0.418149236	7.025932353	0.006233201
SACRAMENT	2021	LDT1	1996	70	GAS	74.9226434	1.060493597	0.0026244	0.002854275	393.293711	0.058202419	0.061862504	0.286461261	0.4180036	6.545288803	0.00389196
SACRAMENT	2021	LHD1	1999	25	DSL	1555.22429	8.239052143	0.052653616	0.055034379	546.5903577	0.017051506	0.085916393	0.367108883	0.417929057	1.343348046	0.005167245
SACRAMENT	2021	LHD2	1999	25	DSL	440.306142	8.239052143	0.052653616	0.055034379	624.6333349	0.017051506	0.098183662	0.367108883	0.417929057	1.343348046	0.005905031
SACRAMENT	2021	LDA	1986	70	GAS	17.2675611	1.317531396	0.014839377	0.016139176	383.7893333	0.054319352	0.071834874	0.286222633	0.417655394	7.750947496	0.003797907
SACRAMENT	2021	LDT1	1989	65	GAS	86.5942489	1.799610683	0.014326209	0.015581059	428.4078985	0.056968702	0.090029559	0.286039951	0.417388825	10.32575686	0.004239443
SACRAMENT	2021	MH	1998	20	DSL	8.11252188	11.14408338	0.296697581	0.310112929	1310.659066	0.017019218	0.206017353	0.366413737	0.417137679	1.921354475	0.012390442
SACRAMENT	2021	LDT1	1988	65	GAS	53.8152723	2.563505793	0.014335832	0.015591526	427.1842946	0.056757639	0.115008165	0.285568698	0.416701173	10.26905206	0.004227335
SACRAMENT	2021	LDT1	1993	65	GAS	147.516422	1.140937617	0.008441241	0.00918062	397.5444966	0.057756573	0.064671572	0.285374132	0.416417263	7.883478042	0.003934025
SACRAMENT	2021	LHD1	2000	25	DSL	1481.88503	8.234373103	0.052410431	0.054780198	546.5903577	0.016942166	0.085916393	0.36475485	0.415249146	1.334739438	0.005167245
SACRAMENT	2021	LHD2	2000	25	DSL	361.113634	8.234373103	0.052410431	0.054780198	624.6333349	0.016942166	0.098183662	0.36475485	0.415249146	1.334739438	0.005905031
SACRAMENT	2021	LDT1	1986	45	GAS	291.479307	2.21130482	0.013668391	0.014865622	375.8796418	0.056098196	0.097364222	0.28438062	0.414967533	12.60261936	0.003719634
SACRAMENT	2021	LDA	1987	65	GAS	103.880404	1.183332643	0.014324976	0.015579719	385.5724738	0.054182594	0.065049515	0.283085462	0.413077641	8.000845784	0.003815552
SACRAMENT	2021	MH	2006	15	DSL	25.0229489	9.582370365	0.212414183	0.22201861	1578.681573	0.016847649	0.248146759	0.362719966	0.412932566	0.907465252	0.014924218
SACRAMENT	2021	LHD1	2006	15	DSL	3998.33675	4.765596223	0.083793369	0.087582134	723.0486622	0.016830711	0.113653181	0.362355297	0.412517415	1.93281954	0.00683541
SACRAMENT	2021	LHD2	2006	15	DSL	1192.37714	4.765596223	0.083793369	0.087582134	821.7876738	0.016830711	0.129173578	0.362355297	0.412517415	1.93281954	0.007768849
SACRAMENT	2021	MH	1989	30	GAS	18.2412758	2.564761847	0.005871491	0.006385782	1771.408696	0.064245538	0.118335741	0.282295747	0.411925291	6.643740122	0.017529525
SACRAMENT	2021	LHD1	2001	25	DSL	2488.8608	8.228034859	0.05208101	0.054435883	546.5903577	0.016794053	0.085916393	0.361566068	0.41161893	1.323078186	0.005167245
SACRAMENT	2021	LHD2	2001	25	DSL	708.742179	8.228034859	0.05208101	0.054435883	624.6333349	0.016794053	0.098183662	0.361566068	0.41161893	1.323078186	0.005905031
SACRAMENT	2021	LHD1	1988	20	DSL	81.6483434	4.437411914	0.245868436	0.256985515	616.2897993	0.016768707	0.096872174	0.361020389	0.410997711	1.529307517	0.005826155
SACRAMENT	2021	LHD1	1990	20	DSL	208.178972	4.437411914	0.245868436	0.256985515	616.2897993	0.016768707	0.096872174	0.361020389	0.410997711	1.529307517	0.005826155
SACRAMENT	2021	LHD2	1987	20	DSL	41.4091617	4.437411914	0.245868436	0.256985515	700.9244292	0.016768707	0.110175559	0.361020389	0.410997711	1.529307517	0.006626257
SACRAMENT	2021	LHD2	1988	20	DSL	16.5645808	4.437411914	0.245868436	0.256985515	700.9244292	0.016768707	0.110175559	0.361020389	0.410997711	1.529307517	0.006626257
SACRAMENT	2021	LHD2	1989	20	DSL	54.2015311	4.437411914	0.245868436	0.256985515	700.9244292	0.016768707	0.110175559	0.361020389	0.410997711	1.529307517	0.006626257
SACRAMENT	2021	LHD1	1987	20	DSL	55.5204457	4.437411914	0.245868436	0.256985515	616.2897993	0.016768707	0.096872174	0.361020389	0.410997711	1.529307517	0.005826155
SACRAMENT	2021	LHD1	1989	20	DSL	120.083651	4.437411914	0.245868436	0.256985515	616.2897993	0.016768707	0.096872174	0.361020389	0.410997711	1.529307517	0.005826155
SACRAMENT	2021	LHD2	1990	20	DSL	37.5646592	4.437411914	0.245868436	0.256985515	700.9244292	0.016768707	0.110175559	0.361020389	0.410997711	1.529307517	0.006626257
SACRAMENT	2021	LDA	1985	70	GAS	17.6022753	1.350476123	0.014538532	0.015811981	406.0002888	0.052720118	0.072964961	0.28045112	0.409233616	7.843770338	0.004017702
SACRAMENT	2021	MH	1999	20	DSL	11.1233941	11.11533098	0.293299085	0.306560768	1310.659066	0.016674996	0.206017353	0.359002838	0.408700863	1.882512002	0.012390442
SACRAMENT	2021	LDT1	1995	70	GAS	51.4707707	1.004037421	0.009152354	0.00995402	392.9904193	0.057407387	0.060076676	0.279838192	0.408339232	6.174143826	0.003888959
SACRAMENT	2021	LDT1	1985	60	GAS	233.651882	2.595201851	0.01294433	0.01407814	418.1156126	0.054868887	0.114267763	0.279239201	0.407465187	11.70741683	0.004137593
SACRAMENT	2021	LDT1	1985	50	GAS	166.313565	2.248837338	0.012960734	0.01409598	389.5927268	0.054735763	0.099017197	0.278561703	0.406476584	12.223454	0.003855336
SACRAMENT	2021	LDT1	1993	40	GAS	1843.91606	1.015309854	0.008259241	0.008982678	349.7571101	0.056373629	0.057550635	0.278541032	0.40644642	10.54803704	0.00346113
SACRAMENT	2021	LDA	1986	65	GAS	65.2662669	1.213775948	0.014063684	0.01529554	386.0571369	0.052784741	0.066177885	0.278136372	0.405855942	8.102412043	0.003820348
SACRAMENT	2021	MH	1990	30	GAS	17.8700634	2.528736496	0.005871491	0.006385782	1771.34464	0.063329683	0.117174938	0.277640639	0.405132569	6.615992723	0.017528891
SACRAMENT	2021	LDA	1995	60	GAS	3901.31062	0.985297682	0.007854108	0.008542059	348.4587499	0.055433453	0.056202339	0.277608231	0.405085279	7.954351796	0.003448282
SACRAMENT	2021	LDA	1981	65	DSL	2.56020535	2.109385794	0.284559867	0.297426402	407.1619107	0.016495276	0.064000182	0.355133583	0.404295973	2.102202522	0.003849144
SACRAMENT	2021	LDA	1982	65	DSL	4.616369	2.109385794	0.284559867	0.297426402	407.1619107	0.016495276	0.064000182	0.355133583	0.404295973	2.102202522	0.003849144
SACRAMENT	2021	LDT1	1981	65	DSL	0.36509601	2.109385794	0.284559867	0.297426402	469.606814	0.016495276	0.073815652	0.355133583	0.404295973	2.102202522	0.004439473
SACRAMENT	2021	LDT1	1982	65	DSL	1.7908973	2.109385794	0.284559867	0.297426402	469.606814	0.016495276	0.073815652	0.355133583	0.404295973	2.102202522	0.004439473
SACRAMENT	2021	LDT2	1980	65	DSL	0.19743025	2.109385794	0.284559867	0.297426402	548.4457405	0.016495276	0.086208033	0.355133583	0.404295973	2.102202522	0.005184785
SACRAMENT	2021	LDT2	1981	65	DSL	0.09650376	2.109385794	0.284559867	0.297426402	548.4457405	0.016495276	0.086208033	0.355133583	0.404295973	2.102202522	0.005184785
SACRAMENT	2021	LDT2	1982	65	DSL	0.9666462	2.109385794	0.284559867	0.297426402	548.4457405	0.016495276	0.086208033	0.355133583	0.404295973	2.102202522	0.005184785
SACRAMENT	2021	MDV	1980	65	DSL	0.23641652	2.109385794	0.284559867	0.297426402	624.2736119	0.016495276	0.098127118	0.355133583	0.404295973	2.102202522	0.005901631
SACRAMENT	2021	MDV	1982	65	DSL	2.54183519	2.109385794	0.284559867	0.297426402	624.2736119	0.016495276	0.098127118	0.355133583	0.404295973	2.102202522	0.005901631
SACRAMENT	2021	LDA	1980	65	DSL	1.59567703	2.109385794	0.284559867	0.297426402	407.1619107	0.016495276	0.064000182	0.355133583	0.404295973	2.102202522	0.003849144
SACRAMENT	2021	LDT1	1987	45	GAS	292.088316	2.194676414	0.013617225	0.014809975	376.1873858	0.054832883	0.096960538	0.276945863	0.404118753	12.49605724	0.003722679
SACRAMENT	2021	LDT1	1994	65	GAS	209.164823	0.939753374	0.008491541	0.009235326	396.7174165	0.056218877	0.056334819	0.275833837	0.402496088	7.134548208	0.00392584
SACRAMENT	2021	LDA	1993	5	DSL	0.0031212	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1994	5	DSL	0.00114648	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1995	5	DSL	0.00433482	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1996	5	DSL	0.00364808	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1997	5	DSL	0.00594059	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1998	5	DSL	0.00592626	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1999	5	DSL	0.01414085	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2000	5	DSL	0.00737349	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2001	5	DSL	0.01555601	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2002	5	DSL	0.04401216	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867

SACRAMENT	2021	LDA	2003	5	DSL	0.05966311	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2004	5	DSL	0.01729651	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2005	5	DSL	0.04942763	1.19869523	0.206811409	0.216162503	684.8340284	0.016399645	0.107646372	0.353074701	0.401952073	2.961342849	0.006474144
SACRAMENT	2021	LDA	2006	5	DSL	0.04773958	1.19869523	0.206811409	0.216162503	696.9095331	0.016399645	0.109544474	0.353074701	0.401952073	2.961342849	0.006588301
SACRAMENT	2021	LDA	2007	5	DSL	0.01598324	1.19869523	0.206811409	0.216162503	671.3742356	0.016399645	0.10553068	0.353074701	0.401952073	2.961342849	0.006346901
SACRAMENT	2021	LDT1	1993	5	DSL	0.00776591	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1994	5	DSL	0.00431292	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1995	5	DSL	0.00154986	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1996	5	DSL	0.00375473	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1997	5	DSL	0.00930124	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1998	5	DSL	0.00288496	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1999	5	DSL	0.00888065	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2000	5	DSL	0.00734064	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2001	5	DSL	0.00733368	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2002	5	DSL	0.00930843	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2003	5	DSL	0.00993134	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2005	5	DSL	0.00082062	1.19869523	0.206811409	0.216162503	1271.298624	0.016399645	0.19983044	0.353074701	0.401952073	2.961342849	0.012018344
SACRAMENT	2021	LDT1	2006	5	DSL	0.00088229	1.19869523	0.206811409	0.216162503	1293.71511	0.016399645	0.203353999	0.353074701	0.401952073	2.961342849	0.01223026
SACRAMENT	2021	LDT1	2007	5	DSL	0.0093798	1.19869523	0.206811409	0.216162503	1246.3124	0.016399645	0.195902953	0.353074701	0.401952073	2.961342849	0.011782134
SACRAMENT	2021	LDT2	1993	5	DSL	0.00067653	1.19869523	0.206811409	0.216162503	1033.129185	0.016399645	0.162393521	0.353074701	0.401952073	2.961342849	0.009766786
SACRAMENT	2021	LDT2	1994	5	DSL	0.00036023	1.19869523	0.206811409	0.216162503	1033.129185	0.016399645	0.162393521	0.353074701	0.401952073	2.961342849	0.009766786
SACRAMENT	2021	LDT2	2001	5	DSL	0.00105703	1.19869523	0.206811409	0.216162503	1033.129185	0.016399645	0.162393521	0.353074701	0.401952073	2.961342849	0.009766786
SACRAMENT	2021	LDT2	2005	5	DSL	0.00440045	1.19869523	0.206811409	0.216162503	1008.643399	0.016399645	0.158544696	0.353074701	0.401952073	2.961342849	0.009535307
SACRAMENT	2021	LDT2	2006	5	DSL	0.00323626	1.19869523	0.206811409	0.216162503	989.3688178	0.016399645	0.155515	0.353074701	0.401952073	2.961342849	0.009353093
SACRAMENT	2021	LDT2	2007	5	DSL	0.0017649	1.19869523	0.206811409	0.216162503	975.2992341	0.016399645	0.153303458	0.353074701	0.401952073	2.961342849	0.009220085
SACRAMENT	2021	MDV	1993	5	DSL	0.00060994	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1994	5	DSL	0.00124926	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1995	5	DSL	0.00328962	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1996	5	DSL	0.00324264	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1997	5	DSL	0.0035329	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1998	5	DSL	0.00382535	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1999	5	DSL	0.00091691	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2000	5	DSL	0.00148846	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2001	5	DSL	0.00269933	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2002	5	DSL	0.00415333	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2003	5	DSL	0.00449807	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2004	5	DSL	0.00992805	1.19869523	0.206811409	0.216162503	1262.774441	0.016399645	0.198490557	0.353074701	0.401952073	2.961342849	0.01193776
SACRAMENT	2021	MDV	2005	5	DSL	0.02012558	1.19869523	0.206811409	0.216162503	1232.845924	0.016399645	0.193786211	0.353074701	0.401952073	2.961342849	0.011654828
SACRAMENT	2021	MDV	2006	5	DSL	0.02850417	1.19869523	0.206811409	0.216162503	1209.286965	0.016399645	0.190083071	0.353074701	0.401952073	2.961342849	0.011432111
SACRAMENT	2021	LDA	1994	60	GAS	2788.28701	1.002285654	0.007784308	0.008466145	348.8197544	0.054780791	0.056980444	0.275389238	0.401847329	8.000595335	0.003451854
SACRAMENT	2021	LDT2	1997	35	GAS	5913.09862	1.221228825	0.002707887	0.002945074	447.2162441	0.056487342	0.065004758	0.275178867	0.401540357	9.826229548	0.004425567
SACRAMENT	2021	LDA	1980	30	DSL	9.15821723	1.594496229	0.282577816	0.295354731	389.7276509	0.016380381	0.061259759	0.352659963	0.401479921	1.271206482	0.003684328
SACRAMENT	2021	LDA	1981	30	DSL	14.6940241	1.594496229	0.282577816	0.295354731	389.7276509	0.016380381	0.061259759	0.352659963	0.401479921	1.271206482	0.003684328
SACRAMENT	2021	LDA	1982	30	DSL	26.495155	1.594496229	0.282577816	0.295354731	389.7276509	0.016380381	0.061259759	0.352659963	0.401479921	1.271206482	0.003684328
SACRAMENT	2021	LDT1	1981	30	DSL	2.09542943	1.594496229	0.282577816	0.295354731	453.7622423	0.016380381	0.071325105	0.352659963	0.401479921	1.271206482	0.004289685
SACRAMENT	2021	LDT1	1982	30	DSL	10.2786631	1.594496229	0.282577816	0.295354731	453.7622423	0.016380381	0.071325105	0.352659963	0.401479921	1.271206482	0.004289685
SACRAMENT	2021	LDT2	1980	30	DSL	1.13312974	1.594496229	0.282577816	0.295354731	529.9411371	0.016380381	0.083299367	0.352659963	0.401479921	1.271206482	0.00500985
SACRAMENT	2021	LDT2	1981	30	DSL	0.55387298	1.594496229	0.282577816	0.295354731	529.9411371	0.016380381	0.083299367	0.352659963	0.401479921	1.271206482	0.00500985
SACRAMENT	2021	LDT2	1982	30	DSL	5.54796222	1.594496229	0.282577816	0.295354731	529.9411371	0.016380381	0.083299367	0.352659963	0.401479921	1.271206482	0.00500985
SACRAMENT	2021	MDV	1980	30	DSL	1.35688728	1.594496229	0.282577816	0.295354731	592.7051097	0.016380381	0.093164989	0.352659963	0.401479921	1.271206482	0.005603195
SACRAMENT	2021	MDV	1982	30	DSL	14.5885906	1.594496229	0.282577816	0.295354731	592.7051097	0.016380381	0.093164989	0.352659963	0.401479921	1.271206482	0.005603195
SACRAMENT	2021	LDT1	1985	55	GAS	302.662978	2.361889067	0.012704883	0.01381772	404.2324009	0.053904628	0.103994909	0.274331884	0.400304441	11.88738462	0.004000207
SACRAMENT	2021	LDA	1984	65	DSL	6.10115987	1.531287711	0.217887628	0.22773954	364.7397687	0.016325222	0.057332012	0.351472412	0.400127973	3.242408129	0.003448103
SACRAMENT	2021	LDA	1985	65	DSL	8.81373203	1.531287711	0.217887628	0.22773954	364.7397687	0.016325222	0.057332012	0.351472412	0.400127973	3.242408129	0.003448103
SACRAMENT	2021	LDA	1986	65	DSL	2.14790867	1.531287711	0.217887628	0.22773954	364.7397687	0.016325222	0.057332012	0.351472412	0.400127973	3.242408129	0.003448103
SACRAMENT	2021	LDA	1987	65	DSL	5.03069023	1.531287711	0.217887628	0.22773954	364.7397687	0.016325222	0.057332012	0.351472412	0.400127973	3.242408129	0.003448103
SACRAMENT	2021	LDA	1988	65	DSL	0.17979039	1.531287711	0.217887628	0.22773954	364.7397687	0.016325222	0.057332012	0.351472412	0.400127973	3.242408129	0.003448103
SACRAMENT	2021	LDA	1989	65	DSL	0.26155848	1.531287711	0.217887628	0.22773954	364.7397687	0.016325222	0.057332012	0.351472412	0.400127973	3.242408129	0.003448103
SACRAMENT	2021	LDA	1990	65	DSL	3.15462206	1.531287711	0.217887628	0.22773954	364.7397687	0.016325222	0.057332012	0.351472412	0.400127973	3.242408129	0.003448103
SACRAMENT	2021	LDA	1991	65	DSL	1.70217135	1.531287711	0.217887628	0.22773954	364.7397687	0.016325222	0.057332012	0.351472412	0.400127973	3.242408129	0.003448103
SACRAMENT	2021	LDA	1992	65	DSL	0.78163795	1.531287711	0.217887628	0.22773954	364.7397687	0.016325222	0.057332012	0.351472412	0.400127973	3.242408129	0.003448103
SACRAMENT	2021	LDT1	1984	65	DSL	0.80737819	1.531287711	0.217887628	0.22773954	420.6785463	0.016325222	0.066124809	0.351472412	0.400127973	3.242408129	0.003976925
SACRAMENT	2021	LDT1	1985	65	DSL	0.85821731	1.531287711	0.217887628	0.22773954	420.6785463	0.016325222	0.066124809	0.351472412	0.400127973	3.242408129	0.003976925
SACRAMENT	2021	LDT1	1986	65	DSL	1.83936605	1.531287711	0.217887628	0.22773954	420.6785463	0.016325222	0.066124809	0.351472412	0.400127973	3.242408129	0.003976925
SACRAMENT	2021	LDT1	1987	65	DSL	1.85892179	1.531287711	0.217887628	0.22773954	420.6785463	0.016325222	0.066124809	0.351472412	0.400127973	3.242408129	0.003976925
SACRAMENT	2021	LDT1	1988	65	DSL	1.75251521	1.531287711	0.217887628	0.22773954	420.6785463	0.016325222	0.066124809	0.351472412	0.400127973	3.242408129	0.003976925
SACRAMENT	2021	LDT1	1989	65	DSL	1.76857631	1.531287711	0.217887628	0.22773954	420.6785463	0.016325222	0.066124809	0.351472412	0.400127973	3.242408129	0.003976925
SACRAMENT	2021	LDT1	1990	65	DSL	0.72704396	1.531287711	0.217887628	0.22773954	420.6785463	0.016325222	0.066124809	0.351472412	0.400127973	3.242408129	0.003976925
SACRAMENT	2021	LDT1	1992	65	DSL	2.25315754	1.531287711	0.217887628	0.22773954	420.6785463	0.016325222	0.066124809	0.351472412	0.400127973	3.242408129	0.003976925
SACRAMENT	2021	LDT2	1984	65	DSL	0.09770167	1.531287711	0.217887628	0.22773954	491.3032561	0.016325222	0.07722603	0.351472412	0.400127973	3.242408129	0.004644583
SACRAMENT	2021	LDT2	1990	65	DSL	0.10087682	1.531287711	0.217887628	0.22773954	491.3032561	0.016325222	0.07722603	0.351472412	0.400127973	3.242408129	0.004644583
SACRAMENT	2021	MDV	1984	65	DSL	1.42447819	1.531287711	0.217887628	0.22773954	559.2306323	0.016325222	0.087903268	0.351472412	0.400127973	3.242408129	0.005286741
SACRAMENT	2021	MDV	1985	65	DSL	0.39819112	1.531287711	0.217887628	0.22773954	559.2306323	0.016325222	0.087903268	0.351472412	0.400127973	3.242408129	0.005286741
SACRAMENT	2021	MDV	1986	65	DSL	0.68449175	1.531287711	0.217887628	0.22773954	559.2306323	0.016325222	0.087903268	0.351472412	0.400127973	3.242408129	0.005286741
SACRAMENT	2021	MDV	1987	65	DSL	0.40297033	1.531287711	0.217887628	0.22773954	559.2306323	0.016325222	0.087903268	0.351472412	0.400127973	3.242408129	0.005286741
SACRAMENT	2021	MDV	1988	65	DSL	0.20404086	1.531287711	0.217887628	0.22773954	559.2306323	0.016325222	0.087903268	0.351472412	0.400127973	3.242408129	0.005286741
SACRAMENT	2021	MDV	1989	65	DSL	0.10438394	1.531287711	0.217887628	0.22773954	559.2306323	0.016325222	0.087903268	0.351472412	0.400127973	3.242408129	0.005286741
SACRAMENT	2021	MDV	1992	65	DSL	0.1043074	1.531287711	0.217887628	0.22773954	559.2306323	0.016325222	0.087903268	0.351472412	0.400127973	3.242408129	0.005286741
SACRAMENT	2021	MH	2000	20	DSL	19.1769596	11.08597914	0.289829743	0.302934558	1310.659066	0.016323598	0.206017353	0.351437453	0.400088175	1.842859818	0.012390442
SACRAMENT	2021	LDT1	1996	65	GAS	283.185402	0.996087796	0.002440526	0.002654295	396.8614334	0.055671849	0.058105476	0.274006274	0.399829311	6.945875897	0.003927266
SACRAMENT	2021	LDA	1985	65	GAS	66.5313873	1.240045225	0.013834729	0.01504653	408.2990162	0.051446999	0.066998483	0.273678608	0.399351182	8.184141367	0.00404045
SACRAMENT	2021	LHD1	2002	20	DSL	2291.39334	6.023930747	0.065945957	0.068927741	616.2897993	0.016282407	0.096872174	0.350550636	0.399078593	1.60396881	0.005826155
SACRAMENT	2021	LHD2	2002	20	DSL	350.929223	6.023930747	0.065945957	0.068927741	700.9244292	0.016282407	0.110175559	0.350550636	0.399078593	1.60396881	0.006626257
SACRAMENT	2021	LDA	1997	65	GAS	1045.95421	0.883838871	0.002538023	0.002760332	358.447254	0.05556012	0.051988865	0.27336263	0.398890108	6.672283354	0.003547126
SACRAMENT	2021	MH	1991	30	GAS	17.2364834	2.490764435	0.005871491	0.006385782	1771.282631	0.062377097	0.115945897	0.272811981	0.398086603	6.590008873	0.017528278
SACRAMENT	2021	LDT1	1986	60	GAS	410.508585	2.578644278	0.013038297	0.014180337	413.6537418	0.05376364	0.113538257	0.272545968	0.397698437	11.28487168	0.004093439
SACRAMENT	2021	LDA	1984	30	DSL	35.016953	1.157508734	0.21636997	0.22615326	349.121982	0.016211511	0.054877114	0.349024293	0.397340953	1.960691317	0.003300458
SACRAMENT	2021	LDA	1985	30	DSL	50.5854701	1.157508734	0.21636997	0.22615326	349.121982	0.016211511	0.054877114	0.349024293	0.397340953	1.960691317	0.003300458
SACRAMENT	2021	LDA	1986	30	DSL	12.3276915	1.157508734	0.21636997	0.22615326	349.121982	0.016211511	0.054877114	0.349024293	0.397340953	1.960691317	0.003300458
SACRAMENT	2021	LDA	1987	30	DSL	28.8731072	1.157508734	0.21636997	0.22615326	349.121982	0.016211511	0.054877114	0.349024293	0.397340953	1.960691317	0.003300458
SACRAMENT	2021	LDA	1988	30	DSL	1.03188766	1.157508734	0.21636997	0.22615326	349.121982	0.016211511	0.054877114	0.349024293	0.397340953	1.960691317	0.003300458
SACRAMENT	2021	LDA	1989	30	DSL	1.50118684	1.157508734	0.21636997	0.22615326	349.121982	0.016211511	0.054877114	0.349024293	0.397340953	1.960691317	0.003300458
SACRAMENT	2021	LDA	1990	30	DSL	18.1056151	1.157508734	0.21636997	0.22615326	349.121982	0.016211511	0.054877114	0.349024293	0.397340953	1.960691317	0.003300458
SACRAMENT	2021	LDA	1991	30	DSL	9.76942997	1.157508734	0.21636997	0.22615326	349.121982	0.016211511	0.054877114	0.349024293	0.397340953	1.960691317	0.003300458
SACRAMENT	2021	LDA	1992	30	DSL	4.4861272	1.157508734	0.21636997	0.22615326	349.121982	0.016211511	0.054877114	0.349024293	0.397340953	1.960691317	0.003300458
SACRAMENT	2021	LDT1	1984	30	DSL	4.63386059	1.157508734	0.21636997	0.22615326	406.4848183	0.016211511	0.063893753	0.349024293	0.397340953	1.960691317	0.003842743
SACRAMENT	2021	LDT1	1985	30	DSL	4.92564624	1.157508734	0.21636997	0.22615326	406.4848183	0.016211511	0.063893753	0.349024293	0.397340953	1.960691317	0.003842743
SACRAMENT	2021	LDT1	1986	30	DSL	10.5568443	1.157508734	0.21636997	0.22615326	406.4848183	0.016211511	0.063893753	0.349024293	0.397340953	1.960691317	0.003842743
SACRAMENT	2021	LDT1	1987	30	DSL	10.6690823	1.157508734	0.21636997	0.22615326	406.4848183	0.016211511	0.063893753	0.349024293	0.397340953	1.960691317	0.003842743
SACRAMENT	2021	LDT1	1988	30	DSL	10.0583732	1.157508734	0.21636997	0.22615326	406.4848183	0.016211511	0.063893753	0.349024293	0.397340953	1.960691317	0.003842743
SACRAMENT	2021	LDT1	1989	30	DSL	10.1505541	1.157508734	0.21636997	0.22615326	406.4848183	0.016211511	0.063893753	0.349024293	0.397340953	1.960691317	0.003842743
SACRAMENT	2021	LDT1	1990	30	DSL	4.17279086	1.157508734	0.21636997	0.22615326	406.4848183	0.016211511	0.063893753	0.349024293	0.397340953	1.960691317	0.003842743
SACRAMENT	2021	LDT1	1992	30	DSL	12.9317561	1.157508734	0.21636997	0.22615326	406.4848183	0.016211511	0.063893753	0.349024293	0.397340953	1.960691317	0.003842743
SACRAMENT	2021	LDT2	1984	30	DSL	0.56074829	1.157508734	0.21636997	0.22615326	474.7266448	0.016211511	0.074620418	0.349024293	0.397340953	1.960691317	0.004487874
SACRAMENT	2021	LDT2	1990	30	DSL	0.5789717	1.157508734	0.21636997	0.22615326	474.7266448	0.016211511	0.074620418	0.349024293	0.397340953	1.960691317	0.004487874
SACRAMENT	2021	MDV	1984	30	DSL	8.17563984	1.157508734	0.21636997	0.22615326	530.9512479	0.016211511	0.083458142	0.349024293	0.397340953	1.960691317	0.005019399
SACRAMENT	2021	MDV	1985	30	DSL	2.28537524	1.157508734	0.21636997	0.22615326	530.9512479	0.016211511	0.083458142	0.349024293	0.397340953	1.960691317	0.005019399
SACRAMENT	2021	MDV	1986	30	DSL	3.928567	1.157508734	0.21636997	0.22615326	530.9512479	0.016211511	0.083458142	0.349024293	0.397340953	1.960691317	0.005019399

SACRAMENT	2021	MDV	1987	30	DSL	2.31280501	1.157508734	0.21636997	0.22615326	530.9512479	0.016211511	0.083458142	0.349024293	0.397340953	1.960691317	0.005019399
SACRAMENT	2021	MDV	1988	30	DSL	1.17107064	1.157508734	0.21636997	0.22615326	530.9512479	0.016211511	0.083458142	0.349024293	0.397340953	1.960691317	0.005019399
SACRAMENT	2021	MDV	1989	30	DSL	0.59910043	1.157508734	0.21636997	0.22615326	530.9512479	0.016211511	0.083458142	0.349024293	0.397340953	1.960691317	0.005019399
SACRAMENT	2021	MDV	1992	30	DSL	0.59866117	1.157508734	0.21636997	0.22615326	530.9512479	0.016211511	0.083458142	0.349024293	0.397340953	1.960691317	0.005019399
SACRAMENT	2021	LHD1	2003	20	DSL	3198.29473	6.018601762	0.065534586	0.068497769	616.2897993	0.016117768	0.096872174	0.347006059	0.395043327	1.587771675	0.005826155
SACRAMENT	2021	LHD2	2003	20	DSL	458.426063	6.018601762	0.065534586	0.068497769	700.9244292	0.016117768	0.110175559	0.347006059	0.395043327	1.587771675	0.006626257
SACRAMENT	2021	LDT1	1986	50	GAS	292.200283	2.249933457	0.01292572	0.0140579	385.7802402	0.053342031	0.099065049	0.270408691	0.394579727	12.0209514	0.003817608
SACRAMENT	2021	LDT1	1992	60	GAS	720.239649	1.072214109	0.007621427	0.008288997	414.7066721	0.053985505	0.06070531	0.269310691	0.392977527	10.37328904	0.004103859
SACRAMENT	2021	LDT1	1989	45	GAS	419.415376	1.469300133	0.013531905	0.014717181	377.4721063	0.053560166	0.073505033	0.268925685	0.392415729	12.44915773	0.003735392
SACRAMENT	2021	LDT1	1990	45	GAS	376.318566	1.017775292	0.013504612	0.014687498	377.8106703	0.053605351	0.057010509	0.268568974	0.391895217	12.48120496	0.003738743
SACRAMENT	2021	LDT1	1988	45	GAS	260.651867	2.095150756	0.013530841	0.014716024	376.5029291	0.053334735	0.09399606	0.268346801	0.391571021	12.3928935	0.003725802
SACRAMENT	2021	MH	2001	20	DSL	15.8425451	11.05602788	0.286289555	0.299234298	1310.659066	0.015965025	0.206017353	0.343717583	0.391299617	1.802397925	0.012390442
SACRAMENT	2021	LDA	1993	60	GAS	2023.73338	1.040100264	0.007621596	0.008289181	349.4463268	0.053153121	0.058899964	0.268016539	0.391089105	8.078692892	0.003458055
SACRAMENT	2021	LDT1	1991	45	GAS	592.402399	1.000150007	0.00753936	0.008199742	377.9415968	0.053570266	0.056440248	0.2678061	0.390782032	12.50747001	0.003740038
SACRAMENT	2021	LDT1	1992	45	GAS	511.402105	0.994969881	0.007531619	0.008191323	378.3799737	0.053678182	0.05633199	0.267777589	0.390740429	12.53943269	0.003744377
SACRAMENT	2021	LDT1	1991	60	GAS	834.317442	1.08638483	0.007583603	0.00824786	414.3595075	0.053562168	0.061306633	0.267765613	0.390722954	10.38847609	0.004100423
SACRAMENT	2021	MH	1992	30	GAS	22.942003	2.451419083	0.005871491	0.006385782	1771.222669	0.061365813	0.114666351	0.267710033	0.390641852	6.566059437	0.017527684
SACRAMENT	2021	LDT1	1995	65	GAS	194.544269	0.943796888	0.008516691	0.009262678	396.1869543	0.054883828	0.056472178	0.267536843	0.390389133	6.546718874	0.003920591
SACRAMENT	2021	LDT1	1994	40	GAS	2614.5047	0.845991329	0.008250373	0.008973034	348.4850056	0.054524974	0.050714123	0.267522824	0.390368677	9.580532341	0.003448542
SACRAMENT	2021	LDA	1985	45	GAS	322.241802	0.979260367	0.013586211	0.014776244	358.511357	0.050279996	0.052908521	0.267470595	0.390292464	9.643805417	0.003547761
SACRAMENT	2021	LDA	1994	45	GAS	1979.80748	0.96619806	0.007498284	0.008155068	318.3652478	0.053111352	0.054928847	0.266996779	0.389601073	9.836489237	0.003150482
SACRAMENT	2021	LDT1	1986	55	GAS	531.755832	2.355524324	0.012720979	0.013835226	400.1387385	0.052652953	0.103714238	0.266915525	0.389482508	11.59488525	0.003959697
SACRAMENT	2021	LDA	1986	45	GAS	316.114248	0.976763959	0.013560913	0.01474873	339.2991399	0.050654433	0.053255441	0.266911229	0.389476239	9.648357288	0.00335764
SACRAMENT	2021	LDA	1992	60	GAS	1720.03814	1.038672243	0.007621417	0.008288987	373.5443752	0.052687369	0.058646217	0.26677705	0.389280445	8.052249331	0.003696524
SACRAMENT	2021	LDA	1991	60	GAS	1658.59565	1.0382974	0.007621572	0.008289155	373.3673729	0.052397891	0.058411742	0.266678837	0.389137133	8.045269668	0.003694773
SACRAMENT	2021	LDA	1990	60	GAS	1158.79971	1.038328255	0.01360972	0.014801813	373.3674952	0.052103217	0.058169389	0.266674391	0.389130645	8.045355679	0.003694774
SACRAMENT	2021	LDA	1993	45	GAS	1436.94048	0.969869014	0.007531585	0.008191285	318.6752377	0.05286606	0.05492283	0.266569075	0.388976969	9.772535606	0.00315355
SACRAMENT	2021	LDA	1995	45	GAS	2770.10362	0.963889889	0.007483999	0.008139532	318.1422507	0.053169482	0.054981218	0.266270368	0.388541096	9.848404437	0.003148275
SACRAMENT	2021	LDA	1987	45	GAS	503.140095	0.973567351	0.013532042	0.014717331	339.0222105	0.050942901	0.053518412	0.266159176	0.388378844	9.64446604	0.0033549
SACRAMENT	2021	LDA	1988	45	GAS	478.15424	0.971626892	0.013504603	0.014687488	339.3216064	0.051261689	0.053787507	0.265803159	0.387859345	9.669333317	0.003357862
SACRAMENT	2021	LDT1	1987	60	GAS	411.366289	2.528982697	0.013061385	0.014205448	413.5566435	0.052579732	0.111730149	0.265565813	0.387513011	10.94091431	0.004092478
SACRAMENT	2021	MH	1986	40	GAS	14.1371569	2.209336941	0.007476817	0.00813172	1593.721816	0.058178615	0.103416745	0.265396694	0.387266233	8.540954469	0.015771169
SACRAMENT	2021	LDA	1992	45	GAS	1221.30339	0.968445339	0.007531621	0.008191325	340.3042652	0.052400547	0.054681018	0.265324754	0.387161258	9.738900432	0.003367587
SACRAMENT	2021	LDA	1990	45	GAS	822.799202	0.968072137	0.013449312	0.014627354	340.1121484	0.051815672	0.05423349	0.265202682	0.386983131	9.729109128	0.003365685
SACRAMENT	2021	LDA	1991	45	GAS	1177.67649	0.968067894	0.00753159	0.008191291	340.1121665	0.052107671	0.054460824	0.265201766	0.386981795	9.729126498	0.003365686
SACRAMENT	2021	LDT1	1996	40	GAS	3539.74226	0.896789262	0.002354716	0.002560968	348.4174426	0.053838355	0.052313026	0.264982165	0.386661354	9.359653686	0.003447873
SACRAMENT	2021	LDA	1989	45	GAS	666.271929	0.967628781	0.013462819	0.014642044	339.2422017	0.051446153	0.05394628	0.264919966	0.386570593	9.680002654	0.003357077
SACRAMENT	2021	LDA	1989	60	GAS	938.352533	1.045770979	0.013543726	0.014730037	372.6069218	0.051445609	0.058302787	0.264917168	0.386566509	8.039337058	0.003687248
SACRAMENT	2021	LHD1	1988	35	GAS	79.6424707	1.548343227	0.008620274	0.009375335	785.5761231	0.054098728	0.073617139	0.264010903	0.385244091	8.231195891	0.007773913
SACRAMENT	2021	LHD2	1988	35	GAS	2.26915895	1.548343227	0.008620274	0.009375335	897.7944504	0.054139068	0.073764179	0.264010903	0.385244091	8.231195891	0.008884404
SACRAMENT	2021	LDT1	1990	60	GAS	529.993032	1.13068105	0.013339514	0.014507939	414.4045524	0.052635021	0.063334906	0.263707508	0.384801376	10.48283943	0.004100869
SACRAMENT	2021	LDT1	1987	50	GAS	292.810798	2.226057439	0.01288761	0.014016451	386.0724218	0.052120359	0.098346948	0.263245649	0.384127433	11.86640333	0.0038205
SACRAMENT	2021	LHD1	1989	35	GAS	120.298193	1.54708551	0.008620274	0.009375335	785.5343454	0.053850762	0.073680294	0.26241274	0.382912054	8.209186924	0.007773499
SACRAMENT	2021	LHD2	1989	35	GAS	2.94719041	1.54708551	0.008620274	0.009375335	897.7526727	0.053886724	0.073812752	0.26241274	0.382912054	8.209186924	0.00888399
SACRAMENT	2021	MH	1993	30	GAS	21.6561863	2.411352176	0.005871491	0.006385782	1771.164241	0.060281542	0.113356897	0.262240922	0.382661338	6.544077474	0.017527106
SACRAMENT	2021	MH	2002	20	DSL	19.0389992	11.0254772	0.282678521	0.295459989	1310.659066	0.015599276	0.206017353	0.335843228	0.382335187	1.761126321	0.012390442
SACRAMENT	2021	LDA	1995	55	GAS	5053.59632	0.953109622	0.007331228	0.007973379	338.5421455	0.052288326	0.054366301	0.261857578	0.382101963	8.605773001	0.003350149
SACRAMENT	2021	MDV	2001	15	GAS	1110.12971	0.677293643	0.008119324	0.008830505	849.4971412	0.058574808	0.044158837	0.261215581	0.381165163	5.393287227	0.008406463
SACRAMENT	2021	LDA	1994	55	GAS	3611.83161	0.963218187	0.007301252	0.007940778	338.8104464	0.05191889	0.054759439	0.261002138	0.380853707	8.626643015	0.003352804
SACRAMENT	2021	LDA	1988	60	GAS	673.414597	1.073665695	0.013339569	0.014507998	372.8045845	0.050330436	0.059436191	0.260974405	0.380813239	8.1190642	0.003689204
SACRAMENT	2021	LDT1	1989	60	GAS	590.688972	1.655604452	0.013206159	0.014362903	414.2021367	0.051965453	0.082825324	0.260918628	0.38073185	10.53429583	0.004098866
SACRAMENT	2021	LHD1	1990	35	GAS	157.109938	1.544426867	0.008620274	0.009375335	785.4943768	0.053613357	0.073758007	0.260915632	0.380727478	8.1880431	0.007773104
SACRAMENT	2021	LHD2	1990	35	GAS	11.9017317	1.544426867	0.008620274	0.009375335	897.7127041	0.053645324	0.073875201	0.260915632	0.380727478	8.1880431	0.008883595
SACRAMENT	2021	LDT1	1988	60	GAS	367.092368	2.360171843	0.013211354	0.014368553	413.307174	0.051787828	0.105885867	0.260563737	0.380213994	10.49103974	0.00409001
SACRAMENT	2021	LDT1	1987	55	GAS	532.866868	2.321404817	0.012706646	0.013819637	400.3393395	0.051473132	0.102559384	0.259976683	0.379357365	11.36565841	0.003961682
SACRAMENT	2021	LDT1	1997	30	GAS	2021.35517	0.735790564	0.00327389	0.003560655	385.7324111	0.054943714	0.046593646	0.258740803	0.377553972	8.280043555	0.003817135
SACRAMENT	2021	LHD1	2007	15	DSL	2015.67999	2.644616973	0.057094895	0.059676472	723.0486622	0.015393347	0.113653181	0.331409688	0.377287896	1.844177674	0.00683541
SACRAMENT	2021	LHD2	2007	15	DSL	796.789919	2.644187853	0.057089659	0.059671	821.7876738	0.015393116	0.129173578	0.331404723	0.377282244	1.844166723	0.007768849
SACRAMENT	2021	LDT1	1995	40	GAS	2431.75166	0.854406308	0.00824594	0.008968212	347.5694799	0.053019752	0.051123484	0.258450212	0.377129942	8.815250879	0.003439482
SACRAMENT	2021	LDA	1987	60	GAS	708.603744	1.091340258	0.013205494	0.01436218	372.6104126	0.049419597	0.05999256	0.258200436	0.376765471	8.160044516	0.003687282
SACRAMENT	2021	LDT1	1992	55	GAS	932.968635	1.013042519	0.007231302	0.007864701	402.4144642	0.051727868	0.057355205	0.258048303	0.376543477	11.08677657	0.003982217
SACRAMENT	2021	LDT1	1999	15	GAS	299.812245	0.498694746	0.008020359	0.008722872	603.2994715	0.060406285	0.037725571	0.258043303	0.376536182	6.035956373	0.005970137
SACRAMENT	2021	LDA	1994	50	GAS	1984.70455	0.956116999	0.00721143	0.007843088	326.9057914	0.051264138	0.054355733	0.257710627	0.376050741	9.217807981	0.003234998
SACRAMENT	2021	LDA	1995	50	GAS	2776.95549	0.950653392	0.007214496	0.007846423	326.6730586	0.051440492	0.054226195	0.257611662	0.375906333	9.216547604	0.003232695
SACRAMENT	2021	LDT1	1991	55	GAS	1080.74029	1.022781908	0.007215058	0.007847034	401.9451645	0.051451034	0.057717407	0.257211727	0.375322749	11.07861456	0.003977573
SACRAMENT	2021	LDT1	1992	50	GAS	512.66706	0.993123321	0.007204275	0.007835307	388.3302645	0.051519607	0.056227444	0.257009375	0.375027477	11.78379948	0.003842843
SACRAMENT	2021	LDA	1993	55	GAS	2621.46047	0.985079752	0.007231375	0.00786478	339.222317	0.050954844	0.055784201	0.256932062	0.374914662	8.643624958	0.00335688
SACRAMENT	2021	LDT1	1991	50	GAS	593.867709	1.000081036	0.007202614	0.0078335	387.8592701	0.051347533	0.056436356	0.25669431	0.374567735	11.76072868	0.003838182
SACRAMENT	2021	MH	2007	15	DSL	31.2552351	7.791550744	0.118814266	0.12418652	1600.623746	0.01527605	0.251595763	0.328884363	0.374412981	0.871450517	0.015131651
SACRAMENT	2021	LDT1	1990	50	GAS	377.249392	1.023193684	0.012852908	0.01397871	387.757153	0.051186971	0.05731402	0.256452611	0.374215048	11.7621846	0.003837171
SACRAMENT	2021	LDT1	1989	50	GAS	420.452802	1.482124014	0.01284705	0.013972339	387.4104074	0.051014529	0.074146576	0.256144038	0.373764779	11.74807159	0.00383374
SACRAMENT	2021	LDA	1993	50	GAS	1440.49476	0.967165027	0.007204283	0.007835315	327.2376258	0.050748979	0.054769706	0.255894018	0.37339995	9.186944773	0.003238282
SACRAMENT	2021	LDA	1992	55	GAS	2228.06623	0.983618768	0.007231298	0.007864696	362.4330171	0.050503447	0.05553775	0.255718985	0.373144542	8.613230636	0.003586569
SACRAMENT	2021	LDA	1991	55	GAS	2148.47616	0.983181691	0.007231364	0.007864768	362.2119674	0.050219906	0.055311085	0.255593992	0.372962154	8.603791045	0.003584381
SACRAMENT	2021	LDA	1990	55	GAS	1501.06118	0.983200127	0.012913051	0.014044121	362.2120321	0.049937936	0.055080993	0.255592063	0.372959339	8.603833112	0.003584382
SACRAMENT	2021	LDA	1986	60	GAS	445.203516	1.111030119	0.013064426	0.014208755	372.9517572	0.048506128	0.060575944	0.255591259	0.372958166	8.223842544	0.00369066
SACRAMENT	2021	LDT1	1988	50	GAS	261.296591	2.112835918	0.012847278	0.013972587	386.33602	0.05079607	0.094789481	0.255573837	0.372932744	11.68996935	0.003823108
SACRAMENT	2021	LDT1	1990	55	GAS	686.53104	1.054269598	0.012797011	0.013917917	401.8962029	0.050978978	0.059054732	0.255410546	0.372694468	11.12081329	0.003977089
SACRAMENT	2021	LDT1	1993	60	GAS	1006.25994	1.073535835	0.007621427	0.008288997	384.0246796	0.051614733	0.060851048	0.255027421	0.372135414	8.1304577	0.003800236
SACRAMENT	2021	MH	1986	60	GAS	18.9362976	2.193270219	0.007225141	0.007858	1778.360459	0.055905064	0.102664679	0.255025306	0.372132328	6.404674351	0.017598318
SACRAMENT	2021	LDA	1992	50	GAS	1224.32429	0.965721969	0.007204275	0.007835306	349.5259124	0.050299933	0.054527249	0.254688512	0.371640879	9.154620849	0.003458842
SACRAMENT	2021	LHD2	1991	40	GAS	3.07919633	2.655985797	0.004187017	0.004553763	871.5480034	0.050904284	0.111725779	0.254595406	0.371505019	9.516534652	0.008624674
SACRAMENT	2021	LHD1	1991	40	GAS	39.289252	2.655985797	0.004187017	0.004553763	762.9165633	0.050866772	0.111662044	0.254595406	0.371505019	9.516534652	0.007549678
SACRAMENT	2021	LDA	1991	50	GAS	1180.58948	0.965306219	0.007204282	0.007835313	349.3129812	0.050017182	0.05430546	0.25456223	0.371456608	9.144667656	0.003456735
SACRAMENT	2021	LDA	1990	50	GAS	824.8344	0.965316218	0.012864777	0.013991618	349.3129973	0.049736687	0.054079098	0.254562033	0.37145632	9.144674525	0.003456735
SACRAMENT	2021	LDA	1989	55	GAS	1215.50304	0.986685815	0.01288471	0.014013298	361.2362064	0.049414737	0.055008729	0.254459272	0.371306373	8.573759601	0.003574725
SACRAMENT	2021	LHD1	2008	15	DSL	2255.72888	2.635299431	0.056075558	0.058611046	723.0486622	0.015147461	0.113653181	0.326115908	0.37126128	1.796624044	0.00683541
SACRAMENT	2021	LHD2	2008	15	DSL	944.139403	2.634570039	0.05606666	0.058601745	821.7876738	0.015147099	0.129173578	0.326108116	0.371252409	1.796602226	0.007768849
SACRAMENT	2021	LDT1	1989	55	GAS	765.154049	1.534330836	0.012739741	0.01385563	401.5739845	0.050602835	0.07675834	0.254076924	0.370748451	11.13422813	0.0039739
SACRAMENT	2021	LDT1	1993	45	GAS	714.489198	0.996247596	0.007531619	0.008191323	349.6885549	0.051405365	0.056470132	0.253992935	0.370625895	9.8154477	0.003460452
SACRAMENT	2021	LDA	1989	50	GAS	667.919956	0.966402782	0.012861878	0.013988466	348.3593875	0.049313003	0.05387793	0.253935394	0.370541931	9.101910647	0.003447299
SACRAMENT	2021	LDA	1988	50	GAS	479.336957	0.975586706	0.012852912	0.013978714	348.4798298	0.048950932	0.054006716	0.253821374	0.370375554	9.113037136	0.00344849
SACRAMENT	2021	LDA	1986	50	GAS	316.896158	0.987691097	0.012840825	0.013965569	348.4986498	0.0481249	0.053851214	0.253582472	0.370026948	9.121329509	0.003448677
SACRAMENT	2021	LDT1	1988	55	GAS	475.516262	2.186827144	0.012741972	0.013858057	400.4581053	0.050393798	0.098108995	0.253549857	0.369979357	11.07793475	0.003962858
SACRAMENT	2021	LDA	1985	50	GAS	323.038869	0.993337032	0.012835396	0.013959664	368.3228111	0.04766095	0.05366907	0.25353826	0.369962434	9.130038341	0.003644853
SACRAMENT	2021	LDA	1987	50	GAS	504.384615	0.980868507	0.012847022	0.013972309	348.1692273	0.048522888	0.053919767	0.253515438	0.369929132	9.102140714	0.003445417
SACRAMENT	2021	LHD1	1992	40	GAS	36.2254081	2.662692276	0.004187017	0.004553763	762.8461344	0.050705863	0.111940457	0.253447508	0.369830009	9.475225103	0.007548981
SACRAMENT	2021	LHD2	1992	40	GAS	2.09699879	2.662692276	0.004187017	0.004553763	871.4775745	0.050738655	0.111995958	0.253447508	0.369830009	9.475225103	0.008623977
SACRAMENT	2021	LDA	1985	60	GAS	453.833335	1.127999776	0.012940816	0.014074318	394.3930143	0.047601519	0.060944772	0.253222108	0.369501106	8.274082421	0.003902839
SACRAMENT	2021	LDA	1988	55	GAS	872.313401	1.003453235	0.012797035	0.013917943	361.404186	0.048752162	0.055549356	0.252790706	0.368871605	8.616143048	0.003576387
SACRAMENT	2021	LDT2	1997	70	GAS	153.348983	1.418818784	0.002637882	0.002868937	488.7722284	0.0518338	0.075522269	0.252509073	0.368460647	6.392135449	0.004836797
SACRAMENT	2021	LHD1	1993	40	GAS	43.337628	2.657884235	0.004187017	0.004553763	762.7820946	0.050572951	0.111866326	0.252462455	0.368392622	9.43750331	0.007548347
SACRAMENT	2021	LHD2	1993	40	GAS	5.83548007	2.657884235	0.004187017	0.004553763	871.4135347	0.05060125	0.111914099	0.252462455	0.368392622	9.43750331	0.008623343
SACRAMENT	2021	MDV	1999	20	GAS	2162.22816	1.034939337	0.005600408	0.006090955	630.0184519	0.055609341	0.060648175	0.252342815	0.368218043	6.302360285	0.006234543
SACRAMENT	2021	LHD1	1994	40	GAS	50.3246478	2.655311309	0.004187017	0.004553763	762.7242301	0.050462575	0.11185665	0.251608371	0.367146345	9.403321094	0.007547775
SACRAMENT	2021	LHD2	1994	40	GAS	8.30800773	2.655311309	0.004187017	0.004553763	871.3556702	0.050486602	0.111897124	0.251608371	0.367146345	9.403321094	0.008622771
SACRAMENT	2021	LDA	1987	55	GAS	917.895965	1.013685094	0.012739456	0.013855321	361.1098905	0.048130388	0.055723743	0.251464763	0.366936792	8.626684681	0.003573475
SACRAMENT	2021	LDA	1997	40	GAS	13074.1496	0.858324486	0.002337528	0.002542275	315.3633047	0.051040987	0.050488066	0.251127939	0.366445299	9.292345487	0.003120776

SACRAMENT	2021	MDV	2002	15	GAS	1506.5233	0.659062457	0.008119324	0.008830505	849.4248952	0.056654583	0.043516315	0.250980118	0.366229599	5.375554479	0.008405748
SACRAMENT	2021	MH	2008	15	DSL	27.6902297	7.749320586	0.117073162	0.122366691	1600.623746	0.014920896	0.251595763	0.321238103	0.365708223	0.851293259	0.015131651
SACRAMENT	2021	LDA	1986	55	GAS	576.698211	1.025769736	0.012678874	0.013789432	361.4816284	0.047531627	0.05592735	0.250456362	0.365465335	8.66692781	0.003577154
SACRAMENT	2021	LHD1	2009	15	DSL	576.743315	2.624387556	0.054953069	0.057437802	723.0486622	0.014878519	0.113653181	0.320325754	0.364669574	1.744650061	0.00683541
SACRAMENT	2021	LHD2	2009	15	DSL	292.906388	2.624387556	0.054953069	0.057437802	821.7876738	0.014878519	0.129173578	0.320325754	0.364669574	1.744650061	0.007768849
SACRAMENT	2021	LDT1	2000	5	GAS	1.33910984	0.351443769	0.019440667	0.021143499	971.0710619	0.063353904	0.030420469	0.24978234	0.364481804	4.419001211	0.009609535
SACRAMENT	2021	LDA	1985	55	GAS	587.876921	1.036014365	0.012625789	0.013731698	382.1473862	0.046896166	0.055974886	0.249469894	0.364025884	8.694505081	0.003781658
SACRAMENT	2021	LDA	2000	5	GAS	7.40203982	0.351254623	0.019440667	0.021143499	812.4399007	0.062724752	0.030208036	0.248557908	0.362695115	4.414175623	0.008039751
SACRAMENT	2021	MDV	1996	25	GAS	1823.05881	1.330706569	0.004144345	0.004507353	537.1397554	0.05372986	0.071705944	0.248350167	0.36239198	7.002693055	0.005315433
SACRAMENT	2021	MDV	1997	25	GAS	2820.19519	1.331494556	0.004144345	0.004507353	537.4679759	0.053714035	0.071892273	0.247490812	0.361138011	7.011718567	0.005318681
SACRAMENT	2021	LDT1	1994	60	GAS	1426.78476	0.887434713	0.007648583	0.008318532	383.0661244	0.050126581	0.053198505	0.245942427	0.358878611	7.365961485	0.00379075
SACRAMENT	2021	LDT1	1993	55	GAS	1303.46748	1.014384687	0.007231302	0.007864701	372.4668504	0.049496993	0.057498194	0.244563705	0.356866785	8.685861483	0.003685861
SACRAMENT	2021	MH	2009	15	DSL	3.14025767	7.706349157	0.115301496	0.120514918	1600.623746	0.014559508	0.251595763	0.313457634	0.356850677	0.83078217	0.015131651
SACRAMENT	2021	LDT1	1994	45	GAS	1013.08048	0.82927866	0.007526061	0.008185279	348.5271487	0.049734686	0.049712259	0.244019624	0.356072862	8.913622818	0.003448959
SACRAMENT	2021	LDT1	1996	60	GAS	1931.70443	0.940445398	0.002193068	0.002385162	382.9514252	0.049576941	0.054859649	0.244008295	0.356056331	7.176117254	0.003789615
SACRAMENT	2021	LDT1	1993	50	GAS	716.256491	0.994433331	0.007204275	0.007835307	359.1679884	0.049323749	0.056367294	0.24370771	0.355617718	9.227444882	0.003554258
SACRAMENT	2021	MH	1995	30	GAS	39.7835709	2.281914076	0.001677569	0.001824509	1772.126126	0.056533736	0.109103221	0.243500802	0.355315799	7.20189861	0.017536625
SACRAMENT	2021	MH	1986	45	GAS	12.892121	2.138381613	0.006841429	0.007440678	1598.260727	0.053330206	0.1000954	0.243279432	0.354992776	7.940392579	0.015816086
SACRAMENT	2021	LHD2	1995	25	GAS	117.699173	1.73353386	0.004843712	0.005267979	1085.311816	0.051895276	0.084268597	0.242873761	0.354400822	6.317645225	0.01074004
SACRAMENT	2021	LHD1	1995	25	GAS	1046.8069	1.733497187	0.004843637	0.005267897	948.881717	0.051860781	0.084212238	0.24286763	0.354391876	6.317483193	0.009389954
SACRAMENT	2021	MH	1996	30	GAS	28.4083582	2.239060916	0.001677569	0.001824509	1772.089557	0.056404541	0.107670092	0.242846443	0.35436096	7.180608536	0.017536263
SACRAMENT	2021	LDT2	1997	65	GAS	579.613738	1.328307267	0.002450786	0.002665453	493.250377	0.049768932	0.070704434	0.24245004	0.353782529	6.775240104	0.004881112
SACRAMENT	2021	LDA	1998	30	GAS	8029.03916	0.692112806	0.003273424	0.003560148	346.1281139	0.051647492	0.044463535	0.242394078	0.35370087	8.095979511	0.003425218
SACRAMENT	2021	MH	1997	30	GAS	49.1822307	2.19934776	0.001677569	0.001824509	1772.052358	0.056275529	0.106320756	0.242193582	0.353408307	7.158916349	0.017535895
SACRAMENT	2021	LDT1	1996	45	GAS	1371.59584	0.879058447	0.002148715	0.002336924	348.4862907	0.049115087	0.051278722	0.241735138	0.352739346	8.706670225	0.003448554
SACRAMENT	2021	LDA	1980	60	DSL	10.8846585	2.03750945	0.248077593	0.259294561	362.1784792	0.014380483	0.056929413	0.309603337	0.352462815	1.67510664	0.003423889
SACRAMENT	2021	LDA	1981	60	DSL	17.4640358	2.03750945	0.248077593	0.259294561	362.1784792	0.014380483	0.056929413	0.309603337	0.352462815	1.67510664	0.003423889
SACRAMENT	2021	LDA	1982	60	DSL	31.489831	2.03750945	0.248077593	0.259294561	362.1784792	0.014380483	0.056929413	0.309603337	0.352462815	1.67510664	0.003423889
SACRAMENT	2021	LDT1	1981	60	DSL	2.49044471	2.03750945	0.248077593	0.259294561	418.0879125	0.014380483	0.065717598	0.309603337	0.352462815	1.67510664	0.003952434
SACRAMENT	2021	LDT1	1982	60	DSL	12.2163227	2.03750945	0.248077593	0.259294561	418.0879125	0.014380483	0.065717598	0.309603337	0.352462815	1.67510664	0.003952434
SACRAMENT	2021	LDT2	1980	60	DSL	1.3467392	2.03750945	0.248077593	0.259294561	488.2776994	0.014380483	0.076750455	0.309603337	0.352462815	1.67510664	0.00461598
SACRAMENT	2021	LDT2	1981	60	DSL	0.65828513	2.03750945	0.248077593	0.259294561	488.2776994	0.014380483	0.076750455	0.309603337	0.352462815	1.67510664	0.00461598
SACRAMENT	2021	LDT2	1982	60	DSL	6.59382414	2.03750945	0.248077593	0.259294561	488.2776994	0.014380483	0.076750455	0.309603337	0.352462815	1.67510664	0.00461598
SACRAMENT	2021	MDV	1980	60	DSL	1.61267791	2.03750945	0.248077593	0.259294561	555.9675317	0.014380483	0.087390354	0.309603337	0.352462815	1.67510664	0.005255893
SACRAMENT	2021	MDV	1982	60	DSL	17.3387267	2.03750945	0.248077593	0.259294561	555.9675317	0.014380483	0.087390354	0.309603337	0.352462815	1.67510664	0.005255893
SACRAMENT	2021	LHD1	1991	30	DSL	190.40484	8.607826806	0.043788138	0.045768043	496.3631357	0.014351031	0.078021373	0.30896925	0.351740949	1.185772455	0.004692417
SACRAMENT	2021	LHD1	1992	30	DSL	252.176733	8.607826806	0.043788138	0.045768043	496.3631357	0.014351031	0.078021373	0.30896925	0.351740949	1.185772455	0.004692417
SACRAMENT	2021	LHD1	1993	30	DSL	298.832672	8.607826806	0.043788138	0.045768043	496.3631357	0.014351031	0.078021373	0.30896925	0.351740949	1.185772455	0.004692417
SACRAMENT	2021	LHD2	1991	30	DSL	40.8858551	8.607826806	0.043788138	0.045768043	563.3196333	0.014351031	0.088546002	0.30896925	0.351740949	1.185772455	0.005325396
SACRAMENT	2021	LHD2	1992	30	DSL	60.1232657	8.607826806	0.043788138	0.045768043	563.3196333	0.014351031	0.088546002	0.30896925	0.351740949	1.185772455	0.005325396
SACRAMENT	2021	LHD2	1993	30	DSL	143.226815	8.607826806	0.043788138	0.045768043	563.3196333	0.014351031	0.088546002	0.30896925	0.351740949	1.185772455	0.005325396
SACRAMENT	2021	MH	1994	35	GAS	34.2798029	2.19627161	0.001379244	0.001500054	1642.769945	0.054493057	0.104402774	0.240623847	0.351117753	6.658943329	0.01625654
SACRAMENT	2021	LHD1	1994	30	DSL	264.944366	8.615757925	0.044143594	0.046139572	496.3631357	0.014319498	0.078021373	0.308290363	0.350968082	1.180577397	0.004692417
SACRAMENT	2021	LHD1	1995	30	DSL	441.133646	8.615757925	0.044143594	0.046139572	496.3631357	0.014319498	0.078021373	0.308290363	0.350968082	1.180577397	0.004692417
SACRAMENT	2021	LHD1	1996	30	DSL	358.826651	8.615757925	0.044143594	0.046139572	496.3631357	0.014319498	0.078021373	0.308290363	0.350968082	1.180577397	0.004692417
SACRAMENT	2021	LHD1	1997	30	DSL	777.789325	8.615757925	0.044143594	0.046139572	496.3631357	0.014319498	0.078021373	0.308290363	0.350968082	1.180577397	0.004692417
SACRAMENT	2021	LHD2	1994	30	DSL	144.536568	8.615757925	0.044143594	0.046139572	563.3196333	0.014319498	0.088546002	0.308290363	0.350968082	1.180577397	0.005325396
SACRAMENT	2021	LHD2	1995	30	DSL	81.7033012	8.615757925	0.044143594	0.046139572	563.3196333	0.014319498	0.088546002	0.308290363	0.350968082	1.180577397	0.005325396
SACRAMENT	2021	LHD2	1996	30	DSL	177.346695	8.615757925	0.044143594	0.046139572	563.3196333	0.014319498	0.088546002	0.308290363	0.350968082	1.180577397	0.005325396
SACRAMENT	2021	LHD2	1997	30	DSL	117.131358	8.615757925	0.044143594	0.046139572	563.3196333	0.014319498	0.088546002	0.308290363	0.350968082	1.180577397	0.005325396
SACRAMENT	2021	LDA	1980	35	DSL	16.2787647	1.666268307	0.24684278	0.258003915	352.3059461	0.014308904	0.055377589	0.308062277	0.350708421	1.169500485	0.003330558
SACRAMENT	2021	LDA	1981	35	DSL	26.1186817	1.666268307	0.24684278	0.258003915	352.3059461	0.014308904	0.055377589	0.308062277	0.350708421	1.169500485	0.003330558
SACRAMENT	2021	LDA	1982	35	DSL	47.095235	1.666268307	0.24684278	0.258003915	352.3059461	0.014308904	0.055377589	0.308062277	0.350708421	1.169500485	0.003330558
SACRAMENT	2021	LDT1	1981	35	DSL	3.72463348	1.666268307	0.24684278	0.258003915	409.5378631	0.014308904	0.064373649	0.308062277	0.350708421	1.169500485	0.003871606
SACRAMENT	2021	LDT1	1982	35	DSL	18.2703612	1.666268307	0.24684278	0.258003915	409.5378631	0.014308904	0.064373649	0.308062277	0.350708421	1.169500485	0.003871606
SACRAMENT	2021	LDT2	1980	35	DSL	2.01414226	1.666268307	0.24684278	0.258003915	478.2922434	0.014308904	0.07518088	0.308062277	0.350708421	1.169500485	0.004521582
SACRAMENT	2021	LDT2	1981	35	DSL	0.98451125	1.666268307	0.24684278	0.258003915	478.2922434	0.014308904	0.07518088	0.308062277	0.350708421	1.169500485	0.004521582
SACRAMENT	2021	LDT2	1982	35	DSL	9.86152315	1.666268307	0.24684278	0.258003915	478.2922434	0.014308904	0.07518088	0.308062277	0.350708421	1.169500485	0.004521582
SACRAMENT	2021	MDV	1980	35	DSL	2.41187211	1.666268307	0.24684278	0.258003915	537.7979246	0.014308904	0.084534344	0.308062277	0.350708421	1.169500485	0.005084124
SACRAMENT	2021	MDV	1982	35	DSL	25.9312731	1.666268307	0.24684278	0.258003915	537.7979246	0.014308904	0.084534344	0.308062277	0.350708421	1.169500485	0.005084124
SACRAMENT	2021	LHD1	1998	30	DSL	319.246478	8.614335839	0.044084562	0.046077871	496.3631357	0.014292956	0.078021373	0.307718934	0.350317548	1.178390518	0.004692417
SACRAMENT	2021	LHD2	1998	30	DSL	92.3984595	8.614335839	0.044084562	0.046077871	563.3196333	0.014292956	0.088546002	0.307718934	0.350317548	1.178390518	0.005325396
SACRAMENT	2021	LDA	1983	20	DSL	15.5271924	1.243284339	0.387449515	0.404968263	529.5022632	0.014264627	0.083230382	0.307109012	0.349623192	1.701848888	0.005005701
SACRAMENT	2021	LDT1	1983	20	DSL	1.6615242	1.243284339	0.387449515	0.404968263	617.3844767	0.014264627	0.097044242	0.307109012	0.349623192	1.701848888	0.005836504
SACRAMENT	2021	MDV	1983	20	DSL	4.39570972	1.243284339	0.387449515	0.404968263	800.5726964	0.014264627	0.125838879	0.307109012	0.349623192	1.701848888	0.007568291
SACRAMENT	2021	LDA	1997	60	GAS	7134.81119	0.855358152	0.002245706	0.00244241	345.8601745	0.048621919	0.050313582	0.239225827	0.349077765	6.97211305	0.003422567
SACRAMENT	2021	MH	1987	35	GAS	10.7079241	2.482943685	0.004827353	0.005250187	1645.314039	0.054202999	0.11370267	0.239200805	0.349041253	8.267843366	0.016281716
SACRAMENT	2021	LHD1	1999	30	DSL	1312.80634	8.611179609	0.043953545	0.045940929	496.3631357	0.014234049	0.078021373	0.306450685	0.34887373	1.173536876	0.004692417
SACRAMENT	2021	LHD2	1999	30	DSL	371.674168	8.611179609	0.043953545	0.045940929	563.3196333	0.014234049	0.088546002	0.306450685	0.34887373	1.173536876	0.005325396
SACRAMENT	2021	LDA	1985	60	DSL	60.1214789	1.479109792	0.189953133	0.198541971	324.4431546	0.014232231	0.050997946	0.30641155	0.348829178	2.58366134	0.003067155
SACRAMENT	2021	LDA	1987	60	DSL	34.3160577	1.479109792	0.189953133	0.198541971	324.4431546	0.014232231	0.050997946	0.30641155	0.348829178	2.58366134	0.003067155
SACRAMENT	2021	LDA	1988	60	DSL	1.2264117	1.479109792	0.189953133	0.198541971	324.4431546	0.014232231	0.050997946	0.30641155	0.348829178	2.58366134	0.003067155
SACRAMENT	2021	LDA	1989	60	DSL	1.78417978	1.479109792	0.189953133	0.198541971	324.4431546	0.014232231	0.050997946	0.30641155	0.348829178	2.58366134	0.003067155
SACRAMENT	2021	LDA	1990	60	DSL	21.5187554	1.479109792	0.189953133	0.198541971	324.4431546	0.014232231	0.050997946	0.30641155	0.348829178	2.58366134	0.003067155
SACRAMENT	2021	LDA	1991	60	DSL	11.6110926	1.479109792	0.189953133	0.198541971	324.4431546	0.014232231	0.050997946	0.30641155	0.348829178	2.58366134	0.003067155
SACRAMENT	2021	LDA	1992	60	DSL	5.33181963	1.479109792	0.189953133	0.198541971	324.4431546	0.014232231	0.050997946	0.30641155	0.348829178	2.58366134	0.003067155
SACRAMENT	2021	LDT1	1985	60	DSL	5.85419363	1.479109792	0.189953133	0.198541971	374.5273919	0.014232231	0.05887049	0.30641155	0.348829178	2.58366134	0.003540631
SACRAMENT	2021	LDT1	1986	60	DSL	12.5469446	1.479109792	0.189953133	0.198541971	374.5273919	0.014232231	0.05887049	0.30641155	0.348829178	2.58366134	0.003540631
SACRAMENT	2021	LDT1	1989	60	DSL	12.0640635	1.479109792	0.189953133	0.198541971	374.5273919	0.014232231	0.05887049	0.30641155	0.348829178	2.58366134	0.003540631
SACRAMENT	2021	LDT2	1984	60	DSL	0.66645652	1.479109792	0.189953133	0.198541971	437.4041147	0.014232231	0.068753836	0.30641155	0.348829178	2.58366134	0.004135042
SACRAMENT	2021	MDV	1986	60	DSL	4.66915219	1.479109792	0.189953133	0.198541971	498.041353	0.014232231	0.078285165	0.30641155	0.348829178	2.58366134	0.004708282
SACRAMENT	2021	MDV	1992	60	DSL	0.71151646	1.479109792	0.189953133	0.198541971	498.041353	0.014232231	0.078285165	0.30641155	0.348829178	2.58366134	0.004708282
SACRAMENT	2021	LDA	1984	60	DSL	41.618097	1.479109792	0.189953133	0.198541971	324.4431546	0.014232231	0.050997946	0.30641155	0.348829178	2.58366134	0.003067155
SACRAMENT	2021	LDA	1986	60	DSL	14.6516192	1.479109792	0.189953133	0.198541971	324.4431546	0.014232231	0.050997946	0.30641155	0.348829178	2.58366134	0.003067155
SACRAMENT	2021	LDT1	1984	60	DSL	5.50740265	1.479109792	0.189953133	0.198541971	374.5273919	0.014232231	0.05887049	0.30641155	0.348829178	2.58366134	0.003540631
SACRAMENT	2021	LDT1	1987	60	DSL	12.6803409	1.479109792	0.189953133	0.198541971	374.5273919	0.014232231	0.05887049	0.30641155	0.348829178	2.58366134	0.003540631
SACRAMENT	2021	LDT1	1988	60	DSL	11.9545053	1.479109792	0.189953133	0.198541971	374.5273919	0.014232231	0.05887049	0.30641155	0.348829178	2.58366134	0.003540631
SACRAMENT	2021	LDT1	1990	60	DSL	4.95941537	1.479109792	0.189953133	0.198541971	374.5273919	0.014232231	0.05887049	0.30641155	0.348829178	2.58366134	0.003540631
SACRAMENT	2021	LDT1	1992	60	DSL	15.3695578	1.479109792	0.189953133	0.198541971	374.5273919	0.014232231	0.05887049	0.30641155	0.348829178	2.58366134	0.003540631
SACRAMENT	2021	LDT2	1990	60	DSL	0.68811528	1.479109792	0.189953133	0.198541971	437.4041147	0.014232231	0.068753836	0.30641155	0.348829178	2.58366134	0.004135042
SACRAMENT	2021	MDV	1984	60	DSL	9.71685264	1.479109792	0.189953133	0.198541971	498.041353	0.014232231	0.078285165	0.30641155	0.348829178	2.58366134	0.004708282
SACRAMENT	2021	MDV	1985	60	DSL	2.71619774	1.479109792	0.189953133	0.198541971	498.041353	0.014232231	0.078285165	0.30641155	0.348829178	2.58366134	0.004708282
SACRAMENT	2021	MDV	1987	60	DSL	2.74879837	1.479109792	0.189953133	0.198541971	498.041353	0.014232231	0.078285165	0.30641155	0.348829178	2.58366134	0.004708282
SACRAMENT	2021	MDV	1988	60	DSL	1.39183245	1.479109792	0.189953133	0.198541971	498.041353	0.014232231	0.078285165	0.30641155	0.348829178	2.58366134	0.004708282
SACRAMENT	2021	MDV	1989	60	DSL	0.71203853	1.479109792	0.189953133	0.198541971	498.041353	0.014232231	0.078285165	0.30641155	0.348829178	2.58366134	0.004708282
SACRAMENT	2021	LDT2	1997	40	GAS	7245.01769	1.173318194	0.002352907	0.002559001	431.4376771	0.049018222	0.062454525	0.238792947	0.348446108	9.050779379	0.004269426
SACRAMENT	2021	LDT1	1995	60	GAS	1327.05296	0.892741659	0.007662161	0.008333299	382.3962095	0.048862708	0.053417284	0.238186279	0.347560858	6.763440831	0.00378412
SACRAMENT	2021	LDA	1984	35	DSL	62.2427621	1.209610963	0.189007636	0.197553722	315.5992393	0.014161389	0.049607805	0.304886377	0.347092871	1.803821392	0.002983548
SACRAMENT	2021	LDA	1985	35	DSL	89.9158582	1.209610963	0.189007636	0.197553722	315.5992393	0.014161389	0.049607805	0.304886377	0.347092871	1.803821392	0.002983548
SACRAMENT	2021	LDA	1986	35	DSL	21.9125168	1.209610963	0.189007636	0.197553722	315.5992393	0.014161389	0.049607805	0.304886377	0.347092871	1.803821392	0.002983548
SACRAMENT	2021	LDA	1987	35	DSL	51.3220538	1.209610963	0.189007636	0.197553722	315.5992393	0.014161389	0.049607805	0.304886377	0.347092871	1.803821392	0.002983548
SACRAMENT	2021	LDA	1988	35	DSL	1.8341841	1.209610963	0.189007636	0.197553722	315.5992393	0.014161389	0.049607805	0.304886377	0.347092871	1.803821392	0.002983548
SACRAMENT	2021	LDA	1989	35	DSL	2.6683651	1.209610963	0.189007636	0.197553722	315.5992393	0.014161389	0.049607805	0.304886377	0.347092871	1.803821392	0.002983548
SACRAMENT	2021	LDA	1990	35	DSL	32.1827971	1.209610963	0.189007636	0.197553722	315.5992393	0.014161389	0.049607805	0.304886377	0.347092871	1.803821392	0.002983548
SACRAMENT	2021	LDA	1991	35	DSL	17.3651975	1.209610963	0.189007636	0.197553722	315.5992393	0.014161389	0.049607805	0.304886377	0.347092871	1.803821392	0.002983548
SACRAMENT	2021	LDA	1992	35	DSL	7.97410752	1.209610963	0.189007636	0.197553722	315.5992393	0.014161389	0.049607805	0.304886377	0.347092871	1.803821392	0.002983548
SACRAMENT	2021	LDT1	1984	35	DSL	8.23670416	1.209610963	0.189007636	0.197553722	366.8681709	0.014161389	0.057666568	0.304886377	0.347092871	1.803821392	0.003468224
SACRAMENT	2021	LDT1	1985	35	DSL	8.75535423	1.209610963	0.189007636	0.197553722	366.8681709	0.014161389	0.057666568	0.304886377	0.347092871	1.803821392	0.003468224

SACRAMENT	2021	LDT1	1986	35	DSL	18.7648293	1.209610963	0.189007636	0.197553722	366.8681709	0.014161389	0.057666568	0.304886377	0.347092871	1.803821392	0.003468224
SACRAMENT	2021	LDT1	1987	35	DSL	18.9643328	1.209610963	0.189007636	0.197553722	366.8681709	0.014161389	0.057666568	0.304886377	0.347092871	1.803821392	0.003468224
SACRAMENT	2021	LDT1	1988	35	DSL	17.8787951	1.209610963	0.189007636	0.197553722	366.8681709	0.014161389	0.057666568	0.304886377	0.347092871	1.803821392	0.003468224
SACRAMENT	2021	LDT1	1989	35	DSL	18.0426471	1.209610963	0.189007636	0.197553722	366.8681709	0.014161389	0.057666568	0.304886377	0.347092871	1.803821392	0.003468224
SACRAMENT	2021	LDT1	1990	35	DSL	7.41715103	1.209610963	0.189007636	0.197553722	366.8681709	0.014161389	0.057666568	0.304886377	0.347092871	1.803821392	0.003468224
SACRAMENT	2021	LDT1	1992	35	DSL	22.9862439	1.209610963	0.189007636	0.197553722	366.8681709	0.014161389	0.057666568	0.304886377	0.347092871	1.803821392	0.003468224
SACRAMENT	2021	LDT2	1984	35	DSL	0.99673213	1.209610963	0.189007636	0.197553722	428.459042	0.014161389	0.067347795	0.304886377	0.347092871	1.803821392	0.004050479
SACRAMENT	2021	LDT2	1990	35	DSL	1.02912432	1.209610963	0.189007636	0.197553722	428.459042	0.014161389	0.067347795	0.304886377	0.347092871	1.803821392	0.004050479
SACRAMENT	2021	MDV	1984	35	DSL	14.5322297	1.209610963	0.189007636	0.197553722	481.7648347	0.014161389	0.075726723	0.304886377	0.347092871	1.803821392	0.00455441
SACRAMENT	2021	MDV	1985	35	DSL	4.06226285	1.209610963	0.189007636	0.197553722	481.7648347	0.014161389	0.075726723	0.304886377	0.347092871	1.803821392	0.00455441
SACRAMENT	2021	MDV	1986	35	DSL	6.98304223	1.209610963	0.189007636	0.197553722	481.7648347	0.014161389	0.075726723	0.304886377	0.347092871	1.803821392	0.00455441
SACRAMENT	2021	MDV	1987	35	DSL	4.11101938	1.209610963	0.189007636	0.197553722	481.7648347	0.014161389	0.075726723	0.304886377	0.347092871	1.803821392	0.00455441
SACRAMENT	2021	MDV	1988	35	DSL	2.08158234	1.209610963	0.189007636	0.197553722	481.7648347	0.014161389	0.075726723	0.304886377	0.347092871	1.803821392	0.00455441
SACRAMENT	2021	MDV	1989	35	DSL	1.0649032	1.209610963	0.189007636	0.197553722	481.7648347	0.014161389	0.075726723	0.304886377	0.347092871	1.803821392	0.00455441
SACRAMENT	2021	MDV	1992	35	DSL	1.06412241	1.209610963	0.189007636	0.197553722	481.7648347	0.014161389	0.075726723	0.304886377	0.347092871	1.803821392	0.00455441
SACRAMENT	2021	LHD1	2000	30	DSL	1250.89871	8.606289235	0.043750541	0.045728746	496.3631357	0.014142775	0.078021373	0.304485613	0.346636627	1.166016472	0.004692417
SACRAMENT	2021	LHD2	2000	30	DSL	304.825658	8.606289235	0.043750541	0.045728746	563.3196333	0.014142775	0.088546002	0.304485613	0.346636627	1.166016472	0.005325396
SACRAMENT	2021	LDT2	1999	20	GAS	2438.46699	0.819432992	0.005644588	0.006139004	626.6457327	0.053645533	0.05126329	0.237482372	0.34653372	7.036290092	0.006201168
SACRAMENT	2021	MH	1986	55	GAS	16.4099189	2.156550571	0.006725307	0.007314385	1710.071662	0.051971812	0.10094587	0.237082769	0.34595062	6.837042831	0.016922545
SACRAMENT	2021	LDA	1999	20	GAS	4584.42115	0.516644358	0.005678022	0.006175367	446.649272	0.053680465	0.037373417	0.235934078	0.344274453	6.347795198	0.004419957
SACRAMENT	2021	LDT1	1995	45	GAS	942.266475	0.837121408	0.007523283	0.008182256	347.7002737	0.048370826	0.050089241	0.235788549	0.344062097	8.200547263	0.003440776
SACRAMENT	2021	MH	1988	35	GAS	12.0968626	2.453629498	0.004827353	0.005250187	1645.08864	0.053476276	0.112767494	0.235489073	0.343625103	8.135740628	0.016279486
SACRAMENT	2021	LHD1	2001	30	DSL	2100.91384	8.599664715	0.043475552	0.045441323	496.3631357	0.014019135	0.078021373	0.301823721	0.34360624	1.155829307	0.004692417
SACRAMENT	2021	LHD2	2001	30	DSL	598.268191	8.599664715	0.043475552	0.045441323	563.3196333	0.014019135	0.088546002	0.301823721	0.34360624	1.155829307	0.005325396
SACRAMENT	2021	LDT1	1994	55	GAS	1848.19793	0.841116413	0.007242964	0.007877385	371.5120142	0.047991222	0.05042189	0.235465445	0.343590624	7.879129453	0.003676413
SACRAMENT	2021	LHD1	1991	45	GAS	48.3685268	2.543535162	0.0038312	0.00416678	764.4850886	0.046880708	0.106934433	0.234644593	0.342392839	8.893732578	0.0075652
SACRAMENT	2021	LHD2	1991	45	GAS	3.79076166	2.543535162	0.0038312	0.00416678	873.500838	0.046915281	0.10699547	0.234644593	0.342392839	8.893732578	0.008643999
SACRAMENT	2021	LDT1	1994	50	GAS	1015.58634	0.826452226	0.007205468	0.007836604	358.1261722	0.047761189	0.049542825	0.234336806	0.341943717	8.376542445	0.003543949
SACRAMENT	2021	LDT2	1998	30	GAS	4255.42283	0.989007032	0.003273709	0.003560457	479.2221918	0.050105637	0.05657037	0.234249575	0.34181643	8.247417465	0.004742292
SACRAMENT	2021	LHD1	1992	45	GAS	44.5966653	2.549957699	0.0038312	0.00416678	764.4193328	0.046732408	0.107201059	0.233586647	0.340849087	8.855126501	0.007564549
SACRAMENT	2021	LHD2	1992	45	GAS	2.58159005	2.549957699	0.0038312	0.00416678	873.4350822	0.046762631	0.10725421	0.233586647	0.340849087	8.855126501	0.008643348
SACRAMENT	2021	LDT1	1996	55	GAS	2502.24997	0.891623566	0.00207275	0.002254305	371.594549	0.047441738	0.052011692	0.233499233	0.340721533	7.688606352	0.003677229
SACRAMENT	2021	MH	1986	50	GAS	12.5466832	2.134899838	0.006604076	0.007182536	1643.830335	0.051180496	0.099932422	0.233472975	0.340683218	7.347381061	0.016267034
SACRAMENT	2021	LDT1	2001	5	GAS	1.58936399	0.335079061	0.019440667	0.021143499	970.6552398	0.059686796	0.029554638	0.233111748	0.340156116	4.202018934	0.00960542
SACRAMENT	2021	LHD1	1993	45	GAS	53.3524339	2.545353223	0.0038312	0.00416678	764.3595389	0.046609912	0.107130066	0.232678786	0.339524338	8.81987338	0.007563957
SACRAMENT	2021	LHD2	1993	45	GAS	7.18398951	2.545353223	0.0038312	0.00416678	873.3752883	0.046635994	0.107175816	0.232678786	0.339524338	8.81987338	0.008642756
SACRAMENT	2021	LDT1	1996	50	GAS	1374.98849	0.876108581	0.002059046	0.0022394	358.1794474	0.047187366	0.051106645	0.232247261	0.338894659	8.179988069	0.003544476
SACRAMENT	2021	LDA	2001	5	GAS	9.22300904	0.334919773	0.019440667	0.021143499	812.0245767	0.059150754	0.029389753	0.231951533	0.338463133	4.197332893	0.008035641
SACRAMENT	2021	LHD1	1994	45	GAS	61.9540702	2.542889231	0.0038312	0.00416678	764.3055088	0.046508185	0.1071208	0.231891631	0.338375723	8.787928192	0.007563423
SACRAMENT	2021	LHD2	1994	45	GAS	10.2278886	2.542889231	0.0038312	0.00416678	873.3212583	0.04653033	0.10715956	0.231891631	0.338375723	8.787928192	0.008642222
SACRAMENT	2021	MH	1989	35	GAS	22.6711383	2.421791836	0.004827353	0.005250187	1641.884113	0.052744517	0.111739237	0.231760109	0.338183807	6.124200629	0.016247774
SACRAMENT	2021	LHD1	2010	15	DSL	548.113668	0.494132178	0.027895579	0.029156894	723.0486622	0.013733784	0.113653181	0.295680289	0.336612351	1.603763451	0.00683541
SACRAMENT	2021	LHD2	2010	15	DSL	257.710136	0.494132178	0.027895579	0.029156894	821.7876738	0.013733784	0.129173578	0.295680289	0.336612351	1.603763451	0.007768849
SACRAMENT	2021	LDT1	1998	25	GAS	3681.26752	0.597724162	0.004173443	0.004539	431.0540618	0.050998019	0.040911215	0.230354085	0.33613214	6.96884692	0.004265629
SACRAMENT	2021	LHD1	1991	50	GAS	357.146461	2.434752705	0.003698283	0.00402222	785.7174078	0.046015438	0.102361038	0.230313791	0.336073343	8.412004958	0.007775311
SACRAMENT	2021	LHD2	1991	50	GAS	27.9904558	2.434752705	0.003698283	0.00402222	897.9357351	0.046049372	0.102419464	0.230313791	0.336073343	8.412004958	0.008885802
SACRAMENT	2021	LDA	1997	45	GAS	5066.03248	0.836081972	0.002137943	0.002325208	315.3093143	0.046680818	0.049179725	0.229675374	0.335141766	8.631059338	0.003120241
SACRAMENT	2021	LHD1	1992	50	GAS	329.295561	2.440900562	0.003698283	0.00402222	785.6550507	0.045869875	0.102616261	0.229275372	0.334558085	8.375489973	0.007774694
SACRAMENT	2021	LHD2	1992	50	GAS	19.0621011	2.440900562	0.003698283	0.00402222	897.873378	0.04589954	0.102667138	0.229275372	0.334558085	8.375489973	0.008885185
SACRAMENT	2021	MH	1991	25	DSL	2.16752697	11.0560955	0.38384116	0.401196754	1196.85896	0.013641506	0.188129561	0.293693593	0.33435063	1.769261408	0.011314621
SACRAMENT	2021	LHD1	1991	55	GAS	98.2321425	2.559431184	0.003766172	0.004096055	816.2326215	0.04574379	0.107602728	0.228954154	0.334089363	7.667622021	0.008077283
SACRAMENT	2021	LHD2	1991	55	GAS	7.69869716	2.559431184	0.003766172	0.004096055	933.0626608	0.045777524	0.107664146	0.228954154	0.334089363	7.667622021	0.009233411
SACRAMENT	2021	MH	1994	65	GAS	8.93223029	2.135330508	0.001310195	0.001424956	1829.010412	0.05179967	0.101505855	0.228730718	0.333763327	4.362616025	0.018099541
SACRAMENT	2021	LHD1	1993	50	GAS	393.946936	2.436493011	0.003698283	0.00402222	785.5983558	0.045749639	0.102548305	0.228384267	0.333257786	8.342146331	0.007774133
SACRAMENT	2021	LHD2	1993	50	GAS	53.0455773	2.436493011	0.003698283	0.00402222	897.8166831	0.04577524	0.102592098	0.228384267	0.333257786	8.342146331	0.008884624
SACRAMENT	2021	MH	1990	35	GAS	22.2097777	2.387774681	0.004827353	0.005250187	1641.82709	0.051992615	0.110643141	0.227938343	0.332607096	6.098623072	0.01624721
SACRAMENT	2021	LHD1	1992	55	GAS	90.5718297	2.56589386	0.003766172	0.004096055	816.1754126	0.045599086	0.10787102	0.227921865	0.33258305	7.634338267	0.008076717
SACRAMENT	2021	LHD2	1992	55	GAS	5.24297799	2.56589386	0.003766172	0.004096055	933.005452	0.045628576	0.107924503	0.227921865	0.33258305	7.634338267	0.009232845
SACRAMENT	2021	LDT1	1995	55	GAS	1719.00948	0.847503485	0.007248796	0.007883727	370.866454	0.046738611	0.050710453	0.227832146	0.332452133	7.243028409	0.003670024
SACRAMENT	2021	LHD1	1994	50	GAS	457.46022	2.4341344	0.003698283	0.00402222	785.5471311	0.04564979	0.102539435	0.22761164	0.332130371	8.311931449	0.007773626
SACRAMENT	2021	LHD2	1994	50	GAS	75.5213042	2.4341344	0.003698283	0.00402222	897.7654583	0.045671526	0.102576537	0.22761164	0.332130371	8.311931449	0.008884117
SACRAMENT	2021	MH	1987	65	GAS	2.79014567	2.414048142	0.004585681	0.004987347	1830.675367	0.051523949	0.110547703	0.227378011	0.33178946	5.416689132	0.018116017
SACRAMENT	2021	LHD1	2011	15	DSL	1208.14539	0.480405914	0.026572955	0.027774466	723.0486622	0.013529998	0.113653181	0.291292896	0.331617595	1.531105176	0.00683541
SACRAMENT	2021	LHD2	2011	15	DSL	653.710591	0.480405914	0.026572955	0.027774466	821.7876738	0.013529998	0.129173578	0.291292896	0.331617595	1.531105176	0.007768849
SACRAMENT	2021	LHD1	1993	55	GAS	108.354011	2.561260608	0.003766172	0.004096055	816.1234173	0.04547956	0.107799584	0.22703602	0.331290428	7.603945223	0.008076203
SACRAMENT	2021	LHD2	1993	55	GAS	14.5900388	2.561260608	0.003766172	0.004096055	932.9534566	0.04550501	0.10784562	0.22703602	0.331290428	7.603945223	0.009232331
SACRAMENT	2021	LHD1	1988	40	GAS	23.5086412	1.51622668	0.007476817	0.00813172	759.6644934	0.04642715	0.072090134	0.226572313	0.330613788	7.541094142	0.007517496
SACRAMENT	2021	LHD2	1988	40	GAS	0.66980398	1.51622668	0.007476817	0.00813172	868.2959335	0.04646177	0.072234124	0.226572313	0.330613788	7.541094142	0.008592492
SACRAMENT	2021	LDT1	1995	50	GAS	944.597177	0.83365067	0.007206064	0.007837253	357.4060642	0.046477307	0.049881569	0.226558396	0.33059348	7.704658722	0.003536823
SACRAMENT	2021	LHD1	1994	55	GAS	125.823163	2.558781217	0.003766172	0.004096055	816.0764503	0.045380301	0.10779026	0.226267954	0.330169668	7.576404072	0.008075738
SACRAMENT	2021	LHD2	1994	55	GAS	20.7719251	2.558781217	0.003766172	0.004096055	932.9064897	0.045401909	0.107829262	0.226267954	0.330169668	7.576404072	0.009231866
SACRAMENT	2021	MH	1992	25	DSL	3.96302498	11.03845659	0.380256698	0.397450219	1196.85896	0.013464407	0.188129561	0.289880751	0.330009963	1.746307752	0.011314621
SACRAMENT	2021	LDT2	2008	5	DSL	0.00587798	0.162970554	0.011154237	0.011658582	947.1455575	0.013446324	0.148878092	0.289491429	0.329566745	3.62485344	0.008953932
SACRAMENT	2021	LDT1	2008	5	DSL	0.00407061	0.162970612	0.011154237	0.011658582	1209.485651	0.013446319	0.190114301	0.289491329	0.329566631	3.624853777	0.011433989
SACRAMENT	2021	LDA	1997	55	GAS	9242.13915	0.827197953	0.002095356	0.002278891	335.9297228	0.04588814	0.048657152	0.2257753	0.329450787	7.544443269	0.003324297
SACRAMENT	2021	LHD1	1989	40	GAS	35.5092832	1.514995051	0.007476817	0.00813172	759.6266179	0.046214347	0.072151979	0.225200781	0.328612451	7.520930403	0.007517121
SACRAMENT	2021	LHD2	1989	40	GAS	0.8699434	1.514995051	0.007476817	0.00813172	868.258058	0.04624521	0.072281689	0.225200781	0.328612451	7.520930403	0.008592117
SACRAMENT	2021	LHD1	1987	25	DSL	59.4216888	4.664489363	0.196133359	0.205001639	546.5903577	0.013376678	0.085916393	0.287991996	0.32785974	1.268617731	0.005167245
SACRAMENT	2021	LHD1	1988	25	DSL	87.3855098	4.664489363	0.196133359	0.205001639	546.5903577	0.013376678	0.085916393	0.287991996	0.32785974	1.268617731	0.005167245
SACRAMENT	2021	LHD1	1989	25	DSL	128.521543	4.664489363	0.196133359	0.205001639	546.5903577	0.013376678	0.085916393	0.287991996	0.32785974	1.268617731	0.005167245
SACRAMENT	2021	LHD1	1990	25	DSL	222.807038	4.664489363	0.196133359	0.205001639	546.5903577	0.013376678	0.085916393	0.287991996	0.32785974	1.268617731	0.005167245
SACRAMENT	2021	LHD2	1987	25	DSL	44.3188503	4.664489363	0.196133359	0.205001639	624.6333349	0.013376678	0.098183662	0.287991996	0.32785974	1.268617731	0.005905031
SACRAMENT	2021	LHD2	1988	25	DSL	17.7285206	4.664489363	0.196133359	0.205001639	624.6333349	0.013376678	0.098183662	0.287991996	0.32785974	1.268617731	0.005905031
SACRAMENT	2021	LHD2	1989	25	DSL	58.0100984	4.664489363	0.196133359	0.205001639	624.6333349	0.013376678	0.098183662	0.287991996	0.32785974	1.268617731	0.005905031
SACRAMENT	2021	LHD2	1990	25	DSL	40.204207	4.664489363	0.196133359	0.205001639	624.6333349	0.013376678	0.098183662	0.287991996	0.32785974	1.268617731	0.005905031
SACRAMENT	2021	LHD1	1984	20	DSL	63.4376243	4.354904695	0.216678541	0.226475783	616.2897993	0.013352578	0.096872174	0.287473137	0.327269054	1.216726787	0.005826155
SACRAMENT	2021	LHD1	1985	20	DSL	106.255894	4.354904695	0.216678541	0.226475783	616.2897993	0.013352578	0.096872174	0.287473137	0.327269054	1.216726787	0.005826155
SACRAMENT	2021	LHD1	1981	20	DSL	2.66621746	4.354904695	0.216678541	0.226475783	616.2897993	0.013352578	0.096872174	0.287473137	0.327269054	1.216726787	0.005826155
SACRAMENT	2021	LHD1	1982	20	DSL	20.2091341	4.354904695	0.216678541	0.226475783	616.2897993	0.013352578	0.096872174	0.287473137	0.327269054	1.216726787	0.005826155
SACRAMENT	2021	LHD1	1983	20	DSL	53.6432701	4.354904695	0.216678541	0.226475783	616.2897993	0.013352578	0.096872174	0.287473137	0.327269054	1.216726787	0.005826155
SACRAMENT	2021	LHD1	1986	20	DSL	145.583197	4.354904695	0.216678541	0.226475783	616.2897993	0.013352578	0.096872174	0.287473137	0.327269054	1.216726787	0.005826155
SACRAMENT	2021	LHD2	1983	20	DSL	4.01976755	4.354904695	0.216678541	0.226475783	700.9244292	0.013352578	0.110175559	0.287473137	0.327269054	1.216726787	0.006626257
SACRAMENT	2021	LHD2	1984	20	DSL	5.43280609	4.354904695	0.216678541	0.226475783	700.9244292	0.013352578	0.110175559	0.287473137	0.327269054	1.216726787	0.006626257
SACRAMENT	2021	LHD2	1985	20	DSL	16.8739446	4.354904695	0.216678541	0.226475783	700.9244292	0.013352578	0.110175559	0.287473137	0.327269054	1.216726787	0.006626257
SACRAMENT	2021	LHD2	1986	20	DSL	41.44302	4.354904695	0.216678541	0.226475783	700.9244292	0.013352578	0.110175559	0.287473137	0.327269054	1.216726787	0.006626257
SACRAMENT	2021	MH	1991	35	GAS	21.4223338	2.351919334	0.004827353	0.005250187	1641.772029	0.051210558	0.109482613	0.223974096	0.326822475	6.074671155	0.016246665
SACRAMENT	2021	LHD1	1990	40	GAS	46.3752711	1.512391555	0.007476817	0.00813172	759.5903745	0.046010608	0.07222808	0.223915973	0.326737662	7.501560381	0.007516763
SACRAMENT	2021	LHD2	1990	40	GAS	3.51311979	1.512391555	0.007476817	0.00813172	868.2218146	0.046038043	0.072342843	0.223915973	0.326737662	7.501560381	0.008591759
SACRAMENT	2021	MH	1988	65	GAS	3.15205905	2.385547351	0.004585681	0.004987347	1830.522967	0.050833145	0.109638475	0.223849736	0.32664101	5.330141839	0.018114509
SACRAMENT	2021	LHD1	2012	15	DSL	1218.00312	0.465686432	0.025154628	0.026292009	723.0486622	0.013311466	0.113653181	0.286588034	0.326261423	1.453189454	0.00683541
SACRAMENT	2021	LHD2	2012	15	DSL	827.539234	0.465686432	0.025154628	0.026292009	821.7876738	0.013311466	0.129173578	0.286588034	0.326261423	1.453189454	0.007768849
SACRAMENT	2021	LDT2	2009	5	DSL	0.00743231	0.16168178	0.010871916	0.011363496	893.4792421	0.013302304	0.140442494	0.286390783	0.326036866	3.511500368	0.008446592
SACRAMENT	2021	LDT1	2009	5	DSL	0.02066106	0.161681833	0.010871916	0.011363496	1184.206962	0.013302299	0.186140843	0.286390657	0.326036723	3.511501194	0.011195014
SACRAMENT	2021	MH	1993	25	DSL	4.38979826	11.02038717	0.376584747	0.393612238	1196.85896	0.013282985	0.188129561	0.285974846	0.325563349	1.722793838	0.011314621
SACRAMENT	2021	LDT1	2002	5	GAS	1.89321113	0.325548716	0.019440667	0.021143499	970.400278	0.05741135	0.029080701	0.222613711	0.324837405	4.06972811	0.009602897
SACRAMENT	2021	LDA	1997	50	GAS	5078.56334	0.824813771	0.002061358	0.002241915	323.9717913	0.045157048	0.048516911	0.222178235	0.324201959	8.078868113	0.003205964
SACRAMENT	2021	LHD1	2004	20	DSL	3960.91049	5.01096013	0.065052532	0.067993919	616.2897993	0.013219604	0.096872174	0.284610298	0.324009902	1.568791559	0.005826155
SACRAMENT	2021	LHD2	2004	20	DSL	555.156619	5.01096013	0.065052532	0.067993919	700.9244292	0.013219604	0.110175559	0.284610298	0.324009902	1.568791559	0.006626257

SACRAMENT	2021	LDA	2002	5	GAS	10.7575912	0.325445926	0.019440667	0.021143499	811.7705802	0.056948524	0.028955182	0.22150929	0.323225837	4.065499246	0.008033128
SACRAMENT	2021	MH	2010	15	DSL	4.7530832	5.918283679	0.026362138	0.027554117	1622.565918	0.013183035	0.255044767	0.283822992	0.323113607	0.801061613	0.015339083
SACRAMENT	2021	LDT2	2010	5	DSL	0.01404088	0.160304685	0.010570248	0.011048188	885.0123988	0.013148415	0.139111625	0.283077644	0.322265077	3.390379046	0.00836655
SACRAMENT	2021	LDT1	2010	5	DSL	0.00232824	0.16030473	0.010570248	0.011048188	1123.470288	0.013148408	0.176593884	0.283077491	0.322264903	3.390380458	0.010620834
SACRAMENT	2021	LDA	1980	55	DSL	14.0995361	1.960026209	0.226318683	0.23655181	334.0759796	0.01311917	0.052512092	0.282447998	0.321548268	1.405668303	0.003158219
SACRAMENT	2021	LDA	1981	55	DSL	22.6221893	1.960026209	0.226318683	0.23655181	334.0759796	0.01311917	0.052512092	0.282447998	0.321548268	1.405668303	0.003158219
SACRAMENT	2021	LDA	1982	55	DSL	40.7906239	1.960026209	0.226318683	0.23655181	334.0759796	0.01311917	0.052512092	0.282447998	0.321548268	1.405668303	0.003158219
SACRAMENT	2021	LDT1	1981	55	DSL	3.22601901	1.960026209	0.226318683	0.23655181	385.9731308	0.01311917	0.060669601	0.282447998	0.321548268	1.405668303	0.003648834
SACRAMENT	2021	LDT1	1982	55	DSL	15.8245188	1.960026209	0.226318683	0.23655181	385.9731308	0.01311917	0.060669601	0.282447998	0.321548268	1.405668303	0.003648834
SACRAMENT	2021	LDT2	1980	55	DSL	1.74451023	1.960026209	0.226318683	0.23655181	450.7713969	0.01311917	0.070854986	0.282447998	0.321548268	1.405668303	0.004261411
SACRAMENT	2021	LDT2	1981	55	DSL	0.85271532	1.960026209	0.226318683	0.23655181	450.7713969	0.01311917	0.070854986	0.282447998	0.321548268	1.405668303	0.004261411
SACRAMENT	2021	LDT2	1982	55	DSL	8.54136691	1.960026209	0.226318683	0.23655181	450.7713969	0.01311917	0.070854986	0.282447998	0.321548268	1.405668303	0.004261411
SACRAMENT	2021	MDV	1980	55	DSL	2.08899623	1.960026209	0.226318683	0.23655181	513.4541571	0.01311917	0.080707843	0.282447998	0.321548268	1.405668303	0.004853988
SACRAMENT	2021	MDV	1982	55	DSL	22.459869	1.960026209	0.226318683	0.23655181	513.4541571	0.01311917	0.080707843	0.282447998	0.321548268	1.405668303	0.004853988
SACRAMENT	2021	MH	1989	65	GAS	5.90738018	2.354593106	0.004585681	0.004987347	1828.418767	0.050137554	0.108638749	0.220305081	0.321468657	4.012278598	0.018093686
SACRAMENT	2021	MH	1992	35	GAS	28.5134291	2.314767248	0.004827353	0.005250187	1641.718974	0.050380311	0.108274393	0.219785481	0.320710458	6.052594562	0.01624614
SACRAMENT	2021	LDA	1980	40	DSL	19.9455388	1.739290141	0.225642031	0.235844562	329.6795307	0.013079946	0.051821031	0.281603529	0.320586895	1.133076815	0.003116657
SACRAMENT	2021	LDA	1981	40	DSL	32.0018864	1.739290141	0.225642031	0.235844562	329.6795307	0.013079946	0.051821031	0.281603529	0.320586895	1.133076815	0.003116657
SACRAMENT	2021	LDA	1982	40	DSL	57.7033857	1.739290141	0.225642031	0.235844562	329.6795307	0.013079946	0.051821031	0.281603529	0.320586895	1.133076815	0.003116657
SACRAMENT	2021	LDT1	1981	40	DSL	4.56360314	1.739290141	0.225642031	0.235844562	382.2300946	0.013079946	0.060081248	0.281603529	0.320586895	1.133076815	0.003613449
SACRAMENT	2021	LDT1	1982	40	DSL	22.3857403	1.739290141	0.225642031	0.235844562	382.2300946	0.013079946	0.060081248	0.281603529	0.320586895	1.133076815	0.003613449
SACRAMENT	2021	LDT2	1980	40	DSL	2.46782562	1.739290141	0.225642031	0.235844562	446.399969	0.013079946	0.070167859	0.281603529	0.320586895	1.133076815	0.004220085
SACRAMENT	2021	LDT2	1981	40	DSL	1.20627135	1.739290141	0.225642031	0.235844562	446.399969	0.013079946	0.070167859	0.281603529	0.320586895	1.133076815	0.004220085
SACRAMENT	2021	LDT2	1982	40	DSL	12.0828206	1.739290141	0.225642031	0.235844562	446.399969	0.013079946	0.070167859	0.281603529	0.320586895	1.133076815	0.004220085
SACRAMENT	2021	MDV	1980	40	DSL	2.9551437	1.739290141	0.225642031	0.235844562	503.0359839	0.013079946	0.079070251	0.281603529	0.320586895	1.133076815	0.004755499
SACRAMENT	2021	MDV	1982	40	DSL	31.7722643	1.739290141	0.225642031	0.235844562	503.0359839	0.013079946	0.079070251	0.281603529	0.320586895	1.133076815	0.004755499
SACRAMENT	2021	LHD1	2013	15	DSL	1501.22407	0.449973731	0.023640598	0.024709521	723.0486622	0.013078189	0.113653181	0.281565702	0.320543831	1.370016284	0.00683541
SACRAMENT	2021	LHD2	2013	15	DSL	599.345134	0.449973731	0.023640598	0.024709521	821.7876738	0.013078189	0.129173578	0.281565702	0.320543831	1.370016284	0.007768849
SACRAMENT	2021	LHD1	2005	20	DSL	3522.37739	5.004975341	0.064499796	0.067416191	616.2897993	0.013036598	0.096872174	0.280670286	0.31952446	1.547028464	0.005826155
SACRAMENT	2021	LHD2	2005	20	DSL	1128.00118	5.004975341	0.064499796	0.067416191	700.9244292	0.013036598	0.110175559	0.280670286	0.31952446	1.547028464	0.006626257
SACRAMENT	2021	LHD1	2002	25	DSL	2452.40218	6.332195757	0.052606192	0.054984811	546.5903577	0.012988748	0.085916393	0.279640099	0.318351661	1.330552063	0.005167245
SACRAMENT	2021	LHD2	2002	25	DSL	375.587891	6.332195757	0.052606192	0.054984811	624.6333349	0.012988748	0.098183662	0.279640099	0.318351661	1.330552063	0.005905031
SACRAMENT	2021	LDT2	2011	5	DSL	0.0114691	0.158839269	0.010249232	0.010712657	856.88578	0.012984657	0.134690512	0.279552012	0.31825138	3.261489481	0.008100652
SACRAMENT	2021	LDA	1984	55	DSL	53.9103605	1.422861601	0.173292325	0.181127835	299.2686505	0.01298392	0.047040864	0.279536163	0.318233337	2.168083371	0.002829165
SACRAMENT	2021	LDA	1985	55	DSL	77.8788758	1.422861601	0.173292325	0.181127835	299.2686505	0.01298392	0.047040864	0.279536163	0.318233337	2.168083371	0.002829165
SACRAMENT	2021	LDA	1986	55	DSL	18.9791012	1.422861601	0.173292325	0.181127835	299.2686505	0.01298392	0.047040864	0.279536163	0.318233337	2.168083371	0.002829165
SACRAMENT	2021	LDA	1987	55	DSL	44.451601	1.422861601	0.173292325	0.181127835	299.2686505	0.01298392	0.047040864	0.279536163	0.318233337	2.168083371	0.002829165
SACRAMENT	2021	LDA	1988	55	DSL	1.58864296	1.422861601	0.173292325	0.181127835	299.2686505	0.01298392	0.047040864	0.279536163	0.318233337	2.168083371	0.002829165
SACRAMENT	2021	LDA	1989	55	DSL	2.31115265	1.422861601	0.173292325	0.181127835	299.2686505	0.01298392	0.047040864	0.279536163	0.318233337	2.168083371	0.002829165
SACRAMENT	2021	LDA	1990	55	DSL	27.8745052	1.422861601	0.173292325	0.181127835	299.2686505	0.01298392	0.047040864	0.279536163	0.318233337	2.168083371	0.002829165
SACRAMENT	2021	LDA	1991	55	DSL	15.0405289	1.422861601	0.173292325	0.181127835	299.2686505	0.01298392	0.047040864	0.279536163	0.318233337	2.168083371	0.002829165
SACRAMENT	2021	LDA	1992	55	DSL	6.90661849	1.422861601	0.173292325	0.181127835	299.2686505	0.01298392	0.047040864	0.279536163	0.318233337	2.168083371	0.002829165
SACRAMENT	2021	LDT1	1984	55	DSL	7.13406147	1.422861601	0.173292325	0.181127835	345.7586448	0.01298392	0.054348444	0.279536163	0.318233337	2.168083371	0.003268663
SACRAMENT	2021	LDT1	1985	55	DSL	7.58328017	1.422861601	0.173292325	0.181127835	345.7586448	0.01298392	0.054348444	0.279536163	0.318233337	2.168083371	0.003268663
SACRAMENT	2021	LDT1	1986	55	DSL	16.2527928	1.422861601	0.173292325	0.181127835	345.7586448	0.01298392	0.054348444	0.279536163	0.318233337	2.168083371	0.003268663
SACRAMENT	2021	LDT1	1987	55	DSL	16.4255889	1.422861601	0.173292325	0.181127835	345.7586448	0.01298392	0.054348444	0.279536163	0.318233337	2.168083371	0.003268663
SACRAMENT	2021	LDT1	1988	55	DSL	15.4853714	1.422861601	0.173292325	0.181127835	345.7586448	0.01298392	0.054348444	0.279536163	0.318233337	2.168083371	0.003268663
SACRAMENT	2021	LDT1	1989	55	DSL	15.6272886	1.422861601	0.173292325	0.181127835	345.7586448	0.01298392	0.054348444	0.279536163	0.318233337	2.168083371	0.003268663
SACRAMENT	2021	LDT1	1990	55	DSL	6.42422143	1.422861601	0.173292325	0.181127835	345.7586448	0.01298392	0.054348444	0.279536163	0.318233337	2.168083371	0.003268663
SACRAMENT	2021	LDT1	1992	55	DSL	19.9090891	1.422861601	0.173292325	0.181127835	345.7586448	0.01298392	0.054348444	0.279536163	0.318233337	2.168083371	0.003268663
SACRAMENT	2021	LDT2	1984	55	DSL	0.86330019	1.422861601	0.173292325	0.181127835	403.8055886	0.01298392	0.063472615	0.279536163	0.318233337	2.168083371	0.003817415
SACRAMENT	2021	LDT2	1990	55	DSL	0.89135606	1.422861601	0.173292325	0.181127835	403.8055886	0.01298392	0.063472615	0.279536163	0.318233337	2.168083371	0.003817415
SACRAMENT	2021	MDV	1984	55	DSL	12.5868088	1.422861601	0.173292325	0.181127835	459.9574409	0.01298392	0.072298904	0.279536163	0.318233337	2.168083371	0.004348252
SACRAMENT	2021	MDV	1985	55	DSL	3.51845014	1.422861601	0.173292325	0.181127835	459.9574409	0.01298392	0.072298904	0.279536163	0.318233337	2.168083371	0.004348252
SACRAMENT	2021	MDV	1986	55	DSL	6.04822652	1.422861601	0.173292325	0.181127835	459.9574409	0.01298392	0.072298904	0.279536163	0.318233337	2.168083371	0.004348252
SACRAMENT	2021	MDV	1987	55	DSL	3.56067966	1.422861601	0.173292325	0.181127835	459.9574409	0.01298392	0.072298904	0.279536163	0.318233337	2.168083371	0.004348252
SACRAMENT	2021	MDV	1988	55	DSL	1.80292215	1.422861601	0.173292325	0.181127835	459.9574409	0.01298392	0.072298904	0.279536163	0.318233337	2.168083371	0.004348252
SACRAMENT	2021	MDV	1989	55	DSL	0.92234524	1.422861601	0.173292325	0.181127835	459.9574409	0.01298392	0.072298904	0.279536163	0.318233337	2.168083371	0.004348252
SACRAMENT	2021	MDV	1992	55	DSL	0.92166898	1.422861601	0.173292325	0.181127835	459.9574409	0.01298392	0.072298904	0.279536163	0.318233337	2.168083371	0.004348252
SACRAMENT	2021	MDV	2000	20	GAS	2799.46427	0.81839574	0.005644588	0.006139004	704.5731125	0.048381998	0.050332166	0.217847735	0.317882903	5.577884579	0.006972322
SACRAMENT	2021	LDT2	1997	45	GAS	2807.33325	1.152014094	0.002147582	0.002335691	431.8587647	0.044678858	0.061320529	0.217653674	0.31759973	8.422716225	0.004273593
SACRAMENT	2021	LDA	1985	40	DSL	110.169308	1.26262044	0.172774212	0.180586295	295.3302669	0.012945101	0.046421805	0.2787004	0.317281876	1.747642026	0.002791933
SACRAMENT	2021	LDA	1987	40	DSL	62.8822908	1.26262044	0.172774212	0.180586295	295.3302669	0.012945101	0.046421805	0.2787004	0.317281876	1.747642026	0.002791933
SACRAMENT	2021	LDA	1988	40	DSL	2.24733208	1.26262044	0.172774212	0.180586295	295.3302669	0.012945101	0.046421805	0.2787004	0.317281876	1.747642026	0.002791933
SACRAMENT	2021	LDA	1989	40	DSL	3.26941145	1.26262044	0.172774212	0.180586295	295.3302669	0.012945101	0.046421805	0.2787004	0.317281876	1.747642026	0.002791933
SACRAMENT	2021	LDA	1990	40	DSL	39.4319373	1.26262044	0.172774212	0.180586295	295.3302669	0.012945101	0.046421805	0.2787004	0.317281876	1.747642026	0.002791933
SACRAMENT	2021	LDA	1991	40	DSL	21.2766895	1.26262044	0.172774212	0.180586295	295.3302669	0.012945101	0.046421805	0.2787004	0.317281876	1.747642026	0.002791933
SACRAMENT	2021	LDA	1992	40	DSL	9.77026661	1.26262044	0.172774212	0.180586295	295.3302669	0.012945101	0.046421805	0.2787004	0.317281876	1.747642026	0.002791933
SACRAMENT	2021	LDT1	1984	40	DSL	10.0920129	1.26262044	0.172774212	0.180586295	342.4055949	0.012945101	0.053821391	0.2787004	0.317281876	1.747642026	0.003236964
SACRAMENT	2021	LDT1	1985	40	DSL	10.7274883	1.26262044	0.172774212	0.180586295	342.4055949	0.012945101	0.053821391	0.2787004	0.317281876	1.747642026	0.003236964
SACRAMENT	2021	LDT1	1986	40	DSL	22.9915868	1.26262044	0.172774212	0.180586295	342.4055949	0.012945101	0.053821391	0.2787004	0.317281876	1.747642026	0.003236964
SACRAMENT	2021	LDT1	1987	40	DSL	23.2360283	1.26262044	0.172774212	0.180586295	342.4055949	0.012945101	0.053821391	0.2787004	0.317281876	1.747642026	0.003236964
SACRAMENT	2021	LDT1	1988	40	DSL	21.9059744	1.26262044	0.172774212	0.180586295	342.4055949	0.012945101	0.053821391	0.2787004	0.317281876	1.747642026	0.003236964
SACRAMENT	2021	LDT1	1989	40	DSL	22.1067338	1.26262044	0.172774212	0.180586295	342.4055949	0.012945101	0.053821391	0.2787004	0.317281876	1.747642026	0.003236964
SACRAMENT	2021	LDT1	1990	40	DSL	9.08785627	1.26262044	0.172774212	0.180586295	342.4055949	0.012945101	0.053821391	0.2787004	0.317281876	1.747642026	0.003236964
SACRAMENT	2021	LDT2	1984	40	DSL	1.22124497	1.26262044	0.172774212	0.180586295	399.8896192	0.012945101	0.062857079	0.2787004	0.317281876	1.747642026	0.003780395
SACRAMENT	2021	LDT2	1990	40	DSL	1.26093346	1.26262044	0.172774212	0.180586295	399.8896192	0.012945101	0.062857079	0.2787004	0.317281876	1.747642026	0.003780395
SACRAMENT	2021	MDV	1984	40	DSL	17.8055988	1.26262044	0.172774212	0.180586295	450.6247357	0.012945101	0.070831933	0.2787004	0.317281876	1.747642026	0.004260024
SACRAMENT	2021	MDV	1985	40	DSL	4.97728316	1.26262044	0.172774212	0.180586295	450.6247357	0.012945101	0.070831933	0.2787004	0.317281876	1.747642026	0.004260024
SACRAMENT	2021	MDV	1986	40	DSL	8.55596493	1.26262044	0.172774212	0.180586295	450.6247357	0.012945101	0.070831933	0.2787004	0.317281876	1.747642026	0.004260024
SACRAMENT	2021	MDV	1987	40	DSL	5.03702204	1.26262044	0.172774212	0.180586295	450.6247357	0.012945101	0.070831933	0.2787004	0.317281876	1.747642026	0.004260024
SACRAMENT	2021	MDV	1989	40	DSL	1.30477149	1.26262044	0.172774212	0.180586295	450.6247357	0.012945101	0.070831933	0.2787004	0.317281876	1.747642026	0.004260024
SACRAMENT	2021	MDV	1992	40	DSL	1.30381484	1.26262044	0.172774212	0.180586295	450.6247357	0.012945101	0.070831933	0.2787004	0.317281876	1.747642026	0.004260024
SACRAMENT	2021	LDA	1984	40	DSL	76.2628768	1.26262044	0.172774212	0.180586295	295.3302669	0.012945101	0.046421805	0.2787004	0.317281876	1.747642026	0.002791933
SACRAMENT	2021	LDA	1986	40	DSL	26.8482875	1.26262044	0.172774212	0.180586295	295.3302669	0.012945101	0.046421805	0.2787004	0.317281876	1.747642026	0.002791933
SACRAMENT	2021	LDT1	1992	40	DSL	28.1638704	1.26262044	0.172774212	0.180586295	342.4055949	0.012945101	0.053821391	0.2787004	0.317281876	1.747642026	0.003236964
SACRAMENT	2021	MDV	1988	40	DSL	2.55045651	1.26262044	0.172774212	0.180586295	450.6247357	0.012945101	0.070831933	0.2787004	0.317281876	1.747642026	0.004260024
SACRAMENT	2021	LDT2	1997	60	GAS	3953.74344	1.246373292	0.002198608	0.002391186	475.6814635	0.044593055	0.066343173	0.217235683	0.316989798	6.976435351	0.004707254
SACRAMENT	2021	MH	1990	65	GAS	5.78716421	2.321519843	0.004585681	0.004987347	1828.376539	0.049422816	0.107573068	0.216672211	0.316167581	3.995521427	0.018093268
SACRAMENT	2021	MDV	1998	25	GAS	3644.49717	1.122481181	0.004159396	0.004523722	537.8994909	0.047316962	0.063091742	0.216252714	0.315555452	6.347356585	0.005322952
SACRAMENT	2021	MH	2011	15	DSL	6.57939746	5.875128395	0.025769091	0.026934255	1622.565918	0.012864962	0.255044767	0.276975062	0.315317693	0.781761783	0.015339083
SACRAMENT	2021	LHD1	2003	25	DSL	3423.02862	6.32659407	0.052278034	0.054641814	546.5903577	0.012857413	0.085916393	0.27681253	0.315132662	1.317115934	0.005167245
SACRAMENT	2021	LHD2	2003	25	DSL	490.638187	6.32659407	0.052278034	0.054641814	624.6333349	0.012857413	0.098183662	0.27681253	0.315132662	1.317115934	0.005905031
SACRAMENT	2021	LHD1	2006	20	DSL	4383.46854	4.998225221	0.063876379	0.066764585	616.2897993	0.01283019	0.096872174	0.27622644	0.314465437	1.522482394	0.005826155
SACRAMENT	2021	LHD2	2006	20	DSL	1307.23048	4.998225221	0.063876379	0.066764585	700.9244292	0.01283019	0.110175559	0.27622644	0.314465437	1.522482394	0.006626257
SACRAMENT	2021	LHD1	2014	15	DSL	2260.09535	0.433267809	0.022030864	0.023027002	706.418543	0.012830165	0.111039157	0.276225895	0.314464816	1.281585665	0.006678196
SACRAMENT	2021	LHD2	2014	15	DSL	907.430915	0.433267809	0.022030864	0.023027002	802.8865573	0.012830165	0.126202586	0.276225895	0.314464816	1.281585665	0.007590165
SACRAMENT	2021	MH	1993	35	GAS	26.9153539	2.276933829	0.004827353	0.005250187	1641.667493	0.049490143	0.107037934	0.215295432	0.314158589	6.032331585	0.016245631
SACRAMENT	2021	LDT2	2012	5	DSL	0.06528183	0.157285533	0.009908868	0.010356903	835.7403548	0.012811028	0.131366745	0.275813887	0.313995773	3.12483168	0.007900752
SACRAMENT	2021	LDT1	2012	5	DSL	0.00132524	0.157285556	0.009908868	0.010356903	1063.446034	0.012811018	0.167158907	0.275813675	0.313995532	3.124834538	0.010053389
SACRAMENT	2021	LDT1	1997	35	GAS	3592.96621	0.69049286	0.002707886	0.002945073	357.1427143	0.045572215	0.043725187	0.214608564	0.313156313	7.592998346	0.003534217
SACRAMENT	2021	MH	1991	65	GAS	5.58198129	2.286659392	0.004585681	0.004987347	1828.335416	0.048679413	0.106444741	0.212903901	0.310668872	3.979829295	0.018092861
SACRAMENT	2021	LDT2	2013	5	DSL	0.11316125	0.155643476	0.009549156	0.009980927	807.9435614	0.012627529	0.126997477	0.271863269	0.309498257	2.980405654	0.007637972
SACRAMENT	2021	LDT1	2013	5	DSL	0.00429311	0.155643486	0.009549156	0.009980927	1034.391514	0.012627518	0.162591941	0.271863028	0.309497983	2.980409339	0.00977872
SACRAMENT	2021	MDV	2007	5	DSL	0.04836956	0.172953815	0.011986549	0.012528527	1192.089976	0.012623728	0.187379943	0.271781426	0.309405084	6.334182604	0.011269537
SACRAMENT	2021	LDT2	2000	10	GAS	311.89933	0.607345521	0.012232021	0.013303439	928.1853444	0.051574353	0.042619844	0.211368461	0.308428363	5.282767579	0.009185146
SACRAMENT	2021	MH	1994	25	DSL	8.16983586	10.94282787	0.219482716	0.229406751	1147.556531	0.012573168	0.180379906	0.270692905	0.308165875	1.631618899	0.010848536
SACRAMENT	2021	LHD1	2015	15	DSL	3186.45293	0.415568666	0.020325427	0.021244453	701.3572023	0.012567395	0.110243585	0.270568608	0.308024371	1.187897599	0.006630348

SACRAMENT	2021	LHD2	2015	15	DSL	1767.68346	0.415568666	0.020325427	0.021244453	797.1340436	0.012567395	0.125298371	0.270568608	0.308024371	1.187897599	0.007535783
SACRAMENT	2021	MH	2012	15	DSL	8.70451366	5.831253546	0.025166155	0.026304057	1622.565918	0.012541585	0.255044767	0.270012943	0.307391784	0.762140128	0.015339083
SACRAMENT	2021	LHD1	1991	35	DSL	100.484026	9.030762887	0.038250652	0.039980177	496.3631357	0.012536187	0.078021373	0.26989673	0.307259483	1.090901817	0.004692417
SACRAMENT	2021	LHD1	1992	35	DSL	133.083452	9.030762887	0.038250652	0.039980177	496.3631357	0.012536187	0.078021373	0.26989673	0.307259483	1.090901817	0.004692417
SACRAMENT	2021	LHD1	1993	35	DSL	157.705602	9.030762887	0.038250652	0.039980177	496.3631357	0.012536187	0.078021373	0.26989673	0.307259483	1.090901817	0.004692417
SACRAMENT	2021	LHD2	1991	35	DSL	21.5770529	9.030762887	0.038250652	0.039980177	563.3196333	0.012536187	0.088546002	0.26989673	0.307259483	1.090901817	0.005325396
SACRAMENT	2021	LHD2	1992	35	DSL	31.7293813	9.030762887	0.038250652	0.039980177	563.3196333	0.012536187	0.088546002	0.26989673	0.307259483	1.090901817	0.005325396
SACRAMENT	2021	LHD2	1993	35	DSL	75.5863504	9.030762887	0.038250652	0.039980177	563.3196333	0.012536187	0.088546002	0.26989673	0.307259483	1.090901817	0.005325396
SACRAMENT	2021	LDA	1980	50	DSL	7.74770711	1.886367241	0.216057769	0.225826943	319.2557279	0.012524368	0.050182555	0.269642274	0.306969802	1.24222807	0.003018115
SACRAMENT	2021	LDA	1981	50	DSL	12.4309123	1.886367241	0.216057769	0.225826943	319.2557279	0.012524368	0.050182555	0.269642274	0.306969802	1.24222807	0.003018115
SACRAMENT	2021	LDA	1982	50	DSL	22.4144826	1.886367241	0.216057769	0.225826943	319.2557279	0.012524368	0.050182555	0.269642274	0.306969802	1.24222807	0.003018115
SACRAMENT	2021	LDT1	1981	50	DSL	1.7727002	1.886367241	0.216057769	0.225826943	369.1468756	0.012524368	0.058024748	0.269642274	0.306969802	1.24222807	0.003489766
SACRAMENT	2021	LDT1	1982	50	DSL	8.69558658	1.886367241	0.216057769	0.225826943	369.1468756	0.012524368	0.058024748	0.269642274	0.306969802	1.24222807	0.003489766
SACRAMENT	2021	LDT2	1980	50	DSL	0.95860986	1.886367241	0.216057769	0.225826943	431.1203021	0.012524368	0.067766108	0.269642274	0.306969802	1.24222807	0.004075637
SACRAMENT	2021	LDT2	1981	50	DSL	0.46856779	1.886367241	0.216057769	0.225826943	431.1203021	0.012524368	0.067766108	0.269642274	0.306969802	1.24222807	0.004075637
SACRAMENT	2021	LDT2	1982	50	DSL	4.6934884	1.886367241	0.216057769	0.225826943	431.1203021	0.012524368	0.067766108	0.269642274	0.306969802	1.24222807	0.004075637
SACRAMENT	2021	MDV	1980	50	DSL	1.14790521	1.886367241	0.216057769	0.225826943	486.5253034	0.012524368	0.076475002	0.269642274	0.306969802	1.24222807	0.004599414
SACRAMENT	2021	MDV	1982	50	DSL	12.3417172	1.886367241	0.216057769	0.225826943	486.5253034	0.012524368	0.076475002	0.269642274	0.306969802	1.24222807	0.004599414
SACRAMENT	2021	LDA	1980	45	DSL	7.7285904	1.81301376	0.215842329	0.225601761	318.4451003	0.01251188	0.050055135	0.269373402	0.306663709	1.156092905	0.003010451
SACRAMENT	2021	LDA	1981	45	DSL	12.4002402	1.81301376	0.215842329	0.225601761	318.4451003	0.01251188	0.050055135	0.269373402	0.306663709	1.156092905	0.003010451
SACRAMENT	2021	LDA	1982	45	DSL	22.359177	1.81301376	0.215842329	0.225601761	318.4451003	0.01251188	0.050055135	0.269373402	0.306663709	1.156092905	0.003010451
SACRAMENT	2021	LDT1	1981	45	DSL	1.76832623	1.81301376	0.215842329	0.225601761	368.5346563	0.01251188	0.057928516	0.269373402	0.306663709	1.156092905	0.003483978
SACRAMENT	2021	LDT1	1982	45	DSL	8.67413107	1.81301376	0.215842329	0.225601761	368.5346563	0.01251188	0.057928516	0.269373402	0.306663709	1.156092905	0.003483978
SACRAMENT	2021	LDT2	1980	45	DSL	0.95624458	1.81301376	0.215842329	0.225601761	430.4053017	0.01251188	0.06765372	0.269373402	0.306663709	1.156092905	0.004068878
SACRAMENT	2021	LDT2	1981	45	DSL	0.46741165	1.81301376	0.215842329	0.225601761	430.4053017	0.01251188	0.06765372	0.269373402	0.306663709	1.156092905	0.004068878
SACRAMENT	2021	LDT2	1982	45	DSL	4.68190768	1.81301376	0.215842329	0.225601761	430.4053017	0.01251188	0.06765372	0.269373402	0.306663709	1.156092905	0.004068878
SACRAMENT	2021	MDV	1980	45	DSL	1.14507287	1.81301376	0.215842329	0.225601761	484.0994939	0.01251188	0.076093699	0.269373402	0.306663709	1.156092905	0.004576481
SACRAMENT	2021	MDV	1982	45	DSL	12.3112652	1.81301376	0.215842329	0.225601761	484.0994939	0.01251188	0.076093699	0.269373402	0.306663709	1.156092905	0.004576481
SACRAMENT	2021	LHD1	1994	35	DSL	139.821427	9.039083693	0.038561157	0.040304722	496.3631357	0.012508642	0.078021373	0.269303696	0.306584353	1.086122403	0.004692417
SACRAMENT	2021	LHD1	1995	35	DSL	232.80335	9.039083693	0.038561157	0.040304722	496.3631357	0.012508642	0.078021373	0.269303696	0.306584353	1.086122403	0.004692417
SACRAMENT	2021	LHD1	1996	35	DSL	189.366754	9.039083693	0.038561157	0.040304722	496.3631357	0.012508642	0.078021373	0.269303696	0.306584353	1.086122403	0.004692417
SACRAMENT	2021	LHD1	1997	35	DSL	410.469622	9.039083693	0.038561157	0.040304722	496.3631357	0.012508642	0.078021373	0.269303696	0.306584353	1.086122403	0.004692417
SACRAMENT	2021	LHD2	1994	35	DSL	76.2775578	9.039083693	0.038561157	0.040304722	563.3196333	0.012508642	0.088546002	0.269303696	0.306584353	1.086122403	0.005325396
SACRAMENT	2021	LHD2	1995	35	DSL	43.1180039	9.039083693	0.038561157	0.040304722	563.3196333	0.012508642	0.088546002	0.269303696	0.306584353	1.086122403	0.005325396
SACRAMENT	2021	LHD2	1996	35	DSL	93.5927359	9.039083693	0.038561157	0.040304722	563.3196333	0.012508642	0.088546002	0.269303696	0.306584353	1.086122403	0.005325396
SACRAMENT	2021	LHD2	1997	35	DSL	61.8147649	9.039083693	0.038561157	0.040304722	563.3196333	0.012508642	0.088546002	0.269303696	0.306584353	1.086122403	0.005325396
SACRAMENT	2021	LHD1	1998	35	DSL	168.47876	9.037591734	0.03850959	0.040250823	496.3631357	0.012485457	0.078021373	0.26880453	0.306016087	1.08411049	0.004692417
SACRAMENT	2021	LHD2	1998	35	DSL	48.7622541	9.037591734	0.03850959	0.040250823	563.3196333	0.012485457	0.088546002	0.26880453	0.306016087	1.08411049	0.005325396
SACRAMENT	2021	LDT2	1997	55	GAS	5121.51563	1.17603707	0.002075129	0.002256892	461.3012614	0.042894881	0.062599248	0.208963004	0.304918325	7.458751591	0.00456495
SACRAMENT	2021	MH	1992	65	GAS	7.42969601	2.250538185	0.004585681	0.004987347	1828.29532	0.047890202	0.105270046	0.208922314	0.30485895	3.965365784	0.018092464
SACRAMENT	2021	LDT2	2014	5	DSL	0.11637029	0.153913098	0.009170097	0.009584728	802.6638289	0.012434161	0.126167576	0.267700157	0.304758831	2.828211418	0.00758806
SACRAMENT	2021	LHD1	1999	35	DSL	692.818869	9.034280426	0.038395141	0.040131199	496.3631357	0.012433998	0.078021373	0.267696665	0.304754855	1.079645175	0.004692417
SACRAMENT	2021	LHD2	1999	35	DSL	196.146887	9.034280426	0.038395141	0.040131199	563.3196333	0.012433998	0.088546002	0.267696665	0.304754855	1.079645175	0.005325396
SACRAMENT	2021	LHD1	1988	45	GAS	28.9412062	1.452031814	0.006841429	0.007440678	761.447409	0.042788988	0.069037941	0.208817469	0.30470596	7.047573208	0.007535139
SACRAMENT	2021	LHD2	1988	45	GAS	0.82458764	1.452031814	0.006841429	0.007440678	870.4631584	0.042820895	0.069175835	0.208817469	0.30470596	7.047573208	0.008613939
SACRAMENT	2021	LDT2	1997	50	GAS	2814.2772	1.151254503	0.002059289	0.002239665	444.2744827	0.042826015	0.061280097	0.208627521	0.304428789	7.922034241	0.004396456
SACRAMENT	2021	MH	1994	40	GAS	42.6748211	2.106722609	0.001196291	0.001301075	1589.69911	0.047219841	0.100145939	0.20850766	0.304253888	6.157862819	0.015731361
SACRAMENT	2021	MDV	2009	5	DSL	0.03870837	0.167725648	0.011399905	0.011915359	1092.082934	0.012411808	0.171660229	0.267218921	0.304210976	5.434193364	0.010324111
SACRAMENT	2021	LDA	1984	50	DSL	29.6237891	1.369389603	0.165435538	0.172915799	285.9925187	0.012395251	0.044954041	0.266862457	0.303805165	1.915995414	0.002703658
SACRAMENT	2021	LDA	1985	50	DSL	42.7945086	1.369389603	0.165435538	0.172915799	285.9925187	0.012395251	0.044954041	0.266862457	0.303805165	1.915995414	0.002703658
SACRAMENT	2021	LDA	1986	50	DSL	10.4290323	1.369389603	0.165435538	0.172915799	285.9925187	0.012395251	0.044954041	0.266862457	0.303805165	1.915995414	0.002703658
SACRAMENT	2021	LDA	1987	50	DSL	24.4261926	1.369389603	0.165435538	0.172915799	285.9925187	0.012395251	0.044954041	0.266862457	0.303805165	1.915995414	0.002703658
SACRAMENT	2021	LDA	1988	50	DSL	0.87296066	1.369389603	0.165435538	0.172915799	285.9925187	0.012395251	0.044954041	0.266862457	0.303805165	1.915995414	0.002703658
SACRAMENT	2021	LDA	1989	50	DSL	1.26998035	1.369389603	0.165435538	0.172915799	285.9925187	0.012395251	0.044954041	0.266862457	0.303805165	1.915995414	0.002703658
SACRAMENT	2021	LDA	1990	50	DSL	15.3170644	1.369389603	0.165435538	0.172915799	285.9925187	0.012395251	0.044954041	0.266862457	0.303805165	1.915995414	0.002703658
SACRAMENT	2021	LDA	1991	50	DSL	8.26478343	1.369389603	0.165435538	0.172915799	285.9925187	0.012395251	0.044954041	0.266862457	0.303805165	1.915995414	0.002703658
SACRAMENT	2021	LDA	1992	50	DSL	3.79519275	1.369389603	0.165435538	0.172915799	285.9925187	0.012395251	0.044954041	0.266862457	0.303805165	1.915995414	0.002703658
SACRAMENT	2021	LDT1	1984	50	DSL	3.92017286	1.369389603	0.165435538	0.172915799	330.6855147	0.012395251	0.051979158	0.266862457	0.303805165	1.915995414	0.003126167
SACRAMENT	2021	LDT1	1985	50	DSL	4.16701891	1.369389603	0.165435538	0.172915799	330.6855147	0.012395251	0.051979158	0.266862457	0.303805165	1.915995414	0.003126167
SACRAMENT	2021	LDT1	1986	50	DSL	8.93092349	1.369389603	0.165435538	0.172915799	330.6855147	0.012395251	0.051979158	0.266862457	0.303805165	1.915995414	0.003126167
SACRAMENT	2021	LDT1	1987	50	DSL	9.02587509	1.369389603	0.165435538	0.172915799	330.6855147	0.012395251	0.051979158	0.266862457	0.303805165	1.915995414	0.003126167
SACRAMENT	2021	LDT1	1988	50	DSL	8.50922481	1.369389603	0.165435538	0.172915799	330.6855147	0.012395251	0.051979158	0.266862457	0.303805165	1.915995414	0.003126167
SACRAMENT	2021	LDT1	1989	50	DSL	8.58720842	1.369389603	0.165435538	0.172915799	330.6855147	0.012395251	0.051979158	0.266862457	0.303805165	1.915995414	0.003126167
SACRAMENT	2021	LDT1	1990	50	DSL	3.53011515	1.369389603	0.165435538	0.172915799	330.6855147	0.012395251	0.051979158	0.266862457	0.303805165	1.915995414	0.003126167
SACRAMENT	2021	LDT1	1992	50	DSL	10.9400614	1.369389603	0.165435538	0.172915799	330.6855147	0.012395251	0.051979158	0.266862457	0.303805165	1.915995414	0.003126167
SACRAMENT	2021	LDT2	1984	50	DSL	0.47438419	1.369389603	0.165435538	0.172915799	386.2019386	0.012395251	0.060705567	0.266862457	0.303805165	1.915995414	0.003650997
SACRAMENT	2021	LDT2	1990	50	DSL	0.48980091	1.369389603	0.165435538	0.172915799	386.2019386	0.012395251	0.060705567	0.266862457	0.303805165	1.915995414	0.003650997
SACRAMENT	2021	MDV	1984	50	DSL	6.91646216	1.369389603	0.165435538	0.172915799	435.8343007	0.012395251	0.068507083	0.266862457	0.303805165	1.915995414	0.004120201
SACRAMENT	2021	MDV	1985	50	DSL	1.93339135	1.369389603	0.165435538	0.172915799	435.8343007	0.012395251	0.068507083	0.266862457	0.303805165	1.915995414	0.004120201
SACRAMENT	2021	MDV	1986	50	DSL	3.32350563	1.369389603	0.165435538	0.172915799	435.8343007	0.012395251	0.068507083	0.266862457	0.303805165	1.915995414	0.004120201
SACRAMENT	2021	MDV	1987	50	DSL	1.95659651	1.369389603	0.165435538	0.172915799	435.8343007	0.012395251	0.068507083	0.266862457	0.303805165	1.915995414	0.004120201
SACRAMENT	2021	MDV	1988	50	DSL	0.99070726	1.369389603	0.165435538	0.172915799	435.8343007	0.012395251	0.068507083	0.266862457	0.303805165	1.915995414	0.004120201
SACRAMENT	2021	MDV	1989	50	DSL	0.5068295	1.369389603	0.165435538	0.172915799	435.8343007	0.012395251	0.068507083	0.266862457	0.303805165	1.915995414	0.004120201
SACRAMENT	2021	MDV	1992	50	DSL	0.50645789	1.369389603	0.165435538	0.172915799	435.8343007	0.012395251	0.068507083	0.266862457	0.303805165	1.915995414	0.004120201
SACRAMENT	2021	LDA	1984	45	DSL	29.5506953	1.316139371	0.165270576	0.172743378	285.2663502	0.012382891	0.044839898	0.266596357	0.303502228	1.783141726	0.002696793
SACRAMENT	2021	LDA	1985	45	DSL	42.6889174	1.316139371	0.165270576	0.172743378	285.2663502	0.012382891	0.044839898	0.266596357	0.303502228	1.783141726	0.002696793
SACRAMENT	2021	LDA	1986	45	DSL	10.4032997	1.316139371	0.165270576	0.172743378	285.2663502	0.012382891	0.044839898	0.266596357	0.303502228	1.783141726	0.002696793
SACRAMENT	2021	LDA	1987	45	DSL	24.3659234	1.316139371	0.165270576	0.172743378	285.2663502	0.012382891	0.044839898	0.266596357	0.303502228	1.783141726	0.002696793
SACRAMENT	2021	LDA	1988	45	DSL	0.87080672	1.316139371	0.165270576	0.172743378	285.2663502	0.012382891	0.044839898	0.266596357	0.303502228	1.783141726	0.002696793
SACRAMENT	2021	LDA	1989	45	DSL	1.2668468	1.316139371	0.165270576	0.172743378	285.2663502	0.012382891	0.044839898	0.266596357	0.303502228	1.783141726	0.002696793
SACRAMENT	2021	LDA	1990	45	DSL	15.279271	1.316139371	0.165270576	0.172743378	285.2663502	0.012382891	0.044839898	0.266596357	0.303502228	1.783141726	0.002696793
SACRAMENT	2021	LDA	1991	45	DSL	8.24439089	1.316139371	0.165270576	0.172743378	285.2663502	0.012382891	0.044839898	0.266596357	0.303502228	1.783141726	0.002696793
SACRAMENT	2021	LDA	1992	45	DSL	3.78582848	1.316139371	0.165270576	0.172743378	285.2663502	0.012382891	0.044839898	0.266596357	0.303502228	1.783141726	0.002696793
SACRAMENT	2021	LDT1	1984	45	DSL	3.91050022	1.316139371	0.165270576	0.172743378	330.1370824	0.012382891	0.051892952	0.266596357	0.303502228	1.783141726	0.003120983
SACRAMENT	2021	LDT1	1985	45	DSL	4.1567372	1.316139371	0.165270576	0.172743378	330.1370824	0.012382891	0.051892952	0.266596357	0.303502228	1.783141726	0.003120983
SACRAMENT	2021	LDT1	1986	45	DSL	8.90888731	1.316139371	0.165270576	0.172743378	330.1370824	0.012382891	0.051892952	0.266596357	0.303502228	1.783141726	0.003120983
SACRAMENT	2021	LDT1	1987	45	DSL	9.00360462	1.316139371	0.165270576	0.172743378	330.1370824	0.012382891	0.051892952	0.266596357	0.303502228	1.783141726	0.003120983
SACRAMENT	2021	LDT1	1988	45	DSL	8.48822913	1.316139371	0.165270576	0.172743378	330.1370824	0.012382891	0.051892952	0.266596357	0.303502228	1.783141726	0.003120983
SACRAMENT	2021	LDT1	1989	45	DSL	8.56602033	1.316139371	0.165270576	0.172743378	330.1370824	0.012382891	0.051892952	0.266596357	0.303502228	1.783141726	0.003120983
SACRAMENT	2021	LDT1	1990	45	DSL	3.52140494	1.316139371	0.165270576	0.172743378	330.1370824	0.012382891	0.051892952	0.266596357	0.303502228	1.783141726	0.003120983
SACRAMENT	2021	LDT1	1992	45	DSL	10.9130679	1.316139371	0.165270576	0.172743378	330.1370824	0.012382891	0.051892952	0.266596357	0.303502228	1.783141726	0.003120983
SACRAMENT	2021	LDT2	1984	45	DSL	0.4732137	1.316139371	0.165270576	0.172743378	385.561434	0.012382891	0.060604888	0.266596357	0.303502228	1.783141726	0.003644942
SACRAMENT	2021	LDT2	1990	45	DSL	0.48859238	1.316139371	0.165270576	0.172743378	385.561434	0.012382891	0.060604888	0.266596357	0.303502228	1.783141726	0.003644942
SACRAMENT	2021	MDV	1984	45	DSL	6.89939646	1.316139371	0.165270576	0.172743378	433.6612359	0.012382891	0.068165507	0.266596357	0.303502228	1.783141726	0.004099658
SACRAMENT	2021	MDV	1985	45	DSL	1.9286209	1.316139371	0.165270576	0.172743378	433.6612359	0.012382891	0.068165507	0.266596357	0.303502228	1.783141726	0.004099658
SACRAMENT	2021	MDV	1986	45	DSL	3.3153052	1.316139371	0.165270576	0.172743378	433.6612359	0.012382891	0.068165507	0.266596357	0.303502228	1.783141726	0.004099658
SACRAMENT	2021	MDV	1987	45	DSL	1.9517688	1.316139371	0.165270576	0.172743378	433.6612359	0.012382891	0.068165507	0.266596357	0.303502228	1.783141726	0.004099658
SACRAMENT	2021	MDV	1988	45	DSL	0.98826279	1.316139371	0.165270576	0.172743378	433.6612359	0.012382891	0.068165507	0.266596357	0.303502228	1.783141726	0.004099658
SACRAMENT	2021	MDV	1989	45	DSL	0.50557894	1.316139371	0.165270576	0.172743378	433.6612359	0.012382891	0.068165507	0.266596357	0.303502228	1.783141726	0.004099658
SACRAMENT	2021	MDV	1992	45	DSL	0.50520825	1.316139371	0.165270576	0.172743378	433.6612359	0.012382891	0.068165507	0.266596357	0.303502228	1.783141726	0.004099658
SACRAMENT	2021	LHD1	1989	45	GAS	43.7150525	1.45085233	0.006841429	0.007440678	761.4120886	0.042592861	0.069097168	0.207553413	0.302861453	7.028729069	0.00753479
SACRAMENT	2021	LHD2	1989	45	GAS	1.07097689	1.45085233	0.006841429	0.007440678	870.427838	0.042621305	0.069221386	0.207553413	0.302861453	7.028729069	0.008613589
SACRAMENT	2021	MH	1995	25	DSL	5.38841992	10.92058398	0.216992649	0.226804094	1147.556531	0.012354514	0.180379906	0.265985405	0.302806699	1.603242384	0.010848536
SACRAMENT	2021	LHD1	2000	35	DSL	660.14781	9.029149769	0.03821781	0.039945849	496.3631357	0.012354267	0.078021373	0.265980098	0.302800658	1.07272646	0.004692417
SACRAMENT	2021	LHD2	2000	35	DSL	160.868333	9.029149769	0.03821781	0.039945849	563.3196333	0.012354267	0.088546002	0.265980098	0.302800658	1.07272646	0.005325396
SACRAMENT	2021	MH	1987	40	GAS	13.3302617	2.381706148	0.004187017	0.004553763	1592.05212	0.046968497	0.10906665	0.207274552	0.302454539	7.64569433	0.015754646
SACRAMENT	2021	MDV	2008	5	DSL	0.02538075	0.171029	0.011705448	0.012234716	1157.678265	0.012336933	0.181970902	0.2656069	0.302375797	6.176174265	0.010944223
SACRAMENT	2021	LHD1	2016	15	DSL	5812.18464	0.348030152	0.018524287	0.019361873	679.6657425	0.012289878	0.10683399	0.264593834	0.301222488	1.088952085	0.006425285

SACRAMENT	2021	LHD2	2016	15	DSL	1380.07353	0.348043124	0.018524287	0.019361873	772.4804134	0.012289878	0.121423164	0.264593834	0.301222488	1.088952085	0.007302718
SACRAMENT	2021	LHD1	1990	45	GAS	57.0920399	1.448359062	0.006841429	0.007440678	761.3782886	0.042405087	0.069170046	0.206369287	0.301133579	7.010626703	0.007534455
SACRAMENT	2021	LHD2	1990	45	GAS	4.32495962	1.448359062	0.006841429	0.007440678	870.3940381	0.042430372	0.069279951	0.206369287	0.301133579	7.010626703	0.008613255
SACRAMENT	2021	LHD1	2001	35	DSL	1108.73379	9.022199761	0.037977596	0.039694774	496.3631357	0.012246263	0.078021373	0.263654831	0.300153496	1.063354344	0.004692417
SACRAMENT	2021	LHD2	2001	35	DSL	315.72935	9.022199761	0.037977596	0.039694774	563.3196333	0.012246263	0.088546002	0.263654831	0.300153496	1.063354344	0.005325396
SACRAMENT	2021	LDT2	2015	5	DSL	0.17115366	0.152094401	0.008771689	0.009168306	783.9460443	0.012230922	0.123225401	0.263324551	0.299777495	2.668248988	0.007411109
SACRAMENT	2021	MH	2013	15	DSL	14.5226499	5.786659144	0.02455333	0.025663523	1622.565918	0.012212904	0.255044767	0.262936636	0.299335879	0.742196646	0.015339083
SACRAMENT	2021	LHD1	1988	50	GAS	213.697833	1.389931006	0.006604076	0.007182536	782.8402867	0.041999238	0.066085311	0.204963355	0.299082046	6.665842519	0.007746839
SACRAMENT	2021	LHD2	1988	50	GAS	6.08864021	1.389931006	0.006604076	0.007182536	895.058614	0.042030556	0.066217308	0.204963355	0.299082046	6.665842519	0.008857331
SACRAMENT	2021	MH	1993	65	GAS	7.01328827	2.21375455	0.004585681	0.004987347	1828.255873	0.047044032	0.104067896	0.204654191	0.298630915	3.952090466	0.018092074
SACRAMENT	2021	MH	1988	40	GAS	15.0593471	2.353587194	0.004187017	0.004553763	1591.844614	0.04633877	0.108169603	0.204058227	0.297761286	7.523532224	0.015752593
SACRAMENT	2021	MDV	2003	15	GAS	1660.09509	0.557410342	0.008119324	0.008830505	849.2653259	0.046936635	0.038978558	0.20380088	0.297385765	5.403238435	0.008404169
SACRAMENT	2021	MH	1996	25	DSL	3.55100642	10.89783417	0.214445951	0.224142246	1147.556531	0.012130886	0.180379906	0.261170842	0.297325639	1.574220518	0.010848536
SACRAMENT	2021	LHD1	1988	55	GAS	58.7769956	1.461106401	0.006725307	0.007314385	813.6010701	0.041751299	0.069469399	0.203753371	0.297316441	6.075978455	0.008051242
SACRAMENT	2021	LHD2	1988	55	GAS	1.67466358	1.461106401	0.006725307	0.007314385	930.4311095	0.041782432	0.069608155	0.203753371	0.297316441	6.075978455	0.00920737
SACRAMENT	2021	LHD1	1989	50	GAS	322.785855	1.388801967	0.006604076	0.007182536	782.8066848	0.041806731	0.066142005	0.20372263	0.297271583	6.648019069	0.007746507
SACRAMENT	2021	LHD2	1989	50	GAS	7.90794407	1.388801967	0.006604076	0.007182536	895.0250121	0.04183465	0.066260911	0.20372263	0.297271583	6.648019069	0.008856998
SACRAMENT	2021	MDV	2010	5	DSL	0.07548206	0.165654402	0.011069921	0.011570454	1081.73407	0.012117223	0.170033532	0.260876675	0.29699075	5.261956129	0.010226277
SACRAMENT	2021	LDA	2008	5	DSL	0.01500231	0.165539116	0.011051559	0.011551261	651.5360866	0.012100831	0.1024124	0.260523773	0.296588995	5.252368807	0.006159359
SACRAMENT	2021	LHD1	1990	50	GAS	421.559666	1.386415332	0.006604076	0.007182536	782.7745333	0.041622423	0.066211767	0.202560358	0.295575599	6.630897215	0.007746189
SACRAMENT	2021	LHD2	1990	50	GAS	31.9348991	1.386415332	0.006604076	0.007182536	894.9928605	0.041647241	0.066316971	0.202560358	0.295575599	6.630897215	0.00885668
SACRAMENT	2021	LHD1	1989	55	GAS	88.7813533	1.459919546	0.006725307	0.007314385	813.5699998	0.041559928	0.069528996	0.202519971	0.295516666	6.059732212	0.008050935
SACRAMENT	2021	LHD2	1989	55	GAS	2.17505806	1.459919546	0.006725307	0.007314385	930.4000392	0.041587683	0.069653991	0.202519971	0.295516666	6.059732212	0.009207063
SACRAMENT	2021	LDT2	2016	5	DSL	0.11260656	0.150187385	0.008353934	0.008731662	752.5179851	0.012017814	0.118285348	0.258736451	0.294554248	2.500518386	0.007114001
SACRAMENT	2021	LHD1	2017	15	DSL	3010.10056	0.284344081	0.016627443	0.017379262	657.9742826	0.011997614	0.103424394	0.258301562	0.294059155	0.984749123	0.006220223
SACRAMENT	2021	LHD2	2017	15	DSL	1172.08479	0.284353593	0.016627443	0.017379262	747.8267832	0.011997614	0.117547956	0.258301562	0.294059155	0.984749123	0.007069652
SACRAMENT	2021	LHD1	1990	55	GAS	115.948816	1.457410696	0.006725307	0.007314385	813.5402795	0.041376708	0.06960233	0.201364561	0.293830694	6.04412548	0.008050641
SACRAMENT	2021	LHD2	1990	55	GAS	8.78360533	1.457410696	0.006725307	0.007314385	930.3703188	0.04140138	0.069712921	0.201364561	0.293830694	6.04412548	0.009206769
SACRAMENT	2021	MH	1989	40	GAS	28.2232303	2.323047656	0.004187017	0.004553763	1588.882162	0.045704679	0.107183271	0.20082697	0.293046243	5.663359108	0.015723277
SACRAMENT	2021	MH	1994	60	GAS	57.1616429	2.091402119	0.001156023	0.00125728	1775.292146	0.045374545	0.099417659	0.200359428	0.292364008	4.617646212	0.017567955
SACRAMENT	2021	MH	1997	25	DSL	9.79942549	10.87457844	0.211842623	0.221421206	1147.556531	0.011902286	0.180379906	0.256249215	0.291722695	1.544553299	0.010848536
SACRAMENT	2021	MH	1995	35	GAS	49.4449428	2.154711123	0.001379244	0.001500054	1642.562306	0.046413256	0.103021375	0.199910105	0.291708356	6.638711206	0.016254486
SACRAMENT	2021	MH	2014	15	DSL	14.8959396	5.741345204	0.023930616	0.025012652	1536.373284	0.011878919	0.241496485	0.255746141	0.291149979	0.721931337	0.014524253
SACRAMENT	2021	LDA	1998	35	GAS	14271.6465	0.65053318	0.002693197	0.002929098	320.4929187	0.042485412	0.041792328	0.199394237	0.290955603	7.455551432	0.003171537
SACRAMENT	2021	MH	1996	35	GAS	35.3072793	2.114246768	0.001379244	0.001500054	1642.528882	0.04630719	0.101668133	0.199372888	0.29092445	6.619086013	0.016254155
SACRAMENT	2021	MH	1987	60	GAS	17.8554857	2.364385925	0.004046079	0.00440048	1777.055495	0.045133024	0.108273496	0.199174508	0.290634975	5.733338417	0.017585405
SACRAMENT	2021	LDA	2009	5	DSL	0.12381042	0.163738349	0.010764667	0.011251398	637.9187462	0.011844715	0.100271943	0.255009744	0.290311639	5.102624358	0.006030626
SACRAMENT	2021	MH	1997	35	GAS	61.126051	2.076747381	0.001379244	0.001500054	1642.494875	0.046201273	0.100394015	0.198836899	0.290142337	6.599090151	0.016253818
SACRAMENT	2021	MDV	2011	5	DSL	0.1571602	0.163429739	0.010715495	0.011200002	1047.355431	0.011800818	0.164629688	0.254064664	0.289235729	5.076961286	0.009901275
SACRAMENT	2021	LDA	1998	70	GAS	370.117703	0.67126231	0.002760594	0.003002398	349.3513365	0.042229327	0.043124033	0.198192366	0.289201835	4.603358765	0.003457115
SACRAMENT	2021	LDT2	2017	5	DSL	0.21462578	0.148192049	0.007916831	0.008274795	721.0899259	0.011794835	0.113345295	0.253935856	0.289089089	2.325019639	0.006816893
SACRAMENT	2021	LDT1	2017	5	DSL	0.00088104	0.148192023	0.007916831	0.008274795	957.6576117	0.011794823	0.15053044	0.253935593	0.289088789	2.325026044	0.009053308
SACRAMENT	2021	LDT1	2003	5	GAS	1.35042654	0.296572178	0.019440667	0.021143499	970.4707186	0.051952091	0.02730022	0.197995143	0.288914047	3.695517464	0.009603594
SACRAMENT	2021	MDV	1996	30	GAS	1273.22964	1.21875247	0.003274085	0.003560866	476.9259624	0.042788573	0.065673228	0.197777347	0.28859624	6.385616833	0.004719569
SACRAMENT	2021	MH	1990	40	GAS	27.6488838	2.290417489	0.004187017	0.004553763	1588.830389	0.045053135	0.106131867	0.197515297	0.288213858	5.639706243	0.015722765
SACRAMENT	2021	MDV	1997	30	GAS	1969.63262	1.219478936	0.003274085	0.003560866	477.2209255	0.042775584	0.065844139	0.197091205	0.287595023	6.393911967	0.004722488
SACRAMENT	2021	LDA	2003	5	GAS	13.0485829	0.296468249	0.019440667	0.021143499	815.2709026	0.051574372	0.027208498	0.1970117	0.28747901	3.692122347	0.008067766
SACRAMENT	2021	LDT1	1997	70	GAS	93.1791856	0.803300911	0.002637889	0.002868944	390.5178842	0.0418109	0.050868712	0.196895787	0.28730987	4.939366681	0.003864491
SACRAMENT	2021	LDT2	2001	10	GAS	351.43904	0.579060542	0.012232021	0.013303439	927.7111407	0.04848953	0.041406593	0.196763141	0.287116314	5.023334638	0.009180454
SACRAMENT	2021	MH	1998	25	DSL	8.44886981	10.77948395	0.214442972	0.224139131	1175.607913	0.011710941	0.184789193	0.252129675	0.287032872	1.518719077	0.011113723
SACRAMENT	2021	LHD1	2018	15	DSL	3384.99018	0.219420896	0.013641169	0.014257962	614.5913629	0.011690602	0.096605204	0.25169178	0.286534358	0.875288716	0.005810099
SACRAMENT	2021	LHD2	2018	15	DSL	1293.87693	0.219564667	0.014634896	0.015296621	698.5195227	0.011690602	0.109797542	0.25169178	0.286534358	0.875288716	0.006603522
SACRAMENT	2021	MH	1988	60	GAS	20.1715437	2.336471457	0.004046079	0.00440048	1776.896963	0.044527906	0.107382973	0.196083874	0.286125128	5.641731734	0.017583836
SACRAMENT	2021	LDA	2010	5	DSL	0.16429597	0.16181533	0.010458299	0.010931177	605.2005949	0.011571211	0.095129106	0.249121367	0.283608114	4.942713863	0.005721322
SACRAMENT	2021	LDT2	2018	5	DSL	0.22493553	0.146108394	0.00746038	0.007797705	689.6618667	0.011561987	0.108405241	0.248922765	0.283382018	2.141752779	0.006519785
SACRAMENT	2021	LDT1	2018	5	DSL	0.00093058	0.146108375	0.00746038	0.007797705	928.2283042	0.011561977	0.145904563	0.248922554	0.283381778	2.141759143	0.008775096
SACRAMENT	2021	LDT2	1998	35	GAS	7564.02965	0.928366372	0.002702154	0.002938839	443.7732204	0.041525841	0.053101776	0.194138052	0.283285789	7.568562819	0.004391496
SACRAMENT	2021	MH	1991	40	GAS	26.6685974	2.256024078	0.004187017	0.004553763	1588.780467	0.044375459	0.105018657	0.194080159	0.283201313	5.61755669	0.015722271
SACRAMENT	2021	MH	2015	15	DSL	26.88232	5.695311743	0.023298013	0.024351446	1536.373284	0.011539631	0.241496485	0.248441459	0.282834084	0.701344201	0.014524253
SACRAMENT	2021	LHD1	1992	55	DSL	183.361049	10.66054428	0.035070247	0.036655968	515.8830343	0.011493848	0.081089629	0.24745578	0.281711953	1.311197495	0.00487695
SACRAMENT	2021	LHD1	1993	55	DSL	217.285201	10.66054428	0.035070247	0.036655968	515.8830343	0.011493848	0.081089629	0.24745578	0.281711953	1.311197495	0.00487695
SACRAMENT	2021	LHD2	1992	55	DSL	43.7164243	10.66054428	0.035070247	0.036655968	559.8847575	0.011493848	0.088006087	0.24745578	0.281711953	1.311197495	0.005292924
SACRAMENT	2021	LHD2	1993	55	DSL	104.142118	10.66054428	0.035070247	0.036655968	559.8847575	0.011493848	0.088006087	0.24745578	0.281711953	1.311197495	0.005292924
SACRAMENT	2021	LHD1	1991	55	DSL	138.445886	10.66054428	0.035070247	0.036655968	515.8830343	0.011493848	0.081089629	0.24745578	0.281711953	1.311197495	0.00487695
SACRAMENT	2021	LHD2	1991	55	DSL	29.7286477	10.66054428	0.035070247	0.036655968	559.8847575	0.011493848	0.088006087	0.24745578	0.281711953	1.311197495	0.005292924
SACRAMENT	2021	MH	1989	60	GAS	37.8041704	2.306154009	0.004046079	0.00440048	1774.672544	0.043918595	0.106403814	0.19297889	0.281594343	4.24682873	0.017561823
SACRAMENT	2021	MH	1999	25	DSL	11.5845738	10.75167223	0.211986654	0.22157175	1175.607913	0.011474082	0.184789193	0.247030227	0.28122749	1.488016358	0.011113723
SACRAMENT	2021	LHD1	1994	55	DSL	192.644564	10.67036674	0.035354935	0.036953528	515.8830343	0.011468593	0.081089629	0.246912054	0.281092958	1.30545293	0.00487695
SACRAMENT	2021	LHD1	1995	55	DSL	320.754127	10.67036674	0.035354935	0.036953528	515.8830343	0.011468593	0.081089629	0.246912054	0.281092958	1.30545293	0.00487695
SACRAMENT	2021	LHD1	1996	55	DSL	260.907619	10.67036674	0.035354935	0.036953528	515.8830343	0.011468593	0.081089629	0.246912054	0.281092958	1.30545293	0.00487695
SACRAMENT	2021	LHD1	1997	55	DSL	565.540939	10.67036674	0.035354935	0.036953528	515.8830343	0.011468593	0.081089629	0.246912054	0.281092958	1.30545293	0.00487695
SACRAMENT	2021	LHD2	1994	55	DSL	105.094456	10.67036674	0.035354935	0.036953528	559.8847575	0.011468593	0.088006087	0.246912054	0.281092958	1.30545293	0.005292924
SACRAMENT	2021	LHD2	1995	55	DSL	59.4075545	10.67036674	0.035354935	0.036953528	559.8847575	0.011468593	0.088006087	0.246912054	0.281092958	1.30545293	0.005292924
SACRAMENT	2021	LHD2	1996	55	DSL	128.951135	10.67036674	0.035354935	0.036953528	559.8847575	0.011468593	0.088006087	0.246912054	0.281092958	1.30545293	0.005292924
SACRAMENT	2021	LHD2	1997	55	DSL	85.1677648	10.67036674	0.035354935	0.036953528	559.8847575	0.011468593	0.088006087	0.246912054	0.281092958	1.30545293	0.005292924
SACRAMENT	2021	MDV	2012	5	DSL	0.27845865	0.161051659	0.010336626	0.010804003	1021.509774	0.011462594	0.160567111	0.24678289	0.280945913	4.879208832	0.009656941
SACRAMENT	2021	LHD1	1991	40	DSL	55.1624456	9.452143708	0.034965393	0.036546373	482.7745805	0.011459483	0.075885441	0.246715931	0.280869684	1.056926074	0.004563956
SACRAMENT	2021	LHD1	1992	40	DSL	73.0584649	9.452143708	0.034965393	0.036546373	482.7745805	0.011459483	0.075885441	0.246715931	0.280869684	1.056926074	0.004563956
SACRAMENT	2021	LHD1	1993	40	DSL	86.5752207	9.452143708	0.034965393	0.036546373	482.7745805	0.011459483	0.075885441	0.246715931	0.280869684	1.056926074	0.004563956
SACRAMENT	2021	LHD2	1991	40	DSL	11.8450968	9.452143708	0.034965393	0.036546373	542.7445231	0.011459483	0.085311881	0.246715931	0.280869684	1.056926074	0.005130888
SACRAMENT	2021	LHD2	1992	40	DSL	17.4183932	9.452143708	0.034965393	0.036546373	542.7445231	0.011459483	0.085311881	0.246715931	0.280869684	1.056926074	0.005130888
SACRAMENT	2021	LHD2	1993	40	DSL	41.4944357	9.452143708	0.034965393	0.036546373	542.7445231	0.011459483	0.085311881	0.246715931	0.280869684	1.056926074	0.005130888
SACRAMENT	2021	LHD1	1998	55	DSL	232.12835	10.66860553	0.035307655	0.036904111	515.8830343	0.011447335	0.081089629	0.246454393	0.280571941	1.303034733	0.00487695
SACRAMENT	2021	LHD2	1998	55	DSL	67.1841459	10.66860553	0.035307655	0.036904111	559.8847575	0.011447335	0.088006087	0.246454393	0.280571941	1.303034733	0.005292924
SACRAMENT	2021	LHD1	1995	40	DSL	127.80143	9.460852768	0.03524923	0.036843043	482.7745805	0.011434304	0.075885441	0.246173831	0.28025254	1.052295513	0.004563956
SACRAMENT	2021	LHD1	1996	40	DSL	103.956158	9.460852768	0.03524923	0.036843043	482.7745805	0.011434304	0.075885441	0.246173831	0.28025254	1.052295513	0.004563956
SACRAMENT	2021	LHD2	1995	40	DSL	23.6703747	9.460852768	0.03524923	0.036843043	542.7445231	0.011434304	0.085311881	0.246173831	0.28025254	1.052295513	0.005130888
SACRAMENT	2021	LHD1	1994	40	DSL	76.7573933	9.460852768	0.03524923	0.036843043	482.7745805	0.011434304	0.075885441	0.246173831	0.28025254	1.052295513	0.004563956
SACRAMENT	2021	LHD1	1997	40	DSL	225.334405	9.460852768	0.03524923	0.036843043	482.7745805	0.011434304	0.075885441	0.246173831	0.28025254	1.052295513	0.004563956
SACRAMENT	2021	LHD2	1994	40	DSL	41.8738859	9.460852768	0.03524923	0.036843043	542.7445231	0.011434304	0.085311881	0.246173831	0.28025254	1.052295513	0.005130888
SACRAMENT	2021	LHD2	1996	40	DSL	51.3793527	9.460852768	0.03524923	0.036843043	542.7445231	0.011434304	0.085311881	0.246173831	0.28025254	1.052295513	0.005130888
SACRAMENT	2021	LHD2	1997	40	DSL	33.9342854	9.460852768	0.03524923	0.036843043	542.7445231	0.011434304	0.085311881	0.246173831	0.28025254	1.052295513	0.005130888
SACRAMENT	2021	LDT2	2003	10	GAS	455.50093	0.576004452	0.012232021	0.013303439	927.5955853	0.047667087	0.041540894	0.19185859	0.279959604	4.963775635	0.00917931
SACRAMENT	2021	LDA	1996	10	DSL	0.27808094	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108
SACRAMENT	2021	LDA	1997	10	DSL	0.45283116	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108
SACRAMENT	2021	LDA	2000	10	DSL	0.56205686	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108
SACRAMENT	2021	LDA	2001	10	DSL	1.18578264	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108
SACRAMENT	2021	LDA	2002	10	DSL	3.35490015	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108
SACRAMENT	2021	LDA	2007	10	DSL	1.21834906	1.260532978	0.143969748	0.150479421	559.3181101	0.011416453	0.087917018	0.245789513	0.27981502	2.103291603	0.005287568
SACRAMENT	2021	LDT1	1994	10	DSL	0.32875988	1.260532978	0.143969748	0.150479421	1116.86901	0.011416453	0.175556255	0.245789513	0.27981502	2.103291603	0.010558429
SACRAMENT	2021	LDT1	1999	10	DSL	0.67694246	1.260532978	0.143969748	0.150479421	1116.86901	0.011416453	0.175556255	0.245789513	0.27981502	2.103291603	0.010558429
SACRAMENT	2021	LDT2	2006	10	DSL	0.24668947	1.260532978	0.143969748	0.150479421	832.8175529	0.011416453	0.130907322	0.245789513	0.27981502	2.103291603	0.007873121
SACRAMENT	2021	MDV	1995	10	DSL	0.25075677	1.260532978	0.143969748	0.150479421	934.6080986	0.011416453	0.146907378	0.245789513	0.27981502	2.103291603	0.008835408
SACRAMENT	2021	MDV	1997	10	DSL	0.26930096	1.260532978	0.143969748	0.150479421	934.6080986	0.011416453	0.146907378	0.245789513	0.27981502	2.103291603	0.008835408
SACRAMENT	2021	MDV	1999	10	DSL	0.06989291	1.260532978	0.143969748	0.150479421	934.6080986	0.011416453	0.146907378	0.245789513	0.27981502	2.103291603	0.008835408
SACRAMENT	2021	MDV	2005	10	DSL	1.53410595	1.260532978	0.143969748	0.150479421	1046.986286	0.011416453	0.164571664	0.245789513	0.27981502	2.103291603	0.009897786
SACRAMENT	2021	LDA	1993	10	DSL	0.23791896	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108
SACRAMENT	2021	LDA	1994	10	DSL	0.08739245	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108

SACRAMENT	2021	LDA	1995	10	DSL	0.3304286	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108
SACRAMENT	2021	LDA	1998	10	DSL	0.45173892	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108
SACRAMENT	2021	LDA	1999	10	DSL	1.07791014	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108
SACRAMENT	2021	LDA	2003	10	DSL	4.54792018	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108
SACRAMENT	2021	LDA	2004	10	DSL	1.31845523	1.260532978	0.143969748	0.150479421	595.4462362	0.011416453	0.093595856	0.245789513	0.27981502	2.103291603	0.005629108
SACRAMENT	2021	LDA	2005	10	DSL	3.76770349	1.260532978	0.143969748	0.150479421	570.5313881	0.011416453	0.089679589	0.245789513	0.27981502	2.103291603	0.005393573
SACRAMENT	2021	LDA	2006	10	DSL	3.63902866	1.260532978	0.143969748	0.150479421	580.5914233	0.011416453	0.091260887	0.245789513	0.27981502	2.103291603	0.005488677
SACRAMENT	2021	LDT1	1993	10	DSL	0.59196941	1.260532978	0.143969748	0.150479421	1116.86901	0.011416453	0.175556255	0.245789513	0.27981502	2.103291603	0.010558429
SACRAMENT	2021	LDT1	1995	10	DSL	0.1181403	1.260532978	0.143969748	0.150479421	1116.86901	0.011416453	0.175556255	0.245789513	0.27981502	2.103291603	0.010558429
SACRAMENT	2021	LDT1	1996	10	DSL	0.28621019	1.260532978	0.143969748	0.150479421	1116.86901	0.011416453	0.175556255	0.245789513	0.27981502	2.103291603	0.010558429
SACRAMENT	2021	LDT1	1997	10	DSL	0.70900221	1.260532978	0.143969748	0.150479421	1116.86901	0.011416453	0.175556255	0.245789513	0.27981502	2.103291603	0.010558429
SACRAMENT	2021	LDT1	1998	10	DSL	0.21991094	1.260532978	0.143969748	0.150479421	1116.86901	0.011416453	0.175556255	0.245789513	0.27981502	2.103291603	0.010558429
SACRAMENT	2021	LDT1	2000	10	DSL	0.55955266	1.260532978	0.143969748	0.150479421	1116.86901	0.011416453	0.175556255	0.245789513	0.27981502	2.103291603	0.010558429
SACRAMENT	2021	LDT1	2001	10	DSL	0.55902182	1.260532978	0.143969748	0.150479421	1116.86901	0.011416453	0.175556255	0.245789513	0.27981502	2.103291603	0.010558429
SACRAMENT	2021	LDT1	2002	10	DSL	0.70955085	1.260532978	0.143969748	0.150479421	1116.86901	0.011416453	0.175556255	0.245789513	0.27981502	2.103291603	0.010558429
SACRAMENT	2021	LDT1	2003	10	DSL	0.75703268	1.260532978	0.143969748	0.150479421	1116.86901	0.011416453	0.175556255	0.245789513	0.27981502	2.103291603	0.010558429
SACRAMENT	2021	LDT1	2005	10	DSL	0.06255311	1.260532978	0.143969748	0.150479421	1070.136626	0.011416453	0.168210575	0.245789513	0.27981502	2.103291603	0.01011664
SACRAMENT	2021	LDT1	2006	10	DSL	0.06725428	1.260532978	0.143969748	0.150479421	1089.006074	0.011416453	0.17117659	0.245789513	0.27981502	2.103291603	0.010295024
SACRAMENT	2021	LDT1	2007	10	DSL	0.71499093	1.260532978	0.143969748	0.150479421	1049.10406	0.011416453	0.164904549	0.245789513	0.27981502	2.103291603	0.009917806
SACRAMENT	2021	LDT2	1993	10	DSL	0.05156946	1.260532978	0.143969748	0.150479421	869.653565	0.011416453	0.13669743	0.245789513	0.27981502	2.103291603	0.008221354
SACRAMENT	2021	LDT2	1994	10	DSL	0.02745937	1.260532978	0.143969748	0.150479421	869.653565	0.011416453	0.13669743	0.245789513	0.27981502	2.103291603	0.008221354
SACRAMENT	2021	LDT2	2001	10	DSL	0.08057358	1.260532978	0.143969748	0.150479421	869.653565	0.011416453	0.13669743	0.245789513	0.27981502	2.103291603	0.008221354
SACRAMENT	2021	LDT2	2005	10	DSL	0.33543133	1.260532978	0.143969748	0.150479421	849.0422498	0.011416453	0.133457618	0.245789513	0.27981502	2.103291603	0.008026503
SACRAMENT	2021	LDT2	2007	10	DSL	0.13453247	1.260532978	0.143969748	0.150479421	820.9742483	0.011416453	0.129045719	0.245789513	0.27981502	2.103291603	0.007761159
SACRAMENT	2021	MDV	1993	10	DSL	0.04649395	1.260532978	0.143969748	0.150479421	934.6080986	0.011416453	0.146907378	0.245789513	0.27981502	2.103291603	0.008835408
SACRAMENT	2021	MDV	1994	10	DSL	0.09522708	1.260532978	0.143969748	0.150479421	934.6080986	0.011416453	0.146907378	0.245789513	0.27981502	2.103291603	0.008835408
SACRAMENT	2021	MDV	1996	10	DSL	0.24717578	1.260532978	0.143969748	0.150479421	934.6080986	0.011416453	0.146907378	0.245789513	0.27981502	2.103291603	0.008835408
SACRAMENT	2021	MDV	1998	10	DSL	0.29159364	1.260532978	0.143969748	0.150479421	934.6080986	0.011416453	0.146907378	0.245789513	0.27981502	2.103291603	0.008835408
SACRAMENT	2021	MDV	2000	10	DSL	0.11346007	1.260532978	0.143969748	0.150479421	934.6080986	0.011416453	0.146907378	0.245789513	0.27981502	2.103291603	0.008835408
SACRAMENT	2021	MDV	2001	10	DSL	0.20576102	1.260532978	0.143969748	0.150479421	934.6080986	0.011416453	0.146907378	0.245789513	0.27981502	2.103291603	0.008835408
SACRAMENT	2021	MDV	2002	10	DSL	0.31659466	1.260532978	0.143969748	0.150479421	934.6080986	0.011416453	0.146907378	0.245789513	0.27981502	2.103291603	0.008835408
SACRAMENT	2021	MDV	2003	10	DSL	0.34287312	1.260532978	0.143969748	0.150479421	934.6080986	0.011416453	0.146907378	0.245789513	0.27981502	2.103291603	0.008835408
SACRAMENT	2021	MDV	2004	10	DSL	0.75678191	1.260532978	0.143969748	0.150479421	1072.402882	0.011416453	0.168566799	0.245789513	0.27981502	2.103291603	0.010138064
SACRAMENT	2021	MDV	2006	10	DSL	2.17277749	1.260532978	0.143969748	0.150479421	1026.978995	0.011416453	0.161426797	0.245789513	0.27981502	2.103291603	0.009708645
SACRAMENT	2021	LHD1	1998	40	DSL	92.4893321	9.459291194	0.035202092	0.036793774	482.7745805	0.01141311	0.075885441	0.245717538	0.279733081	1.05034626	0.004563956
SACRAMENT	2021	LHD2	1998	40	DSL	26.7688836	9.459291194	0.035202092	0.036793774	542.7445231	0.01141311	0.085311881	0.245717538	0.279733081	1.05034626	0.005130888
SACRAMENT	2021	LHD1	1999	55	DSL	954.558908	10.66469663	0.035202722	0.036794433	515.8830343	0.011400156	0.081089629	0.245438642	0.279415576	1.297667697	0.00487695
SACRAMENT	2021	LHD2	1999	55	DSL	270.249219	10.66469663	0.035202722	0.036794433	559.8847575	0.011400156	0.088006087	0.245438642	0.279415576	1.297667697	0.005292924
SACRAMENT	2021	LDA	1983	25	DSL	50.1489503	1.303094787	0.309074951	0.323049449	443.8508538	0.011379131	0.069767173	0.244985989	0.278900261	1.411747245	0.004195987
SACRAMENT	2021	LDT1	1983	25	DSL	5.36630783	1.303094787	0.309074951	0.323049449	517.6546282	0.011379131	0.081368099	0.244985989	0.278900261	1.411747245	0.004893698
SACRAMENT	2021	MDV	1983	25	DSL	14.1970436	1.303094787	0.309074951	0.323049449	676.9665924	0.011379131	0.106409721	0.244985989	0.278900261	1.411747245	0.006399769
SACRAMENT	2021	MH	1994	45	GAS	38.9165206	2.039062856	0.001094629	0.001190509	1594.524074	0.043284699	0.09692964	0.191131338	0.278898399	5.724869323	0.015779108
SACRAMENT	2021	LHD1	2019	15	DSL	3812.37187	0.177582836	0.010041172	0.010495189	614.5913629	0.011368842	0.096605204	0.244764471	0.278648078	0.760570866	0.005810099
SACRAMENT	2021	LHD2	2019	15	DSL	1434.95972	0.177686481	0.012546646	0.01311395	698.5195227	0.011368842	0.109797542	0.244764471	0.278648078	0.760570866	0.006603522
SACRAMENT	2021	LHD1	1999	40	DSL	380.334913	9.455825378	0.035097472	0.036684424	482.7745805	0.011366071	0.075885441	0.244704824	0.278580173	1.046020016	0.004563956
SACRAMENT	2021	LHD2	1999	40	DSL	107.67823	9.455825378	0.035097472	0.036684424	542.7445231	0.011366071	0.085311881	0.244704824	0.278580173	1.046020016	0.005130888
SACRAMENT	2021	MH	1992	40	GAS	35.4962801	2.220386802	0.004187017	0.004553763	1588.732455	0.043656025	0.1038597	0.190450601	0.27790507	5.597141344	0.015721796
SACRAMENT	2021	LHD1	2000	55	DSL	909.545049	10.65864004	0.035040135	0.036624495	515.8830343	0.011327054	0.081089629	0.243864802	0.277623864	1.289351823	0.00487695
SACRAMENT	2021	LHD2	2000	55	DSL	221.642781	10.65864004	0.035040135	0.036624495	559.8847575	0.011327054	0.088006087	0.243864802	0.277623864	1.289351823	0.005292924
SACRAMENT	2021	LDT2	2019	5	DSL	0.23158183	0.143936421	0.006984581	0.007300393	658.2338075	0.011319268	0.103465188	0.243697178	0.277433035	1.950717844	0.006222677
SACRAMENT	2021	LDT1	2019	5	DSL	0.00096888	0.143936425	0.006984581	0.007300393	898.7989967	0.011319263	0.141278686	0.243697063	0.277432904	1.950723493	0.008496883
SACRAMENT	2021	MH	1995	65	GAS	12.8837851	2.094923222	0.001310195	0.001424956	1828.82251	0.044119224	0.100162786	0.190029303	0.277290312	4.349360922	0.018097681
SACRAMENT	2021	MH	1987	45	GAS	12.1562877	2.305214991	0.0038312	0.00416678	1596.7117	0.043054302	0.105563852	0.190000992	0.277249002	7.108083147	0.015800757
SACRAMENT	2021	MH	1990	60	GAS	37.0348506	2.273761134	0.004046079	0.00440048	1774.630707	0.043292511	0.105360056	0.189796634	0.276950802	4.229091966	0.017561409
SACRAMENT	2021	LHD1	2000	40	DSL	362.399569	9.450455321	0.034935371	0.036514994	482.7745805	0.011293188	0.075885441	0.24313569	0.276793818	1.039316782	0.004563956
SACRAMENT	2021	LHD2	2000	40	DSL	88.3114567	9.450455321	0.034935371	0.036514994	542.7445231	0.011293188	0.085311881	0.24313569	0.276793818	1.039316782	0.005130888
SACRAMENT	2021	MH	1996	65	GAS	9.19995807	2.055581652	0.001310195	0.001424956	1828.799928	0.0440184	0.098847094	0.189518638	0.276545151	4.336503449	0.018097458
SACRAMENT	2021	LDA	2011	5	DSL	0.29241773	0.159770058	0.010132454	0.010590598	626.205932	0.01128032	0.098430852	0.242858645	0.276478421	4.772637329	0.005919898
SACRAMENT	2021	LHD2	1995	30	GAS	104.084696	1.603937573	0.003774882	0.004105529	963.2446469	0.040450816	0.077968808	0.189312836	0.276244846	5.816794543	0.009532087
SACRAMENT	2021	LHD1	1995	30	GAS	925.720853	1.603903641	0.003774824	0.004105465	842.1869477	0.040423928	0.077916662	0.189308057	0.276237872	5.816645357	0.008334123
SACRAMENT	2021	MDV	1999	25	GAS	6983.45648	0.930912138	0.004173456	0.004539014	537.9931373	0.041709343	0.054552108	0.189267715	0.276179006	5.712675863	0.005323878
SACRAMENT	2021	LDT1	1997	65	GAS	352.189725	0.75190252	0.002450791	0.002665459	394.0830945	0.040146426	0.047613929	0.189057452	0.27587219	5.235403825	0.003899772
SACRAMENT	2021	MH	1997	65	GAS	15.9275117	2.01912278	0.001310195	0.001424956	1828.776966	0.043917718	0.09760833	0.189009141	0.275801695	4.323403132	0.018097231
SACRAMENT	2021	MH	2000	25	DSL	19.9720429	10.72328069	0.209479131	0.218950847	1175.607913	0.011232285	0.184789193	0.241824478	0.275301091	1.456673611	0.011113723
SACRAMENT	2021	LHD1	2001	55	DSL	1527.60233	10.65043577	0.034819894	0.036394295	515.8830343	0.01122803	0.081089629	0.241732873	0.275196804	1.278087111	0.00487695
SACRAMENT	2021	LHD2	2001	55	DSL	435.00874	10.65043577	0.034819894	0.036394295	559.8847575	0.01122803	0.088006087	0.241732873	0.275196804	1.278087111	0.005292924
SACRAMENT	2021	MH	2016	15	DSL	12.3572389	5.648558778	0.022655521	0.023679903	1536.373284	0.011195039	0.241496485	0.241022589	0.274388194	0.680435237	0.014524253
SACRAMENT	2021	LHD1	2001	40	DSL	608.65861	9.443181022	0.034715789	0.036285483	482.7745805	0.01119446	0.075885441	0.241010134	0.274374014	1.030236557	0.004563956
SACRAMENT	2021	LHD2	2001	40	DSL	173.325093	9.443181022	0.034715789	0.036285483	542.7445231	0.01119446	0.085311881	0.241010134	0.274374014	1.030236557	0.005130888
SACRAMENT	2021	LDA	1998	65	GAS	1398.9353	0.64064619	0.002544175	0.002767022	352.9572412	0.040052204	0.041157156	0.187974609	0.274292108	4.932320748	0.003492798
SACRAMENT	2021	LDT2	2002	10	GAS	379.42557	0.562754727	0.012232021	0.013303439	927.4235315	0.046596954	0.040750781	0.187677459	0.273858507	4.866604647	0.009177608
SACRAMENT	2021	LHD1	1987	30	DSL	50.1594336	4.875167069	0.163725817	0.171128772	496.3631357	0.01116642	0.078021373	0.240406452	0.273686763	1.108253138	0.004692417
SACRAMENT	2021	LHD1	1988	30	DSL	73.7644414	4.875167069	0.163725817	0.171128772	496.3631357	0.01116642	0.078021373	0.240406452	0.273686763	1.108253138	0.004692417
SACRAMENT	2021	LHD1	1989	30	DSL	108.488465	4.875167069	0.163725817	0.171128772	496.3631357	0.01116642	0.078021373	0.240406452	0.273686763	1.108253138	0.004692417
SACRAMENT	2021	LHD1	1990	30	DSL	188.077368	4.875167069	0.163725817	0.171128772	496.3631357	0.01116642	0.078021373	0.240406452	0.273686763	1.108253138	0.004692417
SACRAMENT	2021	LHD2	1987	30	DSL	37.4107245	4.875167069	0.163725817	0.171128772	563.3196333	0.01116642	0.088546002	0.240406452	0.273686763	1.108253138	0.005325396
SACRAMENT	2021	LHD2	1988	30	DSL	14.9651175	4.875167069	0.163725817	0.171128772	563.3196333	0.01116642	0.088546002	0.240406452	0.273686763	1.108253138	0.005325396
SACRAMENT	2021	LHD2	1989	30	DSL	48.9678725	4.875167069	0.163725817	0.171128772	563.3196333	0.01116642	0.088546002	0.240406452	0.273686763	1.108253138	0.005325396
SACRAMENT	2021	LHD2	1990	30	DSL	33.9374443	4.875167069	0.163725817	0.171128772	563.3196333	0.01116642	0.088546002	0.240406452	0.273686763	1.108253138	0.005325396
SACRAMENT	2021	MH	1988	45	GAS	13.7330954	2.277999109	0.0038312	0.00416678	1596.518966	0.042477054	0.104695616	0.187052705	0.272946868	6.994510937	0.015798849
SACRAMENT	2021	MH	1993	40	GAS	33.5068412	2.184095972	0.004187017	0.004553763	1588.685976	0.042884668	0.102673655	0.186559841	0.272227683	5.578403141	0.015721336
SACRAMENT	2021	MH	1991	60	GAS	35.7217863	2.239617839	0.004046079	0.00440048	1774.590146	0.042641319	0.104254941	0.186495737	0.272134142	4.212482502	0.017561008
SACRAMENT	2021	MDV	2013	5	DSL	0.09800436	0.158520163	0.009933316	0.010382457	987.5342739	0.011102549	0.155226636	0.239031352	0.272121302	4.668698765	0.00933575
SACRAMENT	2021	MH	1994	55	GAS	49.5354448	2.056387943	0.001076049	0.001170302	1706.828712	0.042182178	0.097753212	0.186262959	0.271794472	4.929375516	0.016890454
SACRAMENT	2021	LDT1	1997	40	GAS	4402.27796	0.663429481	0.002352906	0.002559	344.562616	0.039546557	0.042011409	0.186232546	0.271750095	6.993787043	0.003409726
SACRAMENT	2021	LDT1	2020	5	DSL	0.00099098	0.14167618	0.006489435	0.006782858	869.3696892	0.011066681	0.136652808	0.238259137	0.271242187	1.751918841	0.00821867
SACRAMENT	2021	LDT2	2020	5	DSL	0.23716328	0.141676131	0.006489435	0.006782858	626.8057484	0.01106668	0.098525135	0.238259094	0.271242138	1.751914882	0.005925568
SACRAMENT	2021	LHD1	2020	15	DSL	4362.36563	0.138527755	0.006908462	0.007220832	614.5913629	0.011032332	0.096605204	0.237519614	0.270400289	0.640595576	0.005810099
SACRAMENT	2021	LHD2	2020	15	DSL	1624.98116	0.138642628	0.010362693	0.010831248	698.5195227	0.011032332	0.109797542	0.237519614	0.270400289	0.640595576	0.006603522
SACRAMENT	2021	MH	1987	55	GAS	15.4733031	2.324801464	0.003766172	0.004096055	1708.711806	0.041957649	0.106460785	0.185161405	0.270187087	6.12038617	0.016909088
SACRAMENT	2021	MH	1991	65	DSL	0.96883826	11.93128046	0.34598962	0.361633735	959.2141137	0.011007031	0.150775101	0.2369749	0.269780169	0.705541797	0.009068023
SACRAMENT	2021	MH	2001	25	DSL	16.4993824	10.69430934	0.206920403	0.216276425	1175.607913	0.01098555	0.184789193	0.236512428	0.269253675	1.424690835	0.011113723
SACRAMENT	2021	LHD1	1991	50	DSL	229.896707	10.215566	0.03348022	0.034994047	493.6847405	0.010972736	0.077600366	0.236236545	0.2689396	1.158741596	0.004667096
SACRAMENT	2021	LHD1	1992	50	DSL	304.480708	10.215566	0.03348022	0.034994047	493.6847405	0.010972736	0.077600366	0.236236545	0.2689396	1.158741596	0.004667096
SACRAMENT	2021	LHD1	1993	50	DSL	360.813556	10.215566	0.03348022	0.034994047	493.6847405	0.010972736	0.077600366	0.236236545	0.2689396	1.158741596	0.004667096
SACRAMENT	2021	LHD2	1991	50	DSL	49.3659901	10.215566	0.03348022	0.034994047	540.9262835	0.010972736	0.085026079	0.236236545	0.2689396	1.158741596	0.005113699
SACRAMENT	2021	LHD2	1992	50	DSL	72.593432	10.215566	0.03348022	0.034994047	540.9262835	0.010972736	0.085026079	0.236236545	0.2689396	1.158741596	0.005113699
SACRAMENT	2021	LHD2	1993	50	DSL	172.933488	10.215566	0.03348022	0.034994047	540.9262835	0.010972736	0.085026079	0.236236545	0.2689396	1.158741596	0.005113699
SACRAMENT	2021	LDA	2012	5	DSL	0.36181481	0.157602534	0.009787132	0.010229662	572.8662153	0.010972041	0.090046591	0.236221578	0.268922561	4.592394754	0.005415646
SACRAMENT	2021	LHD1	1991	45	DSL	59.5384205	9.832059819	0.033446835	0.034959153	470.9086159	0.010961795	0.074020277	0.236000983	0.268671429	1.078395321	0.00445178
SACRAMENT	2021	LHD1	1992	45	DSL	78.8541109	9.832059819	0.033446835	0.034959153	470.9086159	0.010961795	0.074020277	0.236000983	0.268671429	1.078395321	0.00445178
SACRAMENT	2021	LHD1	1993	45	DSL	93.4431358	9.832059819	0.033446835	0.034959153	470.9086159	0.010961795	0.074020277	0.236000983	0.268671429	1.078395321	0.00445178
SACRAMENT	2021	LHD2	1991	45	DSL	12.784755	9.832059819	0.033446835	0.034959153	521.7107967	0.010961795	0.082005672	0.236000983	0.268671429	1.078395321	0.004932043
SACRAMENT	2021	LHD2	1992	45	DSL	18.8001748	9.832059819	0.033446835	0.034959153	521.7107967	0.010961795	0.082005672	0.236000983	0.268671429	1.078395321	0.004932043
SACRAMENT	2021	LHD2	1993	45	DSL	44.7861427	9.832059819	0.033446835	0.034959153	521.7107967	0.010961795	0.082005672	0.236000983	0.268671429	1.078395321	0.004932043
SACRAMENT	2021	MH	1989	45	GAS	25.7376573	2.248440382	0.0038312	0.00416678	1593.765001	0.041895806	0.103740961	0.18409073	0.268624761	5.265136911	0.015771597
SACRAMENT	2021	LHD1	1994	50	DSL	319.896476	10.22497847	0.033752	0.035278116	493.6847405	0.010948626	0.077600366	0.235717471	0.268348669	1.153664965	0.004667096
SACRAMENT	2021	LHD1	1995	50	DSL	532.629174	10.22497847	0.033752	0.035278116	493.6847405	0.010948626	0.077600366	0.235717471	0.268348669	1.153664965	0.004667096

SACRAMENT	2021	LHD1	1996	50	DSL	433.250885	10.22497847	0.033752	0.035278116	493.6847405	0.010948626	0.077600366	0.235717471	0.268348669	1.153664965	0.004667096
SACRAMENT	2021	LHD1	1997	50	DSL	939.110607	10.22497847	0.033752	0.035278116	493.6847405	0.010948626	0.077600366	0.235717471	0.268348669	1.153664965	0.004667096
SACRAMENT	2021	LHD2	1994	50	DSL	174.514897	10.22497847	0.033752	0.035278116	540.9262835	0.010948626	0.085026079	0.235717471	0.268348669	1.153664965	0.005113699
SACRAMENT	2021	LHD2	1995	50	DSL	98.6493827	10.22497847	0.033752	0.035278116	540.9262835	0.010948626	0.085026079	0.235717471	0.268348669	1.153664965	0.005113699
SACRAMENT	2021	LHD2	1996	50	DSL	214.130173	10.22497847	0.033752	0.035278116	540.9262835	0.010948626	0.085026079	0.235717471	0.268348669	1.153664965	0.005113699
SACRAMENT	2021	LHD2	1997	50	DSL	141.425573	10.22497847	0.033752	0.035278116	540.9262835	0.010948626	0.085026079	0.235717471	0.268348669	1.153664965	0.005113699
SACRAMENT	2021	LHD1	1994	45	DSL	82.8464711	9.841118928	0.033718345	0.035242939	470.9086159	0.010937709	0.074020277	0.235482427	0.268081087	1.0736707	0.00445178
SACRAMENT	2021	LHD1	1995	45	DSL	137.939774	9.841118928	0.033718345	0.035242939	470.9086159	0.010937709	0.074020277	0.235482427	0.268081087	1.0736707	0.00445178
SACRAMENT	2021	LHD1	1996	45	DSL	112.202883	9.841118928	0.033718345	0.035242939	470.9086159	0.010937709	0.074020277	0.235482427	0.268081087	1.0736707	0.00445178
SACRAMENT	2021	LHD1	1997	45	DSL	243.209931	9.841118928	0.033718345	0.035242939	470.9086159	0.010937709	0.074020277	0.235482427	0.268081087	1.0736707	0.00445178
SACRAMENT	2021	LHD2	1994	45	DSL	45.1956943	9.841118928	0.033718345	0.035242939	521.7107967	0.010937709	0.082005672	0.235482427	0.268081087	1.0736707	0.004932043
SACRAMENT	2021	LHD2	1995	45	DSL	25.548119	9.841118928	0.033718345	0.035242939	521.7107967	0.010937709	0.082005672	0.235482427	0.268081087	1.0736707	0.004932043
SACRAMENT	2021	LHD2	1996	45	DSL	55.4552191	9.841118928	0.033718345	0.035242939	521.7107967	0.010937709	0.082005672	0.235482427	0.268081087	1.0736707	0.004932043
SACRAMENT	2021	LHD2	1997	45	DSL	36.6262542	9.841118928	0.033718345	0.035242939	521.7107967	0.010937709	0.082005672	0.235482427	0.268081087	1.0736707	0.004932043
SACRAMENT	2021	LHD1	1998	50	DSL	385.461389	10.22329077	0.033706865	0.03523094	493.6847405	0.010928332	0.077600366	0.235280559	0.267851274	1.151527937	0.004667096
SACRAMENT	2021	LHD2	1998	50	DSL	111.562824	10.22329077	0.033706865	0.03523094	540.9262835	0.010928332	0.085026079	0.235280559	0.267851274	1.151527937	0.005113699
SACRAMENT	2021	LDT1	1999	20	GAS	1124.22266	0.442277294	0.00564453	0.006138942	500.728922	0.04294453	0.033457669	0.183450255	0.267690182	5.439862093	0.004955119
SACRAMENT	2021	MH	1994	50	GAS	37.8737725	2.035742794	0.001056652	0.001149206	1640.365016	0.041539917	0.096771817	0.183426942	0.267656163	5.2973195	0.016232742
SACRAMENT	2021	LHD1	1998	45	DSL	99.826407	9.839494588	0.033673254	0.035195809	470.9086159	0.010917435	0.074020277	0.235045951	0.267584188	1.071681852	0.00445178
SACRAMENT	2021	LHD2	1998	45	DSL	28.8924291	9.839494588	0.033673254	0.035195809	521.7107967	0.010917435	0.082005672	0.235045951	0.267584188	1.071681852	0.004932043
SACRAMENT	2021	MH	1992	60	GAS	47.5462025	2.204239724	0.004046079	0.00440048	1774.55084	0.04195	0.103104413	0.183008018	0.26704487	4.197173481	0.017560619
SACRAMENT	2021	LHD1	1999	50	DSL	1585.0955	10.21954503	0.033606689	0.035126235	493.6847405	0.010883292	0.077600366	0.234310861	0.266747337	1.146784939	0.004667096
SACRAMENT	2021	LHD2	1999	50	DSL	448.763105	10.21954503	0.033606689	0.035126235	540.9262835	0.010883292	0.085026079	0.234310861	0.266747337	1.146784939	0.005113699
SACRAMENT	2021	LHD1	1999	45	DSL	410.506454	9.835889469	0.033573179	0.035091209	470.9086159	0.010872439	0.074020277	0.234077219	0.266481352	1.06726773	0.00445178
SACRAMENT	2021	LHD2	1999	45	DSL	116.220223	9.835889469	0.033573179	0.035091209	521.7107967	0.010872439	0.082005672	0.234077219	0.266481352	1.06726773	0.004932043
SACRAMENT	2021	MH	1992	65	DSL	1.77138751	11.91224528	0.342758631	0.358256655	959.2141137	0.010864134	0.150775101	0.233898402	0.26627778	0.696388393	0.009068023
SACRAMENT	2021	MH	1987	50	GAS	11.8305663	2.301461573	0.003698283	0.00402222	1642.389097	0.041318807	0.10539197	0.18234216	0.266073251	6.577230909	0.016252772
SACRAMENT	2021	MH	1988	55	GAS	17.4803651	2.297354339	0.003766172	0.004096055	1708.54441	0.041395105	0.105585172	0.182288214	0.265994535	6.022595278	0.016907432
SACRAMENT	2021	LDT1	1998	30	GAS	2571.00807	0.550578438	0.003273709	0.003560457	382.8052834	0.040348121	0.037684327	0.182249325	0.265937787	6.374735761	0.003788169
SACRAMENT	2021	MDV	2001	20	GAS	4162.71516	0.608156251	0.005685611	0.006183621	704.82441	0.040853321	0.039651152	0.182186239	0.265845733	4.908315181	0.006974809
SACRAMENT	2021	MH	2017	15	DSL	25.6780677	5.601086331	0.02200314	0.022998024	1478.287328	0.010845143	0.232366182	0.233489533	0.26581231	0.659204447	0.013975131
SACRAMENT	2021	LHD1	2002	30	DSL	2070.13814	6.618197583	0.043913957	0.045899551	496.3631357	0.010842589	0.078021373	0.233434558	0.265749724	1.162358418	0.004692417
SACRAMENT	2021	LHD2	2002	30	DSL	317.043764	6.618197583	0.043913957	0.045899551	563.3196333	0.010842589	0.088546002	0.233434558	0.265749724	1.162358418	0.005325396
SACRAMENT	2021	LHD1	2000	50	DSL	1510.34761	10.21374125	0.033451474	0.034964001	493.6847405	0.010813504	0.077600366	0.232808376	0.265036858	1.13943597	0.004667096
SACRAMENT	2021	LHD2	2000	50	DSL	368.049547	10.21374125	0.033451474	0.034964001	540.9262835	0.010813504	0.085026079	0.232808376	0.265036858	1.13943597	0.005113699
SACRAMENT	2021	LDT1	2021	5	DSL	0.00087891	0.139327649	0.00597494	0.0062451	839.9403817	0.010804234	0.132026931	0.232608794	0.264809647	1.545344859	0.007940457
SACRAMENT	2021	LDT2	2021	5	DSL	0.20439898	0.139327524	0.00597494	0.0062451	595.3776892	0.010804221	0.093585082	0.232608513	0.264809327	1.545343948	0.00562846
SACRAMENT	2021	LHD1	2000	45	DSL	391.14832	9.830303569	0.033418118	0.034929137	470.9086159	0.010802721	0.074020277	0.232576233	0.264772578	1.060428333	0.00445178
SACRAMENT	2021	LHD2	2000	45	DSL	95.3171054	9.830303569	0.033418118	0.034929137	521.7107967	0.010802721	0.082005672	0.232576233	0.264772578	1.060428333	0.004932043
SACRAMENT	2021	MH	1990	45	GAS	25.2138926	2.216858169	0.0038312	0.00416678	1593.717055	0.041298559	0.102723324	0.181055041	0.26419509	5.243147211	0.015771122
SACRAMENT	2021	MH	2002	25	DSL	19.8283626	10.66475819	0.20431047	0.213548482	1175.607913	0.010733878	0.184789193	0.231094076	0.263085241	1.392068031	0.011113723
SACRAMENT	2021	LHD1	2003	30	DSL	2889.46982	6.612342889	0.043640021	0.045613229	496.3631357	0.010732955	0.078021373	0.231074194	0.263062607	1.150620737	0.004692417
SACRAMENT	2021	LHD2	2003	30	DSL	414.16079	6.612342889	0.043640021	0.045613229	563.3196333	0.010732955	0.088546002	0.231074194	0.263062607	1.150620737	0.005325396
SACRAMENT	2021	MDV	2014	5	DSL	0.30897859	0.155835251	0.009505564	0.009935364	981.0809559	0.010720686	0.154212264	0.23081005	0.262761897	4.445431093	0.009274743
SACRAMENT	2021	LHD1	2001	50	DSL	2536.66437	10.20587943	0.033241218	0.034744238	493.6847405	0.01071897	0.077600366	0.230773105	0.262719837	1.129481032	0.004667096
SACRAMENT	2021	LHD2	2001	50	DSL	722.354995	10.20587943	0.033241218	0.034744238	540.9262835	0.01071897	0.085026079	0.230773105	0.262719837	1.129481032	0.005113699
SACRAMENT	2021	MH	1993	65	DSL	1.96214605	11.89274551	0.33944878	0.354797147	959.2141137	0.010717748	0.150775101	0.230746813	0.262689905	0.687011571	0.009068023
SACRAMENT	2021	LHD1	2001	45	DSL	656.942814	9.822736889	0.033208072	0.034709593	470.9086159	0.010708281	0.074020277	0.230542991	0.262457868	1.051163662	0.00445178
SACRAMENT	2021	LHD2	2001	45	DSL	187.074778	9.822736889	0.033208072	0.034709593	521.7107967	0.010708281	0.082005672	0.230542991	0.262457868	1.051163662	0.004932043
SACRAMENT	2021	MH	1988	50	GAS	13.3651242	2.274290004	0.003698283	0.00402222	1642.210319	0.040764828	0.104525147	0.179512716	0.261944534	6.4721406	0.016251002
SACRAMENT	2021	LDT2	1998	70	GAS	196.163861	1.059150209	0.002685772	0.002921022	486.4319798	0.038397118	0.060582501	0.17951091	0.261941899	4.878099094	0.004813639
SACRAMENT	2021	LHD2	2021	15	DSL	1482.37462	0.103564166	0.008083037	0.008448516	681.0565347	0.010681071	0.107052603	0.22995718	0.261790961	0.515362854	0.006438433
SACRAMENT	2021	LHD1	2021	15	DSL	3957.0347	0.103670918	0.004315942	0.00451109	599.2265788	0.010681071	0.094190073	0.22995718	0.261790961	0.515362854	0.005664846
SACRAMENT	2021	MH	1989	55	GAS	32.7605419	2.267544464	0.003766172	0.004096055	1706.17167	0.040828662	0.104622405	0.179401685	0.261782517	4.533524787	0.016883952
SACRAMENT	2021	MH	1993	60	GAS	44.8814088	2.168212808	0.004046079	0.00440048	1774.512445	0.041208786	0.101926993	0.179269304	0.261589348	4.183122114	0.017560239
SACRAMENT	2021	LHD1	1981	25	DSL	2.85356398	4.577759969	0.172848092	0.180663516	546.5903577	0.010651574	0.085916393	0.229322124	0.261067992	1.009320335	0.005167245
SACRAMENT	2021	LHD1	1982	25	DSL	21.629165	4.577759969	0.172848092	0.180663516	546.5903577	0.010651574	0.085916393	0.229322124	0.261067992	1.009320335	0.005167245
SACRAMENT	2021	LHD1	1983	25	DSL	57.4126101	4.577759969	0.172848092	0.180663516	546.5903577	0.010651574	0.085916393	0.229322124	0.261067992	1.009320335	0.005167245
SACRAMENT	2021	LHD1	1984	25	DSL	67.8951821	4.577759969	0.172848092	0.180663516	546.5903577	0.010651574	0.085916393	0.229322124	0.261067992	1.009320335	0.005167245
SACRAMENT	2021	LHD1	1985	25	DSL	113.722154	4.577759969	0.172848092	0.180663516	546.5903577	0.010651574	0.085916393	0.229322124	0.261067992	1.009320335	0.005167245
SACRAMENT	2021	LHD1	1986	25	DSL	155.81286	4.577759969	0.172848092	0.180663516	546.5903577	0.010651574	0.085916393	0.229322124	0.261067992	1.009320335	0.005167245
SACRAMENT	2021	LHD2	1983	25	DSL	4.30222368	4.577759969	0.172848092	0.180663516	624.6333349	0.010651574	0.098183662	0.229322124	0.261067992	1.009320335	0.005905031
SACRAMENT	2021	LHD2	1984	25	DSL	5.8145519	4.577759969	0.172848092	0.180663516	624.6333349	0.010651574	0.098183662	0.229322124	0.261067992	1.009320335	0.005905031
SACRAMENT	2021	LHD2	1986	25	DSL	44.3550877	4.577759969	0.172848092	0.180663516	624.6333349	0.010651574	0.098183662	0.229322124	0.261067992	1.009320335	0.005905031
SACRAMENT	2021	LHD2	1985	25	DSL	18.0596224	4.577759969	0.172848092	0.180663516	624.6333349	0.010651574	0.098183662	0.229322124	0.261067992	1.009320335	0.005905031
SACRAMENT	2021	LDA	2013	5	DSL	0.55894798	0.155312759	0.009422332	0.009848368	557.2148781	0.010646374	0.087586419	0.229210168	0.260940537	4.401986132	0.005267684
SACRAMENT	2021	MH	1991	45	GAS	24.3199383	2.183569341	0.0038312	0.00416678	1593.670836	0.040677358	0.101645866	0.177906176	0.259600274	5.222555116	0.015770665
SACRAMENT	2021	LDT2	1999	25	GAS	7875.63884	0.7422908	0.004187319	0.004554091	535.192436	0.04014283	0.046437315	0.177707519	0.259310395	6.389077436	0.005296163
SACRAMENT	2021	LHD1	2004	25	DSL	4239.23093	5.26738799	0.051893491	0.054239885	546.5903577	0.010545499	0.085916393	0.227038389	0.258468111	1.301371219	0.005167245
SACRAMENT	2021	LHD2	2004	25	DSL	594.165689	5.26738799	0.051893491	0.054239885	624.6333349	0.010545499	0.098183662	0.227038389	0.258468111	1.301371219	0.005905031
SACRAMENT	2021	MH	1991	30	DSL	2.60627558	10.98244139	0.298749051	0.312257158	1123.433115	0.01052352	0.176588041	0.226565194	0.25792941	1.451455722	0.010620483
SACRAMENT	2021	MH	1989	50	GAS	25.0480301	2.244779406	0.003698283	0.00402222	1639.661589	0.04020701	0.103572047	0.176670137	0.257796649	4.871921236	0.016225781
SACRAMENT	2021	MH	1990	55	GAS	32.0938605	2.23569391	0.003766172	0.004096055	1706.128901	0.040246628	0.103596122	0.176443319	0.257465677	4.514590644	0.016883529
SACRAMENT	2021	MH	2018	15	DSL	28.2287091	5.552894423	0.02134087	0.02230581	1478.287328	0.010489943	0.232366182	0.22584229	0.257106433	0.637651829	0.013975131
SACRAMENT	2021	MDV	2002	20	GAS	5649.09426	0.591786084	0.005685611	0.006183621	704.7680452	0.039514049	0.039074217	0.175047459	0.255428842	4.892176986	0.006974251
SACRAMENT	2021	LDA	1983	70	DSL	1.61452282	1.84188131	0.283039822	0.295837627	433.7235962	0.010420602	0.068175309	0.224349435	0.255406916	2.329526948	0.004100248
SACRAMENT	2021	LDT1	1983	70	DSL	0.17276586	1.84188131	0.283039822	0.295837627	499.8078774	0.010420602	0.078562838	0.224349435	0.255406916	2.329526948	0.004724982
SACRAMENT	2021	MDV	1983	70	DSL	0.45706741	1.84188131	0.283039822	0.295837627	662.9510793	0.010420602	0.104206678	0.224349435	0.255406916	2.329526948	0.006267272
SACRAMENT	2021	LHD1	2005	25	DSL	3769.88351	5.26109694	0.051452565	0.053779021	546.5903577	0.010399512	0.085916393	0.223895376	0.25489	1.283317918	0.005167245
SACRAMENT	2021	LHD2	2005	25	DSL	1207.2622	5.26109694	0.051452565	0.053779021	624.6333349	0.010399512	0.098183662	0.223895376	0.25489	1.283317918	0.005905031
SACRAMENT	2021	MH	1992	45	GAS	32.3701817	2.149076596	0.0038312	0.00416678	1593.626404	0.04001788	0.10052413	0.174579093	0.254745402	5.203575286	0.015770225
SACRAMENT	2021	MH	1992	30	DSL	4.76521647	10.96491999	0.295959213	0.309341176	1123.433115	0.0103869	0.176588041	0.223623838	0.254580872	1.432625145	0.010620483
SACRAMENT	2021	LDA	1999	25	GAS	14806.5344	0.471048091	0.00419781	0.004565501	381.5737945	0.03964883	0.03407504	0.174262836	0.254283922	5.797741804	0.003775982
SACRAMENT	2021	MH	1990	50	GAS	24.5382994	2.213248616	0.003698283	0.00402222	1639.616774	0.039633837	0.102556067	0.173756814	0.253545536	4.85157379	0.016225337
SACRAMENT	2021	MH	1991	55	GAS	30.9559782	2.20212224	0.003766172	0.004096055	1706.087563	0.03964125	0.102509509	0.17337466	0.252987897	4.496859904	0.016883119
SACRAMENT	2021	MDV	2015	5	DSL	0.66201664	0.152996921	0.00905337	0.009462724	958.2025586	0.010317002	0.150616098	0.222118985	0.252867697	4.209405831	0.00905846
SACRAMENT	2021	MH	1995	40	GAS	61.553857	2.066856676	0.001196291	0.001301075	1589.517317	0.040218455	0.098820864	0.173228002	0.252773894	6.139153148	0.015729562
SACRAMENT	2021	LDA	2014	5	DSL	0.6924839	0.152900732	0.009038056	0.009446717	557.8870328	0.01030332	0.087692073	0.221824417	0.252532351	4.201411444	0.005274039
SACRAMENT	2021	MH	1996	40	GAS	43.9539232	2.028042182	0.001196291	0.001301075	1589.486543	0.040126546	0.097522799	0.172762487	0.252094615	6.121004736	0.015729258
SACRAMENT	2021	LDA	1998	40	GAS	17486.3194	0.622993096	0.002336444	0.002541096	309.1386914	0.036775128	0.040023065	0.172594503	0.251849493	6.874121907	0.003059178
SACRAMENT	2021	MH	1997	40	GAS	76.0956326	1.992071764	0.001196291	0.001301075	1589.45523	0.040034766	0.096300631	0.172298037	0.251416892	6.102513548	0.015728948
SACRAMENT	2021	LDT2	1998	65	GAS	741.441296	0.994521921	0.002487233	0.002705092	490.983641	0.036829758	0.056885817	0.172183325	0.251249504	5.181759855	0.004858681
SACRAMENT	2021	MH	1993	30	DSL	5.27837676	10.94697094	0.293101281	0.30635402	1123.433115	0.010246945	0.176588041	0.22061069	0.251150604	1.413334945	0.010620483
SACRAMENT	2021	LHD2	2006	25	DSL	1399.08536	5.254001393	0.050955254	0.053259225	624.6333349	0.010234857	0.098183662	0.220350446	0.250854333	1.262956036	0.005905031
SACRAMENT	2021	LHD1	2006	25	DSL	4691.48077	5.254001393	0.050955254	0.053259225	546.5903577	0.010234857	0.085916393	0.220350446	0.250854333	1.262956036	0.005167245
SACRAMENT	2021	MDV	1998	30	GAS	2545.32755	1.029716417	0.00327389	0.003560655	477.6102036	0.037548051	0.057877676	0.171605862	0.25040687	5.799832664	0.00472634
SACRAMENT	2021	MH	1993	45	GAS	30.5559494	2.113951287	0.0038312	0.00416678	1593.583411	0.039310805	0.099376176	0.171012576	0.249541149	5.18615467	0.0157698
SACRAMENT	2021	MH	1991	50	GAS	23.6682982	2.18001399	0.003698283	0.00402222	1639.57354	0.039037677	0.101480363	0.170734878	0.249135934	4.832519572	0.016224909
SACRAMENT	2021	MH	1994	65	DSL	3.65174212	11.80904674	0.197838975	0.206784375	919.7010324	0.010145013	0.144564195	0.218416151	0.248652266	0.650653049	0.008694482
SACRAMENT	2021	MH	2019	15	DSL	30.7737698	5.503983081	0.020668711	0.021603259	1478.287328	0.010129439	0.232366182	0.218080862	0.248270562	0.615777383	0.013975131
SACRAMENT	2021	MH	1992	55	GAS	41.2028445	2.167336424	0.003766172	0.004096055	1706.047677	0.038998569	0.101378243	0.170132322	0.248256686	4.480517398	0.016882725
SACRAMENT	2021	LDT1	1997	45	GAS	1705.8152	0.651446911	0.002147581	0.00233569	344.9278274	0.036045432	0.041252617	0.169745057	0.247691589	6.508464659	0.00341334
SACRAMENT	2021	LDT1	1997	60	GAS	2402.4065	0.70527324	0.00219861	0.002391189	380.0290089	0.035973051	0.044661148	0.169404202	0.247194213	5.390876753	0.003760695
SACRAMENT	2021	LDT2	2008	10	DSL	0.44805884	0.135320988	0.010483986	0.010958026	797.2754258	0.010065835	0.125320594	0.216711503	0.246711638	2.713542983	0.00753712
SACRAMENT	2021	LDT1	2008	10	DSL	0.31028937	0.135321036	0.010483986	0.010958026	1018.104535	0.010065832	0.160031855	0.216711427	0.246711552	2.713543236	0.009624749
SACRAMENT	2021	LDT2	1998	40	GAS	9267.81915	0.891473222	0.002346482	0.002552013	428.2945557	0.036025778	0.050991518	0.168424628	0.245764822	6.972299903	0.004238322
SACRAMENT	2021	MH	1992	50	GAS	31.5028394	2.145577407	0.003698283	0.00402222	1639.531933	0.038404782	0.100360454	0.167541908	0.244476759	4.814957211	0.016224498
SACRAMENT	2021	MH	1995	65	DSL	2.4085086	11.78504204	0.195594459	0.204438373	919.7010324	0.009968585	0.144564195	0.214617772	0.244328065	0.639337131	0.008694482

SACRAMENT	2021	LDT2	2009	10	DSL	0.56653995	0.134250867	0.010218631	0.010680672	752.1009178	0.009958023	0.118219791	0.214390378	0.244069192	2.628687571	0.007110058
SACRAMENT	2021	LDT1	2009	10	DSL	1.57492406	0.134250911	0.010218631	0.010680672	996.8257807	0.009958019	0.156687131	0.214390284	0.244069085	2.628688189	0.009423588
SACRAMENT	2021	LDA	2015	5	DSL	0.64403521	0.150366455	0.008634303	0.009024708	547.5856651	0.009942879	0.086072841	0.21406433	0.243698007	3.990670659	0.005176654
SACRAMENT	2021	MH	1993	55	GAS	38.8935733	2.13191267	0.003766172	0.004096055	1706.008913	0.038309505	0.100220535	0.166656649	0.243184992	4.465517448	0.016882341
SACRAMENT	2021	MH	1995	60	GAS	82.4495452	2.051826098	0.001156023	0.00125728	1775.123717	0.038646766	0.09810222	0.166458457	0.24289579	4.603616241	0.017566288
SACRAMENT	2021	MDV	2016	5	DSL	0.33776429	0.150005175	0.008576735	0.008964537	919.7886308	0.009891499	0.144577964	0.212958155	0.242438701	3.960623006	0.00869531
SACRAMENT	2021	MH	1996	60	GAS	58.8749618	2.01329387	0.001156023	0.00125728	1775.100216	0.038558448	0.096813595	0.166011134	0.242243057	4.590007145	0.017566056
SACRAMENT	2021	MH	1997	60	GAS	101.927817	1.977585037	0.001156023	0.00125728	1775.076313	0.038470254	0.095600314	0.165564835	0.241591818	4.576141009	0.017565819
SACRAMENT	2021	LDT2	2010	10	DSL	1.07028924	0.13310741	0.009935089	0.01038431	744.9738126	0.009842823	0.117099509	0.211910183	0.241245654	2.538016895	0.007042682
SACRAMENT	2021	LDT1	2010	10	DSL	0.17747394	0.133107447	0.009935089	0.01038431	945.699682	0.009842818	0.14865082	0.211910068	0.241245524	2.538017951	0.008940263
SACRAMENT	2021	MDV	1996	35	GAS	2263.17034	1.142365563	0.002714022	0.002951746	441.6872091	0.035601763	0.061557073	0.164558474	0.240123339	5.849759382	0.004370853
SACRAMENT	2021	LDA	1998	60	GAS	9542.61586	0.620257532	0.002249027	0.002446022	340.3552638	0.035042698	0.039847323	0.164463791	0.239985178	5.154767924	0.003368091
SACRAMENT	2021	MH	1996	65	DSL	1.58722402	11.76049139	0.193298898	0.202039016	919.7010324	0.009788145	0.144564195	0.210733007	0.239905518	0.627763861	0.008694482
SACRAMENT	2021	MH	1993	50	GAS	29.7372186	2.11050929	0.003698283	0.00402222	1639.491623	0.037726209	0.099214369	0.164119156	0.239482286	4.798837617	0.016224099
SACRAMENT	2021	MH	2020	15	DSL	32.3955479	5.454352333	0.019986663	0.020890371	1478.287328	0.009763632	0.232366182	0.210205249	0.2393047	0.593581109	0.013975131
SACRAMENT	2021	MDV	1997	35	GAS	3501.02919	1.143038755	0.002714022	0.002951746	441.9556495	0.035590326	0.061716853	0.163984677	0.239286056	5.857243822	0.004373509
SACRAMENT	2021	LHD1	1987	35	DSL	26.4710804	5.114703029	0.143020908	0.149487679	496.3631357	0.009754305	0.078021373	0.210004443	0.239076097	1.019584624	0.004692417
SACRAMENT	2021	LHD1	1988	35	DSL	38.9283593	5.114703029	0.143020908	0.149487679	496.3631357	0.009754305	0.078021373	0.210004443	0.239076097	1.019584624	0.004692417
SACRAMENT	2021	LHD1	1989	35	DSL	57.2535745	5.114703029	0.143020908	0.149487679	496.3631357	0.009754305	0.078021373	0.210004443	0.239076097	1.019584624	0.004692417
SACRAMENT	2021	LHD1	1990	35	DSL	99.2557286	5.114703029	0.143020908	0.149487679	496.3631357	0.009754305	0.078021373	0.210004443	0.239076097	1.019584624	0.004692417
SACRAMENT	2021	LHD2	1988	35	DSL	7.89767344	5.114703029	0.143020908	0.149487679	563.3196333	0.009754305	0.088546002	0.210004443	0.239076097	1.019584624	0.005325396
SACRAMENT	2021	LHD2	1989	35	DSL	25.8422473	5.114703029	0.143020908	0.149487679	563.3196333	0.009754305	0.088546002	0.210004443	0.239076097	1.019584624	0.005325396
SACRAMENT	2021	LHD2	1990	35	DSL	17.9101068	5.114703029	0.143020908	0.149487679	563.3196333	0.009754305	0.088546002	0.210004443	0.239076097	1.019584624	0.005325396
SACRAMENT	2021	LHD2	1987	35	DSL	19.7430916	5.114703029	0.143020908	0.149487679	563.3196333	0.009754305	0.088546002	0.210004443	0.239076097	1.019584624	0.005325396
SACRAMENT	2021	LDT2	2011	10	DSL	0.87425106	0.131890616	0.009633363	0.010068941	721.2977664	0.009720234	0.113377964	0.209270916	0.238241025	2.441530959	0.006818858
SACRAMENT	2021	LDT1	1997	55	GAS	3111.97796	0.665282758	0.002075131	0.002256894	368.5111257	0.034604523	0.042128767	0.162959533	0.237790169	5.763578722	0.003646716
SACRAMENT	2021	MH	1994	30	DSL	9.82356574	10.86992834	0.17082653	0.178550547	1077.15533	0.009699368	0.169313818	0.208821683	0.237729602	1.338537413	0.010182992
SACRAMENT	2021	LDT1	1997	50	GAS	1710.03454	0.651119952	0.002059289	0.002239665	354.8772231	0.034549985	0.041231913	0.162702704	0.237415404	6.121572321	0.003511798
SACRAMENT	2021	MDV	2000	25	GAS	9041.56982	0.74046831	0.004187319	0.004554091	601.5852323	0.036002965	0.04553955	0.162109148	0.236549288	5.076796117	0.005953174
SACRAMENT	2021	MH	1997	65	DSL	4.38013387	11.73539477	0.19095229	0.199586305	919.7010324	0.009603693	0.144564195	0.206761855	0.235384626	0.615933239	0.008694482
SACRAMENT	2021	LDT2	2012	10	DSL	4.97621629	0.130600487	0.009313451	0.009734564	703.4982553	0.009590257	0.110580129	0.206472579	0.235055304	2.33922977	0.006650588
SACRAMENT	2021	LDT1	2012	10	DSL	0.10101851	0.130600506	0.009313451	0.009734564	895.1732735	0.009590249	0.140708773	0.20647242	0.235055123	2.339231909	0.008462607
SACRAMENT	2021	LDA	1983	65	DSL	6.10241809	1.804203783	0.259815524	0.271563229	401.6547314	0.00956556	0.06313453	0.205940866	0.234449984	2.039499465	0.003797082
SACRAMENT	2021	LDT1	1983	65	DSL	0.65300378	1.804203783	0.259815524	0.271563229	463.2550192	0.00956556	0.072817238	0.205940866	0.234449984	2.039499465	0.004379426
SACRAMENT	2021	MDV	1983	65	DSL	1.72757945	1.804203783	0.259815524	0.271563229	615.8298292	0.00956556	0.096799873	0.205940866	0.234449984	2.039499465	0.005821807
SACRAMENT	2021	LDA	2016	5	DSL	0.06338946	0.147709927	0.008211073	0.008582341	531.7324337	0.009565051	0.083580934	0.20592991	0.234437511	3.769763726	0.005026784
SACRAMENT	2021	MH	1995	30	DSL	6.4791384	10.84783263	0.168888475	0.176524862	1077.15533	0.009530691	0.169313818	0.205190158	0.233595353	1.315258064	0.010182992
SACRAMENT	2021	LDA	1983	30	DSL	35.0241744	1.363807482	0.258005825	0.269671704	384.4562835	0.009498932	0.060431174	0.204506422	0.232816965	1.233289805	0.003634494
SACRAMENT	2021	LDT1	1983	30	DSL	3.74784518	1.363807482	0.258005825	0.269671704	447.6247576	0.009498932	0.070360378	0.204506422	0.232816965	1.233289805	0.004231664
SACRAMENT	2021	MDV	1983	30	DSL	9.91525703	1.363807482	0.258005825	0.269671704	584.6883153	0.009498932	0.091904861	0.204506422	0.232816965	1.233289805	0.005527407
SACRAMENT	2021	LHD1	2002	35	DSL	1092.49226	6.943375426	0.038360559	0.040095054	496.3631357	0.009471426	0.078021373	0.20391422	0.232142783	1.069361078	0.004692417
SACRAMENT	2021	LHD2	2002	35	DSL	167.316302	6.943375426	0.038360559	0.040095054	563.3196333	0.009471426	0.088546002	0.20391422	0.232142783	1.069361078	0.005325396
SACRAMENT	2021	MH	1995	45	GAS	56.1329112	2.000477261	0.001094629	0.001190509	1594.357045	0.036866785	0.095647122	0.158791767	0.231708573	5.707475233	0.015777455
SACRAMENT	2021	LDT2	2013	10	DSL	8.62590456	0.129237021	0.008975354	0.00938118	680.099845	0.009452891	0.106902225	0.203515171	0.231688491	2.231113336	0.006429389
SACRAMENT	2021	LDT1	2013	10	DSL	0.32724941	0.12923703	0.008975354	0.00938118	870.7161518	0.009452882	0.136864454	0.20351499	0.231688286	2.231116094	0.008231399
SACRAMENT	2021	LDT1	2000	10	GAS	102.075877	0.303649231	0.012232021	0.013303439	793.9630583	0.040264694	0.026283442	0.158749642	0.231647104	4.0818216	0.007856908
SACRAMENT	2021	MDV	2007	10	DSL	3.68704989	0.14361049	0.011266286	0.011775697	1012.374566	0.009450045	0.159131184	0.203453903	0.231618742	4.741730126	0.00957058
SACRAMENT	2021	MH	1998	65	DSL	3.77646433	11.63277273	0.193296212	0.202036209	942.1826131	0.009449301	0.148097986	0.203437889	0.231600511	0.60563113	0.008907014
SACRAMENT	2021	MDV	2017	5	DSL	0.45605455	0.146860012	0.008075657	0.008440803	881.374703	0.009444176	0.138539829	0.203327558	0.231474907	3.699082663	0.008332161
SACRAMENT	2021	MH	1996	45	GAS	40.0829743	1.962909338	0.001094629	0.001190509	1594.328461	0.036782535	0.094390745	0.158365046	0.231085903	5.690602937	0.015777173
SACRAMENT	2021	LDA	2000	10	GAS	564.232807	0.303527516	0.012232021	0.013303439	664.486141	0.03987102	0.026103486	0.157995959	0.230547332	4.078710525	0.006575629
SACRAMENT	2021	MH	1997	45	GAS	69.3940168	1.928094151	0.001094629	0.001190509	1594.299376	0.036698404	0.093207828	0.157939302	0.230464659	5.673411967	0.015776885
SACRAMENT	2021	LDA	1998	45	GAS	6775.68062	0.606782395	0.002137263	0.002324468	309.3789098	0.033634491	0.038981638	0.157854738	0.230341263	6.384713998	0.003061555
SACRAMENT	2021	MH	2021	15	DSL	27.3927479	5.404002209	0.019294726	0.020167148	1336.953754	0.009392521	0.210150512	0.202215451	0.230208847	0.571063007	0.012639021
SACRAMENT	2021	LHD1	2003	35	DSL	1524.8854	6.937233068	0.038121266	0.03984494	496.3631357	0.009375656	0.078021373	0.201852351	0.229795481	1.058562498	0.004692417
SACRAMENT	2021	LHD2	2003	35	DSL	218.568727	6.937233068	0.038121266	0.03984494	563.3196333	0.009375656	0.088546002	0.201852351	0.229795481	1.058562498	0.005325396
SACRAMENT	2021	MH	1996	30	DSL	4.26979753	10.82523437	0.166906343	0.174453108	1077.15533	0.009358177	0.169313818	0.201476041	0.229367077	1.291449284	0.010182992
SACRAMENT	2021	LDT2	2014	10	DSL	8.87051909	0.127800219	0.008619072	0.009008788	675.655543	0.009308136	0.106203642	0.200398691	0.228140586	2.117181667	0.006387375
SACRAMENT	2021	MDV	2009	10	DSL	2.95060995	0.139269333	0.010714893	0.011199373	927.4442429	0.009291403	0.14578132	0.20003844	0.227730465	4.068003719	0.008767683
SACRAMENT	2021	MH	1999	65	DSL	5.17805703	11.60275948	0.191082118	0.199722003	942.1826131	0.009258184	0.148097986	0.199323257	0.226916276	0.593387574	0.008907014
SACRAMENT	2021	LDA	1998	55	GAS	12361.1097	0.600079445	0.002096782	0.002280442	330.3060292	0.033069668	0.038551019	0.155203891	0.226473154	5.579777236	0.003268646
SACRAMENT	2021	MDV	2008	10	DSL	1.93469004	0.142012238	0.011002076	0.011499541	983.1506465	0.009235352	0.15453759	0.198831691	0.226356661	4.623446056	0.009294309
SACRAMENT	2021	MH	1995	55	GAS	71.4495715	2.017474502	0.001076049	0.001170302	1706.669067	0.035927737	0.096459796	0.154747121	0.225806636	4.914398405	0.016888874
SACRAMENT	2021	MH	1996	55	GAS	51.0201819	1.979587379	0.001076049	0.001170302	1706.644246	0.035845633	0.095192745	0.15433127	0.225199827	4.899870583	0.016888628
SACRAMENT	2021	MH	1997	30	DSL	11.7830152	10.80213357	0.164880136	0.172335284	1077.15533	0.009181827	0.169313818	0.197679331	0.225044776	1.267111075	0.010182992
SACRAMENT	2021	LHD2	1995	35	GAS	38.8926701	1.539066625	0.003103588	0.003375436	892.7034849	0.03293184	0.074815374	0.154123468	0.224896603	5.3183419	0.008834025
SACRAMENT	2021	LHD1	1995	35	GAS	345.908256	1.539034066	0.00310354	0.003375383	780.4849246	0.03290995	0.074765338	0.154119577	0.224890926	5.318205498	0.007723531
SACRAMENT	2021	LDA	2017	5	DSL	0.90022003	0.14493115	0.007768366	0.008119617	515.8792024	0.009169836	0.081089027	0.197421164	0.22475087	3.538690571	0.004876914
SACRAMENT	2021	MH	1997	55	GAS	88.3291577	1.944476382	0.001076049	0.001170302	1706.618994	0.035763645	0.093999777	0.15391637	0.224594406	4.885068367	0.016888378
SACRAMENT	2021	LDT2	1998	60	GAS	5057.62452	0.937475534	0.002218285	0.002412587	473.2920943	0.032918461	0.053622812	0.153897565	0.224566966	5.348312902	0.004683609
SACRAMENT	2021	LDT2	2015	10	DSL	13.0464728	0.126290082	0.008244605	0.008617389	659.8995384	0.009155993	0.103727018	0.197123139	0.224411588	1.997434776	0.006238424
SACRAMENT	2021	LDT2	1998	45	GAS	3591.13779	0.874169797	0.002143555	0.002331311	428.9703088	0.032847234	0.050001777	0.153564571	0.224081061	6.486280243	0.004245009
SACRAMENT	2021	LDA	1998	50	GAS	6792.4403	0.598505713	0.002061504	0.002242074	318.2206258	0.032539365	0.038449917	0.152715048	0.222841439	5.975927154	0.003149051
SACRAMENT	2021	LHD1	2007	20	DSL	2209.83633	2.670010153	0.044948405	0.046980772	616.2897993	0.009072713	0.096872174	0.195330178	0.222370421	1.095704302	0.005826155
SACRAMENT	2021	MH	1995	50	GAS	54.6288588	1.997220026	0.001056652	0.001149206	1640.205668	0.035380706	0.095491386	0.15239096	0.222368532	5.28122445	0.016231165
SACRAMENT	2021	LHD2	2007	20	DSL	873.539114	2.669539034	0.044944703	0.046976903	700.9244292	0.009071997	0.110175559	0.19531476	0.222352869	1.095623211	0.006626257
SACRAMENT	2021	MDV	2010	10	DSL	5.7537454	0.137549494	0.010404737	0.010875193	918.6555384	0.009070879	0.144399858	0.195290674	0.222325448	3.939067984	0.008684599
SACRAMENT	2021	MH	2000	65	DSL	8.92707654	11.57212051	0.188821868	0.197359555	942.1826131	0.009063084	0.148097986	0.195122852	0.222134395	0.580888789	0.008907014
SACRAMENT	2021	LDA	2008	10	DSL	1.14357591	0.137453768	0.010387478	0.010857154	542.7910595	0.009058608	0.085319196	0.195026494	0.222024697	3.931890974	0.005131328
SACRAMENT	2021	MH	1996	50	GAS	39.0089717	1.959713272	0.001056652	0.001149206	1640.179155	0.035299852	0.094237056	0.151981441	0.221770961	5.265612226	0.016230902
SACRAMENT	2021	MH	1998	30	DSL	10.1590814	10.70767259	0.166904024	0.174450684	1103.485794	0.009034217	0.1734526	0.194501378	0.221426888	1.245917356	0.010431909
SACRAMENT	2021	MH	1997	50	GAS	67.5346399	1.924954772	0.001056652	0.001149206	1640.152179	0.035219112	0.093056065	0.151572858	0.221174759	5.249705127	0.016230635
SACRAMENT	2021	MH	2003	20	DSL	22.1443489	7.778101038	0.204956102	0.214223308	1296.390184	0.009016316	0.203774484	0.194115969	0.220988125	0.645030007	0.012255549
SACRAMENT	2021	LDT2	2016	10	DSL	8.5836224	0.124706609	0.007851952	0.008206983	633.4444502	0.008996461	0.099568646	0.193688515	0.220501497	1.87187268	0.005988328
SACRAMENT	2021	LDT1	1998	35	GAS	4569.97625	0.516798054	0.00270216	0.002938845	354.4934937	0.033440513	0.03537223	0.151048196	0.220409173	5.850018009	0.003508
SACRAMENT	2021	MDV	2018	5	DSL	0.48455531	0.143561433	0.007550138	0.007891521	842.9607752	0.008975034	0.132501695	0.193227191	0.21997631	3.424784866	0.007969011
SACRAMENT	2021	LHD1	1987	55	DSL	36.4715898	6.037753267	0.13112923	0.137058312	515.8830343	0.008943269	0.081089629	0.192543323	0.219197772	1.225478575	0.00487695
SACRAMENT	2021	LHD1	1988	55	DSL	53.6351041	6.037753267	0.13112923	0.137058312	515.8830343	0.008943269	0.081089629	0.192543323	0.219197772	1.225478575	0.00487695
SACRAMENT	2021	LHD1	1989	55	DSL	78.8834023	6.037753267	0.13112923	0.137058312	515.8830343	0.008943269	0.081089629	0.192543323	0.219197772	1.225478575	0.00487695
SACRAMENT	2021	LHD1	1990	55	DSL	136.75355	6.037753267	0.13112923	0.137058312	515.8830343	0.008943269	0.081089629	0.192543323	0.219197772	1.225478575	0.00487695
SACRAMENT	2021	LHD2	1987	55	DSL	27.2018342	6.037753267	0.13112923	0.137058312	559.8847575	0.008943269	0.088006087	0.192543323	0.219197772	1.225478575	0.005292924
SACRAMENT	2021	LHD2	1988	55	DSL	10.8813355	6.037753267	0.13112923	0.137058312	559.8847575	0.008943269	0.088006087	0.192543323	0.219197772	1.225478575	0.005292924
SACRAMENT	2021	LHD2	1989	55	DSL	35.6051898	6.037753267	0.13112923	0.137058312	559.8847575	0.008943269	0.088006087	0.192543323	0.219197772	1.225478575	0.005292924
SACRAMENT	2021	LHD2	1990	55	DSL	24.6763661	6.037753267	0.13112923	0.137058312	559.8847575	0.008943269	0.088006087	0.192543323	0.219197772	1.225478575	0.005292924
SACRAMENT	2021	LHD1	1987	40	DSL	14.5317579	5.353358145	0.130737177	0.136648532	482.7745805	0.008916531	0.075885441	0.191967653	0.21854241	0.987830029	0.004563956
SACRAMENT	2021	LHD1	1988	40	DSL	21.3703968	5.353358145	0.130737177	0.136648532	482.7745805	0.008916531	0.075885441	0.191967653	0.21854241	0.987830029	0.004563956
SACRAMENT	2021	LHD1	1989	40	DSL	31.430341	5.353358145	0.130737177	0.136648532	482.7745805	0.008916531	0.075885441	0.191967653	0.21854241	0.987830029	0.004563956
SACRAMENT	2021	LHD1	1990	40	DSL	54.4881507	5.353358145	0.130737177	0.136648532	482.7745805	0.008916531	0.075885441	0.191967653	0.21854241	0.987830029	0.004563956
SACRAMENT	2021	LHD2	1987	40	DSL	10.838312	5.353358145	0.130737177	0.136648532	542.7445231	0.008916531	0.085311881	0.191967653	0.21854241	0.987830029	0.005130888
SACRAMENT	2021	LHD2	1988	40	DSL	4.33556457	5.353358145	0.130737177	0.136648532	542.7445231	0.008916531	0.085311881	0.191967653	0.21854241	0.987830029	0.005130888
SACRAMENT	2021	LHD2	1989	40	DSL	14.186549	5.353358145	0.130737177	0.136648532	542.7445231	0.008916531	0.085311881	0.191967653	0.21854241	0.987830029	0.005130888
SACRAMENT	2021	LHD2	1990	40	DSL	9.83206322	5.353358145	0.130737177	0.136648532	542.7445231	0.008916531	0.085311881	0.191967653	0.21854241	0.987830029	0.005130888
SACRAMENT	2021	LHD1	2008	20	DSL	2473.00745	2.662343226	0.04412421	0.046119311	616.2897993	0.008915065	0.096872174	0.19193609	0.218506478	1.069589532	0.005826155
SACRAMENT	2021	LHD2	2008	20	DSL	1035.08174	2.661543196	0.044117902	0.046112718	700.9244292	0.008913881	0.110175559	0.191910611	0.218477471	1.06945317	0.006626257
SACRAMENT	2021	MDV	1999	30	GAS	4877.26655	0.855885944	0.003273709	0.003560457	477.6948681	0.032951821	0.05015552	0.149528028	0.218190947	5.231949365	0.004727178
SACRAMENT	2021	LHD1	1981	30	DSL	2.40876953	4.78452043	0.144288026	0.15081209	496.3631357	0.008891592	0.078021373	0.191430731	0.21793116	0.881733245	0.004692417
SACRAMENT	2021	LHD1	1982	30	DSL	18.2577555	4.78452043	0.144288026	0.15081209	496.3631357	0.008891592	0.078021373	0.191430731	0.21793116	0.881733245	0.004692417
SACRAMENT	2021	LHD1	1984	30	DSL	57.3121355	4.78452043	0.144288026	0.15081209	496.3631357	0.008891592	0.078021373	0.191430731	0.21793116	0.881733245	0.004692417

SACRAMENT	2021	LHD1	1985	30	DSL	95.9959056	4.78452043	0.144288026	0.15081209	496.3631357	0.008891592	0.078021373	0.191430731	0.21793116	0.881733245	0.004692417
SACRAMENT	2021	LHD1	1986	30	DSL	131.525794	4.78452043	0.144288026	0.15081209	496.3631357	0.008891592	0.078021373	0.191430731	0.21793116	0.881733245	0.004692417
SACRAMENT	2021	LHD2	1985	30	DSL	15.2446093	4.78452043	0.144288026	0.15081209	563.3196333	0.008891592	0.088546002	0.191430731	0.21793116	0.881733245	0.005325396
SACRAMENT	2021	LHD2	1986	30	DSL	37.4413135	4.78452043	0.144288026	0.15081209	563.3196333	0.008891592	0.088546002	0.191430731	0.21793116	0.881733245	0.005325396
SACRAMENT	2021	LHD1	1983	30	DSL	48.4635167	4.78452043	0.144288026	0.15081209	496.3631357	0.008891592	0.078021373	0.191430731	0.21793116	0.881733245	0.004692417
SACRAMENT	2021	LHD2	1983	30	DSL	3.63162185	4.78452043	0.144288026	0.15081209	563.3196333	0.008891592	0.088546002	0.191430731	0.21793116	0.881733245	0.005325396
SACRAMENT	2021	LHD2	1984	30	DSL	4.90821846	4.78452043	0.144288026	0.15081209	563.3196333	0.008891592	0.088546002	0.191430731	0.21793116	0.881733245	0.005325396
SACRAMENT	2021	LDA	2009	10	DSL	9.43765563	0.135958519	0.010117826	0.010575309	531.4465296	0.008866881	0.083535994	0.190898725	0.217325507	3.8197932	0.005024081
SACRAMENT	2021	MH	2001	65	DSL	7.37487148	11.54085583	0.186515462	0.194948864	942.1826131	0.008863999	0.148097986	0.190836676	0.217254867	0.568134775	0.008907014
SACRAMENT	2021	MH	1999	30	DSL	13.9295114	10.68004615	0.164992237	0.172452454	1103.485794	0.008851496	0.1734526	0.190567491	0.216948419	1.22072965	0.010431909
SACRAMENT	2021	MDV	2011	10	DSL	11.9797983	0.135702267	0.010071608	0.010527001	889.4597055	0.00883402	0.139810679	0.190191245	0.216520087	3.800581983	0.008408593
SACRAMENT	2021	LDT2	2017	10	DSL	16.3602073	0.123049802	0.007441114	0.007777568	606.989362	0.008829541	0.095410275	0.190094819	0.216410313	1.740495397	0.005738232
SACRAMENT	2021	LDT1	2017	10	DSL	0.06715895	0.12304978	0.007441114	0.007777568	806.1241211	0.008829532	0.126711486	0.190094622	0.216410089	1.740500192	0.007620772
SACRAMENT	2021	LDT1	2001	10	GAS	121.151916	0.28951004	0.012232021	0.013303439	793.5996787	0.037934057	0.025535359	0.148154616	0.216186867	3.881395553	0.007853312
SACRAMENT	2021	LHD1	2004	30	DSL	3578.44798	5.505296395	0.043319017	0.045277711	496.3631357	0.008803043	0.078021373	0.189524343	0.215760864	1.136866293	0.004692417
SACRAMENT	2021	LHD2	2004	30	DSL	501.551118	5.505296395	0.043319017	0.045277711	563.3196333	0.008803043	0.088546002	0.189524343	0.215760864	1.136866293	0.005325396
SACRAMENT	2021	LDT2	1998	55	GAS	6551.4375	0.888005027	0.00208358	0.002266083	458.8137868	0.031608496	0.050793141	0.147773327	0.215630491	5.731027691	0.004540334
SACRAMENT	2021	LDA	2001	10	GAS	703.039218	0.289412182	0.012232021	0.013303439	664.1230298	0.037599207	0.025396388	0.147440108	0.21514426	3.878347241	0.006572036
SACRAMENT	2021	LDT2	1998	50	GAS	3600.02049	0.871814927	0.002060154	0.002240605	441.6088332	0.031513636	0.04986708	0.147329847	0.214983366	6.095788636	0.004370077
SACRAMENT	2021	LDA	2018	5	DSL	0.95354026	0.142030124	0.007306182	0.007636535	500.025971	0.008757234	0.078597119	0.188538099	0.214638091	3.297451091	0.004727044
SACRAMENT	2021	LHD1	2009	20	DSL	632.29696	2.653164325	0.043217484	0.045171587	616.2897993	0.008741693	0.096872174	0.188203505	0.214257178	1.040925745	0.005826155
SACRAMENT	2021	LHD2	2009	20	DSL	321.12001	2.653164325	0.043217484	0.045171587	700.9244292	0.008741693	0.110175559	0.188203505	0.214257178	1.040925745	0.006626257
SACRAMENT	2021	MDV	1996	70	GAS	58.6925558	1.44103513	0.002586633	0.002813199	485.9494605	0.031636331	0.077651067	0.146229456	0.213377679	3.853862652	0.004808864
SACRAMENT	2021	LHD2	2002	55	DSL	230.526728	8.196446093	0.035171016	0.036761293	559.8847575	0.008683911	0.088006087	0.186959481	0.212840939	1.285306839	0.005292924
SACRAMENT	2021	LHD1	2002	55	DSL	1505.22491	8.196446093	0.035171016	0.036761293	515.8830343	0.008683911	0.081089629	0.186959481	0.212840939	1.285306839	0.00487695
SACRAMENT	2021	LHD1	2005	30	DSL	3182.2593	5.498721201	0.042950946	0.044892997	496.3631357	0.008681178	0.078021373	0.186900656	0.212773971	1.121095091	0.004692417
SACRAMENT	2021	LHD2	2005	30	DSL	1019.08225	5.498721201	0.042950946	0.044892997	563.3196333	0.008681178	0.088546002	0.186900656	0.212773971	1.121095091	0.005325396
SACRAMENT	2021	MDV	1997	70	GAS	90.7949114	1.441563602	0.002586633	0.002813199	486.0852579	0.031620741	0.077835304	0.145694561	0.212597162	3.856646881	0.004810208
SACRAMENT	2021	MH	2000	30	DSL	24.0147635	10.65184375	0.163040596	0.170412568	1103.485794	0.008664965	0.1734526	0.1865516	0.212376594	1.195016881	0.010431909
SACRAMENT	2021	LDA	2010	10	DSL	12.5237338	0.134361759	0.009829867	0.01027433	504.1892212	0.008662138	0.079251524	0.186490723	0.212307289	3.700085188	0.004766401
SACRAMENT	2021	MH	2002	65	DSL	8.86285452	11.50896544	0.184162901	0.192489931	942.1826131	0.00866093	0.148097986	0.186464727	0.212277694	0.555125532	0.008907014
SACRAMENT	2021	LHD1	2002	40	DSL	599.742542	7.267357494	0.035065861	0.036651383	482.7745805	0.008657947	0.075885441	0.186400505	0.212204582	1.036056213	0.004563956
SACRAMENT	2021	LHD2	2002	40	DSL	91.8511808	7.267357494	0.035065861	0.036651383	542.7445231	0.008657947	0.085311881	0.186400505	0.212204582	1.036056213	0.005130888
SACRAMENT	2021	LDT2	2018	10	DSL	17.1460849	0.12131966	0.007012091	0.007329147	580.5342738	0.008655232	0.091251903	0.18634205	0.212138035	1.603302953	0.005488137
SACRAMENT	2021	LDT1	2018	10	DSL	0.07093522	0.121319645	0.007012091	0.007329147	781.3515152	0.008655225	0.122817577	0.186341892	0.212137855	1.603307717	0.007386582
SACRAMENT	2021	LHD1	2003	55	DSL	2100.97185	8.189195224	0.034951618	0.036531976	515.8830343	0.008596104	0.081089629	0.185069048	0.210688807	1.272327604	0.00487695
SACRAMENT	2021	LHD2	2003	55	DSL	301.141806	8.189195224	0.034951618	0.036531976	559.8847575	0.008596104	0.088006087	0.185069048	0.210688807	1.272327604	0.005292924
SACRAMENT	2021	MDV	2012	10	DSL	21.2259739	0.133727653	0.009715506	0.010154798	867.5104514	0.008580827	0.136360562	0.184740153	0.210314382	3.652545712	0.008201094
SACRAMENT	2021	LHD1	2003	40	DSL	837.11224	7.26092853	0.034847119	0.036422751	482.7745805	0.008570403	0.075885441	0.184515724	0.210058885	1.025593951	0.004563956
SACRAMENT	2021	LHD2	2003	40	DSL	119.987087	7.26092853	0.034847119	0.036422751	542.7445231	0.008570403	0.085311881	0.184515724	0.210058885	1.025593951	0.005130888
SACRAMENT	2021	MH	1991	60	DSL	6.15637419	11.67502755	0.270360396	0.282584894	945.1994801	0.008547664	0.148572196	0.184026174	0.209501564	0.653666014	0.008935534
SACRAMENT	2021	LHD1	2006	30	DSL	3960.20415	5.491305175	0.042535807	0.044459087	496.3631357	0.008543729	0.078021373	0.183941463	0.209405126	1.103307132	0.004692417
SACRAMENT	2021	LHD2	2006	30	DSL	1181.0053	5.491305175	0.042535807	0.044459087	563.3196333	0.008543729	0.088546002	0.183941463	0.209405126	1.103307132	0.005325396
SACRAMENT	2021	LHD1	1987	50	DSL	60.5630016	5.78573339	0.125184048	0.130844315	493.6847405	0.008537796	0.077600366	0.183813728	0.209259709	1.082989409	0.004667096
SACRAMENT	2021	LHD1	1988	50	DSL	89.0639239	5.78573339	0.125184048	0.130844315	493.6847405	0.008537796	0.077600366	0.183813728	0.209259709	1.082989409	0.004667096
SACRAMENT	2021	LHD1	1989	50	DSL	130.990057	5.78573339	0.125184048	0.130844315	493.6847405	0.008537796	0.077600366	0.183813728	0.209259709	1.082989409	0.004667096
SACRAMENT	2021	LHD1	1990	50	DSL	227.086495	5.78573339	0.125184048	0.130844315	493.6847405	0.008537796	0.077600366	0.183813728	0.209259709	1.082989409	0.004667096
SACRAMENT	2021	LHD2	1987	50	DSL	45.1700827	5.78573339	0.125184048	0.130844315	540.9262835	0.008537796	0.085026079	0.183813728	0.209259709	1.082989409	0.005113699
SACRAMENT	2021	LHD2	1988	50	DSL	18.0690324	5.78573339	0.125184048	0.130844315	540.9262835	0.008537796	0.085026079	0.183813728	0.209259709	1.082989409	0.005113699
SACRAMENT	2021	LHD2	1989	50	DSL	59.1242987	5.78573339	0.125184048	0.130844315	540.9262835	0.008537796	0.085026079	0.183813728	0.209259709	1.082989409	0.005113699
SACRAMENT	2021	LHD2	1990	50	DSL	40.9764095	5.78573339	0.125184048	0.130844315	540.9262835	0.008537796	0.085026079	0.183813728	0.209259709	1.082989409	0.005113699
SACRAMENT	2021	LHD1	1987	45	DSL	15.6845459	5.568529123	0.125059222	0.130713845	470.9086159	0.008529283	0.074020277	0.18363044	0.209051047	1.007895734	0.00445178
SACRAMENT	2021	LHD1	1988	45	DSL	23.0656864	5.568529123	0.125059222	0.130713845	470.9086159	0.008529283	0.074020277	0.18363044	0.209051047	1.007895734	0.00445178
SACRAMENT	2021	LHD1	1989	45	DSL	33.9236746	5.568529123	0.125059222	0.130713845	470.9086159	0.008529283	0.074020277	0.18363044	0.209051047	1.007895734	0.00445178
SACRAMENT	2021	LHD1	1990	45	DSL	58.8106345	5.568529123	0.125059222	0.130713845	470.9086159	0.008529283	0.074020277	0.18363044	0.209051047	1.007895734	0.00445178
SACRAMENT	2021	LHD2	1987	45	DSL	11.6981031	5.568529123	0.125059222	0.130713845	521.7107967	0.008529283	0.082005672	0.18363044	0.209051047	1.007895734	0.004932043
SACRAMENT	2021	LHD2	1988	45	DSL	4.67950004	5.568529123	0.125059222	0.130713845	521.7107967	0.008529283	0.082005672	0.18363044	0.209051047	1.007895734	0.004932043
SACRAMENT	2021	LHD2	1989	45	DSL	15.3119521	5.568529123	0.125059222	0.130713845	521.7107967	0.008529283	0.082005672	0.18363044	0.209051047	1.007895734	0.004932043
SACRAMENT	2021	LHD2	1990	45	DSL	10.6120298	5.568529123	0.125059222	0.130713845	521.7107967	0.008529283	0.082005672	0.18363044	0.209051047	1.007895734	0.004932043
SACRAMENT	2021	MDV	1996	40	GAS	2772.94701	1.100250336	0.002359783	0.002566479	426.4490085	0.030923767	0.059287668	0.142935843	0.208571647	5.386892174	0.004220059
SACRAMENT	2021	MDV	2019	5	DSL	0.50457379	0.140109436	0.007000176	0.007316693	804.5468474	0.008484071	0.12646356	0.182657048	0.207942905	3.137729707	0.007605861
SACRAMENT	2021	MDV	1998	35	GAS	4524.32903	0.965554038	0.002707886	0.002945073	442.3388029	0.031175218	0.054271276	0.142480103	0.207906631	5.319078578	0.004377301
SACRAMENT	2021	MDV	1997	40	GAS	4289.63222	1.10087471	0.002359783	0.002566479	426.6946151	0.030912976	0.059440262	0.142433488	0.207838612	5.393492968	0.004222489
SACRAMENT	2021	MH	2001	30	DSL	19.8391706	10.6230654	0.161049102	0.168331027	1103.485794	0.008474626	0.1734526	0.182453704	0.207711412	1.168779049	0.010431909
SACRAMENT	2021	LDT2	2019	10	DSL	17.6527105	0.119516184	0.006564883	0.006861718	554.0791856	0.008473534	0.087093532	0.182430208	0.207684663	1.460295376	0.005238041
SACRAMENT	2021	LDT1	2019	10	DSL	0.07385448	0.119516187	0.006564883	0.006861718	756.5789092	0.00847353	0.118923669	0.182430122	0.207684565	1.460299605	0.007152392
SACRAMENT	2021	MDV	2003	20	GAS	6224.95094	0.500510506	0.005685611	0.006183621	704.6660829	0.032736213	0.03499967	0.142142041	0.207413332	4.917371562	0.006973242
SACRAMENT	2021	MH	2004	20	DSL	30.2890842	7.545000426	0.197853002	0.206799037	1295.495982	0.008445338	0.203633928	0.181823164	0.206993584	0.56555079	0.012247096
SACRAMENT	2021	LDA	2011	10	DSL	22.2900284	0.132663488	0.009523602	0.009954217	521.6886498	0.008444378	0.082002191	0.181802487	0.206970045	3.57276694	0.004931834
SACRAMENT	2021	MH	1992	60	DSL	11.2560835	11.6564012	0.267835663	0.279946003	945.1994801	0.008436695	0.148572196	0.181637076	0.206781735	0.645185625	0.008935534
SACRAMENT	2021	LDT1	2002	10	GAS	144.31317	0.281275772	0.012232021	0.013303439	793.3772156	0.036487893	0.025125876	0.141482568	0.206451031	3.759198813	0.007851111
SACRAMENT	2021	MDV	1996	65	GAS	221.840478	1.332831256	0.002411783	0.002623034	489.8979078	0.030534002	0.071820434	0.141134267	0.205942791	4.073520607	0.004847937
SACRAMENT	2021	LDA	2002	10	GAS	820.015295	0.281225604	0.012232021	0.013303439	663.9013208	0.036199358	0.025020865	0.140802491	0.205458665	3.756532586	0.006569842
SACRAMENT	2021	MDV	1997	65	GAS	343.177874	1.333648095	0.002411783	0.002623034	490.2126631	0.030527328	0.07200855	0.140656592	0.205245769	4.079006979	0.004851052
SACRAMENT	2021	LDT2	1999	30	GAS	5500.36933	0.685188576	0.003273529	0.003560262	475.2554053	0.031660429	0.042865031	0.14015694	0.204516678	5.858471327	0.004703038
SACRAMENT	2021	LDT2	2000	15	GAS	989.004167	0.535205546	0.008119324	0.008830505	759.1230299	0.034195419	0.037557496	0.140143939	0.204497707	4.812857798	0.007512138
SACRAMENT	2021	LDA	1983	60	DSL	41.6266797	1.742726375	0.226505623	0.236747202	357.2797356	0.008339198	0.056159399	0.179538018	0.204392096	1.625142706	0.003377578
SACRAMENT	2021	LDT1	1983	60	DSL	4.45436198	1.742726375	0.226505623	0.236747202	412.4329506	0.008339198	0.064828716	0.179538018	0.204392096	1.625142706	0.003898975
SACRAMENT	2021	MDV	1983	60	DSL	11.7844099	1.742726375	0.226505623	0.236747202	548.4476414	0.008339198	0.086208332	0.179538018	0.204392096	1.625142706	0.005184803
SACRAMENT	2021	LDA	2019	5	DSL	0.97789054	0.13900685	0.006824521	0.007133096	484.1727397	0.008327247	0.076105212	0.179280726	0.204099187	3.046045145	0.004577174
SACRAMENT	2021	MH	1993	60	DSL	12.4682373	11.63732023	0.265249306	0.277242702	945.1994801	0.008323017	0.148572196	0.179189666	0.203995521	0.636498245	0.008935534
SACRAMENT	2021	LDA	1993	15	DSL	0.75441921	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	1994	15	DSL	0.27711346	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	1995	15	DSL	1.04775879	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	1996	15	DSL	0.88176916	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	1997	15	DSL	1.43588606	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	1998	15	DSL	1.43242269	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	1999	15	DSL	3.41795419	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	2000	15	DSL	1.78223076	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	2001	15	DSL	3.760008	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	2002	15	DSL	10.6380807	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	2003	15	DSL	14.4210377	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	2004	15	DSL	4.18070061	1.32420124	0.104878702	0.109620852	489.7528348	0.008316628	0.076982325	0.179052096	0.203838907	1.573200451	0.004629926
SACRAMENT	2021	LDA	2005	15	DSL	11.9470422	1.32420124	0.104878702	0.109620852	469.2604431	0.008316628	0.073761207	0.179052096	0.203838907	1.573200451	0.004436199
SACRAMENT	2021	LDA	2006	15	DSL	11.5390261	1.32420124	0.104878702	0.109620852	477.5347934	0.008316628	0.075061819	0.179052096	0.203838907	1.573200451	0.004514421
SACRAMENT	2021	LDA	2007	15	DSL	3.86327313	1.32420124	0.104878702	0.109620852	460.0375539	0.008316628	0.072311497	0.179052096	0.203838907	1.573200451	0.004349009
SACRAMENT	2021	LDT1	1993	15	DSL	1.8770807	1.32420124	0.104878702	0.109620852	926.0684789	0.008316628	0.145565069	0.179052096	0.203838907	1.573200451	0.008754677
SACRAMENT	2021	LDT1	1994	15	DSL	1.04246743	1.32420124	0.104878702	0.109620852	926.0684789	0.008316628	0.145565069	0.179052096	0.203838907	1.573200451	0.008754677
SACRAMENT	2021	LDT1	1995	15	DSL	0.37461207	1.32420124	0.104878702	0.109620852	926.0684789	0.008316628	0.145565069	0.179052096	0.203838907	1.573200451	0.008754677
SACRAMENT	2021	LDT1	1996	15	DSL	0.90754625	1.32420124	0.104878702	0.109620852	926.0684789	0.008316628	0.145565069	0.179052096	0.203838907	1.573200451	0.008754677
SACRAMENT	2021	LDT1	1997	15	DSL	2.24818098	1.32420124	0.104878702	0.109620852	926.0684789	0.008316628	0.145565069	0.179052096	0.203838907	1.573200451	0.008754677
SACRAMENT	2021	LDT1	1998	15	DSL	0.69731741	1.32420124	0.104878702	0.109620852	926.0684789	0.008316628	0.145565069	0.179052096	0.203838907	1.573200451	0.008754677
SACRAMENT	2021	LDT1	1999	15	DSL	2.14652246	1.32420124	0.104878702	0.109620852	926.0684789	0.008316628	0.145565069	0.179052096	0.203838907	1.573200451	0.008754677
SACRAMENT	2021	LDT1	2000	15	DSL	1.77429017	1.32420124	0.104878702	0.109620852	926.0684789	0.008316628	0.145565069	0.179052096	0.203838907	1.573200451	0.008754677
SACRAMENT	2021	LDT1	2001	15	DSL	1.77260693	1.32420124	0.104878702	0.109620852	926.0684789	0.008316628	0.145565069	0.179052096	0.203838907	1.573200451	0.008754677
SACRAMENT	2021	LDT1	2002	15	DSL	2.24992068	1.32420124	0.104878702	0.109620852	926.0684789	0.008316628	0.145565069	0.179052096	0.203838907	1.573200451	0.008754677
SACRAMENT	2021	LDT1	2003	15	DSL	2.40048119	1.32420124	0.104878702	0.109620852	926.0684789	0.008316628	0.145565069	0.179052096	0.203838907	1.573200451	0.008754677
SACRAMENT	2021	LDT1	2005	15	DSL	0.19835016	1.32420124	0.104878702	0.109620852	887.3196312	0.008316628	0.139474289	0.179052096	0.203838907	1.573200451	0.008388362

SACRAMENT	2021	LDT1	2006	15	DSL	0.21325717	1.32420124	0.104878702	0.109620852	902.9655131	0.008316628	0.141933604	0.179052096	0.203838907	1.573200451	0.008536271
SACRAMENT	2021	LDT1	2007	15	DSL	2.26717065	1.32420124	0.104878702	0.109620852	869.8801672	0.008316628	0.136733048	0.179052096	0.203838907	1.573200451	0.008223496
SACRAMENT	2021	LDT2	1993	15	DSL	0.16352201	1.32420124	0.104878702	0.109620852	721.0861319	0.008316628	0.113344698	0.179052096	0.203838907	1.573200451	0.006816857
SACRAMENT	2021	LDT2	1994	15	DSL	0.08707114	1.32420124	0.104878702	0.109620852	721.0861319	0.008316628	0.113344698	0.179052096	0.203838907	1.573200451	0.006816857
SACRAMENT	2021	LDT2	2001	15	DSL	0.25549143	1.32420124	0.104878702	0.109620852	721.0861319	0.008316628	0.113344698	0.179052096	0.203838907	1.573200451	0.006816857
SACRAMENT	2021	LDT2	2005	15	DSL	1.06362197	1.32420124	0.104878702	0.109620852	703.9959547	0.008316628	0.11065836	0.179052096	0.203838907	1.573200451	0.006655293
SACRAMENT	2021	LDT2	2006	15	DSL	0.7822297	1.32420124	0.104878702	0.109620852	690.543007	0.008316628	0.108543744	0.179052096	0.203838907	1.573200451	0.006528115
SACRAMENT	2021	LDT2	2007	15	DSL	0.42659013	1.32420124	0.104878702	0.109620852	680.7229556	0.008316628	0.107000169	0.179052096	0.203838907	1.573200451	0.00643528
SACRAMENT	2021	MDV	1993	15	DSL	0.14742805	1.32420124	0.104878702	0.109620852	792.6104296	0.008316628	0.124587322	0.179052096	0.203838907	1.573200451	0.007493019
SACRAMENT	2021	MDV	1994	15	DSL	0.30195632	1.32420124	0.104878702	0.109620852	792.6104296	0.008316628	0.124587322	0.179052096	0.203838907	1.573200451	0.007493019
SACRAMENT	2021	MDV	1995	15	DSL	0.79512672	1.32420124	0.104878702	0.109620852	792.6104296	0.008316628	0.124587322	0.179052096	0.203838907	1.573200451	0.007493019
SACRAMENT	2021	MDV	1996	15	DSL	0.78377174	1.32420124	0.104878702	0.109620852	792.6104296	0.008316628	0.124587322	0.179052096	0.203838907	1.573200451	0.007493019
SACRAMENT	2021	MDV	1997	15	DSL	0.85392863	1.32420124	0.104878702	0.109620852	792.6104296	0.008316628	0.124587322	0.179052096	0.203838907	1.573200451	0.007493019
SACRAMENT	2021	MDV	1998	15	DSL	0.92461668	1.32420124	0.104878702	0.109620852	792.6104296	0.008316628	0.124587322	0.179052096	0.203838907	1.573200451	0.007493019
SACRAMENT	2021	MDV	1999	15	DSL	0.221624	1.32420124	0.104878702	0.109620852	792.6104296	0.008316628	0.124587322	0.179052096	0.203838907	1.573200451	0.007493019
SACRAMENT	2021	MDV	2000	15	DSL	0.35977148	1.32420124	0.104878702	0.109620852	792.6104296	0.008316628	0.124587322	0.179052096	0.203838907	1.573200451	0.007493019
SACRAMENT	2021	MDV	2001	15	DSL	0.65244931	1.32420124	0.104878702	0.109620852	792.6104296	0.008316628	0.124587322	0.179052096	0.203838907	1.573200451	0.007493019
SACRAMENT	2021	MDV	2002	15	DSL	1.00389261	1.32420124	0.104878702	0.109620852	792.6104296	0.008316628	0.124587322	0.179052096	0.203838907	1.573200451	0.007493019
SACRAMENT	2021	MDV	2003	15	DSL	1.0872192	1.32420124	0.104878702	0.109620852	792.6104296	0.008316628	0.124587322	0.179052096	0.203838907	1.573200451	0.007493019
SACRAMENT	2021	MDV	2004	15	DSL	2.39968604	1.32420124	0.104878702	0.109620852	909.4696596	0.008316628	0.142955965	0.179052096	0.203838907	1.573200451	0.008597759
SACRAMENT	2021	MDV	2005	15	DSL	4.86450926	1.32420124	0.104878702	0.109620852	887.9146789	0.008316628	0.139567823	0.179052096	0.203838907	1.573200451	0.008393987
SACRAMENT	2021	MDV	2006	15	DSL	6.88967814	1.32420124	0.104878702	0.109620852	870.9471529	0.008316628	0.136900764	0.179052096	0.203838907	1.573200451	0.008233583
SACRAMENT	2021	LDT1	1998	70	GAS	118.516746	0.591389588	0.002685727	0.002920973	388.7172805	0.030908224	0.040477645	0.139610042	0.203718645	3.770504002	0.003846673
SACRAMENT	2021	MDV	2013	10	DSL	7.47054571	0.13162565	0.00933643	0.009758582	838.6569819	0.0083113	0.131825199	0.178937399	0.203708332	3.494959171	0.007928324
SACRAMENT	2021	LDA	1983	35	DSL	62.2555982	1.425195709	0.225378184	0.235568786	347.5407361	0.008297689	0.054628564	0.178644362	0.203374729	1.134617425	0.00328551
SACRAMENT	2021	LDT1	1983	35	DSL	6.66180852	1.425195709	0.225378184	0.235568786	403.9985472	0.008297689	0.063502946	0.178644362	0.203374729	1.134617425	0.003819239
SACRAMENT	2021	MDV	1983	35	DSL	17.6244057	1.425195709	0.225378184	0.235568786	530.5237923	0.008297689	0.083390952	0.178644362	0.203374729	1.134617425	0.005015358
SACRAMENT	2021	LHD1	2002	50	DSL	2499.50549	7.854320928	0.03357642	0.035094597	493.6847405	0.008290196	0.077600366	0.178483048	0.203191083	1.135861306	0.004667096
SACRAMENT	2021	LHD2	2002	50	DSL	382.80181	7.854320928	0.03357642	0.035094597	540.9262835	0.008290196	0.085026079	0.178483048	0.203191083	1.135861306	0.005113699
SACRAMENT	2021	LDT1	2020	10	DSL	0.0755388	0.117639415	0.006099489	0.006375281	731.8063033	0.00828445	0.11502976	0.178359324	0.203050232	1.311475666	0.006918201
SACRAMENT	2021	LDT2	2020	10	DSL	18.0781658	0.117639374	0.006099489	0.006375281	527.6240974	0.008284448	0.082935161	0.178359292	0.203050196	1.311472702	0.004987945
SACRAMENT	2021	LHD1	2002	45	DSL	647.319444	7.559459083	0.03354294	0.035059603	470.9086159	0.00828193	0.074020277	0.178305075	0.202988473	1.057101533	0.00445178
SACRAMENT	2021	LHD2	2002	45	DSL	99.1376319	7.559459083	0.03354294	0.035059603	521.7107967	0.00828193	0.082005672	0.178305075	0.202988473	1.057101533	0.004932043
SACRAMENT	2021	MH	2002	30	DSL	23.8419996	10.59371111	0.159017753	0.166207831	1103.485794	0.008280477	0.1734526	0.178273804	0.202952873	1.142016154	0.010431909
SACRAMENT	2021	MH	2005	20	DSL	28.5188653	7.512858645	0.195343372	0.204175932	1295.495982	0.008260099	0.203633928	0.177835075	0.202453409	0.553148111	0.012247096
SACRAMENT	2021	LDA	2012	10	DSL	27.5799359	0.130863706	0.00919903	0.009614969	477.2516309	0.008213602	0.07501731	0.17683402	0.201313775	3.437838458	0.004511744
SACRAMENT	2021	LHD1	2003	50	DSL	3488.77475	7.847372716	0.03336697	0.034875676	493.6847405	0.00820637	0.077600366	0.176678324	0.201136525	1.124391196	0.004667096
SACRAMENT	2021	LHD2	2003	50	DSL	500.061878	7.847372716	0.03336697	0.034875676	540.9262835	0.00820637	0.085026079	0.176678324	0.201136525	1.124391196	0.005113699
SACRAMENT	2021	MH	1991	35	DSL	3.07314217	10.96773217	0.236617133	0.24731591	1062.498767	0.008202299	0.16701001	0.176590669	0.201036736	1.186461675	0.010044434
SACRAMENT	2021	LHD1	2003	45	DSL	903.519414	7.552771716	0.033333698	0.0348409	470.9086159	0.008198188	0.074020277	0.17650215	0.200935964	1.046426752	0.00445178
SACRAMENT	2021	LHD2	2003	45	DSL	129.505528	7.552771716	0.033333698	0.0348409	521.7107967	0.008198188	0.082005672	0.17650215	0.200935964	1.046426752	0.004932043
SACRAMENT	2021	LDT1	1999	25	GAS	3630.95818	0.400450067	0.004187301	0.004554071	427.6391248	0.032141633	0.030293496	0.137302485	0.200351464	4.939459734	0.004231836
SACRAMENT	2021	LDA	1999	30	GAS	10340.9272	0.436396803	0.003273394	0.003560114	338.9102737	0.030972309	0.031568408	0.136128165	0.198637899	5.337991421	0.003353792
SACRAMENT	2021	MH	1992	35	DSL	5.61881783	10.95023423	0.234407508	0.245006375	1062.498767	0.008095814	0.16701001	0.174298102	0.198426801	1.171069019	0.010044434
SACRAMENT	2021	LDT1	2021	10	DSL	0.06699627	0.115689336	0.00561591	0.005869837	707.0336973	0.008087983	0.111135851	0.174129512	0.198234873	1.156835654	0.006684011
SACRAMENT	2021	LDT2	2021	10	DSL	15.5806526	0.115689232	0.00561591	0.005869837	501.1690092	0.008087973	0.078776789	0.174129301	0.198234633	1.156834971	0.004737849
SACRAMENT	2021	MH	2006	20	DSL	26.5377467	7.48012132	0.192787242	0.201504225	1295.495982	0.008071428	0.203633928	0.17377309	0.19782911	0.540515622	0.012247096
SACRAMENT	2021	MDV	2014	10	DSL	23.5524074	0.129396259	0.008934382	0.009338355	833.1765441	0.008025439	0.13096375	0.172782983	0.196701939	3.327822366	0.007876515
SACRAMENT	2021	MDV	2001	25	GAS	13444.5294	0.5552616	0.004200191	0.004568091	601.7804812	0.030098811	0.036202476	0.134226278	0.19586267	4.489218175	0.005955106
SACRAMENT	2021	MH	1993	35	DSL	6.22390139	10.93230923	0.23214395	0.242640469	1062.498767	0.007986729	0.16701001	0.171949578	0.195753163	1.155300655	0.010044434
SACRAMENT	2021	LDT1	1998	65	GAS	447.9582	0.555047925	0.002487198	0.002705055	392.3445784	0.029648585	0.037990241	0.133920354	0.195416266	4.005208874	0.003882568
SACRAMENT	2021	MDV	2020	5	DSL	0.52694275	0.136504022	0.006425773	0.006716318	766.1329197	0.007971287	0.120425426	0.171617122	0.195374683	2.837917313	0.007242711
SACRAMENT	2021	LDA	2013	10	DSL	42.60674	0.128962413	0.008856151	0.009256587	464.2125897	0.00796981	0.072967755	0.171585321	0.19533848	3.295299735	0.004388478
SACRAMENT	2021	LDA	2020	5	DSL	0.94770039	0.135861328	0.006323383	0.006609299	468.3195083	0.007879874	0.073613305	0.169649055	0.19313417	2.784472549	0.004427304
SACRAMENT	2021	MH	1994	60	DSL	23.2045863	11.55541909	0.154593723	0.161583766	906.2637061	0.007878252	0.142452034	0.169614117	0.193094396	0.602813025	0.008567451
SACRAMENT	2021	LHD2	1995	40	GAS	11.4802293	1.507142497	0.002691905	0.002927693	863.6592622	0.028261875	0.073263514	0.132267684	0.193004694	4.872453223	0.008546609
SACRAMENT	2021	LHD1	1995	40	GAS	102.104229	1.507110614	0.002691864	0.002927647	755.0276097	0.028243089	0.073214516	0.132264345	0.192999822	4.872328257	0.00747161
SACRAMENT	2021	LDT1	1998	40	GAS	5599.35845	0.49630274	0.002346488	0.00255202	342.1446719	0.029011697	0.033969429	0.131043577	0.19121848	5.38914325	0.003385799
SACRAMENT	2021	LHD1	1981	35	DSL	1.27120119	5.019602567	0.126041237	0.131740262	496.3631357	0.007767153	0.078021373	0.167222234	0.190371396	0.811188011	0.004692417
SACRAMENT	2021	LHD1	1982	35	DSL	9.63532635	5.019602567	0.126041237	0.131740262	496.3631357	0.007767153	0.078021373	0.167222234	0.190371396	0.811188011	0.004692417
SACRAMENT	2021	LHD1	1983	35	DSL	25.5760791	5.019602567	0.126041237	0.131740262	496.3631357	0.007767153	0.078021373	0.167222234	0.190371396	0.811188011	0.004692417
SACRAMENT	2021	LHD1	1984	35	DSL	30.2458388	5.019602567	0.126041237	0.131740262	496.3631357	0.007767153	0.078021373	0.167222234	0.190371396	0.811188011	0.004692417
SACRAMENT	2021	LHD1	1985	35	DSL	50.6607661	5.019602567	0.126041237	0.131740262	496.3631357	0.007767153	0.078021373	0.167222234	0.190371396	0.811188011	0.004692417
SACRAMENT	2021	LHD1	1986	35	DSL	69.4112677	5.019602567	0.126041237	0.131740262	496.3631357	0.007767153	0.078021373	0.167222234	0.190371396	0.811188011	0.004692417
SACRAMENT	2021	LHD2	1983	35	DSL	1.91654783	5.019602567	0.126041237	0.131740262	563.3196333	0.007767153	0.088546002	0.167222234	0.190371396	0.811188011	0.005325396
SACRAMENT	2021	LHD2	1984	35	DSL	2.59025743	5.019602567	0.126041237	0.131740262	563.3196333	0.007767153	0.088546002	0.167222234	0.190371396	0.811188011	0.005325396
SACRAMENT	2021	LHD2	1985	35	DSL	8.04517214	5.019602567	0.126041237	0.131740262	563.3196333	0.007767153	0.088546002	0.167222234	0.190371396	0.811188011	0.005325396
SACRAMENT	2021	LHD2	1986	35	DSL	19.7592346	5.019602567	0.126041237	0.131740262	563.3196333	0.007767153	0.088546002	0.167222234	0.190371396	0.811188011	0.005325396
SACRAMENT	2021	LDT2	2001	15	GAS	1114.38096	0.510280232	0.008119324	0.008830505	758.706628	0.032150084	0.036488353	0.130460153	0.190367148	4.57650179	0.007508017
SACRAMENT	2021	MDV	1996	45	GAS	1074.47444	1.086882431	0.002151891	0.002340378	427.3159032	0.028149666	0.05856733	0.13011339	0.189861154	5.015462559	0.004228637
SACRAMENT	2021	MH	1995	60	DSL	15.3045981	11.53192995	0.152839832	0.159750571	906.2637061	0.007741244	0.142452034	0.166664433	0.189736377	0.592329123	0.008567451
SACRAMENT	2021	MDV	2015	10	DSL	50.4633206	0.12703948	0.00850936	0.008894115	813.7472157	0.007723244	0.12790973	0.166276906	0.189295202	3.151135307	0.007692838
SACRAMENT	2021	MDV	1997	45	GAS	1662.1667	1.087499565	0.002151891	0.002340378	427.5626134	0.028139986	0.058718089	0.129656765	0.189194847	5.021625055	0.004231079
SACRAMENT	2021	LDA	2014	10	DSL	52.7857378	0.126959611	0.008494966	0.008879071	464.772558	0.007713002	0.073055774	0.166056394	0.189044164	3.145150758	0.004393772
SACRAMENT	2021	MDV	1998	70	GAS	117.332942	1.185526037	0.002637889	0.002868944	486.6578212	0.028298025	0.066635329	0.129330464	0.188718709	3.453704316	0.004815874
SACRAMENT	2021	LHD1	2004	35	DSL	1888.48592	5.775793064	0.037840856	0.039551852	496.3631357	0.007689803	0.078021373	0.165556929	0.188475557	1.045908513	0.004692417
SACRAMENT	2021	LHD2	2004	35	DSL	264.687995	5.775793064	0.037840856	0.039551852	563.3196333	0.007689803	0.088546002	0.165556929	0.188475557	1.045908513	0.005325396
SACRAMENT	2021	MDV	2002	25	GAS	18245.1624	0.540315235	0.004200191	0.004568091	601.7344045	0.029112099	0.035675721	0.12896676	0.188187993	4.474457941	0.00595465
SACRAMENT	2021	MDV	1983	55	DSL	15.265037	1.676453265	0.206638792	0.215982082	506.5092931	0.007607766	0.079616207	0.163790721	0.186464846	1.363740991	0.004788334
SACRAMENT	2021	LDA	1983	55	DSL	53.9214783	1.676453265	0.206638792	0.215982082	329.557344	0.007607766	0.051801825	0.163790721	0.186464846	1.363740991	0.003115502
SACRAMENT	2021	LDT1	1983	55	DSL	5.76999618	1.676453265	0.206638792	0.215982082	380.7525461	0.007607766	0.059848998	0.163790721	0.186464846	1.363740991	0.003599481
SACRAMENT	2021	MDV	1996	60	GAS	1513.24973	1.224724371	0.002177551	0.002368285	472.306865	0.027627015	0.065995028	0.127697595	0.186336031	4.180286434	0.004673859
SACRAMENT	2021	MH	1996	60	DSL	10.0858372	11.50790658	0.151046053	0.157875686	906.2637061	0.007601121	0.142452034	0.163647665	0.186301986	0.581606792	0.008567451
SACRAMENT	2021	LDA	1983	40	DSL	76.2786043	1.48765288	0.206020979	0.215336334	325.2203604	0.00758502	0.051120112	0.163301015	0.185907349	1.099280175	0.003074502
SACRAMENT	2021	LDT1	1983	40	DSL	8.16237368	1.48765288	0.206020979	0.215336334	377.0601373	0.00758502	0.059268603	0.163301015	0.185907349	1.099280175	0.003564574
SACRAMENT	2021	MDV	1983	40	DSL	21.594284	1.48765288	0.206020979	0.215336334	496.2320337	0.00758502	0.078000765	0.163301015	0.185907349	1.099280175	0.004691177
SACRAMENT	2021	LHD1	2005	35	DSL	1679.40177	5.768894805	0.037519332	0.039215789	496.3631357	0.007583349	0.078021373	0.163265037	0.18586639	1.031399124	0.004692417
SACRAMENT	2021	LHD2	2005	35	DSL	537.809263	5.768894805	0.037519332	0.039215789	563.3196333	0.007583349	0.088546002	0.163265037	0.18586639	1.031399124	0.005325396
SACRAMENT	2021	MDV	2000	30	GAS	6314.65896	0.683049401	0.003273529	0.003560262	534.1400666	0.028279422	0.042008229	0.12733265	0.185803505	4.662727883	0.005285749
SACRAMENT	2021	MDV	1997	60	GAS	2340.93359	1.225343891	0.002177551	0.002368285	472.5366481	0.027616813	0.066160809	0.127246212	0.185677374	4.184795673	0.004676133
SACRAMENT	2021	LDT2	2003	15	GAS	1444.35167	0.507587142	0.008119324	0.008830505	758.6065969	0.031604778	0.036606703	0.127208281	0.185622024	4.522240646	0.007507027
SACRAMENT	2021	MH	1994	35	DSL	11.5832778	10.85536981	0.13529912	0.141416746	1018.731062	0.007559934	0.160130336	0.162760926	0.185292493	1.094159	0.009630672
SACRAMENT	2021	LDT1	2003	10	GAS	102.938511	0.256239893	0.012232021	0.013303439	793.3086639	0.03301825	0.023587531	0.12583619	0.183619873	3.413541271	0.007850432
SACRAMENT	2021	LHD1	2006	35	DSL	2089.95347	5.761114401	0.037156692	0.038836752	496.3631357	0.007463282	0.078021373	0.160680066	0.182923572	1.015034335	0.004692417
SACRAMENT	2021	LHD2	2006	35	DSL	623.262345	5.761114401	0.037156692	0.038836752	563.3196333	0.007463282	0.088546002	0.160680066	0.182923572	1.015034335	0.005325396
SACRAMENT	2021	MH	1997	60	DSL	27.8330701	11.48334898	0.149212386	0.155959108	906.2637061	0.007457882	0.142452034	0.160563811	0.182791224	0.57064603	0.008567451
SACRAMENT	2021	LDA	2003	10	GAS	994.649958	0.256185301	0.012232021	0.013303439	666.6950034	0.032783275	0.023511514	0.125230586	0.182736177	3.411531294	0.006597488
SACRAMENT	2021	LDA	2015	10	DSL	49.0926561	0.124855299	0.008115474	0.00848242	456.1905463	0.007443178	0.071706801	0.16024724	0.182430829	2.987391502	0.004312641
SACRAMENT	2021	MH	1995	35	DSL	7.63975751	10.8333037	0.133764129	0.139812349	1018.731062	0.007428462	0.160130336	0.159930423	0.182070154	1.07512979	0.009630672
SACRAMENT	2021	LDT2	2002	15	GAS	1203.12368	0.495911208	0.008119324	0.008830505	758.4543193	0.030895246	0.035910438	0.124436059	0.181576806	4.433713158	0.00750552
SACRAMENT	2021	MDV	1998	65	GAS	443.483769	1.101179269	0.002450791	0.002665459	490.9940432	0.027226914	0.061894417	0.124435166	0.181575503	3.663835668	0.004858784
SACRAMENT	2021	MDV	2016	10	DSL	25.7466452	0.124555314	0.008061365	0.008425864	781.1244404	0.007404715	0.122781884	0.159419165	0.18148812	2.964898015	0.007384435
SACRAMENT	2021	MDV	1996	50	GAS	1077.13216	1.09682233	0.002058364	0.002238659	440.0785631	0.026886901	0.059102948	0.124276638	0.181344178	4.72281777	0.004354934
SACRAMENT	2021	MDV	1997	50	GAS	1666.27808	1.097481201	0.002058364	0.002238659	440.3532832	0.026878912	0.059257034	0.123846284	0.180716207	4.729002067	0.004357653
SACRAMENT	2021	MDV	1999	35	GAS	8669.35915	0.803000963	0.002702154	0.002938839	442.4423424	0.027287083	0.047056423	0.123822709	0.180681806	4.80460031	0.004378326
SACRAMENT	2021	MDV	1996	55	GAS	1960.20108	1.135692248	0.002066086	0.002247057	457.4616158	0.026778085	0.061197477	0.123773669	0.180610247	4.455623245	0.004526954
SACRAMENT	2021	MDV	1998	40	GAS	5543.42924	0.929163501	0.002352906	0.002559	427.0983395	0.027060669	0.052225859	0.123675377	0.180466819	4.899200392	0.004226484
SACRAMENT	2021	MDV	1997	55	GAS	3032.34849	1.136377722	0.002066086	0.002247057	457.7479554	0.026770567	0.0613572	0.123347077	0.179987765	4.461476562	0.004529787

SACRAMENT	2021	MH	1998	60	DSL	23.9971196	11.38293099	0.151043955	0.157873492	928.4168189	0.007337987	0.145934195	0.157982539	0.179852617	0.561101396	0.008776878
SACRAMENT	2021	MH	1996	35	DSL	5.03465365	10.81073571	0.132194229	0.138171465	1018.731062	0.007294001	0.160130336	0.157035546	0.178774528	1.055667808	0.009630672
SACRAMENT	2021	LDA	1983	50	DSL	29.6298983	1.613451139	0.197270132	0.206189812	314.9375476	0.007262842	0.049503797	0.156364721	0.178010839	1.205175741	0.002977292
SACRAMENT	2021	LDT1	1983	50	DSL	3.17061782	1.613451139	0.197270132	0.206189812	364.153879	0.007262842	0.057239919	0.156364721	0.178010839	1.205175741	0.003442564
SACRAMENT	2021	MDV	1983	50	DSL	8.38815082	1.613451139	0.197270132	0.206189812	479.9446729	0.007262842	0.075440619	0.156364721	0.178010839	1.205175741	0.004537203
SACRAMENT	2021	LHD2	1995	45	GAS	14.1331726	1.443332242	0.002463144	0.002678894	866.135184	0.026047195	0.070161642	0.121902816	0.177880302	4.553579381	0.00857111
SACRAMENT	2021	LHD1	1995	45	GAS	125.699291	1.443301709	0.002463106	0.002678853	757.1192362	0.026029881	0.070114718	0.121899738	0.177875812	4.553462593	0.007492309
SACRAMENT	2021	LDA	1983	45	DSL	29.5567894	1.550710303	0.197073426	0.205984211	314.1378844	0.0072556	0.049378101	0.156208803	0.177833337	1.121609757	0.002969733
SACRAMENT	2021	MDV	1983	45	DSL	8.36745388	1.550710303	0.197073426	0.205984211	477.5516744	0.0072556	0.075064473	0.156208803	0.177833337	1.121609757	0.004514581
SACRAMENT	2021	LDT1	1983	45	DSL	3.16279463	1.550710303	0.197073426	0.205984211	363.5499404	0.0072556	0.057144988	0.156208803	0.177833337	1.121609757	0.003436854
SACRAMENT	2021	MH	1999	60	DSL	32.9033834	11.35356235	0.149313835	0.156065144	928.4168189	0.007189573	0.145934195	0.154787263	0.176215008	0.549758061	0.008776878
SACRAMENT	2021	LDA	2016	10	DSL	4.83196685	0.122649477	0.007717676	0.008066635	442.9833082	0.007160338	0.069630807	0.154157864	0.175498479	2.822021931	0.004187785
SACRAMENT	2021	MH	1997	35	DSL	13.8937269	10.78766585	0.130589419	0.136494093	1018.731062	0.007156549	0.160130336	0.154076294	0.175405617	1.035773056	0.009630672
SACRAMENT	2021	LDT1	1998	60	GAS	3055.67601	0.522793885	0.002218266	0.002412567	378.1935443	0.02650315	0.035782614	0.119712668	0.174684444	4.13393054	0.003742532
SACRAMENT	2021	LHD2	1995	50	GAS	104.357377	1.3816035	0.002377689	0.002585954	890.9516802	0.025566446	0.067160954	0.119652873	0.174597191	4.306935473	0.008816689
SACRAMENT	2021	LHD1	1995	50	GAS	928.14605	1.381574272	0.002377653	0.002585914	778.7331648	0.025549452	0.067116037	0.119649852	0.174592784	4.306825011	0.007706196
SACRAMENT	2021	LHD1	1981	55	DSL	1.75144829	5.925490029	0.115561358	0.12078653	515.8830343	0.007121342	0.081089629	0.153318302	0.174542694	0.974998548	0.00487695
SACRAMENT	2021	LHD1	1982	55	DSL	13.2754563	5.925490029	0.115561358	0.12078653	515.8830343	0.007121342	0.081089629	0.153318302	0.174542694	0.974998548	0.00487695
SACRAMENT	2021	LHD1	1983	55	DSL	35.238466	5.925490029	0.115561358	0.12078653	515.8830343	0.007121342	0.081089629	0.153318302	0.174542694	0.974998548	0.00487695
SACRAMENT	2021	LHD1	1984	55	DSL	41.6724142	5.925490029	0.115561358	0.12078653	515.8830343	0.007121342	0.081089629	0.153318302	0.174542694	0.974998548	0.00487695
SACRAMENT	2021	LHD1	1985	55	DSL	69.7998968	5.925490029	0.115561358	0.12078653	515.8830343	0.007121342	0.081089629	0.153318302	0.174542694	0.974998548	0.00487695
SACRAMENT	2021	LHD1	1986	55	DSL	95.6341503	5.925490029	0.115561358	0.12078653	515.8830343	0.007121342	0.081089629	0.153318302	0.174542694	0.974998548	0.00487695
SACRAMENT	2021	LHD2	1983	55	DSL	2.64060043	5.925490029	0.115561358	0.12078653	559.8847575	0.007121342	0.088006087	0.153318302	0.174542694	0.974998548	0.005292924
SACRAMENT	2021	LHD2	1984	55	DSL	3.56883077	5.925490029	0.115561358	0.12078653	559.8847575	0.007121342	0.088006087	0.153318302	0.174542694	0.974998548	0.005292924
SACRAMENT	2021	LHD2	1985	55	DSL	11.0845577	5.925490029	0.115561358	0.12078653	559.8847575	0.007121342	0.088006087	0.153318302	0.174542694	0.974998548	0.005292924
SACRAMENT	2021	LHD2	1986	55	DSL	27.2240759	5.925490029	0.115561358	0.12078653	559.8847575	0.007121342	0.088006087	0.153318302	0.174542694	0.974998548	0.005292924
SACRAMENT	2021	LDT1	1998	45	GAS	2169.66553	0.486773693	0.002143558	0.002331315	342.7068869	0.026451555	0.033317213	0.119479618	0.174344379	5.013483295	0.003391362
SACRAMENT	2021	LHD1	1985	40	DSL	27.8111046	5.253820238	0.11521585	0.120425399	482.7745805	0.007100051	0.075885441	0.152859908	0.174020842	0.785923853	0.004563956
SACRAMENT	2021	LHD2	1986	40	DSL	10.8471739	5.253820238	0.11521585	0.120425399	542.7445231	0.007100051	0.085311881	0.152859908	0.174020842	0.785923853	0.005130888
SACRAMENT	2021	LHD1	1981	40	DSL	0.6978479	5.253820238	0.11521585	0.120425399	482.7745805	0.007100051	0.075885441	0.152859908	0.174020842	0.785923853	0.004563956
SACRAMENT	2021	LHD1	1982	40	DSL	5.28947922	5.253820238	0.11521585	0.120425399	482.7745805	0.007100051	0.075885441	0.152859908	0.174020842	0.785923853	0.004563956
SACRAMENT	2021	LHD1	1983	40	DSL	14.0404314	5.253820238	0.11521585	0.120425399	482.7745805	0.007100051	0.075885441	0.152859908	0.174020842	0.785923853	0.004563956
SACRAMENT	2021	LHD1	1984	40	DSL	16.6039769	5.253820238	0.11521585	0.120425399	482.7745805	0.007100051	0.075885441	0.152859908	0.174020842	0.785923853	0.004563956
SACRAMENT	2021	LHD1	1986	40	DSL	38.1045171	5.253820238	0.11521585	0.120425399	482.7745805	0.007100051	0.075885441	0.152859908	0.174020842	0.785923853	0.004563956
SACRAMENT	2021	LHD2	1983	40	DSL	1.05212211	5.253820238	0.11521585	0.120425399	542.7445231	0.007100051	0.085311881	0.152859908	0.174020842	0.785923853	0.005130888
SACRAMENT	2021	LHD2	1984	40	DSL	1.42196666	5.253820238	0.11521585	0.120425399	542.7445231	0.007100051	0.085311881	0.152859908	0.174020842	0.785923853	0.005130888
SACRAMENT	2021	LHD2	1985	40	DSL	4.41653653	5.253820238	0.11521585	0.120425399	542.7445231	0.007100051	0.085311881	0.152859908	0.174020842	0.785923853	0.005130888
SACRAMENT	2021	LHD2	1995	55	GAS	28.7032067	1.452352461	0.002421336	0.002633424	926.6572181	0.025415517	0.070600123	0.118946512	0.173566472	3.925812389	0.009170024
SACRAMENT	2021	LHD1	1995	55	GAS	255.283994	1.452321736	0.002421299	0.002633384	809.8270062	0.025398623	0.070552905	0.11894351	0.17356209	3.925711701	0.008013895
SACRAMENT	2021	MDV	2017	10	DSL	34.7635171	0.121943759	0.007590397	0.007933601	748.5016651	0.007069852	0.117654038	0.152209759	0.173280691	2.769110523	0.007076033
SACRAMENT	2021	MDV	2004	5	GAS	8.29393745	0.168705262	0.001296044	0.001409567	1294.548096	0.034401335	0.019202852	0.118651871	0.173136531	2.14767922	0.012810603
SACRAMENT	2021	LHD1	2004	55	DSL	2601.93701	6.818150192	0.034694524	0.036263257	515.8830343	0.007050423	0.081089629	0.151791462	0.172804487	1.257118285	0.00487695
SACRAMENT	2021	LHD2	2004	55	DSL	364.684473	6.818150192	0.034694524	0.036263257	559.8847575	0.007050423	0.088006087	0.151791462	0.172804487	1.257118285	0.005292924
SACRAMENT	2021	MH	1998	35	DSL	11.978895	10.69333137	0.132192392	0.138169545	1043.633376	0.007041498	0.164044633	0.151599317	0.172585743	1.0184487	0.009866089
SACRAMENT	2021	MH	2000	60	DSL	56.726108	11.32358142	0.147547649	0.154219099	928.4168189	0.007038064	0.145934195	0.151525381	0.172501572	0.538178264	0.008776878
SACRAMENT	2021	LHD1	2004	40	DSL	1036.71704	6.045295038	0.034590794	0.036154836	482.7745805	0.007029344	0.075885441	0.151337632	0.172287832	1.01333407	0.004563956
SACRAMENT	2021	LHD2	2004	40	DSL	145.305058	6.045295038	0.034590794	0.036154836	542.7445231	0.007029344	0.085311881	0.151337632	0.172287832	1.01333407	0.005130888
SACRAMENT	2021	MH	2003	25	DSL	23.0624611	6.817642579	0.189944347	0.198532788	1162.809306	0.006983296	0.18277743	0.150346255	0.171159216	0.547315102	0.01099273
SACRAMENT	2021	LHD1	2005	55	DSL	2313.86296	6.810007005	0.034399733	0.035955137	515.8830343	0.00695282	0.081089629	0.149690132	0.170412263	1.239678884	0.00487695
SACRAMENT	2021	LHD2	2005	55	DSL	740.988223	6.810007005	0.034399733	0.035955137	559.8847575	0.00695282	0.088006087	0.149690132	0.170412263	1.239678884	0.005292924
SACRAMENT	2021	LHD1	2005	40	DSL	921.936678	6.038074902	0.034296884	0.035847637	482.7745805	0.006932033	0.075885441	0.149242585	0.16990276	0.999276571	0.004563956
SACRAMENT	2021	LHD2	2005	40	DSL	295.239706	6.038074902	0.034296884	0.035847637	542.7445231	0.006932033	0.085311881	0.149242585	0.16990276	0.999276571	0.005130888
SACRAMENT	2021	LDT2	1999	35	GAS	9776.92662	0.643486086	0.002696503	0.002932693	440.1815649	0.026191111	0.040256145	0.115944923	0.16918656	5.383638889	0.004355953
SACRAMENT	2021	MH	1999	35	DSL	16.4247286	10.66574194	0.130678206	0.136586895	1043.633376	0.006899081	0.164044633	0.148533145	0.169095111	0.997859544	0.009866089
SACRAMENT	2021	MH	1991	55	DSL	5.12319237	11.43293113	0.217691363	0.2275344	943.6763434	0.006885062	0.14833278	0.148231323	0.168751506	0.65460187	0.008921135
SACRAMENT	2021	MH	2001	60	DSL	46.8627948	11.29298822	0.145745396	0.152335356	928.4168189	0.006883462	0.145934195	0.14819689	0.168712307	0.526362004	0.008776878
SACRAMENT	2021	MDV	1999	70	GAS	224.82923	0.94940454	0.002685772	0.002921022	487.0650036	0.025438684	0.055635776	0.115435088	0.168442609	3.071706728	0.004819903
SACRAMENT	2021	LDA	2017	10	DSL	68.6207706	0.120342147	0.00730157	0.007631715	429.7760701	0.006864483	0.067554813	0.147788269	0.168247118	2.649041989	0.004062929
SACRAMENT	2021	LDT1	1998	55	GAS	3958.19625	0.494890865	0.002083572	0.002266074	366.6014562	0.025450991	0.033872793	0.114960147	0.167749576	4.429734617	0.003627819
SACRAMENT	2021	LHD1	2006	55	DSL	2879.51698	6.800822472	0.034067245	0.035607615	515.8830343	0.006842737	0.081089629	0.147320092	0.16771413	1.220009405	0.00487695
SACRAMENT	2021	LHD2	2006	55	DSL	858.724625	6.800822472	0.034067245	0.035607615	559.8847575	0.006842737	0.088006087	0.147320092	0.16771413	1.220009405	0.005292924
SACRAMENT	2021	LDT1	1998	50	GAS	2175.03221	0.485631108	0.002060153	0.002240604	352.8294221	0.025376466	0.033239009	0.114623521	0.167258373	4.711663559	0.003491533
SACRAMENT	2021	LHD1	2006	40	DSL	1147.31614	6.02993146	0.03396539	0.035501155	482.7745805	0.006822278	0.075885441	0.146879631	0.167212694	0.983421457	0.004563956
SACRAMENT	2021	LHD2	2006	40	DSL	342.150655	6.02993146	0.03396539	0.035501155	542.7445231	0.006822278	0.085311881	0.146879631	0.167212694	0.983421457	0.005130888
SACRAMENT	2021	LHD1	1981	50	DSL	2.90837241	5.678156095	0.110321997	0.115310268	493.6847405	0.006798472	0.077600366	0.146367104	0.166629217	0.861633261	0.004667096
SACRAMENT	2021	LHD1	1982	50	DSL	22.0445965	5.678156095	0.110321997	0.115310268	493.6847405	0.006798472	0.077600366	0.146367104	0.166629217	0.861633261	0.004667096
SACRAMENT	2021	LHD1	1983	50	DSL	58.5153345	5.678156095	0.110321997	0.115310268	493.6847405	0.006798472	0.077600366	0.146367104	0.166629217	0.861633261	0.004667096
SACRAMENT	2021	LHD1	1984	50	DSL	69.1992453	5.678156095	0.110321997	0.115310268	493.6847405	0.006798472	0.077600366	0.146367104	0.166629217	0.861633261	0.004667096
SACRAMENT	2021	LHD1	1985	50	DSL	115.906416	5.678156095	0.110321997	0.115310268	493.6847405	0.006798472	0.077600366	0.146367104	0.166629217	0.861633261	0.004667096
SACRAMENT	2021	LHD1	1986	50	DSL	158.805559	5.678156095	0.110321997	0.115310268	493.6847405	0.006798472	0.077600366	0.146367104	0.166629217	0.861633261	0.004667096
SACRAMENT	2021	LHD2	1983	50	DSL	4.38485652	5.678156095	0.110321997	0.115310268	540.9262835	0.006798472	0.085026079	0.146367104	0.166629217	0.861633261	0.005113699
SACRAMENT	2021	LHD2	1984	50	DSL	5.92623204	5.678156095	0.110321997	0.115310268	540.9262835	0.006798472	0.085026079	0.146367104	0.166629217	0.861633261	0.005113699
SACRAMENT	2021	LHD2	1985	50	DSL	18.4064937	5.678156095	0.110321997	0.115310268	540.9262835	0.006798472	0.085026079	0.146367104	0.166629217	0.861633261	0.005113699
SACRAMENT	2021	LHD2	1986	50	DSL	45.2070162	5.678156095	0.110321997	0.115310268	540.9262835	0.006798472	0.085026079	0.146367104	0.166629217	0.861633261	0.005113699
SACRAMENT	2021	MH	1992	55	DSL	9.36705269	11.41469101	0.215658474	0.225409593	943.6763434	0.006795677	0.14833278	0.146306927	0.16656071	0.64610934	0.008921135
SACRAMENT	2021	LHD1	1981	45	DSL	0.75320739	5.464990425	0.11021199	0.115195288	470.9086159	0.006791693	0.074020277	0.146221156	0.166463064	0.801888256	0.00445178
SACRAMENT	2021	LHD1	1982	45	DSL	5.70908767	5.464990425	0.11021199	0.115195288	470.9086159	0.006791693	0.074020277	0.146221156	0.166463064	0.801888256	0.00445178
SACRAMENT	2021	LHD1	1983	45	DSL	15.1542431	5.464990425	0.11021199	0.115195288	470.9086159	0.006791693	0.074020277	0.146221156	0.166463064	0.801888256	0.00445178
SACRAMENT	2021	LHD1	1984	45	DSL	17.9211517	5.464990425	0.11021199	0.115195288	470.9086159	0.006791693	0.074020277	0.146221156	0.166463064	0.801888256	0.00445178
SACRAMENT	2021	LHD1	1985	45	DSL	30.0173283	5.464990425	0.11021199	0.115195288	470.9086159	0.006791693	0.074020277	0.146221156	0.166463064	0.801888256	0.00445178
SACRAMENT	2021	LHD1	1986	45	DSL	41.1273057	5.464990425	0.11021199	0.115195288	470.9086159	0.006791693	0.074020277	0.146221156	0.166463064	0.801888256	0.00445178
SACRAMENT	2021	LHD2	1983	45	DSL	1.13558578	5.464990425	0.11021199	0.115195288	521.7107967	0.006791693	0.082005672	0.146221156	0.166463064	0.801888256	0.004932043
SACRAMENT	2021	LHD2	1984	45	DSL	1.53476968	5.464990425	0.11021199	0.115195288	521.7107967	0.006791693	0.082005672	0.146221156	0.166463064	0.801888256	0.004932043
SACRAMENT	2021	LHD2	1985	45	DSL	4.76689542	5.464990425	0.11021199	0.115195288	521.7107967	0.006791693	0.082005672	0.146221156	0.166463064	0.801888256	0.004932043
SACRAMENT	2021	LHD2	1986	45	DSL	11.7076681	5.464990425	0.11021199	0.115195288	521.7107967	0.006791693	0.082005672	0.146221156	0.166463064	0.801888256	0.004932043
SACRAMENT	2021	MH	2000	35	DSL	28.316569	10.63757731	0.129132455	0.134971252	1043.633376	0.006753694	0.164044633	0.145403058	0.165531714	0.976841187	0.009866089
SACRAMENT	2021	LHD1	2004	50	DSL	4320.65386	6.533556024	0.033121532	0.034619141	493.6847405	0.006730769	0.077600366	0.144909488	0.164969818	1.110950299	0.004667096
SACRAMENT	2021	LHD2	2004	50	DSL	605.577833	6.533556024	0.033121532	0.034619141	540.9262835	0.006730769	0.085026079	0.144909488	0.164969818	1.110950299	0.005113699
SACRAMENT	2021	MH	2002	60	DSL	56.3180163	11.26178276	0.143907077	0.150413917	928.4168189	0.006725766	0.145934195	0.144801792	0.164847213	0.51430928	0.008776878
SACRAMENT	2021	LHD1	2004	45	DSL	1118.95864	6.288277482	0.033088505	0.03458462	470.9086159	0.006724057	0.074020277	0.144764993	0.16480532	1.033917837	0.00445178
SACRAMENT	2021	LHD2	2004	45	DSL	156.831945	6.288277482	0.033088505	0.03458462	521.7107967	0.006724057	0.082005672	0.144764993	0.16480532	1.033917837	0.004932043
SACRAMENT	2021	MDV	2018	10	DSL	36.9360355	0.119204816	0.007096455	0.007417326	715.8788898	0.006718655	0.112526192	0.144648686	0.164672913	2.563772879	0.00676763
SACRAMENT	2021	MDV	1998	45	GAS	2147.99382	0.916019949	0.002147581	0.00233569	428.0297485	0.02465457	0.051487094	0.112678781	0.164420613	4.559009402	0.004235701
SACRAMENT	2021	MH	1993	55	DSL	10.375779	11.39600571	0.213575966	0.223232924	943.6763434	0.006704111	0.14833278	0.144335561	0.164316441	0.637409522	0.008921135
SACRAMENT	2021	LHD1	2007	25	DSL	2365.11442	2.756163408	0.036651209	0.038308414	546.5903577	0.006690406	0.085916393	0.144040495	0.163980527	0.829165805	0.005167245
SACRAMENT	2021	LHD2	2007	25	DSL	934.919897	2.755657932	0.036648418	0.038305496	624.6333349	0.006689723	0.098183662	0.144025805	0.163963803	0.829082345	0.005905031
SACRAMENT	2021	MH	2007	20	DSL	33.1473127	5.709631763	0.107074771	0.111916217	1313.502144	0.006681576	0.206464245	0.143850396	0.163764112	0.430422243	0.012417319
SACRAMENT	2021	MH	1991	40	DSL	3.8148276	11.00670574	0.197445405	0.20637301	1014.055915	0.006677843	0.159395468	0.14377002	0.163672609	0.974279266	0.009586475
SACRAMENT	2021	LDA	1999	35	GAS	18381.0359	0.410200079	0.002692226	0.002928041	313.8790122	0.025473626	0.029673369	0.11196059	0.16337263	4.916546661	0.003106087
SACRAMENT	2021	MDV	1998	60	GAS	3025.15438	1.018470397	0.00219861	0.002391189	473.1809459	0.024469136	0.057245567	0.111831294	0.163183962	3.773124773	0.004682509
SACRAMENT	2021	LHD1	2005	50	DSL	3842.29169	6.525752739	0.032840106	0.03432499	493.6847405	0.006637591	0.077600366	0.142903429	0.162686053	1.095538617	0.004667096
SACRAMENT	2021	LHD2	2005	50	DSL	1230.45009	6.525752739	0.032840106	0.03432499	540.9262835	0.006637591	0.085026079	0.142903429	0.162686053	1.095538617	0.005113699
SACRAMENT	2021	LDA	1999	70	GAS	476.689692	0.421602998	0.002768709	0.003011223	344.0304221	0.025360508	0.030498242	0.111463419	0.16264716	3.029541221	0.00340446
SACRAMENT	2021	LHD1	2005	45	DSL	995.07288	6.280767143	0.03280736	0.034290763	470.9086159	0.006630973	0.074020277	0.142760934	0.162523832	1.019574789	0.00445178
SACRAMENT	2021	LHD2	2005	45	DSL	318.660741	6.280767143	0.03280736	0.034290763	521.7107967	0.006630973	0.082005672	0.142760934	0.162523832	1.019574789	0.004932043
SACRAMENT	2021	MH	2004	25	DSL	31.54488	6.55104943	0.186884243	0.195334319	1162.007243	0.006621786	0.182651357	0.142563146	0.162298664	0.486000034	0.010985147
SACRAMENT	2021	MH	2001	35	DSL	23.3929951	10.60883751	0.127555139	0.133322616	1043.633376	0.006605339	0.164044633	0.142209053	0.161895553	0.955393628	0.009866089
SACRAMENT	2021	MH	1992	40	DSL	6.97488764	10.98914563	0.195601581	0.204445816	1014.055915	0.006591148	0.159395468	0.141903543	0.161547749	0.961639376	0.009586475

SACRAMENT	2021	MDV	1999	65	GAS	849.787901	0.886712744	0.002487233	0.002705092	491.4286016	0.024367288	0.051961993	0.110573328	0.161348341	3.267688249	0.004863084
SACRAMENT	2021	LHD1	2008	25	DSL	2646.77772	2.749129031	0.03596742	0.037593707	546.5903577	0.006570769	0.085916393	0.141464797	0.161048266	0.810037284	0.005167245
SACRAMENT	2021	LHD2	2008	25	DSL	1107.81361	2.748271008	0.035962653	0.037588725	624.6333349	0.006569639	0.098183662	0.141440455	0.161020555	0.809897536	0.005905031
SACRAMENT	2021	LDA	2018	10	DSL	72.685194	0.117933309	0.006867159	0.007177661	416.568832	0.006555612	0.065478819	0.141138461	0.160676754	2.468451599	0.003938074
SACRAMENT	2021	LHD1	2006	50	DSL	4781.59008	6.516951574	0.032522693	0.033993225	493.6847405	0.006532498	0.077600366	0.140640843	0.160110249	1.078156152	0.004667096
SACRAMENT	2021	LHD2	2006	50	DSL	1425.95761	6.516951574	0.032522693	0.033993225	540.9262835	0.006532498	0.085026079	0.140640843	0.160110249	1.078156152	0.005113699
SACRAMENT	2021	LHD1	2006	45	DSL	1238.33144	6.272296386	0.032490263	0.033959329	470.9086159	0.006525984	0.074020277	0.140500604	0.159950596	1.003397611	0.00445178
SACRAMENT	2021	LHD2	2006	45	DSL	369.293082	6.272296386	0.032490263	0.033959329	521.7107967	0.006525984	0.082005672	0.140500604	0.159950596	1.003397611	0.004932043
SACRAMENT	2021	MH	2008	20	DSL	29.3664949	5.679193627	0.105509813	0.110280499	1313.502144	0.006525071	0.206464245	0.140480947	0.159928218	0.420312234	0.012417319
SACRAMENT	2021	MH	1993	40	DSL	7.72600469	10.97115693	0.193712753	0.202471584	1014.055915	0.006502338	0.159395468	0.139991509	0.159371026	0.948690968	0.009586475
SACRAMENT	2021	LDT2	1999	70	GAS	253.552638	0.708793378	0.002732982	0.002972367	484.0320903	0.02466496	0.044341735	0.109188836	0.159328094	3.413990854	0.00478989
SACRAMENT	2021	MH	2005	25	DSL	29.7012672	6.523141891	0.184513744	0.192856637	1162.007243	0.006476544	0.182651357	0.139436182	0.158738822	0.475341924	0.010985147
SACRAMENT	2021	MH	2002	35	DSL	28.1128576	10.57952253	0.125946257	0.131640988	1043.633376	0.006454015	0.164044633	0.138951133	0.158186627	0.933516868	0.009866089
SACRAMENT	2021	LDT1	1999	30	GAS	2535.87187	0.369545884	0.003273529	0.003560262	379.7414838	0.025353581	0.027955637	0.108305314	0.15803886	4.52922235	0.00375785
SACRAMENT	2021	LHD1	2009	25	DSL	676.726433	2.740583285	0.035215619	0.036807913	546.5903577	0.006438972	0.085916393	0.138627272	0.157817933	0.789002712	0.005167245
SACRAMENT	2021	LHD2	2009	25	DSL	343.68408	2.740583285	0.035215619	0.036807913	624.6333349	0.006438972	0.098183662	0.138627272	0.157817933	0.789002712	0.005905031
SACRAMENT	2021	MDV	1998	50	GAS	2153.3069	0.921475518	0.002059289	0.002239665	440.9245117	0.023605669	0.051793737	0.10788499	0.157425525	4.287773195	0.004363305
SACRAMENT	2021	MDV	1998	55	GAS	3918.65979	0.949921023	0.002075131	0.002256894	458.4030694	0.023599601	0.053392585	0.107857257	0.157385057	4.036158719	0.00453627
SACRAMENT	2021	MDV	1999	40	GAS	10622.1229	0.771874939	0.002346482	0.002552013	427.2424947	0.023667204	0.045232416	0.107396503	0.156712725	4.426903746	0.004227911
SACRAMENT	2021	MH	2009	20	DSL	3.33035738	5.648221206	0.103917386	0.108616069	1313.502144	0.00636582	0.206464245	0.137052357	0.156024997	0.410024758	0.012417319
SACRAMENT	2021	MDV	2019	10	DSL	38.461977	0.116338485	0.006579541	0.006877038	683.2561145	0.006351123	0.107398346	0.136735942	0.15566478	2.348885154	0.006459227
SACRAMENT	2021	MH	1994	55	DSL	19.3103206	11.3158029	0.124477249	0.130105558	904.8033122	0.006345856	0.142222481	0.136622549	0.155535689	0.603676075	0.008553645
SACRAMENT	2021	LDA	1993	20	DSL	2.82888772	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	1994	20	DSL	1.03910775	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	1995	20	DSL	3.92883944	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	1996	20	DSL	3.3064189	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	1997	20	DSL	5.38422189	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	1998	20	DSL	5.37123508	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	1999	20	DSL	12.816493	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	2000	20	DSL	6.68292986	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	2001	20	DSL	14.0991112	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	2002	20	DSL	39.8902031	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	2003	20	DSL	54.0753678	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	2004	20	DSL	15.6766057	1.389662077	0.079949902	0.083564882	401.7563456	0.006339834	0.063150503	0.136492894	0.155388085	1.239210355	0.003798042
SACRAMENT	2021	LDA	2005	20	DSL	44.798489	1.389662077	0.079949902	0.083564882	384.9459306	0.006339834	0.06050814	0.136492894	0.155388085	1.239210355	0.003639123
SACRAMENT	2021	LDA	2006	20	DSL	43.2685283	1.389662077	0.079949902	0.083564882	391.7335845	0.006339834	0.061575064	0.136492894	0.155388085	1.239210355	0.003703291
SACRAMENT	2021	LDA	2007	20	DSL	14.4863303	1.389662077	0.079949902	0.083564882	377.3801668	0.006339834	0.059318907	0.136492894	0.155388085	1.239210355	0.0035676
SACRAMENT	2021	LDT1	1993	20	DSL	7.03859396	1.389662077	0.079949902	0.083564882	760.8359562	0.006339834	0.119592817	0.136492894	0.155388085	1.239210355	0.007192636
SACRAMENT	2021	LDT1	1994	20	DSL	3.90899814	1.389662077	0.079949902	0.083564882	760.8359562	0.006339834	0.119592817	0.136492894	0.155388085	1.239210355	0.007192636
SACRAMENT	2021	LDT1	1995	20	DSL	1.40470373	1.389662077	0.079949902	0.083564882	760.8359562	0.006339834	0.119592817	0.136492894	0.155388085	1.239210355	0.007192636
SACRAMENT	2021	LDT1	1996	20	DSL	3.40307668	1.389662077	0.079949902	0.083564882	760.8359562	0.006339834	0.119592817	0.136492894	0.155388085	1.239210355	0.007192636
SACRAMENT	2021	LDT1	1997	20	DSL	8.43012935	1.389662077	0.079949902	0.083564882	760.8359562	0.006339834	0.119592817	0.136492894	0.155388085	1.239210355	0.007192636
SACRAMENT	2021	LDT1	1998	20	DSL	2.6147699	1.389662077	0.079949902	0.083564882	760.8359562	0.006339834	0.119592817	0.136492894	0.155388085	1.239210355	0.007192636
SACRAMENT	2021	LDT1	1999	20	DSL	8.04893473	1.389662077	0.079949902	0.083564882	760.8359562	0.006339834	0.119592817	0.136492894	0.155388085	1.239210355	0.007192636
SACRAMENT	2021	LDT1	2000	20	DSL	6.65315462	1.389662077	0.079949902	0.083564882	760.8359562	0.006339834	0.119592817	0.136492894	0.155388085	1.239210355	0.007192636
SACRAMENT	2021	LDT1	2001	20	DSL	6.64684286	1.389662077	0.079949902	0.083564882	760.8359562	0.006339834	0.119592817	0.136492894	0.155388085	1.239210355	0.007192636
SACRAMENT	2021	LDT1	2002	20	DSL	8.43665279	1.389662077	0.079949902	0.083564882	760.8359562	0.006339834	0.119592817	0.136492894	0.155388085	1.239210355	0.007192636
SACRAMENT	2021	LDT1	2003	20	DSL	9.00121791	1.389662077	0.079949902	0.083564882	760.8359562	0.006339834	0.119592817	0.136492894	0.155388085	1.239210355	0.007192636
SACRAMENT	2021	LDT1	2005	20	DSL	0.74376463	1.389662077	0.079949902	0.083564882	729.0008196	0.006339834	0.114588777	0.136492894	0.155388085	1.239210355	0.006891679
SACRAMENT	2021	LDT1	2006	20	DSL	0.79966226	1.389662077	0.079949902	0.083564882	741.8551061	0.006339834	0.116609292	0.136492894	0.155388085	1.239210355	0.007013199
SACRAMENT	2021	LDT1	2007	20	DSL	8.50133597	1.389662077	0.079949902	0.083564882	714.6729685	0.006339834	0.112336638	0.136492894	0.155388085	1.239210355	0.00675623
SACRAMENT	2021	LDT2	1993	20	DSL	0.61316759	1.389662077	0.079949902	0.083564882	592.4273088	0.006339834	0.093121323	0.136492894	0.155388085	1.239210355	0.005600569
SACRAMENT	2021	LDT2	1994	20	DSL	0.32649549	1.389662077	0.079949902	0.083564882	592.4273088	0.006339834	0.093121323	0.136492894	0.155388085	1.239210355	0.005600569
SACRAMENT	2021	LDT2	2001	20	DSL	0.95803045	1.389662077	0.079949902	0.083564882	592.4273088	0.006339834	0.093121323	0.136492894	0.155388085	1.239210355	0.005600569
SACRAMENT	2021	LDT2	2005	20	DSL	3.98832251	1.389662077	0.079949902	0.083564882	578.3864234	0.006339834	0.090914291	0.136492894	0.155388085	1.239210355	0.005467832
SACRAMENT	2021	LDT2	2006	20	DSL	2.93317022	1.389662077	0.079949902	0.083564882	567.3337998	0.006339834	0.089176973	0.136492894	0.155388085	1.239210355	0.005363345
SACRAMENT	2021	LDT2	2007	20	DSL	1.59960876	1.389662077	0.079949902	0.083564882	559.2658779	0.006339834	0.087908808	0.136492894	0.155388085	1.239210355	0.005287074
SACRAMENT	2021	MDV	1993	20	DSL	0.55281916	1.389662077	0.079949902	0.083564882	658.2598234	0.006339834	0.103469277	0.136492894	0.155388085	1.239210355	0.006222923
SACRAMENT	2021	MDV	1994	20	DSL	1.13226244	1.389662077	0.079949902	0.083564882	658.2598234	0.006339834	0.103469277	0.136492894	0.155388085	1.239210355	0.006222923
SACRAMENT	2021	MDV	1995	20	DSL	2.98153092	1.389662077	0.079949902	0.083564882	658.2598234	0.006339834	0.103469277	0.136492894	0.155388085	1.239210355	0.006222923
SACRAMENT	2021	MDV	1996	20	DSL	2.9389525	1.389662077	0.079949902	0.083564882	658.2598234	0.006339834	0.103469277	0.136492894	0.155388085	1.239210355	0.006222923
SACRAMENT	2021	MDV	1997	20	DSL	3.2020237	1.389662077	0.079949902	0.083564882	658.2598234	0.006339834	0.103469277	0.136492894	0.155388085	1.239210355	0.006222923
SACRAMENT	2021	MDV	1998	20	DSL	3.46708663	1.389662077	0.079949902	0.083564882	658.2598234	0.006339834	0.103469277	0.136492894	0.155388085	1.239210355	0.006222923
SACRAMENT	2021	MDV	1999	20	DSL	0.83103585	1.389662077	0.079949902	0.083564882	658.2598234	0.006339834	0.103469277	0.136492894	0.155388085	1.239210355	0.006222923
SACRAMENT	2021	MDV	2000	20	DSL	1.34905516	1.389662077	0.079949902	0.083564882	658.2598234	0.006339834	0.103469277	0.136492894	0.155388085	1.239210355	0.006222923
SACRAMENT	2021	MDV	2001	20	DSL	2.44652551	1.389662077	0.079949902	0.083564882	658.2598234	0.006339834	0.103469277	0.136492894	0.155388085	1.239210355	0.006222923
SACRAMENT	2021	MDV	2002	20	DSL	3.76435201	1.389662077	0.079949902	0.083564882	658.2598234	0.006339834	0.103469277	0.136492894	0.155388085	1.239210355	0.006222923
SACRAMENT	2021	MDV	2003	20	DSL	4.07680635	1.389662077	0.079949902	0.083564882	658.2598234	0.006339834	0.103469277	0.136492894	0.155388085	1.239210355	0.006222923
SACRAMENT	2021	MDV	2004	20	DSL	8.9982363	1.389662077	0.079949902	0.083564882	755.3109513	0.006339834	0.118724363	0.136492894	0.155388085	1.239210355	0.007140405
SACRAMENT	2021	MDV	2005	20	DSL	18.2407211	1.389662077	0.079949902	0.083564882	737.4096251	0.006339834	0.115910524	0.136492894	0.155388085	1.239210355	0.006971173
SACRAMENT	2021	MDV	2006	20	DSL	25.8346096	1.389662077	0.079949902	0.083564882	723.3181619	0.006339834	0.113695542	0.136492894	0.155388085	1.239210355	0.006837958
SACRAMENT	2021	MH	2006	25	DSL	27.6380107	6.494717262	0.182099323	0.190333047	1162.007243	0.006328611	0.182651357	0.136251278	0.155113021	0.46448633	0.010985147
SACRAMENT	2021	LDA	1999	65	GAS	1801.74585	0.402637574	0.002550351	0.002773739	347.4566793	0.024047074	0.029126307	0.105690667	0.154223574	3.247259393	0.003438366
SACRAMENT	2021	LDT1	2000	15	GAS	323.673242	0.267582039	0.008119324	0.008830505	649.2979935	0.026696759	0.023161518	0.105256006	0.153589318	3.718737692	0.00642533
SACRAMENT	2021	MDV	2000	35	GAS	11224.3294	0.641370929	0.002696503	0.002932693	494.7624283	0.02333679	0.039444961	0.105077655	0.153329068	4.288767294	0.004896075
SACRAMENT	2021	LDA	2000	15	GAS	1789.13048	0.267470963	0.008119324	0.008830505	543.4817507	0.026435237	0.023002608	0.104754296	0.152857223	3.715757924	0.005378193
SACRAMENT	2021	MH	1995	55	DSL	12.736133	11.29280084	0.123065034	0.128629489	904.8033122	0.006235498	0.142222481	0.134246607	0.152830836	0.593177163	0.008553645
SACRAMENT	2021	MDV	2003	25	GAS	20105.0355	0.456978389	0.004200191	0.004568091	601.6663865	0.024118507	0.031955558	0.10472359	0.152812417	4.497501276	0.005953977
SACRAMENT	2021	LDA	2019	10	DSL	74.5413344	0.115422963	0.006414441	0.006704473	403.3615938	0.006233726	0.063402825	0.134208448	0.152787395	2.280250655	0.003813218
SACRAMENT	2021	MDV	2001	30	GAS	9389.6989	0.514802061	0.003273363	0.003560081	534.3160248	0.023467005	0.033564556	0.104651601	0.15270737	4.136816564	0.00528749
SACRAMENT	2021	LDT2	1999	65	GAS	958.353877	0.669168424	0.002523161	0.002744168	488.4776036	0.023587038	0.041862819	0.104417001	0.152365043	3.637186163	0.004833882
SACRAMENT	2021	MH	1994	40	DSL	14.3788362	10.89394411	0.112900487	0.118005346	972.2837256	0.006154866	0.152829462	0.132510634	0.150854547	0.898483659	0.009191578
SACRAMENT	2021	MDV	2005	5	GAS	9.06254813	0.140797269	0.001296044	0.001409567	1263.748699	0.030127709	0.016794747	0.103295572	0.150728656	2.056571203	0.012505818
SACRAMENT	2021	MH	1996	55	DSL	8.39320075	11.26927562	0.121620702	0.12711985	904.8033122	0.00612263	0.142222481	0.131816628	0.150064468	0.58243948	0.008553645
SACRAMENT	2021	LHD1	1996	5	GAS	164.606855	0.648622313	0.009963166	0.010835852	1989.892783	0.024718405	0.041587837	0.102425493	0.149459039	0.690875147	0.019691602
SACRAMENT	2021	LHD2	1996	5	GAS	25.5901814	0.648622313	0.009963166	0.010835852	2279.149613	0.024750538	0.0416583	0.102425493	0.149459039	0.690875147	0.022554033
SACRAMENT	2021	LHD1	1997	5	GAS	219.561005	0.648527906	0.009963166	0.010835852	1989.888761	0.024735862	0.041732739	0.102211047	0.149146119	0.688921411	0.019691562
SACRAMENT	2021	LHD2	1997	5	GAS	26.6695752	0.648527906	0.009963166	0.010835852	2279.145591	0.024761108	0.041787789	0.102211047	0.149146119	0.688921411	0.022553993
SACRAMENT	2021	LHD1	1999	5	GAS	396.662008	0.64661553	0.009963166	0.010835852	1989.879573	0.02487768	0.041947867	0.10208664	0.148964585	0.683463035	0.019691471
SACRAMENT	2021	LHD2	1999	5	GAS	48.8891711	0.64661553	0.009963166	0.010835852	2279.136403	0.024889482	0.041973197	0.10208664	0.148964585	0.683463035	0.022553902
SACRAMENT	2021	LHD1	1998	5	GAS	198.044301	0.648041047	0.009963166	0.010835852	1989.884356	0.024785227	0.04185833	0.102064155	0.148931775	0.686541898	0.019691519
SACRAMENT	2021	LHD2	1998	5	GAS	23.4178281	0.648041047	0.009963166	0.010835852	2279.141186	0.024803697	0.041898343	0.102064155	0.148931775	0.686541898	0.02255395
SACRAMENT	2021	LHD1	2000	5	GAS	490.785729	0.643795317	0.009963166	0.010835852	1989.871535	0.024871811	0.041985688	0.101681703	0.148373703	0.679493563	0.019691392
SACRAMENT	2021	LHD2	2000	5	GAS	56.6104324	0.643795317	0.009963166	0.010835852	2279.128365	0.024876994	0.04199672	0.101681703	0.148373703	0.679493563	0.022553823
SACRAMENT	2021	MH	1995	40	DSL	9.48356965	10.87179958	0.111619612	0.116666556	972.2837256	0.006047829	0.152829462	0.130206201	0.148231103	0.882857563	0.009191578
SACRAMENT	2021	MDV	2000	70	GAS	291.08926	0.715150125	0.002732982	0.002972367	545.3869198	0.022512845	0.043982456	0.101367709	0.147915523	2.689794713	0.005397046
SACRAMENT	2021	MH	2003	30	DSL	27.7307411	6.205449821	0.186082384	0.194496204	1091.472366	0.006027586	0.171564256	0.129770385	0.147734956	0.51352114	0.010318339
SACRAMENT	2021	LHD1	2001	5	GAS	667.448632	0.639131445	0.009963166	0.010835852	1989.861226	0.024841932	0.041943967	0.101158228	0.147609849	0.674414288	0.01969129
SACRAMENT	2021	LHD2	2001	5	GAS	90.9267602	0.639131445	0.009963166	0.010835852	2279.118056	0.024840613	0.041941188	0.101158228	0.147609849	0.674414288	0.022553721
SACRAMENT	2021	MH	1991	50	DSL	3.49608269	11.22709655	0.18798252	0.196482255	954.6447037	0.006019224	0.150056853	0.129590346	0.147529994	0.708349364	0.009024826
SACRAMENT	2021	MH	1997	55	DSL	23.1620379	11.24522725	0.120144252	0.125576642	904.8033122	0.006007253	0.142222481	0.129332614	0.147236582	0.571463026	0.008553645
SACRAMENT	2021	MDV	2002	30	GAS	12742.4751	0.500944774	0.003273363	0.003560081	534.276782	0.0226977	0.033076183	0.100550936	0.146723689	4.123215003	0.005287102
SACRAMENT	2021	LDT2	1999	40	GAS	11979.1688	0.61731615	0.002340148	0.002545125	425.015441	0.022709777	0.038618968	0.100533474	0.14669821	4.961337033	0.004205872
SACRAMENT	2021	LHD1	2002	5	GAS	641.424101	0.50334612	0.009963166	0.010835852	1989.655643	0.025254427	0.035382826	0.100471903	0.146608365	0.546582169	0.019689256
SACRAMENT	2021	LHD2	2002	5	GAS	60.1208033	0.50334612	0.009963166	0.010835852	2278.912473	0.025246824	0.035368859	0.100471903	0.146608365	0.546582169	0.022551686
SACRAMENT	2021	MDV	2020	10	DSL	40.1670885	0.113344765	0.006039653	0.006312739	650.6333391	0.005967257	0.1022705	0.128471521	0.146256286	2.12444744	0.006150825
SACRAMENT	2021	MH	1991	45	DSL	3.12383797	11.07727659	0.181233867	0.189428458	978.104561	0.005950151	0.153744416	0.128103246	0.145837028	0.814908496	0.009246606
SACRAMENT	2021	MH	1992	50	DSL	6.3921064	11.20918483	0.186227064	0.194647425	954.6447037	0.00594108	0.150056853	0.127907955	0.145614703	0.699159536	0.009024826

SACRAMENT	2021	MH	1996	40	DSL	6.24973875	10.8491514	0.110309607	0.115297318	972.2837256	0.005938358	0.152829462	0.127849357	0.145547993	0.86687609	0.009191578
SACRAMENT	2021	LHD1	2003	5	GAS	865.260395	0.49339027	0.009963166	0.010835852	1989.576299	0.025139161	0.035022441	0.099578629	0.145304902	0.498955772	0.01968847
SACRAMENT	2021	LHD2	2003	5	GAS	91.4699061	0.49339027	0.009963166	0.010835852	2278.833129	0.025125419	0.034997535	0.099578629	0.145304902	0.498955772	0.022550901
SACRAMENT	2021	MH	1998	55	DSL	19.9698485	11.14689156	0.121619012	0.127118084	926.9207265	0.005910678	0.14569903	0.127253424	0.144869562	0.561904726	0.008762734
SACRAMENT	2021	LDA	2020	10	DSL	72.24004	0.11281111	0.005943416	0.006212151	390.1543557	0.005898825	0.061326831	0.126998239	0.144579051	2.084439018	0.003688362
SACRAMENT	2021	MH	1992	45	DSL	5.71150812	11.05960389	0.179541433	0.1876595	978.104561	0.005872904	0.153744416	0.126440161	0.143943717	0.804336215	0.009246606
SACRAMENT	2021	MDV	1999	60	GAS	5796.69375	0.828102173	0.002218285	0.002412587	473.5661609	0.02172698	0.048527372	0.098592201	0.143865508	3.381031722	0.004686321
SACRAMENT	2021	MH	1993	50	DSL	7.08046446	11.19083593	0.184428761	0.192767811	954.6447037	0.005861029	0.150056853	0.126184501	0.143652665	0.689745401	0.009024826
SACRAMENT	2021	LDT1	2001	15	GAS	384.161613	0.255122288	0.008119324	0.008830505	648.9782687	0.025151473	0.022502292	0.098231171	0.143338694	3.536139831	0.006422166
SACRAMENT	2021	MDV	1999	45	GAS	4115.90973	0.758832053	0.002143555	0.002331311	428.2323142	0.021586337	0.044468094	0.097953993	0.142934236	4.117023081	0.004237706
SACRAMENT	2021	MH	1997	40	DSL	17.246899	10.82599956	0.108970472	0.113897633	972.2837256	0.005826453	0.152829462	0.125440104	0.142805218	0.850539241	0.009191578
SACRAMENT	2021	LDA	2001	15	GAS	2229.27288	0.255032414	0.008119324	0.008830505	543.1622404	0.024928982	0.022379508	0.097755569	0.142644697	3.533224387	0.005375031
SACRAMENT	2021	LDT2	2000	20	GAS	3708.52397	0.48057235	0.005685611	0.006183621	629.8934497	0.023849782	0.033723668	0.097744159	0.142628047	4.38007879	0.006233306
SACRAMENT	2021	MH	1993	45	DSL	6.32657338	11.04149985	0.17780769	0.185847364	978.104561	0.005793771	0.153744416	0.124736483	0.142004193	0.793505883	0.009246606
SACRAMENT	2021	MH	1999	55	DSL	27.3814355	11.11813191	0.120225938	0.125662021	926.9207265	0.005791132	0.14569903	0.12467966	0.141939504	0.550545152	0.008762734
SACRAMENT	2021	MH	2004	30	DSL	37.9301625	5.90762181	0.185597708	0.193989612	1090.719508	0.005774497	0.171445918	0.124321529	0.141531796	0.465818471	0.010311222
SACRAMENT	2021	LDA	1999	40	GAS	22521.3443	0.392795047	0.002335355	0.002539912	302.9637663	0.022048708	0.028414311	0.096907535	0.141407248	4.53332522	0.002998072
SACRAMENT	2021	MDV	2000	65	GAS	1100.23119	0.673882946	0.002523161	0.002744168	550.2717483	0.021445312	0.041444483	0.096560969	0.140901539	2.871448571	0.005445385
SACRAMENT	2021	MH	1998	40	DSL	14.8699334	10.73132987	0.110308075	0.115295716	996.0506611	0.005732785	0.156565293	0.12342349	0.140509438	0.836313109	0.009416261
SACRAMENT	2021	MH	2000	55	DSL	47.2061566	11.08877267	0.118803823	0.124175605	926.9207265	0.005669093	0.14569903	0.122052245	0.138948366	0.538948776	0.008762734
SACRAMENT	2021	MH	2005	30	DSL	35.7133675	5.882455279	0.183243528	0.191528987	1090.719508	0.00564784	0.171445918	0.121594674	0.138427453	0.455602947	0.010311222
SACRAMENT	2021	MDV	1999	55	GAS	7508.7972	0.778534129	0.00208358	0.002266083	458.7449626	0.020821445	0.045622649	0.094483082	0.137869491	3.629802328	0.004539653
SACRAMENT	2021	MH	1999	40	DSL	20.3887437	10.70364239	0.109044561	0.113975072	996.0506611	0.005616837	0.156565293	0.120927189	0.137667565	0.819406041	0.009416261
SACRAMENT	2021	MDV	1999	50	GAS	4126.09046	0.759928925	0.002060154	0.002240605	441.198459	0.020728755	0.044532371	0.094062479	0.137255748	3.866000277	0.004366016
SACRAMENT	2021	LDT1	2002	15	GAS	457.603826	0.247866079	0.008119324	0.008830505	648.7827299	0.024192621	0.022141446	0.093807393	0.136883528	3.424812667	0.006420231
SACRAMENT	2021	LDA	2002	15	GAS	2600.19329	0.247818333	0.008119324	0.008830505	542.9673591	0.024000856	0.022048594	0.093354704	0.136222965	3.422249663	0.005373102
SACRAMENT	2021	MH	1994	50	DSL	13.1774239	11.11207706	0.107489551	0.112349752	915.3198509	0.005547827	0.143875534	0.119441446	0.135976145	0.653242197	0.008653064
SACRAMENT	2021	MH	2001	55	DSL	38.9981352	11.05881387	0.117352669	0.122658835	926.9207265	0.005544563	0.14569903	0.119371177	0.135896149	0.527115598	0.008762734
SACRAMENT	2021	LDT2	1999	60	GAS	6537.25938	0.636684935	0.002237682	0.002433683	470.7535244	0.020968938	0.039830669	0.092826989	0.135452924	3.772703437	0.004658488
SACRAMENT	2021	MH	2006	30	DSL	33.2324688	5.856822446	0.180845728	0.189022769	1090.719508	0.005518836	0.171445918	0.118817294	0.135265589	0.445198141	0.010311222
SACRAMENT	2021	LDA	1999	60	GAS	12290.3243	0.390246115	0.002252361	0.002449648	334.8741721	0.021029772	0.028229924	0.092429151	0.1348724	3.395825774	0.003313851
SACRAMENT	2021	MH	2000	40	DSL	35.1506123	10.67537769	0.107754707	0.112626897	996.0506611	0.005498471	0.156565293	0.118378851	0.134766451	0.802146529	0.009416261
SACRAMENT	2021	MH	1994	45	DSL	11.7743603	10.96379197	0.103630631	0.108316348	937.813322	0.005484163	0.147411194	0.118070807	0.134415764	0.751511392	0.008865708
SACRAMENT	2021	LDT2	1999	45	GAS	4641.74419	0.603857386	0.002139585	0.002326994	425.935694	0.020721796	0.037776995	0.09173292	0.133856461	4.612600218	0.004214979
SACRAMENT	2021	LHD1	2007	30	DSL	1996.45621	2.852223369	0.031182367	0.032592295	496.3631357	0.005452887	0.078021373	0.117397451	0.133649193	0.699664024	0.004692417
SACRAMENT	2021	LHD2	2007	30	DSL	789.19084	2.851689292	0.031180156	0.032589984	563.3196333	0.005452291	0.088546002	0.117384611	0.133634575	0.699586102	0.005325396
SACRAMENT	2021	MH	1995	50	DSL	8.69117747	11.08948912	0.106270065	0.111075126	915.3198509	0.005451347	0.143875534	0.117364292	0.133611444	0.641881249	0.008653064
SACRAMENT	2021	MDV	2000	40	GAS	13752.5975	0.615491939	0.002340148	0.002545125	477.8559395	0.020220063	0.037853377	0.09104409	0.132851323	3.953327693	0.004728772
SACRAMENT	2021	MH	2002	55	DSL	46.8665521	11.02825549	0.115872473	0.121111712	926.9207265	0.005417541	0.14569903	0.116636458	0.132782853	0.515045618	0.008762734
SACRAMENT	2021	LDT2	2001	20	GAS	4178.65631	0.458191385	0.005685611	0.006183621	629.5233703	0.022423252	0.032763662	0.090990149	0.132772611	4.16497625	0.006229644
SACRAMENT	2021	MH	1995	45	DSL	7.76578604	10.94150546	0.102454924	0.107087481	937.813322	0.005388791	0.147411194	0.11601749	0.132078199	0.738441382	0.008865708
SACRAMENT	2021	MH	2001	40	DSL	29.0387617	10.64653576	0.106438514	0.111251191	996.0506611	0.005377689	0.156565293	0.115778475	0.131806097	0.784534572	0.009416261
SACRAMENT	2021	LHD1	2008	30	DSL	2234.21573	2.845448398	0.03059213	0.031975371	496.3631357	0.005354497	0.078021373	0.115279161	0.13123766	0.683738043	0.004692417
SACRAMENT	2021	LHD2	2008	30	DSL	935.135035	2.844542018	0.030588347	0.031971416	563.3196333	0.005353508	0.088546002	0.115257872	0.131213424	0.683607718	0.005325396
SACRAMENT	2021	MH	1996	50	DSL	5.72754676	11.06638745	0.105022844	0.109771511	915.3198509	0.005352673	0.143875534	0.115239898	0.131192963	0.630261926	0.008653064
SACRAMENT	2021	LHD1	2010	20	DSL	600.90962	0.324582004	0.023805888	0.024882285	616.2897993	0.00533934	0.096872174	0.114952852	0.13086618	0.623501769	0.005826155
SACRAMENT	2021	LHD2	2010	20	DSL	282.533549	0.324582004	0.023805888	0.024882285	700.9244292	0.00533934	0.110175559	0.114952852	0.13086618	0.623501769	0.006626257
SACRAMENT	2021	LDT1	1999	35	GAS	4507.52153	0.34703134	0.00269651	0.002932701	351.7199728	0.020975575	0.026252443	0.089603367	0.130749023	4.162115569	0.003480554
SACRAMENT	2021	MH	1996	45	DSL	5.11770733	10.91871207	0.101252479	0.105830667	937.813322	0.005291249	0.147411194	0.113917475	0.129687471	0.725074129	0.008865708
SACRAMENT	2021	LDT2	1999	55	GAS	8468.09527	0.607556625	0.00209191	0.002275143	456.1253328	0.020046301	0.038008418	0.088742582	0.129492967	4.057962533	0.00451373
SACRAMENT	2021	LDT2	2003	20	GAS	5415.96584	0.455773203	0.005685611	0.006183621	629.4353157	0.022042926	0.032869931	0.088722113	0.129463099	4.115594345	0.006228773
SACRAMENT	2021	LDA	1999	45	GAS	8726.67555	0.382476775	0.002136581	0.002323726	303.4877832	0.020167146	0.027667899	0.088637776	0.129340034	4.210254173	0.003003258
SACRAMENT	2021	LHD1	2011	20	DSL	1324.51758	0.315565594	0.02267717	0.023702531	616.2897993	0.005260114	0.096872174	0.113247147	0.128924348	0.59525411	0.005826155
SACRAMENT	2021	LHD2	2011	20	DSL	716.677955	0.315565594	0.02267717	0.023702531	700.9244292	0.005260114	0.110175559	0.113247147	0.128924348	0.59525411	0.006626257
SACRAMENT	2021	MH	2002	40	DSL	34.8977363	10.61711661	0.105095981	0.109847955	996.0506611	0.005254489	0.156565293	0.113126063	0.128786501	0.766570171	0.009416261
SACRAMENT	2021	MH	1997	50	DSL	15.805848	11.04277203	0.103747889	0.108438908	915.3198509	0.005251805	0.143875534	0.113068264	0.128720701	0.618384226	0.008653064
SACRAMENT	2021	LDT2	1999	50	GAS	4653.22557	0.59983872	0.002061006	0.002241532	438.7607844	0.019921056	0.03752559	0.088188138	0.128683924	4.327819436	0.004341894
SACRAMENT	2021	LHD1	2009	30	DSL	571.242846	2.837137705	0.029943513	0.031297426	496.3631357	0.005246046	0.078021373	0.112944285	0.12857956	0.666211474	0.004692417
SACRAMENT	2021	LHD2	2009	30	DSL	290.112906	2.837137705	0.029943513	0.031297426	563.3196333	0.005246046	0.088546002	0.112944285	0.12857956	0.666211474	0.005325396
SACRAMENT	2021	MH	2003	35	DSL	32.6981961	5.705372601	0.190179666	0.198778747	1032.27155	0.005213331	0.162258712	0.112239953	0.127777724	0.490440659	0.009758678
SACRAMENT	2021	MH	1997	45	DSL	14.1229234	10.89541179	0.100023295	0.104545905	937.813322	0.005191538	0.147411194	0.11177076	0.127243579	0.711409631	0.008865708
SACRAMENT	2021	LDA	1999	55	GAS	15920.3775	0.377862332	0.002098214	0.002281999	324.6919094	0.019838055	0.027334096	0.087191371	0.127229443	3.677527247	0.00321309
SACRAMENT	2021	LHD1	2012	20	DSL	1335.32483	0.305896766	0.02146678	0.022437413	616.2897993	0.005175154	0.096872174	0.111418019	0.126842007	0.564962491	0.005826155
SACRAMENT	2021	LHD2	2012	20	DSL	907.250294	0.305896766	0.02146678	0.022437413	700.9244292	0.005175154	0.110175559	0.111418019	0.126842007	0.564962491	0.006626257
SACRAMENT	2021	MH	1998	50	DSL	13.6274878	10.94620674	0.105021385	0.109769986	937.6943361	0.005167375	0.147392491	0.111250544	0.126651348	0.608041122	0.008864584
SACRAMENT	2021	LDT2	2002	20	GAS	4511.41983	0.445289135	0.005685611	0.006183621	629.299273	0.021548059	0.03224474	0.086788612	0.126641738	4.035027374	0.006227426
SACRAMENT	2021	MDV	2001	70	GAS	432.840557	0.490239121	0.002776819	0.003020044	545.8631459	0.019411553	0.031963078	0.086566227	0.126317235	2.336674656	0.005401758
SACRAMENT	2021	MH	2010	20	DSL	5.04081747	3.890212438	0.02249726	0.023514486	1331.508306	0.005125223	0.209294563	0.110343042	0.125618217	0.311432046	0.012587542
SACRAMENT	2021	MDV	2001	35	GAS	16690.2242	0.483993842	0.002691255	0.002926985	494.9494905	0.019278571	0.031555893	0.085973192	0.12545188	3.812220787	0.004897926
SACRAMENT	2021	MH	1998	45	DSL	12.1765037	10.80013511	0.101251072	0.105829196	960.7376476	0.005108077	0.151014579	0.109973899	0.125197973	0.699510583	0.009082426
SACRAMENT	2021	LDA	1999	50	GAS	8748.26103	0.377100706	0.002061651	0.002242233	312.4903649	0.019514177	0.027279001	0.085767874	0.12515228	3.939909606	0.003092345
SACRAMENT	2021	LHD1	2013	20	DSL	1645.82648	0.295575519	0.020174717	0.021086928	616.2897993	0.005084462	0.096872174	0.109465466	0.124619155	0.532626913	0.005826155
SACRAMENT	2021	LHD2	2013	20	DSL	657.075854	0.295575519	0.020174717	0.021086928	700.9244292	0.005084462	0.110175559	0.109465466	0.124619155	0.532626913	0.006626257
SACRAMENT	2021	MDV	2000	60	GAS	7505.05303	0.639087282	0.002237682	0.002433683	530.1946865	0.01893138	0.039304514	0.085241588	0.124384325	2.988524144	0.005246706
SACRAMENT	2021	MH	1999	50	DSL	18.6851783	10.91796487	0.103818427	0.108512635	937.6943361	0.005062862	0.147392491	0.109000446	0.124089761	0.595748845	0.008864584
SACRAMENT	2021	LDA	1993	25	DSL	9.1366002	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	1994	25	DSL	3.3560583	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	1995	25	DSL	12.6891693	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	1996	25	DSL	10.6789066	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	1997	25	DSL	17.3896908	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	1998	25	DSL	17.3477467	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	1999	25	DSL	41.3940689	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	2000	25	DSL	21.5841929	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	2001	25	DSL	45.5366051	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	2002	25	DSL	128.835385	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	2003	25	DSL	174.649921	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	2004	25	DSL	50.631518	1.456514293	0.063777373	0.066661102	336.7689044	0.005057392	0.052935382	0.108882662	0.123955671	1.027971295	0.003183677
SACRAMENT	2021	LDA	2005	25	DSL	144.687921	1.456514293	0.063777373	0.066661102	322.6777143	0.005057392	0.050720443	0.108882662	0.123955671	1.027971295	0.003050465
SACRAMENT	2021	LDA	2006	25	DSL	139.746531	1.456514293	0.063777373	0.066661102	328.3674085	0.005057392	0.051614784	0.108882662	0.123955671	1.027971295	0.003104253
SACRAMENT	2021	LDA	2007	25	DSL	46.7872258	1.456514293	0.063777373	0.066661102	316.3357759	0.005057392	0.049723579	0.108882662	0.123955671	1.027971295	0.002990511
SACRAMENT	2021	LDT1	1993	25	DSL	22.7328991	1.456514293	0.063777373	0.066661102	637.9335227	0.005057392	0.100274266	0.108882662	0.123955671	1.027971295	0.006030766
SACRAMENT	2021	LDT1	1994	25	DSL	12.6250869	1.456514293	0.063777373	0.066661102	637.9335227	0.005057392	0.100274266	0.108882662	0.123955671	1.027971295	0.006030766
SACRAMENT	2021	LDT1	1995	25	DSL	4.53684192	1.456514293	0.063777373	0.066661102	637.9335227	0.005057392	0.100274266	0.108882662	0.123955671	1.027971295	0.006030766
SACRAMENT	2021	LDT1	1996	25	DSL	10.991087	1.456514293	0.063777373	0.066661102	637.9335227	0.005057392	0.100274266	0.108882662	0.123955671	1.027971295	0.006030766
SACRAMENT	2021	LDT1	1997	25	DSL	27.2272106	1.456514293	0.063777373	0.066661102	637.9335227	0.005057392	0.100274266	0.108882662	0.123955671	1.027971295	0.006030766
SACRAMENT	2021	LDT1	1998	25	DSL	8.44505316	1.456514293	0.063777373	0.066661102	637.9335227	0.005057392	0.100274266	0.108882662	0.123955671	1.027971295	0.006030766
SACRAMENT	2021	LDT1	1999	25	DSL	25.9960472	1.456514293	0.063777373	0.066661102	637.9335227	0.005057392	0.100274266	0.108882662	0.123955671	1.027971295	0.006030766
SACRAMENT	2021	LDT1	2000	25	DSL	21.4880264	1.456514293	0.063777373	0.066661102	637.9335227	0.005057392	0.100274266	0.108882662	0.123955671	1.027971295	0.006030766
SACRAMENT	2021	LDT1	2001	25	DSL	21.467641	1.456514293	0.063777373	0.066661102	637.9335227	0.005057392	0.100274266	0.108882662	0.123955671	1.027971295	0.006030766
SACRAMENT	2021	LDT1	2002	25	DSL	27.2482796	1.456514293	0.063777373	0.066661102	637.9335227	0.005057392	0.100274266	0.108882662	0.123955671	1.027971295	0.006030766
SACRAMENT	2021	LDT1	2003	25	DSL	29.0716839	1.456514293	0.063777373	0.066661102	637.9335227	0.005057392	0.100274266	0.108882662	0.123955671	1.027971295	0.006030766
SACRAMENT	2021	LDT1	2005	25	DSL	2.40217384	1.456514293	0.063777373	0.066661102	611.2409082	0.005057392	0.096078559	0.108882662	0.123955671	1.027971295	0.005778425
SACRAMENT	2021	LDT1	2006	25	DSL	2.58270922	1.456514293	0.063777373	0.066661102	622.018764	0.005057392	0.097772688	0.108882662	0.123955671	1.027971295	0.005880314
SACRAMENT	2021	LDT1	2007	25	DSL	27.4571901	1.456514293	0.063777373	0.066661102	599.2275215	0.005057392	0.094190222	0.108882662	0.123955671	1.027971295	0.005664855
SACRAMENT	2021	LDT2	1993	25	DSL	1.98037806	1.456514293	0.063777373	0.066661102	496.7289426	0.005057392	0.078078872	0.108882662	0.123955671	1.027971295	0.004695875
SACRAMENT	2021	LDT2	1994	25	DSL	1.05449883	1.456514293	0.063777373	0.066661102	496.7289426	0.005057392	0.078078872	0.108882662	0.123955671	1.027971295	0.004695875
SACRAMENT	2021	LDT2	2001	25	DSL	3.09419887	1.456514293	0.063777373	0.066661102	496.7289426	0.005057392	0.078078872	0.108882662	0.123955671	1.027971295	0.004695875
SACRAMENT	2021	LDT2	2005	25	DSL	12.8812848	1.456514293	0.063777373	0.066661102	484.9561664	0.005057392	0.076228356	0.108882662	0.123955671	1.027971295	0.00458458

SACRAMENT	2021	LDT2	2006	25	DSL	9.47340663	1.456514293	0.063777373	0.066661102	475.6889399	0.005057392	0.074771677	0.108882662	0.123955671	1.027971295	0.004496971
SACRAMENT	2021	LDT2	2007	25	DSL	5.16633646	1.456514293	0.063777373	0.066661102	468.9242782	0.005057392	0.073708366	0.108882662	0.123955671	1.027971295	0.004433021
SACRAMENT	2021	MDV	1993	25	DSL	1.7854677	1.456514293	0.063777373	0.066661102	556.6264145	0.005057392	0.087493921	0.108882662	0.123955671	1.027971295	0.005262121
SACRAMENT	2021	MDV	1994	25	DSL	3.65692464	1.456514293	0.063777373	0.066661102	556.6264145	0.005057392	0.087493921	0.108882662	0.123955671	1.027971295	0.005262121
SACRAMENT	2021	MDV	1995	25	DSL	9.62959961	1.456514293	0.063777373	0.066661102	556.6264145	0.005057392	0.087493921	0.108882662	0.123955671	1.027971295	0.005262121
SACRAMENT	2021	MDV	1996	25	DSL	9.49208195	1.456514293	0.063777373	0.066661102	556.6264145	0.005057392	0.087493921	0.108882662	0.123955671	1.027971295	0.005262121
SACRAMENT	2021	MDV	1997	25	DSL	10.3417362	1.456514293	0.063777373	0.066661102	556.6264145	0.005057392	0.087493921	0.108882662	0.123955671	1.027971295	0.005262121
SACRAMENT	2021	MDV	1998	25	DSL	11.1978232	1.456514293	0.063777373	0.066661102	556.6264145	0.005057392	0.087493921	0.108882662	0.123955671	1.027971295	0.005262121
SACRAMENT	2021	MDV	1999	25	DSL	2.68403807	1.456514293	0.063777373	0.066661102	556.6264145	0.005057392	0.087493921	0.108882662	0.123955671	1.027971295	0.005262121
SACRAMENT	2021	MDV	2000	25	DSL	4.35711094	1.456514293	0.063777373	0.066661102	556.6264145	0.005057392	0.087493921	0.108882662	0.123955671	1.027971295	0.005262121
SACRAMENT	2021	MDV	2001	25	DSL	7.90166584	1.456514293	0.063777373	0.066661102	556.6264145	0.005057392	0.087493921	0.108882662	0.123955671	1.027971295	0.005262121
SACRAMENT	2021	MDV	2002	25	DSL	12.157916	1.456514293	0.063777373	0.066661102	556.6264145	0.005057392	0.087493921	0.108882662	0.123955671	1.027971295	0.005262121
SACRAMENT	2021	MDV	2003	25	DSL	13.1670655	1.456514293	0.063777373	0.066661102	556.6264145	0.005057392	0.087493921	0.108882662	0.123955671	1.027971295	0.005262121
SACRAMENT	2021	MDV	2004	25	DSL	29.062054	1.456514293	0.063777373	0.066661102	638.6931295	0.005057392	0.100393666	0.108882662	0.123955671	1.027971295	0.006037947
SACRAMENT	2021	MDV	2005	25	DSL	58.9129697	1.456514293	0.063777373	0.066661102	623.5557162	0.005057392	0.098014275	0.108882662	0.123955671	1.027971295	0.005894844
SACRAMENT	2021	MDV	2006	25	DSL	83.4393312	1.456514293	0.063777373	0.066661102	611.6399341	0.005057392	0.09614128	0.108882662	0.123955671	1.027971295	0.005782197
SACRAMENT	2021	MH	2004	35	DSL	44.7246572	5.37930137	0.191918597	0.200596304	1031.559527	0.005036819	0.162146792	0.108439755	0.123451452	0.454293658	0.009751947
SACRAMENT	2021	LDT1	1999	70	GAS	116.89706	0.384129004	0.00273292	0.0029723	386.8651199	0.019736448	0.029058831	0.084310072	0.123025058	2.63945284	0.003828344
SACRAMENT	2021	MH	1999	45	DSL	16.6956775	10.77227011	0.100091301	0.104616985	960.7376476	0.005004764	0.151014579	0.107749623	0.122665782	0.685369142	0.009082426
SACRAMENT	2021	MH	2011	20	DSL	6.97769012	3.861845561	0.021991158	0.022985501	1331.508306	0.005001565	0.209294563	0.107680744	0.122587368	0.303928771	0.012587542
SACRAMENT	2021	LHD1	2014	20	DSL	2477.79451	0.284601853	0.018800982	0.019651079	602.1151339	0.004988036	0.094644114	0.107389487	0.122255791	0.498247375	0.005692153
SACRAMENT	2021	LHD2	2014	20	DSL	994.837382	0.284601853	0.018800982	0.019651079	684.8031673	0.004988036	0.107641521	0.107389487	0.122255791	0.498247375	0.006473853
SACRAMENT	2021	LDT1	2003	15	GAS	326.408576	0.225803941	0.008119324	0.008830505	648.6935618	0.021892139	0.020785825	0.083433353	0.121745752	3.10990186	0.006419349
SACRAMENT	2021	MH	2000	50	DSL	32.2136307	10.88913421	0.102590391	0.107229074	937.6943361	0.004956171	0.147392491	0.106703444	0.121474777	0.583200324	0.008864584
SACRAMENT	2021	MDV	2002	70	GAS	587.394769	0.477043012	0.002776819	0.003020044	545.8363407	0.018775195	0.031498007	0.083174218	0.121367624	2.328991834	0.005401493
SACRAMENT	2021	MDV	2000	45	GAS	5328.92062	0.602579574	0.002139585	0.002326994	479.0873917	0.018468848	0.037059253	0.083158961	0.12134536	3.673896222	0.004740958
SACRAMENT	2021	LDA	2003	15	GAS	3153.94378	0.22575261	0.008119324	0.008830505	545.2114016	0.021735929	0.020718541	0.083030237	0.121157527	3.107949034	0.005395309
SACRAMENT	2021	MH	2005	35	DSL	42.1107639	5.356385489	0.189484241	0.198051877	1031.559527	0.004926342	0.162146792	0.106061249	0.120743681	0.444330877	0.009751947
SACRAMENT	2021	MDV	2002	35	GAS	22649.7961	0.470965842	0.002691255	0.002926985	494.9150955	0.018646573	0.031096746	0.082604421	0.120536178	3.799686474	0.004897586
SACRAMENT	2021	LDT2	2008	15	DSL	1.42075348	0.09050687	0.009143486	0.009556914	661.0727259	0.004914934	0.103911427	0.105815625	0.120464053	1.324965412	0.006249515
SACRAMENT	2021	LDT1	2008	15	DSL	0.98389913	0.090506902	0.009143486	0.009556914	844.1764517	0.004914932	0.132692782	0.105815588	0.120464012	1.324965536	0.007980503
SACRAMENT	2021	MH	2000	45	DSL	28.7836906	10.74382419	0.098907352	0.103379504	960.7376476	0.004899297	0.151014579	0.10547898	0.120080806	0.670932908	0.009082426
SACRAMENT	2021	LHD1	2015	20	DSL	3493.38163	0.272975767	0.017345574	0.018129864	597.8011053	0.004885878	0.093966009	0.10519008	0.119751912	0.461823877	0.00565137
SACRAMENT	2021	LHD2	2015	20	DSL	1937.95203	0.272975767	0.017345574	0.018129864	679.8966963	0.004885878	0.106870293	0.10519008	0.119751912	0.461823877	0.006427469
SACRAMENT	2021	MDV	2001	65	GAS	1636.00911	0.469184046	0.002556523	0.002780452	550.7786145	0.018367075	0.030590309	0.081908356	0.119520481	2.505130052	0.005450401
SACRAMENT	2021	MH	2012	20	DSL	9.23145307	3.833005699	0.021476617	0.022447694	1331.508306	0.004875844	0.209294563	0.104974052	0.119505979	0.296300379	0.012587542
SACRAMENT	2021	LDT2	2009	15	DSL	1.7964462	0.08979114	0.008912059	0.009315023	623.6156137	0.004862291	0.09802369	0.104682269	0.119173803	1.283532317	0.00589541
SACRAMENT	2021	LDT1	2009	15	DSL	4.99393973	0.089791169	0.008912059	0.009315023	826.5328578	0.004862289	0.129919455	0.104682223	0.119173751	1.283532619	0.007813708
SACRAMENT	2021	MDV	2003	30	GAS	14041.4159	0.423680328	0.003273363	0.003560081	534.2289313	0.018804368	0.029627093	0.081649372	0.119142573	4.144449445	0.005286628
SACRAMENT	2021	MH	2001	50	DSL	26.6124509	10.85971477	0.101337279	0.105919301	937.6943361	0.004847301	0.147392491	0.104359537	0.118806395	0.570395557	0.008864584
SACRAMENT	2021	MDV	2000	55	GAS	9721.73511	0.6082856	0.00209191	0.002275143	513.5039738	0.017993751	0.03741018	0.081019761	0.118223845	3.222739376	0.005081538
SACRAMENT	2021	MH	2006	35	DSL	39.1854576	5.333045009	0.187004779	0.195460306	1031.559527	0.004813818	0.162146792	0.103638672	0.117985738	0.434183496	0.009751947
SACRAMENT	2021	LDT2	2010	15	DSL	3.393789	0.08902636	0.008664772	0.009056554	617.7060689	0.004806041	0.097094792	0.103471242	0.11779513	1.239259751	0.005839544
SACRAMENT	2021	LDT1	2010	15	DSL	0.56275359	0.089026385	0.008664772	0.009056554	784.140896	0.004806039	0.123256029	0.103471186	0.117795066	1.239260267	0.007412951
SACRAMENT	2021	LDT1	1999	65	GAS	441.836265	0.362376208	0.002523114	0.002744117	390.4108741	0.01887655	0.027413261	0.080636763	0.117664976	2.811995701	0.003863432
SACRAMENT	2021	MH	2001	45	DSL	23.7788954	10.71479733	0.097699227	0.102116753	960.7376476	0.004791676	0.151014579	0.10316197	0.117443044	0.656201882	0.009082426
SACRAMENT	2021	LHD1	2016	20	DSL	6372.03169	0.228621914	0.015808494	0.016523284	579.3124114	0.004777987	0.091059844	0.102867242	0.117107516	0.423356419	0.005476586
SACRAMENT	2021	LHD2	2016	20	DSL	1513.00635	0.228630432	0.015808494	0.016523284	658.8689635	0.004777987	0.103565026	0.102867242	0.117107516	0.423356419	0.006228681
SACRAMENT	2021	MDV	2000	50	GAS	5342.10173	0.599392054	0.002061006	0.002241532	493.7345825	0.017803767	0.036863217	0.080164326	0.116975596	3.443277127	0.004885904
SACRAMENT	2021	MH	2013	20	DSL	15.401798	3.80369286	0.020953636	0.021901067	1331.508306	0.004748061	0.209294563	0.102222967	0.116374051	0.288546868	0.012587542
SACRAMENT	2021	LDT2	2011	15	DSL	2.77216992	0.088212531	0.008401625	0.008781509	598.0747246	0.004746184	0.094009018	0.102182544	0.116328033	1.192147718	0.005653957
SACRAMENT	2021	MH	2002	50	DSL	31.9818835	10.82970656	0.100059089	0.104583317	937.6943361	0.004736252	0.147392491	0.101968725	0.116084615	0.557334546	0.008864584
SACRAMENT	2021	MH	2007	25	DSL	34.5216115	4.739257484	0.100092961	0.10461872	1178.158039	0.004734832	0.185190037	0.101938148	0.116049804	0.326715899	0.01113783
SACRAMENT	2021	MDV	2002	65	GAS	2220.17826	0.456554691	0.002556523	0.002780452	550.7517185	0.017764958	0.030145212	0.078698862	0.114837194	2.496893361	0.005450135
SACRAMENT	2021	LDT2	2012	15	DSL	15.7791254	0.087349652	0.008122618	0.008489886	583.3159963	0.004682719	0.091689151	0.100816176	0.114772513	1.14219622	0.005514434
SACRAMENT	2021	LDT1	2012	15	DSL	0.32032043	0.087349666	0.008122618	0.008489886	742.2461761	0.004682715	0.116670763	0.100816098	0.114772425	1.142197264	0.007016896
SACRAMENT	2021	MH	2002	45	DSL	28.5766187	10.68518956	0.096466925	0.100828731	960.7376476	0.004681902	0.151014579	0.100798594	0.114752497	0.641176064	0.009082426
SACRAMENT	2021	LHD1	2007	35	DSL	1053.60745	2.972407071	0.027550044	0.028795735	496.3631357	0.004664822	0.078021373	0.100430863	0.11433386	0.623991616	0.004692417
SACRAMENT	2021	LHD1	2017	20	DSL	3300.04247	0.186797598	0.014189741	0.014831338	560.8237174	0.004664362	0.088153678	0.10042097	0.114322597	0.382845001	0.005301801
SACRAMENT	2021	LHD2	2017	20	DSL	1284.98351	0.186803844	0.014189741	0.014831338	637.8412306	0.004664362	0.100259759	0.10042097	0.114322597	0.382845001	0.006029893
SACRAMENT	2021	LHD2	2007	35	DSL	416.486644	2.971842701	0.027548176	0.028793782	563.3196333	0.004664281	0.088546002	0.100419216	0.114320601	0.623915931	0.005325396
SACRAMENT	2021	LDA	1993	70	DSL	0.29414872	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	1994	70	DSL	0.10804678	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	1995	70	DSL	0.40852208	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	1996	70	DSL	0.34380258	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	1997	70	DSL	0.55985325	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	1998	70	DSL	0.55850288	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	1999	70	DSL	1.33266337	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	2000	70	DSL	0.69489335	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	2001	70	DSL	1.46603045	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	2002	70	DSL	4.14779708	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	2003	70	DSL	5.62277539	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	2004	70	DSL	1.63005887	2.058734698	0.058405044	0.061045861	329.0849145	0.004631379	0.051727566	0.09971086	0.113514185	1.696257486	0.003111036
SACRAMENT	2021	LDA	2005	70	DSL	4.65816233	2.058734698	0.058405044	0.061045861	315.3152403	0.004631379	0.049563165	0.09971086	0.113514185	1.696257486	0.002980863
SACRAMENT	2021	LDA	2006	70	DSL	4.4990765	2.058734698	0.058405044	0.061045861	320.8751139	0.004631379	0.050437099	0.09971086	0.113514185	1.696257486	0.003033424
SACRAMENT	2021	LDA	2007	70	DSL	1.50629362	2.058734698	0.058405044	0.061045861	309.1180047	0.004631379	0.048589046	0.09971086	0.113514185	1.696257486	0.002922277
SACRAMENT	2021	LDT1	1993	70	DSL	0.73187543	2.058734698	0.058405044	0.061045861	615.9400159	0.004631379	0.096817193	0.09971086	0.113514185	1.696257486	0.005822848
SACRAMENT	2021	LDT1	1994	70	DSL	0.40645897	2.058734698	0.058405044	0.061045861	615.9400159	0.004631379	0.096817193	0.09971086	0.113514185	1.696257486	0.005822848
SACRAMENT	2021	LDT1	1995	70	DSL	0.14606158	2.058734698	0.058405044	0.061045861	615.9400159	0.004631379	0.096817193	0.09971086	0.113514185	1.696257486	0.005822848
SACRAMENT	2021	LDT1	1996	70	DSL	0.35385309	2.058734698	0.058405044	0.061045861	615.9400159	0.004631379	0.096817193	0.09971086	0.113514185	1.696257486	0.005822848
SACRAMENT	2021	LDT1	1997	70	DSL	0.87656776	2.058734698	0.058405044	0.061045861	615.9400159	0.004631379	0.096817193	0.09971086	0.113514185	1.696257486	0.005822848
SACRAMENT	2021	LDT1	1998	70	DSL	0.27188468	2.058734698	0.058405044	0.061045861	615.9400159	0.004631379	0.096817193	0.09971086	0.113514185	1.696257486	0.005822848
SACRAMENT	2021	LDT1	1999	70	DSL	0.83693101	2.058734698	0.058405044	0.061045861	615.9400159	0.004631379	0.096817193	0.09971086	0.113514185	1.696257486	0.005822848
SACRAMENT	2021	LDT1	2000	70	DSL	0.69179731	2.058734698	0.058405044	0.061045861	615.9400159	0.004631379	0.096817193	0.09971086	0.113514185	1.696257486	0.005822848
SACRAMENT	2021	LDT1	2001	70	DSL	0.69114101	2.058734698	0.058405044	0.061045861	615.9400159	0.004631379	0.096817193	0.09971086	0.113514185	1.696257486	0.005822848
SACRAMENT	2021	LDT1	2002	70	DSL	0.87724607	2.058734698	0.058405044	0.061045861	615.9400159	0.004631379	0.096817193	0.09971086	0.113514185	1.696257486	0.005822848
SACRAMENT	2021	LDT1	2003	70	DSL	0.93594974	2.058734698	0.058405044	0.061045861	615.9400159	0.004631379	0.096817193	0.09971086	0.113514185	1.696257486	0.005822848
SACRAMENT	2021	LDT1	2005	70	DSL	0.0773369	2.058734698	0.058405044	0.061045861	590.1676606	0.004631379	0.092766138	0.09971086	0.113514185	1.696257486	0.005579207
SACRAMENT	2021	LDT1	2006	70	DSL	0.08314916	2.058734698	0.058405044	0.061045861	600.5739372	0.004631379	0.094401859	0.09971086	0.113514185	1.696257486	0.005677584
SACRAMENT	2021	LDT1	2007	70	DSL	0.88397185	2.058734698	0.058405044	0.061045861	578.5684495	0.004631379	0.090942903	0.09971086	0.113514185	1.696257486	0.005469553
SACRAMENT	2021	LDT2	1993	70	DSL	0.06375738	2.058734698	0.058405044	0.061045861	479.6036294	0.004631379	0.075387012	0.09971086	0.113514185	1.696257486	0.004533979
SACRAMENT	2021	LDT2	1994	70	DSL	0.03394911	2.058734698	0.058405044	0.061045861	479.6036294	0.004631379	0.075387012	0.09971086	0.113514185	1.696257486	0.004533979
SACRAMENT	2021	LDT2	2001	70	DSL	0.09961634	2.058734698	0.058405044	0.061045861	479.6036294	0.004631379	0.075387012	0.09971086	0.113514185	1.696257486	0.004533979
SACRAMENT	2021	LDT2	2005	70	DSL	0.41470715	2.058734698	0.058405044	0.061045861	468.2367334	0.004631379	0.073600294	0.09971086	0.113514185	1.696257486	0.004426521
SACRAMENT	2021	LDT2	2006	70	DSL	0.30499205	2.058734698	0.058405044	0.061045861	459.2890055	0.004631379	0.072193836	0.09971086	0.113514185	1.696257486	0.004341933
SACRAMENT	2021	LDT2	2007	70	DSL	0.16632787	2.058734698	0.058405044	0.061045861	452.7575634	0.004631379	0.071167184	0.09971086	0.113514185	1.696257486	0.004280187
SACRAMENT	2021	MDV	1993	70	DSL	0.05748233	2.058734698	0.058405044	0.061045861	545.1023528	0.004631379	0.085682499	0.09971086	0.113514185	1.696257486	0.005153178
SACRAMENT	2021	MDV	1994	70	DSL	0.11773304	2.058734698	0.058405044	0.061045861	545.1023528	0.004631379	0.085682499	0.09971086	0.113514185	1.696257486	0.005153178
SACRAMENT	2021	MDV	1995	70	DSL	0.31002061	2.058734698	0.058405044	0.061045861	545.1023528	0.004631379	0.085682499	0.09971086	0.113514185	1.696257486	0.005153178
SACRAMENT	2021	MDV	1996	70	DSL	0.30559329	2.058734698	0.058405044	0.061045861	545.1023528	0.004631379	0.085682499	0.09971086	0.113514185	1.696257486	0.005153178
SACRAMENT	2021	MDV	1997	70	DSL	0.33294753	2.058734698	0.058405044	0.061045861	545.1023528	0.004631379	0.085682499	0.09971086	0.113514185	1.696257486	0.005153178
SACRAMENT	2021	MDV	1998	70	DSL	0.36050886	2.058734698	0.058405044	0.061045861	545.1023528	0.004631379	0.085682499	0.09971086	0.113514185	1.696257486	0.005153178
SACRAMENT	2021	MDV	1999	70	DSL	0.08641139	2.058734698	0.058405044	0.061045861	545.1023528	0.004631379	0.085682499	0.09971086	0.113514185	1.696257486	0.005153178
SACRAMENT	2021	MDV	2000	70	DSL	0.14027522	2.058734698	0.058405044	0.061045861	545.1023528	0.004631379	0.085682499	0.09971086	0.113514185	1.696257486	0.005153178
SACRAMENT	2021	MDV	2001	70	DSL	0.25439057	2.058734698	0.058405044	0.061045861	545.1023528	0.004631379	0.085682499	0.09971086	0.113514185	1.696257486	0.005153178
SACRAMENT	2021	MDV	2002	70	DSL	0.39141862	2.058734698	0.058405044	0.061045861	545.1023528	0.004631379	0.085682499	0.09971086	0.113514185	1.696257486	0.005153178
SACRAMENT	2021	MDV	2003	70	DSL	0.42390773	2.058734698	0.058405044	0.061045861	545.1023528	0.004631379	0.085682499	0.09971086	0.113514185	1.696257486	0.005153178
SACRAMENT	2021	MDV	2004	70	DSL	0.93563971	2.058734698	0.058405044	0.061045861	625.4700073	0.004631379	0.098315175	0.09971086	0.113514185	1.696257486	0.005912941

SACRAMENT	2021	MDV	2005	70	DSL	1.89667647	2.058734698	0.058405044	0.061045861	610.6459901	0.004631379	0.095985046	0.09971086	0.113514185	1.696257486	0.005772801
SACRAMENT	2021	MDV	2006	70	DSL	2.68629161	2.058734698	0.058405044	0.061045861	598.9769052	0.004631379	0.094150828	0.09971086	0.113514185	1.696257486	0.005662486
SACRAMENT	2021	LDT1	1999	40	GAS	5522.83588	0.332962215	0.002340157	0.002545134	339.6129863	0.018187958	0.025188133	0.07769524	0.113372712	3.835629441	0.003360746
SACRAMENT	2021	MH	2008	25	DSL	30.5840398	4.714309405	0.098635742	0.103095612	1178.158039	0.004622918	0.185190037	0.099528701	0.113306809	0.318951349	0.01113783
SACRAMENT	2021	MH	2014	20	DSL	15.7976853	3.773907054	0.020422217	0.021345619	1260.776999	0.004618217	0.198176587	0.099427488	0.113191585	0.28066824	0.011918877
SACRAMENT	2021	LDT2	2013	15	DSL	27.3519522	0.086437724	0.00782775	0.008181686	563.9148579	0.004615646	0.088639563	0.099372136	0.11312857	1.089405261	0.005331023
SACRAMENT	2021	LDT1	2013	15	DSL	1.03767786	0.08643773	0.00782775	0.008181686	721.9671915	0.004615642	0.113483189	0.099372048	0.11312847	1.089406608	0.006825186
SACRAMENT	2021	MDV	2007	15	DSL	11.691297	0.096051146	0.009825759	0.010270036	858.5616161	0.004614256	0.13495393	0.09934222	0.113094513	2.315286123	0.008116495
SACRAMENT	2021	LHD1	2008	35	DSL	1179.08237	2.965704407	0.027024156	0.028246068	496.3631357	0.004579976	0.078021373	0.098604186	0.112254311	0.609965666	0.004692417
SACRAMENT	2021	LHD2	2008	35	DSL	493.507061	2.964746751	0.027020954	0.028242722	563.3196333	0.004579079	0.088546002	0.098584867	0.112232317	0.609839193	0.005325396
SACRAMENT	2021	MH	2021	5	GAS	15.0438813	0.187442722	0.007173479	0.007801813	3465.300141	0.026403543	0.022430356	0.076599747	0.111774172	0.324145212	0.034291954
SACRAMENT	2021	LHD1	2018	20	DSL	3711.04259	0.144158242	0.011641276	0.012167643	523.8463294	0.004545004	0.082341348	0.097851257	0.111397151	0.340289625	0.004952232
SACRAMENT	2021	LHD2	2018	20	DSL	1418.50703	0.144252664	0.012489316	0.013054028	595.7857648	0.004545004	0.093649225	0.097851257	0.111397151	0.340289625	0.005632318
SACRAMENT	2021	LDT2	2014	15	DSL	28.1276024	0.085476747	0.007517023	0.007856909	560.2297991	0.004544965	0.088060323	0.097850425	0.111396203	1.033774846	0.005296186
SACRAMENT	2021	MH	2003	40	DSL	40.5897202	5.314101225	0.202236195	0.211380418	985.2068576	0.004540531	0.154860798	0.097754959	0.111287521	0.478073658	0.009313748
SACRAMENT	2021	MDV	2009	15	DSL	9.35611353	0.093147646	0.009344869	0.009767402	786.5349989	0.004536795	0.123632349	0.097674522	0.11119595	1.986319825	0.007435584
SACRAMENT	2021	MDV	2008	15	DSL	6.13472466	0.094982186	0.009595332	0.01002919	833.77777	0.004509426	0.131058254	0.097085292	0.110525151	2.257530523	0.007882198
SACRAMENT	2021	MH	2009	25	DSL	3.46843513	4.688923408	0.097152944	0.101545769	1178.158039	0.004509039	0.185190037	0.097076964	0.110515669	0.311050503	0.01113783
SACRAMENT	2021	MDV	2004	10	GAS	632.219189	0.145762218	0.000815468	0.000886896	1055.412822	0.021863834	0.016591363	0.075409422	0.110037252	1.983806523	0.010444165
SACRAMENT	2021	LHD1	2009	35	DSL	301.467026	2.957421391	0.026446418	0.027642208	496.3631357	0.004486411	0.078021373	0.09658979	0.109961054	0.594518658	0.004692417
SACRAMENT	2021	LHD2	2009	35	DSL	153.103843	2.957421391	0.026446418	0.027642208	563.3196333	0.004486411	0.088546002	0.09658979	0.109961054	0.594518658	0.005325396
SACRAMENT	2021	MH	2015	20	DSL	28.5096773	3.743648291	0.019882358	0.02078135	1260.776999	0.00448631	0.198176587	0.096587616	0.10995858	0.272664494	0.011918877
SACRAMENT	2021	LDT2	2015	15	DSL	41.3691685	0.08446672	0.007190436	0.007515555	547.1654746	0.004470677	0.086006793	0.096251043	0.109575413	0.975304983	0.005172681
SACRAMENT	2021	MDV	2010	15	DSL	18.2445989	0.091997364	0.00907437	0.009484673	779.0815873	0.004429117	0.122460776	0.095356289	0.108556795	1.923363244	0.007365123
SACRAMENT	2021	MDV	2001	40	GAS	20449.6791	0.46329883	0.002334267	0.002538728	478.0780398	0.01668138	0.030206599	0.074390961	0.108551116	3.51582946	0.00473097
SACRAMENT	2021	LDA	2008	15	DSL	3.62617433	0.091933339	0.009059318	0.00946894	446.4441018	0.004423126	0.070174796	0.095227295	0.108409944	1.919858863	0.004220502
SACRAMENT	2021	LHD1	2019	20	DSL	4179.59096	0.116675891	0.008569064	0.008956519	523.8463294	0.004419912	0.082341348	0.095158099	0.108331169	0.29569029	0.004952232
SACRAMENT	2021	LHD2	2019	20	DSL	1573.17934	0.116743937	0.010707218	0.011191351	595.7857648	0.004419912	0.093649225	0.095158099	0.108331169	0.29569029	0.005632318
SACRAMENT	2021	MH	2004	40	DSL	55.5186996	4.962901521	0.205846912	0.215154396	984.5272984	0.004408751	0.154753981	0.094917823	0.108057631	0.451425596	0.009307324
SACRAMENT	2021	MH	1998	5	GAS	3.76392481	0.331080786	0.009963166	0.010835852	4205.598628	0.025265016	0.033196296	0.073859237	0.107775225	0.451486464	0.041617808
SACRAMENT	2021	LDT2	2016	15	DSL	27.2178793	0.083407645	0.006847988	0.007157624	525.2298464	0.004392781	0.082558818	0.094573989	0.107666199	0.913995677	0.004965311
SACRAMENT	2021	LDT1	2000	20	GAS	1213.69557	0.240267557	0.005685611	0.006183621	538.7217181	0.018619801	0.020797215	0.073411379	0.107121712	3.384343518	0.005331088
SACRAMENT	2021	MH	1999	5	GAS	10.4319794	0.322845353	0.009963166	0.010835852	4205.584498	0.025102444	0.032623401	0.07327776	0.106926736	0.44415395	0.041617668
SACRAMENT	2021	MH	2016	20	DSL	13.105301	3.712916583	0.01933406	0.02020826	1260.776999	0.004352342	0.198176587	0.093703352	0.106675036	0.264535629	0.011918877
SACRAMENT	2021	LDA	2000	20	GAS	6708.80213	0.240154708	0.005685611	0.006183621	450.9579159	0.018436241	0.0206534	0.073056862	0.106604401	3.381181726	0.004462594
SACRAMENT	2021	LDA	2009	15	DSL	29.9259404	0.09093327	0.008824144	0.009223132	437.1132582	0.00432951	0.068708117	0.093211793	0.10611543	1.8651239	0.004132292
SACRAMENT	2021	MH	2000	5	GAS	9.43520642	0.31459561	0.009963166	0.010835852	4205.57018	0.024942152	0.032033944	0.072704825	0.10609071	0.43667989	0.041617526
SACRAMENT	2021	MDV	2011	15	DSL	37.9868415	0.090761881	0.008783835	0.009181001	754.3215604	0.004313464	0.118568845	0.092866346	0.10572216	1.855743471	0.007131051
SACRAMENT	2021	MH	2005	40	DSL	52.2739579	4.941759508	0.203235884	0.212425309	984.5272984	0.00431205	0.154753981	0.092835906	0.105687507	0.441525712	0.009307324
SACRAMENT	2021	LDT2	2017	15	DSL	51.8767166	0.082299521	0.006489681	0.006783115	503.2942183	0.004311277	0.079110842	0.092819263	0.10566856	0.84984694	0.00475794
SACRAMENT	2021	LDT1	2017	15	DSL	0.21295488	0.082299506	0.006489681	0.006783115	668.4097527	0.004311273	0.105064705	0.092819167	0.105668451	0.849849281	0.006318876
SACRAMENT	2021	MH	2001	5	GAS	4.00888836	0.306397083	0.009963166	0.010835852	4205.5557	0.024779766	0.0314523	0.072125632	0.105245553	0.429119902	0.041617383
SACRAMENT	2021	LHD1	2020	20	DSL	4782.56177	0.091021359	0.005895632	0.006162206	523.8463294	0.004289085	0.082341348	0.092341485	0.105124642	0.249046999	0.004952232
SACRAMENT	2021	LHD2	2020	20	DSL	1781.50421	0.091096827	0.008843448	0.00924331	595.7857648	0.004289085	0.093649225	0.092341485	0.105124642	0.249046999	0.005632318
SACRAMENT	2021	LDT2	2000	25	GAS	11977.6054	0.438774364	0.004200191	0.004568091	537.8363456	0.017571401	0.030790538	0.072013313	0.105081657	4.006085304	0.005322327
SACRAMENT	2021	LDT1	1999	60	GAS	3013.91619	0.344335067	0.002237657	0.002433656	376.2348207	0.016785511	0.026048474	0.071704271	0.104630704	2.916739988	0.003723149
SACRAMENT	2021	MH	2002	5	GAS	8.17501544	0.298287557	0.009963166	0.010835852	4205.541062	0.024610393	0.030872167	0.071526858	0.104371824	0.421514062	0.041617238
SACRAMENT	2021	MDV	2002	40	GAS	27751.6382	0.450827891	0.002334267	0.002538728	478.0471466	0.016134523	0.029767086	0.071476028	0.104297652	3.50426966	0.004730664
SACRAMENT	2021	MH	2020	5	GAS	15.1579374	0.170921122	0.007173479	0.007801813	3831.498263	0.024856877	0.021022561	0.071461511	0.104276469	0.312644235	0.037915781
SACRAMENT	2021	MDV	2001	60	GAS	11159.7774	0.456691251	0.002255694	0.002453273	530.6508091	0.016015261	0.029775792	0.071420392	0.104216469	2.625743457	0.00525122
SACRAMENT	2021	LDA	1993	65	DSL	1.11179504	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	1994	65	DSL	0.40838484	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	1995	65	DSL	1.54409247	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	1996	65	DSL	1.29947192	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	1997	65	DSL	2.11607947	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	1998	65	DSL	2.11097546	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	1999	65	DSL	5.03707283	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	2000	65	DSL	2.62649106	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	2001	65	DSL	5.5411609	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	2002	65	DSL	15.6774445	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	2003	65	DSL	21.2524257	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	2004	65	DSL	6.16113976	2.016621218	0.053612729	0.056036858	304.7528751	0.00425136	0.047902908	0.091529274	0.104199993	1.485072426	0.002881011
SACRAMENT	2021	LDA	2005	65	DSL	17.606474	2.016621218	0.053612729	0.056036858	292.0013098	0.00425136	0.04589854	0.091529274	0.104199993	1.485072426	0.002760462
SACRAMENT	2021	LDA	2006	65	DSL	17.0051767	2.016621218	0.053612729	0.056036858	297.1500948	0.00425136	0.046707857	0.091529274	0.104199993	1.485072426	0.002809137
SACRAMENT	2021	LDA	2007	65	DSL	5.69334376	2.016621218	0.053612729	0.056036858	286.2622884	0.00425136	0.044996445	0.091529274	0.104199993	1.485072426	0.002706208
SACRAMENT	2021	LDT1	1993	65	DSL	2.76627235	2.016621218	0.053612729	0.056036858	570.893971	0.00425136	0.089736582	0.091529274	0.104199993	1.485072426	0.005397001
SACRAMENT	2021	LDT1	1994	65	DSL	1.53629454	2.016621218	0.053612729	0.056036858	570.893971	0.00425136	0.089736582	0.091529274	0.104199993	1.485072426	0.005397001
SACRAMENT	2021	LDT1	1995	65	DSL	0.55206951	2.016621218	0.053612729	0.056036858	570.893971	0.00425136	0.089736582	0.091529274	0.104199993	1.485072426	0.005397001
SACRAMENT	2021	LDT1	1996	65	DSL	1.33745987	2.016621218	0.053612729	0.056036858	570.893971	0.00425136	0.089736582	0.091529274	0.104199993	1.485072426	0.005397001
SACRAMENT	2021	LDT1	1997	65	DSL	3.3131665	2.016621218	0.053612729	0.056036858	570.893971	0.00425136	0.089736582	0.091529274	0.104199993	1.485072426	0.005397001
SACRAMENT	2021	LDT1	1998	65	DSL	1.02764355	2.016621218	0.053612729	0.056036858	570.893971	0.00425136	0.089736582	0.091529274	0.104199993	1.485072426	0.005397001
SACRAMENT	2021	LDT1	1999	65	DSL	3.16335134	2.016621218	0.053612729	0.056036858	570.893971	0.00425136	0.089736582	0.091529274	0.104199993	1.485072426	0.005397001
SACRAMENT	2021	LDT1	2000	65	DSL	2.61478895	2.016621218	0.053612729	0.056036858	570.893971	0.00425136	0.089736582	0.091529274	0.104199993	1.485072426	0.005397001
SACRAMENT	2021	LDT1	2001	65	DSL	2.61230833	2.016621218	0.053612729	0.056036858	570.893971	0.00425136	0.089736582	0.091529274	0.104199993	1.485072426	0.005397001
SACRAMENT	2021	LDT1	2002	65	DSL	3.31573031	2.016621218	0.053612729	0.056036858	570.893971	0.00425136	0.089736582	0.091529274	0.104199993	1.485072426	0.005397001
SACRAMENT	2021	LDT1	2003	65	DSL	3.53761282	2.016621218	0.053612729	0.056036858	570.893971	0.00425136	0.089736582	0.091529274	0.104199993	1.485072426	0.005397001
SACRAMENT	2021	LDT1	2005	65	DSL	0.29231059	2.016621218	0.053612729	0.056036858	547.0064464	0.00425136	0.085981796	0.091529274	0.104199993	1.485072426	0.005171178
SACRAMENT	2021	LDT1	2006	65	DSL	0.31427919	2.016621218	0.053612729	0.056036858	556.6516723	0.00425136	0.087497891	0.091529274	0.104199993	1.485072426	0.00526236
SACRAMENT	2021	LDT1	2007	65	DSL	3.34115177	2.016621218	0.053612729	0.056036858	536.25553	0.00425136	0.084291902	0.091529274	0.104199993	1.485072426	0.005069543
SACRAMENT	2021	LDT2	1993	65	DSL	0.24098401	2.016621218	0.053612729	0.056036858	444.5283849	0.00425136	0.069873672	0.091529274	0.104199993	1.485072426	0.004202392
SACRAMENT	2021	LDT2	1994	65	DSL	0.1283176	2.016621218	0.053612729	0.056036858	444.5283849	0.00425136	0.069873672	0.091529274	0.104199993	1.485072426	0.004202392
SACRAMENT	2021	LDT2	2001	65	DSL	0.37652025	2.016621218	0.053612729	0.056036858	444.5283849	0.00425136	0.069873672	0.091529274	0.104199993	1.485072426	0.004202392
SACRAMENT	2021	LDT2	2005	65	DSL	1.5674702	2.016621218	0.053612729	0.056036858	433.9927935	0.00425136	0.068217623	0.091529274	0.104199993	1.485072426	0.004102793
SACRAMENT	2021	LDT2	2006	65	DSL	1.15277962	2.016621218	0.053612729	0.056036858	425.6994471	0.00425136	0.066914025	0.091529274	0.104199993	1.485072426	0.004024391
SACRAMENT	2021	LDT2	2007	65	DSL	0.62867009	2.016621218	0.053612729	0.056036858	419.6456743	0.00425136	0.065962456	0.091529274	0.104199993	1.485072426	0.003967161
SACRAMENT	2021	MDV	1993	65	DSL	0.21726617	2.016621218	0.053612729	0.056036858	506.3575568	0.00425136	0.079592356	0.091529274	0.104199993	1.485072426	0.0047869
SACRAMENT	2021	MDV	1994	65	DSL	0.44499602	2.016621218	0.053612729	0.056036858	506.3575568	0.00425136	0.079592356	0.091529274	0.104199993	1.485072426	0.0047869
SACRAMENT	2021	MDV	1995	65	DSL	1.1717861	2.016621218	0.053612729	0.056036858	506.3575568	0.00425136	0.079592356	0.091529274	0.104199993	1.485072426	0.0047869
SACRAMENT	2021	MDV	1996	65	DSL	1.15505215	2.016621218	0.053612729	0.056036858	506.3575568	0.00425136	0.079592356	0.091529274	0.104199993	1.485072426	0.0047869
SACRAMENT	2021	MDV	1997	65	DSL	1.25844305	2.016621218	0.053612729	0.056036858	506.3575568	0.00425136	0.079592356	0.091529274	0.104199993	1.485072426	0.0047869
SACRAMENT	2021	MDV	1998	65	DSL	1.36261673	2.016621218	0.053612729	0.056036858	506.3575568	0.00425136	0.079592356	0.091529274	0.104199993	1.485072426	0.0047869
SACRAMENT	2021	MDV	1999	65	DSL	0.32660948	2.016621218	0.053612729	0.056036858	506.3575568	0.00425136	0.079592356	0.091529274	0.104199993	1.485072426	0.0047869
SACRAMENT	2021	MDV	2000	65	DSL	0.53019879	2.016621218	0.053612729	0.056036858	506.3575568	0.00425136	0.079592356	0.091529274	0.104199993	1.485072426	0.0047869
SACRAMENT	2021	MDV	2001	65	DSL	0.96152099	2.016621218	0.053612729	0.056036858	506.3575568	0.00425136	0.079592356	0.091529274	0.104199993	1.485072426	0.0047869
SACRAMENT	2021	MDV	2002	65	DSL	1.47944646	2.016621218	0.053612729	0.056036858	506.3575568	0.00425136	0.079592356	0.091529274	0.104199993	1.485072426	0.0047869
SACRAMENT	2021	MDV	2003	65	DSL	1.60224567	2.016621218	0.053612729	0.056036858	506.3575568	0.00425136	0.079592356	0.091529274	0.104199993	1.485072426	0.0047869
SACRAMENT	2021	MDV	2004	65	DSL	3.536441	2.016621218	0.053612729	0.056036858	581.0128376	0.00425136	0.091327127	0.091529274	0.104199993	1.485072426	0.005492661
SACRAMENT	2021	MDV	2005	65	DSL	7.16887532	2.016621218	0.053612729	0.056036858	567.2424822	0.00425136	0.089162619	0.091529274	0.104199993	1.485072426	0.005362481
SACRAMENT	2021	MDV	2006	65	DSL	10.1533867	2.016621218	0.053612729	0.056036858	556.4028127	0.00425136	0.087458774	0.091529274	0.104199993	1.485072426	0.005260008
SACRAMENT	2021	LDA	2010	15	DSL	39.7116111	0.089865308	0.008573004	0.008960637	414.6941997	0.004229538	0.065184153	0.09105946	0.103665141	1.80667302	0.003920352
SACRAMENT	2021	LDT2	2018	15	DSL	54.3686627	0.081142348	0.006115513	0.00639203	481.3585901	0.004226166	0.075662867	0.090986866	0.103582498	0.782858783	0.00455057
SACRAMENT	2021	LDT1	2018	15	DSL	0.22492908	0.081142338	0.006115513	0.00639203	647.8691797	0.004226162	0.101836013	0.090986789	0.10358241	0.78286111	0.006124694
SACRAMENT	2021	LDA	1993	30	DSL	6.38102846	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649
SACRAMENT	2021	LDA	1994	30	DSL	2.34388099	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649
SACRAMENT	2021	LDA	1995	30	DSL	8.86215319	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649
SACRAMENT	2021	LDA	1996	30	DSL	7.45817975	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649
SACRAMENT	2021	LDA	1997	30	DSL	12.1450112	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649
SACRAMENT	2021	LDA	1998	30	DSL	12.1157173	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649

SACRAMENT	2021	LDA	1999	30	DSL	28.9097395	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649
SACRAMENT	2021	LDA	2000	30	DSL	15.0744638	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649
SACRAMENT	2021	LDA	2001	30	DSL	31.8028989	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649
SACRAMENT	2021	LDA	2002	30	DSL	89.9790119	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649
SACRAMENT	2021	LDA	2003	30	DSL	121.976019	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649
SACRAMENT	2021	LDA	2004	30	DSL	35.3612011	1.52437498	0.053239299	0.055646543	291.7036663	0.004221748	0.045851754	0.090891743	0.103474206	0.898026557	0.002757649
SACRAMENT	2021	LDA	2005	30	DSL	101.05047	1.52437498	0.053239299	0.055646543	279.49811	0.004221748	0.043933211	0.090891743	0.103474206	0.898026557	0.002642262
SACRAMENT	2021	LDA	2006	30	DSL	97.5993883	1.52437498	0.053239299	0.055646543	284.4264293	0.004221748	0.044707874	0.090891743	0.103474206	0.898026557	0.002688853
SACRAMENT	2021	LDA	2007	30	DSL	32.6763361	1.52437498	0.053239299	0.055646543	274.0048277	0.004221748	0.043069743	0.090891743	0.103474206	0.898026557	0.002590331
SACRAMENT	2021	LDT1	1993	30	DSL	15.8767236	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	LDT1	1994	30	DSL	8.81739781	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	LDT1	1995	30	DSL	3.16854374	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	LDT1	1996	30	DSL	7.67620752	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	LDT1	1997	30	DSL	19.0155639	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	LDT1	1998	30	DSL	5.89804997	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	LDT1	1999	30	DSL	18.1557159	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	LDT1	2000	30	DSL	15.0073008	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	LDT1	2001	30	DSL	14.9930636	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	LDT1	2002	30	DSL	19.0302787	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	LDT1	2003	30	DSL	20.3037495	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	LDT1	2005	30	DSL	1.67768528	1.52437498	0.053239299	0.055646543	528.5504049	0.004221748	0.083080763	0.090891743	0.103474206	0.898026557	0.004996702
SACRAMENT	2021	LDT1	2006	30	DSL	1.80377172	1.52437498	0.053239299	0.055646543	537.8702001	0.004221748	0.084545705	0.090891743	0.103474206	0.898026557	0.005084808
SACRAMENT	2021	LDT1	2007	30	DSL	19.1761824	1.52437498	0.053239299	0.055646543	518.1622253	0.004221748	0.081447886	0.090891743	0.103474206	0.898026557	0.004898496
SACRAMENT	2021	LDT2	1993	30	DSL	1.38310186	1.52437498	0.053239299	0.055646543	429.5299615	0.004221748	0.067516128	0.090891743	0.103474206	0.898026557	0.004060603
SACRAMENT	2021	LDT2	1994	30	DSL	0.73646508	1.52437498	0.053239299	0.055646543	429.5299615	0.004221748	0.067516128	0.090891743	0.103474206	0.898026557	0.004060603
SACRAMENT	2021	LDT2	2001	30	DSL	2.1609976	1.52437498	0.053239299	0.055646543	429.5299615	0.004221748	0.067516128	0.090891743	0.103474206	0.898026557	0.004060603
SACRAMENT	2021	LDT2	2005	30	DSL	8.99632718	1.52437498	0.053239299	0.055646543	419.3498417	0.004221748	0.065915955	0.090891743	0.103474206	0.898026557	0.003964364
SACRAMENT	2021	LDT2	2006	30	DSL	6.61625506	1.52437498	0.053239299	0.055646543	411.3363135	0.004221748	0.06465634	0.090891743	0.103474206	0.898026557	0.003888607
SACRAMENT	2021	LDT2	2007	30	DSL	3.60818458	1.52437498	0.053239299	0.055646543	405.4867955	0.004221748	0.063736878	0.090891743	0.103474206	0.898026557	0.003833308
SACRAMENT	2021	MDV	1993	30	DSL	1.2469759	1.52437498	0.053239299	0.055646543	480.7518779	0.004221748	0.0755675	0.090891743	0.103474206	0.898026557	0.004544834
SACRAMENT	2021	MDV	1994	30	DSL	2.55400693	1.52437498	0.053239299	0.055646543	480.7518779	0.004221748	0.0755675	0.090891743	0.103474206	0.898026557	0.004544834
SACRAMENT	2021	MDV	1995	30	DSL	6.72534069	1.52437498	0.053239299	0.055646543	480.7518779	0.004221748	0.0755675	0.090891743	0.103474206	0.898026557	0.004544834
SACRAMENT	2021	MDV	1996	30	DSL	6.62929796	1.52437498	0.053239299	0.055646543	480.7518779	0.004221748	0.0755675	0.090891743	0.103474206	0.898026557	0.004544834
SACRAMENT	2021	MDV	1997	30	DSL	7.22269897	1.52437498	0.053239299	0.055646543	480.7518779	0.004221748	0.0755675	0.090891743	0.103474206	0.898026557	0.004544834
SACRAMENT	2021	MDV	1998	30	DSL	7.82059263	1.52437498	0.053239299	0.055646543	480.7518779	0.004221748	0.0755675	0.090891743	0.103474206	0.898026557	0.004544834
SACRAMENT	2021	MDV	1999	30	DSL	1.87454008	1.52437498	0.053239299	0.055646543	480.7518779	0.004221748	0.0755675	0.090891743	0.103474206	0.898026557	0.004544834
SACRAMENT	2021	MDV	2000	30	DSL	3.0430191	1.52437498	0.053239299	0.055646543	480.7518779	0.004221748	0.0755675	0.090891743	0.103474206	0.898026557	0.004544834
SACRAMENT	2021	MDV	2001	30	DSL	5.51854667	1.52437498	0.053239299	0.055646543	480.7518779	0.004221748	0.0755675	0.090891743	0.103474206	0.898026557	0.004544834
SACRAMENT	2021	MDV	2002	30	DSL	8.49112432	1.52437498	0.053239299	0.055646543	480.7518779	0.004221748	0.0755675	0.090891743	0.103474206	0.898026557	0.004544834
SACRAMENT	2021	MDV	2003	30	DSL	9.19591725	1.52437498	0.053239299	0.055646543	480.7518779	0.004221748	0.0755675	0.090891743	0.103474206	0.898026557	0.004544834
SACRAMENT	2021	MDV	2004	30	DSL	20.297024	1.52437498	0.053239299	0.055646543	551.6319625	0.004221748	0.086708863	0.090891743	0.103474206	0.898026557	0.005214906
SACRAMENT	2021	MDV	2005	30	DSL	41.1449913	1.52437498	0.053239299	0.055646543	538.5579515	0.004221748	0.08465381	0.090891743	0.103474206	0.898026557	0.005091309
SACRAMENT	2021	MDV	2006	30	DSL	58.2742744	1.52437498	0.053239299	0.055646543	528.2664266	0.004221748	0.083036126	0.090891743	0.103474206	0.898026557	0.004994017
SACRAMENT	2021	MH	2003	5	GAS	10.2969411	0.290289105	0.009963166	0.010835852	4205.526256	0.024437053	0.030297827	0.070896785	0.103452422	0.413887673	0.041617092
SACRAMENT	2021	LDT1	1999	45	GAS	2140.01421	0.325812455	0.00213959	0.002326999	340.3644445	0.016595218	0.024647264	0.070891379	0.103444533	3.566023818	0.003368182
SACRAMENT	2021	MH	2017	20	DSL	27.232524	3.681711944	0.018777323	0.01962635	1213.110564	0.004216311	0.190684087	0.090774694	0.103340954	0.256281647	0.011468257
SACRAMENT	2021	MH	2006	40	DSL	48.6426455	4.920225763	0.200576478	0.209645656	984.5272984	0.004213558	0.154753981	0.090715413	0.103273467	0.431442394	0.009307324
SACRAMENT	2021	MDV	2012	15	DSL	67.3056164	0.089441198	0.008473265	0.008856388	735.707119	0.004189836	0.115642914	0.090204693	0.102692046	1.783460504	0.006955078
SACRAMENT	2021	LHD1	2007	40	DSL	578.39605	3.09616671	0.025213664	0.026353714	482.7745805	0.004174484	0.075885441	0.089874186	0.102315785	0.586430232	0.004563956
SACRAMENT	2021	LHD2	2007	40	DSL	228.637554	3.095572974	0.025211962	0.026351935	542.7445231	0.004173971	0.085311881	0.089863147	0.102303218	0.586353224	0.005130888
SACRAMENT	2021	LHD2	2021	20	DSL	1625.16139	0.068054025	0.006898006	0.007209903	580.8911207	0.004152524	0.091307995	0.089401407	0.101777558	0.200359754	0.00549151
SACRAMENT	2021	LHD1	2021	20	DSL	4338.18815	0.06812413	0.003683194	0.003849732	510.7501712	0.004152524	0.080282814	0.089401407	0.101777558	0.200359754	0.004828426
SACRAMENT	2021	LDT2	2019	15	DSL	55.9751257	0.079936127	0.005725486	0.005984367	459.422962	0.004137447	0.072214892	0.089076796	0.101408011	0.713031221	0.004343199
SACRAMENT	2021	LDT1	2019	15	DSL	0.23418577	0.07993613	0.005725486	0.005984367	627.3286066	0.004137445	0.098607321	0.089076754	0.101407963	0.713033285	0.005930511
SACRAMENT	2021	LDA	2011	15	DSL	70.6796357	0.088729451	0.008305898	0.008681454	429.0874299	0.0041232	0.067446569	0.088770294	0.101059078	1.744506224	0.004056419
SACRAMENT	2021	LHD1	2008	40	DSL	647.277682	3.089454512	0.024731955	0.025850225	482.7745805	0.00409793	0.075885441	0.08822601	0.100439446	0.573417163	0.004563956
SACRAMENT	2021	LHD2	2008	40	DSL	270.919245	3.088447125	0.024729039	0.025847176	542.7445231	0.004097079	0.085311881	0.088207691	0.100418592	0.573288577	0.005130888
SACRAMENT	2021	MDV	2002	60	GAS	15144.5948	0.444398173	0.002255694	0.002453273	530.6250566	0.015490242	0.029342547	0.068621858	0.100132854	2.617110197	0.005250965
SACRAMENT	2021	LDT1	1999	55	GAS	3904.10231	0.328243825	0.002091899	0.002275131	364.5269836	0.016050242	0.024831194	0.068563352	0.100047483	3.137256182	0.00360729
SACRAMENT	2021	LDT1	2001	20	GAS	1440.51218	0.229079684	0.005685611	0.006183621	538.4371844	0.017542033	0.020205282	0.068511869	0.099972358	3.218165115	0.005328272
SACRAMENT	2021	MH	2018	20	DSL	29.9375719	3.650034389	0.018212146	0.019035619	1213.110564	0.004078219	0.190684087	0.087801644	0.099956334	0.247902546	0.011468257
SACRAMENT	2021	LDA	2001	20	GAS	8359.22858	0.228986481	0.005685611	0.006183621	450.6735898	0.017385761	0.020093935	0.068175868	0.099482067	3.215083968	0.004459781
SACRAMENT	2021	MDV	2013	15	DSL	23.6884152	0.088035313	0.008142658	0.008510833	711.2374392	0.004058231	0.111796621	0.087371332	0.099466453	1.706514343	0.006723752
SACRAMENT	2021	LDT1	1999	50	GAS	2145.30755	0.323821981	0.002061005	0.002241531	350.6314439	0.015952407	0.024496687	0.068145423	0.099437641	3.34586869	0.003469782
SACRAMENT	2021	MDV	2001	45	GAS	7923.93705	0.450697353	0.002135899	0.002322985	479.364582	0.015265237	0.029384996	0.068075642	0.099335818	3.264512174	0.004743701
SACRAMENT	2021	LDT1	2020	15	DSL	0.2395266	0.078680886	0.005319598	0.005560127	606.7880335	0.004045121	0.095378629	0.08708907	0.099145116	0.640365716	0.005736329
SACRAMENT	2021	LDT2	2020	15	DSL	57.3242057	0.078680859	0.005319598	0.005560127	437.4873338	0.00404512	0.068766917	0.087089055	0.099145099	0.640364269	0.004135829
SACRAMENT	2021	MDV	2003	70	GAS	647.272545	0.403465113	0.002776819	0.003020044	545.7879295	0.01555469	0.028213485	0.06753913	0.09855294	2.340986078	0.005401014
SACRAMENT	2021	LHD1	2009	40	DSL	165.495543	3.081111291	0.024202769	0.025297111	482.7745805	0.004013467	0.075885441	0.086407581	0.098369286	0.559074671	0.004563956
SACRAMENT	2021	LHD2	2009	40	DSL	84.0490052	3.081111291	0.024202769	0.025297111	542.7445231	0.004013467	0.085311881	0.086407581	0.098369286	0.559074671	0.005130888
SACRAMENT	2021	LDA	2012	15	DSL	87.4534471	0.087525701	0.008022826	0.008385583	392.5381083	0.004010528	0.061701524	0.086344297	0.098297241	1.678623511	0.003710897
SACRAMENT	2021	MH	2003	45	DSL	33.2375987	5.02166241	0.222251969	0.232301217	950.2782899	0.004009185	0.149370514	0.086315403	0.098264348	0.476420137	0.008983547
SACRAMENT	2021	LHD1	2004	5	GAS	666.780432	0.409861396	0.000664211	0.00072239	1989.351394	0.017994809	0.026572427	0.067222929	0.098091541	0.445091701	0.019686245
SACRAMENT	2021	LHD2	2004	5	GAS	73.1576545	0.409861396	0.000664211	0.00072239	2278.608223	0.017980684	0.02653306	0.067222929	0.098091541	0.445091701	0.022548676
SACRAMENT	2021	MDV	2001	55	GAS	14455.9138	0.443514592	0.002099645	0.002283556	513.9181869	0.015065255	0.028916688	0.067183821	0.098034474	2.84658064	0.005085637
SACRAMENT	2021	MDV	2003	35	GAS	24958.6682	0.39832527	0.002691255	0.002926985	494.8791516	0.01544813	0.027854066	0.067076444	0.097877789	3.819254753	0.00489723
SACRAMENT	2021	LDT2	2001	25	GAS	13496.0154	0.418339993	0.004200191	0.004568091	537.5030458	0.016520401	0.029914029	0.067037275	0.097820634	3.809349317	0.005319028
SACRAMENT	2021	LDT1	2021	15	DSL	0.21243903	0.077376613	0.00489785	0.005119309	586.2474605	0.00394919	0.092149937	0.085023743	0.096793878	0.564858283	0.005542147
SACRAMENT	2021	LDT2	2021	15	DSL	49.4048202	0.077376543	0.00489785	0.005119309	415.5517057	0.003949186	0.065318941	0.08502364	0.096793761	0.564857949	0.003928458
SACRAMENT	2021	MH	2019	20	DSL	32.6367013	3.617883934	0.01763853	0.018436067	1213.110564	0.003938064	0.190684087	0.084784201	0.096521176	0.239398327	0.011468257
SACRAMENT	2021	MH	2007	30	DSL	41.5094411	4.167707856	0.098304398	0.102749286	1105.879472	0.003936943	0.173828853	0.084760071	0.096493706	0.292837487	0.010454538
SACRAMENT	2021	MDV	2001	50	GAS	7943.53695	0.443637563	0.002061797	0.002242392	494.0817026	0.01478929	0.028924705	0.065953146	0.096238676	3.052705772	0.004889339
SACRAMENT	2021	MH	2019	5	GAS	13.8541411	0.159850073	0.007173479	0.007801813	3831.452937	0.023164076	0.020051113	0.065890183	0.0961468	0.299205635	0.037915333
SACRAMENT	2021	MDV	2014	15	DSL	74.6825237	0.086544228	0.007792016	0.008144337	706.5896599	0.003918652	0.111066055	0.084366262	0.09604538	1.62490499	0.006679813
SACRAMENT	2021	MDV	2005	10	GAS	690.807818	0.121649568	0.000815468	0.000886896	1030.305652	0.019147723	0.014510748	0.065649697	0.095795884	1.899650251	0.01019571
SACRAMENT	2021	LHD1	2007	45	DSL	624.279559	3.208965074	0.023872794	0.024952216	470.9086159	0.003902624	0.074020277	0.084021192	0.09565254	0.580380881	0.00445178
SACRAMENT	2021	LHD2	2007	45	DSL	246.775114	3.208345109	0.023871117	0.024950463	521.7107967	0.003902115	0.082005672	0.084010237	0.095640069	0.580298662	0.004932043
SACRAMENT	2021	LDT1	2002	20	GAS	1715.90254	0.222564182	0.005685611	0.006183621	538.2632848	0.016873276	0.019881271	0.065426481	0.095470167	3.116848648	0.005326552
SACRAMENT	2021	MDV	2002	45	GAS	10753.3342	0.438565617	0.002135899	0.002322985	479.3360657	0.014764805	0.028957437	0.065408169	0.095443446	3.253778688	0.004743419
SACRAMENT	2021	LDT2	2003	25	GAS	17492.2159	0.416132133	0.004200191	0.004568091	537.4242493	0.016240194	0.030011055	0.065366292	0.09538234	3.764183891	0.005318249
SACRAMENT	2021	LDA	2013	15	DSL	135.102065	0.086254058	0.007723789	0.008073024	381.813534	0.003891489	0.06001577	0.083781468	0.095379632	1.60902488	0.003609511
SACRAMENT	2021	MH	2004	45	DSL	45.4624533	4.649193853	0.227382651	0.237663886	949.6228231	0.003890294	0.149267484	0.083755735	0.095350335	0.457214284	0.008977351
SACRAMENT	2021	LHD1	2007	55	DSL	1451.6498	3.461718525	0.023720404	0.024792936	515.8830343	0.003890087	0.081089629	0.083751284	0.095345268	0.665667341	0.00487695
SACRAMENT	2021	LHD2	2007	55	DSL	573.831132	3.461042738	0.023718379	0.024790819	559.8847575	0.003889513	0.088006087	0.083738914	0.095331187	0.665559252	0.005292924
SACRAMENT	2021	LHD1	2005	5	GAS	394.455604	0.397354008	0.000664211	0.00072239	1989.343452	0.017559636	0.026135682	0.065239516	0.095197348	0.445477295	0.019686166
SACRAMENT	2021	LHD2	2005	5	GAS	99.620294	0.397354008	0.000664211	0.00072239	2278.600282	0.017541631	0.026085383	0.065239516	0.095197348	0.445477295	0.022548597
SACRAMENT	2021	LDA	2002	20	GAS	9750.08948	0.22250916	0.005685611	0.006183621	450.5002897	0.016738476	0.019796816	0.065106654	0.095003476	3.114101688	0.004458066
SACRAMENT	2021	MH	2008	30	DSL	36.7748301	4.145929668	0.096879268	0.101259719	1105.879472	0.003843463	0.173828853	0.082747495	0.094202521	0.285829883	0.010454538
SACRAMENT	2021	MDV	2002	55	GAS	19617.6814	0.4315762	0.002099645	0.002283556	513.8919994	0.014571379	0.028495943	0.064551292	0.094193094	2.837221283	0.005085378
SACRAMENT	2021	LHD1	1996	10	GAS	429.225688	0.562587716	0.0062688	0.006817892	1615.383788	0.015556658	0.036071541	0.064462021	0.094062829	0.629308618	0.015985532
SACRAMENT	2021	LHD2	1996	10	GAS	66.7284677	0.562587716	0.0062688	0.006817892	1850.196795	0.01557688	0.036132658	0.064462021	0.094062829	0.629308618	0.018309197
SACRAMENT	2021	LHD1	2008	45	DSL	698.625494	3.202219573	0.023420143	0.024479098	470.9086159	0.003830408	0.074020277	0.082466419	0.093882535	0.567674254	0.00445178
SACRAMENT	2021	LHD1	1997	10	GAS	572.523078	0.562505831	0.0062688	0.006817892	1615.380385	0.015567645	0.036197222	0.064327058	0.093865892	0.627528986	0.015985498
SACRAMENT	2021	LHD2	1997	10	GAS	69.5430743	0.562505831	0.0062688	0.006817892	1850.193392	0.015583533	0.036244971	0.064327058	0.093865892	0.627528986	0.018309163
SACRAMENT	2021	LHD2	2008	45	DSL	292.410965	3.201167761	0.023417271	0.024476096	521.7107967	0.003829563	0.082005672	0.082448231	0.09386183	0.567537059	0.004932043
SACRAMENT	2021	LHD1	2006	5	GAS	1215.80262	0.383576589	0.000664211	0.00072239	1989.337776	0.017405076	0.02562965	0.064298919	0.093824831	0.444455552	0.01968611
SACRAMENT	2021	LHD2	2006	5	GAS	87.8252362	0.383576589	0.000664211	0.00072239	2278.594606	0.017383172	0.025569179	0.064298919	0.093824831	0.444455552	0.022548541
SACRAMENT	2021	LHD1	1999	10	GAS	1034.32827	0.560847116	0.0062688	0.006817892	1615.372166	0.015656898	0.036383816	0.064248762	0.093751642	0.622557027	0.015985417

SACRAMENT	2021	LHD2	1999	10	GAS	127.482468	0.560847116	0.0062688	0.006817892	1850.185173	0.015664326	0.036405786	0.064248762	0.093751642	0.622557027	0.018309082
SACRAMENT	2021	LHD1	1998	10	GAS	516.416532	0.56208355	0.0062688	0.006817892	1615.376551	0.015598713	0.036306155	0.06423461	0.093730993	0.625361521	0.01598546
SACRAMENT	2021	LHD2	1998	10	GAS	61.0638808	0.56208355	0.0062688	0.006817892	1850.189558	0.015610337	0.036340861	0.06423461	0.093730993	0.625361521	0.018309126
SACRAMENT	2021	LHD1	2008	55	DSL	1624.5279	3.454762877	0.023289175	0.024342208	515.8830343	0.003816626	0.081089629	0.082169713	0.093544755	0.651488906	0.00487695
SACRAMENT	2021	LHD2	2008	55	DSL	679.949092	3.453616474	0.023285727	0.024338604	559.8847575	0.003815671	0.088006087	0.08214916	0.093521357	0.651308737	0.005292924
SACRAMENT	2021	LHD1	2007	50	DSL	2410.54119	3.324731315	0.023383177	0.024440461	493.6847405	0.003811079	0.077600366	0.082050277	0.093408785	0.605204772	0.004667096
SACRAMENT	2021	LHD2	2007	50	DSL	952.87691	3.324085259	0.023381394	0.024438597	540.9262835	0.00381055	0.085026079	0.082038894	0.093395826	0.605112688	0.005113699
SACRAMENT	2021	LHD1	2000	10	GAS	1279.76348	0.558400982	0.0062688	0.006817892	1615.365336	0.015653204	0.03641662	0.063993913	0.093379767	0.61894129	0.01598535
SACRAMENT	2021	LHD2	2000	10	GAS	147.616281	0.558400982	0.0062688	0.006817892	1850.178343	0.015656466	0.036426188	0.063993913	0.093379767	0.61894129	0.018309015
SACRAMENT	2021	LDT2	2002	25	GAS	14570.7584	0.406559922	0.004200191	0.004568091	537.3013056	0.015875599	0.02944024	0.063941779	0.093303695	3.690496139	0.005317032
SACRAMENT	2021	MH	2005	45	DSL	42.8054401	4.629388238	0.224498458	0.234649282	949.6228231	0.003804964	0.149267484	0.081918645	0.093258931	0.447187453	0.008977351
SACRAMENT	2021	MDV	2003	65	GAS	2446.49852	0.386136858	0.002556523	0.002780452	550.7083057	0.014717739	0.027001756	0.063905051	0.0932501	2.509752293	0.005449705
SACRAMENT	2021	MH	2020	20	DSL	34.3566559	3.585260599	0.017056476	0.017827694	1213.110564	0.003795848	0.190684087	0.081722366	0.093035481	0.23076899	0.011468257
SACRAMENT	2021	LHD1	2001	10	GAS	1740.42629	0.554355736	0.0062688	0.006817892	1615.356582	0.0156344	0.036380433	0.063664461	0.092899032	0.614314649	0.015985263
SACRAMENT	2021	LHD2	2001	10	GAS	237.098881	0.554355736	0.0062688	0.006817892	1850.169589	0.01563357	0.036378023	0.063664461	0.092899032	0.614314649	0.018308928
SACRAMENT	2021	LHD1	2007	5	GAS	498.933045	0.380030087	0.000664211	0.00072239	1989.33118	0.017306431	0.025743579	0.063548355	0.092729611	0.442336516	0.019686045
SACRAMENT	2021	LHD2	2007	5	GAS	75.1302422	0.380030087	0.000664211	0.00072239	2278.58801	0.017280717	0.025672568	0.063548355	0.092729611	0.442336516	0.022548476
SACRAMENT	2021	MDV	2002	50	GAS	10779.9326	0.431695861	0.002061797	0.002242392	494.0546488	0.014304461	0.028503843	0.06336884	0.092467663	3.04266869	0.004889071
SACRAMENT	2021	MDV	2015	15	DSL	160.014561	0.084967941	0.007421339	0.007756899	690.1122847	0.003771096	0.108476041	0.081189482	0.092428827	1.538632451	0.006524043
SACRAMENT	2021	LDA	2014	15	DSL	167.378733	0.084914522	0.007408785	0.007743777	382.2741063	0.003766095	0.060088166	0.081081811	0.092306251	1.535710323	0.003613865
SACRAMENT	2021	LHD1	2002	10	GAS	1672.56522	0.436581255	0.0062688	0.006817892	1615.170152	0.015894006	0.030689576	0.063232519	0.092268743	0.497874139	0.015983418
SACRAMENT	2021	LHD2	2002	10	GAS	156.769857	0.436581255	0.0062688	0.006817892	1849.983159	0.015889221	0.030677461	0.063232519	0.092268743	0.497874139	0.018307083
SACRAMENT	2021	LHD1	2009	45	DSL	178.624119	3.193795485	0.022922748	0.023959213	470.9086159	0.00375069	0.074020277	0.080750145	0.091928672	0.553658141	0.00445178
SACRAMENT	2021	LHD2	2009	45	DSL	90.7165185	3.193795485	0.022922748	0.023959213	521.7107967	0.00375069	0.082005672	0.080750145	0.091928672	0.553658141	0.004932043
SACRAMENT	2021	MH	2009	30	DSL	4.17051225	4.123769202	0.095429124	0.099744006	1105.879472	0.003748342	0.173828853	0.080699594	0.091871122	0.27869927	0.010454538
SACRAMENT	2021	LHD1	2008	50	DSL	2697.6144	3.317913581	0.022947067	0.023984632	493.6847405	0.003739858	0.077600366	0.080516951	0.091663195	0.592136704	0.004667096
SACRAMENT	2021	LHD2	2008	50	DSL	1129.09139	3.316817567	0.022944021	0.023981448	540.9262835	0.00373898	0.085026079	0.080498044	0.091641671	0.591983138	0.005113699
SACRAMENT	2021	LHD1	2009	55	DSL	415.358253	3.446014454	0.022814619	0.023846195	515.8830343	0.00373544	0.081089629	0.080421829	0.091554905	0.635822847	0.00487695
SACRAMENT	2021	LHD2	2009	55	DSL	210.944943	3.446014454	0.022814619	0.023846195	559.8847575	0.00373544	0.088006087	0.080421829	0.091554905	0.635822847	0.005292924
SACRAMENT	2021	LHD1	2003	10	GAS	2256.23646	0.42794597	0.0062688	0.006817892	1615.098964	0.015821462	0.030376992	0.062670332	0.091448401	0.454491913	0.015982714
SACRAMENT	2021	LHD2	2003	10	GAS	238.515178	0.42794597	0.0062688	0.006817892	1849.91197	0.015812814	0.03035539	0.062670332	0.091448401	0.454491913	0.018306379
SACRAMENT	2021	MH	2006	45	DSL	39.8318768	4.609215652	0.221560824	0.231578822	949.6228231	0.003718054	0.149267484	0.080047517	0.091128776	0.436974835	0.008977351
SACRAMENT	2021	LDA	1993	60	DSL	7.58393403	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	1994	60	DSL	2.78573257	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	1995	60	DSL	10.5327825	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	1996	60	DSL	8.86414214	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	1997	60	DSL	14.4345014	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	1998	60	DSL	14.3996852	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	1999	60	DSL	34.3595956	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	2000	60	DSL	17.9161933	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	2001	60	DSL	37.7981526	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	2002	60	DSL	106.941208	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	2003	60	DSL	144.97006	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	2004	60	DSL	42.0272403	1.947905784	0.046739257	0.048852598	271.0836401	0.00370631	0.042610573	0.079794674	0.090840932	1.183356339	0.002562715
SACRAMENT	2021	LDA	2005	60	DSL	120.099777	1.947905784	0.046739257	0.048852598	259.7408734	0.00370631	0.040827648	0.079794674	0.090840932	1.183356339	0.002455485
SACRAMENT	2021	LDA	2006	60	DSL	115.998123	1.947905784	0.046739257	0.048852598	264.3208183	0.00370631	0.041547552	0.079794674	0.090840932	1.183356339	0.002498782
SACRAMENT	2021	LDA	2007	60	DSL	38.8362439	1.947905784	0.046739257	0.048852598	254.6359017	0.00370631	0.040025218	0.079794674	0.090840932	1.183356339	0.002407225
SACRAMENT	2021	LDT1	1993	60	DSL	18.8696893	1.947905784	0.046739257	0.048852598	508.2632139	0.00370631	0.079891899	0.079794674	0.090840932	1.183356339	0.004804915
SACRAMENT	2021	LDT1	1994	60	DSL	10.4795902	1.947905784	0.046739257	0.048852598	508.2632139	0.00370631	0.079891899	0.079794674	0.090840932	1.183356339	0.004804915
SACRAMENT	2021	LDT1	1995	60	DSL	3.76585481	1.947905784	0.046739257	0.048852598	508.2632139	0.00370631	0.079891899	0.079794674	0.090840932	1.183356339	0.004804915
SACRAMENT	2021	LDT1	1996	60	DSL	9.12327093	1.947905784	0.046739257	0.048852598	508.2632139	0.00370631	0.079891899	0.079794674	0.090840932	1.183356339	0.004804915
SACRAMENT	2021	LDT1	1997	60	DSL	22.6002412	1.947905784	0.046739257	0.048852598	508.2632139	0.00370631	0.079891899	0.079794674	0.090840932	1.183356339	0.004804915
SACRAMENT	2021	LDT1	1998	60	DSL	7.00990792	1.947905784	0.046739257	0.048852598	508.2632139	0.00370631	0.079891899	0.079794674	0.090840932	1.183356339	0.004804915
SACRAMENT	2021	LDT1	1999	60	DSL	21.5783008	1.947905784	0.046739257	0.048852598	508.2632139	0.00370631	0.079891899	0.079794674	0.090840932	1.183356339	0.004804915
SACRAMENT	2021	LDT1	2000	60	DSL	17.8363692	1.947905784	0.046739257	0.048852598	508.2632139	0.00370631	0.079891899	0.079794674	0.090840932	1.183356339	0.004804915
SACRAMENT	2021	LDT1	2001	60	DSL	17.8194481	1.947905784	0.046739257	0.048852598	508.2632139	0.00370631	0.079891899	0.079794674	0.090840932	1.183356339	0.004804915
SACRAMENT	2021	LDT1	2002	60	DSL	22.6177299	1.947905784	0.046739257	0.048852598	508.2632139	0.00370631	0.079891899	0.079794674	0.090840932	1.183356339	0.004804915
SACRAMENT	2021	LDT1	2003	60	DSL	24.1312663	1.947905784	0.046739257	0.048852598	508.2632139	0.00370631	0.079891899	0.079794674	0.090840932	1.183356339	0.004804915
SACRAMENT	2021	LDT1	2005	60	DSL	1.99395043	1.947905784	0.046739257	0.048852598	486.9963052	0.00370631	0.076549037	0.079794674	0.090840932	1.183356339	0.004603866
SACRAMENT	2021	LDT1	2006	60	DSL	2.14380578	1.947905784	0.046739257	0.048852598	495.5833874	0.00370631	0.077898807	0.079794674	0.090840932	1.183356339	0.004685045
SACRAMENT	2021	LDT1	2007	60	DSL	22.7911383	1.947905784	0.046739257	0.048852598	477.4248337	0.00370631	0.075044535	0.079794674	0.090840932	1.183356339	0.004513382
SACRAMENT	2021	LDT2	1993	60	DSL	1.64383427	1.947905784	0.046739257	0.048852598	395.7607491	0.00370631	0.062208078	0.079794674	0.090840932	1.183356339	0.003741362
SACRAMENT	2021	LDT2	1994	60	DSL	0.87529818	1.947905784	0.046739257	0.048852598	395.7607491	0.00370631	0.062208078	0.079794674	0.090840932	1.183356339	0.003741362
SACRAMENT	2021	LDT2	2001	60	DSL	2.56837332	1.947905784	0.046739257	0.048852598	395.7607491	0.00370631	0.062208078	0.079794674	0.090840932	1.183356339	0.003741362
SACRAMENT	2021	LDT2	2005	60	DSL	10.6922501	1.947905784	0.046739257	0.048852598	386.3809801	0.00370631	0.060733709	0.079794674	0.090840932	1.183356339	0.00365269
SACRAMENT	2021	LDT2	2006	60	DSL	7.86350386	1.947905784	0.046739257	0.048852598	378.9974674	0.00370631	0.059573124	0.079794674	0.090840932	1.183356339	0.003582889
SACRAMENT	2021	LDT2	2007	60	DSL	4.28837358	1.947905784	0.046739257	0.048852598	373.6078326	0.00370631	0.058725948	0.079794674	0.090840932	1.183356339	0.003531938
SACRAMENT	2021	MDV	1993	60	DSL	1.48204682	1.947905784	0.046739257	0.048852598	450.9534852	0.00370631	0.070883608	0.079794674	0.090840932	1.183356339	0.004263132
SACRAMENT	2021	MDV	1994	60	DSL	3.03546994	1.947905784	0.046739257	0.048852598	450.9534852	0.00370631	0.070883608	0.079794674	0.090840932	1.183356339	0.004263132
SACRAMENT	2021	MDV	1995	60	DSL	7.99315353	1.947905784	0.046739257	0.048852598	450.9534852	0.00370631	0.070883608	0.079794674	0.090840932	1.183356339	0.004263132
SACRAMENT	2021	MDV	1996	60	DSL	7.87900551	1.947905784	0.046739257	0.048852598	450.9534852	0.00370631	0.070883608	0.079794674	0.090840932	1.183356339	0.004263132
SACRAMENT	2021	MDV	1997	60	DSL	8.58427021	1.947905784	0.046739257	0.048852598	450.9534852	0.00370631	0.070883608	0.079794674	0.090840932	1.183356339	0.004263132
SACRAMENT	2021	MDV	1998	60	DSL	9.29487448	1.947905784	0.046739257	0.048852598	450.9534852	0.00370631	0.070883608	0.079794674	0.090840932	1.183356339	0.004263132
SACRAMENT	2021	MDV	1999	60	DSL	2.22791489	1.947905784	0.046739257	0.048852598	450.9534852	0.00370631	0.070883608	0.079794674	0.090840932	1.183356339	0.004263132
SACRAMENT	2021	MDV	2000	60	DSL	3.61666716	1.947905784	0.046739257	0.048852598	450.9534852	0.00370631	0.070883608	0.079794674	0.090840932	1.183356339	0.004263132
SACRAMENT	2021	MDV	2001	60	DSL	6.55886338	1.947905784	0.046739257	0.048852598	450.9534852	0.00370631	0.070883608	0.079794674	0.090840932	1.183356339	0.004263132
SACRAMENT	2021	MDV	2002	60	DSL	10.09181	1.947905784	0.046739257	0.048852598	450.9534852	0.00370631	0.070883608	0.079794674	0.090840932	1.183356339	0.004263132
SACRAMENT	2021	MDV	2003	60	DSL	10.9294654	1.947905784	0.046739257	0.048852598	450.9534852	0.00370631	0.070883608	0.079794674	0.090840932	1.183356339	0.004263132
SACRAMENT	2021	MDV	2004	60	DSL	24.1232729	1.947905784	0.046739257	0.048852598	517.440217	0.00370631	0.081334396	0.079794674	0.090840932	1.183356339	0.004891671
SACRAMENT	2021	MDV	2005	60	DSL	48.9013491	1.947905784	0.046739257	0.048852598	505.1765711	0.00370631	0.079406722	0.079794674	0.090840932	1.183356339	0.004775735
SACRAMENT	2021	MDV	2006	60	DSL	69.2597213	1.947905784	0.046739257	0.048852598	495.5229446	0.00370631	0.077889306	0.079794674	0.090840932	1.183356339	0.004684474
SACRAMENT	2021	LDA	1993	35	DSL	11.3423014	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	1994	35	DSL	4.16625704	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	1995	35	DSL	15.7525097	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	1996	35	DSL	13.2569418	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	1997	35	DSL	21.5878019	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	1998	35	DSL	21.5357319	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	1999	35	DSL	51.3871677	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	2000	35	DSL	26.7949147	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	2001	35	DSL	56.5297692	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	2002	35	DSL	159.938023	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	2003	35	DSL	216.81282	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	2004	35	DSL	62.8546644	1.592990733	0.046506611	0.048609433	263.6942385	0.003687862	0.041449062	0.079397494	0.090388768	0.826177737	0.002492859
SACRAMENT	2021	LDA	2005	35	DSL	179.61758	1.592990733	0.046506611	0.048609433	252.6606615	0.003687862	0.039714737	0.079397494	0.090388768	0.826177737	0.002388552
SACRAMENT	2021	LDA	2006	35	DSL	173.48327	1.592990733	0.046506611	0.048609433	257.1157628	0.003687862	0.040415017	0.079397494	0.090388768	0.826177737	0.002430669
SACRAMENT	2021	LDA	2007	35	DSL	58.082307	1.592990733	0.046506611	0.048609433	247.6948449	0.003687862	0.03893418	0.079397494	0.090388768	0.826177737	0.002341607
SACRAMENT	2021	LDT1	1993	35	DSL	28.2209343	1.592990733	0.046506611	0.048609433	497.8690469	0.003687862	0.078258081	0.079397494	0.090388768	0.826177737	0.004706653
SACRAMENT	2021	LDT1	1994	35	DSL	15.6729569	1.592990733	0.046506611	0.048609433	497.8690469	0.003687862	0.078258081	0.079397494	0.090388768	0.826177737	0.004706653
SACRAMENT	2021	LDT1	1996	35	DSL	13.644487	1.592990733	0.046506611	0.048609433	497.8690469	0.003687862	0.078258081	0.079397494	0.090388768	0.826177737	0.004706653
SACRAMENT	2021	LDT1	1997	35	DSL	33.8002345	1.592990733	0.046506611	0.048609433	497.8690469	0.003687862	0.078258081	0.079397494	0.090388768	0.826177737	0.004706653
SACRAMENT	2021	LDT1	1998	35	DSL	10.4838054	1.592990733	0.046506611	0.048609433	497.8690469	0.003687862	0.078258081	0.079397494	0.090388768	0.826177737	0.004706653
SACRAMENT	2021	LDT1	1999	35	DSL	32.2718514	1.592990733	0.046506611	0.048609433	497.8690469	0.003687862	0.078258081	0.079397494	0.090388768	0.826177737	0.004706653
SACRAMENT	2021	LDT1	2000	35	DSL	26.6755321	1.592990733	0.046506611	0.048609433	497.8690469	0.003687862	0.078258081	0.079397494	0.090388768	0.826177737	0.004706653
SACRAMENT	2021	LDT1	2001	35	DSL	26.6502254	1.592990733	0.046506611	0.048609433	497.8690469	0.003687862	0.078258081	0.079397494	0.090388768	0.826177737	0.004706653
SACRAMENT	2021	LDT1	2002	35	DSL	33.82639	1.592990733	0.046506611	0.048609433	497.8690469	0.003687862	0.078258081	0.079397494	0.090388768	0.826177737	0.004706653
SACRAMENT	2021	LDT1	2003	35	DSL	36.0899891	1.592990733	0.046506611	0.048609433	497.8690469	0.003687862	0.078258081	0.079397494	0.090388768	0.826177737	0.004706653
SACRAMENT	2021	LDT1	2005	35	DSL	2.98209172	1.592990733	0.046506611	0.048609433	477.0370541	0.003687862	0.074983582	0.079397494	0.090388768	0.826177737	0.004509716
SACRAMENT	2021	LDT1	2007	35	DSL	34.0857344	1.592990733	0.046506611	0.048609433	467.6613227	0.003687862	0.073509847	0.079397494	0.090388768	0.826177737	0.004421081

SACRAMENT	2021	LDT2	1994	35	DSL	1.30906938	1.592990733	0.046506611	0.048609433	387.6672983	0.003687862	0.060935901	0.079397494	0.090388768	0.826177737	0.00366485
SACRAMENT	2021	LDT2	2001	35	DSL	3.84118114	1.592990733	0.046506611	0.048609433	387.6672983	0.003687862	0.060935901	0.079397494	0.090388768	0.826177737	0.00366485
SACRAMENT	2021	LDT2	2005	35	DSL	15.9910045	1.592990733	0.046506611	0.048609433	378.479349	0.003687862	0.059491683	0.079397494	0.090388768	0.826177737	0.003577991
SACRAMENT	2021	LDT2	2006	35	DSL	11.7604176	1.592990733	0.046506611	0.048609433	371.2468317	0.003687862	0.058354832	0.079397494	0.090388768	0.826177737	0.003509618
SACRAMENT	2021	LDT2	2007	35	DSL	6.4135613	1.592990733	0.046506611	0.048609433	365.9674169	0.003687862	0.057524982	0.079397494	0.090388768	0.826177737	0.003459708
SACRAMENT	2021	MDV	1993	35	DSL	2.21650422	1.592990733	0.046506611	0.048609433	436.2158483	0.003687862	0.068567057	0.079397494	0.090388768	0.826177737	0.004123808
SACRAMENT	2021	MDV	1994	35	DSL	4.53975666	1.592990733	0.046506611	0.048609433	436.2158483	0.003687862	0.068567057	0.079397494	0.090388768	0.826177737	0.004123808
SACRAMENT	2021	MDV	1995	35	DSL	11.9543177	1.592990733	0.046506611	0.048609433	436.2158483	0.003687862	0.068567057	0.079397494	0.090388768	0.826177737	0.004123808
SACRAMENT	2021	MDV	1996	35	DSL	11.7836014	1.592990733	0.046506611	0.048609433	436.2158483	0.003687862	0.068567057	0.079397494	0.090388768	0.826177737	0.004123808
SACRAMENT	2021	MDV	1997	35	DSL	12.8383738	1.592990733	0.046506611	0.048609433	436.2158483	0.003687862	0.068567057	0.079397494	0.090388768	0.826177737	0.004123808
SACRAMENT	2021	MDV	1998	35	DSL	13.901132	1.592990733	0.046506611	0.048609433	436.2158483	0.003687862	0.068567057	0.079397494	0.090388768	0.826177737	0.004123808
SACRAMENT	2021	MDV	1999	35	DSL	3.33200185	1.592990733	0.046506611	0.048609433	436.2158483	0.003687862	0.068567057	0.079397494	0.090388768	0.826177737	0.004123808
SACRAMENT	2021	MDV	2000	35	DSL	5.40897758	1.592990733	0.046506611	0.048609433	436.2158483	0.003687862	0.068567057	0.079397494	0.090388768	0.826177737	0.004123808
SACRAMENT	2021	MDV	2001	35	DSL	9.8092369	1.592990733	0.046506611	0.048609433	436.2158483	0.003687862	0.068567057	0.079397494	0.090388768	0.826177737	0.004123808
SACRAMENT	2021	MDV	2002	35	DSL	15.0930046	1.592990733	0.046506611	0.048609433	436.2158483	0.003687862	0.068567057	0.079397494	0.090388768	0.826177737	0.004123808
SACRAMENT	2021	MDV	2003	35	DSL	16.3457766	1.592990733	0.046506611	0.048609433	436.2158483	0.003687862	0.068567057	0.079397494	0.090388768	0.826177737	0.004123808
SACRAMENT	2021	MDV	2004	35	DSL	36.0780345	1.592990733	0.046506611	0.048609433	500.5297234	0.003687862	0.078676302	0.079397494	0.090388768	0.826177737	0.004731806
SACRAMENT	2021	MDV	2005	35	DSL	73.1353727	1.592990733	0.046506611	0.048609433	488.6668663	0.003687862	0.076811626	0.079397494	0.090388768	0.826177737	0.004619659
SACRAMENT	2021	MDV	2006	35	DSL	103.582736	1.592990733	0.046506611	0.048609433	479.3287306	0.003687862	0.075343801	0.079397494	0.090388768	0.826177737	0.00453138
SACRAMENT	2021	LDT1	1995	35	DSL	5.6320981	1.592990733	0.046506611	0.048609433	497.8690469	0.003687862	0.078258081	0.079397494	0.090388768	0.826177737	0.004706653
SACRAMENT	2021	LDT1	2006	35	DSL	3.20621083	1.592990733	0.046506611	0.048609433	485.4485275	0.003687862	0.076305748	0.079397494	0.090388768	0.826177737	0.004589234
SACRAMENT	2021	LDT2	1993	35	DSL	2.45846862	1.592990733	0.046506611	0.048609433	387.6672983	0.003687862	0.060935901	0.079397494	0.090388768	0.826177737	0.00366485
SACRAMENT	2021	LHD1	2009	50	DSL	689.724323	3.309366308	0.022467574	0.023483458	493.6847405	0.003661196	0.077600366	0.078823392	0.089735192	0.57770972	0.004667096
SACRAMENT	2021	LHD2	2009	50	DSL	350.285223	3.309366308	0.022467574	0.023483458	540.9262835	0.003661196	0.085026079	0.078823392	0.089735192	0.57770972	0.005113699
SACRAMENT	2021	MH	2018	5	GAS	12.606336	0.153170356	0.0069875	0.007599544	3831.416893	0.021797251	0.019447853	0.061442007	0.089656032	0.288567983	0.037914976
SACRAMENT	2021	MH	2021	20	DSL	29.0510047	3.552164403	0.016465981	0.0172105	1097.129558	0.003651569	0.172453488	0.07861614	0.089499248	0.222014534	0.01037182
SACRAMENT	2021	LDA	2015	15	DSL	155.66831	0.083507093	0.007077816	0.007397843	375.2154262	0.003634346	0.05897864	0.078245324	0.0890771	1.458679829	0.003547135
SACRAMENT	2021	MH	2003	50	DSL	37.1982781	4.850194116	0.25022699	0.261541144	927.4858462	0.003619295	0.145787859	0.077921286	0.088708203	0.485480097	0.008768077
SACRAMENT	2021	MDV	2016	15	DSL	81.6402502	0.083306454	0.007030625	0.007348519	662.4459805	0.003615565	0.104127283	0.077840993	0.088616795	1.447696736	0.006262497
SACRAMENT	2021	LDA	2016	15	DSL	15.3217237	0.082031771	0.00673088	0.007035221	364.3525104	0.003496241	0.057271141	0.075272011	0.08569218	1.377933379	0.003444442
SACRAMENT	2021	MH	2004	50	DSL	50.8798784	4.458745269	0.256525816	0.268124775	926.8461008	0.003481446	0.1456873	0.074953488	0.085329563	0.471659723	0.008762029
SACRAMENT	2021	MH	2017	5	GAS	11.0797108	0.149765091	0.006708532	0.00729614	3831.391662	0.0207888	0.019110928	0.058194867	0.084917813	0.28148375	0.037914726
SACRAMENT	2021	LDT1	2003	20	GAS	1223.9524	0.202754122	0.005685611	0.006183621	538.1772149	0.015268792	0.01866403	0.058191049	0.084912242	2.830255069	0.0053257
SACRAMENT	2021	LDT2	2004	5	GAS	7.8663263	0.065703097	0.001296044	0.001409567	1070.591443	0.017237297	0.009184957	0.058114254	0.084800183	1.671536276	0.01059437
SACRAMENT	2021	MDV	2003	40	GAS	30580.5812	0.381293346	0.002334267	0.002538728	478.0178122	0.013366972	0.026663059	0.058039965	0.084691781	3.522316552	0.004730374
SACRAMENT	2021	MDV	2017	15	DSL	110.231924	0.081559765	0.006619876	0.006919197	634.7796763	0.003452059	0.099778525	0.074320793	0.084609282	1.352097862	0.006000951
SACRAMENT	2021	LDA	2003	20	GAS	11826.5185	0.202696964	0.005685611	0.006183621	452.3323162	0.015158889	0.018602599	0.057906251	0.084496665	2.828101479	0.004476195
SACRAMENT	2021	MH	2005	50	DSL	47.9062486	4.439750967	0.253271962	0.264723796	926.8461008	0.003405085	0.1456873	0.073309466	0.083457954	0.461316099	0.008762029
SACRAMENT	2021	MDV	2002	55	DSL	13.072513	1.873830028	0.042639752	0.044567732	416.4702585	0.003381229	0.065463325	0.072795876	0.082873265	0.993015285	0.003937142
SACRAMENT	2021	LDA	1993	55	DSL	9.8239143	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	1994	55	DSL	3.60852269	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	1995	55	DSL	13.6437306	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	1996	55	DSL	11.4822429	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	1997	55	DSL	18.6978557	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	1998	55	DSL	18.6527563	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	1999	55	DSL	44.5079982	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	2000	55	DSL	23.2078954	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	2001	55	DSL	48.9621627	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	2002	55	DSL	138.527215	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	2003	55	DSL	187.788217	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	2004	55	DSL	54.4403479	1.873830028	0.042639752	0.044567732	250.0494585	0.003381229	0.039304293	0.072795876	0.082873265	0.993015285	0.002363867
SACRAMENT	2021	LDA	2005	55	DSL	155.572282	1.873830028	0.042639752	0.044567732	239.5868107	0.003381229	0.03765971	0.072795876	0.082873265	0.993015285	0.002264957
SACRAMENT	2021	LDA	2006	55	DSL	150.259168	1.873830028	0.042639752	0.044567732	243.8113841	0.003381229	0.038323754	0.072795876	0.082873265	0.993015285	0.002304894
SACRAMENT	2021	LDA	2007	55	DSL	50.3068632	1.873830028	0.042639752	0.044567732	234.8779488	0.003381229	0.036919543	0.072795876	0.082873265	0.993015285	0.002220441
SACRAMENT	2021	LDT1	1993	55	DSL	24.4430146	1.873830028	0.042639752	0.044567732	469.2217548	0.003381229	0.073755126	0.072795876	0.082873265	0.993015285	0.004435833
SACRAMENT	2021	LDT1	1994	55	DSL	13.5748275	1.873830028	0.042639752	0.044567732	469.2217548	0.003381229	0.073755126	0.072795876	0.082873265	0.993015285	0.004435833
SACRAMENT	2021	LDT1	1995	55	DSL	4.87813247	1.873830028	0.042639752	0.044567732	469.2217548	0.003381229	0.073755126	0.072795876	0.082873265	0.993015285	0.004435833
SACRAMENT	2021	LDT1	1996	55	DSL	11.8179076	1.873830028	0.042639752	0.044567732	469.2217548	0.003381229	0.073755126	0.072795876	0.082873265	0.993015285	0.004435833
SACRAMENT	2021	LDT1	1997	55	DSL	29.2754172	1.873830028	0.042639752	0.044567732	469.2217548	0.003381229	0.073755126	0.072795876	0.082873265	0.993015285	0.004435833
SACRAMENT	2021	LDT1	1998	55	DSL	9.08034462	1.873830028	0.042639752	0.044567732	469.2217548	0.003381229	0.073755126	0.072795876	0.082873265	0.993015285	0.004435833
SACRAMENT	2021	LDT1	1999	55	DSL	27.9516378	1.873830028	0.042639752	0.044567732	469.2217548	0.003381229	0.073755126	0.072795876	0.082873265	0.993015285	0.004435833
SACRAMENT	2021	LDT1	2000	55	DSL	23.1044945	1.873830028	0.042639752	0.044567732	469.2217548	0.003381229	0.073755126	0.072795876	0.082873265	0.993015285	0.004435833
SACRAMENT	2021	LDT1	2001	55	DSL	23.0825756	1.873830028	0.042639752	0.044567732	469.2217548	0.003381229	0.073755126	0.072795876	0.082873265	0.993015285	0.004435833
SACRAMENT	2021	LDT1	2002	55	DSL	29.2980713	1.873830028	0.042639752	0.044567732	469.2217548	0.003381229	0.073755126	0.072795876	0.082873265	0.993015285	0.004435833
SACRAMENT	2021	LDT1	2003	55	DSL	31.2586437	1.873830028	0.042639752	0.044567732	469.2217548	0.003381229	0.073755126	0.072795876	0.082873265	0.993015285	0.004435833
SACRAMENT	2021	LDT1	2005	55	DSL	2.58288087	1.873830028	0.042639752	0.044567732	449.588431	0.003381229	0.07066904	0.072795876	0.082873265	0.993015285	0.004250227
SACRAMENT	2021	LDT1	2006	55	DSL	2.77699729	1.873830028	0.042639752	0.044567732	457.5159097	0.003381229	0.07191513	0.072795876	0.082873265	0.993015285	0.004325171
SACRAMENT	2021	LDT1	2007	55	DSL	29.5226974	1.873830028	0.042639752	0.044567732	440.7521774	0.003381229	0.069280104	0.072795876	0.082873265	0.993015285	0.004166693
SACRAMENT	2021	LDT2	1993	55	DSL	2.12935489	1.873830028	0.042639752	0.044567732	365.3609942	0.003381229	0.05742966	0.072795876	0.082873265	0.993015285	0.003453975
SACRAMENT	2021	LDT2	1994	55	DSL	1.13382504	1.873830028	0.042639752	0.044567732	365.3609942	0.003381229	0.05742966	0.072795876	0.082873265	0.993015285	0.003453975
SACRAMENT	2021	LDT2	2001	55	DSL	3.3269645	1.873830028	0.042639752	0.044567732	365.3609942	0.003381229	0.05742966	0.072795876	0.082873265	0.993015285	0.003453975
SACRAMENT	2021	LDT2	2005	55	DSL	13.8502982	1.873830028	0.042639752	0.044567732	356.7017178	0.003381229	0.056068543	0.072795876	0.082873265	0.993015285	0.003372114
SACRAMENT	2021	LDT2	2006	55	DSL	10.1860575	1.873830028	0.042639752	0.044567732	349.8853583	0.003381229	0.054997106	0.072795876	0.082873265	0.993015285	0.003307675
SACRAMENT	2021	LDT2	2007	55	DSL	5.55498166	1.873830028	0.042639752	0.044567732	344.90972	0.003381229	0.054215005	0.072795876	0.082873265	0.993015285	0.003260637
SACRAMENT	2021	MDV	1993	55	DSL	1.91978212	1.873830028	0.042639752	0.044567732	416.4702585	0.003381229	0.065463325	0.072795876	0.082873265	0.993015285	0.003937142
SACRAMENT	2021	MDV	1994	55	DSL	3.93202214	1.873830028	0.042639752	0.044567732	416.4702585	0.003381229	0.065463325	0.072795876	0.082873265	0.993015285	0.003937142
SACRAMENT	2021	MDV	1995	55	DSL	10.3540003	1.873830028	0.042639752	0.044567732	416.4702585	0.003381229	0.065463325	0.072795876	0.082873265	0.993015285	0.003937142
SACRAMENT	2021	MDV	1996	55	DSL	10.2061377	1.873830028	0.042639752	0.044567732	416.4702585	0.003381229	0.065463325	0.072795876	0.082873265	0.993015285	0.003937142
SACRAMENT	2021	MDV	1997	55	DSL	11.1197084	1.873830028	0.042639752	0.044567732	416.4702585	0.003381229	0.065463325	0.072795876	0.082873265	0.993015285	0.003937142
SACRAMENT	2021	MDV	1998	55	DSL	12.0401958	1.873830028	0.042639752	0.044567732	416.4702585	0.003381229	0.065463325	0.072795876	0.082873265	0.993015285	0.003937142
SACRAMENT	2021	MDV	1999	55	DSL	2.88594875	1.873830028	0.042639752	0.044567732	416.4702585	0.003381229	0.065463325	0.072795876	0.082873265	0.993015285	0.003937142
SACRAMENT	2021	MDV	2000	55	DSL	4.68488097	1.873830028	0.042639752	0.044567732	416.4702585	0.003381229	0.065463325	0.072795876	0.082873265	0.993015285	0.003937142
SACRAMENT	2021	MDV	2001	55	DSL	8.49608019	1.873830028	0.042639752	0.044567732	416.4702585	0.003381229	0.065463325	0.072795876	0.082873265	0.993015285	0.003937142
SACRAMENT	2021	MDV	2003	55	DSL	14.1575772	1.873830028	0.042639752	0.044567732	416.4702585	0.003381229	0.065463325	0.072795876	0.082873265	0.993015285	0.003937142
SACRAMENT	2021	MDV	2004	55	DSL	31.2482895	1.873830028	0.042639752	0.044567732	477.8729248	0.003381229	0.075114969	0.072795876	0.082873265	0.993015285	0.004517618
SACRAMENT	2021	MDV	2005	55	DSL	63.3447839	1.873830028	0.042639752	0.044567732	466.5470476	0.003381229	0.073334699	0.072795876	0.082873265	0.993015285	0.004410547
SACRAMENT	2021	MDV	2006	55	DSL	89.7161768	1.873830028	0.042639752	0.044567732	457.6316086	0.003381229	0.071933316	0.072795876	0.082873265	0.993015285	0.004326264
SACRAMENT	2021	LDT2	2005	5	GAS	9.52970085	0.062233967	0.001296044	0.001409567	1045.027102	0.016918714	0.008759701	0.056752023	0.082812418	1.511583974	0.01034139
SACRAMENT	2021	LDA	1993	40	DSL	13.8971426	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	1994	40	DSL	5.10470193	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	1995	40	DSL	19.3007455	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	1996	40	DSL	16.2430536	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	1997	40	DSL	26.4504309	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	1998	40	DSL	26.3866322	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	1999	40	DSL	62.9620716	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	2000	40	DSL	32.8304402	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	2001	40	DSL	69.2630386	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	2002	40	DSL	195.963889	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	2003	40	DSL	265.649673	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	2004	40	DSL	77.0126095	1.662801282	0.042512267	0.044434483	246.7588008	0.00337112	0.038787047	0.072578229	0.082625488	0.800446729	0.002332758
SACRAMENT	2021	LDA	2005	40	DSL	220.076246	1.662801282	0.042512267	0.044434483	236.4338417	0.00337112	0.037164107	0.072578229	0.082625488	0.800446729	0.00223515
SACRAMENT	2021	LDA	2006	40	DSL	212.560189	1.662801282	0.042512267	0.044434483	240.6028197	0.00337112	0.037819413	0.072578229	0.082625488	0.800446729	0.002274562
SACRAMENT	2021	LDA	2007	40	DSL	71.1652838	1.662801282	0.042512267	0.044434483	231.7869486	0.00337112	0.03643368	0.072578229	0.082625488	0.800446729	0.00219122
SACRAMENT	2021	LDT1	1993	40	DSL	34.5776692	1.662801282	0.042512267	0.044434483	464.6714017	0.00337112	0.073039873	0.072578229	0.082625488	0.800446729	0.004392816
SACRAMENT	2021	LDT1	1994	40	DSL	19.2032735	1.662801282	0.042512267	0.044434483	464.6714017	0.00337112	0.073039873	0.072578229	0.082625488	0.800446729	0.004392816
SACRAMENT	2021	LDT1	1995	40	DSL	6.90072209	1.662801282	0.042512267	0.044434483	464.6714017	0.00337112	0.073039873	0.072578229	0.082625488	0.800446729	0.004392816
SACRAMENT	2021	LDT1	1996	40	DSL	16.7178929	1.662801282	0.042512267	0.044434483	464.6714017	0.00337112	0.073039873	0.072578229	0.082625488	0.800446729	0.004392816
SACRAMENT	2021	LDT1	1997	40	DSL	41.4137008	1.662801282	0.042512267	0.044434483	464.6714017	0.00337112	0.073039873	0.072578229	0.082625488	0.800446729	0.004392816

SACRAMENT	2021	LDT1	1998	40	DSL	12.8452712	1.662801282	0.042512267	0.044434483	464.6714017	0.00337112	0.073039873	0.072578229	0.082625488	0.800446729	0.004392816
SACRAMENT	2021	LDT1	1999	40	DSL	39.541051	1.662801282	0.042512267	0.044434483	464.6714017	0.00337112	0.073039873	0.072578229	0.082625488	0.800446729	0.004392816
SACRAMENT	2021	LDT1	2000	40	DSL	32.6841669	1.662801282	0.042512267	0.044434483	464.6714017	0.00337112	0.073039873	0.072578229	0.082625488	0.800446729	0.004392816
SACRAMENT	2021	LDT1	2001	40	DSL	32.6531599	1.662801282	0.042512267	0.044434483	464.6714017	0.00337112	0.073039873	0.072578229	0.082625488	0.800446729	0.004392816
SACRAMENT	2021	LDT1	2002	40	DSL	41.4457477	1.662801282	0.042512267	0.044434483	464.6714017	0.00337112	0.073039873	0.072578229	0.082625488	0.800446729	0.004392816
SACRAMENT	2021	LDT1	2003	40	DSL	44.2192201	1.662801282	0.042512267	0.044434483	464.6714017	0.00337112	0.073039873	0.072578229	0.082625488	0.800446729	0.004392816
SACRAMENT	2021	LDT1	2005	40	DSL	3.65380465	1.662801282	0.042512267	0.044434483	445.2284752	0.00337112	0.069983716	0.072578229	0.082625488	0.800446729	0.00420901
SACRAMENT	2021	LDT1	2006	40	DSL	3.92840635	1.662801282	0.042512267	0.044434483	453.0790759	0.00337112	0.071217721	0.072578229	0.082625488	0.800446729	0.004283227
SACRAMENT	2021	LDT1	2007	40	DSL	41.7635091	1.662801282	0.042512267	0.044434483	436.4779126	0.00337112	0.06860825	0.072578229	0.082625488	0.800446729	0.004126286
SACRAMENT	2021	LDT2	1993	40	DSL	3.01223602	1.662801282	0.042512267	0.044434483	361.8178475	0.00337112	0.056872727	0.072578229	0.082625488	0.800446729	0.00342048
SACRAMENT	2021	LDT2	1994	40	DSL	1.60393584	1.662801282	0.042512267	0.044434483	361.8178475	0.00337112	0.056872727	0.072578229	0.082625488	0.800446729	0.00342048
SACRAMENT	2021	LDT2	2001	40	DSL	4.70640303	1.662801282	0.042512267	0.044434483	361.8178475	0.00337112	0.056872727	0.072578229	0.082625488	0.800446729	0.00342048
SACRAMENT	2021	LDT2	2005	40	DSL	19.5929609	1.662801282	0.042512267	0.044434483	353.2425458	0.00337112	0.055524809	0.072578229	0.082625488	0.800446729	0.003339412
SACRAMENT	2021	LDT2	2006	40	DSL	14.4094389	1.662801282	0.042512267	0.044434483	346.492289	0.00337112	0.054463763	0.072578229	0.082625488	0.800446729	0.003275598
SACRAMENT	2021	LDT2	2007	40	DSL	7.85820904	1.662801282	0.042512267	0.044434483	341.5649027	0.00337112	0.053689246	0.072578229	0.082625488	0.800446729	0.003229017
SACRAMENT	2021	MDV	1993	40	DSL	2.7157694	1.662801282	0.042512267	0.044434483	408.0199242	0.00337112	0.06413505	0.072578229	0.082625488	0.800446729	0.003857256
SACRAMENT	2021	MDV	1994	40	DSL	5.56233193	1.662801282	0.042512267	0.044434483	408.0199242	0.00337112	0.06413505	0.072578229	0.082625488	0.800446729	0.003857256
SACRAMENT	2021	MDV	1995	40	DSL	14.6470148	1.662801282	0.042512267	0.044434483	408.0199242	0.00337112	0.06413505	0.072578229	0.082625488	0.800446729	0.003857256
SACRAMENT	2021	MDV	1996	40	DSL	14.4378448	1.662801282	0.042512267	0.044434483	408.0199242	0.00337112	0.06413505	0.072578229	0.082625488	0.800446729	0.003857256
SACRAMENT	2021	MDV	1997	40	DSL	15.7302037	1.662801282	0.042512267	0.044434483	408.0199242	0.00337112	0.06413505	0.072578229	0.082625488	0.800446729	0.003857256
SACRAMENT	2021	MDV	1998	40	DSL	17.032347	1.662801282	0.042512267	0.044434483	408.0199242	0.00337112	0.06413505	0.072578229	0.082625488	0.800446729	0.003857256
SACRAMENT	2021	MDV	1999	40	DSL	4.08253166	1.662801282	0.042512267	0.044434483	408.0199242	0.00337112	0.06413505	0.072578229	0.082625488	0.800446729	0.003857256
SACRAMENT	2021	MDV	2000	40	DSL	6.62734393	1.662801282	0.042512267	0.044434483	408.0199242	0.00337112	0.06413505	0.072578229	0.082625488	0.800446729	0.003857256
SACRAMENT	2021	MDV	2001	40	DSL	12.0187569	1.662801282	0.042512267	0.044434483	408.0199242	0.00337112	0.06413505	0.072578229	0.082625488	0.800446729	0.003857256
SACRAMENT	2021	MDV	2002	40	DSL	18.4926875	1.662801282	0.042512267	0.044434483	408.0199242	0.00337112	0.06413505	0.072578229	0.082625488	0.800446729	0.003857256
SACRAMENT	2021	MDV	2003	40	DSL	20.027645	1.662801282	0.042512267	0.044434483	408.0199242	0.00337112	0.06413505	0.072578229	0.082625488	0.800446729	0.003857256
SACRAMENT	2021	MDV	2004	40	DSL	44.2045727	1.662801282	0.042512267	0.044434483	468.1767079	0.00337112	0.073590859	0.072578229	0.082625488	0.800446729	0.004425954
SACRAMENT	2021	MDV	2005	40	DSL	89.6090362	1.662801282	0.042512267	0.044434483	457.0806369	0.00337112	0.071846711	0.072578229	0.082625488	0.800446729	0.004321056
SACRAMENT	2021	MDV	2006	40	DSL	126.914635	1.662801282	0.042512267	0.044434483	448.3460954	0.00337112	0.070473763	0.072578229	0.082625488	0.800446729	0.004238483
SACRAMENT	2021	MH	2003	55	DSL	54.5107057	4.788644365	0.286161256	0.299100198	916.8295268	0.003370859	0.144112834	0.072572607	0.082619088	0.505253537	0.008667336
SACRAMENT	2021	LDA	2017	15	DSL	217.59017	0.080488557	0.006367979	0.006655911	353.4895946	0.003351781	0.055563642	0.072161873	0.082151495	1.293470947	0.003341748
SACRAMENT	2021	LDT2	2000	30	GAS	8365.19486	0.406802752	0.003273363	0.003560081	477.5625322	0.013699816	0.028546963	0.056146297	0.081928545	3.691609406	0.004725868
SACRAMENT	2021	MH	2007	35	DSL	48.9450981	3.737504837	0.100470513	0.105013344	1045.897223	0.003338131	0.164400479	0.071867985	0.081816923	0.271986321	0.00988749
SACRAMENT	2021	MH	2016	5	GAS	14.0399627	0.148728416	0.006243584	0.006790467	3981.894611	0.02009557	0.01898185	0.05598628	0.081695048	0.277696362	0.039404075
SACRAMENT	2021	MH	2006	50	DSL	44.5783477	4.420404727	0.249957818	0.261259801	926.8461008	0.003327308	0.1456873	0.071634983	0.081551665	0.450780819	0.008762029
SACRAMENT	2021	MDV	2003	60	GAS	16688.4027	0.375855331	0.002255694	0.002453273	530.5907938	0.012833204	0.02628279	0.055722322	0.081309882	2.630588242	0.005250626
SACRAMENT	2021	MH	2003	65	DSL	10.3084275	4.963041466	0.381907526	0.39917569	931.9252603	0.003298351	0.146485673	0.071011563	0.080841943	0.57694086	0.008810045
SACRAMENT	2021	MDV	2018	15	DSL	117.120781	0.079727875	0.00618909	0.006468934	607.1133721	0.003280577	0.095429768	0.070628882	0.080406286	1.251835851	0.005739405
SACRAMENT	2021	MH	2003	60	DSL	65.5037479	4.829199068	0.330054768	0.34497838	918.3093315	0.003263878	0.144345439	0.070269366	0.079997001	0.535740458	0.008681326
SACRAMENT	2021	MH	2005	5	GAS	7.72974917	0.186438481	0.000664211	0.00072239	4205.286182	0.019588711	0.022230318	0.054798226	0.079961443	0.306225773	0.041614716
SACRAMENT	2021	MH	2008	35	DSL	43.3623682	3.718064227	0.099020558	0.103497828	1045.897223	0.003258646	0.164400479	0.070156729	0.079868772	0.265443165	0.00988749
SACRAMENT	2021	MH	2015	5	GAS	5.35257164	0.152293367	0.005406678	0.005880256	3981.887552	0.019680674	0.019255965	0.054683205	0.079793604	0.276787781	0.039404005
SACRAMENT	2021	MH	2006	5	GAS	12.2387851	0.180852157	0.000664211	0.00072239	4205.280553	0.01956519	0.021768896	0.054678413	0.079786612	0.303000251	0.04161466
SACRAMENT	2021	MH	2007	5	GAS	7.64023378	0.176675324	0.000664211	0.00072239	4205.275059	0.019551495	0.021424466	0.054589483	0.079656846	0.299776203	0.041614606
SACRAMENT	2021	MH	2004	5	GAS	12.6527572	0.190620006	0.000664211	0.00072239	4205.29338	0.019488351	0.022564507	0.054514358	0.079547223	0.311539399	0.041614787
SACRAMENT	2021	MH	2008	5	GAS	4.76820604	0.172516401	0.000757201	0.000823525	4205.269431	0.019532387	0.021079262	0.054483031	0.079501511	0.296515136	0.04161455
SACRAMENT	2021	MH	2009	5	GAS	0.63731998	0.168450465	0.00085019	0.000924659	4205.263689	0.019506453	0.020739572	0.054355248	0.079315051	0.293240642	0.041614493
SACRAMENT	2021	LDA	1995	50	DSL	7.49724161	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDA	1996	50	DSL	6.30950226	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDA	1998	50	DSL	10.2497055	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDT1	1999	50	DSL	15.3594488	1.803410364	0.040706536	0.042547105	448.7663283	0.00322793	0.070539817	0.069495431	0.079115928	0.877555152	0.004242456
SACRAMENT	2021	LDT1	2003	50	DSL	17.1766514	1.803410364	0.040706536	0.042547105	448.7663283	0.00322793	0.070539817	0.069495431	0.079115928	0.877555152	0.004242456
SACRAMENT	2021	LDT1	2005	50	DSL	1.41929524	1.803410364	0.040706536	0.042547105	429.9889069	0.00322793	0.067588268	0.069495431	0.079115928	0.877555152	0.004064942
SACRAMENT	2021	LDT2	1994	50	DSL	0.62303783	1.803410364	0.040706536	0.042547105	349.4333121	0.00322793	0.054926051	0.069495431	0.079115928	0.877555152	0.003303401
SACRAMENT	2021	MDV	1993	50	DSL	1.05492191	1.803410364	0.040706536	0.042547105	394.6278671	0.00322793	0.062030005	0.069495431	0.079115928	0.877555152	0.003730653
SACRAMENT	2021	MDV	1994	50	DSL	2.16064952	1.803410364	0.040706536	0.042547105	394.6278671	0.00322793	0.062030005	0.069495431	0.079115928	0.877555152	0.003730653
SACRAMENT	2021	MDV	1996	50	DSL	5.60828136	1.803410364	0.040706536	0.042547105	394.6278671	0.00322793	0.062030005	0.069495431	0.079115928	0.877555152	0.003730653
SACRAMENT	2021	MDV	1999	50	DSL	1.5858313	1.803410364	0.040706536	0.042547105	394.6278671	0.00322793	0.062030005	0.069495431	0.079115928	0.877555152	0.003730653
SACRAMENT	2021	LDA	1993	50	DSL	5.39824928	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDA	1994	50	DSL	1.98288629	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDA	1997	50	DSL	10.2744877	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDA	1999	50	DSL	24.4571829	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDA	2000	50	DSL	12.7527583	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDA	2001	50	DSL	26.9047501	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDA	2002	50	DSL	76.1208227	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDA	2003	50	DSL	103.189785	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDA	2004	50	DSL	29.9150176	1.803410364	0.040706536	0.042547105	238.9567846	0.00322793	0.037560679	0.069495431	0.079115928	0.877555152	0.002259001
SACRAMENT	2021	LDA	2005	50	DSL	85.4871013	1.803410364	0.040706536	0.042547105	228.9582798	0.00322793	0.035989053	0.069495431	0.079115928	0.877555152	0.002164479
SACRAMENT	2021	LDA	2006	50	DSL	82.5675408	1.803410364	0.040706536	0.042547105	232.9954431	0.00322793	0.036623639	0.069495431	0.079115928	0.877555152	0.002202645
SACRAMENT	2021	LDA	2007	50	DSL	27.6436642	1.803410364	0.040706536	0.042547105	224.4583121	0.00322793	0.035281721	0.069495431	0.079115928	0.877555152	0.002121938
SACRAMENT	2021	LDT1	1993	50	DSL	13.4314574	1.803410364	0.040706536	0.042547105	448.7663283	0.00322793	0.070539817	0.069495431	0.079115928	0.877555152	0.004242456
SACRAMENT	2021	LDT1	1994	50	DSL	7.45937926	1.803410364	0.040706536	0.042547105	448.7663283	0.00322793	0.070539817	0.069495431	0.079115928	0.877555152	0.004242456
SACRAMENT	2021	LDT1	1995	50	DSL	2.68053795	1.803410364	0.040706536	0.042547105	448.7663283	0.00322793	0.070539817	0.069495431	0.079115928	0.877555152	0.004242456
SACRAMENT	2021	LDT1	1996	50	DSL	6.4939503	1.803410364	0.040706536	0.042547105	448.7663283	0.00322793	0.070539817	0.069495431	0.079115928	0.877555152	0.004242456
SACRAMENT	2021	LDT1	1997	50	DSL	16.0868667	1.803410364	0.040706536	0.042547105	448.7663283	0.00322793	0.070539817	0.069495431	0.079115928	0.877555152	0.004242456
SACRAMENT	2021	LDT1	1998	50	DSL	4.98965711	1.803410364	0.040706536	0.042547105	448.7663283	0.00322793	0.070539817	0.069495431	0.079115928	0.877555152	0.004242456
SACRAMENT	2021	LDT1	2000	50	DSL	12.6959394	1.803410364	0.040706536	0.042547105	448.7663283	0.00322793	0.070539817	0.069495431	0.079115928	0.877555152	0.004242456
SACRAMENT	2021	LDT1	2001	50	DSL	12.683895	1.803410364	0.040706536	0.042547105	448.7663283	0.00322793	0.070539817	0.069495431	0.079115928	0.877555152	0.004242456
SACRAMENT	2021	LDT1	2002	50	DSL	16.0993151	1.803410364	0.040706536	0.042547105	448.7663283	0.00322793	0.070539817	0.069495431	0.079115928	0.877555152	0.004242456
SACRAMENT	2021	LDT1	2006	50	DSL	1.52596238	1.803410364	0.040706536	0.042547105	437.5707921	0.00322793	0.068780035	0.069495431	0.079115928	0.877555152	0.004136618
SACRAMENT	2021	LDT1	2007	50	DSL	16.2227474	1.803410364	0.040706536	0.042547105	421.5378642	0.00322793	0.066259882	0.069495431	0.079115928	0.877555152	0.003985049
SACRAMENT	2021	LDT2	1993	50	DSL	1.17008233	1.803410364	0.040706536	0.042547105	349.4333121	0.00322793	0.054926051	0.069495431	0.079115928	0.877555152	0.003303401
SACRAMENT	2021	LDT2	2001	50	DSL	1.82816983	1.803410364	0.040706536	0.042547105	349.4333121	0.00322793	0.054926051	0.069495431	0.079115928	0.877555152	0.003303401
SACRAMENT	2021	LDT2	2005	50	DSL	7.61075069	1.803410364	0.040706536	0.042547105	341.1515313	0.00322793	0.05362427	0.069495431	0.079115928	0.877555152	0.003225109
SACRAMENT	2021	LDT2	2006	50	DSL	5.59724727	1.803410364	0.040706536	0.042547105	334.6323267	0.00322793	0.052599542	0.069495431	0.079115928	0.877555152	0.003163479
SACRAMENT	2021	LDT2	2007	50	DSL	3.05246716	1.803410364	0.040706536	0.042547105	329.8735982	0.00322793	0.051851536	0.069495431	0.079115928	0.877555152	0.003118492
SACRAMENT	2021	MDV	1995	50	DSL	5.68953199	1.803410364	0.040706536	0.042547105	394.6278671	0.00322793	0.062030005	0.069495431	0.079115928	0.877555152	0.003730653
SACRAMENT	2021	MDV	1997	50	DSL	6.11028923	1.803410364	0.040706536	0.042547105	394.6278671	0.00322793	0.062030005	0.069495431	0.079115928	0.877555152	0.003730653
SACRAMENT	2021	MDV	1998	50	DSL	6.61609783	1.803410364	0.040706536	0.042547105	394.6278671	0.00322793	0.062030005	0.069495431	0.079115928	0.877555152	0.003730653
SACRAMENT	2021	MDV	2000	50	DSL	2.57434609	1.803410364	0.040706536	0.042547105	394.6278671	0.00322793	0.062030005	0.069495431	0.079115928	0.877555152	0.003730653
SACRAMENT	2021	MDV	2001	50	DSL	4.66860331	1.803410364	0.040706536	0.042547105	394.6278671	0.00322793	0.062030005	0.069495431	0.079115928	0.877555152	0.003730653
SACRAMENT	2021	MDV	2002	50	DSL	7.18335705	1.803410364	0.040706536	0.042547105	394.6278671	0.00322793	0.062030005	0.069495431	0.079115928	0.877555152	0.003730653
SACRAMENT	2021	MDV	2003	50	DSL	7.77960073	1.803410364	0.040706536	0.042547105	394.6278671	0.00322793	0.062030005	0.069495431	0.079115928	0.877555152	0.003730653
SACRAMENT	2021	MDV	2004	50	DSL	17.1709617	1.803410364	0.040706536	0.042547105	452.8101809	0.00322793	0.071175455	0.069495431	0.079115928	0.877555152	0.004280685
SACRAMENT	2021	MDV	2005	50	DSL	34.8080127	1.803410364	0.040706536	0.042547105	442.0783058	0.00322793	0.069488553	0.069495431	0.079115928	0.877555152	0.00417923
SACRAMENT	2021	MDV	2006	50	DSL	49.2991156	1.803410364	0.040706536	0.042547105	433.63045	0.00322793	0.068160668	0.069495431	0.079115928	0.877555152	0.004099367
SACRAMENT	2021	MH	2010	5	GAS	0.7716237	0.164568272	0.001036169	0.001126929	4205.257896	0.01947303	0.020413241	0.054204615	0.079095247	0.28999527	0.041614436
SACRAMENT	2021	LDA	1999	45	DSL	24.3968372	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265
SACRAMENT	2021	LDA	2002	45	DSL	75.933002	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265
SACRAMENT	2021	LDA	2004	45	DSL	29.8412052	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265
SACRAMENT	2021	LDA	2006	45	DSL	82.3638135	1.733282753	0.040665946	0.04250468	232.4038404	0.003224711	0.036530647	0.069426135	0.079037038	0.816706134	0.002197052
SACRAMENT	2021	LDT1	1995	45	DSL	2.67392399	1.733282753	0.040665946	0.04250468	448.0220625	0.003224711	0.070422829	0.069426135	0.079037038	0.816706134	0.00423542
SACRAMENT	2021	MDV	2001	45	DSL	4.65708398	1.733282753	0.040665946	0.04250468	392.6602572	0.003224711	0.061720724	0.069426135	0.079037038	0.816706134	0.003712052
SACRAMENT	2021	LDA	1993	45	DSL	5.38492963	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265
SACRAMENT	2021	LDA	1994	45	DSL	1.97799372	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265
SACRAMENT	2021	LDA	1995	45	DSL	7.47874289	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265
SACRAMENT	2021	LDA	1996	45	DSL	6.29393418	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265
SACRAMENT	2021	LDA	1997	45	DSL	10.2491364	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265

SACRAMENT	2021	LDA	1998	45	DSL	10.2244153	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265
SACRAMENT	2021	LDA	2000	45	DSL	12.7212921	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265
SACRAMENT	2021	LDA	2001	45	DSL	26.8383653	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265
SACRAMENT	2021	LDA	2003	45	DSL	102.935174	1.733282753	0.040665946	0.04250468	238.3500453	0.003224711	0.037465308	0.069426135	0.079037038	0.816706134	0.002253265
SACRAMENT	2021	LDA	2005	45	DSL	85.2761703	1.733282753	0.040665946	0.04250468	228.376928	0.003224711	0.035897673	0.069426135	0.079037038	0.816706134	0.002158983
SACRAMENT	2021	LDA	2007	45	DSL	27.5754561	1.733282753	0.040665946	0.04250468	223.8883862	0.003224711	0.035192136	0.069426135	0.079037038	0.816706134	0.00211655
SACRAMENT	2021	LDT1	1993	45	DSL	13.3983166	1.733282753	0.040665946	0.04250468	448.0220625	0.003224711	0.070422829	0.069426135	0.079037038	0.816706134	0.00423542
SACRAMENT	2021	LDT1	1994	45	DSL	7.44097398	1.733282753	0.040665946	0.04250468	448.0220625	0.003224711	0.070422829	0.069426135	0.079037038	0.816706134	0.00423542
SACRAMENT	2021	LDT1	1996	45	DSL	6.47792711	1.733282753	0.040665946	0.04250468	448.0220625	0.003224711	0.070422829	0.069426135	0.079037038	0.816706134	0.00423542
SACRAMENT	2021	LDT1	1997	45	DSL	16.047174	1.733282753	0.040665946	0.04250468	448.0220625	0.003224711	0.070422829	0.069426135	0.079037038	0.816706134	0.00423542
SACRAMENT	2021	LDT1	1998	45	DSL	4.97734562	1.733282753	0.040665946	0.04250468	448.0220625	0.003224711	0.070422829	0.069426135	0.079037038	0.816706134	0.00423542
SACRAMENT	2021	LDT1	1999	45	DSL	15.3215509	1.733282753	0.040665946	0.04250468	448.0220625	0.003224711	0.070422829	0.069426135	0.079037038	0.816706134	0.00423542
SACRAMENT	2021	LDT1	2000	45	DSL	12.6646134	1.733282753	0.040665946	0.04250468	448.0220625	0.003224711	0.070422829	0.069426135	0.079037038	0.816706134	0.00423542
SACRAMENT	2021	LDT1	2001	45	DSL	12.6525987	1.733282753	0.040665946	0.04250468	448.0220625	0.003224711	0.070422829	0.069426135	0.079037038	0.816706134	0.00423542
SACRAMENT	2021	LDT1	2002	45	DSL	16.0595917	1.733282753	0.040665946	0.04250468	448.0220625	0.003224711	0.070422829	0.069426135	0.079037038	0.816706134	0.00423542
SACRAMENT	2021	LDT1	2003	45	DSL	17.1342697	1.733282753	0.040665946	0.04250468	448.0220625	0.003224711	0.070422829	0.069426135	0.079037038	0.816706134	0.00423542
SACRAMENT	2021	LDT1	2005	45	DSL	1.41579327	1.733282753	0.040665946	0.04250468	429.2757829	0.003224711	0.067476175	0.069426135	0.079037038	0.816706134	0.0040582
SACRAMENT	2021	LDT1	2006	45	DSL	1.52219722	1.733282753	0.040665946	0.04250468	436.8450938	0.003224711	0.068665965	0.069426135	0.079037038	0.816706134	0.004129757
SACRAMENT	2021	LDT1	2007	45	DSL	16.1827193	1.733282753	0.040665946	0.04250468	420.838756	0.003224711	0.066149992	0.069426135	0.079037038	0.816706134	0.00397844
SACRAMENT	2021	LDT2	1993	45	DSL	1.16719526	1.733282753	0.040665946	0.04250468	348.8537872	0.003224711	0.054834957	0.069426135	0.079037038	0.816706134	0.003297923
SACRAMENT	2021	LDT2	1994	45	DSL	0.62150054	1.733282753	0.040665946	0.04250468	348.8537872	0.003224711	0.054834957	0.069426135	0.079037038	0.816706134	0.003297923
SACRAMENT	2021	LDT2	2001	45	DSL	1.823659	1.733282753	0.040665946	0.04250468	348.8537872	0.003224711	0.054834957	0.069426135	0.079037038	0.816706134	0.003297923
SACRAMENT	2021	LDT2	2005	45	DSL	7.5919719	1.733282753	0.040665946	0.04250468	340.5857415	0.003224711	0.053535336	0.069426135	0.079037038	0.816706134	0.00321976
SACRAMENT	2021	LDT2	2006	45	DSL	5.58343661	1.733282753	0.040665946	0.04250468	334.0773488	0.003224711	0.052512307	0.069426135	0.079037038	0.816706134	0.003158232
SACRAMENT	2021	LDT2	2007	45	DSL	3.04493549	1.733282753	0.040665946	0.04250468	329.3265126	0.003224711	0.051765542	0.069426135	0.079037038	0.816706134	0.00311332
SACRAMENT	2021	MDV	1993	45	DSL	1.05231899	1.733282753	0.040665946	0.04250468	392.6602572	0.003224711	0.061720724	0.069426135	0.079037038	0.816706134	0.003712052
SACRAMENT	2021	MDV	1994	45	DSL	2.15531832	1.733282753	0.040665946	0.04250468	392.6602572	0.003224711	0.061720724	0.069426135	0.079037038	0.816706134	0.003712052
SACRAMENT	2021	MDV	1995	45	DSL	5.67549363	1.733282753	0.040665946	0.04250468	392.6602572	0.003224711	0.061720724	0.069426135	0.079037038	0.816706134	0.003712052
SACRAMENT	2021	MDV	1996	45	DSL	5.59444347	1.733282753	0.040665946	0.04250468	392.6602572	0.003224711	0.061720724	0.069426135	0.079037038	0.816706134	0.003712052
SACRAMENT	2021	MDV	1997	45	DSL	6.09521269	1.733282753	0.040665946	0.04250468	392.6602572	0.003224711	0.061720724	0.069426135	0.079037038	0.816706134	0.003712052
SACRAMENT	2021	MDV	1998	45	DSL	6.59977325	1.733282753	0.040665946	0.04250468	392.6602572	0.003224711	0.061720724	0.069426135	0.079037038	0.816706134	0.003712052
SACRAMENT	2021	MDV	1999	45	DSL	1.58191841	1.733282753	0.040665946	0.04250468	392.6602572	0.003224711	0.061720724	0.069426135	0.079037038	0.816706134	0.003712052
SACRAMENT	2021	MDV	2000	45	DSL	2.56799414	1.733282753	0.040665946	0.04250468	392.6602572	0.003224711	0.061720724	0.069426135	0.079037038	0.816706134	0.003712052
SACRAMENT	2021	MDV	2002	45	DSL	7.16563282	1.733282753	0.040665946	0.04250468	392.6602572	0.003224711	0.061720724	0.069426135	0.079037038	0.816706134	0.003712052
SACRAMENT	2021	MDV	2003	45	DSL	7.76040532	1.733282753	0.040665946	0.04250468	392.6602572	0.003224711	0.061720724	0.069426135	0.079037038	0.816706134	0.003712052
SACRAMENT	2021	MDV	2004	45	DSL	17.128594	1.733282753	0.040665946	0.04250468	450.5524746	0.003224711	0.070820575	0.069426135	0.079037038	0.816706134	0.004259341
SACRAMENT	2021	MDV	2005	45	DSL	34.7221274	1.733282753	0.040665946	0.04250468	439.8741086	0.003224711	0.069142084	0.069426135	0.079037038	0.816706134	0.004158392
SACRAMENT	2021	MDV	2006	45	DSL	49.1774749	1.733282753	0.040665946	0.04250468	431.4683737	0.003224711	0.06782082	0.069426135	0.079037038	0.816706134	0.004078928
SACRAMENT	2021	LDT1	2000	25	GAS	3919.93331	0.219370184	0.004200191	0.004568091	459.9590308	0.013718196	0.018988369	0.054086061	0.078922254	3.095370992	0.004551667
SACRAMENT	2021	MH	2014	5	GAS	7.24960452	0.153280861	0.004290803	0.00466664	3981.886794	0.019474959	0.019289289	0.054056207	0.07887869	0.278015761	0.039403998
SACRAMENT	2021	MH	2011	5	GAS	4.98760428	0.160975892	0.001408127	0.001531467	4205.252199	0.019435155	0.020109684	0.05404134	0.078856996	0.286845705	0.04161438
SACRAMENT	2021	MH	2012	5	GAS	3.27083521	0.157799055	0.002059054	0.002239409	4205.246825	0.019403962	0.019572421	0.053901508	0.078652954	0.283835834	0.041614326
SACRAMENT	2021	MH	2013	5	GAS	6.05774062	0.155177649	0.003081939	0.00335189	4205.241484	0.01940297	0.019398375	0.053860721	0.078593438	0.280577293	0.041614273
SACRAMENT	2021	LHD1	2010	25	DSL	643.133605	0.246916356	0.020408596	0.021331382	546.5903577	0.003204948	0.085916393	0.06900064	0.078552642	0.374257971	0.005167245
SACRAMENT	2021	LHD2	2010	25	DSL	302.386272	0.246916356	0.020408596	0.021331382	624.6333349	0.003204948	0.098183662	0.06900064	0.078552642	0.374257971	0.005905031
SACRAMENT	2021	LDA	2000	25	GAS	21667.7539	0.219259066	0.004200191	0.004568091	385.0534377	0.013582392	0.018856366	0.053822627	0.078537851	3.092204249	0.003810416
SACRAMENT	2021	LDA	2018	15	DSL	230.478083	0.078877452	0.005989112	0.006259913	342.6266789	0.003200966	0.053856143	0.068914913	0.078455047	1.205292494	0.003239054
SACRAMENT	2021	MH	2004	55	DSL	74.5598512	4.381254807	0.293276406	0.306537064	916.1971317	0.003182209	0.14401343	0.068511085	0.077995315	0.494761912	0.008661358
SACRAMENT	2021	MH	2009	35	DSL	4.91758322	3.698282372	0.097545152	0.101955711	1045.897223	0.003177766	0.164400479	0.068415437	0.077886426	0.258785152	0.00988749
SACRAMENT	2021	MDV	2003	45	GAS	11849.5063	0.370922373	0.002135899	0.002322985	479.3096052	0.012232201	0.025937838	0.053112742	0.077501989	3.270535558	0.004743157
SACRAMENT	2021	LHD1	2011	25	DSL	1417.58717	0.240057383	0.019440955	0.020319989	546.5903577	0.003157392	0.085916393	0.067976788	0.077387054	0.357302267	0.005167245
SACRAMENT	2021	LHD2	2011	25	DSL	767.03661	0.240057383	0.019440955	0.020319989	624.6333349	0.003157392	0.098183662	0.067976788	0.077387054	0.357302267	0.005905031
SACRAMENT	2021	LDT2	2006	5	GAS	9.46397326	0.056295645	0.001296044	0.001409567	1014.873756	0.015869591	0.008040243	0.05280865	0.077058258	1.308567613	0.010042999
SACRAMENT	2021	MDV	2003	55	GAS	21617.4662	0.365010986	0.002099645	0.002283556	513.8628331	0.012071954	0.025524467	0.052416942	0.076486678	2.851832894	0.005085089
SACRAMENT	2021	MH	2005	55	DSL	70.2022661	4.362590615	0.289556396	0.302648851	916.1971317	0.003112411	0.14401343	0.06700837	0.076284574	0.483911651	0.008661358
SACRAMENT	2021	LDT2	2001	30	GAS	9425.65684	0.387857346	0.003273363	0.003560081	477.2584397	0.012880387	0.027734321	0.052266652	0.076267375	3.510317106	0.004722859
SACRAMENT	2021	LHD1	2012	25	DSL	1429.15381	0.232702103	0.018403297	0.019235412	546.5903577	0.003106395	0.085916393	0.06687885	0.076137125	0.339119672	0.005167245
SACRAMENT	2021	LHD2	2012	25	DSL	970.999854	0.232702103	0.018403297	0.019235412	624.6333349	0.003106395	0.098183662	0.06687885	0.076137125	0.339119672	0.005905031
SACRAMENT	2021	MDV	2019	15	DSL	121.959401	0.077810784	0.005738269	0.005997729	579.4470679	0.003101119	0.09108101	0.066765257	0.076007806	1.146910738	0.005477859
SACRAMENT	2021	LDA	2004	5	GAS	14.2578237	0.061149867	0.001296044	0.001409567	851.9565209	0.015501211	0.008516113	0.051769331	0.075541686	1.414069753	0.0084308
SACRAMENT	2021	MH	2010	25	DSL	5.24981148	2.950351144	0.019286719	0.020158779	1194.308834	0.003076424	0.187728717	0.066233594	0.075402543	0.186937602	0.011290513
SACRAMENT	2021	LDT1	2004	5	GAS	1.28235535	0.061228782	0.001296044	0.001409567	973.7160048	0.015474192	0.008544764	0.051549896	0.075221488	1.405685655	0.009635709
SACRAMENT	2021	MDV	2003	50	GAS	11878.8161	0.365112191	0.002061797	0.002242392	494.0281181	0.01185082	0.025531544	0.051456767	0.075085593	3.05833835	0.004888809
SACRAMENT	2021	LHD1	2013	25	DSL	1761.47341	0.224850514	0.017295622	0.018077653	546.5903577	0.003051957	0.085916393	0.065706827	0.074802854	0.319710188	0.005167245
SACRAMENT	2021	LHD2	2013	25	DSL	703.24646	0.224850514	0.017295622	0.018077653	624.6333349	0.003051957	0.098183662	0.065706827	0.074802854	0.319710188	0.005905031
SACRAMENT	2021	LDA	2019	15	DSL	236.363734	0.077198454	0.005594279	0.005847228	331.7637631	0.003043796	0.052148643	0.065531135	0.074602841	1.11339797	0.003136361
SACRAMENT	2021	MH	2006	55	DSL	65.3255289	4.343580602	0.285767458	0.298688595	916.1971317	0.003041319	0.14401343	0.065477811	0.074542135	0.472860346	0.008661358
SACRAMENT	2021	LHD2	2008	5	GAS	115.613329	0.264121655	0.000757201	0.000823525	2278.364835	0.014303683	0.019988657	0.050976709	0.074385094	0.335740576	0.022546267
SACRAMENT	2021	LDT2	2003	30	GAS	12216.615	0.385810364	0.003273363	0.003560081	477.1868507	0.012661919	0.027824277	0.050963844	0.074366322	3.468697146	0.004722151
SACRAMENT	2021	MDV	2009	5	GAS	3.02383342	0.054464592	0.001658937	0.001804245	1118.213925	0.015432958	0.007789712	0.05095162	0.074348485	1.147641402	0.011065633
SACRAMENT	2021	LDT1	2001	25	GAS	4652.49426	0.209155381	0.004200191	0.004568091	459.7025499	0.012924147	0.018447919	0.050476332	0.073654945	2.94338175	0.004549129
SACRAMENT	2021	LDT2	2009	5	GAS	4.98056498	0.05355548	0.001658937	0.001804245	925.398285	0.015338318	0.007725495	0.050451047	0.07361805	1.142639196	0.009157566
SACRAMENT	2021	MH	2011	25	DSL	7.26698753	2.928837602	0.018852842	0.019705284	1194.308834	0.003002198	0.187728717	0.064635545	0.073583271	0.182433749	0.011290513
SACRAMENT	2021	LHD1	2014	25	DSL	2651.90116	0.216502615	0.01611793	0.016846711	534.0187795	0.002994077	0.083940315	0.064460718	0.073384241	0.299073813	0.005048398
SACRAMENT	2021	LHD2	2014	25	DSL	1064.7414	0.216502615	0.01611793	0.016846711	610.2667682	0.002994077	0.095925437	0.064460718	0.073384241	0.299073813	0.005769216
SACRAMENT	2021	MH	2004	60	DSL	89.596156	4.40963898	0.337634422	0.352900752	917.6759157	0.002992582	0.144245875	0.064428524	0.073347591	0.526520851	0.008675338
SACRAMENT	2021	LDA	2001	25	GAS	26998.2188	0.209062576	0.004200191	0.004568091	384.7971546	0.01280848	0.01834558	0.050226689	0.073290667	2.940302271	0.00380788
SACRAMENT	2021	MDV	2004	15	GAS	2004.70906	0.128448708	0.000541288	0.0005887	862.9343391	0.01449641	0.014620656	0.049998819	0.07295816	1.807344077	0.008539435
SACRAMENT	2021	LDT2	2002	30	GAS	10176.2605	0.376935639	0.003273363	0.003560081	477.0744293	0.012377657	0.027295056	0.049853201	0.072745673	3.400793849	0.004721038
SACRAMENT	2021	MDV	2008	5	GAS	6.99639283	0.055430565	0.001477491	0.001606906	1185.265975	0.015055597	0.00787168	0.049665212	0.072471361	1.157220355	0.011729168
SACRAMENT	2021	LHD1	2008	5	GAS	620.777804	0.230477085	0.000757201	0.000823525	1989.101012	0.013884359	0.017745381	0.049349631	0.072010866	0.335755292	0.019683767
SACRAMENT	2021	LDT2	2008	5	GAS	7.45602421	0.054262895	0.001477491	0.001606906	980.8703747	0.014996024	0.007787716	0.049272812	0.071898771	1.152424753	0.009706508
SACRAMENT	2021	LHD2	2015	25	DSL	2074.12568	0.207658407	0.014870221	0.015542586	605.8943348	0.002932756	0.095238152	0.06314052	0.071881284	0.277210548	0.00572788
SACRAMENT	2021	LHD1	2015	25	DSL	3738.85031	0.207658407	0.014870221	0.015542586	530.192647	0.002932756	0.083338901	0.06314052	0.071881284	0.277210548	0.005012227
SACRAMENT	2021	MDV	2007	5	GAS	9.01654788	0.056589703	0.001296044	0.001409567	1220.46769	0.0148978	0.007969526	0.049227986	0.071833361	1.177876229	0.012077517
SACRAMENT	2021	MH	2005	60	DSL	84.3597873	4.390853872	0.33335176	0.348424447	917.6759157	0.002926943	0.144245875	0.063015355	0.071738792	0.514974109	0.008675338
SACRAMENT	2021	MH	2012	25	DSL	9.61419227	2.906965347	0.01841173	0.019244227	1194.308834	0.002926733	0.187728717	0.063010849	0.071733662	0.177854794	0.011290513
SACRAMENT	2021	LDT2	2007	5	GAS	9.91088262	0.055238497	0.001296044	0.001409567	1009.997645	0.014879488	0.007873633	0.0489626	0.071446111	1.173296375	0.009994745
SACRAMENT	2021	MDV	2020	15	DSL	127.366154	0.075808491	0.005267413	0.005505582	551.7807637	0.002913685	0.086732252	0.062729916	0.071413838	1.037322569	0.005216313
SACRAMENT	2021	MH	2004	65	DSL	14.0998875	4.535894454	0.389599862	0.407215839	931.2824528	0.002912565	0.146384633	0.062705805	0.07138639	0.566936542	0.008803968
SACRAMENT	2021	LDA	2020	15	DSL	229.066541	0.075451566	0.005183481	0.005417854	320.9008473	0.002880271	0.050441144	0.062010543	0.07059488	1.017787306	0.003033667
SACRAMENT	2021	MH	2007	40	DSL	60.7577198	3.41085468	0.106484643	0.111299406	998.2112916	0.002871477	0.156904914	0.061821208	0.070379336	0.260096604	0.009436686
SACRAMENT	2021	LDT1	2002	25	GAS	5541.93628	0.203206566	0.004200191	0.004568091	459.5458653	0.012431439	0.018152089	0.048203163	0.070337943	2.8507162	0.004547579
SACRAMENT	2021	LHD2	2016	25	DSL	1619.32044	0.173877704	0.013552494	0.014165278	587.1553348	0.002867994	0.092292642	0.061746233	0.070293981	0.254120392	0.005550729
SACRAMENT	2021	LHD1	2016	25	DSL	6819.77386	0.173871212	0.013552494	0.014165278	513.7949363	0.002867994	0.080761409	0.061746233	0.070293981	0.254120392	0.00485721
SACRAMENT	2021	MH	2021	10	GAS	75.6257238	0.163014455	0.004513536	0.004908882	2813.052688	0.016604472	0.019507144	0.048171503	0.070291744	0.295051729	0.027837437
SACRAMENT	2021	LDA	2005	5	GAS	18.9432306	0.059113046	0.001296044	0.001409567	816.2097613	0.014643855	0.008344042	0.048144484	0.070252319	1.296458356	0.008077057
SACRAMENT	2021	MH	2006	60	DSL	78.4995702	4.371720701	0.328989746	0.343865203	917.6759157	0.002860088	0.144245875	0.061576003	0.070100185	0.503213417	0.008675338
SACRAMENT	2021	LDT1	2005	5	GAS	0.93865489	0.059225003	0.001296044	0.001409567	932.8742722	0.014617325	0.00836722	0.047971253	0.06999954	1.2881512	0.009231547
SACRAMENT	2021	LDA	2002	25	GAS	31490.3519	0.203148841	0.004200191	0.004568091	384.6410193	0.01233161	0.018074313	0.04796553	0.069991189	2.847950585	0.003806335
SACRAMENT	2021	MH	2013	25	DSL	16.0403618	2.884734384	0.017963383	0.018775608	1194.308834	0.002850032	0.187728717	0.061359505	0.069853717	0.173200736	0.011290513
SACRAMENT	2021	MH	2005	65	DSL	13.275832	4.516571495	0.384658054	0.402050585	931.2824528	0.002848681	0.146384633	0.061330423	0.069820609	0.554503472	0.008803968
SACRAMENT	2021	MH	2008	40	DSL	53.8276297	3.393172214	0.104955087	0.10970069	998.2112916	0.002802983	0.156904914	0.060346584	0.068700574	0.253812378	0.009436686
SACRAMENT	2021	LHD1	2017	25	DSL	3531.92584	0.142012881	0.012164751	0.012714787	497.3972255	0.002799791	0.078183917	0.060277854	0.068622329	0.229803347	0.004702193
SACRAMENT	2021	LHD2	2017	25	DSL	1375.27517	0.142017642	0.012164751	0.012714787	568.4163347	0.002799791	0.089347132	0.060277854	0.068622329	0.229803347	0.005373579
SACRAMENT	2021	MH	2006	65	DSL	12.3536004	4.496890509	0.379624681	0.396789625	931.2824528	0.002783613	0.146384633	0.059929556	0.068225815	0.541840031	0.008803968
SACRAMENT	2021	MH	2014	25	DSL	16.4526627	2.862144721	0.017507801	0.018299427	1130.865727	0.002772092	0.177756344	0.059681515	0.067943437	0.168471577	0.010690748
SACRAMENT	2021	MH	1998	10	GAS	18.9212832	0.287933045	0.0062688	0.006817892	3414.034479	0.015888483	0.028870025	0.04644807	0.067776915	0.410963533	0.033784639

SACRAMENT	2021	LDT2	2000	70	GAS	385.613601	0.387392822	0.002776819	0.003020044	487.9197003	0.011332281	0.027184891	0.046443371	0.067770057	2.085200058	0.004828361
SACRAMENT	2021	LDT2	2000	35	GAS	14869.1645	0.382457729	0.002691255	0.002926985	442.3943642	0.011254648	0.026838576	0.046125203	0.067305788	3.401946859	0.004377851
SACRAMENT	2021	MH	1999	10	GAS	52.4416526	0.280770886	0.0062688	0.006817892	3414.022323	0.015786246	0.028371792	0.046082395	0.067243323	0.404289145	0.033784518
SACRAMENT	2021	MH	2009	40	DSL	6.10441403	3.375179364	0.103398682	0.108073912	998.2112916	0.002733288	0.156904914	0.058846077	0.066992346	0.247417841	0.009436686
SACRAMENT	2021	MDV	2013	5	GAS	7.95510427	0.049942707	0.006013646	0.006540389	1011.113543	0.014211719	0.007387651	0.045896267	0.066971725	1.006638705	0.010005788
SACRAMENT	2021	LHD1	2018	25	DSL	3971.80561	0.109545311	0.009979972	0.010431222	464.6018041	0.002728146	0.073028934	0.05873538	0.066866325	0.204259412	0.004392158
SACRAMENT	2021	LHD2	2018	25	DSL	1518.18096	0.109617218	0.01070699	0.011191112	530.9383346	0.002728146	0.083456112	0.05873538	0.066866325	0.204259412	0.005019277
SACRAMENT	2021	MDV	2014	5	GAS	12.713146	0.049426109	0.008372447	0.0091058	1004.805375	0.014196353	0.007355569	0.045733388	0.066734052	0.999905714	0.009943364
SACRAMENT	2021	MH	2000	10	GAS	47.4308658	0.273596282	0.0062688	0.006817892	3414.009985	0.015685443	0.027859156	0.045722092	0.066717569	0.397485916	0.033784396
SACRAMENT	2021	MH	2001	10	GAS	20.1527171	0.266466219	0.0062688	0.006817892	3413.997507	0.015583323	0.027353313	0.045357853	0.066186073	0.390604471	0.033784273
SACRAMENT	2021	LDT2	2013	5	GAS	17.9228581	0.049343512	0.006013646	0.006540389	836.7562774	0.014050225	0.007338726	0.045255397	0.066036569	1.002315004	0.008280382
SACRAMENT	2021	MH	2015	25	DSL	29.6916983	2.839196366	0.017044985	0.017815683	1130.865727	0.002692915	0.177756344	0.057976877	0.06600282	0.163667315	0.010690748
SACRAMENT	2021	LDT2	2014	5	GAS	16.7195684	0.048952324	0.008372447	0.0091058	831.5883735	0.014045666	0.007316117	0.045146937	0.065878305	0.996027278	0.008229241
SACRAMENT	2021	MH	2002	10	GAS	41.0958747	0.259413558	0.0062688	0.006817892	3413.98491	0.015476809	0.026848786	0.044981301	0.065636608	0.383681288	0.033784148
SACRAMENT	2021	MH	2020	10	GAS	76.1990849	0.148646014	0.004513536	0.004908882	3110.32738	0.015631816	0.018282818	0.044940205	0.065576642	0.284583016	0.030779211
SACRAMENT	2021	MH	2003	10	GAS	51.7628138	0.252457495	0.0062688	0.006817892	3413.972197	0.0153678	0.026349295	0.044585065	0.065058422	0.376739402	0.033784022
SACRAMENT	2021	LHD1	2019	25	DSL	4473.27737	0.088639203	0.007346189	0.007678352	464.6018041	0.002653059	0.073028934	0.057118807	0.065025964	0.177488587	0.004392158
SACRAMENT	2021	LHD2	2019	25	DSL	1683.72159	0.088691128	0.009179212	0.009594255	530.9383346	0.002653059	0.083456112	0.057118807	0.065025964	0.177488587	0.005019277
SACRAMENT	2021	MDV	2011	5	GAS	5.56536924	0.05108019	0.002747614	0.002988281	1072.257534	0.013725224	0.007469444	0.044298822	0.064640738	1.01296216	0.010610858
SACRAMENT	2021	MDV	2015	5	GAS	12.1732001	0.048064484	0.010549802	0.011473872	981.6391979	0.013747918	0.00721946	0.044030228	0.064248805	0.961629683	0.009714116
SACRAMENT	2021	LDT2	2000	65	GAS	1457.5052	0.37075485	0.002556523	0.002780452	492.3213726	0.010722525	0.026017338	0.043944391	0.064123552	2.235526164	0.004871919
SACRAMENT	2021	MH	2016	25	DSL	13.6486512	2.815889328	0.016574933	0.017324378	1130.865727	0.0026125	0.177756344	0.056245592	0.064031867	0.15878795	0.010690748
SACRAMENT	2021	MDV	2010	5	GAS	4.01170882	0.051541075	0.002021829	0.002198924	1107.363015	0.013554239	0.007474724	0.043812018	0.063930394	0.994365611	0.010958255
SACRAMENT	2021	LDT2	2011	5	GAS	12.4240007	0.050054877	0.002747614	0.002988281	887.3382211	0.013567447	0.007385598	0.043642031	0.063682349	1.008230894	0.008780931
SACRAMENT	2021	MDV	2005	15	GAS	2190.48823	0.107200137	0.000541288	0.0005887	842.4058472	0.012695542	0.012787174	0.043527814	0.063515685	1.730673626	0.008336289
SACRAMENT	2021	LDT2	2015	5	GAS	19.2408352	0.047704252	0.010549802	0.011473872	812.4622978	0.01360844	0.007188705	0.043502465	0.063478695	0.958194473	0.008039973
SACRAMENT	2021	LHD1	2020	25	DSL	5118.617	0.069124647	0.005054278	0.00528281	464.6018041	0.002574531	0.073028934	0.05542813	0.063101241	0.149490874	0.004392158
SACRAMENT	2021	LHD2	2020	25	DSL	1906.68478	0.069182011	0.007581417	0.007924215	530.9383346	0.002574531	0.083456112	0.05542813	0.063101241	0.149490874	0.005019277
SACRAMENT	2021	LDT2	2001	70	GAS	434.498124	0.369351366	0.002776819	0.003020044	487.7435452	0.010654462	0.026411023	0.043234186	0.063087223	1.982797373	0.004826618
SACRAMENT	2021	LDT2	2010	5	GAS	8.49965706	0.050362236	0.002021829	0.002198924	916.3733962	0.013381983	0.007380558	0.043090348	0.062877335	0.98929927	0.009068258
SACRAMENT	2021	LDT2	2001	35	GAS	16754.1395	0.364646107	0.002691255	0.002926985	442.1158057	0.010581472	0.026074567	0.042938004	0.062655035	3.234879679	0.004375094
SACRAMENT	2021	LDT1	2003	25	GAS	3953.06032	0.185119495	0.004200191	0.004568091	459.4609228	0.01124933	0.017040718	0.042872436	0.062559358	2.588593443	0.004546738
SACRAMENT	2021	LHD1	1996	15	GAS	977.404768	0.495687177	0.00416108	0.004525554	1321.091076	0.010345285	0.031782067	0.042867689	0.062552432	0.575728012	0.013073267
SACRAMENT	2021	LHD2	1996	15	GAS	151.949719	0.495687177	0.00416108	0.004525554	1513.117643	0.010358733	0.031835916	0.042867689	0.062552432	0.575728012	0.014973526
SACRAMENT	2021	LHD2	1997	15	GAS	158.358957	0.495615029	0.00416108	0.004525554	1513.114675	0.010363157	0.031934873	0.042777938	0.062421467	0.574099902	0.014973496
SACRAMENT	2021	LHD1	1997	15	GAS	1303.71225	0.495615029	0.00416108	0.004525554	1321.088108	0.010352591	0.031892803	0.042777938	0.062421467	0.574099902	0.013073238
SACRAMENT	2021	LHD1	1999	15	GAS	2355.30493	0.494153562	0.00416108	0.004525554	1321.080674	0.010411945	0.032057207	0.04272587	0.06234549	0.569551266	0.013073164
SACRAMENT	2021	LHD2	1999	15	GAS	290.294769	0.494153562	0.00416108	0.004525554	1513.107241	0.010416885	0.032076564	0.04272587	0.06234549	0.569551266	0.014973423
SACRAMENT	2021	LHD1	1998	15	GAS	1175.95008	0.495242964	0.00416108	0.004525554	1321.0847	0.010373252	0.031988781	0.04271646	0.062331758	0.572116979	0.013073204
SACRAMENT	2021	LHD2	1998	15	GAS	139.05069	0.495242964	0.00416108	0.004525554	1513.111267	0.010380982	0.03201936	0.04271646	0.062331758	0.572116979	0.014973463
SACRAMENT	2021	LDA	2003	25	GAS	38196.6987	0.185060486	0.004200191	0.004568091	386.1834724	0.011167893	0.016984004	0.042660832	0.062250586	2.586393788	0.003821599
SACRAMENT	2021	LHD1	2000	15	GAS	2914.19401	0.491998312	0.00416108	0.004525554	1321.0747	0.010409489	0.032086111	0.042556394	0.062098191	0.56624338	0.013073105
SACRAMENT	2021	LHD2	2000	15	GAS	336.142176	0.491998312	0.00416108	0.004525554	1513.101267	0.010411658	0.032094541	0.042556394	0.062098191	0.56624338	0.014973364
SACRAMENT	2021	MH	2017	25	DSL	28.3615937	2.792223617	0.016097647	0.016825511	1088.110871	0.002530848	0.171035876	0.054487661	0.062030579	0.153833484	0.010286561
SACRAMENT	2021	LHD1	2001	15	GAS	3963.18534	0.488434109	0.00416108	0.004525554	1321.067046	0.010396984	0.032054226	0.042337307	0.061778498	0.56201066	0.013073029
SACRAMENT	2021	LHD2	2001	15	GAS	539.906123	0.488434109	0.00416108	0.004525554	1513.093613	0.010396432	0.032052103	0.042337307	0.061778498	0.56201066	0.014973288
SACRAMENT	2021	LHD1	2004	10	GAS	1738.6839	0.355496537	0.00041792	0.000454526	1614.933381	0.011325128	0.023047805	0.042307103	0.061734425	0.405427876	0.015981075
SACRAMENT	2021	LHD2	2004	10	GAS	190.764501	0.355496537	0.00041792	0.000454526	1849.746388	0.011316238	0.02301366	0.042307103	0.061734425	0.405427876	0.01830474
SACRAMENT	2021	LDT1	2000	30	GAS	2737.69296	0.203385616	0.003273363	0.003560081	408.3984308	0.010695604	0.017604767	0.042169037	0.06153296	2.852385759	0.004041434
SACRAMENT	2021	LDT2	2003	70	GAS	563.153995	0.367402051	0.002776819	0.003020044	487.7016344	0.010473749	0.026496687	0.042156524	0.061514701	1.959288401	0.004826203
SACRAMENT	2021	LDT1	2007	5	GAS	1.85128986	0.054402706	0.001296044	0.001409567	914.2395338	0.013059343	0.007789305	0.042109384	0.061445914	1.086989448	0.009047141
SACRAMENT	2021	LDA	2007	5	GAS	25.0537323	0.054098643	0.001296044	0.001409567	799.8556915	0.013045376	0.007754474	0.042080802	0.061404208	1.087934273	0.00791522
SACRAMENT	2021	MH	2007	45	DSL	49.7525162	3.163440628	0.116286551	0.121544513	962.8216772	0.002504602	0.15134216	0.053922601	0.061387296	0.255200917	0.009102127
SACRAMENT	2021	LHD1	2002	15	GAS	3808.65653	0.384664868	0.00416108	0.004525554	1320.896954	0.010569624	0.027040102	0.042050062	0.061359352	0.45548413	0.013071346
SACRAMENT	2021	LHD2	2002	15	GAS	356.986103	0.384664868	0.00416108	0.004525554	1512.923521	0.010566442	0.027029428	0.042050062	0.061359352	0.45548413	0.014971605
SACRAMENT	2021	LDA	2000	30	GAS	15132.8231	0.203283698	0.003273363	0.003560081	341.9157926	0.010589805	0.017482478	0.041963973	0.06123373	2.849512967	0.003383534
SACRAMENT	2021	MDV	2016	5	GAS	14.0956622	0.046032904	0.012182818	0.013249926	942.6244118	0.01320091	0.007032615	0.041914103	0.06116096	0.960933198	0.009328033
SACRAMENT	2021	LDT2	2003	35	GAS	21715.0779	0.362721625	0.002691255	0.002926985	442.0503959	0.010401997	0.026159139	0.041867724	0.061093285	3.196525434	0.004374447
SACRAMENT	2021	LHD1	2021	25	DSL	4643.01867	0.051709461	0.003157573	0.003300344	452.986759	0.00249256	0.07120321	0.053663343	0.061092148	0.120266275	0.004282354
SACRAMENT	2021	LHD2	2021	25	DSL	1739.35625	0.051656053	0.005913605	0.006180991	517.6648763	0.00249256	0.08136971	0.053663343	0.061092148	0.120266275	0.004893795
SACRAMENT	2021	LHD1	2003	15	GAS	5137.75465	0.377056455	0.00416108	0.004525554	1320.832433	0.010521382	0.026764689	0.041676204	0.060813819	0.415795555	0.013070708
SACRAMENT	2021	LHD2	2003	15	GAS	543.131222	0.377056455	0.00416108	0.004525554	1512.859	0.010515631	0.026745656	0.041676204	0.060813819	0.415795555	0.014970966
SACRAMENT	2021	LDT1	2006	5	GAS	1.2943978	0.05050383	0.001296044	0.001409567	933.191141	0.012885244	0.007375045	0.041588427	0.060685734	1.040671615	0.009234683
SACRAMENT	2021	LDA	2006	5	GAS	21.8355488	0.05028283	0.001296044	0.001409567	825.9103753	0.012871473	0.007342563	0.041583209	0.060678121	1.041634201	0.008173053
SACRAMENT	2021	LDT2	2016	5	GAS	20.4669207	0.045761195	0.012182818	0.013249926	780.2310956	0.01309204	0.007007899	0.041510082	0.060571414	0.958211416	0.007721019
SACRAMENT	2021	MH	2019	10	GAS	69.6448896	0.139017787	0.004513536	0.004908882	3110.292882	0.014567259	0.017437974	0.041436548	0.060464114	0.27235059	0.030778869
SACRAMENT	2021	LDT2	2002	70	GAS	469.09899	0.35895077	0.002776819	0.003020044	487.6368769	0.010238612	0.025992717	0.041237816	0.060174125	1.920933325	0.004825562
SACRAMENT	2021	MH	2018	25	DSL	31.1787939	2.768199245	0.015613126	0.016319082	1088.110871	0.002447957	0.171035876	0.052703082	0.059998955	0.148803914	0.010286561
SACRAMENT	2021	MH	2008	45	DSL	44.0776913	3.147091683	0.114623826	0.119806607	962.8216772	0.002444788	0.15134216	0.052634854	0.059921282	0.249012191	0.009102127
SACRAMENT	2021	LHD1	2005	10	GAS	1028.57489	0.344648156	0.00041792	0.000454526	1614.928555	0.011051249	0.022668992	0.041058831	0.05991295	0.405779107	0.015981027
SACRAMENT	2021	LHD2	2005	10	GAS	259.767974	0.344648156	0.00041792	0.000454526	1849.741562	0.011039917	0.022625364	0.041058831	0.05991295	0.405779107	0.018304692
SACRAMENT	2021	MDV	2017	5	GAS	13.1131798	0.045439545	0.013090049	0.014236623	903.5841248	0.012978071	0.00699218	0.0410195	0.059855558	0.955591794	0.008941697
SACRAMENT	2021	LDT2	2002	35	GAS	18088.3403	0.354378006	0.002691255	0.002926985	441.9472747	0.010168471	0.025661589	0.04095531	0.059761893	3.133950177	0.004373427
SACRAMENT	2021	LDT2	2001	65	GAS	1642.27422	0.353488249	0.002556523	0.002780452	492.1342604	0.010081177	0.025276707	0.040907884	0.059692688	2.125741071	0.004870067
SACRAMENT	2021	LDT2	2017	5	GAS	21.2407136	0.045249382	0.013090049	0.014236623	747.9744439	0.012898527	0.006973736	0.040729796	0.059432822	0.953641436	0.007401813
SACRAMENT	2021	LHD1	2010	30	DSL	542.886243	0.20498148	0.018083674	0.018901337	496.3631357	0.00242089	0.078021373	0.052120331	0.059335531	0.282699539	0.004692417
SACRAMENT	2021	LHD2	2010	30	DSL	255.252324	0.20498148	0.018083674	0.018901337	563.3196333	0.00242089	0.088546002	0.052120331	0.059335531	0.282699539	0.005325396
SACRAMENT	2021	MDV	2012	5	GAS	6.30697942	0.049238743	0.004017738	0.004369657	1045.743812	0.012736653	0.007311033	0.040531764	0.059143855	0.961453134	0.010348483
SACRAMENT	2021	LHD1	2006	10	GAS	3170.30367	0.332698202	0.00041792	0.000454526	1614.924527	0.010953976	0.02223008	0.040466861	0.059049149	0.404848416	0.015980987
SACRAMENT	2021	LHD2	2006	10	GAS	229.011406	0.332698202	0.00041792	0.000454526	1849.737534	0.010940191	0.02217763	0.040466861	0.059049149	0.404848416	0.018304652
SACRAMENT	2021	LDT1	2008	5	GAS	3.16595048	0.053536149	0.001477491	0.001606906	887.2609107	0.012555758	0.00775328	0.040074425	0.058476507	1.079637653	0.008780166
SACRAMENT	2021	LHD1	2011	30	DSL	1196.62317	0.199287396	0.017226265	0.018005161	496.3631357	0.002384968	0.078021373	0.051346953	0.058455093	0.269891877	0.004692417
SACRAMENT	2021	LHD2	2011	30	DSL	647.476076	0.199287396	0.017226265	0.018005161	563.3196333	0.002384968	0.088546002	0.051346953	0.058455093	0.269891877	0.005325396
SACRAMENT	2021	LDA	2008	5	GAS	22.1714742	0.053187728	0.001477491	0.001606906	776.2570039	0.012548232	0.007718689	0.040048173	0.0584382	1.080586122	0.007681692
SACRAMENT	2021	MH	2009	45	DSL	4.99870566	3.13045576	0.112931915	0.118038195	962.8216772	0.002383925	0.15134216	0.051324504	0.058429536	0.24271483	0.009102127
SACRAMENT	2021	LHD1	2007	10	GAS	1301.00827	0.329622115	0.00041792	0.000454526	1614.919431	0.010891893	0.022328898	0.03999449	0.058359866	0.402918216	0.015980937
SACRAMENT	2021	LHD2	2007	10	GAS	195.908183	0.329622115	0.00041792	0.000454526	1849.732437	0.01087571	0.022267306	0.03999449	0.058359866	0.402918216	0.018304602
SACRAMENT	2021	LDT2	2000	40	GAS	18218.4277	0.366104282	0.002334267	0.002538728	427.3281686	0.009738432	0.02569099	0.039911257	0.058238413	3.137453379	0.004228759
SACRAMENT	2021	LDT2	2012	5	GAS	12.1679699	0.048170484	0.004017738	0.004369657	865.3882201	0.012577532	0.00721803	0.039901312	0.058223901	0.957098387	0.008563718
SACRAMENT	2021	LDT2	2003	65	GAS	2128.55531	0.351622655	0.002556523	0.002780452	492.0899133	0.009910188	0.025358692	0.039888207	0.058204778	2.100537292	0.004869629
SACRAMENT	2021	MH	2019	25	DSL	33.98983	2.743816225	0.01512137	0.015805091	1088.110871	0.00236383	0.171035876	0.050891857	0.057936996	0.143699243	0.010286561
SACRAMENT	2021	LHD1	2012	30	DSL	1206.38688	0.193181295	0.016306816	0.017044138	496.3631357	0.002346447	0.078021373	0.050517615	0.057510946	0.25615747	0.004692417
SACRAMENT	2021	LHD2	2012	30	DSL	819.646895	0.193181295	0.016306816	0.017044138	563.3196333	0.002346447	0.088546002	0.050517615	0.057510946	0.25615747	0.005325396
SACRAMENT	2021	LHD2	2009	5	GAS	64.3379258	0.162941547	0.00085019	0.000924659	2278.145698	0.011446129	0.01414873	0.039397789	0.057489161	0.22899156	0.022544098
SACRAMENT	2021	LHD2	2012	5	GAS	53.5930692	0.162070714	0.002059054	0.002239409	2278.125147	0.011603487	0.014422345	0.039375868	0.057457174	0.216085727	0.022543895
SACRAMENT	2021	LDT1	2001	30	GAS	3249.31568	0.193915122	0.003273363	0.003560081	408.1642914	0.010076512	0.017103698	0.039354656	0.057426221	2.712327604	0.004039117
SACRAMENT	2021	LHD2	2011	5	GAS	36.061567	0.163228417	0.001408127	0.001531467	2278.133591	0.0115363	0.014394348	0.039347729	0.057416114	0.221489477	0.022543979
SACRAMENT	2021	LHD2	2010	5	GAS	11.754612	0.163482469	0.001036169	0.001126929	2278.13968	0.011430986	0.014294942	0.039166625	0.057151847	0.225823774	0.022544039
SACRAMENT	2021	LDA	2001	30	GAS	18855.6354	0.193830132	0.003273363	0.003560081	341.6818233	0.009986408	0.017008908	0.039160322	0.05714265	2.709532997	0.003381219
SACRAMENT	2021	LHD2	2013	5	GAS	46.0864686	0.15917373	0.003081939	0.00335189	2278.114683	0.011604705	0.01434165	0.039146952	0.057123141	0.210107084	0.022543792
SACRAMENT	2021	MH	2010	30	DSL	6.31247299	2.452824839	0.0170896	0.017862316	1121.039436	0.002323808	0.176211788	0.050030214	0.056956073	0.141205206	0.010597854
SACRAMENT	2021	LDT2	2002	65	GAS	1773.05525	0.343534343	0.002556523	0.002780452	492.0209861	0.009687702	0.024876366	0.039018932	0.056936334	2.059417125	0.004868947
SACRAMENT	2021	LHD1	2013	30	DSL	1486.90672	0.186663175	0.015325326	0.01601827	496.3631357	0.002305326	0.078021373	0.049632316	0.056503092	0.24149632	0.004692417
SACRAMENT	2021	LHD2	2013	30	DSL	593.629109	0.186663175	0.015325326	0.01601827	563.3196333	0.002305326	0.088546002	0.049632316	0.056503092	0.24149632	0.005325396
SACRAMENT	2021	MH	2018	10	GAS	63.3721621	0.133208597	0.004396518	0.004781615	3110.265471	0.0137077	0.016913333	0.038639211	0.056382246	0.262667716	0.030778598
SACRAMENT	2021	LHD2	2014	5	GAS	166.200797	0.155839424	0.004290803	0.00466664	2243.939095	0.011532502	0.014250451	0.038637201	0.056379314	0.204304827	0.022205596
SACRAMENT	2021	MDV	2018	5	GAS	13.9326776	0.043102404	0.013634388	0.014828641	864.5114397	0.012292947	0.006760126	0.038461373	0.056122745	0.949103042	0.008555042
SACRAMENT	2021	LDT2	2000	60	GAS	9942.14121	0.360882894	0.002255694	0.002453273	474.3408213	0.009349558	0.025324584	0.038317527	0.055912846	2.343159068	0.004693987

SACRAMENT	2021	LDT2	2018	5	GAS	22.2610309	0.042998876	0.013634388	0.014828641	715.685582	0.012248028	0.006748871	0.038303314	0.055892106	0.947995562	0.007082289
SACRAMENT	2021	MH	2020	25	DSL	35.7810945	2.719074569	0.014622379	0.015283538	1088.110871	0.002278464	0.171035876	0.049053986	0.055844702	0.138519469	0.010286561
SACRAMENT	2021	LHD2	2015	5	GAS	193.842505	0.151840306	0.005406678	0.005880256	2232.541159	0.011456493	0.014118043	0.038102654	0.055599303	0.199531204	0.022092805
SACRAMENT	2021	MH	2011	30	DSL	8.73796376	2.434939188	0.01670515	0.017460482	1121.039436	0.00226774	0.176211788	0.048823112	0.055581867	0.137803175	0.010597854
SACRAMENT	2021	LHD1	2014	30	DSL	2238.54055	0.179733036	0.014281795	0.014927555	484.9467835	0.002261606	0.076226881	0.048691054	0.055431528	0.225908426	0.004584491
SACRAMENT	2021	LHD2	2014	30	DSL	898.77664	0.179733036	0.014281795	0.014927555	550.3632817	0.002261606	0.086509444	0.048691054	0.055431528	0.225908426	0.005202912
SACRAMENT	2021	LDT1	2002	30	GAS	3870.5046	0.188399773	0.003273363	0.003560081	408.0212968	0.009692364	0.016829424	0.037582344	0.054840068	2.626936258	0.004037701
SACRAMENT	2021	LDA	2002	30	GAS	21992.9544	0.188347276	0.003273363	0.003560081	341.5393254	0.009614606	0.016757406	0.037397361	0.054570141	2.624429522	0.003379808
SACRAMENT	2021	MH	2007	50	DSL	55.6811565	2.999193616	0.129839383	0.135710144	939.7283802	0.002220107	0.147712215	0.047797588	0.054414376	0.25624216	0.008883813
SACRAMENT	2021	LHD1	2015	30	DSL	3156.06335	0.172390878	0.013176224	0.013771994	481.4722416	0.002215287	0.075680731	0.04769383	0.054296254	0.209393788	0.004551644
SACRAMENT	2021	LHD2	2015	30	DSL	1750.82485	0.172390878	0.013176224	0.013771994	546.4200443	0.002215287	0.085889622	0.04769383	0.054296254	0.209393788	0.005165634
SACRAMENT	2021	LDT1	2009	5	GAS	2.33579118	0.050798909	0.001658937	0.001804245	868.578083	0.011771601	0.007450447	0.037185341	0.054260763	0.975117059	0.008595284
SACRAMENT	2021	LDT2	2001	40	GAS	20527.9913	0.349054264	0.002334267	0.002538728	427.0720504	0.009155946	0.024959649	0.037153435	0.054214205	2.983375285	0.004226224
SACRAMENT	2021	MH	2012	30	DSL	11.5602873	2.416755315	0.016314289	0.017051948	1121.039436	0.002210738	0.176211788	0.047595881	0.054184746	0.134344415	0.010597854
SACRAMENT	2021	LDA	2009	5	GAS	19.1096178	0.050441485	0.001658937	0.001804245	759.8934354	0.011750611	0.007418291	0.037099106	0.054134928	0.975729208	0.007519762
SACRAMENT	2021	LDT1	2011	5	GAS	1.1560924	0.048236121	0.002747614	0.002988281	852.5969632	0.011750006	0.007211696	0.036974946	0.053953754	0.934999026	0.008437138
SACRAMENT	2021	LDT2	2004	10	GAS	599.623817	0.056767816	0.000815468	0.000886896	873.5707531	0.010955197	0.00793585	0.036934625	0.053894918	1.543994344	0.008644691
SACRAMENT	2021	LDA	2011	5	GAS	24.5611332	0.047907641	0.002747614	0.002988281	745.9072087	0.011721959	0.00718708	0.036842097	0.053759902	0.935312321	0.007381357
SACRAMENT	2021	MH	2021	25	DSL	30.2554693	2.693974295	0.014116153	0.014754423	984.0806229	0.002191861	0.15468377	0.047189468	0.053722072	0.133264592	0.009303101
SACRAMENT	2021	MDV	2021	5	DSL	0.43335071	0.028364211	0.000971155	0.001015066	727.7189919	0.00218371	0.114387291	0.047014	0.053522314	1.485916472	0.006879562
SACRAMENT	2021	MH	2017	10	GAS	55.6978039	0.13024712	0.004220992	0.004590714	3110.246444	0.013073512	0.016620317	0.036597173	0.053402509	0.256219324	0.03077841
SACRAMENT	2021	LDT2	2000	45	GAS	7059.36134	0.356146444	0.002135899	0.002322985	428.4889004	0.008911701	0.024992209	0.036523046	0.053294343	2.913183039	0.004240245
SACRAMENT	2021	LDA	2021	5	DSL	0.78489661	0.028253972	0.000967128	0.001010857	452.4662769	0.002171384	0.071121398	0.046748612	0.053220187	1.476216098	0.004277433
SACRAMENT	2021	MH	2008	50	DSL	49.3301046	2.98374951	0.127990661	0.133777831	939.7283802	0.002167035	0.147712215	0.046654988	0.053113602	0.250008119	0.008883813
SACRAMENT	2021	LHD1	2016	30	DSL	5756.75315	0.144358268	0.012008611	0.012551587	466.5813475	0.002166369	0.07334009	0.046640641	0.053097268	0.191952405	0.004410872
SACRAMENT	2021	LHD2	2016	30	DSL	1366.91161	0.144363654	0.012008611	0.012551587	529.5204553	0.002166369	0.083233242	0.046640641	0.053097268	0.191952405	0.005005873
SACRAMENT	2021	LDT2	2003	40	GAS	26606.3757	0.347212071	0.002334267	0.002538728	427.011989	0.009000649	0.025040605	0.036227342	0.052862853	2.948002993	0.00422563
SACRAMENT	2021	MH	2013	30	DSL	19.2872355	2.398273224	0.015917017	0.016636714	1121.039436	0.0021528	0.176211788	0.046348522	0.052764711	0.130828926	0.010597854
SACRAMENT	2021	LHD1	2009	5	GAS	113.233875	0.095680364	0.00085019	0.000924659	1988.874727	0.010540707	0.008737537	0.036118476	0.052703995	0.22899156	0.019681528
SACRAMENT	2021	LHD1	2012	5	GAS	207.076025	0.093459425	0.002059054	0.002239409	1988.854169	0.010694772	0.00880612	0.03609512	0.052669914	0.216085727	0.019681324
SACRAMENT	2021	LDT2	2005	10	GAS	726.417312	0.053770469	0.000815468	0.000886896	852.6904519	0.010752721	0.007568426	0.036068856	0.05263159	1.396246758	0.008438063
SACRAMENT	2021	LHD1	2011	5	GAS	131.711941	0.094682708	0.001408127	0.001531467	1988.862613	0.010628712	0.008821582	0.036066851	0.052628665	0.221489477	0.019681408
SACRAMENT	2021	LDT2	2000	55	GAS	12878.6383	0.350470541	0.002099645	0.002283556	459.3860098	0.008794953	0.024593908	0.036044578	0.052596163	2.540229595	0.004545997
SACRAMENT	2021	LHD1	2010	5	GAS	79.9861898	0.094743308	0.001036169	0.001126929	1988.868759	0.010527771	0.008736741	0.035898999	0.052383735	0.225823774	0.019681469
SACRAMENT	2021	LHD1	2013	5	GAS	300.364684	0.092571041	0.003081939	0.00335189	1988.843786	0.010699216	0.00884124	0.035884777	0.052362983	0.210107084	0.019681222
SACRAMENT	2021	LDT2	2001	60	GAS	11202.5138	0.344076044	0.002255694	0.002453273	474.1470074	0.008790332	0.024603674	0.03566983	0.052049332	2.2280882	0.004692069
SACRAMENT	2021	LHD2	2016	5	GAS	31.0318486	0.132245594	0.006243584	0.006790467	2186.9737	0.010857821	0.012770234	0.03559176	0.051935413	0.196770842	0.021641878
SACRAMENT	2021	LHD1	2017	30	DSL	2981.39288	0.117925312	0.010778957	0.011266334	451.6904535	0.00211485	0.070999449	0.045531486	0.051834569	0.173584279	0.004270099
SACRAMENT	2021	LHD2	2017	30	DSL	1160.90648	0.117929261	0.010778957	0.011266334	512.6208663	0.00211485	0.080576862	0.045531486	0.051834569	0.173584279	0.004846111
SACRAMENT	2021	MH	2009	50	DSL	5.59436453	2.96803431	0.126109489	0.1318116	939.7283802	0.002113032	0.147712215	0.045492334	0.051789997	0.243664648	0.008883813
SACRAMENT	2021	LDT2	2002	40	GAS	22162.7194	0.339225216	0.002334267	0.002538728	426.9171094	0.008798583	0.024564329	0.035437848	0.051710824	2.890292818	0.004224691
SACRAMENT	2021	LHD1	2014	5	GAS	412.074673	0.088251751	0.004290803	0.00466664	1959.007234	0.010636163	0.008590853	0.035417673	0.051681386	0.204304827	0.019385965
SACRAMENT	2021	LDT2	2000	50	GAS	7076.82271	0.350567714	0.002061797	0.002242392	441.651421	0.008633847	0.024600727	0.035384312	0.051632705	2.724171393	0.004370499
SACRAMENT	2021	LDT1	2010	5	GAS	1.26062664	0.049139925	0.002021829	0.002198924	824.0535176	0.011262345	0.007302275	0.035257391	0.051447503	0.940207344	0.008154678
SACRAMENT	2021	MH	2016	10	GAS	70.5790164	0.129345548	0.003928448	0.004272546	3232.42293	0.012637559	0.016508061	0.035208253	0.0513758	0.252771871	0.031987445
SACRAMENT	2021	MH	2014	30	DSL	19.7829939	2.379492922	0.015513334	0.016214779	1061.488486	0.002093928	0.166851208	0.045081035	0.051321761	0.127256707	0.010034884
SACRAMENT	2021	LDA	2010	5	GAS	24.0217824	0.04876246	0.002021829	0.002198924	720.9429326	0.01123903	0.0072707	0.035152579	0.05129456	0.940690695	0.007134315
SACRAMENT	2021	LHD1	2015	5	GAS	1197.84485	0.086377691	0.005406678	0.005880256	1949.055777	0.010569752	0.0085659	0.034928157	0.050967085	0.199531204	0.019287487
SACRAMENT	2021	LDT1	2000	70	GAS	126.200484	0.193681403	0.002776819	0.003020044	417.4839846	0.008847243	0.016764785	0.034881592	0.050899137	1.611165835	0.004131342
SACRAMENT	2021	MDV	2004	20	GAS	7517.16914	0.115336804	0.000379041	0.000412241	716.3240264	0.0101106	0.013128195	0.034871951	0.050885069	1.644825131	0.007088607
SACRAMENT	2021	LDT2	2003	60	GAS	14519.6034	0.342260125	0.002255694	0.002453273	474.1012999	0.008641237	0.024683475	0.034780717	0.050751941	2.201670945	0.004691617
SACRAMENT	2021	LDA	2000	70	GAS	697.583559	0.193519226	0.002776819	0.003020044	349.0005373	0.008756204	0.01664273	0.034698004	0.050631246	1.608150633	0.003453643
SACRAMENT	2021	LDT1	2000	35	GAS	4866.25925	0.191214048	0.002691255	0.002926985	378.328604	0.008786633	0.016551214	0.034642631	0.050550445	2.62857299	0.003743868
SACRAMENT	2021	LHD1	2018	30	DSL	3352.70713	0.090982777	0.008843066	0.0092429	421.9086653	0.002060733	0.066318167	0.044366362	0.050508154	0.15428941	0.003988554
SACRAMENT	2021	LHD2	2018	30	DSL	1281.53707	0.091042444	0.009487263	0.009916235	478.8216883	0.002060733	0.075264101	0.044366362	0.050508154	0.15428941	0.004526587
SACRAMENT	2021	LDA	2000	35	GAS	26898.6484	0.191116271	0.002691255	0.002926985	316.7289653	0.008699596	0.016436075	0.034473687	0.050303923	2.625850058	0.00313429
SACRAMENT	2021	MH	2005	10	GAS	38.8575172	0.16214109	0.00041792	0.000454526	3413.773204	0.012318809	0.019333177	0.034461118	0.050285582	0.27874064	0.033782053
SACRAMENT	2021	MH	2015	10	GAS	26.9074248	0.132445901	0.003401869	0.003699843	3232.418085	0.012376642	0.016746453	0.034388784	0.050180033	0.251944839	0.031987397
SACRAMENT	2021	MH	2006	10	GAS	61.5244806	0.157282797	0.00041792	0.000454526	3413.768226	0.012304017	0.018931889	0.034385771	0.050175636	0.275804622	0.033782004
SACRAMENT	2021	MH	2007	10	GAS	38.4075225	0.153650306	0.00041792	0.000454526	3413.763333	0.012295405	0.018632346	0.034329845	0.050094029	0.272869947	0.033781956
SACRAMENT	2021	MH	2004	10	GAS	63.6055218	0.165777663	0.00041792	0.000454526	3413.780101	0.012255695	0.019623812	0.034282601	0.05002509	0.283577344	0.033782122
SACRAMENT	2021	MH	2008	10	GAS	23.9698138	0.15003339	0.000476429	0.00051816	3413.758339	0.012283388	0.018332131	0.0342629	0.049996344	0.269901576	0.033781906
SACRAMENT	2021	LHD2	2020	5	GAS	158.105338	0.097643544	0.007173479	0.007801813	2050.348889	0.010967895	0.010326817	0.034249514	0.049976811	0.220585008	0.020289864
SACRAMENT	2021	MH	2009	10	GAS	3.20381318	0.146497342	0.000534938	0.000581793	3413.753268	0.012267079	0.01803671	0.034182541	0.049879084	0.266920982	0.033781856
SACRAMENT	2021	MH	2015	30	DSL	35.7018617	2.360414415	0.015103241	0.015786143	1061.488486	0.002034121	0.166851208	0.04379342	0.049855897	0.123627759	0.010034884
SACRAMENT	2021	LHD2	2017	5	GAS	105.630032	0.117124585	0.006708532	0.00729614	2141.415548	0.010535835	0.011672672	0.03409232	0.049747434	0.197131066	0.021191043
SACRAMENT	2021	MH	2010	10	GAS	3.87895915	0.143121092	0.000651955	0.000709061	3413.748177	0.01224606	0.017752908	0.034087812	0.049740855	0.263966897	0.033781806
SACRAMENT	2021	LDT2	2002	60	GAS	12094.6159	0.334387178	0.002255694	0.002453273	474.0297146	0.00844724	0.024213992	0.034022749	0.049645916	2.158570983	0.004690908
SACRAMENT	2021	LHD2	2019	5	GAS	137.587213	0.103252268	0.007173479	0.007801813	2050.328672	0.010753024	0.010670857	0.034003141	0.049617304	0.208501142	0.020289664
SACRAMENT	2021	LDT2	2001	45	GAS	7954.28183	0.339560177	0.002135899	0.002322985	428.2512494	0.008378664	0.02428076	0.033999345	0.049611765	2.770118701	0.004237893
SACRAMENT	2021	MH	2014	10	GAS	36.4438258	0.133304701	0.002699763	0.002936239	3232.418156	0.012247274	0.016775433	0.033994482	0.049604668	0.253062603	0.031987398
SACRAMENT	2021	MH	2011	10	GAS	25.0727306	0.139996885	0.00088599	0.000963595	3413.74319	0.012222242	0.017488911	0.033985132	0.049591025	0.26110002	0.033781756
SACRAMENT	2021	MH	2012	10	GAS	16.4425174	0.137234066	0.001295552	0.001409031	3413.738468	0.012202625	0.017021667	0.033897196	0.049462709	0.258360298	0.03378171
SACRAMENT	2021	MH	2013	10	GAS	30.4523155	0.134954292	0.001939149	0.002109001	3413.733656	0.012202001	0.016870303	0.033871546	0.049425281	0.255394226	0.033781662
SACRAMENT	2021	MDV	2019	5	GAS	14.4170665	0.038375575	0.012877498	0.014005454	825.4048853	0.010999309	0.006252444	0.033766594	0.049272134	0.941825996	0.00816805
SACRAMENT	2021	LDT2	2019	5	GAS	22.9187908	0.038358952	0.012877498	0.014005454	683.3629703	0.010990721	0.006249446	0.033741715	0.049235832	0.94163257	0.006762431
SACRAMENT	2021	MH	2007	55	DSL	81.5956891	2.904894491	0.147119198	0.153771275	928.9314006	0.002007885	0.14601508	0.043228572	0.049212855	0.262606242	0.008781742
SACRAMENT	2021	LDT1	2012	5	GAS	2.32348795	0.046406706	0.004017738	0.004369657	780.0592943	0.010872552	0.007066583	0.033695728	0.049168727	0.90987305	0.007719319
SACRAMENT	2021	LHD1	2019	30	DSL	3776.01283	0.07362714	0.006509321	0.006803643	421.9086653	0.002004015	0.066318167	0.043145268	0.049118019	0.134067797	0.003988554
SACRAMENT	2021	LHD2	2019	30	DSL	1421.27434	0.073670189	0.008133527	0.008501289	478.8216883	0.002004015	0.075264101	0.043145268	0.049118019	0.134067797	0.004526587
SACRAMENT	2021	LDT2	2006	10	GAS	721.407117	0.048639728	0.000815468	0.000886896	828.1005614	0.010085948	0.006946812	0.033562638	0.048974522	1.208720996	0.008194726
SACRAMENT	2021	LDA	2012	5	GAS	39.6891258	0.04602661	0.004017738	0.004369657	682.4571913	0.010845513	0.007037922	0.033562327	0.048974069	0.910131479	0.006753467
SACRAMENT	2021	LDT2	2001	55	GAS	14511.2728	0.334148609	0.002099645	0.002283556	459.1775328	0.0082689	0.023893797	0.033553939	0.048961828	2.415480735	0.004543934
SACRAMENT	2021	LDT1	2003	30	GAS	2760.82896	0.171630629	0.003273363	0.003560081	407.9323045	0.008770715	0.015799034	0.03342616	0.048775375	2.38539002	0.004036821
SACRAMENT	2021	LHD1	2020	5	GAS	977.282961	0.070364658	0.007173479	0.007801813	1790.013719	0.010728445	0.007787998	0.033316618	0.048615531	0.220585008	0.017713637
SACRAMENT	2021	LDA	2003	30	GAS	26676.6867	0.171576851	0.003273363	0.003560081	342.8962683	0.008707289	0.015746538	0.033261439	0.048535013	2.383400979	0.003393237
SACRAMENT	2021	LHD2	2018	5	GAS	120.290063	0.105044702	0.0069875	0.007599544	2050.313715	0.01039253	0.010749033	0.033180134	0.048416374	0.201303797	0.020289516
SACRAMENT	2021	LDT2	2003	45	GAS	10309.5626	0.337768091	0.002135899	0.002322985	428.1955349	0.008236551	0.024359514	0.033151872	0.048375133	2.737274879	0.004237342
SACRAMENT	2021	MH	2016	30	DSL	16.4113974	2.34103771	0.014686738	0.015350807	1061.488486	0.001973378	0.166851208	0.042485676	0.048367118	0.119942082	0.010034884
SACRAMENT	2021	LHD1	2016	5	GAS	1932.02305	0.077831788	0.006243584	0.006790467	1909.276128	0.010142652	0.007992073	0.033037374	0.048208059	0.196770842	0.018893835
SACRAMENT	2021	LDT1	2000	65	GAS	477.000452	0.185363062	0.002556523	0.002780452	421.2341347	0.008371199	0.016044761	0.033004717	0.048160406	1.727317897	0.004168453
SACRAMENT	2021	LDT2	2001	50	GAS	7973.95679	0.334241257	0.002061797	0.002242392	441.4288224	0.00811743	0.023900422	0.032939297	0.048064944	2.590389282	0.004368296
SACRAMENT	2021	MH	2008	55	DSL	72.2887981	2.890004894	0.145032132	0.151589841	928.9314006	0.001959833	0.14601508	0.04219405	0.048035121	0.256199208	0.008781742
SACRAMENT	2021	LDA	2004	10	GAS	1086.82634	0.052841062	0.000815468	0.000886896	696.180759	0.009853352	0.007358977	0.032907201	0.048018111	1.306604376	0.006889273
SACRAMENT	2021	LDA	2000	65	GAS	2636.65925	0.185275929	0.002556523	0.002780452	352.3541809	0.008288649	0.015933803	0.032845238	0.047927694	1.725694831	0.00348683
SACRAMENT	2021	LHD1	2019	5	GAS	874.642153	0.071166387	0.007173479	0.007801813	1789.992405	0.010435686	0.007716583	0.032815668	0.047884546	0.208501142	0.017713426
SACRAMENT	2021	LDT1	2004	10	GAS	97.7496712	0.052901984	0.000815468	0.000886896	794.8870042	0.009834652	0.00738272	0.032762635	0.04780716	1.298428716	0.007866051
SACRAMENT	2021	LDT2	2003	55	GAS	18808.0933	0.332385083	0.002099645	0.002283556	459.128531	0.008128649	0.023971297	0.032717567	0.047741398	2.386841666	0.004543449
SACRAMENT	2021	LHD1	2020	30	DSL	4320.76124	0.057426336	0.004478501	0.004680999	421.9086653	0.001944698	0.066318167	0.041868198	0.047664159	0.112919442	0.003988554
SACRAMENT	2021	LHD2	2020	30	DSL	1609.48352	0.057473974	0.006717751	0.007021498	478.8216883	0.001944698	0.075264101	0.041868198	0.047664159	0.112919442	0.004526587
SACRAMENT	2021	LDT1	2001	70	GAS	149.784953	0.184662779	0.002776819	0.003020044	417.3485475	0.008335139	0.016287623	0.032553578	0.047502105	1.532054195	0.004130002
SACRAMENT	2021	LDT2	2002	45	GAS	8587.71388	0.329998474	0.002135899	0.002322985	428.1074831	0.00805164	0.023896193	0.0324294	0.047320905	2.683689922	0.004236471
SACRAMENT	2021	MDV	2009	10	GAS	230.496736	0.047057688	0.001043799	0.001135227	911.5700286	0.009808446	0.006730351	0.032382399	0.047252321	1.060073813	0.009020724
SACRAMENT	2021	LDA	2001	70	GAS	869.19547	0.18451975	0.002776819	0.003020044	348.8653209	0.008257283	0.016191907	0.032379799	0.047248527	1.529151562	0.003452305
SACRAMENT	2021	LHD1	2010	35	DSL	286.502146	0.177781554	0.016351572	0.017090917	496.3631357	0.001924924	0.078021373	0.041442475	0.047179502	0.224783079	0.004692417
SACRAMENT	2021	LHD2	2010	35	DSL	134.70656	0.177781554	0.016351572	0.017090917	563.3196333	0.001924924	0.088546002	0.041442475	0.047179502	0.224783079	0.005325396
SACRAMENT	2021	LDT1	2001	35	GAS	5775.67051	0.182310313	0.002691255	0.002926985	378.1140502	0.008278038	0.016080131	0.032330565	0.047176685	2.499504514	0.003741745
SACRAMENT	2021	LDA	2001	35	GAS	33515.961	0.182228542	0.002691255	0.002926985	316.5145698	0.008203901	0.01599085	0.032170469	0.046943073	2.496857344	0.003132168

SACRAMENT	2021	LHD1	2017	5	GAS	700.802392	0.072742011	0.006708532	0.00729614	1869.505679	0.009990585	0.007670363	0.032133186	0.046888669	0.197131066	0.018500274
SACRAMENT	2021	LDT2	2003	50	GAS	10335.0633	0.332477242	0.002061797	0.002242392	441.3765995	0.007979748	0.023977943	0.032118246	0.046866869	2.559676417	0.004367779
SACRAMENT	2021	MH	2017	30	DSL	34.1025187	2.321362817	0.014263823	0.01490877	1021.356589	0.001911701	0.160543033	0.041157805	0.046855425	0.116199676	0.009655493
SACRAMENT	2021	MH	2021	15	GAS	95.5282561	0.142886297	0.002995978	0.003258399	2300.487278	0.01106586	0.017098506	0.032103345	0.046845126	0.270485668	0.022765187
SACRAMENT	2021	MH	2009	55	DSL	8.19803427	2.874853936	0.142908431	0.149370117	928.9314006	0.001910938	0.14601508	0.041141371	0.046836715	0.249679706	0.008781742
SACRAMENT	2021	LDT2	2008	20	DSL	5.32747839	0.059486646	0.007802986	0.008155802	543.121714	0.001910799	0.08537117	0.041138379	0.04683331	0.515112299	0.005134453
SACRAMENT	2021	LDT1	2008	20	DSL	3.68938133	0.059486667	0.007802986	0.008155802	693.5554038	0.001910798	0.109017251	0.041138365	0.046833293	0.515112347	0.006556593
SACRAMENT	2021	LHD2	2008	10	GAS	301.471107	0.229088016	0.000476429	0.00051816	1849.544412	0.009002098	0.017337321	0.032082459	0.046814649	0.305821448	0.018302741
SACRAMENT	2021	LDT2	2009	10	GAS	379.651857	0.046272211	0.001043799	0.001135227	755.0455767	0.009748297	0.006674867	0.032064259	0.046788092	1.055453287	0.007471788
SACRAMENT	2021	LDT2	2002	55	GAS	15666.8649	0.32473929	0.002099645	0.002283556	459.0513938	0.00794616	0.023515359	0.032004561	0.04670098	2.340116798	0.004542686
SACRAMENT	2021	LHD1	2011	35	DSL	631.504499	0.172843045	0.015576288	0.016280579	496.3631357	0.001896361	0.078021373	0.040827539	0.046479438	0.214599314	0.004692417
SACRAMENT	2021	LHD2	2011	35	DSL	341.698261	0.172843045	0.015576288	0.016280579	563.3196333	0.001896361	0.088546002	0.040827539	0.046479438	0.214599314	0.005325396
SACRAMENT	2021	LHD1	2018	5	GAS	780.709083	0.070300723	0.0069875	0.007599544	1789.976568	0.010012819	0.007557816	0.031788663	0.046385943	0.201303797	0.017713269
SACRAMENT	2021	LDT1	2014	5	GAS	4.46008735	0.0433736	0.008372447	0.0091058	759.9332919	0.010360372	0.006776528	0.031774701	0.04636557	0.870323688	0.007520156
SACRAMENT	2021	LDT2	2009	20	DSL	6.73623431	0.059016225	0.007605488	0.007949374	512.3478367	0.001890333	0.080533945	0.04069776	0.046331694	0.499004182	0.00484353
SACRAMENT	2021	LDT1	2009	20	DSL	18.7260537	0.059016244	0.007605488	0.007949374	679.0598444	0.001890332	0.106738751	0.040697742	0.046331673	0.4990043	0.006419558
SACRAMENT	2021	MH	2007	60	DSL	98.0508943	2.89450688	0.168268153	0.175876492	930.4307382	0.00188899	0.146250755	0.040668839	0.046298769	0.275572397	0.008795917
SACRAMENT	2021	LHD1	2021	30	DSL	3919.296	0.042967709	0.002797866	0.002924373	411.3609487	0.00188278	0.064660213	0.040535148	0.046146571	0.090844346	0.00388884
SACRAMENT	2021	LHD2	2021	30	DSL	1468.23704	0.042923399	0.005239934	0.005476861	466.8511461	0.00188278	0.073382499	0.040535148	0.046146571	0.090844346	0.004413422
SACRAMENT	2021	LDA	2014	5	GAS	51.2812274	0.043005247	0.008372447	0.0091058	664.8921748	0.010324923	0.006749133	0.031609262	0.046124161	0.870308953	0.006579647
SACRAMENT	2021	LDT1	2013	5	GAS	3.75061728	0.044526379	0.006013646	0.006540389	758.7293251	0.010288647	0.006887969	0.03156904	0.046065469	0.877009997	0.007508242
SACRAMENT	2021	MDV	2008	10	GAS	533.311691	0.047892295	0.000929634	0.001011061	966.2241422	0.009568613	0.006801172	0.03156482	0.046059311	1.06892187	0.009561571
SACRAMENT	2021	LDA	2013	5	GAS	51.0195453	0.044130032	0.006013646	0.006540389	663.7935175	0.010256426	0.006856804	0.031420897	0.0458493	0.877121035	0.006568775
SACRAMENT	2021	LDT2	2002	50	GAS	8608.95564	0.324829329	0.002061797	0.002242392	441.2941557	0.007800602	0.023521879	0.0314183	0.04584551	2.509568131	0.004366963
SACRAMENT	2021	LDT2	2010	20	DSL	12.7258795	0.058513565	0.007394454	0.007728799	507.4926944	0.001868465	0.079770784	0.040226944	0.045795701	0.481792153	0.004797631
SACRAMENT	2021	LDT1	2010	20	DSL	2.11018846	0.058513581	0.007394454	0.007728799	644.2316114	0.001868464	0.101264238	0.040226922	0.045795676	0.481792354	0.006090306
SACRAMENT	2021	LHD1	2012	35	DSL	636.657189	0.16754719	0.014744906	0.015411606	496.3631357	0.001865732	0.078021373	0.040168106	0.045728718	0.203678666	0.004692417
SACRAMENT	2021	LHD2	2012	35	DSL	432.559486	0.16754719	0.014744906	0.015411606	563.3196333	0.001865732	0.088546002	0.040168106	0.045728718	0.203678666	0.005325396
SACRAMENT	2021	LDT2	2008	10	GAS	568.347858	0.046883422	0.000929634	0.001011061	800.2992606	0.009530751	0.006728627	0.031315429	0.045695401	1.064492184	0.00791961
SACRAMENT	2021	MDV	2007	10	GAS	687.301372	0.048893796	0.000815468	0.000886896	994.9195604	0.009468325	0.006885712	0.03128694	0.045653829	1.088001655	0.009845536
SACRAMENT	2021	LDT2	2007	10	GAS	755.473527	0.047726346	0.000815468	0.000886896	824.0635058	0.009456687	0.006802859	0.031118274	0.045407712	1.083771255	0.008154776
SACRAMENT	2021	MH	2007	65	DSL	15.430423	2.954858476	0.193243834	0.201981463	944.2263932	0.001851663	0.14841924	0.039865209	0.04538389	0.294426118	0.008926335
SACRAMENT	2021	LDT1	2002	70	GAS	178.420137	0.179410585	0.002776819	0.003020044	417.2657722	0.008017377	0.016026436	0.031087549	0.045362878	1.483821021	0.004129183
SACRAMENT	2021	MH	2018	30	DSL	37.4899737	2.301389745	0.013834498	0.014460032	1021.356589	0.001849089	0.160543033	0.039809806	0.045320817	0.11240054	0.009655493
SACRAMENT	2021	LHD1	2008	10	GAS	1618.72833	0.199906131	0.000476429	0.00051816	1614.727011	0.008738194	0.015391597	0.031058449	0.045320416	0.305834853	0.015979033
SACRAMENT	2021	MH	2010	35	DSL	7.44323704	2.120881476	0.015452713	0.016151416	1060.23492	0.001847731	0.166654165	0.039780559	0.045287521	0.112276593	0.010023033
SACRAMENT	2021	LDT2	2011	20	DSL	10.3949598	0.057978666	0.007169887	0.007494077	491.3640463	0.001845194	0.077235585	0.039725932	0.045225332	0.463476213	0.004645157
SACRAMENT	2021	MH	2008	60	DSL	86.8671051	2.879718951	0.165887543	0.173388242	930.4307382	0.001843785	0.146250755	0.039695616	0.04519082	0.268837325	0.008795917
SACRAMENT	2021	MH	1998	15	GAS	23.9008249	0.252380605	0.00416108	0.004525554	2791.980509	0.010588697	0.025305308	0.030954783	0.045169147	0.376746634	0.02762891
SACRAMENT	2021	LDA	2002	70	GAS	1013.81767	0.179300256	0.002776819	0.003020044	348.7829052	0.007949858	0.015952486	0.030922091	0.045121442	1.48112258	0.00345149
SACRAMENT	2021	LDT1	2002	35	GAS	6879.83609	0.177125029	0.002691255	0.002926985	377.9830401	0.007962453	0.015822271	0.030874579	0.045052113	2.420813409	0.003740449
SACRAMENT	2021	LDT1	2001	65	GAS	566.142761	0.176731774	0.002556523	0.002780452	421.0901976	0.00788665	0.015588093	0.030801967	0.044946158	1.642502946	0.004167029
SACRAMENT	2021	LHD2	2013	35	DSL	313.281126	0.161893989	0.013857426	0.014483997	563.3196333	0.001833036	0.088546002	0.039464177	0.044927342	0.192021136	0.005325396
SACRAMENT	2021	LHD1	2013	35	DSL	784.698401	0.161893989	0.013857426	0.014483997	496.3631357	0.001833036	0.078021373	0.039464177	0.044927342	0.192021136	0.004692417
SACRAMENT	2021	LDA	2002	35	GAS	39092.5569	0.177073859	0.002691255	0.002926985	316.3840169	0.007898464	0.015754402	0.030722184	0.044829739	2.418433779	0.003130876
SACRAMENT	2021	MH	1999	15	GAS	66.2427989	0.246102791	0.00416108	0.004525554	2791.96976	0.010520562	0.024868594	0.030711083	0.044813541	0.370627957	0.027628804
SACRAMENT	2021	LDA	2001	65	GAS	3285.30145	0.176659802	0.002556523	0.002780452	352.2103456	0.00781637	0.015502184	0.030650818	0.044725602	1.640921498	0.003485407
SACRAMENT	2021	LDA	2005	10	GAS	1443.97929	0.051080996	0.000815468	0.000886896	666.9613497	0.009308374	0.007210286	0.030603066	0.044655922	1.197931118	0.006600123
SACRAMENT	2021	LDT2	2012	20	DSL	59.1678648	0.05741153	0.006931784	0.007245208	479.2386243	0.00182052	0.075329638	0.039194723	0.044620586	0.444056362	0.004530528
SACRAMENT	2021	LDT1	2012	20	DSL	1.20112334	0.057411538	0.006931784	0.007245208	609.8119006	0.001820519	0.095853939	0.039194693	0.044620552	0.444056768	0.005764915
SACRAMENT	2021	LDT1	2005	10	GAS	71.5505316	0.051170708	0.000815468	0.000886896	761.5372266	0.009290069	0.007229321	0.030488221	0.044488341	1.189862402	0.007536028
SACRAMENT	2021	MH	2000	15	GAS	59.9133161	0.239814069	0.00416108	0.004525554	2791.958838	0.010453383	0.024419255	0.030470963	0.044463158	0.364391165	0.027628696
SACRAMENT	2021	LDT1	2015	5	GAS	9.01394672	0.041467438	0.010549802	0.011473872	746.2282299	0.010015281	0.006603925	0.030460737	0.044448235	0.876638267	0.007384533
SACRAMENT	2021	MDV	2005	20	GAS	8213.79562	0.096257265	0.000379041	0.000412241	699.2820066	0.008854576	0.011481873	0.030358713	0.044299363	1.575048996	0.006919962
SACRAMENT	2021	MH	2008	65	DSL	13.6704125	2.939799932	0.190515332	0.19912959	944.2263932	0.001807385	0.14841924	0.038911929	0.044298644	0.287223248	0.008926335
SACRAMENT	2021	LDA	2015	5	GAS	59.8552957	0.04109545	0.010549802	0.011473872	652.9512809	0.009980894	0.006576048	0.030296437	0.04420849	0.876584342	0.006461482
SACRAMENT	2021	MH	2011	35	DSL	10.3032101	2.105416309	0.015105086	0.015788071	1060.23492	0.00180315	0.166654165	0.038820755	0.044194848	0.109571534	0.010023033
SACRAMENT	2021	MH	2001	15	GAS	25.4563371	0.233564388	0.00416108	0.004525554	2791.947792	0.010385326	0.023975872	0.030228221	0.044108949	0.358082671	0.027628587
SACRAMENT	2021	LHD1	2014	35	DSL	1181.36475	0.155883442	0.012913847	0.013497754	484.9467835	0.001798273	0.076226881	0.038715751	0.044075309	0.179626723	0.004584491
SACRAMENT	2021	LHD2	2014	35	DSL	474.319324	0.155883442	0.012913847	0.013497754	550.3632817	0.001798273	0.086509444	0.038715751	0.044075309	0.179626723	0.005202912
SACRAMENT	2021	MH	2009	60	DSL	9.85131201	2.864671445	0.163465146	0.170856315	930.4307382	0.001797788	0.146250755	0.038705311	0.044063424	0.261984027	0.008795917
SACRAMENT	2021	LDT2	2013	20	DSL	102.563137	0.056812155	0.006680146	0.006982193	463.2991079	0.001794444	0.072824168	0.038633317	0.043981463	0.423532602	0.004379843
SACRAMENT	2021	LDT1	2013	20	DSL	3.89103843	0.056812159	0.006680146	0.006982193	593.1511665	0.001794442	0.093235103	0.038633283	0.043981424	0.423533125	0.005607412
SACRAMENT	2021	MDV	2007	20	DSL	43.8395072	0.063130683	0.008385233	0.008764376	713.0320227	0.001793904	0.112078704	0.038621687	0.043968223	0.900123389	0.006740717
SACRAMENT	2021	MH	2019	30	DSL	40.8700169	2.281118504	0.013398762	0.014004595	1021.356589	0.001785542	0.160543033	0.038441679	0.043763295	0.108544675	0.009655493
SACRAMENT	2021	MH	2002	15	GAS	51.9111361	0.227382552	0.00416108	0.004525554	2791.93665	0.010314341	0.023533641	0.029977271	0.043742764	0.351735914	0.027628476
SACRAMENT	2021	LDT1	2000	40	GAS	5962.37888	0.183037958	0.002334267	0.002538728	365.4660323	0.007602906	0.015843503	0.029975606	0.043740335	2.424207535	0.003616583
SACRAMENT	2021	LHD1	1996	20	GAS	1129.38362	0.446402603	0.002913824	0.00316905	1098.169071	0.007227924	0.028622078	0.029950301	0.04370341	0.525983872	0.010867273
SACRAMENT	2021	LHD2	1996	20	GAS	175.57672	0.446402603	0.002913824	0.00316905	1257.78555	0.00723732	0.028670574	0.029950301	0.04370341	0.525983872	0.012446808
SACRAMENT	2021	MH	2020	15	GAS	96.2525095	0.130291995	0.002995978	0.003258399	2543.594545	0.010417644	0.016025353	0.029949884	0.0437028	0.260888582	0.02517093
SACRAMENT	2021	LHD1	1997	20	GAS	1506.42938	0.446337629	0.002913824	0.00316905	1098.166443	0.007233029	0.028721804	0.029887595	0.043611908	0.524496434	0.010867247
SACRAMENT	2021	LHD2	1997	20	GAS	182.982546	0.446337629	0.002913824	0.00316905	1257.782922	0.007240411	0.028759692	0.029887595	0.043611908	0.524496434	0.012446782
SACRAMENT	2021	LHD1	1999	20	GAS	2721.53656	0.445021471	0.002913824	0.00316905	1098.159699	0.007274498	0.028869863	0.029851217	0.043558826	0.52034081	0.01086718
SACRAMENT	2021	LHD2	1999	20	GAS	335.433351	0.445021471	0.002913824	0.00316905	1257.776179	0.007277949	0.028887295	0.029851217	0.043558826	0.52034081	0.012446715
SACRAMENT	2021	LHD1	1998	20	GAS	1358.80118	0.446002557	0.002913824	0.00316905	1098.163386	0.007247464	0.02880824	0.029844642	0.043549232	0.52268484	0.010867217
SACRAMENT	2021	LHD2	1998	20	GAS	160.671993	0.446002557	0.002913824	0.00316905	1257.779866	0.007252864	0.028835779	0.029844642	0.043549232	0.52268484	0.012446751
SACRAMENT	2021	LDA	2000	40	GAS	32957.5399	0.182938429	0.002334267	0.002538728	305.9137079	0.00752731	0.015732777	0.029828294	0.043525376	2.421501223	0.003027264
SACRAMENT	2021	LHD1	2000	20	GAS	3367.32855	0.44308051	0.002913824	0.00316905	1098.154398	0.007272781	0.028895892	0.029732809	0.043386046	0.517318732	0.010867128
SACRAMENT	2021	LHD2	2000	20	GAS	388.409674	0.44308051	0.002913824	0.00316905	1257.770878	0.007274297	0.028903484	0.029732809	0.043386046	0.517318732	0.012446662
SACRAMENT	2021	MH	2003	15	GAS	65.3853092	0.221285387	0.00416108	0.004525554	2791.925424	0.010241694	0.023095825	0.029713204	0.043357438	0.34537201	0.027628365
SACRAMENT	2021	LDT2	2014	20	DSL	105.471636	0.056180542	0.006414974	0.00670503	460.2715508	0.001766965	0.072348278	0.038041716	0.043307964	0.401904935	0.004351221
SACRAMENT	2021	MDV	2009	20	DSL	35.0831396	0.061222325	0.007974844	0.008335431	653.2142023	0.001763789	0.102676176	0.037973329	0.043230111	0.772229797	0.006175223
SACRAMENT	2021	MH	2009	65	DSL	1.55031642	2.924477061	0.187738935	0.196227657	944.2263932	0.00176233	0.14841924	0.037941918	0.043194351	0.279893941	0.008926335
SACRAMENT	2021	LHD1	2015	35	DSL	1665.57715	0.149515548	0.01191417	0.012452876	481.4722416	0.001761443	0.075680731	0.037922828	0.043172618	0.166495427	0.004551644
SACRAMENT	2021	LHD2	2015	35	DSL	923.978244	0.149515548	0.01191417	0.012452876	546.4200443	0.001761443	0.085889622	0.037922828	0.043172618	0.166495427	0.005165634
SACRAMENT	2021	LHD1	2001	20	GAS	4579.42989	0.439870685	0.002913824	0.00316905	1098.147609	0.007264045	0.028867178	0.02957974	0.043162687	0.513451728	0.010867061
SACRAMENT	2021	LHD2	2001	20	GAS	623.857332	0.439870685	0.002913824	0.00316905	1257.764088	0.007263659	0.028865266	0.02957974	0.043162687	0.513451728	0.012446595
SACRAMENT	2021	LDT1	2016	5	GAS	8.1198909	0.039901294	0.012182818	0.013249926	724.9384018	0.009772365	0.006448098	0.029561268	0.043135733	0.869051813	0.007173853
SACRAMENT	2021	MH	2012	35	DSL	13.6311013	2.089693279	0.014751663	0.015418668	1060.23492	0.001757825	0.166654165	0.037844946	0.043083955	0.106821367	0.010023033
SACRAMENT	2021	MDV	2008	20	DSL	23.0037185	0.062428097	0.008188588	0.008558839	692.4491366	0.001753148	0.108843361	0.037744252	0.042969321	0.877669505	0.006546135
SACRAMENT	2021	LDT2	2002	65	GAS	674.375276	0.171705155	0.002556523	0.002780452	421.0022508	0.007585986	0.015338123	0.02941482	0.042922037	1.590792549	0.004166159
SACRAMENT	2021	LDA	2016	5	GAS	62.3197135	0.039539805	0.012182818	0.013249926	634.3707205	0.009735556	0.006421203	0.029386994	0.042881433	0.868885116	0.006277613
SACRAMENT	2021	LHD1	2002	20	GAS	4400.87305	0.346418884	0.002913824	0.00316905	1097.99248	0.007384662	0.024351592	0.029379051	0.042869842	0.41612932	0.010865526
SACRAMENT	2021	LHD2	2002	20	GAS	412.49467	0.346418884	0.002913824	0.00316905	1257.608959	0.007382439	0.024341979	0.029379051	0.042869842	0.41612932	0.01244506
SACRAMENT	2021	LDA	2002	65	GAS	3831.93052	0.171662641	0.002556523	0.002780452	352.122701	0.00752536	0.015272961	0.029270947	0.042712097	1.589381944	0.00348454
SACRAMENT	2021	LDT2	2015	20	DSL	155.124274	0.055516691	0.006136266	0.006413721	449.5382108	0.001738084	0.070661147	0.037419917	0.042600088	0.379173363	0.004249753
SACRAMENT	2021	MDV	2013	10	GAS	606.391066	0.043150757	0.003783772	0.004115197	824.2563851	0.009032285	0.006382969	0.02916946	0.042564007	0.929829936	0.008156685
SACRAMENT	2021	LHD1	2003	20	GAS	5936.6356	0.339566951	0.002913824	0.00316905	1097.93388	0.007350957	0.024103563	0.029117848	0.042488696	0.379869923	0.010864946
SACRAMENT	2021	LHD2	2003	20	GAS	627.583909	0.339566951	0.002913824	0.00316905	1257.550359	0.007346939	0.024086422	0.029117848	0.042488696	0.379869923	0.01244448
SACRAMENT	2021	MDV	2014	10	GAS	969.080721	0.0427076	0.005267924	0.005729348	819.1694893	0.00902328	0.006355724	0.02906839	0.042416527	0.923776356	0.008106346
SACRAMENT	2021	LHD2	2021	5	GAS	130.222353	0.074500049	0.007173479	0.007801813	1999.057333	0.009615025	0.008635261	0.028992049	0.042305129	0.206329785	0.019782293
SACRAMENT	2021	LDT1	2017	5	GAS	6.51636339	0.038754854	0.013090049	0.014236623	703.638387	0.009618272	0.006338943	0.028971591	0.042275278	0.864962566	0.006963072
SACRAMENT	2021	LHD1	2016	35	DSL	3038.06212	0.12516124	0.010858394	0.011349363	466.5813475	0.001722546	0.07334009	0.037085405	0.042219268	0.152627249	0.004410872
SACRAMENT	2021	LHD2	2016	35	DSL	721.372321	0.125165922	0.010858394	0.011349363	529.5204553	0.001722546	0.083233242	0.037085405	0.042219268	0.152627249	0.005005873
SACRAMENT	2021	MDV	2010	20	DSL	68.412788	0.06046629	0.007744002	0.008094152	647.0241735	0.001721926	0.10170319	0.03707206	0.042204075	0.747753906	0.006116705
SACRAMENT	2021	MH	2020	30	DSL	43.0238674	2.260549106	0.012956615	0.013542456	1021.356589	0.001721061	0.160543033	0.037053424	0.04218286	0.10463208	0.009655493
SACRAMENT	2021	LDA	2008	20	DSL	13.5972677	0.060424209	0.007731157	0.008080726	366.2291223	0.001719597	0.057566118	0.037021911	0.042146984	0.746391493	0.003462182
SACRAMENT	2021	LDA	2017	5	GAS	74.9982187	0.038398917	0.013090049	0.014236623	615.7794586	0.009578928	0.006312218	0.028787877	0.042007202	0.864696863	0.006093637

SACRAMENT	2021	LDT1	2000	60	GAS	3253.78313	0.180427466	0.002255694	0.002453273	405.8265779	0.007299308	0.015617543	0.028778625	0.041993702	1.810482319	0.004015983
SACRAMENT	2021	LDT2	2013	10	GAS	1366.1997	0.042633049	0.003783772	0.004115197	682.7163057	0.008929647	0.006340697	0.028762154	0.041969667	0.925836142	0.006756031
SACRAMENT	2021	MH	2013	35	DSL	22.7421909	2.073712389	0.014392443	0.015043205	1060.23492	0.001711758	0.166654165	0.036853132	0.041954841	0.104026094	0.010023033
SACRAMENT	2021	LDT2	2014	10	GAS	1274.47694	0.042298217	0.005267924	0.005729348	678.5550901	0.008927502	0.006321635	0.028695639	0.041872609	0.920193211	0.006714853
SACRAMENT	2021	LDT2	2016	20	DSL	102.060397	0.054820601	0.005844024	0.006108265	431.5164176	0.0017078	0.067828372	0.036767922	0.041857835	0.35533789	0.004079382
SACRAMENT	2021	LDA	2000	60	GAS	17985.554	0.180313453	0.002255694	0.002453273	339.4211995	0.007225982	0.015507028	0.028634229	0.041783	1.808060549	0.003358848
SACRAMENT	2021	LHD1	2021	5	GAS	828.895213	0.057433071	0.007173479	0.007801813	1745.232438	0.009508427	0.006932335	0.028522154	0.041619461	0.206329785	0.01727049
SACRAMENT	2021	LDT2	2020	5	GAS	23.4263195	0.033262828	0.009238205	0.010047391	650.9979872	0.009493555	0.005679096	0.028444151	0.041505638	0.925306823	0.006442153
SACRAMENT	2021	MDV	2020	5	GAS	14.9010085	0.033193169	0.009238205	0.010047391	786.2559266	0.009469187	0.005671836	0.028355095	0.041375688	0.924513031	0.00778064
SACRAMENT	2021	LDA	2009	20	DSL	112.214964	0.059766903	0.007530461	0.007870955	358.5748009	0.001683201	0.056362965	0.036238336	0.041254936	0.725111955	0.003389821
SACRAMENT	2021	LHD1	2017	35	DSL	1573.39676	0.102198435	0.00974652	0.010187215	451.6904535	0.001681583	0.070999449	0.036203482	0.041215257	0.138022188	0.004270099
SACRAMENT	2021	LHD2	2017	35	DSL	612.655417	0.102201868	0.00974652	0.010187215	512.6208663	0.001681583	0.080576862	0.036203482	0.041215257	0.138022188	0.004846111
SACRAMENT	2021	MDV	2011	20	DSL	142.441374	0.059654255	0.007496062	0.007835001	626.4610691	0.001676963	0.098470956	0.036104034	0.041102043	0.721465086	0.00592231
SACRAMENT	2021	MDV	2011	10	GAS	424.229535	0.044133548	0.001728792	0.001880219	874.0947541	0.008723092	0.006453638	0.028154201	0.041082544	0.935670897	0.008649876
SACRAMENT	2021	LDT2	2017	20	DSL	194.525012	0.054092275	0.005538247	0.005788662	413.4946244	0.001676113	0.064995597	0.03608573	0.041081204	0.33039852	0.003909011
SACRAMENT	2021	LDT1	2017	20	DSL	0.79852876	0.054092265	0.005538247	0.005788662	549.1496417	0.001676111	0.086318676	0.036085693	0.041081162	0.33039943	0.005191439
SACRAMENT	2021	LHD1	2004	15	GAS	3959.21769	0.313222401	0.000277405	0.000301704	1320.702888	0.007531288	0.020307058	0.028134516	0.041053819	0.370908928	0.013069426
SACRAMENT	2021	LHD2	2004	15	GAS	434.396491	0.313222401	0.000277405	0.000301704	1512.729455	0.007525376	0.020276974	0.028134516	0.041053819	0.370908928	0.014969684
SACRAMENT	2021	MDV	2015	10	GAS	927.922446	0.041534158	0.00663791	0.007219333	800.3354538	0.008738987	0.006238581	0.027988208	0.040840328	0.888573593	0.007919968
SACRAMENT	2021	LDT1	2001	40	GAS	7076.63404	0.174514937	0.002334267	0.002538728	365.2687275	0.007162828	0.015392563	0.02797502	0.040821084	2.305173833	0.00361463
SACRAMENT	2021	MH	2014	35	DSL	23.3267554	2.057473644	0.014027426	0.014661684	1003.913978	0.001664946	0.157801297	0.035845314	0.040807507	0.101185713	0.009490597
SACRAMENT	2021	MDV	2010	10	GAS	305.799183	0.044531755	0.00127213	0.001383558	902.7050151	0.008614422	0.0064582	0.027844811	0.040631083	0.918493305	0.008932998
SACRAMENT	2021	LDA	2001	40	GAS	41065.3949	0.174431006	0.002334267	0.002538728	305.7165624	0.007098411	0.015306604	0.027835439	0.040617407	2.302546977	0.003025313
SACRAMENT	2021	MH	2021	30	DSL	36.3797506	2.239681564	0.012508058	0.013073617	923.7084706	0.001655644	0.145194108	0.035645042	0.04057951	0.100662756	0.008732367
SACRAMENT	2021	LDT2	2011	10	GAS	947.040133	0.043247673	0.001728792	0.001880219	723.9805521	0.008622817	0.006381194	0.027736776	0.040473438	0.931300637	0.007164374
SACRAMENT	2021	LDT2	2015	10	GAS	1466.66469	0.041222869	0.00663791	0.007219333	663.0007625	0.008650326	0.006212005	0.027652731	0.040350801	0.885399361	0.00656093
SACRAMENT	2021	LDT1	2003	70	GAS	127.266993	0.163441554	0.002776819	0.003020044	417.4658689	0.007255003	0.015045209	0.027649616	0.040346255	1.347383989	0.004131163
SACRAMENT	2021	LDA	2010	20	DSL	148.908839	0.059064972	0.00731614	0.007646944	340.1838935	0.001644335	0.053472171	0.035401564	0.040302327	0.702387764	0.003215961
SACRAMENT	2021	MH	2019	15	GAS	87.973437	0.121852611	0.002995978	0.003258399	2543.566701	0.009708182	0.015284826	0.027614912	0.040295615	0.24967463	0.025170654
SACRAMENT	2021	LDT2	2018	20	DSL	203.8692	0.05333171	0.005218935	0.005454912	395.4728312	0.001643024	0.062162822	0.035373341	0.040270197	0.304355256	0.00373864
SACRAMENT	2021	LDT1	2018	20	DSL	0.8434291	0.053331703	0.005218935	0.005454912	532.2739927	0.001643023	0.083666059	0.035373311	0.040270163	0.304356161	0.005031903
SACRAMENT	2021	LHD1	2018	35	DSL	1769.35371	0.078803328	0.007996054	0.0083576	421.9086653	0.001638552	0.066318167	0.035277056	0.040160583	0.122680245	0.003988554
SACRAMENT	2021	LHD2	2018	35	DSL	676.316863	0.078855146	0.008578548	0.008966432	478.8216883	0.001638552	0.075264101	0.035277056	0.040160583	0.122680245	0.004526587
SACRAMENT	2021	LDA	2003	70	GAS	1229.72548	0.163335376	0.002776819	0.003020044	350.3874533	0.007199641	0.014990173	0.027502294	0.040131283	1.345095754	0.003467368
SACRAMENT	2021	LDT1	2003	35	GAS	4907.38358	0.161359431	0.002691255	0.002926985	377.907699	0.007205302	0.014853544	0.027460198	0.040069857	2.198220124	0.003739703
SACRAMENT	2021	MDV	2021	10	DSL	33.0328791	0.023551942	0.000912799	0.000954071	618.0105638	0.001634712	0.097142654	0.035194391	0.040066475	1.112347929	0.005842422
SACRAMENT	2021	LDT1	2000	45	GAS	2310.33038	0.178059425	0.002135899	0.002322985	366.4911585	0.006957468	0.015412569	0.027430869	0.040027059	2.250921184	0.003626727
SACRAMENT	2021	LDT2	2010	10	GAS	647.900509	0.043513232	0.00127213	0.001383558	747.6630476	0.008504945	0.00637684	0.027386153	0.03996181	0.913813538	0.007398732
SACRAMENT	2021	MDV	2012	20	DSL	252.379616	0.058786221	0.007231024	0.007557978	611.0018492	0.0016289	0.096040982	0.035069253	0.039924013	0.693363337	0.005776165
SACRAMENT	2021	LDA	2003	35	GAS	47417.9083	0.161307218	0.002691255	0.002926985	317.6458547	0.007153097	0.014804038	0.027324496	0.039871841	2.196323958	0.003143363
SACRAMENT	2021	LHD1	2005	15	GAS	2342.20372	0.303664062	0.000277405	0.000301704	1320.699818	0.007349157	0.019973292	0.027304406	0.039842526	0.371230255	0.013069395
SACRAMENT	2021	LHD2	2005	15	GAS	591.526703	0.303664062	0.000277405	0.000301704	1512.726385	0.007341621	0.019934852	0.027304406	0.039842526	0.371230255	0.014969654
SACRAMENT	2021	LDA	2021	10	DSL	59.8300505	0.023460406	0.000909014	0.000950116	376.9471176	0.001625484	0.059250838	0.034995723	0.039840304	1.105086288	0.003563506
SACRAMENT	2021	LDA	2000	45	GAS	12770.5413	0.177962784	0.002135899	0.002322985	306.7241119	0.006888306	0.01530487	0.02729613	0.039830449	2.248419129	0.003035284
SACRAMENT	2021	MH	2015	35	DSL	42.0971971	2.040977052	0.013656613	0.014274105	1003.913978	0.001617392	0.157801297	0.034821492	0.039641954	0.098300226	0.009490597
SACRAMENT	2021	LDT1	2000	55	GAS	4214.81602	0.175221693	0.002099645	0.002283556	392.9964406	0.006866322	0.015166939	0.027071512	0.039502687	1.962752265	0.003889018
SACRAMENT	2021	LDT2	2019	20	DSL	209.893044	0.052538908	0.004886089	0.005107016	377.451038	0.001608532	0.059330047	0.034630756	0.039424813	0.277208105	0.00356827
SACRAMENT	2021	LDT1	2019	20	DSL	0.87813943	0.05253891	0.004886089	0.005107016	515.3983438	0.001608532	0.081013442	0.034630739	0.039424794	0.277208908	0.004872368
SACRAMENT	2021	LDA	2000	55	GAS	23297.7424	0.175136325	0.002099645	0.002283556	328.8133082	0.006798459	0.015061793	0.026940093	0.039310921	1.960816347	0.003253874
SACRAMENT	2021	LDA	2011	20	DSL	265.031364	0.058318418	0.007088194	0.007408691	351.9910157	0.001602998	0.055328086	0.034511595	0.039289157	0.67821892	0.003327581
SACRAMENT	2021	LHD1	2006	15	GAS	7219.20894	0.293135146	0.000277405	0.000301704	1320.696771	0.00728447	0.019586574	0.026910742	0.039268092	0.370378805	0.013069365
SACRAMENT	2021	LHD2	2006	15	GAS	521.489852	0.293135146	0.000277405	0.000301704	1512.723338	0.007275302	0.019540361	0.026910742	0.039268092	0.370378805	0.014969624
SACRAMENT	2021	LDT1	2001	60	GAS	3861.85329	0.172026001	0.002255694	0.002453273	405.6773843	0.006876803	0.015173034	0.026857926	0.039191023	1.721583819	0.004014507
SACRAMENT	2021	LHD1	2019	35	DSL	1992.74856	0.063750952	0.005885841	0.006151972	421.9086653	0.001593454	0.066318167	0.034306126	0.039055244	0.10660142	0.003988554
SACRAMENT	2021	LHD2	2019	35	DSL	750.061643	0.063788434	0.007354477	0.007687014	478.8216883	0.001593454	0.075264101	0.034306126	0.039055244	0.10660142	0.004526587
SACRAMENT	2021	LDT1	2007	10	GAS	141.117651	0.047004219	0.000815468	0.000886896	746.298961	0.00829989	0.00673	0.026762699	0.039052068	1.004049738	0.007385233
SACRAMENT	2021	LDA	2007	10	GAS	1909.76245	0.046747931	0.000815468	0.000886896	653.5707125	0.0082923	0.006700826	0.026748683	0.039031615	1.005254287	0.006467612
SACRAMENT	2021	LDA	2001	60	GAS	22410.1642	0.171928102	0.002255694	0.002453273	339.272164	0.006814252	0.01508697	0.026721151	0.03899144	1.719241069	0.003357373
SACRAMENT	2021	LDT1	2002	40	GAS	8429.51172	0.169551369	0.002334267	0.002538728	365.1482608	0.006889759	0.015145729	0.026715183	0.038982733	2.23260078	0.003613438
SACRAMENT	2021	LHD1	2010	40	DSL	157.280313	0.158185356	0.015000378	0.015678629	482.7745805	0.001586742	0.075885441	0.034161626	0.03889074	0.185291917	0.004563956
SACRAMENT	2021	LHD2	2010	40	DSL	73.9494985	0.158185356	0.015000378	0.015678629	542.7445231	0.001586742	0.085311881	0.034161626	0.03889074	0.185291917	0.005130888
SACRAMENT	2021	MDV	2016	10	GAS	1074.46532	0.039781565	0.0076654	0.008336822	768.5854282	0.008391982	0.006077575	0.026645315	0.038880781	0.888088708	0.007605776
SACRAMENT	2021	LHD1	2007	15	GAS	2962.57125	0.290424854	0.000277405	0.000301704	1320.692617	0.007243184	0.01967364	0.026596612	0.038809715	0.368612946	0.013069324
SACRAMENT	2021	LHD2	2007	15	GAS	446.109349	0.290424854	0.000277405	0.000301704	1512.719184	0.007232422	0.019619372	0.026596612	0.038809715	0.368612946	0.014969583
SACRAMENT	2021	LDA	2002	40	GAS	47898.113	0.169496891	0.002334267	0.002538728	305.596525	0.006834131	0.015080273	0.026582313	0.038788849	2.230226488	0.003024125
SACRAMENT	2021	LDT1	2000	50	GAS	2316.04499	0.175270276	0.002061797	0.002242392	377.7871265	0.006740544	0.015171144	0.026575615	0.038779075	2.104878072	0.00373851
SACRAMENT	2021	MDV	2013	20	DSL	88.825769	0.057862188	0.006948887	0.007263084	590.6798771	0.001577735	0.092846651	0.033967715	0.038669985	0.663448659	0.005584049
SACRAMENT	2021	LDA	2000	50	GAS	12802.1293	0.175183927	0.002061797	0.002242392	316.1436821	0.006673912	0.015065887	0.026446557	0.038590754	2.102790442	0.003128498
SACRAMENT	2021	LDA	2006	10	GAS	1664.45106	0.043450595	0.000815468	0.000886896	674.8695525	0.008181758	0.006344884	0.026432388	0.038570078	0.962472893	0.006678381
SACRAMENT	2021	LDT1	2006	10	GAS	98.6676273	0.04363557	0.000815468	0.000886896	761.8269243	0.008189242	0.006372077	0.026431604	0.038568934	0.961266058	0.007538895
SACRAMENT	2021	LDT1	2020	20	DSL	0.89816623	0.051713887	0.004539707	0.004744972	498.5226948	0.001572638	0.078360825	0.033857979	0.038545058	0.248957636	0.004712832
SACRAMENT	2021	LDT2	2020	20	DSL	214.951764	0.051713869	0.004539707	0.004744972	359.4292448	0.001572638	0.056497272	0.033857973	0.038545051	0.248957073	0.003397899
SACRAMENT	2021	LDT2	2016	10	GAS	1560.1251	0.039546755	0.0076654	0.008336822	636.7575491	0.008322772	0.006056215	0.026388474	0.038505999	0.885573253	0.006301232
SACRAMENT	2021	MH	2016	35	DSL	19.351199	2.024222617	0.013280003	0.013880466	1003.913978	0.001569094	0.157801297	0.033781665	0.03845818	0.095369631	0.009490597
SACRAMENT	2021	LDT1	2018	5	GAS	6.88277088	0.03525107	0.013634388	0.014828641	682.3124831	0.008847433	0.005955945	0.026260046	0.038318597	0.86107965	0.006752035
SACRAMENT	2021	LHD1	2011	40	DSL	346.675328	0.153791199	0.01428916	0.014935252	482.7745805	0.001563198	0.075885441	0.033654726	0.038313668	0.176897293	0.004563956
SACRAMENT	2021	LHD2	2011	40	DSL	187.581176	0.153791199	0.01428916	0.014935252	542.7445231	0.001563198	0.085311881	0.033654726	0.038313668	0.176897293	0.005130888
SACRAMENT	2021	LDA	2012	20	DSL	327.929058	0.05752724	0.006846623	0.007156196	322.0087046	0.001559189	0.050615284	0.03356843	0.038215426	0.652605425	0.00304414
SACRAMENT	2021	LDT1	2003	65	GAS	481.031541	0.156421971	0.002556523	0.002780452	421.0704205	0.006864633	0.014399039	0.026161873	0.038175343	1.444519508	0.004166833
SACRAMENT	2021	LDA	2018	5	GAS	79.4403797	0.034910009	0.013634388	0.014828641	597.1618088	0.008807245	0.005928483	0.02607998	0.038055845	0.860704669	0.0059094
SACRAMENT	2021	MDV	2017	10	GAS	999.573964	0.039271709	0.008236228	0.008957649	736.8085285	0.008251014	0.006043082	0.026078796	0.038054118	0.88330976	0.007291318
SACRAMENT	2021	MDV	2006	5	GAS	8.91434741	0.02924616	0.001296044	0.001409567	1219.078444	0.008617679	0.005263652	0.026074428	0.038047744	0.789673666	0.012063769
SACRAMENT	2021	LDA	2003	65	GAS	4647.99809	0.156377814	0.002556523	0.002780452	353.6955452	0.006815203	0.01435164	0.026033757	0.037988397	1.44341254	0.003500104
SACRAMENT	2021	LHD1	2020	35	DSL	2280.23344	0.049701148	0.004049538	0.00423264	421.9086653	0.001546289	0.066318167	0.033290689	0.037899236	0.089785714	0.003988554
SACRAMENT	2021	LHD2	2020	35	DSL	849.386935	0.049742424	0.006074307	0.00634896	478.8216883	0.001546289	0.075264101	0.033290689	0.037899236	0.089785714	0.004526587
SACRAMENT	2021	LDT2	2017	10	GAS	1619.10875	0.039107359	0.008236228	0.008957649	610.4875212	0.008200442	0.006027141	0.025894612	0.037785357	0.881506929	0.006041269
SACRAMENT	2021	LHD1	2012	40	DSL	349.503987	0.149079087	0.013526478	0.014138085	482.7745805	0.001537949	0.075885441	0.033111146	0.037694839	0.167895247	0.004563956
SACRAMENT	2021	LHD2	2012	40	DSL	237.461019	0.149079087	0.013526478	0.014138085	542.7445231	0.001537949	0.085311881	0.033111146	0.037694839	0.167895247	0.005130888
SACRAMENT	2021	LDT1	2021	20	DSL	0.79659444	0.050856639	0.004179791	0.004368782	481.6470459	0.001535343	0.075708208	0.033055033	0.037630958	0.219602297	0.004553297
SACRAMENT	2021	LDT2	2021	20	DSL	185.256004	0.050856593	0.004179791	0.004368782	341.4074515	0.001535341	0.053664497	0.033054993	0.037630912	0.219602168	0.003227528
SACRAMENT	2021	MDV	2012	10	GAS	480.760006	0.042542529	0.002527951	0.002749377	852.4785164	0.008094804	0.00631677	0.02576004	0.03758899	0.888092123	0.008435966
SACRAMENT	2021	MH	2018	15	GAS	80.0499067	0.116760708	0.002918304	0.003173922	2543.544591	0.009135339	0.014824965	0.025750659	0.037575301	0.240797954	0.025170436
SACRAMENT	2021	MDV	2004	25	GAS	24278.5773	0.105305336	0.000280013	0.000304539	611.7470485	0.007449016	0.011986365	0.025692018	0.037489732	1.504381565	0.006053733
SACRAMENT	2021	LDT1	2002	60	GAS	4600.14428	0.167133223	0.002255694	0.002453273	405.5862571	0.006614638	0.01492972	0.025648397	0.03742608	1.667383744	0.004013605
SACRAMENT	2021	LDT1	2001	45	GAS	2742.08717	0.169768225	0.002135899	0.002322985	366.3080732	0.006554749	0.014973894	0.025600119	0.037355634	2.140396207	0.003624915
SACRAMENT	2021	MDV	2014	20	DSL	280.041216	0.056882156	0.006649651	0.006950319	586.8199148	0.00152347	0.092239919	0.032799421	0.037339961	0.631721052	0.005547559
SACRAMENT	2021	MH	2010	40	DSL	9.23962008	1.88357882	0.014175796	0.014816763	1011.895285	0.001523111	0.159055847	0.032791685	0.037331154	0.092551206	0.009566049
SACRAMENT	2021	MH	2017	35	DSL	40.2113611	2.007210348	0.012897596	0.013480769	965.9588116	0.001520052	0.151835273	0.032725834	0.037256186	0.092393928	0.009131785
SACRAMENT	2021	LDA	2002	60	GAS	26138.9079	0.167064787	0.002255694	0.002453273	339.1813831	0.006560552	0.014863887	0.025518189	0.037236082	1.665241583	0.003356475
SACRAMENT	2021	LDA	2001	45	GAS	15912.2108	0.16968675	0.002135899	0.002322985	306.5411731	0.006495817	0.014890287	0.025472451	0.037169341	2.137967398	0.003033473
SACRAMENT	2021	LDT1	2008	10	GAS	241.329845	0.046255509	0.000929634	0.001011061	724.2809889	0.007979836	0.006698874	0.025469377	0.037164856	0.997258901	0.007167348
SACRAMENT	2021	LDA	2008	10	GAS	1690.05753	0.045960788	0.000929634	0.001011061	634.2927895	0.00797629	0.006669904	0.025456641	0.037146271	0.998464576	0.006276841
SACRAMENT	2021	LDA	2013	20	DSL	506.599731	0.056691438	0.006591426	0.006889461	313.2110714	0.00151291	0.049232419	0.032572069	0.037081135	0.625547276	0.002960971
SACRAMENT	2021	LHD1	2013	40	DSL	430.773773	0.144049017	0.012712334	0.013287129	482.7745805	0.001510998	0.075885441	0.032530888	0.037034253	0.158285777	0.004563956
SACRAMENT	2021	LHD2	2013	40	DSL	171.981098	0.144049017	0.012712334	0.013287129	542.7445231	0.001510998	0.085311881	0.032530888	0.037034253	0.158285777	0.005130888
SACRAMENT	2021	LDT2	2012	10	GAS	927.52376	0.041619547	0.002527951	0.002749377	706.0691003	0.007993674	0.006236415	0.025359355	0.037004311	0.884069653	0.006987126
SACRAMENT	2021	LDT1	2001	55	GAS	5002.48494	0.16706263	0.002099645	0.002283556	392.835887	0.006468879	0.014735255	0.025264746	0.036866259	1.86637699	0.00388743
SACRAMENT	2021	LHD2	2021	35	DSL	774.845684	0.037125486	0.004738039	0.004952272	466.8511461	0.001497056	0.073382499	0.03223074	0.036692555	0.072233127	0.004413422

SACRAMENT	2021	LHD1	2021	35	DSL	2068.36465	0.037163986	0.002529879	0.002644269	411.3609487	0.001497056	0.064660213	0.03223074	0.036692555	0.072233127	0.00388884
SACRAMENT	2021	LDA	2001	55	GAS	29029.1992	0.166991733	0.002099645	0.002283556	328.6528663	0.006411089	0.014653795	0.025140202	0.036684523	1.864492864	0.003252287
SACRAMENT	2021	MH	2011	40	DSL	12.7898314	1.869844031	0.013856895	0.014483442	1011.895285	0.001486362	0.159055847	0.032000505	0.036430447	0.090321387	0.009566049
SACRAMENT	2021	LHD1	2014	40	DSL	648.530634	0.13870099	0.011846726	0.012382383	471.6707652	0.001482342	0.074140076	0.031913949	0.03633191	0.148068884	0.004458985
SACRAMENT	2021	LHD2	2014	40	DSL	260.385805	0.13870099	0.011846726	0.012382383	530.2613991	0.001482342	0.083349708	0.031913949	0.03633191	0.148068884	0.005012877
SACRAMENT	2021	LDT1	2001	50	GAS	2748.86974	0.167108951	0.002061797	0.002242392	377.6156539	0.006350382	0.014739341	0.024801946	0.036190941	2.00152412	0.003736813
SACRAMENT	2021	LHD2	2009	10	GAS	167.766345	0.141328645	0.000534938	0.000581793	1849.358861	0.007203681	0.012272013	0.024795205	0.036181105	0.208585245	0.018300905
SACRAMENT	2021	LHD2	2012	10	GAS	139.748262	0.140573321	0.001295552	0.001409031	1849.340168	0.007302715	0.012509336	0.024781409	0.036160974	0.1968295	0.01830072
SACRAMENT	2021	LHD2	2011	10	GAS	94.0334525	0.141577464	0.00088599	0.000963595	1849.347893	0.007260431	0.012485052	0.0247637	0.036135132	0.201751702	0.018300797
SACRAMENT	2021	MH	2018	35	DSL	44.2056166	1.989940253	0.012509393	0.013075012	965.9588116	0.001470268	0.151835273	0.031653998	0.036035973	0.089373119	0.009131785
SACRAMENT	2021	LDA	2001	50	GAS	15951.5697	0.167037121	0.002061797	0.002242392	315.9723276	0.006293639	0.014657778	0.024679639	0.036012471	1.999492599	0.003126802
SACRAMENT	2021	LHD2	2010	10	GAS	30.6511016	0.141797818	0.000651955	0.000709061	1849.35366	0.007194151	0.012398832	0.02464972	0.035968814	0.205699753	0.018300854
SACRAMENT	2021	LHD2	2013	10	GAS	120.174194	0.138060599	0.001939149	0.002109001	1849.330914	0.007303482	0.012439344	0.02463734	0.035950748	0.191383638	0.018300629
SACRAMENT	2021	MDV	2015	20	DSL	600.015505	0.055846124	0.006333317	0.006619682	573.1355199	0.001466105	0.090088922	0.031564372	0.035933939	0.59818052	0.005418192
SACRAMENT	2021	LDA	2014	20	DSL	627.62935	0.055811013	0.006322604	0.006608484	313.5888903	0.00146416	0.049291807	0.031522512	0.035886284	0.597044472	0.002964543
SACRAMENT	2021	LDT2	2004	15	GAS	1901.35213	0.050024984	0.000541288	0.0005887	714.1872722	0.00726364	0.006993237	0.024488818	0.035734026	1.406653824	0.007067462
SACRAMENT	2021	MDV	2018	10	GAS	1062.04155	0.037254577	0.008578724	0.009330145	705.0019669	0.007816092	0.005842961	0.024454479	0.035683919	0.877468041	0.006976566
SACRAMENT	2021	LDT1	2002	45	GAS	3266.30652	0.164939664	0.002135899	0.002322985	366.1962905	0.006304862	0.014733773	0.024447235	0.035673347	2.073010795	0.003623809
SACRAMENT	2021	LDT2	2021	5	GAS	19.9752283	0.029529699	0.005738885	0.006241561	618.6092164	0.008331198	0.005244776	0.024427282	0.035644233	0.905255975	0.00612164
SACRAMENT	2021	MH	2017	15	GAS	70.3558764	0.114164899	0.002801794	0.003047206	2543.529353	0.008712692	0.014568129	0.024389766	0.035589489	0.234886456	0.025170285
SACRAMENT	2021	LHD1	2015	40	DSL	914.347413	0.133035006	0.010929656	0.011423847	468.2913431	0.001451983	0.073608878	0.031260331	0.035587808	0.137244569	0.004427037
SACRAMENT	2021	LHD2	2015	40	DSL	507.233854	0.133035006	0.010929656	0.011423847	526.4621874	0.001451983	0.082752524	0.031260331	0.035587808	0.137244569	0.004976961
SACRAMENT	2021	LDT2	2018	10	GAS	1696.88414	0.037165095	0.008578724	0.009330145	584.1879841	0.007787531	0.005833232	0.024353983	0.035537275	0.876444149	0.005781014
SACRAMENT	2021	MH	2012	40	DSL	16.9208902	1.85588023	0.013532676	0.014144564	1011.895285	0.001449001	0.159055847	0.031196132	0.035514722	0.088054386	0.009566049
SACRAMENT	2021	LDA	2002	45	GAS	18559.7843	0.164886835	0.002135899	0.002322985	306.4297881	0.006253972	0.014670112	0.024325705	0.035496012	2.070816174	0.003032371
SACRAMENT	2021	LHD2	2014	10	GAS	433.382021	0.135168562	0.002699763	0.002936239	1821.587334	0.007258041	0.012360242	0.024316525	0.035482616	0.186098442	0.018026083
SACRAMENT	2021	MDV	2021	5	GAS	12.1026385	0.029356932	0.005738885	0.006241561	747.0831072	0.0082765	0.005220677	0.024240376	0.0353715	0.903385211	0.007392993
SACRAMENT	2021	LDT1	2002	55	GAS	5958.83653	0.162311021	0.002099645	0.002283556	392.7378437	0.006222266	0.014498961	0.024126965	0.03520601	1.807618438	0.003886459
SACRAMENT	2021	LDA	2002	55	GAS	33859.2596	0.162268052	0.002099645	0.002283556	328.5551609	0.006172399	0.014437117	0.024008413	0.03503302	1.805931178	0.00325132
SACRAMENT	2021	LHD2	2015	10	GAS	505.46001	0.131699896	0.003401869	0.003699843	1812.334384	0.007210204	0.012245397	0.023980105	0.034991713	0.181750215	0.017934518
SACRAMENT	2021	LDT2	2005	15	GAS	2303.40267	0.047383659	0.000541288	0.0005887	697.100114	0.007129392	0.006669455	0.023914786	0.0348964	1.272048599	0.006898371
SACRAMENT	2021	LHD1	2016	40	DSL	1667.7968	0.111338072	0.009961124	0.010411521	453.8081057	0.00141992	0.071332315	0.030570031	0.034801948	0.125812831	0.004290119
SACRAMENT	2021	LHD2	2016	40	DSL	396.009825	0.111342245	0.009961124	0.010411521	510.1798517	0.00141992	0.080193168	0.030570031	0.034801948	0.125812831	0.004823034
SACRAMENT	2021	MH	2019	35	DSL	48.1911327	1.97241234	0.012115393	0.012663198	965.9588116	0.00141974	0.151835273	0.030566158	0.034797539	0.086307202	0.009131785
SACRAMENT	2021	LDT1	2003	40	GAS	6012.76642	0.15445989	0.002334267	0.002538728	365.1016703	0.00623461	0.014218424	0.023760785	0.034671682	2.027313606	0.003612977
SACRAMENT	2021	LDA	2015	20	DSL	583.718124	0.054885965	0.006040157	0.006313266	307.7984806	0.00141294	0.048381635	0.030419759	0.034630873	0.567097007	0.002909803
SACRAMENT	2021	MH	2013	40	DSL	28.2308897	1.84168742	0.01320314	0.013800127	1011.895285	0.001411026	0.159055847	0.030378566	0.034583977	0.085750202	0.009566049
SACRAMENT	2021	LDT1	2002	50	GAS	3274.38575	0.162356025	0.002061797	0.002242392	377.5109563	0.006108286	0.014502981	0.023685006	0.034561106	1.938510774	0.003735777
SACRAMENT	2021	LDA	2003	40	GAS	58098.7408	0.154404902	0.002334267	0.002538728	306.8356812	0.006189204	0.014170575	0.02364247	0.034499037	2.025401693	0.003036388
SACRAMENT	2021	LDT1	2009	10	GAS	178.049571	0.043890519	0.001043799	0.001135227	709.017637	0.007481464	0.006437225	0.023633214	0.034485531	0.900713461	0.007016304
SACRAMENT	2021	MDV	2016	20	DSL	306.13099	0.054754092	0.005999885	0.006271173	550.1587639	0.001405638	0.086477296	0.030262566	0.034451919	0.562827065	0.005200979
SACRAMENT	2021	LDA	2009	10	GAS	1456.66243	0.043587693	0.001043799	0.001135227	620.9095537	0.007469282	0.006410323	0.023582065	0.034410894	0.901576496	0.006144403
SACRAMENT	2021	LDA	2002	50	GAS	18605.692	0.162312156	0.002061797	0.002242392	315.8679906	0.006059322	0.014441041	0.023568585	0.034391223	1.936690718	0.00312577
SACRAMENT	2021	LDT1	2011	10	GAS	88.1250679	0.041676258	0.001728792	0.001880219	695.9681479	0.007467739	0.006230942	0.023499497	0.034290411	0.863656523	0.006887169
SACRAMENT	2021	MH	2016	15	GAS	89.1533993	0.113374648	0.00260761	0.002836014	2643.443822	0.008422156	0.014469734	0.023464136	0.034238812	0.231726039	0.02615902
SACRAMENT	2021	LDA	2011	10	GAS	1872.21327	0.041398138	0.001728792	0.001880219	609.4772515	0.007451069	0.006210528	0.023418698	0.034172508	0.86423118	0.006031271
SACRAMENT	2021	LHD1	2017	40	DSL	863.743393	0.09088195	0.008941128	0.009345406	439.3248683	0.001386153	0.069055751	0.029843049	0.033974327	0.11377367	0.0041532
SACRAMENT	2021	LHD2	2017	40	DSL	336.327798	0.09088501	0.008941128	0.009345406	493.897516	0.001386153	0.077633812	0.029843049	0.033974327	0.11377367	0.004669108
SACRAMENT	2021	LDT1	2019	5	GAS	7.13263139	0.031947908	0.012877498	0.014005454	660.9300354	0.007945317	0.005571093	0.023201605	0.033855728	0.833234523	0.006540438
SACRAMENT	2021	MH	2014	40	DSL	28.9565355	1.827265608	0.012868286	0.013450133	958.1422021	0.001372439	0.150606611	0.029547807	0.033638214	0.083408835	0.00905789
SACRAMENT	2021	LDA	2019	5	GAS	81.4690254	0.031621007	0.012877498	0.014005454	578.4869147	0.00790264	0.005542673	0.023021927	0.033593543	0.832657248	0.005724597
SACRAMENT	2021	MH	2020	35	DSL	50.7308061	1.95462662	0.011715597	0.012245324	965.9588116	0.001368468	0.151835273	0.029462314	0.033540886	0.083196178	0.009131785
SACRAMENT	2021	MH	2005	15	GAS	49.0837068	0.142120771	0.000277405	0.000301704	2791.753927	0.008209729	0.016946019	0.022966216	0.033512249	0.255532643	0.027626668
SACRAMENT	2021	MH	2015	15	GAS	33.9886911	0.116092186	0.002258079	0.002455867	2643.440265	0.008248271	0.01467869	0.02291801	0.033441907	0.230967866	0.026158984
SACRAMENT	2021	MH	2006	15	GAS	77.7159681	0.137862355	0.000277405	0.000301704	2791.749444	0.008199871	0.01659428	0.022916002	0.033438976	0.252841079	0.027626624
SACRAMENT	2021	MH	2007	15	GAS	48.5152864	0.134678384	0.000277405	0.000301704	2791.745019	0.008194131	0.016331723	0.022878731	0.033384591	0.250150745	0.02762658
SACRAMENT	2021	MH	2004	15	GAS	80.34468	0.145308319	0.000277405	0.000301704	2791.760442	0.008167667	0.017200768	0.022847246	0.033338647	0.259966642	0.027626733
SACRAMENT	2021	MH	2008	15	GAS	30.2779847	0.131508066	0.000316242	0.000343942	2791.740513	0.008186123	0.016068577	0.022834117	0.033319489	0.247429521	0.027626536
SACRAMENT	2021	LDA	2016	20	DSL	57.45272	0.053916293	0.005744085	0.006003807	298.8873625	0.001359248	0.046980931	0.029263812	0.033314904	0.535704875	0.00282556
SACRAMENT	2021	LDT1	2003	60	GAS	3281.28057	0.152256979	0.002255694	0.002453273	405.6836976	0.00598565	0.014015641	0.022811973	0.033287177	1.514068159	0.004014569
SACRAMENT	2021	MH	2009	15	GAS	4.04696538	0.12840863	0.000355079	0.000386181	2791.735951	0.008175254	0.015809633	0.022780562	0.033241343	0.244697092	0.02762649
SACRAMENT	2021	LHD1	2009	10	GAS	295.266486	0.082989124	0.000534938	0.000581793	1614.536954	0.006633849	0.007578572	0.022731352	0.033169535	0.208585245	0.015977152
SACRAMENT	2021	MH	2010	15	GAS	4.8997905	0.125449261	0.000432752	0.000470658	2791.731386	0.008161246	0.015560874	0.022717431	0.033149222	0.241988964	0.027626445
SACRAMENT	2021	LHD1	2012	10	GAS	539.967482	0.081062775	0.001295552	0.001409031	1614.518257	0.006730811	0.007638058	0.022716653	0.033148086	0.1968295	0.015976967
SACRAMENT	2021	LHD1	2011	10	GAS	343.449538	0.082123799	0.00088599	0.000963595	1614.525982	0.006689236	0.007651469	0.022698862	0.033122126	0.201751702	0.015977043
SACRAMENT	2021	LDA	2003	60	GAS	31705.5838	0.152189353	0.002255694	0.002453273	340.6910606	0.005941442	0.013967242	0.022696032	0.033117996	1.512305202	0.003371414
SACRAMENT	2021	LHD2	2018	40	DSL	371.275851	0.070093643	0.007869669	0.008225501	461.3328447	0.001350682	0.072515099	0.029079384	0.033104945	0.101127086	0.004361254
SACRAMENT	2021	LHD1	2018	40	DSL	971.317352	0.070047491	0.007335309	0.007666979	410.3583934	0.001350682	0.064502625	0.029079384	0.033104945	0.101127086	0.003879363
SACRAMENT	2021	MH	2014	15	GAS	46.0348007	0.116844946	0.001792038	0.001949005	2643.440756	0.008162055	0.014704092	0.022655232	0.033058462	0.231992564	0.026158989
SACRAMENT	2021	MH	2011	15	GAS	31.6711578	0.122710815	0.000588099	0.000639612	2791.726925	0.008145373	0.015329474	0.022649001	0.03304937	0.239360784	0.027626401
SACRAMENT	2021	LHD1	2010	10	GAS	208.570459	0.082176361	0.000651955	0.000709061	1614.531785	0.006625708	0.007577882	0.022593223	0.032967978	0.205699753	0.015977101
SACRAMENT	2021	MH	2012	15	GAS	20.7697188	0.120289134	0.000859957	0.000935281	2791.722691	0.008132299	0.014919922	0.022590397	0.032963855	0.236849172	0.027626359
SACRAMENT	2021	LHD1	2013	10	GAS	783.225207	0.080292228	0.001939149	0.002109001	1614.509054	0.006733607	0.007668519	0.022584273	0.032954918	0.191383638	0.015976876
SACRAMENT	2021	MH	2013	15	GAS	38.4664959	0.118290854	0.001287161	0.001399905	2791.718307	0.008131884	0.014787248	0.022573303	0.032938911	0.234130055	0.027626316
SACRAMENT	2021	LHD1	2010	45	DSL	169.757184	0.142790151	0.013910419	0.014539386	470.9086159	0.00134329	0.074020277	0.028920243	0.032923774	0.156862769	0.00445178
SACRAMENT	2021	LHD2	2010	45	DSL	79.8158292	0.142790151	0.013910419	0.014539386	521.7107967	0.00134329	0.082005672	0.028920243	0.032923774	0.156862769	0.004932043
SACRAMENT	2021	MDV	2017	20	DSL	413.342781	0.053606062	0.005649355	0.005904793	527.1820078	0.001342071	0.08286567	0.028894003	0.032893901	0.525660694	0.004983766
SACRAMENT	2021	MH	2021	20	GAS	99.0862621	0.128200133	0.002097953	0.002281716	1912.231027	0.007749796	0.015341084	0.022483059	0.032807226	0.247695888	0.018923076
SACRAMENT	2021	LDT1	2010	10	GAS	96.093364	0.042457149	0.00127213	0.001383558	672.6749575	0.007157805	0.006309203	0.022407902	0.032697558	0.868467434	0.006656664
SACRAMENT	2021	LHD2	2016	10	GAS	80.918055	0.114704266	0.003928448	0.004272546	1775.345158	0.006833427	0.011076364	0.022399861	0.032685824	0.179235839	0.01756848
SACRAMENT	2021	MH	2015	40	DSL	52.2571168	1.812614797	0.012528115	0.01309458	958.1422021	0.001333239	0.150606611	0.028703855	0.032677431	0.081030286	0.00905789
SACRAMENT	2021	MDV	2005	25	GAS	26528.5067	0.087885248	0.000280013	0.000304539	597.1919191	0.006523636	0.010483233	0.022366876	0.032637693	1.440563272	0.005909698
SACRAMENT	2021	LDA	2010	10	GAS	1831.10035	0.042136808	0.00127213	0.001383558	589.0856425	0.007144095	0.006282785	0.022344754	0.032605413	0.869200813	0.00582948
SACRAMENT	2021	LHD1	2014	10	GAS	1074.51804	0.076545858	0.002699763	0.002936239	1590.287784	0.006693925	0.007451345	0.022290298	0.032525951	0.186098442	0.015737187
SACRAMENT	2021	LDT2	2006	15	GAS	2287.5158	0.042862343	0.000541288	0.0005887	676.9724583	0.006687301	0.006121675	0.022253085	0.032471649	1.101203524	0.006699191
SACRAMENT	2021	LHD1	2011	45	DSL	374.176692	0.138823651	0.013250879	0.013850024	470.9086159	0.001323358	0.074020277	0.028491116	0.032435241	0.149756124	0.00445178
SACRAMENT	2021	LHD2	2011	45	DSL	202.46178	0.138823651	0.013250879	0.013850024	521.7107967	0.001323358	0.082005672	0.028491116	0.032435241	0.149756124	0.004932043
SACRAMENT	2021	MH	2021	35	DSL	42.8965174	1.936583105	0.011310003	0.011821392	873.607069	0.001316453	0.137318866	0.028342466	0.032266014	0.080040047	0.008258728
SACRAMENT	2021	LHD1	2019	40	DSL	1093.95382	0.056654454	0.005399471	0.005643611	410.3583934	0.001313507	0.064502625	0.028279032	0.032193798	0.08787308	0.003879363
SACRAMENT	2021	LHD2	2019	40	DSL	411.759325	0.056687899	0.006746748	0.007051806	461.3328447	0.001313507	0.072515099	0.028279032	0.032193798	0.08787308	0.004361254
SACRAMENT	2021	LHD1	2015	10	GAS	3123.47733	0.074920376	0.003401869	0.003699843	1582.209022	0.006652129	0.007429701	0.021982219	0.032076402	0.181750215	0.015657241
SACRAMENT	2021	LHD1	1996	25	GAS	869.973571	0.412164557	0.00215256	0.002341105	938.6760621	0.005304589	0.026426831	0.021980591	0.032074028	0.479833827	0.009288961
SACRAMENT	2021	LHD2	1996	25	GAS	135.248204	0.412164557	0.00215256	0.002341105	1075.105878	0.005311485	0.026471607	0.021980591	0.032074028	0.479833827	0.010639044
SACRAMENT	2021	LHD1	1997	25	GAS	1160.41505	0.412104566	0.00215256	0.002341105	938.6737128	0.005308336	0.026518908	0.021934571	0.032006875	0.478476897	0.009288937
SACRAMENT	2021	LHD2	1997	25	GAS	140.952973	0.412104566	0.00215256	0.002341105	1075.103528	0.005313753	0.02655389	0.021934571	0.032006875	0.478476897	0.010639021
SACRAMENT	2021	LHD1	1999	25	GAS	2096.42219	0.410889354	0.00215256	0.002341105	938.6675886	0.00533877	0.026655611	0.021907873	0.031967917	0.47468589	0.009288877
SACRAMENT	2021	LHD2	1999	25	GAS	258.387093	0.410889354	0.00215256	0.002341105	1075.097404	0.005341302	0.026671707	0.021907873	0.031967917	0.47468589	0.01063896
SACRAMENT	2021	LHD1	1998	25	GAS	1046.69582	0.411795193	0.00215256	0.002341105	938.6709573	0.005318929	0.026598715	0.021903048	0.031960876	0.476824254	0.00928891
SACRAMENT	2021	LHD2	1998	25	GAS	123.766969	0.411795193	0.00215256	0.002341105	1075.100773	0.005322893	0.026624141	0.021903048	0.031960876	0.476824254	0.010638994
SACRAMENT	2021	LDA	2017	20	DSL	815.909969	0.052901999	0.005434388	0.005680107	289.9762444	0.001303086	0.045580227	0.028054671	0.031938377	0.502868065	0.002741318
SACRAMENT	2021	LHD1	2012	45	DSL	377.229746	0.134570139	0.012543615	0.013110782	470.9086159	0.001301983	0.074020277	0.028030937	0.031911358	0.142135252	0.00445178
SACRAMENT	2021	LHD2	2012	45	DSL	256.298535	0.134570139	0.012543615	0.013110782	521.7107967	0.001301983	0.082005672	0.028030937	0.031911358	0.142135252	0.004932043
SACRAMENT	2021	LHD1	2000	25	GAS	2593.88112	0.409097261	0.00215256	0.002341105	938.6628439	0.00533751	0.026679644	0.021820974	0.031841114	0.47192897	0.00928883
SACRAMENT	2021	LHD2	2000	25	GAS	299.195194	0.409097261	0.00215256	0.002341105	1075.09266	0.005338622	0.026686654	0.021820974	0.031841114	0.47192897	0.010638913
SACRAMENT	2021	LDA	2004	15	GAS	3446.22665	0.046563982	0.000541288	0.0005887	569.0749759	0.006532958	0.006484792	0.021818094	0.031836912	1.190333448	0.005631458
SACRAMENT	2021	LDT1	2003	45	GAS	2329.85478	0.150258664	0.002135899	0.002322985	366.1745819	0.005705331	0.013831691	0.021743646	0.031728277	1.882397888	0.003623594
SACRAMENT	2021	MH	2016	40	DSL	24.0215011	1.797734995	0.012182625	0.01273347	958.1422021	0.001293427	0.150606611	0.027846711	0.031701629	0.078614555	0.00905789
SACRAMENT	2021	LDT1	2004	15	GAS	309.955242	0.046618332	0.000541288	0.0005887	649.8073607	0.006520684	0.006505807	0.021722657	0.031697651	1.182931613	0.006430371

SACRAMENT	2021	LHD1	2001	25	GAS	3527.57283	0.406133621	0.00215256	0.002341105	938.6567678	0.005331098	0.026653132	0.021708635	0.03167719	0.468401259	0.00928877
SACRAMENT	2021	LHD2	2001	25	GAS	480.562478	0.406133621	0.00215256	0.002341105	1075.086583	0.005330815	0.026651367	0.021708635	0.03167719	0.468401259	0.010638853
SACRAMENT	2021	MH	1998	20	GAS	24.7910252	0.226440378	0.002913824	0.00316905	2320.785315	0.007415623	0.022704373	0.021678682	0.031633482	0.345003832	0.022966052
SACRAMENT	2021	MH	2010	45	DSL	7.56602369	1.702210138	0.013145752	0.013740145	976.0205314	0.001289422	0.153416836	0.027760491	0.031603473	0.07835117	0.009226904
SACRAMENT	2021	LDA	2003	45	GAS	22512.3711	0.150205326	0.002135899	0.002322985	307.6988037	0.005663794	0.013785157	0.021635429	0.031570367	1.880631679	0.003044929
SACRAMENT	2021	LHD1	2002	25	GAS	3390.02902	0.319849358	0.00215256	0.002341105	938.5154043	0.00541962	0.022483881	0.02156135	0.031462271	0.37961796	0.009287371
SACRAMENT	2021	LHD2	2002	25	GAS	317.748067	0.319849358	0.00215256	0.002341105	1074.94522	0.005417988	0.022475006	0.02156135	0.031462271	0.37961796	0.010637454
SACRAMENT	2021	LHD2	2020	10	GAS	412.272455	0.084691903	0.004513536	0.004908882	1664.44062	0.006902702	0.008957047	0.021555111	0.031453168	0.200927834	0.016470989
SACRAMENT	2021	MH	1999	20	GAS	68.7100508	0.220807811	0.002913824	0.00316905	2320.775698	0.007367906	0.022312546	0.021508011	0.031384439	0.339400685	0.022965957
SACRAMENT	2021	LHD1	2013	45	DSL	464.946573	0.130029615	0.011788628	0.012321658	470.9086159	0.001279167	0.074020277	0.027539707	0.031352126	0.134000153	0.00445178
SACRAMENT	2021	LHD2	2013	45	DSL	185.624165	0.130029615	0.011788628	0.012321658	521.7107967	0.001279167	0.082005672	0.027539707	0.031352126	0.134000153	0.004932043
SACRAMENT	2021	MDV	2019	10	GAS	1098.96489	0.033171517	0.008102491	0.008812198	673.1649705	0.006994159	0.005404559	0.02147125	0.031330797	0.870895005	0.006661513
SACRAMENT	2021	MDV	2009	15	GAS	730.884009	0.041468217	0.000692849	0.000753536	745.2493553	0.006503308	0.005930926	0.02147055	0.031329775	0.965778721	0.007374847
SACRAMENT	2021	LDT1	2003	55	GAS	4250.43506	0.147863993	0.002099645	0.002283556	392.761169	0.005630589	0.013611255	0.021458794	0.031312622	1.641408302	0.00388669
SACRAMENT	2021	LHD2	2017	10	GAS	275.438852	0.101588939	0.004220992	0.004590714	1738.363182	0.006630783	0.010124385	0.021456181	0.031308808	0.179563962	0.017202513
SACRAMENT	2021	LDT2	2019	10	GAS	1747.02298	0.033157148	0.008102491	0.008812198	557.8581211	0.006988698	0.005401968	0.02145543	0.031307713	0.870716146	0.005520458
SACRAMENT	2021	MDV	2018	20	DSL	439.17431	0.052402032	0.005281726	0.005520542	504.2052517	0.001275403	0.079254044	0.027458683	0.031259885	0.486681416	0.004766553
SACRAMENT	2021	LDT1	2012	10	GAS	177.111737	0.040095634	0.002527951	0.002749377	636.7656056	0.006910071	0.006105564	0.021415384	0.031249278	0.840447714	0.006301312
SACRAMENT	2021	LHD1	2020	40	DSL	1251.77363	0.04415412	0.003714909	0.003882881	410.3583934	0.001274628	0.064502625	0.027441992	0.031240884	0.074011652	0.003879363
SACRAMENT	2021	LHD2	2020	40	DSL	466.285663	0.044190819	0.005572364	0.005824321	461.3328447	0.001274628	0.072515099	0.027441992	0.031240884	0.074011652	0.004361254
SACRAMENT	2021	LHD2	2019	10	GAS	358.769787	0.089556675	0.004513536	0.004908882	1664.422504	0.006767472	0.009255453	0.021400055	0.03122691	0.189920807	0.01647081
SACRAMENT	2021	LHD2	2003	25	GAS	483.433092	0.313522951	0.00215256	0.002341105	1074.891962	0.005391935	0.022239049	0.021369652	0.031182546	0.346539977	0.010636927
SACRAMENT	2021	LHD1	2003	25	GAS	4573.03965	0.313522951	0.00215256	0.002341105	938.4621464	0.005394884	0.022254875	0.021369652	0.031182546	0.346539977	0.009286844
SACRAMENT	2021	LDA	2003	55	GAS	41070.1011	0.147819718	0.002099645	0.002283556	329.9762919	0.005589918	0.013566217	0.021353228	0.031158579	1.640073815	0.003265383
SACRAMENT	2021	MH	2000	20	GAS	62.1448227	0.215165457	0.002913824	0.00316905	2320.76592	0.007320858	0.021909391	0.021339846	0.031139054	0.333689374	0.02296586
SACRAMENT	2021	LHD2	2008	15	GAS	686.490361	0.201845843	0.000316242	0.000343942	1512.555693	0.005986457	0.01527564	0.021335057	0.031132065	0.279783193	0.014967965
SACRAMENT	2021	LDA	2012	10	GAS	3025.36969	0.039772694	0.002527951	0.002749377	557.6418866	0.006893956	0.006081636	0.02133391	0.031130392	0.840964012	0.005518319
SACRAMENT	2021	LDT2	2009	15	GAS	1203.84122	0.040776038	0.000692849	0.000753536	617.2455275	0.006463428	0.005882032	0.021259612	0.031021977	0.961569197	0.006108145
SACRAMENT	2021	MH	2001	20	GAS	26.4044733	0.209558132	0.002913824	0.00316905	2320.75603	0.007273195	0.02151158	0.021169845	0.030890989	0.327912402	0.022965762
SACRAMENT	2021	MH	2011	45	DSL	10.473176	1.689797863	0.012850023	0.013431044	976.0205314	0.001258311	0.153416836	0.0270907	0.030840961	0.07646347	0.009226904
SACRAMENT	2021	LHD2	2014	45	DSL	281.041919	0.125202079	0.010985918	0.011482652	509.7114484	0.001254908	0.080119542	0.027017425	0.030757542	0.125350828	0.004818606
SACRAMENT	2021	LHD1	2014	45	DSL	699.977841	0.125202079	0.010985918	0.011482652	460.0777177	0.001254908	0.07231781	0.027017425	0.030757542	0.125350828	0.004349389
SACRAMENT	2021	LDT1	2003	50	GAS	2335.61769	0.147904991	0.002061797	0.002242392	377.5043616	0.005527448	0.013615029	0.021065712	0.030739037	1.760265115	0.003735712
SACRAMENT	2021	MH	2017	40	DSL	49.916145	1.782626206	0.011831818	0.012366801	921.9175378	0.001253001	0.144912598	0.026976374	0.030710809	0.076161641	0.008715436
SACRAMENT	2021	MH	2002	20	GAS	53.8445968	0.204011679	0.002913824	0.00316905	2320.746059	0.007223482	0.021114802	0.020994097	0.030634537	0.322100392	0.022965664
SACRAMENT	2021	MH	2020	20	GAS	99.8374907	0.116900301	0.002097953	0.002281716	2114.306776	0.007295829	0.014378233	0.020974917	0.030606549	0.238907405	0.02092278
SACRAMENT	2021	LHD1	2020	10	GAS	2548.34436	0.06108157	0.004513536	0.004908882	1453.106382	0.006752003	0.00676054	0.020967988	0.030596439	0.200927834	0.014379666
SACRAMENT	2021	LDA	2003	50	GAS	22568.0556	0.147859896	0.002061797	0.002242392	317.2033693	0.005487512	0.013569904	0.020962041	0.030587762	1.758824352	0.003138984
SACRAMENT	2021	MDV	2008	15	GAS	1691.08245	0.042203689	0.000617069	0.000671118	789.9252579	0.006344292	0.005993334	0.020928469	0.030538772	0.973839731	0.007816951
SACRAMENT	2021	LDA	2018	20	DSL	864.236497	0.051843082	0.005111066	0.005342165	281.0651263	0.001244453	0.044179524	0.026792337	0.030501294	0.468586562	0.002657076
SACRAMENT	2021	LHD2	2018	10	GAS	313.666067	0.091111357	0.004396518	0.004781615	1664.409879	0.006540593	0.009323259	0.020882091	0.030471098	0.183364845	0.016470685
SACRAMENT	2021	MH	2003	20	GAS	67.8206234	0.198541194	0.002913824	0.00316905	2320.736024	0.007172605	0.020721986	0.020809162	0.030364681	0.316272679	0.022965564
SACRAMENT	2021	LHD1	2016	10	GAS	5037.90637	0.067519365	0.003928448	0.004272546	1549.917739	0.006383331	0.006933153	0.020792245	0.030339995	0.179235839	0.015337692
SACRAMENT	2021	LDT2	2008	15	GAS	1802.17893	0.04131465	0.000617069	0.000671118	654.2338816	0.006319188	0.005929407	0.020763115	0.030297488	0.969804071	0.006474175
SACRAMENT	2021	MDV	2007	15	GAS	2179.36961	0.043086233	0.000541288	0.0005887	813.3837906	0.006277798	0.006067833	0.020744225	0.030269925	0.991222342	0.008049092
SACRAMENT	2021	LHD1	2021	40	DSL	1135.46458	0.033000767	0.002320825	0.002425763	400.0994336	0.001234045	0.062890059	0.026568261	0.030246199	0.059542803	0.003782378
SACRAMENT	2021	LHD2	2021	40	DSL	425.364953	0.032966466	0.004346517	0.004543047	449.7995235	0.001234045	0.070702221	0.026568261	0.030246199	0.059542803	0.004252223
SACRAMENT	2021	LHD1	2008	15	GAS	3686.06268	0.176134144	0.000316242	0.000343942	1320.526209	0.005810959	0.013561294	0.020654083	0.03013839	0.279795456	0.013067677
SACRAMENT	2021	LHD1	2019	10	GAS	2280.70015	0.061769251	0.004513536	0.004908882	1453.087575	0.006567754	0.00669765	0.020652713	0.03013639	0.189920807	0.01437948
SACRAMENT	2021	LHD1	2015	45	DSL	986.881567	0.120087529	0.010135484	0.010593766	456.7813574	0.001229206	0.071799668	0.02646409	0.030127608	0.116187276	0.004318227
SACRAMENT	2021	LHD2	2015	45	DSL	547.472146	0.120087529	0.010135484	0.010593766	506.0594728	0.001229206	0.079545502	0.02646409	0.030127608	0.116187276	0.004784082
SACRAMENT	2021	LDT2	2007	15	GAS	2395.53726	0.042057452	0.000541288	0.0005887	673.6597503	0.006270081	0.005994822	0.020632395	0.030106742	0.987368242	0.006666409
SACRAMENT	2021	MH	2012	45	DSL	13.8559654	1.677178628	0.012549363	0.013116789	976.0205314	0.001226682	0.153416836	0.026409741	0.030065735	0.074544292	0.009226904
SACRAMENT	2021	LDT1	2020	5	GAS	7.23929086	0.028555219	0.009238205	0.010047391	639.5642646	0.007128563	0.005171065	0.02044597	0.029834711	0.825853494	0.006329007
SACRAMENT	2021	MH	2018	40	DSL	54.8743914	1.767288439	0.011475694	0.011994574	921.9175378	0.001211963	0.144912598	0.026092845	0.029704969	0.073671544	0.008715436
SACRAMENT	2021	LDA	2005	15	GAS	4578.72588	0.045012997	0.000541288	0.0005887	545.1829311	0.006171627	0.006353764	0.020290409	0.029607717	1.091330708	0.005395027
SACRAMENT	2021	LDA	2020	5	GAS	78.4390954	0.028238842	0.009238205	0.010047391	559.8283009	0.00708556	0.005140464	0.0202741	0.029583919	0.825143449	0.005539955
SACRAMENT	2021	MDV	2019	20	DSL	457.317954	0.051142002	0.004896998	0.005118419	481.2284956	0.001205635	0.075642418	0.025956606	0.02954987	0.445889245	0.00454934
SACRAMENT	2021	LHD1	2017	10	GAS	1827.39892	0.063116403	0.004220992	0.004590714	1517.633639	0.006287627	0.00665538	0.020223189	0.02950963	0.179563962	0.015018215
SACRAMENT	2021	LDT1	2005	15	GAS	226.880173	0.045092696	0.000541288	0.0005887	622.5370112	0.006159608	0.006370629	0.02021465	0.02949717	1.084022428	0.006160508
SACRAMENT	2021	LDT1	2014	10	GAS	339.977583	0.037477811	0.005267924	0.005729348	620.3903177	0.006585109	0.005855392	0.020196173	0.029470209	0.804060257	0.006139265
SACRAMENT	2021	LHD1	2016	45	DSL	1800.10125	0.100519793	0.009237327	0.009654998	442.6540989	0.001202063	0.06957906	0.025879703	0.029462321	0.106509498	0.004184673
SACRAMENT	2021	LHD2	2016	45	DSL	427.424839	0.100523555	0.009237327	0.009654998	490.4081489	0.001202063	0.077085332	0.025879703	0.029462321	0.106509498	0.004636121
SACRAMENT	2021	LDA	2014	10	GAS	3908.99693	0.037164719	0.005267924	0.005729348	543.3445064	0.006563612	0.005832536	0.020094187	0.02932139	0.804316183	0.005376834
SACRAMENT	2021	MH	2013	45	DSL	23.1173553	1.664352436	0.012243771	0.012797381	976.0205314	0.001194534	0.153416836	0.025717614	0.029277793	0.072593637	0.009226904
SACRAMENT	2021	LDT1	2013	10	GAS	285.897046	0.038471021	0.003783772	0.004115197	619.3534417	0.006538969	0.005951241	0.020063763	0.029276996	0.810092186	0.006129004
SACRAMENT	2021	MDV	2004	30	GAS	16956.2298	0.097632187	0.000218224	0.000237339	542.9901848	0.005807741	0.01111297	0.020031181	0.029229452	1.386288288	0.005373328
SACRAMENT	2021	LHD1	2018	10	GAS	2035.76208	0.061011334	0.004396518	0.004781615	1453.074396	0.00630162	0.006559142	0.020006362	0.029193236	0.183364845	0.014379349
SACRAMENT	2021	LDA	2013	10	GAS	3889.04977	0.038133816	0.003783772	0.004115197	542.3912097	0.006519502	0.005925128	0.019972709	0.02914413	0.81046227	0.005367401
SACRAMENT	2021	LDA	2019	20	DSL	886.30625	0.050739542	0.004774118	0.004989982	272.1540083	0.001183349	0.04277882	0.025476811	0.029003656	0.432860347	0.002572834
SACRAMENT	2021	LHD1	2017	45	DSL	932.263187	0.082070366	0.008291446	0.008666349	428.5268405	0.001173477	0.067358452	0.025264261	0.028761681	0.096317493	0.00405112
SACRAMENT	2021	LHD2	2017	45	DSL	363.008305	0.082073124	0.008291446	0.008666349	474.756825	0.001173477	0.074625162	0.025264261	0.028761681	0.096317493	0.004488159
SACRAMENT	2021	MH	2019	40	DSL	59.8217893	1.751721702	0.011114252	0.011616789	921.9175378	0.001170312	0.144912598	0.025196123	0.028684111	0.071144265	0.008715436
SACRAMENT	2021	LHD1	2004	20	GAS	4574.8453	0.28207971	0.000194255	0.00021127	1097.828079	0.005261873	0.018287993	0.019656698	0.028683008	0.338861598	0.010863899
SACRAMENT	2021	LHD2	2004	20	GAS	501.941772	0.28207971	0.000194255	0.00021127	1257.444558	0.005257743	0.0182609	0.019656698	0.028683008	0.338861598	0.012443433
SACRAMENT	2021	MH	2014	45	DSL	23.711563	1.651319291	0.011933249	0.012472817	924.1731583	0.001161867	0.145267151	0.025014317	0.028477137	0.070611504	0.00873676
SACRAMENT	2021	LHD1	2010	50	DSL	655.486277	0.130801541	0.013008475	0.013596661	493.6847405	0.001160687	0.077600366	0.024988915	0.028448218	0.135539331	0.004667096
SACRAMENT	2021	LHD2	2010	50	DSL	308.194207	0.130801541	0.013008475	0.013596661	540.9262835	0.001160687	0.085026079	0.024988915	0.028448218	0.135539331	0.005113699
SACRAMENT	2021	LDT1	2015	10	GAS	687.103094	0.035833426	0.00663791	0.007219333	609.2607144	0.006366303	0.005706677	0.01936264	0.028253918	0.810039071	0.006029129
SACRAMENT	2021	MDV	2013	15	GAS	1922.81045	0.038025347	0.002511577	0.00273157	673.862351	0.005988689	0.005624805	0.019340269	0.028221276	0.847120224	0.006668414
SACRAMENT	2021	MH	2019	20	GAS	91.2500593	0.109328335	0.002097953	0.002281716	2114.283447	0.006798969	0.013713818	0.019339657	0.028220382	0.228638285	0.020922549
SACRAMENT	2021	MDV	2014	15	GAS	3072.86608	0.037634536	0.003496722	0.003803004	669.6981463	0.005982656	0.005600753	0.019273058	0.028123201	0.841587223	0.006627206
SACRAMENT	2021	LDT2	2008	25	DSL	17.2064235	0.045120727	0.006689437	0.006991903	455.3879788	0.00114696	0.071580649	0.02469338	0.028111772	0.309197012	0.004305054
SACRAMENT	2021	LDT1	2008	25	DSL	11.9157795	0.045120743	0.006689437	0.006991903	581.5212048	0.00114696	0.091407035	0.024693372	0.028111762	0.30919704	0.005497467
SACRAMENT	2021	LDA	2015	10	GAS	4562.56956	0.035517019	0.00663791	0.007219333	533.6468173	0.006345461	0.005683394	0.019261286	0.028106023	0.810264839	0.005280868
SACRAMENT	2021	LHD1	2011	50	DSL	1444.81477	0.127168067	0.012391699	0.012951997	493.6847405	0.001143465	0.077600366	0.024618122	0.028026095	0.129398741	0.004667096
SACRAMENT	2021	LHD2	2011	50	DSL	781.769087	0.127168067	0.012391699	0.012951997	540.9262835	0.001143465	0.085026079	0.024618122	0.028026095	0.129398741	0.005113699
SACRAMENT	2021	LHD1	2018	45	DSL	1048.37087	0.063275331	0.00680231	0.00710988	400.2723235	0.001143448	0.062917235	0.024617764	0.028025687	0.085611261	0.003784013
SACRAMENT	2021	LHD2	2018	45	DSL	400.728748	0.063316962	0.007297842	0.007627818	443.4541772	0.001143448	0.069704821	0.024617764	0.028025687	0.085611261	0.004192237
SACRAMENT	2021	LHD1	2005	20	GAS	2706.39821	0.273471726	0.000194255	0.00021127	1097.826043	0.005134624	0.017987412	0.019076727	0.027836715	0.339155162	0.010863879
SACRAMENT	2021	LHD2	2005	20	GAS	683.504512	0.273471726	0.000194255	0.00021127	1257.442523	0.005129359	0.017952794	0.019076727	0.027836715	0.339155162	0.012443413
SACRAMENT	2021	LDT2	2013	15	GAS	4332.09393	0.037569132	0.002511577	0.00273157	558.1126713	0.005920637	0.005587555	0.019070213	0.02782721	0.843481684	0.005522977
SACRAMENT	2021	LDT2	2009	25	DSL	21.756353	0.044763912	0.006520123	0.006814934	429.5851919	0.001134676	0.06752481	0.024428898	0.027810676	0.299528088	0.004061125
SACRAMENT	2021	LDT1	2009	25	DSL	60.4804727	0.044763926	0.006520123	0.006814934	569.3672008	0.001134675	0.089496595	0.024428887	0.027810664	0.299528159	0.005382568
SACRAMENT	2021	MDV	2020	20	DSL	477.591954	0.049825973	0.004495172	0.004698424	458.2517395	0.001132765	0.072030792	0.024387769	0.027763854	0.403284198	0.004332127
SACRAMENT	2021	LDT2	2014	15	GAS	4041.24947	0.037273783	0.003496722	0.003803004	554.7055117	0.005919153	0.005570713	0.019025915	0.02776257	0.838322874	0.005489261
SACRAMENT	2021	MH	2015	45	DSL	42.7916494	1.638079199	0.011617795	0.0121431	924.1731583	0.001128682	0.145267151	0.024299852	0.027663766	0.068597893	0.00873676
SACRAMENT	2021	MH	2020	40	DSL	62.9743984	1.735926003	0.010747492	0.011233446	921.9175378	0.001128048	0.144912598	0.024286209	0.027648234	0.068579803	0.008715436
SACRAMENT	2021	LHD1	2012	50	DSL	1456.60358	0.123271678	0.011730294	0.012260686	493.6847405	0.001124996	0.077600366	0.024220499	0.027573427	0.122813827	0.004667096
SACRAMENT	2021	LHD2	2012	50	DSL	989.649855	0.123271678	0.011730294	0.012260686	540.9262835	0.001124996	0.085026079	0.024220499	0.027573427	0.122813827	0.005113699
SACRAMENT	2021	LDT2	2010	25	DSL	41.1014097	0.044382643	0.006339206	0.006625837	425.5143302	0.001121549	0.066884927	0.02414629	0.027488946	0.289196539	0.004022641
SACRAMENT	2021	LDT1	2010	25	DSL	6.81538125	0.044382656	0.006339206	0.006625837	540.1649829	0.001121548	0.084906413	0.024146277	0.027488931	0.28919666	0.005106502
SACRAMENT	2021	LDA	2020	20	DSL	858.943557	0.04959138	0.004423545	0.004623558	263.2428902	0.001119775	0.041378116	0.024108096	0.027445464	0.395689393	0.002488592
SACRAMENT	2021	LHD1	2006	20	GAS	8341.73987	0.263989666	0.000194255	0.00021127	1097.823624	0.005089429	0.017639144	0.018801686	0.027435377	0.338377279	0.010863855
SACRAMENT	2021	LHD2	2006	20	GAS	602.577475	0.263989666	0.000194255	0.00021127	1257.440103	0.005083024	0.017597526	0.018801686	0.027435377	0.338377279	0.012443389
SACRAMENT	2021	LDT1	2016	10	GAS	618.952201	0.034482637	0.0076654	0.008336822	591.9344917	0.006212414	0.005572436	0.018792465	0.02742192	0.803172483	0.005857672
SACRAMENT	2021	MH	2010	50	DSL	8.46761092	1.564595665	0.012293389	0.012849242	952.6106596	0.001114142	0.14973713	0.023986816	0.027307395	0.067700355	0.009005597
SACRAMENT	2021	LDA	2016	10	GAS	4750.4239	0.034175166	0.0076654	0.008336822	518.5185529	0.006190021	0.005549994	0.018684716	0.027264694	0.80329566	0.005131161

SACRAMENT	2021	LHD1	2019	45	DSL	1180.73595	0.051185644	0.005007134	0.005233534	400.2723235	0.001111977	0.062917235	0.023940209	0.027254337	0.074390804	0.003784013
SACRAMENT	2021	LHD2	2019	45	DSL	444.42373	0.051215773	0.006256515	0.006539407	443.4541772	0.001111977	0.069704821	0.023940209	0.027254337	0.074390804	0.004192237
SACRAMENT	2021	MDV	2011	15	GAS	1345.19294	0.038891403	0.001147531	0.001248045	714.6015693	0.005783685	0.005687081	0.018667121	0.027239019	0.852441623	0.007071562
SACRAMENT	2021	LDT2	2011	25	DSL	33.5731219	0.043976922	0.006146686	0.006424612	411.9910401	0.001107581	0.064759254	0.023845556	0.02714658	0.278202365	0.003894797
SACRAMENT	2021	LHD1	2007	20	GAS	3423.22808	0.26154885	0.000194255	0.00021127	1097.820121	0.005060584	0.017717554	0.018582214	0.027115123	0.336763993	0.01086382
SACRAMENT	2021	LHD2	2007	20	GAS	515.475888	0.26154885	0.000194255	0.00021127	1257.4366	0.005053065	0.017668681	0.018582214	0.027115123	0.336763993	0.012443355
SACRAMENT	2021	LHD1	2013	50	DSL	1795.30604	0.119112375	0.01102426	0.011522728	493.6847405	0.001105281	0.077600366	0.023796045	0.027090215	0.115784588	0.004667096
SACRAMENT	2021	LHD2	2013	50	DSL	716.75372	0.119112375	0.01102426	0.011522728	540.9262835	0.001105281	0.085026079	0.023796045	0.027090215	0.115784588	0.005113699
SACRAMENT	2021	MDV	2015	15	GAS	2942.35697	0.0366002	0.004406086	0.004792021	654.2936626	0.005794104	0.005497483	0.018556679	0.027077862	0.8094993	0.006474766
SACRAMENT	2021	MDV	2010	15	GAS	969.661161	0.039242312	0.00084441	0.000918373	737.9851335	0.005711633	0.005691101	0.018461986	0.026939686	0.836792004	0.007302961
SACRAMENT	2021	LDT1	2017	10	GAS	496.720647	0.033494379	0.008236228	0.008957649	574.5971645	0.006114968	0.005478513	0.018419148	0.026877177	0.799535828	0.005686105
SACRAMENT	2021	MH	2016	45	DSL	19.6704241	1.624632163	0.01129741	0.011808228	924.1731583	0.001094977	0.145267151	0.023574219	0.026837681	0.066552805	0.00873676
SACRAMENT	2021	LDT2	2011	15	GAS	3002.9774	0.038110752	0.001147531	0.001248045	591.8400513	0.005717199	0.005623242	0.018390355	0.026835163	0.848460105	0.005856737
SACRAMENT	2021	LDT2	2012	25	DSL	191.097413	0.043546748	0.005942562	0.006211259	401.8243109	0.00109277	0.063161186	0.023526697	0.026783581	0.266545568	0.003798685
SACRAMENT	2021	LDT1	2012	25	DSL	3.87932816	0.043546754	0.005942562	0.006211259	511.3052961	0.001092769	0.080370072	0.023526679	0.02678356	0.266545811	0.004833674
SACRAMENT	2021	LDT2	2015	15	GAS	4650.65921	0.03632589	0.004406086	0.004792021	541.9831598	0.00573532	0.005474064	0.018334252	0.026753297	0.806607543	0.005363363
SACRAMENT	2021	LDA	2017	10	GAS	5716.86407	0.033191616	0.008236228	0.008957649	503.378668	0.006090961	0.005456214	0.018305372	0.026711156	0.799570154	0.00498134
SACRAMENT	2021	MH	2011	50	DSL	11.7211872	1.553186855	0.012016835	0.012560183	952.6106596	0.00108726	0.14973713	0.023408075	0.026648537	0.066069263	0.009005597
SACRAMENT	2021	LHD2	2021	10	GAS	339.565318	0.064618209	0.004513536	0.004908882	1622.80504	0.006051266	0.007489862	0.018246298	0.026624955	0.187942948	0.016058971
SACRAMENT	2021	MH	2021	40	DSL	53.2493485	1.719901353	0.010375414	0.010844544	833.7764183	0.001085171	0.131058042	0.023363102	0.026597338	0.065978159	0.007882186
SACRAMENT	2021	LHD1	2014	50	DSL	2702.83624	0.114690157	0.010273597	0.010738124	482.3299915	0.001084319	0.075815558	0.02334476	0.026576457	0.108311025	0.004559753
SACRAMENT	2021	LHD2	2014	50	DSL	1085.1919	0.114690157	0.010273597	0.010738124	528.484979	0.001084319	0.083070479	0.02334476	0.026576457	0.108311025	0.004996084
SACRAMENT	2021	LDT2	2010	15	GAS	2054.43309	0.038344768	0.00084441	0.000918373	611.1937444	0.005639046	0.005619405	0.018157881	0.026495937	0.832528508	0.006048258
SACRAMENT	2021	LHD1	2020	45	DSL	1351.07542	0.039901364	0.003444976	0.003600742	400.2723235	0.001079063	0.062917235	0.023231596	0.026447627	0.062656121	0.003784013
SACRAMENT	2021	LHD2	2020	45	DSL	503.275582	0.039934509	0.005167464	0.005401114	443.4541772	0.001079063	0.069704821	0.023231596	0.026447627	0.062656121	0.004192237
SACRAMENT	2021	LDT2	2013	25	DSL	331.253297	0.043092121	0.005726835	0.005985777	388.459601	0.001077118	0.06106044	0.023189713	0.026399946	0.254226147	0.00367234
SACRAMENT	2021	LDT1	2013	25	DSL	12.5670815	0.043092124	0.005726835	0.005985777	497.3358712	0.001077117	0.078174273	0.023189692	0.026399923	0.254226461	0.004701613
SACRAMENT	2021	LDT2	2020	10	GAS	1785.7102	0.028754239	0.005812656	0.006321794	531.4882134	0.006037197	0.004909327	0.018088371	0.026394508	0.855771727	0.005259507
SACRAMENT	2021	MDV	2007	25	DSL	141.59065	0.047884736	0.007188592	0.007513628	602.9419449	0.001076794	0.094774077	0.023182732	0.026391999	0.540300557	0.00569997
SACRAMENT	2021	MH	2018	20	GAS	83.0314124	0.104759789	0.002043562	0.00222256	2114.264933	0.006397787	0.013301223	0.018034057	0.026315254	0.220509513	0.020922365
SACRAMENT	2021	MDV	2020	10	GAS	1135.85418	0.028694022	0.005812656	0.006321794	641.2878742	0.006021701	0.004903051	0.018031737	0.026311869	0.855037588	0.006346063
SACRAMENT	2021	LHD1	2021	10	GAS	2161.41131	0.049864747	0.004513536	0.004908882	1416.755351	0.005984179	0.006018816	0.017950567	0.026193426	0.187942948	0.014019943
SACRAMENT	2021	LDT1	2021	5	GAS	6.36108499	0.025688914	0.005738885	0.006241561	618.1641012	0.006364394	0.004824268	0.017923399	0.026153782	0.806907344	0.006117235
SACRAMENT	2021	LHD1	2015	50	DSL	3810.66244	0.110005023	0.009478305	0.009906872	478.8741983	0.001062112	0.075272355	0.022866644	0.026032154	0.100393138	0.004527083
SACRAMENT	2021	LHD2	2015	50	DSL	2113.96343	0.110005023	0.009478305	0.009906872	524.698495	0.001062112	0.082475297	0.022866644	0.026032154	0.100393138	0.004960288
SACRAMENT	2021	MH	2017	45	DSL	40.8747039	1.610978191	0.010972093	0.011468202	889.2327682	0.001060754	0.139775008	0.022837417	0.025998881	0.064476239	0.008406448
SACRAMENT	2021	LDT2	2014	25	DSL	340.647021	0.042613041	0.005499505	0.005748168	385.9211034	0.001060624	0.060661423	0.022834603	0.025995677	0.241244104	0.003648342
SACRAMENT	2021	MH	2012	50	DSL	15.5070786	1.541587817	0.011735669	0.012266304	952.6106596	0.001059931	0.14973713	0.022819683	0.025978692	0.064410972	0.009005597
SACRAMENT	2021	MDV	2009	25	DSL	113.309771	0.046437243	0.006836769	0.007145898	552.3598226	0.001058717	0.086823272	0.022793554	0.025948946	0.463532216	0.005221787
SACRAMENT	2021	LDA	2021	5	GAS	64.6780599	0.02536843	0.005738885	0.006241561	541.1346884	0.006320447	0.004788098	0.017757772	0.0259121	0.806026473	0.005354966
SACRAMENT	2021	LDT1	2007	15	GAS	447.471129	0.041421098	0.000541288	0.0005887	610.0581132	0.005503088	0.005930616	0.017744511	0.025892749	0.914738068	0.00603702
SACRAMENT	2021	LDA	2007	15	GAS	6055.68156	0.041194664	0.000541288	0.0005887	534.2143219	0.005497951	0.005904823	0.017734881	0.025878696	0.915799628	0.005286484
SACRAMENT	2021	MDV	2008	25	DSL	74.2962606	0.047351823	0.00702001	0.007337424	585.5369968	0.00105233	0.092038262	0.02265605	0.025792406	0.526822576	0.00553543
SACRAMENT	2021	MDV	2016	15	GAS	3407.03097	0.035055531	0.00508811	0.005533783	628.3375326	0.005563976	0.005355562	0.017666135	0.025778382	0.80904043	0.006217909
SACRAMENT	2021	LHD1	2021	45	DSL	1225.53971	0.029832277	0.002152189	0.002249502	390.2655154	0.001044707	0.061344304	0.022491921	0.025605556	0.050407212	0.003689413
SACRAMENT	2021	LHD2	2021	45	DSL	459.108678	0.029801343	0.00403069	0.00421294	432.3678228	0.001044707	0.067962201	0.022491921	0.025605556	0.050407212	0.004087431
SACRAMENT	2021	LDA	2006	15	GAS	5277.82163	0.038289024	0.000541288	0.0005887	551.6109945	0.00542466	0.005591165	0.017525171	0.025572688	0.876825226	0.005458638
SACRAMENT	2021	LDT1	2006	15	GAS	312.865996	0.038452575	0.000541288	0.0005887	622.7359181	0.005429725	0.005615208	0.017524985	0.025572417	0.875760059	0.006162477
SACRAMENT	2021	LDT2	2015	25	DSL	501.012628	0.042109509	0.005260572	0.005498431	376.9215848	0.001043288	0.059246824	0.022461367	0.025570773	0.22759944	0.003563264
SACRAMENT	2021	LDT2	2016	15	GAS	4947.01359	0.034848616	0.00508811	0.005533783	520.5304634	0.005518089	0.005336739	0.017495846	0.025529898	0.806748874	0.005151071
SACRAMENT	2021	LHD1	2016	50	DSL	6950.76131	0.092094639	0.008638384	0.009028973	464.0636561	0.001038658	0.072944344	0.022361696	0.025457305	0.092030927	0.00438707
SACRAMENT	2021	LHD2	2016	50	DSL	1650.42274	0.092098081	0.008638384	0.009028973	508.4707065	0.001038658	0.079924514	0.022361696	0.025457305	0.092030927	0.004806877
SACRAMENT	2021	MDV	2005	30	GAS	18527.5871	0.081481426	0.000218224	0.000237339	530.0707198	0.005086254	0.009719364	0.017438682	0.025446484	1.327479702	0.005245479
SACRAMENT	2021	MDV	2010	25	DSL	220.956204	0.045863789	0.006638871	0.006939051	547.1255163	0.001033589	0.086000512	0.022252565	0.025333066	0.448840522	0.005172304
SACRAMENT	2021	LDA	2008	25	DSL	43.9157759	0.04583187	0.006627858	0.006927541	306.9885059	0.001032191	0.048254318	0.022222463	0.025298797	0.448022732	0.002902145
SACRAMENT	2021	MH	2013	50	DSL	25.87208	1.529798553	0.011449892	0.011967606	952.6106596	0.001032153	0.14973713	0.022221641	0.025297861	0.062725483	0.009005597
SACRAMENT	2021	MDV	2017	15	GAS	3169.55736	0.034605978	0.005467011	0.005945874	602.3587	0.005470456	0.005325125	0.017290348	0.025230036	0.804669844	0.005960828
SACRAMENT	2021	MH	2018	45	DSL	44.9348503	1.597117288	0.010641845	0.011123022	889.2327682	0.001026013	0.139775008	0.022089447	0.025147366	0.062368195	0.008406448
SACRAMENT	2021	LDT2	2016	25	DSL	329.629571	0.041581524	0.005010035	0.005236566	361.8109608	0.00102511	0.056871645	0.022070006	0.025125235	0.213292158	0.003420415
SACRAMENT	2021	LDT2	2017	15	GAS	5134.04535	0.034461154	0.005467011	0.005945874	499.0551251	0.005436927	0.005311078	0.017168233	0.025051846	0.803027517	0.004938555
SACRAMENT	2021	LHD1	1996	30	GAS	769.342153	0.381351777	0.001677569	0.001824509	832.9249237	0.004134769	0.024451203	0.017133214	0.025000746	0.44179353	0.008242467
SACRAMENT	2021	LHD2	1996	30	GAS	119.603799	0.381351777	0.001677569	0.001824509	953.9823658	0.004140144	0.024492631	0.017133214	0.025000746	0.44179353	0.009440429
SACRAMENT	2021	LHD1	2010	55	DSL	394.739791	0.121868054	0.012246982	0.012800737	515.8830343	0.001019253	0.081089629	0.021943911	0.024981684	0.119023297	0.00487695
SACRAMENT	2021	LHD2	2010	55	DSL	185.597352	0.121868054	0.012246982	0.012800737	559.8847575	0.001019253	0.088006087	0.021943911	0.024981684	0.119023297	0.005292924
SACRAMENT	2021	LHD1	1997	30	GAS	1026.18774	0.381296272	0.001677569	0.001824509	832.9227887	0.004137689	0.024536396	0.017097342	0.024948402	0.440544175	0.008242446
SACRAMENT	2021	LHD2	1997	30	GAS	124.648687	0.381296272	0.001677569	0.001824509	953.9802308	0.004141912	0.024568762	0.017097342	0.024948402	0.440544175	0.009440408
SACRAMENT	2021	MH	2017	20	GAS	72.9763223	0.102430782	0.001961975	0.002133827	2114.252242	0.006101793	0.013070785	0.017080978	0.024924523	0.215096089	0.02092224
SACRAMENT	2021	LDT2	2004	20	GAS	7129.60589	0.044918488	0.000379041	0.000412241	592.6469989	0.005066066	0.006279375	0.017079861	0.024922892	1.280165515	0.005864722
SACRAMENT	2021	MDV	2012	15	GAS	1524.44588	0.037489364	0.001677994	0.001824971	696.9270773	0.00536711	0.00556647	0.017079717	0.024922683	0.80909505	0.006896658
SACRAMENT	2021	LHD1	1999	30	GAS	1853.92524	0.380171907	0.001677569	0.001824509	832.9171663	0.004161411	0.024662879	0.017076532	0.024918036	0.437053711	0.008242391
SACRAMENT	2021	LHD2	1999	30	GAS	228.49899	0.380171907	0.001677569	0.001824509	953.9746084	0.004163386	0.024677771	0.017076532	0.024918036	0.437053711	0.009440352
SACRAMENT	2021	LHD1	1998	30	GAS	925.622622	0.381010027	0.001677569	0.001824509	832.9202709	0.004145946	0.024610236	0.017072771	0.024912547	0.43902255	0.008242421
SACRAMENT	2021	LHD2	1998	30	GAS	109.45062	0.381010027	0.001677569	0.001824509	953.977713	0.004149036	0.024633762	0.017072771	0.024912547	0.43902255	0.009440383
SACRAMENT	2021	LHD1	2017	50	DSL	3599.76356	0.075207237	0.007753834	0.008104428	449.2531139	0.001013958	0.070616333	0.021829916	0.024851908	0.083224392	0.004247058
SACRAMENT	2021	LHD2	2017	50	DSL	1401.69009	0.075209761	0.007753834	0.008104428	492.242918	0.001013958	0.077373732	0.021829916	0.024851908	0.083224392	0.004653466
SACRAMENT	2021	LHD2	2000	30	GAS	264.586744	0.378513788	0.001677569	0.001824509	953.9702928	0.004161297	0.024691601	0.017008797	0.024819196	0.434515355	0.009440309
SACRAMENT	2021	LHD1	2000	30	GAS	2293.84219	0.378513788	0.001677569	0.001824509	832.9128507	0.00416043	0.024685116	0.017008797	0.024819196	0.434515355	0.008242348
SACRAMENT	2021	LDA	2009	25	DSL	362.426284	0.045333302	0.006455804	0.006747706	300.5723348	0.001010344	0.047245785	0.021752121	0.024763344	0.435249653	0.002841489
SACRAMENT	2021	LHD1	2001	30	GAS	3119.53209	0.375771705	0.001677569	0.001824509	832.9073247	0.004155432	0.024660586	0.016921232	0.024691423	0.431267314	0.008242293
SACRAMENT	2021	LHD2	2001	30	GAS	424.974946	0.375771705	0.001677569	0.001824509	953.9647668	0.004155211	0.024658952	0.016921232	0.024691423	0.431267314	0.009440255
SACRAMENT	2021	MDV	2011	25	DSL	460.050031	0.045247859	0.006426314	0.006716883	529.7372957	0.0010066	0.083267326	0.021671507	0.024671569	0.433060615	0.005007922
SACRAMENT	2021	LDT2	2017	25	DSL	628.267163	0.041029087	0.004747895	0.004962573	346.7003369	0.00100609	0.054496465	0.021660519	0.024659061	0.19832226	0.003277565
SACRAMENT	2021	LDT1	2017	25	DSL	2.5790483	0.041029079	0.004747895	0.004962573	460.4421788	0.001006089	0.072375098	0.021660497	0.024659036	0.198322806	0.004352834
SACRAMENT	2021	LDT1	2008	15	GAS	765.234805	0.04076132	0.000617069	0.000671118	592.063368	0.005290882	0.005903188	0.016886998	0.024641468	0.908551287	0.005858947
SACRAMENT	2021	LDA	2008	15	GAS	5359.01742	0.040501027	0.000617069	0.000671118	518.4607066	0.005288431	0.005877574	0.016878233	0.024628677	0.909614113	0.005130589
SACRAMENT	2021	LHD1	2011	55	DSL	870.080582	0.118482739	0.011666311	0.01219381	515.8830343	0.001004129	0.081089629	0.021618301	0.024610998	0.113630964	0.00487695
SACRAMENT	2021	LHD2	2011	55	DSL	470.788447	0.118482739	0.011666311	0.01219381	559.8847575	0.001004129	0.088006087	0.021618301	0.024610998	0.113630964	0.005292924
SACRAMENT	2021	MH	2014	50	DSL	26.537095	1.517819068	0.011159504	0.011664087	902.0068468	0.001003927	0.141782915	0.021613949	0.024606044	0.061012795	0.008527209
SACRAMENT	2021	LDT2	2012	15	GAS	2941.09277	0.036676013	0.001677994	0.001824971	577.1953182	0.005300058	0.005495659	0.01681405	0.024535022	0.805430385	0.005711816
SACRAMENT	2021	LHD1	2002	30	GAS	2997.89822	0.295937919	0.001677569	0.001824509	832.7772579	0.004224432	0.020803021	0.016806427	0.024523899	0.349522583	0.008241006
SACRAMENT	2021	LHD2	2002	30	GAS	280.993572	0.295937919	0.001677569	0.001824509	953.8347	0.00422316	0.020794809	0.016806427	0.024523899	0.349522583	0.009438968
SACRAMENT	2021	LDT1	2018	10	GAS	524.650668	0.030468456	0.008578724	0.009330145	557.237246	0.005625368	0.005147885	0.016696641	0.0243637	0.796088349	0.005514314
SACRAMENT	2021	LDT2	2005	20	GAS	8637.19718	0.042546787	0.000379041	0.000412241	578.4548441	0.004972434	0.005988645	0.016679499	0.024338686	1.157664182	0.00572428
SACRAMENT	2021	LHD1	2003	30	GAS	4044.06787	0.290084465	0.001677569	0.001824509	832.7283391	0.004205151	0.020591136	0.016657005	0.024305863	0.319066959	0.008240522
SACRAMENT	2021	LHD2	2003	30	GAS	427.51351	0.290084465	0.001677569	0.001824509	953.7857812	0.004202852	0.020576492	0.016657005	0.024305863	0.319066959	0.009438483
SACRAMENT	2021	MH	2019	45	DSL	48.9861131	1.583049463	0.010306666	0.010772688	889.2327682	0.000990752	0.139775008	0.021330808	0.024283137	0.060228674	0.008406448
SACRAMENT	2021	MH	2021	25	GAS	110.405005	0.116783611	0.001549843	0.001685596	1634.464948	0.005728235	0.013974925	0.016618276	0.024249349	0.227535079	0.016174356
SACRAMENT	2021	LHD1	2018	50	DSL	4048.09211	0.057999878	0.006361252	0.006648879	419.6320294	0.000988011	0.065960311	0.021271301	0.024215962	0.073973532	0.003967032
SACRAMENT	2021	LHD2	2018	50	DSL	1547.34067	0.05803799	0.006824654	0.007133235	459.787341	0.000988011	0.072272167	0.021271301	0.024215962	0.073973532	0.004346644
SACRAMENT	2021	LHD1	2012	55	DSL	877.179908	0.114852466	0.011043624	0.011542968	515.8830343	0.00098791	0.081089629	0.02126913	0.02421349	0.107848449	0.00487695
SACRAMENT	2021	LHD2	2012	55	DSL	595.976133	0.114852466	0.011043624	0.011542968	559.8847575	0.00098791	0.088006087	0.02126913	0.02421349	0.107848449	0.005292924
SACRAMENT	2021	LDA	2018	10	GAS	6055.47519	0.030178154	0.008578724	0.009330145	488.2156725	0.005600755	0.00512491	0.016584933	0.024200695	0.796024306	0.00483129
SACRAMENT	2021	LDA	2010	25	DSL	480.938326	0.044800887	0.006272068	0.006555663	285.1563102	0.000987015	0.044822601	0.021249847	0.024191538	0.42160942	0.002695753
SACRAMENT	2021	MDV	2006	10	GAS	679.510971	0.025268834	0.000815468	0.000886896	993.7981781	0.005476982	0.004547823	0.016571652	0.024181316	0.729419811	0.009834439
SACRAMENT	2021	MDV	2004	70	GAS	781.637839	0.092973826	0.000185121	0.000201336	560.3274504	0.004804076	0.010582732	0.016569491	0.024178162	0.783042868	0.005544894
SACRAMENT	2021	LDT2	2018	25	DSL	658.446557	0.040452197	0.004474151	0.004676452	331.5897129	0.000986228	0.052121285	0.021232907	0.024172253	0.182689747	0.003134715
SACRAMENT	2021	LDT1	2018	25	DSL	2.72406517	0.040452192	0.004474151	0.004676452	446.2925555	0.000986227	0.070150975	0.021232889	0.024172232	0.18269029	0.00421907
SACRAMENT	2021	LHD2	2009	15	GAS	382.026589	0.124522443	0.000355079	0.000386181	1512.393791	0.004790498	0.010812677	0.016488983	0.024060685	0.190825877	0.014966363

SACRAMENT	2021	LHD2	2012	15	GAS	318.225637	0.12385694	0.000859957	0.000935281	1512.376704	0.004856356	0.011021779	0.016479808	0.024047297	0.180071039	0.014966194
SACRAMENT	2021	LHD2	2011	15	GAS	214.126851	0.124741674	0.000588099	0.000639612	1512.383791	0.004828237	0.011000383	0.016468031	0.024030113	0.184574155	0.014966264
SACRAMENT	2021	MDV	2004	35	GAS	30139.7605	0.09178941	0.000179417	0.000195132	503.1499113	0.004771165	0.010447916	0.016455979	0.024012526	1.277513021	0.004979076
SACRAMENT	2021	MH	2010	55	DSL	12.4085165	1.454800922	0.011573756	0.01209707	941.6656694	0.000978379	0.14801673	0.021063922	0.023979875	0.059450784	0.008902127
SACRAMENT	2021	MH	2016	20	GAS	92.4739699	0.101721755	0.001825997	0.001985938	2197.303328	0.005898321	0.012982503	0.016432728	0.023978598	0.212201953	0.021744098
SACRAMENT	2021	MDV	2012	25	DSL	815.123073	0.044589454	0.006199098	0.006479394	516.6649346	0.00097775	0.081212533	0.021050377	0.023964455	0.416192493	0.004884342
SACRAMENT	2021	LHD2	2010	15	GAS	69.7966912	0.124935824	0.000432752	0.000470658	1512.389189	0.00478416	0.010924415	0.016392234	0.02391951	0.188186061	0.014966317
SACRAMENT	2021	LHD2	2013	15	GAS	273.652845	0.12164302	0.001287161	0.001399905	1512.368394	0.004856866	0.01096011	0.016384001	0.023907496	0.175088849	0.014966111
SACRAMENT	2021	MH	2015	50	DSL	47.8908146	1.505649365	0.010864504	0.011355748	902.0068468	0.000975252	0.141782915	0.020996606	0.02390324	0.059272908	0.008527209
SACRAMENT	2021	LHD1	2013	55	DSL	1081.14961	0.110977235	0.01037892	0.010848209	515.8830343	0.000970598	0.081089629	0.020896397	0.023789159	0.101675752	0.00487695
SACRAMENT	2021	LHD2	2013	55	DSL	431.635602	0.110977235	0.01037892	0.010848209	559.8847575	0.000970598	0.088006087	0.020896397	0.023789159	0.101675752	0.005292924
SACRAMENT	2021	LDT2	2019	25	DSL	677.902067	0.039850855	0.004188804	0.004378203	316.479089	0.000965524	0.049746106	0.020787168	0.023664809	0.166394625	0.002991866
SACRAMENT	2021	LDT1	2019	25	DSL	2.83617086	0.039850856	0.004188804	0.004378203	432.1429322	0.000965524	0.067926851	0.020787159	0.023664798	0.166395107	0.004085305
SACRAMENT	2021	MDV	2018	15	GAS	3367.63633	0.032828241	0.005694352	0.006193128	576.3565869	0.005182047	0.00514874	0.016213252	0.02365834	0.799331344	0.005703516
SACRAMENT	2021	LHD2	2014	15	GAS	986.8693	0.119094892	0.001792038	0.001949005	1489.679506	0.004826647	0.010890414	0.016170657	0.023596185	0.170253645	0.014741586
SACRAMENT	2021	LDA	2011	25	DSL	855.985057	0.044234624	0.006076651	0.006351411	295.0535318	0.000962202	0.046378306	0.020715642	0.023583381	0.407102032	0.002789317
SACRAMENT	2021	LDT2	2018	15	GAS	5380.66397	0.03274939	0.005694352	0.006193128	477.5566336	0.005163112	0.005140167	0.016146623	0.023561115	0.798398627	0.00472581
SACRAMENT	2021	LHD1	2019	50	DSL	4559.19564	0.046925146	0.004682474	0.004894195	419.6320294	0.000960818	0.065960311	0.020685852	0.023549467	0.064278349	0.003967032
SACRAMENT	2021	LHD2	2019	50	DSL	1716.06084	0.046952694	0.005850846	0.006115395	459.787341	0.000960818	0.072272167	0.020685852	0.023549467	0.064278349	0.004346644
SACRAMENT	2021	MH	2005	20	GAS	50.9118583	0.127513289	0.000194255	0.00021127	2320.585244	0.005749551	0.01520427	0.016084018	0.023469762	0.234002731	0.022964072
SACRAMENT	2021	MH	2015	20	GAS	35.2546198	0.104159978	0.001581235	0.001719738	2197.300578	0.005776543	0.013169982	0.016050258	0.023420499	0.21150766	0.02174407
SACRAMENT	2021	MH	2006	20	GAS	80.6105449	0.123692562	0.000194255	0.00021127	2320.581185	0.005742647	0.014888684	0.016048851	0.023418446	0.231537944	0.022964032
SACRAMENT	2021	MH	2020	45	DSL	51.567682	1.568774722	0.009966556	0.010417199	889.2327682	0.000954973	0.139775008	0.020560001	0.023406194	0.058057675	0.008406448
SACRAMENT	2021	MH	2011	55	DSL	17.1763376	1.44419272	0.011313391	0.011824933	941.6656694	0.000954773	0.14801673	0.020555703	0.023401301	0.058018447	0.008902127
SACRAMENT	2021	MH	1998	25	GAS	27.6229339	0.206275331	0.00215256	0.002341105	1983.680913	0.005481232	0.020682496	0.016023724	0.02338178	0.3169228	0.019630131
SACRAMENT	2021	MH	2007	20	GAS	50.3222667	0.120835847	0.000194255	0.00021127	2320.577168	0.005738627	0.014653113	0.016022749	0.023380358	0.229074285	0.022963992
SACRAMENT	2021	MH	2004	20	GAS	83.3371647	0.130373214	0.000194255	0.00021127	2320.591321	0.005720094	0.015432836	0.016000699	0.023348182	0.238063143	0.022964132
SACRAMENT	2021	LHD1	2014	55	DSL	1627.67254	0.106857046	0.009672199	0.010109533	504.0177245	0.000952191	0.079224567	0.020500104	0.023338005	0.095112875	0.00476478
SACRAMENT	2021	LHD2	2014	55	DSL	653.512421	0.106857046	0.009672199	0.010109533	547.0074081	0.000952191	0.085981947	0.020500104	0.023338005	0.095112875	0.005171187
SACRAMENT	2021	MH	2008	20	GAS	31.405706	0.117991381	0.000221451	0.000240848	2320.573083	0.005733019	0.014417013	0.015991504	0.023334765	0.226582338	0.022963952
SACRAMENT	2021	MH	2009	20	GAS	4.1976968	0.115210512	0.000248646	0.000270426	2320.568955	0.005725407	0.014184684	0.015953998	0.023280037	0.22408013	0.022963911
SACRAMENT	2021	LHD2	2015	15	GAS	1151.0006	0.116038704	0.002258079	0.002455867	1482.112135	0.004794836	0.010789226	0.015946936	0.023269731	0.166275635	0.014666701
SACRAMENT	2021	MH	2010	20	GAS	5.08228607	0.112555313	0.000303038	0.000329581	2320.564834	0.005715597	0.013961493	0.015909785	0.023215522	0.221600175	0.02296387
SACRAMENT	2021	MDV	2013	25	DSL	286.885031	0.043888573	0.005957224	0.006226584	499.480616	0.000947038	0.078511397	0.020389177	0.023211723	0.398236158	0.004721888
SACRAMENT	2021	MH	1999	25	GAS	76.558883	0.201144358	0.00215256	0.002341105	1983.67221	0.005445962	0.020325562	0.015897572	0.0231977	0.311775711	0.019630045
SACRAMENT	2021	MH	2016	50	DSL	22.0144035	1.493289449	0.010564892	0.01104259	902.0068468	0.00094613	0.141782915	0.020369613	0.02318945	0.057505823	0.008527209
SACRAMENT	2021	MH	2014	20	GAS	47.7493939	0.104835368	0.001254887	0.001364804	2197.301271	0.005716163	0.013192774	0.015866226	0.023151959	0.212446022	0.021744077
SACRAMENT	2021	MH	2011	20	GAS	32.8507687	0.11009833	0.00041182	0.000447892	2320.560812	0.00570448	0.013753877	0.015861862	0.023145592	0.219193432	0.02296383
SACRAMENT	2021	LDT1	2020	25	DSL	2.9008524	0.039225075	0.003891854	0.004067826	417.9933089	0.000943979	0.065702727	0.020323308	0.023136735	0.149437234	0.00395154
SACRAMENT	2021	LDT2	2020	25	DSL	694.240469	0.039225062	0.003891854	0.004067826	301.368465	0.000943979	0.047370926	0.020323304	0.023136731	0.149436896	0.002849016
SACRAMENT	2021	MH	2012	20	GAS	21.5432991	0.107925555	0.00060219	0.000654937	2320.556989	0.005695324	0.01338642	0.015820819	0.023085703	0.216893436	0.022963793
SACRAMENT	2021	MH	2013	20	GAS	39.8992031	0.106132663	0.000901343	0.000980293	2320.552991	0.005695033	0.013267382	0.015808848	0.023068234	0.214403419	0.022963753
SACRAMENT	2021	MH	2000	25	GAS	69.2437009	0.196004469	0.00215256	0.002341105	1983.663358	0.005411187	0.019958309	0.015773275	0.023016325	0.306529264	0.019629957
SACRAMENT	2021	LDA	2012	25	DSL	1059.12889	0.043634514	0.005869554	0.006134949	269.9211097	0.000935906	0.04242784	0.020149506	0.022938873	0.391727489	0.002551725
SACRAMENT	2021	MDV	2004	65	GAS	2954.35953	0.088980732	0.000170435	0.000185363	561.4549	0.004545583	0.010128219	0.015677936	0.022877207	0.839493943	0.005556051
SACRAMENT	2021	LDT1	2009	15	GAS	564.578858	0.038677241	0.000692849	0.000753536	579.5759806	0.004960446	0.005672617	0.015669565	0.022864992	0.820593702	0.005735374
SACRAMENT	2021	LHD1	2015	55	DSL	2294.81554	0.102491898	0.008923462	0.009326942	500.4065432	0.000932689	0.07865694	0.020080248	0.022860027	0.088159815	0.004730641
SACRAMENT	2021	LHD2	2015	55	DSL	1273.04798	0.102491898	0.008923462	0.009326942	543.0882148	0.000932689	0.085365904	0.020080248	0.022860027	0.088159815	0.005134137
SACRAMENT	2021	LHD1	2020	50	DSL	5216.93032	0.036587857	0.003221606	0.003367272	419.6320294	0.000932379	0.065960311	0.020073565	0.022852419	0.054138842	0.003967032
SACRAMENT	2021	LHD2	2020	50	DSL	1943.30649	0.036618233	0.004832409	0.005050909	459.787341	0.000932379	0.072272167	0.020073565	0.022852419	0.054138842	0.004346644
SACRAMENT	2021	MH	2001	25	GAS	29.4206882	0.190896489	0.00215256	0.002341105	1983.654405	0.005375958	0.019595923	0.015647619	0.022832969	0.301222499	0.019629868
SACRAMENT	2021	LDA	2009	15	GAS	4618.94295	0.038409836	0.000692849	0.000753536	507.5110768	0.004952274	0.005648829	0.015635353	0.022815071	0.821347822	0.005022234
SACRAMENT	2021	MH	2012	55	DSL	22.7242185	1.433407638	0.011048685	0.011548257	941.6656694	0.000930774	0.14801673	0.020039009	0.02281308	0.056562226	0.008902127
SACRAMENT	2021	LDT1	2011	15	GAS	279.436507	0.036725988	0.001147531	0.001248045	568.9056241	0.004951346	0.005490836	0.015580906	0.022735621	0.786833032	0.005629782
SACRAMENT	2021	LDT2	2021	10	GAS	1522.64503	0.02552901	0.003610893	0.003927175	505.0929292	0.005298468	0.004534213	0.015535241	0.022668987	0.83737593	0.004998304
SACRAMENT	2021	LDA	2011	15	GAS	5936.61655	0.036480382	0.001147531	0.001248045	498.1634229	0.004940199	0.005472768	0.015527038	0.022657017	0.787325758	0.004929731
SACRAMENT	2021	LDT2	2006	20	GAS	8577.6253	0.038487002	0.000379041	0.000412241	561.7256008	0.004664095	0.005496781	0.015520536	0.02264753	1.002181739	0.00555873
SACRAMENT	2021	MH	2002	25	GAS	59.9953301	0.185843961	0.00215256	0.002341105	1983.645382	0.005339212	0.019234479	0.015517715	0.022643414	0.295883548	0.019629779
SACRAMENT	2021	MH	2020	25	GAS	111.242048	0.106490055	0.001549843	0.001685596	1807.186057	0.005392687	0.013097817	0.015503538	0.022622726	0.21946192	0.017883571
SACRAMENT	2021	LDT1	2021	25	DSL	2.57280094	0.038574851	0.003583301	0.003745322	403.8436856	0.000921592	0.063478604	0.019841338	0.022588045	0.131816643	0.003817775
SACRAMENT	2021	LDT2	2021	25	DSL	598.330586	0.038574816	0.003583301	0.003745322	286.2578411	0.000921591	0.044995746	0.019841314	0.022588017	0.131816565	0.002706166
SACRAMENT	2021	MH	2010	60	DSL	14.910912	1.407021347	0.011253756	0.011762601	943.1855607	0.000921488	0.148255636	0.019839099	0.022585495	0.055993845	0.008916495
SACRAMENT	2021	MH	2010	65	DSL	2.34655359	1.403193457	0.011253756	0.011762601	957.1703337	0.000921488	0.150453847	0.019839099	0.022585495	0.055993845	0.009048702
SACRAMENT	2021	MH	2021	45	DSL	43.6041557	1.554293076	0.009621514	0.010056557	804.2165183	0.000918675	0.126411637	0.019778525	0.022516536	0.055855198	0.007602738
SACRAMENT	2021	MDV	2021	10	GAS	922.543763	0.02537965	0.003610893	0.003927175	609.3853134	0.005263681	0.004513378	0.015416372	0.022495534	0.835645444	0.006030362
SACRAMENT	2021	MH	2017	50	DSL	45.7454408	1.480739327	0.010260669	0.010724611	867.9045026	0.000916559	0.136422502	0.019732969	0.022464674	0.055711539	0.008204819
SACRAMENT	2021	MH	2003	25	GAS	75.5678552	0.180860635	0.00215256	0.002341105	1983.636307	0.005301606	0.018876644	0.015381021	0.02244395	0.290530172	0.019629689
SACRAMENT	2021	MDV	2014	25	DSL	904.463126	0.043145216	0.005700692	0.005958452	496.2166207	0.000914466	0.077998343	0.019687907	0.022413373	0.379191609	0.004691032
SACRAMENT	2021	LHD1	2016	55	DSL	4185.81161	0.085775893	0.008132708	0.008500433	484.9300522	0.000912093	0.076224251	0.01963683	0.022355226	0.080816574	0.004584333
SACRAMENT	2021	LHD2	2016	55	DSL	993.899568	0.085779108	0.008132708	0.008500433	526.291672	0.000912093	0.082725722	0.01963683	0.022355226	0.080816574	0.004975349
SACRAMENT	2021	LDA	2013	25	DSL	1636.1905	0.043000557	0.005650776	0.005906279	262.5465671	0.000908127	0.041268664	0.019551438	0.022258013	0.37548579	0.002482009
SACRAMENT	2021	MH	2013	55	DSL	37.9131887	1.42244568	0.010779636	0.011267044	941.6656694	0.000906381	0.14801673	0.019513841	0.022215211	0.055082121	0.008902127
SACRAMENT	2021	LDA	2004	20	GAS	12922.5079	0.041808499	0.000379041	0.000412241	471.9642112	0.004556161	0.005822513	0.015216192	0.022203432	1.083152828	0.004670468
SACRAMENT	2021	LHD1	2021	50	DSL	4732.19717	0.027363162	0.002012642	0.002103645	409.1412287	0.000902693	0.064311304	0.019434439	0.022124816	0.043555012	0.003867856
SACRAMENT	2021	LHD2	2021	50	DSL	1772.76408	0.02733485	0.003769342	0.003939775	448.2926575	0.000902693	0.070465363	0.019434439	0.022124816	0.043555012	0.004237978
SACRAMENT	2021	LDT1	2004	20	GAS	1162.25642	0.041859584	0.000379041	0.000412241	539.1067078	0.004547887	0.005841701	0.015150587	0.0221077	1.076560722	0.005334898
SACRAMENT	2021	LHD1	2009	15	GAS	672.361603	0.07312041	0.000355079	0.000386181	1320.361305	0.004411556	0.00667736	0.015116506	0.02205797	0.190825877	0.013066045
SACRAMENT	2021	LHD1	2012	15	GAS	1229.57876	0.071423134	0.000859957	0.000935281	1320.344216	0.004476036	0.006729772	0.015106731	0.022043707	0.180071039	0.013065876
SACRAMENT	2021	MH	2011	60	DSL	20.6402481	1.396761547	0.01100059	0.011497988	943.1855607	0.000899255	0.148255636	0.019360432	0.022040564	0.054644796	0.008916495
SACRAMENT	2021	MH	2011	65	DSL	3.2481882	1.392961569	0.01100059	0.011497988	957.1703337	0.000899255	0.150453847	0.019360432	0.022040564	0.054644796	0.009048702
SACRAMENT	2021	LHD1	2011	15	GAS	782.080908	0.072357986	0.000588099	0.000639612	1320.351303	0.004448388	0.006741589	0.0150949	0.022026443	0.184574155	0.013065946
SACRAMENT	2021	LHD1	2010	15	GAS	474.943059	0.072404297	0.000432752	0.000470658	1320.356725	0.004406141	0.006676752	0.015024649	0.021923933	0.188186061	0.013066
SACRAMENT	2021	LHD1	2013	15	GAS	1783.50941	0.070744217	0.001287161	0.001399905	1320.335939	0.004477895	0.006756612	0.015018697	0.021915248	0.175088849	0.013065794
SACRAMENT	2021	MDV	2009	20	GAS	2740.63645	0.037235187	0.000485172	0.000527669	618.5701557	0.004535768	0.005325503	0.014974752	0.021851124	0.878934527	0.006121253
SACRAMENT	2021	LHD1	2017	55	DSL	2167.81032	0.070015866	0.007299938	0.007630009	469.4535612	0.000890403	0.073791562	0.019169849	0.021823599	0.073083152	0.004438024
SACRAMENT	2021	LHD2	2017	55	DSL	844.110505	0.070018223	0.007299938	0.007630009	509.4951293	0.000890403	0.080085539	0.019169849	0.021823599	0.073083152	0.004816561
SACRAMENT	2021	LHD2	2008	20	GAS	793.234281	0.181776963	0.000221451	0.000240848	1257.292111	0.004182549	0.013756833	0.014906131	0.021750991	0.255609323	0.012441925
SACRAMENT	2021	LHD2	2016	15	GAS	184.261322	0.101064123	0.00260761	0.002836014	1451.863553	0.004544276	0.0097521	0.014896062	0.021736299	0.163975338	0.014367367
SACRAMENT	2021	MH	2018	50	DSL	50.2894049	1.467999003	0.009951834	0.010401812	867.9045026	0.00088654	0.136422502	0.019086676	0.021728911	0.053890056	0.008204819
SACRAMENT	2021	LDT1	2010	15	GAS	304.703243	0.037414126	0.00084441	0.000918373	549.8702736	0.00474585	0.005559802	0.014857144	0.02167951	0.791216006	0.005441412
SACRAMENT	2021	LDT2	2009	20	GAS	4514.11041	0.036613665	0.000485172	0.000527669	512.1703053	0.004507953	0.005281601	0.014827633	0.021636448	0.875103529	0.00506834
SACRAMENT	2021	LHD1	2014	15	GAS	2446.82246	0.06744335	0.001792038	0.001949005	1300.527527	0.004451506	0.006565263	0.014823202	0.021629982	0.170253645	0.012869774
SACRAMENT	2021	LDA	2010	15	GAS	5806.25127	0.037131304	0.00084441	0.000918373	481.5013337	0.004736669	0.005536443	0.014814993	0.021618003	0.791853157	0.004764846
SACRAMENT	2021	MH	2014	55	DSL	38.887708	1.41130685	0.010506247	0.010981292	891.6432675	0.000881594	0.140153905	0.018980199	0.021607694	0.053578131	0.008429235
SACRAMENT	2021	MDV	2015	25	DSL	1937.9001	0.042359384	0.005429502	0.005675	484.6450567	0.000880032	0.076179454	0.018946566	0.021569406	0.359058849	0.004581639
SACRAMENT	2021	LDA	2014	25	DSL	2027.08592	0.042332753	0.005420318	0.0056654	262.8632706	0.000878865	0.041318446	0.01892144	0.021540801	0.358376934	0.002485003
SACRAMENT	2021	LDT1	2019	10	GAS	543.696702	0.027615497	0.008102491	0.008812198	539.8241779	0.005052209	0.004815605	0.014753264	0.021527928	0.770481795	0.005341998
SACRAMENT	2021	MH	2012	60	DSL	27.3069566	1.386330677	0.010743202	0.011228962	943.1855607	0.000876651	0.148255636	0.018873783	0.021486547	0.053273251	0.008916495
SACRAMENT	2021	MH	2012	65	DSL	4.29733858	1.382559077	0.010743202	0.011228962	957.1703337	0.000876651	0.150453847	0.018873783	0.021486547	0.053273251	0.009048702
SACRAMENT	2021	LDA	2019	10	GAS	6210.11208	0.027337052	0.008102491	0.008812198	472.9988301	0.005025927	0.004791762	0.014641503	0.021364847	0.770225275	0.004680707
SACRAMENT	2021	LHD1	2015	15	GAS	7112.57904	0.066011164	0.002258079	0.002455867	1293.92037	0.004423712	0.006546193	0.014618327	0.021331029	0.166275635	0.012804391
SACRAMENT	2021	MDV	2008	20	GAS	6341.146	0.037895583	0.000432106	0.000469955	655.6466542	0.004424861	0.005381541	0.014596675	0.021299434	0.88627068	0.006488155
SACRAMENT	2021	LHD1	2018	55	DSL	2437.79784	0.053964457	0.005988876	0.006259666	438.5005791	0.000867618	0.068926185	0.018679304	0.021265146	0.064959548	0.004145407
SACRAMENT	2021	LHD2	2018	55	DSL	931.822609	0.054000014	0.006425151	0.006715668	475.9020439	0.000867618	0.074805174	0.018679304	0.021265146	0.064959548	0.004498986
SACRAMENT	2021	LDT2	2008	30	DSL	12.0170168	0.037508744	0.005927384	0.006195394	393.7817272	0.000866368	0.061897004	0.018652394	0.021234511	0.233555086	0.003722653
SACRAMENT	2021	LDT1	2008	30	DSL	8.32201545	0.037508757	0.005927384	0.006195394	502.8512722	0.000866368	0.079041217	0.018652388	0.021234503	0.233555108	0.004753753
SACRAMENT	2021	LDT2	2008	20	GAS	6757.73063	0.037097295	0.000432106	0.000469955	542.8567489	0.004407352	0.005324139	0.014481348	0.021131149	0.882597912	0.005372008
SACRAMENT	2021	MDV	2007	20	GAS	8172.10352	0.038688038	0.000379041	0.000412241	675.1164876	0.004378484	0.005448435	0.014468174	0.021111925	0.902090221	0.006680825

SACRAMENT	2021	LHD1	2008	20	GAS	4259.2168	0.158621695	0.000221451	0.000240848	1097.673598	0.004059934	0.012212938	0.014430356	0.021056742	0.255620526	0.01086237
SACRAMENT	2021	LHD1	2004	25	GAS	3524.04129	0.260444849	0.000143504	0.000156074	938.3729057	0.0038617	0.016885346	0.014426094	0.021050522	0.30912974	0.009285961
SACRAMENT	2021	LHD2	2004	25	GAS	386.649911	0.260444849	0.000143504	0.000156074	1074.802721	0.003858669	0.016860331	0.014426094	0.021050522	0.30912974	0.010636044
SACRAMENT	2021	MDV	2005	70	GAS	854.073301	0.077593672	0.000185121	0.000201336	547.0165608	0.004207273	0.009255621	0.014425015	0.021048948	0.749824927	0.005413172
SACRAMENT	2021	LDT2	2009	30	DSL	15.1947009	0.037212124	0.005777359	0.006038585	371.4696188	0.000857089	0.058389851	0.018452615	0.021007075	0.226251567	0.003511724
SACRAMENT	2021	LDT1	2009	30	DSL	42.2397401	0.037212136	0.005777359	0.006038585	492.3414983	0.000857088	0.077389227	0.018452607	0.021007066	0.22625162	0.004654398
SACRAMENT	2021	LDT2	2007	20	GAS	8982.67939	0.037764274	0.000379041	0.000412241	558.9745399	0.004373102	0.005382877	0.014390177	0.020998112	0.898582687	0.005531506
SACRAMENT	2021	MH	2015	55	DSL	70.179649	1.39999115	0.010228515	0.010691003	891.6432675	0.000856414	0.140153905	0.018438082	0.02099053	0.052050257	0.008429235
SACRAMENT	2021	MH	2019	50	DSL	54.8234268	1.455068485	0.009638388	0.010074193	867.9045026	0.000856072	0.136422502	0.018430732	0.020982163	0.052041375	0.008204819
SACRAMENT	2021	MH	2013	60	DSL	45.5590497	1.375728739	0.010481593	0.010955524	943.1855607	0.000853676	0.148255636	0.018379152	0.020923443	0.05187921	0.008916495
SACRAMENT	2021	MH	2013	65	DSL	7.16969908	1.371985982	0.010481593	0.010955524	957.1703337	0.000853676	0.150453847	0.018379152	0.020923443	0.05187921	0.009048702
SACRAMENT	2021	LHD2	2020	15	GAS	938.799972	0.074620702	0.002995978	0.003258399	1361.171374	0.004590345	0.007891913	0.014334298	0.020916574	0.183820432	0.013469894
SACRAMENT	2021	MDV	2005	35	GAS	32932.8539	0.076605187	0.000179417	0.000195132	491.1795426	0.0041785	0.009137711	0.014326194	0.020904749	1.223318858	0.00486062
SACRAMENT	2021	MH	2019	25	GAS	101.673664	0.09959239	0.001549843	0.001685596	1807.165893	0.005025434	0.01249257	0.014294841	0.020858999	0.210028639	0.017883371
SACRAMENT	2021	LHD2	2017	15	GAS	627.211406	0.089508415	0.002801794	0.003047206	1421.620918	0.004409516	0.008920436	0.014268508	0.020820574	0.164275524	0.014068091
SACRAMENT	2021	LDA	2015	25	DSL	1885.26363	0.041631102	0.005178178	0.005412312	258.009508	0.000848119	0.040555502	0.018259511	0.020787239	0.340400919	0.002439118
SACRAMENT	2021	MDV	2004	40	GAS	36928.709	0.087864601	0.000155618	0.000169249	486.4969999	0.004128398	0.010001176	0.014239044	0.02077758	1.178189346	0.004814282
SACRAMENT	2021	MDV	2019	15	GAS	3484.71687	0.029230076	0.00537824	0.005849327	550.3308113	0.00463706	0.004762389	0.014235233	0.020772018	0.79332692	0.00544597
SACRAMENT	2021	LHD2	2019	15	GAS	816.967181	0.078906976	0.002995978	0.003258399	1361.154968	0.004500416	0.008154834	0.014231185	0.020766111	0.173750566	0.013469732
SACRAMENT	2021	LDT2	2010	30	DSL	28.7053455	0.036895176	0.005617052	0.00587103	367.9494754	0.000847173	0.057836534	0.018239144	0.020764053	0.218447527	0.003478446
SACRAMENT	2021	LDT1	2010	30	DSL	4.75988231	0.036895187	0.005617052	0.00587103	467.089844	0.000847173	0.073420019	0.018239134	0.020764042	0.218447618	0.004415679
SACRAMENT	2021	LDT2	2019	15	GAS	5539.64963	0.029217415	0.00537824	0.005849327	456.0345777	0.00463344	0.004760106	0.014224745	0.020756714	0.793163992	0.004512832
SACRAMENT	2021	LDT1	2012	15	GAS	561.605073	0.035333109	0.001677994	0.001824971	520.519185	0.004581595	0.005380351	0.014199073	0.020719254	0.76568868	0.005150959
SACRAMENT	2021	LHD1	2019	55	DSL	2745.58903	0.04364629	0.004408371	0.004607698	438.5005791	0.000843739	0.068926185	0.018165194	0.020679866	0.056445763	0.004145407
SACRAMENT	2021	LHD2	2019	55	DSL	1033.42743	0.043672058	0.005508348	0.005757411	475.9020439	0.000843739	0.074805174	0.018165194	0.020679866	0.056445763	0.004498986
SACRAMENT	2021	MDV	2016	25	DSL	988.726576	0.041531077	0.005143653	0.005376226	465.2158452	0.000843737	0.073125452	0.018165155	0.020679821	0.337837879	0.004397963
SACRAMENT	2021	LDA	2005	20	GAS	17169.1033	0.040415913	0.000379041	0.000412241	452.1433291	0.004304164	0.005704867	0.014150767	0.020648765	0.993064544	0.004474325
SACRAMENT	2021	LDA	2012	15	GAS	9593.16978	0.035048028	0.001677994	0.001824971	455.8027094	0.004570822	0.005359188	0.014144784	0.020640036	0.766129068	0.004510537
SACRAMENT	2021	LDT1	2005	20	GAS	850.745211	0.040489683	0.000379041	0.000412241	516.4761542	0.004296052	0.005720322	0.014098818	0.020572963	0.986545592	0.00511095
SACRAMENT	2021	LDT2	2011	30	DSL	23.4475671	0.036557901	0.005446463	0.005692728	356.2556566	0.000836622	0.055998428	0.018011982	0.020505444	0.210142967	0.003367897
SACRAMENT	2021	LHD1	2005	25	GAS	2084.76099	0.252497078	0.000143504	0.000156074	938.3714947	0.003768312	0.016607819	0.014000451	0.020429426	0.309397546	0.009285947
SACRAMENT	2021	LHD2	2005	25	GAS	526.509196	0.252497078	0.000143504	0.000156074	1074.80131	0.003764448	0.016575856	0.014000451	0.020429426	0.309397546	0.01063603
SACRAMENT	2021	MH	2016	55	DSL	32.2601134	1.388498585	0.009946442	0.010396176	891.6432675	0.00083084	0.140153905	0.01788749	0.020363719	0.050498498	0.008429235
SACRAMENT	2021	LHD1	1996	35	GAS	287.475216	0.365928078	0.001379244	0.001500054	772.0909677	0.0033662	0.023462278	0.013948501	0.02035362	0.403935368	0.007640466
SACRAMENT	2021	LHD2	1996	35	GAS	44.6915951	0.365928078	0.001379244	0.001500054	884.309295	0.003370576	0.023502031	0.013948501	0.02035362	0.403935368	0.008750957
SACRAMENT	2021	MH	2014	60	DSL	46.730098	1.364955737	0.010215762	0.010677673	893.0824204	0.000830331	0.14038012	0.01787654	0.020351252	0.050462674	0.008442841
SACRAMENT	2021	MH	2014	65	DSL	7.35398878	1.361242289	0.010215762	0.010677673	906.3243056	0.000830331	0.14246156	0.01787654	0.020351252	0.050462674	0.008568024
SACRAMENT	2021	LHD1	2020	15	GAS	5802.92373	0.053801785	0.002995978	0.003258399	1188.34578	0.004490129	0.00595481	0.013943857	0.020346843	0.183820432	0.011759645
SACRAMENT	2021	LHD1	1997	35	GAS	383.449081	0.365874817	0.001379244	0.001500054	772.0890312	0.003368577	0.023544026	0.013919298	0.020311006	0.402793073	0.007640447
SACRAMENT	2021	LHD2	1997	35	GAS	46.5766865	0.365874817	0.001379244	0.001500054	884.3073585	0.003372016	0.023575084	0.013919298	0.020311006	0.402793073	0.008750938
SACRAMENT	2021	LHD1	1999	35	GAS	692.744517	0.364795927	0.001379244	0.001500054	772.0838996	0.00338789	0.023665394	0.013902356	0.020286285	0.399601713	0.007640396
SACRAMENT	2021	LHD2	1999	35	GAS	85.3817723	0.364795927	0.001379244	0.001500054	884.3022269	0.003389498	0.023679684	0.013902356	0.020286285	0.399601713	0.008750887
SACRAMENT	2021	LHD1	1998	35	GAS	345.87155	0.365600149	0.001379244	0.001500054	772.0867397	0.0033753	0.02361488	0.013899294	0.020281817	0.401401838	0.007640424
SACRAMENT	2021	LHD2	1998	35	GAS	40.8977208	0.365600149	0.001379244	0.001500054	884.305067	0.003377815	0.023637454	0.013899294	0.020281817	0.401401838	0.008750916
SACRAMENT	2021	LHD2	2018	15	GAS	714.259929	0.080276782	0.002918304	0.003173922	1361.143975	0.00434954	0.008214576	0.013886735	0.020263491	0.167752792	0.013469623
SACRAMENT	2021	LDT2	2012	30	DSL	133.462996	0.036200299	0.005265593	0.00550368	347.464313	0.000825435	0.054616551	0.017771128	0.020231248	0.201337887	0.003284787
SACRAMENT	2021	LDT1	2012	30	DSL	2.7093342	0.036200304	0.005265593	0.00550368	442.1343822	0.000825434	0.069497368	0.017771115	0.020231233	0.201338071	0.00417976
SACRAMENT	2021	MH	2020	50	DSL	57.7126222	1.44194778	0.00932033	0.009741754	867.9045026	0.000825157	0.136422502	0.017765138	0.020224428	0.050165494	0.008204819
SACRAMENT	2021	LHD1	2000	35	GAS	857.125502	0.36320487	0.001379244	0.001500054	772.0799831	0.003387091	0.023686731	0.013847211	0.020205817	0.397280874	0.007640357
SACRAMENT	2021	LHD2	2000	35	GAS	98.8664552	0.36320487	0.001379244	0.001500054	884.2983103	0.003387797	0.023692954	0.013847211	0.020205817	0.397280874	0.008750849
SACRAMENT	2021	LHD1	2016	15	GAS	11471.9921	0.059486584	0.00260761	0.002836014	1267.513439	0.004244959	0.006108316	0.013826986	0.020176306	0.163975338	0.012543073
SACRAMENT	2021	LHD1	2006	25	GAS	6425.71143	0.24374227	0.000143504	0.000156074	938.3694994	0.003735143	0.016286262	0.013798599	0.020134883	0.308687915	0.009285927
SACRAMENT	2021	LHD2	2006	25	GAS	464.170428	0.24374227	0.000143504	0.000156074	1074.799315	0.003730442	0.016247836	0.013798599	0.020134883	0.308687915	0.010636011
SACRAMENT	2021	LHD1	2001	35	GAS	1165.65583	0.36057369	0.001379244	0.001500054	772.0749684	0.003383022	0.023663193	0.013775923	0.020101794	0.394311164	0.007640308
SACRAMENT	2021	LHD2	2001	35	GAS	158.7977	0.36057369	0.001379244	0.001500054	884.2932957	0.003382843	0.023661626	0.013775923	0.020101794	0.394311164	0.008750799
SACRAMENT	2021	LHD1	2020	55	DSL	3141.68283	0.034015882	0.003033019	0.003170158	438.5005791	0.000818764	0.068926185	0.017627517	0.020067756	0.047541798	0.004145407
SACRAMENT	2021	LHD2	2020	55	DSL	1170.27682	0.034044155	0.004549528	0.004755238	475.9020439	0.000818764	0.074805174	0.017627517	0.020067756	0.047541798	0.004498986
SACRAMENT	2021	LHD1	2019	15	GAS	5193.46178	0.054410179	0.002995978	0.003258399	1188.328914	0.004367602	0.005899704	0.013734197	0.020040907	0.173750566	0.011759478
SACRAMENT	2021	LDA	2016	25	DSL	185.557925	0.040895604	0.004924358	0.005147016	250.5398377	0.000815891	0.039381374	0.017565652	0.019997327	0.32155774	0.002368502
SACRAMENT	2021	LHD1	2002	35	GAS	1120.20567	0.283968766	0.001379244	0.001500054	771.9560969	0.003439197	0.019961647	0.013682458	0.01996541	0.3195713	0.007639131
SACRAMENT	2021	LHD2	2002	35	GAS	104.997091	0.283968766	0.001379244	0.001500054	884.1744242	0.003438161	0.019953767	0.013682458	0.01996541	0.3195713	0.008749623
SACRAMENT	2021	MDV	2004	60	GAS	20152.6962	0.086611474	0.00015038	0.000163552	542.302875	0.003963543	0.009858539	0.013670453	0.019947893	0.879912692	0.005366527
SACRAMENT	2021	LDT2	2013	30	DSL	231.348277	0.035822368	0.005074441	0.005303885	335.9076211	0.000813612	0.0528	0.017516584	0.019941466	0.192032288	0.003175535
SACRAMENT	2021	LDT1	2013	30	DSL	8.77688668	0.035822371	0.005074441	0.005303885	430.054783	0.000813611	0.067598623	0.017516568	0.019941448	0.192032525	0.004065564
SACRAMENT	2021	MDV	2007	30	DSL	98.8873263	0.039806457	0.006369677	0.006657685	520.7540726	0.000813367	0.081855288	0.017511311	0.019935463	0.408121484	0.004922999
SACRAMENT	2021	MDV	2005	65	GAS	3228.14413	0.074261134	0.000170435	0.000185363	548.1160205	0.003980892	0.008858105	0.013648848	0.019916367	0.803881256	0.005424052
SACRAMENT	2021	LHD1	2007	25	GAS	2636.94099	0.241488659	0.000143504	0.000156074	938.366472	0.003713974	0.016358658	0.013637527	0.019899848	0.30721618	0.009285897
SACRAMENT	2021	LHD2	2007	25	GAS	397.075353	0.241488659	0.000143504	0.000156074	1074.796288	0.003708455	0.016313535	0.013637527	0.019899848	0.30721618	0.010635981
SACRAMENT	2021	LHD2	2003	35	GAS	159.746269	0.278352054	0.001379244	0.001500054	884.1297618	0.003421628	0.01974428	0.01356081	0.019787902	0.291725479	0.008749181
SACRAMENT	2021	LHD1	2003	35	GAS	1511.12126	0.278352054	0.001379244	0.001500054	771.9114345	0.003423499	0.019758331	0.01356081	0.019787902	0.291725479	0.007638689
SACRAMENT	2021	MH	2015	60	DSL	84.332609	1.354011675	0.00994571	0.01039541	893.0824204	0.000806615	0.14038012	0.017365946	0.019769975	0.049023643	0.008442841
SACRAMENT	2021	MH	2015	65	DSL	13.2715549	1.350328001	0.00994571	0.01039541	906.3243056	0.000806615	0.14246156	0.017365946	0.019769975	0.049023643	0.008568024
SACRAMENT	2021	MDV	2017	25	DSL	1334.99386	0.040660293	0.004843146	0.005062132	445.7866337	0.00080558	0.070071451	0.017343673	0.019744619	0.315528703	0.004214287
SACRAMENT	2021	MH	2017	55	DSL	67.0357982	1.376829161	0.009660028	0.010096811	857.9327411	0.000804872	0.134855079	0.017328425	0.019727259	0.048922855	0.00811055
SACRAMENT	2021	MDV	2013	20	GAS	7210.06936	0.034143761	0.001758749	0.0019128	559.3143963	0.004176844	0.005050631	0.013488977	0.019683084	0.770945971	0.005534869
SACRAMENT	2021	LDT2	2014	30	DSL	237.908882	0.035424111	0.004873008	0.005093344	333.7125391	0.000801153	0.052454964	0.017248348	0.019636097	0.182226171	0.003154784
SACRAMENT	2021	LHD1	2017	15	GAS	4161.23374	0.055603425	0.002801794	0.003047206	1241.11241	0.004181316	0.005863166	0.01344856	0.019624108	0.164275524	0.012281813
SACRAMENT	2021	MDV	2014	20	GAS	11522.497	0.033791842	0.002448603	0.002663079	555.8427418	0.004172494	0.005028885	0.013441641	0.019614011	0.765855135	0.005500515
SACRAMENT	2021	MDV	2009	30	DSL	79.1358777	0.03860316	0.006057933	0.006331846	477.0668712	0.000799713	0.074988269	0.017217341	0.019600798	0.350133742	0.004509998
SACRAMENT	2021	MDV	2021	15	DSL	104.74423	0.015752269	0.000796087	0.000832082	524.1144595	0.000798195	0.082383494	0.017184674	0.019563609	0.543135871	0.004954766
SACRAMENT	2021	LDT1	2014	15	GAS	1078.03773	0.033025973	0.003496722	0.003803004	507.1262307	0.004366089	0.005159854	0.01339056	0.019539473	0.732522363	0.005018425
SACRAMENT	2021	MDV	2008	30	DSL	51.888727	0.039363448	0.006220299	0.006501554	505.7216177	0.000794888	0.079492396	0.017113476	0.019482555	0.397940755	0.004780888
SACRAMENT	2021	MH	2021	50	DSL	48.8001412	1.428636897	0.008997661	0.009404495	784.9273692	0.000793793	0.123379652	0.017089894	0.019455708	0.048262415	0.007420386
SACRAMENT	2021	LDA	2021	15	DSL	189.715602	0.015691047	0.000792786	0.000828632	310.0379315	0.00079369	0.048733645	0.017087668	0.019453174	0.539590166	0.002930973
SACRAMENT	2021	MH	2018	25	GAS	92.516191	0.095430684	0.001509662	0.001641895	1807.149895	0.004728903	0.012116718	0.013329812	0.01945083	0.202561495	0.017883213
SACRAMENT	2021	LDA	2014	15	GAS	12395.0707	0.032749597	0.003496722	0.003803004	444.1091115	0.004351752	0.005139638	0.013322682	0.019440427	0.732726408	0.00439482
SACRAMENT	2021	LHD1	2021	55	DSL	2849.77213	0.025423222	0.001894826	0.001980502	427.5380646	0.000792696	0.06720303	0.017066271	0.019428815	0.038247652	0.004041772
SACRAMENT	2021	LHD2	2021	55	DSL	1067.57463	0.025396795	0.003548692	0.003709148	464.0044928	0.000792696	0.072935045	0.017066271	0.019428815	0.038247652	0.004386511
SACRAMENT	2021	LHD1	2018	15	GAS	4635.70475	0.053744677	0.002918304	0.003173922	1188.317554	0.004190621	0.005777926	0.013304369	0.019413704	0.167752792	0.011759366
SACRAMENT	2021	LDT1	2013	15	GAS	906.55331	0.033901467	0.002511577	0.00273157	506.2851579	0.004335542	0.005244357	0.013302906	0.01941157	0.738033319	0.005010102
SACRAMENT	2021	LDT2	2013	20	GAS	16244.2937	0.033734117	0.001758749	0.0019128	463.1005543	0.004129381	0.005017183	0.013300624	0.01940824	0.767634613	0.004582755
SACRAMENT	2021	LDT2	2014	20	GAS	15153.6981	0.033467924	0.002448603	0.002663079	460.2582054	0.004128205	0.005001913	0.013269275	0.019362495	0.762884535	0.004554628
SACRAMENT	2021	LDA	2013	15	GAS	12331.8201	0.033603834	0.002511577	0.00273157	443.3365838	0.004322553	0.005221272	0.013242282	0.019323107	0.738341587	0.004387175
SACRAMENT	2021	LDT2	2015	30	DSL	349.908693	0.035005526	0.004661294	0.004872057	325.9305024	0.000788058	0.051231736	0.016966421	0.019315142	0.171919536	0.003081215
SACRAMENT	2021	MH	2016	60	DSL	38.7659324	1.342896558	0.009671436	0.010108735	893.0824204	0.000782528	0.14038012	0.01684737	0.019179611	0.047562116	0.008442841
SACRAMENT	2021	MH	2016	65	DSL	6.10065556	1.339243123	0.009671436	0.010108735	906.3243056	0.000782528	0.14246156	0.01684737	0.019179611	0.047562116	0.008568024
SACRAMENT	2021	LDA	2017	25	DSL	2635.18525	0.04012626	0.004658857	0.00486951	243.0701673	0.000782179	0.038207245	0.016839863	0.019171064	0.30184739	0.002297887
SACRAMENT	2021	MDV	2010	30	DSL	154.316463	0.038126449	0.005882579	0.006148563	472.5460607	0.000780732	0.07427766	0.0168087	0.019135588	0.339036223	0.00446726
SACRAMENT	2021	LDA	2008	30	DSL	30.670907	0.038099915	0.005872821	0.006138364	265.9083767	0.000779676	0.041797094	0.016785962	0.019109702	0.338418496	0.00251379
SACRAMENT	2021	MH	2018	55	DSL	73.6945657	1.364982884	0.009369272	0.009792909	857.9327411	0.000778511	0.134855079	0.016760885	0.019081153	0.047323328	0.00811055
SACRAMENT	2021	MDV	2004	45	GAS	14309.3084	0.085474732	0.000142393	0.000154866	488.0991907	0.003777923	0.009729149	0.01303024	0.019013696	1.093970429	0.004830137
SACRAMENT	2021	MDV	2011	20	GAS	5044.14485	0.034921411	0.000803566	0.000873952	593.1236875	0.004033863	0.00510655	0.013019486	0.018998003	0.775788862	0.00586944
SACRAMENT	2021	LDT2	2016	30	DSL	230.214262	0.034566613	0.004439298	0.004640023	312.8640889	0.000774327	0.049177878	0.016670802	0.0189786	0.161112386	0.002957691
SACRAMENT	2021	LDT1	2020	10	GAS	551.826998	0.02468472	0.005812656	0.006321794	522.4248504	0.004533237	0.004470156	0.013002121	0.018972664	0.763792132	0.005169817
SACRAMENT	2021	MDV	2015	20	GAS	11033.1197	0.032862143	0.003085392	0.003355645	543.0408322	0.004040853	0.004936013	0.012941574	0.018884314	0.73660156	0.005373829
SACRAMENT	2021	MH	2021	30	GAS	124.828585	0.108532538	0.00120785	0.001313647	1450.303359	0.004455052	0.012987559	0.012924623	0.01885958	0.20904432	0.014351927
SACRAMENT	2021	LDA	2020	10	GAS	5979.15063	0.024414965	0.005812656	0.006321794	457.7953218	0.004506669	0.004444384	0.012895051	0.018816428	0.763414028	0.004530256
SACRAMENT	2021	MDV	2010	20	GAS	3635.99242	0.0352365	0.000591304	0.000643097	612.5271192	0.00398361	0.005110159	0.012876413	0.018789232	0.761546478	0.006061452

SACRAMENT	2021	MDV	2004	55	GAS	26104.9687	0.084112522	0.000139976	0.000152237	523.5344379	0.003728431	0.009574096	0.012859538	0.018764608	0.953917424	0.005180798
SACRAMENT	2021	MDV	2018	25	DSL	1418.42324	0.039747034	0.004527981	0.004732716	426.3574221	0.000765563	0.067017449	0.01648212	0.018763798	0.292131327	0.004030611
SACRAMENT	2021	LDT1	2015	15	GAS	2178.74089	0.031576674	0.004406086	0.004792021	498.0266468	0.004220972	0.005028765	0.012837774	0.01873285	0.737953577	0.004928377
SACRAMENT	2021	LDT2	2011	20	GAS	11260.4315	0.034220448	0.000803566	0.000873952	491.0814206	0.003987492	0.005049227	0.012826454	0.018716331	0.772165367	0.004859649
SACRAMENT	2021	LDA	2009	30	DSL	253.119583	0.037685457	0.005720366	0.005979016	260.3507952	0.000763174	0.040923519	0.016430684	0.018705242	0.328770222	0.002461251
SACRAMENT	2021	LDT2	2015	20	GAS	17438.8357	0.032615849	0.003085392	0.003355645	449.6857722	0.003999857	0.004914986	0.012786451	0.018657959	0.733970213	0.004450005
SACRAMENT	2021	MDV	2011	30	DSL	321.300295	0.037614428	0.005694236	0.005951704	457.5280531	0.000760346	0.071917038	0.016369791	0.018635919	0.32711671	0.004325285
SACRAMENT	2021	LDA	2015	15	GAS	14467.4896	0.031297392	0.004406086	0.004792021	436.1805396	0.004207071	0.005008174	0.012770324	0.018634426	0.738129494	0.00431636
SACRAMENT	2021	LDT2	2017	30	DSL	438.783635	0.034107374	0.00420702	0.004397243	299.7976755	0.00075996	0.04712402	0.016361492	0.018626471	0.149804722	0.002834166
SACRAMENT	2021	LDT1	2017	30	DSL	1.80121492	0.034107368	0.00420702	0.004397243	398.1521799	0.000759959	0.062583978	0.016361475	0.018626452	0.149805135	0.00376397
SACRAMENT	2021	MH	2017	60	DSL	80.5547454	1.331610389	0.00939294	0.009817647	859.3174837	0.000758071	0.135072742	0.016320813	0.01858016	0.046078093	0.008123641
SACRAMENT	2021	MH	2017	65	DSL	12.6770266	1.327987659	0.00939294	0.009817647	872.0587304	0.000758071	0.137075488	0.016320813	0.01858016	0.046078093	0.008244091
SACRAMENT	2021	LDT2	2010	20	GAS	7703.62209	0.034430576	0.000591304	0.000643097	507.13512	0.003932983	0.005045782	0.012664313	0.018479737	0.757666362	0.005018513
SACRAMENT	2021	MH	2019	55	DSL	80.338764	1.352959759	0.009074174	0.009484468	857.9327411	0.000751756	0.134855079	0.01618487	0.018425399	0.045699916	0.00811055
SACRAMENT	2021	MH	2017	25	GAS	81.3124958	0.093309081	0.00144939	0.001576344	1807.138975	0.004510119	0.011906801	0.012625346	0.018422876	0.197588689	0.017883105
SACRAMENT	2021	MDV	2004	50	GAS	14344.7026	0.084135843	0.000137453	0.000149493	502.9998501	0.003660133	0.00957675	0.012623977	0.018420877	1.022992002	0.004977591
SACRAMENT	2021	LDT2	2004	25	GAS	23026.8449	0.041011683	0.000280013	0.000304539	506.0103863	0.00373244	0.005733224	0.01258364	0.018362018	1.170858448	0.005007383
SACRAMENT	2021	LDA	2018	25	DSL	2791.26786	0.03932307	0.004381675	0.004579795	235.6004969	0.000746985	0.037033117	0.016082145	0.018308452	0.281269861	0.002227272
SACRAMENT	2021	LDA	2010	30	DSL	335.888742	0.037242861	0.005557562	0.00580885	246.9976891	0.000745552	0.038824597	0.016051287	0.018273323	0.318466934	0.002335016
SACRAMENT	2021	LDT2	2018	30	DSL	459.861013	0.033627807	0.003964461	0.004143717	286.7312621	0.000744957	0.045070161	0.016038491	0.018258755	0.137996546	0.002710642
SACRAMENT	2021	LDT1	2018	30	DSL	1.90249513	0.033627802	0.003964461	0.004143717	385.9167601	0.000744957	0.06066074	0.016038477	0.01825874	0.137996956	0.003648301
SACRAMENT	2021	MH	1998	30	GAS	31.2316616	0.19170143	0.001677569	0.001824509	1760.175777	0.004262949	0.019221222	0.012462219	0.018184841	0.291167899	0.017418366
SACRAMENT	2021	LDT1	2016	15	GAS	1962.64066	0.030386113	0.00508811	0.005533783	483.8610328	0.004118898	0.004910433	0.012459609	0.018181032	0.73168255	0.004788197
SACRAMENT	2021	MDV	2012	30	DSL	569.284352	0.037067097	0.005492904	0.005741269	446.237604	0.000738553	0.070142337	0.015900615	0.018101793	0.314375204	0.00421855
SACRAMENT	2021	MDV	2005	40	GAS	40350.9436	0.073329639	0.000155618	0.000169249	474.9252734	0.003615533	0.008746993	0.012396182	0.01808848	1.128208654	0.004699771
SACRAMENT	2021	LDA	2016	15	GAS	15063.1585	0.030114719	0.00508811	0.005533783	423.8125034	0.004103969	0.004890583	0.012387923	0.018076429	0.731764832	0.004193968
SACRAMENT	2021	LDT1	2007	20	GAS	1677.9074	0.037192878	0.000379041	0.000412241	506.1055824	0.003838159	0.005325225	0.012376007	0.01805904	0.832483522	0.005008325
SACRAMENT	2021	LDA	2007	20	GAS	22707.3262	0.036987538	0.000379041	0.000412241	443.0281345	0.003834335	0.005301776	0.012368512	0.018048103	0.833338724	0.004384123
SACRAMENT	2021	MH	1999	30	GAS	86.5607226	0.186932974	0.001677569	0.001824509	1760.167859	0.004235518	0.018889507	0.012364107	0.018041676	0.286439092	0.017418288
SACRAMENT	2021	MDV	2016	20	GAS	12775.5336	0.031474303	0.003562983	0.003875069	521.4879788	0.003880228	0.004808444	0.012320081	0.017977433	0.736130991	0.005160546
SACRAMENT	2021	MH	2018	60	DSL	88.5563705	1.320153175	0.009110223	0.009522147	859.3174837	0.000733242	0.135072742	0.015786274	0.017971623	0.044571575	0.008123641
SACRAMENT	2021	MH	2018	65	DSL	13.9362549	1.316561615	0.009110223	0.009522147	872.0587304	0.000733242	0.137075488	0.015786274	0.017971623	0.044571575	0.008244091
SACRAMENT	2021	LDT2	2005	25	GAS	27895.9879	0.038846262	0.000280013	0.000304539	493.8840399	0.003663456	0.00546778	0.012288673	0.017931602	1.058816905	0.004887383
SACRAMENT	2021	MH	2000	30	GAS	78.2898673	0.182156231	0.001677569	0.001824509	1760.159802	0.004208472	0.018548201	0.012267436	0.017900614	0.28161	0.017418208
SACRAMENT	2021	LDT2	2019	30	DSL	473.448798	0.033127913	0.003711621	0.003879444	273.6648487	0.000729318	0.043016303	0.015701798	0.017875453	0.125687861	0.002587117
SACRAMENT	2021	LDT1	2019	30	DSL	1.98079007	0.033127914	0.003711621	0.003879444	373.6813403	0.000729318	0.058737503	0.01570179	0.017875444	0.125688225	0.003532633
SACRAMENT	2021	LDT1	2006	20	GAS	1173.17104	0.034527378	0.000379041	0.000412241	516.5973769	0.003786991	0.005042013	0.012222897	0.017835622	0.79701047	0.00511215
SACRAMENT	2021	LDA	2006	20	GAS	19790.5415	0.034378646	0.000379041	0.000412241	457.4410413	0.003783221	0.005020151	0.012222258	0.01783469	0.797873675	0.00452675
SACRAMENT	2021	LDT1	2017	15	GAS	1575.05561	0.029515032	0.005467011	0.005945874	469.6869951	0.004054249	0.00482763	0.01221197	0.017819678	0.728354197	0.004647934
SACRAMENT	2021	LDA	2011	30	DSL	597.822482	0.036772128	0.005384407	0.005627866	255.5704992	0.000726809	0.040172123	0.01564777	0.017813945	0.307508632	0.00241606
SACRAMENT	2021	LDT2	2016	20	GAS	18550.0922	0.031288526	0.003562983	0.003875069	431.8763116	0.003848227	0.004791545	0.012201324	0.017804144	0.734045947	0.004273766
SACRAMENT	2021	MH	2020	55	DSL	84.572618	1.340759793	0.008774735	0.009171489	857.9327411	0.000724608	0.134855079	0.015600382	0.017759997	0.044052619	0.00811055
SACRAMENT	2021	MH	2001	30	GAS	33.2642789	0.177409144	0.001677569	0.001824509	1760.151652	0.004181073	0.018211419	0.012169709	0.017758011	0.276743492	0.017418127
SACRAMENT	2021	MDV	2019	25	DSL	1477.02268	0.0387913	0.004198157	0.004387979	406.9282106	0.000723684	0.063963448	0.015580496	0.017737358	0.267645759	0.003846935
SACRAMENT	2021	MH	2016	25	GAS	103.037383	0.092663194	0.001348938	0.001467093	1878.125687	0.004359724	0.011826381	0.012146195	0.017723699	0.194930116	0.018585576
SACRAMENT	2021	LDA	2017	15	GAS	18127.6516	0.029247795	0.005467011	0.005945874	411.4356333	0.00403825	0.004807907	0.01213629	0.017709246	0.72835525	0.004071489
SACRAMENT	2021	LHD2	2021	15	GAS	773.236015	0.056934087	0.002995978	0.003258399	1327.122601	0.004024134	0.006599199	0.012133914	0.017705779	0.171941106	0.013132954
SACRAMENT	2021	MH	2002	30	GAS	67.8332668	0.17271359	0.001677569	0.001824509	1760.143441	0.004152495	0.017875512	0.012068678	0.017610587	0.271838413	0.017418046
SACRAMENT	2021	MH	2020	30	GAS	125.774981	0.098966249	0.00120785	0.001313647	1603.563059	0.004194084	0.012172422	0.012057652	0.017594498	0.20162723	0.015868556
SACRAMENT	2021	MDV	2017	20	GAS	11885.0656	0.031069757	0.003828312	0.004163638	499.9166825	0.003814879	0.004780975	0.012057602	0.017594425	0.732101646	0.004947081
SACRAMENT	2021	MDV	2013	30	DSL	200.361349	0.036484457	0.005278585	0.005517259	431.3957043	0.000715355	0.067809397	0.015401171	0.017533209	0.300811705	0.004078241
SACRAMENT	2021	LDT2	2020	15	GAS	5662.32326	0.025337464	0.003858303	0.004196256	434.4791537	0.004002563	0.004325967	0.011992293	0.017499126	0.779534248	0.004299523
SACRAMENT	2021	LDT1	2020	30	DSL	2.02596385	0.032607704	0.003448499	0.003604425	361.4459204	0.000713044	0.056814265	0.015351416	0.017476567	0.112878924	0.003416964
SACRAMENT	2021	LDT2	2020	30	DSL	484.859586	0.032607692	0.003448499	0.003604425	260.5984352	0.000713044	0.040962445	0.015351413	0.017476563	0.112878669	0.002463592
SACRAMENT	2021	LDT2	2017	20	GAS	19251.4156	0.030939731	0.003828312	0.004163638	414.0484668	0.003791497	0.004768364	0.011972444	0.017470163	0.73060743	0.004097345
SACRAMENT	2021	LHD1	1996	40	GAS	84.8561283	0.358337805	0.001196291	0.001301075	747.3724391	0.002888849	0.022975611	0.011970506	0.017467335	0.370069511	0.007395856
SACRAMENT	2021	LHD2	1996	40	GAS	13.1919397	0.358337805	0.001196291	0.001301075	856.0038792	0.002892605	0.02301454	0.011970506	0.017467335	0.370069511	0.008470852
SACRAMENT	2021	MH	2003	30	GAS	85.4402245	0.16808235	0.001677569	0.001824509	1760.135187	0.004123247	0.017542959	0.011962366	0.017455457	0.266920083	0.017417965
SACRAMENT	2021	MDV	2020	15	GAS	3601.68941	0.025284402	0.003858303	0.004196256	524.2716044	0.003992289	0.004320437	0.011954746	0.017444338	0.778865511	0.005188093
SACRAMENT	2021	LHD1	1997	40	GAS	113.185425	0.35828565	0.001196291	0.001301075	747.3706722	0.00289089	0.023055664	0.011945444	0.017430764	0.369022985	0.007395839
SACRAMENT	2021	LHD2	1997	40	GAS	13.7483757	0.35828565	0.001196291	0.001301075	856.0021123	0.00289384	0.023086077	0.011945444	0.017430764	0.369022985	0.008470835
SACRAMENT	2021	LHD1	2021	15	GAS	4921.82499	0.043918983	0.002995978	0.003258399	1158.61844	0.00397952	0.005301146	0.011937251	0.017418809	0.171941106	0.011465469
SACRAMENT	2021	LHD1	1999	40	GAS	204.482384	0.357229138	0.001196291	0.001301075	747.3659751	0.002907464	0.023174514	0.011930905	0.017409548	0.366099189	0.007395792
SACRAMENT	2021	LHD2	1999	40	GAS	25.2027522	0.357229138	0.001196291	0.001301075	855.9974152	0.002908843	0.023188507	0.011930905	0.017409548	0.366099189	0.008470788
SACRAMENT	2021	LDA	2019	25	DSL	2862.54764	0.038486033	0.004092813	0.004277872	228.1308265	0.000710307	0.035858989	0.015292498	0.017409492	0.259825141	0.002156657
SACRAMENT	2021	LHD1	1998	40	GAS	102.093395	0.358016679	0.001196291	0.001301075	747.3685779	0.002896659	0.023125048	0.011928277	0.017405713	0.367748392	0.007395818
SACRAMENT	2021	LHD2	1998	40	GAS	12.0720746	0.358016679	0.001196291	0.001301075	856.000018	0.002898818	0.023147154	0.011928277	0.017405713	0.367748392	0.008470814
SACRAMENT	2021	MDV	2012	20	GAS	5716.29957	0.033662491	0.001175026	0.001277948	578.4515631	0.00374332	0.004998251	0.011912342	0.017382462	0.736340074	0.005724247
SACRAMENT	2021	MDV	2005	60	GAS	22020.2745	0.07228381	0.00015038	0.000163552	529.4176259	0.003471158	0.008622243	0.01190118	0.017366174	0.842585377	0.005239017
SACRAMENT	2021	MH	2019	60	DSL	96.5404882	1.308524922	0.008823284	0.009222234	859.3174837	0.000708043	0.135072742	0.015243754	0.017354	0.043042561	0.008123641
SACRAMENT	2021	MH	2019	65	DSL	15.192728	1.304964997	0.008823284	0.009222234	872.0587304	0.000708043	0.137075488	0.015243754	0.017354	0.043042561	0.008244091
SACRAMENT	2021	MH	2005	25	GAS	56.7275814	0.116157932	0.000143504	0.000156074	1983.501456	0.004249761	0.013850294	0.011888447	0.017347594	0.214956455	0.019628355
SACRAMENT	2021	LHD1	2000	40	GAS	253.003903	0.355671084	0.001196291	0.001301075	747.3624007	0.002906778	0.023195408	0.011883579	0.017340491	0.363972928	0.007395757
SACRAMENT	2021	LHD2	2000	40	GAS	29.183123	0.355671084	0.001196291	0.001301075	855.9938408	0.002907384	0.023201503	0.011883579	0.017340491	0.363972928	0.008470753
SACRAMENT	2021	LDA	2012	30	DSL	739.69873	0.036273259	0.005200902	0.005436064	233.80121	0.000706946	0.036750294	0.015220133	0.017327109	0.295895316	0.002210262
SACRAMENT	2021	MH	2015	25	GAS	39.2817976	0.094884288	0.001168122	0.00127044	1878.123457	0.004269712	0.011997164	0.011863493	0.017311181	0.194292334	0.018585554
SACRAMENT	2021	MH	2006	25	GAS	89.8187848	0.112677449	0.000143504	0.000156074	1983.497755	0.004244658	0.013562811	0.011862454	0.017309665	0.212692285	0.019628318
SACRAMENT	2021	MH	2007	25	GAS	56.07064	0.110075131	0.000143504	0.000156074	1983.494085	0.004241687	0.013348219	0.01184316	0.017281512	0.210429152	0.019628282
SACRAMENT	2021	MH	2004	25	GAS	92.8568698	0.118763174	0.000143504	0.000156074	1983.507103	0.004227988	0.014058506	0.011826862	0.017257729	0.218686376	0.019628411
SACRAMENT	2021	LHD1	2001	40	GAS	344.075019	0.353094482	0.001196291	0.001301075	747.3578243	0.002903286	0.023172359	0.011822401	0.017251219	0.361252198	0.007395712
SACRAMENT	2021	LHD2	2001	40	GAS	46.8734599	0.353094482	0.001196291	0.001301075	855.9892644	0.002903132	0.023170824	0.011822401	0.017251219	0.361252198	0.008470708
SACRAMENT	2021	MH	2008	25	GAS	34.9932178	0.107483972	0.000163595	0.000177924	1983.490357	0.004237541	0.013133145	0.011820066	0.017247812	0.208140032	0.019628245
SACRAMENT	2021	MH	2009	25	GAS	4.67720497	0.104950746	0.000183685	0.000199774	1983.486594	0.004231915	0.012921505	0.011792343	0.01720736	0.205841488	0.019628208
SACRAMENT	2021	LDT1	2008	20	GAS	2869.44354	0.036600449	0.000432106	0.000469955	491.1799499	0.003690155	0.005300597	0.01177793	0.017186327	0.826853065	0.004860624
SACRAMENT	2021	LDA	2008	20	GAS	20095.0059	0.036364741	0.000432106	0.000469955	429.9663953	0.003688213	0.00527731	0.011771075	0.017176325	0.827710169	0.004254866
SACRAMENT	2021	MH	2010	25	GAS	5.66284175	0.102531999	0.000223866	0.000243475	1983.482842	0.004224664	0.012718189	0.011759663	0.017159673	0.203563385	0.019628171
SACRAMENT	2021	LHD1	2002	40	GAS	330.659168	0.278078537	0.001196291	0.001301075	747.2489423	0.002951495	0.019547592	0.01174219	0.017134176	0.292778509	0.007394634
SACRAMENT	2021	LHD2	2002	40	GAS	30.9927469	0.278078537	0.001196291	0.001301075	855.8803825	0.002950606	0.019539876	0.01174219	0.017134176	0.292778509	0.00846963
SACRAMENT	2021	MH	2014	25	GAS	53.2038649	0.095499533	0.000927036	0.001008236	1878.124237	0.004225082	0.012017926	0.011727466	0.017112691	0.195154319	0.018585562
SACRAMENT	2021	LDT2	2012	20	GAS	11028.3792	0.032932166	0.001175026	0.001277948	478.9277279	0.003696554	0.004934668	0.011727051	0.017112086	0.733004941	0.004739378
SACRAMENT	2021	MH	2011	25	GAS	36.6033517	0.100293816	0.000304228	0.000330876	1983.479185	0.004216447	0.012529062	0.011724241	0.017107985	0.201352535	0.019628134
SACRAMENT	2021	MH	2021	55	DSL	71.5121847	1.328382994	0.008470954	0.008853973	775.9089709	0.000697066	0.121962085	0.015007419	0.017084949	0.042381439	0.00733513
SACRAMENT	2021	MH	2012	25	GAS	24.0042162	0.098314531	0.000444862	0.000483828	1983.475705	0.00420968	0.012194328	0.011693905	0.017063718	0.199239743	0.0196281
SACRAMENT	2021	LDT1	2021	30	DSL	1.79685174	0.032067174	0.003175095	0.003318659	349.2105006	0.000696134	0.054891028	0.014987355	0.017062108	0.099569033	0.003301295
SACRAMENT	2021	LDT2	2021	30	DSL	417.875841	0.032067145	0.003175095	0.003318659	247.5320218	0.000696133	0.038908587	0.014987337	0.017062087	0.099568974	0.002340068
SACRAMENT	2021	MH	2013	25	GAS	44.4569372	0.0966813	0.000665859	0.000724182	1983.472041	0.004209464	0.012085891	0.011685056	0.017050806	0.196952397	0.019628064
SACRAMENT	2021	LHD1	2003	40	GAS	446.048538	0.27257833	0.001196291	0.001301075	747.2080549	0.002938023	0.019348493	0.011637792	0.016981839	0.267267276	0.007394229
SACRAMENT	2021	LHD2	2003	40	GAS	47.1534559	0.27257833	0.001196291	0.001301075	855.839495	0.002936417	0.019334734	0.011637792	0.016981839	0.267267276	0.008469226
SACRAMENT	2021	MDV	2014	30	DSL	631.679708	0.035866507	0.005051276	0.005279673	428.5766288	0.000690751	0.067366278	0.01487146	0.016930168	0.286426213	0.00405159
SACRAMENT	2021	LDT2	2008	35	DSL	21.3602913	0.032403738	0.005359644	0.005601983	355.403143	0.000688876	0.055864425	0.014831091	0.016884211	0.185706817	0.003359838
SACRAMENT	2021	LDT1	2008	35	DSL	14.7924129	0.03240375	0.005359644	0.005601983	453.8425991	0.000688876	0.071337736	0.014831086	0.016884205	0.185706834	0.004290445
SACRAMENT	2021	LDA	2013	30	DSL	1142.72026	0.035746252	0.005007047	0.005233443	227.4135029	0.000685963	0.035746236	0.014768377	0.016812815	0.283626985	0.002149875
SACRAMENT	2021	LHD2	2009	20	GAS	441.428757	0.112141579	0.000248646	0.000270426	1257.148689	0.00334697	0.009737608	0.011520332	0.016810441	0.17433811	0.012440505
SACRAMENT	2021	LHD2	2012	20	GAS	367.707253	0.111542245	0.00060219	0.000654937	1257.133087	0.003392983	0.009925919	0.011513922	0.016801088	0.164512514	0.012440351
SACRAMENT	2021	LHD2	2011	20	GAS	247.421913	0.112339013	0.00041182	0.000447892	1257.139573	0.003373337	0.00990665	0.011505694	0.016789081	0.16862655	0.012440415
SACRAMENT	2021	MH	2020	60	DSL	101.628173	1.296725636	0.008532124	0.008917909	859.3174837	0.000682473	0.135072742	0.014693252	0.01672729	0.041491051	0.008123641
SACRAMENT	2021	MH	2020	65	DSL	15.9933849	1.293197812	0.008532124	0.008917909	872.0587304	0.000682473	0.137075488	0.014693252	0.01672729	0.041491051	0.008244091
SACRAMENT	2021	LHD2	2010	20	GAS	80.6495348	0.112513859	0.000303038	0.000329581	1257.144575	0.003342542	0.009838236	0.011452737	0.016711807	0.17192638	0.012440465

SACRAMENT	2021	LHD2	2013	20	GAS	316.203737	0.109548448	0.000901343	0.000980293	1257.125584	0.003393339	0.009870382	0.011446984	0.016703413	0.159960795	0.012440277
SACRAMENT	2021	LDT2	2009	35	DSL	27.0086365	0.032147489	0.005223988	0.005460194	335.2656076	0.000681498	0.052699085	0.01467224	0.01670337	0.179899565	0.003169466
SACRAMENT	2021	LDT1	2009	35	DSL	75.0812926	0.032147499	0.005223988	0.005460194	444.3571243	0.000681497	0.069846752	0.014672234	0.016703363	0.179899607	0.004200773
SACRAMENT	2021	LDT2	2006	25	GAS	27703.5856	0.035139578	0.000280013	0.000304539	479.5830878	0.003436286	0.005018696	0.011434803	0.016685638	0.916610346	0.004745863
SACRAMENT	2021	MDV	2020	25	DSL	1542.50263	0.037793089	0.003853675	0.004027921	387.498999	0.000679944	0.060909446	0.014638799	0.016665299	0.242072009	0.003663259
SACRAMENT	2021	LDT1	2021	10	GAS	484.884293	0.022208576	0.003610893	0.003927175	504.9921265	0.004047621	0.004170676	0.011398907	0.016633258	0.746401908	0.004997306
SACRAMENT	2021	MDV	2005	45	GAS	15635.3719	0.071335112	0.000142393	0.000154866	476.4925415	0.003308597	0.00850908	0.011343825	0.016552883	1.047562439	0.00471528
SACRAMENT	2021	LDT2	2010	35	DSL	51.0238566	0.031873678	0.005079036	0.005308687	332.0885429	0.000673614	0.052199694	0.014502503	0.016510136	0.173694333	0.003139431
SACRAMENT	2021	LDT1	2010	35	DSL	8.46070823	0.031873687	0.005079036	0.005308687	421.5665358	0.000673613	0.066264389	0.014502495	0.016510127	0.173694405	0.00398532
SACRAMENT	2021	MDV	2018	20	GAS	12627.8134	0.029472807	0.003987509	0.00433678	478.3275325	0.003613631	0.004622478	0.011306094	0.016497825	0.727192413	0.004733439
SACRAMENT	2021	LHD2	2014	20	GAS	1140.31981	0.107253672	0.001254887	0.001364804	1238.265599	0.003372226	0.009807616	0.011297928	0.01648591	0.155543363	0.012253642
SACRAMENT	2021	LDA	2021	10	GAS	4930.19279	0.021934919	0.003610893	0.003927175	442.5578115	0.004020376	0.004140049	0.011295551	0.016482441	0.745862921	0.004379468
SACRAMENT	2021	LDA	2020	25	DSL	2774.17299	0.03761515	0.00379227	0.003963739	220.6611561	0.000672147	0.034684861	0.014470925	0.016474186	0.237513214	0.002086041
SACRAMENT	2021	LDT2	2018	20	GAS	20176.1751	0.029402016	0.003987509	0.00433678	396.2028772	0.003600427	0.004614781	0.011259631	0.016430027	0.726343873	0.003920749
SACRAMENT	2021	LHD1	2004	30	GAS	3116.40905	0.240974398	0.000111838	0.000121634	832.6504026	0.00301008	0.015623024	0.011244709	0.016408253	0.284622532	0.008239751
SACRAMENT	2021	LHD2	2004	30	GAS	341.925416	0.240974398	0.000111838	0.000121634	953.7078447	0.003007717	0.015599879	0.011244709	0.016408253	0.284622532	0.009437712
SACRAMENT	2021	LDA	2004	25	GAS	41736.4703	0.03817078	0.000280013	0.000304539	402.8198732	0.003356626	0.005315902	0.01121011	0.016357766	0.99057964	0.003986229
SACRAMENT	2021	MDV	2005	55	GAS	28524.1524	0.070198245	0.000139976	0.000152237	511.0921857	0.003265253	0.008373471	0.011195216	0.016336033	0.913450708	0.005057671
SACRAMENT	2021	LDT2	2011	35	DSL	41.6781363	0.031582307	0.004924786	0.005147463	321.534422	0.000665224	0.050540734	0.01432188	0.016304508	0.167091122	0.003039657
SACRAMENT	2021	MDV	2015	30	DSL	1353.43513	0.035213247	0.00481098	0.005028511	418.5824012	0.000664741	0.065795324	0.01431148	0.016292669	0.271218729	0.003957109
SACRAMENT	2021	LDT1	2004	25	GAS	3753.79771	0.038218829	0.000280013	0.000304539	460.2292741	0.00335067	0.005333617	0.011162242	0.016287917	0.984638472	0.004554342
SACRAMENT	2021	LDA	2014	30	DSL	1415.72277	0.035191108	0.004802842	0.005020005	227.6878262	0.000663859	0.035789356	0.014292501	0.016271062	0.270703638	0.002152469
SACRAMENT	2021	LHD2	2015	20	GAS	1329.97226	0.104501351	0.001581235	0.001719738	1231.975051	0.00335	0.009716488	0.011141621	0.016257827	0.151909062	0.012191392
SACRAMENT	2021	MH	2019	30	GAS	114.95656	0.092555923	0.00120785	0.001313647	1603.545268	0.003908459	0.011609937	0.011117606	0.016222784	0.19296055	0.01586838
SACRAMENT	2021	LDT1	2018	15	GAS	1663.61915	0.0268484	0.005694352	0.006193128	455.4957227	0.003729603	0.004536248	0.011069827	0.016153066	0.725198343	0.004507499
SACRAMENT	2021	MDV	2009	25	GAS	8851.57066	0.03399664	0.0003584	0.00038981	528.2198396	0.003341741	0.004862315	0.011032695	0.016098883	0.80388661	0.005227164
SACRAMENT	2021	LHD1	1996	45	GAS	104.465361	0.343166296	0.001094629	0.001190509	749.9717536	0.002662471	0.022002857	0.011032464	0.016098545	0.345850605	0.007421578
SACRAMENT	2021	LHD2	1996	45	GAS	16.2404388	0.343166296	0.001094629	0.001190509	858.9875031	0.002665932	0.022040137	0.011032464	0.016098545	0.345850605	0.008500378
SACRAMENT	2021	MH	2021	60	DSL	85.9338741	1.284755324	0.008236743	0.008609172	777.1613234	0.000656533	0.122158937	0.014134769	0.016091494	0.039917046	0.007346969
SACRAMENT	2021	MH	2021	65	DSL	13.5235485	1.281260067	0.008236743	0.008609172	788.6844266	0.000656533	0.123970209	0.014134769	0.016091494	0.039917046	0.007455904
SACRAMENT	2021	LDT2	2012	35	DSL	237.230963	0.031273375	0.004761241	0.004976523	313.5998965	0.000656329	0.049293537	0.01413037	0.016086486	0.160089933	0.002964647
SACRAMENT	2021	LDT1	2012	35	DSL	4.81585146	0.031273379	0.004761241	0.004976523	399.0432724	0.000656328	0.062724045	0.014130359	0.016086474	0.16009008	0.003772394
SACRAMENT	2021	LHD1	1997	45	GAS	139.341218	0.343116348	0.001094629	0.001190509	749.9701038	0.002664351	0.02207952	0.011009365	0.01606484	0.344872568	0.007421562
SACRAMENT	2021	LHD2	1997	45	GAS	16.9254604	0.343116348	0.001094629	0.001190509	858.9858532	0.002667071	0.022108645	0.011009365	0.01606484	0.344872568	0.008500361
SACRAMENT	2021	LHD1	1999	45	GAS	251.73581	0.342104568	0.001094629	0.001190509	749.9657148	0.002679627	0.022193338	0.010995965	0.016045287	0.342140117	0.007421519
SACRAMENT	2021	LHD2	1999	45	GAS	31.0268058	0.342104568	0.001094629	0.001190509	858.9814643	0.002680898	0.022206739	0.010995965	0.016045287	0.342140117	0.008500318
SACRAMENT	2021	LDA	2018	15	GAS	19201.3564	0.02659218	0.005694352	0.006193128	399.0411069	0.003713209	0.004515933	0.010995539	0.016044664	0.7251095	0.003948835
SACRAMENT	2021	LHD1	1998	45	GAS	125.685953	0.342858766	0.001094629	0.001190509	749.9681474	0.002669669	0.022145966	0.010993543	0.016041753	0.34368139	0.007421543
SACRAMENT	2021	LHD2	1998	45	GAS	14.8617861	0.342858766	0.001094629	0.001190509	858.9838969	0.002671658	0.022167136	0.010993543	0.016041753	0.34368139	0.008500342
SACRAMENT	2021	MDV	2005	50	GAS	15674.046	0.070217709	0.000137453	0.000149493	491.0423377	0.00320544	0.008375792	0.010990142	0.016036789	0.979595031	0.004859262
SACRAMENT	2021	MDV	2006	15	GAS	2154.66696	0.022267423	0.000541288	0.0005887	812.4179761	0.003631412	0.004007636	0.010987527	0.016032973	0.664536869	0.008039534
SACRAMENT	2021	LHD1	2000	45	GAS	311.470069	0.34061248	0.001094629	0.001190509	749.962377	0.002678995	0.022213348	0.010952349	0.015981642	0.340153008	0.007421486
SACRAMENT	2021	LHD2	2000	45	GAS	35.9269927	0.34061248	0.001094629	0.001190509	858.9781265	0.002679553	0.022219184	0.010952349	0.015981642	0.340153008	0.008500285
SACRAMENT	2021	LHD2	2008	25	GAS	611.034947	0.167835091	0.000163595	0.000177924	1074.667304	0.003069582	0.012701715	0.010939642	0.0159631	0.233182054	0.010634704
SACRAMENT	2021	LDT1	2009	20	GAS	2117.03277	0.034729111	0.000485172	0.000527669	480.8120206	0.00345969	0.005093562	0.010928824	0.015947314	0.746804751	0.004758025
SACRAMENT	2021	LDT2	2009	25	GAS	14579.4482	0.033429175	0.0003584	0.00038981	437.2758585	0.003321248	0.004822232	0.010924305	0.01594072	0.800382723	0.004327199
SACRAMENT	2021	LHD1	2005	30	GAS	1843.61291	0.23362079	0.000111838	0.000121634	832.6493627	0.002937286	0.015366244	0.010912933	0.015924127	0.284869108	0.00823974
SACRAMENT	2021	LHD2	2005	30	GAS	465.606924	0.23362079	0.000111838	0.000121634	953.7068048	0.002934275	0.015336671	0.010912933	0.015924127	0.284869108	0.009437702
SACRAMENT	2021	LDA	2009	20	GAS	17319.9075	0.034487119	0.000485172	0.000527669	420.8773746	0.003453774	0.005071926	0.010904277	0.015911495	0.747391597	0.004164923
SACRAMENT	2021	LHD1	2001	45	GAS	423.586627	0.338144967	0.001094629	0.001190509	749.9581035	0.002675776	0.022191274	0.010895964	0.015899365	0.337610334	0.007421443
SACRAMENT	2021	LHD2	2001	45	GAS	57.7053541	0.338144967	0.001094629	0.001190509	858.973853	0.002675634	0.022189804	0.010895964	0.015899365	0.337610334	0.008500243
SACRAMENT	2021	LDT1	2011	20	GAS	1047.81862	0.032977039	0.000803566	0.000873952	471.9574722	0.003453343	0.004930338	0.010866988	0.015857084	0.716079888	0.004670402
SACRAMENT	2021	LDT2	2013	35	DSL	411.222409	0.030946881	0.004588398	0.004795865	303.169538	0.000646928	0.047654029	0.013927973	0.015856072	0.152690766	0.002866042
SACRAMENT	2021	LDT1	2013	35	DSL	15.6009482	0.030946884	0.004588398	0.004795865	388.1409698	0.000646927	0.061010355	0.013927961	0.015856058	0.152690954	0.003669328
SACRAMENT	2021	MDV	2007	35	DSL	175.772585	0.034388728	0.005759572	0.006019995	472.5123083	0.000646733	0.074272355	0.01392378	0.015851298	0.324509917	0.004466941
SACRAMENT	2021	LHD1	1996	50	GAS	771.35767	0.328489686	0.001056652	0.001149206	771.9557528	0.00261333	0.021061834	0.010828839	0.015801417	0.327117661	0.007639128
SACRAMENT	2021	LHD2	1996	50	GAS	119.917136	0.328489686	0.001056652	0.001149206	884.1740801	0.002616727	0.02109752	0.010828839	0.015801417	0.327117661	0.008749619
SACRAMENT	2021	LDA	2011	20	GAS	22260.8615	0.032754716	0.000803566	0.000873952	413.1228705	0.003445352	0.004913846	0.010828736	0.015801266	0.716432965	0.004088186
SACRAMENT	2021	LHD1	2002	45	GAS	407.070535	0.26630509	0.001094629	0.001190509	749.8563517	0.002720207	0.018719975	0.010822039	0.015791493	0.273617852	0.007420436
SACRAMENT	2021	LHD2	2002	45	GAS	38.1547988	0.26630509	0.001094629	0.001190509	858.8721012	0.002719388	0.018712585	0.010822039	0.015791493	0.273617852	0.008499236
SACRAMENT	2021	LHD1	1997	50	GAS	1028.87614	0.328441875	0.001056652	0.001149206	771.9541888	0.002615176	0.021135218	0.010806167	0.015768334	0.3261926	0.007639112
SACRAMENT	2021	LHD2	1997	50	GAS	124.975241	0.328441875	0.001056652	0.001149206	884.1725161	0.002617845	0.021163098	0.010806167	0.015768334	0.3261926	0.008749604
SACRAMENT	2021	LHD1	1999	50	GAS	1858.78214	0.327473367	0.001056652	0.001149206	771.9500355	0.002630169	0.021244169	0.010793014	0.015749141	0.323608152	0.007639071
SACRAMENT	2021	LHD2	1999	50	GAS	229.09761	0.327473367	0.001056652	0.001149206	884.1683628	0.002631417	0.021256996	0.010793014	0.015749141	0.323608152	0.008749563
SACRAMENT	2021	LHD1	1998	50	GAS	928.047561	0.328195309	0.001056652	0.001149206	771.952336	0.002620395	0.021198823	0.010790637	0.015745672	0.325065941	0.007639094
SACRAMENT	2021	LHD2	1998	50	GAS	109.737358	0.328195309	0.001056652	0.001149206	884.1706633	0.002622348	0.021219088	0.010790637	0.015745672	0.325065941	0.008749585
SACRAMENT	2021	LHD1	1996	55	GAS	212.159785	0.345310941	0.001076049	0.001170302	803.6105757	0.002597903	0.022140366	0.010764912	0.015708135	0.29817084	0.007952378
SACRAMENT	2021	LHD2	1996	55	GAS	32.9828754	0.345310941	0.001076049	0.001170302	920.440615	0.00260128	0.022177879	0.010764912	0.015708135	0.29817084	0.009108506
SACRAMENT	2021	LDA	2015	30	DSL	1316.67367	0.034607827	0.004588286	0.004795748	223.4835772	0.000640636	0.035128506	0.013792506	0.015701851	0.257125273	0.002112724
SACRAMENT	2021	LHD1	2006	30	GAS	5682.43775	0.225520478	0.000111838	0.000121634	832.6476486	0.002911432	0.015068727	0.010755595	0.015694539	0.284215734	0.008239723
SACRAMENT	2021	LHD2	2006	30	GAS	410.478994	0.225520478	0.000111838	0.000121634	953.7050907	0.002907768	0.015033173	0.010755595	0.015694539	0.284215734	0.009437685
SACRAMENT	2021	MDV	2008	25	GAS	20480.3165	0.034599599	0.000319215	0.000347175	559.8771008	0.00326003	0.00491348	0.010754146	0.015692424	0.810596365	0.005540438
SACRAMENT	2021	LHD1	2000	50	GAS	2299.85158	0.326045092	0.001056652	0.001149206	771.9468718	0.002629549	0.021263323	0.010750203	0.015686671	0.321728674	0.00763904
SACRAMENT	2021	LHD2	2000	50	GAS	265.279907	0.326045092	0.001056652	0.001149206	884.1651991	0.002630097	0.021268909	0.010750203	0.015686671	0.321728674	0.008749531
SACRAMENT	2021	LHD1	1997	55	GAS	282.989525	0.345260681	0.001076049	0.001170302	803.609142	0.002599737	0.022217508	0.010742374	0.015675247	0.297327638	0.007952364
SACRAMENT	2021	LHD2	1997	55	GAS	34.374093	0.345260681	0.001076049	0.001170302	920.4391813	0.002602391	0.022246815	0.010742374	0.015675247	0.297327638	0.009108492
SACRAMENT	2021	LHD1	1999	55	GAS	511.252866	0.344242577	0.001076049	0.001170302	803.6053515	0.002614642	0.022332037	0.010729299	0.015656167	0.294971889	0.007952326
SACRAMENT	2021	LHD2	1999	55	GAS	63.0126616	0.344242577	0.001076049	0.001170302	920.4353909	0.002615883	0.022345522	0.010729299	0.015656167	0.294971889	0.009108454
SACRAMENT	2021	LHD1	1998	55	GAS	255.256905	0.345001489	0.001076049	0.001170302	803.6074476	0.002604926	0.022284369	0.010726935	0.015652719	0.296300678	0.007952347
SACRAMENT	2021	LHD2	1998	55	GAS	30.1829555	0.345001489	0.001076049	0.001170302	920.4374869	0.002606867	0.022305672	0.010726935	0.015652719	0.296300678	0.009108475
SACRAMENT	2021	LHD1	2003	45	GAS	549.125003	0.261037754	0.001094629	0.001190509	749.8181459	0.002707792	0.018529306	0.010725822	0.015651095	0.249776181	0.007420058
SACRAMENT	2021	LHD2	2003	45	GAS	58.0500538	0.261037754	0.001094629	0.001190509	858.8338954	0.002706311	0.018516129	0.010725822	0.015651095	0.249776181	0.008498858
SACRAMENT	2021	MDV	2016	30	DSL	690.529549	0.034524677	0.004557694	0.004763773	401.8016131	0.000637325	0.063157618	0.013721233	0.015620712	0.255189255	0.00379847
SACRAMENT	2021	LDT2	2014	35	DSL	422.883908	0.030602827	0.004406259	0.00460549	301.1883921	0.000637021	0.047342621	0.013714691	0.015613264	0.144893621	0.002847313
SACRAMENT	2021	LHD1	2001	50	GAS	3127.70462	0.323683111	0.001056652	0.001149206	771.9428211	0.00262639	0.021242193	0.010694859	0.015605913	0.319323724	0.007639
SACRAMENT	2021	LHD2	2001	50	GAS	426.088293	0.323683111	0.001056652	0.001149206	884.1611484	0.002626251	0.021240786	0.010694859	0.015605913	0.319323724	0.008749491
SACRAMENT	2021	LHD1	2000	55	GAS	632.567792	0.342741164	0.001076049	0.001170302	803.6024525	0.002614026	0.022352172	0.01068674	0.015594066	0.293258727	0.007952298
SACRAMENT	2021	LHD2	2000	55	GAS	72.9645018	0.342741164	0.001076049	0.001170302	920.4324919	0.00261457	0.022358045	0.01068674	0.015594066	0.293258727	0.009108426
SACRAMENT	2021	MDV	2009	35	DSL	140.664312	0.033349202	0.005477688	0.005725365	432.8722143	0.000635876	0.068041484	0.013690036	0.015585196	0.278402084	0.004092199
SACRAMENT	2021	LDT2	2008	25	GAS	21825.7807	0.033870742	0.000319215	0.000347175	463.471314	0.003247131	0.00486107	0.010669178	0.01556844	0.807237197	0.004586424
SACRAMENT	2021	MDV	2007	25	GAS	26393.8516	0.035323129	0.000280013	0.000304539	576.5022699	0.003225862	0.004974555	0.010659472	0.015554277	0.825065153	0.005704957
SACRAMENT	2021	LHD1	2001	55	GAS	860.266472	0.340258231	0.001076049	0.001170302	803.5987406	0.002610885	0.02232996	0.010631723	0.015513785	0.291066592	0.007952261
SACRAMENT	2021	LHD2	2001	55	GAS	117.194402	0.340258231	0.001076049	0.001170302	920.4287799	0.002610747	0.022328481	0.010631723	0.015513785	0.291066592	0.009108389
SACRAMENT	2021	LHD1	2007	30	GAS	2331.92125	0.223435343	0.000111838	0.000121634	832.6449593	0.002894931	0.015135711	0.010630045	0.015511336	0.282860676	0.008239697
SACRAMENT	2021	LHD2	2007	30	GAS	351.144928	0.223435343	0.000111838	0.000121634	953.7024014	0.00289063	0.01509396	0.010630045	0.015511336	0.282860676	0.009437658
SACRAMENT	2021	LHD1	2002	50	GAS	3005.7521	0.254915697	0.001056652	0.001149206	771.8465693	0.002670001	0.017919355	0.010622298	0.015500032	0.258797384	0.007638048
SACRAMENT	2021	LHD2	2002	50	GAS	281.729717	0.254915697	0.001056652	0.001149206	884.0648965	0.002669197	0.017912282	0.010622298	0.015500032	0.258797384	0.008748539
SACRAMENT	2021	MDV	2008	35	DSL	92.2324021	0.034006014	0.005624503	0.005878818	458.8724342	0.00063204	0.072128356	0.01360745	0.015491177	0.316414907	0.004337995
SACRAMENT	2021	MH	2021	35	GAS	155.142993	0.102482503	0.000993056	0.001080039	1344.400567	0.003657524	0.012263581	0.010610901	0.015483401	0.192697085	0.013303933
SACRAMENT	2021	LDT2	2007	25	GAS	29011.8091	0.03447971	0.000280013	0.000304539	477.2313713	0.003221897	0.004914699	0.010602007	0.015470424	0.82185711	0.004722591
SACRAMENT	2021	LHD1	2008	25	GAS	3280.91003	0.146455778	0.000163595	0.000177924	938.2359986	0.002979594	0.011276234	0.01059047	0.015453588	0.233192274	0.009284606
SACRAMENT	2021	LHD1	2009	20	GAS	776.908611	0.065850284	0.000248646	0.000270426	1097.528075	0.003082215	0.006013452	0.010561426	0.015411208	0.17433811	0.01086093
SACRAMENT	2021	LHD1	2002	55	GAS	826.723768	0.267969385	0.001076049	0.001170302	803.5109802	0.002654238	0.018836967	0.01055959	0.015408529	0.235896261	0.007951393
SACRAMENT	2021	LHD2	2002	55	GAS	77.4889765	0.267969385	0.001076049	0.001170302	920.3410196	0.002653439	0.018829531	0.01055959	0.015408529	0.235896261	0.00910752
SACRAMENT	2021	LHD1	2012	20	GAS	1420.76872	0.064321763	0.00060219	0.000654937	1097.512471	0.003127265	0.006060653	0.010554596	0.015401242	0.164512514	0.010860776
SACRAMENT	2021	LHD1	2011	20	GAS	903.688416	0.065163666	0.00041182	0.000447892	1097.518957	0.003107948	0.006071295	0.01054633	0.01538918	0.16862655	0.01086084
SACRAMENT	2021	LHD1	2003	50	GAS	4054.66249	0.249873635	0.001056652	0.001149206	771.810418	0.002657814	0.017736841	0.010527857	0.015362225	0.236247093	0.00763769
SACRAMENT	2021	LHD2	2003	50	GAS	428.633507	0.249873635	0.001056652	0.001149206	884.0287453	0.002656361	0.017724227	0.010527857	0.015362225	0.236247093	0.008748181

SACRAMENT	2021	LDT2	2015	35	DSL	621.963983	0.030241212	0.004214823	0.004405398	294.1648048	0.000626609	0.046238611	0.013490522	0.015358062	0.1366985	0.002780915
SACRAMENT	2021	LHD1	2010	20	GAS	548.793016	0.065205372	0.000303038	0.000329581	1097.523976	0.003078432	0.006012905	0.010497248	0.01531756	0.17192638	0.010860889
SACRAMENT	2021	LHD1	2013	20	GAS	2060.83127	0.063710348	0.000901343	0.000980293	1097.504991	0.003128564	0.006084824	0.01049309	0.015311492	0.159960795	0.010860702
SACRAMENT	2021	LHD1	2003	55	GAS	1115.22366	0.26266913	0.001076049	0.001170302	803.4779944	0.002642124	0.018645106	0.010465707	0.015271535	0.215341458	0.007951066
SACRAMENT	2021	LHD2	2003	55	GAS	117.894456	0.26266913	0.001076049	0.001170302	920.3080338	0.00264068	0.018631847	0.010465707	0.015271535	0.215341458	0.009107194
SACRAMENT	2021	MDV	2010	35	DSL	274.298078	0.032937372	0.00531913	0.005559637	428.7702039	0.000620784	0.067396705	0.013365113	0.015215293	0.269578106	0.00405342
SACRAMENT	2021	LDA	2005	25	GAS	55451.9119	0.036899361	0.000280013	0.000304539	385.8987016	0.003170974	0.005208492	0.010425187	0.015212408	0.908190878	0.00381878
SACRAMENT	2021	LDA	2008	35	DSL	54.5176495	0.03291445	0.005310307	0.005550415	240.3758163	0.000619944	0.037783731	0.013347034	0.01519471	0.269086932	0.002272416
SACRAMENT	2021	LHD2	2016	20	GAS	212.912527	0.091015644	0.001825997	0.001985938	1206.8321	0.003174942	0.008788883	0.010407408	0.015186466	0.149807516	0.011942582
SACRAMENT	2021	LDT1	2005	25	GAS	2747.69438	0.036968075	0.000280013	0.000304539	440.9056954	0.00316513	0.005222795	0.010387348	0.015157194	0.902309293	0.004363119
SACRAMENT	2021	MH	2018	30	GAS	104.602732	0.088688252	0.001176535	0.001279589	1603.531157	0.003677835	0.011260639	0.010367068	0.015127602	0.186100227	0.015868241
SACRAMENT	2021	LDT1	2010	20	GAS	1142.56271	0.033594933	0.000591304	0.000643097	456.1700085	0.003310019	0.004992263	0.010362197	0.015120493	0.720068739	0.004514172
SACRAMENT	2021	LHD1	2014	20	GAS	2827.28435	0.060737675	0.001254887	0.001364804	1081.039307	0.003110127	0.0059125	0.010356504	0.015112186	0.155543363	0.01069776
SACRAMENT	2021	LDA	2016	30	DSL	129.5942	0.03399641	0.004363381	0.004560674	217.013472	0.000616291	0.034111496	0.013268392	0.015105183	0.242891887	0.002051558
SACRAMENT	2021	LDT2	2016	35	DSL	409.206693	0.029862037	0.00401409	0.004195589	282.3718645	0.000615691	0.044384925	0.013255466	0.015090467	0.128105403	0.00266943
SACRAMENT	2021	LDA	2010	20	GAS	21772.0235	0.033339161	0.000591304	0.000643097	399.3092001	0.003303408	0.004971017	0.010332148	0.015076646	0.720552705	0.003951488
SACRAMENT	2021	LDT2	2021	15	GAS	4828.16773	0.022495305	0.002396824	0.002606765	412.9023526	0.003512761	0.003995396	0.010299504	0.015029012	0.762761268	0.004086004
SACRAMENT	2021	MH	1998	35	GAS	38.816217	0.181015231	0.001379244	0.001500054	1631.646917	0.00349981	0.018149755	0.010231274	0.014929451	0.268398613	0.016146469
SACRAMENT	2021	MDV	2017	30	DSL	932.36364	0.033800797	0.004291421	0.00448546	385.0208249	0.000608503	0.060519912	0.013100719	0.014914297	0.238337793	0.003639831
SACRAMENT	2021	MDV	2021	15	GAS	2925.30166	0.022363694	0.002396824	0.002606765	498.1909294	0.003489698	0.003977037	0.010220697	0.014914017	0.761184977	0.004930003
SACRAMENT	2021	LHD1	2015	20	GAS	8218.52985	0.059447887	0.001581235	0.001719738	1075.546899	0.003090708	0.005895326	0.010213364	0.014903317	0.151909062	0.010643408
SACRAMENT	2021	LDA	2009	35	DSL	449.920986	0.0325564	0.005172455	0.00540633	235.3518746	0.000606823	0.036994037	0.013064541	0.014873112	0.261415294	0.002224922
SACRAMENT	2021	MDV	2011	35	DSL	571.112451	0.032495039	0.005148827	0.005381634	415.1434387	0.000604574	0.065254767	0.013016124	0.014817991	0.260100535	0.003924598
SACRAMENT	2021	MH	1999	35	GAS	107.581846	0.176512587	0.001379244	0.001500054	1631.63966	0.00347729	0.01783653	0.010150726	0.014811915	0.264039597	0.016146397
SACRAMENT	2021	LDT2	2017	35	DSL	779.939517	0.0294653	0.003804061	0.003976064	270.5789242	0.000604268	0.042531239	0.013009524	0.014810479	0.119114332	0.002557944
SACRAMENT	2021	LDT1	2017	35	DSL	3.20166611	0.029465295	0.003804061	0.003976064	359.3476445	0.000604267	0.056484446	0.013009511	0.014810463	0.11911466	0.003397128
SACRAMENT	2021	MH	2021	65	GAS	40.4253474	0.099638867	0.00094334	0.001025969	1500.791875	0.003476746	0.011923297	0.010086444	0.014718115	0.126245764	0.014851552
SACRAMENT	2021	MH	2000	35	GAS	97.3024272	0.17200212	0.001379244	0.001500054	1631.632275	0.003455086	0.017514251	0.010071361	0.014696106	0.259596436	0.016146324
SACRAMENT	2021	LHD2	2020	20	GAS	1084.77608	0.067201407	0.002097953	0.002281716	1131.449786	0.003207129	0.007107246	0.010014921	0.01461375	0.167937951	0.011196613
SACRAMENT	2021	MH	2001	35	GAS	41.3424519	0.167519654	0.001379244	0.001500054	1631.624806	0.003432591	0.017196242	0.009991129	0.014579031	0.255102192	0.01614625
SACRAMENT	2021	LHD2	2017	20	GAS	724.737909	0.080608882	0.001961975	0.002133827	1181.694191	0.00308079	0.008033506	0.009968956	0.014546678	0.150081765	0.011693822
SACRAMENT	2021	LDA	2010	35	DSL	597.043468	0.032174043	0.005025244	0.005252463	223.2809356	0.000592811	0.035096654	0.012762871	0.01452968	0.253222833	0.002110808
SACRAMENT	2021	LDT2	2018	35	DSL	817.404633	0.029051003	0.003584735	0.003746821	258.7859839	0.000592338	0.040677553	0.012752696	0.014518097	0.109725289	0.002446458
SACRAMENT	2021	LDT1	2018	35	DSL	3.38169205	0.029051	0.003584735	0.003746821	348.3047079	0.000592338	0.05474865	0.012752685	0.014518084	0.109725615	0.003292732
SACRAMENT	2021	LHD2	2019	20	GAS	943.999234	0.07106151	0.002097953	0.002281716	1131.434893	0.003144298	0.007344025	0.009942879	0.014508626	0.158738143	0.011196465
SACRAMENT	2021	MDV	2013	25	GAS	23286.7218	0.031174093	0.001299259	0.001413063	477.6168971	0.003077303	0.00461135	0.009938046	0.014501573	0.705118668	0.004726406
SACRAMENT	2021	MDV	2019	20	GAS	13066.8368	0.026241642	0.003766149	0.004096031	456.7203645	0.003233482	0.00427549	0.009926411	0.014484595	0.721678198	0.004519618
SACRAMENT	2021	LDA	2017	30	DSL	1840.42113	0.033356856	0.004128126	0.004314781	210.5433668	0.000590827	0.033094485	0.01272016	0.014481057	0.228003475	0.001990392
SACRAMENT	2021	LDT2	2019	20	GAS	20772.3325	0.026230275	0.003766149	0.004096031	378.3393583	0.003230957	0.00427344	0.009919097	0.014473923	0.721529985	0.003743975
SACRAMENT	2021	MH	2002	35	GAS	84.3064592	0.163085849	0.001379244	0.001500054	1631.617281	0.003409129	0.01687906	0.009908184	0.014457999	0.25058069	0.016146176
SACRAMENT	2021	LDT1	2012	20	GAS	2105.8818	0.031726344	0.001175026	0.001277948	431.8225308	0.003195458	0.00483113	0.009903221	0.014450758	0.696836867	0.004273234
SACRAMENT	2021	MDV	2014	25	GAS	37214.785	0.030852165	0.001808882	0.001967325	474.6436318	0.003074028	0.004591404	0.009902946	0.014450356	0.700428683	0.004696984
SACRAMENT	2021	MH	2020	35	GAS	156.319219	0.093449477	0.000993056	0.001080039	1486.470334	0.003443273	0.011493883	0.009899132	0.01444479	0.185860011	0.014709829
SACRAMENT	2021	LDA	2012	20	GAS	35972.0426	0.031468645	0.001175026	0.001277948	377.9993744	0.003187745	0.004811866	0.009864737	0.014394601	0.697144878	0.00374061
SACRAMENT	2021	MDV	2012	35	DSL	1011.90502	0.032022201	0.00496678	0.005191355	404.8989175	0.000587246	0.063644471	0.012643067	0.014393291	0.249969373	0.003827751
SACRAMENT	2021	MH	2003	35	GAS	106.189236	0.158712772	0.001379244	0.001500054	1631.609718	0.003385118	0.016565045	0.009820904	0.01433064	0.246046972	0.016146101
SACRAMENT	2021	MH	2017	30	GAS	91.935359	0.086716546	0.001129563	0.001228503	1603.521553	0.00350768	0.011065553	0.00981918	0.014328125	0.181531538	0.015868146
SACRAMENT	2021	LDT2	2004	30	GAS	16082.0162	0.038023337	0.000218224	0.000237339	449.1555306	0.002910055	0.005315468	0.00981103	0.014316233	1.078946586	0.004444758
SACRAMENT	2021	LDT2	2013	25	GAS	52465.0083	0.030800077	0.001299259	0.001413063	395.3793256	0.003042334	0.004580812	0.009799276	0.014299081	0.702090051	0.003912599
SACRAMENT	2021	LDT1	2019	15	GAS	1724.01237	0.024334223	0.00537824	0.005849327	441.2581729	0.003349566	0.004243415	0.009781273	0.01427281	0.701857223	0.004366607
SACRAMENT	2021	LDT2	2014	25	GAS	48942.6569	0.030556425	0.001808882	0.001967325	392.9439745	0.003041399	0.004566778	0.009775958	0.014265056	0.69771186	0.003888499
SACRAMENT	2021	LHD1	2020	20	GAS	6705.23331	0.048436949	0.002097953	0.002281716	987.7937781	0.003137111	0.005361027	0.009742133	0.014215697	0.167937951	0.00977502
SACRAMENT	2021	LDT2	2019	35	DSL	841.556971	0.028619146	0.003356112	0.003507861	246.9930436	0.000579904	0.038823867	0.012484981	0.014213321	0.099938275	0.002334973
SACRAMENT	2021	LDT1	2019	35	DSL	3.5208616	0.028619147	0.003356112	0.003507861	337.2617712	0.000579903	0.053012854	0.012484975	0.014213314	0.099938565	0.003188337
SACRAMENT	2021	MH	1998	65	GAS	10.114276	0.175992506	0.001310195	0.001424956	1821.429638	0.003326828	0.017646144	0.009725581	0.014191545	0.175841726	0.018024523
SACRAMENT	2021	MDV	2018	30	DSL	990.630966	0.033041607	0.004012159	0.004193571	368.2400368	0.000578276	0.057882206	0.012449936	0.014173424	0.220664349	0.003481193
SACRAMENT	2021	LDA	2011	35	DSL	1062.63165	0.031767377	0.004868674	0.005088814	231.0305832	0.000577908	0.03631479	0.012442022	0.014164415	0.244509551	0.00218407
SACRAMENT	2021	LDA	2019	15	GAS	19691.6958	0.024088485	0.00537824	0.005849327	386.5997314	0.003332072	0.004222338	0.009706974	0.014164393	0.70159363	0.003825718
SACRAMENT	2021	LHD2	2018	20	GAS	825.321802	0.072295121	0.002043562	0.00222256	1131.425169	0.003038886	0.007397828	0.009702223	0.014157462	0.15325859	0.011196369
SACRAMENT	2021	LHD1	2016	20	GAS	13255.7978	0.053568524	0.001825997	0.001985938	1053.597059	0.002965819	0.005500626	0.009660479	0.014096548	0.149807516	0.010426197
SACRAMENT	2021	MH	1999	65	GAS	28.0324196	0.1716148	0.001310195	0.001424956	1821.424781	0.003305421	0.017341611	0.009649014	0.014079818	0.172985911	0.018024475
SACRAMENT	2021	LHD1	2019	20	GAS	6001.00475	0.04898723	0.002097953	0.002281716	987.778564	0.003051505	0.005311693	0.00959565	0.014001949	0.158738143	0.00977487
SACRAMENT	2021	MDV	2011	25	GAS	16291.327	0.031884107	0.000593627	0.000645624	506.484383	0.002971961	0.004662405	0.009592147	0.013996838	0.709548049	0.005012074
SACRAMENT	2021	LDT2	2005	30	GAS	19482.64	0.036015701	0.000218224	0.000237339	438.3871637	0.00285627	0.005069366	0.009581054	0.013980652	0.975700253	0.004338196
SACRAMENT	2021	MH	2000	65	GAS	25.3539289	0.167229486	0.001310195	0.001424956	1821.419841	0.003284314	0.017028273	0.009573571	0.013969733	0.170074967	0.018024426
SACRAMENT	2021	MDV	2013	35	DSL	356.143032	0.031518859	0.004772988	0.004988801	391.431946	0.000568801	0.061527651	0.012245944	0.013941193	0.239184618	0.00370044
SACRAMENT	2021	LDT2	2008	40	DSL	26.1716738	0.028753844	0.004916756	0.00513907	331.705049	0.00056785	0.052139414	0.012225481	0.013917898	0.153080793	0.003135806
SACRAMENT	2021	LDT1	2008	40	DSL	18.1243879	0.028753854	0.004916756	0.00513907	423.5806142	0.00056785	0.066580974	0.012225477	0.013917893	0.153080808	0.00400436
SACRAMENT	2021	MDV	2015	25	GAS	35634.2187	0.030002744	0.002279304	0.002478951	463.7023871	0.002976977	0.004506521	0.009534313	0.013912447	0.673641742	0.004588711
SACRAMENT	2021	LDT1	2020	35	DSL	3.60115816	0.028169738	0.003118193	0.003259183	326.2188346	0.000566963	0.051277058	0.012206382	0.013896154	0.089753497	0.003083941
SACRAMENT	2021	LDT2	2020	35	DSL	861.839689	0.028169728	0.003118193	0.003259183	235.2001033	0.000566963	0.036970181	0.01220638	0.013896152	0.089753294	0.002223487
SACRAMENT	2021	MH	2001	65	GAS	10.7725328	0.162871398	0.001310195	0.001424956	1821.414845	0.003262931	0.016719089	0.009497305	0.013858445	0.167130557	0.018024376
SACRAMENT	2021	MDV	2010	25	GAS	11743.3467	0.03217179	0.00043682	0.000475081	523.0499675	0.002934937	0.004665701	0.009486738	0.013843025	0.696521753	0.005176003
SACRAMENT	2021	LDA	2018	30	DSL	1949.42968	0.032689166	0.00388252	0.004058071	204.0732616	0.000564243	0.032077475	0.01214781	0.013829474	0.212460031	0.001929226
SACRAMENT	2021	LDT2	2011	25	GAS	36368.379	0.03124411	0.000593627	0.000645624	419.2650248	0.002937797	0.004610069	0.00944993	0.013789315	0.706233946	0.004148967
SACRAMENT	2021	MH	2016	30	GAS	116.498439	0.086116293	0.001051276	0.001143359	1666.509857	0.003390712	0.010990815	0.009446527	0.01378435	0.179089016	0.016491466
SACRAMENT	2021	LDA	2012	35	DSL	1314.8172	0.031336405	0.004702746	0.004915383	211.3515843	0.000562115	0.033221526	0.012101995	0.013777316	0.235275447	0.001998033
SACRAMENT	2021	LDT2	2009	40	DSL	33.0923027	0.028526458	0.00479231	0.005008997	312.9102739	0.000561768	0.049185138	0.012094538	0.013768828	0.148293792	0.002958127
SACRAMENT	2021	LDT1	2009	40	DSL	91.9932724	0.028526467	0.00479231	0.005008997	414.7276258	0.000561768	0.065189407	0.012094533	0.013768822	0.148293827	0.003920668
SACRAMENT	2021	LDT2	2015	25	GAS	56323.0802	0.02977788	0.002279304	0.002478951	383.9083652	0.002946774	0.004487323	0.009420031	0.013745688	0.671235305	0.003799084
SACRAMENT	2021	MH	2002	65	GAS	21.9675915	0.15856062	0.001310195	0.001424956	1821.40981	0.003240629	0.016410708	0.00941846	0.013743394	0.164168289	0.018024327
SACRAMENT	2021	MH	2020	65	GAS	40.7318347	0.090856485	0.00094334	0.001025969	1659.40952	0.003273085	0.011174956	0.009409855	0.013730838	0.121766446	0.016421202
SACRAMENT	2021	LHD1	2017	20	GAS	4808.27328	0.050067846	0.001961975	0.002133827	1031.65223	0.002921353	0.00527946	0.009396085	0.013710745	0.150081765	0.010209035
SACRAMENT	2021	LDT1	2014	20	GAS	4042.37809	0.029653838	0.002448603	0.002663079	420.6950758	0.003045049	0.004633004	0.009339	0.013627447	0.666604717	0.004163119
SACRAMENT	2021	MH	2003	65	GAS	27.6695498	0.154308885	0.001310195	0.001424956	1821.404744	0.003217804	0.016105406	0.009335493	0.01362233	0.161198017	0.018024276
SACRAMENT	2021	LDT2	2010	25	GAS	24880.7737	0.031435962	0.00043682	0.000475081	432.9674607	0.002897638	0.004606923	0.009330472	0.013615003	0.692972941	0.004284564
SACRAMENT	2021	LDT2	2010	40	DSL	62.5169251	0.028283489	0.004659335	0.00487001	309.9450542	0.000555269	0.048719046	0.011954621	0.013609542	0.143178731	0.002930095
SACRAMENT	2021	LDT1	2010	40	DSL	10.3664736	0.028283497	0.004659335	0.00487001	393.4567017	0.000555269	0.061845914	0.011954615	0.013609534	0.14317879	0.003719581
SACRAMENT	2021	LDT1	2021	35	DSL	3.19391055	0.027702775	0.002870976	0.003000789	315.1758979	0.000553518	0.049541262	0.011916906	0.013566606	0.079170394	0.002979546
SACRAMENT	2021	LDT2	2021	35	DSL	742.775838	0.02770275	0.002870976	0.003000789	223.407163	0.000553517	0.035116495	0.011916892	0.013566589	0.079170347	0.002112001
SACRAMENT	2021	LHD1	2018	20	GAS	5356.52084	0.04839008	0.002043562	0.00222256	987.7685835	0.002927854	0.00520227	0.009295343	0.013563742	0.15325859	0.009774771
SACRAMENT	2021	LDA	2014	20	GAS	46478.4865	0.02940405	0.002448603	0.002663079	368.2847204	0.003034856	0.004614596	0.009291066	0.013557502	0.666700329	0.003644476
SACRAMENT	2021	LDT1	2013	20	GAS	3399.3534	0.030440842	0.001758749	0.0019128	420.0134173	0.003023848	0.004709019	0.009278185	0.013538706	0.671668315	0.004156373
SACRAMENT	2021	MH	2005	30	GAS	64.1386113	0.107951065	0.000111838	0.000121634	1760.013418	0.00330519	0.012871734	0.009246068	0.01349184	0.197487904	0.01741676
SACRAMENT	2021	LDA	2013	20	GAS	46241.3122	0.030171944	0.001758749	0.0019128	367.6605736	0.003014598	0.004688035	0.009235321	0.013476159	0.671859452	0.003638299
SACRAMENT	2021	MH	2015	30	GAS	44.4136677	0.088180461	0.0009301	0.0009901	1666.50798	0.003320707	0.011149533	0.00922666	0.013463521	0.178503063	0.016491447
SACRAMENT	2021	MH	2006	30	GAS	101.55293	0.104716488	0.000111838	0.000121634	1760.010034	0.003301221	0.012604563	0.009225852	0.013462341	0.195407733	0.017416726
SACRAMENT	2021	MDV	2014	35	DSL	1122.81299	0.030985012	0.004567452	0.004773972	388.8740248	0.000549237	0.061125581	0.011824754	0.013461696	0.227746272	0.003676258
SACRAMENT	2021	MH	2007	30	GAS	63.3958455	0.10229803	0.000111838	0.000121634	1760.006673	0.00329891	0.012405131	0.009210847	0.013440446	0.193328514	0.017416693
SACRAMENT	2021	LDT2	2011	40	DSL	51.0660914	0.028024937	0.004517832	0.004722109	300.0946765	0.000548354	0.047170704	0.011805731	0.01344004	0.137735609	0.002836974
SACRAMENT	2021	MH	2004	30	GAS	104.987918	0.110372239	0.000111838	0.000121634	1760.018643	0.003288256	0.013065235	0.009198171	0.013421949	0.200914711	0.017416811
SACRAMENT	2021	MH	2021	40	GAS	193.137034	0.098303964	0.000861329	0.000936774	1301.410994	0.003169352	0.011763556	0.009194658	0.013416824	0.178196773	0.012878517
SACRAMENT	2021	MH	2008	30	GAS	39.5648173	0.099889943	0.000127495	0.000138663	1760.003262	0.003295686	0.012205253	0.009192885	0.013414236	0.191225421	0.017416659
SACRAMENT	2021	MDV	2019	30	DSL	1031.55698	0.032247107	0.003719908	0.003888106	351.4592486	0.000546642	0.0552445	0.011768885	0.013398093	0.202168928	0.003322554
SACRAMENT	2021	MH	2009	30	GAS	5.28824647	0.097535696	0.000143153	0.000155691	1759.999822	0.003291311	0.012008566	0.009171324	0.013382775	0.189113669	0.017416625
SACRAMENT	2021	LDA	2013	35	DSL	2031.18944	0.030881124	0.004527459	0.00473217	205.5772258	0.00054543	0.032313877	0.011742789	0.013368385	0.22552052	0.001943444
SACRAMENT	2021	LHD1	2004	35	GAS	1164.48886	0.231228235	9.19496E-05	0.000100004	771.8425149	0.002450568	0.014991154	0.009154548	0.013358295	0.260232664	0.007638007
SACRAMENT	2021	LHD2	2004	35	GAS	127.765107	0.231228235	9.19496E-05	0.000100004	884.0608422	0.002448644	0.014968945	0.009154548	0.013358295	0.260232664	0.008748499

SACRAMENT	2021	MH	2010	30	GAS	6.40264925	0.09528784	0.000174467	0.000189749	1759.996395	0.003285671	0.011819615	0.009145908	0.013345687	0.187020698	0.017416591
SACRAMENT	2021	MH	2019	35	GAS	142.873563	0.087396488	0.000993056	0.001080039	1486.454343	0.00320878	0.010962753	0.009127369	0.013318636	0.177871063	0.014709671
SACRAMENT	2021	MH	2014	30	GAS	60.1545478	0.088752236	0.000722473	0.000785755	1666.508779	0.003285997	0.011168828	0.009120867	0.013309148	0.179294999	0.016491455
SACRAMENT	2021	MH	2011	30	GAS	41.385303	0.093207791	0.000237096	0.000257864	1759.993057	0.003279281	0.01164385	0.009118359	0.013305487	0.184989514	0.017416558
SACRAMENT	2021	LDT1	2007	25	GAS	5419.22147	0.033958012	0.000280013	0.000304539	432.0402606	0.002827776	0.004862062	0.009118061	0.013305054	0.761401829	0.004275389
SACRAMENT	2021	LDA	2007	25	GAS	73338.9876	0.033769286	0.000280013	0.000304539	378.1061869	0.00282484	0.004840473	0.00911216	0.013296442	0.762116252	0.003741667
SACRAMENT	2021	MH	2012	30	GAS	27.1401857	0.091368348	0.000346698	0.000377065	1759.989878	0.003274017	0.011332766	0.009094765	0.01327106	0.183048419	0.017416527
SACRAMENT	2021	MH	2013	30	GAS	50.2649002	0.089850509	0.000518928	0.000564381	1759.986517	0.00327385	0.01123199	0.009087883	0.013261017	0.180946955	0.017416493
SACRAMENT	2021	LDT2	2012	40	DSL	290.666981	0.027750803	0.004367801	0.004565293	292.6892209	0.000541021	0.04600667	0.011647866	0.013260322	0.131964429	0.002766966
SACRAMENT	2021	LDT1	2012	40	DSL	5.90061679	0.027750807	0.004367801	0.004565293	372.4352776	0.000541021	0.058541639	0.011647857	0.013260311	0.131964549	0.003520853
SACRAMENT	2021	MDV	2016	25	GAS	41261.7802	0.028735088	0.00263212	0.00286267	445.2931241	0.002858576	0.004389964	0.009076242	0.013244031	0.673178996	0.004406536
SACRAMENT	2021	LDA	2019	30	DSL	1999.21169	0.03199334	0.003626565	0.003790542	197.6031564	0.000536538	0.031060464	0.011551343	0.013150436	0.196261545	0.00186806
SACRAMENT	2021	LDT1	2006	25	GAS	3789.0492	0.031524345	0.000280013	0.000304539	440.9811457	0.002790078	0.004603482	0.009005257	0.01314045	0.728957648	0.004363866
SACRAMENT	2021	LDA	2006	25	GAS	63918.5021	0.031387391	0.000280013	0.000304539	390.3978433	0.002787183	0.004583352	0.009004411	0.013139215	0.729682273	0.003863303
SACRAMENT	2021	LDT2	2016	25	GAS	59912.161	0.028565479	0.00263212	0.00286267	368.698745	0.002835001	0.004374536	0.008988754	0.013116368	0.671272259	0.003648573
SACRAMENT	2021	LDT2	2013	40	DSL	503.849811	0.027461085	0.004209241	0.004399564	282.9543532	0.000533272	0.044476484	0.011481028	0.013070387	0.125865189	0.002674936
SACRAMENT	2021	LDT1	2013	40	DSL	19.1150449	0.027461087	0.004209241	0.004399564	362.2599349	0.000533271	0.056942217	0.011481018	0.013070376	0.125865344	0.003424659
SACRAMENT	2021	MDV	2007	40	DSL	215.365169	0.030515249	0.005283637	0.005522539	441.9702699	0.000533111	0.069471572	0.011477572	0.013066453	0.26749818	0.004178208
SACRAMENT	2021	LDT1	2015	20	GAS	8169.74598	0.028351681	0.003085392	0.003355645	413.1340048	0.002943739	0.004515166	0.008953164	0.013064436	0.671498734	0.004088296
SACRAMENT	2021	LDT2	2006	30	GAS	19348.2657	0.032579108	0.000218224	0.000237339	425.6883612	0.002679154	0.004653006	0.008915322	0.013009216	0.844656846	0.004212531
SACRAMENT	2021	LDA	2015	20	GAS	54249.5509	0.028099338	0.003085392	0.003355645	361.6970681	0.002933853	0.004496425	0.008905545	0.012994951	0.671566728	0.003579286
SACRAMENT	2021	LHD1	2005	35	GAS	688.891176	0.224172042	9.19496E-05	0.000100004	771.8417075	0.002391305	0.01474476	0.008884443	0.012964159	0.26045811	0.007637999
SACRAMENT	2021	LHD2	2005	35	GAS	173.980394	0.224172042	9.19496E-05	0.000100004	884.0600348	0.002388853	0.014716382	0.008884443	0.012964159	0.26045811	0.008748491
SACRAMENT	2021	MDV	2017	25	GAS	38385.7911	0.028365182	0.002828129	0.003075848	426.8682649	0.00281037	0.004364799	0.008882673	0.012961575	0.669462066	0.004224208
SACRAMENT	2021	MDV	2015	35	DSL	2405.7359	0.030420662	0.004350171	0.004546867	379.8056453	0.000528556	0.059700158	0.011379497	0.012954801	0.215654335	0.003590529
SACRAMENT	2021	LDA	2014	35	DSL	2516.4524	0.030401537	0.004342813	0.004539176	205.8252086	0.000527855	0.032352857	0.011364406	0.012937621	0.21524477	0.001945788
SACRAMENT	2021	MH	1998	40	GAS	48.322189	0.173634662	0.001196291	0.001301075	1579.470926	0.003032689	0.017409732	0.008865701	0.01293681	0.248201818	0.015630145
SACRAMENT	2021	MH	2021	60	GAS	258.701265	0.097589079	0.000832336	0.000905242	1456.303392	0.003045497	0.011678009	0.008835342	0.01289251	0.13362585	0.014411303
SACRAMENT	2021	LDT2	2014	40	DSL	518.13805	0.027155784	0.004042153	0.004224921	281.1053091	0.000525106	0.04418584	0.011305216	0.012870237	0.11943789	0.002657456
SACRAMENT	2021	LDT2	2017	25	GAS	62177.2602	0.028246475	0.002828129	0.003075848	353.4735844	0.002793145	0.004353285	0.008819938	0.012870033	0.668095697	0.003497908
SACRAMENT	2021	MDV	2009	40	DSL	172.348796	0.029592813	0.005025046	0.005252256	404.8924145	0.000524162	0.063643449	0.011284893	0.012847101	0.229490832	0.003827689
SACRAMENT	2021	MH	1999	40	GAS	133.928308	0.169315606	0.001196291	0.001301075	1579.464235	0.003013174	0.017109278	0.008795903	0.012834961	0.244170815	0.015630079
SACRAMENT	2021	MDV	2012	25	GAS	18462.2187	0.030734681	0.000868039	0.000944072	493.9539024	0.002757903	0.004563526	0.008776455	0.012806583	0.6734676	0.004888074
SACRAMENT	2021	LHD1	2006	35	GAS	2123.32057	0.216399345	9.19496E-05	0.000100004	771.8402082	0.002370257	0.014459275	0.008756351	0.012777247	0.259860725	0.007637985
SACRAMENT	2021	LHD2	2006	35	GAS	153.381089	0.216399345	9.19496E-05	0.000100004	884.0585355	0.002367274	0.01442516	0.008756351	0.012777247	0.259860725	0.008748476
SACRAMENT	2021	MDV	2008	40	DSL	113.007651	0.030175642	0.005159728	0.005393028	429.2120439	0.000521	0.067466156	0.011216816	0.0127696	0.260825347	0.004057597
SACRAMENT	2021	LDA	2004	30	GAS	29148.8736	0.03538963	0.000218224	0.000237339	357.5862591	0.002617066	0.004928581	0.008740204	0.012753685	0.912834115	0.003538606
SACRAMENT	2021	MH	2000	40	GAS	121.131492	0.164989044	0.001196291	0.001301075	1579.457426	0.002993934	0.016800139	0.008727131	0.012734609	0.240061998	0.015630012
SACRAMENT	2021	LDT1	2004	30	GAS	2621.66337	0.035433986	0.000218224	0.000237339	408.5234255	0.002612402	0.004944979	0.008702815	0.012699127	0.907344794	0.00404267
SACRAMENT	2021	LDT1	2016	20	GAS	7359.42291	0.027281907	0.003562983	0.003875069	401.3704479	0.002872454	0.00440879	0.008689133	0.012679162	0.665744481	0.003971886
SACRAMENT	2021	LDT1	2008	25	GAS	9267.58537	0.033417109	0.000319215	0.000347175	419.3008491	0.002718733	0.004839575	0.008677426	0.01266208	0.756252129	0.004149322
SACRAMENT	2021	MH	2019	65	GAS	37.2283228	0.084971452	0.00094334	0.001025969	1659.39806	0.003050182	0.010658564	0.008676238	0.012660346	0.116532476	0.016421089
SACRAMENT	2021	LDT2	2015	40	DSL	762.060697	0.026834901	0.003866536	0.004041363	274.5500509	0.000516523	0.043155445	0.011120431	0.012659871	0.112682534	0.002595485
SACRAMENT	2021	LDA	2008	25	GAS	64901.846	0.033200678	0.000319215	0.000347175	366.9604885	0.002717189	0.004818136	0.008672015	0.012654184	0.756968749	0.003631372
SACRAMENT	2021	MH	2001	40	GAS	51.4670911	0.160689343	0.001196291	0.001301075	1579.450538	0.002974442	0.016495096	0.008657608	0.012633161	0.235905943	0.015629943
SACRAMENT	2021	LHD1	2007	35	GAS	871.354263	0.214398543	9.19496E-05	0.000100004	771.8378036	0.002356823	0.01452355	0.008654138	0.012628097	0.258621784	0.007637961
SACRAMENT	2021	LHD2	2007	35	GAS	131.210104	0.214398543	9.19496E-05	0.000100004	884.0561309	0.002353321	0.014483488	0.008654138	0.012628097	0.258621784	0.008748452
SACRAMENT	2021	LDT2	2012	25	GAS	35618.9083	0.030067877	0.000868039	0.000944072	408.8871597	0.002723448	0.004505473	0.008639942	0.012607382	0.670417237	0.00404627
SACRAMENT	2021	LDA	2016	20	GAS	56483.1637	0.027036689	0.003562983	0.003875069	351.4280592	0.002861854	0.004390716	0.0863857	0.012605382	0.665726732	0.003477666
SACRAMENT	2021	MDV	2020	30	DSL	1077.28838	0.031417298	0.003414669	0.003569065	334.6784605	0.000513603	0.052606793	0.011057565	0.012588302	0.182851537	0.003163915
SACRAMENT	2021	LDT1	2020	15	GAS	1749.79279	0.021751513	0.003858303	0.004196256	427.0348372	0.003005462	0.003938982	0.008620193	0.012578565	0.695748769	0.004225856
SACRAMENT	2021	MDV	2009	30	GAS	6181.96299	0.031519451	0.000279327	0.000303794	468.8294531	0.00260544	0.004508019	0.008601812	0.012551744	0.740781872	0.004639447
SACRAMENT	2021	MDV	2010	40	DSL	336.083423	0.029227371	0.00487959	0.005100223	401.055548	0.000511721	0.063040347	0.011017055	0.012542184	0.2222171	0.003791417
SACRAMENT	2021	MH	2002	40	GAS	104.952851	0.156436318	0.001196291	0.001301075	1579.443601	0.002954111	0.016190847	0.008585734	0.012528282	0.23172468	0.015629875
SACRAMENT	2021	LDA	2008	40	DSL	66.7976911	0.02920703	0.004871496	0.005091763	224.9379756	0.000511029	0.035357117	0.011002151	0.012525218	0.221812219	0.002126473
SACRAMENT	2021	MH	2020	40	GAS	194.601315	0.089639244	0.000861329	0.000936774	1438.940499	0.002983698	0.01102524	0.00857789	0.012516836	0.171874184	0.014239483
SACRAMENT	2021	LDA	2015	35	DSL	2340.39226	0.029897642	0.004148808	0.004336399	202.0246521	0.000509389	0.031755462	0.010966845	0.012485024	0.204448196	0.001909859
SACRAMENT	2021	LDA	2020	15	GAS	18959.3382	0.02151347	0.003858303	0.004196256	374.1722536	0.002987784	0.003916209	0.008549026	0.012474719	0.695374293	0.003702738
SACRAMENT	2021	LDA	2020	30	DSL	1937.49057	0.031269377	0.003360259	0.003512195	191.1330513	0.000507713	0.030043454	0.010930759	0.012443942	0.179408006	0.001806895
SACRAMENT	2021	LHD2	2008	30	GAS	540.355428	0.155288001	0.000127495	0.000138663	953.5852865	0.002392647	0.011752155	0.008527124	0.012442759	0.214695832	0.009436499
SACRAMENT	2021	LDT2	2016	40	DSL	501.380058	0.026498435	0.00368239	0.003848892	263.5434577	0.000507523	0.041425361	0.010926671	0.012439289	0.105599121	0.002491433
SACRAMENT	2021	MH	1998	60	GAS	64.7261228	0.172371958	0.001156023	0.00125728	1767.440565	0.002914175	0.017283125	0.0851924	0.012431255	0.186121097	0.017490257
SACRAMENT	2021	LDT2	2009	30	GAS	10182.3295	0.030993334	0.000279327	0.000303794	388.1325417	0.002589463	0.004470856	0.008517304	0.01242843	0.737553039	0.003840886
SACRAMENT	2021	LDT1	2017	20	GAS	5906.07369	0.02649903	0.003828312	0.004163638	389.6010657	0.002827272	0.004334318	0.008516143	0.012426736	0.662668435	0.003855418
SACRAMENT	2021	MDV	2016	35	DSL	1227.4188	0.029825808	0.004121146	0.004307486	364.5794006	0.000506757	0.057306805	0.010910174	0.012420508	0.202908808	0.003446586
SACRAMENT	2021	MH	2018	35	GAS	130.005326	0.083744417	0.00096731	0.001052038	1486.441662	0.003019442	0.010632926	0.00851119	0.012419509	0.171547217	0.014709545
SACRAMENT	2021	MH	2003	40	GAS	132.194653	0.152241546	0.001196291	0.001301075	1579.436629	0.002933304	0.015889635	0.008510103	0.012417922	0.227532121	0.015629806
SACRAMENT	2021	LHD2	2021	20	GAS	893.468211	0.051273314	0.002097953	0.002281716	1103.147443	0.002811535	0.005943062	0.008477583	0.012370469	0.157085024	0.010916538
SACRAMENT	2021	LDA	2017	20	GAS	67974.2641	0.026257573	0.003828312	0.004163638	341.1529126	0.002815927	0.004316359	0.0084628	0.012348898	0.662575892	0.003375985
SACRAMENT	2021	LHD2	2009	25	GAS	340.036234	0.10354058	0.000183685	0.000199774	1074.53907	0.002456348	0.008990756	0.008454797	0.012337219	0.159041611	0.010633435
SACRAMENT	2021	MH	1999	60	GAS	179.392952	0.16808431	0.001156023	0.00125728	1767.435485	0.002895423	0.016984856	0.00845217	0.012333386	0.183098336	0.017490207
SACRAMENT	2021	LHD2	2012	25	GAS	283.247947	0.102987213	0.000444862	0.000483828	1074.524842	0.002490117	0.009164624	0.008450092	0.012330355	0.150078117	0.010633294
SACRAMENT	2021	LHD2	2011	25	GAS	190.591152	0.103722871	0.000304228	0.000330876	1074.530765	0.002475699	0.009146833	0.008444054	0.012321543	0.153831186	0.010633353
SACRAMENT	2021	MH	2021	45	GAS	176.127777	0.095146823	0.000788133	0.000857166	1305.990737	0.002905229	0.011385756	0.008428407	0.012298711	0.165666769	0.012923837
SACRAMENT	2021	LHD2	2010	25	GAS	62.1250057	0.103884307	0.000223866	0.000243475	1074.535369	0.002453099	0.009083666	0.008405188	0.012264831	0.156841487	0.010633399
SACRAMENT	2021	LDA	2009	40	DSL	551.2652	0.028889311	0.004745035	0.004959584	220.2366904	0.000500213	0.034618141	0.010769289	0.012260119	0.215488377	0.002082029
SACRAMENT	2021	LHD2	2013	25	GAS	243.574362	0.101146335	0.000665859	0.000724182	1074.518048	0.002490379	0.009113347	0.008400967	0.012258671	0.145925768	0.010633227
SACRAMENT	2021	MH	2000	60	GAS	162.252	0.163789212	0.001156023	0.00125728	1767.430316	0.002876934	0.016677965	0.008386085	0.012236956	0.180017225	0.017490156
SACRAMENT	2021	MDV	2008	30	GAS	14303.5133	0.032078474	0.000248776	0.000270566	496.9255325	0.002541733	0.004555455	0.008384637	0.012234842	0.746964914	0.004917481
SACRAMENT	2021	MDV	2011	40	DSL	699.754912	0.028834861	0.00472336	0.004936929	388.3095836	0.000498359	0.061036859	0.010729377	0.012214683	0.214404603	0.003670922
SACRAMENT	2021	LDT2	2017	40	DSL	955.620049	0.026146386	0.003489717	0.003647506	252.5368644	0.000498106	0.039695278	0.010723938	0.01220849	0.098187653	0.002387382
SACRAMENT	2021	LDT1	2017	40	DSL	3.92283794	0.026146382	0.003489717	0.003647506	335.3865333	0.000498106	0.052718092	0.010723927	0.012208477	0.098187923	0.003170609
SACRAMENT	2021	LDT2	2020	20	GAS	21232.3287	0.022746332	0.002701802	0.002938457	360.4484528	0.002790943	0.003883573	0.008362096	0.01220195	0.709080514	0.00356693
SACRAMENT	2021	LHD1	2021	20	GAS	5687.13056	0.039536919	0.002097953	0.002281716	963.0833905	0.002780365	0.004772218	0.008340181	0.012169972	0.157085024	0.009530491
SACRAMENT	2021	MDV	2020	20	GAS	13505.4553	0.022698697	0.002701802	0.002938457	435.0857453	0.00278378	0.003878608	0.008335915	0.012163747	0.708472217	0.004305526
SACRAMENT	2021	MDV	2018	25	GAS	40784.6807	0.026906707	0.002945734	0.003203754	408.428999	0.002662053	0.004220014	0.008328858	0.012153451	0.664940985	0.004041736
SACRAMENT	2021	MH	2001	60	GAS	68.9386248	0.159520779	0.001156023	0.00125728	1767.425088	0.002858204	0.016375141	0.008319278	0.012139472	0.17690069	0.017490104
SACRAMENT	2021	LDT2	2008	30	GAS	15243.1895	0.031402726	0.000248776	0.000270566	411.382227	0.002531676	0.004506865	0.00831839	0.012138176	0.743869439	0.004070961
SACRAMENT	2021	MDV	2007	30	GAS	18433.5436	0.032749284	0.000218224	0.000237339	511.6810726	0.002515093	0.004612081	0.008310823	0.012127133	0.760297909	0.005063499
SACRAMENT	2021	LDT2	2018	25	GAS	65164.0024	0.026842079	0.002945734	0.003203754	338.2341127	0.002652326	0.004212987	0.008294631	0.012103506	0.664165085	0.003347101
SACRAMENT	2021	LHD2	2014	25	GAS	878.397812	0.099027563	0.000927036	0.001008236	1058.397431	0.002474884	0.009055394	0.008291574	0.012099045	0.141895923	0.010473701
SACRAMENT	2021	LDT2	2007	30	GAS	20261.9328	0.031967321	0.000218224	0.000237339	423.5954802	0.002512002	0.004556586	0.00826602	0.012061756	0.757341696	0.004191821
SACRAMENT	2021	LHD1	2008	30	GAS	2901.40123	0.135506973	0.000127495	0.000138663	832.5266856	0.002322505	0.01043324	0.008254955	0.01204561	0.214705242	0.008238526
SACRAMENT	2021	MH	2002	60	GAS	140.581197	0.155298683	0.001156023	0.00125728	1767.41982	0.002838668	0.016073104	0.008250213	0.012038692	0.173765253	0.017490052
SACRAMENT	2021	MH	2020	60	GAS	260.662624	0.08898737	0.000832336	0.000905242	1610.217301	0.002867098	0.010945063	0.008242676	0.012027693	0.128884679	0.015934406
SACRAMENT	2021	LDA	2016	35	DSL	230.354166	0.029369439	0.003945445	0.004123841	196.1758074	0.000490032	0.030836105	0.010550106	0.012010594	0.193130794	0.001854567
SACRAMENT	2021	MH	2021	55	GAS	224.186737	0.095955246	0.000774755	0.000842617	1399.545802	0.002831229	0.011482496	0.008213724	0.011985446	0.1426467	0.01384964
SACRAMENT	2021	LDA	2010	40	DSL	731.526863	0.028550021	0.004609989	0.004818432	208.9409926	0.000488663	0.032842614	0.010520618	0.011977024	0.208735214	0.001975244
SACRAMENT	2021	LDT2	2018	40	DSL	1001.52414	0.025778755	0.003288514	0.003437206	241.5302711	0.000488273	0.037965195	0.01051223	0.011967475	0.09044813	0.00228333
SACRAMENT	2021	LDT1	2018	40	DSL	4.14341453	0.025778752	0.003288514	0.003437206	325.0799338	0.000488273	0.051098039	0.010512221	0.011967465	0.090448399	0.003073174
SACRAMENT	2021	MH	2003	60	GAS	177.070773	0.151134416	0.001156023	0.00125728	1767.414523	0.002818674	0.015774083	0.008177538	0.011932644	0.170621345	0.017489999
SACRAMENT	2021	LHD2	2015	25	GAS	1024.48866	0.096486339	0.001168122	0.00127044	1053.020429	0.002458572	0.008971256	0.00817686	0.011931654	0.138580497	0.010420491
SACRAMENT	2021	MDV	2012	40	DSL	1239.83553	0.028415282	0.004556355	0.004762374	378.7272432	0.000484076	0.059530649	0.010421862	0.011864596	0.20605334	0.003580334
SACRAMENT	2021	LDA	2005	30	GAS	38727.7784	0.034210848	0.000218224	0.000237339	342.5631599	0.002472319	0.004828998	0.008128222	0.011860682	0.836911625	0.00338994
SACRAMENT	2021	MDV	2017	35	DSL	1657.27978	0.029200449	0.003880377	0.004055831	349.3531559	0.00048384	0.054913451	0.010416784	0.011858816	0.189509694	0.003302644
SACRAMENT	2021	MH	1998	45	GAS	44.0665342	0.168058191	0.001094629	0.001190509	1585.0263	0.002779955	0.016850599	0.008126863	0.0118587	0.230749371	0.01568512
SACRAMENT	2021	LDT2	2004	70	GAS	741.338879	0.036209116	0.000185121	0.000201336	462.5655825	0.002407153	0.005061849	0.008115537	0.011842172	0.609441367	0.004577461
SACRAMENT	2021	LDT1	2005	30	GAS	1918.99784	0.03427437	0.000218224	0.000237339	391.3687492	0.002467743	0.004842232	0.008098657	0.011817542	0.831478419	0.003872911

SACRAMENT	2021	MH	2018	65	GAS	33.8752681	0.081420716	0.000918883	0.000999369	1659.388967	0.002870202	0.010337889	0.008090514	0.01180566	0.112389399	0.016420999
SACRAMENT	2021	MH	2021	50	GAS	171.408524	0.094991902	0.00076079	0.000827428	1344.327234	0.002788121	0.011367217	0.008088662	0.011802957	0.153294295	0.013303208
SACRAMENT	2021	LDT2	2008	45	DSL	10.1411223	0.026010144	0.004559494	0.004765654	319.8199408	0.000480726	0.050271241	0.010349738	0.011782489	0.129593765	0.003023449
SACRAMENT	2021	LDT1	2008	45	DSL	7.02292238	0.026010153	0.004559494	0.004765654	408.4035723	0.000480725	0.064195354	0.010349735	0.011782485	0.129593777	0.003860882
SACRAMENT	2021	MH	1999	45	GAS	122.133465	0.163877846	0.001094629	0.001190509	1585.020084	0.002762067	0.016559795	0.008062883	0.011765339	0.22700181	0.015685059
SACRAMENT	2021	MH	2017	35	GAS	114.261703	0.081882621	0.000928691	0.001010036	1486.433047	0.002879747	0.010448716	0.008061384	0.011763152	0.167335799	0.01470946
SACRAMENT	2021	LDT2	2004	35	GAS	28585.8427	0.035747839	0.000179417	0.000195132	416.1739791	0.002390663	0.004997365	0.00805994	0.011761045	0.99428692	0.004118379
SACRAMENT	2021	LDT1	2009	25	GAS	6837.48666	0.031708532	0.000358416	0.00038981	410.4443985	0.002548937	0.004650548	0.008051845	0.011749233	0.683038749	0.00406168
SACRAMENT	2021	LDA	2009	25	GAS	55938.9717	0.031486426	0.000358416	0.00038981	359.1975561	0.002544472	0.004630622	0.008033425	0.011722355	0.683514717	0.003554551
SACRAMENT	2021	LDT2	2019	40	DSL	1031.11677	0.025395541	0.003078784	0.003217993	230.5236779	0.000478023	0.036235112	0.010291549	0.011716244	0.082380554	0.002179278
SACRAMENT	2021	LDT1	2019	40	DSL	4.31393186	0.025395542	0.003078784	0.003217993	314.7733344	0.000478023	0.049477985	0.010291544	0.011716239	0.082380793	0.00297574
SACRAMENT	2021	LDT1	2011	25	GAS	3384.19224	0.030108847	0.000593627	0.000645624	402.8840136	0.002544261	0.00450152	0.008006287	0.011682756	0.654937332	0.003986864
SACRAMENT	2021	LDA	2011	40	DSL	1301.98828	0.028189162	0.004466357	0.004668306	216.1929286	0.000476378	0.033982518	0.010256137	0.01167593	0.201552731	0.002043801
SACRAMENT	2021	MH	2000	45	GAS	110.463643	0.159690237	0.001094629	0.001190509	1585.013757	0.002744429	0.016260583	0.007999841	0.01167335	0.223181907	0.015684996
SACRAMENT	2021	LDT2	2009	45	DSL	12.8227598	0.025804455	0.00444409	0.004645032	301.6985891	0.000475577	0.047422817	0.010238886	0.011656291	0.125541228	0.002852137
SACRAMENT	2021	LDT1	2009	45	DSL	35.6459823	0.025804464	0.00444409	0.004645032	399.8677896	0.000475576	0.062853648	0.010238881	0.011656285	0.125541258	0.003780189
SACRAMENT	2021	LDA	2011	25	GAS	71897.0181	0.029904758	0.000593627	0.000645624	352.5777474	0.002538268	0.004486297	0.007977773	0.011641147	0.655202008	0.003489043
SACRAMENT	2021	MH	2001	45	GAS	46.93447	0.155528625	0.001094629	0.001190509	1585.007358	0.002726562	0.015965338	0.007936112	0.011580356	0.219318087	0.015684933
SACRAMENT	2021	LDT2	2005	70	GAS	898.098741	0.034297271	0.000185121	0.000201336	451.5329633	0.002362664	0.004827489	0.007925304	0.011564585	0.55112283	0.004468285
SACRAMENT	2021	MH	1998	55	GAS	56.0907125	0.169486113	0.001076049	0.001170302	1698.561136	0.002709145	0.016993771	0.007919861	0.011556643	0.19868581	0.016808639
SACRAMENT	2021	MH	2019	40	GAS	177.862859	0.083833054	0.000861329	0.000936774	1438.925904	0.002780502	0.010515767	0.007909135	0.011540991	0.164486399	0.014239338
SACRAMENT	2021	LDT2	2010	45	DSL	24.2243498	0.025584671	0.004320778	0.004516144	298.8396142	0.000470075	0.046973426	0.010120436	0.011521444	0.121210966	0.002825109
SACRAMENT	2021	LDT1	2010	45	DSL	4.01684955	0.025584678	0.004320778	0.004516144	379.3590102	0.000470075	0.059629954	0.010120431	0.011521437	0.121211016	0.003586307
SACRAMENT	2021	LDA	2017	35	DSL	3271.3553	0.02881693	0.003732723	0.0039015	190.3269626	0.000469785	0.029916748	0.01011419	0.011514333	0.181292561	0.001799274
SACRAMENT	2021	MDV	2013	40	DSL	436.363864	0.027968636	0.004378578	0.004576557	366.1307437	0.000468871	0.057550654	0.010094507	0.011491925	0.197163312	0.003461252
SACRAMENT	2021	LDT2	2005	35	GAS	34630.4639	0.033860349	0.000179417	0.000195132	406.1969536	0.002346478	0.004765991	0.00787101	0.01148536	0.899141823	0.004019648
SACRAMENT	2021	MH	2002	45	GAS	95.7098283	0.151412191	0.001094629	0.001190509	1585.000912	0.002707925	0.01567086	0.007870228	0.011484218	0.215430832	0.015684869
SACRAMENT	2021	MH	2020	45	GAS	177.463101	0.086760379	0.000788133	0.000857166	1444.007756	0.002735046	0.010671152	0.007863037	0.011473726	0.159788756	0.014289627
SACRAMENT	2021	MH	1999	55	GAS	155.459312	0.165270249	0.001076049	0.001170302	1698.555752	0.002691713	0.016700496	0.00785751	0.01146566	0.195458988	0.016808586
SACRAMENT	2021	LHD1	2004	40	GAS	343.730556	0.226431978	7.97527E-05	8.67384E-05	747.1460149	0.00210306	0.0146802	0.007856369	0.011463996	0.238414812	0.007393615
SACRAMENT	2021	LHD2	2004	40	GAS	37.7133462	0.226431978	7.97527E-05	8.67384E-05	855.777455	0.002101409	0.014658451	0.007856369	0.011463996	0.238414812	0.008468612
SACRAMENT	2021	LDT1	2020	40	DSL	4.41231514	0.024996754	0.002860524	0.002989865	304.4667349	0.000467356	0.047857931	0.010061896	0.011454799	0.073985095	0.002878306
SACRAMENT	2021	LDT2	2020	40	DSL	1055.96815	0.024996745	0.002860524	0.002989865	219.5170846	0.000467356	0.034505029	0.010061894	0.011454797	0.073984928	0.002075226
SACRAMENT	2021	MH	2003	45	GAS	120.55249	0.147352138	0.001094629	0.001190509	1584.994435	0.002688853	0.015379322	0.0078009	0.011383054	0.211533075	0.015684805
SACRAMENT	2021	MH	1998	50	GAS	42.8857941	0.167784554	0.001056652	0.001149206	1631.549437	0.002667896	0.016823162	0.007799274	0.011380683	0.21351634	0.016145504
SACRAMENT	2021	LDT2	2011	45	DSL	19.7873273	0.02535079	0.004189557	0.00437899	289.342179	0.00046422	0.045480561	0.00999439	0.011377948	0.116602977	0.002735324
SACRAMENT	2021	MH	2000	55	GAS	140.605213	0.16104706	0.001076049	0.001170302	1698.550274	0.002674525	0.016398743	0.007796074	0.011376014	0.192169876	0.016808532
SACRAMENT	2021	LDA	2012	40	DSL	1610.97835	0.027806733	0.00431414	0.004509206	197.7777891	0.000463359	0.031087914	0.009975848	0.01135684	0.193940926	0.001869711
SACRAMENT	2021	MH	2016	35	GAS	144.789885	0.081315829	0.000864326	0.000940034	1544.822395	0.002783718	0.010378144	0.007755441	0.011316722	0.165084281	0.01528727
SACRAMENT	2021	LHD1	2009	25	GAS	598.459148	0.06079972	0.000183685	0.000199774	938.1062197	0.002262044	0.005552234	0.007751053	0.011310319	0.159041611	0.009283322
SACRAMENT	2021	MDV	2013	30	GAS	16263.515	0.02890257	0.00101256	0.001101252	423.9148962	0.002399267	0.004275341	0.007748352	0.011306376	0.649767169	0.004194982
SACRAMENT	2021	LHD1	2012	25	GAS	1094.42993	0.059388433	0.000444862	0.000483828	938.0919902	0.002295106	0.005595815	0.007746041	0.011303005	0.150078117	0.009283181
SACRAMENT	2021	LHD1	2011	25	GAS	696.118683	0.060165763	0.000304228	0.000330876	938.097913	0.00228093	0.00560564	0.007739975	0.011294153	0.153831186	0.009283239
SACRAMENT	2021	MH	1999	50	GAS	118.860962	0.163611015	0.001056652	0.001149206	1631.543676	0.002650729	0.016532831	0.007737872	0.011291085	0.210048657	0.016145447
SACRAMENT	2021	MH	2001	55	GAS	59.7412052	0.156850088	0.001076049	0.001170302	1698.544732	0.002657113	0.016100989	0.007733968	0.011285388	0.188842949	0.016808477
SACRAMENT	2021	MDV	2018	35	DSL	1760.85017	0.028544586	0.003627864	0.003791899	334.1269112	0.000459805	0.052520097	0.009899326	0.011269725	0.175456996	0.003158701
SACRAMENT	2021	MDV	2014	30	GAS	25990.9153	0.028604184	0.001409728	0.001533208	421.2772619	0.002396724	0.00425686	0.007721018	0.011266492	0.645450928	0.00416888
SACRAMENT	2021	LDT1	2018	20	GAS	6238.16531	0.024104177	0.003987509	0.00433678	377.8187801	0.002600789	0.00407259	0.007719395	0.011264123	0.659749849	0.003738823
SACRAMENT	2021	LHD1	2010	25	GAS	422.739813	0.060204271	0.000223866	0.000243475	938.1025292	0.002259268	0.005551729	0.007703953	0.011241591	0.156841487	0.009283285
SACRAMENT	2021	LHD1	2013	25	GAS	1587.47542	0.058823912	0.000665859	0.000724182	938.0852138	0.00229606	0.005618132	0.007700901	0.011237137	0.145925768	0.009283114
SACRAMENT	2021	LDT2	2012	45	DSL	112.628998	0.025102813	0.004050427	0.004233569	282.2020636	0.000458013	0.044358234	0.009860746	0.011225804	0.111717262	0.002667824
SACRAMENT	2021	LDT1	2012	45	DSL	2.28639852	0.025102817	0.004050427	0.004233569	359.0907911	0.000458012	0.056444072	0.009860739	0.011225795	0.111717364	0.003394699
SACRAMENT	2021	LDT2	2004	65	GAS	2802.0414	0.034653986	0.000170435	0.000185363	464.56376	0.002277632	0.00484445	0.007678864	0.01120498	0.653377174	0.004597235
SACRAMENT	2021	MH	2000	50	GAS	107.503827	0.159430224	0.001056652	0.001149206	1631.537812	0.002633803	0.016234108	0.007677372	0.011202804	0.206514036	0.016145389
SACRAMENT	2021	MH	2002	55	GAS	121.825611	0.152698679	0.001076049	0.001170302	1698.53915	0.002638951	0.015804009	0.007669762	0.011191699	0.185495844	0.016808422
SACRAMENT	2021	LDA	2018	20	GAS	72000.3948	0.023872735	0.003987509	0.00433678	330.864536	0.00258918	0.004054112	0.00766707	0.01118777	0.659574635	0.003274173
SACRAMENT	2021	LDT1	2021	40	DSL	3.91333544	0.024582389	0.002633737	0.002752823	294.1601354	0.000456272	0.046237877	0.009823277	0.011183148	0.065261292	0.002780871
SACRAMENT	2021	LDT2	2021	40	DSL	910.085291	0.024582367	0.002633737	0.002752823	208.5104913	0.000456272	0.032774946	0.009823265	0.011183134	0.065261253	0.001971174
SACRAMENT	2021	MDV	2006	20	GAS	8079.47463	0.019994389	0.000379041	0.000412241	674.2626512	0.002532748	0.003598541	0.007663311	0.011182285	0.60478077	0.006672376
SACRAMENT	2021	MH	2017	65	GAS	29.7729788	0.079610581	0.000882198	0.000959471	1659.38275	0.002737412	0.01015879	0.00766294	0.011181744	0.109630282	0.016420937
SACRAMENT	2021	MH	2020	55	GAS	225.886422	0.087497547	0.000774755	0.000842617	1547.458132	0.002665381	0.010761821	0.007662755	0.011181474	0.137585461	0.015313353
SACRAMENT	2021	LDT2	2013	30	GAS	36641.7161	0.028555807	0.00101256	0.001101252	350.9434303	0.002372003	0.004247027	0.007640158	0.0111485	0.646976298	0.00347287
SACRAMENT	2021	LHD2	2016	25	GAS	164.008286	0.084034955	0.001348938	0.001467093	1031.530056	0.002330097	0.008114796	0.00763802	0.011145381	0.136663342	0.010207826
SACRAMENT	2021	LDT1	2010	25	GAS	3690.19196	0.030672999	0.00043682	0.000475081	389.4099058	0.002438667	0.004558059	0.007634381	0.01114007	0.658585594	0.003853527
SACRAMENT	2021	LHD1	2005	40	GAS	203.344966	0.219522148	7.97527E-05	8.67384E-05	747.1453427	0.002052201	0.014438916	0.007624567	0.01112575	0.238621356	0.007393609
SACRAMENT	2021	LHD2	2005	40	GAS	51.3550449	0.219522148	7.97527E-05	8.67384E-05	855.7767828	0.002050097	0.014411127	0.007624567	0.01112575	0.238621356	0.008468605
SACRAMENT	2021	LDT2	2014	30	GAS	34181.6955	0.028329992	0.001409728	0.001533208	348.7831115	0.002371284	0.004234029	0.00762201	0.011122019	0.642947352	0.003451492
SACRAMENT	2021	MH	2001	50	GAS	45.6768851	0.155275389	0.001056652	0.001149206	1631.531881	0.002616656	0.015939343	0.007616212	0.011113558	0.202938777	0.016145331
SACRAMENT	2021	LDA	2010	25	GAS	70318.1938	0.030438351	0.00043682	0.000475081	340.7913292	0.002433695	0.004538493	0.007611925	0.011107303	0.65896965	0.003372406
SACRAMENT	2021	MDV	2014	40	DSL	1375.7254	0.027494921	0.004190026	0.00437948	363.7381603	0.000452744	0.057174573	0.009747314	0.011096669	0.18773452	0.003438634
SACRAMENT	2021	MH	2003	55	GAS	153.446946	0.148604129	0.001076049	0.001170302	1698.533539	0.002620364	0.015509994	0.0076022	0.011093112	0.182139697	0.016808366
SACRAMENT	2021	LHD1	2014	25	GAS	2177.88059	0.056079236	0.000927036	0.001008236	924.0110834	0.002282529	0.005459025	0.007600661	0.011090866	0.141895923	0.009143839
SACRAMENT	2021	MH	2019	60	GAS	238.241964	0.083223404	0.000832336	0.000905242	1610.205749	0.002671843	0.010439294	0.007600055	0.011089983	0.123344741	0.015934291
SACRAMENT	2021	MH	2005	35	GAS	79.714563	0.101933444	9.19496E-05	0.000100004	1631.498653	0.002713506	0.012154213	0.007590868	0.011076576	0.182044379	0.016145002
SACRAMENT	2021	LDT2	2013	45	DSL	195.234075	0.02484074	0.003903388	0.004079882	272.8159995	0.000451452	0.042882876	0.009719506	0.011065011	0.106553823	0.002579092
SACRAMENT	2021	LDT1	2013	45	DSL	7.40678677	0.024840742	0.003903388	0.004079882	349.2800344	0.000451452	0.054901957	0.009719497	0.011065002	0.106553954	0.003301952
SACRAMENT	2021	MDV	2007	45	DSL	83.4507003	0.027603475	0.004899716	0.00512126	425.3325623	0.000451317	0.066856356	0.00971658	0.01106168	0.22645621	0.004020922
SACRAMENT	2021	MH	2015	35	GAS	55.1994507	0.083264932	0.00074847	0.000814029	1544.820761	0.002726245	0.010528014	0.007574934	0.011053326	0.16454415	0.015287254
SACRAMENT	2021	MH	2006	35	GAS	126.214885	0.098879175	9.19496E-05	0.000100004	1631.495542	0.002710248	0.011901934	0.007574271	0.011052358	0.180126878	0.016144971
SACRAMENT	2021	MH	2007	35	GAS	78.7914178	0.096595532	9.19496E-05	0.000100004	1631.492451	0.002708351	0.01171362	0.007561952	0.011034382	0.178210253	0.01614494
SACRAMENT	2021	LDT1	2021	15	GAS	1537.52362	0.01956945	0.002396824	0.002606765	412.7828242	0.002683479	0.003675059	0.007557211	0.011027464	0.679893517	0.004084821
SACRAMENT	2021	MH	2002	50	GAS	93.1453329	0.151165657	0.001056652	0.001149206	1631.525907	0.00259877	0.015645344	0.007552983	0.011021295	0.199341834	0.016145271
SACRAMENT	2021	LDA	2013	40	DSL	2488.71267	0.027402735	0.004153337	0.004341133	192.3742817	0.000449606	0.030238558	0.00967975	0.011019752	0.1858998	0.001818629
SACRAMENT	2021	MH	2004	35	GAS	130.484054	0.104219652	9.19496E-05	0.000100004	1631.50349	0.002699604	0.012336927	0.007551545	0.011019197	0.18520321	0.01614505
SACRAMENT	2021	MH	2008	35	GAS	49.1730653	0.094321681	0.000104823	0.000114004	1631.489314	0.002705704	0.011524884	0.007547205	0.011012865	0.176271622	0.016144909
SACRAMENT	2021	MH	2020	50	GAS	172.708068	0.086619113	0.00076079	0.000827428	1486.399947	0.002624798	0.010653777	0.007546083	0.011011226	0.147855269	0.014709132
SACRAMENT	2021	LDA	2018	35	DSL	3465.1184	0.028240113	0.003510642	0.003669378	184.4781178	0.000448647	0.028997391	0.009659097	0.01099624	0.168933491	0.001743982
SACRAMENT	2021	MH	2009	35	GAS	6.57248805	0.092098669	0.000117695	0.000128005	1631.486152	0.002702111	0.011339161	0.007529505	0.010987035	0.174325008	0.016144878
SACRAMENT	2021	LHD1	2006	40	GAS	626.755813	0.211910677	7.97527E-05	8.67384E-05	747.1440011	0.002034138	0.014159353	0.007514639	0.010965344	0.238074056	0.007393596
SACRAMENT	2021	LHD2	2006	40	GAS	45.2745999	0.211910677	7.97527E-05	8.67384E-05	855.7754412	0.002031578	0.014125945	0.007514639	0.010965344	0.238074056	0.008468592
SACRAMENT	2021	MH	2010	35	GAS	7.95752163	0.089976118	0.000143441	0.000156006	1631.483004	0.002697481	0.011160743	0.007508638	0.010956587	0.172395707	0.016144847
SACRAMENT	2021	LDT2	2005	65	GAS	3394.54725	0.032824252	0.000170435	0.000185363	453.4787687	0.002235536	0.004620156	0.007498867	0.010942329	0.590854341	0.00448754
SACRAMENT	2021	LHD1	2015	25	GAS	6330.80173	0.054888372	0.001168122	0.00127044	919.3162716	0.002268277	0.005443168	0.00749561	0.010937577	0.138580497	0.00909738
SACRAMENT	2021	LDA	2021	15	GAS	15633.1891	0.019328001	0.002396824	0.002606765	361.7156088	0.002665359	0.003648013	0.007488527	0.010927241	0.679327804	0.003579469
SACRAMENT	2021	MH	2014	35	GAS	74.7629766	0.083804834	0.000593994	0.000646023	1544.821543	0.002697749	0.010546233	0.00748808	0.010926589	0.165274157	0.015287261
SACRAMENT	2021	MH	2003	50	GAS	117.322348	0.147112215	0.001056652	0.001149206	1631.519903	0.002580466	0.015354281	0.00748645	0.01092421	0.195735173	0.016145212
SACRAMENT	2021	MH	2011	35	GAS	51.4356529	0.088012018	0.000194933	0.000212008	1631.479939	0.002692235	0.010994776	0.007486021	0.010923584	0.170523361	0.016144817
SACRAMENT	2021	MDV	2011	30	GAS	11377.9107	0.029560848	0.000462635	0.000503158	449.5349787	0.002317135	0.004322676	0.007478666	0.010912852	0.653848846	0.004448513
SACRAMENT	2021	LDT2	2014	45	DSL	200.770549	0.024564572	0.003748441	0.003917929	271.0332073	0.000444539	0.042602646	0.009570669	0.01089557	0.101112658	0.002562239
SACRAMENT	2021	MH	2012	35	GAS	33.7311333	0.086275113	0.000285044	0.000310111	1631.477019	0.002687914	0.010701033	0.007466651	0.010895319	0.16873406	0.016144788
SACRAMENT	2021	MH	2013	35	GAS	62.471645	0.084841885	0.000426646	0.000464017	1631.473924	0.002687776	0.010605874	0.007461001	0.010887075	0.16679693	0.016144757
SACRAMENT	2021	MDV	2009	45	DSL	66.7825156	0.026769058	0.004659915	0.004870616	389.6504807	0.00044374	0.061247629	0.009553464	0.010875983	0.19428029	0.003683598
SACRAMENT	2021	MDV	2015	30	GAS	24887.0431	0.027816736	0.001776345	0.001931937	411.5670045	0.002321066	0.004178175	0.007433638	0.010847147	0.620771895	0.004072789
SACRAMENT	2021	LHD1	2007	40	GAS	257.203908	0.209951376	7.97527E-05	8.67384E-05	747.1418237	0.002022609	0.014222295	0.007426921	0.010837345	0.236938988	0.007393574
SACRAMENT	2021	LHD2	2007	40	GAS	38.7302307	0.209951376	7.97527E-05	8.67384E-05	855.7732638	0.002019604	0.014183064	0.007426921	0.010837345	0.236938988	0.00846857
SACRAMENT	2021	MDV	2008	45	DSL	43.7887317	0.027296274	0.004784811	0.005001159	413.0546122	0.000441063	0.064926433	0.009495832	0.010810373	0.220807183	0.003904852
SACRAMENT	2021	MDV	2010	30	GAS	8201.58786	0.029827569	0.00034043	0.000370248	464.2361608	0.002288269	0.004325731	0.007396482	0.010792929	0.641845108	0.004593993
SACRAMENT	2021	MH	2018	40	GAS	161.84323	0.08032989	0.000838999	0.000912487	1438.914332	0.002616435	0.010199388	0.007375198	0.010761871	0.158638417	0.014239224

SACRAMENT	2021	LDT2	2006	70	GAS	891.904437	0.031024649	0.000185121	0.000201336	438.4767834	0.002216156	0.004430995	0.00737462	0.010761028	0.477103157	0.004339083
SACRAMENT	2021	MH	2016	65	GAS	37.7276555	0.079059516	0.000821055	0.000892973	1724.572723	0.002646129	0.010090176	0.007372119	0.010757379	0.108155198	0.017066045
SACRAMENT	2021	LDT2	2011	30	GAS	25399.7829	0.028967485	0.000462635	0.000503158	372.1430403	0.002290499	0.004274153	0.007367784	0.010751054	0.650794899	0.003682657
SACRAMENT	2021	LHD2	2020	25	GAS	835.612011	0.062047215	0.001549843	0.001685596	967.0999994	0.002353719	0.006562136	0.007349973	0.010725063	0.153203005	0.009570238
SACRAMENT	2021	LDT2	2015	45	DSL	295.286834	0.024274307	0.003585585	0.003747709	264.7128264	0.000437273	0.04160917	0.009414234	0.01071748	0.095393769	0.002502488
SACRAMENT	2021	LDT2	2015	30	GAS	39336.2049	0.027608256	0.001776345	0.001931937	340.7637809	0.002297517	0.004160376	0.007344536	0.010717129	0.618554325	0.003372134
SACRAMENT	2021	LDT2	2006	35	GAS	34391.6131	0.030629418	0.000179417	0.000195132	394.4300141	0.002200974	0.004374547	0.007324099	0.010687308	0.778380751	0.003903205
SACRAMENT	2021	MDV	2015	40	DSL	2947.6253	0.026994138	0.0039907	0.004171142	355.2559386	0.000435696	0.055841286	0.009380283	0.010678828	0.177766962	0.003358446
SACRAMENT	2021	LHD2	2017	25	GAS	558.271624	0.074426368	0.00144939	0.001576344	1010.044055	0.002260998	0.007417354	0.007316239	0.010675839	0.136913528	0.009995205
SACRAMENT	2021	MDV	2019	25	GAS	42202.6166	0.023956391	0.002782207	0.003025903	389.9752831	0.002381955	0.00390316	0.007312323	0.010670124	0.659867226	0.003859122
SACRAMENT	2021	LDA	2014	40	DSL	3083.28058	0.026977167	0.00398395	0.004164086	192.6063381	0.000435118	0.030275034	0.009367843	0.010664666	0.177429352	0.001820823
SACRAMENT	2021	LDT2	2019	25	GAS	67089.4417	0.023946014	0.002782207	0.003025903	322.9802715	0.002380095	0.003901288	0.007306935	0.010662263	0.659731706	0.003196152
SACRAMENT	2021	MDV	2019	35	DSL	1833.59631	0.027858219	0.003363606	0.003515693	318.9006665	0.000434652	0.050126744	0.009357802	0.010653235	0.160750719	0.003014758
SACRAMENT	2021	LHD2	2019	25	GAS	727.170441	0.065611257	0.001549843	0.001685596	967.0864685	0.002307607	0.006780755	0.007297101	0.010647912	0.144810392	0.009570105
SACRAMENT	2021	LDT1	2012	25	GAS	6801.47182	0.028966932	0.000868039	0.000944072	368.6270862	0.002354264	0.004410941	0.007296229	0.010646641	0.637337378	0.003647864
SACRAMENT	2021	MDV	2010	45	DSL	130.227173	0.026438487	0.004525028	0.00472963	385.9580508	0.000433208	0.060667231	0.009326719	0.01061785	0.188122559	0.003648692
SACRAMENT	2021	LDT2	2010	30	GAS	17376.8055	0.029145358	0.00034043	0.000370248	384.3036759	0.002259188	0.004271236	0.007274648	0.010615149	0.638574876	0.003802996
SACRAMENT	2021	LDA	2012	25	GAS	116180.706	0.028730587	0.000868039	0.000944072	322.6058292	0.002348483	0.00439319	0.007267573	0.010604825	0.637562405	0.003192446
SACRAMENT	2021	LDA	2008	45	DSL	25.8830809	0.026420087	0.004517522	0.004721785	217.2728045	0.000432622	0.034152259	0.009314103	0.010603487	0.187779799	0.002054009
SACRAMENT	2021	MH	2019	45	GAS	162.198773	0.081140662	0.000788133	0.000857166	1443.994226	0.002548785	0.010178041	0.007250014	0.010579204	0.152920447	0.014289493
SACRAMENT	2021	LHD1	2004	45	GAS	423.162564	0.216845172	7.29752E-05	7.93672E-05	749.7603768	0.001938259	0.014058661	0.007240722	0.010565645	0.222811943	0.007419487
SACRAMENT	2021	LHD2	2004	45	GAS	46.428448	0.216845172	7.29752E-05	7.93672E-05	858.7761262	0.001936737	0.014037833	0.007240722	0.010565645	0.222811943	0.008498286
SACRAMENT	2021	LDA	2004	70	GAS	1343.68683	0.033689735	0.000185121	0.000201336	366.8724006	0.002163927	0.004691843	0.007226857	0.010545413	0.515166899	0.0036305
SACRAMENT	2021	LDT2	2016	45	DSL	194.277084	0.023969947	0.00341482	0.003569223	254.1006032	0.000429654	0.039941076	0.009250203	0.010530741	0.089397157	0.002402165
SACRAMENT	2021	MH	2005	65	GAS	20.7710889	0.099105043	8.73463E-05	9.49971E-05	1821.329138	0.002579388	0.011816963	0.00721568	0.010529103	0.119266629	0.018023528
SACRAMENT	2021	MH	2015	65	GAS	14.3832275	0.080954536	0.000710999	0.000773276	1724.571422	0.002591497	0.010235887	0.007200534	0.010507002	0.10780133	0.017066032
SACRAMENT	2021	MH	2006	65	GAS	32.8875993	0.096135522	8.73463E-05	9.49971E-05	1821.327079	0.00257629	0.011571685	0.007199903	0.010506081	0.118010376	0.018023508
SACRAMENT	2021	LDT1	2004	70	GAS	120.851823	0.033743311	0.000185121	0.000201336	420.2590953	0.002160939	0.004709037	0.007198837	0.010504527	0.512512351	0.004158804
SACRAMENT	2021	MH	2007	65	GAS	20.5305465	0.093915245	8.73463E-05	9.49971E-05	1821.325038	0.002574487	0.011388596	0.007188193	0.010488994	0.116754696	0.018023488
SACRAMENT	2021	LDT2	2021	20	GAS	18104.4492	0.020194231	0.001678392	0.001825405	342.5402915	0.002449327	0.003586702	0.007181488	0.010479211	0.693773964	0.003389714
SACRAMENT	2021	LDA	2004	35	GAS	51812.2296	0.033271404	0.000179417	0.000195132	331.2871602	0.002149937	0.004633584	0.007180136	0.010477238	0.84118428	0.003278355
SACRAMENT	2021	MH	2004	65	GAS	34.0000093	0.101327815	8.73463E-05	9.49971E-05	1821.332257	0.002566172	0.011994608	0.007178301	0.010474559	0.121336142	0.018023559
SACRAMENT	2021	MH	2008	65	GAS	12.8129425	0.091704488	9.95748E-05	0.000108297	1821.322964	0.002571971	0.011205097	0.007174176	0.01046854	0.115484599	0.018023467
SACRAMENT	2021	LDA	2019	35	DSL	3553.60611	0.02763899	0.003279203	0.003427474	178.6292731	0.000426618	0.028078034	0.009184827	0.010456315	0.156053578	0.001688689
SACRAMENT	2021	MH	2009	65	GAS	1.7125821	0.089543159	0.000111803	0.000121596	1821.32087	0.002568556	0.011024527	0.007157349	0.010443988	0.114209273	0.018023446
SACRAMENT	2021	LHD1	2020	25	GAS	5165.09684	0.044633641	0.001549843	0.001685596	844.312302	0.002302333	0.004940075	0.007149772	0.010432931	0.153203005	0.008355155
SACRAMENT	2021	LDT1	2004	35	GAS	4660.01623	0.033313447	0.000179417	0.000195132	378.5106488	0.002146135	0.004649048	0.007149521	0.010432564	0.836149883	0.00374567
SACRAMENT	2021	MH	2010	65	GAS	2.07347796	0.087479503	0.00013626	0.000148195	1821.318781	0.002564155	0.01085106	0.007137515	0.010415044	0.112945288	0.018023426
SACRAMENT	2021	MDV	2021	20	GAS	10969.1664	0.020076082	0.001678392	0.001825405	413.4337816	0.002433246	0.003570221	0.007126539	0.010399029	0.69234024	0.004091262
SACRAMENT	2021	LHD2	2018	25	GAS	635.752231	0.066750252	0.001509662	0.001641895	967.0777834	0.002230245	0.006830431	0.007120483	0.010390192	0.139811617	0.009570019
SACRAMENT	2021	MH	2014	65	GAS	19.4808624	0.081479458	0.000564257	0.000613681	1724.571824	0.002564409	0.010253601	0.007117973	0.010386529	0.108279595	0.017066036
SACRAMENT	2021	MH	2011	65	GAS	13.4025011	0.085569903	0.000185174	0.000201394	1821.316744	0.002559168	0.010689698	0.007116015	0.010383672	0.111718618	0.018023406
SACRAMENT	2021	MDV	2009	70	GAS	284.972323	0.030015551	0.000236955	0.00025771	484.1456961	0.002155181	0.004292927	0.007115289	0.010382614	0.418429534	0.004791014
SACRAMENT	2021	LDA	2009	45	DSL	213.606811	0.026132684	0.00440025	0.00459921	212.7317241	0.000423466	0.033438465	0.009116968	0.010379062	0.182426217	0.00201108
SACRAMENT	2021	LDT1	2007	30	GAS	3784.80022	0.031483636	0.000218224	0.000237339	383.4932565	0.002204719	0.004507784	0.007109038	0.010373492	0.701632128	0.003794977
SACRAMENT	2021	LHD1	2004	50	GAS	3124.57339	0.207571091	7.04435E-05	7.66137E-05	771.7552413	0.001902484	0.013457397	0.007107081	0.010370636	0.210743369	0.007637144
SACRAMENT	2021	LHD2	2004	50	GAS	342.821189	0.207571091	7.04435E-05	7.66137E-05	883.9735686	0.001900991	0.01343746	0.007107081	0.010370636	0.210743369	0.008747635
SACRAMENT	2021	LDA	2007	30	GAS	51220.1647	0.031308833	0.000218224	0.000237339	335.6393707	0.002202448	0.004487793	0.007104492	0.010366858	0.702301649	0.003321424
SACRAMENT	2021	MH	2012	65	GAS	8.78926436	0.083881193	0.000270774	0.000294491	1821.314807	0.00255506	0.010404105	0.007097602	0.010356805	0.110546355	0.018023386
SACRAMENT	2021	MH	2013	65	GAS	16.2781309	0.082487733	0.000405287	0.000440786	1821.312772	0.00255493	0.010311588	0.007092231	0.010348968	0.109277242	0.018023366
SACRAMENT	2021	LHD1	2016	25	GAS	10211.051	0.049439993	0.001348938	0.001467093	900.555069	0.002176621	0.005076692	0.007089847	0.010345487	0.136663342	0.008911722
SACRAMENT	2021	MH	2018	60	GAS	216.784153	0.079745715	0.000810757	0.000881772	1610.196585	0.002514188	0.010125216	0.007086984	0.01034131	0.118959468	0.015934201
SACRAMENT	2021	MDV	2011	45	DSL	271.144298	0.02608343	0.00438015	0.004578201	373.6919006	0.000421896	0.058739163	0.00908318	0.010340597	0.181508725	0.003532732
SACRAMENT	2021	LDT2	2017	45	DSL	370.288114	0.023651491	0.003236146	0.00338247	243.48838	0.000421682	0.038272983	0.009078575	0.010335354	0.083122822	0.002301841
SACRAMENT	2021	LDT1	2017	45	DSL	1.52003954	0.023651487	0.003236146	0.00338247	323.3695162	0.000421682	0.050829185	0.009078566	0.010335343	0.083123051	0.003057005
SACRAMENT	2021	MDV	2016	30	GAS	28817.3487	0.02664152	0.002051307	0.002230984	395.2302698	0.002228762	0.004070122	0.007076523	0.010326045	0.620350814	0.003911124
SACRAMENT	2021	MDV	2009	35	GAS	10988.4618	0.029633176	0.000229654	0.000249769	434.4381522	0.002140417	0.004238238	0.007066545	0.010311486	0.682656339	0.004299118
SACRAMENT	2021	MH	2019	55	GAS	206.457006	0.081830081	0.000774755	0.000842617	1547.446182	0.002483863	0.01026452	0.007065346	0.010309737	0.131671531	0.015313234
SACRAMENT	2021	LHD1	2004	55	GAS	859.405237	0.218200363	7.17366E-05	7.80201E-05	803.426482	0.001891253	0.014146522	0.007065125	0.010309414	0.192094573	0.007950556
SACRAMENT	2021	LHD2	2004	55	GAS	94.2920163	0.218200363	7.17366E-05	7.80201E-05	920.2565214	0.001889769	0.014125564	0.007065125	0.010309414	0.192094573	0.009106684
SACRAMENT	2021	LDA	2015	40	DSL	2867.56309	0.026530029	0.003805976	0.003978066	189.0498677	0.000419897	0.029716007	0.009040128	0.010291584	0.168529581	0.001787201
SACRAMENT	2021	LDT2	2009	70	GAS	469.378757	0.029514538	0.000236955	0.00025771	399.864789	0.002141965	0.004257537	0.007045385	0.01028061	0.416605732	0.003956986
SACRAMENT	2021	LHD1	2019	25	GAS	4622.62375	0.045155262	0.001549843	0.001685596	844.2985354	0.002239507	0.004896192	0.007042268	0.010276061	0.144810392	0.008355018
SACRAMENT	2021	LHD1	2005	45	GAS	250.335548	0.210227895	7.29752E-05	7.93672E-05	749.7597614	0.001891385	0.013827593	0.007027085	0.010253905	0.22300497	0.007419481
SACRAMENT	2021	LHD2	2005	45	GAS	63.2225797	0.210227895	7.29752E-05	7.93672E-05	858.7755109	0.001889446	0.013800981	0.007027085	0.010253905	0.22300497	0.00849828
SACRAMENT	2021	LDT1	2006	30	GAS	2646.28311	0.0292273	0.000218224	0.000237339	391.4286859	0.002175327	0.004268046	0.007021088	0.010245156	0.6717348	0.003873504
SACRAMENT	2021	LDA	2006	30	GAS	44640.8699	0.029100484	0.000218224	0.000237339	346.5481331	0.002173088	0.004249406	0.007020483	0.010244273	0.672413247	0.003429375
SACRAMENT	2021	MDV	2016	40	DSL	1503.89356	0.026466287	0.0037806	0.003951542	341.013881	0.000417727	0.053602633	0.008993413	0.010238403	0.167260642	0.003223808
SACRAMENT	2021	LDT2	2016	30	GAS	41842.8295	0.026484269	0.002051307	0.002230984	327.2661806	0.002210381	0.004055818	0.00700831	0.01022651	0.61859371	0.003238564
SACRAMENT	2021	LDT2	2009	35	GAS	18099.128	0.029138545	0.000229654	0.000249769	359.6334625	0.002127291	0.004203299	0.00699712	0.010210181	0.679680856	0.003558865
SACRAMENT	2021	MH	2017	40	GAS	142.244042	0.078544005	0.000805502	0.000876057	1438.906479	0.002495386	0.010022688	0.006985427	0.010193118	0.154743905	0.014239146
SACRAMENT	2021	LDT2	2006	65	GAS	3371.13461	0.029692184	0.000170435	0.000185363	440.4176838	0.002096911	0.00424069	0.006977813	0.010182009	0.511498447	0.00435829
SACRAMENT	2021	LDT2	2008	50	DSL	10.1662064	0.023859679	0.004263859	0.004456652	320.351234	0.000415377	0.050354753	0.008942827	0.010180814	0.111977191	0.003028471
SACRAMENT	2021	LDT1	2008	50	DSL	7.04029362	0.023859687	0.004263859	0.004456652	409.0820229	0.000415377	0.064301997	0.008942824	0.01018081	0.111977201	0.003867296
SACRAMENT	2021	LDT2	2004	40	GAS	35024.7728	0.034219303	0.000155618	0.000169249	402.3253949	0.002068595	0.004783684	0.006974112	0.010176608	0.916983418	0.003981336
SACRAMENT	2021	MH	2019	50	GAS	157.85274	0.081008546	0.00076079	0.000827428	1486.387336	0.002446044	0.010161469	0.00695777	0.010152762	0.141499905	0.014709008
SACRAMENT	2021	LDA	2010	45	DSL	283.455441	0.02582577	0.004275017	0.004468314	201.8209478	0.000413688	0.031723442	0.0890645	0.010139401	0.176709186	0.001907934
SACRAMENT	2021	LDT2	2018	45	DSL	388.075246	0.023318939	0.003049564	0.003187452	232.8761568	0.000413358	0.036604889	0.00889935	0.010131318	0.076570767	0.002201517
SACRAMENT	2021	LDT1	2018	45	DSL	1.60550959	0.023318936	0.003049564	0.003187452	313.4322058	0.000413357	0.049267178	0.008899342	0.010131309	0.076570994	0.002963062
SACRAMENT	2021	LHD2	2008	35	GAS	201.911195	0.149007408	0.000104823	0.000114004	883.9499603	0.001947903	0.011276841	0.006942107	0.010129906	0.196298121	0.008747401
SACRAMENT	2021	MDV	2008	70	GAS	659.354547	0.030547902	0.000211038	0.000229523	513.188709	0.002102483	0.004338099	0.006935645	0.010120477	0.421922016	0.005078418
SACRAMENT	2021	LHD1	2006	45	GAS	771.591562	0.202938682	7.29752E-05	7.93672E-05	749.7585138	0.001874737	0.013559866	0.006925771	0.010106069	0.222493488	0.007419468
SACRAMENT	2021	LHD2	2006	45	GAS	55.7370167	0.202938682	7.29752E-05	7.93672E-05	858.7742633	0.001872378	0.013527873	0.006925771	0.010106069	0.222493488	0.008498268
SACRAMENT	2021	MDV	2017	30	GAS	26808.7494	0.026298642	0.002204064	0.002397121	378.8792897	0.002191185	0.004046802	0.006925631	0.010105864	0.616930881	0.003749318
SACRAMENT	2021	LDT2	2009	50	DSL	12.854477	0.023670996	0.004155938	0.004343851	302.1997785	0.000410928	0.047501597	0.008847043	0.010071771	0.108475543	0.002856875
SACRAMENT	2021	LDT1	2009	50	DSL	35.7341529	0.023671004	0.004155938	0.004343851	400.5320603	0.000410928	0.062958062	0.008847039	0.010071766	0.108475569	0.003786468
SACRAMENT	2021	LHD1	2005	50	GAS	1848.4428	0.201236823	7.04435E-05	7.66137E-05	771.7546264	0.001856476	0.013236212	0.006897387	0.01006465	0.210925941	0.007637138
SACRAMENT	2021	LHD2	2005	50	GAS	466.826717	0.201236823	7.04435E-05	7.66137E-05	883.9729537	0.001854573	0.013210738	0.006897387	0.01006465	0.210925941	0.008747629
SACRAMENT	2021	LHD1	2017	25	GAS	3703.85279	0.046187245	0.00144939	0.001576344	881.7982148	0.002143987	0.004870266	0.006895807	0.010062345	0.136913528	0.008726108
SACRAMENT	2021	MDV	2008	35	GAS	25424.5472	0.030158744	0.000204535	0.000222451	460.4738676	0.00208808	0.004282835	0.006888131	0.010051145	0.688354228	0.004556762
SACRAMENT	2021	MDV	2012	45	DSL	480.417254	0.025703888	0.004225281	0.004416329	364.4702817	0.000409804	0.057289653	0.008822846	0.010044224	0.174438789	0.003445555
SACRAMENT	2021	LDT2	2008	70	GAS	702.671161	0.029904396	0.000211038	0.000229523	423.8458941	0.002094164	0.004291827	0.006880847	0.010040516	0.420173542	0.004194299
SACRAMENT	2021	LDT1	2014	25	GAS	13055.8708	0.027074141	0.001808882	0.001967325	359.11842	0.002243398	0.004229962	0.006880382	0.010039837	0.609657157	0.003553768
SACRAMENT	2021	LDT2	2017	30	GAS	43424.7814	0.026188584	0.002204064	0.002397121	313.7543874	0.002177755	0.004036127	0.006876718	0.01003449	0.615671728	0.003104854
SACRAMENT	2021	MDV	2007	70	GAS	849.738142	0.031186705	0.000185121	0.000201336	528.4340272	0.002080447	0.004392023	0.006874587	0.010031382	0.429453138	0.005229283
SACRAMENT	2021	MDV	2020	35	DSL	1914.88403	0.027141348	0.003087603	0.003227211	303.6744218	0.000408381	0.04773339	0.008792209	0.010009346	0.145390869	0.002870815
SACRAMENT	2021	LHD1	2005	55	GAS	508.409059	0.21154173	7.17366E-05	7.80201E-05	803.4258469	0.001845516	0.01391401	0.006856669	0.010005235	0.192260989	0.00795055
SACRAMENT	2021	LHD2	2005	55	GAS	128.399392	0.21154173	7.17366E-05	7.80201E-05	920.2558863	0.001843624	0.013887231	0.006856669	0.010005235	0.192260989	0.009106678
SACRAMENT	2021	LHD1	2007	45	GAS	316.640646	0.201062336	7.29752E-05	7.93672E-05	749.7564838	0.001864112	0.013620143	0.006844926	0.0099881	0.221432703	0.007419448
SACRAMENT	2021	LHD2	2007	45	GAS	47.6803223	0.201062336	7.29752E-05	7.93672E-05	858.7722332	0.001861342	0.013582573	0.006844926	0.0099881	0.221432703	0.008498247
SACRAMENT	2021	LDA	2014	25	GAS	150113.893	0.026845077	0.001808882	0.001967325	314.3048785	0.002235794	0.004212997	0.006844777	0.009987883	0.609689565	0.003110302
SACRAMENT	2021	MDV	2012	30	GAS	12894.0679	0.028495176	0.000676495	0.00073575	438.4127031	0.002150242	0.004231001	0.006842699	0.009984851	0.620600696	0.004338449
SACRAMENT	2021	LDA	2004	65	GAS	5078.73824	0.03225466	0.000170435	0.000185363	369.9258961	0.00204838	0.004491986	0.006840965	0.00998232	0.552821879	0.003660717
SACRAMENT	2021	LDT2	2007	70	GAS	934.0221	0.030442052	0.000185121	0.000201336	436.4358089	0.00207789	0.004339176	0.006837527	0.009977303	0.427783326	0.004318886
SACRAMENT	2021	LDT1	2013	25	GAS	10979.0618	0.027793237	0.001299259	0.001413063	358.5457741	0.002227829	0.00429945	0.006835732	0.009974683	0.614317846	0.003548101
SACRAMENT	2021	LDT2	2008	35	GAS	27094.8251	0.029523437	0.000204535	0.000222451	381.1766381	0.002079818	0.004237152	0.006833709	0.009971732	0.68550164	0.003772052
SACRAMENT	2021	MDV	2007	35	GAS	32765.6913	0.03078941	0.000179417	0.000195132	474.1472425	0.002066195	0.004336072	0.006827492	0.00996266	0.700641048	0.004692071
SACRAMENT	2021	LDT2	2010	50	DSL	24.2842688	0.023469383	0.004040621	0.00422332	299.3360543	0.000406174	0.047051459	0.008744695	0.009955254	0.104733923	0.002829802

SACRAMENT	2021	LDT1	2010	50	DSL	4.02678525	0.023469389	0.004040621	0.00422332	379.9892111	0.000406174	0.059729012	0.008744691	0.009955249	0.104733967	0.003592265
SACRAMENT	2021	LHD1	2018	25	GAS	4126.17244	0.044616354	0.001509662	0.001641895	844.2896616	0.002148759	0.004796568	0.006821872	0.00995446	0.139811617	0.008354931
SACRAMENT	2021	LDT1	2019	20	GAS	6464.62514	0.021846332	0.003766149	0.004096031	365.9964866	0.002335695	0.003809575	0.006820607	0.009952614	0.638469517	0.003621832
SACRAMENT	2021	LDT1	2004	65	GAS	456.784099	0.032294084	0.000170435	0.000185363	422.6307458	0.002044665	0.004506791	0.006811489	0.009939309	0.549460358	0.004182274
SACRAMENT	2021	LDT2	2005	40	GAS	42430.9384	0.03241252	0.000155618	0.000169249	392.6854092	0.002030363	0.004562203	0.006810635	0.009938062	0.829235631	0.00388594
SACRAMENT	2021	LDA	2013	25	GAS	149347.88	0.027546711	0.001299259	0.001413063	313.7816949	0.002220922	0.004280133	0.006803868	0.009928188	0.614438034	0.003105124
SACRAMENT	2021	LHD2	2006	50	GAS	411.554364	0.194259357	7.04435E-05	7.66137E-05	883.971758	0.00183782	0.01294931	0.006797943	0.009919542	0.210442163	0.008747617
SACRAMENT	2021	LHD1	2006	50	GAS	5697.32456	0.194259357	7.04435E-05	7.66137E-05	771.7534308	0.001840135	0.012979935	0.006797943	0.009919542	0.210442163	0.007637126
SACRAMENT	2021	LDT2	2019	45	DSL	399.541935	0.022972291	0.002855073	0.002984166	222.2639337	0.00040468	0.034936795	0.008712527	0.009918633	0.069740991	0.002101193
SACRAMENT	2021	LDT1	2019	45	DSL	1.67158244	0.022972292	0.002855073	0.002984166	303.4948954	0.00040468	0.047705171	0.008712523	0.009918628	0.069741193	0.002869118
SACRAMENT	2021	LDT2	2007	35	GAS	36015.6597	0.030054243	0.000179417	0.000195132	392.4933425	0.002063655	0.004283898	0.006790685	0.009908952	0.697916795	0.00388404
SACRAMENT	2021	LDA	2016	40	DSL	282.241192	0.026061323	0.003619418	0.003783072	183.5766578	0.000403941	0.028855694	0.008696604	0.009900505	0.159200484	0.00173546
SACRAMENT	2021	LDA	2020	35	DSL	3443.89659	0.02701356	0.003038404	0.003175788	172.7804283	0.000403698	0.027158677	0.008691382	0.009894561	0.142652811	0.001633396
SACRAMENT	2021	LDA	2011	45	DSL	504.500491	0.025499344	0.004141822	0.004329097	208.8257609	0.000403288	0.032824502	0.008682549	0.009884504	0.170628703	0.001974154
SACRAMENT	2021	LDA	2019	20	GAS	73839.0477	0.021624422	0.003766149	0.004096031	320.5356989	0.002323336	0.003790426	0.00676833	0.009876332	0.638137145	0.003171961
SACRAMENT	2021	LDT1	2008	30	GAS	6472.50888	0.030982148	0.000248776	0.000270566	372.1863436	0.002119702	0.004486936	0.00676549	0.009872187	0.696886677	0.003683086
SACRAMENT	2021	LDA	2008	30	GAS	45327.6402	0.030781654	0.000248776	0.000270566	325.7465072	0.002118515	0.004467083	0.006761324	0.009866107	0.697558147	0.003223526
SACRAMENT	2021	MH	2018	45	GAS	147.589966	0.077750005	0.0007677	0.000834943	1443.983498	0.00239839	0.009871823	0.006760574	0.009865013	0.14748367	0.014289387
SACRAMENT	2021	LHD1	2006	55	GAS	1567.0333	0.204206963	7.17366E-05	7.80201E-05	803.4247216	0.001829272	0.01364461	0.006757812	0.009860983	0.191820021	0.007950539
SACRAMENT	2021	LHD2	2006	55	GAS	113.196885	0.204206963	7.17366E-05	7.80201E-05	920.254761	0.00182697	0.013612417	0.006757812	0.009860983	0.191820021	0.009106667
SACRAMENT	2021	LDT2	2011	50	DSL	19.8362714	0.023254839	0.003917908	0.004095059	289.8228417	0.000401116	0.045556115	0.008635783	0.009831265	0.10075233	0.002739868
SACRAMENT	2021	LDT2	2012	30	GAS	24876.3503	0.027876959	0.000676495	0.00073575	362.9308436	0.002123378	0.004177179	0.006736265	0.009829541	0.617789785	0.003591495
SACRAMENT	2021	MDV	2009	65	GAS	1077.11098	0.028726426	0.000218157	0.000237265	485.0928505	0.002039217	0.004108551	0.006732437	0.009823956	0.448594928	0.004800387
SACRAMENT	2021	LDA	2005	70	GAS	1785.24928	0.032567574	0.000185121	0.000201336	351.4869832	0.002044242	0.004597043	0.006720838	0.009807031	0.472319297	0.003478249
SACRAMENT	2021	LHD1	2008	35	GAS	1084.14824	0.130026419	0.000104823	0.000114004	771.7306912	0.001890799	0.01001127	0.006720528	0.009806579	0.196306725	0.007636901
SACRAMENT	2021	MH	2016	40	GAS	180.248482	0.078000323	0.0007496 75	0.00081534	1495.429789	0.002412174	0.009954994	0.006720319	0.009806273	0.152661812	0.01479849
SACRAMENT	2021	LHD2	2007	50	GAS	352.064855	0.192463259	7.04435E-05	7.66137E-05	883.9698255	0.001826988	0.013001671	0.00671859	0.009803751	0.209438836	0.008747598
SACRAMENT	2021	LHD1	2007	50	GAS	2338.0304	0.192463259	7.04435E-05	7.66137E-05	771.7514982	0.001829706	0.013037634	0.00671859	0.009803751	0.209438836	0.007637107
SACRAMENT	2021	MH	2017	60	GAS	190.531628	0.077972818	0.000778389	0.000846569	1610.190341	0.002397869	0.009949801	0.006712444	0.009794783	0.116039059	0.015934139
SACRAMENT	2021	MDV	2017	40	DSL	2030.58026	0.025911367	0.003559727	0.003720682	326.7718235	0.000398836	0.05136398	0.008586704	0.009775392	0.15621556	0.003089169
SACRAMENT	2021	LDT1	2005	70	GAS	88.4607804	0.032639024	0.000185121	0.000201336	402.6396925	0.002041279	0.004611193	0.006699087	0.009775292	0.469659343	0.003984446
SACRAMENT	2021	LDT2	2004	60	GAS	19113.6822	0.033731266	0.00015038	0.000163552	448.2652277	0.001985992	0.004715459	0.006695623	0.009770237	0.68483504	0.004435948
SACRAMENT	2021	LHD1	2007	55	GAS	643.06877	0.202318891	7.17366E-05	7.80201E-05	803.4229318	0.001818905	0.013705263	0.006678928	0.009745876	0.190905478	0.007950521
SACRAMENT	2021	LHD2	2007	55	GAS	96.8344608	0.202318891	7.17366E-05	7.80201E-05	920.2529712	0.001816202	0.013667458	0.006678928	0.009745876	0.190905478	0.009106649
SACRAMENT	2021	LDA	2005	35	GAS	68838.7679	0.032163178	0.000179417	0.000195132	317.3693596	0.002031026	0.004539961	0.006677389	0.009743631	0.77122107	0.003140627
SACRAMENT	2021	MDV	2013	45	DSL	169.084306	0.025299861	0.004060421	0.004244015	352.3479699	0.000396932	0.055384194	0.008545717	0.009728731	0.166912749	0.003330955
SACRAMENT	2021	LDT2	2009	65	GAS	1774.11268	0.02824693	0.000218157	0.000237265	401.580241	0.002026712	0.004074681	0.006666294	0.009727441	0.446639645	0.003973962
SACRAMENT	2021	LDT1	2005	35	GAS	3411.02568	0.032223227	0.000179417	0.000195132	362.6166752	0.002027295	0.00455245	0.006653194	0.009708325	0.766236371	0.003588386
SACRAMENT	2021	LDT2	2012	50	DSL	112.907586	0.023027364	0.0037878	0.003959067	282.6708649	0.000395752	0.044431924	0.008520307	0.009699803	0.096530764	0.002672256
SACRAMENT	2021	LDT1	2012	50	DSL	2.29205394	0.023027367	0.0037878	0.003959067	359.687322	0.000395752	0.056537838	0.0085203	0.009699796	0.096530853	0.003400339
SACRAMENT	2021	LDT1	2020	45	DSL	1.70970445	0.022611556	0.002652672	0.002772615	293.5575851	0.00039565	0.046143164	0.00851811	0.009697301	0.062633638	0.002775175
SACRAMENT	2021	LDT2	2020	45	DSL	409.171463	0.022611548	0.002652672	0.002772615	211.6517105	0.00039565	0.033268701	0.008518108	0.0096973	0.062633497	0.00200087
SACRAMENT	2021	LDT1	2015	25	GAS	26386.2374	0.025884745	0.002279304	0.002478951	352.6573249	0.002168711	0.004122293	0.006595973	0.009624828	0.614103474	0.00348983
SACRAMENT	2021	LHD2	2009	30	GAS	300.703627	0.095800047	0.000143153	0.000155691	953.4687324	0.00191465	0.008318621	0.006590261	0.009616494	0.1464331	0.009435346
SACRAMENT	2021	LDA	2012	45	DSL	624.229406	0.025153407	0.004000665	0.004181557	191.0381508	0.000392266	0.030028537	0.008445264	0.009614371	0.16418477	0.001805998
SACRAMENT	2021	MH	2018	55	GAS	187.86198	0.078410616	0.000754669	0.000820771	1547.436705	0.0023373	0.0099557	0.006588372	0.009613738	0.126990216	0.015313141
SACRAMENT	2021	LHD2	2012	30	GAS	250.484144	0.095288049	0.000346698	0.000377065	953.4556352	0.001940972	0.008479491	0.006586594	0.009611143	0.138180214	0.009435216
SACRAMENT	2021	LHD2	2011	30	GAS	168.545129	0.095968711	0.000237096	0.000257864	953.4610921	0.001929733	0.00846303	0.006581887	0.009604275	0.141635748	0.00943527
SACRAMENT	2021	MH	2005	40	GAS	99.2364139	0.097777292	7.97527E-05	8.67384E-05	1579.334481	0.002351333	0.011658646	0.006577711	0.00959818	0.168345675	0.015628795
SACRAMENT	2021	MH	2015	40	GAS	68.7176262	0.079869955	0.000649187	0.00070605	1495.428323	0.002362372	0.010098753	0.006563904	0.009578033	0.152162326	0.014798476
SACRAMENT	2021	MH	2006	40	GAS	157.124522	0.094847555	7.97527E-05	8.67384E-05	1579.331608	0.00234851	0.011416654	0.006563329	0.009577194	0.166572465	0.015628767
SACRAMENT	2021	MDV	2008	65	GAS	2492.16491	0.029235913	0.000194296	0.000211314	514.1904217	0.001989355	0.004151784	0.006562459	0.009575924	0.45233919	0.005088331
SACRAMENT	2021	LDA	2015	25	GAS	175212.489	0.025653383	0.002279304	0.002478951	308.6758256	0.002161335	0.004105026	0.006560609	0.009573225	0.614109389	0.003054598
SACRAMENT	2021	MH	2007	40	GAS	98.0871933	0.092657024	7.97527E-05	8.67384E-05	1579.328753	0.002346866	0.011236019	0.006552654	0.009561618	0.164800065	0.015628738
SACRAMENT	2021	LDT2	2013	50	DSL	195.716988	0.022786959	0.003650295	0.003815345	273.2692085	0.000390083	0.042954114	0.008398266	0.009560868	0.092069226	0.002583377
SACRAMENT	2021	LDT1	2013	50	DSL	7.42510749	0.02278696	0.003650295	0.003815345	349.8602674	0.000390083	0.054993162	0.008398259	0.00956086	0.09206934	0.003307438
SACRAMENT	2021	LHD2	2010	30	GAS	54.9388938	0.096118078	0.000174467	0.000189749	953.4653548	0.001912117	0.008404585	0.006551593	0.009560069	0.144407398	0.009435313
SACRAMENT	2021	MDV	2007	50	DSL	83.657116	0.025321276	0.004582021	0.0047892	427.4638923	0.000389966	0.067191371	0.008395738	0.00955799	0.195672455	0.004041071
SACRAMENT	2021	LHD2	2013	30	GAS	215.399674	0.093584793	0.000518928	0.000564381	953.44941	0.001941176	0.008432047	0.006548302	0.009555268	0.134357055	0.009435155
SACRAMENT	2021	MH	2004	40	GAS	162.439197	0.099970285	7.97527E-05	8.67384E-05	1579.338964	0.002339286	0.011833911	0.006543636	0.009548459	0.171266807	0.015628839
SACRAMENT	2021	MH	2008	40	GAS	61.2153975	0.090475885	9.09181E-05	9.88817E-05	1579.325856	0.002344572	0.011054977	0.006539876	0.009542972	0.163007314	0.01562871
SACRAMENT	2021	LDT2	2005	60	GAS	23155.3671	0.031950252	0.00015038	0.000163552	437.5629307	0.001949286	0.004497136	0.006538674	0.009541217	0.619301948	0.00433004
SACRAMENT	2021	MH	2009	40	GAS	8.18207013	0.088343512	0.000102083	0.000111025	1579.322937	0.002341459	0.010876827	0.006524538	0.00952059	0.161207182	0.015628681
SACRAMENT	2021	LDT2	2008	65	GAS	2655.88888	0.028620045	0.000194296	0.000211314	425.6620684	0.001981483	0.004107499	0.006510609	0.009500266	0.450464665	0.004212271
SACRAMENT	2021	MH	2010	40	GAS	9.90629416	0.086307504	0.000124414	0.000135312	1579.320031	0.002337447	0.010705684	0.006506456	0.009494206	0.159423059	0.015628652
SACRAMENT	2021	MDV	2007	65	GAS	3211.75851	0.02984728	0.000170435	0.000185363	529.465005	0.001968505	0.004203392	0.006504686	0.009491623	0.460413246	0.005239485
SACRAMENT	2021	LDA	2017	40	DSL	4008.22454	0.025571047	0.003424274	0.003579104	178.1034479	0.00038725	0.027995382	0.008337272	0.00949143	0.149442059	0.001683718
SACRAMENT	2021	MDV	2018	30	GAS	28484.141	0.024946498	0.002295718	0.002496803	362.5155425	0.002075555	0.003912577	0.006493861	0.009475826	0.612769821	0.003587385
SACRAMENT	2021	MH	2014	40	GAS	93.0721993	0.080387844	0.000515203	0.00056033	1495.429068	0.002337679	0.010116229	0.006488642	0.009468212	0.1528374	0.014798483
SACRAMENT	2021	MH	2018	50	GAS	143.635369	0.077623411	0.000741065	0.000805976	1486.377336	0.002301713	0.00985575	0.006488059	0.00946736	0.136469162	0.014708909
SACRAMENT	2021	LDT1	2021	45	DSL	1.51635747	0.02223673	0.002442364	0.002552796	283.6202747	0.000386267	0.044581158	0.008316102	0.009467329	0.055248319	0.002681232
SACRAMENT	2021	LDT2	2021	45	DSL	352.644094	0.02223671	0.002442364	0.002552796	201.0394873	0.000386267	0.031600608	0.008316092	0.009467317	0.055248286	0.001900546
SACRAMENT	2021	MH	2011	40	GAS	64.0320858	0.084423488	0.000169076	0.000183885	1579.317202	0.002332901	0.010546484	0.006486858	0.009465607	0.157691606	0.015628624
SACRAMENT	2021	MH	2012	40	GAS	41.9917839	0.082757402	0.000247233	0.000268889	1579.314507	0.002329157	0.010264717	0.006470073	0.009441115	0.156036948	0.015628597
SACRAMENT	2021	LDT2	2007	65	GAS	3530.32691	0.029134609	0.000170435	0.000185363	438.3054685	0.001966085	0.004152814	0.00646962	0.009440454	0.458623053	0.004337388
SACRAMENT	2021	LDT2	2018	30	GAS	45510.731	0.024886578	0.002295718	0.002496803	300.2299129	0.002067971	0.003906063	0.006467174	0.009436885	0.612054798	0.002971018
SACRAMENT	2021	MH	2013	40	GAS	77.7707584	0.081382611	0.000370053	0.000402466	1579.311646	0.002329037	0.010173439	0.006465177	0.009433971	0.154245586	0.015628569
SACRAMENT	2021	LHD2	2014	30	GAS	776.791946	0.091624417	0.000722473	0.000785755	939.145038	0.001929098	0.008378427	0.006463034	0.009430844	0.130646689	0.009293601
SACRAMENT	2021	MH	2016	60	GAS	241.437435	0.07743309	0.000724441	0.000787895	1673.44719	0.002317909	0.009882599	0.006457697	0.009423056	0.114477743	0.016560117
SACRAMENT	2021	LDT2	2014	50	DSL	201.267156	0.022533623	0.003505394	0.003663893	271.4834547	0.00038411	0.042673418	0.008269662	0.00941446	0.087367717	0.002566495
SACRAMENT	2021	MDV	2009	50	DSL	66.9477025	0.024555847	0.004357769	0.004554808	391.6030088	0.000383419	0.06155454	0.008254796	0.009397536	0.16787043	0.003702057
SACRAMENT	2021	MDV	2014	45	DSL	533.072497	0.024871348	0.003885569	0.004061258	350.0454539	0.00038328	0.055022271	0.008251794	0.009394119	0.158930606	0.003309188
SACRAMENT	2021	MDV	2013	70	GAS	749.705499	0.027523531	0.000858963	0.0009342	437.7787496	0.001984637	0.00407135	0.00640932	0.009352464	0.367020015	0.004332176
SACRAMENT	2021	MH	2017	45	GAS	129.716846	0.076021477	0.00073705	0.000801609	1443.976218	0.002287429	0.009700798	0.006403285	0.009343658	0.143863003	0.014289315
SACRAMENT	2021	MDV	2008	50	DSL	43.8970434	0.025039474	0.004474567	0.004676887	415.1244177	0.000381106	0.065251778	0.008204998	0.009340844	0.19079134	0.003924419
SACRAMENT	2021	LDT1	2016	25	GAS	23769.0964	0.024907557	0.00263212	0.00286267	342.6088513	0.002116146	0.004025092	0.006401311	0.009340778	0.608811755	0.003390392
SACRAMENT	2021	LDA	2013	45	DSL	964.337993	0.024787958	0.003851547	0.004025697	185.8187777	0.000380623	0.029208124	0.008194596	0.009329002	0.157377385	0.001756656
SACRAMENT	2021	MDV	2014	70	GAS	1198.11321	0.027234406	0.001195883	0.001300632	434.9799402	0.001982101	0.004053011	0.006385315	0.009317437	0.364410638	0.004304479
SACRAMENT	2021	LDT2	2004	45	GAS	13571.5623	0.033288556	0.000142393	0.000154866	403.6636396	0.001892984	0.00465357	0.006382054	0.009312679	0.851435931	0.003994579
SACRAMENT	2021	LHD2	2015	30	GAS	905.984203	0.089273171	0.000910361	0.0009901	934.3737728	0.001916384	0.008300579	0.006373618	0.009300368	0.127594104	0.009246386
SACRAMENT	2021	MDV	2018	40	DSL	2157.47976	0.02532938	0.003328079	0.00347856	312.529766	0.000379024	0.049125327	0.008160157	0.009289796	0.144631719	0.00295453
SACRAMENT	2021	MDV	2013	35	GAS	28908.4574	0.027172902	0.000832495	0.000905414	392.8185092	0.001971041	0.004019484	0.006365412	0.009288394	0.598783115	0.003887258
SACRAMENT	2021	LDA	2016	25	GAS	182426.5	0.024682726	0.00263212	0.00286267	299.9049995	0.002108245	0.004008436	0.006363784	0.009286018	0.608738926	0.002967803
SACRAMENT	2021	LDA	2005	65	GAS	6747.71354	0.0311803	0.000170435	0.000185363	354.4102935	0.001935086	0.004401224	0.006361966	0.009283366	0.506842426	0.003507177
SACRAMENT	2021	LDT2	2015	50	DSL	296.017227	0.022267357	0.003353098	0.00350471	265.1525741	0.000377832	0.041678292	0.008134493	0.009260579	0.082426236	0.002506645
SACRAMENT	2021	MDV	2014	35	GAS	46198.9471	0.026892223	0.001159034	0.001260555	390.3720846	0.001968937	0.004002087	0.006342909	0.009255558	0.594796252	0.003863048
SACRAMENT	2021	LDT1	2005	65	GAS	334.35555	0.031237224	0.000170435	0.000185363	404.9097073	0.001931444	0.004413149	0.006338629	0.009249313	0.503517993	0.00400691
SACRAMENT	2021	LDT2	2006	40	GAS	42138.2867	0.02931974	0.000155618	0.000169249	381.3123658	0.001904461	0.004187497	0.006337403	0.009247523	0.717863453	0.003773395
SACRAMENT	2021	MH	2005	60	GAS	132.9242	0.097066237	7.70682E-05	8.38187E-05	1767.336166	0.002259446	0.011573863	0.006320661	0.009223094	0.126238728	0.017489224
SACRAMENT	2021	LDT2	2013	70	GAS	1689.08726	0.027193314	0.000858963	0.0009342	361.5663305	0.001962085	0.004044387	0.006319823	0.009221872	0.365443595	0.003577992
SACRAMENT	2021	MH	2015	60	GAS	92.0451992	0.079289125	0.000627335	0.000682284	1673.445948	0.002270053	0.010025313	0.006307394	0.009203735	0.11410319	0.016560104
SACRAMENT	2021	MH	2006	60	GAS	210.463585	0.094157806	7.70682E-05	8.38187E-05	1767.333999	0.002256733	0.01133363	0.006306842	0.009202929	0.124909036	0.017489203
SACRAMENT	2021	LDT2	2014	70	GAS	1575.68675	0.026973345	0.001195883	0.001300632	359.2658247	0.001961062	0.004031272	0.006303435	0.009197957	0.362997162	0.003555227
SACRAMENT	2021	LDT2	2004	55	GAS	24759.0729	0.032758037	0.000139976	0.000152237	433.1257183	0.001868185	0.004579406	0.006298447	0.009190678	0.742432838	0.00428613
SACRAMENT	2021	MH	2007	60	GAS	131.384853	0.091983204	7.70682E-05	8.38187E-05	1767.331848	0.002255153	0.011154308	0.006296584	0.009187961	0.123579953	0.017489181
SACRAMENT	2021	MH	2004	60	GAS	217.582432	0.099243282	7.70682E-05	8.38187E-05	1767.339497	0.00224787	0.011747852	0.006287919	0.009175316	0.128429221	0.017489257
SACRAMENT	2021	MDV	2010	50	DSL	130.54929	0.024252607	0.004231628	0.004422963	387.8920761	0.000374319	0.060971233	0.008058874	0.009174492	0.162549762	0.003666975
SACRAMENT	2021	MH	2008	60	GAS	81.9961889	0.089817927	8.78577E-05	9.55533E-05	1767.329664	0.002252949	0.010974583	0.006284306	0.009170044	0.122235608	0.01748916

SACRAMENT	2021	LDA	2008	50	DSL	25.9471029	0.024235729	0.004224609	0.004415627	217.8258899	0.000373813	0.034239196	0.008047972	0.009162081	0.162253595	0.002059238
SACRAMENT	2021	LDT1	2009	30	GAS	4775.3208	0.029398067	0.000279327	0.000303794	364.3221684	0.001987319	0.004311682	0.006277746	0.009160472	0.629420514	0.003605263
SACRAMENT	2021	LDT2	2013	35	GAS	65130.7845	0.026846891	0.000832495	0.000905414	325.1751919	0.001948644	0.003992865	0.006276529	0.009158696	0.59621123	0.003217872
SACRAMENT	2021	LDT1	2017	25	GAS	19075.1417	0.02419233	0.002828129	0.003075848	332.5561074	0.002082813	0.003957022	0.006273727	0.009154608	0.605969652	0.003290912
SACRAMENT	2021	MH	2009	60	GAS	10.9596375	0.087701061	9.86473E-05	0.000107288	1767.327461	0.002249958	0.010797729	0.006269567	0.009148537	0.120885728	0.017489138
SACRAMENT	2021	LDA	2009	30	GAS	39067.9424	0.029192303	0.000279327	0.000303794	318.8525663	0.001983853	0.004293232	0.006263433	0.009139587	0.629869146	0.003155305
SACRAMENT	2021	LDT2	2014	35	GAS	60758.0889	0.026634442	0.001159034	0.001260555	323.1712246	0.001948038	0.003980622	0.006261572	0.009136872	0.592489155	0.003198041
SACRAMENT	2021	MH	2010	60	GAS	13.2691839	0.085679859	0.000120226	0.000130757	1767.325265	0.002246102	0.01062783	0.006252192	0.009123184	0.119547854	0.017489116
SACRAMENT	2021	LDT1	2011	30	GAS	2363.52981	0.027914944	0.000462635	0.000503158	357.6104718	0.001983673	0.004173513	0.006242226	0.009108642	0.603525045	0.003538846
SACRAMENT	2021	MH	2017	55	GAS	165.111926	0.0766674	0.00072454	0.000788003	1547.430262	0.002229165	0.009783222	0.006240184	0.009105662	0.123872655	0.015313077
SACRAMENT	2021	LDT2	2016	50	DSL	194.757629	0.021988161	0.003193405	0.003337797	254.5227217	0.000371248	0.040007427	0.007992559	0.009099225	0.077244785	0.002406155
SACRAMENT	2021	MH	2014	60	GAS	124.667419	0.079803248	0.00049786	0.000541469	1673.446439	0.002246325	0.010042662	0.006235074	0.009098205	0.114609413	0.016560109
SACRAMENT	2021	LDA	2017	25	GAS	219539.882	0.02397095	0.002828129	0.003075848	291.1296525	0.002074363	0.003940472	0.006234154	0.009096862	0.605827885	0.002880964
SACRAMENT	2021	MH	2011	60	GAS	85.7690584	0.083809544	0.000163385	0.000177696	1767.323126	0.002241734	0.010469788	0.006233359	0.009095703	0.118249475	0.017489095
SACRAMENT	2021	LDT2	2005	45	GAS	16441.338	0.031530917	0.000142393	0.000154866	393.9994157	0.001857998	0.004438113	0.006232455	0.009094384	0.769960501	0.003898944
SACRAMENT	2021	LHD2	2021	25	GAS	688.245975	0.04734077	0.001549843	0.001685596	942.9088041	0.002063392	0.005487243	0.006221716	0.009078714	0.143302318	0.009330847
SACRAMENT	2021	LDA	2011	30	GAS	50213.089	0.027725877	0.000462635	0.000503158	312.975405	0.001979016	0.004159422	0.006220043	0.009076271	0.603778557	0.003097145
SACRAMENT	2021	MH	2012	60	GAS	56.2467351	0.082155574	0.000238911	0.000259838	1767.32109	0.002238136	0.01019007	0.00621723	0.009072168	0.117008684	0.017489075
SACRAMENT	2021	LDA	2004	40	GAS	63482.8782	0.031847725	0.000155618	0.000169249	320.1483964	0.001860229	0.004435314	0.0062126	0.009065411	0.775721659	0.003168128
SACRAMENT	2021	MH	2013	60	GAS	104.171598	0.080790781	0.000357596	0.000388919	1767.31894	0.002238021	0.010099456	0.006212526	0.009065303	0.11566538	0.017489054
SACRAMENT	2021	LDA	2018	40	DSL	4245.63256	0.025059202	0.003220544	0.003366163	172.630238	0.000369826	0.027135069	0.007962132	0.009064358	0.1392543	0.001631977
SACRAMENT	2021	MDV	2015	45	DSL	1142.1596	0.02441835	0.003700727	0.003868058	341.8825404	0.000368848	0.053739174	0.007941076	0.009040387	0.15049236	0.003232019
SACRAMENT	2021	LDA	2014	45	DSL	1194.72394	0.024402998	0.003694467	0.003861515	186.0429264	0.000368359	0.029243357	0.007930544	0.009028398	0.150206549	0.001758775
SACRAMENT	2021	LDT1	2004	40	GAS	5709.67984	0.031889003	0.000155618	0.000169249	365.877795	0.00185701	0.00445026	0.006186344	0.009027098	0.771141168	0.003620657
SACRAMENT	2021	MDV	2011	70	GAS	524.491921	0.0281504	0.000392457	0.000426833	464.2635372	0.001916699	0.004116426	0.00618624	0.009026947	0.369325544	0.004594264
SACRAMENT	2021	LDT2	2004	50	GAS	13605.1317	0.03276712	0.000137453	0.000149493	416.1217911	0.001833964	0.004580676	0.006183071	0.009022323	0.796193503	0.004117862
SACRAMENT	2021	MH	2016	45	GAS	164.374298	0.075495255	0.000685967	0.000746052	1500.699836	0.002211151	0.009635278	0.00616027	0.008989052	0.141927314	0.014850641
SACRAMENT	2021	LDT2	2020	25	GAS	68575.1143	0.020765056	0.001995931	0.002170757	307.7030992	0.002055911	0.003545302	0.006159826	0.008988404	0.648317538	0.003044972
SACRAMENT	2021	LDT2	2005	55	GAS	29994.5043	0.031028409	0.000139976	0.000152237	422.7756638	0.001833657	0.004367383	0.006150807	0.008975244	0.671388109	0.004183708
SACRAMENT	2021	MDV	2015	70	GAS	1147.22759	0.026479831	0.001506887	0.001638877	424.8879089	0.001919112	0.003977367	0.006146308	0.008968678	0.35031276	0.00420461
SACRAMENT	2021	LDA	2009	50	DSL	214.135169	0.023972088	0.004114941	0.004301	213.2732498	0.000365901	0.033523585	0.007877636	0.008968164	0.157627763	0.002016199
SACRAMENT	2021	MH	2017	50	GAS	126.24115	0.075897696	0.000711479	0.000773799	1486.370547	0.002195224	0.009685003	0.006145172	0.008967021	0.133118897	0.014708842
SACRAMENT	2021	MDV	2011	35	GAS	20224.2779	0.027791785	0.000380364	0.000413681	416.5598447	0.001903569	0.004063986	0.00614386	0.008965106	0.602544522	0.004122197
SACRAMENT	2021	MDV	2020	25	GAS	43619.2446	0.02072157	0.001995931	0.002170757	371.4981727	0.002050634	0.003540769	0.00614054	0.008960262	0.647761367	0.003676276
SACRAMENT	2021	LDT2	2008	55	DSL	18.5008018	0.02213402	0.00401426	0.004195767	334.9533124	0.000364762	0.052649996	0.007853106	0.008940239	0.098332302	0.003166513
SACRAMENT	2021	LDT1	2008	55	DSL	12.8121614	0.022134028	0.00401426	0.004195767	427.7285806	0.000364762	0.067232976	0.007853103	0.008940236	0.098332311	0.004043573
SACRAMENT	2021	MDV	2011	50	DSL	271.814974	0.023926906	0.004096144	0.004281353	375.5644606	0.000364545	0.059033503	0.007848441	0.008934928	0.156834992	0.003550435
SACRAMENT	2021	LHD1	2021	25	GAS	4380.84385	0.036417115	0.001549843	0.001685596	823.1912059	0.002040516	0.004395649	0.006120877	0.008931569	0.143302318	0.008146144
SACRAMENT	2021	LDT2	2017	50	DSL	371.204024	0.021696034	0.003026316	0.003163153	243.8928692	0.00036436	0.038336563	0.007844462	0.008930398	0.071823364	0.002305665
SACRAMENT	2021	LDT1	2017	50	DSL	1.52379937	0.02169603	0.003026316	0.003163153	323.906706	0.00036436	0.050913624	0.007844454	0.008930389	0.071823562	0.003062083
SACRAMENT	2021	MDV	2010	70	GAS	378.071746	0.028404395	0.000288789	0.000314085	479.4715001	0.001892822	0.004119336	0.006118259	0.008927748	0.36254525	0.004744759
SACRAMENT	2021	MDV	2009	40	GAS	13463.601	0.028366096	0.000199191	0.000216638	420.0924344	0.001852062	0.004057016	0.006114546	0.008922332	0.629581392	0.004157155
SACRAMENT	2021	MDV	2015	35	GAS	44236.8103	0.026151758	0.001460454	0.001588377	381.3720941	0.001906769	0.003928089	0.006106776	0.008910994	0.572045091	0.003773986
SACRAMENT	2021	LDT2	2011	70	GAS	1170.86355	0.027585349	0.000392457	0.000426833	383.4343825	0.001894666	0.004070218	0.00609452	0.00889311	0.367600526	0.003794394
SACRAMENT	2021	LDT2	2006	60	GAS	22995.6615	0.028901581	0.00015038	0.000163552	424.9280879	0.001828412	0.004127775	0.006084339	0.008878253	0.53612534	0.004205008
SACRAMENT	2021	MDV	2010	35	GAS	14578.3524	0.028042545	0.000279891	0.000304406	430.1830578	0.001879855	0.004066859	0.006076344	0.008866588	0.591482659	0.00425701
SACRAMENT	2021	LDT2	2015	70	GAS	1813.29615	0.026281371	0.001506887	0.001638877	350.9396467	0.001899642	0.003960423	0.006072636	0.008861177	0.349061345	0.003472832
SACRAMENT	2021	MDV	2013	65	GAS	2833.66474	0.026341435	0.000790818	0.000860086	438.6339384	0.00187785	0.003896491	0.006064453	0.008849236	0.393479198	0.004340638
SACRAMENT	2021	LDT2	2009	55	DSL	23.3930064	0.021958984	0.003912657	0.00408957	315.9744871	0.000360855	0.049666789	0.007768994	0.008844483	0.095257345	0.002987095
SACRAMENT	2021	LDT1	2009	55	DSL	65.0302046	0.021958991	0.003912657	0.00408957	418.7888982	0.000360855	0.065827783	0.007768991	0.008844479	0.095257368	0.003959061
SACRAMENT	2021	LDT2	2009	40	GAS	22175.937	0.027892615	0.000199191	0.000216638	347.6790089	0.001840704	0.004023571	0.006054474	0.008834675	0.626837246	0.003440566
SACRAMENT	2021	LDT2	2011	35	GAS	45148.207	0.027233932	0.000380364	0.000413681	344.818823	0.001881686	0.004018367	0.006052769	0.008832186	0.599730204	0.003412262
SACRAMENT	2021	MDV	2014	65	GAS	4528.51308	0.026069929	0.001101009	0.001197448	435.9110313	0.001875891	0.003879714	0.006043162	0.008818168	0.390879763	0.004313693
SACRAMENT	2021	LHD1	2009	30	GAS	529.234295	0.056254428	0.000143153	0.000155691	832.4089248	0.001763196	0.005137158	0.006041714	0.008816055	0.1464331	0.008237361
SACRAMENT	2021	LDT2	2005	50	GAS	16482.0057	0.031037012	0.000137453	0.000149493	406.1686051	0.001800068	0.004368594	0.006038137	0.008810835	0.720004319	0.004019368
SACRAMENT	2021	LHD1	2012	30	GAS	967.835236	0.054948646	0.000346698	0.000377065	832.3958265	0.001788967	0.00517748	0.006037807	0.008810355	0.138180214	0.008237231
SACRAMENT	2021	LDT2	2015	35	GAS	69920.2482	0.025955757	0.001460454	0.001588377	315.7386895	0.001887424	0.003911355	0.006033578	0.008804183	0.570001586	0.00312449
SACRAMENT	2021	LHD1	2011	30	GAS	615.597375	0.055667865	0.000237096	0.000257864	832.4012834	0.001777917	0.005186571	0.006033079	0.008803455	0.141635748	0.008237285
SACRAMENT	2021	MH	2005	45	GAS	90.496828	0.094637065	7.29752E-05	7.93672E-05	1584.899578	0.002155381	0.011284216	0.006029546	0.0087983	0.156508357	0.015683866
SACRAMENT	2021	MDV	2019	40	DSL	2246.6119	0.024720324	0.003085658	0.003225178	298.2877084	0.00035829	0.046886674	0.00771377	0.008781614	0.132509124	0.002819892
SACRAMENT	2021	LDT2	2010	70	GAS	801.025281	0.027754735	0.000288789	0.000314085	395.9890605	0.001868766	0.004067441	0.006017479	0.008780691	0.360698065	0.003918633
SACRAMENT	2021	MH	2015	45	GAS	62.6657792	0.077304842	0.000594018	0.000646049	1500.698481	0.0021655	0.00977442	0.00601689	0.008779832	0.141462949	0.014850628
SACRAMENT	2021	MH	2006	45	GAS	143.286827	0.09180142	7.29752E-05	7.93672E-05	1584.896908	0.002152793	0.011049996	0.006016363	0.008779063	0.154859831	0.01568384
SACRAMENT	2021	LDT1	2020	20	GAS	6561.29543	0.019527098	0.002701802	0.002938457	354.1889648	0.002095676	0.003536162	0.006010767	0.008770897	0.632867505	0.003504987
SACRAMENT	2021	MH	2007	45	GAS	89.4488174	0.08968124	7.29752E-05	7.93672E-05	1584.894254	0.002151286	0.010875161	0.006006578	0.008764785	0.153212058	0.015683813
SACRAMENT	2021	LHD1	2010	30	GAS	373.840733	0.055703494	0.000174467	0.000189749	832.4055556	0.001761032	0.00513669	0.006005001	0.008762484	0.144407398	0.008237328
SACRAMENT	2021	LDA	2010	50	DSL	284.15657	0.023690548	0.003997827	0.004178591	202.3346992	0.000357452	0.031804197	0.007695735	0.008761082	0.152687887	0.001912791
SACRAMENT	2021	MH	2016	55	GAS	209.226154	0.076136708	0.000674324	0.000733389	1608.220598	0.00215483	0.009717145	0.00600336	0.008760088	0.122205938	0.015914647
SACRAMENT	2021	LHD1	2013	30	GAS	1403.84927	0.054426328	0.000518928	0.000564381	832.3896148	0.00178971	0.005198129	0.006002622	0.008759013	0.134357055	0.00823717
SACRAMENT	2021	LDT2	2018	50	DSL	389.035153	0.021390977	0.002851832	0.002980779	233.2630167	0.000357167	0.036665698	0.0076896	0.008754098	0.066161974	0.002205174
SACRAMENT	2021	LDT1	2018	50	DSL	1.60948083	0.021390974	0.002851832	0.002980779	313.9528875	0.000357167	0.049349022	0.007689593	0.008754091	0.066162171	0.002967984
SACRAMENT	2021	MH	2004	45	GAS	148.133447	0.096759627	7.29752E-05	7.93672E-05	1584.903748	0.002144338	0.011453852	0.005998312	0.008752723	0.159224088	0.015683907
SACRAMENT	2021	MH	2008	45	GAS	55.8242593	0.087570151	8.31918E-05	9.04786E-05	1584.891562	0.002149183	0.010699934	0.005994865	0.008747693	0.151545365	0.015683787
SACRAMENT	2021	LDT2	2010	55	DSL	44.1933233	0.021771952	0.003804091	0.003976095	312.9802301	0.00035668	0.049196134	0.007679118	0.008742165	0.091971657	0.002958789
SACRAMENT	2021	LDT1	2010	55	DSL	7.32807825	0.021771958	0.003804091	0.003976095	397.3096759	0.00035668	0.062451548	0.007679114	0.00874216	0.091971695	0.003756005
SACRAMENT	2021	MH	2009	45	GAS	7.46148882	0.085506262	9.34083E-05	0.00010159	1584.888848	0.00214633	0.010527506	0.005980805	0.008727176	0.14987181	0.01568376
SACRAMENT	2021	LDT2	2013	65	GAS	6384.2496	0.026025399	0.000790818	0.000860086	363.1162797	0.001856511	0.003870687	0.005979773	0.00872567	0.391789131	0.00359333
SACRAMENT	2021	LDT2	2010	35	GAS	30887.3355	0.02740116	0.000279891	0.000304406	356.0869967	0.001855964	0.004015625	0.005976255	0.008720538	0.588469027	0.003523769
SACRAMENT	2021	LDA	2015	45	DSL	1111.13672	0.023998526	0.003529426	0.003689011	182.6076492	0.000355472	0.028703379	0.00765311	0.008712557	0.142672261	0.001726299
SACRAMENT	2021	LDT2	2014	65	GAS	5955.62924	0.02582003	0.001101009	0.001197448	360.8871505	0.00185598	0.003858905	0.005965669	0.00870509	0.389363618	0.003571271
SACRAMENT	2021	MH	2010	45	GAS	9.03386332	0.083535642	0.000113841	0.000123813	1584.886148	0.002142652	0.010361859	0.00596423	0.008702991	0.148213139	0.015683733
SACRAMENT	2021	LDA	2004	60	GAS	34643.8096	0.031390743	0.00015038	0.000163552	356.3390645	0.001785762	0.004371671	0.005963901	0.008702511	0.579207524	0.003526264
SACRAMENT	2021	LDA	2020	20	GAS	71092.8857	0.019312224	0.002701802	0.002938457	310.2214011	0.002083204	0.003515505	0.005960726	0.008697877	0.632433868	0.003069892
SACRAMENT	2021	MDV	2008	40	GAS	31151.399	0.028869192	0.000177404	0.000192943	445.2711838	0.001806776	0.004099706	0.005960169	0.008697064	0.634836283	0.004406319
SACRAMENT	2021	LHD2	2008	40	GAS	59.5995804	0.145916618	9.09181E-05	9.88817E-05	855.6764225	0.001671677	0.011042931	0.005957667	0.008693414	0.179840527	0.008467612
SACRAMENT	2021	LHD2	2016	30	GAS	145.03715	0.077752632	0.001051276	0.001143359	915.3049996	0.001816241	0.007508147	0.005953608	0.008687491	0.125828937	0.009057685
SACRAMENT	2021	LDT1	2010	30	GAS	2577.24092	0.028437989	0.00034043	0.000370248	345.6519221	0.001901344	0.004225933	0.005952263	0.008685529	0.606886921	0.003420506
SACRAMENT	2021	MH	2014	45	GAS	84.8754855	0.077806098	0.00047142	0.000512712	1500.699179	0.002142864	0.009791335	0.005947901	0.008679163	0.142090555	0.014850635
SACRAMENT	2021	MDV	2012	50	DSL	481.605569	0.023578743	0.003951316	0.004129977	366.2966324	0.000354097	0.05757673	0.007623496	0.008678843	0.150726121	0.00346282
SACRAMENT	2021	MH	2011	45	GAS	58.3928865	0.081712133	0.000154708	0.000168259	1584.883519	0.002138485	0.010207772	0.005946265	0.008676776	0.146603434	0.015683707
SACRAMENT	2021	MDV	2016	45	DSL	582.735691	0.023940866	0.003505894	0.003664415	328.1766166	0.000353635	0.051584794	0.007613563	0.008667535	0.141598014	0.003102449
SACRAMENT	2021	LDT1	2004	60	GAS	3115.88048	0.031434201	0.00015038	0.000163552	407.5631793	0.001782856	0.00438679	0.005939312	0.008666629	0.575914987	0.004033168
SACRAMENT	2021	LDA	2010	30	GAS	49110.4334	0.028220592	0.00034043	0.000370248	302.5142909	0.001897483	0.004207816	0.005934802	0.008660048	0.607250495	0.002993624
SACRAMENT	2021	MH	2012	45	GAS	38.2936373	0.080099555	0.000226223	0.000246038	1584.881014	0.002135052	0.009935054	0.005930879	0.008654325	0.145065125	0.015683682
SACRAMENT	2021	MH	2013	45	GAS	70.9216171	0.078768917	0.000338605	0.000368264	1584.878355	0.002134943	0.009846708	0.005926391	0.008647776	0.143399723	0.015683656
SACRAMENT	2021	LHD1	2014	30	GAS	1925.9612	0.05188684	0.000722473	0.000785755	819.9011352	0.001779163	0.005050917	0.005924488	0.008644999	0.130646689	0.008113586
SACRAMENT	2021	LDT2	2011	55	DSL	36.098709	0.021572925	0.003688561	0.003855342	303.0333913	0.000352238	0.047632629	0.007583477	0.008633284	0.088475238	0.002864755
SACRAMENT	2021	LDT2	2008	40	GAS	33197.9051	0.028261049	0.000177404	0.000192943	368.5088	0.001799626	0.004055977	0.005913078	0.008628349	0.632205477	0.003646693
SACRAMENT	2021	MH	2016	50	GAS	159.969973	0.075372332	0.000662169	0.000720169	1544.760939	0.002122021	0.00961959	0.005911953	0.008626708	0.131327771	0.015286662
SACRAMENT	2021	MDV	2007	40	GAS	40146.1278	0.029472891	0.000155618	0.000169249	458.493824	0.001787839	0.004150666	0.005907698	0.0086205	0.646167831	0.004537168
SACRAMENT	2021	LDA	2019	40	DSL	4354.05203	0.024525788	0.00300823	0.003144248	167.157028	0.000351667	0.026274757	0.007571185	0.008619291	0.128637203	0.001580235
SACRAMENT	2021	LDT1	2007	70	GAS	174.46939	0.029981446	0.000185121	0.000201336	394.621588	0.00182371	0.004292702	0.005880489	0.008580796	0.396315859	0.003905101
SACRAMENT	2021	MH	2005	55	GAS	115.19017	0.095441157	7.17366E-05	7.80201E-05	1698.450996	0.00210048	0.011380093	0.005875966	0.008574195	0.134760886	0.016807549
SACRAMENT	2021	LDT2	2007	40	GAS	44128.1481	0.028769159	0.000155618	0.000169249	379.45008	0.001785641	0.004100723	0.00587585	0.008574027	0.643655382	0.003754966
SACRAMENT	2021	LDA	2007	70	GAS	2361.11561	0.029804953	0.000185121	0.000201336	344.4700426	0.001821099	0.004272228	0.005874365	0.008571859	0.396350834	0.00340881
SACRAMENT	2021	LDT2	2019	50	DSL	400.530204	0.021072989	0.002669951	0.002790675	222.6331643	0.000349669	0.034994833	0.007528173	0.008570325	0.060260617	0.002104684
SACRAMENT	2021	LDT1	2019	50	DSL	1.67571711	0.02107299	0.002669951	0.002790675	303.999069	0.000349669	0.04778442	0.00752817	0.008570321	0.060260791	0.002873884
SACRAMENT	2021	MDV	2009	60	GAS	7347.34217	0.027961538	0.000192486	0.000209346	468.5122368	0.001778105	0.003999155	0.005870381	0.008566047	0.470193233	0.004636308

SACRAMENT	2021	MH	2015	55	GAS	79.7650251	0.077961669	0.000583936	0.000635084	1608.219362	0.002110341	0.009857469	0.005863632	0.008556198	0.121806098	0.015914634
SACRAMENT	2021	MH	2006	55	GAS	182.384668	0.092581419	7.17366E-05	7.80201E-05	1698.44869	0.002097958	0.011143883	0.005863118	0.008555448	0.133341429	0.016807527
SACRAMENT	2021	MH	2007	55	GAS	113.856195	0.090443225	7.17366E-05	7.80201E-05	1698.4464	0.00209649	0.010967563	0.005853582	0.008541534	0.131922621	0.016807504
SACRAMENT	2021	MDV	2011	65	GAS	1982.42412	0.026941381	0.000361322	0.000392971	465.1683949	0.001813568	0.003939632	0.005853377	0.008541233	0.395950937	0.004603218
SACRAMENT	2021	LDA	2011	50	DSL	505.748376	0.023391111	0.003873268	0.0040484	209.3573436	0.000348466	0.032908059	0.00750227	0.008540835	0.147433966	0.00197918
SACRAMENT	2021	MDV	2016	70	GAS	1328.40439	0.025356469	0.00174014	0.001892561	407.9340904	0.001842391	0.003873801	0.00584976	0.008535956	0.349911019	0.004036839
SACRAMENT	2021	MH	2004	55	GAS	188.553757	0.097581754	7.17366E-05	7.80201E-05	1698.454571	0.002089719	0.01155117	0.005845527	0.008529779	0.137099255	0.016807585
SACRAMENT	2021	LHD1	2015	30	GAS	5598.50642	0.050785003	0.000910361	0.0009901	815.7351897	0.001768054	0.005036245	0.005842604	0.008525514	0.127594104	0.008072361
SACRAMENT	2021	MH	2008	55	GAS	71.0566996	0.088314199	8.17797E-05	8.89429E-05	1698.444076	0.002094441	0.010790847	0.005842168	0.008524877	0.130487522	0.016807481
SACRAMENT	2021	LDT1	2007	35	GAS	6727.49624	0.029599505	0.000179417	0.000195132	355.3210345	0.001811217	0.004238017	0.005840204	0.008522012	0.646578484	0.00351619
SACRAMENT	2021	LDT2	2012	55	DSL	205.472996	0.021361903	0.003566069	0.003727311	295.5554169	0.000347528	0.046457196	0.007482072	0.008517842	0.084768087	0.002794062
SACRAMENT	2021	LDT1	2012	55	DSL	4.17115629	0.021361906	0.003566069	0.003727311	376.0823969	0.000347528	0.059114916	0.007482066	0.008517835	0.084768165	0.003555331
SACRAMENT	2021	LDA	2007	35	GAS	91044.0302	0.029434861	0.000179417	0.000195132	310.9560978	0.001809326	0.004219179	0.005836388	0.008516444	0.64717685	0.003077163
SACRAMENT	2021	MH	2009	55	GAS	9.49746179	0.086232774	9.18229E-05	9.98657E-05	1698.441733	0.00209166	0.010616954	0.005828465	0.008504883	0.129046515	0.016807458
SACRAMENT	2021	MDV	2015	65	GAS	4336.18051	0.025352674	0.00138734	0.001508858	425.8762763	0.001816705	0.003808063	0.00581833	0.008490094	0.375948121	0.004214391
SACRAMENT	2021	MDV	2016	35	GAS	51222.9428	0.025046746	0.00168652	0.001834244	366.2316215	0.001830927	0.003826483	0.00581336	0.008482842	0.571648157	0.003624159
SACRAMENT	2021	LDT2	2009	60	GAS	12101.829	0.02749481	0.000192486	0.000209346	387.4757595	0.001767201	0.003966186	0.005812708	0.00848189	0.468143809	0.003834387
SACRAMENT	2021	MH	2010	55	GAS	11.4988809	0.08424541	0.000111909	0.000121711	1698.4394	0.002088076	0.0104499	0.005812313	0.008481314	0.127618323	0.016807435
SACRAMENT	2021	LDT1	2006	70	GAS	121.986729	0.027832767	0.000185121	0.000201336	402.7280492	0.001799398	0.004064403	0.005807739	0.008474638	0.379428398	0.003985321
SACRAMENT	2021	LDA	2006	70	GAS	2057.82733	0.02770268	0.000185121	0.000201336	355.675541	0.001796822	0.004045291	0.005804902	0.0084705	0.379483021	0.003519698
SACRAMENT	2021	LDT2	2006	45	GAS	16327.9399	0.028522259	0.000142393	0.000154866	382.5990647	0.001742784	0.004073599	0.005799398	0.008462468	0.66654939	0.003786128
SACRAMENT	2021	MH	2014	55	GAS	108.034965	0.078467185	0.000463418	0.00050401	1608.219928	0.002088283	0.009874528	0.0057964	0.008458093	0.122346496	0.01591464
SACRAMENT	2021	MH	2011	55	GAS	74.3262132	0.082406408	0.000152082	0.000165403	1698.437127	0.002084015	0.010294503	0.005794805	0.008455766	0.126232292	0.016807412
SACRAMENT	2021	LDT2	2016	70	GAS	1928.84498	0.025206803	0.00174014	0.001892561	336.950777	0.001827196	0.003860186	0.005793373	0.008453676	0.348919918	0.003334401
SACRAMENT	2021	MDV	2010	65	GAS	1428.99923	0.027184467	0.000265878	0.000289167	480.4039619	0.001790975	0.003942416	0.005789053	0.008447373	0.388681839	0.004753987
SACRAMENT	2021	MH	2005	50	GAS	88.0720122	0.094482974	7.04435E-05	7.66137E-05	1631.431868	0.002068499	0.011265843	0.005786499	0.008443646	0.14481986	0.016144341
SACRAMENT	2021	MH	2012	55	GAS	48.742599	0.080780129	0.000222383	0.000241862	1698.434963	0.00208067	0.010019469	0.005779811	0.008433887	0.124907737	0.016807391
SACRAMENT	2021	LDA	2005	40	GAS	84344.6259	0.030786919	0.000155618	0.000169249	306.7010735	0.001757342	0.004345696	0.005777599	0.008430658	0.711203124	0.003035056
SACRAMENT	2021	MH	2013	55	GAS	90.2735854	0.079438184	0.000332858	0.000362013	1698.432671	0.002080563	0.009930371	0.005775438	0.008427505	0.12347375	0.016807368
SACRAMENT	2021	MH	2015	50	GAS	60.986682	0.077178972	0.00057341	0.000623636	1544.759664	0.00207821	0.009758505	0.005774353	0.008425922	0.130898086	0.015286649
SACRAMENT	2021	MH	2006	50	GAS	139.44753	0.091651946	7.04435E-05	7.66137E-05	1631.429396	0.002066015	0.011032004	0.005773847	0.008425184	0.14329445	0.016144316
SACRAMENT	2021	LDT2	2008	60	DSL	14.2823783	0.021426797	0.003903271	0.00407976	362.823005	0.000343552	0.057030724	0.007396464	0.008420383	0.092614484	0.003429982
SACRAMENT	2021	LDT2	2008	65	DSL	2.09377842	0.021397532	0.003903271	0.00407976	407.5318858	0.000343552	0.064058337	0.007396464	0.008420383	0.092614484	0.003852642
SACRAMENT	2021	LDT2	2008	70	DSL	0.55395304	0.021465321	0.003903271	0.00407976	439.6879438	0.000343552	0.069112822	0.007396464	0.008420383	0.092614484	0.004156632
SACRAMENT	2021	LDT1	2008	60	DSL	9.89082193	0.021426805	0.003903271	0.00407976	463.3176123	0.000343552	0.072827077	0.007396462	0.00842038	0.092614492	0.004380018
SACRAMENT	2021	LDT1	2008	65	DSL	1.44998186	0.02139754	0.003903271	0.00407976	520.4099456	0.000343552	0.081801196	0.007396462	0.00842038	0.092614492	0.004919745
SACRAMENT	2021	LDT1	2008	70	DSL	0.38362314	0.021465328	0.003903271	0.00407976	561.4725789	0.000343552	0.08825567	0.007396462	0.00842038	0.092614492	0.005307935
SACRAMENT	2021	LDT1	2006	35	GAS	4703.77791	0.027478199	0.000179417	0.000195132	362.6711946	0.001787071	0.004012626	0.005767952	0.008416582	0.619027053	0.003588925
SACRAMENT	2021	LHD1	2008	40	GAS	320.015839	0.127329343	9.09181E-05	9.88817E-05	747.0441749	0.00162267	0.009803611	0.00576751	0.008415937	0.17984841	0.007392608
SACRAMENT	2021	LDA	2006	35	GAS	79349.3097	0.027358691	0.000179417	0.000195132	321.0622955	0.001785206	0.00399506	0.005767374	0.008415739	0.619634437	0.003177172
SACRAMENT	2021	LDT2	2011	65	GAS	4425.51744	0.026400597	0.000361322	0.000392971	385.0760798	0.00179272	0.003895408	0.005766592	0.008414598	0.394101559	0.00381064
SACRAMENT	2021	MH	2007	50	GAS	87.0520825	0.089535218	7.04435E-05	7.66137E-05	1631.426938	0.002064569	0.010857454	0.005764456	0.008411481	0.141769738	0.016144292
SACRAMENT	2021	MDV	2013	50	DSL	169.502536	0.02320812	0.003797145	0.003968835	354.1135761	0.000342974	0.055661723	0.007384039	0.008406237	0.144223147	0.003347647
SACRAMENT	2021	LDT2	2016	35	GAS	74375.7825	0.024898908	0.00168652	0.001834244	303.2300359	0.001815827	0.003813035	0.005757324	0.008401073	0.570029	0.003000707
SACRAMENT	2021	LDT1	2005	40	GAS	4179.35552	0.0308454	0.000155618	0.000169249	350.516828	0.00175418	0.004357792	0.005756882	0.008400428	0.70666327	0.003468648
SACRAMENT	2021	MH	2004	50	GAS	144.164288	0.09660208	7.04435E-05	7.66137E-05	1631.435722	0.002057901	0.011435202	0.005756523	0.008399905	0.147332772	0.016144379
SACRAMENT	2021	LDT2	2013	55	DSL	356.17231	0.021138885	0.003436613	0.003592002	285.7252193	0.00034255	0.044912026	0.007374903	0.008395836	0.080850207	0.002701131
SACRAMENT	2021	LDT1	2013	55	DSL	13.5124586	0.021138886	0.003436613	0.003592002	365.8074108	0.00034255	0.057499831	0.007374896	0.008395829	0.080850307	0.003458196
SACRAMENT	2021	MH	2008	50	GAS	54.3284771	0.087427566	8.03056E-05	8.73396E-05	1631.424445	0.002062551	0.010682512	0.005753215	0.008395078	0.140227519	0.016144267
SACRAMENT	2021	MDV	2007	55	DSL	152.242013	0.023489907	0.004313798	0.004508849	451.123736	0.000342447	0.070910369	0.007372682	0.008393309	0.171828949	0.004264742
SACRAMENT	2021	LDT2	2015	65	GAS	6853.7224	0.025162661	0.00138734	0.001508858	352.6021651	0.001798274	0.003791841	0.00574859	0.008388329	0.374605129	0.003489284
SACRAMENT	2021	LDA	2016	45	DSL	109.364134	0.023574544	0.003356423	0.003508186	177.3209489	0.000341964	0.027872384	0.007362293	0.008381481	0.134774518	0.001676321
SACRAMENT	2021	LDT1	2020	50	DSL	1.71393341	0.020742079	0.002480675	0.00259284	294.0452505	0.000341866	0.046219819	0.007360184	0.00837908	0.054119416	0.002779785
SACRAMENT	2021	LDT2	2020	50	DSL	410.183551	0.020742072	0.002480675	0.00259284	212.0033118	0.000341866	0.033323968	0.007360183	0.008379079	0.054119293	0.002004194
SACRAMENT	2021	MH	2009	50	GAS	7.26156208	0.085367038	9.01677E-05	9.80656E-05	1631.421933	0.002059812	0.010510365	0.005739722	0.008375389	0.13867895	0.016144243
SACRAMENT	2021	LHD2	2020	30	GAS	738.955257	0.057408662	0.00120785	0.001313647	858.1356773	0.001834654	0.006071561	0.005729084	0.008359866	0.141057367	0.008491948
SACRAMENT	2021	MH	2010	50	GAS	8.79180561	0.083399627	0.000109892	0.000119517	1631.419431	0.002056283	0.010344988	0.005723816	0.008352178	0.137144153	0.016144218
SACRAMENT	2021	MDV	2017	70	GAS	1235.81322	0.025025565	0.001869725	0.002033496	390.9734547	0.001810934	0.003850903	0.005723778	0.008352123	0.347819065	0.003868999
SACRAMENT	2021	LDT2	2006	55	GAS	29787.6283	0.0280677	0.000139976	0.000152237	410.5761143	0.001719953	0.004008678	0.005723423	0.008351605	0.581215963	0.004062983
SACRAMENT	2021	MDV	2008	60	GAS	16999.9087	0.028457458	0.000171433	0.000186449	496.6124496	0.001734628	0.004041236	0.005722168	0.008349774	0.474117768	0.004914383
SACRAMENT	2021	LDT2	2009	60	DSL	18.0590966	0.021257354	0.003804477	0.003976498	342.265052	0.000339872	0.0537993	0.007317243	0.008330195	0.089718329	0.003235636
SACRAMENT	2021	LDT2	2009	65	DSL	2.6474405	0.02122832	0.003804477	0.003976498	384.4406782	0.000339872	0.060428721	0.007317243	0.008330195	0.089718329	0.003634347
SACRAMENT	2021	LDT2	2009	70	DSL	0.70043597	0.021295572	0.003804477	0.003976498	414.7747383	0.000339872	0.065196813	0.007317243	0.008330195	0.089718329	0.003921113
SACRAMENT	2021	LDT1	2009	60	DSL	50.2024719	0.021257361	0.003804477	0.003976498	453.6341062	0.000339872	0.071304964	0.00731724	0.008330191	0.08971835	0.004288474
SACRAMENT	2021	LDT1	2009	65	DSL	7.35961827	0.021228327	0.003804477	0.003976498	509.5331891	0.000339872	0.080091522	0.00731724	0.008330191	0.08971835	0.004816921
SACRAMENT	2021	LDT1	2009	70	DSL	1.94714152	0.021295579	0.003804477	0.003976498	549.7375984	0.000339872	0.086411095	0.00731724	0.008330191	0.08971835	0.005196997
SACRAMENT	2021	MH	2014	50	GAS	82.6012907	0.077679412	0.000455065	0.000494925	1544.760299	0.002056487	0.009775393	0.005708144	0.008329311	0.13147882	0.015286655
SACRAMENT	2021	MH	2011	50	GAS	56.8282793	0.081579087	0.00014934	0.000162421	1631.416996	0.002052284	0.010191151	0.005706574	0.00832702	0.135654665	0.016144194
SACRAMENT	2021	LHD2	2017	30	GAS	493.695334	0.068862369	0.001129563	0.001228503	896.240119	0.001762381	0.006862845	0.005702789	0.008321497	0.126059289	0.008869023
SACRAMENT	2021	MDV	2019	30	GAS	29474.4316	0.022211184	0.002168275	0.002358197	346.1390508	0.001857175	0.003618817	0.00570131	0.008319338	0.608099362	0.003425327
SACRAMENT	2021	LDT2	2019	30	GAS	46855.4634	0.022201563	0.002168275	0.002358197	286.6927681	0.001855725	0.003617082	0.00569711	0.008313209	0.607974474	0.002837057
SACRAMENT	2021	LDT2	2010	65	GAS	3027.63832	0.026562708	0.000265878	0.000289167	397.6825419	0.001768214	0.00389275	0.005693696	0.008308228	0.386701486	0.003935391
SACRAMENT	2021	LDA	2012	50	DSL	625.773441	0.023073775	0.003741264	0.003910428	191.5244538	0.000338943	0.030104977	0.007297241	0.008307424	0.141866001	0.001810595
SACRAMENT	2021	MH	2012	50	GAS	37.2675791	0.079969135	0.000218375	0.000237503	1631.414676	0.00204899	0.009918878	0.005691809	0.008305474	0.134231241	0.016144171
SACRAMENT	2021	MDV	2017	35	GAS	47652.6503	0.024724256	0.001812112	0.001970837	351.0780559	0.001800044	0.003804538	0.00568936	0.0083019	0.568487877	0.003474202
SACRAMENT	2021	LDT1	2012	30	GAS	4750.16792	0.026856235	0.000676495	0.00073575	327.2051835	0.001835538	0.004089534	0.005688618	0.008300818	0.58730668	0.003237961
SACRAMENT	2021	LHD2	2019	30	GAS	643.057319	0.060706262	0.00120785	0.001313647	858.1232512	0.001798711	0.006273837	0.005687872	0.008299729	0.133330104	0.008491825
SACRAMENT	2021	MH	2013	50	GAS	69.021309	0.078640663	0.000326858	0.000355488	1631.412215	0.002048885	0.009830675	0.005687502	0.008299189	0.132690216	0.016144146
SACRAMENT	2021	LDT1	2018	25	GAS	20147.7146	0.022005506	0.002945734	0.003203754	322.4931684	0.001915923	0.003718003	0.005686646	0.00829794	0.603271853	0.003191331
SACRAMENT	2021	LDA	2004	45	GAS	24598.6418	0.030981516	0.000142393	0.000154866	321.2138549	0.001702312	0.00431468	0.005685204	0.008295836	0.720275257	0.003178671
SACRAMENT	2021	LDT2	2017	70	GAS	2001.76883	0.024920834	0.001869725	0.002033496	322.9551176	0.001799834	0.003840745	0.005683353	0.008293136	0.347109168	0.003195903
SACRAMENT	2021	LDT2	2008	60	GAS	18116.7259	0.027857989	0.000171433	0.000186449	410.708961	0.001727764	0.00399813	0.005676958	0.008283803	0.472152991	0.004064298
SACRAMENT	2021	MDV	2007	60	GAS	21908.5026	0.029052548	0.00015038	0.000163552	511.3642616	0.001716447	0.004091469	0.005671793	0.008276267	0.482580562	0.005060364
SACRAMENT	2021	MDV	2017	45	DSL	786.818711	0.023438897	0.003301069	0.003450329	314.4706928	0.000337643	0.049430414	0.007269255	0.008275563	0.132247567	0.002972879
SACRAMENT	2021	LDA	2012	30	GAS	81140.9468	0.026637257	0.000676495	0.00073575	286.3720629	0.001831045	0.004073099	0.00566632	0.008268281	0.587523396	0.002833884
SACRAMENT	2021	LDT2	2014	55	DSL	366.272691	0.020903872	0.003300195	0.003449415	283.8580682	0.000337305	0.044618535	0.007261969	0.008267269	0.076721596	0.00268348
SACRAMENT	2021	LDT1	2004	45	GAS	2212.41338	0.031021639	0.000142393	0.000154866	367.1047404	0.001699362	0.004329215	0.005661163	0.008260755	0.716018726	0.003632799
SACRAMENT	2021	MDV	2012	70	GAS	594.382801	0.027135575	0.000573876	0.000624142	452.7899441	0.001778648	0.004029126	0.005660178	0.008259318	0.350545376	0.004480724
SACRAMENT	2021	MDV	2009	55	DSL	121.833665	0.022779838	0.004102673	0.004288178	413.2779762	0.000336698	0.064961543	0.007248914	0.008252407	0.147414717	0.003906963
SACRAMENT	2021	MDV	2020	40	DSL	2346.20959	0.0240842	0.002832463	0.002960534	284.0456509	0.000336635	0.044648021	0.007247544	0.008250847	0.119847779	0.002685253
SACRAMENT	2021	LDT2	2017	35	GAS	77187.7079	0.024620786	0.001812112	0.001970837	290.7083384	0.001789012	0.003794502	0.005649178	0.008243267	0.567327596	0.002876795
SACRAMENT	2021	LDA	2018	25	GAS	232543.278	0.021793346	0.002945734	0.003203754	282.3438445	0.001907285	0.003700986	0.005647845	0.008241322	0.603053948	0.002794021
SACRAMENT	2021	MDV	2006	25	GAS	26094.6835	0.018255369	0.000280013	0.000304539	575.7387394	0.00186601	0.003285557	0.005645968	0.008238583	0.5531415	0.005697402
SACRAMENT	2021	LDT2	2010	60	DSL	34.1166707	0.021076298	0.003698912	0.003866161	339.0216587	0.00033594	0.053289484	0.007232593	0.008233826	0.086623697	0.003204974
SACRAMENT	2021	LDT2	2010	65	DSL	5.00146035	0.021047511	0.003698912	0.003866161	380.7976177	0.00033594	0.059856083	0.007232593	0.008233826	0.086623697	0.003599907
SACRAMENT	2021	LDT2	2010	70	DSL	1.32324134	0.021114191	0.003698912	0.003866161	410.8442243	0.00033594	0.064578991	0.007232593	0.008233826	0.086623697	0.003883955
SACRAMENT	2021	LDT1	2010	60	DSL	5.65718108	0.021076304	0.003698912	0.003866161	430.3677115	0.00033594	0.067647811	0.007232589	0.008233822	0.086623733	0.004068523
SACRAMENT	2021	LDT1	2010	65	DSL	0.82933552	0.021047517	0.003698912	0.003866161	483.3997918	0.00033594	0.075983716	0.007232589	0.008233822	0.086623733	0.004569866
SACRAMENT	2021	LDT1	2010	70	DSL	0.21941812	0.021114197	0.003698912	0.003866161	521.5421612	0.00033594	0.081979165	0.007232589	0.008233822	0.086623733	0.004930449
SACRAMENT	2021	LDT2	2007	60	GAS	24081.5666	0.028358852	0.00015038	0.000163552	422.9076137	0.001714337	0.004042239	0.005641217	0.00823165	0.480704177	0.004185014
SACRAMENT	2021	MDV	2012	35	GAS	22919.2529	0.026789889	0.000556193	0.00060491	406.2537744	0.001766463	0.003977798	0.005621402	0.008202737	0.571905192	0.00402021
SACRAMENT	2021	MDV	2008	55	DSL	79.8853053	0.023228486	0.004212634	0.00440311	438.1012796	0.000334667	0.06886342	0.007205185	0.008202624	0.167542618	0.004141633
SACRAMENT	2021	LDT2	2006	50	GAS	16368.3271	0.028075482	0.000137453	0.000149493	394.4353155	0.001688447	0.00400979	0.005618581	0.00819862	0.623302674	0.003903257
SACRAMENT	2021	LDA	2004	55	GAS	44876.1572	0.030489458	0.000139976	0.000152237	344.8330382	0.001680108	0.004246153	0.005611049	0.00818763	0.628142449	0.003412402
SACRAMENT	2021	LDT1	2021	50	DSL	1.52010819	0.020398243	0.002284002	0.002387275	284.091432	0.000333759	0.044655217	0.007185637	0.008180369	0.047738034	0.002685686
SACRAMENT	2021	LDT2	2021	50	DSL	353.516361	0.020398225	0.002284002	0.002387275	201.3734593	0.000333759	0.031653104	0.007185628	0.00818036	0.047738006	0.001903703
SACRAMENT	2021	LDT1	2008	70	GAS	298.365728	0.029503885	0.000211038	0.000229523	382.9749214	0.001753386	0.004272849	0.005596311	0.008166124	0.393635398	0.003789847
SACRAMENT	2021	MDV	2009	45	GAS	5216.93891	0.027594553	0.000182263	0.000198228	421.5244387	0.001694833	0.003946667	0.00559546	0.008164883	0.584577876	0.004171326

SACRAMENT	2021	LDA	2008	70	GAS	2089.48564	0.029303096	0.000211038	0.000229523	334.3052906	0.001751699	0.004252513	0.005590615	0.008157813	0.393673792	0.003308222
SACRAMENT	2021	LDA	2020	40	DSL	4219.63056	0.023970805	0.002787329	0.00291336	161.6838181	0.000332774	0.025414445	0.007164431	0.008156228	0.117590759	0.001528494
SACRAMENT	2021	LDT1	2004	55	GAS	4036.18263	0.030527247	0.000139976	0.000152237	393.9893927	0.001677099	0.004260221	0.005586999	0.008152536	0.624352104	0.003898844
SACRAMENT	2021	LHD1	2020	30	GAS	4567.64074	0.041319849	0.00120785	0.001313647	749.1833065	0.0017946	0.004573303	0.005573034	0.008132158	0.141057367	0.007413776
SACRAMENT	2021	LDT2	2015	55	DSL	538.702035	0.020656864	0.003156813	0.00329955	277.2386168	0.000331791	0.04357805	0.007143271	0.008132139	0.072382255	0.002620902
SACRAMENT	2021	LDT2	2011	60	DSL	27.8677337	0.02088363	0.003586577	0.003748746	328.2471962	0.000331756	0.051595888	0.007142514	0.008131277	0.083330587	0.003103116
SACRAMENT	2021	LDT2	2011	65	DSL	4.08537417	0.020855107	0.003586577	0.003748746	368.6954715	0.000331756	0.057953794	0.007142514	0.008131277	0.083330587	0.003485498
SACRAMENT	2021	LDT2	2011	70	DSL	1.08087151	0.020921177	0.003586577	0.003748746	397.7871656	0.000331756	0.062526603	0.007142514	0.008131277	0.083330587	0.003760519
SACRAMENT	2021	LDT2	2012	70	GAS	1146.73468	0.026546856	0.000573876	0.000624142	373.9555719	0.001756427	0.003977871	0.005572137	0.008130849	0.348957637	0.003700594
SACRAMENT	2021	LDT1	2007	65	GAS	659.44262	0.028693786	0.000170435	0.000185363	396.8398208	0.001725582	0.004108337	0.005564078	0.008119089	0.424887036	0.003927052
SACRAMENT	2021	MDV	2014	50	DSL	534.391055	0.022815036	0.003633631	0.003797928	351.7995222	0.000331178	0.055297986	0.007130071	0.008117111	0.137326072	0.003325771
SACRAMENT	2021	LDA	2007	65	GAS	8924.3177	0.028535358	0.000170435	0.000185363	347.3283363	0.001723858	0.004090245	0.005560692	0.008114149	0.425321218	0.003437095
SACRAMENT	2021	LDT1	2008	35	GAS	11504.9082	0.029128028	0.000204535	0.000222451	344.8446849	0.001741374	0.004218416	0.005557973	0.008110181	0.642205385	0.003412518
SACRAMENT	2021	LDA	2008	35	GAS	80570.0463	0.028939236	0.000204535	0.000222451	301.7907006	0.001740374	0.004199709	0.005554473	0.008105074	0.642805673	0.002986464
SACRAMENT	2021	LHD2	2018	30	GAS	562.213619	0.061760108	0.001176535	0.001279589	858.1153623	0.001738409	0.006319799	0.005550204	0.008098844	0.128727623	0.008491747
SACRAMENT	2021	LDA	2005	60	GAS	46028.4606	0.030345159	0.00015038	0.000163552	341.3903444	0.001686993	0.00428334	0.005546314	0.008093168	0.531033517	0.003378334
SACRAMENT	2021	LDT2	2009	45	GAS	8592.83552	0.027133951	0.000182263	0.000198228	348.8551828	0.00168444	0.003914132	0.005540488	0.008084667	0.582029886	0.003452205
SACRAMENT	2021	MDV	2016	65	GAS	5020.97517	0.02428197	0.001602088	0.001742416	408.9608612	0.001744488	0.003709645	0.005538908	0.008082362	0.375706851	0.004046999
SACRAMENT	2021	LDT2	2012	35	GAS	44217.8037	0.026208669	0.000556193	0.00060491	336.2833615	0.001744394	0.003927196	0.005533964	0.008075147	0.56931484	0.003327796
SACRAMENT	2021	LDT1	2005	60	GAS	2280.7535	0.030405482	0.00015038	0.000163552	390.4709548	0.001684132	0.004295641	0.005526999	0.008064984	0.527760655	0.003864027
SACRAMENT	2021	LHD1	2016	30	GAS	9029.92025	0.045749121	0.001051276	0.001143359	799.0880126	0.001696611	0.004697699	0.005526323	0.008063998	0.125828937	0.007907624
SACRAMENT	2021	LDA	2013	50	DSL	966.723288	0.02273854	0.003601815	0.003764673	186.2917944	0.000328883	0.029282476	0.007080648	0.008060847	0.135983992	0.001761127
SACRAMENT	2021	MDV	2009	55	GAS	9517.44299	0.027154779	0.00017917	0.000194863	452.2435214	0.00167263	0.003883769	0.005522157	0.008057919	0.509738661	0.004475316
SACRAMENT	2021	MDV	2010	55	DSL	237.577958	0.022498529	0.003983916	0.004164051	409.3616459	0.000328707	0.06434595	0.007076867	0.008056542	0.142742395	0.00386994
SACRAMENT	2021	LDA	2008	55	DSL	47.2194042	0.022482872	0.003977308	0.004157144	227.9376412	0.000328262	0.035828623	0.007067293	0.008045644	0.142482317	0.00215483
SACRAMENT	2021	LDA	2004	50	GAS	24659.4867	0.030497745	0.000137453	0.000149493	331.2927759	0.001649329	0.004247307	0.005508256	0.008037634	0.673623484	0.003278411
SACRAMENT	2021	MDV	2013	40	GAS	35420.0562	0.02601102	0.000722067	0.000785313	379.8484505	0.001705504	0.003847616	0.005507869	0.00803707	0.552229116	0.003758908
SACRAMENT	2021	LDA	2017	45	DSL	1553.12554	0.02313105	0.003175459	0.003319039	172.0342485	0.000327835	0.027041388	0.007058093	0.008035169	0.126513318	0.001626342
SACRAMENT	2021	LDT2	2012	60	DSL	158.622479	0.02067935	0.003467471	0.003624255	320.1470191	0.00032732	0.050322653	0.007047005	0.008022547	0.079839	0.003026541
SACRAMENT	2021	LDT2	2012	65	DSL	23.2538529	0.020651106	0.003467471	0.003624255	359.5971497	0.00032732	0.056523664	0.007047005	0.008022547	0.079839	0.003399486
SACRAMENT	2021	LDT2	2012	70	DSL	6.15229499	0.02071653	0.003467471	0.003624255	387.9709462	0.00032732	0.06098363	0.007047005	0.008022547	0.079839	0.003667721
SACRAMENT	2021	LDT1	2012	60	DSL	3.22007839	0.020679354	0.003467471	0.003624255	407.374223	0.00032732	0.064033555	0.007047	0.008022541	0.079839073	0.003851151
SACRAMENT	2021	LDT1	2012	65	DSL	0.47205938	0.020651109	0.003467471	0.003624255	457.5729296	0.00032732	0.071924092	0.007047	0.008022541	0.079839073	0.00432571
SACRAMENT	2021	LDT1	2012	70	DSL	0.12489322	0.020716533	0.003467471	0.003624255	493.677446	0.00032732	0.07759922	0.007047	0.008022541	0.079839073	0.004667027
SACRAMENT	2021	LDT1	2006	65	GAS	461.073707	0.02663739	0.000170435	0.000185363	405.0895368	0.001702578	0.003889843	0.005495241	0.008018643	0.406782125	0.004008689
SACRAMENT	2021	LDA	2006	65	GAS	7777.97784	0.026522634	0.000170435	0.000185363	358.6557321	0.001700878	0.003872975	0.005494938	0.008018201	0.407220489	0.003549189
SACRAMENT	2021	LHD2	2008	45	GAS	73.3723284	0.139738717	8.31918E-05	9.04786E-05	858.6818114	0.00154068	0.010575389	0.005490808	0.008012174	0.168071007	0.008497353
SACRAMENT	2021	LHD1	2019	30	GAS	4087.91649	0.041798954	0.00120785	0.001313647	749.1706968	0.001745628	0.004532267	0.005489238	0.008009882	0.133330104	0.007413651
SACRAMENT	2021	MDV	2014	40	GAS	56605.2099	0.025741889	0.001005291	0.001093346	377.476621	0.001703649	0.003830895	0.005488285	0.008008493	0.548528217	0.003735437
SACRAMENT	2021	LDT2	2016	65	GAS	7290.46277	0.024138646	0.001602088	0.001742416	338.6246926	0.0017301	0.003696608	0.005485517	0.008004454	0.374642685	0.003350966
SACRAMENT	2021	LDT1	2004	50	GAS	2217.8858	0.030535712	0.000137453	0.000149493	378.5093143	0.001646378	0.004261402	0.005484656	0.008003197	0.669562367	0.003745657
SACRAMENT	2021	LDT2	2016	55	DSL	354.426436	0.02039786	0.003006469	0.003142408	266.1242401	0.00032601	0.041831025	0.007018808	0.007990446	0.067832185	0.002515831
SACRAMENT	2021	LDT2	2009	55	GAS	15676.2085	0.026701517	0.00017917	0.000194863	374.3661325	0.001662373	0.003851752	0.005467905	0.007978754	0.507516872	0.003704656
SACRAMENT	2021	MDV	2008	45	GAS	12070.6894	0.028083965	0.000162328	0.000176547	446.7930807	0.001653392	0.003988196	0.005454188	0.007958739	0.589457139	0.00442138
SACRAMENT	2021	LDT2	2013	40	GAS	79801.4232	0.025698949	0.000722067	0.000785313	314.3674744	0.001686124	0.003822135	0.00543096	0.007924844	0.549857189	0.003110921
SACRAMENT	2021	MDV	2009	50	GAS	5229.84304	0.027162308	0.00017594	0.000191351	434.4488911	0.001641991	0.003884846	0.005421002	0.007910314	0.546649595	0.004299224
SACRAMENT	2021	MDV	2017	65	GAS	4671.00796	0.023969863	0.001721392	0.001872171	392.0320308	0.001715105	0.003688453	0.005420894	0.007910155	0.37364926	0.003879475
SACRAMENT	2021	LDT2	2013	60	DSL	274.960389	0.020463459	0.003341595	0.003492687	309.4989027	0.000322632	0.048648917	0.006946067	0.007907636	0.076148936	0.002925878
SACRAMENT	2021	LDT2	2013	65	DSL	40.3088419	0.020435509	0.003341595	0.003492687	347.6369187	0.000322632	0.054643682	0.006946067	0.007907636	0.076148936	0.003286419
SACRAMENT	2021	LDT2	2013	70	DSL	10.6645504	0.02050025	0.003341595	0.003492687	375.0670004	0.000322632	0.058955309	0.006946067	0.007907636	0.076148936	0.003545732
SACRAMENT	2021	LDT1	2013	60	DSL	10.4314422	0.02046346	0.003341595	0.003492687	396.2443096	0.000322631	0.062284087	0.006946061	0.007907629	0.07614903	0.003745934
SACRAMENT	2021	LDT1	2013	65	DSL	1.52923611	0.02043551	0.003341595	0.003492687	445.0715322	0.000322631	0.069959047	0.006946061	0.007907629	0.07614903	0.004207527
SACRAMENT	2021	LDT1	2013	70	DSL	0.40459152	0.020500251	0.003341595	0.003492687	480.1896334	0.000322631	0.075479123	0.006946061	0.007907629	0.07614903	0.004539519
SACRAMENT	2021	LDT2	2014	40	GAS	74443.7827	0.025495135	0.001005291	0.001093346	312.4239373	0.001685565	0.003810348	0.005417908	0.007905798	0.546400584	0.003091688
SACRAMENT	2021	MDV	2007	60	DSL	117.528854	0.022739361	0.004194527	0.004384185	488.4762281	0.000322534	0.076781661	0.006943976	0.007905255	0.161837454	0.004617857
SACRAMENT	2021	MDV	2007	65	DSL	17.2295798	0.022708303	0.004194527	0.004384185	548.4903378	0.000322534	0.086215043	0.006943976	0.007905255	0.161837454	0.005185206
SACRAMENT	2021	MDV	2007	70	DSL	4.55844707	0.022780245	0.004194527	0.004384185	590.458994	0.000322534	0.092811931	0.006943976	0.007905255	0.161837454	0.005581961
SACRAMENT	2021	LDT2	2008	45	GAS	12863.6791	0.027492364	0.000162328	0.000176547	369.7594628	0.00164685	0.003945656	0.005411095	0.007895857	0.587014387	0.00365907
SACRAMENT	2021	MDV	2007	45	GAS	15556.0089	0.028671244	0.000142393	0.000154866	460.0618973	0.001636063	0.00403777	0.005406172	0.007888674	0.599978689	0.004552685
SACRAMENT	2021	LDA	2009	55	DSL	389.690331	0.022238299	0.003874059	0.004049227	223.1736618	0.000321315	0.035079792	0.006917713	0.007875356	0.138420162	0.002109794
SACRAMENT	2021	MDV	2018	45	DSL	835.990322	0.022912443	0.003086254	0.003225801	300.7647691	0.00032087	0.047276033	0.006908152	0.007864472	0.122441023	0.002843309
SACRAMENT	2021	LHD2	2008	50	GAS	541.771047	0.133762342	8.03056E-05	8.73396E-05	883.8840929	0.001512243	0.010123099	0.005389465	0.007864294	0.158967467	0.00874675
SACRAMENT	2021	MDV	2008	55	GAS	22020.9782	0.027636391	0.000159573	0.00017355	479.3634494	0.001631732	0.003924636	0.005382736	0.007854476	0.513993268	0.00474369
SACRAMENT	2021	LDT2	2017	65	GAS	7566.09331	0.02386955	0.001721392	0.001872171	324.6338355	0.001704593	0.003678723	0.005382608	0.007854289	0.372886643	0.003212515
SACRAMENT	2021	MDV	2011	55	DSL	494.657967	0.022196385	0.003856363	0.00403073	396.3517051	0.000320124	0.062300969	0.006892075	0.00784617	0.137723994	0.003746949
SACRAMENT	2021	LDT2	2007	45	GAS	17098.9807	0.027986653	0.000142393	0.000154866	380.7388283	0.001634052	0.003989186	0.005377028	0.007846147	0.597645834	0.003767719
SACRAMENT	2021	LHD1	2017	30	GAS	3275.42143	0.042744887	0.001129563	0.001228503	782.4447102	0.001671174	0.004507283	0.005375075	0.007843297	0.126059289	0.007742925
SACRAMENT	2021	LDT2	2017	55	DSL	675.529478	0.020126861	0.002849161	0.002977988	255.0098634	0.000319961	0.040083999	0.006888581	0.007842192	0.063071387	0.00241076
SACRAMENT	2021	LDT1	2017	55	DSL	2.77306097	0.020126858	0.002849161	0.002977988	338.6708481	0.000319961	0.053234341	0.006888574	0.007842184	0.063071561	0.003201657
SACRAMENT	2021	LDT2	2009	50	GAS	8614.08995	0.026708921	0.00017594	0.000191351	359.6452108	0.001631922	0.00385282	0.005367744	0.007832599	0.544266922	0.003558981
SACRAMENT	2021	MDV	2018	70	GAS	1313.04439	0.023734547	0.001947476	0.002118057	374.0062861	0.001714996	0.003722496	0.005365767	0.007829714	0.345311556	0.003701095
SACRAMENT	2021	LHD2	2009	35	GAS	112.362022	0.091925433	0.000117695	0.000128005	883.8442308	0.001558756	0.007982176	0.005365267	0.007828985	0.133884958	0.008746355
SACRAMENT	2021	LDT1	2014	30	GAS	9118.25855	0.025101438	0.001409728	0.001533208	318.7658386	0.001749108	0.003921754	0.005364419	0.007827748	0.561804203	0.003154446
SACRAMENT	2021	LHD2	2012	35	GAS	93.5968257	0.091434142	0.000285044	0.000310011	883.8322575	0.001580185	0.00813654	0.005362282	0.007824629	0.126339278	0.008746237
SACRAMENT	2021	LHD2	2011	35	GAS	62.9791921	0.092087275	0.000194933	0.000212008	883.8372489	0.001571036	0.008120744	0.00535845	0.007819037	0.1294987	0.008746286
SACRAMENT	2021	LHD2	2008	55	GAS	149.012622	0.140612025	8.17797E-05	8.89429E-05	920.1743518	0.001503316	0.010641481	0.005357649	0.007817868	0.144900349	0.009105871
SACRAMENT	2021	MDV	2012	65	GAS	2246.59095	0.025970141	0.000528348	0.000574627	453.6714546	0.001682944	0.00385608	0.005355621	0.007814909	0.37581687	0.004489447
SACRAMENT	2021	MDV	2015	50	DSL	1144.98474	0.02239949	0.003460774	0.003617255	343.5957045	0.000318708	0.05400846	0.006861591	0.007811465	0.130034896	0.003248215
SACRAMENT	2021	LDA	2014	50	DSL	1197.6791	0.022385408	0.00345492	0.003611136	186.5165136	0.000318285	0.029317799	0.006852491	0.007801105	0.129787937	0.001763252
SACRAMENT	2021	LDT2	2018	70	GAS	2097.92565	0.023677539	0.001947476	0.002118057	308.9529765	0.001708729	0.003716298	0.005343716	0.007797538	0.344908622	0.00305734
SACRAMENT	2021	LDT2	2008	55	GAS	23467.657	0.027054218	0.000159573	0.00017355	396.8088218	0.001625275	0.003882774	0.005340207	0.007792418	0.511863244	0.003926745
SACRAMENT	2021	LDA	2014	30	GAS	104839.985	0.024889202	0.001409728	0.001533208	279.0043208	0.001743193	0.003906047	0.005336701	0.007787302	0.561843148	0.002760974
SACRAMENT	2021	LDT2	2014	60	DSL	282.757752	0.020235955	0.003208949	0.003354043	307.4763959	0.000317691	0.048331008	0.006839701	0.007786544	0.072260395	0.002906758
SACRAMENT	2021	LDT2	2014	65	DSL	41.4519254	0.020208316	0.003208949	0.003354043	345.3651884	0.000317691	0.054286598	0.006839701	0.007786544	0.072260395	0.003264943
SACRAMENT	2021	LDT2	2014	70	DSL	10.9669771	0.020272337	0.003208949	0.003354043	372.6160205	0.000317691	0.058570049	0.006839701	0.007786544	0.072260395	0.003522561
SACRAMENT	2021	MDV	2007	55	GAS	28379.3677	0.028214311	0.000139976	0.000152237	493.6018448	0.00161463	0.003973421	0.005335349	0.007785329	0.523167821	0.00488459
SACRAMENT	2021	MDV	2018	35	GAS	50630.6648	0.023452928	0.001887467	0.002052792	335.9129694	0.001705042	0.003678327	0.005334623	0.00778427	0.564644789	0.003324131
SACRAMENT	2021	LHD2	2010	35	GAS	20.5286689	0.092230601	0.000143441	0.000156006	883.8411593	0.001556694	0.008064664	0.005333787	0.007783049	0.132032842	0.008746325
SACRAMENT	2021	LHD2	2013	35	GAS	80.4870338	0.089799774	0.000426646	0.000464017	883.8265823	0.001580351	0.008091015	0.005331108	0.00777914	0.122843733	0.008746181
SACRAMENT	2021	LDT1	2013	30	GAS	7667.80904	0.025768063	0.00101256	0.001101252	318.2565092	0.001736962	0.003986168	0.005329584	0.007776917	0.566094171	0.003149406
SACRAMENT	2021	MDV	2009	65	DSL	13.7881969	0.022021861	0.003989239	0.004169615	502.4762803	0.00031712	0.078982274	0.006827405	0.007772547	0.138842859	0.004750208
SACRAMENT	2021	MDV	2009	70	DSL	3.64795696	0.022091628	0.003989239	0.004169615	540.9240939	0.00031712	0.085025735	0.006827405	0.007772547	0.138842859	0.005113678
SACRAMENT	2021	MDV	2009	60	DSL	94.054004	0.02205198	0.003989239	0.004169615	447.4968859	0.00031712	0.070340279	0.006827405	0.007772547	0.138842859	0.004230455
SACRAMENT	2021	LHD1	2018	30	GAS	3648.8906	0.0412971	0.001176535	0.001279589	749.1626607	0.001674893	0.004439725	0.005317445	0.007759204	0.128727623	0.007413572
SACRAMENT	2021	MDV	2011	40	GAS	24779.7747	0.026603441	0.00032991	0.000358807	402.8084672	0.001647122	0.003890215	0.005316165	0.007757335	0.555698083	0.003986116
SACRAMENT	2021	LHD1	2008	45	GAS	393.96766	0.121938401	8.31918E-05	9.04786E-05	749.6653179	0.001495513	0.00938854	0.005315552	0.007756441	0.168078373	0.007418546
SACRAMENT	2021	LDT2	2018	35	GAS	80895.4909	0.023396596	0.001887467	0.002052792	278.1751979	0.001698811	0.003672203	0.005312701	0.00775228	0.563985922	0.002752769
SACRAMENT	2021	LDT2	2007	55	GAS	31194.2648	0.02754063	0.000139976	0.000152237	408.5936175	0.001612645	0.00392561	0.005306587	0.007743359	0.521133625	0.004043365
SACRAMENT	2021	LDA	2013	30	GAS	104304.999	0.025539639	0.00101256	0.001101252	278.5388368	0.00173159	0.00396828	0.005304783	0.007740726	0.566213938	0.002756368
SACRAMENT	2021	LDT1	2008	65	GAS	1127.73409	0.028236735	0.000194296	0.000211314	385.1286661	0.001659041	0.004089336	0.005295191	0.00772673	0.422013335	0.00381116
SACRAMENT	2021	MDV	2008	60	DSL	61.6704164	0.022486293	0.00409616	0.00428137	474.3755283	0.000315207	0.074565227	0.006786218	0.007725658	0.157800364	0.004484555
SACRAMENT	2021	MDV	2008	65	DSL	9.04080429	0.022455581	0.00409616	0.00428137	532.6572283	0.000315207	0.083726299	0.006786218	0.007725658	0.157800364	0.005035526
SACRAMENT	2021	MDV	2008	70	DSL	2.39193458	0.022526722	0.00409616	0.00428137	573.4143876	0.000315207	0.090132756	0.006786218	0.007725658	0.157800364	0.005420828
SACRAMENT	2021	LDA	2008	65	GAS	7897.63688	0.028054879	0.000194296	0.000211314	337.0801979	0.001658164	0.004071369	0.005292094	0.007722211	0.422448503	0.003335682
SACRAMENT	2021	LDT2	2021	25	GAS	58472.8456	0.018434884	0.001239896	0.0013485	292.4114055	0.001804224	0.003274223	0.005290029	0.007719197	0.634292387	0.002893648
SACRAMENT	2021	MDV	2013	60	GAS	19329.3958	0.025640051	0.000697761	0.000758879	423.6397251	0.0016374	0.003792741	0.00528793	0.007716135	0.412423869	0.004192259
SACRAMENT	2021	LDA	2005	45	GAS	32682.2491	0.029949562	0.000142393	0.000154866	307.7256472	0.001608159	0.0042275	0.005287131	0.007714968	0.660368326	0.003045195
SACRAMENT	2021	MDV	2008	50	GAS	12100.5463	0.027644054	0.000156697	0.000170422	460.4970064	0.001601842	0.003925725	0.005284135	0.007710597	0.551212284	0.004556991

SACRAMENT	2021	MDV	2015	40	GAS	54201.1039	0.025032658	0.001266729	0.001377683	368.7685716	0.001649823	0.003759996	0.00528386	0.007710196	0.527523776	0.003649264
SACRAMENT	2021	LDA	2010	55	DSL	517.117614	0.021977122	0.003763802	0.003933984	211.72733	0.000313895	0.033280588	0.006757977	0.007693508	0.13408223	0.002001585
SACRAMENT	2021	LDT2	2012	65	GAS	4334.31745	0.025406706	0.000528348	0.000574627	375.5557495	0.001661919	0.003807027	0.005272316	0.007693352	0.374114668	0.003716429
SACRAMENT	2021	LDT1	2021	20	GAS	5765.33788	0.017567665	0.001678392	0.001825405	342.3572243	0.001871097	0.003299132	0.005269382	0.00768907	0.618401117	0.003387902
SACRAMENT	2021	MDV	2014	60	GAS	30890.5357	0.025373543	0.000971452	0.001056543	420.9757591	0.001635527	0.003776078	0.005268832	0.007688267	0.409610613	0.004165896
SACRAMENT	2021	LDT2	2018	55	DSL	707.979161	0.019843868	0.002684891	0.00280629	243.8954867	0.000313645	0.038336974	0.00675259	0.007687375	0.058099861	0.002305689
SACRAMENT	2021	LDT1	2018	55	DSL	2.92898695	0.019843865	0.002684891	0.00280629	328.2633199	0.000313645	0.051598423	0.006752584	0.007687368	0.058100034	0.003103269
SACRAMENT	2021	LDT1	2005	45	GAS	1619.43617	0.030006422	0.000142393	0.000154866	351.6961474	0.001605261	0.004239263	0.005268159	0.007687286	0.656149815	0.003480318
SACRAMENT	2021	LHD2	2014	35	GAS	290.258933	0.087918685	0.000593994	0.000646023	870.5667726	0.001570518	0.008039563	0.005261689	0.007677844	0.119451316	0.008614964
SACRAMENT	2021	LDA	2018	45	DSL	1645.11751	0.022668046	0.002986533	0.00312157	166.7475482	0.000313084	0.026210392	0.00674051	0.007673623	0.117888656	0.001576364
SACRAMENT	2021	MDV	2010	40	GAS	17862.1105	0.026843478	0.000242764	0.000264028	415.9842589	0.001626602	0.003892965	0.005257745	0.007672089	0.545496254	0.004116501
SACRAMENT	2021	MDV	2021	25	GAS	35427.6657	0.018327028	0.001239896	0.0013485	353.0064562	0.001792378	0.003259179	0.005249552	0.007660134	0.632981586	0.003493285
SACRAMENT	2021	LDT2	2015	60	DSL	415.870963	0.019996839	0.003069531	0.003208322	300.306175	0.000312498	0.047203949	0.006727904	0.007659272	0.068173378	0.002838973
SACRAMENT	2021	LDT2	2015	65	DSL	60.966152	0.019969526	0.003069531	0.003208322	337.3114167	0.000312498	0.053020657	0.006727904	0.007659272	0.068173378	0.003188806
SACRAMENT	2021	LDT2	2015	70	DSL	16.1298755	0.020032791	0.003069531	0.003208322	363.9267708	0.000312498	0.05720422	0.006727904	0.007659272	0.068173378	0.003440417
SACRAMENT	2021	LDT2	2008	50	GAS	12895.4975	0.027061719	0.000156697	0.000170422	381.2007324	0.001595503	0.003883851	0.005242385	0.007649676	0.548928021	0.00377229
SACRAMENT	2021	MDV	2007	50	GAS	15594.4867	0.028222133	0.000137453	0.000149493	474.173917	0.001585053	0.003974522	0.005237616	0.007642717	0.56105118	0.004692335
SACRAMENT	2021	LDT2	2011	40	GAS	55317.7918	0.026069441	0.00032991	0.000358807	333.3607822	0.001628187	0.003846546	0.005237345	0.007642322	0.553102571	0.003298875
SACRAMENT	2021	MDV	2012	55	DSL	876.441896	0.021873403	0.003720013	0.003888216	386.5709087	0.000310949	0.060763564	0.006694541	0.00762129	0.132359513	0.003654485
SACRAMENT	2021	LDA	2021	20	GAS	58620.6393	0.017349843	0.001678392	0.001825405	299.8825035	0.001858331	0.003274651	0.00522112	0.007618647	0.617835425	0.00296758
SACRAMENT	2021	LDT2	2015	40	GAS	85669.7084	0.024845044	0.001266729	0.001377683	305.2332194	0.001633085	0.003743979	0.005220526	0.007617779	0.525639314	0.00302053
SACRAMENT	2021	LDA	2005	55	GAS	59623.363	0.029473894	0.000139976	0.000152237	330.3625939	0.001587183	0.004160358	0.005218168	0.007614338	0.575898413	0.003269206
SACRAMENT	2021	LHD1	2008	50	GAS	2909.0023	0.116723313	8.03056E-05	8.73396E-05	771.6650349	0.001467911	0.008987009	0.005217443	0.007613281	0.158974435	0.007636251
SACRAMENT	2021	LDT2	2013	60	GAS	43549.1488	0.02533243	0.000697761	0.000758879	350.3611701	0.001618794	0.003767623	0.005214092	0.007608391	0.410652431	0.003467108
SACRAMENT	2021	MDV	2021	20	DSL	392.765268	0.010353354	0.000679375	0.000710093	435.2749834	0.000310318	0.068419166	0.006680957	0.007605825	0.211157185	0.004114914
SACRAMENT	2021	LDT2	2007	50	GAS	17141.2751	0.027548266	0.000137453	0.000149493	392.5209142	0.001583104	0.003926699	0.00520938	0.007601516	0.558869684	0.003884313
SACRAMENT	2021	LDT2	2014	60	GAS	40625.3828	0.025130319	0.000971452	0.001056543	348.1763593	0.001618167	0.003755825	0.005201268	0.007589678	0.408021815	0.003445487
SACRAMENT	2021	MDV	2010	60	DSL	183.407092	0.02177966	0.003873766	0.00404892	443.2562883	0.000309593	0.069673716	0.006665362	0.007588071	0.134442222	0.004190366
SACRAMENT	2021	MDV	2010	65	DSL	26.8872455	0.021749913	0.003873766	0.00404892	497.7146835	0.000309593	0.078233817	0.006665362	0.007588071	0.134442222	0.004705194
SACRAMENT	2021	MDV	2010	70	DSL	7.11358528	0.021818818	0.003873766	0.00404892	535.7981555	0.000309593	0.084220009	0.006665362	0.007588071	0.134442222	0.005065219
SACRAMENT	2021	LDT1	2005	55	GAS	2954.3937	0.029528209	0.000139976	0.000152237	377.4619617	0.001584232	0.004171701	0.005199144	0.007586579	0.572147769	0.003735292
SACRAMENT	2021	LDA	2008	60	DSL	36.4527658	0.021764503	0.00386734	0.004042204	247.1117748	0.000309174	0.03884253	0.006656345	0.007577806	0.134197267	0.002336095
SACRAMENT	2021	LDA	2008	65	DSL	5.34392891	0.021734776	0.00386734	0.004042204	277.803647	0.000309174	0.043666865	0.006656345	0.007577806	0.134197267	0.002626244
SACRAMENT	2021	LDA	2008	70	DSL	1.41384858	0.021803633	0.00386734	0.004042204	299.9840095	0.000309174	0.047153309	0.006656345	0.007577806	0.134197267	0.002835928
SACRAMENT	2021	LDT1	2009	70	GAS	220.129797	0.027995386	0.000236955	0.00025771	374.9220075	0.00164388	0.004105957	0.005192857	0.007577404	0.355527237	0.003710157
SACRAMENT	2021	LHD2	2015	35	GAS	338.533386	0.085662535	0.00074847	0.000814029	866.1439903	0.001560167	0.007964864	0.005188893	0.00757162	0.116660312	0.008571197
SACRAMENT	2021	LHD1	2008	55	GAS	800.113005	0.122700465	8.17797E-05	8.89429E-05	803.343585	0.001459245	0.009447215	0.005186643	0.007568337	0.1449067	0.007949736
SACRAMENT	2021	LDA	2021	20	DSL	711.387153	0.010313115	0.000676558	0.000707149	254.3317721	0.000308566	0.039977413	0.006643244	0.007562891	0.209778707	0.00240435
SACRAMENT	2021	LDA	2009	70	GAS	1800.92995	0.027790088	0.000236955	0.00025771	327.2694078	0.001640353	0.004087012	0.005178934	0.007557088	0.35547284	0.003238596
SACRAMENT	2021	LDT2	2010	40	GAS	37844.6743	0.026229518	0.000242764	0.000264028	344.256828	0.00160593	0.003843922	0.005171139	0.007545715	0.542716924	0.0034067
SACRAMENT	2021	LDT1	2011	70	GAS	108.952542	0.026583028	0.000392457	0.000426833	368.0255181	0.001640864	0.003974381	0.005163475	0.007534531	0.34090022	0.003641911
SACRAMENT	2021	LDA	2015	50	DSL	1113.88512	0.022014377	0.00330058	0.003449818	183.0724916	0.000307151	0.028776446	0.00661277	0.007528199	0.123277836	0.001730693
SACRAMENT	2021	LDT2	2019	55	DSL	728.89824	0.019548879	0.002513657	0.002627314	232.78111	0.000307061	0.036589949	0.006610834	0.007525995	0.052917609	0.002200619
SACRAMENT	2021	LDT1	2019	55	DSL	3.04952595	0.019548879	0.002513657	0.002627314	317.8557918	0.00030706	0.049962504	0.006610831	0.007525992	0.052917762	0.00300488
SACRAMENT	2021	LDT2	2016	60	DSL	273.612598	0.019746111	0.002923344	0.003055524	288.2670298	0.000307053	0.045311563	0.006610679	0.007525819	0.063887885	0.00272516
SACRAMENT	2021	LDT2	2016	65	DSL	40.1112574	0.019719141	0.002923344	0.003055524	323.7887473	0.000307053	0.050895082	0.006610679	0.007525819	0.063887885	0.003060968
SACRAMENT	2021	LDT2	2016	70	DSL	10.6122753	0.019781613	0.002923344	0.003055524	349.3371034	0.000307053	0.054910928	0.006610679	0.007525819	0.063887885	0.003302492
SACRAMENT	2021	LDT1	2009	35	GAS	8488.15019	0.027638746	0.000229654	0.000249769	337.5588063	0.001632618	0.00405365	0.005157282	0.007525494	0.580032962	0.003340418
SACRAMENT	2021	LDA	2009	35	GAS	69443.4106	0.027445015	0.000229654	0.000249769	295.4043269	0.001629748	0.004036263	0.005145453	0.007508232	0.580429692	0.002923265
SACRAMENT	2021	LDA	2011	70	GAS	2314.69205	0.0263941	0.000392457	0.000426833	321.2476818	0.001636353	0.003959629	0.005143056	0.007504735	0.340748359	0.003179006
SACRAMENT	2021	LDT1	2015	30	GAS	18428.2258	0.023998776	0.001776345	0.001931937	313.0329781	0.001690883	0.003821941	0.005142696	0.00750421	0.565906407	0.003097715
SACRAMENT	2021	LDA	2011	55	DSL	920.377783	0.021699341	0.003646534	0.003811414	219.0759744	0.000306004	0.034435692	0.006588087	0.007500099	0.129468522	0.002071056
SACRAMENT	2021	MDV	2016	50	DSL	584.177091	0.021961484	0.003278574	0.003426816	329.8211008	0.000305563	0.051843284	0.006578599	0.007489297	0.122349619	0.003117996
SACRAMENT	2021	LDT1	2011	35	GAS	4201.1829	0.02624438	0.000380364	0.000413681	331.3402333	0.001629623	0.00392375	0.005128102	0.007482915	0.556169385	0.00327888
SACRAMENT	2021	LDA	2005	50	GAS	32763.0888	0.029481905	0.000137453	0.000149493	317.3859205	0.001558106	0.004161489	0.005122572	0.007474845	0.617596687	0.003140791
SACRAMENT	2021	LDA	2015	30	GAS	122368.918	0.023784404	0.001776345	0.001931937	274.0097451	0.001685146	0.003805954	0.005115165	0.007464037	0.565921142	0.002711549
SACRAMENT	2021	LDA	2011	35	GAS	89253.9494	0.026066361	0.000380364	0.000413681	289.9594503	0.001625775	0.003910462	0.005109807	0.007456218	0.556386996	0.002869384
SACRAMENT	2021	LDT1	2005	50	GAS	1623.44186	0.029536397	0.000137453	0.000149493	362.6266244	0.001555212	0.004172858	0.005103906	0.007447608	0.613577839	0.003588484
SACRAMENT	2021	MDV	2011	60	GAS	13522.7926	0.026224022	0.000318805	0.000346729	449.2645768	0.001581349	0.003834733	0.00510388	0.00744757	0.415014614	0.004445837
SACRAMENT	2021	MDV	2019	45	DSL	870.527659	0.022361504	0.002861447	0.002990829	287.0588453	0.000303318	0.045121653	0.006530254	0.00743426	0.112178385	0.002713738
SACRAMENT	2021	LDA	2009	60	DSL	300.835866	0.021527744	0.003766947	0.003937271	241.9470491	0.000302631	0.038030707	0.006515462	0.007417421	0.130371318	0.00228727
SACRAMENT	2021	LDA	2009	65	DSL	44.1021537	0.021498341	0.003766947	0.003937271	271.99745	0.000302631	0.042754211	0.006515462	0.007417421	0.130371318	0.002571354
SACRAMENT	2021	LDA	2009	70	DSL	11.6681507	0.021566449	0.003766947	0.003937271	293.714235	0.000302631	0.046167788	0.006515462	0.007417421	0.130371318	0.002776656
SACRAMENT	2021	MDV	2018	65	GAS	4962.9189	0.022737835	0.001792975	0.001950023	375.0903083	0.001624625	0.003566173	0.00508302	0.007417131	0.371142608	0.003711823
SACRAMENT	2021	MDV	2015	60	GAS	29578.5695	0.024673279	0.00122409	0.001331309	411.250775	0.001583764	0.003706016	0.005072295	0.007401481	0.393878324	0.00406966
SACRAMENT	2021	MDV	2011	60	DSL	381.869515	0.021487169	0.003749739	0.003919286	429.1691402	0.000301509	0.067459412	0.006491316	0.007389931	0.12971563	0.004057192
SACRAMENT	2021	MDV	2011	65	DSL	55.9815832	0.021457821	0.003749739	0.003919286	481.8967908	0.000301509	0.075747465	0.006491316	0.007389931	0.12971563	0.004555658
SACRAMENT	2021	MDV	2011	70	DSL	14.8111031	0.021525801	0.003749739	0.003919286	518.7699303	0.000301509	0.081543409	0.006491316	0.007389931	0.12971563	0.004904241
SACRAMENT	2021	LDT2	2018	65	GAS	7929.53761	0.022683221	0.001792975	0.001950023	310.6301405	0.001618688	0.003560235	0.005062131	0.00738665	0.370709533	0.003073937
SACRAMENT	2021	LDT2	2017	60	DSL	521.499969	0.019483771	0.002770386	0.00289565	276.2278846	0.000301356	0.043419177	0.006488025	0.007386185	0.059403917	0.002611347
SACRAMENT	2021	LDT2	2017	65	DSL	76.4512294	0.01945716	0.002770386	0.00289565	310.2660779	0.000301356	0.048769507	0.006488025	0.007386185	0.059403917	0.00293313
SACRAMENT	2021	LDT2	2017	70	DSL	20.2267778	0.019518801	0.002770386	0.00289565	334.7474359	0.000301356	0.052617635	0.006488025	0.007386185	0.059403917	0.003164567
SACRAMENT	2021	LDT1	2017	60	DSL	2.140767	0.019483768	0.002770386	0.00289565	366.8498571	0.000301356	0.057663689	0.006488018	0.007386177	0.059404081	0.00346805
SACRAMENT	2021	LDT1	2017	65	DSL	0.31383371	0.019457156	0.002770386	0.00289565	412.054947	0.000301356	0.064769299	0.006488018	0.007386177	0.059404081	0.003895401
SACRAMENT	2021	LDT1	2017	70	DSL	0.0830313	0.019518798	0.002770386	0.00289565	444.5678944	0.000301356	0.069879882	0.006488018	0.007386177	0.059404081	0.004202765
SACRAMENT	2021	MDV	2013	55	DSL	308.466376	0.021529585	0.003574867	0.003736507	373.7135282	0.000301182	0.058742562	0.006484263	0.007381902	0.126648954	0.003532937
SACRAMENT	2021	LDT1	2007	40	GAS	8242.85749	0.028333865	0.000155618	0.000169249	343.4722855	0.001567211	0.004056804	0.005053417	0.007373934	0.596308506	0.003398937
SACRAMENT	2021	LDA	2007	40	GAS	111551.599	0.028175347	0.000155618	0.000169249	300.5113312	0.001565516	0.004038641	0.005049924	0.007368837	0.59681227	0.002973803
SACRAMENT	2021	MDV	2010	60	GAS	9747.69219	0.026460636	0.000234592	0.00025514	463.9767082	0.001561649	0.003837443	0.005047793	0.007365728	0.407395534	0.004591426
SACRAMENT	2021	LDT1	2020	55	DSL	3.11907326	0.019241902	0.00233546	0.00244106	307.4482637	0.000300209	0.048326586	0.006463315	0.007358054	0.047524739	0.002906492
SACRAMENT	2021	LDT2	2020	55	DSL	746.465722	0.019241895	0.00233546	0.00244106	221.6667332	0.000300209	0.034842924	0.006463314	0.007358053	0.047524631	0.002095548
SACRAMENT	2021	MDV	2013	45	GAS	13724.7286	0.025303535	0.000660705	0.000718577	381.1453074	0.001560718	0.003742963	0.005040286	0.007354774	0.512754869	0.003771742
SACRAMENT	2021	MDV	2016	40	GAS	62760.8552	0.023974511	0.001462807	0.001590936	354.1210914	0.001584168	0.003662674	0.00502988	0.007339589	0.527134743	0.003504315
SACRAMENT	2021	LDT2	2011	60	GAS	30187.9672	0.025697638	0.000318805	0.000346729	371.546996	0.001563171	0.003791687	0.005028208	0.00733715	0.413076195	0.003676759
SACRAMENT	2021	LDT1	2019	25	GAS	20879.1233	0.019943847	0.002782207	0.003025903	312.3948516	0.001720598	0.003477819	0.005024422	0.007331625	0.58378528	0.0030914
SACRAMENT	2021	MDV	2014	45	GAS	21933.6508	0.025041738	0.00091986	0.001000432	378.7657552	0.001559022	0.003726699	0.005022372	0.007328633	0.509319845	0.003748194
SACRAMENT	2021	LDT2	2015	60	GAS	46751.5832	0.024488359	0.00122409	0.001331309	340.1492785	0.001567696	0.003690228	0.005011497	0.007312764	0.392471281	0.003366053
SACRAMENT	2021	LDA	2019	45	DSL	1687.12839	0.02218553	0.002789645	0.002915781	161.4608479	0.000297711	0.025379397	0.006409546	0.007296842	0.108900529	0.001526386
SACRAMENT	2021	LDA	2012	55	DSL	1138.8034	0.021404956	0.003522257	0.003681518	200.4152594	0.000297641	0.031502488	0.006408042	0.007295129	0.124579037	0.001894645
SACRAMENT	2021	LDT1	2016	30	GAS	16600.4068	0.023092853	0.002051307	0.002230984	304.1154908	0.001649907	0.003731833	0.004990945	0.007282775	0.561034837	0.003009469
SACRAMENT	2021	MDV	2014	40	GAS	5763.2988	0.026303263	0.000155618	0.000169249	350.5727313	0.001546318	0.00384105	0.004990899	0.007282707	0.570899135	0.003469201
SACRAMENT	2021	LDA	2006	40	GAS	97222.6558	0.026188016	0.000155618	0.000169249	310.2791925	0.001544646	0.003824112	0.00499021	0.007281703	0.571413262	0.003070464
SACRAMENT	2021	LDA	2019	25	GAS	238481.667	0.019740462	0.002782207	0.003025903	273.5222837	0.001711415	0.003460197	0.004985685	0.007275099	0.583424783	0.002706725
SACRAMENT	2021	LDT2	2016	40	GAS	91128.847	0.023833001	0.001462807	0.001590936	293.1333978	0.001571103	0.003649801	0.004981395	0.00726884	0.525641667	0.002900793
SACRAMENT	2021	MDV	2013	55	GAS	25038.4994	0.024900273	0.00064949	0.00070638	408.9267715	0.001540272	0.003683311	0.004974256	0.007258423	0.447110626	0.004046662
SACRAMENT	2021	LDT2	2013	45	GAS	30921.8277	0.024999952	0.000660705	0.000718577	315.4329883	0.001542983	0.003718175	0.004969906	0.007252076	0.510552491	0.003121465
SACRAMENT	2021	LDA	2010	60	DSL	399.208071	0.021274912	0.003659737	0.003825214	229.5378509	0.000295643	0.036080154	0.006365015	0.007246147	0.126285628	0.002169958
SACRAMENT	2021	LDA	2010	65	DSL	58.5233934	0.021245854	0.003659737	0.003825214	258.0469998	0.000295643	0.040561395	0.006365015	0.007246147	0.126285628	0.002439472
SACRAMENT	2021	LDA	2010	70	DSL	15.4835924	0.021313163	0.003659737	0.003825214	278.6499547	0.000295643	0.043799892	0.006365015	0.007246147	0.126285628	0.002634244
SACRAMENT	2021	LDT2	2010	60	GAS	20652.5559	0.025855432	0.000234592	0.00025514	383.7079691	0.001541803	0.003789099	0.004964646	0.0072444	0.405319834	0.003797101
SACRAMENT	2021	LDA	2016	50	DSL	109.634646	0.021625449	0.003138794	0.003280717	177.7723336	0.000295479	0.027943335	0.006361486	0.007242128	0.116453688	0.001680588
SACRAMENT	2021	LDT2	2018	60	DSL	546.550702	0.019209819	0.002610657	0.002728699	264.1887394	0.000295407	0.041526791	0.006359941	0.00724037	0.054721475	0.002497534
SACRAMENT	2021	LDT2	2018	65	DSL	80.1236349	0.019183582	0.002610657	0.002728699	296.7434086	0.000295407	0.046643931	0.006359941	0.00724037	0.054721475	0.002805292
SACRAMENT	2021	LDT2	2018	70	DSL	21.1983898	0.019244357	0.002610657	0.002728699	320.1577685	0.000295407	0.050324343	0.006359941	0.00724037	0.054721475	0.003026642
SACRAMENT	2021	LDT1	2018	60	DSL	2.26113982	0.019209817	0.002610657	0.002728699	355.5763736	0.000295407	0.055891654	0.006359935	0.007240364	0.054721638	0.003361475
SACRAMENT	2021	LDT1	2018	65	DSL	0.33148021	0.01918358	0.002610657	0.002728699	399.392288	0.000295407	0.062778906	0.006359935	0.007240364	0.054721638	0.003775693
SACRAMENT	2021	LDT1	2018	70	DSL	0.08770005	0.019244355	0.002610657	0.002728699	430.9060959	0.000295407	0.067732438	0.006359935	0.007240364	0.054721638	0.004073612
SACRAMENT	2021	LDA	2016	30	GAS	127407.204	0.022884533	0.002051307	0.002230984	266.2259087	0.00164376	0.003716413	0.004961726	0.007240139	0.560977063	0.002634521

SACRAMENT	2021	LDT2	2014	45	GAS	28845.8242	0.024801695	0.00091986	0.001000432	313.4832121	0.001542474	0.003706711	0.004957969	0.007234656	0.507344294	0.003102171
SACRAMENT	2021	MDV	2014	55	GAS	40014.3215	0.024643391	0.000904247	0.000983451	406.3843544	0.001538646	0.003667417	0.004956732	0.007232851	0.444145612	0.004021503
SACRAMENT	2021	LDT1	2010	70	GAS	118.804065	0.027081117	0.000288789	0.000314085	355.7013856	0.001572763	0.004024299	0.004923622	0.007184538	0.342799171	0.003519954
SACRAMENT	2021	LDT1	2021	55	DSL	2.76634365	0.018922933	0.002150301	0.002247528	297.0407356	0.000293089	0.046690667	0.006310037	0.007183557	0.041920955	0.002808103
SACRAMENT	2021	LDT2	2021	55	DSL	643.340878	0.018922916	0.002150301	0.002247528	210.5523565	0.000293089	0.033095898	0.006310029	0.007183549	0.04192093	0.001990477
SACRAMENT	2021	MDV	2017	40	GAS	58386.3581	0.02366541	0.00157174	0.00170941	339.4615537	0.001557416	0.003641604	0.00492249	0.007182886	0.524197723	0.003359247
SACRAMENT	2021	MDV	2012	60	DSL	676.601742	0.021174508	0.003617159	0.003780711	418.5785059	0.000292868	0.065794712	0.006305267	0.007178128	0.124663084	0.003957072
SACRAMENT	2021	MDV	2012	65	DSL	99.1889513	0.021145587	0.003617159	0.003780711	470.0049928	0.000292868	0.07387824	0.006305267	0.007178128	0.124663084	0.004443237
SACRAMENT	2021	MDV	2012	70	DSL	26.2425195	0.021212577	0.003617159	0.003780711	505.9682115	0.000292868	0.079531157	0.006305267	0.007178128	0.124663084	0.004783219
SACRAMENT	2021	LHD1	2009	35	GAS	197.755631	0.053979228	0.000117695	0.000128005	771.6239778	0.001435454	0.004929386	0.004918684	0.007177332	0.133884958	0.007635845
SACRAMENT	2021	LHD1	2012	35	GAS	361.644871	0.052726259	0.000285044	0.000310011	771.6120036	0.001456435	0.004968078	0.004915503	0.007172691	0.126339278	0.007635726
SACRAMENT	2021	LDT1	2009	65	GAS	832.025437	0.026793024	0.000218157	0.000237265	377.0273901	0.001555428	0.003929612	0.004913445	0.007169687	0.381157883	0.003730992
SACRAMENT	2021	LHD1	2011	35	GAS	230.026377	0.053416389	0.000194933	0.000212008	771.6169949	0.001447439	0.004976802	0.004911653	0.007167073	0.1294987	0.007635776
SACRAMENT	2021	LDA	2010	70	GAS	2263.86252	0.026865052	0.000288789	0.000314085	310.4927585	0.001568938	0.004005699	0.004907204	0.00716058	0.342707782	0.003072578
SACRAMENT	2021	LDT2	2013	55	GAS	56411.7651	0.024601528	0.00064949	0.00070638	338.5048916	0.001522769	0.003658918	0.004904798	0.00715707	0.445190202	0.00334978
SACRAMENT	2021	LDA	2009	65	GAS	6806.98182	0.02660632	0.000218157	0.000237265	329.9829138	0.001552763	0.003912919	0.004902395	0.007153563	0.381455337	0.003265448
SACRAMENT	2021	MDV	2017	50	DSL	788.764912	0.021501017	0.00308703	0.003226612	316.046497	0.000291745	0.049678108	0.006281095	0.007150609	0.114270243	0.002987776
SACRAMENT	2021	LDT2	2014	55	GAS	52624.4397	0.024407167	0.000904247	0.000983451	336.4229828	0.001522314	0.003647747	0.00489317	0.007140103	0.44242286	0.003329178
SACRAMENT	2021	LDT1	2017	30	GAS	13322.1351	0.022429803	0.002204064	0.002397121	295.1942377	0.001623925	0.003668734	0.004891492	0.007137653	0.558420574	0.002921186
SACRAMENT	2021	LDT1	2010	35	GAS	4581.05516	0.026736124	0.000279891	0.000304406	320.2600137	0.001561989	0.003973033	0.004889892	0.00713532	0.55926747	0.003169232
SACRAMENT	2021	LHD1	2010	35	GAS	139.690702	0.053450576	0.000143441	0.000156006	771.6209131	0.001433692	0.004928938	0.004888795	0.007133718	0.132032842	0.007635814
SACRAMENT	2021	LDT2	2017	40	GAS	94574.1556	0.023566372	0.00157174	0.00170941	281.0215642	0.00154787	0.003631998	0.004887724	0.007132156	0.523127838	0.002780936
SACRAMENT	2021	LHD1	2013	35	GAS	524.567476	0.052225066	0.000426646	0.000464017	771.6063393	0.00145704	0.004987892	0.004886858	0.007130892	0.122843733	0.00763567
SACRAMENT	2021	LDT1	2011	65	GAS	411.808339	0.025441325	0.000361322	0.000392971	370.0913031	0.001552574	0.003803687	0.004885644	0.007129121	0.365476377	0.003662353
SACRAMENT	2021	MDV	2014	55	DSL	972.502686	0.021164931	0.003420925	0.003575604	371.271393	0.000290823	0.058358693	0.006261242	0.007128007	0.120592317	0.00350985
SACRAMENT	2021	MDV	2013	50	GAS	13758.6768	0.024907177	0.000637783	0.000693647	392.8340935	0.001512057	0.003684332	0.004883138	0.007125463	0.479486571	0.003887412
SACRAMENT	2021	LDA	2010	35	GAS	87293.9751	0.026531465	0.000279891	0.000304406	280.2674864	0.001558795	0.003955959	0.004875479	0.007114288	0.559586416	0.002773474
SACRAMENT	2021	LDA	2011	65	GAS	8748.85041	0.025269796	0.000361322	0.000392971	323.9104018	0.001548977	0.003790962	0.004868433	0.007104006	0.365654604	0.003205356
SACRAMENT	2021	MDV	2014	50	GAS	21987.9038	0.024650151	0.000887947	0.000965724	390.3911843	0.00151046	0.003668423	0.004865929	0.007100353	0.476305437	0.003863237
SACRAMENT	2021	MDV	2011	45	GAS	9601.78267	0.025879842	0.000301874	0.000328315	404.1874724	0.001507292	0.003784403	0.004864856	0.007098787	0.515975868	0.003999763
SACRAMENT	2021	LDT2	2012	40	GAS	28081.7898	0.025644384	0.000482415	0.000524671	392.8438995	0.001528486	0.003807712	0.004864092	0.007097671	0.52744089	0.003887509
SACRAMENT	2021	LDA	2017	30	GAS	153327.299	0.02222468	0.002204064	0.002397121	258.4380823	0.00161735	0.003653411	0.004860677	0.007092688	0.558299361	0.002557454
SACRAMENT	2021	LDT2	2019	60	DSL	562.699959	0.018924256	0.002444158	0.002554672	252.1495943	0.000289206	0.039634405	0.006226428	0.007088374	0.04984056	0.00238372
SACRAMENT	2021	LDT2	2019	65	DSL	82.4910953	0.018898409	0.002444158	0.002554672	283.2207392	0.000289206	0.044518356	0.006226428	0.007088374	0.04984056	0.002677455
SACRAMENT	2021	LDT2	2019	70	DSL	21.8247511	0.01895828	0.002444158	0.002554672	305.568101	0.000289206	0.04803105	0.006226428	0.007088374	0.04984056	0.002888717
SACRAMENT	2021	LDT1	2019	60	DSL	2.35419436	0.018924257	0.002444158	0.002554672	344.3028902	0.000289206	0.05411962	0.006226425	0.007088371	0.049840705	0.003254901
SACRAMENT	2021	LDT1	2019	65	DSL	0.34512189	0.018898409	0.002444158	0.002554672	386.7296291	0.000289206	0.060788512	0.006226425	0.007088371	0.049840705	0.003655986
SACRAMENT	2021	LDT1	2019	70	DSL	0.09130924	0.018958281	0.002444158	0.002554672	417.2442975	0.000289206	0.065584993	0.006226425	0.007088371	0.049840705	0.003944459
SACRAMENT	2021	LDT1	2007	60	GAS	4498.28352	0.027929766	0.00015038	0.000163552	382.6799623	0.00150463	0.003998946	0.004851625	0.007079479	0.445343887	0.003786928
SACRAMENT	2021	LDA	2013	55	DSL	1759.27532	0.021093968	0.003390971	0.003544296	194.9396934	0.000288807	0.030641805	0.006217841	0.007078599	0.119413774	0.001842881
SACRAMENT	2021	LHD2	2021	30	GAS	608.635317	0.043801648	0.00120785	0.001313647	836.670251	0.001608352	0.005077025	0.004849642	0.007076586	0.131941588	0.00827953
SACRAMENT	2021	LDA	2007	60	GAS	60875.8216	0.02777106	0.00015038	0.000163552	334.5592426	0.001502846	0.00398069	0.004847769	0.007073853	0.445621381	0.003310735
SACRAMENT	2021	LHD2	2016	35	GAS	54.1951146	0.074607942	0.000864326	0.000940034	848.4677801	0.001478639	0.007204481	0.004846955	0.007072665	0.115046406	0.008396276
SACRAMENT	2021	LDA	2011	60	DSL	710.519675	0.021006007	0.003545712	0.003706034	237.5046638	0.000288211	0.037332426	0.006205003	0.007063984	0.121940197	0.002245273
SACRAMENT	2021	LDA	2011	65	DSL	104.161277	0.020977317	0.003545712	0.003706034	267.0033099	0.000288211	0.041969202	0.006205003	0.007063984	0.121940197	0.002524141
SACRAMENT	2021	LDA	2011	70	DSL	27.5580526	0.021043774	0.003545712	0.003706034	288.3213534	0.000288211	0.045320102	0.006205003	0.007063984	0.121940197	0.002725674
SACRAMENT	2021	MDV	2015	45	GAS	21002.0966	0.024351811	0.001159081	0.001260606	370.0293324	0.001509767	0.00365773	0.004835307	0.007055669	0.489818062	0.00366174
SACRAMENT	2021	MDV	2016	60	GAS	34249.7879	0.023629193	0.001413568	0.001537384	394.8862417	0.001520653	0.003609918	0.004828213	0.007045317	0.393540631	0.003907719
SACRAMENT	2021	LHD1	2014	35	GAS	719.661739	0.049788287	0.000593994	0.000646023	760.0298295	0.001448453	0.004846633	0.004823247	0.007038071	0.119451316	0.007521111
SACRAMENT	2021	LDT2	2013	50	GAS	30998.313	0.024608349	0.000637783	0.000693647	325.1916777	0.001494875	0.003659333	0.004814952	0.007025967	0.477427086	0.003218035
SACRAMENT	2021	MDV	2010	45	GAS	6921.29391	0.02611335	0.000222133	0.00024159	417.4118367	0.001488514	0.003787078	0.004811396	0.007020777	0.506503282	0.004130629
SACRAMENT	2021	LDT1	2008	40	GAS	14096.3764	0.027882547	0.000177404	0.000192943	333.3442976	0.001506778	0.004038042	0.004809208	0.007017585	0.592275405	0.003298712
SACRAMENT	2021	LDA	2008	40	GAS	98718.362	0.027700929	0.000177404	0.000192943	291.6528058	0.001505856	0.004020004	0.004805997	0.0070129	0.592781267	0.002886141
SACRAMENT	2021	LDT2	2014	50	GAS	28917.1745	0.024413862	0.000887947	0.000965724	323.1911345	0.001494427	0.003648748	0.004803532	0.007009303	0.474457943	0.003198238
SACRAMENT	2021	LDT2	2020	30	GAS	47893.0616	0.019252392	0.001555502	0.00169175	273.1345088	0.00160297	0.003287038	0.004802746	0.007008155	0.597460883	0.002702887
SACRAMENT	2021	MDV	2011	55	GAS	17516.8659	0.025467395	0.00029675	0.000322743	433.657511	0.001487545	0.003724091	0.004801124	0.00700579	0.449919264	0.004291393
SACRAMENT	2021	LDT2	2011	45	GAS	21434.796	0.025360366	0.000301874	0.000328315	334.4944385	0.001489965	0.003741922	0.004792728	0.006993537	0.513565887	0.003310094
SACRAMENT	2021	LDT1	2006	60	GAS	3145.14136	0.025928125	0.00015038	0.000163552	390.5899463	0.001484571	0.003786269	0.004791603	0.006991895	0.426367287	0.003865204
SACRAMENT	2021	LDA	2006	60	GAS	53056.2455	0.025812246	0.00015038	0.000163552	345.4527235	0.001482812	0.00376924	0.004790446	0.006990207	0.426656723	0.003418535
SACRAMENT	2021	LDT2	2012	40	GAS	54177.8161	0.025088016	0.000482415	0.000524671	325.1102105	0.001509391	0.003759274	0.004788433	0.00698727	0.525051932	0.003217229
SACRAMENT	2021	MDV	2020	30	GAS	30463.8087	0.019212073	0.001555502	0.00169175	329.7413838	0.001598856	0.003282836	0.004787709	0.006986214	0.59694834	0.003263058
SACRAMENT	2021	MDV	2020	45	DSL	909.120235	0.021786079	0.00262665	0.002745415	273.3529216	0.000284985	0.042967273	0.006135561	0.006984928	0.101459658	0.002584168
SACRAMENT	2021	LDT2	2016	60	GAS	49730.7386	0.023489721	0.001413568	0.001537384	326.6355985	0.001508112	0.003597231	0.004781673	0.006977406	0.392425952	0.003232324
SACRAMENT	2021	LDT2	2015	45	GAS	33195.6982	0.024169299	0.001159081	0.001260606	306.2694571	0.00149445	0.003642148	0.004777349	0.006971097	0.488068296	0.003030785
SACRAMENT	2021	MDV	2015	55	GAS	38314.8548	0.023965162	0.001139407	0.001239209	397.0236564	0.001490082	0.003599654	0.004772261	0.006963673	0.427168385	0.003928871
SACRAMENT	2021	LHD1	2021	30	GAS	3874.10371	0.033717345	0.00120785	0.001313647	730.4420066	0.001590521	0.004069779	0.00477104	0.006961891	0.131941588	0.007228316
SACRAMENT	2021	MDV	2013	60	DSL	238.132029	0.020841675	0.003476027	0.003633197	404.6565501	0.000283669	0.063606375	0.006107217	0.00695266	0.119284582	0.00382546
SACRAMENT	2021	MDV	2013	65	DSL	34.9098514	0.020813209	0.003476027	0.003633197	454.3725878	0.000283669	0.071421043	0.006107217	0.00695266	0.119284582	0.004295455
SACRAMENT	2021	MDV	2013	70	DSL	9.23613409	0.020879147	0.003476027	0.003633197	489.1396669	0.000283669	0.076885944	0.006107217	0.00695266	0.119284582	0.004624129
SACRAMENT	2021	LDA	2017	50	DSL	1556.96721	0.021218623	0.002969564	0.003103834	172.4721756	0.00028327	0.027110224	0.006098638	0.006942893	0.10931549	0.001630482
SACRAMENT	2021	LHD1	2015	35	GAS	2091.95848	0.048731013	0.00074847	0.000814029	756.1681654	0.001439409	0.004832555	0.004756584	0.006940796	0.116660312	0.007482897
SACRAMENT	2021	LDT1	2020	60	DSL	2.40788398	0.018627087	0.002270888	0.002373567	333.0294067	0.000282752	0.052347585	0.006087487	0.006930199	0.044761274	0.003148326
SACRAMENT	2021	LDT1	2020	65	DSL	0.35299272	0.018601646	0.002270888	0.002373567	374.0669701	0.000282752	0.058798119	0.006087487	0.006930199	0.044761274	0.003536278
SACRAMENT	2021	LDT1	2020	70	DSL	0.09339163	0.018660577	0.002270888	0.002373567	403.582499	0.000282752	0.063437549	0.006087487	0.006930199	0.044761274	0.003815306
SACRAMENT	2021	LDT2	2020	60	DSL	576.261826	0.018627081	0.002270888	0.002373567	240.1104491	0.000282752	0.037742019	0.006087486	0.006930198	0.044761173	0.002269907
SACRAMENT	2021	LDT2	2020	65	DSL	84.4792478	0.01860164	0.002270888	0.002373567	269.6980698	0.000282752	0.042392781	0.006087486	0.006930198	0.044761173	0.002549617
SACRAMENT	2021	LDT2	2020	70	DSL	22.3507586	0.018660571	0.002270888	0.002373567	290.9784335	0.000282752	0.045737758	0.006087486	0.006930198	0.044761173	0.002750793
SACRAMENT	2021	MDV	2010	55	GAS	12626.7571	0.025697182	0.000218363	0.00023749	447.8545778	0.001469014	0.003726724	0.004748364	0.006928802	0.441659385	0.004431884
SACRAMENT	2021	LDT2	2010	45	GAS	14664.231	0.02551609	0.000222133	0.00024159	345.4310167	0.001469597	0.003739369	0.004732143	0.006905131	0.503922624	0.00341832
SACRAMENT	2021	LDA	2020	45	DSL	1635.04213	0.021683504	0.002584796	0.002701669	156.1741476	0.000281717	0.024548401	0.0060652	0.006904827	0.09954893	0.001476407
SACRAMENT	2021	LDT2	2011	55	GAS	39104.2434	0.024956198	0.00029675	0.000322743	358.9696434	0.001470445	0.003682287	0.004729941	0.006901919	0.447817816	0.003552296
SACRAMENT	2021	MDV	2017	60	GAS	31862.542	0.023323429	0.001518834	0.00165187	378.5111137	0.001494889	0.00358898	0.004724864	0.00689451	0.391301073	0.003745674
SACRAMENT	2021	LDT2	2015	55	GAS	60560.0662	0.023785548	0.001139407	0.001239209	328.694024	0.001474965	0.00358432	0.004715059	0.006880203	0.42564242	0.003252694
SACRAMENT	2021	MDV	2011	50	GAS	9625.53274	0.025474456	0.000291401	0.000316925	416.5872495	0.001460297	0.003725124	0.004713177	0.006877457	0.482498587	0.004122469
SACRAMENT	2021	MDV	2019	70	GAS	1358.6942	0.02112827	0.001839365	0.002000477	357.0325085	0.001534218	0.00344238	0.00470987	0.006872631	0.342519594	0.003533126
SACRAMENT	2021	LDA	2012	60	DSL	879.141412	0.020721029	0.003424871	0.003579729	217.2742079	0.000280334	0.03415248	0.006035427	0.006870933	0.117335025	0.002054023
SACRAMENT	2021	LDA	2012	65	DSL	128.881008	0.020692727	0.003424871	0.003579729	244.2601831	0.000280334	0.038394299	0.006035427	0.006870933	0.117335025	0.002309137
SACRAMENT	2021	LDA	2012	70	DSL	34.0981765	0.020758283	0.003424871	0.003579729	263.7623728	0.000280334	0.041459772	0.006035427	0.006870933	0.117335025	0.002493503
SACRAMENT	2021	LDT2	2019	70	GAS	2159.9143	0.021119118	0.001839365	0.002000477	294.9442679	0.00153302	0.00344073	0.004706399	0.006867567	0.342449249	0.002918713
SACRAMENT	2021	LDT1	2012	70	GAS	218.970316	0.025574834	0.000573876	0.000624142	336.708829	0.00151833	0.003894409	0.004705539	0.006866312	0.331739301	0.003332007
SACRAMENT	2021	MDV	2015	55	DSL	2083.68146	0.02077944	0.003258187	0.003405507	362.6134995	0.000279872	0.056997792	0.006025477	0.006859605	0.114189601	0.003428002
SACRAMENT	2021	LDA	2014	55	DSL	2179.57641	0.020766376	0.003252675	0.003399747	195.1748443	0.000279501	0.030678768	0.006017486	0.006850508	0.113972735	0.001845104
SACRAMENT	2021	LDT2	2017	60	GAS	51610.9088	0.023225822	0.001518834	0.00165187	313.1113567	0.001485727	0.003579513	0.004691494	0.006845817	0.390502429	0.003098491
SACRAMENT	2021	LDA	2012	70	GAS	3740.3854	0.02535777	0.000573876	0.000624142	293.9154431	0.001514004	0.003877453	0.004685209	0.006836646	0.331574599	0.002908532
SACRAMENT	2021	MDV	2015	50	GAS	21054.0454	0.023971664	0.001118868	0.001216872	381.3971697	0.001462784	0.003600631	0.004684834	0.006836099	0.458097555	0.003774234
SACRAMENT	2021	MDV	2019	35	GAS	52390.9101	0.020881264	0.001782687	0.001938835	320.7364176	0.001525634	0.003402136	0.004683518	0.006834178	0.56033245	0.003173947
SACRAMENT	2021	LDT2	2019	35	GAS	83285.7578	0.020872219	0.001782687	0.001938835	265.6306601	0.001524443	0.003400505	0.004680067	0.006829143	0.560217373	0.002628631
SACRAMENT	2021	LDT1	2012	35	GAS	8443.44087	0.02524903	0.000556193	0.00060491	303.1682629	0.001507928	0.003844797	0.004673303	0.006819273	0.541223595	0.003000096
SACRAMENT	2021	LDT2	2010	55	GAS	26752.4662	0.02510944	0.000218363	0.00023749	370.7149915	0.001450345	0.003679775	0.004670149	0.006814671	0.439409109	0.003668525
SACRAMENT	2021	MDV	2012	60	GAS	15324.7648	0.025278643	0.000466177	0.00050701	438.1595003	0.001467451	0.003753406	0.00466986	0.006814248	0.393911161	0.004335943
SACRAMENT	2021	LHD2	2020	35	GAS	276.120737	0.055086779	0.000993056	0.001080039	795.4725291	0.001493629	0.005825998	0.004664165	0.006805939	0.128969882	0.007871846
SACRAMENT	2021	MDV	2010	50	GAS	6938.41377	0.025704307	0.000214427	0.000233209	430.2213716	0.001442104	0.003727757	0.004661384	0.00680188	0.473640597	0.004257389
SACRAMENT	2021	LDT1	2010	65	GAS	449.044178	0.025918021	0.000265878	0.000289167	357.6994154	0.001488138	0.003851461	0.004658697	0.00679796	0.367512226	0.003539726
SACRAMENT	2021	MDV	2018	50	DSL	838.058149	0.021018089	0.002886143	0.003016642	302.2718932	0.000277252	0.047512932	0.005969079	0.0067954	0.105796771	0.002857556
SACRAMENT	2021	LDA	2012	35	GAS	144228.33	0.025042899	0.000556193	0.00060491	265.3122309	0.001504216	0.003829306	0.00465492	0.006792448	0.541407728	0.00262548
SACRAMENT	2021	LDA	2010	65	GAS	8556.72981	0.025720687	0.000265878	0.000289167	313.0677265	0.001485161	0.003835069	0.004645174	0.006778227	0.367757246	0.003098059
SACRAMENT	2021	LDT2	2011	50	GAS	21487.8151	0.024963118	0.000291401	0.000316925	344.8472081	0.00144351	0.003683308	0.004643298	0.006775489	0.480244969	0.003412543
SACRAMENT	2021	LHD2	2017	35	GAS	184.476013	0.066077243	0.000928691	0.001010036	830.7950559	0.00143479	0.006585278	0.004642758	0.006774702	0.115257019	0.008221391

SACRAMENT	2021	LDT1	2021	60	DSL	2.13558131	0.018318311	0.002090848	0.002185387	321.7559232	0.000276047	0.05057555	0.005943121	0.006765848	0.039483339	0.003041751
SACRAMENT	2021	LDT1	2021	65	DSL	0.31307349	0.018293291	0.002090848	0.002185387	361.4043111	0.000276047	0.056807725	0.005943121	0.006765848	0.039483339	0.00341657
SACRAMENT	2021	LDT1	2021	70	DSL	0.08283017	0.018351246	0.002090848	0.002185387	389.9207006	0.000276047	0.061290104	0.005943121	0.006765848	0.039483339	0.003686153
SACRAMENT	2021	LDT2	2021	65	DSL	72.8083713	0.018293275	0.002090848	0.002185387	256.1754004	0.000276046	0.040267205	0.005943114	0.00676584	0.039483316	0.002421779
SACRAMENT	2021	LDT2	2021	60	DSL	496.650788	0.018318294	0.002090848	0.002185387	228.0713039	0.000276046	0.035849633	0.005943114	0.00676584	0.039483316	0.002156094
SACRAMENT	2021	LDT2	2021	70	DSL	19.2629832	0.018351229	0.002090848	0.002185387	276.3887661	0.000276046	0.043444465	0.005943114	0.00676584	0.039483316	0.002612868
SACRAMENT	2021	LHD2	2019	35	GAS	240.287161	0.058251009	0.000993056	0.001080039	795.4611857	0.001464368	0.006020092	0.004630613	0.00675698	0.121904784	0.007871733
SACRAMENT	2021	LDT2	2015	50	GAS	33277.808	0.023792002	0.001118868	0.001216872	315.7644838	0.001447943	0.003585292	0.00462868	0.006754159	0.456461103	0.003124746
SACRAMENT	2021	LDT1	2007	45	GAS	3193.98087	0.027563199	0.000142393	0.000154866	344.6395725	0.001434165	0.003946461	0.004624414	0.006747934	0.553683391	0.003410488
SACRAMENT	2021	LDA	2007	45	GAS	43224.5341	0.027409021	0.000142393	0.000154866	301.5273691	0.001432617	0.003928796	0.004621229	0.006743287	0.554153808	0.002983858
SACRAMENT	2021	LDT1	2008	60	GAS	7692.65969	0.027484886	0.000171433	0.000186449	371.3880077	0.001446609	0.003980451	0.004617167	0.00673736	0.442331828	0.003675185
SACRAMENT	2021	MDV	2018	40	GAS	62035.1672	0.022448134	0.001637099	0.001780495	324.7915067	0.001475189	0.003520737	0.004615474	0.006734889	0.520631412	0.003214075
SACRAMENT	2021	LDA	2008	60	GAS	53872.4808	0.02730345	0.000171433	0.000186449	324.6892038	0.001445574	0.003962321	0.004613607	0.006732165	0.442611555	0.003213063
SACRAMENT	2021	LHD2	2009	40	GAS	33.1667067	0.090018667	0.000102083	0.000111025	855.5799515	0.001337713	0.007816605	0.004604435	0.00671878	0.122660071	0.008466657
SACRAMENT	2021	MDV	2016	45	GAS	24318.8689	0.023322456	0.001338496	0.001455737	355.3296732	0.001449688	0.003563057	0.004602894	0.006716532	0.489458109	0.003516275
SACRAMENT	2021	LHD2	2012	40	GAS	27.6276486	0.089537567	0.000247233	0.000268889	855.5689827	0.001356104	0.007967767	0.004601873	0.006715042	0.115747019	0.008466549
SACRAMENT	2021	MDV	2014	60	DSL	750.759422	0.020488672	0.003326341	0.003476743	402.0122091	0.000273912	0.063190721	0.005897164	0.006713529	0.113580125	0.003800461
SACRAMENT	2021	MDV	2014	65	DSL	110.060372	0.020460688	0.003326341	0.003476743	451.4033635	0.000273912	0.070954323	0.005897164	0.006713529	0.113580125	0.004267385
SACRAMENT	2021	MDV	2014	70	DSL	29.1187822	0.020525509	0.003326341	0.003476743	485.9432473	0.000273912	0.076383511	0.005897164	0.006713529	0.113580125	0.004593911
SACRAMENT	2021	LHD2	2011	40	GAS	18.5900214	0.090177152	0.000169076	0.000183885	855.5735566	0.001348252	0.0079523	0.004598584	0.006710243	0.118641556	0.008466594
SACRAMENT	2021	LDT2	2012	60	GAS	29565.8609	0.024730211	0.000466177	0.00050701	362.359935	0.001449118	0.003705659	0.004597222	0.006708256	0.392127004	0.003585845
SACRAMENT	2021	LDT2	2018	40	GAS	99117.1126	0.022394216	0.001637099	0.001780495	268.8992924	0.001469798	0.003514875	0.004596507	0.006707212	0.520023902	0.002660976
SACRAMENT	2021	LDT2	2010	50	GAS	14700.503	0.025116402	0.000214427	0.000233209	356.1263627	0.001423777	0.003680795	0.004584602	0.00668984	0.471227375	0.003524159
SACRAMENT	2021	LHD2	2010	40	GAS	6.05959494	0.090317505	0.000124414	0.000135312	855.5771454	0.001335944	0.007897382	0.004577418	0.006679358	0.120963236	0.008466629
SACRAMENT	2021	LHD2	2013	40	GAS	23.757937	0.0879371	0.000370053	0.000402466	855.5637912	0.001356246	0.007923186	0.004575119	0.006676003	0.11254454	0.008466497
SACRAMENT	2021	LDA	2013	60	DSL	1358.13766	0.020419977	0.003297215	0.0034463	211.3380368	0.000272013	0.033219396	0.005856287	0.006666993	0.112470112	0.001997904
SACRAMENT	2021	LDA	2013	65	DSL	199.101246	0.020392087	0.003297215	0.0034463	237.5867254	0.000272013	0.037345325	0.005856287	0.006666993	0.112470112	0.002246049
SACRAMENT	2021	LDA	2013	70	DSL	52.6764147	0.02045669	0.003297215	0.0034463	256.5560937	0.000272013	0.040327045	0.005856287	0.006666993	0.112470112	0.002425378
SACRAMENT	2021	LDT1	2006	45	GAS	2233.1899	0.025587829	0.000142393	0.000154866	351.7691343	0.001415046	0.003736576	0.004567203	0.006664452	0.530090324	0.003481041
SACRAMENT	2021	LDA	2006	45	GAS	37672.2882	0.025475743	0.000142393	0.000154866	311.3338105	0.001413519	0.003720102	0.004566584	0.006663549	0.53057025	0.0030809
SACRAMENT	2021	LDT1	2007	55	GAS	5826.89032	0.027123924	0.000139976	0.000152237	369.9171897	0.001415377	0.003883566	0.004563832	0.006659533	0.48279937	0.00366063
SACRAMENT	2021	LDA	2007	55	GAS	78856.02	0.026973702	0.000139976	0.000152237	323.7383425	0.001413931	0.003866398	0.004560952	0.006655331	0.483270148	0.003203653
SACRAMENT	2021	LDT2	2016	45	GAS	35311.0307	0.023184795	0.001338496	0.001455737	294.1264172	0.001437733	0.003550534	0.004558525	0.006651789	0.488071751	0.002910619
SACRAMENT	2021	LDA	2018	50	DSL	1649.18672	0.020793898	0.002792888	0.00291917	167.1720175	0.000270524	0.026277113	0.005824226	0.006630494	0.101863238	0.001580377
SACRAMENT	2021	MDV	2016	55	GAS	44365.7579	0.022952842	0.001315778	0.001431028	381.2554	0.001430831	0.0035059	0.004543021	0.006629165	0.426883446	0.003772831
SACRAMENT	2021	LHD1	2020	35	GAS	1706.76142	0.0395211	0.000993056	0.001080039	694.4754867	0.00146102	0.004374216	0.004537121	0.006620557	0.128969882	0.006872398
SACRAMENT	2021	LDA	2015	55	DSL	2027.08534	0.020422181	0.00310737	0.003247871	191.5709466	0.000269723	0.030112285	0.005806976	0.006610857	0.108255917	0.001811034
SACRAMENT	2021	LHD2	2018	35	GAS	210.078807	0.059262232	0.00096731	0.001052038	795.4540322	0.001415275	0.006064196	0.004518535	0.006593435	0.117696698	0.007871662
SACRAMENT	2021	LHD2	2014	40	GAS	85.6778181	0.08609503	0.000515203	0.00056033	842.7281228	0.001347808	0.007872802	0.004515544	0.006589072	0.109436542	0.008339478
SACRAMENT	2021	LDT1	2006	55	GAS	4074.08596	0.025180036	0.000139976	0.000152237	377.593842	0.001396508	0.003677026	0.004507371	0.006577145	0.46222675	0.003736597
SACRAMENT	2021	MDV	2016	55	DSL	1063.10498	0.020373113	0.003086652	0.003226217	348.0764805	0.000268329	0.054712775	0.005776969	0.006576695	0.107440807	0.003290575
SACRAMENT	2021	LDA	2006	55	GAS	68726.8648	0.025071129	0.000139976	0.000152237	334.2846477	0.001395082	0.003661018	0.00450702	0.006576633	0.462703242	0.003308018
SACRAMENT	2021	MDV	2017	45	GAS	22623.8184	0.023021775	0.001438172	0.001564143	340.6181331	0.001425209	0.003542562	0.004504626	0.00657314	0.486732276	0.003370693
SACRAMENT	2021	LDT2	2016	55	GAS	64419.1408	0.022817363	0.001315778	0.001431028	315.6655263	0.001419031	0.003494266	0.004499229	0.006565265	0.425674326	0.003123766
SACRAMENT	2021	LHD1	2016	35	GAS	3374.15319	0.043869986	0.000864326	0.000940034	740.7366858	0.001381246	0.004504742	0.004499093	0.006565067	0.115046406	0.00733019
SACRAMENT	2021	LDT1	2007	50	GAS	3201.8812	0.027131445	0.000137453	0.000149493	355.3645051	0.00138945	0.003884643	0.004480232	0.006537544	0.51775959	0.00351662
SACRAMENT	2021	LDA	2007	50	GAS	43331.4502	0.026981034	0.000137453	0.000149493	311.0074259	0.001388028	0.003867448	0.004477397	0.006533407	0.518261616	0.003077671
SACRAMENT	2021	LDT2	2017	45	GAS	36646.035	0.02292543	0.001438172	0.001564143	281.9715388	0.001416474	0.003533217	0.004472812	0.006526717	0.485738857	0.002790337
SACRAMENT	2021	LHD1	2019	35	GAS	1527.5059	0.040000397	0.000993056	0.001080039	694.4639938	0.001421152	0.004337249	0.004468901	0.00652101	0.121904784	0.006872284
SACRAMENT	2021	MDV	2019	65	GAS	5135.46166	0.020245035	0.001693441	0.001841771	358.1356463	0.001453714	0.003298477	0.004462732	0.006512008	0.368327205	0.003544043
SACRAMENT	2021	LDT1	2009	40	GAS	10400.0968	0.026456945	0.000199191	0.000216638	326.3049544	0.001412673	0.003880321	0.004462498	0.006511666	0.534936745	0.003229052
SACRAMENT	2021	MDV	2016	50	GAS	24379.0218	0.022959002	0.001292059	0.001405232	366.2520128	0.001404617	0.003507531	0.004459788	0.006507713	0.457790627	0.003624361
SACRAMENT	2021	LDT2	2019	65	GAS	8163.83634	0.020236266	0.001693441	0.001841771	296.6135512	0.001452579	0.003296895	0.004459444	0.00650721	0.36825156	0.002935232
SACRAMENT	2021	LHD2	2015	40	GAS	99.9273359	0.083885677	0.000649187	0.00070605	838.446972	0.001338925	0.007799652	0.004453072	0.006497912	0.106879536	0.008297112
SACRAMENT	2021	LDT1	2012	65	GAS	827.64294	0.024476431	0.000528348	0.000574627	338.6009276	0.001436633	0.00372715	0.004452348	0.006496856	0.355655029	0.003350731
SACRAMENT	2021	LDA	2009	40	GAS	85085.4637	0.026270646	0.000199191	0.000216638	285.4845251	0.001410137	0.003863552	0.004452093	0.006496484	0.535259507	0.002825101
SACRAMENT	2021	MDV	2012	45	GAS	10881.2629	0.024946871	0.000441419	0.000480083	394.1906402	0.001398728	0.003704144	0.004451161	0.006495124	0.489738545	0.003900836
SACRAMENT	2021	MDV	2017	55	GAS	41273.4183	0.022657609	0.001413761	0.001537594	365.4742763	0.001406714	0.003486525	0.004446171	0.006487842	0.424534862	0.003616664
SACRAMENT	2021	LDT1	2011	40	GAS	5147.4948	0.025122201	0.00032991	0.000358807	320.2946035	0.001410082	0.003755975	0.004437249	0.006474823	0.512928505	0.003169575
SACRAMENT	2021	LDT1	2014	70	GAS	420.327867	0.023899397	0.001195883	0.001300632	327.957214	0.00144652	0.003733952	0.004436397	0.006473581	0.317185117	0.003245402
SACRAMENT	2021	LDA	2012	65	GAS	14137.549	0.024277611	0.000528348	0.000574627	296.3536592	0.001433161	0.003712286	0.004435033	0.00647159	0.355810308	0.00293266
SACRAMENT	2021	LDT1	2018	30	GAS	14071.2232	0.020402359	0.002295718	0.002496803	286.2640812	0.00149381	0.003447139	0.004433775	0.006469754	0.555939239	0.002832815
SACRAMENT	2021	MDV	2018	60	GAS	33853.7663	0.022122687	0.001581993	0.001720562	362.1262289	0.001415884	0.003469694	0.004429926	0.006464137	0.388592422	0.003583533
SACRAMENT	2021	LDT1	2020	25	GAS	21191.3441	0.017826227	0.001995931	0.002170757	302.3110999	0.001543752	0.003228152	0.004427751	0.006460964	0.578635422	0.002991613
SACRAMENT	2021	MDV	2015	65	DSL	235.815038	0.020088025	0.003168102	0.003311349	440.8768259	0.000263598	0.069299697	0.005675108	0.006460733	0.107549713	0.004167871
SACRAMENT	2021	MDV	2015	70	DSL	62.3898191	0.020151665	0.003168102	0.003311349	474.6112542	0.000263598	0.07460228	0.005675108	0.006460733	0.107549713	0.004486783
SACRAMENT	2021	MDV	2015	60	DSL	1608.57498	0.020115499	0.003168102	0.003311349	392.6374526	0.000263598	0.06171714	0.005675108	0.006460733	0.107549713	0.003711836
SACRAMENT	2021	LDT1	2006	50	GAS	2238.71371	0.025187017	0.000137453	0.000149493	362.733081	0.001370927	0.003678046	0.004424804	0.006456664	0.495697276	0.003589538
SACRAMENT	2021	LDA	2006	50	GAS	37765.4708	0.025077943	0.000137453	0.000149493	321.1323363	0.001369525	0.003662013	0.004424453	0.006456151	0.49620555	0.003177865
SACRAMENT	2021	LDA	2014	60	DSL	1682.60464	0.020102852	0.003162743	0.003305748	211.5929687	0.000263248	0.033259468	0.005667582	0.006452165	0.107345458	0.002000314
SACRAMENT	2021	LDA	2014	65	DSL	246.667691	0.020075395	0.003162743	0.003305748	237.8733204	0.000263248	0.037390373	0.005667582	0.006452165	0.107345458	0.002248758
SACRAMENT	2021	LDA	2014	70	DSL	65.2611162	0.020138995	0.003162743	0.003305748	256.8655711	0.000263248	0.040375691	0.005667582	0.006452165	0.107345458	0.002428303
SACRAMENT	2021	LDA	2011	40	GAS	109358.305	0.024950984	0.00032991	0.000358807	280.2234028	0.001406699	0.003743134	0.004421251	0.006451479	0.513087861	0.002773038
SACRAMENT	2021	LDT2	2016	50	GAS	35398.3728	0.022823487	0.001292059	0.001405232	303.2509947	0.001393033	0.003495203	0.004416799	0.006444983	0.456493964	0.003000914
SACRAMENT	2021	LDT2	2017	55	GAS	66854.6354	0.022562788	0.001413761	0.001537594	302.6241978	0.001398092	0.003477328	0.004414769	0.006442021	0.423668388	0.002994712
SACRAMENT	2021	LDT2	2018	60	GAS	54090.0865	0.02206955	0.001581993	0.001720562	299.577413	0.00141071	0.003463917	0.004411721	0.006437572	0.388138985	0.002964561
SACRAMENT	2021	LDA	2014	70	GAS	4832.84905	0.02368922	0.001195883	0.001300632	286.2845807	0.001441038	0.003717725	0.00441167	0.006437499	0.316928329	0.002833018
SACRAMENT	2021	LDT1	2013	70	GAS	353.465939	0.024538582	0.000858963	0.0009342	327.5042201	0.001436788	0.003795974	0.004408552	0.006432948	0.319757447	0.00324092
SACRAMENT	2021	LDT1	2014	35	GAS	16207.738	0.023599117	0.001159034	0.001260555	295.3467843	0.001436913	0.003687037	0.004406934	0.006430588	0.517714081	0.002922696
SACRAMENT	2021	LDA	2018	30	GAS	162408.909	0.020205774	0.002295718	0.002496803	250.6411123	0.001487088	0.003431382	0.00440356	0.006425664	0.555747952	0.002480297
SACRAMENT	2021	MDV	2019	50	DSL	872.680913	0.0205127	0.002675913	0.002796906	288.4972894	0.000262086	0.045347756	0.005642552	0.00642367	0.096929204	0.002727337
SACRAMENT	2021	MDV	2006	30	GAS	18224.6037	0.016925178	0.000218224	0.000237339	510.9925707	0.001454864	0.003046152	0.004401967	0.006423339	0.509720141	0.005056686
SACRAMENT	2021	LDT1	2008	45	GAS	5462.12967	0.027124157	0.000162328	0.000176547	334.4755882	0.001378862	0.003928209	0.004400937	0.006421837	0.549938583	0.003309907
SACRAMENT	2021	LDA	2008	45	GAS	38251.8514	0.026947507	0.000162328	0.000176547	292.6373146	0.001378022	0.003910666	0.00439801	0.006417566	0.55041093	0.002895883
SACRAMENT	2021	MDV	2012	55	GAS	19851.0661	0.024549293	0.000433927	0.000471935	422.9362018	0.001380404	0.003645111	0.004392849	0.006410035	0.427040914	0.004185297
SACRAMENT	2021	LDA	2020	25	GAS	229612.25	0.017629345	0.001995931	0.002170757	264.7151073	0.001534493	0.003209162	0.004390685	0.006406878	0.578182091	0.002619571
SACRAMENT	2021	LDA	2013	70	GAS	4808.18759	0.024312875	0.000858963	0.0009342	285.8799084	0.001431769	0.003777668	0.004386271	0.006400437	0.319548398	0.002829013
SACRAMENT	2021	LDA	2014	35	GAS	186353.457	0.023399339	0.001159034	0.001260555	258.484157	0.001432033	0.003672232	0.004384102	0.006397272	0.517734844	0.00255791
SACRAMENT	2021	LDT2	2012	45	GAS	20993.0729	0.024405636	0.000441419	0.000480083	326.2176403	0.001381253	0.003657024	0.004381926	0.006394096	0.487520354	0.003228188
SACRAMENT	2021	LDT1	2013	35	GAS	13629.5586	0.024225978	0.000832495	0.000905414	294.8771032	0.001426946	0.003747616	0.00437835	0.006388878	0.521675528	0.002918048
SACRAMENT	2021	LHD1	2017	35	GAS	1223.90601	0.040957549	0.000928691	0.001010036	725.3086777	0.001360537	0.004318815	0.004375959	0.006385389	0.115257019	0.007177517
SACRAMENT	2021	MDV	2017	50	GAS	22679.7785	0.022663622	0.001388277	0.001509877	351.0941836	0.001380941	0.00348745	0.004364709	0.006368973	0.455270652	0.003474362
SACRAMENT	2021	LDA	2016	55	DSL	199.516791	0.020061382	0.002955055	0.00308867	186.0247485	0.000259474	0.0292405	0.005586312	0.006359645	0.10226332	0.001758603
SACRAMENT	2021	LDA	2013	35	GAS	185402.517	0.024010978	0.000832495	0.000905414	258.055196	0.001422513	0.00373076	0.004357915	0.006359059	0.521770885	0.002553665
SACRAMENT	2021	LDT1	2008	55	GAS	9964.75301	0.026691879	0.000159573	0.00017355	359.0037329	0.001360798	0.003865605	0.004343283	0.006337708	0.479533982	0.003552633
SACRAMENT	2021	LDA	2008	55	GAS	69784.1821	0.026519518	0.000159573	0.00017355	314.1894293	0.001360047	0.003848555	0.004340644	0.006333858	0.480006034	0.003109159
SACRAMENT	2021	LDT2	2017	50	GAS	36736.6791	0.022568776	0.001388277	0.001509877	290.7248727	0.001372477	0.003478251	0.004333882	0.006323991	0.454341447	0.002876958
SACRAMENT	2021	LHD1	2018	35	GAS	1363.45787	0.039536816	0.00096731	0.001052038	694.4567205	0.001363565	0.004250482	0.004329042	0.006316927	0.117696698	0.006872212
SACRAMENT	2021	LDT2	2012	55	GAS	38298.3927	0.024016684	0.000433927	0.000471935	350.0915991	0.001363158	0.003598742	0.004324521	0.00631033	0.425106701	0.00346444
SACRAMENT	2021	LDA	2019	50	DSL	1691.30151	0.020351276	0.002608766	0.002726723	161.8718595	0.000257241	0.025444002	0.005538252	0.006304932	0.094096929	0.001530271
SACRAMENT	2021	MDV	2012	50	GAS	10908.1777	0.024556099	0.000426105	0.000463428	406.2858555	0.001355117	0.003646122	0.004312381	0.006292616	0.457963581	0.004020528
SACRAMENT	2021	MDV	2017	55	DSL	1435.42072	0.019945949	0.002906321	0.003037732	333.5394615	0.000256195	0.052427759	0.005515717	0.006279277	0.100345937	0.003153147
SACRAMENT	2021	LDT1	2009	60	GAS	5675.52991	0.026079616	0.000192486	0.000209346	363.5716213	0.001356263	0.00382498	0.004284302	0.006251644	0.399509326	0.003597836
SACRAMENT	2021	LDA	2009	60	GAS	46432.7498	0.02589369	0.000192486	0.000209346	317.848617	0.001353687	0.003808114	0.00427387	0.006236422	0.399661825	0.00314537
SACRAMENT	2021	LDA	2015	60	DSL	1564.88351	0.019769654	0.003021455	0.003158072	207.6859107	0.000254039	0.032645333	0.005469313	0.006226449	0.101961061	0.001963379
SACRAMENT	2021	LDA	2015	70	DSL	60.6952119	0.019805198	0.003021455	0.003158072	252.1225558	0.000254039	0.039630155	0.005469313	0.006226449	0.101961061	0.002383465
SACRAMENT	2021	LDA	2015	65	DSL	229.409925	0.019742652	0.003021455	0.003158072	233.4809965	0.000254039	0.036699961	0.005469313	0.006226449	0.101961061	0.002207235
SACRAMENT	2021	LDT1	2008	50	GAS	5475.64027	0.02669928	0.000156697	0.000170422	344.8823287	0.001335871	0.003866677	0.004263722	0.006221613	0.51425775	0.00341289

SACRAMENT	2021	LDA	2008	50	GAS	38346.4676	0.026526726	0.000156697	0.000170422	301.8359642	0.001335132	0.003849601	0.004261125	0.006217823	0.514761161	0.002986912
SACRAMENT	2021	LDT1	2011	60	GAS	2809.08545	0.024763908	0.000318805	0.000346729	356.8818982	0.001353775	0.003702407	0.004260061	0.006216272	0.383072808	0.003531636
SACRAMENT	2021	LDT1	2015	70	GAS	849.493004	0.022845367	0.001506887	0.001638877	321.9751397	0.001398062	0.003638255	0.004252103	0.006204659	0.319351177	0.003186205
SACRAMENT	2021	LDT2	2012	50	GAS	21044.9994	0.024023342	0.000426105	0.000463428	336.3163485	0.001338188	0.00359974	0.004245304	0.006194737	0.455889309	0.003328123
SACRAMENT	2021	MDV	2016	60	DSL	820.703212	0.019722155	0.00300131	0.003137016	376.8967863	0.000252726	0.059242926	0.00544105	0.006194274	0.101193348	0.00356303
SACRAMENT	2021	MDV	2016	65	DSL	120.314043	0.019695218	0.00300131	0.003137016	423.2022639	0.000252726	0.066521502	0.00544105	0.006194274	0.101193348	0.004000783
SACRAMENT	2021	MDV	2016	70	DSL	31.8316059	0.019757613	0.00300131	0.003137016	455.5842935	0.000252726	0.071611507	0.00544105	0.006194274	0.101193348	0.00430691
SACRAMENT	2021	LDA	2011	60	GAS	59678.8992	0.024592964	0.000318805	0.000346729	311.998206	0.001350387	0.003689424	0.004244263	0.006193218	0.383106939	0.003087475
SACRAMENT	2021	LHD2	2009	45	GAS	40.8311347	0.086207406	9.34083E-05	0.00010159	858.5917293	0.001232886	0.007485662	0.004243618	0.006192278	0.11463268	0.008496461
SACRAMENT	2021	LHD2	2012	45	GAS	34.0120667	0.085746675	0.000226223	0.000246038	858.5814785	0.001249836	0.007630423	0.004241257	0.006188832	0.108172047	0.00849636
SACRAMENT	2021	LHD2	2011	45	GAS	22.8859523	0.08635918	0.000154708	0.000168259	858.5857533	0.001242599	0.007615611	0.004238226	0.00618441	0.110877153	0.008496402
SACRAMENT	2021	LDT1	2010	40	GAS	5612.93288	0.025592918	0.000242764	0.000264028	309.582254	0.001351559	0.00380315	0.004231131	0.006174056	0.515785721	0.003063567
SACRAMENT	2021	LDA	2015	70	GAS	5640.88701	0.022633428	0.001506887	0.001638877	281.0738882	0.00139274	0.003621776	0.004227582	0.006168878	0.319074466	0.002781454
SACRAMENT	2021	LDT1	2015	35	GAS	32756.2388	0.022562323	0.001460454	0.001588377	290.0328288	0.00138907	0.003593178	0.004224755	0.006164752	0.521486208	0.00287011
SACRAMENT	2021	MDV	2018	45	GAS	24037.676	0.021837618	0.001497977	0.001629187	325.8961697	0.001349964	0.003424984	0.004223678	0.006163182	0.48342211	0.003225007
SACRAMENT	2021	LHD1	2009	40	GAS	58.3729528	0.052859563	0.000102083	0.000111025	746.9468587	0.001231896	0.004827138	0.00422118	0.006159536	0.122660071	0.007391645
SACRAMENT	2021	LHD2	2010	45	GAS	7.45989463	0.086493591	0.000113841	0.000123813	858.5891083	0.001231255	0.007563018	0.004218719	0.006155945	0.113046893	0.008496435
SACRAMENT	2021	LDA	2010	40	GAS	106956.849	0.025396186	0.000242764	0.000264028	270.8553628	0.001348744	0.003786684	0.0042185	0.006155625	0.516038296	0.002680333
SACRAMENT	2021	LHD1	2012	40	GAS	106.749319	0.051632583	0.000247233	0.000268889	746.9358892	0.001249902	0.004865028	0.00421845	0.006155553	0.115747019	0.007391536
SACRAMENT	2021	LHD2	2013	45	GAS	29.2481112	0.084213969	0.000338605	0.000368264	858.5766282	0.001249967	0.00758773	0.0042166	0.006152853	0.105179152	0.008496312
SACRAMENT	2021	LHD1	2011	40	GAS	67.8985411	0.052308398	0.000169076	0.000183885	746.940463	0.001242182	0.00487357	0.004215147	0.006150732	0.118641556	0.007391581
SACRAMENT	2021	LDT2	2018	45	GAS	38406.3612	0.021785165	0.001497977	0.001629187	269.806303	0.001345031	0.003419282	0.004206321	0.006137854	0.482858019	0.002669952
SACRAMENT	2021	LDA	2015	35	GAS	217511.199	0.022360546	0.001460454	0.001588377	253.8545877	0.001384337	0.00357811	0.004202077	0.006131661	0.521484323	0.002512097
SACRAMENT	2021	LDT1	2014	65	GAS	1588.71485	0.022877517	0.001101009	0.001197448	329.8810551	0.001369009	0.003574297	0.004198676	0.006126698	0.340223995	0.00326444
SACRAMENT	2021	LHD1	2010	40	GAS	41.2335098	0.052341877	0.000124414	0.000135312	746.9440585	0.001230385	0.004826699	0.00419553	0.006122107	0.120963236	0.007391617
SACRAMENT	2021	LHD1	2013	40	GAS	154.840357	0.051141786	0.000370053	0.000402466	746.930707	0.001250421	0.00488443	0.004193868	0.006119682	0.11254454	0.007391485
SACRAMENT	2021	LDA	2017	55	DSL	2833.42091	0.019683979	0.002795731	0.002922141	180.4785505	0.000248752	0.028368715	0.005355493	0.006096873	0.095994941	0.001706171
SACRAMENT	2021	LDA	2014	65	GAS	18266.7381	0.0226848	0.001101009	0.001197448	288.7428242	0.001364422	0.003560094	0.004177113	0.006095234	0.340270925	0.002857344
SACRAMENT	2021	LDT1	2013	65	GAS	1335.99656	0.023484684	0.000790818	0.000860086	329.34433	0.001359479	0.003632942	0.004171341	0.006086811	0.34280938	0.003259129
SACRAMENT	2021	MDV	2018	55	GAS	43852.7678	0.02149283	0.001472551	0.001601534	349.6813994	0.001332487	0.003370908	0.004168999	0.006083393	0.421676212	0.003460381
SACRAMENT	2021	LHD2	2009	50	GAS	301.491408	0.082520469	9.01677E-05	9.80656E-05	883.798698	0.001210131	0.007165513	0.004165294	0.006077988	0.108423619	0.008745905
SACRAMENT	2021	LHD2	2012	50	GAS	251.140361	0.082079443	0.000218375	0.000237503	883.7890021	0.001226768	0.007304084	0.004162977	0.006074606	0.102312926	0.008745809
SACRAMENT	2021	LHD2	2014	45	GAS	105.476934	0.082449889	0.00047142	0.000512712	845.6959115	0.00124219	0.007539479	0.004161694	0.006072734	0.102274555	0.008368847
SACRAMENT	2021	LHD2	2011	50	GAS	168.986682	0.082665753	0.00014934	0.000162421	883.7930448	0.001219665	0.007289905	0.004160002	0.006070265	0.10487151	0.008745849
SACRAMENT	2021	LHD2	2016	40	GAS	15.997162	0.073060385	0.000749675	0.00081534	821.3360495	0.001268958	0.007055042	0.004159623	0.006069712	0.105400939	0.008127786
SACRAMENT	2021	LDA	2013	65	GAS	18173.525	0.023277224	0.000790818	0.000860086	288.2512053	0.001355317	0.003616752	0.004152058	0.006058673	0.342905078	0.002852479
SACRAMENT	2021	LDT2	2018	55	GAS	70066.0596	0.021441206	0.001472551	0.001601534	289.5711746	0.001327618	0.003365296	0.004151866	0.006058393	0.421184171	0.002865542
SACRAMENT	2021	LHD2	2010	50	GAS	55.0828223	0.082794415	0.000109892	0.000119517	883.7962152	0.00120853	0.007239561	0.004140855	0.006042325	0.106923726	0.00874588
SACRAMENT	2021	LHD2	2009	55	GAS	82.9243747	0.086746166	9.18229E-05	9.98657E-05	920.0960775	0.001202987	0.007532444	0.004140705	0.006042107	0.098829153	0.009105097
SACRAMENT	2021	LHD1	2014	40	GAS	212.427734	0.048755552	0.000515203	0.00056033	735.7245317	0.001243052	0.004746102	0.004139277	0.006040023	0.109436542	0.007280591
SACRAMENT	2021	LHD2	2013	50	GAS	215.963977	0.080612288	0.000326858	0.000355488	883.7844107	0.001226897	0.007263216	0.004138775	0.006039291	0.09948214	0.008745763
SACRAMENT	2021	LHD2	2012	55	GAS	69.0754589	0.086282556	0.000222383	0.000241862	920.0872388	0.001219526	0.00767811	0.004138401	0.006038745	0.093259199	0.009105009
SACRAMENT	2021	MDV	2020	50	DSL	911.368949	0.01998485	0.002456339	0.002567404	274.7226857	0.000246245	0.04318258	0.005301512	0.006035419	0.087667547	0.002597117
SACRAMENT	2021	LHD2	2011	55	GAS	46.4793177	0.086898889	0.000152082	0.000165403	920.0909227	0.001212464	0.007663205	0.004135444	0.00603443	0.095591372	0.009105046
SACRAMENT	2021	LDT1	2016	70	GAS	765.235332	0.021978972	0.00174014	0.001892561	312.723233	0.001363884	0.003551829	0.004125731	0.006020257	0.316453637	0.00309465
SACRAMENT	2021	LDT2	2021	30	GAS	40837.6074	0.017092015	0.000966297	0.001050936	259.5629863	0.001406738	0.003035716	0.004124592	0.006018595	0.584540917	0.002568586
SACRAMENT	2021	LHD2	2010	55	GAS	15.1503773	0.08703414	0.000111909	0.000121711	920.0938057	0.001201396	0.007610284	0.004116409	0.006006655	0.097461986	0.009105074
SACRAMENT	2021	LHD2	2013	55	GAS	59.4002922	0.084740271	0.000332858	0.000362013	920.0830451	0.001219654	0.00763515	0.004114342	0.006003638	0.090678911	0.009104968
SACRAMENT	2021	LDA	2016	60	DSL	154.024367	0.019420383	0.002873352	0.003003272	201.6731661	0.000244386	0.031700213	0.00526148	0.005989845	0.096316921	0.001906537
SACRAMENT	2021	LDA	2016	65	DSL	22.5797755	0.019393859	0.002873352	0.003003272	226.7214546	0.000244386	0.035637455	0.00526148	0.005989845	0.096316921	0.002143333
SACRAMENT	2021	LDA	2016	70	DSL	5.97395364	0.0194553	0.002873352	0.003003272	244.8233194	0.000244386	0.038482816	0.00526148	0.005989845	0.096316921	0.002314461
SACRAMENT	2021	LHD2	2015	45	GAS	123.019344	0.080334078	0.000594018	0.000646049	841.3999168	0.001234003	0.007469426	0.004104116	0.005988717	0.099884889	0.008326334
SACRAMENT	2021	LDT1	2016	35	GAS	29507.2839	0.021710504	0.00168652	0.001834244	281.7683132	0.001355398	0.003508444	0.004100059	0.005982797	0.516988973	0.002788326
SACRAMENT	2021	LDA	2016	70	GAS	5873.13884	0.021773008	0.00174014	0.001892561	273.0079123	0.00135823	0.003535903	0.004099846	0.005982486	0.316134338	0.002701635
SACRAMENT	2021	MDV	2021	30	GAS	24742.7859	0.016992016	0.000966297	0.001050936	313.3303733	0.001397502	0.003021767	0.004093033	0.005972543	0.583332929	0.003100658
SACRAMENT	2021	MDV	2018	50	GAS	24097.1333	0.02149847	0.001446007	0.001572664	335.9249989	0.001308072	0.003371793	0.004092611	0.005971929	0.452203702	0.00332425
SACRAMENT	2021	MDV	2018	55	DSL	1525.1262	0.019497949	0.002717193	0.002840053	319.0024425	0.000243468	0.050142742	0.005241722	0.005967352	0.092904992	0.00301572
SACRAMENT	2021	LDA	2020	50	DSL	1639.08642	0.019890757	0.002417199	0.002526494	156.5717014	0.000243421	0.024610891	0.005240715	0.005966206	0.086016557	0.001480166
SACRAMENT	2021	LHD2	2014	50	GAS	778.82698	0.078923655	0.000455065	0.000494925	870.5256905	0.001219263	0.007217029	0.004084882	0.00596065	0.096734869	0.008614557
SACRAMENT	2021	LDT1	2009	45	GAS	4029.87804	0.025737331	0.000182263	0.000198228	327.4177848	0.001292747	0.003774778	0.00408366	0.005958867	0.496698584	0.003240064
SACRAMENT	2021	LHD1	2015	40	GAS	617.49844	0.047720209	0.000649187	0.00070605	731.9865608	0.001235291	0.004732316	0.004082067	0.005956543	0.106879536	0.0072436
SACRAMENT	2021	LDA	2016	35	GAS	226466.772	0.021514423	0.00168652	0.001834244	246.6410052	0.001350328	0.003493909	0.004075996	0.005947684	0.516920179	0.002440713
SACRAMENT	2021	LDT2	2018	50	GAS	38501.3595	0.021446833	0.001446007	0.001572664	278.1874574	0.001303292	0.003366179	0.004075792	0.005947387	0.451676039	0.00275289
SACRAMENT	2021	LDA	2009	45	GAS	32969.3124	0.025556125	0.000182263	0.000198228	286.4536635	0.001290428	0.003758469	0.004074149	0.005944989	0.497000664	0.002834691
SACRAMENT	2021	LDT1	2010	60	GAS	3063.08383	0.025227911	0.000234592	0.00025514	344.9342302	0.001297589	0.00374891	0.004062174	0.005927514	0.385206677	0.003413404
SACRAMENT	2021	LHD2	2014	55	GAS	214.214198	0.082965166	0.000463418	0.00050401	906.2800212	0.001212065	0.007586598	0.004060767	0.005925462	0.088174748	0.008968375
SACRAMENT	2021	LDT1	2011	45	GAS	1994.5753	0.024438891	0.000301874	0.000328315	321.3883613	0.001290375	0.003653815	0.004060555	0.005925152	0.47626353	0.003180398
SACRAMENT	2021	MDV	2017	60	DSL	1108.12613	0.01930864	0.002825965	0.002953742	361.1561199	0.000241297	0.056768713	0.00519499	0.005914151	0.09451103	0.003414224
SACRAMENT	2021	MDV	2017	65	DSL	162.449875	0.019282267	0.002825965	0.002953742	405.5277019	0.000241297	0.063743307	0.00519499	0.005914151	0.09451103	0.003833695
SACRAMENT	2021	MDV	2017	70	DSL	42.9795249	0.019343355	0.002825965	0.002953742	436.5573327	0.000241297	0.068620733	0.00519499	0.005914151	0.09451103	0.004127037
SACRAMENT	2021	MDV	2019	40	GAS	64191.9058	0.019986297	0.001546218	0.001681654	310.1110178	0.001319939	0.003256321	0.00405206	0.005912756	0.516632792	0.0030688
SACRAMENT	2021	LDA	2010	60	GAS	58368.379	0.025031778	0.000234592	0.00025514	301.5562315	0.001294752	0.003732349	0.004049628	0.005909207	0.385309938	0.002984143
SACRAMENT	2021	LDT2	2019	40	GAS	102045.785	0.01997764	0.001546218	0.001681654	256.7666414	0.001318909	0.00325476	0.004049075	0.0059084	0.51652669	0.002540914
SACRAMENT	2021	LDA	2011	45	GAS	42374.6661	0.024272356	0.000301874	0.000328315	281.1761267	0.001287282	0.003641326	0.004045925	0.005903804	0.476413785	0.002782466
SACRAMENT	2021	LDT1	2012	40	GAS	10345.3168	0.024169411	0.000482415	0.000524671	293.0595051	0.001304781	0.003680398	0.00404372	0.005900587	0.499144716	0.002900061
SACRAMENT	2021	LDT1	2017	70	GAS	614.115578	0.02134401	0.001869725	0.002033496	303.4699812	0.001342114	0.003491136	0.004042637	0.005899007	0.314831577	0.003003081
SACRAMENT	2021	LDT1	2009	55	GAS	7351.84658	0.025327155	0.00017917	0.000194863	351.4417665	0.001275811	0.00371462	0.004030162	0.005880804	0.43310991	0.003477801
SACRAMENT	2021	LHD2	2015	50	GAS	908.357694	0.076898333	0.00057341	0.000623636	866.1038198	0.001211227	0.007149972	0.004028367	0.005878184	0.09447464	0.008570799
SACRAMENT	2021	LDA	2012	40	GAS	176715.605	0.023971317	0.000482415	0.000524671	256.4015052	0.00130152	0.00366545	0.004027661	0.005877153	0.49927431	0.002537301
SACRAMENT	2021	LDT1	2015	65	GAS	3210.83196	0.021872916	0.00138734	0.001508858	323.9447545	0.001323459	0.003483386	0.004025203	0.005873567	0.342720815	0.003205696
SACRAMENT	2021	LDA	2009	55	GAS	60147.0626	0.025150235	0.00017917	0.000194863	307.5638409	0.001273597	0.003698776	0.004021008	0.005867446	0.433427653	0.003043594
SACRAMENT	2021	LDT1	2017	35	GAS	23680.1439	0.021087027	0.001812112	0.001970837	273.5003946	0.001334044	0.003449103	0.004018328	0.005863535	0.51457195	0.002706508
SACRAMENT	2021	LDA	2017	70	GAS	7067.98742	0.021141229	0.001869725	0.002033496	264.9404858	0.001336107	0.003475307	0.004015448	0.005859332	0.314473755	0.002621801
SACRAMENT	2021	LDT1	2011	55	GAS	3638.77304	0.024049409	0.00029675	0.000322743	344.9735323	0.00127347	0.003595584	0.00400736	0.00584753	0.415291005	0.003413793
SACRAMENT	2021	LHD2	2015	55	GAS	249.841262	0.080836132	0.000583936	0.000635084	901.6769055	0.001204077	0.007516107	0.004004586	0.005843483	0.086114527	0.008922824
SACRAMENT	2021	LDA	2015	65	GAS	21320.8822	0.021678229	0.00138734	0.001508858	283.5705842	0.001319011	0.003468926	0.004003783	0.005842311	0.342753608	0.002806161
SACRAMENT	2021	LHD2	2020	40	GAS	81.5045449	0.053944141	0.000861329	0.000936774	770.0336523	0.001281822	0.005705152	0.004002754	0.005840809	0.118157074	0.007620107
SACRAMENT	2021	LDA	2011	55	GAS	77305.5763	0.023886855	0.00029675	0.000322743	301.9010217	0.001270491	0.003583494	0.003993152	0.005826798	0.41547411	0.002987555
SACRAMENT	2021	LDA	2017	35	GAS	272539.836	0.020893956	0.001812112	0.001970837	239.4238157	0.001328623	0.003434659	0.003992955	0.00582651	0.514444549	0.002369293
SACRAMENT	2021	LDA	2018	55	DSL	3001.24506	0.019289973	0.002629397	0.002748287	174.9323525	0.00023756	0.02749693	0.00511452	0.005822541	0.089450777	0.00165374
SACRAMENT	2021	LHD2	2017	40	GAS	54.4531122	0.064706634	0.000805502	0.000876057	804.2282862	0.001231327	0.006448683	0.003984383	0.005814002	0.105593894	0.007958491
SACRAMENT	2021	LHD2	2019	40	GAS	70.9272905	0.057042736	0.000861329	0.000936774	770.0232683	0.00125671	0.005895221	0.00397396	0.005798793	0.111684312	0.007620004
SACRAMENT	2021	LDT2	2020	70	GAS	2207.74486	0.018310399	0.001319544	0.001435125	280.924507	0.001323931	0.003126208	0.003966699	0.005788198	0.336370372	0.002779976
SACRAMENT	2021	LDT1	2009	50	GAS	4039.84596	0.025334177	0.00017594	0.000191351	337.6113442	0.001252441	0.00371565	0.003956338	0.005773079	0.464472042	0.003340938
SACRAMENT	2021	MDV	2020	70	GAS	1404.30189	0.018272054	0.001319544	0.001435125	340.0476484	0.001320532	0.003122212	0.00395428	0.005770076	0.336081811	0.003365047
SACRAMENT	2021	LHD2	2021	35	GAS	227.424909	0.042030098	0.000993056	0.001080039	775.5750309	0.001309393	0.004871686	0.003948193	0.005761194	0.120635252	0.007674944
SACRAMENT	2021	LDA	2009	50	GAS	33050.8621	0.025157071	0.00017594	0.000191351	295.4643913	0.001250265	0.003699781	0.003947344	0.005759955	0.464810245	0.00292386
SACRAMENT	2021	LDT2	2020	35	GAS	85130.0922	0.018099533	0.001278884	0.001390903	253.0668426	0.0013168	0.003090206	0.003945335	0.005757023	0.55052112	0.002504302
SACRAMENT	2021	LDA	2017	60	DSL	2187.36408	0.01905504	0.002718432	0.002841348	195.6604214	0.000234288	0.030755094	0.005044082	0.005742352	0.090413035	0.001849695
SACRAMENT	2021	LDA	2017	65	DSL	320.664781	0.019029014	0.002718432	0.002841348	219.9619127	0.000234288	0.03457495	0.005044082	0.005742352	0.090413035	0.002079431
SACRAMENT	2021	LDA	2017	70	DSL	84.8385999	0.019089299	0.002718432	0.002841348	237.5240831	0.000234288	0.037335478	0.005044082	0.005742352	0.090413035	0.002245457
SACRAMENT	2021	LDT1	2011	50	GAS	1999.50889	0.024056077	0.000291401	0.000316925	331.3959136	0.001250143	0.003596581	0.003933953	0.005740415	0.445362844	0.003279431
SACRAMENT	2021	MDV	2020	35	GAS	54149.5315	0.018061629	0.001278884	0.001390903	305.5405286	0.00131342	0.003086256	0.003932982	0.005738999	0.550048845	0.003023571
SACRAMENT	2021	LDA	2011	50	GAS	42479.4801	0.023893347	0.000291401	0.000316925	290.0225791	0.001247216	0.003584468	0.003919998	0.005720053	0.445556765	0.002870009
SACRAMENT	2021	LDT1	2019	30	GAS	14582.0411	0.01849095	0.002168275	0.002358197	277.3015788	0.001341525	0.003224462	0.003917468	0.00571636	0.537986192	0.002744124
SACRAMENT	2021	LDT1	2016	65	GAS	2892.36291	0.021047597	0.001602088	0.001742416	314.7145912	0.001291409	0.003401317	0.003906493	0.005700345	0.339782954	0.003114356
SACRAMENT	2021	LHD1	2020	40	GAS	503.797051	0.038491844	0.000861329	0.000936774	672.264886	0.001253837	0.004260298	0.003893726	0.005681716	0.118157074	0.006652606
SACRAMENT	2021	LHD1	2009	45	GAS	71.8622419	0.050621564	9.34083E-05	0.00010159	749.5744567	0.001135362	0.004622764	0.003890396	0.005676857	0.11463268	0.007417647

SACRAMENT	2021	MDV	2019	60	GAS	35030.7394	0.0196956	0.001494171	0.001625048	345.731586	0.001266805	0.003208959	0.003888943	0.005674737	0.385561851	0.003421294
SACRAMENT	2021	LHD1	2012	45	GAS	131.417806	0.049446533	0.000226223	0.000246038	749.5642052	0.001151956	0.004659049	0.003887881	0.005673186	0.108172047	0.007417545
SACRAMENT	2021	LDA	2019	30	GAS	166556.298	0.018302491	0.002168275	0.002358197	242.8114576	0.001334376	0.003208143	0.003887298	0.005672336	0.537663318	0.002402816
SACRAMENT	2021	LDT2	2019	60	GAS	55688.3183	0.019687069	0.001494171	0.001625048	286.0337578	0.001265816	0.00320742	0.003886078	0.005670556	0.385482666	0.002830536
SACRAMENT	2021	LHD1	2011	45	GAS	83.5890793	0.050093735	0.000154708	0.000168259	749.5684799	0.001144841	0.00466723	0.003884836	0.005668743	0.110877153	0.007417588
SACRAMENT	2021	LHD1	2021	35	GAS	1447.61183	0.032227368	0.000993056	0.001080039	677.1031727	0.001294876	0.003889935	0.003884202	0.005667819	0.120635252	0.006700485
SACRAMENT	2021	LDA	2016	65	GAS	22198.7254	0.020858407	0.001602088	0.001742416	275.5135604	0.001286639	0.003387373	0.003883749	0.005667158	0.339711973	0.00272643
SACRAMENT	2021	LDT1	2012	60	GAS	5645.63541	0.023824706	0.000466177	0.00050701	326.5183249	0.001252679	0.003627908	0.003882247	0.005664966	0.372778596	0.003231164
SACRAMENT	2021	LDT1	2021	25	GAS	18620.6002	0.016037148	0.001239896	0.0013485	292.2062783	0.001378288	0.003011708	0.003881533	0.005663923	0.565381726	0.002891618
SACRAMENT	2021	LHD2	2018	40	GAS	62.0104732	0.058032984	0.000838999	0.000912487	770.0167426	0.001214579	0.005938409	0.003877775	0.00565844	0.107829031	0.00761994
SACRAMENT	2021	LDT1	2010	45	GAS	2174.92542	0.024896805	0.000222133	0.00024159	310.6370708	0.00123682	0.003699707	0.003871935	0.005649918	0.478916508	0.003074006
SACRAMENT	2021	LHD1	2010	45	GAS	50.7620793	0.050125796	0.000113841	0.000123813	749.5718411	0.001133968	0.004622344	0.003866756	0.005642361	0.113046893	0.007417621
SACRAMENT	2021	LDA	2012	60	GAS	96437.0543	0.023627353	0.000466177	0.00050701	285.4577566	0.001249419	0.003612855	0.003866428	0.005641883	0.372792784	0.002824836
SACRAMENT	2021	MDV	2019	55	DSL	1588.13387	0.019029113	0.00251927	0.00263318	304.4654236	0.00023015	0.047857725	0.004954983	0.005640919	0.085117975	0.002878293
SACRAMENT	2021	LHD1	2013	45	GAS	190.622106	0.048976516	0.000338605	0.000368264	749.5593635	0.001152435	0.00467763	0.003865224	0.005640126	0.105179152	0.007417498
SACRAMENT	2021	LHD1	2016	40	GAS	995.973077	0.042912687	0.000749675	0.00081534	717.0485796	0.001185376	0.004406443	0.003861091	0.005634094	0.105400939	0.007095777
SACRAMENT	2021	LDA	2010	45	GAS	41444.1386	0.024705449	0.000222133	0.00024159	271.7738644	0.001234248	0.003683692	0.003860386	0.005633066	0.479153331	0.002689423
SACRAMENT	2021	MDV	2018	60	DSL	1177.37759	0.018874954	0.002642066	0.002761529	345.4154536	0.000229311	0.054294499	0.004936927	0.005620363	0.087502761	0.003265418
SACRAMENT	2021	MDV	2018	65	DSL	172.602051	0.018849174	0.002642066	0.002761529	387.8531399	0.000229311	0.060965112	0.004936927	0.005620363	0.087502761	0.003666607
SACRAMENT	2021	MDV	2018	70	DSL	45.6654962	0.018908889	0.002642066	0.002761529	417.530372	0.000229311	0.06562996	0.004936927	0.005620363	0.087502761	0.003947164
SACRAMENT	2021	LDA	2021	25	GAS	189330.012	0.015837642	0.001239896	0.0013485	255.8865495	0.001368819	0.002989234	0.003845801	0.005611784	0.564808247	0.002532205
SACRAMENT	2021	LHD1	2019	40	GAS	450.884908	0.038993333	0.000861329	0.000936774	672.2543737	0.001219623	0.004228053	0.00383518	0.005596285	0.111684312	0.006652502
SACRAMENT	2021	LHD2	2016	45	GAS	19.6939142	0.069967113	0.000685967	0.000746052	824.2287256	0.001169519	0.006756342	0.003833663	0.005594072	0.098503058	0.008156411
SACRAMENT	2021	LDT1	2017	65	GAS	2321.175	0.020443615	0.001721392	0.001872171	305.4785814	0.001271094	0.003343863	0.003828714	0.00558685	0.338212011	0.003022958
SACRAMENT	2021	LDT1	2010	55	GAS	3967.79203	0.024500024	0.000218363	0.00023749	333.4273278	0.001220618	0.003640745	0.00382121	0.005575901	0.417604342	0.003299534
SACRAMENT	2021	LHD1	2009	50	GAS	530.620779	0.048456571	9.01677E-05	9.80656E-05	771.5788756	0.001114406	0.004425057	0.003818592	0.00557208	0.108423619	0.007635398
SACRAMENT	2021	LHD1	2012	50	GAS	970.370764	0.047331793	0.000218375	0.000237503	771.5691791	0.001130695	0.00445979	0.003816123	0.005568477	0.102312926	0.007635303
SACRAMENT	2021	LHD1	2014	45	GAS	261.517235	0.046691312	0.00047142	0.000512712	738.3139029	0.001145643	0.004545159	0.003814912	0.00556671	0.102274555	0.007306215
SACRAMENT	2021	LDT1	2014	40	GAS	19858.5134	0.022589648	0.001005291	0.001093346	285.4933835	0.001243308	0.003529322	0.003813158	0.005564151	0.477442117	0.002825188
SACRAMENT	2021	LHD1	2011	50	GAS	617.210112	0.047951316	0.00014934	0.000162421	771.5732217	0.001123711	0.004467621	0.003813134	0.005564116	0.10487151	0.007635343
SACRAMENT	2021	LDA	2010	55	GAS	75607.9826	0.02431307	0.000218363	0.00023749	291.7997745	0.001218149	0.003625187	0.003810033	0.005559591	0.417863232	0.002887595
SACRAMENT	2021	LDA	2017	65	GAS	26714.8991	0.020257326	0.001721392	0.001872171	267.4504405	0.001265989	0.003330007	0.00380472	0.005551838	0.338162839	0.002646639
SACRAMENT	2021	LHD1	2009	55	GAS	145.945772	0.050937928	9.18229E-05	9.98657E-05	803.2645519	0.001107828	0.004651655	0.003796049	0.005539186	0.098829153	0.007948954
SACRAMENT	2021	LHD1	2010	50	GAS	374.820119	0.047982006	0.000109892	0.000119517	771.5763981	0.001113039	0.004424654	0.003795388	0.005538221	0.106923726	0.007635374
SACRAMENT	2021	LDA	2019	55	DSL	3077.88697	0.018879364	0.002456054	0.002567106	169.3861544	0.000225895	0.026625145	0.004863393	0.005536649	0.082630825	0.001601308
SACRAMENT	2021	LHD1	2013	50	GAS	1407.52706	0.046881878	0.000326858	0.000355488	771.5645962	0.001131165	0.004477576	0.003793884	0.005536027	0.09948214	0.007635257
SACRAMENT	2021	LHD1	2012	55	GAS	266.897784	0.049755553	0.000222383	0.000241862	803.2557125	0.00112402	0.004688167	0.003793595	0.005535604	0.093259199	0.007948866
SACRAMENT	2021	LDA	2014	40	GAS	228329.371	0.022397678	0.001005291	0.001093346	249.797164	0.001239038	0.003515034	0.003793256	0.00553511	0.47742221	0.002471945
SACRAMENT	2021	LHD1	2011	55	GAS	169.761928	0.0504068	0.000152082	0.000165403	803.2593964	0.001117077	0.004696398	0.003790624	0.005531269	0.095591372	0.007948903
SACRAMENT	2021	LDT1	2013	40	GAS	16699.602	0.023190104	0.000722067	0.000785313	285.0452116	0.001234709	0.003587373	0.003788503	0.005528174	0.481116465	0.002820753
SACRAMENT	2021	LHD1	2010	55	GAS	103.093233	0.050439062	0.000111909	0.000121711	803.2622854	0.001106468	0.004651231	0.003772982	0.005505527	0.097461986	0.007948931
SACRAMENT	2021	LHD1	2013	55	GAS	387.13641	0.049282599	0.000332858	0.000362013	803.2515272	0.001124487	0.004706864	0.003771488	0.005503346	0.090678911	0.007948825
SACRAMENT	2021	LDA	2013	40	GAS	227164.233	0.022983552	0.000722067	0.000785313	249.3886174	0.001230827	0.003571122	0.003770678	0.005502164	0.481165645	0.002467903
SACRAMENT	2021	LHD2	2016	50	GAS	145.417118	0.066974744	0.000662169	0.000720169	848.4284259	0.001147933	0.006467385	0.003762905	0.005490823	0.093167656	0.008395887
SACRAMENT	2021	LHD1	2015	45	GAS	760.194921	0.045699803	0.000594018	0.000646049	734.5630078	0.00113849	0.004531956	0.003762185	0.005489771	0.099884889	0.007269096
SACRAMENT	2021	LDT2	2020	65	GAS	8344.62169	0.017548452	0.00121486	0.001321271	282.5791329	0.001254755	0.002996118	0.003759439	0.005485765	0.361896597	0.00279635
SACRAMENT	2021	LDA	2018	60	DSL	2316.92214	0.018673623	0.002556697	0.0026723	189.6476767	0.000223746	0.029809974	0.004817121	0.005483972	0.084249401	0.001792853
SACRAMENT	2021	LDA	2018	70	DSL	89.863609	0.018707196	0.002556697	0.0026723	230.2248467	0.000223746	0.03618814	0.004817121	0.005483972	0.084249401	0.002176453
SACRAMENT	2021	LDA	2018	65	DSL	339.657827	0.018648118	0.002556697	0.0026723	213.2023708	0.000223746	0.033512444	0.004817121	0.005483972	0.084249401	0.002015529
SACRAMENT	2021	LHD1	2017	40	GAS	361.269144	0.040011875	0.000805502	0.000876057	702.1137452	0.001167604	0.004219097	0.003755418	0.005479897	0.105593894	0.006947985
SACRAMENT	2021	LDT1	2010	50	GAS	2180.3051	0.024506817	0.000214427	0.000233209	320.3070228	0.001198258	0.003641754	0.003751213	0.005473762	0.447843693	0.003169698
SACRAMENT	2021	MDV	2020	65	GAS	5307.84525	0.017511702	0.00121486	0.001321271	341.1631209	0.001251534	0.002992288	0.003747669	0.005468589	0.361586138	0.003376086
SACRAMENT	2021	LHD1	2014	50	GAS	1931.00682	0.044694408	0.000455065	0.000494925	759.9891703	0.001124498	0.00435077	0.0037445	0.005463966	0.096734869	0.007520709
SACRAMENT	2021	LHD2	2016	55	GAS	39.9965745	0.070404378	0.000674324	0.000733389	883.2754478	0.001141156	0.006798566	0.003740691	0.005458408	0.084923199	0.008740727
SACRAMENT	2021	LDA	2010	50	GAS	41546.6509	0.024319678	0.000214427	0.000233209	280.3216578	0.001195833	0.003626172	0.003740234	0.00545774	0.448118872	0.00277401
SACRAMENT	2021	LHD1	2014	55	GAS	531.118064	0.046983113	0.000463418	0.00050401	791.2009733	0.00111786	0.004573564	0.003722395	0.00543171	0.088174748	0.007829575
SACRAMENT	2021	LHD1	2018	40	GAS	402.461672	0.038568884	0.000838999	0.000912487	672.2477452	0.001170202	0.004146423	0.003715153	0.005421143	0.10782903	0.006652436
SACRAMENT	2021	MDV	2019	45	GAS	24873.3791	0.019442745	0.001414819	0.001538745	311.1638488	0.001207895	0.003167762	0.003708096	0.005410845	0.479710512	0.003079219
SACRAMENT	2021	LDT2	2019	45	GAS	39541.1766	0.019434323	0.001414819	0.001538745	257.6307679	0.001206952	0.003166243	0.003705364	0.005406858	0.479611992	0.002549465
SACRAMENT	2021	LDT1	2012	45	GAS	4008.65161	0.023512016	0.000441419	0.000480083	294.0567146	0.001194014	0.003580293	0.003700434	0.005399665	0.463465028	0.00290993
SACRAMENT	2021	LHD1	2015	50	GAS	5613.17335	0.043745304	0.00057341	0.000623636	756.1284118	0.001117477	0.004338133	0.003692747	0.005388447	0.09447464	0.007482504
SACRAMENT	2021	LHD2	2020	45	GAS	100.339267	0.051660223	0.000788133	0.000857166	772.7434947	0.001181375	0.005463604	0.003689087	0.005383107	0.110424378	0.007646923
SACRAMENT	2021	LDA	2012	45	GAS	68474.587	0.023319334	0.000441419	0.000480083	257.2696965	0.001191032	0.003565756	0.003685747	0.005378234	0.463587587	0.002545892
SACRAMENT	2021	LHD2	2017	45	GAS	67.0365732	0.061967048	0.00073705	0.000801609	807.0604805	0.001134837	0.006175655	0.003672155	0.0053584	0.098683385	0.007986518
SACRAMENT	2021	LHD1	2015	55	GAS	1543.88775	0.045985408	0.000583936	0.000635084	787.1820282	0.00111088	0.004560279	0.003670947	0.005356637	0.086114527	0.007789804
SACRAMENT	2021	LDT1	2018	70	GAS	648.64658	0.019411172	0.001947476	0.002118057	294.2120208	0.00123431	0.00327967	0.003663553	0.005345848	0.313286061	0.002911466
SACRAMENT	2021	LHD2	2019	45	GAS	87.3177364	0.054627628	0.000788133	0.000857166	772.7337919	0.001158231	0.005645625	0.003662549	0.005344383	0.104375221	0.007646827
SACRAMENT	2021	LDT1	2014	60	GAS	10837.1671	0.022266408	0.000971452	0.001056543	318.0748009	0.001193593	0.00347882	0.003660686	0.005341664	0.356527435	0.003147608
SACRAMENT	2021	MDV	2019	55	GAS	45377.3701	0.019136345	0.001390805	0.001512627	333.8768007	0.001192295	0.003117841	0.003660205	0.005340963	0.418466944	0.003303982
SACRAMENT	2021	LDT2	2019	55	GAS	72136.3429	0.019128056	0.001390805	0.001512627	276.5064806	0.001191364	0.003116346	0.003657508	0.005337028	0.418381002	0.002736256
SACRAMENT	2021	LDT1	2015	40	GAS	40134.5461	0.021596824	0.001266729	0.001377683	280.3497717	0.001201887	0.003439417	0.003655449	0.005334023	0.480899807	0.002774288
SACRAMENT	2021	LDT1	2012	55	GAS	7313.12247	0.023137305	0.000433927	0.000471935	315.6272854	0.001178372	0.003523234	0.003651957	0.005328927	0.404131002	0.003123388
SACRAMENT	2021	LDT1	2018	35	GAS	25011.6507	0.019180851	0.001887467	0.002052792	265.2245156	0.001227146	0.003240755	0.00364229	0.00531482	0.512277504	0.002624612
SACRAMENT	2021	MDV	2006	70	GAS	840.106558	0.016117621	0.000185121	0.000201336	527.8311374	0.001203441	0.00290081	0.00364124	0.00531329	0.28791466	0.005223317
SACRAMENT	2021	LDA	2014	60	GAS	124603.664	0.022075205	0.000971452	0.001056543	278.091002	0.001189369	0.003464426	0.003641196	0.005313225	0.356432366	0.002751936
SACRAMENT	2021	MDV	2019	65	DSL	179.732773	0.018395937	0.002449615	0.002560376	370.1785779	0.000216767	0.058186917	0.004666861	0.005312911	0.080168543	0.003499519
SACRAMENT	2021	MDV	2019	60	DSL	1226.01868	0.018421097	0.002449615	0.002560376	329.6747873	0.000216767	0.051820286	0.004666861	0.005312911	0.080168543	0.003116612
SACRAMENT	2021	MDV	2019	70	DSL	47.5520786	0.018454217	0.002449615	0.002560376	398.5034113	0.000216767	0.062639187	0.004666861	0.005312911	0.080168543	0.00376729
SACRAMENT	2021	LDA	2012	55	GAS	124920.569	0.022948969	0.000433927	0.000471935	276.2236353	0.001175497	0.003509123	0.003637672	0.005308083	0.404288554	0.002733457
SACRAMENT	2021	LDT1	2013	60	GAS	9113.28923	0.022859366	0.000697761	0.000758879	317.5916866	0.001185405	0.003536209	0.003637221	0.005307424	0.359314473	0.003142827
SACRAMENT	2021	LDA	2018	70	GAS	7486.62588	0.019217133	0.001947476	0.002118057	256.8682409	0.001228221	0.003263489	0.003637002	0.005307105	0.312885999	0.002541919
SACRAMENT	2021	LDA	2015	40	GAS	266505.361	0.021402964	0.001266729	0.001377683	245.3160858	0.001197745	0.003424878	0.003635686	0.005305184	0.480858137	0.002427602
SACRAMENT	2021	MDV	2020	55	DSL	1658.53965	0.01853944	0.00231255	0.002417113	289.9284046	0.000216239	0.045572708	0.0046555	0.005299978	0.07698489	0.002740866
SACRAMENT	2021	LHD2	2020	50	GAS	740.891166	0.049450807	0.00076079	0.000827428	795.429154	0.00115957	0.005229936	0.003620998	0.005283751	0.104443259	0.007871416
SACRAMENT	2021	LDA	2013	60	GAS	123967.827	0.022653762	0.000697761	0.000758879	277.6528394	0.001181555	0.00351988	0.003619733	0.005281905	0.3592716	0.0027476
SACRAMENT	2021	LDA	2018	35	GAS	288682.431	0.018995825	0.001887467	0.002052792	232.1984464	0.001221605	0.003225906	0.003617413	0.005278521	0.512085383	0.002297792
SACRAMENT	2021	MDV	2006	35	GAS	32394.2998	0.015912294	0.000179417	0.000195132	473.510608	0.001195197	0.002863856	0.003616296	0.00527689	0.469724893	0.004685771
SACRAMENT	2021	LHD2	2017	50	GAS	494.988713	0.059316828	0.000711479	0.000773799	830.7558351	0.001113891	0.005911533	0.003604379	0.005259501	0.093338216	0.008221002
SACRAMENT	2021	LHD2	2020	55	GAS	203.780058	0.051983078	0.000774755	0.000842617	828.0958364	0.001152725	0.00549775	0.003599622	0.005252559	0.095201018	0.00819468
SACRAMENT	2021	LHD2	2019	50	GAS	644.741996	0.052291302	0.00076079	0.000827428	795.4199727	0.001136853	0.005404172	0.00359495	0.005245743	0.098721753	0.007871325
SACRAMENT	2021	MDV	2019	50	GAS	24934.9035	0.019141311	0.001365734	0.001485361	320.7445128	0.001170447	0.00311865	0.003593137	0.005243097	0.448760772	0.003174027
SACRAMENT	2021	LDT2	2019	50	GAS	39638.9819	0.019133019	0.001365734	0.001485361	265.6387951	0.001169534	0.003117154	0.003590489	0.005239234	0.448668608	0.002628711
SACRAMENT	2021	LDA	2020	55	DSL	2982.8642	0.018452151	0.002275701	0.002378598	163.8399564	0.000213759	0.02575336	0.004602112	0.005239199	0.07553508	0.001548877
SACRAMENT	2021	LHD1	2020	45	GAS	620.218506	0.036967557	0.000788133	0.000857166	674.6288869	0.001155583	0.004091589	0.003588603	0.00523648	0.110424378	0.006676
SACRAMENT	2021	LDT1	2012	50	GAS	4018.56703	0.02314372	0.000426105	0.000463428	303.2089777	0.001156786	0.003524211	0.00358506	0.005231311	0.433394729	0.003000499
SACRAMENT	2021	LHD2	2017	55	GAS	136.145271	0.062354316	0.00072454	0.000788003	864.8765832	0.001107315	0.00621425	0.0035831	0.005228452	0.085078666	0.008558655
SACRAMENT	2021	LHD2	2018	45	GAS	76.3403496	0.05557595	0.0007677	0.000834943	772.7276986	0.001119401	0.005686985	0.003573902	0.005215029	0.100772246	0.007646767
SACRAMENT	2021	LHD2	2019	55	GAS	177.334496	0.054969028	0.000774755	0.000842617	828.0874582	0.001130142	0.005680908	0.003573728	0.005214775	0.089985811	0.008194597
SACRAMENT	2021	LDA	2019	60	DSL	2376.0887	0.018276133	0.002388147	0.002496128	183.634932	0.00021276	0.028864854	0.004580597	0.005214705	0.077826015	0.001736011
SACRAMENT	2021	LDA	2019	65	DSL	348.331569	0.018251171	0.002388147	0.002496128	206.4428289	0.00021276	0.032449938	0.004580597	0.005214705	0.077826015	0.001951627
SACRAMENT	2021	LDA	2019	70	DSL	92.1584295	0.018308992	0.002388147	0.002496128	222.9256103	0.00021276	0.035040802	0.004580597	0.005214705	0.077826015	0.002107449
SACRAMENT	2021	LDA	2012	50	GAS	68643.9593	0.022955206	0.000426105	0.000463428	265.359768	0.001153962	0.003510077	0.003571031	0.00521084	0.433561312	0.00262595
SACRAMENT	2021	LHD1	2016	45	GAS	1226.13051	0.041119636	0.000685967	0.000746052	719.5724197	0.001092486	0.004222325	0.003558525	0.005192591	0.098503058	0.007120752
SACRAMENT	2021	LDT1	2016	40	GAS	36153.7677	0.020781091	0.001462807	0.001590936	272.3545607	0.001172727	0.00335825	0.003547484	0.005176481	0.476731791	0.002695169
SACRAMENT	2021	LHD1	2019	45	GAS	555.079001	0.037431646	0.000788133	0.000857166	674.6190658	0.00112405	0.004058719	0.003534644	0.005157744	0.104375221	0.006675903
SACRAMENT	2021	LDA	2016	40	GAS	277478.167	0.020592704	0.001462807	0.001590936	238.3383729	0.001168295	0.003344223	0.003526524	0.005145896	0.476628185	0.002358551
SACRAMENT	2021	LHD1	2020	50	GAS	4579.60701	0.035556001	0.00076079	0.000827428	694.4322342	0.001134255	0.003935357	0.003522368	0.005139831	0.104443259	0.00687197
SACRAMENT	2021	LDT1	2015	60	GAS	21902.1823	0.021286771	0.00122409	0.001331309	312.3187502	0.001153763	0.003390039	0.003509086	0.00512045	0.3590663	0.003090647

SACRAMENT	2021	LHD2	2018	50	GAS	563.686502	0.053199066	0.000741065	0.000805976	795.4141958	0.00109874	0.005443763	0.003507939	0.005118776	0.095313933	0.007871268
SACRAMENT	2021	LHD1	2020	55	GAS	1259.60819	0.037089288	0.000774755	0.000842617	722.9483781	0.001127559	0.004105062	0.003501574	0.005109489	0.095201018	0.00715416
SACRAMENT	2021	LHD1	2016	50	GAS	9053.57678	0.03939931	0.000662169	0.000720169	740.6976671	0.001072322	0.004045676	0.003492845	0.005096752	0.093167656	0.007329804
SACRAMENT	2021	LDA	2015	60	GAS	145437.026	0.021093773	0.00122409	0.001331309	273.0764743	0.001149664	0.003375402	0.00348974	0.005092221	0.358953179	0.002702313
SACRAMENT	2021	LDT1	2014	45	GAS	7694.8694	0.021975234	0.00091986	0.001000432	286.4662948	0.00113776	0.003433328	0.00348945	0.005091797	0.443314924	0.002834816
SACRAMENT	2021	LHD2	2018	55	GAS	155.040407	0.055923276	0.000754669	0.000820771	828.0821615	0.001092254	0.005722527	0.00348723	0.005088557	0.086879551	0.008194544
SACRAMENT	2021	LDT1	2017	40	GAS	29014.0706	0.02018395	0.00157174	0.00170941	264.3562434	0.001154228	0.003301391	0.003476697	0.005073188	0.474482316	0.002616019
SACRAMENT	2021	LHD1	2016	55	GAS	2490.16116	0.041351925	0.000674324	0.000733389	771.1174523	0.001065992	0.004246178	0.003472226	0.005066664	0.084923199	0.007630832
SACRAMENT	2021	LDA	2014	45	GAS	88474.1298	0.021788507	0.00091986	0.001000432	250.6444724	0.001133856	0.003419432	0.003471246	0.005065234	0.443298604	0.00248033
SACRAMENT	2021	LDT1	2018	65	GAS	2451.69196	0.018596016	0.001792975	0.001950023	296.2332999	0.001169269	0.003141943	0.003470504	0.005064151	0.336721444	0.002931469
SACRAMENT	2021	LHD1	2019	50	GAS	4098.62598	0.035974245	0.00076079	0.000827428	694.4229368	0.001103303	0.003900693	0.003469406	0.005062549	0.098721753	0.006871878
SACRAMENT	2021	LDT1	2013	45	GAS	6470.83967	0.022559346	0.000660705	0.000718577	286.0157268	0.00112989	0.003489798	0.003466883	0.005058868	0.446725467	0.002830357
SACRAMENT	2021	LHD1	2017	45	GAS	444.754109	0.038366187	0.00073705	0.000801609	704.584766	0.001076107	0.004045566	0.003461133	0.005050477	0.098683385	0.006972437
SACRAMENT	2021	LDA	2017	40	GAS	333929.139	0.019998456	0.00157174	0.00170941	231.3573667	0.001149491	0.003287452	0.003454605	0.005040951	0.474324283	0.002289469
SACRAMENT	2021	LDT1	2020	30	GAS	14800.0971	0.016527647	0.001555502	0.00169175	268.3526692	0.001203646	0.002992992	0.003452267	0.00503754	0.533244915	0.002655567
SACRAMENT	2021	LDA	2013	45	GAS	88022.6567	0.022358434	0.000660705	0.000718577	250.2336488	0.00112634	0.003473993	0.00345058	0.005035078	0.446773278	0.002476265
SACRAMENT	2021	LHD1	2019	55	GAS	1127.3157	0.037573044	0.000774755	0.000842617	722.9398846	0.00109679	0.004074051	0.003448924	0.005032662	0.089985811	0.007154076
SACRAMENT	2021	LDA	2018	65	GAS	28297.2285	0.018417455	0.001792975	0.001950023	259.3777913	0.001164046	0.003127686	0.003446969	0.005029809	0.33663006	0.002566754
SACRAMENT	2021	MDV	2006	65	GAS	3175.35397	0.015425392	0.000170435	0.000185363	528.9336226	0.001138688	0.002776224	0.003445316	0.005027397	0.308670985	0.005234227
SACRAMENT	2021	LDT1	2014	55	GAS	14038.0177	0.021625668	0.000904247	0.000983451	307.4932242	0.00112289	0.003378713	0.003443844	0.00502525	0.386586897	0.003042895
SACRAMENT	2021	LDA	2014	55	GAS	161406.43	0.021443122	0.000904247	0.000983451	269.1238069	0.001119103	0.003365229	0.00342608	0.004999327	0.386621879	0.002663198
SACRAMENT	2021	LHD1	2018	45	GAS	495.465735	0.037010317	0.0007677	0.000834943	674.6128778	0.001078502	0.003978866	0.003424023	0.004996327	0.100772246	0.006675841
SACRAMENT	2021	LDA	2020	30	GAS	160361.871	0.016345205	0.001555502	0.00169175	234.995235	0.001196437	0.002975403	0.003423397	0.004995412	0.532836529	0.002325468
SACRAMENT	2021	LDT1	2013	55	GAS	11804.9777	0.022199817	0.00064949	0.00070638	306.9978007	0.001115088	0.003434181	0.003421465	0.004992594	0.389534484	0.003037992
SACRAMENT	2021	MDV	2020	60	DSL	1280.37103	0.01794707	0.002248611	0.002350283	313.934121	0.000203665	0.049346072	0.004384793	0.004991795	0.072508379	0.002967806
SACRAMENT	2021	MDV	2020	65	DSL	187.700758	0.017922558	0.002248611	0.002350283	352.5040158	0.000203665	0.055408722	0.004384793	0.004991795	0.072508379	0.003332431
SACRAMENT	2021	MDV	2020	70	DSL	49.6601761	0.017979338	0.002248611	0.002350283	379.4764506	0.000203665	0.059648414	0.004384793	0.004991795	0.072508379	0.003587417
SACRAMENT	2021	LDT2	2020	40	GAS	104305.553	0.017323487	0.001109244	0.001206404	244.6162965	0.001139238	0.002957709	0.003413333	0.004980727	0.507564644	0.002420677
SACRAMENT	2021	LDT2	2021	70	GAS	1882.50688	0.016252767	0.000819717	0.000891517	266.8985065	0.001161605	0.002886657	0.003405855	0.004969816	0.328943128	0.002641177
SACRAMENT	2021	LDA	2013	55	GAS	160582.792	0.022003331	0.00064949	0.00070638	268.6705937	0.001111649	0.003418818	0.003405572	0.004969403	0.38962502	0.002658713
SACRAMENT	2021	LDT1	2016	60	GAS	19729.7961	0.02048177	0.001413568	0.001537384	303.3883418	0.001125708	0.003309879	0.003405252	0.004968936	0.355911524	0.003002274
SACRAMENT	2021	MDV	2020	40	GAS	66346.6549	0.017287208	0.001109244	0.001206404	295.4127813	0.001136314	0.002953928	0.003402646	0.004965133	0.507129221	0.002923349
SACRAMENT	2021	LHD1	2017	50	GAS	3284.00236	0.036803089	0.000711479	0.000773799	725.2697142	0.001056245	0.003880743	0.003397251	0.004957261	0.093338216	0.007177132
SACRAMENT	2021	LHD2	2021	40	GAS	67.130647	0.041158288	0.000861329	0.000936774	750.7731716	0.001123712	0.004770635	0.003388312	0.004944217	0.110521218	0.007429509
SACRAMENT	2021	LDT2	2021	35	GAS	72588.9966	0.016068433	0.000794458	0.000864046	240.4908335	0.001155591	0.002853918	0.003388223	0.004944087	0.538607898	0.002379852
SACRAMENT	2021	LDA	2016	60	GAS	151425.094	0.020294217	0.001413568	0.001537384	265.2852495	0.001121332	0.003295749	0.003384765	0.004939041	0.355751679	0.002625213
SACRAMENT	2021	LDA	2020	60	DSL	2302.73236	0.017862571	0.002212781	0.002312833	177.6221874	0.00020133	0.027919734	0.004334509	0.00493455	0.071142873	0.001679168
SACRAMENT	2021	LDA	2020	65	DSL	337.577623	0.017838174	0.002212781	0.002312833	199.6832869	0.00020133	0.031387432	0.004334509	0.00493455	0.071142873	0.001887725
SACRAMENT	2021	LDA	2020	70	DSL	89.3132473	0.017894686	0.002212781	0.002312833	215.6263739	0.00020133	0.033893463	0.004334509	0.00493455	0.071142873	0.002038445
SACRAMENT	2021	LDT1	2014	50	GAS	7713.9027	0.021631599	0.000887947	0.000965724	295.3931618	0.00110232	0.00337964	0.003380757	0.004933192	0.414578994	0.002923155
SACRAMENT	2021	MDV	2021	70	GAS	1140.57771	0.016157678	0.000819717	0.000891517	323.0565073	0.001153979	0.002873393	0.003379795	0.004931789	0.328263349	0.003196906
SACRAMENT	2021	LHD1	2017	55	GAS	903.255731	0.038555814	0.00072454	0.000788003	755.0554583	0.00105001	0.004065561	0.003377196	0.004927996	0.085078666	0.007471886
SACRAMENT	2021	LDA	2014	50	GAS	88692.971	0.021448885	0.000887947	0.000965724	258.5373473	0.0010986	0.003366133	0.003363311	0.004907736	0.414614201	0.002558437
SACRAMENT	2021	MDV	2021	35	GAS	43980.3925	0.015974423	0.000794458	0.000864046	290.3323728	0.001148004	0.002840804	0.003362298	0.004906257	0.537494834	0.002873074
SACRAMENT	2021	LHD1	2018	50	GAS	3658.44994	0.035547056	0.000741065	0.000805976	694.4170669	0.001058596	0.003821555	0.003360827	0.00490411	0.095313933	0.00687182
SACRAMENT	2021	LDT1	2013	50	GAS	6486.84532	0.022205973	0.000637783	0.000693647	294.9183771	0.001094662	0.003435133	0.003358791	0.0490114	0.417741255	0.002918456
SACRAMENT	2021	LDT1	2015	45	GAS	15551.5211	0.021009426	0.001159081	0.001260606	281.3040965	0.001099857	0.00334587	0.003345134	0.004881212	0.446526626	0.002783732
SACRAMENT	2021	LDA	2013	50	GAS	88240.3812	0.022009311	0.000637783	0.000693647	258.1031345	0.001091283	0.003419747	0.003343183	0.004878365	0.417836055	0.00255414
SACRAMENT	2021	LHD1	2018	55	GAS	1006.2465	0.037164481	0.000754669	0.000820771	722.9344955	0.001052347	0.00399544	0.003340986	0.004875159	0.086879551	0.007154023
SACRAMENT	2021	LDT1	2017	60	GAS	15833.5281	0.019892279	0.001518834	0.00165187	294.4543893	0.001107888	0.003253683	0.003337116	0.004869512	0.35418971	0.002913865
SACRAMENT	2021	LHD1	2021	40	GAS	427.302001	0.031351519	0.000861329	0.000936774	655.4488461	0.001111254	0.003784217	0.003333395	0.004864082	0.110521218	0.00648619
SACRAMENT	2021	LDA	2015	45	GAS	103266.741	0.02082086	0.001159081	0.001260606	246.1471529	0.001096069	0.003331731	0.003327057	0.004854833	0.446490146	0.002435826
SACRAMENT	2021	LDA	2017	60	GAS	182231.459	0.019707612	0.001518834	0.00165187	257.4903007	0.00110322	0.003239642	0.003315545	0.004838035	0.353988443	0.002548075
SACRAMENT	2021	LDT1	2015	55	GAS	28371.1806	0.020675846	0.001139407	0.001239209	301.9588567	0.001085516	0.003292746	0.003301518	0.004817567	0.389414095	0.002988128
SACRAMENT	2021	LDA	2015	55	GAS	188393.104	0.020491451	0.001139407	0.001239209	264.3019466	0.001081843	0.003279019	0.003283872	0.004791819	0.389432602	0.002615482
SACRAMENT	2021	LDT2	2020	60	GAS	56921.5169	0.017070705	0.001071906	0.001165795	272.4750878	0.001093317	0.00291455	0.003275745	0.004779959	0.37874914	0.002696362
SACRAMENT	2021	MDV	2020	60	GAS	36206.6268	0.017034956	0.001071906	0.001165795	329.3218904	0.00109051	0.002910824	0.003265489	0.004764994	0.378424223	0.003258907
SACRAMENT	2021	LDT1	2016	45	GAS	14009.0306	0.020215891	0.001338496	0.001455737	273.2808679	0.001073175	0.003266913	0.003246339	0.00473705	0.442657678	0.002704336
SACRAMENT	2021	LDT1	2015	50	GAS	15589.9879	0.020681456	0.001118868	0.001216872	290.0778022	0.00106563	0.003293639	0.003241035	0.00472931	0.417609662	0.002870555
SACRAMENT	2021	LDT1	2019	70	GAS	672.193952	0.017589417	0.001839365	0.002000477	284.936488	0.001108238	0.003067252	0.003236232	0.004722302	0.303027472	0.002819678
SACRAMENT	2021	LDT2	2021	65	GAS	7115.31844	0.015579541	0.000754685	0.000820789	268.5319008	0.001101169	0.002767086	0.003228656	0.004711247	0.354083497	0.002657341
SACRAMENT	2021	LDA	2016	45	GAS	107518.535	0.020032648	0.001338496	0.001455737	239.1450214	0.001069121	0.003253271	0.003227167	0.004709074	0.442563702	0.002366534
SACRAMENT	2021	LDA	2015	50	GAS	103522.171	0.020496895	0.001118868	0.001216872	253.9063686	0.001062022	0.00327989	0.003223706	0.004704024	0.417627149	0.002512609
SACRAMENT	2021	LDT1	2019	35	GAS	25919.6315	0.017383784	0.001782687	0.001938835	256.9189461	0.001102037	0.003031393	0.003218126	0.004695881	0.495726752	0.002542421
SACRAMENT	2021	LDA	2019	70	GAS	7677.80964	0.017403707	0.001839365	0.002000477	248.778268	0.001101845	0.0030506	0.003209889	0.004683863	0.302558894	0.002461863
SACRAMENT	2021	LDT1	2016	55	GAS	25557.1614	0.01989551	0.001315778	0.001431028	293.3536807	0.001059215	0.003215139	0.003204111	0.004675432	0.386066205	0.002902972
SACRAMENT	2021	MDV	2021	65	GAS	4311.04593	0.015488391	0.000754685	0.000820789	324.1777352	0.001093939	0.002754371	0.003203951	0.004675198	0.353351763	0.003208001
SACRAMENT	2021	LDA	2019	35	GAS	296054.429	0.017206415	0.001782687	0.001938835	224.9430782	0.001096148	0.003016018	0.003193293	0.004659645	0.495413683	0.002225994
SACRAMENT	2021	LDA	2016	55	GAS	196149.8	0.019716321	0.001315778	0.001431028	256.7908222	0.001055278	0.0032019	0.003185381	0.004648101	0.386034865	0.002541153
SACRAMENT	2021	LDT1	2017	45	GAS	11242.5074	0.019635001	0.001438172	0.001564143	265.2542595	0.001056247	0.003211602	0.003181565	0.004642532	0.440570127	0.002624906
SACRAMENT	2021	LDA	2017	45	GAS	129392.42	0.019454573	0.001438172	0.001564143	232.1393207	0.001051915	0.003198046	0.003161356	0.004613044	0.440425636	0.002297207
SACRAMENT	2021	LDT1	2018	40	GAS	30645.4979	0.018359086	0.001637099	0.001780495	256.3506999	0.001061717	0.003101912	0.00315128	0.004598341	0.472346093	0.002536798
SACRAMENT	2021	LDT1	2016	50	GAS	14043.682	0.019900849	0.001292059	0.001405232	281.812098	0.001039809	0.003216002	0.003145409	0.004589774	0.414018139	0.002788759
SACRAMENT	2021	LDT1	2017	55	GAS	20510.0971	0.019324408	0.001413761	0.001537594	284.7436983	0.00104254	0.003160799	0.003140278	0.004582286	0.384271575	0.00281777
SACRAMENT	2021	LDA	2018	40	GAS	353707.836	0.018181349	0.001637099	0.001780495	224.3689329	0.00105688	0.00308759	0.00312963	0.004566748	0.472128	0.002220312
SACRAMENT	2021	MDV	2006	40	GAS	39691.0808	0.015231903	0.000155618	0.000169249	457.8893121	0.001034181	0.002741401	0.003129112	0.004565992	0.433204872	0.004531186
SACRAMENT	2021	MDV	2021	25	DSL	1268.53364	0.007853037	0.000582422	0.000608757	368.0697875	0.000186269	0.057855445	0.004010256	0.004565409	0.126747451	0.003479583
SACRAMENT	2021	LDA	2016	50	GAS	107784.482	0.019721499	0.001292059	0.001405232	246.6915333	0.001035943	0.003202741	0.003127017	0.004562935	0.413982156	0.002441213
SACRAMENT	2021	LDT2	2020	45	GAS	40416.8024	0.016852363	0.001014979	0.001103882	245.4381318	0.001042534	0.002877272	0.003123592	0.004557939	0.471291657	0.002428809
SACRAMENT	2021	LHD2	2021	45	GAS	82.6437342	0.039415705	0.000788133	0.000857166	753.4159275	0.001035654	0.004568653	0.003122794	0.004556774	0.103288244	0.007455661
SACRAMENT	2021	LDA	2017	55	GAS	236055.09	0.019147968	0.001413761	0.001537594	249.2746675	0.001038328	0.003147644	0.003120524	0.004553461	0.384196661	0.002466775
SACRAMENT	2021	MDV	2020	45	GAS	25708.3113	0.01681707	0.001014979	0.001103882	296.414377	0.001039858	0.002873593	0.003113813	0.004543668	0.470887351	0.002933261
SACRAMENT	2021	LDA	2021	25	DSL	2297.60268	0.007822516	0.000580008	0.000606233	213.1914858	0.000185217	0.033510733	0.003987618	0.004539638	0.125920017	0.002015426
SACRAMENT	2021	LDT2	2020	55	GAS	73733.7774	0.016587283	0.000997751	0.001085146	263.4242578	0.001029102	0.002832014	0.003083347	0.004499212	0.411150623	0.002606797
SACRAMENT	2021	LDT1	2017	50	GAS	11270.3158	0.019329537	0.001388277	0.001509877	273.5420855	0.001023439	0.003161638	0.003082742	0.004498331	0.412092353	0.002706921
SACRAMENT	2021	MDV	2020	55	GAS	46900.566	0.016552546	0.000997751	0.001085146	318.0546307	0.00102646	0.002828393	0.003073693	0.004485126	0.41079791	0.003147408
SACRAMENT	2021	LHD1	2021	45	GAS	526.046366	0.030128478	0.000788133	0.000857166	657.7543891	0.001024173	0.003636593	0.003072181	0.004482919	0.103288244	0.006509013
SACRAMENT	2021	LDT1	2019	65	GAS	2540.69405	0.016854119	0.001693441	0.001841771	286.9647763	0.001050086	0.00293903	0.00306642	0.004474513	0.325859494	0.002839749
SACRAMENT	2021	LHD2	2021	50	GAS	610.229815	0.037729966	0.00076079	0.000827428	775.5348587	0.001016539	0.00437326	0.003065157	0.00447267	0.097693653	0.007674546
SACRAMENT	2021	LDA	2017	50	GAS	129712.473	0.019152939	0.001388277	0.001509877	239.4721767	0.001019302	0.003148462	0.003063344	0.004470025	0.412009619	0.002369771
SACRAMENT	2021	LHD2	2021	55	GAS	167.842016	0.039662037	0.000774755	0.000842617	807.3854663	0.001010538	0.004597205	0.003047062	0.004446266	0.089048688	0.007989734
SACRAMENT	2021	LDA	2019	65	GAS	29019.8465	0.016682912	0.001693441	0.001841771	251.2815794	0.001044526	0.002924256	0.003042908	0.004440204	0.325687938	0.002486635
SACRAMENT	2021	LDT2	2020	50	GAS	40516.7735	0.016591538	0.000979766	0.001065585	253.0725445	0.001010244	0.00283274	0.003026846	0.004416766	0.440913506	0.002504358
SACRAMENT	2021	LDT1	2021	30	GAS	13004.682	0.014868939	0.000966297	0.001050936	259.3845222	0.00107464	0.002792323	0.003026399	0.004416115	0.521035344	0.00256682
SACRAMENT	2021	LDT1	2018	60	GAS	16723.8289	0.01809292	0.001581993	0.001720562	285.5135484	0.001019035	0.003056941	0.003024594	0.004413481	0.352552896	0.002825388
SACRAMENT	2021	MDV	2020	50	GAS	25771.901	0.016556792	0.000979766	0.001065585	305.5463919	0.001007651	0.002829119	0.003017369	0.004402937	0.44053526	0.003023629
SACRAMENT	2021	LHD1	2021	50	GAS	3884.25305	0.029007705	0.00076079	0.000827428	677.0630623	0.00100527	0.003501312	0.003015478	0.004400178	0.097693653	0.006700088
SACRAMENT	2021	MDV	2006	60	GAS	21660.1749	0.015014665	0.00015038	0.000163552	510.7958077	0.000992884	0.002702303	0.00300416	0.004383664	0.323532432	0.005054739
SACRAMENT	2021	LDA	2018	60	GAS	193025.068	0.017916049	0.001581993	0.001720562	249.6882749	0.001014278	0.003042537	0.003003477	0.004382667	0.352306009	0.002470868
SACRAMENT	2021	LDA	2021	30	GAS	132228.637	0.014684057	0.000966297	0.001050936	227.1594948	0.001067267	0.002771504	0.002998566	0.0043755	0.520516138	0.002247927
SACRAMENT	2021	LHD1	2021	55	GAS	1068.35302	0.030208573	0.000774755	0.000842617	704.8668938	0.000999335	0.00364626	0.002997676	0.004374202	0.089048688	0.006975229
SACRAMENT	2021	LDT2	2021	40	GAS	88939.5895	0.015379204	0.000689076	0.000749433	232.4547249	0.000999747	0.002731504	0.002931284	0.004277323	0.496559517	0.002300328
SACRAMENT	2021	MDV	2021	40	GAS	53886.9284	0.015289226	0.000689076	0.000749433	280.7032485	0.000993183	0.002718952	0.002908855	0.004244595	0.495533348	0.002777786
SACRAMENT	2021	LDT1	2018	45	GAS	11874.6605	0.017859778	0.001497977	0.001629187	257.2204627	0.000971591	0.00301755	0.002883776	0.004207999	0.438587722	0.002545405
SACRAMENT	2021	LDA	2018	45	GAS	137056.362	0.017686894	0.001497977	0.001629187	225.1262291	0.000967167	0.003003621	0.002863971	0.0041791	0.438387484	0.002227807
SACRAMENT	2021	MDV	2006	45	GAS	15379.6851	0.014817604	0.000142393	0.000154866	459.4819926	0.000946386	0.002666836	0.00286347	0.004178369	0.402238673	0.004546947
SACRAMENT	2021	LDT1	2020	70	GAS	682.245761	0.015718972	0.001319544	0.001435125	275.6693901	0.000994119	0.002846549	0.002851307	0.004160621	0.300216793	0.002727972
SACRAMENT	2021	LDT1	2018	55	GAS	21663.3559	0.017577795	0.001472551	0.001601534	276.1254558	0.000959012	0.002969907	0.002846443	0.004153523	0.382568372	0.002732485

SACRAMENT	2021	LDT1	2020	35	GAS	26307.2267	0.015537949	0.001278884	0.001390903	248.6259693	0.000988765	0.002813767	0.00283595	0.004138212	0.491350306	0.002460356
SACRAMENT	2021	LDA	2018	55	GAS	250036.685	0.017408688	0.001472551	0.001601534	241.7500174	0.000954706	0.002956376	0.00282707	0.004125255	0.382445317	0.002392312
SACRAMENT	2021	LDA	2020	70	GAS	7392.26277	0.01553962	0.001319544	0.001435125	240.6966524	0.000987722	0.002828758	0.002826194	0.004123976	0.299698823	0.002381888
SACRAMENT	2021	MDV	2006	55	GAS	28057.6942	0.014581456	0.000139976	0.000152237	493.0547789	0.000933988	0.002624335	0.002825957	0.00412363	0.350743008	0.004879177
SACRAMENT	2021	LDT2	2021	60	GAS	48536.0193	0.01515407	0.000665881	0.000724206	258.9064535	0.000959395	0.002691517	0.00281297	0.004104679	0.370492897	0.002562089
SACRAMENT	2021	LDA	2020	35	GAS	285043.813	0.015366257	0.001278884	0.001390903	217.7001564	0.000982828	0.0027972	0.002812191	0.004103542	0.490958376	0.00215432
SACRAMENT	2021	LDT1	2018	50	GAS	11904.0325	0.017582409	0.001446007	0.001572664	265.2641638	0.000941441	0.002970686	0.002794288	0.004077419	0.410264627	0.002625004
SACRAMENT	2021	MDV	2021	60	GAS	29407.1179	0.015065409	0.000665881	0.000724206	312.9021804	0.000953096	0.00267915	0.002791446	0.004073271	0.369727253	0.003096421
SACRAMENT	2021	LDT1	2019	40	GAS	31758.0004	0.016638718	0.001546218	0.001681654	248.3178345	0.000953454	0.002901469	0.00278424	0.004062756	0.457065615	0.002457306
SACRAMENT	2021	LDA	2018	50	GAS	137395.372	0.017413154	0.001446007	0.001572664	232.2446852	0.000937211	0.002957134	0.002775266	0.004049661	0.410130244	0.002298249
SACRAMENT	2021	MDV	2006	50	GAS	15417.7269	0.014585499	0.000137453	0.000149493	473.6171054	0.000916879	0.002625062	0.002774191	0.004048093	0.37614083	0.004686825
SACRAMENT	2021	LDA	2019	40	GAS	362740.369	0.016468365	0.001546218	0.001681654	217.3528961	0.00094832	0.002886649	0.00276264	0.004031238	0.456736792	0.002150883
SACRAMENT	2021	LDT1	2020	65	GAS	2578.68691	0.015064861	0.00121486	0.001321271	277.7009191	0.000942176	0.002728096	0.002702326	0.003943228	0.322999423	0.002748076
SACRAMENT	2021	LDT2	2021	45	GAS	34462.727	0.014960964	0.000630517	0.000685745	233.2343858	0.000914885	0.00265722	0.002682466	0.003914248	0.461074199	0.002308043
SACRAMENT	2021	LDA	2020	65	GAS	27940.5639	0.014899083	0.00121486	0.001321271	243.1898246	0.000936566	0.002712158	0.00267982	0.003910387	0.322776175	0.00240656
SACRAMENT	2021	LDT1	2019	60	GAS	17330.9426	0.016396711	0.001494171	0.001625048	276.5510177	0.000915073	0.002859267	0.00267216	0.003899209	0.341107005	0.002736697
SACRAMENT	2021	MDV	2021	45	GAS	20880.3584	0.014873433	0.000630517	0.000685745	281.6537304	0.000908878	0.00264501	0.002661941	0.003884298	0.460121363	0.002787192
SACRAMENT	2021	LDA	2019	60	GAS	197954.293	0.016227263	0.001494171	0.001625048	241.8643132	0.000910042	0.002844388	0.002651128	0.00386852	0.340779092	0.002393443
SACRAMENT	2021	LDT2	2021	55	GAS	62871.5508	0.014726077	0.000619815	0.000674106	250.3298413	0.000903125	0.002615502	0.002647986	0.003863935	0.402264077	0.002477217
SACRAMENT	2021	MDV	2021	55	GAS	38092.7636	0.014639921	0.000619815	0.000674106	302.2202112	0.000897196	0.002603484	0.002627725	0.00383437	0.401432775	0.002990714
SACRAMENT	2021	LDT2	2021	50	GAS	34547.9708	0.014729812	0.000608642	0.000661954	240.4943414	0.000886575	0.002616165	0.00259946	0.003793127	0.4313824	0.002379886
SACRAMENT	2021	MDV	2021	50	GAS	20932.006	0.014643633	0.000608642	0.000661954	290.336258	0.000880754	0.002604144	0.002579571	0.003764103	0.430490924	0.002873113
SACRAMENT	2021	LDT1	2019	45	GAS	12305.7381	0.016186208	0.001414819	0.001538745	249.1608056	0.000872519	0.00282256	0.002547896	0.003717884	0.424400432	0.002465648
SACRAMENT	2021	LDA	2019	45	GAS	140556.33	0.016020506	0.001414819	0.001538745	218.0870004	0.000867823	0.002808147	0.002528137	0.003689052	0.424097335	0.002158148
SACRAMENT	2021	LDT1	2019	55	GAS	22449.7858	0.015931128	0.001390805	0.001512627	267.4827617	0.00086125	0.002778079	0.00251499	0.003669867	0.370218178	0.002646959
SACRAMENT	2021	LDT1	2021	70	GAS	599.481821	0.014138848	0.000819717	0.000891517	266.3922222	0.000887377	0.002655215	0.00249903	0.003646578	0.293206158	0.002636167
SACRAMENT	2021	LDA	2019	55	GAS	256421.799	0.015768999	0.001390805	0.001512627	234.2006125	0.000856669	0.002764061	0.002495644	0.003641638	0.370004406	0.002317605
SACRAMENT	2021	LDT1	2021	35	GAS	23115.8698	0.01397849	0.000794458	0.000864046	240.3153389	0.000882783	0.002625101	0.002486092	0.0036277	0.480092571	0.002378115
SACRAMENT	2021	LDA	2021	70	GAS	6095.39429	0.013957724	0.000819717	0.000891517	232.6048377	0.000880887	0.002634414	0.002474919	0.003611396	0.292628788	0.002301813
SACRAMENT	2021	LDT1	2019	50	GAS	12336.1764	0.015935262	0.001365734	0.001485361	256.9608941	0.000845469	0.002778799	0.002468906	0.003602622	0.397019162	0.002542836
SACRAMENT	2021	LDA	2021	35	GAS	235036.887	0.013804519	0.000794458	0.000864046	210.439326	0.000876712	0.002605498	0.002463189	0.00359428	0.47959869	0.002082468
SACRAMENT	2021	LDT1	2020	40	GAS	32232.9011	0.014871735	0.001109244	0.001206404	240.2966118	0.000855436	0.002693123	0.002453541	0.003580202	0.453010855	0.00237793
SACRAMENT	2021	LDA	2019	50	GAS	140903.997	0.015772996	0.001365734	0.001485361	224.991548	0.00084097	0.002764762	0.00244991	0.003574903	0.396787541	0.002226474
SACRAMENT	2021	LDA	2020	40	GAS	349249.623	0.014706873	0.001109244	0.001206404	210.3483665	0.000850264	0.002677169	0.002432883	0.003550057	0.452609149	0.002081568
SACRAMENT	2021	LDT1	2021	65	GAS	2265.86373	0.013553186	0.000754685	0.000820789	268.4218337	0.000841208	0.00254523	0.00236901	0.003456854	0.315615232	0.002656252
SACRAMENT	2021	MDV	2021	30	DSL	885.947625	0.00652821	0.000516074	0.000539408	317.8976724	0.0001407	0.049969087	0.003029187	0.003448528	0.095739967	0.003005276
SACRAMENT	2021	LDT1	2020	60	GAS	17590.1049	0.014654729	0.001071906	0.001165795	267.5959505	0.000820955	0.002653825	0.002354642	0.003435888	0.33804063	0.002648079
SACRAMENT	2021	LDA	2021	30	DSL	1604.65247	0.006502837	0.000513934	0.000537172	184.6629461	0.000139906	0.029026444	0.003012088	0.003429061	0.095114957	0.001745729
SACRAMENT	2021	LDA	2021	65	GAS	23038.7851	0.013385134	0.000754685	0.000820789	235.0825572	0.000835466	0.002526342	0.002347305	0.003425182	0.315324607	0.002326332
SACRAMENT	2021	LDA	2020	60	GAS	190592.137	0.014490847	0.001071906	0.001165795	234.0476717	0.000815897	0.002637844	0.002334546	0.003406565	0.337657972	0.002316091
SACRAMENT	2021	LDT1	2020	45	GAS	12489.7549	0.014467288	0.001014979	0.001103882	241.1114636	0.000782823	0.002619881	0.002245273	0.003276297	0.420636542	0.002385993
SACRAMENT	2021	LDA	2020	45	GAS	135328.873	0.014306925	0.001014979	0.001103882	211.0579456	0.000778092	0.002604364	0.002226374	0.00324872	0.42026578	0.002088589
SACRAMENT	2021	LDT1	2020	55	GAS	22785.494	0.014239724	0.000997751	0.001085146	258.8472066	0.000772736	0.002578672	0.002216344	0.003234083	0.366959554	0.002561503
SACRAMENT	2021	LDA	2020	55	GAS	246885.167	0.014082756	0.000997751	0.001085146	226.6581666	0.000768116	0.002563558	0.00219783	0.003207068	0.366686973	0.002242966
SACRAMENT	2021	LDT1	2020	50	GAS	12520.6483	0.014243377	0.000979766	0.001065585	248.6661266	0.000758576	0.002579333	0.00217573	0.00317482	0.393523478	0.002460753
SACRAMENT	2021	LDA	2020	50	GAS	135663.61	0.014086283	0.000979766	0.001065585	217.7467467	0.000754039	0.0025642	0.002157551	0.003148294	0.393228781	0.002154781
SACRAMENT	2021	LDT1	2021	40	GAS	28322.6945	0.013378905	0.000689076	0.000749433	232.2591467	0.00076373	0.002512501	0.002150815	0.003138465	0.442612401	0.002298393
SACRAMENT	2021	LDA	2021	40	GAS	287978.691	0.013211912	0.000689076	0.000749433	203.3273619	0.000758446	0.002493648	0.00213091	0.003109419	0.442117118	0.002012089
SACRAMENT	2021	LDT1	2021	60	GAS	15456.2311	0.013183053	0.000665881	0.000724206	258.6275286	0.000732904	0.002475721	0.002064003	0.003011788	0.330241885	0.002559329
SACRAMENT	2021	LDA	2021	60	GAS	157155.429	0.013017206	0.000665881	0.000724206	226.2174637	0.000727747	0.002456898	0.002044661	0.002983565	0.329790261	0.002238605
SACRAMENT	2021	LDT1	2021	45	GAS	10974.6098	0.013015064	0.000630517	0.000685745	233.0465451	0.000698902	0.002444173	0.001968246	0.00287206	0.410982272	0.002306184
SACRAMENT	2021	LDA	2021	45	GAS	111587.327	0.012852627	0.000630517	0.000685745	204.0130824	0.000694068	0.002425835	0.001950036	0.002845488	0.410524597	0.002018875
SACRAMENT	2021	LDT1	2021	55	GAS	20021.3621	0.012810728	0.000619815	0.000674106	250.1962007	0.000689918	0.0024058	0.001942947	0.002835144	0.358561387	0.002475894
SACRAMENT	2021	LDA	2021	55	GAS	203572.639	0.012651637	0.000619815	0.000674106	219.1000073	0.000685191	0.0023879	0.001925096	0.002809096	0.358212456	0.002168172
SACRAMENT	2021	LDT1	2021	50	GAS	11001.7555	0.012813976	0.000608642	0.000661954	240.355639	0.000677275	0.0024064	0.001907341	0.002783188	0.384516244	0.002378514
SACRAMENT	2021	LDA	2021	50	GAS	111863.338	0.012654767	0.000608642	0.000661954	210.4859707	0.000672633	0.002388491	0.001889814	0.002757612	0.384139694	0.002082929
SACRAMENT	2021	MDV	2021	35	DSL	1574.77515	0.005639709	0.000466643	0.000487742	288.4481771	0.000111875	0.045340037	0.0024086	0.00274203	0.076125786	0.002726873
SACRAMENT	2021	LDA	2021	35	DSL	2852.27564	0.00561779	0.000464708	0.00048572	166.9315835	0.000111243	0.02623932	0.002395003	0.002726552	0.075628821	0.001578104
SACRAMENT	2021	MDV	2021	40	DSL	1929.49154	0.005004463	0.000428082	0.000447438	269.8035934	9.222E-05	0.042409368	0.001985443	0.002260295	0.062751578	0.002550614
SACRAMENT	2021	LDA	2021	40	DSL	3494.74764	0.004985013	0.000426307	0.000445583	156.2106082	9.16995E-05	0.024554132	0.001974236	0.002247536	0.062341922	0.001476752
SACRAMENT	2021	MDV	2021	45	DSL	747.648384	0.004526936	0.000396977	0.000414926	259.6469978	7.80708E-05	0.040812892	0.001680819	0.0019135	0.053123668	0.002454598
SACRAMENT	2021	LDA	2021	45	DSL	1354.16112	0.004509342	0.000395331	0.000413206	150.8874473	7.76301E-05	0.023717405	0.001671331	0.001902699	0.052776865	0.001426429
SACRAMENT	2021	MDV	2021	50	DSL	749.497696	0.004152658	0.000371237	0.000388023	260.9480819	6.74581E-05	0.041017405	0.001452333	0.001653385	0.045902201	0.002466898
SACRAMENT	2021	LDA	2021	50	DSL	1357.51064	0.004136518	0.000369698	0.000386414	151.2715434	6.70773E-05	0.02377778	0.001444135	0.001644052	0.045602542	0.00143006
SACRAMENT	2021	MDV	2021	55	DSL	1363.96093	0.003852316	0.000349506	0.000365309	275.3913856	5.92381E-05	0.043287691	0.001275361	0.001451913	0.040308826	0.002603439
SACRAMENT	2021	LDA	2021	55	DSL	2470.4432	0.003837343	0.000348056	0.000363794	158.2937584	5.89037E-05	0.024881574	0.001268161	0.001443717	0.040045682	0.001496445
SACRAMENT	2021	MDV	2021	60	DSL	1052.9601	0.003729227	0.000339842	0.000355208	298.1934546	5.57935E-05	0.046871858	0.001201201	0.001367487	0.037964952	0.002819001
SACRAMENT	2021	MDV	2021	65	DSL	154.362606	0.003724134	0.000339842	0.000355208	334.8294538	5.57935E-05	0.052630527	0.001201201	0.001367487	0.037964952	0.003165342
SACRAMENT	2021	MDV	2021	70	DSL	40.839868	0.003735932	0.000339842	0.000355208	360.4494899	5.57935E-05	0.05665764	0.001201201	0.001367487	0.037964952	0.003407544
SACRAMENT	2021	LDA	2021	60	DSL	1907.15001	0.003714733	0.000338433	0.000353736	171.6094427	5.54785E-05	0.026974615	0.00119442	0.001359768	0.037717109	0.001622326
SACRAMENT	2021	LDA	2021	70	DSL	73.9702814	0.003721412	0.000338433	0.000353736	208.3271375	5.54785E-05	0.032746125	0.00119442	0.001359768	0.037717109	0.001969441
SACRAMENT	2021	LDA	2021	65	DSL	279.585756	0.00370966	0.000338433	0.000353736	192.923745	5.54785E-05	0.030324926	0.00119442	0.001359768	0.037717109	0.001823823
						Wtd Ave g/mile	**0.133**	**0.00210**		**331.577**	**0.00612**	**0.00895**	**0.0340**	**0.0450**		

	Acetaldehyde	Benzene	Butadiene	Ethylbenzene	Formaldehyde	Naphthalene
Percent TOG	0.28%	2.47%	0.55%	1.05%	1.58%	0.05%

Note that although spectator vehicles do emit toxic organic compounds while driving on streets,
the potential health impacts of those emissions on residences, businesses, schools, etc. near public streets is not assessed herein.

APPENDIX B-2

Spectator On Site Emission Factors

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EMFAC2017 (v1.0.2) Emission Rates **Spectators On-Site:** 5 mph only, ALL FUELS, ALL YEARS ... LD autos and trucks, LHD trucks, MD trucks, Motorcycles, Motor Homes
Region Type: County
Region: SACRAMENTO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Yea	Vehicle Cate	Model Year	Speed	Fuel	VMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
SACRAMENT	2021	MDV	1977	5	GAS	0.08227208	8.628385285	0.227256434	0.238160777	2583.110965	3.844763188	0.242726586	34.80304655	37.83762975	600.1125488	0.025561977
SACRAMENT	2021	MCY	1977	5	GAS	0.00208908	0.619207375	0.225342508	0.236155017	575.5143342	2.076713279	0.034971377	19.28884422	20.97069707	180.5382996	0.005695181
SACRAMENT	2021	MCY	1978	5	GAS	0.00313649	0.931515709	0.227256434	0.238160777	623.572673	1.932964331	0.046567453	17.72612197	19.27171631	132.9520974	0.006170757
SACRAMENT	2021	MCY	1979	5	GAS	0.00393066	0.931515709	0.227256434	0.238160777	623.572673	1.943426074	0.046861145	17.72612197	19.27171631	132.9520974	0.006170757
SACRAMENT	2021	MCY	1980	5	GAS	0.00389182	1.077553766	0.088772044	0.093031554	588.7822361	1.829701061	0.051833285	16.40291271	17.83313243	126.6446603	0.005826478
SACRAMENT	2021	MCY	1981	5	GAS	0.00527582	1.077553766	0.088772044	0.093031554	588.7822361	1.838423807	0.052126823	16.40291271	17.83313243	126.6446603	0.005826478
SACRAMENT	2021	MCY	1985	5	GAS	0.00848632	0.974162775	0.088772044	0.093031554	604.0594458	1.862548501	0.049469932	16.24405612	17.66042465	113.6174948	0.005977658
SACRAMENT	2021	MCY	1986	5	GAS	0.0101679	0.974162775	0.088772044	0.093031554	604.0594458	1.871061563	0.049729371	16.24405612	17.66042465	113.6174948	0.005977658
SACRAMENT	2021	MCY	1987	5	GAS	0.00924411	0.974162775	0.088772044	0.093031554	604.0594458	1.87934765	0.049977981	16.24405612	17.66042465	113.6174948	0.005977658
SACRAMENT	2021	MCY	1982	5	GAS	0.00746204	1.028152602	0.088772044	0.093031554	591.2845609	1.776596555	0.051135397	15.88444251	17.26945524	109.1681077	0.00585124
SACRAMENT	2021	MCY	1983	5	GAS	0.00609281	1.028152602	0.088772044	0.093031554	591.2845609	1.785732362	0.051401746	15.88444251	17.26945524	109.1681077	0.00585124
SACRAMENT	2021	MCY	1984	5	GAS	0.00568483	1.028152602	0.088772044	0.093031554	591.2845609	1.794520879	0.051652803	15.88444251	17.26945524	109.1681077	0.00585124
SACRAMENT	2021	MCY	2004	5	GAS	0.22880492	1.335587589	0.001075872	0.001134592	566.4163596	1.953287968	0.074247932	15.0276168	16.92688969	83.0746649	0.005605149
SACRAMENT	2021	MCY	2005	5	GAS	0.33114225	1.335585044	0.001075906	0.001134617	566.4162994	1.957027733	0.074369736	15.03266073	16.92665763	83.07464334	0.005605148
SACRAMENT	2021	MCY	2006	5	GAS	0.418465	1.335536325	0.00107594	0.00113464	566.4151463	1.960665629	0.07448558	15.03742861	16.9262729	83.07423063	0.005605137
SACRAMENT	2021	MCY	2007	5	GAS	0.41577692	1.33547926	0.00107597	0.001134661	566.4137957	1.964118658	0.074594198	15.04171222	16.92587982	83.07374724	0.005605124
SACRAMENT	2021	MCY	1994	5	GAS	0.01989406	0.892531396	0.014330515	0.015025906	575.876144	1.820801815	0.0489603	15.05102764	16.4185656	112.6422957	0.005698761
SACRAMENT	2021	MCY	1988	5	GAS	0.00837398	0.862428088	0.014203527	0.014885049	576.5956332	1.779483111	0.046281105	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	1989	5	GAS	0.0106885	0.862428088	0.014203527	0.014885049	576.5956332	1.786639475	0.046486523	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	1990	5	GAS	0.01112094	0.862428088	0.014203527	0.014885049	576.5956332	1.792937949	0.046664841	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	1991	5	GAS	0.01468234	0.862428088	0.014203527	0.014885049	576.5956332	1.799323143	0.04684325	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	1992	5	GAS	0.01440528	0.862428088	0.014203527	0.014885049	576.5956332	1.805691958	0.047018828	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	1993	5	GAS	0.02017426	0.862428088	0.014203527	0.014885049	576.5956332	1.811700526	0.047182305	15.08182599	16.39685615	114.4765418	0.005705881
SACRAMENT	2021	MCY	2008	5	GAS	0.2989415	1.703248588	0.001387156	0.001488615	538.1834066	1.89574431	0.097874611	12.50614155	15.91437979	42.91541106	0.005325761
SACRAMENT	2021	MCY	2009	5	GAS	0.31174046	1.701524113	0.001557235	0.001671235	538.1425907	1.898428706	0.097938549	12.50759917	15.9081583	42.90080271	0.005325357
SACRAMENT	2021	MCY	2010	5	GAS	0.13369106	1.699580861	0.001897477	0.002036533	538.0965965	1.900832365	0.097983341	12.51005278	15.90111167	42.88434098	0.005324902
SACRAMENT	2021	MCY	2011	5	GAS	0.15926836	1.697570582	0.002578026	0.002767176	538.0490158	1.903093593	0.09801921	12.51151955	15.89386936	42.86731138	0.005324431
SACRAMENT	2021	MCY	2012	5	GAS	0.24695736	1.695004541	0.003769827	0.004046392	537.9882808	1.904947291	0.098021381	12.51110438	15.88472598	42.84557364	0.00532383
SACRAMENT	2021	MCY	2013	5	GAS	0.32518115	1.691961349	0.005641249	0.006055598	537.9162519	1.906495129	0.09799638	12.5094372	15.87393437	42.8197936	0.005323117
SACRAMENT	2021	MCY	2014	5	GAS	0.38091932	1.688006323	0.007854066	0.008430914	537.8226407	1.907556663	0.097924363	12.50506352	15.8600069	42.78628872	0.005322191
SACRAMENT	2021	MCY	2015	5	GAS	0.46649149	1.683515184	0.00989713	0.010623841	537.7163399	1.908316192	0.097823689	12.49893695	15.84424296	42.74824169	0.005321139
SACRAMENT	2021	MCY	2016	5	GAS	0.4405184	1.678177816	0.011430024	0.012268956	537.5900093	1.908593402	0.097678098	12.49054557	15.82555813	42.70302503	0.005319889
SACRAMENT	2021	MCY	2017	5	GAS	0.54891288	1.671882114	0.012282333	0.013183403	537.4409959	1.90843202	0.097485991	12.47933421	15.80357703	42.64968864	0.005318414
SACRAMENT	2021	MCY	2018	5	GAS	0.63982894	1.664660539	0.01279436	0.013732524	537.2700688	1.907779492	0.097246166	12.4655615	15.77840465	42.58850705	0.005316723
SACRAMENT	2021	MCY	2019	5	GAS	0.73849574	1.656280414	0.013136212	0.014098958	537.0717229	1.906615879	0.096950806	12.44845768	15.7492453	42.51750862	0.00531476
SACRAMENT	2021	MCY	2020	5	GAS	0.82871936	1.646860254	0.013137581	0.014099924	536.8487673	1.904938577	0.09660316	12.4283175	15.71651058	42.43769726	0.005312554
SACRAMENT	2021	MCY	2021	5	GAS	0.66342361	1.636057988	0.013139017	0.014100936	536.5931141	1.902642763	0.096188662	12.40450025	15.6790104	42.34617521	0.005310024
SACRAMENT	2021	MCY	1997	5	GAS	0.03702004	1.035651049	0.014598152	0.015419852	559.8606978	1.72233089	0.057045389	13.37957845	15.24432393	96.48449908	0.005540275
SACRAMENT	2021	MCY	1998	5	GAS	0.04719498	1.035651049	0.014598583	0.015420156	559.8606978	1.727227869	0.057180658	13.3850389	15.24408253	96.48449908	0.005540275
SACRAMENT	2021	MCY	1999	5	GAS	0.07108994	1.035651049	0.014598994	0.015420446	559.8606978	1.731992734	0.057310518	13.39016262	15.24385602	96.48449908	0.005540275
SACRAMENT	2021	MCY	2000	5	GAS	0.10315028	1.035651049	0.014599417	0.015420744	559.8606978	1.736653114	0.057435865	13.39534125	15.24362709	96.48449908	0.005540275
SACRAMENT	2021	MCY	2001	5	GAS	0.15278706	1.035651049	0.014599851	0.01542105	559.8606978	1.740832836	0.057546892	13.40056406	15.2433962	96.48449908	0.005540275
SACRAMENT	2021	MCY	2002	5	GAS	0.18880744	1.035651049	0.014600285	0.015421356	559.8606978	1.745054094	0.057657694	13.4056915	15.24316953	96.48449908	0.005540275
SACRAMENT	2021	MCY	2003	5	GAS	0.23554577	1.035651049	0.014600767	0.015421696	559.8606978	1.748970553	0.057759309	13.41127886	15.24292253	96.48449908	0.005540275
SACRAMENT	2021	MCY	1996	5	GAS	0.02931584	1.01169442	0.014488156	0.015303803	559.6172745	1.704977938	0.055619214	13.28709354	15.14259805	97.64319785	0.005537867
SACRAMENT	2021	MCY	1995	5	GAS	0.02347327	0.94514283	0.014111856	0.014922992	556.1222374	1.636476931	0.051898758	12.70248966	14.57343605	99.2019751	0.00550328
SACRAMENT	2021	LHD1	1977	5	GAS	7.79518137	3.191421174	0.048610849	0.052868734	2218.775888	1.372655355	0.127796207	8.235251236	12.01685927	122.9637738	0.021956586
SACRAMENT	2021	LHD1	1978	5	GAS	10.7798618	3.158631072	0.048610849	0.052868734	2217.329674	1.365201118	0.12684889	8.183312535	11.94107044	122.192682	0.021942275
SACRAMENT	2021	LHD1	1979	5	GAS	11.8607343	3.128238561	0.048610849	0.052868734	2215.806171	1.358608736	0.126044721	8.137388335	11.87405796	121.3564681	0.021927198
SACRAMENT	2021	LHD2	1979	5	GAS	0.18459731	3.128238561	0.048610849	0.052868734	2505.063001	1.35870714	0.126070479	8.137388335	11.87405796	121.3564681	0.024789629
SACRAMENT	2021	LHD1	1980	5	GAS	25.0172067	3.097370176	0.048610849	0.052868734	2214.152714	1.351520306	0.125174943	8.088076757	11.80210262	120.4474832	0.021910836
SACRAMENT	2021	LHD1	1981	5	GAS	19.4403628	3.058249017	0.048610849	0.052868734	2212.28197	1.337490657	0.124021766	7.990886165	11.66028233	119.5316726	0.021892323
SACRAMENT	2021	LHD2	1981	5	GAS	2.64645799	3.058249017	0.048610849	0.052868734	2501.538799	1.337574755	0.124046905	7.990886165	11.66028233	119.5316726	0.024754754
SACRAMENT	2021	LHD1	1982	5	GAS	11.0990081	3.03493858	0.048610849	0.052868734	2210.555267	1.327177897	0.123414763	7.919477874	11.55608352	118.6365939	0.021875236
SACRAMENT	2021	LHD2	1982	5	GAS	0.7663886	3.03493858	0.048610849	0.052868734	2499.812097	1.327255374	0.123435862	7.919477874	11.55608352	118.6365939	0.024737667
SACRAMENT	2021	LHD1	1983	5	GAS	12.0161888	3.077770654	0.048610849	0.052868734	2208.977236	1.317339489	0.124772742	7.851428542	11.4567861	117.826171	0.02185962
SACRAMENT	2021	LHD2	1983	5	GAS	2.84027095	3.077770654	0.048610849	0.052868734	2498.234066	1.317410677	0.124786349	7.851428542	11.4567861	117.826171	0.024722051
SACRAMENT	2021	MH	1977	5	GAS	0.11764358	3.678548283	0.048610849	0.052868734	4503.305323	1.298131356	0.136856904	7.357222927	10.73564242	168.4550942	0.044563857
SACRAMENT	2021	MH	1978	5	GAS	0.23615802	3.67690147	0.048610849	0.052868734	4502.873062	1.282768379	0.136814289	7.256750982	10.589034	168.4557271	0.044559579
SACRAMENT	2021	MH	1979	5	GAS	0.19857027	3.677025015	0.048610849	0.052868734	4502.806192	1.267242338	0.136817592	7.155398113	10.44114013	168.6892755	0.044558917
SACRAMENT	2021	MH	1980	5	GAS	0.0159363	3.675703666	0.048610849	0.052868734	4502.929496	1.251579109	0.13678339	7.053310058	10.29217348	169.0448018	0.044560138
SACRAMENT	2021	MDV	1980	5	GAS	0.05133564	3.252330566	0.20651089	0.223529709	1902.611411	1.191298671	0.123912276	7.259769387	10.23241775	193.6470099	0.018827882
SACRAMENT	2021	MH	1981	5	GAS	0.25302288	3.673732171	0.048610849	0.052868734	4503.171999	1.236012216	0.1367323	6.952060514	10.14443038	169.4732486	0.044562537
SACRAMENT	2021	MH	1982	5	GAS	0.38057826	3.67041422	0.048610849	0.052868734	4503.375025	1.220930601	0.136646242	6.854158527	10.00157203	169.8676817	0.044564547
SACRAMENT	2021	MH	1983	5	GAS	0.31113535	3.665171693	0.048610849	0.052868734	4503.353325	1.206659874	0.136510152	6.761684971	9.866634837	170.1055708	0.044564332
SACRAMENT	2021	MH	1984	5	GAS	1.32738299	3.657328971	0.048610849	0.052868734	4502.992041	1.192742212	0.136306491	6.671642838	9.735245568	170.1226069	0.044560757
SACRAMENT	2021	MDV	1978	5	GAS	0.05510704	3.27136782	0.206503946	0.223524812	1908.160071	1.058931339	0.124596335	6.371907047	8.92933085	199.4021851	0.018882791
SACRAMENT	2021	MDV	1979	5	GAS	0.03881512	3.22221858	0.206504322	0.223525077	1904.868986	1.055222504	0.123277297	6.346432046	8.893422243	197.7730858	0.018850223
SACRAMENT	2021	MH	1985	5	GAS	1.22745814	3.746549064	0.048610849	0.052868734	4489.578931	1.095412831	0.138678535	6.049237747	8.82703352	163.3537773	0.044428023
SACRAMENT	2021	LDT1	1977	5	GAS	0.00698086	2.792879985	0.206502532	0.223523815	1522.682608	1.041802135	0.111389473	6.297080918	8.826028241	197.540935	0.015068179
SACRAMENT	2021	LDT2	1977	5	GAS	0.01094678	2.792753953	0.206502994	0.223524141	1558.512504	1.041783839	0.111385554	6.297529978	8.825947983	197.5298799	0.015422745
SACRAMENT	2021	LDT2	1978	5	GAS	0.01322136	2.745223251	0.206503417	0.223524439	1555.43337	1.039973939	0.110097332	6.275255343	8.794421243	195.3499528	0.015392274
SACRAMENT	2021	LDT1	1978	5	GAS	0.00747572	2.744937463	0.206502793	0.223523999	1519.579893	1.039984125	0.110089868	6.274638758	8.794363185	195.3551026	0.015037475
SACRAMENT	2021	MDV	1981	5	GAS	0.01272802	2.252513006	0.080354962	0.087080403	1575.45001	1.039003779	0.09698149	6.132193594	8.791431912	96.65291725	0.015590355
SACRAMENT	2021	MDV	1982	5	GAS	0.0108684	2.36687125	0.079935886	0.086763178	1571.598601	1.018234001	0.101965817	5.948032594	8.593942023	93.46938625	0.015552242
SACRAMENT	2021	LHD1	1984	5	GAS	22.5053233	3.082420049	0.048610849	0.052868734	2191.473395	0.991793806	0.125330317	5.803122529	8.467902772	112.355805	0.021686406
SACRAMENT	2021	LHD2	1984	5	GAS	2.10117869	3.082420049	0.048610849	0.052868734	2480.730225	0.992683239	0.125331272	5.803122529	8.467902772	112.355805	0.024548837
SACRAMENT	2021	LHD1	1985	5	GAS	26.8447134	3.086132799	0.048610849	0.052868734	2190.272828	0.98559539	0.125436136	5.75786912	8.401869104	111.7215004	0.021674525
SACRAMENT	2021	LHD2	1985	5	GAS	3.59312285	3.086132799	0.048610849	0.052868734	2479.529658	0.986404651	0.125437007	5.75786912	8.401869104	111.7215004	0.024536956
SACRAMENT	2021	LHD1	1986	5	GAS	36.4293725	2.913456971	0.048610849	0.052868734	2189.182723	0.980171089	0.120498979	5.717963422	8.343638803	111.1423363	0.021663738
SACRAMENT	2021	LHD2	1986	5	GAS	7.57444165	2.913456971	0.048610849	0.052868734	2478.439553	0.98090492	0.120499783	5.717963422	8.343638803	111.1423363	0.024526169
SACRAMENT	2021	LHD1	1987	5	GAS	33.0633761	2.969307099	0.048610849	0.052868734	2188.099184	0.975138205	0.122106012	5.680912978	8.289574882	110.5595466	0.021653015
SACRAMENT	2021	LHD2	1987	5	GAS	3.38915254	2.969307099	0.048610849	0.052868734	2477.356014	0.975801279	0.122106735	5.680912978	8.289574882	110.5595466	0.024515446
SACRAMENT	2021	LDT2	1980	5	GAS	0.00858253	2.821151386	0.205316827	0.222549067	1372.805635	0.919376365	0.116444134	5.328754716	7.646659156	92.91082139	0.013585025
SACRAMENT	2021	LDT2	1979	5	GAS	0.01483604	2.835345468	0.205313033	0.222546384	1393.990578	0.852540065	0.117145235	4.904410521	7.026017727	95.32453628	0.013794667
SACRAMENT	2021	MDV	1984	5	GAS	0.02942563	2.230203504	0.079575377	0.086545483	1590.463049	0.853218953	0.095001922	4.798225669	7.001559633	103.9330724	0.015738921
SACRAMENT	2021	LDA	1977	5	GAS	0.02641262	2.109884413	0.20799056	0.22539083	1413.250985	0.712535031	0.084626355	4.92381114	6.917977265	98.98366357	0.013985264
SACRAMENT	2021	MDV	1983	5	GAS	0.01788595	3.348015781	0.078691268	0.085583934	1530.42468	0.8314297	0.157635151	4.680582286	6.829894684	70.73181573	0.015144793
SACRAMENT	2021	LDA	1978	5	GAS	0.03385674	2.187459634	0.206895655	0.224564332	1409.687763	0.728696953	0.090795862	4.756359817	6.793766126	97.12375126	0.013950003
SACRAMENT	2021	LDA	1979	5	GAS	0.03381935	2.40457728	0.210670729	0.228387371	1403.193454	0.750551669	0.101225055	4.807330571	6.779700783	93.23892161	0.013885737
SACRAMENT	2021	LDT2	1981	5	GAS	0.00867474	3.893667426	0.079174399	0.086109382	1499.562665	0.778837377	0.172946912	4.337780204	6.329678691	72.62157989	0.014839388
SACRAMENT	2021	LDT1	1980	5	GAS	0.0078923	2.116154042	0.205318632	0.222550254	1349.425902	0.774443848	0.095291005	4.369487787	6.270089616	92.94223111	0.013353663
SACRAMENT	2021	LDT1	1979	5	GAS	0.01145024	2.126620559	0.205314813	0.222547561	1351.568322	0.71813585	0.095857883	4.021519551	5.761185184	95.3158327	0.013374864
SACRAMENT	2021	LDT2	1982	5	GAS	0.01276309	4.625798021	0.079865942	0.086861499	1485.309921	0.693471374	0.204060186	3.789049788	5.528972557	63.9485664	0.014698346
SACRAMENT	2021	MH	1979	5	DSL	0.01559023	26.72699033	1.991987749	2.082056596	2340.526571	0.22005544	0.367898183	4.737664061	5.393515552	7.673640332	0.022126393
SACRAMENT	2021	MH	1982	5	DSL	0.12624437	26.68621955	1.957441304	2.045948114	2340.526571	0.215419561	0.367898183	4.637856322	5.279891077	7.511916004	0.022126393
SACRAMENT	2021	MH	1983	5	DSL	0.02254942	26.67172236	1.945157362	2.033108746	2340.526571	0.213771147	0.367898183	4.602366927	5.239488761	7.454410458	0.022126393
SACRAMENT	2021	MH	1984	5	DSL	0.12181469	26.6567717	1.932489189	2.019867775	2340.526571	0.212071171	0.367898183	4.565767459	5.197822699	7.395106195	0.022126393
SACRAMENT	2021	LDT1	1981	5	GAS	0.0192611	2.595980895	0.079175849	0.08611096	1073.87227	0.65607914	0.130360154	3.557135878	5.190564322	72.63679184	0.010626837

SACRAMENT	2021	MH	1985	5	DSL	0.07760805	26.64136757	1.919436786	2.0062252	2340.526571	0.210319635	0.367898183	4.528057917	5.154892892	7.334003213	0.022126393
SACRAMENT	2021	MH	1986	5	DSL	0.10771271	26.62550997	1.906000153	1.992181022	2340.526571	0.208516538	0.367898183	4.4892383	5.11069934	7.271101515	0.022126393
SACRAMENT	2021	MH	1987	5	DSL	0.11289775	26.53057598	1.912538712	1.999015226	2267.723958	0.201852825	0.356454626	4.345772486	4.947373049	7.036074311	0.021438147
SACRAMENT	2021	LDA	1980	5	GAS	0.03850966	3.49133372	0.214921427	0.233746661	1349.118478	0.577263403	0.15695822	3.380418997	4.932699466	61.85920448	0.013350621
SACRAMENT	2021	MH	1988	5	DSL	0.11670133	26.50817133	1.899891357	1.985796014	2267.723958	0.199586407	0.356454626	4.296977844	4.891823592	6.957069921	0.021438147
SACRAMENT	2021	MH	1989	5	DSL	0.15057393	26.4851606	1.886901907	1.972219238	2267.723958	0.197258685	0.356454626	4.24686335	4.834771574	6.875928559	0.021438147
SACRAMENT	2021	MH	1990	5	DSL	0.18677912	26.46154378	1.873570361	1.958284898	2267.723958	0.194869658	0.356454626	4.195429004	4.776216991	6.792650227	0.021438147
SACRAMENT	2021	MDV	1994	5	GAS	0.47826962	3.757593003	0.061118742	0.066472208	1175.931352	0.604629836	0.179206551	3.164441727	4.617545939	27.79437101	0.011636794
SACRAMENT	2021	MDV	1993	5	GAS	0.22888823	3.799196538	0.060161224	0.06543082	1175.525018	0.59348344	0.180813421	3.113412691	4.54308449	28.06220485	0.011632773
SACRAMENT	2021	LDT1	1982	5	GAS	0.02754989	3.0837195	0.079862855	0.086858142	1059.454893	0.584261632	0.15379895	3.107668113	4.534702015	63.95317863	0.010484165
SACRAMENT	2021	MDV	1992	5	GAS	0.2006712	3.926853868	0.057288669	0.062306655	1364.517351	0.563548401	0.18626977	2.963369536	4.324141871	28.9212232	0.013503005
SACRAMENT	2021	MDV	1990	5	GAS	0.14898775	3.975970341	0.100196759	0.108973117	1362.902828	0.548801066	0.18792338	2.89902231	4.230246549	29.21053585	0.013487028
SACRAMENT	2021	MDV	1987	5	GAS	0.06537609	3.967675948	0.100546752	0.109353767	1356.265906	0.545213348	0.18672693	2.897592848	4.228160682	28.89610686	0.013421351
SACRAMENT	2021	MDV	1991	5	GAS	0.13967551	4.008724336	0.055398184	0.06025058	1363.483969	0.543191206	0.18966747	2.86290396	4.177542739	29.44508336	0.013492779
SACRAMENT	2021	LDA	1996	5	GAS	1.9732807	2.159103204	0.019159598	0.020837811	845.7663915	0.538939178	0.118098084	2.756818764	4.022743469	21.93435649	0.008369544
SACRAMENT	2021	MDV	1989	5	GAS	0.12013424	4.080318502	0.094310565	0.102571345	1364.423735	0.519813388	0.191935503	2.753624325	4.018082151	31.25351987	0.013502079
SACRAMENT	2021	MDV	1988	5	GAS	0.07767762	4.093210608	0.095154882	0.103489616	1359.013265	0.517542083	0.192670336	2.745422443	4.006113985	29.89578513	0.013448538
SACRAMENT	2021	LDT2	1992	5	GAS	0.27870055	4.355339195	0.061118742	0.066472208	1274.966248	0.517317298	0.198696438	2.651058953	3.868419001	26.77515488	0.012616825
SACRAMENT	2021	LDA	1981	5	GAS	0.05497572	3.069573673	0.084375673	0.091766243	986.8224771	0.470968087	0.14911525	2.640599342	3.853156361	44.85798015	0.009765408
SACRAMENT	2021	LDT2	1993	5	GAS	0.42677828	4.360993638	0.061118742	0.066472208	1159.79842	0.514823063	0.199186444	2.630717686	3.838737072	27.1089746	0.011477146
SACRAMENT	2021	MDV	1986	5	GAS	0.04943582	4.19177737	0.09090069	0.098862795	1355.765385	0.491400796	0.196598184	2.616532606	3.818038236	30.46762932	0.013416398
SACRAMENT	2021	MDV	1995	5	GAS	0.54535	3.233409118	0.061118742	0.066472208	1163.983827	0.512825415	0.161636319	2.608173173	3.805840172	21.18698177	0.011518564
SACRAMENT	2021	LDT2	1991	5	GAS	0.24412707	4.424204566	0.060161224	0.06543082	1273.799723	0.507663639	0.201179509	2.607089382	3.804258706	27.00543938	0.012605281
SACRAMENT	2021	LDA	1982	5	GAS	0.06764123	3.041368009	0.084628875	0.092041623	984.7140898	0.467610245	0.148972219	2.581923123	3.767536161	43.92900855	0.009744544
SACRAMENT	2021	LDT2	1994	5	GAS	0.55287322	4.263181973	0.061806191	0.067219872	1156.414664	0.503154611	0.195809708	2.552860929	3.725128676	24.52641014	0.011443661
SACRAMENT	2021	LDT2	1996	5	GAS	0.86983972	3.268687196	0.017855326	0.019419296	1156.294292	0.499051312	0.160963336	2.539838475	3.70612634	23.84301469	0.011442469
SACRAMENT	2021	LDT2	1995	5	GAS	0.79557513	3.099217788	0.062149866	0.06759365	1154.023245	0.492423299	0.156545286	2.482080826	3.621846515	22.49162476	0.011419996
SACRAMENT	2021	LDT2	1990	5	GAS	0.19933295	4.639388246	0.102301184	0.111261872	1274.272844	0.482248231	0.209404198	2.482025554	3.621765861	27.8462952	0.012609963
SACRAMENT	2021	LDT2	1984	5	GAS	0.03313687	5.099161885	0.081255295	0.088372547	1449.705169	0.461581119	0.224826417	2.435708694	3.554180409	41.1685772	0.014346008
SACRAMENT	2021	LDA	1983	5	GAS	0.07621547	2.951929087	0.087141173	0.094773976	978.8037372	0.449069869	0.147569089	2.435091966	3.553280481	39.93430455	0.009686056
SACRAMENT	2021	LDT2	1989	5	GAS	0.14911669	4.776869494	0.098925319	0.10759031	1273.733699	0.464996935	0.214516372	2.398436939	3.499793551	28.36509806	0.012604628
SACRAMENT	2021	LDT2	1988	5	GAS	0.11650015	4.764624021	0.099056846	0.107733358	1270.447242	0.463672307	0.213756261	2.396571716	3.497071822	28.21225836	0.012572105
SACRAMENT	2021	LDA	1978	5	DSL	0.0011141	1.430442975	2.142354163	2.239221912	954.9215097	0.142676911	0.150100363	3.071749896	3.496983032	6.021397126	0.009027442
SACRAMENT	2021	LDA	1979	5	DSL	0.00261209	1.430442975	2.142354163	2.239221912	954.9215097	0.142676911	0.150100363	3.071749896	3.496983032	6.021397126	0.009027442
SACRAMENT	2021	MDV	1978	5	DSL	0.00034003	1.430442975	2.142354163	2.239221912	1356.797493	0.142676911	0.213269671	3.071749896	3.496983032	6.021397126	0.012826616
SACRAMENT	2021	LDA	1977	5	DSL	0.00070543	1.430442975	2.142354163	2.239221912	954.9215097	0.142676911	0.150100363	3.071749896	3.496983032	6.021397126	0.009027442
SACRAMENT	2021	LDT2	1978	5	DSL	0.00080872	1.430442975	2.142354163	2.239221912	1274.64369	0.142676911	0.200356238	3.071749896	3.496983032	6.021397126	0.012049967
SACRAMENT	2021	LDT2	1979	5	DSL	0.00132409	1.430442975	2.142354163	2.239221912	1274.64369	0.142676911	0.200356238	3.071749896	3.496983032	6.021397126	0.012049967
SACRAMENT	2021	MDV	1985	5	GAS	0.03824957	4.390720014	0.082922133	0.090185386	1467.220199	0.44737992	0.205145252	2.386309623	3.4820974	31.8127784	0.014519333
SACRAMENT	2021	LDA	1995	5	GAS	1.60560283	1.925395689	0.067008992	0.072878393	841.2871879	0.476268638	0.109826445	2.385131845	3.480378789	19.5866048	0.008325219
SACRAMENT	2021	LDA	1994	5	GAS	1.14753271	1.969104543	0.065242036	0.070956667	842.2976046	0.462378753	0.111944585	2.324430331	3.391803282	19.99335526	0.008335218
SACRAMENT	2021	LDT2	1983	5	GAS	0.01500488	5.394842656	0.078528772	0.085407205	1444.144358	0.434668685	0.236197524	2.292282741	3.344893595	39.35423757	0.014290979
SACRAMENT	2021	LDT2	1987	5	GAS	0.07304336	5.099307805	0.092734141	0.100856839	1271.026342	0.440625009	0.225283919	2.286181567	3.335990775	30.00462914	0.012577836
SACRAMENT	2021	LDT2	1986	5	GAS	0.06342044	5.182090796	0.090042108	0.097929008	1270.913433	0.434139915	0.228166426	2.260826968	3.298993405	31.11279485	0.012576719
SACRAMENT	2021	MH	1986	5	GAS	1.10117519	4.212690032	0.062269787	0.067724075	4238.725081	0.484680021	0.197191602	2.210992387	3.2262749	15.53624935	0.041945621
SACRAMENT	2021	LDT2	1985	5	GAS	0.04181872	5.193187564	0.085556834	0.093050863	1436.797927	0.420675365	0.228655561	2.199302584	3.209217168	32.6422592	0.01421828
SACRAMENT	2021	LHD1	1991	5	GAS	76.2146512	4.807563212	0.034871081	0.037925482	2025.910915	0.435240915	0.202117924	2.178442497	3.178778178	17.76622253	0.020048031
SACRAMENT	2021	LHD2	1991	5	GAS	5.97313165	4.807563212	0.034871081	0.037925482	2315.167745	0.435561886	0.20223329	2.178442497	3.178778178	17.76622253	0.022910462
SACRAMENT	2021	LDT1	1992	5	GAS	0.29641803	2.134116365	0.061118742	0.066472208	1000.259636	0.435769552	0.120826795	2.173868689	3.172104088	26.77515488	0.00989838
SACRAMENT	2021	LHD1	1992	5	GAS	70.2713006	4.819702518	0.034871081	0.037925482	2025.746319	0.433864097	0.202621876	2.168620522	3.164445975	17.68910259	0.020046402
SACRAMENT	2021	LHD2	1992	5	GAS	4.06783084	4.819702518	0.034871081	0.037925482	2315.003149	0.434144688	0.202722337	2.168620522	3.164445975	17.68910259	0.022908833
SACRAMENT	2021	LDA	1993	5	GAS	0.83287704	2.067494268	0.061123027	0.066476869	844.0742271	0.429220526	0.117080384	2.164279298	3.158111271	20.86727367	0.008352799
SACRAMENT	2021	LHD1	1993	5	GAS	84.0678311	4.810999549	0.034871081	0.037925482	2025.598348	0.432726838	0.202487692	2.16019193	3.152146993	17.61868055	0.020044938
SACRAMENT	2021	LHD2	1993	5	GAS	11.3198663	4.810999549	0.034871081	0.037925482	2314.855178	0.432968982	0.202574165	2.16019193	3.152146993	17.61868055	0.022907369
SACRAMENT	2021	LDA	1992	5	GAS	0.70788983	2.064552328	0.061118491	0.066471936	901.4701672	0.425405572	0.116570154	2.153997157	3.143107595	20.79626621	0.008920778
SACRAMENT	2021	LDA	1991	5	GAS	0.68260288	2.063655793	0.061122401	0.066476188	900.9582151	0.423053917	0.116095571	2.153131076	3.141843812	20.77417155	0.008915712
SACRAMENT	2021	LDA	1990	5	GAS	0.4769095	2.063735274	0.109141385	0.118701214	900.9589213	0.420659631	0.115614903	2.153017758	3.141678459	20.77491608	0.008915719
SACRAMENT	2021	LHD1	1994	5	GAS	97.621494	4.806342331	0.034871081	0.037925482	2025.465684	0.431782409	0.202470178	2.152883972	3.141483239	17.55486647	0.020043625
SACRAMENT	2021	LHD2	1994	5	GAS	16.116161	4.806342331	0.034871081	0.037925482	2314.722514	0.431988001	0.202543439	2.152883972	3.141483239	17.55486647	0.022906056
SACRAMENT	2021	LDT1	1991	5	GAS	0.34336729	2.167860394	0.060161224	0.06543082	999.4268828	0.427634941	0.122336227	2.137813635	3.119492638	27.00543938	0.009890139
SACRAMENT	2021	LDA	1989	5	GAS	0.38618342	2.083211792	0.107470729	0.116884223	898.8626563	0.410841496	0.116141158	2.115612335	3.087096553	20.89510971	0.008894975
SACRAMENT	2021	LDA	1984	5	GAS	0.1038308	3.111315341	0.087551198	0.095219916	967.0883786	0.398360284	0.159747581	2.100108046	3.06447273	32.48154039	0.009570123
SACRAMENT	2021	LDT1	1993	5	GAS	0.41413104	2.136887042	0.061118742	0.066472208	926.1414083	0.415493105	0.121124803	2.052943565	2.995650431	21.05111019	0.00916492
SACRAMENT	2021	LDA	1997	5	GAS	2.93636529	1.672201607	0.019187832	0.020868518	834.0790876	0.417218062	0.098361665	2.052764241	2.995388762	17.1858619	0.008253889
SACRAMENT	2021	LDT1	1990	5	GAS	0.21812114	2.273300389	0.102301184	0.111261872	1000.068653	0.40623045	0.127338534	2.03526128	2.969848481	27.8462952	0.00989649
SACRAMENT	2021	LDA	1988	5	GAS	0.27714696	2.155016257	0.102302538	0.111263344	899.7489947	0.388477804	0.119297802	2.014343058	2.939324661	21.57295033	0.008903746
SACRAMENT	2021	LDT1	1984	5	GAS	0.06800902	5.098801617	0.081258098	0.088375596	1022.941245	0.388877213	0.224810206	1.997611197	2.91490957	41.17448745	0.010122833
SACRAMENT	2021	LDT1	1994	5	GAS	0.58720002	1.762352103	0.061806191	0.067219872	923.4543655	0.406331575	0.105646641	1.993636355	2.909109489	18.98984694	0.00913833
SACRAMENT	2021	LDT1	1996	5	GAS	0.79500209	1.867834996	0.017855326	0.019419296	923.3321297	0.403157855	0.108957706	1.984266452	2.895436949	18.42421787	0.00913712
SACRAMENT	2021	MH	1991	5	DSL	0.29211382	28.19118238	1.829292237	1.912004715	2180.980418	0.117717162	0.34281975	2.534381192	2.88522449	4.807960908	0.020618108
SACRAMENT	2021	LDT1	1989	5	GAS	0.24310084	3.343808851	0.098925319	0.10759031	999.8179269	0.391698453	0.167281534	1.966718605	2.869831171	28.36509806	0.009894009
SACRAMENT	2021	LDT1	1988	5	GAS	0.1510786	4.764624021	0.099056846	0.107733358	997.2108361	0.390587258	0.213758311	1.965189121	2.867599353	28.21225836	0.00986821
SACRAMENT	2021	MH	1992	5	DSL	0.53408994	28.14620612	1.812209575	1.894149651	2180.980418	0.116188913	0.34281975	2.501478894	2.847767411	4.74558444	0.020618108
SACRAMENT	2021	LDA	1987	5	GAS	0.29162922	2.200624043	0.098908467	0.107571982	899.3929725	0.372493007	0.120971501	1.946148141	2.839814799	21.97725947	0.008900223
SACRAMENT	2021	LDT1	1995	5	GAS	0.54615492	1.770978179	0.062149915	0.067593704	921.5780788	0.397801172	0.105966651	1.939122572	2.829563105	17.37984082	0.009119762
SACRAMENT	2021	LHD1	1988	5	GAS	45.6028761	2.744500975	0.062269787	0.067724075	2019.031296	0.397253349	0.130489355	1.938663247	2.828892859	14.07831333	0.019979951
SACRAMENT	2021	LHD2	1988	5	GAS	1.29930894	2.744500975	0.062269787	0.067724075	2308.288126	0.397549573	0.13074999	1.938663247	2.828892859	14.07831333	0.022842382
SACRAMENT	2021	LHD1	1989	5	GAS	68.8821368	2.74227162	0.062269787	0.067724075	2018.921022	0.395432503	0.130601301	1.926927745	2.811768442	14.04067006	0.01997886
SACRAMENT	2021	LHD2	1989	5	GAS	1.68754633	2.74227162	0.062269787	0.067724075	2308.177852	0.395696581	0.130836088	1.926927745	2.811768442	14.04067006	0.022841291
SACRAMENT	2021	MH	1993	5	DSL	0.59160543	28.10013214	1.794709961	1.875858781	2180.980418	0.114623363	0.34281975	2.467773518	2.809396081	4.681685471	0.020618108
SACRAMENT	2021	LHD1	1990	5	GAS	89.9603563	2.737559067	0.062269787	0.067724075	2018.816296	0.39368921	0.13073905	1.915934303	2.795726837	14.00450857	0.019977824
SACRAMENT	2021	LHD2	1990	5	GAS	6.81487138	2.737559067	0.062269787	0.067724075	2308.073126	0.393923952	0.130946781	1.915934303	2.795726837	14.00450857	0.022840255
SACRAMENT	2021	LDT1	1983	5	GAS	0.02978578	5.394144291	0.078534325	0.085413244	1018.132129	0.366215452	0.23616894	1.880047858	2.743361421	39.36105186	0.010075243
SACRAMENT	2021	LDA	1986	5	GAS	0.18322561	2.25124206	0.095337356	0.103688074	900.5988549	0.356254468	0.122742949	1.877196395	2.739200573	22.47204864	0.008912156
SACRAMENT	2021	LDT1	1987	5	GAS	0.16929974	5.099119607	0.092734278	0.100856989	998.275052	0.371173108	0.225278487	1.874693635	2.735548551	30.0049661	0.009878741
SACRAMENT	2021	LDT1	1986	5	GAS	0.16894675	5.181880006	0.090043277	0.097930279	998.5760404	0.365720277	0.22815928	1.853959061	2.705292709	31.11377399	0.009881719
SACRAMENT	2021	MH	1994	5	DSL	1.10103448	27.90236901	1.046000458	1.093295957	2091.138895	0.108498113	0.328697914	2.335900485	2.659267401	4.433917932	0.019768783
SACRAMENT	2021	LDA	1985	5	GAS	0.18677726	2.294917503	0.092208202	0.100284833	951.9945985	0.341378814	0.123992244	1.81600639	2.649912261	22.88768856	0.009420758
SACRAMENT	2021	LDT1	1985	5	GAS	0.09616054	5.192991591	0.085557189	0.093051249	1009.706881	0.354382119	0.228649473	1.80352445	2.631698644	32.6441823	0.009991868
SACRAMENT	2021	MH	1995	5	DSL	0.72618792	27.84565081	1.034133412	1.080892336	2091.138895	0.10661127	0.328697914	2.295277877	2.613021263	4.356804866	0.019768783
SACRAMENT	2021	MH	1996	5	DSL	0.47856292	27.78764263	1.021996478	1.068206624	2091.138895	0.104681515	0.328697914	2.253731386	2.565723345	4.277938058	0.019768783
SACRAMENT	2021	MH	1994	5	GAS	3.32403853	4.017028446	0.009963166	0.010835852	4229.810154	0.393383606	0.190954939	1.737055737	2.534707653	11.201335	0.0418574
SACRAMENT	2021	LDT2	1997	5	GAS	1.62718181	2.48527679	0.017995549	0.019571802	1144.496927	0.35543218	0.132288736	1.731492775	2.526590192	18.09943285	0.011325725
SACRAMENT	2021	MH	1987	5	GAS	1.03832429	4.541357891	0.034871081	0.037925482	4234.055723	0.391289691	0.207964652	1.726782836	2.519717461	13.90774462	0.041899414
SACRAMENT	2021	MH	1997	5	DSL	1.32065142	27.72834443	1.009589656	1.05523882	2091.138895	0.102708847	0.328697914	2.211261012	2.517373647	4.197317509	0.019768783
SACRAMENT	2021	MH	1988	5	GAS	1.17300667	4.487741607	0.034871081	0.037925482	4233.587946	0.3860435	0.206254194	1.699987967	2.480618451	13.68552813	0.041894785
SACRAMENT	2021	MH	1998	5	DSL	1.13863939	27.48586949	1.021982279	1.068191782	2142.255624	0.101057669	0.336732751	2.175712108	2.476903583	4.127113111	0.02025202
SACRAMENT	2021	MH	1989	5	GAS	2.19837137	4.429509834	0.034871081	0.037925482	4228.108419	0.380760954	0.204373489	1.673068698	2.441337917	10.30181809	0.04184056
SACRAMENT	2021	MH	1999	5	DSL	1.56123273	27.41495429	1.010276073	1.055956274	2142.255624	0.099013727	0.336732751	2.131707252	2.42680698	4.043678594	0.02025202
SACRAMENT	2021	MH	1990	5	GAS	2.15363422	4.367291719	0.034871081	0.037925482	4227.921248	0.375333001	0.202368707	1.645479495	2.401079817	10.25879283	0.041838708
SACRAMENT	2021	MH	2000	5	DSL	2.69159725	27.34256065	0.998325837	1.043465702	2142.255624	0.096927178	0.336732751	2.086785085	2.37566608	3.958504802	0.02025202
SACRAMENT	2021	MH	1991	5	GAS	2.07727749	4.30171151	0.034871081	0.037925482	4227.733976	0.369687355	0.200246075	1.616861719	2.359320825	10.21850213	0.041836855
SACRAMENT	2021	MH	2001	5	DSL	2.22359288	27.26868859	0.986131571	1.030720065	2142.255624	0.094798022	0.336732751	2.040945607	2.323480883	3.871591735	0.02025202
SACRAMENT	2021	MH	1992	5	GAS	2.7648857	4.233759539	0.034871081	0.037925482	4227.54472	0.363693829	0.198036215	1.586624247	2.315198377	10.18136601	0.041834982
SACRAMENT	2021	MH	2002	5	DSL	2.67223371	27.19333811	0.973693274	1.017719363	2142.255624	0.092626259	0.336732751	1.99418882	2.270251389	3.782939392	0.02025202
SACRAMENT	2021	MH	1993	5	GAS	2.6099238	4.164561395	0.034871081	0.037925482	4227.350916	0.357267732	0.195774704	1.554210729	2.267900648	10.14728067	0.041833064
SACRAMENT	2021	MH	1995	5	GAS	4.79456942	3.941013412	0.009963166	0.010835852	4228.488778	0.335055787	0.18842833	1.443144555	2.105833146	11.16730155	0.041844324
SACRAMENT	2021	MH	1996	5	GAS	3.42367069	3.867003229	0.009963166	0.010835852	4228.419727	0.334290097	0.185953223	1.439266397	2.100174148	11.13428905	0.041843641

SACRAMENT	2021	MH	1997	5	GAS	5.92726127	3.798416036	0.009963166	0.010835852	4228.349726	0.333525488	0.183622833	1.435397117	2.094528104	11.10065303	0.041842948
SACRAMENT	2021	LDA	1998	5	GAS	3.92730869	1.212265312	0.019271907	0.020959958	818.7317835	0.300859245	0.077879792	1.412004648	2.060393867	12.69460263	0.008102015
SACRAMENT	2021	LDT1	1997	5	GAS	0.98872176	1.406639595	0.017995621	0.01957188	914.1957264	0.286679922	0.089074895	1.350032375	1.969964073	13.98587644	0.009046708
SACRAMENT	2021	LDT2	1998	5	GAS	2.08148929	1.863810936	0.018493671	0.020113555	1136.698326	0.264385104	0.106608418	1.236030556	1.803612886	13.7562341	0.011248551
SACRAMENT	2021	LHD2	1995	5	GAS	22.2697462	2.728057821	0.022419216	0.024382943	2296.911565	0.241822394	0.132613276	1.131746829	1.651442317	9.096282567	0.022729802
SACRAMENT	2021	LHD1	1995	5	GAS	198.065318	2.728000109	0.02241887	0.024382567	2007.654242	0.241661652	0.132524584	1.131718261	1.65140063	9.09604927	0.019867366
SACRAMENT	2021	LDT2	1981	5	DSL	0.00027092	1.253835211	1.097691325	1.147324056	1274.64369	0.063630622	0.200356238	1.369929838	1.559574042	4.191945321	0.012049967
SACRAMENT	2021	MDV	1980	5	DSL	0.00066371	1.253835211	1.097691325	1.147324056	1356.797493	0.063630622	0.213269671	1.369929838	1.559574042	4.191945321	0.012826616
SACRAMENT	2021	LDA	1980	5	DSL	0.00447963	1.253835211	1.097691325	1.147324056	954.9215097	0.063630622	0.150100363	1.369929838	1.559574042	4.191945321	0.009027442
SACRAMENT	2021	LDA	1981	5	DSL	0.00718741	1.253835211	1.097691325	1.147324056	954.9215097	0.063630622	0.150100363	1.369929838	1.559574042	4.191945321	0.009027442
SACRAMENT	2021	LDA	1982	5	DSL	0.01295979	1.253835211	1.097691325	1.147324056	954.9215097	0.063630622	0.150100363	1.369929838	1.559574042	4.191945321	0.009027442
SACRAMENT	2021	LDT1	1981	5	DSL	0.00102495	1.253835211	1.097691325	1.147324056	1091.414005	0.063630622	0.171555083	1.369929838	1.559574042	4.191945321	0.010317787
SACRAMENT	2021	LDT1	1982	5	DSL	0.00502769	1.253835211	1.097691325	1.147324056	1091.414005	0.063630622	0.171555083	1.369929838	1.559574042	4.191945321	0.010317787
SACRAMENT	2021	LDT2	1980	5	DSL	0.00055426	1.253835211	1.097691325	1.147324056	1274.64369	0.063630622	0.200356238	1.369929838	1.559574042	4.191945321	0.012049967
SACRAMENT	2021	LDT2	1982	5	DSL	0.00271372	1.253835211	1.097691325	1.147324056	1274.64369	0.063630622	0.200356238	1.369929838	1.559574042	4.191945321	0.012049967
SACRAMENT	2021	MDV	1982	5	DSL	0.00713583	1.253835211	1.097691325	1.147324056	1356.797493	0.063630622	0.213269671	1.369929838	1.559574042	4.191945321	0.012826616
SACRAMENT	2021	LDA	1984	5	DSL	0.01712812	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1985	5	DSL	0.02473428	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1986	5	DSL	0.00602994	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1987	5	DSL	0.01412294	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1988	5	DSL	0.00050474	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1989	5	DSL	0.00073429	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1990	5	DSL	0.00885615	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1991	5	DSL	0.0047786	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1992	5	DSL	0.00219434	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDT1	1984	5	DSL	0.0022666	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1985	5	DSL	0.00240932	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1986	5	DSL	0.00516375	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1987	5	DSL	0.00521865	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1988	5	DSL	0.00491993	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1989	5	DSL	0.00496502	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1990	5	DSL	0.00204107	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1992	5	DSL	0.00632541	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT2	1984	5	DSL	0.00027428	0.910209245	0.840502778	0.878506584	1141.838743	0.062974637	0.179481149	1.35580685	1.543495959	6.465598553	0.010794482
SACRAMENT	2021	LDT2	1990	5	DSL	0.0002832	0.910209245	0.840502778	0.878506584	1141.838743	0.062974637	0.179481149	1.35580685	1.543495959	6.465598553	0.010794482
SACRAMENT	2021	MDV	1984	5	DSL	0.00399902	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1985	5	DSL	0.00111786	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1986	5	DSL	0.00192161	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1987	5	DSL	0.00113128	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1988	5	DSL	0.00057282	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1989	5	DSL	0.00029304	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1992	5	DSL	0.00029283	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1996	5	GAS	0.62278508	2.475311371	0.017462498	0.01899206	1133.255733	0.213347576	0.13338368	0.986135201	1.43896617	10.97542998	0.011214484
SACRAMENT	2021	MDV	1997	5	GAS	0.96342229	2.47671666	0.017462498	0.01899206	1133.905152	0.213303863	0.133727013	0.982811023	1.434115538	10.9891148	0.011220911
SACRAMENT	2021	LDT1	1998	5	GAS	1.25757791	1.039906198	0.018493197	0.02011304	908.1806022	0.212777016	0.071176354	0.961097233	1.402430827	10.63288231	0.008987183
SACRAMENT	2021	LHD1	1991	5	DSL	26.6923981	6.751893377	0.170097781	0.177788848	1316.983587	0.055747484	0.20701148	1.200210511	1.366359871	3.910217077	0.012450231
SACRAMENT	2021	LHD1	1992	5	DSL	35.3520517	6.751893377	0.170097781	0.177788848	1316.983587	0.055747484	0.20701148	1.200210511	1.366359871	3.910217077	0.012450231
SACRAMENT	2021	LHD1	1993	5	DSL	41.892636	6.751893377	0.170097781	0.177788848	1316.983587	0.055747484	0.20701148	1.200210511	1.366359871	3.910217077	0.012450231
SACRAMENT	2021	LHD2	1991	5	DSL	5.73169002	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	LHD2	1992	5	DSL	8.4285365	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	LHD2	1993	5	DSL	20.0786239	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	LHD1	1994	5	DSL	37.1419156	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD1	1995	5	DSL	61.8414684	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD1	1996	5	DSL	50.303048	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD1	1997	5	DSL	109.036421	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD2	1994	5	DSL	20.262235	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1995	5	DSL	11.45379	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1996	5	DSL	24.8618081	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1997	5	DSL	16.4203643	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD1	1998	5	DSL	44.7543985	6.756998998	0.17124926	0.178992391	1316.983587	0.055521889	0.20701148	1.195353583	1.360830582	3.885874313	0.012450231
SACRAMENT	2021	LHD2	1998	5	DSL	12.9531186	6.756998998	0.17124926	0.178992391	1389.089524	0.055521889	0.218345529	1.195353583	1.360830582	3.885874313	0.013131891
SACRAMENT	2021	LHD1	1999	5	DSL	184.039174	6.754523283	0.170740313	0.178460432	1316.983587	0.055293058	0.20701148	1.190426987	1.35522198	3.869868888	0.012450231
SACRAMENT	2021	LHD2	1999	5	DSL	52.1041106	6.754523283	0.170740313	0.178460432	1389.089524	0.055293058	0.218345529	1.190426987	1.35522198	3.869868888	0.013131891
SACRAMENT	2021	LHD1	2000	5	DSL	175.360492	6.750687322	0.169951733	0.177636196	1316.983587	0.054938499	0.20701148	1.182793545	1.346531813	3.845069517	0.012450231
SACRAMENT	2021	LHD2	2000	5	DSL	42.7327783	6.750687322	0.169951733	0.177636196	1389.089524	0.054938499	0.218345529	1.182793545	1.346531813	3.845069517	0.013131891
SACRAMENT	2021	LHD1	2001	5	DSL	294.522075	6.745491115	0.16888352	0.176519683	1316.983587	0.054458213	0.20701148	1.172453256	1.334760082	3.811476202	0.012450231
SACRAMENT	2021	LHD2	2001	5	DSL	83.8697837	6.745491115	0.16888352	0.176519683	1389.089524	0.054458213	0.218345529	1.172453256	1.334760082	3.811476202	0.013131891
SACRAMENT	2021	MDV	1998	5	GAS	1.24501659	2.049769575	0.017995621	0.01957188	1134.942175	0.193066474	0.115212206	0.882371719	1.287554741	9.777603535	0.011231173
SACRAMENT	2021	MH	2003	5	DSL	3.10808751	15.63375435	0.294435299	0.307748357	2118.933317	0.04972095	0.33306681	1.070462786	1.218650713	2.23068304	0.02003154
SACRAMENT	2021	MDV	1999	5	GAS	2.38565673	1.656247634	0.018493671	0.020113555	1135.318659	0.175858721	0.09705728	0.798007736	1.164451015	8.624776586	0.011234898
SACRAMENT	2021	LDA	1999	5	GAS	5.05814111	0.762193646	0.019356313	0.021051756	803.4790067	0.180805548	0.055136151	0.794668797	1.159578844	8.344912004	0.007951076
SACRAMENT	2021	MH	2004	5	DSL	4.25124825	14.85205575	0.249555564	0.260839359	2117.471756	0.04617686	0.332837072	0.99416061	1.131785758	2.093999848	0.020017723
SACRAMENT	2021	MH	2005	5	DSL	4.00278778	14.78878583	0.246390122	0.25753079	2117.471756	0.045164022	0.332837072	0.972354798	1.106961291	2.048077872	0.020017723
SACRAMENT	2021	LDT2	1999	5	GAS	2.69044002	1.258277384	0.018984706	0.0206476	1128.498209	0.171339088	0.07871716	0.758497699	1.106798062	9.54364827	0.011167405
SACRAMENT	2021	MH	2006	5	DSL	3.72472632	14.72434361	0.243166029	0.254160918	2117.471756	0.044132417	0.332837072	0.95014495	1.081676855	2.001305011	0.020017723
SACRAMENT	2021	LHD1	1987	5	DSL	7.03173077	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD1	1988	5	DSL	10.3408602	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD1	1989	5	DSL	15.2087378	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD1	1990	5	DSL	26.3661154	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD2	1987	5	DSL	5.24451979	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1988	5	DSL	2.09792394	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1989	5	DSL	6.86468866	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1990	5	DSL	4.75760896	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	MDV	2000	5	GAS	3.08874007	1.26565802	0.018984706	0.0206476	1270.14318	0.158162663	0.077839248	0.712152851	1.039171769	7.473628788	0.012569096
SACRAMENT	2021	LHD1	2002	5	DSL	290.207704	5.191248086	0.17058653	0.178299696	1316.983587	0.04211872	0.20701148	0.906791242	1.032321542	3.833006677	0.012450231
SACRAMENT	2021	LHD2	2002	5	DSL	44.4456053	5.191248086	0.17058653	0.178299696	1389.089524	0.04211872	0.218345529	0.906791242	1.032321542	3.833006677	0.013131891
SACRAMENT	2021	LHD1	2003	5	DSL	405.067849	5.186655723	0.169522409	0.17718746	1316.983587	0.041692838	0.20701148	0.897622262	1.021883267	3.79430036	0.012450231
SACRAMENT	2021	LHD2	2003	5	DSL	58.0602084	5.186655723	0.169522409	0.17718746	1389.089524	0.041692838	0.218345529	0.897622262	1.021883267	3.79430036	0.013131891
SACRAMENT	2021	MH	2007	5	DSL	4.65241715	12.77216972	0.137070374	0.143268088	2146.902599	0.040835913	0.337463191	0.879173174	1.000880207	2.149176387	0.02029595
SACRAMENT	2021	MH	2008	5	DSL	4.1217575	12.70185424	0.13505604	0.141162674	2146.902599	0.039888015	0.337463191	0.858765477	0.977647401	2.099859437	0.02029595
SACRAMENT	2021	MH	2009	5	DSL	0.46743493	12.63030451	0.133006347	0.139020304	2146.902599	0.038923479	0.337463191	0.83799958	0.954006807	2.049676804	0.02029595
SACRAMENT	2021	LHD1	2010	5	DSL	76.1059211	0.888395474	0.034030116	0.035568807	1316.983587	0.037573022	0.20701148	0.808925051	0.920907389	4.387591862	0.012450231
SACRAMENT	2021	LHD2	2010	5	DSL	35.7832114	0.888395474	0.034030116	0.035568807	1389.089524	0.037573022	0.218345529	0.808925051	0.920907389	4.387591862	0.013131891
SACRAMENT	2021	LHD1	2011	5	DSL	167.751733	0.863717157	0.032416633	0.033882369	1316.983587	0.037015503	0.20701148	0.796921976	0.907242687	4.188812639	0.012450231
SACRAMENT	2021	LHD2	2011	5	DSL	90.7681191	0.863717157	0.032416633	0.033882369	1389.089524	0.037015503	0.218345529	0.796921976	0.907242687	4.188812639	0.013131891
SACRAMENT	2021	MDV	2001	5	GAS	4.59285916	0.889561317	0.019440667	0.021143499	1270.690268	0.139003493	0.057998468	0.619888985	0.904540552	6.408879776	0.01257451
SACRAMENT	2021	LDA	1983	5	DSL	0.01713166	1.072432666	1.002239879	1.047556719	942.0054588	0.036899201	0.14807014	0.794418076	0.904392164	4.066910846	0.008905339
SACRAMENT	2021	LDT1	1983	5	DSL	0.00183321	1.072432666	1.002239879	1.047556719	1076.651788	0.036899201	0.169234668	0.794418076	0.904392164	4.066910846	0.010178231
SACRAMENT	2021	MDV	1983	5	DSL	0.00484993	1.072432666	1.002239879	1.047556719	1338.445759	0.036899201	0.210385034	0.794418076	0.904392164	4.066910846	0.012653126
SACRAMENT	2021	LHD1	2012	5	DSL	169.120485	0.837253142	0.0306864	0.032073903	1316.983587	0.036417641	0.20701148	0.784050369	0.892589218	3.975650038	0.012450231
SACRAMENT	2021	LHD2	2012	5	DSL	114.904333	0.837253142	0.0306864	0.032073903	1389.089524	0.036417641	0.218345529	0.784050369	0.892589218	3.975650038	0.013131891
SACRAMENT	2021	MH	2010	5	DSL	0.7075079	10.66018942	0.032159454	0.033613562	2176.333443	0.036066278	0.34208931	0.776485741	0.883977392	2.191552259	0.020574178
SACRAMENT	2021	LHD2	2007	5	DSL	110.634772	2.626517293	0.1008126	0.105370899	1389.089524	0.035798412	0.218345529	0.770718739	0.877412043	4.235206679	0.013131891
SACRAMENT	2021	LHD1	2007	5	DSL	279.878411	2.626857126	0.100825311	0.105384184	1316.983587	0.035797762	0.20701148	0.770704737	0.877396103	4.235072267	0.012450231
SACRAMENT	2021	LHD1	2013	5	DSL	208.445889	0.809003429	0.028839418	0.030143409	1316.983587	0.035779437	0.20701148	0.770310223	0.876946975	3.748104058	0.012450231
SACRAMENT	2021	LHD2	2013	5	DSL	83.2194418	0.809003429	0.028839418	0.030143409	1389.089524	0.035779437	0.218345529	0.770310223	0.876946975	3.748104058	0.013131891
SACRAMENT	2021	MDV	2002	5	GAS	6.23282962	0.865616373	0.019440667	0.021143499	1270.552123	0.13444662	0.057154575	0.595599275	0.869097064	6.38780783	0.012573143
SACRAMENT	2021	LHD2	2008	5	DSL	131.094339	2.613053542	0.099183039	0.103667655	1389.089524	0.035253113	0.218345529	0.75897876	0.864046858	4.121505585	0.013131891

SACRAMENT	2021	LHD1	2008	5	DSL	313.209347	2.613632879	0.099204506	0.103690093	1316.983587	0.03525197	0.20701148	0.758954167	0.86401886	4.121291695	0.012450231
SACRAMENT	2021	MH	2011	5	DSL	0.97935919	10.58245683	0.03143599	0.032857386	2176.333443	0.03519609	0.34208931	0.757751106	0.862649255	2.138751596	0.020574178
SACRAMENT	2021	LHD1	2014	5	DSL	313.815634	0.778968013	0.026875687	0.028090886	1286.692964	0.035100891	0.202250216	0.755701526	0.860315945	3.5061747	0.012163876
SACRAMENT	2021	LHD2	2014	5	DSL	125.997343	0.778968013	0.026875687	0.028090886	1357.140465	0.035100891	0.213323582	0.755701526	0.860315945	3.5061747	0.012829858
SACRAMENT	2021	LDT1	1999	5	GAS	1.24039146	0.681076815	0.018984067	0.020646905	901.8310906	0.137046509	0.051522524	0.585434672	0.854264899	7.378587846	0.00892435
SACRAMENT	2021	LHD1	2009	5	DSL	80.0811653	2.598602216	0.097412474	0.101817034	1316.983587	0.034656926	0.20701148	0.74614321	0.849434437	3.997194604	0.012450231
SACRAMENT	2021	LHD2	2009	5	DSL	40.6702329	2.598602216	0.097412474	0.101817034	1389.089524	0.034656926	0.218345529	0.74614321	0.849434437	3.997194604	0.013131891
SACRAMENT	2021	LHD1	1982	5	DSL	2.55951098	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1984	5	DSL	8.0344509	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD2	1985	5	DSL	2.13710524	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD1	1981	5	DSL	0.33767963	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1983	5	DSL	6.79398423	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1985	5	DSL	13.4574359	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1986	5	DSL	18.4382858	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD2	1983	5	DSL	0.50910836	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD2	1984	5	DSL	0.68807138	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD2	1986	5	DSL	5.24880799	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD1	2015	5	DSL	442.440956	0.747146894	0.024795206	0.025916335	1277.474079	0.034382002	0.200801135	0.740224265	0.842696112	3.249861964	0.012076724
SACRAMENT	2021	LHD2	2015	5	DSL	245.443939	0.747146894	0.024795206	0.025916335	1347.416838	0.034382002	0.211795163	0.740224265	0.842696112	3.249861964	0.012737935
SACRAMENT	2021	MH	2012	5	DSL	1.29568786	10.50342814	0.030700462	0.032088601	2176.333443	0.034311392	0.34208931	0.738704072	0.840965474	2.085070477	0.020574178
SACRAMENT	2021	LHD1	2004	5	DSL	501.654045	4.318299509	0.16827545	0.175884119	1316.983587	0.034195977	0.20701148	0.736219247	0.838136665	3.748943547	0.012450231
SACRAMENT	2021	LHD2	2004	5	DSL	70.3112489	4.318299509	0.16827545	0.175884119	1389.089524	0.034195977	0.218345529	0.736219247	0.838136665	3.748943547	0.013131891
SACRAMENT	2021	LHD1	2005	5	DSL	446.113303	4.313141992	0.166845654	0.174389674	1316.983587	0.033722584	0.20701148	0.726027372	0.826533894	3.696936247	0.012450231
SACRAMENT	2021	LHD2	2005	5	DSL	142.862697	4.313141992	0.166845654	0.174389674	1389.089524	0.033722584	0.218345529	0.726027372	0.826533894	3.696936247	0.013131891
SACRAMENT	2021	LHD1	2016	5	DSL	807.025426	0.625757431	0.022597976	0.023619756	1237.964571	0.033622769	0.194590791	0.723878419	0.824087453	2.979165851	0.011703217
SACRAMENT	2021	LHD2	2016	5	DSL	191.624062	0.625780743	0.022597976	0.023619756	1305.744152	0.033622769	0.205244797	0.723878419	0.824087453	2.979165851	0.012343978
SACRAMENT	2021	MH	2013	5	DSL	2.16173147	10.42310337	0.02995287	0.031307206	2176.333443	0.033412184	0.34208931	0.719344642	0.81892605	2.030508901	0.020574178
SACRAMENT	2021	LHD1	2006	5	DSL	555.171527	4.307324936	0.165233021	0.172704125	1316.983587	0.033188655	0.20701148	0.714532199	0.813447403	3.638278465	0.012450231
SACRAMENT	2021	LHD2	2006	5	DSL	165.562302	4.307324936	0.165233021	0.172704125	1389.089524	0.033188655	0.218345529	0.714532199	0.813447403	3.638278465	0.013131891
SACRAMENT	2021	LHD2	2017	5	DSL	162.744697	0.511307625	0.020283996	0.021201148	1264.071467	0.03282319	0.198694431	0.70666396	0.804489937	2.694086361	0.011950021
SACRAMENT	2021	LHD1	2017	5	DSL	417.954321	0.511290531	0.020283996	0.021201148	1198.455064	0.03282319	0.188380447	0.70666396	0.804489937	2.694086361	0.01132971
SACRAMENT	2021	MH	2014	5	DSL	2.21729654	10.34148255	0.029193215	0.030513202	2060.724018	0.032498465	0.323917118	0.699672815	0.796530983	1.975066869	0.019481253
SACRAMENT	2021	LHD1	2018	5	DSL	470.007977	0.394590728	0.016641008	0.017393441	1119.436049	0.031983265	0.175959758	0.688580854	0.783903523	2.3946235	0.010582696
SACRAMENT	2021	LHD2	2018	5	DSL	179.65561	0.39484915	0.017853267	0.018660512	1180.726095	0.031983265	0.1855937	0.688580854	0.783903523	2.3946235	0.011162108
SACRAMENT	2021	MH	2015	5	DSL	4.00149819	10.2585657	0.028421496	0.02970659	2060.724018	0.031570236	0.323917118	0.679688593	0.773780275	1.918744379	0.019481253
SACRAMENT	2021	LHD1	2019	5	DSL	529.350188	0.319370247	0.012249333	0.012803193	1119.436049	0.03110299	0.175959758	0.669629054	0.762328158	2.080777274	0.010582696
SACRAMENT	2021	LHD2	2019	5	DSL	199.245042	0.319556459	0.015305788	0.015997848	1180.726095	0.03110299	0.1855937	0.669629054	0.762328158	2.080777274	0.011162108
SACRAMENT	2021	MH	2016	5	DSL	1.83940483	10.17435287	0.027637713	0.028887368	2060.724018	0.030627497	0.323917118	0.659391976	0.750673926	1.861541432	0.019481253
SACRAMENT	2021	LHD1	2020	5	DSL	605.717162	0.249152374	0.008427707	0.00880877	1119.436049	0.030182363	0.175959758	0.649808501	0.739763776	1.752547695	0.010582696
SACRAMENT	2021	LHD2	2020	5	DSL	225.629637	0.249358941	0.01264156	0.013213156	1180.726095	0.030182363	0.1855937	0.649808501	0.739763776	1.752547695	0.011162108
SACRAMENT	2021	MH	2017	5	DSL	3.82224233	10.08884408	0.026841866	0.028055536	1982.813834	0.029670248	0.311670722	0.638782967	0.727211938	1.803458026	0.018744721
SACRAMENT	2021	LHD1	2021	5	DSL	549.436711	0.186481005	0.005265064	0.005503127	1091.450147	0.029221381	0.171560764	0.62911912	0.716210292	1.409934777	0.010318129
SACRAMENT	2021	LHD2	2021	5	DSL	205.828631	0.186289139	0.009860583	0.010306435	1151.207943	0.029221381	0.180953857	0.62911912	0.716210292	1.409934777	0.010883055
SACRAMENT	2021	MDV	2003	5	GAS	6.86819104	0.732105908	0.019440667	0.021143499	1270.12146	0.111385021	0.051194659	0.483638533	0.705724212	6.420704863	0.012568881
SACRAMENT	2021	MH	2018	5	DSL	4.20191146	10.00203937	0.026033956	0.027211096	1982.813834	0.028698489	0.311670722	0.617861565	0.703394313	1.74449416	0.018744721
SACRAMENT	2021	MH	2019	5	DSL	4.58074988	9.913938802	0.025213982	0.026354046	1982.813834	0.02771222	0.311670722	0.596627773	0.679221053	1.684649835	0.018744721
SACRAMENT	2021	MH	2020	5	DSL	4.82215547	9.824542415	0.024381944	0.025484388	1982.813834	0.026711441	0.311670722	0.575081592	0.654692159	1.62392505	0.018744721
SACRAMENT	2021	MH	2021	5	DSL	4.07747662	9.733850268	0.023537843	0.02460212	1793.244351	0.025696152	0.28187304	0.553223026	0.629807634	1.562319804	0.016952608
SACRAMENT	2021	LDT2	2000	5	GAS	4.09173523	0.702942003	0.019440667	0.021143499	1135.158508	0.081148924	0.049328229	0.332574664	0.48529217	5.71915155	0.011233314
SACRAMENT	2021	LDT2	2001	5	GAS	4.61044755	0.670204954	0.019440667	0.021143499	1134.614219	0.076295153	0.04792401	0.309594134	0.451759033	5.438288104	0.011227927
SACRAMENT	2021	LDT2	2003	5	GAS	5.97561144	0.666667834	0.019440667	0.021143499	1134.478737	0.075001092	0.048079452	0.301877138	0.440498411	5.373809218	0.011226587
SACRAMENT	2021	LDT2	2002	5	GAS	4.97759638	0.651332596	0.019440667	0.021143499	1134.283621	0.073317306	0.047164974	0.295298397	0.430898728	5.268611403	0.011224656
SACRAMENT	2021	LDA	1993	5	DSL	0.0031212	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1994	5	DSL	0.00114648	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1995	5	DSL	0.00433482	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1996	5	DSL	0.00364808	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1997	5	DSL	0.00594059	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1998	5	DSL	0.00592626	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1999	5	DSL	0.01414085	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2000	5	DSL	0.00737349	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2001	5	DSL	0.01555601	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2002	5	DSL	0.04401216	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2003	5	DSL	0.05966311	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2004	5	DSL	0.01729651	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2005	5	DSL	0.04942763	1.19869523	0.206811409	0.216162503	684.8340284	0.016399645	0.107646372	0.353074701	0.401952073	2.961342849	0.006474144
SACRAMENT	2021	LDA	2006	5	DSL	0.04773958	1.19869523	0.206811409	0.216162503	696.9095331	0.016399645	0.109544474	0.353074701	0.401952073	2.961342849	0.006588301
SACRAMENT	2021	LDA	2007	5	DSL	0.01598324	1.19869523	0.206811409	0.216162503	671.3742356	0.016399645	0.10553068	0.353074701	0.401952073	2.961342849	0.006346901
SACRAMENT	2021	LDT1	1993	5	DSL	0.00776591	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1994	5	DSL	0.00431292	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1995	5	DSL	0.00154986	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1996	5	DSL	0.00375473	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1997	5	DSL	0.00930124	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1998	5	DSL	0.00288496	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1999	5	DSL	0.00888065	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2000	5	DSL	0.00734064	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2001	5	DSL	0.00733368	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2002	5	DSL	0.00930843	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2003	5	DSL	0.00993134	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2005	5	DSL	0.00082062	1.19869523	0.206811409	0.216162503	1271.298624	0.016399645	0.19983044	0.353074701	0.401952073	2.961342849	0.012018344
SACRAMENT	2021	LDT1	2006	5	DSL	0.00088229	1.19869523	0.206811409	0.216162503	1293.71511	0.016399645	0.203353999	0.353074701	0.401952073	2.961342849	0.01223026
SACRAMENT	2021	LDT1	2007	5	DSL	0.0093798	1.19869523	0.206811409	0.216162503	1246.3124	0.016399645	0.195902953	0.353074701	0.401952073	2.961342849	0.011782134
SACRAMENT	2021	LDT2	1993	5	DSL	0.00067653	1.19869523	0.206811409	0.216162503	1033.129185	0.016399645	0.162393521	0.353074701	0.401952073	2.961342849	0.009766786
SACRAMENT	2021	LDT2	1994	5	DSL	0.00036023	1.19869523	0.206811409	0.216162503	1033.129185	0.016399645	0.162393521	0.353074701	0.401952073	2.961342849	0.009766786
SACRAMENT	2021	LDT2	2001	5	DSL	0.00105703	1.19869523	0.206811409	0.216162503	1033.129185	0.016399645	0.162393521	0.353074701	0.401952073	2.961342849	0.009766786
SACRAMENT	2021	LDT2	2005	5	DSL	0.00440045	1.19869523	0.206811409	0.216162503	1008.643399	0.016399645	0.158544696	0.353074701	0.401952073	2.961342849	0.009535307
SACRAMENT	2021	LDT2	2006	5	DSL	0.00323626	1.19869523	0.206811409	0.216162503	989.3688178	0.016399645	0.155515	0.353074701	0.401952073	2.961342849	0.009353093
SACRAMENT	2021	LDT2	2007	5	DSL	0.0017649	1.19869523	0.206811409	0.216162503	975.2992341	0.016399645	0.153303458	0.353074701	0.401952073	2.961342849	0.009220085
SACRAMENT	2021	MDV	1993	5	DSL	0.00060994	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1994	5	DSL	0.00124926	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1995	5	DSL	0.00328962	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1996	5	DSL	0.00324264	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1997	5	DSL	0.0035329	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1998	5	DSL	0.00382535	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1999	5	DSL	0.00091691	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2000	5	DSL	0.00148846	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2001	5	DSL	0.00269933	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2002	5	DSL	0.00415333	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2003	5	DSL	0.00449807	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2004	5	DSL	0.00992805	1.19869523	0.206811409	0.216162503	1262.774441	0.016399645	0.198490557	0.353074701	0.401952073	2.961342849	0.01193776
SACRAMENT	2021	MDV	2005	5	DSL	0.02012558	1.19869523	0.206811409	0.216162503	1232.845924	0.016399645	0.193786211	0.353074701	0.401952073	2.961342849	0.011654828
SACRAMENT	2021	MDV	2006	5	DSL	0.02850417	1.19869523	0.206811409	0.216162503	1209.286965	0.016399645	0.190083071	0.353074701	0.401952073	2.961342849	0.011432111
SACRAMENT	2021	LDT1	2000	5	GAS	1.33910984	0.351443769	0.019440667	0.021143499	971.0710619	0.063353904	0.030420469	0.24978234	0.364481804	4.419001211	0.009609535
SACRAMENT	2021	LDA	2000	5	GAS	7.40203982	0.351254623	0.019440667	0.021143499	812.4399007	0.062724752	0.030208036	0.248557908	0.362695115	4.414175623	0.008039751
SACRAMENT	2021	LDT1	2001	5	GAS	1.58936399	0.335079061	0.019440667	0.021143499	970.6552398	0.059686796	0.029554638	0.233111748	0.340156116	4.202018934	0.00960542
SACRAMENT	2021	LDA	2001	5	GAS	9.22300904	0.334919773	0.019440667	0.021143499	812.0245767	0.059150754	0.029389753	0.231951533	0.338463133	4.197332893	0.008035641
SACRAMENT	2021	LDT2	2008	5	DSL	0.00587798	0.162970554	0.011154237	0.011658582	947.1455575	0.013446324	0.148878092	0.289491429	0.329566745	3.62485344	0.008953932
SACRAMENT	2021	LDT1	2008	5	DSL	0.00407061	0.162970612	0.011154237	0.011658582	1209.485651	0.013446319	0.190114301	0.289491329	0.329566631	3.624853777	0.011433989
SACRAMENT	2021	LDT2	2009	5	DSL	0.00743231	0.16168178	0.010871916	0.011363496	893.4792421	0.013302304	0.140442494	0.286390783	0.326036866	3.511500368	0.008446592

SACRAMENT	2021	LDT1	2009	5	DSL	0.02066106	0.161681833	0.010871916	0.011363496	1184.206962	0.013302299	0.186140843	0.286390657	0.326036723	3.511501194	0.011195014
SACRAMENT	2021	LDT1	2002	5	GAS	1.89321113	0.325548716	0.019440667	0.021143499	970.400278	0.05741135	0.029080701	0.222613711	0.324837405	4.06972811	0.009602897
SACRAMENT	2021	LDA	2002	5	GAS	10.7575912	0.325445926	0.019440667	0.021143499	811.7705802	0.056948524	0.028955182	0.22150929	0.323225837	4.065499246	0.008033128
SACRAMENT	2021	LDT2	2010	5	DSL	0.01404088	0.160304685	0.010570248	0.011048188	885.0123988	0.013148415	0.139111625	0.283077644	0.322265077	3.390379046	0.00836655
SACRAMENT	2021	LDT1	2010	5	DSL	0.00232824	0.16030473	0.010570248	0.011048188	1123.470288	0.013148408	0.176593884	0.283077491	0.322264903	3.390380458	0.010620834
SACRAMENT	2021	LDT2	2011	5	DSL	0.0114691	0.158839269	0.010249232	0.010712657	856.88578	0.012984657	0.134690512	0.279552012	0.31825138	3.261489481	0.008100652
SACRAMENT	2021	LDT2	2012	5	DSL	0.06528183	0.157285533	0.009908868	0.010356903	835.7403548	0.012811028	0.131366745	0.275813887	0.313995773	3.12483168	0.007900752
SACRAMENT	2021	LDT1	2012	5	DSL	0.00132524	0.157285556	0.009908868	0.010356903	1063.446034	0.012811018	0.167158907	0.275813675	0.313995532	3.124834538	0.010053389
SACRAMENT	2021	LDT2	2013	5	DSL	0.11316125	0.155643476	0.009549156	0.009980927	807.9435614	0.012627529	0.126997477	0.271863269	0.309498257	2.980405654	0.007637972
SACRAMENT	2021	LDT1	2013	5	DSL	0.00429311	0.155643486	0.009549156	0.009980927	1034.391514	0.012627518	0.162591941	0.271863028	0.309497983	2.980409339	0.00977872
SACRAMENT	2021	MDV	2007	5	DSL	0.04836956	0.172953815	0.011986549	0.012528527	1192.089976	0.012623728	0.187379943	0.271781426	0.309405084	6.334182604	0.011269537
SACRAMENT	2021	LDT2	2014	5	DSL	0.11637029	0.153913098	0.009170097	0.009584728	802.6638289	0.012434161	0.126167576	0.267700157	0.304758831	2.828211418	0.00758806
SACRAMENT	2021	MDV	2009	5	DSL	0.03870837	0.167725648	0.011399905	0.011915359	1092.082934	0.012411808	0.171660229	0.267218921	0.304210976	5.434193364	0.010324111
SACRAMENT	2021	MDV	2008	5	DSL	0.02538075	0.171029	0.011705448	0.012234716	1157.678265	0.012336933	0.181970902	0.2656069	0.302375797	6.176174265	0.010944223
SACRAMENT	2021	LDT2	2015	5	DSL	0.17115366	0.152094401	0.008771689	0.009168306	783.9460443	0.012230922	0.123225401	0.263324551	0.299777495	2.668248988	0.007411109
SACRAMENT	2021	MDV	2010	5	DSL	0.07548206	0.165654402	0.011069921	0.011570454	1081.73407	0.012117223	0.170033532	0.260876675	0.29699075	5.261956129	0.010226277
SACRAMENT	2021	LDA	2008	5	DSL	0.01500231	0.165539116	0.011051559	0.011551261	651.5360866	0.012100831	0.1024124	0.260523773	0.296588995	5.252368807	0.006159359
SACRAMENT	2021	LDT2	2016	5	DSL	0.11260656	0.150187385	0.008353934	0.008731662	752.5179851	0.012017814	0.118285348	0.258736451	0.294554248	2.500518386	0.007114001
SACRAMENT	2021	LDA	2009	5	DSL	0.12381042	0.163738349	0.010764667	0.011251398	637.9187462	0.011844715	0.100271943	0.255009744	0.290311639	5.102624358	0.006030626
SACRAMENT	2021	MDV	2011	5	DSL	0.1571602	0.163429739	0.010715495	0.011200002	1047.355431	0.011800818	0.164629688	0.254064664	0.289235729	5.076961286	0.009901275
SACRAMENT	2021	LDT2	2017	5	DSL	0.21462578	0.148192049	0.007916831	0.008274795	721.0899259	0.011794835	0.113345295	0.253935856	0.289089089	2.325019639	0.006816893
SACRAMENT	2021	LDT1	2017	5	DSL	0.00088104	0.148192023	0.007916831	0.008274795	957.6576117	0.011794823	0.15053044	0.253935593	0.289088789	2.325026044	0.009053308
SACRAMENT	2021	LDT1	2003	5	GAS	1.35042654	0.296572178	0.019440667	0.021143499	970.4707186	0.051952091	0.02730022	0.197995143	0.288914047	3.695517464	0.009603594
SACRAMENT	2021	LDA	2003	5	GAS	13.0485829	0.296468249	0.019440667	0.021143499	815.2709026	0.051574372	0.027208498	0.1970117	0.28747901	3.692122347	0.008067766
SACRAMENT	2021	LDA	2010	5	DSL	0.16429597	0.16181533	0.010458299	0.010931177	605.2005949	0.011571211	0.095129106	0.249121367	0.283608114	4.942713863	0.005721322
SACRAMENT	2021	LDT2	2018	5	DSL	0.22493553	0.146108394	0.00746038	0.007797705	689.6618667	0.011561987	0.108405241	0.248922765	0.283382018	2.141752779	0.006519785
SACRAMENT	2021	LDT1	2018	5	DSL	0.00093058	0.146108375	0.00746038	0.007797705	928.2283042	0.011561977	0.145904563	0.248922554	0.283381778	2.141759143	0.008775096
SACRAMENT	2021	MDV	2012	5	DSL	0.27845865	0.161051659	0.010336626	0.010804003	1021.509774	0.011462594	0.160567111	0.24678289	0.280945913	4.879208832	0.009656941
SACRAMENT	2021	LDT2	2019	5	DSL	0.23158183	0.143936421	0.006984581	0.007300393	658.2338075	0.011319268	0.103465188	0.243697178	0.277433035	1.950717844	0.006222677
SACRAMENT	2021	LDT1	2019	5	DSL	0.00096888	0.143936425	0.006984581	0.007300393	898.7989967	0.011319263	0.141278686	0.243697063	0.277432904	1.950723493	0.008496883
SACRAMENT	2021	LDA	2011	5	DSL	0.29241773	0.159770058	0.010132454	0.010590598	626.205932	0.01128032	0.098430852	0.242858645	0.276478421	4.772637329	0.005919898
SACRAMENT	2021	MDV	2013	5	DSL	0.09800436	0.158520163	0.009933316	0.010382457	987.5342739	0.011102549	0.155226636	0.239031352	0.272121302	4.668698765	0.00933575
SACRAMENT	2021	LDT1	2020	5	DSL	0.00099098	0.14167618	0.006489435	0.006782858	869.3696892	0.011066681	0.136652808	0.238259137	0.271242187	1.751918841	0.00821867
SACRAMENT	2021	LDT2	2020	5	DSL	0.23716328	0.141676131	0.006489435	0.006782858	626.8057484	0.01106668	0.098525135	0.238259094	0.271242138	1.751914882	0.005925568
SACRAMENT	2021	LDA	2012	5	DSL	0.36181481	0.157602534	0.009787132	0.010229662	572.8662153	0.010972041	0.090046591	0.236221578	0.268922561	4.592394754	0.005415646
SACRAMENT	2021	LDT1	2021	5	DSL	0.00087891	0.139327649	0.00597494	0.0062451	839.9403817	0.010804234	0.132026931	0.232608794	0.264809647	1.545344859	0.007940457
SACRAMENT	2021	LDT2	2021	5	DSL	0.20439898	0.139327524	0.00597494	0.0062451	595.3776892	0.010804221	0.093585082	0.232608513	0.264809327	1.545343948	0.00562846
SACRAMENT	2021	MDV	2014	5	DSL	0.30897859	0.155835251	0.009505564	0.009935364	981.0809559	0.010720686	0.154212264	0.23081005	0.262761897	4.445431093	0.009274743
SACRAMENT	2021	LDA	2013	5	DSL	0.55894798	0.155312759	0.009422332	0.009848368	557.2148781	0.010646374	0.087586419	0.229210168	0.260940537	4.401986132	0.005267684
SACRAMENT	2021	MDV	2015	5	DSL	0.66201664	0.152996921	0.00905337	0.009462724	958.2025586	0.010317002	0.150616098	0.222118985	0.252867697	4.209405831	0.00905846
SACRAMENT	2021	LDA	2014	5	DSL	0.6924839	0.152900732	0.009038056	0.009446717	557.8870328	0.01030332	0.087692073	0.221824417	0.252532351	4.201411444	0.005274039
SACRAMENT	2021	LDA	2015	5	DSL	0.64403521	0.150366455	0.008634303	0.009024708	547.5856651	0.009942879	0.086072841	0.21406433	0.243698007	3.990670659	0.005176654
SACRAMENT	2021	MDV	2016	5	DSL	0.33776429	0.150005175	0.008576735	0.008964537	919.7886308	0.009891499	0.144577964	0.212958155	0.242438701	3.960623006	0.00869531
SACRAMENT	2021	LDA	2016	5	DSL	0.06338946	0.147709927	0.008211073	0.008582341	531.7324337	0.009565051	0.083580934	0.20592991	0.234437511	3.769763726	0.005026784
SACRAMENT	2021	MDV	2017	5	DSL	0.45605455	0.146860012	0.008075657	0.008440803	881.374703	0.009444176	0.138539829	0.203327558	0.231474907	3.699082663	0.008332161
SACRAMENT	2021	LDA	2017	5	DSL	0.90022003	0.14493115	0.007768366	0.008119617	515.8792024	0.009169836	0.081089027	0.197421164	0.22475087	3.538690571	0.004876914
SACRAMENT	2021	MDV	2018	5	DSL	0.48455531	0.143561433	0.007550138	0.007891521	842.9607752	0.008975034	0.132501695	0.193227191	0.21997631	3.424784866	0.007969011
SACRAMENT	2021	LDA	2018	5	DSL	0.95354026	0.142030124	0.007306182	0.007636535	500.025971	0.008757234	0.078597119	0.188538099	0.214638091	3.297451091	0.004727044
SACRAMENT	2021	MDV	2019	5	DSL	0.50457379	0.140109436	0.007000176	0.007316693	804.5468474	0.008484071	0.12646356	0.182657048	0.207942905	3.137729707	0.007605861
SACRAMENT	2021	LDA	2019	5	DSL	0.97789054	0.13900685	0.006824521	0.007133096	484.1727397	0.008327247	0.076105212	0.179280726	0.204099187	3.046045145	0.004577174
SACRAMENT	2021	MDV	2020	5	DSL	0.52694275	0.136504022	0.006425773	0.006716318	766.1329197	0.007971287	0.120425426	0.171617122	0.195374683	2.837917313	0.007242711
SACRAMENT	2021	LDA	2020	5	DSL	0.94770039	0.135861328	0.006323383	0.006609299	468.3195083	0.007879874	0.073613305	0.169649055	0.19313417	2.784472549	0.004427304
SACRAMENT	2021	MDV	2004	5	GAS	8.29393745	0.168705262	0.001296044	0.001409567	1294.548096	0.034401335	0.019202852	0.118651871	0.173136531	2.14767922	0.012810603
SACRAMENT	2021	MDV	2005	5	GAS	9.06254813	0.140797269	0.001296044	0.001409567	1263.748699	0.030127709	0.016794747	0.103295572	0.150728656	2.056571203	0.012505818
SACRAMENT	2021	LHD1	1996	5	GAS	164.606855	0.648622313	0.009963166	0.010835852	1989.892783	0.024718405	0.041587837	0.102425493	0.149459039	0.690875147	0.019691602
SACRAMENT	2021	LHD2	1996	5	GAS	25.5901814	0.648622313	0.009963166	0.010835852	2279.149613	0.024750538	0.0416583	0.102425493	0.149459039	0.690875147	0.022554033
SACRAMENT	2021	LHD1	1997	5	GAS	219.561005	0.648527906	0.009963166	0.010835852	1989.888761	0.024735862	0.041732739	0.102211047	0.149146119	0.688921411	0.019691562
SACRAMENT	2021	LHD2	1997	5	GAS	26.6695752	0.648527906	0.009963166	0.010835852	2279.145591	0.024761108	0.041787789	0.102211047	0.149146119	0.688921411	0.022553993
SACRAMENT	2021	LHD1	1999	5	GAS	396.662008	0.64661553	0.009963166	0.010835852	1989.879573	0.02487768	0.041947867	0.10208664	0.148964585	0.683463035	0.019691471
SACRAMENT	2021	LHD2	1999	5	GAS	48.8891711	0.64661553	0.009963166	0.010835852	2279.136403	0.024889482	0.041973197	0.10208664	0.148964585	0.683463035	0.022553902
SACRAMENT	2021	LHD1	1998	5	GAS	198.044301	0.648041047	0.009963166	0.010835852	1989.884356	0.024785227	0.04185833	0.102064155	0.148931775	0.686541898	0.019691519
SACRAMENT	2021	LHD2	1998	5	GAS	23.4178281	0.648041047	0.009963166	0.010835852	2279.141186	0.024803697	0.041898343	0.102064155	0.148931775	0.686541898	0.02255395
SACRAMENT	2021	LHD1	2000	5	GAS	490.785729	0.643795317	0.009963166	0.010835852	1989.871535	0.024871811	0.041985688	0.101681703	0.148373703	0.679493563	0.019691392
SACRAMENT	2021	LHD2	2000	5	GAS	56.6104324	0.643795317	0.009963166	0.010835852	2279.128365	0.024876994	0.04199672	0.101681703	0.148373703	0.679493563	0.022553823
SACRAMENT	2021	LHD1	2001	5	GAS	667.448632	0.639131445	0.009963166	0.010835852	1989.861226	0.024841932	0.041943967	0.101158228	0.147609849	0.674414288	0.01969129
SACRAMENT	2021	LHD2	2001	5	GAS	90.9267602	0.639131445	0.009963166	0.010835852	2279.118056	0.024840613	0.041941188	0.101158228	0.147609849	0.674414288	0.022553721
SACRAMENT	2021	LHD1	2002	5	GAS	641.424101	0.50334612	0.009963166	0.010835852	1989.655643	0.025254427	0.035382826	0.100471903	0.146608365	0.546582169	0.019689256
SACRAMENT	2021	LHD2	2002	5	GAS	60.1208033	0.50334612	0.009963166	0.010835852	2278.912473	0.025246824	0.035368859	0.100471903	0.146608365	0.546582169	0.022551686
SACRAMENT	2021	LHD1	2003	5	GAS	865.260395	0.49339027	0.009963166	0.010835852	1989.576299	0.025139161	0.035022441	0.099578629	0.145304902	0.498955772	0.01968847
SACRAMENT	2021	LHD2	2003	5	GAS	91.4699061	0.49339027	0.009963166	0.010835852	2278.833129	0.025125419	0.034997535	0.099578629	0.145304902	0.498955772	0.022550901
SACRAMENT	2021	MH	2021	5	GAS	15.0438813	0.187442722	0.007173479	0.007801813	3465.300141	0.026403543	0.022430356	0.076599747	0.111774172	0.324145212	0.034291954
SACRAMENT	2021	MH	1998	5	GAS	3.76392481	0.331080786	0.009963166	0.010835852	4205.598628	0.025265016	0.033196296	0.073859237	0.107775225	0.451486464	0.041617808
SACRAMENT	2021	MH	1999	5	GAS	10.4319794	0.322845353	0.009963166	0.010835852	4205.584498	0.025102444	0.032623401	0.07327776	0.106926736	0.44415395	0.041617668
SACRAMENT	2021	MH	2000	5	GAS	9.43520642	0.31459561	0.009963166	0.010835852	4205.57018	0.024942152	0.032033944	0.072704825	0.10609071	0.43667989	0.041617526
SACRAMENT	2021	MH	2001	5	GAS	4.00888836	0.306397083	0.009963166	0.010835852	4205.5557	0.024779766	0.0314523	0.072125632	0.105245553	0.429119902	0.041617383
SACRAMENT	2021	MH	2002	5	GAS	8.17501544	0.298287557	0.009963166	0.010835852	4205.541062	0.024610393	0.030872167	0.071526858	0.104371824	0.421514062	0.041617238
SACRAMENT	2021	MH	2020	5	GAS	15.1579374	0.170921122	0.007173479	0.007801813	3831.498263	0.024856877	0.021022561	0.071461511	0.104276469	0.312644235	0.037915781
SACRAMENT	2021	MH	2003	5	GAS	10.2969411	0.290289105	0.009963166	0.010835852	4205.526256	0.024437053	0.030297827	0.070896785	0.103452422	0.413887673	0.041617092
SACRAMENT	2021	LHD1	2004	5	GAS	666.780432	0.409861396	0.000664211	0.00072239	1989.351394	0.017994809	0.026572427	0.067222929	0.098091541	0.445091701	0.019686245
SACRAMENT	2021	LHD2	2004	5	GAS	73.1576545	0.409861396	0.000664211	0.00072239	2278.608223	0.017980684	0.02653306	0.067222929	0.098091541	0.445091701	0.022548676
SACRAMENT	2021	MH	2019	5	GAS	13.8541411	0.159850073	0.007173479	0.007801813	3831.452937	0.023164076	0.020051113	0.065890183	0.0961468	0.299205635	0.037915333
SACRAMENT	2021	LHD1	2005	5	GAS	394.455604	0.397354008	0.000664211	0.00072239	1989.343452	0.017559636	0.026135682	0.065239516	0.095197348	0.445477295	0.019686166
SACRAMENT	2021	LHD2	2005	5	GAS	99.620294	0.397354008	0.000664211	0.00072239	2278.600282	0.017541631	0.026085383	0.065239516	0.095197348	0.445477295	0.022548597
SACRAMENT	2021	LHD1	2006	5	GAS	1215.80262	0.383576589	0.000664211	0.00072239	1989.337776	0.017405076	0.02562965	0.064298919	0.093824831	0.444455552	0.01968611
SACRAMENT	2021	LHD2	2006	5	GAS	87.8252362	0.383576589	0.000664211	0.00072239	2278.594606	0.017383172	0.025569179	0.064298919	0.093824831	0.444455552	0.022548541
SACRAMENT	2021	LHD1	2007	5	GAS	498.933045	0.380030087	0.000664211	0.00072239	1989.33118	0.017306431	0.025743579	0.063548355	0.092729611	0.442336516	0.019686045
SACRAMENT	2021	LHD2	2007	5	GAS	75.1302422	0.380030087	0.000664211	0.00072239	2278.58801	0.017280717	0.025672568	0.063548355	0.092729611	0.442336516	0.022548476
SACRAMENT	2021	MH	2018	5	GAS	12.606336	0.153170356	0.0069875	0.007599544	3831.416893	0.021797251	0.019447853	0.061442007	0.089656032	0.288567983	0.037914976
SACRAMENT	2021	MH	2017	5	GAS	11.0797108	0.149765091	0.006708532	0.00729614	3831.391662	0.0207888	0.019110928	0.058194867	0.084917813	0.28148375	0.037914726
SACRAMENT	2021	LDT2	2004	5	GAS	7.8663263	0.065703097	0.001296044	0.001409567	1070.591443	0.017237297	0.009184957	0.058114254	0.084800183	1.671536276	0.01059437
SACRAMENT	2021	LDT2	2005	5	GAS	9.52970085	0.062233967	0.001296044	0.001409567	1045.027102	0.016918714	0.008759701	0.056752023	0.082812418	1.511583974	0.01034139
SACRAMENT	2021	MH	2016	5	GAS	14.0399627	0.148728416	0.006243584	0.006790467	3981.894611	0.02009557	0.01898185	0.05598628	0.081695048	0.277696362	0.039404075
SACRAMENT	2021	MH	2005	5	GAS	7.72974917	0.186438481	0.000664211	0.00072239	4205.286182	0.019588711	0.022230318	0.054798226	0.079961443	0.306225773	0.041614716
SACRAMENT	2021	MH	2015	5	GAS	5.35257164	0.152293367	0.005406678	0.005880256	3981.887552	0.019680674	0.019255965	0.054683205	0.079793604	0.276787781	0.039404005
SACRAMENT	2021	MH	2006	5	GAS	12.2387851	0.180852157	0.000664211	0.00072239	4205.280553	0.01956519	0.021768896	0.054678413	0.079786612	0.303000251	0.04161466
SACRAMENT	2021	MH	2007	5	GAS	7.64023378	0.176675324	0.000664211	0.00072239	4205.275059	0.019551495	0.021424466	0.054589483	0.079656846	0.299776203	0.041614606
SACRAMENT	2021	MH	2004	5	GAS	12.6527572	0.190620006	0.000664211	0.00072239	4205.29338	0.019488351	0.022564507	0.054514358	0.079547223	0.311539399	0.041614787
SACRAMENT	2021	MH	2008	5	GAS	4.76820604	0.172516401	0.000757201	0.000823525	4205.269431	0.019532387	0.021079262	0.054483031	0.079501511	0.296515136	0.04161455
SACRAMENT	2021	MH	2009	5	GAS	0.63731998	0.168450465	0.00085019	0.000924659	4205.263689	0.019506453	0.020739572	0.054355248	0.079315051	0.293240642	0.041614493
SACRAMENT	2021	MH	2010	5	GAS	0.7716237	0.164568272	0.001036169	0.001126929	4205.257896	0.01947303	0.020413241	0.054204615	0.079095247	0.28999527	0.041614436
SACRAMENT	2021	MH	2014	5	GAS	7.24960452	0.153280861	0.004290803	0.00466664	3981.886794	0.019474959	0.019289289	0.054056207	0.07887869	0.278015761	0.039403998
SACRAMENT	2021	MH	2011	5	GAS	4.98760428	0.160975892	0.001408127	0.001531467	4205.252199	0.019435155	0.020109684	0.05404134	0.078856996	0.286845705	0.04161438
SACRAMENT	2021	MH	2012	5	GAS	3.27083521	0.157799055	0.002059054	0.002239409	4205.246825	0.019403962	0.019572421	0.053901508	0.078652954	0.283835834	0.041614326
SACRAMENT	2021	MH	2013	5	GAS	6.05774062	0.155177649	0.003081939	0.00335189	4205.241484	0.01940297	0.019398375	0.053860721	0.078593438	0.280577293	0.041614273
SACRAMENT	2021	LDT2	2006	5	GAS	9.46397326	0.056295645	0.001296044	0.001409567	1014.873756	0.015869591	0.008040243	0.05280865	0.077058258	1.308567613	0.010042999
SACRAMENT	2021	LDA	2004	5	GAS	14.2578237	0.061149867	0.001296044	0.001409567	851.9565209	0.015501211	0.008516113	0.051769331	0.075541686	1.414069753	0.0084308
SACRAMENT	2021	LDT1	2004	5	GAS	1.28235535	0.061228782	0.001296044	0.001409567	973.7160048	0.015474192	0.008544764	0.051549896	0.075221488	1.405685655	0.009635709
SACRAMENT	2021	LHD2	2008	5	GAS	115.613329	0.264121655	0.000757201	0.000823525	2278.364835	0.014303683	0.019988657	0.050976709	0.074385094	0.335740576	0.022546267

SACRAMENT	2021	MDV	2009	5	GAS	3.02383342	0.054464592	0.001658937	0.001804245	1118.213925	0.015432958	0.007789712	0.05095162	0.074348485	1.147641402	0.011065633
SACRAMENT	2021	LDT2	2009	5	GAS	4.98056498	0.05355548	0.001658937	0.001804245	925.398285	0.015338318	0.007725495	0.050451047	0.07361805	1.142639196	0.009157566
SACRAMENT	2021	MDV	2008	5	GAS	6.99639283	0.055430565	0.001477491	0.001606906	1185.265975	0.015055597	0.00787168	0.049665212	0.072471361	1.157220355	0.011729168
SACRAMENT	2021	LHD1	2008	5	GAS	620.777804	0.230477085	0.000757201	0.000823525	1989.101012	0.013884359	0.017745381	0.049349631	0.072010866	0.335755292	0.019683767
SACRAMENT	2021	LDT2	2008	5	GAS	7.45602421	0.054262895	0.001477491	0.001606906	980.8703747	0.014996024	0.007787716	0.049272812	0.071898771	1.152424753	0.009706508
SACRAMENT	2021	MDV	2007	5	GAS	9.01654788	0.056589703	0.001296044	0.001409567	1220.46769	0.0148978	0.007969526	0.049227986	0.071833361	1.177876229	0.012077517
SACRAMENT	2021	LDT2	2007	5	GAS	9.91088262	0.055238497	0.001296044	0.001409567	1009.997645	0.014879488	0.007873633	0.0489626	0.071446111	1.173296375	0.009994745
SACRAMENT	2021	LDA	2005	5	GAS	18.9432306	0.059113046	0.001296044	0.001409567	816.2097613	0.014643855	0.008344042	0.048144484	0.070252319	1.296458356	0.008077057
SACRAMENT	2021	LDT1	2005	5	GAS	0.93865489	0.059225003	0.001296044	0.001409567	932.8742722	0.014617325	0.00836722	0.047971253	0.06999954	1.2881512	0.009231547
SACRAMENT	2021	MDV	2013	5	GAS	7.95510427	0.049942707	0.006013646	0.006540389	1011.113543	0.014211719	0.007387651	0.045896267	0.066971725	1.006638705	0.010005788
SACRAMENT	2021	MDV	2014	5	GAS	12.713146	0.049426109	0.008372447	0.0091058	1004.805375	0.014196353	0.007355569	0.045733388	0.066734052	0.999905714	0.009943364
SACRAMENT	2021	LDT2	2013	5	GAS	17.9228581	0.049343512	0.006013646	0.006540389	836.7562774	0.014050225	0.007338726	0.045255397	0.066036569	1.002315004	0.008280382
SACRAMENT	2021	LDT2	2014	5	GAS	16.7195684	0.048952324	0.008372447	0.0091058	831.5883735	0.014045666	0.007316117	0.045146937	0.065878305	0.996027278	0.008229241
SACRAMENT	2021	MDV	2011	5	GAS	5.56536924	0.05108019	0.002747614	0.002988281	1072.257534	0.013725224	0.007469444	0.044298822	0.064640738	1.01296216	0.010610858
SACRAMENT	2021	MDV	2015	5	GAS	12.1732001	0.048064484	0.010549802	0.011473872	981.6391979	0.013747918	0.00721946	0.044030228	0.064248805	0.961629683	0.009714116
SACRAMENT	2021	MDV	2010	5	GAS	4.01170882	0.051541075	0.002021829	0.002198924	1107.363015	0.013554239	0.007474724	0.043812018	0.063930394	0.994365611	0.010958255
SACRAMENT	2021	LDT2	2011	5	GAS	12.4240007	0.050054877	0.002747614	0.002988281	887.3382211	0.013567447	0.007385598	0.043642031	0.063682349	1.008230894	0.008780931
SACRAMENT	2021	LDT2	2015	5	GAS	19.2408352	0.047704252	0.010549802	0.011473872	812.4622978	0.01360844	0.007188705	0.043502465	0.063478695	0.958194473	0.008039973
SACRAMENT	2021	LDT2	2010	5	GAS	8.49965706	0.050362236	0.002021829	0.002198924	916.3733962	0.013381983	0.007380558	0.043090348	0.062877335	0.98929927	0.009068258
SACRAMENT	2021	LDT1	2007	5	GAS	1.85128986	0.054402706	0.001296044	0.001409567	914.2395338	0.013059343	0.007789305	0.042109384	0.061445914	1.086989448	0.009047141
SACRAMENT	2021	LDA	2007	5	GAS	25.0537323	0.054098643	0.001296044	0.001409567	799.8556915	0.013045376	0.007754474	0.042080802	0.061404208	1.087934273	0.00791522
SACRAMENT	2021	MDV	2016	5	GAS	14.0956622	0.046032904	0.012182818	0.013249926	942.6244118	0.01320091	0.007032615	0.041914103	0.06116096	0.960933198	0.009328033
SACRAMENT	2021	LDT1	2006	5	GAS	1.2943978	0.05050383	0.001296044	0.001409567	933.191141	0.012885244	0.007375045	0.041588427	0.060685734	1.040671615	0.009234683
SACRAMENT	2021	LDA	2006	5	GAS	21.8355488	0.05028283	0.001296044	0.001409567	825.9103753	0.012871473	0.007342563	0.041583209	0.060678121	1.041634201	0.008173053
SACRAMENT	2021	LDT2	2016	5	GAS	20.4669207	0.045761195	0.012182818	0.013249926	780.2310956	0.01309204	0.007007899	0.041510082	0.060571414	0.958211416	0.007721019
SACRAMENT	2021	MDV	2017	5	GAS	13.1131798	0.045439545	0.013090049	0.014236623	903.5841248	0.012978071	0.00699218	0.0410195	0.059855558	0.955591794	0.008941697
SACRAMENT	2021	LDT2	2017	5	GAS	21.2407136	0.045249382	0.013090049	0.014236623	747.9744439	0.012898527	0.006973736	0.040729796	0.059432822	0.953641436	0.007401813
SACRAMENT	2021	MDV	2012	5	GAS	6.30697942	0.049238743	0.004017738	0.004369657	1045.743812	0.012736653	0.007311033	0.040531764	0.059143855	0.961453134	0.010348483
SACRAMENT	2021	LDT1	2008	5	GAS	3.16595048	0.053536149	0.001477491	0.001606906	887.2609107	0.012555758	0.00775328	0.040074425	0.058476507	1.079637653	0.008780166
SACRAMENT	2021	LDA	2008	5	GAS	22.1714742	0.053187728	0.001477491	0.001606906	776.2570039	0.012548232	0.007718689	0.040048173	0.0584382	1.080586122	0.007681692
SACRAMENT	2021	LDT2	2012	5	GAS	12.1679699	0.048170484	0.004017738	0.004369657	865.3882201	0.012577532	0.00721803	0.039901312	0.058223901	0.957098387	0.008563718
SACRAMENT	2021	LHD2	2009	5	GAS	64.3379258	0.162941547	0.00085019	0.000924659	2278.145698	0.011446129	0.01414873	0.039397789	0.057489161	0.22899156	0.022544098
SACRAMENT	2021	LHD2	2012	5	GAS	53.5930692	0.162070714	0.002059054	0.002239409	2278.125147	0.011603487	0.014422345	0.039375868	0.057457174	0.216085727	0.022543895
SACRAMENT	2021	LHD2	2011	5	GAS	36.061567	0.163228417	0.001408127	0.001531467	2278.133591	0.0115363	0.014394348	0.039347729	0.057416114	0.221489477	0.022543979
SACRAMENT	2021	LHD2	2010	5	GAS	11.754612	0.163482469	0.001036169	0.001126929	2278.13968	0.011430986	0.014294942	0.039166625	0.057151847	0.225823774	0.022544039
SACRAMENT	2021	LHD2	2013	5	GAS	46.0864686	0.15917373	0.003081939	0.00335189	2278.114683	0.011604705	0.01434165	0.039146952	0.057123141	0.210107084	0.022543792
SACRAMENT	2021	LHD2	2014	5	GAS	166.200797	0.155839424	0.004290803	0.00466664	2243.939095	0.011532502	0.014250451	0.038637201	0.056379314	0.204304827	0.022205596
SACRAMENT	2021	MDV	2018	5	GAS	13.9326776	0.043102404	0.013634388	0.014828641	864.5114397	0.012292947	0.006760126	0.038461373	0.056122745	0.949103042	0.008555042
SACRAMENT	2021	LDT2	2018	5	GAS	22.2610309	0.042998876	0.013634388	0.014828641	715.685582	0.012248028	0.006748871	0.038303314	0.055892106	0.947995562	0.007082289
SACRAMENT	2021	LHD2	2015	5	GAS	193.842505	0.151840306	0.005406678	0.005880256	2232.541159	0.011456493	0.014118043	0.038102654	0.055599303	0.199531204	0.022092805
SACRAMENT	2021	LDT1	2009	5	GAS	2.33579118	0.050798909	0.001658937	0.001804245	868.578083	0.011771601	0.007450447	0.037185341	0.054260763	0.975117059	0.008595284
SACRAMENT	2021	LDA	2009	5	GAS	19.1096178	0.050441485	0.001658937	0.001804245	759.8934354	0.011750611	0.007418291	0.037099106	0.054134928	0.975729208	0.007519762
SACRAMENT	2021	LDT1	2011	5	GAS	1.1560924	0.048236121	0.002747614	0.002988281	852.5969632	0.011750006	0.007211696	0.036974946	0.053953754	0.934999026	0.008437138
SACRAMENT	2021	LDA	2011	5	GAS	24.5611332	0.047907641	0.002747614	0.002988281	745.9072087	0.011721959	0.00718708	0.036842097	0.053759902	0.935312321	0.007381357
SACRAMENT	2021	MDV	2021	5	DSL	0.43335071	0.028364211	0.000971155	0.001015066	727.7189919	0.00218371	0.114387291	0.047014	0.053522314	1.485916472	0.006879562
SACRAMENT	2021	LDA	2021	5	DSL	0.78489661	0.028253972	0.000967128	0.001010857	452.4662769	0.002171384	0.071121398	0.046748612	0.053220187	1.476216098	0.004277433
SACRAMENT	2021	LHD1	2009	5	GAS	113.233875	0.095680364	0.00085019	0.000924659	1988.874727	0.010540707	0.008737537	0.036118476	0.052703995	0.22899156	0.019681528
SACRAMENT	2021	LHD1	2012	5	GAS	207.076025	0.093459425	0.002059054	0.002239409	1988.854169	0.010694772	0.00880612	0.03609512	0.052669914	0.216085727	0.019681324
SACRAMENT	2021	LHD1	2011	5	GAS	131.711941	0.094682708	0.001408127	0.001531467	1988.862613	0.010628712	0.008821582	0.036066851	0.052628665	0.221489477	0.019681408
SACRAMENT	2021	LHD1	2010	5	GAS	79.9861898	0.094743308	0.001036169	0.001126929	1988.868759	0.010527771	0.008736741	0.035898999	0.052383735	0.225823774	0.019681469
SACRAMENT	2021	LHD1	2013	5	GAS	300.364684	0.092571041	0.003081939	0.00335189	1988.843786	0.010699216	0.00884124	0.035884777	0.052362983	0.210107084	0.019681222
SACRAMENT	2021	LHD2	2016	5	GAS	31.0318486	0.132245594	0.006243584	0.006790467	2186.9737	0.010857821	0.012770234	0.03559176	0.051935413	0.196770842	0.021641878
SACRAMENT	2021	LHD1	2014	5	GAS	412.074673	0.088251751	0.004290803	0.00466664	1959.007234	0.010636163	0.008590853	0.035417673	0.051681386	0.204304827	0.019385965
SACRAMENT	2021	LDT1	2010	5	GAS	1.26062664	0.049139925	0.002021829	0.002198924	824.0535176	0.011262345	0.007302275	0.035257391	0.051447503	0.940207344	0.008154678
SACRAMENT	2021	LDA	2010	5	GAS	24.0217824	0.04876246	0.002021829	0.002198924	720.9429326	0.01123903	0.0072707	0.035152579	0.05129456	0.940690695	0.007134315
SACRAMENT	2021	LHD1	2015	5	GAS	1197.84485	0.086377691	0.005406678	0.005880256	1949.055777	0.010569752	0.0085659	0.034928157	0.050967085	0.199531204	0.019287487
SACRAMENT	2021	LHD2	2020	5	GAS	158.105338	0.097643544	0.007173479	0.007801813	2050.348889	0.010967895	0.010326817	0.034249514	0.049976811	0.220585008	0.020289864
SACRAMENT	2021	LHD2	2017	5	GAS	105.630032	0.117124585	0.006708532	0.00729614	2141.415548	0.010535835	0.011672672	0.03409232	0.049747434	0.197131066	0.021191043
SACRAMENT	2021	LHD2	2019	5	GAS	137.587213	0.103252268	0.007173479	0.007801813	2050.328672	0.010753024	0.010670857	0.034003141	0.049617304	0.208501142	0.020289664
SACRAMENT	2021	MDV	2019	5	GAS	14.4170665	0.038375575	0.012877498	0.014005454	825.4048853	0.010999309	0.006252444	0.033766594	0.049272134	0.941825996	0.00816805
SACRAMENT	2021	LDT2	2019	5	GAS	22.9187908	0.038358952	0.012877498	0.014005454	683.3629703	0.010990721	0.006249446	0.033741715	0.049235832	0.94163257	0.006762431
SACRAMENT	2021	LDT1	2012	5	GAS	2.32348795	0.046406706	0.004017738	0.004369657	780.0592943	0.010872552	0.007066583	0.033695728	0.049168727	0.90987305	0.007719319
SACRAMENT	2021	LDA	2012	5	GAS	39.6891258	0.04602661	0.004017738	0.004369657	682.4571913	0.010845513	0.007037922	0.033562327	0.048974069	0.910131479	0.006753467
SACRAMENT	2021	LHD1	2020	5	GAS	977.282961	0.070364658	0.007173479	0.007801813	1790.013719	0.010728445	0.007787998	0.033316618	0.048615531	0.220585008	0.017713637
SACRAMENT	2021	LHD2	2018	5	GAS	120.290063	0.105044702	0.0069875	0.007599544	2050.313715	0.01039253	0.010749033	0.033180134	0.048416374	0.201303797	0.020289516
SACRAMENT	2021	LHD1	2016	5	GAS	1932.02305	0.077831788	0.006243584	0.006790467	1909.276128	0.010142652	0.007992073	0.033037374	0.048208059	0.196770842	0.018893835
SACRAMENT	2021	LHD1	2019	5	GAS	874.642153	0.071166387	0.007173479	0.007801813	1789.992405	0.010435686	0.007716583	0.032815668	0.047884546	0.208501142	0.017713426
SACRAMENT	2021	LHD1	2017	5	GAS	700.802392	0.072742011	0.006708532	0.00729614	1869.505679	0.009990585	0.007670363	0.032133186	0.046888669	0.197131066	0.018500274
SACRAMENT	2021	LHD1	2018	5	GAS	780.709083	0.070300723	0.0069875	0.007599544	1789.976568	0.010012819	0.007557816	0.031788663	0.046385943	0.201303797	0.017713269
SACRAMENT	2021	LDT1	2014	5	GAS	4.46008735	0.0433736	0.008372447	0.0091058	759.9332919	0.010360372	0.006776528	0.031774701	0.04636557	0.870323688	0.007520156
SACRAMENT	2021	LDA	2014	5	GAS	51.2812274	0.043005247	0.008372447	0.0091058	664.8921748	0.010324923	0.006749133	0.031609262	0.046124161	0.870308953	0.006579647
SACRAMENT	2021	LDT1	2013	5	GAS	3.75061728	0.044526379	0.006013646	0.006540389	758.7293251	0.010288647	0.006887969	0.03156904	0.046065469	0.877009997	0.007508242
SACRAMENT	2021	LDA	2013	5	GAS	51.0195453	0.044130032	0.006013646	0.006540389	663.7935175	0.010256426	0.006856804	0.031420897	0.0458493	0.877121035	0.006568775
SACRAMENT	2021	LDT1	2015	5	GAS	9.01394672	0.041467438	0.010549802	0.011473872	746.2282299	0.010015281	0.006603925	0.030460737	0.044448235	0.876638267	0.007384533
SACRAMENT	2021	LDA	2015	5	GAS	59.8552957	0.04109545	0.010549802	0.011473872	652.9512809	0.009980894	0.006576048	0.030296437	0.04420849	0.876584342	0.006461482
SACRAMENT	2021	LDT1	2016	5	GAS	8.1198909	0.039901294	0.012182818	0.013249926	724.9384018	0.009772365	0.006448098	0.029561268	0.043135733	0.869051813	0.007173853
SACRAMENT	2021	LDA	2016	5	GAS	62.3197135	0.039539805	0.012182818	0.013249926	634.3707205	0.009735556	0.006421203	0.029386994	0.042881433	0.868885116	0.006277613
SACRAMENT	2021	LHD2	2021	5	GAS	130.222353	0.074500049	0.007173479	0.007801813	1999.057333	0.009615025	0.008635261	0.028992049	0.042305129	0.206329785	0.019782293
SACRAMENT	2021	LDT1	2017	5	GAS	6.51636339	0.038754854	0.013090049	0.014236623	703.638387	0.009618272	0.006338943	0.028971591	0.042275278	0.864962566	0.006963072
SACRAMENT	2021	LDA	2017	5	GAS	74.9982187	0.038398917	0.013090049	0.014236623	615.7794586	0.009578928	0.006312218	0.028787877	0.042007202	0.864696863	0.006093637
SACRAMENT	2021	LHD1	2021	5	GAS	828.895213	0.057433071	0.007173479	0.007801813	1745.232438	0.009508427	0.006932335	0.028522154	0.041619461	0.206329785	0.01727049
SACRAMENT	2021	LDT2	2020	5	GAS	23.4263195	0.033262828	0.009238205	0.010047391	650.9979872	0.009493555	0.005679096	0.028444151	0.041505638	0.925306823	0.006442153
SACRAMENT	2021	MDV	2020	5	GAS	14.9010085	0.033193169	0.009238205	0.010047391	786.2559266	0.009469187	0.005671836	0.028355095	0.041375688	0.924513031	0.00778064
SACRAMENT	2021	LDT1	2018	5	GAS	6.88277088	0.03525107	0.013634388	0.014828641	682.3124831	0.008847433	0.005955945	0.026260046	0.038318597	0.86107965	0.006752035
SACRAMENT	2021	LDA	2018	5	GAS	79.4403797	0.034910009	0.013634388	0.014828641	597.1618088	0.008807245	0.005928483	0.02607998	0.038055845	0.860704669	0.0059094
SACRAMENT	2021	MDV	2006	5	GAS	8.91434741	0.02924616	0.001296044	0.001409567	1219.078444	0.008617679	0.005263652	0.026074428	0.038047744	0.789673666	0.012063769
SACRAMENT	2021	LDT2	2021	5	GAS	19.9752283	0.029529699	0.005738885	0.006241561	618.6092164	0.008331198	0.005244776	0.024427282	0.035644233	0.905255975	0.00612164
SACRAMENT	2021	MDV	2021	5	GAS	12.1026385	0.029356932	0.005738885	0.006241561	747.0831072	0.0082765	0.005220677	0.024240376	0.0353715	0.903385211	0.007392993
SACRAMENT	2021	LDT1	2019	5	GAS	7.13263139	0.031947908	0.012877498	0.014005454	660.9300354	0.007945317	0.005571093	0.023201605	0.033855728	0.833234523	0.006540438
SACRAMENT	2021	LDA	2019	5	GAS	81.4690254	0.031621007	0.012877498	0.014005454	578.4869147	0.00790264	0.005542673	0.023021927	0.033593543	0.832657248	0.005724597
SACRAMENT	2021	LDT1	2020	5	GAS	7.23929086	0.028555219	0.009238205	0.010047391	639.5642646	0.007128563	0.005171065	0.02044597	0.029834711	0.825853494	0.006329007
SACRAMENT	2021	LDA	2020	5	GAS	78.4390954	0.028238842	0.009238205	0.010047391	559.8283009	0.00708556	0.005140464	0.0202741	0.029583919	0.825143449	0.005539955
SACRAMENT	2021	LDT1	2021	5	GAS	6.36108499	0.025688914	0.005738885	0.006241561	618.1641012	0.006364394	0.004824268	0.017923399	0.026153782	0.806907344	0.006117235
SACRAMENT	2021	LDA	2021	5	GAS	64.6780599	0.02536843	0.005738885	0.006241561	541.1346884	0.006320447	0.004788098	0.017757772	0.0259121	0.806026473	0.005354966

Wtd Ave g/mile	**1.166**	**0.0362**		**1670.216**	**0.0416**	**0.0896**	**0.424**	**0.526**
			Acetaldehyde	Benzene	Butadiene	Ethylbenzene	Formaldehyde	Naphthalene
		Percent TOG	0.28%	2.47%	0.55%	1.05%	1.58%	0.05%
			0.00147	**0.0130**	**0.00289**	**0.00552**	**0.00831**	**0.000263**

TOG speciation from Table 14 of the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards, dated May 2011.

DSL VMT	11839
DSL + GAS VMT	32298
DSL / GAS =	0.367

APPENDIX B-3

Spectator On-Site DPM Emission Factors

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EMFAC2017 (v1.0.2) Emission Rates **Spectators On-Site DPM:** 5 mph only, DSL only, ALL YEARS ... LD autos and trucks, LHD trucks, MD trucks, Motorcycles, Motor Homes
Region Type: County
Region: SACRAMENTO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Yea	Vehicle Categ	Model Year	Speed	Fuel	VMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
SACRAMENT	2021	MH	1979	5	DSL	0.01559023	26.72699033	1.991987749	2.082056596	2340.526571	0.22005544	0.367898183	4.737664061	5.393515552	7.673640332	0.022126393
SACRAMENT	2021	MH	1982	5	DSL	0.12624437	26.68621955	1.957441304	2.045948114	2340.526571	0.215419561	0.367898183	4.637856322	5.279891077	7.511916004	0.022126393
SACRAMENT	2021	MH	1983	5	DSL	0.02254942	26.67172236	1.945157362	2.033108746	2340.526571	0.213771147	0.367898183	4.602366927	5.239488761	7.454410458	0.022126393
SACRAMENT	2021	MH	1984	5	DSL	0.12181469	26.6567717	1.932489189	2.019867775	2340.526571	0.212071171	0.367898183	4.565767459	5.197822699	7.395106195	0.022126393
SACRAMENT	2021	MH	1985	5	DSL	0.07760805	26.64136757	1.919436786	2.0062252	2340.526571	0.210319635	0.367898183	4.528057917	5.154892892	7.334003213	0.022126393
SACRAMENT	2021	MH	1986	5	DSL	0.10771271	26.62550997	1.906000153	1.992181022	2340.526571	0.208516538	0.367898183	4.4892383	5.11069934	7.271101515	0.022126393
SACRAMENT	2021	MH	1987	5	DSL	0.11289775	26.53057598	1.912538712	1.999015226	2267.723958	0.201852825	0.356454626	4.345772486	4.947373049	7.036074311	0.021438147
SACRAMENT	2021	MH	1988	5	DSL	0.11670133	26.50817133	1.899891357	1.985796014	2267.723958	0.199586407	0.356454626	4.296977844	4.891823592	6.957069921	0.021438147
SACRAMENT	2021	MH	1989	5	DSL	0.15057393	26.4851606	1.886901907	1.972219238	2267.723958	0.197258685	0.356454626	4.24686335	4.834771574	6.875928559	0.021438147
SACRAMENT	2021	MH	1990	5	DSL	0.18677912	26.46154378	1.873570361	1.958284898	2267.723958	0.194869658	0.356454626	4.195429004	4.776216991	6.792650227	0.021438147
SACRAMENT	2021	LDA	1978	5	DSL	0.0011141	1.430442975	2.142354163	2.239221912	954.9215097	0.142676911	0.150100363	3.071749896	3.496983032	6.021397126	0.009027442
SACRAMENT	2021	LDA	1979	5	DSL	0.00261209	1.430442975	2.142354163	2.239221912	954.9215097	0.142676911	0.150100363	3.071749896	3.496983032	6.021397126	0.009027442
SACRAMENT	2021	MDV	1978	5	DSL	0.00034003	1.430442975	2.142354163	2.239221912	1356.797493	0.142676911	0.213269671	3.071749896	3.496983032	6.021397126	0.012826616
SACRAMENT	2021	LDA	1977	5	DSL	0.00070543	1.430442975	2.142354163	2.239221912	954.9215097	0.142676911	0.150100363	3.071749896	3.496983032	6.021397126	0.009027442
SACRAMENT	2021	LDT2	1978	5	DSL	0.00080872	1.430442975	2.142354163	2.239221912	1274.64369	0.142676911	0.200356238	3.071749896	3.496983032	6.021397126	0.012049967
SACRAMENT	2021	LDT2	1979	5	DSL	0.00132409	1.430442975	2.142354163	2.239221912	1274.64369	0.142676911	0.200356238	3.071749896	3.496983032	6.021397126	0.012049967
SACRAMENT	2021	MH	1991	5	DSL	0.29211382	28.19118238	1.829292237	1.912004715	2180.980418	0.117717162	0.34281975	2.534381192	2.88522449	4.807960908	0.020618108
SACRAMENT	2021	MH	1992	5	DSL	0.53408994	28.14620612	1.812209575	1.894149651	2180.980418	0.116188913	0.34281975	2.501478894	2.847767411	4.74558444	0.020618108
SACRAMENT	2021	MH	1993	5	DSL	0.59160543	28.10013214	1.794709961	1.875858781	2180.980418	0.114623363	0.34281975	2.467773518	2.809396081	4.681685471	0.020618108
SACRAMENT	2021	MH	1994	5	DSL	1.10103448	27.90236901	1.046000458	1.093295957	2091.138895	0.108498113	0.328697914	2.335900485	2.659267401	4.433917932	0.019768783
SACRAMENT	2021	MH	1995	5	DSL	0.72618792	27.84565081	1.034133412	1.080892336	2091.138895	0.10661127	0.328697914	2.295277877	2.613021263	4.356804866	0.019768783
SACRAMENT	2021	MH	1996	5	DSL	0.47856292	27.78764263	1.021996478	1.068206624	2091.138895	0.104681515	0.328697914	2.253731386	2.565723345	4.277938058	0.019768783
SACRAMENT	2021	MH	1997	5	DSL	1.32065142	27.72834443	1.009589656	1.05523882	2091.138895	0.102708847	0.328697914	2.211261012	2.517373647	4.197317509	0.019768783
SACRAMENT	2021	MH	1998	5	DSL	1.13863939	27.48586949	1.021982279	1.068191782	2142.255624	0.101057669	0.336732751	2.175712108	2.476903583	4.127113111	0.02025202
SACRAMENT	2021	MH	1999	5	DSL	1.56123273	27.41495429	1.010276073	1.055956274	2142.255624	0.099013727	0.336732751	2.131707252	2.42680698	4.043678594	0.02025202
SACRAMENT	2021	MH	2000	5	DSL	2.69159725	27.34256065	0.998325837	1.043465702	2142.255624	0.096927178	0.336732751	2.086785085	2.37566608	3.958504802	0.02025202
SACRAMENT	2021	MH	2001	5	DSL	2.22359288	27.26868859	0.986131571	1.030720065	2142.255624	0.094798022	0.336732751	2.040945607	2.323480883	3.871591735	0.02025202
SACRAMENT	2021	MH	2002	5	DSL	2.67223371	27.19333811	0.973693274	1.017719363	2142.255624	0.092626259	0.336732751	1.99418882	2.270251389	3.782939392	0.02025202
SACRAMENT	2021	LDT2	1981	5	DSL	0.00027092	1.253835211	1.097691325	1.147324056	1274.64369	0.063630622	0.200356238	1.369929838	1.559574042	4.191945321	0.012049967
SACRAMENT	2021	MDV	1980	5	DSL	0.00066371	1.253835211	1.097691325	1.147324056	1356.797493	0.063630622	0.213269671	1.369929838	1.559574042	4.191945321	0.012826616
SACRAMENT	2021	LDA	1980	5	DSL	0.00447963	1.253835211	1.097691325	1.147324056	954.9215097	0.063630622	0.150100363	1.369929838	1.559574042	4.191945321	0.009027442
SACRAMENT	2021	LDA	1981	5	DSL	0.00718741	1.253835211	1.097691325	1.147324056	954.9215097	0.063630622	0.150100363	1.369929838	1.559574042	4.191945321	0.009027442
SACRAMENT	2021	LDA	1982	5	DSL	0.01295979	1.253835211	1.097691325	1.147324056	954.9215097	0.063630622	0.150100363	1.369929838	1.559574042	4.191945321	0.009027442
SACRAMENT	2021	LDT1	1981	5	DSL	0.00102495	1.253835211	1.097691325	1.147324056	1091.414005	0.063630622	0.171555083	1.369929838	1.559574042	4.191945321	0.010317787
SACRAMENT	2021	LDT1	1982	5	DSL	0.00502769	1.253835211	1.097691325	1.147324056	1091.414005	0.063630622	0.171555083	1.369929838	1.559574042	4.191945321	0.010317787
SACRAMENT	2021	LDT2	1980	5	DSL	0.00055426	1.253835211	1.097691325	1.147324056	1274.64369	0.063630622	0.200356238	1.369929838	1.559574042	4.191945321	0.012049967
SACRAMENT	2021	LDT2	1982	5	DSL	0.00271372	1.253835211	1.097691325	1.147324056	1274.64369	0.063630622	0.200356238	1.369929838	1.559574042	4.191945321	0.012049967
SACRAMENT	2021	MDV	1982	5	DSL	0.00713583	1.253835211	1.097691325	1.147324056	1356.797493	0.063630622	0.213269671	1.369929838	1.559574042	4.191945321	0.012826616
SACRAMENT	2021	LDA	1984	5	DSL	0.01712812	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1985	5	DSL	0.02474328	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1986	5	DSL	0.00602994	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1987	5	DSL	0.01412294	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1988	5	DSL	0.00050474	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1989	5	DSL	0.00073429	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1990	5	DSL	0.00885615	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1991	5	DSL	0.0047786	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDA	1992	5	DSL	0.00219434	0.910209245	0.840502778	0.878506584	855.4283723	0.062974637	0.134461428	1.35580685	1.543495959	6.465598553	0.008086874
SACRAMENT	2021	LDT1	1984	5	DSL	0.0022666	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1985	5	DSL	0.00240932	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1986	5	DSL	0.00516375	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1987	5	DSL	0.00521865	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1988	5	DSL	0.00491993	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1989	5	DSL	0.00496502	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1990	5	DSL	0.00204107	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT1	1992	5	DSL	0.00632541	0.910209245	0.840502778	0.878506584	977.6997338	0.062974637	0.153680783	1.35580685	1.543495959	6.465598553	0.009242779
SACRAMENT	2021	LDT2	1984	5	DSL	0.00027428	0.910209245	0.840502778	0.878506584	1141.838743	0.062974637	0.179481149	1.35580685	1.543495959	6.465598553	0.010794482
SACRAMENT	2021	LDT2	1990	5	DSL	0.0002832	0.910209245	0.840502778	0.878506584	1141.838743	0.062974637	0.179481149	1.35580685	1.543495959	6.465598553	0.010794482
SACRAMENT	2021	MDV	1984	5	DSL	0.00399902	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1985	5	DSL	0.00111786	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1986	5	DSL	0.00192161	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1987	5	DSL	0.00113128	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1988	5	DSL	0.00057282	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1989	5	DSL	0.00029304	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	MDV	1992	5	DSL	0.00029283	0.910209245	0.840502778	0.878506584	1215.432954	0.062974637	0.191049134	1.35580685	1.543495959	6.465598553	0.011490212
SACRAMENT	2021	LHD1	1991	5	DSL	26.6923981	6.751893377	0.170097781	0.177788848	1316.983587	0.055747484	0.20701148	1.200210511	1.366359871	3.910217077	0.012450231
SACRAMENT	2021	LHD1	1992	5	DSL	35.3520517	6.751893377	0.170097781	0.177788848	1316.983587	0.055747484	0.20701148	1.200210511	1.366359871	3.910217077	0.012450231
SACRAMENT	2021	LHD1	1993	5	DSL	41.892636	6.751893377	0.170097781	0.177788848	1316.983587	0.055747484	0.20701148	1.200210511	1.366359871	3.910217077	0.012450231
SACRAMENT	2021	LHD2	1991	5	DSL	5.73169002	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	LHD2	1992	5	DSL	8.4285365	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	LHD2	1993	5	DSL	20.0786239	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	LHD1	1994	5	DSL	37.1419156	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD1	1995	5	DSL	61.8414684	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD1	1996	5	DSL	50.303048	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD1	1997	5	DSL	109.036421	6.758114468	0.171478573	0.179232073	1316.983587	0.055624992	0.20701148	1.197573334	1.36335762	3.893085794	0.012450231
SACRAMENT	2021	LHD2	1994	5	DSL	20.262235	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1995	5	DSL	11.45379	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1996	5	DSL	24.8618081	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1997	5	DSL	16.4203643	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD1	1998	5	DSL	44.7543985	6.756998998	0.17124926	0.178992391	1316.983587	0.055521889	0.20701148	1.195353583	1.360830582	3.885874313	0.012450231
SACRAMENT	2021	LHD2	1998	5	DSL	12.9531186	6.756998998	0.17124926	0.178992391	1389.089524	0.055521889	0.218345529	1.195353583	1.360830582	3.885874313	0.013131891
SACRAMENT	2021	LHD1	1999	5	DSL	184.039174	6.754523283	0.170740313	0.178460432	1316.983587	0.055293058	0.20701148	1.190426987	1.35522198	3.869868888	0.012450231
SACRAMENT	2021	LHD2	1999	5	DSL	52.1041106	6.754523283	0.170740313	0.178460432	1389.089524	0.055293058	0.218345529	1.190426987	1.35522198	3.869868888	0.013131891
SACRAMENT	2021	LHD1	2000	5	DSL	175.360492	6.750687322	0.169951733	0.177636196	1316.983587	0.054938499	0.20701148	1.182793545	1.346531813	3.845069517	0.012450231
SACRAMENT	2021	LHD2	2000	5	DSL	42.7327783	6.750687322	0.169951733	0.177636196	1389.089524	0.054938499	0.218345529	1.182793545	1.346531813	3.845069517	0.013131891
SACRAMENT	2021	LHD1	2001	5	DSL	294.522075	6.745491115	0.16888352	0.176519683	1316.983587	0.054458213	0.20701148	1.172453256	1.334760082	3.811476202	0.012450231
SACRAMENT	2021	LHD2	2001	5	DSL	83.8697837	6.745491115	0.16888352	0.176519683	1389.089524	0.054458213	0.218345529	1.172453256	1.334760082	3.811476202	0.013131891
SACRAMENT	2021	MH	2003	5	DSL	3.10808751	15.63375435	0.294435299	0.307748357	2118.933317	0.04972095	0.33306681	1.070462786	1.218650713	2.23068304	0.02003154
SACRAMENT	2021	MH	2004	5	DSL	4.25124825	14.85205575	0.249555564	0.260839359	2117.471756	0.04617686	0.332837072	0.99416061	1.131785758	2.093999848	0.020017723
SACRAMENT	2021	MH	2005	5	DSL	4.00278778	14.78878583	0.246390122	0.25753079	2117.471756	0.045164022	0.332837072	0.972354798	1.106961291	2.048077872	0.020017723
SACRAMENT	2021	MH	2006	5	DSL	3.72472632	14.72434361	0.243166029	0.254160918	2117.471756	0.044132417	0.332837072	0.95014495	1.081676855	2.001305011	0.020017723
SACRAMENT	2021	LHD1	1987	5	DSL	7.03173077	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD1	1988	5	DSL	10.3408602	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD1	1989	5	DSL	15.2087378	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD1	1990	5	DSL	26.3661154	3.824032359	0.636003251	0.664760495	1316.983587	0.043376663	0.20701148	0.933874007	1.063153468	3.654588473	0.012450231
SACRAMENT	2021	LHD2	1987	5	DSL	5.24451979	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1988	5	DSL	2.09792394	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1989	5	DSL	6.86468866	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1990	5	DSL	4.75760896	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD1	2002	5	DSL	290.207704	5.191248086	0.17058653	0.178299696	1316.983587	0.04211872	0.20701148	0.906791242	1.032321542	3.833006677	0.012450231

SACRAMENT	2021	LHD2	2002	5	DSL	44.4456053	5.191248086	0.17058653	0.178299696	1389.089524	0.04211872	0.218345529	0.906791242	1.032321542	3.833006677	0.013131891
SACRAMENT	2021	LHD1	2003	5	DSL	405.067849	5.186655723	0.169522409	0.17718746	1316.983587	0.041692838	0.20701148	0.897622262	1.021883267	3.79430036	0.012450231
SACRAMENT	2021	LHD2	2003	5	DSL	58.0602084	5.186655723	0.169522409	0.17718746	1389.089524	0.041692838	0.218345529	0.897622262	1.021883267	3.79430036	0.013131891
SACRAMENT	2021	MH	2007	5	DSL	4.65241715	12.77216972	0.137070374	0.143268088	2146.902599	0.040835913	0.337463191	0.879173174	1.000880207	2.149176387	0.02029595
SACRAMENT	2021	MH	2008	5	DSL	4.1217575	12.70185424	0.13505604	0.141162674	2146.902599	0.039888015	0.337463191	0.858765477	0.977647401	2.099859437	0.02029595
SACRAMENT	2021	MH	2009	5	DSL	0.46743493	12.63030451	0.133006347	0.139020304	2146.902599	0.038923479	0.337463191	0.83799958	0.954006807	2.049676804	0.02029595
SACRAMENT	2021	LHD1	2010	5	DSL	76.1059211	0.888395474	0.034030116	0.035568807	1316.983587	0.037573022	0.20701148	0.808925051	0.920907389	4.387591862	0.012450231
SACRAMENT	2021	LHD2	2010	5	DSL	35.7832114	0.888395474	0.034030116	0.035568807	1389.089524	0.037573022	0.218345529	0.808925051	0.920907389	4.387591862	0.013131891
SACRAMENT	2021	LHD1	2011	5	DSL	167.751733	0.863717157	0.032416633	0.033882369	1316.983587	0.037015503	0.20701148	0.796921976	0.907242687	4.188812639	0.012450231
SACRAMENT	2021	LHD2	2011	5	DSL	90.7681191	0.863717157	0.032416633	0.033882369	1389.089524	0.037015503	0.218345529	0.796921976	0.907242687	4.188812639	0.013131891
SACRAMENT	2021	LDA	1983	5	DSL	0.01713166	1.072432666	1.002239879	1.047556719	942.0054588	0.036899201	0.14807014	0.794418076	0.904392164	4.066910846	0.008905339
SACRAMENT	2021	LDT1	1983	5	DSL	0.00183321	1.072432666	1.002239879	1.047556719	1076.651788	0.036899201	0.169234668	0.794418076	0.904392164	4.066910846	0.010178231
SACRAMENT	2021	MDV	1983	5	DSL	0.00484993	1.072432666	1.002239879	1.047556719	1338.445759	0.036899201	0.210385034	0.794418076	0.904392164	4.066910846	0.012653126
SACRAMENT	2021	LHD1	2012	5	DSL	169.120485	0.837253142	0.0306864	0.032073903	1316.983587	0.036417641	0.20701148	0.784050369	0.892589218	3.975650038	0.012450231
SACRAMENT	2021	LHD2	2012	5	DSL	114.904333	0.837253142	0.0306864	0.032073903	1389.089524	0.036417641	0.218345529	0.784050369	0.892589218	3.975650038	0.013131891
SACRAMENT	2021	MH	2010	5	DSL	0.7075079	10.66018942	0.032159454	0.033613562	2176.333443	0.036066278	0.34208931	0.776485741	0.883977392	2.191552259	0.020574178
SACRAMENT	2021	LHD2	2007	5	DSL	110.634772	2.626517293	0.1008126	0.105370899	1389.089524	0.035798412	0.218345529	0.770718739	0.877412043	4.235206679	0.013131891
SACRAMENT	2021	LHD1	2007	5	DSL	279.878411	2.626857126	0.100825311	0.105384184	1316.983587	0.035797762	0.20701148	0.770704737	0.877396103	4.235072267	0.012450231
SACRAMENT	2021	LHD1	2013	5	DSL	208.445889	0.809003429	0.028839418	0.030143409	1316.983587	0.035779437	0.20701148	0.770310223	0.876946975	3.748104058	0.012450231
SACRAMENT	2021	LHD2	2013	5	DSL	83.2194418	0.809003429	0.028839418	0.030143409	1389.089524	0.035779437	0.218345529	0.770310223	0.876946975	3.748104058	0.013131891
SACRAMENT	2021	LHD2	2008	5	DSL	131.094339	2.613053542	0.099183039	0.103667655	1389.089524	0.035253113	0.218345529	0.75897876	0.864046858	4.121505585	0.013131891
SACRAMENT	2021	LHD1	2008	5	DSL	313.209347	2.613632879	0.099204506	0.103690093	1316.983587	0.03525197	0.20701148	0.758954167	0.86401886	4.121291695	0.012450231
SACRAMENT	2021	MH	2011	5	DSL	0.97935919	10.58245683	0.03143599	0.032857386	2176.333443	0.03519609	0.34208931	0.757751106	0.862649255	2.138751596	0.020574178
SACRAMENT	2021	LHD1	2014	5	DSL	313.815634	0.778968013	0.026875687	0.028090886	1286.692964	0.035100891	0.202250216	0.755701526	0.860315945	3.5061747	0.012163876
SACRAMENT	2021	LHD2	2014	5	DSL	125.997343	0.778968013	0.026875687	0.028090886	1357.140465	0.035100891	0.213323582	0.755701526	0.860315945	3.5061747	0.012829858
SACRAMENT	2021	LHD1	2009	5	DSL	80.0811653	2.598602216	0.097412474	0.101817034	1316.983587	0.034656926	0.20701148	0.74614321	0.849434437	3.997194604	0.012450231
SACRAMENT	2021	LHD2	2009	5	DSL	40.6702329	2.598602216	0.097412474	0.101817034	1389.089524	0.034656926	0.218345529	0.74614321	0.849434437	3.997194604	0.013131891
SACRAMENT	2021	LHD1	1982	5	DSL	2.55951098	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1984	5	DSL	8.0344509	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD2	1985	5	DSL	2.13710524	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD1	1981	5	DSL	0.33767963	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1983	5	DSL	6.79398423	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1985	5	DSL	13.4574359	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD1	1986	5	DSL	18.4382858	3.752930041	0.560495925	0.585839064	1316.983587	0.034539947	0.20701148	0.743624732	0.846567318	2.907613832	0.012450231
SACRAMENT	2021	LHD2	1983	5	DSL	0.50910836	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD2	1984	5	DSL	0.68807138	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD2	1986	5	DSL	5.24880799	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD1	2015	5	DSL	442.440956	0.747146894	0.024795206	0.025916335	1277.474079	0.034382002	0.200801135	0.740224265	0.842696112	3.249861964	0.012076724
SACRAMENT	2021	LHD2	2015	5	DSL	245.443939	0.747146894	0.024795206	0.025916335	1347.416838	0.034382002	0.211795163	0.740224265	0.842696112	3.249861964	0.012737935
SACRAMENT	2021	MH	2012	5	DSL	1.29568786	10.50342814	0.030700462	0.032088601	2176.333443	0.034311392	0.34208931	0.738704072	0.840965474	2.085070477	0.020574178
SACRAMENT	2021	LHD1	2004	5	DSL	501.654045	4.318299509	0.16827545	0.175884119	1316.983587	0.034195977	0.20701148	0.736219247	0.838136665	3.748943547	0.012450231
SACRAMENT	2021	LHD2	2004	5	DSL	70.3112489	4.318299509	0.16827545	0.175884119	1389.089524	0.034195977	0.218345529	0.736219247	0.838136665	3.748943547	0.013131891
SACRAMENT	2021	LHD1	2005	5	DSL	446.113303	4.313141992	0.166845654	0.174389674	1316.983587	0.033722584	0.20701148	0.726027372	0.826533894	3.696936247	0.012450231
SACRAMENT	2021	LHD2	2005	5	DSL	142.862697	4.313141992	0.166845654	0.174389674	1389.089524	0.033722584	0.218345529	0.726027372	0.826533894	3.696936247	0.013131891
SACRAMENT	2021	LHD1	2016	5	DSL	807.025426	0.625757431	0.022597976	0.023619756	1237.964571	0.033622769	0.194590791	0.723878419	0.824087453	2.979165851	0.011703217
SACRAMENT	2021	LHD2	2016	5	DSL	191.624062	0.625780743	0.022597976	0.023619756	1305.744152	0.033622769	0.205244797	0.723878419	0.824087453	2.979165851	0.012343978
SACRAMENT	2021	MH	2013	5	DSL	2.16173147	10.42310337	0.02995287	0.031307206	2176.333443	0.033412184	0.34208931	0.719344642	0.81892605	2.030508901	0.020574178
SACRAMENT	2021	LHD1	2006	5	DSL	555.171527	4.307324936	0.165233021	0.172704125	1316.983587	0.033188655	0.20701148	0.714532199	0.813447403	3.638278465	0.012450231
SACRAMENT	2021	LHD2	2006	5	DSL	165.562302	4.307324936	0.165233021	0.172704125	1389.089524	0.033188655	0.218345529	0.714532199	0.813447403	3.638278465	0.013131891
SACRAMENT	2021	LHD2	2017	5	DSL	162.744697	0.511307625	0.020283996	0.021201148	1264.071467	0.03282319	0.198694431	0.70666396	0.804489937	2.694086361	0.011950021
SACRAMENT	2021	LHD1	2017	5	DSL	417.954321	0.511290531	0.020283996	0.021201148	1198.455064	0.03282319	0.188380447	0.70666396	0.804489937	2.694086361	0.01132971
SACRAMENT	2021	MH	2014	5	DSL	2.21729654	10.34148255	0.029193215	0.030513202	2060.724018	0.032498465	0.323917118	0.699672815	0.796530983	1.975066869	0.019481253
SACRAMENT	2021	LHD1	2018	5	DSL	470.007977	0.394590728	0.016641008	0.017393441	1119.436049	0.031983265	0.175959758	0.688580854	0.783903523	2.3946235	0.010582696
SACRAMENT	2021	LHD2	2018	5	DSL	179.65561	0.39484915	0.017853267	0.018660512	1180.726095	0.031983265	0.1855937	0.688580854	0.783903523	2.3946235	0.011162108
SACRAMENT	2021	MH	2015	5	DSL	4.00149819	10.2585657	0.028421496	0.02970659	2060.724018	0.031570236	0.323917118	0.679688593	0.773780275	1.918744379	0.019481253
SACRAMENT	2021	LHD1	2019	5	DSL	529.350188	0.319370247	0.012249333	0.012803193	1119.436049	0.03110299	0.175959758	0.669629054	0.762328158	2.080777274	0.010582696
SACRAMENT	2021	LHD2	2019	5	DSL	199.245042	0.319556459	0.015305788	0.015997848	1180.726095	0.03110299	0.1855937	0.669629054	0.762328158	2.080777274	0.011162108
SACRAMENT	2021	MH	2016	5	DSL	1.83940483	10.17435287	0.027637713	0.028887368	2060.724018	0.030627497	0.323917118	0.659391976	0.750673926	1.861541432	0.019481253
SACRAMENT	2021	LHD1	2020	5	DSL	605.717162	0.249152374	0.008427707	0.00880877	1119.436049	0.030182363	0.175959758	0.649808501	0.739763776	1.752547695	0.010582696
SACRAMENT	2021	LHD2	2020	5	DSL	225.629637	0.249358941	0.01264156	0.013213156	1180.726095	0.030182363	0.1855937	0.649808501	0.739763776	1.752547695	0.011162108
SACRAMENT	2021	MH	2017	5	DSL	3.82224233	10.08884408	0.026841866	0.028055536	1982.813834	0.029670248	0.311670722	0.638782967	0.727211938	1.803458026	0.018744721
SACRAMENT	2021	LHD1	2021	5	DSL	549.436711	0.186481005	0.005265064	0.005503127	1091.450147	0.029221381	0.171560764	0.62911912	0.716210292	1.409934777	0.010318129
SACRAMENT	2021	LHD2	2021	5	DSL	205.828631	0.186289139	0.009860583	0.010306435	1151.207943	0.029221381	0.180953857	0.62911912	0.716210292	1.409934777	0.010883055
SACRAMENT	2021	MH	2018	5	DSL	4.20191146	10.00203937	0.026033956	0.027211096	1982.813834	0.028698489	0.311670722	0.617861565	0.703394313	1.74449416	0.018744721
SACRAMENT	2021	MH	2019	5	DSL	4.58074988	9.913938802	0.025213982	0.026354046	1982.813834	0.02771222	0.311670722	0.596627773	0.679221053	1.684649835	0.018744721
SACRAMENT	2021	MH	2020	5	DSL	4.82215547	9.824542415	0.024381944	0.025484388	1982.813834	0.026711441	0.311670722	0.575081592	0.654692159	1.62392505	0.018744721
SACRAMENT	2021	MH	2021	5	DSL	4.07747662	9.733850268	0.023537843	0.02460212	1793.244351	0.025696152	0.28187304	0.553223026	0.629807634	1.562319804	0.016952608
SACRAMENT	2021	LDA	1993	5	DSL	0.0031212	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1994	5	DSL	0.00114648	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1995	5	DSL	0.00433482	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1996	5	DSL	0.00364808	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1997	5	DSL	0.00594059	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1998	5	DSL	0.00592626	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	1999	5	DSL	0.01414085	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2000	5	DSL	0.00737349	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2001	5	DSL	0.01555601	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2002	5	DSL	0.04401216	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2003	5	DSL	0.05966311	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2004	5	DSL	0.01729651	1.19869523	0.206811409	0.216162503	714.7404212	0.016399645	0.112347241	0.353074701	0.401952073	2.961342849	0.006756867
SACRAMENT	2021	LDA	2005	5	DSL	0.04942763	1.19869523	0.206811409	0.216162503	684.8340284	0.016399645	0.107646372	0.353074701	0.401952073	2.961342849	0.006474144
SACRAMENT	2021	LDA	2006	5	DSL	0.04773958	1.19869523	0.206811409	0.216162503	696.9095331	0.016399645	0.109544474	0.353074701	0.401952073	2.961342849	0.006588301
SACRAMENT	2021	LDA	2007	5	DSL	0.01598324	1.19869523	0.206811409	0.216162503	671.3742356	0.016399645	0.10553068	0.353074701	0.401952073	2.961342849	0.006346901
SACRAMENT	2021	LDT1	1993	5	DSL	0.00776591	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1994	5	DSL	0.00431292	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1995	5	DSL	0.00154986	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1996	5	DSL	0.00375473	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1997	5	DSL	0.00930124	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1998	5	DSL	0.00288496	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	1999	5	DSL	0.00888065	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2000	5	DSL	0.00734064	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2001	5	DSL	0.00733368	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2002	5	DSL	0.00930843	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2003	5	DSL	0.00993134	1.19869523	0.206811409	0.216162503	1326.815661	0.016399645	0.208556945	0.353074701	0.401952073	2.961342849	0.01254318
SACRAMENT	2021	LDT1	2005	5	DSL	0.00082062	1.19869523	0.206811409	0.216162503	1271.298624	0.016399645	0.19983044	0.353074701	0.401952073	2.961342849	0.012018344
SACRAMENT	2021	LDT1	2006	5	DSL	0.00088229	1.19869523	0.206811409	0.216162503	1293.71511	0.016399645	0.203353999	0.353074701	0.401952073	2.961342849	0.01223026
SACRAMENT	2021	LDT1	2007	5	DSL	0.0093798	1.19869523	0.206811409	0.216162503	1246.3124	0.016399645	0.195902953	0.353074701	0.401952073	2.961342849	0.011782134
SACRAMENT	2021	LDT2	1993	5	DSL	0.00067653	1.19869523	0.206811409	0.216162503	1033.129185	0.016399645	0.162393521	0.353074701	0.401952073	2.961342849	0.009766786
SACRAMENT	2021	LDT2	1994	5	DSL	0.00036023	1.19869523	0.206811409	0.216162503	1033.129185	0.016399645	0.162393521	0.353074701	0.401952073	2.961342849	0.009766786
SACRAMENT	2021	LDT2	2001	5	DSL	0.00105703	1.19869523	0.206811409	0.216162503	1033.129185	0.016399645	0.162393521	0.353074701	0.401952073	2.961342849	0.009766786
SACRAMENT	2021	LDT2	2005	5	DSL	0.00440045	1.19869523	0.206811409	0.216162503	1008.643399	0.016399645	0.158544696	0.353074701	0.401952073	2.961342849	0.009535307
SACRAMENT	2021	LDT2	2006	5	DSL	0.00323626	1.19869523	0.206811409	0.216162503	989.3688178	0.016399645	0.155515	0.353074701	0.401952073	2.961342849	0.009353093
SACRAMENT	2021	LDT2	2007	5	DSL	0.0017649	1.19869523	0.206811409	0.216162503	975.2992341	0.016399645	0.153303458	0.353074701	0.401952073	2.961342849	0.009220085
SACRAMENT	2021	MDV	1993	5	DSL	0.00060994	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1994	5	DSL	0.00124926	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1995	5	DSL	0.00328962	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1996	5	DSL	0.00324264	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1997	5	DSL	0.0035329	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	1998	5	DSL	0.00382535	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858

SACRAMENT	2021	MDV	1999	5	DSL	0.00091691	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2000	5	DSL	0.00148846	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2001	5	DSL	0.00269933	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2002	5	DSL	0.00415333	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2003	5	DSL	0.00449807	1.19869523	0.206811409	0.216162503	1100.518508	0.016399645	0.172986184	0.353074701	0.401952073	2.961342849	0.010403858
SACRAMENT	2021	MDV	2004	5	DSL	0.00992805	1.19869523	0.206811409	0.216162503	1262.774441	0.016399645	0.198490557	0.353074701	0.401952073	2.961342849	0.01193776
SACRAMENT	2021	MDV	2005	5	DSL	0.02012558	1.19869523	0.206811409	0.216162503	1232.845924	0.016399645	0.193786211	0.353074701	0.401952073	2.961342849	0.011654828
SACRAMENT	2021	MDV	2006	5	DSL	0.02850417	1.19869523	0.206811409	0.216162503	1209.286965	0.016399645	0.190083071	0.353074701	0.401952073	2.961342849	0.011432111
SACRAMENT	2021	LDT2	2008	5	DSL	0.00587798	0.162970554	0.011154237	0.011658582	947.1455575	0.013446324	0.148878092	0.289491429	0.329566745	3.62485344	0.008953932
SACRAMENT	2021	LDT1	2008	5	DSL	0.00407061	0.162970612	0.011154237	0.011658582	1209.485651	0.013446319	0.190114301	0.289491329	0.329566631	3.624853777	0.011433989
SACRAMENT	2021	LDT2	2009	5	DSL	0.00743231	0.16168178	0.010871916	0.011363496	893.4792421	0.013302304	0.140442494	0.286390783	0.326036866	3.511500368	0.008446592
SACRAMENT	2021	LDT1	2009	5	DSL	0.02066106	0.161681833	0.010871916	0.011363496	1184.206962	0.013302299	0.186140843	0.286390657	0.326036723	3.511501194	0.011195014
SACRAMENT	2021	LDT2	2010	5	DSL	0.01404088	0.160304685	0.010570248	0.011048188	885.0123988	0.013148415	0.139111625	0.283077644	0.322265077	3.390379046	0.00836655
SACRAMENT	2021	LDT1	2010	5	DSL	0.00232824	0.16030473	0.010570248	0.011048188	1123.470288	0.013148408	0.176593884	0.283077491	0.322264903	3.390380458	0.010620834
SACRAMENT	2021	LDT2	2011	5	DSL	0.0114691	0.158839269	0.010249232	0.010712657	856.88578	0.012984657	0.134690512	0.279552012	0.31825138	3.261489481	0.008100652
SACRAMENT	2021	LDT2	2012	5	DSL	0.06528183	0.157285533	0.009908868	0.010356903	835.7403548	0.012811028	0.131366745	0.275813887	0.313995773	3.12483168	0.007900752
SACRAMENT	2021	LDT1	2012	5	DSL	0.00132524	0.157285556	0.009908868	0.010356903	1063.446034	0.012811018	0.167158907	0.275813675	0.313995532	3.124834538	0.010053389
SACRAMENT	2021	LDT2	2013	5	DSL	0.11316125	0.155643476	0.009549156	0.009980927	807.9435614	0.012627529	0.126997477	0.271863269	0.309498257	2.980405654	0.007637972
SACRAMENT	2021	LDT1	2013	5	DSL	0.00429311	0.155643486	0.009549156	0.009980927	1034.391514	0.012627518	0.162591941	0.271863028	0.309497983	2.980409339	0.00977872
SACRAMENT	2021	MDV	2007	5	DSL	0.04836956	0.172953815	0.011986549	0.012528527	1192.089976	0.012623728	0.187379943	0.271781426	0.309405084	6.334182604	0.011269537
SACRAMENT	2021	LDT2	2014	5	DSL	0.11637029	0.153913098	0.009170097	0.009584728	802.6638289	0.012434161	0.126167576	0.267700157	0.304758831	2.828211418	0.00758806
SACRAMENT	2021	MDV	2009	5	DSL	0.03870837	0.167725648	0.011399905	0.011915359	1092.082934	0.012411808	0.171660229	0.267218921	0.304210976	5.434193364	0.010324111
SACRAMENT	2021	MDV	2008	5	DSL	0.02538075	0.171029	0.011705448	0.012234716	1157.678265	0.012336933	0.181970902	0.2656069	0.302375797	6.176174265	0.010944223
SACRAMENT	2021	LDT2	2015	5	DSL	0.17115366	0.152094401	0.008771689	0.009168306	783.9460443	0.012230922	0.123225401	0.263324551	0.299777495	2.668248988	0.007411109
SACRAMENT	2021	MDV	2010	5	DSL	0.07548206	0.165654402	0.011069921	0.011570454	1081.73407	0.012117223	0.170033532	0.260876675	0.29699075	5.261956129	0.010226277
SACRAMENT	2021	LDA	2008	5	DSL	0.01500231	0.165539116	0.011051559	0.011551261	651.5360866	0.012100831	0.1024124	0.260523773	0.296588995	5.252368807	0.006159359
SACRAMENT	2021	LDT2	2016	5	DSL	0.11260656	0.150187385	0.008353934	0.008731662	752.5179851	0.012017814	0.118285348	0.258736451	0.294554248	2.500518386	0.007114001
SACRAMENT	2021	LDA	2009	5	DSL	0.12381042	0.163738349	0.010764667	0.011251398	637.9187462	0.011844715	0.100271943	0.255009744	0.290311639	5.102624358	0.006030626
SACRAMENT	2021	MDV	2011	5	DSL	0.1571602	0.163429739	0.010715495	0.011200002	1047.355431	0.011800818	0.164629688	0.254064664	0.289235729	5.076961286	0.009901275
SACRAMENT	2021	LDT2	2017	5	DSL	0.21462578	0.148192049	0.007916831	0.008274795	721.0899259	0.011794835	0.113345295	0.253935856	0.289089089	2.325019639	0.006816893
SACRAMENT	2021	LDT1	2017	5	DSL	0.00088104	0.148192023	0.007916831	0.008274795	957.6576117	0.011794823	0.15053044	0.253935593	0.289088789	2.325026044	0.009053308
SACRAMENT	2021	LDA	2010	5	DSL	0.16429597	0.16181533	0.010458299	0.010931177	605.2005949	0.011571211	0.095129106	0.249121367	0.283608114	4.942713863	0.005721322
SACRAMENT	2021	LDT2	2018	5	DSL	0.22493553	0.146108394	0.00746038	0.007797705	689.6618667	0.011561987	0.108405241	0.248922765	0.283382018	2.141752779	0.006519785
SACRAMENT	2021	LDT1	2018	5	DSL	0.00093058	0.146108375	0.00746038	0.007797705	928.2283042	0.011561977	0.145904563	0.248922554	0.283381778	2.141759143	0.008775096
SACRAMENT	2021	MDV	2012	5	DSL	0.27845865	0.161051659	0.010336626	0.010804003	1021.509774	0.011462594	0.160567111	0.24678289	0.280945913	4.879208832	0.009656941
SACRAMENT	2021	LDT2	2019	5	DSL	0.23158183	0.143936421	0.006984581	0.007300393	658.2338075	0.011319268	0.103465188	0.243697178	0.277433035	1.950717844	0.006222677
SACRAMENT	2021	LDT1	2019	5	DSL	0.00096888	0.143936425	0.006984581	0.007300393	898.7989967	0.011319263	0.141278686	0.243697063	0.277432904	1.950723493	0.008496883
SACRAMENT	2021	LDA	2011	5	DSL	0.29241773	0.159770058	0.010132454	0.010590598	626.205932	0.01128032	0.098430852	0.242858645	0.276478421	4.772637329	0.005919898
SACRAMENT	2021	MDV	2013	5	DSL	0.09800436	0.158520163	0.009933316	0.010382457	987.5342739	0.011102549	0.155226636	0.239031352	0.272121302	4.668698765	0.00933575
SACRAMENT	2021	LDT1	2020	5	DSL	0.00099098	0.14167618	0.006489435	0.006782858	869.3696892	0.011066681	0.136652808	0.238259137	0.271242187	1.751918841	0.00821867
SACRAMENT	2021	LDT2	2020	5	DSL	0.23716328	0.141676131	0.006489435	0.006782858	626.8057484	0.01106668	0.098525135	0.238259094	0.271242138	1.751914882	0.005925568
SACRAMENT	2021	LDA	2012	5	DSL	0.36181481	0.157602534	0.009787132	0.010229662	572.8662153	0.010972041	0.090046591	0.236221578	0.268922561	4.592394754	0.005415646
SACRAMENT	2021	LDT1	2021	5	DSL	0.00087891	0.139327649	0.00597494	0.0062451	839.9403817	0.010804234	0.132026931	0.232608794	0.264809647	1.545344859	0.007940457
SACRAMENT	2021	LDT2	2021	5	DSL	0.20439898	0.139327524	0.00597494	0.0062451	595.3776892	0.010804221	0.093585082	0.232608513	0.264809327	1.545343948	0.00562846
SACRAMENT	2021	MDV	2014	5	DSL	0.30897859	0.155835251	0.009505564	0.009935364	981.0809559	0.010720686	0.154212264	0.23081005	0.262761897	4.445431093	0.009274743
SACRAMENT	2021	LDA	2013	5	DSL	0.55894798	0.155312759	0.009422332	0.009848368	557.2148781	0.010646374	0.087586419	0.229210168	0.260940537	4.401986132	0.005267684
SACRAMENT	2021	MDV	2015	5	DSL	0.66201664	0.152996921	0.00905337	0.009462724	958.2025586	0.010317002	0.150616098	0.222118985	0.252867697	4.209405831	0.00905846
SACRAMENT	2021	LDA	2014	5	DSL	0.6924839	0.152900732	0.009038056	0.009446717	557.8870328	0.01030332	0.087692073	0.221824417	0.252532351	4.201411444	0.005274039
SACRAMENT	2021	LDA	2015	5	DSL	0.64403521	0.150366455	0.008634303	0.009024708	547.5856651	0.009942879	0.086072841	0.21406433	0.243698007	3.990670659	0.005176654
SACRAMENT	2021	MDV	2016	5	DSL	0.33776429	0.150005175	0.008576735	0.008964537	919.7886308	0.009891499	0.144577964	0.212958155	0.242438701	3.960623006	0.00869531
SACRAMENT	2021	LDA	2016	5	DSL	0.06338946	0.147709927	0.008211073	0.008582341	531.7324337	0.009565051	0.083580934	0.20592991	0.234437511	3.769763726	0.005026784
SACRAMENT	2021	MDV	2017	5	DSL	0.45605455	0.146860012	0.008075657	0.008440803	881.374703	0.009444176	0.138539829	0.203327558	0.231474907	3.699082663	0.008332161
SACRAMENT	2021	LDA	2017	5	DSL	0.90022003	0.14493115	0.007768366	0.008119617	515.8792024	0.009169836	0.081089027	0.197421164	0.22475087	3.538690571	0.004876914
SACRAMENT	2021	MDV	2018	5	DSL	0.48455531	0.143561433	0.007550138	0.007891521	842.9607752	0.008975034	0.132501695	0.193227191	0.21997631	3.424784866	0.007969011
SACRAMENT	2021	LDA	2018	5	DSL	0.95354026	0.142030124	0.007306182	0.007636535	500.025971	0.008757234	0.078597119	0.188538099	0.214638091	3.297451091	0.004727044
SACRAMENT	2021	MDV	2019	5	DSL	0.50457379	0.140109436	0.007000176	0.007316693	804.5468474	0.008484071	0.12646356	0.182657048	0.207942905	3.137729707	0.007605861
SACRAMENT	2021	LDA	2019	5	DSL	0.97789054	0.13900685	0.006824521	0.007133096	484.1727397	0.008327247	0.076105212	0.179280726	0.204099187	3.046045145	0.004577174
SACRAMENT	2021	MDV	2020	5	DSL	0.52694275	0.136504022	0.006425773	0.006716318	766.1329197	0.007971287	0.120425426	0.171617122	0.195374683	2.837917313	0.007242711
SACRAMENT	2021	LDA	2020	5	DSL	0.94770039	0.135861328	0.006323383	0.006609299	468.3195083	0.007879874	0.073613305	0.169649055	0.19313417	2.784472549	0.004427304
SACRAMENT	2021	MDV	2021	5	DSL	0.43335071	0.028364211	0.000971155	0.001015066	727.7189919	0.00218371	0.114387291	0.047014	0.053522314	1.485916472	0.006879562
SACRAMENT	2021	LDA	2021	5	DSL	0.78489661	0.028253972	0.000967128	0.001010857	452.4662769	0.002171384	0.071121398	0.046748612	0.053220187	1.476216098	0.004277433

Wtd Ave g/mile **0.0852**

DPM

APPENDIX B-4

Drag Racing Emission Factors

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EMFAC2017 (v1.0.2) Emission Rates **Race Vehicles Racing:** 50 mph, GAS only, 1977 only, MDV only
Region Type: County
Region: SACRAMENTO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Yea	Vehicle Cate	Model Year	Speed	Fuel	VMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
SACRAMENT	2021	MDV	1977	50	GAS	142.292912	12.9163389	0.044730715	0.046877009	890.5423385	0.75023561	0.363351746	6.791181567	7.383325289	175.9624802	0.008812638
						Wtd Ave g/mile	**12.916**	**0.0447**		**890.542**	**0.750**	**0.363**	**6.791**	**7.383**		

	Acetaldehyde	Benzene	Butadiene	Ethylbenzene	Formaldehyde	Naphthalene
Percent TOG	0.28%	2.47%	0.55%	1.05%	1.58%	0.05%
	0.0207	**0.182**	**0.0406**	**0.0775**	**0.117**	**0.00369**

TOG speciation from Table 14 of the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards, dated May 2011.

APPENDIX B-5

Drag Race Staging and Return Emission Factors

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EMFAC2017 (v1.0.2) Emission Rates **Race Vehicles Staging and Return:** 15 mph, GAS only, 1977 only, MDV only
Region Type: County
Region: SACRAMENTO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Yea	Vehicle Cate	Model Year	Speed	Fuel	VMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
SACRAMENT	2021	MDV	1977	15	GAS	19.8858003	**9.469128132**	**0.115246832**	0.120776669	1568.087611	1.929831196	0.266377667	17.46895755	**18.99212895**	316.3879042	0.015517498
						Wtd Ave g/mile	**9.469**	**0.115**		**1568.088**	**1.930**	**0.266**	**17.469**	**18.992**		

	Acetaldehyde	Benzene	Butadiene	Ethylbenzene	Formaldehyde	Naphthalene
Percent TOG	0.28%	2.47%	0.55%	1.05%	1.58%	0.05%
	0.0532	**0.469**	**0.104**	**0.199**	**0.300**	**0.00950**

TOG speciation from Table 14 of the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards, dated May 2011.

APPENDIX B-6

Tow Vehicle Travel Emission Factors

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EMFAC2017 (v1.0.2) Emission Rates **Tow Vehicles to/from Raceway** All Speeds, DSL only, ALL YEARS ... LHD2 only
Region Type: County
Region: SACRAMENTO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Yea	Vehicle Cate	Model Year	Speed	Fuel	VMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
SACRAMENT	2021	LHD2	1991	5	DSL	5.731690018	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	LHD2	1992	5	DSL	8.428536501	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	LHD2	1993	5	DSL	20.07862385	6.751893377	0.170097781	0.177788848	1389.089524	0.055747484	0.218345529	1.200210511	1.366359871	3.910217077	0.013131891
SACRAMENT	2021	LHD2	1994	5	DSL	20.26223495	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1995	5	DSL	11.45378996	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1996	5	DSL	24.86180811	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1997	5	DSL	16.42036434	6.758114468	0.171478573	0.179232073	1389.089524	0.055624992	0.218345529	1.197573334	1.36335762	3.893085794	0.013131891
SACRAMENT	2021	LHD2	1998	5	DSL	12.95311856	6.756998998	0.17124926	0.178992391	1389.089524	0.055521889	0.218345529	1.195353583	1.360830582	3.885874313	0.013131891
SACRAMENT	2021	LHD2	1999	5	DSL	52.10411064	6.754523283	0.170740313	0.178460432	1389.089524	0.055293058	0.218345529	1.190426987	1.35522198	3.869868888	0.013131891
SACRAMENT	2021	LHD2	2000	5	DSL	42.73277831	6.750687322	0.169951733	0.177636196	1389.089524	0.054938499	0.218345529	1.182793545	1.346531813	3.845069517	0.013131891
SACRAMENT	2021	LHD2	2001	5	DSL	83.86978365	6.745491115	0.16888352	0.176519683	1389.089524	0.054458213	0.218345529	1.172453256	1.334760082	3.811476202	0.013131891
SACRAMENT	2021	LHD2	1987	5	DSL	5.244519792	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1988	5	DSL	2.097923945	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1989	5	DSL	6.864688663	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	1990	5	DSL	4.757608964	3.824032359	0.636003251	0.664760495	1389.089524	0.043376663	0.218345529	0.933874007	1.063153468	3.654588473	0.013131891
SACRAMENT	2021	LHD2	2002	5	DSL	44.4456053	5.191248086	0.17058653	0.178299696	1389.089524	0.04211872	0.218345529	0.906791242	1.032321542	3.833006677	0.013131891
SACRAMENT	2021	LHD2	2003	5	DSL	58.06020845	5.186655723	0.169522409	0.17718746	1389.089524	0.041692838	0.218345529	0.897622262	1.021883267	3.79430036	0.013131891
SACRAMENT	2021	LHD2	1991	10	DSL	19.06048168	7.100741256	0.118411913	0.123765974	1234.527259	0.038808068	0.194050493	0.835514855	0.951178114	2.777228833	0.011670722
SACRAMENT	2021	LHD2	1992	10	DSL	28.02872539	7.100741256	0.118411913	0.123765974	1234.527259	0.038808068	0.194050493	0.835514855	0.951178114	2.777228833	0.011670722
SACRAMENT	2021	LHD2	1993	10	DSL	66.77057568	7.100741256	0.118411913	0.123765974	1234.527259	0.038808068	0.194050493	0.835514855	0.951178114	2.777228833	0.011670722
SACRAMENT	2021	LHD2	1994	10	DSL	67.38116627	7.10728377	0.119373138	0.124770662	1234.527259	0.038722796	0.194050493	0.83367901	0.949088126	2.765061351	0.011670722
SACRAMENT	2021	LHD2	1997	10	DSL	54.60519546	7.10728377	0.119373138	0.124770662	1234.527259	0.038722796	0.194050493	0.83367901	0.949088126	2.765061351	0.011670722
SACRAMENT	2021	LHD2	1995	10	DSL	38.08907197	7.10728377	0.119373138	0.124770662	1234.527259	0.038722796	0.194050493	0.83367901	0.949088126	2.765061351	0.011670722
SACRAMENT	2021	LHD2	1996	10	DSL	82.67684341	7.10728377	0.119373138	0.124770662	1234.527259	0.038722796	0.194050493	0.83367901	0.949088126	2.765061351	0.011670722
SACRAMENT	2021	LHD2	1998	10	DSL	43.07502293	7.106110667	0.119213504	0.12460381	1234.527259	0.038651022	0.194050493	0.832133752	0.947328953	2.759939403	0.011670722
SACRAMENT	2021	LHD2	1999	10	DSL	173.2699157	7.10350704	0.118859206	0.124233491	1234.527259	0.038491724	0.194050493	0.82870415	0.943424579	2.748571561	0.011670722
SACRAMENT	2021	LHD2	2000	10	DSL	142.1059645	7.099472887	0.118310243	0.123659707	1234.527259	0.038244901	0.194050493	0.823390204	0.937375004	2.730957826	0.011670722
SACRAMENT	2021	LHD2	2001	10	DSL	278.9052565	7.09400821	0.117566617	0.122882458	1234.527259	0.037910554	0.194050493	0.816191913	0.929180228	2.707098198	0.011670722
SACRAMENT	2021	LHD2	2010	5	DSL	35.78321142	0.888395474	0.034030116	0.035568807	1389.089524	0.037573022	0.218345529	0.808925051	0.920907389	4.387591862	0.013131891
SACRAMENT	2021	LHD2	2011	5	DSL	90.76811913	0.863717157	0.032416633	0.033882369	1389.089524	0.037015503	0.218345529	0.796921976	0.907242687	4.188812639	0.013131891
SACRAMENT	2021	LHD2	2012	5	DSL	114.9043335	0.837253142	0.0306864	0.032073903	1389.089524	0.036417641	0.218345529	0.784050369	0.892589218	3.975650038	0.013131891
SACRAMENT	2021	LHD2	2007	5	DSL	110.6347722	2.626517293	0.1008126	0.105370899	1389.089524	0.035798412	0.218345529	0.770718739	0.877412043	4.235206679	0.013131891
SACRAMENT	2021	LHD2	2013	5	DSL	83.21944182	0.809003429	0.028839418	0.030143409	1389.089524	0.035779437	0.218345529	0.770310223	0.876946975	3.748104058	0.013131891
SACRAMENT	2021	LHD2	2008	5	DSL	131.094339	2.613053542	0.099183039	0.103667655	1389.089524	0.035253113	0.218345529	0.75897876	0.864046858	4.121505585	0.013131891
SACRAMENT	2021	LHD2	2014	5	DSL	125.9973428	0.778968013	0.026875687	0.028090886	1357.140465	0.035100891	0.213323582	0.755701526	0.860315945	3.5061747	0.012829858
SACRAMENT	2021	LHD2	2009	5	DSL	40.67023285	2.598602216	0.097412474	0.101817034	1389.089524	0.034656926	0.218345529	0.74614321	0.849434437	3.997194604	0.013131891
SACRAMENT	2021	LHD2	1985	5	DSL	2.137105237	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD2	1983	5	DSL	0.509108362	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD2	1984	5	DSL	0.688071381	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD2	1986	5	DSL	5.248807991	3.752930041	0.560495925	0.585839064	1389.089524	0.034539947	0.218345529	0.743624732	0.846567318	2.907613832	0.013131891
SACRAMENT	2021	LHD2	2015	5	DSL	245.4439394	0.747146894	0.024795206	0.025916335	1347.416838	0.034382002	0.211795163	0.740224265	0.842696112	3.249861964	0.012737935
SACRAMENT	2021	LHD2	2004	5	DSL	70.31124894	4.318299509	0.16827545	0.175884119	1389.089524	0.034195977	0.218345529	0.736219247	0.838136665	3.748943547	0.013131891
SACRAMENT	2021	LHD2	2005	5	DSL	142.8626973	4.313141992	0.166845654	0.174389674	1389.089524	0.033722584	0.218345529	0.726027372	0.826533894	3.696936247	0.013131891
SACRAMENT	2021	LHD2	2016	5	DSL	191.6240619	0.625780743	0.022597976	0.023619756	1305.744152	0.033622769	0.205244797	0.723878419	0.824087453	2.979165851	0.012343978
SACRAMENT	2021	LHD2	2006	5	DSL	165.5623022	4.307324936	0.165233021	0.172704125	1389.089524	0.033188655	0.218345529	0.714532199	0.813447403	3.638278465	0.013131891
SACRAMENT	2021	LHD2	2017	5	DSL	162.7446966	0.511307625	0.020283996	0.021201148	1264.071467	0.03282319	0.198694431	0.70666396	0.804489937	2.694086361	0.011950021
SACRAMENT	2021	LHD2	2018	5	DSL	179.6556101	0.39484915	0.017853267	0.018660512	1180.726095	0.031983265	0.1855937	0.688580854	0.783903523	2.3946235	0.011162108
SACRAMENT	2021	LHD2	2019	5	DSL	199.2450424	0.319556459	0.015305788	0.015997848	1180.726095	0.03110299	0.1855937	0.669629054	0.762328158	2.080777274	0.011162108
SACRAMENT	2021	LHD2	1987	10	DSL	17.44041864	4.021607395	0.442747467	0.462766543	1234.527259	0.030196241	0.194050493	0.650107292	0.74010393	2.595668803	0.011670722
SACRAMENT	2021	LHD2	1988	10	DSL	6.9765533	4.021607395	0.442747467	0.462766543	1234.527259	0.030196241	0.194050493	0.650107292	0.74010393	2.595668803	0.011670722
SACRAMENT	2021	LHD2	1989	10	DSL	22.82821857	4.021607395	0.442747467	0.462766543	1234.527259	0.030196241	0.194050493	0.650107292	0.74010393	2.595668803	0.011670722
SACRAMENT	2021	LHD2	1990	10	DSL	15.82121821	4.021607395	0.442747467	0.462766543	1234.527259	0.030196241	0.194050493	0.650107292	0.74010393	2.595668803	0.011670722
SACRAMENT	2021	LHD2	2020	5	DSL	225.6296366	0.249358941	0.01264156	0.013213156	1180.726095	0.030182363	0.1855937	0.649808501	0.739763776	1.752547695	0.011162108
SACRAMENT	2021	LHD2	2002	10	DSL	147.8018949	5.459462612	0.118752151	0.124121597	1234.527259	0.029320537	0.194050493	0.63125389	0.718640585	2.722390202	0.011670722
SACRAMENT	2021	LHD2	2021	5	DSL	205.8286313	0.186289139	0.009860583	0.010306435	1151.207943	0.029221381	0.180953857	0.62911912	0.716210292	1.409934777	0.010883055
SACRAMENT	2021	LHD2	2003	10	DSL	193.0766556	5.454632977	0.118011373	0.123347324	1234.527259	0.029024063	0.194050493	0.624870993	0.711374082	2.694899069	0.011670722
SACRAMENT	2021	LHD2	1991	15	DSL	41.27954291	7.470250807	0.086260398	0.090160711	821.7876738	0.028270799	0.129173578	0.608653658	0.692911723	2.077285739	0.007768849
SACRAMENT	2021	LHD2	1992	15	DSL	60.70218959	7.470250807	0.086260398	0.090160711	821.7876738	0.028270799	0.129173578	0.608653658	0.692911723	2.077285739	0.007768849
SACRAMENT	2021	LHD2	1993	15	DSL	144.6059386	7.470250807	0.086260398	0.090160711	821.7876738	0.028270799	0.129173578	0.608653658	0.692911723	2.077285739	0.007768849
SACRAMENT	2021	LHD2	1994	15	DSL	145.9283029	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1995	15	DSL	82.49001822	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1996	15	DSL	179.0543577	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1997	15	DSL	118.2592102	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1998	15	DSL	93.28815962	7.475899633	0.086844339	0.090771054	821.7876738	0.028156395	0.129173578	0.6061906	0.690107696	2.064353752	0.007768849
SACRAMENT	2021	LHD2	2010	10	DSL	118.9954871	0.737725902	0.03198527	0.033431502	1234.527259	0.028126933	0.194050493	0.605556316	0.689385606	3.284524273	0.011670722
SACRAMENT	2021	LHD2	1999	15	DSL	375.2529994	7.473160518	0.086586241	0.090501286	821.7876738	0.028040349	0.129173578	0.603692213	0.687263448	2.05585094	0.007768849
SACRAMENT	2021	LHD2	2000	15	DSL	307.7608089	7.468916435	0.086186334	0.090083297	821.7876738	0.027860545	0.129173578	0.599821123	0.68285647	2.042676383	0.007768849
SACRAMENT	2021	LHD2	2011	10	DSL	301.8453661	0.717232963	0.03046874	0.031846402	1234.527259	0.027709577	0.194050493	0.596570888	0.679156294	3.13571937	0.011670722
SACRAMENT	2021	LHD2	2001	15	DSL	604.0288854	7.463167386	0.085644619	0.089517089	821.7876738	0.027616981	0.129173578	0.594577331	0.676886761	2.024830081	0.007768849
SACRAMENT	2021	LHD2	2012	10	DSL	382.1092796	0.695257177	0.028842476	0.030146605	1234.527259	0.027262022	0.194050493	0.586935282	0.668186797	2.976147158	0.011670722
SACRAMENT	2021	LHD2	2013	10	DSL	276.7425735	0.671798542	0.027106478	0.028332113	1234.527259	0.026784267	0.194050493	0.576649493	0.65647711	2.805807638	0.011670722
SACRAMENT	2021	LHD2	2014	10	DSL	418.9985913	0.646857055	0.025260746	0.026402925	1206.133132	0.026276311	0.189587332	0.565713513	0.644027223	2.624700809	0.011402296
SACRAMENT	2021	LHD2	2007	10	DSL	367.9110424	2.65694517	0.074831424	0.078214969	1234.527259	0.02594351	0.194050493	0.558548496	0.635870328	3.101938039	0.011670722
SACRAMENT	2021	LHD2	2015	10	DSL	816.2129662	0.620432715	0.02330528	0.024359041	1197.491441	0.025738155	0.188228979	0.55412733	0.630837125	2.432826672	0.011320601
SACRAMENT	2021	LHD2	2008	10	DSL	435.948427	2.644908562	0.073543704	0.076869024	1234.527259	0.025552601	0.194050493	0.55013245	0.626289219	3.018211333	0.011670722
SACRAMENT	2021	LHD2	2016	10	DSL	637.2373434	0.519672784	0.021240079	0.022200462	1160.455624	0.025169798	0.182407464	0.541890931	0.616906797	2.230185226	0.010970479
SACRAMENT	2021	LHD2	2009	10	DSL	135.2470608	2.632045688	0.072142943	0.075404927	1234.527259	0.025125065	0.194050493	0.540927861	0.615810407	2.926660022	0.011670722
SACRAMENT	2021	LHD2	2017	10	DSL	541.2002914	0.424634587	0.019065145	0.019927186	1123.419806	0.024571238	0.176585949	0.529004293	0.602236217	2.016776475	0.010620357
SACRAMENT	2021	LHD2	1983	10	DSL	1.693017343	3.946831456	0.390183778	0.407826157	1234.527259	0.024044648	0.194050493	0.517667113	0.589329591	2.065130608	0.011670722
SACRAMENT	2021	LHD2	1984	10	DSL	2.28815095	3.946831456	0.390183778	0.407826157	1234.527259	0.024044648	0.194050493	0.517667113	0.589329591	2.065130608	0.011670722
SACRAMENT	2021	LHD2	1985	10	DSL	7.106848956	3.946831456	0.390183778	0.407826157	1234.527259	0.024044648	0.194050493	0.517667113	0.589329591	2.065130608	0.011670722
SACRAMENT	2021	LHD2	1986	10	DSL	17.45467885	3.946831456	0.390183778	0.407826157	1234.527259	0.024044648	0.194050493	0.517667113	0.589329591	2.065130608	0.011670722
SACRAMENT	2021	LHD2	2018	10	DSL	597.4367865	0.32794239	0.016780477	0.017539215	1049.34817	0.023942475	0.164942919	0.515467391	0.586825354	1.792600419	0.009920114
SACRAMENT	2021	LHD2	2004	10	DSL	233.816949	4.541411685	0.117143315	0.122440016	1234.527259	0.023805196	0.194050493	0.512511857	0.583460675	2.662684426	0.011670722
SACRAMENT	2021	LHD2	2005	10	DSL	475.0835821	4.535987696	0.116147977	0.121399673	1234.527259	0.023475648	0.194050493	0.505416883	0.575383518	2.625746278	0.011670722
SACRAMENT	2021	LHD2	2019	10	DSL	662.5805773	0.265418958	0.014386074	0.015036549	1049.34817	0.023283507	0.164942919	0.50128019	0.570674169	1.557657066	0.009920114
SACRAMENT	2021	LHD2	2006	10	DSL	550.5701142	4.529870092	0.115025358	0.120226294	1234.527259	0.023103959	0.194050493	0.497414629	0.566273485	2.584084632	0.011670722
SACRAMENT	2021	LHD2	2020	10	DSL	750.3213783	0.207126176	0.011881938	0.012419186	1049.34817	0.022594331	0.164942919	0.486442646	0.553782611	1.311946422	0.009920114
SACRAMENT	2021	LHD2	1987	15	DSL	37.77095048	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LHD2	1988	15	DSL	15.10921582	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LHD2	1989	15	DSL	49.43938164	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LHD2	1990	15	DSL	34.26422622	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LHD2	2021	10	DSL	684.4740108	0.154751277	0.009268067	0.009687128	1023.114466	0.021874946	0.160819346	0.470954703	0.536150618	1.0554685	0.009672111
SACRAMENT	2021	LHD2	1991	20	DSL	45.25571226	7.834905486	0.065757015	0.068730255	700.9244292	0.021551064	0.110175559	0.463981718	0.528212338	1.636278452	0.006626257
SACRAMENT	2021	LHD2	1992	20	DSL	66.54920651	7.834905486	0.065757015	0.068730255	700.9244292	0.021551064	0.110175559	0.463981718	0.528212338	1.636278452	0.006626257
SACRAMENT	2021	LHD2	1993	20	DSL	158.5348162	7.834905486	0.065757015	0.068730255	700.9244292	0.021551064	0.110175559	0.463981718	0.528212338	1.636278452	0.006626257
SACRAMENT	2021	LHD2	1994	20	DSL	159.9845546	7.842124448	0.066290807	0.069288183	700.9244292	0.021503711	0.110175559	0.462962228	0.527051717	1.629109656	0.006626257
SACRAMENT	2021	LHD2	1995	20	DSL	90.43570412	7.842124448	0.066290807	0.069288183	700.9244292	0.021503711	0.110175559	0.462962228	0.527051717	1.629109656	0.006626257
SACRAMENT	2021	LHD2	1996	20	DSL	196.3014104	7.842124448	0.066290807	0.069288183	700.9244292	0.021503711	0.110175559	0.462962228	0.527051717	1.629109656	0.006626257

SACRAMENT	2021	LHD2	1997	20	DSL	129.6502919	7.842124448	0.066290807	0.069288183	700.9244292	0.021503711	0.110175559	0.462962228	0.527051717	1.629109656	0.006626257
SACRAMENT	2021	LHD2	1998	20	DSL	102.2739549	7.840830055	0.066202158	0.069195526	700.9244292	0.021463853	0.110175559	0.462104109	0.526074806	1.626091923	0.006626257
SACRAMENT	2021	LHD2	1999	20	DSL	411.3984935	7.837957232	0.066005407	0.068989879	700.9244292	0.02137539	0.110175559	0.460199568	0.523906612	1.619394256	0.006626257
SACRAMENT	2021	LHD2	2002	15	DSL	320.0965624	5.743563034	0.086508254	0.090419773	821.7876738	0.021359347	0.129173578	0.459854168	0.523513397	2.036268051	0.007768849
SACRAMENT	2021	LHD2	2000	20	DSL	337.4052528	7.833505978	0.065700555	0.068671243	700.9244292	0.021238324	0.110175559	0.457248604	0.520547136	1.609016654	0.006626257
SACRAMENT	2021	LHD2	2003	15	DSL	418.1487238	5.738482073	0.085968614	0.089855733	821.7876738	0.021143373	0.129173578	0.455204373	0.518219914	2.01570549	0.007768849
SACRAMENT	2021	LHD2	2001	20	DSL	662.2107589	7.827476293	0.065287601	0.068239617	700.9244292	0.021052653	0.110175559	0.453251218	0.515996377	1.594959118	0.006626257
SACRAMENT	2021	LHD2	1983	15	DSL	3.666590553	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD2	1984	15	DSL	4.955479453	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD2	1985	15	DSL	15.39139889	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD2	1986	15	DSL	37.80183401	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD2	2004	15	DSL	506.3805281	4.777738419	0.085336253	0.08919478	821.7876738	0.017341546	0.129173578	0.373353285	0.425037893	1.991609881	0.007768849
SACRAMENT	2021	LHD2	1991	25	DSL	48.43568558	8.235844229	0.052455469	0.054827273	624.6333349	0.017191644	0.098183662	0.370125968	0.421363806	1.357354118	0.005905031
SACRAMENT	2021	LHD2	1992	25	DSL	71.22540517	8.235844229	0.052455469	0.054827273	624.6333349	0.017191644	0.098183662	0.370125968	0.421363806	1.357354118	0.005905031
SACRAMENT	2021	LHD2	1993	25	DSL	169.6745478	8.235844229	0.052455469	0.054827273	624.6333349	0.017191644	0.098183662	0.370125968	0.421363806	1.357354118	0.005905031
SACRAMENT	2021	LHD2	1994	25	DSL	171.2261546	8.243432609	0.052881284	0.055272341	624.6333349	0.017153869	0.098183662	0.369312704	0.42043796	1.351407334	0.005905031
SACRAMENT	2021	LHD2	1995	25	DSL	96.79033012	8.243432609	0.052881284	0.055272341	624.6333349	0.017153869	0.098183662	0.369312704	0.42043796	1.351407334	0.005905031
SACRAMENT	2021	LHD2	1996	25	DSL	210.094879	8.243432609	0.052881284	0.055272341	624.6333349	0.017153869	0.098183662	0.369312704	0.42043796	1.351407334	0.005905031
SACRAMENT	2021	LHD2	1997	25	DSL	138.7604009	8.243432609	0.052881284	0.055272341	624.6333349	0.017153869	0.098183662	0.369312704	0.42043796	1.351407334	0.005905031
SACRAMENT	2021	LHD2	1998	25	DSL	109.4604167	8.242071978	0.052810567	0.055198427	624.6333349	0.017122074	0.098183662	0.368628168	0.419658661	1.348904012	0.005905031
SACRAMENT	2021	LHD2	2005	15	DSL	1028.894938	4.772032177	0.084611172	0.088436913	821.7876738	0.017101478	0.129173578	0.368184757	0.419153867	1.96398123	0.007768849
SACRAMENT	2021	LHD2	1999	25	DSL	440.3061422	8.239052143	0.052653616	0.055034379	624.6333349	0.017051506	0.098183662	0.367108883	0.417929057	1.343348046	0.005905031
SACRAMENT	2021	LHD2	2000	25	DSL	361.1136345	8.234373103	0.052410431	0.054780198	624.6333349	0.016942166	0.098183662	0.36475485	0.415249146	1.334739438	0.005905031
SACRAMENT	2021	LHD2	2006	15	DSL	1192.377141	4.765596223	0.083793369	0.087582134	821.7876738	0.016830711	0.129173578	0.362355297	0.412517415	1.93281954	0.007768849
SACRAMENT	2021	LHD2	2001	25	DSL	708.7421786	8.228034859	0.05208101	0.054435883	624.6333349	0.016794053	0.098183662	0.361566068	0.41161893	1.323078186	0.005905031
SACRAMENT	2021	LHD2	1987	20	DSL	41.40916168	4.437411914	0.245868436	0.256985515	700.9244292	0.016768707	0.110175559	0.361020389	0.410997711	1.529307517	0.006626257
SACRAMENT	2021	LHD2	1988	20	DSL	16.56458079	4.437411914	0.245868436	0.256985515	700.9244292	0.016768707	0.110175559	0.361020389	0.410997711	1.529307517	0.006626257
SACRAMENT	2021	LHD2	1989	20	DSL	54.20153112	4.437411914	0.245868436	0.256985515	700.9244292	0.016768707	0.110175559	0.361020389	0.410997711	1.529307517	0.006626257
SACRAMENT	2021	LHD2	1990	20	DSL	37.56465923	4.437411914	0.245868436	0.256985515	700.9244292	0.016768707	0.110175559	0.361020389	0.410997711	1.529307517	0.006626257
SACRAMENT	2021	LHD2	2002	20	DSL	350.9292231	6.023930747	0.065945957	0.068927741	700.9244292	0.016282407	0.110175559	0.350550636	0.399078593	1.60396881	0.006626257
SACRAMENT	2021	LHD2	2003	20	DSL	458.4260626	6.018601762	0.065534586	0.068497769	700.9244292	0.016117768	0.110175559	0.347006059	0.395043327	1.587771675	0.006626257
SACRAMENT	2021	LHD2	2007	15	DSL	796.7899194	2.644187853	0.057089659	0.059671	821.7876738	0.015393116	0.129173578	0.331404723	0.377282244	1.844166723	0.007768849
SACRAMENT	2021	LHD2	2008	15	DSL	944.1394032	2.634570039	0.05606666	0.058601745	821.7876738	0.015147099	0.129173578	0.326108116	0.371252409	1.796602226	0.007768849
SACRAMENT	2021	LHD2	2009	15	DSL	292.9063883	2.624387556	0.054953069	0.057437802	821.7876738	0.014878519	0.129173578	0.320325754	0.364669574	1.744650061	0.007768849
SACRAMENT	2021	LHD2	1991	30	DSL	40.88585507	8.607826806	0.043788138	0.045768043	563.3196333	0.014351031	0.088546002	0.30896925	0.351740949	1.185772455	0.005325396
SACRAMENT	2021	LHD2	1992	30	DSL	60.12326569	8.607826806	0.043788138	0.045768043	563.3196333	0.014351031	0.088546002	0.30896925	0.351740949	1.185772455	0.005325396
SACRAMENT	2021	LHD2	1993	30	DSL	143.2268148	8.607826806	0.043788138	0.045768043	563.3196333	0.014351031	0.088546002	0.30896925	0.351740949	1.185772455	0.005325396
SACRAMENT	2021	LHD2	1994	30	DSL	144.5365676	8.615757925	0.044143594	0.046139572	563.3196333	0.014319498	0.088546002	0.308290363	0.350968082	1.180577397	0.005325396
SACRAMENT	2021	LHD2	1995	30	DSL	81.70330124	8.615757925	0.044143594	0.046139572	563.3196333	0.014319498	0.088546002	0.308290363	0.350968082	1.180577397	0.005325396
SACRAMENT	2021	LHD2	1996	30	DSL	177.3466953	8.615757925	0.044143594	0.046139572	563.3196333	0.014319498	0.088546002	0.308290363	0.350968082	1.180577397	0.005325396
SACRAMENT	2021	LHD2	1997	30	DSL	117.1313582	8.615757925	0.044143594	0.046139572	563.3196333	0.014319498	0.088546002	0.308290363	0.350968082	1.180577397	0.005325396
SACRAMENT	2021	LHD2	1998	30	DSL	92.39845949	8.614335839	0.044084562	0.046077871	563.3196333	0.014292956	0.088546002	0.307718934	0.350317548	1.178390518	0.005325396
SACRAMENT	2021	LHD2	1999	30	DSL	371.6741676	8.611179609	0.043953545	0.045940929	563.3196333	0.014234049	0.088546002	0.306450685	0.34887373	1.173536876	0.005325396
SACRAMENT	2021	LHD2	2000	30	DSL	304.8256579	8.606289235	0.043750541	0.045728746	563.3196333	0.014142775	0.088546002	0.304485613	0.346636627	1.166016472	0.005325396
SACRAMENT	2021	LHD2	2001	30	DSL	598.2681911	8.599664715	0.043475552	0.045441323	563.3196333	0.014019135	0.088546002	0.301823721	0.34360624	1.155829307	0.005325396
SACRAMENT	2021	LHD2	2010	15	DSL	257.7101355	0.494132178	0.027895579	0.029156894	821.7876738	0.013733784	0.129173578	0.295680289	0.336612351	1.603763451	0.007768849
SACRAMENT	2021	LHD2	2011	15	DSL	653.7105909	0.480405914	0.026572955	0.027774466	821.7876738	0.013529998	0.129173578	0.291292896	0.331617595	1.531105176	0.007768849
SACRAMENT	2021	LHD2	1987	25	DSL	44.31885026	4.664489363	0.196133359	0.205001639	624.6333349	0.013376678	0.098183662	0.287991996	0.32785974	1.268617731	0.005905031
SACRAMENT	2021	LHD2	1988	25	DSL	17.7285206	4.664489363	0.196133359	0.205001639	624.6333349	0.013376678	0.098183662	0.287991996	0.32785974	1.268617731	0.005905031
SACRAMENT	2021	LHD2	1989	25	DSL	58.01009835	4.664489363	0.196133359	0.205001639	624.6333349	0.013376678	0.098183662	0.287991996	0.32785974	1.268617731	0.005905031
SACRAMENT	2021	LHD2	1990	25	DSL	40.20420699	4.664489363	0.196133359	0.205001639	624.6333349	0.013376678	0.098183662	0.287991996	0.32785974	1.268617731	0.005905031
SACRAMENT	2021	LHD2	1983	20	DSL	4.019767549	4.354904695	0.216678541	0.226475783	700.9244292	0.013352578	0.110175559	0.287473137	0.327269054	1.216726787	0.006626257
SACRAMENT	2021	LHD2	1984	20	DSL	5.432806092	4.354904695	0.216678541	0.226475783	700.9244292	0.013352578	0.110175559	0.287473137	0.327269054	1.216726787	0.006626257
SACRAMENT	2021	LHD2	1985	20	DSL	16.87394458	4.354904695	0.216678541	0.226475783	700.9244292	0.013352578	0.110175559	0.287473137	0.327269054	1.216726787	0.006626257
SACRAMENT	2021	LHD2	1986	20	DSL	41.44302001	4.354904695	0.216678541	0.226475783	700.9244292	0.013352578	0.110175559	0.287473137	0.327269054	1.216726787	0.006626257
SACRAMENT	2021	LHD2	2012	15	DSL	827.5392337	0.465686432	0.025154628	0.026292009	821.7876738	0.013311466	0.129173578	0.286588034	0.326261423	1.453189454	0.007768849
SACRAMENT	2021	LHD2	2004	20	DSL	555.1566189	5.01096013	0.065052532	0.067993919	700.9244292	0.013219604	0.110175559	0.284610298	0.324009902	1.568791559	0.006626257
SACRAMENT	2021	LHD2	2013	15	DSL	599.3451336	0.449973731	0.023640598	0.024709521	821.7876738	0.013078189	0.129173578	0.281565702	0.320543831	1.370016284	0.007768849
SACRAMENT	2021	LHD2	2005	20	DSL	1128.001183	5.004975341	0.064499796	0.067416191	700.9244292	0.013036598	0.110175559	0.280670286	0.31952446	1.547028464	0.006626257
SACRAMENT	2021	LHD2	2002	25	DSL	375.5878906	6.332195757	0.052606192	0.054984811	624.6333349	0.012988748	0.098183662	0.279640099	0.318351661	1.330552063	0.005905031
SACRAMENT	2021	LHD2	2003	25	DSL	490.6381873	6.32659407	0.052278034	0.054641814	624.6333349	0.012857413	0.098183662	0.27681253	0.315132662	1.317115934	0.005905031
SACRAMENT	2021	LHD2	2006	20	DSL	1307.230483	4.998225221	0.063876379	0.066764585	700.9244292	0.01283019	0.110175559	0.27622644	0.314465437	1.522482394	0.006626257
SACRAMENT	2021	LHD2	2014	15	DSL	907.430915	0.433267809	0.022030864	0.023027002	802.8865573	0.012830165	0.126202586	0.276225895	0.314464816	1.281585665	0.007590165
SACRAMENT	2021	LHD2	2015	15	DSL	1767.683458	0.415568666	0.020325427	0.021244453	797.1340436	0.012567395	0.125298371	0.270568608	0.308024371	1.187897599	0.007535783
SACRAMENT	2021	LHD2	1991	35	DSL	21.57705295	9.030762887	0.038250652	0.039980177	563.3196333	0.012536187	0.088546002	0.26989673	0.307259483	1.090901817	0.005325396
SACRAMENT	2021	LHD2	1992	35	DSL	31.72938135	9.030762887	0.038250652	0.039980177	563.3196333	0.012536187	0.088546002	0.26989673	0.307259483	1.090901817	0.005325396
SACRAMENT	2021	LHD2	1993	35	DSL	75.58635039	9.030762887	0.038250652	0.039980177	563.3196333	0.012536187	0.088546002	0.26989673	0.307259483	1.090901817	0.005325396
SACRAMENT	2021	LHD2	1994	35	DSL	76.27755777	9.039083693	0.038561157	0.040304722	563.3196333	0.012508642	0.088546002	0.269303696	0.306584353	1.086122403	0.005325396
SACRAMENT	2021	LHD2	1995	35	DSL	43.11800387	9.039083693	0.038561157	0.040304722	563.3196333	0.012508642	0.088546002	0.269303696	0.306584353	1.086122403	0.005325396
SACRAMENT	2021	LHD2	1996	35	DSL	93.5927359	9.039083693	0.038561157	0.040304722	563.3196333	0.012508642	0.088546002	0.269303696	0.306584353	1.086122403	0.005325396
SACRAMENT	2021	LHD2	1997	35	DSL	61.81476489	9.039083693	0.038561157	0.040304722	563.3196333	0.012508642	0.088546002	0.269303696	0.306584353	1.086122403	0.005325396
SACRAMENT	2021	LHD2	1998	35	DSL	48.76225407	9.037591734	0.03850959	0.040250823	563.3196333	0.012485457	0.088546002	0.26880453	0.306016087	1.08411049	0.005325396
SACRAMENT	2021	LHD2	1999	35	DSL	196.146887	9.034280426	0.038395141	0.040131199	563.3196333	0.012433998	0.088546002	0.267696665	0.304754855	1.079645175	0.005325396
SACRAMENT	2021	LHD2	2000	35	DSL	160.8683333	9.029149769	0.03821781	0.039945849	563.3196333	0.012354267	0.088546002	0.265980098	0.302800658	1.07272646	0.005325396
SACRAMENT	2021	LHD2	2016	15	DSL	1380.073531	0.348043124	0.018524287	0.019361873	772.4804134	0.012289878	0.121423164	0.264593834	0.301222488	1.088952085	0.007302718
SACRAMENT	2021	LHD2	2001	35	DSL	315.7293498	9.022199761	0.037977596	0.039694774	563.3196333	0.012246263	0.088546002	0.263654831	0.300153496	1.063354344	0.005325396
SACRAMENT	2021	LHD2	2017	15	DSL	1172.084789	0.284353593	0.016627443	0.017379262	747.8267832	0.011997614	0.117547956	0.258301562	0.294059155	0.984749123	0.007069652
SACRAMENT	2021	LHD2	2018	15	DSL	1293.876927	0.219564667	0.014634896	0.015296621	698.5195227	0.011690602	0.109797542	0.25169178	0.286534358	0.875288716	0.006603522
SACRAMENT	2021	LHD2	1992	55	DSL	43.71642427	10.66054428	0.035070247	0.036655968	559.8847575	0.011493848	0.088006087	0.24745578	0.281711953	1.311197495	0.005292924
SACRAMENT	2021	LHD2	1993	55	DSL	104.1421176	10.66054428	0.035070247	0.036655968	559.8847575	0.011493848	0.088006087	0.24745578	0.281711953	1.311197495	0.005292924
SACRAMENT	2021	LHD2	1991	55	DSL	29.72864774	10.66054428	0.035070247	0.036655968	559.8847575	0.011493848	0.088006087	0.24745578	0.281711953	1.311197495	0.005292924
SACRAMENT	2021	LHD2	1994	55	DSL	105.0944562	10.67036674	0.035354935	0.036953528	559.8847575	0.011468593	0.088006087	0.246912054	0.281092958	1.30545293	0.005292924
SACRAMENT	2021	LHD2	1995	55	DSL	59.40755446	10.67036674	0.035354935	0.036953528	559.8847575	0.011468593	0.088006087	0.246912054	0.281092958	1.30545293	0.005292924
SACRAMENT	2021	LHD2	1996	55	DSL	128.9511354	10.67036674	0.035354935	0.036953528	559.8847575	0.011468593	0.088006087	0.246912054	0.281092958	1.30545293	0.005292924
SACRAMENT	2021	LHD2	1997	55	DSL	85.1677648	10.67036674	0.035354935	0.036953528	559.8847575	0.011468593	0.088006087	0.246912054	0.281092958	1.30545293	0.005292924
SACRAMENT	2021	LHD2	1991	40	DSL	11.84509678	9.452143708	0.034965393	0.036546373	542.7445231	0.011459483	0.085311881	0.246715931	0.280869684	1.056926074	0.005130888
SACRAMENT	2021	LHD2	1992	40	DSL	17.41839322	9.452143708	0.034965393	0.036546373	542.7445231	0.011459483	0.085311881	0.246715931	0.280869684	1.056926074	0.005130888
SACRAMENT	2021	LHD2	1993	40	DSL	41.49443568	9.452143708	0.034965393	0.036546373	542.7445231	0.011459483	0.085311881	0.246715931	0.280869684	1.056926074	0.005130888
SACRAMENT	2021	LHD2	1998	55	DSL	67.18414595	10.66860553	0.035307655	0.036904111	559.8847575	0.011447335	0.088006087	0.246454393	0.280571941	1.303034733	0.005292924
SACRAMENT	2021	LHD2	1995	40	DSL	23.67037473	9.460852768	0.03524923	0.036843043	542.7445231	0.011434304	0.085311881	0.246173831	0.28025254	1.052295513	0.005130888
SACRAMENT	2021	LHD2	1994	40	DSL	41.87388593	9.460852768	0.03524923	0.036843043	542.7445231	0.011434304	0.085311881	0.246173831	0.28025254	1.052295513	0.005130888
SACRAMENT	2021	LHD2	1996	40	DSL	51.37935274	9.460852768	0.03524923	0.036843043	542.7445231	0.011434304	0.085311881	0.246173831	0.28025254	1.052295513	0.005130888
SACRAMENT	2021	LHD2	1997	40	DSL	33.93428539	9.460852768	0.03524923	0.036843043	542.7445231	0.011434304	0.085311881	0.246173831	0.28025254	1.052295513	0.005130888
SACRAMENT	2021	LHD2	1998	40	DSL	26.7688836	9.459291194	0.035202092	0.036793774	542.7445231	0.01141311	0.085311881	0.245717538	0.279733081	1.05034626	0.005130888
SACRAMENT	2021	LHD2	1999	55	DSL	270.249219	10.66469663	0.035202722	0.036794433	559.8847575	0.011400156	0.088006087	0.245438642	0.279415576	1.297667697	0.005292924
SACRAMENT	2021	LHD2	2019	15	DSL	1434.959716	0.177686481	0.012546646	0.01311395	698.5195227	0.011368842	0.109797542	0.244764471	0.278648078	0.760570866	0.006603522
SACRAMENT	2021	LHD2	1999	40	DSL	107.6782295	9.455825378	0.035097472	0.036684424	542.7445231	0.011366071	0.085311881	0.244704824	0.278580173	1.046020016	0.005130888
SACRAMENT	2021	LHD2	2000	55	DSL	221.6427806	10.65864004	0.035040135	0.036624495	559.8847575	0.011327054	0.088006087	0.243864802	0.277623864	1.289351823	0.005292924
SACRAMENT	2021	LHD2	2000	40	DSL	88.31145669	9.450455321	0.034935371	0.036514994	542.7445231	0.011293188	0.085311881	0.24313569	0.276793818	1.039316782	0.005130888
SACRAMENT	2021	LHD2	2001	55	DSL	435.0087402	10.65043577	0.034819894	0.036394295	559.8847575	0.01122803	0.088006087	0.241732873	0.275196804	1.278087111	0.005292924
SACRAMENT	2021	LHD2	2001	40	DSL	173.3250928	9.443181022	0.034715789	0.036285483	542.7445231	0.01119446	0.085311881	0.241010134	0.274374014	1.030236557	0.005130888
SACRAMENT	2021	LHD2	1987	30	DSL	37.41072449	4.875167069	0.163725817	0.171128772	563.3196333	0.01116642	0.088546002	0.240406452	0.273686763	1.108253138	0.005325396
SACRAMENT	2021	LHD2	1988	30	DSL	14.96511746	4.875167069	0.163725817	0.171128772	563.3196333	0.01116642	0.088546002	0.240406452	0.273686763	1.108253138	0.005325396
SACRAMENT	2021	LHD2	1989	30	DSL	48.96787246	4.875167069	0.163725817	0.171128772	563.3196333	0.01116642	0.088546002	0.240406452	0.273686763	1.108253138	0.005325396
SACRAMENT	2021	LHD2	1990	30	DSL	33.93744428	4.875167069	0.163725817	0.171128772	563.3196333	0.01116642	0.088546002	0.240406452	0.273686763	1.108253138	0.005325396
SACRAMENT	2021	LHD2	2020	15	DSL	1624.981155	0.138642628	0.010362693	0.010831248	698.5195227	0.011032332	0.109797542	0.237519614	0.270400289	0.640595576	0.006603522
SACRAMENT	2021	LHD2	1991	50	DSL	49.36599013	10.215566	0.03348022	0.034994047	540.9262835	0.010972736	0.085026079	0.236236545	0.2689396	1.158741596	0.005113699
SACRAMENT	2021	LHD2	1992	50	DSL	72.59343202	10.215566	0.03348022	0.034994047	540.9262835	0.010972736	0.085026079	0.236236545	0.2689396	1.158741596	0.005113699

SACRAMENT	2021	LHD2	1993	50	DSL	172.933488	10.215566	0.03348022	0.034994047	540.9262835	0.010972736	0.085026079	0.236236545	0.2689396	1.158741596	0.005113699
SACRAMENT	2021	LHD2	1991	45	DSL	12.78475501	9.832059819	0.033446835	0.034959153	521.7107967	0.010961795	0.082005672	0.236000983	0.268671429	1.078395321	0.004932043
SACRAMENT	2021	LHD2	1992	45	DSL	18.80017481	9.832059819	0.033446835	0.034959153	521.7107967	0.010961795	0.082005672	0.236000983	0.268671429	1.078395321	0.004932043
SACRAMENT	2021	LHD2	1993	45	DSL	44.78614268	9.832059819	0.033446835	0.034959153	521.7107967	0.010961795	0.082005672	0.236000983	0.268671429	1.078395321	0.004932043
SACRAMENT	2021	LHD2	1994	50	DSL	174.5148966	10.22497847	0.033752	0.035278116	540.9262835	0.010948626	0.085026079	0.235717471	0.268348669	1.153664965	0.005113699
SACRAMENT	2021	LHD2	1995	50	DSL	98.64938267	10.22497847	0.033752	0.035278116	540.9262835	0.010948626	0.085026079	0.235717471	0.268348669	1.153664965	0.005113699
SACRAMENT	2021	LHD2	1996	50	DSL	214.1301728	10.22497847	0.033752	0.035278116	540.9262835	0.010948626	0.085026079	0.235717471	0.268348669	1.153664965	0.005113699
SACRAMENT	2021	LHD2	1997	50	DSL	141.4255728	10.22497847	0.033752	0.035278116	540.9262835	0.010948626	0.085026079	0.235717471	0.268348669	1.153664965	0.005113699
SACRAMENT	2021	LHD2	1994	45	DSL	45.1956943	9.841118928	0.033718345	0.035242939	521.7107967	0.010937709	0.082005672	0.235482427	0.268081087	1.0736707	0.004932043
SACRAMENT	2021	LHD2	1995	45	DSL	25.54811899	9.841118928	0.033718345	0.035242939	521.7107967	0.010937709	0.082005672	0.235482427	0.268081087	1.0736707	0.004932043
SACRAMENT	2021	LHD2	1996	45	DSL	55.45521913	9.841118928	0.033718345	0.035242939	521.7107967	0.010937709	0.082005672	0.235482427	0.268081087	1.0736707	0.004932043
SACRAMENT	2021	LHD2	1997	45	DSL	36.62625416	9.841118928	0.033718345	0.035242939	521.7107967	0.010937709	0.082005672	0.235482427	0.268081087	1.0736707	0.004932043
SACRAMENT	2021	LHD2	1998	50	DSL	111.5628237	10.22329077	0.033706865	0.03523094	540.9262835	0.010928332	0.085026079	0.235280559	0.267851274	1.151527937	0.005113699
SACRAMENT	2021	LHD2	1998	45	DSL	28.89242909	9.839494588	0.033673254	0.035195809	521.7107967	0.010917435	0.082005672	0.235045951	0.267584188	1.071681852	0.004932043
SACRAMENT	2021	LHD2	1999	50	DSL	448.7631054	10.21954503	0.033606689	0.035126235	540.9262835	0.010883292	0.085026079	0.234310861	0.266747337	1.146784939	0.005113699
SACRAMENT	2021	LHD2	1999	45	DSL	116.2202226	9.8358889469	0.033573179	0.035091209	521.7107967	0.010872439	0.082005672	0.234077219	0.266481352	1.06726773	0.004932043
SACRAMENT	2021	LHD2	2002	30	DSL	317.0437639	6.618197583	0.043913957	0.045899551	563.3196333	0.010842589	0.088546002	0.233434558	0.265749724	1.162358418	0.005325396
SACRAMENT	2021	LHD2	2000	50	DSL	368.0495466	10.21374125	0.033451474	0.034964001	540.9262835	0.010813504	0.085026079	0.232808376	0.265036858	1.13943597	0.005113699
SACRAMENT	2021	LHD2	2000	45	DSL	95.31710543	9.830303569	0.033418118	0.034929137	521.7107967	0.010802721	0.082005672	0.232576233	0.264772578	1.060428333	0.004932043
SACRAMENT	2021	LHD2	2003	30	DSL	414.1607903	6.612342889	0.043640021	0.045613229	563.3196333	0.010732955	0.088546002	0.231074194	0.263062607	1.150620737	0.005325396
SACRAMENT	2021	LHD2	2001	50	DSL	722.3549945	10.20587943	0.033241218	0.034744238	540.9262835	0.01071897	0.085026079	0.230773105	0.262719837	1.129481032	0.005113699
SACRAMENT	2021	LHD2	2001	45	DSL	187.0747779	9.822736889	0.033208072	0.034709593	521.7107967	0.010708281	0.082005672	0.230542991	0.262457868	1.051163662	0.004932043
SACRAMENT	2021	LHD2	2021	15	DSL	1482.374621	0.103564166	0.008083037	0.008448516	681.0565347	0.010681071	0.107052603	0.22995718	0.261790961	0.515362854	0.006438433
SACRAMENT	2021	LHD2	1983	25	DSL	4.302223684	4.577759969	0.172848092	0.180663516	624.6333349	0.010651574	0.098183662	0.229322124	0.261067992	1.009320335	0.005905031
SACRAMENT	2021	LHD2	1984	25	DSL	5.814551899	4.577759969	0.172848092	0.180663516	624.6333349	0.010651574	0.098183662	0.229322124	0.261067992	1.009320335	0.005905031
SACRAMENT	2021	LHD2	1986	25	DSL	44.35508771	4.577759969	0.172848092	0.180663516	624.6333349	0.010651574	0.098183662	0.229322124	0.261067992	1.009320335	0.005905031
SACRAMENT	2021	LHD2	1985	25	DSL	18.05962238	4.577759969	0.172848092	0.180663516	624.6333349	0.010651574	0.098183662	0.229322124	0.261067992	1.009320335	0.005905031
SACRAMENT	2021	LHD2	2004	25	DSL	594.1656886	5.26738799	0.051893491	0.054239885	624.6333349	0.010545499	0.098183662	0.227038389	0.258468111	1.301371219	0.005905031
SACRAMENT	2021	LHD2	2005	25	DSL	1207.262198	5.26109694	0.051452565	0.053779021	624.6333349	0.010399512	0.098183662	0.223895376	0.25489	1.283317918	0.005905031
SACRAMENT	2021	LHD2	2006	25	DSL	1399.085363	5.254001393	0.050955254	0.053259225	624.6333349	0.010234857	0.098183662	0.220350446	0.250854333	1.262956036	0.005905031
SACRAMENT	2021	LHD2	1988	35	DSL	7.897673442	5.114703029	0.143020908	0.149487679	563.3196333	0.009754305	0.088546002	0.210004443	0.239076097	1.019584624	0.005325396
SACRAMENT	2021	LHD2	1989	35	DSL	25.84224728	5.114703029	0.143020908	0.149487679	563.3196333	0.009754305	0.088546002	0.210004443	0.239076097	1.019584624	0.005325396
SACRAMENT	2021	LHD2	1990	35	DSL	17.91010683	5.114703029	0.143020908	0.149487679	563.3196333	0.009754305	0.088546002	0.210004443	0.239076097	1.019584624	0.005325396
SACRAMENT	2021	LHD2	1987	35	DSL	19.74309163	5.114703029	0.143020908	0.149487679	563.3196333	0.009754305	0.088546002	0.210004443	0.239076097	1.019584624	0.005325396
SACRAMENT	2021	LHD2	2002	35	DSL	167.3163022	6.943375426	0.038360559	0.040095054	563.3196333	0.009471426	0.088546002	0.20391422	0.232142783	1.069361078	0.005325396
SACRAMENT	2021	LHD2	2003	35	DSL	218.5687272	6.937233068	0.038121266	0.03984494	563.3196333	0.009375656	0.088546002	0.201852351	0.229795481	1.058562498	0.005325396
SACRAMENT	2021	LHD2	2007	20	DSL	873.5391136	2.669539034	0.044944703	0.046976903	700.9244292	0.009071997	0.110175559	0.19531476	0.222352869	1.095623211	0.006626257
SACRAMENT	2021	LHD2	1987	55	DSL	27.20183418	6.037753267	0.13112923	0.137058312	559.8847575	0.008943269	0.088006087	0.192543323	0.219197772	1.225478575	0.005292924
SACRAMENT	2021	LHD2	1988	55	DSL	10.88133548	6.037753267	0.13112923	0.137058312	559.8847575	0.008943269	0.088006087	0.192543323	0.219197772	1.225478575	0.005292924
SACRAMENT	2021	LHD2	1989	55	DSL	35.60518982	6.037753267	0.13112923	0.137058312	559.8847575	0.008943269	0.088006087	0.192543323	0.219197772	1.225478575	0.005292924
SACRAMENT	2021	LHD2	1990	55	DSL	24.67636605	6.037753267	0.13112923	0.137058312	559.8847575	0.008943269	0.088006087	0.192543323	0.219197772	1.225478575	0.005292924
SACRAMENT	2021	LHD2	1987	40	DSL	10.83831197	5.353358145	0.130737177	0.136648532	542.7445231	0.008916531	0.085311881	0.191967653	0.21854241	0.987830029	0.005130888
SACRAMENT	2021	LHD2	1988	40	DSL	4.335564569	5.353358145	0.130737177	0.136648532	542.7445231	0.008916531	0.085311881	0.191967653	0.21854241	0.987830029	0.005130888
SACRAMENT	2021	LHD2	1989	40	DSL	14.18654905	5.353358145	0.130737177	0.136648532	542.7445231	0.008916531	0.085311881	0.191967653	0.21854241	0.987830029	0.005130888
SACRAMENT	2021	LHD2	1990	40	DSL	9.832063222	5.353358145	0.130737177	0.136648532	542.7445231	0.008916531	0.085311881	0.191967653	0.21854241	0.987830029	0.005130888
SACRAMENT	2021	LHD2	2008	20	DSL	1035.081742	2.661543196	0.044117902	0.046112718	700.9244292	0.008913881	0.110175559	0.191910611	0.218477471	1.06945317	0.006626257
SACRAMENT	2021	LHD2	1985	30	DSL	15.24460931	4.78452043	0.144288026	0.15081209	563.3196333	0.008891592	0.088546002	0.191430731	0.21793116	0.881733245	0.005325396
SACRAMENT	2021	LHD2	1986	30	DSL	37.44131349	4.78452043	0.144288026	0.15081209	563.3196333	0.008891592	0.088546002	0.191430731	0.21793116	0.881733245	0.005325396
SACRAMENT	2021	LHD2	1983	30	DSL	3.631621849	4.78452043	0.144288026	0.15081209	563.3196333	0.008891592	0.088546002	0.191430731	0.21793116	0.881733245	0.005325396
SACRAMENT	2021	LHD2	1984	30	DSL	4.908218464	4.78452043	0.144288026	0.15081209	563.3196333	0.008891592	0.088546002	0.191430731	0.21793116	0.881733245	0.005325396
SACRAMENT	2021	LHD2	2004	30	DSL	501.5511176	5.505296395	0.043319017	0.045277711	563.3196333	0.008803043	0.088546002	0.189524343	0.215760864	1.136866293	0.005325396
SACRAMENT	2021	LHD2	2009	20	DSL	321.1200099	2.653164325	0.043217484	0.045171587	700.9244292	0.008741693	0.110175559	0.188203505	0.214257178	1.040925745	0.006626257
SACRAMENT	2021	LHD2	2002	55	DSL	230.5267276	8.196446093	0.035171016	0.036761293	559.8847575	0.008683911	0.088006087	0.186959481	0.212840939	1.285306839	0.005292924
SACRAMENT	2021	LHD2	2005	30	DSL	1019.082246	5.498721201	0.042950946	0.044892997	563.3196333	0.008681178	0.088546002	0.186900656	0.212773971	1.121095091	0.005325396
SACRAMENT	2021	LHD2	2002	40	DSL	91.85118082	7.267357494	0.035065861	0.036651383	542.7445231	0.008657947	0.085311881	0.186400505	0.212204582	1.036056213	0.005130888
SACRAMENT	2021	LHD2	2003	55	DSL	301.1418062	8.189195224	0.034951618	0.036531976	559.8847575	0.008596104	0.088006087	0.185069048	0.210688807	1.272327604	0.005292924
SACRAMENT	2021	LHD2	2003	40	DSL	119.9870869	7.26092853	0.034847119	0.036422751	542.7445231	0.008570403	0.085311881	0.184515724	0.210058885	1.025593951	0.005130888
SACRAMENT	2021	LHD2	2006	30	DSL	1181.005301	5.491305175	0.042535807	0.044459087	563.3196333	0.008543729	0.088546002	0.183941463	0.209405126	1.103307132	0.005325396
SACRAMENT	2021	LHD2	1987	50	DSL	45.17008273	5.78573339	0.125184048	0.130844315	540.9262835	0.008537796	0.085026079	0.183813728	0.209259709	1.082989409	0.005113699
SACRAMENT	2021	LHD2	1988	50	DSL	18.06903242	5.78573339	0.125184048	0.130844315	540.9262835	0.008537796	0.085026079	0.183813728	0.209259709	1.082989409	0.005113699
SACRAMENT	2021	LHD2	1989	50	DSL	59.12429871	5.78573339	0.125184048	0.130844315	540.9262835	0.008537796	0.085026079	0.183813728	0.209259709	1.082989409	0.005113699
SACRAMENT	2021	LHD2	1990	50	DSL	40.97640947	5.78573339	0.125184048	0.130844315	540.9262835	0.008537796	0.085026079	0.183813728	0.209259709	1.082989409	0.005113699
SACRAMENT	2021	LHD2	1987	45	DSL	11.69810309	5.568529123	0.125059222	0.130713845	521.7107967	0.008529283	0.082005672	0.18363044	0.209051047	1.007895734	0.004932043
SACRAMENT	2021	LHD2	1988	45	DSL	4.67950004	5.568529123	0.125059222	0.130713845	521.7107967	0.008529283	0.082005672	0.18363044	0.209051047	1.007895734	0.004932043
SACRAMENT	2021	LHD2	1989	45	DSL	15.31195206	5.568529123	0.125059222	0.130713845	521.7107967	0.008529283	0.082005672	0.18363044	0.209051047	1.007895734	0.004932043
SACRAMENT	2021	LHD2	1990	45	DSL	10.61202976	5.568529123	0.125059222	0.130713845	521.7107967	0.008529283	0.082005672	0.18363044	0.209051047	1.007895734	0.004932043
SACRAMENT	2021	LHD2	2002	50	DSL	382.8018099	7.854320928	0.03357642	0.035094597	540.9262835	0.008290196	0.085026079	0.178483048	0.203191083	1.135861306	0.005113699
SACRAMENT	2021	LHD2	2002	45	DSL	99.1376319	7.559459083	0.03354294	0.035059603	521.7107967	0.00828193	0.082005672	0.178305075	0.202988473	1.057101533	0.004932043
SACRAMENT	2021	LHD2	2003	50	DSL	500.0618784	7.847372716	0.03336697	0.034875676	540.9262835	0.00820637	0.085026079	0.176678324	0.201136525	1.124391196	0.005113699
SACRAMENT	2021	LHD2	2003	45	DSL	129.5055278	7.552771716	0.033333698	0.0348409	521.7107967	0.008198188	0.082005672	0.17650215	0.200935964	1.046426752	0.004932043
SACRAMENT	2021	LHD2	1983	35	DSL	1.916547833	5.019602567	0.126041237	0.131740262	563.3196333	0.007767153	0.088546002	0.167222234	0.190371396	0.811188011	0.005325396
SACRAMENT	2021	LHD2	1984	35	DSL	2.590257425	5.019602567	0.126041237	0.131740262	563.3196333	0.007767153	0.088546002	0.167222234	0.190371396	0.811188011	0.005325396
SACRAMENT	2021	LHD2	1985	35	DSL	8.045172143	5.019602567	0.126041237	0.131740262	563.3196333	0.007767153	0.088546002	0.167222234	0.190371396	0.811188011	0.005325396
SACRAMENT	2021	LHD2	1986	35	DSL	19.75923464	5.019602567	0.126041237	0.131740262	563.3196333	0.007767153	0.088546002	0.167222234	0.190371396	0.811188011	0.005325396
SACRAMENT	2021	LHD2	2004	35	DSL	264.6879954	5.775793064	0.037840856	0.039551852	563.3196333	0.007689803	0.088546002	0.165556929	0.188475557	1.045908513	0.005325396
SACRAMENT	2021	LHD2	2005	35	DSL	537.809263	5.768894805	0.037519332	0.039215789	563.3196333	0.007583349	0.088546002	0.163265037	0.18586639	1.031399124	0.005325396
SACRAMENT	2021	LHD2	2006	35	DSL	623.2623449	5.761114401	0.037156692	0.038836752	563.3196333	0.007463282	0.088546002	0.160680066	0.182923572	1.015034335	0.005325396
SACRAMENT	2021	LHD2	1983	55	DSL	2.640600435	5.925490029	0.115561358	0.12078653	559.8847575	0.007121342	0.088006087	0.153318302	0.174542694	0.974998548	0.005292924
SACRAMENT	2021	LHD2	1984	55	DSL	3.568830773	5.925490029	0.115561358	0.12078653	559.8847575	0.007121342	0.088006087	0.153318302	0.174542694	0.974998548	0.005292924
SACRAMENT	2021	LHD2	1985	55	DSL	11.08455771	5.925490029	0.115561358	0.12078653	559.8847575	0.007121342	0.088006087	0.153318302	0.174542694	0.974998548	0.005292924
SACRAMENT	2021	LHD2	1986	55	DSL	27.22407585	5.925490029	0.115561358	0.12078653	559.8847575	0.007121342	0.088006087	0.153318302	0.174542694	0.974998548	0.005292924
SACRAMENT	2021	LHD2	1986	40	DSL	10.84717395	5.253820238	0.11521585	0.120425399	542.7445231	0.007100051	0.085311881	0.152859908	0.174020842	0.785923853	0.005130888
SACRAMENT	2021	LHD2	1983	40	DSL	1.052122114	5.253820238	0.11521585	0.120425399	542.7445231	0.007100051	0.085311881	0.152859908	0.174020842	0.785923853	0.005130888
SACRAMENT	2021	LHD2	1984	40	DSL	1.421966659	5.253820238	0.11521585	0.120425399	542.7445231	0.007100051	0.085311881	0.152859908	0.174020842	0.785923853	0.005130888
SACRAMENT	2021	LHD2	1985	40	DSL	4.416536534	5.253820238	0.11521585	0.120425399	542.7445231	0.007100051	0.085311881	0.152859908	0.174020842	0.785923853	0.005130888
SACRAMENT	2021	LHD2	2004	55	DSL	364.6844727	6.818150192	0.034694524	0.036263257	559.8847575	0.007050423	0.088006087	0.151791462	0.172804487	1.257118285	0.005292924
SACRAMENT	2021	LHD2	2004	40	DSL	145.3050576	6.045295038	0.034590794	0.036154836	542.7445231	0.007029344	0.085311881	0.151337632	0.172287832	1.01333407	0.005130888
SACRAMENT	2021	LHD2	2005	55	DSL	740.9882235	6.810007005	0.034399733	0.035955137	559.8847575	0.00695282	0.088006087	0.149690132	0.170412263	1.239678884	0.005292924
SACRAMENT	2021	LHD2	2005	40	DSL	295.2397061	6.038074902	0.034296884	0.035847637	542.7445231	0.006932033	0.085311881	0.149242585	0.16990276	0.999276571	0.005130888
SACRAMENT	2021	LHD2	2006	55	DSL	858.7246249	6.800822472	0.034067245	0.035607615	559.8847575	0.006842737	0.088006087	0.147320092	0.16771413	1.220009405	0.005292924
SACRAMENT	2021	LHD2	2006	40	DSL	342.1506548	6.02993146	0.03396539	0.035501155	542.7445231	0.006822278	0.085311881	0.146879631	0.167212694	0.983421457	0.005130888
SACRAMENT	2021	LHD2	1983	50	DSL	4.384856524	5.678156095	0.110321997	0.115310268	540.9262835	0.006798472	0.085026079	0.146367104	0.166629217	0.861633261	0.005113699
SACRAMENT	2021	LHD2	1984	50	DSL	5.926232038	5.678156095	0.110321997	0.115310268	540.9262835	0.006798472	0.085026079	0.146367104	0.166629217	0.861633261	0.005113699
SACRAMENT	2021	LHD2	1985	50	DSL	18.40649367	5.678156095	0.110321997	0.115310268	540.9262835	0.006798472	0.085026079	0.146367104	0.166629217	0.861633261	0.005113699
SACRAMENT	2021	LHD2	1986	50	DSL	45.20701619	5.678156095	0.110321997	0.115310268	540.9262835	0.006798472	0.085026079	0.146367104	0.166629217	0.861633261	0.005113699
SACRAMENT	2021	LHD2	1983	45	DSL	1.13558578	5.464990425	0.11021199	0.115195288	521.7107967	0.006791693	0.082005672	0.146221156	0.166463064	0.801888256	0.004932043
SACRAMENT	2021	LHD2	1984	45	DSL	1.534769678	5.464990425	0.11021199	0.115195288	521.7107967	0.006791693	0.082005672	0.146221156	0.166463064	0.801888256	0.004932043
SACRAMENT	2021	LHD2	1985	45	DSL	4.76689542	5.464990425	0.11021199	0.115195288	521.7107967	0.006791693	0.082005672	0.146221156	0.166463064	0.801888256	0.004932043
SACRAMENT	2021	LHD2	1986	45	DSL	11.70766808	5.464990425	0.11021199	0.115195288	521.7107967	0.006791693	0.082005672	0.146221156	0.166463064	0.801888256	0.004932043
SACRAMENT	2021	LHD2	2004	50	DSL	605.5778331	6.533556024	0.033121532	0.034619141	540.9262835	0.006730769	0.085026079	0.144909488	0.164969818	1.110950299	0.005113699
SACRAMENT	2021	LHD2	2004	45	DSL	156.8319448	6.288277482	0.033088505	0.03458462	521.7107967	0.006724057	0.082005672	0.144764993	0.16480532	1.033917837	0.004932043
SACRAMENT	2021	LHD2	2007	25	DSL	934.919897	2.755657932	0.036648418	0.038305496	624.6333349	0.006689723	0.098183662	0.144025805	0.163963803	0.829082345	0.005905031
SACRAMENT	2021	LHD2	2005	50	DSL	1230.450091	6.525752739	0.032840106	0.03432499	540.9262835	0.006637591	0.085026079	0.142903429	0.162686053	1.095538617	0.005113699
SACRAMENT	2021	LHD2	2005	45	DSL	318.6607406	6.280767143	0.03280736	0.034290763	521.7107967	0.006630973	0.082005672	0.142760934	0.162523832	1.019574789	0.004932043
SACRAMENT	2021	LHD2	2008	25	DSL	1107.813606	2.748271008	0.035962653	0.037588725	624.6333349	0.006569639	0.098183662	0.141440455	0.161020555	0.809897536	0.005905031
SACRAMENT	2021	LHD2	2006	50	DSL	1425.957606	6.516951574	0.032522693	0.033993225	540.9262835	0.006532498	0.085026079	0.140640843	0.160110249	1.078156152	0.005113699
SACRAMENT	2021	LHD2	2006	45	DSL	369.2930822	6.272296386	0.032490263	0.033959329	521.7107967	0.006525984	0.082005672	0.140500604	0.159950596	1.003397611	0.004932043
SACRAMENT	2021	LHD2	2009	25	DSL	343.68408	2.740583285	0.035215619	0.036807913	624.6333349	0.006438972	0.098183662	0.138627272	0.157817933	0.789002712	0.005905031

SACRAMENT	2021	LHD2	2007	30	DSL	789.1908405	2.851689292	0.031180156	0.032589984	563.3196333	0.005452291	0.088546002	0.117384611	0.133634575	0.699586102	0.005325396
SACRAMENT	2021	LHD2	2008	30	DSL	935.135035	2.844542018	0.030588347	0.031971416	563.3196333	0.005353508	0.088546002	0.115257872	0.131213424	0.683607718	0.005325396
SACRAMENT	2021	LHD2	2010	20	DSL	282.5335485	0.324582004	0.023805888	0.024882285	700.9244292	0.00533934	0.110175559	0.114952852	0.13086618	0.623501769	0.006626257
SACRAMENT	2021	LHD2	2011	20	DSL	716.6779552	0.315565594	0.02267717	0.023702531	700.9244292	0.005260114	0.110175559	0.113247147	0.128924348	0.59525411	0.006626257
SACRAMENT	2021	LHD2	2009	30	DSL	290.1129057	2.837137705	0.029943513	0.031297426	563.3196333	0.005246046	0.088546002	0.112944285	0.12857956	0.666211474	0.005325396
SACRAMENT	2021	LHD2	2012	20	DSL	907.2502941	0.305896766	0.02146678	0.022437413	700.9244292	0.005175154	0.110175559	0.111418019	0.126842007	0.564962491	0.006626257
SACRAMENT	2021	LHD2	2013	20	DSL	657.075854	0.295575519	0.020174717	0.021086928	700.9244292	0.005084462	0.110175559	0.109465466	0.124619155	0.532626913	0.006626257
SACRAMENT	2021	LHD2	2014	20	DSL	994.8373817	0.284601853	0.018800982	0.019651079	684.8031673	0.004988036	0.107641521	0.107389487	0.122255791	0.498247375	0.006473853
SACRAMENT	2021	LHD2	2015	20	DSL	1937.952029	0.272975767	0.017345574	0.018129864	679.8966963	0.004885878	0.106870293	0.10519008	0.119751912	0.461823877	0.006427469
SACRAMENT	2021	LHD2	2016	20	DSL	1513.006352	0.228630432	0.015808494	0.016523284	658.8689635	0.004777987	0.103565026	0.102867242	0.117107516	0.423356419	0.006228681
SACRAMENT	2021	LHD2	2017	20	DSL	1284.983511	0.186803844	0.014189741	0.014831338	637.8412306	0.004664362	0.100259759	0.10042097	0.114322597	0.382845001	0.006029893
SACRAMENT	2021	LHD2	2007	35	DSL	416.4866437	2.971842701	0.027548176	0.028793782	563.3196333	0.004664281	0.088546002	0.100419216	0.114320601	0.623915931	0.005325396
SACRAMENT	2021	LHD2	2008	35	DSL	493.5070608	2.964746751	0.027020954	0.028242722	563.3196333	0.004579079	0.088546002	0.098584867	0.112232317	0.609839193	0.005325396
SACRAMENT	2021	LHD2	2018	20	DSL	1418.507032	0.144252664	0.012489316	0.013054028	595.7857648	0.004545004	0.093649225	0.097851257	0.111397151	0.340289625	0.005632318
SACRAMENT	2021	LHD2	2009	35	DSL	153.1038428	2.957421391	0.026446418	0.027642208	563.3196333	0.004486411	0.088546002	0.09658979	0.109961054	0.594518658	0.005325396
SACRAMENT	2021	LHD2	2019	20	DSL	1573.179338	0.116743937	0.010707218	0.011191351	595.7857648	0.004419912	0.093649225	0.095158099	0.108331169	0.29569029	0.005632318
SACRAMENT	2021	LHD2	2020	20	DSL	1781.504212	0.091096827	0.008843448	0.00924331	595.7857648	0.004289085	0.093649225	0.092341485	0.105124642	0.249046999	0.005632318
SACRAMENT	2021	LHD2	2007	40	DSL	228.6375537	3.095572974	0.025211962	0.026351935	542.7445231	0.004173971	0.085311881	0.089863147	0.102303218	0.586353224	0.005130888
SACRAMENT	2021	LHD2	2021	20	DSL	1625.161389	0.068054025	0.006898006	0.007209903	580.8911207	0.004152524	0.091307995	0.089401407	0.101777558	0.200359754	0.00549151
SACRAMENT	2021	LHD2	2008	40	DSL	270.9192451	3.088447125	0.024729039	0.025847176	542.7445231	0.004097079	0.085311881	0.088207691	0.100418592	0.573288577	0.005130888
SACRAMENT	2021	LHD2	2009	40	DSL	84.04900521	3.081111291	0.024202769	0.025297111	542.7445231	0.004013467	0.085311881	0.086407581	0.098369286	0.559074671	0.005130888
SACRAMENT	2021	LHD2	2007	45	DSL	246.7751142	3.208345109	0.023871117	0.024950463	521.7107967	0.003902115	0.082005672	0.084010237	0.095640069	0.580298662	0.004932043
SACRAMENT	2021	LHD2	2007	55	DSL	573.831132	3.461042738	0.023718379	0.024790819	559.8847575	0.003889513	0.088006087	0.083738914	0.095331187	0.665559252	0.005292924
SACRAMENT	2021	LHD2	2008	45	DSL	292.4109648	3.201167761	0.023417271	0.024476096	521.7107967	0.003829563	0.082005672	0.082448231	0.09386183	0.567537059	0.004932043
SACRAMENT	2021	LHD2	2008	55	DSL	679.9490924	3.453616474	0.023285727	0.024338604	559.8847575	0.003815671	0.088006087	0.08214916	0.093521357	0.651308737	0.005292924
SACRAMENT	2021	LHD2	2007	50	DSL	952.8769099	3.324085259	0.023381394	0.024438597	540.9262835	0.00381055	0.085026079	0.082038894	0.093395826	0.605112688	0.005113699
SACRAMENT	2021	LHD2	2009	45	DSL	90.71651846	3.193795485	0.022922748	0.023959213	521.7107967	0.00375069	0.082005672	0.080750145	0.091928672	0.553658141	0.004932043
SACRAMENT	2021	LHD2	2008	50	DSL	1129.091389	3.316817567	0.022944021	0.023981448	540.9262835	0.00373898	0.085026079	0.080498044	0.091641671	0.591983138	0.005113699
SACRAMENT	2021	LHD2	2009	55	DSL	210.9449433	3.446014454	0.022814619	0.023846195	559.8847575	0.00373544	0.088006087	0.080421829	0.091554905	0.635822847	0.005292924
SACRAMENT	2021	LHD2	2009	50	DSL	350.2852225	3.309366308	0.022467574	0.023483458	540.9262835	0.003661196	0.085026079	0.078823392	0.089735192	0.57770972	0.005113699
SACRAMENT	2021	LHD2	2010	25	DSL	302.3862721	0.246916356	0.020408596	0.021331382	624.6333349	0.003204948	0.098183662	0.06900064	0.078552642	0.374257971	0.005905031
SACRAMENT	2021	LHD2	2011	25	DSL	767.0366095	0.240057383	0.019440955	0.020319989	624.6333349	0.003157392	0.098183662	0.067976788	0.077387054	0.357302267	0.005905031
SACRAMENT	2021	LHD2	2012	25	DSL	970.9998537	0.232702103	0.018403297	0.019235412	624.6333349	0.003106395	0.098183662	0.06687885	0.076137125	0.339119672	0.005905031
SACRAMENT	2021	LHD2	2013	25	DSL	703.2464605	0.224850514	0.017295622	0.018077653	624.6333349	0.003051957	0.098183662	0.065706827	0.074802854	0.319710188	0.005905031
SACRAMENT	2021	LHD2	2014	25	DSL	1064.741404	0.216502615	0.01611793	0.016846711	610.2667682	0.002994077	0.095925437	0.064460718	0.073384241	0.299073813	0.005769216
SACRAMENT	2021	LHD2	2015	25	DSL	2074.125684	0.207658407	0.014870221	0.015542586	605.8943348	0.002932756	0.095238152	0.06314052	0.071881284	0.277210548	0.00572788
SACRAMENT	2021	LHD2	2016	25	DSL	1619.320441	0.173877704	0.013552494	0.014165278	587.1553348	0.002867994	0.092292642	0.061746233	0.070293981	0.254120392	0.005550729
SACRAMENT	2021	LHD2	2017	25	DSL	1375.275168	0.142017642	0.012164751	0.012714787	568.4163347	0.002799791	0.089347132	0.060277854	0.068622329	0.229803347	0.005373579
SACRAMENT	2021	LHD2	2018	25	DSL	1518.180958	0.109617218	0.01070699	0.011191112	530.9383346	0.002728146	0.083456112	0.05873538	0.066866325	0.204259412	0.005019277
SACRAMENT	2021	LHD2	2019	25	DSL	1683.72159	0.088691128	0.009179212	0.009594255	530.9383346	0.002653059	0.083456112	0.057118807	0.065025964	0.177488587	0.005019277
SACRAMENT	2021	LHD2	2020	25	DSL	1906.684782	0.069182011	0.007581417	0.007924215	530.9383346	0.002574531	0.083456112	0.05542813	0.063101241	0.149490874	0.005019277
SACRAMENT	2021	LHD2	2021	25	DSL	1739.356252	0.051656053	0.005913605	0.006180991	517.6648763	0.00249256	0.08136971	0.053663343	0.061092148	0.120266275	0.004893795
SACRAMENT	2021	LHD2	2010	30	DSL	255.2523237	0.20498148	0.018083674	0.018901337	563.3196333	0.00242089	0.088546002	0.052120331	0.059335531	0.282699539	0.005325396
SACRAMENT	2021	LHD2	2011	30	DSL	647.4760763	0.199287396	0.017226265	0.018005161	563.3196333	0.002384968	0.088546002	0.051346953	0.058455093	0.269891877	0.005325396
SACRAMENT	2021	LHD2	2012	30	DSL	819.646895	0.193181295	0.016306816	0.017044138	563.3196333	0.002346447	0.088546002	0.050517615	0.057510946	0.25615747	0.005325396
SACRAMENT	2021	LHD2	2013	30	DSL	593.6291088	0.186663175	0.015325326	0.01601827	563.3196333	0.002305326	0.088546002	0.049632316	0.056503092	0.24149632	0.005325396
SACRAMENT	2021	LHD2	2014	30	DSL	898.7766399	0.179733036	0.014281795	0.014927555	550.3632817	0.002261606	0.086509444	0.048691054	0.055431528	0.225908426	0.005202912
SACRAMENT	2021	LHD2	2015	30	DSL	1750.824853	0.172390878	0.013176224	0.013771994	546.4200443	0.002215287	0.085889622	0.04769383	0.054296254	0.209393788	0.005165634
SACRAMENT	2021	LHD2	2016	30	DSL	1366.911608	0.144363654	0.012008611	0.012551587	529.5204553	0.002166369	0.083233242	0.046640641	0.053097268	0.191952405	0.005005873
SACRAMENT	2021	LHD2	2017	30	DSL	1160.906479	0.117929261	0.010778957	0.011266334	512.6208663	0.00211485	0.080576862	0.045531486	0.051834569	0.173584279	0.004846111
SACRAMENT	2021	LHD2	2018	30	DSL	1281.537071	0.091042444	0.009487263	0.009916235	478.8216883	0.002060733	0.075264101	0.044366362	0.050508154	0.15428941	0.004526587
SACRAMENT	2021	LHD2	2019	30	DSL	1421.274337	0.073670189	0.008133527	0.008501289	478.8216883	0.002004015	0.075264101	0.043145268	0.049118019	0.134067797	0.004526587
SACRAMENT	2021	LHD2	2020	30	DSL	1609.483519	0.057473974	0.006717751	0.007021498	478.8216883	0.001944698	0.075264101	0.041868198	0.047664159	0.112919442	0.004526587
SACRAMENT	2021	LHD2	2010	35	DSL	134.7065604	0.177781554	0.016351572	0.017090917	563.3196333	0.001924924	0.088546002	0.041442475	0.047179502	0.224783079	0.005325396
SACRAMENT	2021	LHD2	2011	35	DSL	341.6982611	0.172843045	0.015576288	0.016280579	563.3196333	0.001896361	0.088546002	0.040827539	0.046479438	0.214599314	0.005325396
SACRAMENT	2021	LHD2	2021	30	DSL	1468.23704	0.042923399	0.005239934	0.005476861	466.8511461	0.00188278	0.073382499	0.040535148	0.046146571	0.090844346	0.004413422
SACRAMENT	2021	LHD2	2012	35	DSL	432.559486	0.16754719	0.014744906	0.015411606	563.3196333	0.001865732	0.088546002	0.040168106	0.045728718	0.203678666	0.005325396
SACRAMENT	2021	LHD2	2013	35	DSL	313.281126	0.161893989	0.013857426	0.014483997	563.3196333	0.001833036	0.088546002	0.039464177	0.044927342	0.192021136	0.005325396
SACRAMENT	2021	LHD2	2014	35	DSL	474.3193243	0.155883442	0.012913847	0.013497754	550.3632817	0.001798273	0.086509444	0.038715751	0.044075309	0.179626723	0.005202912
SACRAMENT	2021	LHD2	2015	35	DSL	923.9782439	0.149515548	0.01191417	0.012452876	546.4200443	0.001761443	0.085889622	0.037922828	0.043172618	0.166495427	0.005165634
SACRAMENT	2021	LHD2	2016	35	DSL	721.3723205	0.125165922	0.010858394	0.011349363	529.5204553	0.001722546	0.083233242	0.037085405	0.042219268	0.152627249	0.005005873
SACRAMENT	2021	LHD2	2017	35	DSL	612.6554165	0.102201868	0.00974652	0.010187215	512.6208663	0.001681583	0.080576862	0.036203482	0.041215257	0.138022188	0.004846111
SACRAMENT	2021	LHD2	2018	35	DSL	676.316863	0.078855146	0.008578548	0.008966432	478.8216883	0.001638552	0.075264101	0.035277056	0.040160583	0.122680245	0.004526587
SACRAMENT	2021	LHD2	2019	35	DSL	750.0616427	0.063788434	0.007354477	0.007687014	478.8216883	0.001593454	0.075264101	0.034306126	0.039055244	0.10660142	0.004526587
SACRAMENT	2021	LHD2	2010	40	DSL	73.9494985	0.158185356	0.015000378	0.015678629	542.7445231	0.001586742	0.085311881	0.034161626	0.03889074	0.185291917	0.005130888
SACRAMENT	2021	LHD2	2011	40	DSL	187.5811763	0.153791199	0.01428916	0.014935252	542.7445231	0.001563198	0.085311881	0.033654726	0.038313668	0.176897293	0.005130888
SACRAMENT	2021	LHD2	2020	35	DSL	849.3869348	0.049742424	0.006074307	0.00634896	478.8216883	0.001546289	0.075264101	0.033290689	0.037899236	0.089785714	0.004526587
SACRAMENT	2021	LHD2	2012	40	DSL	237.4610187	0.149079087	0.013526478	0.014138085	542.7445231	0.001537949	0.085311881	0.033111146	0.037694839	0.167895247	0.005130888
SACRAMENT	2021	LHD2	2013	40	DSL	171.9810979	0.144049017	0.012712334	0.013287129	542.7445231	0.001510998	0.085311881	0.032530888	0.037034253	0.158285777	0.005130888
SACRAMENT	2021	LHD2	2021	35	DSL	774.8456845	0.037125486	0.004738039	0.004952272	466.8511461	0.001497056	0.073382499	0.03223074	0.036692555	0.072233127	0.004413422
SACRAMENT	2021	LHD2	2014	40	DSL	260.385805	0.13870099	0.011846726	0.012382383	530.2613991	0.001482342	0.083349708	0.031913949	0.03633191	0.148068884	0.005012877
SACRAMENT	2021	LHD2	2015	40	DSL	507.2338538	0.133035006	0.010929656	0.011423847	526.4621874	0.001451983	0.082752524	0.031260331	0.035587808	0.137244569	0.004976961
SACRAMENT	2021	LHD2	2016	40	DSL	396.0098245	0.111342245	0.009961124	0.010411521	510.1798517	0.00141992	0.080193168	0.030570031	0.034801948	0.125812831	0.004823034
SACRAMENT	2021	LHD2	2017	40	DSL	336.3277978	0.09088501	0.008941128	0.009345406	493.897516	0.001386153	0.077633812	0.029843049	0.033974327	0.11377367	0.004669108
SACRAMENT	2021	LHD2	2018	40	DSL	371.275851	0.070093643	0.007869669	0.008225501	461.3328447	0.001350682	0.072515099	0.029079384	0.033104945	0.101127086	0.004361254
SACRAMENT	2021	LHD2	2019	40	DSL	79.81582922	0.142790151	0.013910419	0.014539386	521.7107967	0.00134329	0.082005672	0.028920243	0.032923774	0.156862769	0.004932043
SACRAMENT	2021	LHD2	2011	45	DSL	202.4617804	0.138823651	0.013250879	0.013850024	521.7107967	0.001323358	0.082005672	0.028491116	0.032435241	0.149756124	0.004932043
SACRAMENT	2021	LHD2	2019	40	DSL	411.7593246	0.056687899	0.006746748	0.007051806	461.3328447	0.001313507	0.072515099	0.028279032	0.032193798	0.08787308	0.004361254
SACRAMENT	2021	LHD2	2012	45	DSL	256.2985348	0.134570139	0.012543615	0.013110782	521.7107967	0.001301983	0.082005672	0.028030937	0.031911358	0.142135252	0.004932043
SACRAMENT	2021	LHD2	2013	45	DSL	185.6241654	0.130029615	0.011788628	0.012321658	521.7107967	0.001279167	0.082005672	0.027539707	0.031352126	0.134000153	0.004932043
SACRAMENT	2021	LHD2	2020	40	DSL	466.2856633	0.044190819	0.005572364	0.005824321	461.3328447	0.001274628	0.072515099	0.027441992	0.031240884	0.074011652	0.004361254
SACRAMENT	2021	LHD2	2014	45	DSL	281.0419186	0.125202079	0.010985918	0.011482652	509.7114484	0.001254908	0.080119542	0.027017425	0.030757542	0.125350828	0.004818606
SACRAMENT	2021	LHD2	2021	40	DSL	425.3649534	0.032966466	0.004346517	0.004543047	449.7995235	0.001234045	0.070702221	0.026568261	0.030246199	0.059542803	0.004252223
SACRAMENT	2021	LHD2	2015	45	DSL	547.4721462	0.120087529	0.010135484	0.010593766	506.0594728	0.001229206	0.079545502	0.02646409	0.030127608	0.116187276	0.004784082
SACRAMENT	2021	LHD2	2016	45	DSL	427.4248394	0.100523555	0.009237327	0.009654998	490.4081489	0.001202063	0.077085332	0.025879703	0.029462321	0.106509498	0.004636121
SACRAMENT	2021	LHD2	2017	45	DSL	363.0083045	0.082073124	0.008291446	0.008666349	474.756825	0.001173477	0.074625162	0.025264261	0.028761681	0.096317493	0.004488159
SACRAMENT	2021	LHD2	2010	50	DSL	308.1942073	0.130801541	0.013008475	0.013596661	540.9262835	0.001160687	0.085026079	0.024988915	0.028448218	0.135539331	0.005113699
SACRAMENT	2021	LHD2	2011	50	DSL	781.769087	0.127168067	0.012391699	0.012951997	540.9262835	0.001143465	0.085026079	0.024618122	0.028026095	0.129398741	0.005113699
SACRAMENT	2021	LHD2	2018	45	DSL	400.7287476	0.063316962	0.007297842	0.007627818	443.4541772	0.001143448	0.069704821	0.024617764	0.028025687	0.085611261	0.004192237
SACRAMENT	2021	LHD2	2012	50	DSL	989.6498546	0.123271678	0.011730294	0.012260686	540.9262835	0.001124996	0.085026079	0.024220499	0.027573427	0.122813827	0.005113699
SACRAMENT	2021	LHD2	2019	45	DSL	444.4237297	0.051215773	0.006256515	0.006539407	443.4541772	0.001111977	0.069704821	0.023940209	0.027254337	0.074390804	0.004192237
SACRAMENT	2021	LHD2	2013	50	DSL	716.7537201	0.119112375	0.01102426	0.011522728	540.9262835	0.001105281	0.085026079	0.023796045	0.027090215	0.115784588	0.005113699
SACRAMENT	2021	LHD2	2014	50	DSL	1085.1919	0.114690157	0.010273597	0.010738124	528.484979	0.001084319	0.083070479	0.02334476	0.026576457	0.108311025	0.004996084
SACRAMENT	2021	LHD2	2020	45	DSL	503.2755816	0.039934509	0.005167464	0.005401114	443.4541772	0.001079063	0.069704821	0.023231596	0.026447627	0.062656121	0.004192237
SACRAMENT	2021	LHD2	2015	50	DSL	2113.96343	0.110005023	0.009478305	0.009906872	524.698495	0.001062112	0.082475297	0.022866644	0.026032154	0.100393138	0.004960288
SACRAMENT	2021	LHD2	2021	45	DSL	459.1086777	0.029801343	0.00403069	0.00421294	432.3678228	0.001044707	0.067962201	0.022491921	0.025605556	0.050407212	0.004087431
SACRAMENT	2021	LHD2	2016	50	DSL	1650.42274	0.092098081	0.008638384	0.009028973	508.4707065	0.001038658	0.079924514	0.022361696	0.025457305	0.092030927	0.004806877
SACRAMENT	2021	LHD2	2010	55	DSL	185.5973516	0.121868054	0.012246982	0.012800737	559.8847575	0.001019253	0.088006087	0.021943911	0.024981684	0.119023297	0.005292924
SACRAMENT	2021	LHD2	2017	50	DSL	1401.690088	0.075209761	0.007753834	0.008104428	492.242918	0.001013958	0.077373732	0.021829916	0.024851908	0.083224392	0.004653466
SACRAMENT	2021	LHD2	2011	55	DSL	470.7884465	0.118482739	0.011666311	0.01219381	559.8847575	0.001004129	0.088006087	0.021618301	0.024610998	0.113630964	0.005292924
SACRAMENT	2021	LHD2	2018	50	DSL	1547.340671	0.05803799	0.006824654	0.007133235	459.787341	0.000988011	0.072272167	0.021271301	0.024215962	0.073973532	0.004346644
SACRAMENT	2021	LHD2	2012	55	DSL	595.9761333	0.114852466	0.011043624	0.011542968	559.8847575	0.00098791	0.088006087	0.02126913	0.02421349	0.107848449	0.005292924
SACRAMENT	2021	LHD2	2013	55	DSL	431.6356019	0.110977235	0.01037892	0.010848209	559.8847575	0.000970598	0.088006087	0.020896397	0.023789159	0.101675752	0.005292924
SACRAMENT	2021	LHD2	2019	50	DSL	1716.060842	0.046952694	0.005850846	0.006115395	459.787341	0.000960818	0.072272167	0.020685852	0.023549467	0.064278349	0.004346644
SACRAMENT	2021	LHD2	2014	55	DSL	653.5124209	0.106857046	0.009672199	0.010109533	547.0074081	0.000952191	0.085981947	0.020500104	0.023338005	0.095112875	0.005171187
SACRAMENT	2021	LHD2	2015	55	DSL	1273.047983	0.102491898	0.008923462	0.009326942	543.0882148	0.000932689	0.085365904	0.020080248	0.022860027	0.088159815	0.005134137
SACRAMENT	2021	LHD2	2020	50	DSL	1943.30649	0.036618233	0.004832409	0.005050909	459.787341	0.000932379	0.072272167	0.020073565	0.022852419	0.054138842	0.004346644
SACRAMENT	2021	LHD2	2016	55	DSL	993.8995681	0.085779108	0.008132708	0.008500433	526.291672	0.000912093	0.082725722	0.01963683	0.022355226	0.080816574	0.004975349

SACRAMENT	2021	LHD2	2021	50	DSL	1772.76408	0.02733485	0.003769342	0.003939775	448.2926575	0.000902693	0.070465363	0.019434439	0.022124816	0.043555012	0.004237978
SACRAMENT	2021	LHD2	2017	55	DSL	844.1105052	0.070018223	0.007299938	0.007630009	509.4951293	0.000890403	0.080085539	0.019169849	0.021823599	0.073083152	0.004816561
SACRAMENT	2021	LHD2	2018	55	DSL	931.8226093	0.054000014	0.006425151	0.006715668	475.9020439	0.000867618	0.074805174	0.018679304	0.021265146	0.064959548	0.004498986
SACRAMENT	2021	LHD2	2019	55	DSL	1033.427429	0.043672058	0.005508348	0.005757411	475.9020439	0.000843739	0.074805174	0.018165194	0.020679866	0.056445763	0.004498986
SACRAMENT	2021	LHD2	2020	55	DSL	1170.276823	0.034044155	0.004549528	0.004755238	475.9020439	0.000818764	0.074805174	0.017627517	0.020067756	0.047541798	0.004498986
SACRAMENT	2021	LHD2	2021	55	DSL	1067.574634	0.025396795	0.003548692	0.003709148	464.0044928	0.000792696	0.072935045	0.017066271	0.019428815	0.038247652	0.004386511
						Wtd Ave g/mile	**2.262**	**0.0279**		**634.991**	**0.00807**	**0.100**	**0.174**			

	Acetaldehyde	Benzene	Butadiene	Ethylbenzene	Formaldehyde	Naphthalene
Percent TOG	0.28%	2.47%	0.55%	1.05%	1.58%	0.05%

Note that although tow vehicles do emit toxic organic compounds while driving on streets,
the potential health impacts of those emissions on residences, businesses, schools, etc. near public streets is not assessed herein.

APPENDIX B-7

Tow Vehicle On Site Emission Factors

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EMFAC2017 (v1.0.2) Emission Rates **Tow Vehicles On-Site** 15 mph only, DSL only, ALL YEARS ... LHD2 only
Region Type: County
Region: SACRAMENTO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Yea	Vehicle Cate	Model Year	Speed	Fuel	VMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
SACRAMENT	2021	LHD2	1991	15	DSL	41.2795429	7.470250807	0.086260398	0.090160711	821.7876738	0.028270799	0.129173578	0.608653658	0.692911723	2.077285739	0.007768849
SACRAMENT	2021	LHD2	1992	15	DSL	60.7021896	7.470250807	0.086260398	0.090160711	821.7876738	0.028270799	0.129173578	0.608653658	0.692911723	2.077285739	0.007768849
SACRAMENT	2021	LHD2	1993	15	DSL	144.605939	7.470250807	0.086260398	0.090160711	821.7876738	0.028270799	0.129173578	0.608653658	0.692911723	2.077285739	0.007768849
SACRAMENT	2021	LHD2	1994	15	DSL	145.928303	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1995	15	DSL	82.4900182	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1996	15	DSL	179.054358	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1997	15	DSL	118.25921	7.477133782	0.086960629	0.090892603	821.7876738	0.028208681	0.129173578	0.607316286	0.691389214	2.06818482	0.007768849
SACRAMENT	2021	LHD2	1998	15	DSL	93.2881596	7.475899633	0.086844339	0.090771054	821.7876738	0.028156395	0.129173578	0.6061906	0.690107696	2.064353752	0.007768849
SACRAMENT	2021	LHD2	1999	15	DSL	375.252999	7.473160518	0.086586241	0.090501286	821.7876738	0.028040349	0.129173578	0.603692213	0.687263448	2.05585094	0.007768849
SACRAMENT	2021	LHD2	2000	15	DSL	307.760809	7.468916435	0.086186334	0.090083297	821.7876738	0.027860545	0.129173578	0.599821123	0.68285647	2.042676383	0.007768849
SACRAMENT	2021	LHD2	2001	15	DSL	604.028885	7.463167386	0.085644619	0.089517089	821.7876738	0.027616981	0.129173578	0.594577331	0.676886761	2.024830081	0.007768849
SACRAMENT	2021	LHD2	1987	15	DSL	37.7709505	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LHD2	1988	15	DSL	15.1092158	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LHD2	1989	15	DSL	49.4393816	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LHD2	1990	15	DSL	34.2642262	4.230884468	0.322531507	0.33711495	821.7876738	0.021997278	0.129173578	0.473588445	0.539148959	1.94148416	0.007768849
SACRAMENT	2021	LHD2	2002	15	DSL	320.096562	5.743563034	0.086508254	0.090419773	821.7876738	0.021359347	0.129173578	0.459854168	0.523513397	2.036268051	0.007768849
SACRAMENT	2021	LHD2	2003	15	DSL	418.148724	5.738482073	0.085968614	0.089855733	821.7876738	0.021143373	0.129173578	0.455204373	0.518219914	2.01570549	0.007768849
SACRAMENT	2021	LHD2	1983	15	DSL	3.66659055	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD2	1984	15	DSL	4.95547945	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD2	1985	15	DSL	15.3913989	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD2	1986	15	DSL	37.801834	4.152217327	0.284240049	0.297092123	821.7876738	0.017515982	0.129173578	0.377108773	0.429313266	1.544657145	0.007768849
SACRAMENT	2021	LHD2	2004	15	DSL	506.380528	4.777738419	0.085336253	0.08919478	821.7876738	0.017341546	0.129173578	0.373353285	0.425037893	1.991609881	0.007768849
SACRAMENT	2021	LHD2	2005	15	DSL	1028.89494	4.772032177	0.084611172	0.088436913	821.7876738	0.017101478	0.129173578	0.368184757	0.419153867	1.96398123	0.007768849
SACRAMENT	2021	LHD2	2006	15	DSL	1192.37714	4.765596223	0.083793369	0.087582134	821.7876738	0.016830711	0.129173578	0.362355297	0.412517415	1.93281954	0.007768849
SACRAMENT	2021	LHD2	2007	15	DSL	796.789919	2.644187853	0.057089659	0.059671	821.7876738	0.015393116	0.129173578	0.331404723	0.377282244	1.844166723	0.007768849
SACRAMENT	2021	LHD2	2008	15	DSL	944.139403	2.634570039	0.05606666	0.058601745	821.7876738	0.015147099	0.129173578	0.326108116	0.371252409	1.796602226	0.007768849
SACRAMENT	2021	LHD2	2009	15	DSL	292.906388	2.624387556	0.054953069	0.057437802	821.7876738	0.014878519	0.129173578	0.320325754	0.364669574	1.744650061	0.007768849
SACRAMENT	2021	LHD2	2010	15	DSL	257.710136	0.494132178	0.027895579	0.029156894	821.7876738	0.013733784	0.129173578	0.295680289	0.336612351	1.603763451	0.007768849
SACRAMENT	2021	LHD2	2011	15	DSL	653.710591	0.480405914	0.026572955	0.027774466	821.7876738	0.013529998	0.129173578	0.291292896	0.331617595	1.531105176	0.007768849
SACRAMENT	2021	LHD2	2012	15	DSL	827.539234	0.465686432	0.025154628	0.026292009	821.7876738	0.013311466	0.129173578	0.286588034	0.326261423	1.453189454	0.007768849
SACRAMENT	2021	LHD2	2013	15	DSL	599.345134	0.449973731	0.023640598	0.024709521	821.7876738	0.013078189	0.129173578	0.281565702	0.320543831	1.370016284	0.007768849
SACRAMENT	2021	LHD2	2014	15	DSL	907.430915	0.433267809	0.022030864	0.023027002	802.8865573	0.012830165	0.126202586	0.276225895	0.314464816	1.281585665	0.007590165
SACRAMENT	2021	LHD2	2015	15	DSL	1767.68346	0.415568666	0.020325427	0.021244453	797.1340436	0.012567395	0.125298371	0.270568608	0.308024371	1.187897599	0.007535783
SACRAMENT	2021	LHD2	2016	15	DSL	1380.07353	0.348043124	0.018524287	0.019361873	772.4804134	0.012289878	0.121423164	0.264593834	0.301222488	1.088952085	0.007302718
SACRAMENT	2021	LHD2	2017	15	DSL	1172.08479	0.284353593	0.016627443	0.017379262	747.8267832	0.011997614	0.117547956	0.258301562	0.294059155	0.984749123	0.007069652
SACRAMENT	2021	LHD2	2018	15	DSL	1293.87693	0.219564667	0.014634896	0.015296621	698.5195227	0.011690602	0.109797542	0.25169178	0.286534358	0.875288716	0.006603522
SACRAMENT	2021	LHD2	2019	15	DSL	1434.95972	0.177686481	0.012546646	0.01311395	698.5195227	0.011368842	0.109797542	0.244764471	0.278648078	0.760570866	0.006603522
SACRAMENT	2021	LHD2	2020	15	DSL	1624.98116	0.138642628	0.010362693	0.010831248	698.5195227	0.011032332	0.109797542	0.237519614	0.270400289	0.640595576	0.006603522
SACRAMENT	2021	LHD2	2021	15	DSL	1482.37462	0.103564166	0.008083037	0.008448516	681.0565347	0.010681071	0.107052603	0.22995718	0.261790961	0.515362854	0.006438433

Wtd Ave g/mile	**2.0461**	**0.0415**		**776.580**	**0.0150**	**0.122**	**0.323**	**0.368**	
		DPM							
			Acetaldehyde	Benzene	Butadiene	Ethylbenzene	Formaldehyde	Naphthalene	
		Percent TOG	0.28%	2.47%	0.55%	1.05%	1.58%	0.05%	
			0.00103	**0.00908**	**0.00202**	**0.00386**	**0.00581**	**0.000184**	

TOG speciation from Table 14 of the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards, dated May 2011.

APPENDIX B-8

Street Legal Race Vehicle Travel Emission Factors

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EMFAC2017 (v1.0.2) Emission Rates **MDV vehicles, all speeds, gasoline, 1977 through 1999 model years**
Region Type: County
Region: SACRAMENTO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Yea	Vehicle Cate	Model Year	Speed	Fuel	VMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
SACRAMENT	2021	MDV	1977	5	GAS	0.08227208	8.628385285	0.227256434	0.238160777	2583.110965	3.844763188	0.242726586	34.80304655	37.83762975	600.1125488	0.025561977
SACRAMENT	2021	MDV	1977	10	GAS	6.27132623	9.021884528	0.158202353	0.165793305	1986.421413	2.654372933	0.253796181	24.0275565	26.12259204	424.7599859	0.01965725
SACRAMENT	2021	MDV	1977	15	GAS	19.8858003	9.469128132	0.115246832	0.120776669	1568.087611	1.929831196	0.266377667	17.46895755	18.99212895	316.3879042	0.015517498
SACRAMENT	2021	MDV	1977	20	GAS	74.566892	9.951364707	0.087853614	0.092069054	1276.701901	1.473573479	0.279943547	13.33888302	14.50194069	248.9144945	0.012634
SACRAMENT	2021	MDV	1977	25	GAS	240.832422	10.44587944	0.070082295	0.073445023	1078.864546	1.178076128	0.293854826	10.66402177	11.59385017	206.6647989	0.010676239
SACRAMENT	2021	MDV	1977	70	GAS	7.75349114	14.97909391	0.064178868	0.067258334	1239.087363	1.100686038	0.42137946	9.963481632	10.83222782	344.0711782	0.012261774
SACRAMENT	2021	MDV	1977	65	GAS	29.3059002	14.4174698	0.058912792	0.061739578	1157.945481	0.985294585	0.405580315	8.918950691	9.696621058	296.8821777	0.011458809
SACRAMENT	2021	MDV	1977	30	GAS	168.198072	10.93730281	0.058502445	0.061309542	951.628487	0.984419618	0.307679141	8.911030437	9.688010213	180.8955176	0.009417135
SACRAMENT	2021	MDV	1977	60	GAS	199.905562	14.03102506	0.05135982	0.053824195	1040.222739	0.86813847	0.394709172	7.858445921	8.543647659	237.9234546	0.010293847
SACRAMENT	2021	MDV	1977	35	GAS	298.972689	11.42312572	0.051104175	0.053556284	877.7182525	0.858754424	0.321345909	7.773500921	8.451296047	165.9461309	0.008685734
SACRAMENT	2021	MDV	1977	40	GAS	366.315963	11.93566294	0.046714957	0.04895646	848.2330339	0.785969254	0.335764181	7.114644826	7.734992291	160.7285475	0.008393953
SACRAMENT	2021	MDV	1977	55	GAS	258.949393	13.38954738	0.046855045	0.04910327	950.3523573	0.782413733	0.376663654	7.082460021	7.700001195	197.8003129	0.009404507
SACRAMENT	2021	MDV	1977	45	GAS	141.941818	12.44833814	0.044686112	0.046830266	854.9350789	0.752672119	0.350186335	6.813236993	7.407303794	164.2924128	0.008460276
SACRAMENT	2021	MDV	1977	50	GAS	142.292912	12.91633894	0.044730715	0.046877009	890.5423385	0.750235611	0.363351746	6.791181567	7.383325289	175.9624802	0.008812638
SACRAMENT	2021	MDV	1978	5	GAS	0.05510704	3.27136782	0.206503946	0.223524812	1908.160071	1.058931339	0.124596335	6.371907047	8.92933085	199.4021851	0.018882791
SACRAMENT	2021	MDV	1978	10	GAS	4.20062585	3.403974376	0.14375571	0.155604621	1517.110818	0.739257726	0.129646911	4.448335168	6.233715615	142.2800588	0.015013041
SACRAMENT	2021	MDV	1978	15	GAS	13.3197993	3.571130419	0.104722781	0.113354443	1222.422531	0.536080431	0.13601337	3.225756525	4.52044373	106.0517225	0.012096862
SACRAMENT	2021	MDV	1978	20	GAS	49.9459927	3.758225748	0.079831042	0.08641103	1006.763705	0.407198163	0.143139255	2.450233312	3.433657105	83.23887052	0.009962743
SACRAMENT	2021	MDV	1978	25	GAS	161.313072	3.950093242	0.063682556	0.068931522	856.1299953	0.324563875	0.150446898	1.95299805	2.736851874	68.96155732	0.0084721
SACRAMENT	2021	MDV	1978	70	GAS	5.19340154	5.7312138	0.058318214	0.063125031	867.2873597	0.295256049	0.2182843	1.776644082	2.489716611	112.402538	0.008582511
SACRAMENT	2021	MDV	1978	65	GAS	19.6295197	5.439493772	0.053533023	0.057945426	843.104479	0.271831041	0.207173581	1.635688794	2.292187613	99.46055619	0.008343202
SACRAMENT	2021	MDV	1978	30	GAS	112.661524	4.136947329	0.053160149	0.057541817	757.9636176	0.271506661	0.157563595	1.633736902	2.289452312	60.34450724	0.007500664
SACRAMENT	2021	MDV	1978	60	GAS	133.899664	5.325942178	0.04666977	0.050516476	788.1057786	0.23653106	0.202848751	1.423278238	1.994524117	78.85142202	0.007798946
SACRAMENT	2021	MDV	1978	35	GAS	200.256271	4.319447322	0.04643747	0.050265029	701.2623291	0.236419817	0.164514458	1.422608855	1.993586071	55.37741125	0.006939559
SACRAMENT	2021	MDV	1978	40	GAS	245.363779	4.517371463	0.042449064	0.045947883	678.189768	0.21573725	0.17205278	1.298155654	1.819182428	53.55041927	0.006711238
SACRAMENT	2021	MDV	1978	55	GAS	173.448083	5.05048514	0.04257636	0.046085671	743.1425792	0.215291932	0.19235744	1.295476038	1.815427323	66.27528083	0.007353998
SACRAMENT	2021	MDV	1978	50	GAS	95.3098694	4.879561875	0.040646018	0.043996223	706.1074305	0.206771477	0.185847498	1.244205913	1.743579459	58.81391659	0.006987505
SACRAMENT	2021	MDV	1978	45	GAS	95.0747017	4.713055468	0.040605489	0.043952352	681.8971467	0.206734106	0.179505782	1.243981037	1.743264327	54.71029908	0.006747925
SACRAMENT	2021	MDV	1979	5	GAS	0.03881512	3.22221858	0.206504322	0.223525077	1904.868986	1.055222504	0.123277297	6.346432046	8.893422243	197.7730858	0.018850223
SACRAMENT	2021	MDV	1979	10	GAS	2.9587472	3.352510863	0.143755972	0.155604805	1514.537899	0.736584825	0.128262086	4.430047237	6.207941777	141.0852837	0.01498758
SACRAMENT	2021	MDV	1979	15	GAS	9.38191598	3.517172484	0.104722971	0.113354578	1220.478275	0.534149269	0.134561795	3.212537666	4.501813574	105.1639892	0.012077622
SACRAMENT	2021	MDV	1979	20	GAS	35.1798925	3.701580981	0.079831187	0.086411132	1005.26053	0.405749557	0.14161699	2.440304789	3.419663321	82.54974422	0.009947868
SACRAMENT	2021	MDV	1979	25	GAS	113.622259	3.890656708	0.063682672	0.068931604	854.9008791	0.323419475	0.148850747	1.945143996	2.725781471	68.39485699	0.008459937
SACRAMENT	2021	MDV	1979	70	GAS	3.65801735	5.646261403	0.05831832	0.063125106	865.7706032	0.294297458	0.216017574	1.769995247	2.48034092	111.5422993	0.008567502
SACRAMENT	2021	MDV	1979	65	GAS	13.8262222	5.357506351	0.053533121	0.057945494	841.4831943	0.270864924	0.204970235	1.629064796	2.28285137	98.63758062	0.008327158
SACRAMENT	2021	MDV	1979	30	GAS	79.35412	4.074685209	0.053160245	0.057541885	756.8818951	0.270547923	0.155891404	1.627158254	2.280179683	59.84799089	0.00748996
SACRAMENT	2021	MDV	1979	60	GAS	94.3133877	5.246256911	0.046669855	0.050516536	786.8712529	0.235722092	0.200713997	1.41770502	1.986667354	78.22022173	0.007786729
SACRAMENT	2021	MDV	1979	35	GAS	141.052239	4.254466787	0.046437555	0.050265088	700.2748139	0.23558725	0.16276958	1.416894035	1.985530899	54.92282604	0.006929787
SACRAMENT	2021	MDV	1979	40	GAS	172.824103	4.449512994	0.042449142	0.045947937	677.253323	0.214983424	0.170231758	1.292976301	1.811881718	53.11377196	0.006701971
SACRAMENT	2021	MDV	1979	55	GAS	122.169659	4.974417314	0.042576438	0.046085726	741.9930379	0.214530095	0.190313818	1.29024984	1.808061057	65.72894376	0.007342623
SACRAMENT	2021	MDV	1979	50	GAS	67.132332	4.806091629	0.040646092	0.043996275	705.0680598	0.206040228	0.183873927	1.239189176	1.736508403	58.32935218	0.00697722
SACRAMENT	2021	MDV	1979	45	GAS	66.9666895	4.642255581	0.040605563	0.043952405	680.9448442	0.206011423	0.177605803	1.239015934	1.736265634	54.264032	0.006738501
SACRAMENT	2021	MDV	1980	5	GAS	0.05133564	3.252330566	0.20651089	0.223529709	1902.611411	1.191298671	0.123912276	7.259769387	10.23241775	193.6470099	0.018827882
SACRAMENT	2021	MDV	1980	10	GAS	3.91314438	3.383554311	0.143760544	0.15560803	1512.926526	0.831651379	0.128911839	5.068080212	7.14330045	138.1192467	0.014971634
SACRAMENT	2021	MDV	1980	15	GAS	12.4082219	3.549745764	0.104726302	0.113356927	1219.239967	0.603071207	0.135243656	3.675113547	5.17995753	102.954053	0.012065368
SACRAMENT	2021	MDV	1980	20	GAS	46.5278003	3.735972281	0.079833726	0.086412923	1004.240075	0.458081804	0.142338799	2.791548698	3.934600527	80.81991341	0.00993777
SACRAMENT	2021	MDV	1980	25	GAS	150.273165	3.926893472	0.063684697	0.068933032	854.0076613	0.3651231	0.149612807	2.225058724	3.136150637	66.96458699	0.008451098
SACRAMENT	2021	MDV	1980	70	GAS	4.83797672	5.699997584	0.058320175	0.063126414	863.3144448	0.332168082	0.217167246	2.024230975	2.853090209	109.2550486	0.008543196
SACRAMENT	2021	MDV	1980	65	GAS	18.2861191	5.40724207	0.053534823	0.057946695	839.3775708	0.305793381	0.206013398	1.863503655	2.626550082	96.56975221	0.008306322
SACRAMENT	2021	MDV	1980	30	GAS	104.95122	4.112636293	0.053161936	0.057543078	756.0568626	0.30543781	0.156689522	1.861336806	2.623495976	58.5962587	0.007481796
SACRAMENT	2021	MDV	1980	60	GAS	124.735869	5.29549926	0.046671339	0.050517583	785.2936859	0.266090412	0.201756049	1.62155392	2.285529503	76.59588017	0.007771118
SACRAMENT	2021	MDV	1980	35	GAS	186.551178	4.294097587	0.046439031	0.05026613	699.4693976	0.265963197	0.163603113	1.620778671	2.284436813	53.77449834	0.006921817
SACRAMENT	2021	MDV	1980	40	GAS	228.571629	4.491041851	0.042450492	0.04594889	676.4224862	0.242696051	0.171106597	1.478988775	2.084588393	52.00521165	0.006693749
SACRAMENT	2021	MDV	1980	55	GAS	161.577683	5.02061674	0.042577792	0.046086681	740.7562031	0.242187116	0.191283153	1.475887326	2.080216997	64.35194811	0.007330383
SACRAMENT	2021	MDV	1980	50	GAS	88.7870745	4.850795243	0.040647385	0.043997187	704.0406824	0.232608256	0.184813033	1.417513792	1.997941328	57.10837472	0.006967053
SACRAMENT	2021	MDV	1980	45	GAS	88.5680011	4.685594458	0.040606854	0.043953315	680.043328	0.232569479	0.178518961	1.417277483	1.997608258	53.13155258	0.00672958
SACRAMENT	2021	MDV	1981	5	GAS	0.01272802	2.252513006	0.080354962	0.087080403	1575.45001	1.039003779	0.09698149	6.132193594	8.791431912	96.65291725	0.015590355
SACRAMENT	2021	MDV	1981	10	GAS	0.97021427	2.312671258	0.055971232	0.060655836	1263.300745	0.726421558	0.099571591	4.287335345	6.146547102	69.17488797	0.012501385
SACRAMENT	2021	MDV	1981	15	GAS	3.07646045	2.404001827	0.040788039	0.044201861	1023.49467	0.526872684	0.10350381	3.109599178	4.458083233	51.6891795	0.010128309
SACRAMENT	2021	MDV	1981	20	GAS	11.535975	2.513928308	0.031096153	0.033698797	845.5713655	0.400082802	0.108236673	2.361286115	3.385262677	40.64684836	0.008367614
SACRAMENT	2021	MDV	1981	25	GAS	37.2583156	2.630684236	0.024802079	0.02687793	720.2178644	0.318765558	0.113263576	1.881352265	2.69720453	33.71664735	0.00712714
SACRAMENT	2021	MDV	1981	70	GAS	1.19951465	3.805727559	0.022512006	0.024396185	700.8482743	0.287002988	0.163854827	1.693889782	2.428448557	54.13562951	0.006935462
SACRAMENT	2021	MDV	1981	30	GAS	26.0213172	2.746798702	0.02069563	0.022427785	638.0769601	0.266571952	0.11826286	1.573305937	2.25557328	29.51909557	0.006314289
SACRAMENT	2021	MDV	1981	65	GAS	4.53381013	3.607666159	0.020679398	0.022410194	687.9905049	0.265050315	0.155327334	1.564325249	2.242698099	48.01155815	0.006808224
SACRAMENT	2021	MDV	1981	35	GAS	46.2529865	2.862080608	0.018066918	0.019579059	590.5795585	0.231967573	0.123226299	1.369071118	1.962771613	27.08215779	0.005844263
SACRAMENT	2021	MDV	1981	60	GAS	30.9266687	3.526588428	0.018053534	0.019564554	652.2972608	0.230676684	0.151836549	1.3614523	1.951848879	38.14449388	0.00645501
SACRAMENT	2021	MDV	1981	40	GAS	56.6714217	2.989372282	0.016501162	0.017882254	571.0564228	0.211461836	0.128706817	1.248046387	1.78926426	26.15770674	0.005651066
SACRAMENT	2021	MDV	1981	55	GAS	40.0611268	3.340736428	0.016492627	0.017873005	620.5166027	0.210420117	0.143834728	1.241898173	1.78044986	32.16345296	0.006140515
SACRAMENT	2021	MDV	1981	45	GAS	21.9593068	3.11679406	0.015768209	0.017087955	573.5187216	0.2024516	0.134192935	1.194868036	1.713025009	26.67510625	0.005675433
SACRAMENT	2021	MDV	1981	50	GAS	22.0136233	3.226445024	0.015765288	0.017084789	592.3960397	0.202337037	0.138913935	1.194191886	1.712055644	28.61425028	0.005862239
SACRAMENT	2021	MDV	1982	5	GAS	0.0108684	2.36687125	0.079935886	0.086763178	1571.598601	1.018234001	0.101965817	5.948032594	8.593942023	93.46938625	0.015552242
SACRAMENT	2021	MDV	1982	10	GAS	0.82846206	2.38789288	0.055727003	0.060486624	1261.639504	0.712976976	0.102871437	4.164868087	6.017558632	67.24373278	0.012484946
SACRAMENT	2021	MDV	1982	15	GAS	2.6269772	2.451275646	0.040630716	0.044100969	1022.653694	0.517358238	0.105601994	3.022157638	4.366527438	50.43074856	0.010119987
SACRAMENT	2021	MDV	1982	20	GAS	9.8505226	2.540731099	0.03098069	0.033626739	845.0503305	0.392811253	0.109455772	2.294614143	3.315345133	39.75973565	0.008362458
SACRAMENT	2021	MDV	1982	25	GAS	31.8147257	2.642273473	0.024704427	0.026814422	719.8522612	0.312845781	0.113830261	1.82749437	2.640432851	33.03609365	0.007123522
SACRAMENT	2021	MDV	1982	70	GAS	1.02426074	3.805081889	0.022132619	0.024022957	697.2292373	0.277868717	0.16392454	1.623175207	2.345224812	51.77426922	0.006899649
SACRAMENT	2021	MDV	1982	30	GAS	22.219498	2.747140841	0.020602061	0.022361675	637.8152659	0.2614807	0.118347992	1.527444303	2.206909189	28.94638146	0.006311699
SACRAMENT	2021	MDV	1982	65	GAS	3.87140223	3.602580402	0.020352178	0.022090449	685.6927234	0.257363588	0.15520069	1.503394123	2.17216058	46.15416103	0.006785485
SACRAMENT	2021	MDV	1982	35	GAS	39.4952391	2.854022945	0.017968545	0.019503232	590.3172116	0.227344051	0.122952518	1.328034445	1.918794298	26.54526836	0.005841667
SACRAMENT	2021	MDV	1982	60	GAS	26.4081579	3.512685786	0.017804874	0.019325581	650.5536047	0.224219112	0.151327992	1.309780058	1.892419671	36.76232353	0.006437755
SACRAMENT	2021	MDV	1982	40	GAS	48.3914989	2.975344031	0.016390982	0.01779093	570.6906787	0.206980738	0.128179082	1.209081781	1.746926998	25.59057493	0.005647447
SACRAMENT	2021	MDV	1982	55	GAS	34.2080349	3.323249968	0.01629836	0.017690396	619.56735	0.205073317	0.143167017	1.197939541	1.73082827	31.16884653	0.006131121
SACRAMENT	2021	MDV	1982	45	GAS	18.7509637	3.099227606	0.01563928	0.016975025	573.0249101	0.197885619	0.133516039	1.155952473	1.670163769	26.02531531	0.005670546
SACRAMENT	2021	MDV	1982	50	GAS	18.7973443	3.207805162	0.015609292	0.016942475	591.7659313	0.197519438	0.138193606	1.153813421	1.667073186	27.8335718	0.005856004
SACRAMENT	2021	MDV	1983	5	GAS	0.01788595	3.348015781	0.078691268	0.085583934	1530.42468	0.8314297	0.157635151	4.680582286	6.829894684	70.73181573	0.015144793
SACRAMENT	2021	MDV	1983	10	GAS	1.36338637	2.835847905	0.055519429	0.060382445	1236.568108	0.587584161	0.133520671	3.307839511	4.82679165	53.59472443	0.012236844
SACRAMENT	2021	MDV	1983	15	GAS	4.32317312	2.510218835	0.040765086	0.04433575	1006.882743	0.428837649	0.118189026	2.414166706	3.522746391	42.01248718	0.009963921
SACRAMENT	2021	MDV	1983	20	GAS	16.2108429	2.305344071	0.031145062	0.033873096	834.5048965	0.326097679	0.108542876	1.83578602	2.678774651	34.26158239	0.008258102
SACRAMENT	2021	MDV	1983	25	GAS	52.3569704	2.179424888	0.024758633	0.026927272	712.1273473	0.259086699	0.102614203	1.458543774	2.128303651	29.09152063	0.007047077
SACRAMENT	2021	MDV	1983	30	GAS	36.5662621	2.107895067	0.020480175	0.022274059	631.4239924	0.215260063	0.099246353	1.211819157	1.768283669	25.70872725	0.006248452
SACRAMENT	2021	MDV	1983	70	GAS	1.68560903	2.914530603	0.018160888	0.019751623	668.1874593	0.201558245	0.137225301	1.134683969	1.655728185	34.72757166	0.006612257
SACRAMENT	2021	MDV	1983	65	GAS	6.37110291	2.691836405	0.016998095	0.018486979	661.3381283	0.189482333	0.126740155	1.066701913	1.556528927	31.91172142	0.006544477
SACRAMENT	2021	MDV	1983	35	GAS	64.9966648	2.078075216	0.017631338	0.019175689	584.3218948	0.185666756	0.097842341	1.045221896	1.525185337	23.47554193	0.005782339
SACRAMENT	2021	MDV	1983	60	GAS	43.4594708	2.508000929	0.015388515	0.016736414	633.3022232	0.168444315	0.1180846	0.948267156	1.383709208	26.80887377	0.006267039
SACRAMENT	2021	MDV	1983	40	GAS	79.6370931	2.09187927	0.015801819	0.01718592	564.2735017	0.167056279	0.098492279	0.940453126	1.372306993	22.22107637	0.005583944
SACRAMENT	2021	MDV	1983	55	GAS	56.2955999	2.313136426	0.014545825	0.015819911	607.0040331	0.157648158	0.108909765	0.887489554	1.295022674	24.0323368	0.006006797
SACRAMENT	2021	MDV	1983	45	GAS	30.8581523	2.138633825	0.014749307	0.016041217	565.4207787	0.157338682	0.100693631	0.885747345	1.292480447	21.91251796	0.005595297
SACRAMENT	2021	MDV	1983	50	GAS	30.9344801	2.206932236	0.014344831	0.015601313	582.1916464	0.154538931	0.103909336	0.869985979	1.269481498	22.51255591	0.005761258
SACRAMENT	2021	MDV	1984	5	GAS	0.02942563	2.230203504	0.079575377	0.086545483	1590.463049	0.853218953	0.095001922	4.798225669	7.001559633	103.9330724	0.015738921

SACRAMENT	2021	MDV	1984	10	GAS	2.24301742	2.320838987	0.055395623	0.060247795	1276.630208	0.597108205	0.0988628	3.357942183	4.899901351	74.37522	0.012633291
SACRAMENT	2021	MDV	1984	15	GAS	7.1124025	2.434506029	0.040354458	0.043889155	1033.761708	0.432794491	0.103704775	2.433895342	3.55153437	55.4321026	0.01022991
SACRAMENT	2021	MDV	1984	20	GAS	26.6697715	2.561785938	0.030762537	0.033457066	853.3703328	0.32838256	0.109126628	1.84671663	2.694724571	43.46313576	0.008444791
SACRAMENT	2021	MDV	1984	25	GAS	86.1366954	2.692497288	0.02453979	0.02668926	726.5156477	0.261568816	0.114694653	1.470977879	2.146447468	35.98021875	0.007189461
SACRAMENT	2021	MDV	1984	70	GAS	2.77313204	3.90571103	0.022472664	0.024441073	707.6890319	0.236518941	0.166374976	1.330105537	1.940886877	58.20979996	0.007003157
SACRAMENT	2021	MDV	1984	65	GAS	10.4816178	3.707372449	0.020628712	0.022435607	697.1220746	0.219160689	0.157926174	1.232488378	1.798444148	51.94584956	0.006898588
SACRAMENT	2021	MDV	1984	30	GAS	60.1581215	2.820019593	0.020485027	0.022279336	643.7243731	0.218852945	0.120126832	1.230757727	1.795918787	31.48533572	0.006370175
SACRAMENT	2021	MDV	1984	35	GAS	106.931281	2.944174649	0.017894472	0.019461872	595.8044602	0.190506509	0.125415573	1.071346594	1.563306434	28.89115933	0.005895968
SACRAMENT	2021	MDV	1984	60	GAS	71.4986977	3.629721199	0.017983988	0.019559228	658.7855414	0.190162128	0.154618396	1.069409907	1.560480426	41.03267784	0.006519217
SACRAMENT	2021	MDV	1984	40	GAS	131.017436	3.078925331	0.016357558	0.017790337	576.0160441	0.173729441	0.131155665	0.976997825	1.425632934	27.91985686	0.005700146
SACRAMENT	2021	MDV	1984	55	GAS	92.6164541	3.441852864	0.016406611	0.017843686	627.1446231	0.173489998	0.146615605	0.975651279	1.423668056	34.60672225	0.006206104
SACRAMENT	2021	MDV	1984	50	GAS	50.8928205	3.325893633	0.015662762	0.017034683	598.3254909	0.166661043	0.141675989	0.937247459	1.367629291	30.69828942	0.005920916
SACRAMENT	2021	MDV	1984	45	GAS	50.7672474	3.212447217	0.015647144	0.017017697	578.6862609	0.166497467	0.136843413	0.936327559	1.366286976	28.5230493	0.00572657
SACRAMENT	2021	MDV	1985	5	GAS	0.03824957	4.390720014	0.082922133	0.090185386	1467.220199	0.44737992	0.205145252	2.386309623	3.4820974	31.8127784	0.014519333
SACRAMENT	2021	MDV	1985	10	GAS	2.91563685	3.494010204	0.05815764	0.06325174	1196.309483	0.316260954	0.163248761	1.686925416	2.461557608	27.31773316	0.011838452
SACRAMENT	2021	MDV	1985	15	GAS	9.24521704	2.886449075	0.042383393	0.046095807	979.1541213	0.230282762	0.134862009	1.228320599	1.792362535	23.51688926	0.009689524
SACRAMENT	2021	MDV	1985	20	GAS	34.6673049	2.468560008	0.032063781	0.034872287	813.8636841	0.173667043	0.115337203	0.926334235	1.351704741	20.47272098	0.008053841
SACRAMENT	2021	MDV	1985	25	GAS	111.966729	2.178635671	0.025161974	0.027365943	695.6791343	0.135996446	0.101791224	0.72540052	1.058502736	18.09422755	0.006884309
SACRAMENT	2021	MDV	1985	30	GAS	78.197893	1.980530923	0.020472605	0.022265826	617.484841	0.110685948	0.092535282	0.590395166	0.861503241	16.26084565	0.006110513
SACRAMENT	2021	MDV	1985	35	GAS	138.997041	1.853197309	0.017264387	0.018776596	571.5539526	0.093284712	0.086585942	0.497577553	0.726063997	14.77760467	0.00565599
SACRAMENT	2021	MDV	1985	40	GAS	170.305974	1.792248658	0.015086831	0.016408306	551.5076126	0.081366517	0.083738271	0.434006295	0.633300967	13.59134825	0.005457615
SACRAMENT	2021	MDV	1985	45	GAS	65.9909533	1.786831754	0.013661285	0.014857894	551.8147952	0.073682733	0.08348518	0.39302125	0.573495685	12.70227682	0.005460655
SACRAMENT	2021	MDV	1985	70	GAS	3.60471831	2.630319328	0.013645747	0.014840995	628.7604626	0.072338991	0.122894997	0.385853772	0.563036919	10.79028515	0.006222094
SACRAMENT	2021	MDV	1985	65	GAS	13.6247676	2.385280623	0.013155283	0.01430757	629.4040261	0.071245965	0.111446185	0.38002361	0.554529559	11.09644081	0.006228463
SACRAMENT	2021	MDV	1985	50	GAS	66.1541822	1.828370313	0.012819282	0.013942139	566.9517096	0.069339533	0.085425964	0.369854764	0.539691204	12.06224018	0.005610447
SACRAMENT	2021	MDV	1985	60	GAS	92.9391972	2.135882258	0.012573991	0.013675362	608.8520607	0.06747048	0.099793679	0.359885297	0.52514378	11.13542231	0.006025085
SACRAMENT	2021	MDV	1985	55	GAS	120.38959	1.930239753	0.012468255	0.013560365	588.6013575	0.06745925	0.090185555	0.3598254	0.525056378	11.56175598	0.005824688
SACRAMENT	2021	MDV	1986	5	GAS	0.04943582	4.19177737	0.09090069	0.098862795	1355.765385	0.491400796	0.196598184	2.616532606	3.818038236	30.46762932	0.013416398
SACRAMENT	2021	MDV	1986	10	GAS	3.76832799	3.383033969	0.061940429	0.067365868	1105.693873	0.337519196	0.15866738	1.7971684	2.622423911	26.48275383	0.010941737
SACRAMENT	2021	MDV	1986	15	GAS	11.9490224	2.828527765	0.044112689	0.047976574	905.2279235	0.240166177	0.132660533	1.278798567	1.866019867	23.04107401	0.008957964
SACRAMENT	2021	MDV	1986	20	GAS	44.8059144	2.442332406	0.032781625	0.035653008	752.6382035	0.177912497	0.114547619	0.947320094	1.382327258	20.23794492	0.007447965
SACRAMENT	2021	MDV	1986	25	GAS	144.711903	2.170428016	0.025387219	0.027610917	643.522763	0.137488103	0.101795055	0.732074726	1.068241722	18.0135657	0.006368179
SACRAMENT	2021	MDV	1986	30	GAS	101.067219	1.98102638	0.020469692	0.022262657	571.304418	0.110891682	0.092911945	0.590458348	0.861595435	16.27108296	0.00565352
SACRAMENT	2021	MDV	1986	35	GAS	179.647352	1.85553165	0.017172561	0.018676727	528.8125381	0.092973805	0.087026128	0.495052093	0.722378851	14.83092404	0.005233029
SACRAMENT	2021	MDV	1986	40	GAS	220.112723	1.790848262	0.014983917	0.016296377	510.1673773	0.080971782	0.083992418	0.431145633	0.629126696	13.6510683	0.00504852
SACRAMENT	2021	MDV	1986	45	GAS	4.65893442	2.478522824	0.014412825	0.015675262	580.4111342	0.076547966	0.116244982	0.407590404	0.594754961	10.48467636	0.005743639
SACRAMENT	2021	MDV	1986	65	GAS	17.6093923	2.265700389	0.013739061	0.014942482	581.2417036	0.074557274	0.106263416	0.396990683	0.579287872	10.84314939	0.005751858
SACRAMENT	2021	MDV	1986	70	GAS	85.2903048	1.776510713	0.013596782	0.014787741	510.2973955	0.073480369	0.083319974	0.39125655	0.57092064	12.74055152	0.005049806
SACRAMENT	2021	MDV	1986	50	GAS	85.5012709	1.803631395	0.012833127	0.013957196	524.1157452	0.069553493	0.084591958	0.370347349	0.540409982	12.05637075	0.00518655
SACRAMENT	2021	MDV	1986	60	GAS	120.119684	2.058590398	0.012889165	0.014018143	562.3657416	0.069296438	0.096549768	0.368978626	0.538412745	10.98252211	0.005565065
SACRAMENT	2021	MDV	1986	55	GAS	155.598068	1.884331762	0.012603608	0.013707573	543.9160298	0.068328236	0.088376879	0.363823298	0.530890102	11.49133519	0.00538249
SACRAMENT	2021	MDV	1987	5	GAS	0.06537609	3.967675948	0.100546752	0.109353767	1356.265906	0.545213348	0.18672693	2.897592848	4.228160682	28.89610686	0.013421351
SACRAMENT	2021	MDV	1987	10	GAS	4.98340111	3.262501891	0.066513814	0.072339841	1106.552843	0.36364729	0.153539999	1.932641216	2.820105525	25.53297875	0.010950237
SACRAMENT	2021	MDV	1987	15	GAS	15.8019078	2.769740454	0.046203403	0.050250417	906.0913244	0.252378537	0.13034964	1.341291895	1.957209985	22.51777123	0.008966508
SACRAMENT	2021	MDV	1987	20	GAS	59.2532933	2.420081311	0.033649497	0.036596898	753.4610144	0.183205374	0.113893967	0.973663949	1.420768149	19.99707521	0.007456108
SACRAMENT	2021	MDV	1987	25	GAS	191.373326	2.168755961	0.025659539	0.02790709	644.3444193	0.139396465	0.102066083	0.740836959	1.081027552	17.95273471	0.00637631
SACRAMENT	2021	MDV	1987	30	GAS	133.655694	1.989142301	0.02046617	0.022258827	572.1696089	0.11122	0.093613097	0.591090221	0.862517463	16.31726907	0.005662082
SACRAMENT	2021	MDV	1987	35	GAS	237.573485	1.865363463	0.017061544	0.018555986	529.6696948	0.092659989	0.087787813	0.492451116	0.718583512	14.92581227	0.005241511
SACRAMENT	2021	MDV	1987	70	GAS	6.16117787	2.303989504	0.015340221	0.016683889	580.3250126	0.081673227	0.108430449	0.434060831	0.633380546	10.12456944	0.005742786
SACRAMENT	2021	MDV	1987	40	GAS	291.086656	1.795858432	0.014859495	0.016161056	510.9683647	0.080543937	0.084516764	0.428059104	0.62462284	13.74985605	0.005056446
SACRAMENT	2021	MDV	1987	65	GAS	23.2874276	2.130225749	0.014444847	0.015710089	581.7360792	0.078637094	0.100252772	0.417924989	0.609835163	10.55934055	0.00575675
SACRAMENT	2021	MDV	1987	45	GAS	112.791615	1.770716547	0.013518797	0.014702926	511.0645158	0.073281713	0.083333535	0.389463257	0.568303871	12.81165495	0.005057398
SACRAMENT	2021	MDV	1987	60	GAS	158.851504	1.972904541	0.013270211	0.014432565	562.7716114	0.071549775	0.092848915	0.380258695	0.554872595	10.81520635	0.005569081
SACRAMENT	2021	MDV	1987	50	GAS	113.070606	1.780672848	0.012849865	0.0139754	524.8879655	0.069863217	0.083802099	0.371295311	0.541793246	12.07451685	0.005194192
SACRAMENT	2021	MDV	1987	55	GAS	205.769664	1.836173034	0.012767249	0.013885548	544.6142817	0.06943325	0.086414051	0.369010203	0.538458822	11.4300776	0.0053894
SACRAMENT	2021	MDV	1988	5	GAS	0.07767762	4.093210608	0.095154882	0.103489616	1359.013265	0.517542083	0.192670336	2.745422443	4.006113985	29.89578513	0.013448538
SACRAMENT	2021	MDV	1988	10	GAS	5.92110571	3.331441885	0.063957423	0.069559534	1109.11041	0.350824538	0.156813341	1.861030417	2.715611216	26.19327225	0.010975547
SACRAMENT	2021	MDV	1988	15	GAS	18.7752831	2.80390336	0.045034754	0.048979404	908.0468135	0.246798603	0.131981727	1.309200635	1.910382494	22.92083847	0.008985859
SACRAMENT	2021	MDV	1988	20	GAS	70.402724	2.433359777	0.033164381	0.036069291	754.8772891	0.181134673	0.114539977	0.960871035	1.402100759	20.22180733	0.007470123
SACRAMENT	2021	MDV	1988	25	GAS	227.3832	2.170268741	0.02550732	0.027741538	645.4036187	0.138997532	0.102156094	0.73734476	1.075931742	18.06277678	0.006386792
SACRAMENT	2021	MDV	1988	30	GAS	158.805096	1.985183786	0.020468138	0.022260968	573.0490434	0.111575732	0.093444014	0.591879438	0.863669086	16.36096022	0.005670785
SACRAMENT	2021	MDV	1988	35	GAS	282.276639	1.860364132	0.0171236	0.018623477	530.428528	0.093283281	0.087568664	0.494842877	0.722073565	14.9350322	0.00524902
SACRAMENT	2021	MDV	1988	40	GAS	345.859147	1.793373778	0.014929043	0.016236697	511.6500491	0.081164814	0.08441538	0.430557648	0.62826871	13.74897216	0.005063192
SACRAMENT	2021	MDV	1988	70	GAS	7.32049952	2.399706826	0.014821833	0.016120096	580.9926289	0.079104325	0.112955908	0.419627307	0.612319181	10.34607595	0.005749393
SACRAMENT	2021	MDV	1988	65	GAS	27.6693201	2.206464725	0.014050333	0.015281019	582.8894476	0.076730685	0.103859865	0.407035778	0.593945651	10.76589831	0.005768164
SACRAMENT	2021	MDV	1988	45	GAS	134.015116	1.774249177	0.013562388	0.014750335	511.7663338	0.073739902	0.083515172	0.391170472	0.570795034	12.82276391	0.005064343
SACRAMENT	2021	MDV	1988	60	GAS	188.74189	2.020486023	0.013057217	0.014200915	563.5898555	0.070601186	0.095105715	0.374520427	0.546499327	10.94563343	0.005577178
SACRAMENT	2021	MDV	1988	50	GAS	134.346603	1.794002945	0.012840509	0.013965225	525.7109072	0.0700297	0.084444995	0.371488844	0.542075649	12.11636048	0.005202336
SACRAMENT	2021	MDV	1988	55	GAS	244.488434	1.863583068	0.012675778	0.013786065	545.5279374	0.069150629	0.087720181	0.366825607	0.535271064	11.51394438	0.005398441
SACRAMENT	2021	MDV	1989	5	GAS	0.12013424	4.080318502	0.094310565	0.102571345	1364.423735	0.519813388	0.191935503	2.753624325	4.018082151	31.25351987	0.013502079
SACRAMENT	2021	MDV	1989	10	GAS	9.15743234	3.326611935	0.063537137	0.069102434	1113.861141	0.353441493	0.156481641	1.872297086	2.732051513	27.12559795	0.011022559
SACRAMENT	2021	MDV	1989	15	GAS	29.037378	2.804699486	0.044829594	0.048756274	911.6896722	0.249184127	0.131931222	1.320011162	1.926157189	23.56322201	0.009021908
SACRAMENT	2021	MDV	1989	20	GAS	108.883072	2.43894803	0.033071415	0.035968181	757.6223126	0.18322728	0.114726514	0.970615817	1.416320322	20.68045456	0.007497287
SACRAMENT	2021	MDV	1989	25	GAS	351.665107	2.180308548	0.025474513	0.027705857	647.591162	0.140854468	0.102560283	0.746152942	1.088784622	18.41303692	0.00640844
SACRAMENT	2021	MDV	1989	30	GAS	245.603945	1.999436669	0.020468637	0.02226151	574.9807758	0.113271738	0.094052188	0.600038055	0.875574121	16.65562165	0.005689901
SACRAMENT	2021	MDV	1989	35	GAS	436.561912	1.878266934	0.017143374	0.018644983	532.1842683	0.094842523	0.088352443	0.502412376	0.73311896	15.2017248	0.005266395
SACRAMENT	2021	MDV	1989	40	GAS	534.89701	1.814499875	0.014960802	0.016271238	513.2873489	0.082636983	0.085352883	0.43775557	0.6387719	14.01080531	0.005079394
SACRAMENT	2021	MDV	1989	70	GAS	11.3216994	2.433274774	0.014896186	0.016200962	582.9383808	0.081090391	0.114459648	0.429562757	0.626816966	11.12320837	0.005768648
SACRAMENT	2021	MDV	1989	65	GAS	42.7926706	2.240305464	0.014119767	0.015356535	585.5965158	0.078673593	0.105382498	0.416760175	0.608135469	11.47151505	0.005794952
SACRAMENT	2021	MDV	1989	45	GAS	207.264388	1.798423832	0.013602514	0.014793975	513.4475858	0.07519283	0.084596676	0.398321416	0.581229675	13.1073827	0.00508098
SACRAMENT	2021	MDV	1989	60	GAS	291.903434	2.0517641 47	0.013118082	0.014267111	565.5606495	0.072267769	0.096513638	0.382826396	0.558619378	11.45515616	0.005596681
SACRAMENT	2021	MDV	1989	50	GAS	207.777058	1.821001446	0.012887482	0.014016312	527.613813	0.071517064	0.085658712	0.378849664	0.552816541	12.45201059	0.005221166
SACRAMENT	2021	MDV	1989	55	GAS	378.119628	1.892930941	0.012729372	0.013844353	547.6098394	0.070701566	0.089042229	0.3745297	0.546512859	11.92317862	0.005419043
SACRAMENT	2021	MDV	1990	5	GAS	0.14898775	3.975970341	0.100196759	0.108973117	1362.902828	0.548801066	0.18792338	2.89902231	4.230246549	29.2105385	0.013487028
SACRAMENT	2021	MDV	1990	10	GAS	11.3568391	3.270040862	0.066347875	0.072159368	1113.20237	0.366729388	0.154557776	1.93723508	2.826808881	25.84513058	0.01101604
SACRAMENT	2021	MDV	1990	15	GAS	36.011495	2.774625055	0.046127545	0.050167914	911.4242139	0.25470729	0.131142054	1.345482293	1.963324604	22.77620998	0.009019281
SACRAMENT	2021	MDV	1990	20	GAS	135.034307	2.422723303	0.033618007	0.03656265	757.5608308	0.184959657	0.114509494	0.977042877	1.425698673	20.20242805	0.007496679
SACRAMENT	2021	MDV	1990	25	GAS	436.127058	2.170121394	0.025649659	0.027896344	647.6581899	0.140775109	0.102570319	0.743639558	1.085117098	18.1218639	0.006409103
SACRAMENT	2021	MDV	1990	30	GAS	304.592421	1.990172277	0.020466297	0.022258966	575.1404583	0.112368968	0.094065063	0.593585117	0.86615801	16.46881256	0.005691481
SACRAMENT	2021	MDV	1990	35	GAS	541.414142	1.866153201	0.017065572	0.018560367	532.3657927	0.093631255	0.088203328	0.494603808	0.721724716	15.05994222	0.005268191
SACRAMENT	2021	MDV	1990	70	GAS	14.0409138	2.306132359	0.015306571	0.016647293	581.6909952	0.082146064	0.108998848	0.433933692	0.633195024	10.18112472	0.005756304
SACRAMENT	2021	MDV	1990	40	GAS	663.367092	1.796413553	0.014864009	0.016165966	513.4274658	0.081376029	0.084907099	0.429866008	0.627259469	13.86641321	0.005080781
SACRAMENT	2021	MDV	1990	65	GAS	53.0704957	2.135968385	0.014419239	0.015682238	584.8641018	0.079322263	0.100956085	0.41901706	0.61142871	10.67318889	0.005787704
SACRAMENT	2021	MDV	1990	45	GAS	257.044575	1.771591097	0.013521627	0.014706003	513.5272644	0.074032844	0.083733871	0.391075893	0.570657025	12.9213933	0.005081769
SACRAMENT	2021	MDV	1990	60	GAS	362.011992	1.975199087	0.013256385	0.014417528	565.0573781	0.072148837	0.093357359	0.38112369	0.556134793	10.90166557	0.005591701
SACRAMENT	2021	MDV	1990	50	GAS	257.680376	1.782574182	0.012849258	0.01397474	527.6230968	0.070583881	0.084252984	0.372856865	0.544071862	12.18835095	0.005221258
SACRAMENT	2021	MDV	1990	55	GAS	468.935353	1.838914561	0.012761311	0.01387909	547.4600832	0.070120882	0.0869159	0.370411089	0.540502991	11.54109043	0.005417561
SACRAMENT	2021	MDV	1991	5	GAS	0.13967551	4.008724336	0.055398184	0.06025058	1363.483969	0.543191206	0.18966747	2.86290396	4.177542739	29.44508336	0.013492779
SACRAMENT	2021	MDV	1991	10	GAS	10.6469985	3.288745221	0.036817237	0.040042104	1113.738138	0.364324604	0.155602614	1.920182691	2.801926076	25.99908585	0.011021342
SACRAMENT	2021	MDV	1991	15	GAS	33.7606558	2.784668584	0.025677104	0.027926193	911.830938	0.253829976	0.131752897	1.33781776	1.952140535	22.86940659	0.009023306
SACRAMENT	2021	MDV	1991	20	GAS	126.59421	2.427536348	0.018762024	0.020405413	757.8526587	0.184795488	0.11485566	0.973969623	1.421214188	20.25367287	0.007499566
SACRAMENT	2021	MDV	1991	25	GAS	408.867654	2.171951786	0.014343708	0.015600091	647.8736422	0.14093091	0.102763016	0.742780175	1.083863087	18.14617742	0.006411235
SACRAMENT	2021	MDV	1991	30	GAS	285.554373	1.990570043	0.011461387	0.012465304	575.316886	0.112653824	0.094181179	0.593745028	0.866391351	16.47751712	0.005693227
SACRAMENT	2021	MDV	1991	35	GAS	507.573942	1.866219238	0.009564915	0.010402718	532.5165433	0.093946528	0.088297686	0.49514772	0.722518391	15.06063099	0.005269683
SACRAMENT	2021	MDV	1991	70	GAS	13.1633096	2.330630226	0.008503227	0.009248035	581.8346175	0.081683736	0.110270675	0.430516342	0.628208436	10.23306767	0.005757725
SACRAMENT	2021	MDV	1991	40	GAS	621.904424	1.797038582	0.008333029	0.009062929	513.5624811	0.081669055	0.085024495	0.430438968	0.628095532	13.86489573	0.005082117
SACRAMENT	2021	MDV	1991	65	GAS	49.7534117	2.15566682	0.008022678	0.008725394	585.1041168	0.079009319	0.101992514	0.416420757	0.607640191	10.72113273	0.00579008
SACRAMENT	2021	MDV	1991	45	GAS	240.978427	1.773639775	0.007577867	0.008241622	513.6670375	0.074274023	0.083917411	0.391463251	0.571222256	12.92280797	0.005083152

SACRAMENT	2021	MDV	1991	60	GAS	339.385028	1.987939425	0.00739545	0.008043226	565.2268338	0.072052291	0.094056715	0.37975355	0.554135489	10.93172853	0.005593378
SACRAMENT	2021	MDV	1991	50	GAS	241.574488	1.786970601	0.007194349	0.007824511	527.7886978	0.070749216	0.084548142	0.372885659	0.544113878	12.19703967	0.005222897
SACRAMENT	2021	MDV	1991	55	GAS	439.625321	1.846720226	0.007134256	0.007759154	547.6460765	0.070178428	0.087375116	0.369877307	0.539724098	11.55982377	0.005419402
SACRAMENT	2021	MDV	1992	5	GAS	0.2006712	3.926853868	0.057288669	0.062306655	1364.517351	0.563548401	0.18626977	2.963369536	4.324141871	28.9212232	0.013503005
SACRAMENT	2021	MDV	1992	10	GAS	15.2964964	3.244284625	0.037713552	0.041016929	1114.902105	0.374481709	0.153892192	1.96917902	2.873421404	25.69725658	0.01103286
SACRAMENT	2021	MDV	1992	15	GAS	48.5037872	2.762336647	0.026086853	0.028371833	912.828025	0.258763663	0.131031057	1.360685885	1.985509649	22.71435864	0.009033173
SACRAMENT	2021	MDV	1992	20	GAS	181.87735	2.41825297	0.018932114	0.020590402	758.6769437	0.187093533	0.114709495	0.983814832	1.435580293	20.19360588	0.007507723
SACRAMENT	2021	MDV	1992	25	GAS	587.418379	2.17004805	0.014397079	0.015658137	648.5964246	0.141919758	0.102935929	0.746272526	1.088959118	18.14622179	0.006418387
SACRAMENT	2021	MDV	1992	30	GAS	410.254724	1.992250941	0.011460696	0.012464553	576.0111706	0.113018096	0.094502148	0.594295685	0.867194869	16.5137549	0.005700097
SACRAMENT	2021	MDV	1992	35	GAS	729.229273	1.868568009	0.009543157	0.010379054	533.1725238	0.094039819	0.088635265	0.494500091	0.721573372	15.1121184	0.005276174
SACRAMENT	2021	MDV	1992	70	GAS	18.9116696	2.267009208	0.008684982	0.009445711	581.980963	0.083659393	0.107535268	0.439915536	0.641923717	10.11190806	0.005759173
SACRAMENT	2021	MDV	1992	40	GAS	893.487378	1.797677819	0.008308644	0.009036408	514.1676701	0.081692614	0.085272599	0.429573403	0.626832501	13.91549199	0.005088106
SACRAMENT	2021	MDV	1992	65	GAS	71.48051	2.106422337	0.008161001	0.008875834	585.6849729	0.080639668	0.099917852	0.42403658	0.618753182	10.63377493	0.005795828
SACRAMENT	2021	MDV	1992	45	GAS	346.212657	1.770469424	0.007562584	0.008225	514.2605114	0.074363463	0.083981972	0.391033707	0.570595467	12.9625764	0.005089025
SACRAMENT	2021	MDV	1992	60	GAS	487.592993	1.956237078	0.007470129	0.008124447	565.6677325	0.073004382	0.092793835	0.383887098	0.560167152	10.88296672	0.005597741
SACRAMENT	2021	MDV	1992	50	GAS	347.069016	1.777776967	0.007197629	0.007828078	528.4191158	0.071015265	0.084328605	0.373427506	0.54490454	12.21831007	0.005229136
SACRAMENT	2021	MDV	1992	55	GAS	631.607785	1.828570674	0.007166327	0.007794034	548.2641099	0.070726913	0.086737997	0.371911233	0.542691998	11.55217457	0.005425518
SACRAMENT	2021	MDV	1993	5	GAS	0.22888823	3.799196538	0.060161224	0.06543082	1175.525018	0.59348344	0.180813421	3.113412691	4.54308449	28.06220485	0.011632773
SACRAMENT	2021	MDV	1993	10	GAS	17.4473866	3.173447059	0.039075486	0.042498156	960.8463873	0.389145674	0.151032413	2.041457268	2.978889653	25.17124873	0.009508354
SACRAMENT	2021	MDV	1993	15	GAS	55.3240626	2.725699665	0.026709459	0.029048973	787.0161451	0.265714824	0.129722976	1.393939323	2.034032988	22.42110302	0.007788163
SACRAMENT	2021	MDV	1993	20	GAS	207.451717	2.401984829	0.019190563	0.020871488	654.3979122	0.190194582	0.114316564	0.997760319	1.455929515	20.0552839	0.006475798
SACRAMENT	2021	MDV	1993	25	GAS	670.017189	2.165337822	0.014478175	0.015746336	559.6661707	0.143126792	0.103053931	0.750842803	1.095628056	18.10653704	0.00553835
SACRAMENT	2021	MDV	1993	30	GAS	467.941976	1.993127995	0.011459647	0.012463412	497.1533831	0.113331114	0.094858028	0.594534749	0.867543711	16.53245368	0.004919736
SACRAMENT	2021	MDV	1993	35	GAS	831.768575	1.870591659	0.009510097	0.010343098	460.1383971	0.093981313	0.089026212	0.493025739	0.719422	15.15776697	0.004553442
SACRAMENT	2021	MDV	1993	70	GAS	21.570901	2.169416113	0.008961157	0.009746075	500.2761011	0.086543366	0.103248028	0.454006292	0.662484915	9.917275953	0.004950638
SACRAMENT	2021	MDV	1993	65	GAS	81.5316172	2.029632567	0.008371181	0.009104424	503.7630117	0.082954884	0.096595373	0.435181121	0.635015271	10.4760538	0.004985143
SACRAMENT	2021	MDV	1993	40	GAS	1019.12355	1.797239402	0.008271591	0.00899611	443.5505146	0.081558187	0.085535192	0.42785405	0.624323625	13.96393057	0.004389292
SACRAMENT	2021	MDV	1993	45	GAS	394.894746	1.764254602	0.00753936	0.008199742	443.3687536	0.074344781	0.083965361	0.390012543	0.569105387	12.99639	0.004387493
SACRAMENT	2021	MDV	1993	60	GAS	556.155031	1.906720161	0.007583603	0.00824786	486.6747045	0.07431767	0.09074566	0.389870319	0.568897854	10.78960768	0.004816041
SACRAMENT	2021	MDV	1993	55	GAS	720.420211	1.799380748	0.007215058	0.007847034	472.0593483	0.071412016	0.085637104	0.374627263	0.546655223	11.51461439	0.00467141
SACRAMENT	2021	MDV	1993	50	GAS	395.87152	1.762269925	0.007202614	0.0078335	455.2848224	0.071268107	0.083870906	0.373872315	0.545553605	12.22343685	0.004505412
SACRAMENT	2021	MDV	1994	5	GAS	0.47826962	3.757593003	0.061118742	0.066472208	1175.931352	0.604629836	0.179206551	3.164441727	4.617545939	27.79437101	0.011636794
SACRAMENT	2021	MDV	1994	10	GAS	36.4568977	3.150826762	0.039529464	0.042991899	961.3192763	0.394818178	0.150268748	2.06635373	3.015218513	25.01633749	0.009513034
SACRAMENT	2021	MDV	1994	15	GAS	115.601479	2.714330173	0.026916994	0.029274687	787.428322	0.268559243	0.12945142	1.405554313	2.050981554	22.34130008	0.007792242
SACRAMENT	2021	MDV	1994	20	GAS	433.477298	2.397251709	0.019276712	0.020965183	654.7445837	0.191596657	0.114329362	1.002756429	1.463219828	20.02413997	0.006479228
SACRAMENT	2021	MDV	1994	25	GAS	1400.02332	2.164356721	0.014505207	0.015775736	559.9753658	0.143801509	0.10322217	0.752611713	1.098209246	18.10616026	0.00554141
SACRAMENT	2021	MDV	1994	30	GAS	977.780405	1.993968734	0.011459298	0.012463032	497.4542142	0.113650297	0.095096052	0.594809785	0.867945043	16.55057842	0.004922713
SACRAMENT	2021	MDV	1994	35	GAS	1738.00825	1.871772647	0.009499077	0.010331113	460.4245281	0.094138783	0.089268295	0.492692678	0.718935999	15.18371009	0.004556274
SACRAMENT	2021	MDV	1994	70	GAS	45.073119	2.137144067	0.009053215	0.009846197	500.3261012	0.087657739	0.101924348	0.458772942	0.6694404	9.855613056	0.004951132
SACRAMENT	2021	MDV	1994	65	GAS	170.36304	2.004600098	0.008441241	0.00918062	504.0017295	0.083889039	0.095603081	0.439048753	0.64065891	10.43120689	0.004987506
SACRAMENT	2021	MDV	1994	40	GAS	2129.49273	1.797553193	0.008259241	0.008982678	443.8148265	0.081665421	0.085728632	0.42741104	0.623677187	13.9894562	0.004391907
SACRAMENT	2021	MDV	1994	60	GAS	1162.10453	1.890616834	0.007621427	0.008288997	486.8577365	0.074893184	0.090167009	0.391967287	0.571957745	10.7645841	0.004817852
SACRAMENT	2021	MDV	1994	45	GAS	825.145775	1.762633802	0.007531619	0.008191323	443.6268206	0.074477429	0.084063262	0.389791357	0.568782632	13.01641131	0.004390047
SACRAMENT	2021	MDV	1994	55	GAS	1505.34212	1.790148592	0.007231302	0.007864701	472.3225183	0.071776963	0.085375493	0.375657968	0.548159225	11.51044794	0.004674014
SACRAMENT	2021	MDV	1994	50	GAS	827.186777	1.757587887	0.007204275	0.007835307	455.5565577	0.071487812	0.083822613	0.374144644	0.545950987	12.23401631	0.004508101
SACRAMENT	2021	MDV	1995	5	GAS	0.54535	3.233409118	0.061118742	0.066472208	1163.983827	0.512825415	0.161636319	2.608173373	3.805840172	21.18698177	0.011518564
SACRAMENT	2021	MDV	1995	10	GAS	41.5702115	2.711660778	0.039529464	0.042991899	951.2625599	0.334922859	0.13555441	1.703380508	2.485568839	19.0757143	0.009413514
SACRAMENT	2021	MDV	1995	15	GAS	131.815328	2.335970118	0.026916994	0.029274687	778.6925035	0.227813492	0.116773844	1.158634152	1.690676235	17.0352432	0.007705794
SACRAMENT	2021	MDV	1995	20	GAS	494.275271	2.062977238	0.019276712	0.020965183	647.0100571	0.162517379	0.103127082	0.826545364	1.206093055	15.2663553	0.006402689
SACRAMENT	2021	MDV	1995	25	GAS	1596.38557	1.862488368	0.014505207	0.015775736	553.0411944	0.121971158	0.093104755	0.620331778	0.905186674	13.80285295	0.005472791
SACRAMENT	2021	MDV	1995	30	GAS	1114.92038	1.715874177	0.011459298	0.012463032	491.1787183	0.096397921	0.085775593	0.490269136	0.715399572	12.61719045	0.004860612
SACRAMENT	2021	MDV	1995	35	GAS	1981.77506	1.610703947	0.009499077	0.010331113	454.7037424	0.079847184	0.080518192	0.406093921	0.592571297	11.57483393	0.004499662
SACRAMENT	2021	MDV	1995	70	GAS	51.3949131	1.838460796	0.009053215	0.009846197	496.4471766	0.074321092	0.09190363	0.377988827	0.55156041	7.506795163	0.004912747
SACRAMENT	2021	MDV	1995	65	GAS	194.25755	1.725076583	0.008441241	0.00918062	500.1840212	0.071156709	0.086235617	0.361895128	0.528076522	7.952683149	0.004949726
SACRAMENT	2021	MDV	1995	40	GAS	2428.16775	1.546786043	0.008259241	0.008982678	438.5607107	0.069264823	0.077322972	0.352273206	0.514036236	10.66356418	0.004339914
SACRAMENT	2021	MDV	1995	60	GAS	1325.09715	1.626722926	0.007621427	0.008288997	482.8243767	0.063514321	0.081318972	0.323026793	0.471359938	8.203549255	0.004777939
SACRAMENT	2021	MDV	1995	45	GAS	940.877765	1.516739623	0.007531619	0.008191323	438.7702921	0.063168459	0.075820968	0.321267778	0.468793187	9.921901792	0.004341988
SACRAMENT	2021	MDV	1995	55	GAS	1716.47601	1.540501903	0.007231302	0.007864701	468.1036218	0.060881572	0.077008831	0.309636923	0.451821471	8.775075238	0.004632265
SACRAMENT	2021	MDV	1995	50	GAS	943.205031	1.512473687	0.007204275	0.007835307	451.048706	0.060636205	0.075607716	0.308389014	0.450000526	9.326641306	0.004463493
SACRAMENT	2021	MDV	1996	5	GAS	0.62278508	2.475311371	0.017462498	0.01899206	1133.255733	0.213347576	0.13338368	0.986135201	1.43896617	10.97542998	0.011214484
SACRAMENT	2021	MDV	1996	10	GAS	47.4728297	2.026405242	0.011294133	0.0122834	926.2758757	0.141834711	0.109194096	0.655588425	0.956633091	9.815148946	0.009166251
SACRAMENT	2021	MDV	1996	15	GAS	150.531989	1.711852623	0.00769057	0.008364196	757.6932382	0.097999397	0.092244234	0.45297283	0.66097689	8.714513038	0.007497989
SACRAMENT	2021	MDV	1996	20	GAS	564.458176	1.489358303	0.005507632	0.005990052	628.9249121	0.070841985	0.080254991	0.327445835	0.477808194	7.772905001	0.006223722
SACRAMENT	2021	MDV	1996	25	GAS	1823.05881	1.330706569	0.004144345	0.004507353	537.1397554	0.05372986	0.071705944	0.248350167	0.36239198	7.002693055	0.005315433
SACRAMENT	2021	MDV	1996	30	GAS	1273.22964	1.21875247	0.003274085	0.003560866	476.9259624	0.042788573	0.065673228	0.197777347	0.28859624	6.385616833	0.004719569
SACRAMENT	2021	MDV	1996	35	GAS	2263.17034	1.142365563	0.002714022	0.002951746	441.6872091	0.035601763	0.061557073	0.164558474	0.240123339	5.849759382	0.004370853
SACRAMENT	2021	MDV	1996	70	GAS	58.6925558	1.44103513	0.002586633	0.002813199	485.9494605	0.031636331	0.077651067	0.146229456	0.213377679	3.853862652	0.004808864
SACRAMENT	2021	MDV	1996	40	GAS	2772.94701	1.100250336	0.002359783	0.002566479	426.4490085	0.030923767	0.059287668	0.142935843	0.208571647	5.386892174	0.004220059
SACRAMENT	2021	MDV	1996	65	GAS	221.840478	1.332831256	0.002411783	0.002623034	489.8979078	0.030534002	0.071820434	0.141134267	0.205942791	4.073520607	0.004847937
SACRAMENT	2021	MDV	1996	45	GAS	1074.47444	1.086882431	0.002151891	0.002340378	427.3159032	0.028149666	0.05856733	0.13011339	0.189861154	5.015462559	0.004228637
SACRAMENT	2021	MDV	1996	60	GAS	1513.24973	1.224724371	0.002177551	0.002368285	472.306865	0.027627015	0.065995028	0.127697595	0.186336031	4.180286434	0.004673859
SACRAMENT	2021	MDV	1996	50	GAS	1077.13216	1.09682233	0.002058364	0.002238659	440.0785631	0.026886901	0.059102948	0.124276638	0.181344178	4.72281777	0.004354934
SACRAMENT	2021	MDV	1996	55	GAS	1960.20108	1.135692248	0.002066086	0.002247057	457.4616158	0.026778085	0.061197477	0.123773669	0.180610247	4.455623245	0.004526954
SACRAMENT	2021	MDV	1997	5	GAS	0.96342229	2.47671666	0.017462498	0.01899206	1133.905152	0.213303863	0.133727013	0.982811023	1.434115538	10.9891148	0.011220911
SACRAMENT	2021	MDV	1997	10	GAS	73.4384678	2.027744065	0.011294133	0.0122834	926.9316936	0.141815403	0.109485337	0.653423427	0.953473931	9.829547249	0.009172741
SACRAMENT	2021	MDV	1997	15	GAS	232.866645	1.712968871	0.00769057	0.008364196	758.2201624	0.097981825	0.09248947	0.451457451	0.658765652	8.727057476	0.007503203
SACRAMENT	2021	MDV	1997	20	GAS	873.193021	1.49027618	0.005507632	0.005990052	629.3303646	0.070824506	0.080465475	0.326328384	0.476177612	7.783392435	0.006227734
SACRAMENT	2021	MDV	1997	25	GAS	2820.19519	1.331494556	0.004144345	0.004507353	537.4679759	0.053714035	0.071892273	0.247490812	0.361138011	7.011718567	0.005318681
SACRAMENT	2021	MDV	1997	30	GAS	1969.63262	1.219478936	0.003274085	0.003560866	477.2209255	0.042775584	0.065844139	0.197091205	0.287595023	6.393911967	0.004722488
SACRAMENT	2021	MDV	1997	35	GAS	3501.02919	1.143038755	0.002714022	0.002951746	441.9556495	0.035590326	0.061716853	0.163984677	0.239286056	5.857243822	0.004373509
SACRAMENT	2021	MDV	1997	70	GAS	90.7949114	1.441563602	0.002586633	0.002813199	486.0852579	0.031620741	0.077835304	0.145694561	0.212597162	3.856646881	0.004810208
SACRAMENT	2021	MDV	1997	40	GAS	4289.63222	1.10087471	0.002359783	0.002566479	426.6946151	0.030912976	0.059440262	0.142433488	0.207838612	5.393492968	0.004222489
SACRAMENT	2021	MDV	1997	65	GAS	343.177874	1.333648095	0.002411783	0.002623034	490.2126631	0.030527328	0.07200855	0.140656592	0.205245769	4.079006979	0.004851052
SACRAMENT	2021	MDV	1997	45	GAS	1662.1667	1.087499565	0.002151891	0.002340378	427.5626134	0.028139986	0.058718089	0.129656765	0.189194847	5.021625055	0.004231079
SACRAMENT	2021	MDV	1997	60	GAS	2340.93359	1.225343891	0.002177551	0.002368285	472.5366481	0.027616813	0.066160809	0.127246212	0.185677374	4.184795673	0.004676133
SACRAMENT	2021	MDV	1997	50	GAS	1666.27808	1.097481201	0.002058364	0.002238659	440.3532832	0.026878912	0.059257034	0.123846284	0.180716207	4.729002067	0.004357653
SACRAMENT	2021	MDV	1997	55	GAS	3032.34849	1.136377722	0.002066086	0.002247057	457.7479554	0.026770567	0.0613572	0.123347077	0.179987765	4.461476562	0.004529787
SACRAMENT	2021	MDV	1998	5	GAS	1.24501659	2.049769575	0.017995621	0.01957188	1134.942175	0.193066474	0.115212206	0.882371719	1.287554741	9.777603535	0.011231173
SACRAMENT	2021	MDV	1998	10	GAS	94.9034624	1.689046467	0.011546897	0.012558304	927.9052276	0.127290421	0.0949369	0.58175542	0.848896143	8.798219801	0.009182374
SACRAMENT	2021	MDV	1998	15	GAS	300.930174	1.4342916	0.00780612	0.008489868	758.9709064	0.087291786	0.080617793	0.398949656	0.582146401	7.84848134	0.007510632
SACRAMENT	2021	MDV	1998	20	GAS	1128.41462	1.252820497	0.005555598	0.00604222	629.8827678	0.062700712	0.070417775	0.286561067	0.418149236	7.025932353	0.006233201
SACRAMENT	2021	MDV	1998	25	GAS	3644.49717	1.122481181	0.004159396	0.004523722	537.8994909	0.047316962	0.063091742	0.216252714	0.315555452	6.347356585	0.005322952
SACRAMENT	2021	MDV	1998	30	GAS	2545.32755	1.029716417	0.00327389	0.003560655	477.6102036	0.037548051	0.057877676	0.171605862	0.25040687	5.799832664	0.00472634
SACRAMENT	2021	MDV	1998	35	GAS	4524.32903	0.965554038	0.002707886	0.002945073	442.3388029	0.031175218	0.054271276	0.142480103	0.207906631	5.319078578	0.004377301
SACRAMENT	2021	MDV	1998	70	GAS	117.332942	1.185526037	0.002637889	0.002868944	486.6578212	0.028298025	0.066635329	0.129330464	0.188718709	3.453704316	0.004815874
SACRAMENT	2021	MDV	1998	65	GAS	443.483769	1.101179269	0.002450791	0.002665459	490.9940432	0.027226914	0.061894417	0.124435166	0.181575503	3.663835668	0.004858784
SACRAMENT	2021	MDV	1998	40	GAS	5543.42924	0.929163501	0.002352906	0.002559	427.0983395	0.027060669	0.052225859	0.123675377	0.180466819	4.899200392	0.004226484
SACRAMENT	2021	MDV	1998	45	GAS	2147.99382	0.916019949	0.002147581	0.00233569	428.0297485	0.02465457	0.051487094	0.112678781	0.164420613	4.559009402	0.004235701
SACRAMENT	2021	MDV	1998	60	GAS	3025.15438	1.018470397	0.00219861	0.002391189	473.1809459	0.024469136	0.057245567	0.111831294	0.163183962	3.773124773	0.004682509
SACRAMENT	2021	MDV	1998	50	GAS	2153.3069	0.921475518	0.002059289	0.002239665	440.9245117	0.023605669	0.051793737	0.10788499	0.157425525	4.287773195	0.004363305
SACRAMENT	2021	MDV	1998	55	GAS	3918.65979	0.949921023	0.002075131	0.002256894	458.4030694	0.023599601	0.053392585	0.107857257	0.157385057	4.036158719	0.00453627
SACRAMENT	2021	MDV	1999	5	GAS	2.38565673	1.656247634	0.018493671	0.020113555	1135.318659	0.175858721	0.09705728	0.798007736	1.164451015	8.624776586	0.011234898
SACRAMENT	2021	MDV	1999	10	GAS	181.850655	1.377271606	0.011783032	0.012815122	928.207611	0.114788227	0.080709088	0.520883427	0.760071874	7.813764403	0.009185367
SACRAMENT	2021	MDV	1999	15	GAS	576.631749	1.178192844	0.007914069	0.008607272	759.1808667	0.078014417	0.069042932	0.354012061	0.516573568	7.709187422	0.00751271
SACRAMENT	2021	MDV	1999	20	GAS	2162.22816	1.034939337	0.005600408	0.006090955	630.0184519	0.055609341	0.060648175	0.252342815	0.368218043	6.302360285	0.006234543
SACRAMENT	2021	MDV	1999	25	GAS	6983.45648	0.930912138	0.004173456	0.004539014	537.9931373	0.041709343	0.054552108	0.189267715	0.276179006	5.712675863	0.005323878
SACRAMENT	2021	MDV	1999	30	GAS	4877.26655	0.855885944	0.003273709	0.003560457	477.6948681	0.032951821	0.05015552	0.149528028	0.218190947	5.231949365	0.004727178
SACRAMENT	2021	MDV	1999	35	GAS	8669.35915	0.803000963	0.002702154	0.002938839	442.4423424	0.027287083	0.047056423	0.123822709	0.180681806	4.80460031	0.004378326

SACRAMENT	2021	MDV	1999	70	GAS	224.82923	0.94940454	0.002685772	0.002921022	487.0650036	0.025438684	0.055635776	0.115435088	0.168442609	3.071706728	0.004819903
SACRAMENT	2021	MDV	1999	65	GAS	849.787901	0.886712744	0.002487233	0.002705092	491.4286016	0.024367288	0.051961993	0.110573328	0.161348341	3.267688249	0.004863084
SACRAMENT	2021	MDV	1999	40	GAS	10622.1229	0.771874939	0.002346482	0.002552013	427.2424947	0.023667204	0.045232416	0.107396503	0.156712725	4.426903746	0.004227911
SACRAMENT	2021	MDV	1999	60	GAS	5796.69375	0.828102173	0.002218285	0.002412587	473.5661609	0.02172698	0.048527372	0.098592201	0.143865508	3.381031722	0.004686321
SACRAMENT	2021	MDV	1999	45	GAS	4115.90973	0.758832053	0.002143555	0.002331311	428.2323142	0.021586337	0.044468094	0.097953993	0.142934236	4.117023081	0.004237706
SACRAMENT	2021	MDV	1999	55	GAS	7508.7972	0.778534129	0.00208358	0.002266083	458.7449626	0.020821445	0.045622649	0.094483082	0.137869491	3.629802328	0.004539653
SACRAMENT	2021	MDV	1999	50	GAS	4126.09046	0.759928925	0.002060154	0.002240605	441.198459	0.020728755	0.044532371	0.094062479	0.137255748	3.866000277	0.004366016
						Wtd Ave g/mile	**1.426**	**0.00686**		**496.516**	**0.064**	**0.070**	**0.365**			

	Acetaldehyde	Benzene	Butadiene	Ethylbenzene	Formaldehyde	Naphthalene
Percent TOG	0.28%	2.47%	0.55%	1.05%	1.58%	0.05%

Note that although race vehicles do emit toxic organic compounds while driving on streets, the potential health impacts of those emissions on residences, businesses, schools, etc. near public streets is not assessed herein.

APPENDIX B-9

Street Legal Race Vehicle On-Site Emission Factors

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EMFAC2017 (v1.0.2) Emission Rates **MDV vehicles, 15 mph, gasoline, 1977 through 1999 model years**
Region Type: County
Region: SACRAMENTO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Yea	Vehicle Cate	Model Year	Speed	Fuel	VMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
SACRAMENT	2021	MDV	1977	15	GAS	19.8858003	9.469128132	0.115246832	0.120776669	1568.087611	1.929831196	0.266377667	17.46895755	18.99212895	316.3879042	0.015517498
SACRAMENT	2021	MDV	1978	15	GAS	13.3197993	3.571130419	0.104722781	0.113354443	1222.422531	0.536080431	0.13601337	3.225756525	4.52044373	106.0517225	0.012096862
SACRAMENT	2021	MDV	1979	15	GAS	9.38191598	3.517172484	0.104722971	0.113354578	1220.478275	0.534149269	0.134561795	3.212537666	4.501813574	105.1639892	0.012077622
SACRAMENT	2021	MDV	1980	15	GAS	12.4082219	3.549745764	0.104726302	0.113356927	1219.239967	0.603071207	0.135243656	3.675113547	5.17995753	102.954053	0.012065368
SACRAMENT	2021	MDV	1981	15	GAS	3.07646045	2.404001827	0.040788039	0.044201861	1023.49467	0.526872684	0.10350381	3.109599178	4.458083233	51.6891795	0.010128309
SACRAMENT	2021	MDV	1982	15	GAS	2.6269772	2.451275646	0.040630716	0.044100969	1022.653694	0.517358238	0.105601994	3.022157638	4.366527438	50.43074856	0.010119987
SACRAMENT	2021	MDV	1983	15	GAS	4.32317312	2.510218835	0.040765086	0.04433575	1006.882743	0.428837649	0.118189026	2.414166706	3.522746391	42.01248718	0.009963921
SACRAMENT	2021	MDV	1984	15	GAS	7.1124025	2.434506029	0.040354458	0.043889155	1033.761708	0.432794491	0.103704775	2.433895342	3.55153437	55.4321026	0.01022991
SACRAMENT	2021	MDV	1985	15	GAS	9.24521704	2.886449075	0.042383393	0.046095807	979.1541213	0.230282762	0.134862009	1.228320599	1.792362535	23.51688926	0.009689524
SACRAMENT	2021	MDV	1986	15	GAS	11.9490224	2.828527765	0.044112689	0.047976574	905.2279235	0.240166177	0.132660533	1.278798567	1.866019867	23.04107401	0.008957964
SACRAMENT	2021	MDV	1987	15	GAS	15.8019078	2.769740454	0.046203403	0.050250417	906.0913244	0.252378537	0.13034964	1.341291895	1.957209985	22.51777123	0.008966508
SACRAMENT	2021	MDV	1988	15	GAS	18.7752831	2.80390336	0.045034754	0.048979404	908.0468135	0.246798603	0.131981727	1.309200635	1.910382494	22.92083847	0.008985859
SACRAMENT	2021	MDV	1989	15	GAS	29.037378	2.804699486	0.044829594	0.048756274	911.6896722	0.249184127	0.131931222	1.320011162	1.926157189	23.56322201	0.009021908
SACRAMENT	2021	MDV	1990	15	GAS	36.011495	2.774625055	0.046127545	0.050167914	911.4242139	0.25470729	0.131142054	1.345482293	1.963324604	22.77620998	0.009019281
SACRAMENT	2021	MDV	1991	15	GAS	33.7606558	2.784668584	0.025677104	0.027926193	911.830938	0.253829976	0.131752897	1.33781776	1.952140535	22.86940659	0.009023306
SACRAMENT	2021	MDV	1992	15	GAS	48.5037872	2.762336647	0.026086853	0.028371833	912.828025	0.258763663	0.131031057	1.360685885	1.985509649	22.71435864	0.009033173
SACRAMENT	2021	MDV	1993	15	GAS	55.3240626	2.725699665	0.026709459	0.029048973	787.0161451	0.265714824	0.129722976	1.393939323	2.034032988	22.42110302	0.007788163
SACRAMENT	2021	MDV	1994	15	GAS	115.601479	2.714330173	0.026916994	0.029274687	787.428322	0.268559243	0.12945142	1.405554313	2.050981554	22.34130008	0.007792242
SACRAMENT	2021	MDV	1995	15	GAS	131.815328	2.335970118	0.026916994	0.029274687	778.6925035	0.227813492	0.116773844	1.158634152	1.690676235	17.0352432	0.007705794
SACRAMENT	2021	MDV	1996	15	GAS	150.531989	1.711852623	0.00769057	0.008364196	757.6932382	0.097999397	0.092244234	0.45297283	0.66097689	8.714513038	0.007497989
SACRAMENT	2021	MDV	1997	15	GAS	232.866645	1.712968871	0.00769057	0.008364196	758.2201624	0.097981825	0.09248947	0.451457451	0.658765652	8.727057476	0.007503203
SACRAMENT	2021	MDV	1998	15	GAS	300.930174	1.4342916	0.00780612	0.008489868	758.9709064	0.087291786	0.080617793	0.398949656	0.582146401	7.84848134	0.007510632
SACRAMENT	2021	MDV	1999	15	GAS	576.631749	1.178192844	0.007914069	0.008607272	759.1808667	0.078014417	0.069042932	0.354012061	0.516573568	7.009187422	0.00751271
					Wtd Ave g/mile		**1.882**	**0.0175**		**800.020**	**0.164**	**0.096**	**0.909**	**1.252**		

	Acetaldehyde	Benzene	Butadiene	Ethylbenzene	Formaldehyde	Naphthalene
Percent TOG	0.28%	2.47%	0.55%	1.05%	1.58%	0.05%
	0.00351	**0.0309**	**0.00689**	**0.0131**	**0.0198**	**0.000626**

TOG speciation from Table 14 of the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards, dated May 2011.

APPENDIX B-10

Motocross Emission Factors

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EMFAC2017 (v1.0.2) Emission Rates **Motorcycle 30 mph**
Region Type: County
Region: SACRAMENTO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Yea	Vehicle Cate	Model Year	Speed	Fuel	VMT	NOx_RUNEX	PM2.5_RUNI	PM10_RUNE	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
SACRAMENT	2021	MCY	1977	30	GAS	4.27093208	0.78454736	0.05800975	0.0607932	197.076077	0.5314448	0.04430939	4.93614411	5.36654149	54.3566239	0.00195023
SACRAMENT	2021	MCY	1978	30	GAS	6.41228403	1.18024787	0.05850245	0.06130954	226.871279	0.49465849	0.05900184	4.53623304	4.93176096	40.0293299	0.00224508
SACRAMENT	2021	MCY	1979	30	GAS	8.03589304	1.18024787	0.05850245	0.06130954	226.871279	0.49733572	0.05937395	4.53623304	4.93176096	40.0293299	0.00224508
SACRAMENT	2021	MCY	1980	30	GAS	7.95647622	1.36528083	0.02285252	0.02394904	214.183366	0.46823273	0.06567374	4.19761495	4.56361773	38.1302814	0.00211952
SACRAMENT	2021	MCY	1981	30	GAS	10.7859452	1.36528083	0.02285252	0.02394904	214.183366	0.47046493	0.06604566	4.19761495	4.56361773	38.1302814	0.00211952
SACRAMENT	2021	MCY	1985	30	GAS	17.3495318	1.2342825	0.02285252	0.02394904	223.085731	0.47663861	0.06267933	4.15696249	4.51942066	34.2080514	0.00220761
SACRAMENT	2021	MCY	1986	30	GAS	20.7873898	1.2342825	0.02285252	0.02394904	223.085731	0.47881715	0.06300805	4.15696249	4.51942066	34.2080514	0.00220761
SACRAMENT	2021	MCY	1987	30	GAS	18.898782	1.2342825	0.02285252	0.02394904	223.085731	0.48093762	0.06332304	4.15696249	4.51942066	34.2080514	0.00220761
SACRAMENT	2021	MCY	1982	30	GAS	15.255483	1.30268863	0.02285252	0.02394904	218.757253	0.45464293	0.06478951	4.06493496	4.41936897	32.8684262	0.00216478
SACRAMENT	2021	MCY	1983	30	GAS	12.4562239	1.30268863	0.02285252	0.02394904	218.757253	0.45698084	0.06512698	4.06493496	4.41936897	32.8684262	0.00216478
SACRAMENT	2021	MCY	1984	30	GAS	11.6221334	1.30268863	0.02285252	0.02394904	218.757253	0.45922988	0.06544507	4.06493496	4.41936897	32.8684262	0.00216478
SACRAMENT	2021	MCY	1988	30	GAS	17.1198662	1.09271256	0.0036564	0.00383185	212.045199	0.45538162	0.05863903	3.85954003	4.19606504	34.466694	0.00209836
SACRAMENT	2021	MCY	1989	30	GAS	21.851707	1.09271256	0.0036564	0.00383185	212.045199	0.45721298	0.0588993	3.85954003	4.19606504	34.466694	0.00209836
SACRAMENT	2021	MCY	1990	30	GAS	22.7357966	1.09271256	0.0036564	0.00383185	212.045199	0.4588248	0.05912523	3.85954003	4.19606504	34.466694	0.00209836
SACRAMENT	2021	MCY	1991	30	GAS	30.0167642	1.09271256	0.0036564	0.00383185	212.045199	0.46045881	0.05935128	3.85954003	4.19606504	34.466694	0.00209836
SACRAMENT	2021	MCY	1992	30	GAS	29.4503334	1.09271256	0.0036564	0.00383185	212.045199	0.46208864	0.05957374	3.85954003	4.19606504	34.466694	0.00209836
SACRAMENT	2021	MCY	1993	30	GAS	41.2445048	1.09271256	0.0036564	0.00383185	212.045199	0.46362627	0.05978087	3.85954003	4.19606504	34.466694	0.00209836
SACRAMENT	2021	MCY	1994	30	GAS	40.6716686	1.09828608	0.00365053	0.00382767	212.231303	0.46257584	0.06024709	3.82372298	4.17114685	34.0697859	0.0021002
SACRAMENT	2021	MCY	2004	30	GAS	467.771646	1.19840198	0.00023906	0.00025211	217.21931	0.43242776	0.06662152	3.32688202	3.74735167	28.5307553	0.00214956
SACRAMENT	2021	MCY	2005	30	GAS	676.991379	1.19840051	0.00023907	0.00025212	217.219283	0.43325574	0.06673085	3.32799908	3.74730076	28.5307415	0.00214956
SACRAMENT	2021	MCY	2006	30	GAS	855.515089	1.19837228	0.00023908	0.00025212	217.218777	0.43406213	0.06683566	3.32906245	3.74722441	28.5304754	0.00214956
SACRAMENT	2021	MCY	2007	30	GAS	850.019547	1.19833922	0.00023909	0.00025213	217.218185	0.43482778	0.06693414	3.33001997	3.74714773	28.5301638	0.00214955
SACRAMENT	2021	MCY	1996	30	GAS	59.9336651	1.14133508	0.0035694	0.00377035	209.608383	0.42020334	0.06274638	3.27469407	3.7319957	30.2438082	0.00207424
SACRAMENT	2021	MCY	1997	30	GAS	75.6842404	1.1462996	0.00356943	0.00377034	210.083837	0.42110568	0.0631401	3.27127412	3.72719981	30.0836533	0.00207895
SACRAMENT	2021	MCY	1998	30	GAS	96.4860102	1.1462996	0.00356953	0.00377042	210.083837	0.42230298	0.06328982	3.27260918	3.72714079	30.0836533	0.00207895
SACRAMENT	2021	MCY	1999	30	GAS	145.33717	1.1462996	0.00356963	0.00377049	210.083837	0.42346798	0.06343355	3.27386192	3.72708541	30.0836533	0.00207895
SACRAMENT	2021	MCY	2000	30	GAS	210.881722	1.1462996	0.00356974	0.00377056	210.083837	0.42460743	0.06357229	3.27512808	3.72702944	30.0836533	0.00207895
SACRAMENT	2021	MCY	2001	30	GAS	312.359774	1.1462996	0.00356984	0.00377064	210.083837	0.42562936	0.06369518	3.27640505	3.72697299	30.0836533	0.00207895
SACRAMENT	2021	MCY	2002	30	GAS	386.000309	1.1462996	0.00356995	0.00377071	210.083837	0.42666145	0.06381782	3.27765869	3.72691757	30.0836533	0.00207895
SACRAMENT	2021	MCY	2003	30	GAS	481.552726	1.1462996	0.00357007	0.0037708	210.083837	0.42761901	0.06393029	3.27902479	3.72685717	30.0836533	0.00207895
SACRAMENT	2021	MCY	1995	30	GAS	47.989043	1.13231188	0.00355763	0.00376212	207.605725	0.41239343	0.0621764	3.20103704	3.67251695	30.2184385	0.00205443
SACRAMENT	2021	MCY	2008	30	GAS	611.159757	1.15665292	0.00025864	0.00027756	214.014518	0.36242614	0.06646532	2.39090924	3.04249216	17.6553481	0.00211785
SACRAMENT	2021	MCY	2009	30	GAS	637.326107	1.15565381	0.00029035	0.00031161	213.996614	0.36295534	0.06651863	2.39129334	3.04143685	17.6459319	0.00211767
SACRAMENT	2021	MCY	2010	30	GAS	273.319687	1.15452795	0.00035379	0.00037972	213.976439	0.36343296	0.06656024	2.39188137	3.04024079	17.6353211	0.00211747
SACRAMENT	2021	MCY	2011	30	GAS	325.61023	1.15336325	0.00048068	0.00051595	213.955568	0.36388403	0.0665962	2.39228496	3.03901253	17.6243443	0.00211726
SACRAMENT	2021	MCY	2012	30	GAS	504.882722	1.15187656	0.0007029	0.00075447	213.928927	0.36426243	0.06661252	2.39236293	3.03746403	17.6103327	0.002117
SACRAMENT	2021	MCY	2013	30	GAS	664.804419	1.15011343	0.00105183	0.00112909	213.897332	0.36458688	0.0666132	2.39223094	3.03563752	17.5937156	0.00211669
SACRAMENT	2021	MCY	2014	30	GAS	778.756235	1.147822	0.00146442	0.00157198	213.856269	0.36482696	0.06658727	2.39163761	3.03328239	17.5721192	0.00211628
SACRAMENT	2021	MCY	2015	30	GAS	953.701063	1.14521997	0.00184536	0.00198086	213.80964	0.36501442	0.06654507	2.39074227	3.03061784	17.5475951	0.00211582
SACRAMENT	2021	MCY	2016	30	GAS	900.601341	1.14212765	0.00213117	0.00228759	213.754225	0.3651177	0.06647738	2.38946614	3.02746066	17.5184497	0.00211527
SACRAMENT	2021	MCY	2017	30	GAS	1122.20439	1.13848011	0.00229009	0.0024581	213.688858	0.36514626	0.06638378	2.38771001	3.02374778	17.4840704	0.00211462
SACRAMENT	2021	MCY	2018	30	GAS	1308.07431	1.13429614	0.00238556	0.00256048	213.613878	0.36508976	0.06626333	2.38552142	3.01949674	17.4446344	0.00211388
SACRAMENT	2021	MCY	2019	30	GAS	1509.78995	1.12944094	0.0024493	0.0026288	213.526869	0.36494661	0.06611212	2.38276754	3.01457349	17.3988707	0.00211302
SACRAMENT	2021	MCY	2020	30	GAS	1694.24426	1.12398318	0.00244955	0.00262898	213.42906	0.36471522	0.06593172	2.37949747	3.00904746	17.3474264	0.00211205
SACRAMENT	2021	MCY	2021	30	GAS	1356.31154	1.11772466	0.00244982	0.00262917	213.316903	0.3643788	0.06571432	2.37560988	3.00271767	17.2884337	0.00211094
						Wtd Ave g/mile	**1.149**	**0.00198**		**213.901**	**0.384**	**0.0660**	**2.660**	**3.238**		

	Acetaldehyde	Benzene	Butadiene	Ethylbenzene	Formaldehyde	Naphthalene
Percent TOG	0.28%	2.47%	0.55%	1.05%	1.58%	0.05%
	0.00907	**0.0800**	**0.0178**	**0.0340**	**0.0512**	**0.00162**

TOG speciation from Table 14 of the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards, dated May 2011.

APPENDIX C

RACEWAY 2019 EMISSION ESTIMATES

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APPENDIX C-1

Drag Racing Annual Emissions

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SACRAMENTO RACEWAY 2019 EMISSIONS … Annual Emissions for all NHRA, non-NHRA, and Test & Tune Events

	NOx	ROG	PM2.5 Tailpipe	PM2.5 Fugitive	Total PM2.5	PM10 Tailpipe	PM10 Fugitive	Total PM10	TOG	DPM
Spectator Vehicles to/from Raceway for Drags										
Emission Factors (g/mi)	0.133	0.034	0.00210	0.0751		0.00210	0.300		NA	NA
Number of vehicles	64900	64900	64900	64900		64900	64900			
Miles per vehicle	Not Used	Not Used	Not Used	Not Used		Not Used	Not Used			
Total miles	4719000	4719000	4719000	4719000		4719000	4719000			
Emissions (grams per year)	627627	160446	9909.9	354396.90	364306.8	9909.9	1417587.60	1427497.5		
Emissions (lb/yr)	1383.7	353.7	21.8	781.3	803.1	21.8	3125.2	3147.0	NA	NA
Tow Vehicles to/from Raceway for Drags										
Emission Factors (g/mi)	2.262	0.174	0.0279	0.0751		0.0279	0.300		NA	NA
Number of vehicles	4960	4960	4960	4960		4960	4960			
Miles per vehicle	Not Used	Not Used	Not Used	Not Used		Not Used	Not Used			
Total miles	237700	237700	237700	237700		237700	237700			
Emissions (grams per year)	537677.4	41359.8	6631.83	17851.27	24483.10	6631.83	71405.08	78036.91		
Emissions (lb/yr)	1185.36	91.18	14.62	39.35	53.98	14.62	157.42	172.04	NA	NA
Non-Trailered Race Vehicles to/from Raceway for Drags										
Emission Factors (g/mi)	1.426	0.365	0.00686	0.0751		0.00686	0.300		NA	NA
Number of vehicles	10020	10020	10020	10020		10020	10020			
Miles per vehicle	NA	NA	NA	NA		NA	NA			
Total miles	533700	533700	533700	533700		533700	533700			
Emissions (grams per year)	761056.2	194800.5	3661.182	40080.87	43742.052	3661.182	160323.48	163984.662		
Emissions (lb/yr)	1677.8	429.5	8.1	88.4	96.4	8.1	353.4	361.5	NA	NA
Spectator Vehicles On-Site at Raceway for Drags										
Emission Factors (g/mi)	1.166	0.424	0.0362	0.0751		0.0362	0.300		0.526	0.0852
Number of vehicles … Note 1	64900	64900	64900	64900		64900	64900		64900	23818
Miles per vehicle	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5
Total miles	32450	32450	32450	32450		32450	32450		32450	11909.15
Emissions (grams per year)	37836.7	13758.8	1174.7	2437.0	3611.7	1174.7	9748.0	10922.7	17068.7	1014.7
Emissions (pounds per year)	83.41	30.33	2.59	5.37	7.96	2.59	21.49	24.08	3.76E+01	2.24E+00
Tow Vehicles On-Site at Raceway for Drags										
Emission Factors (g/mi)	2.0461	0.323	0.0415	0.0751		0.0415	0.300		0.368	0.0415
Number of vehicles … Note 2	4960	4960	4960	4960		4960	4960		4960	4960
Miles per vehicle	1	1	1	1		1	1		1	1
Total miles	4960	4960	4960	4960		4960	4960		4960	4960
Emissions (grams per year)	10148.7	1602.1	205.8	372.5	578.3	205.8	1490.0	1695.8	1825.3	205.8
Emissions (pounds per year)	22.37	3.53	0.45	0.82	1.27	0.45	3.28	3.74	4.02E+00	4.54E-01
Non-Trailered Race Vehicles On-Site at Raceway for Drags										
Emission Factors (g/mi)	1.882	0.909	0.0175	0.0751		0.0175	0.300		1.252	0
Number of vehicles … Note 3	10020	10020	10020	10020		10020	10020		10020	0
Miles per vehicle	1	1	1	1		1	1		1	1
Total miles	10020	10020	10020	10020		10020	10020		10020	0
Emissions (grams per year)	18857.6	9108.2	175.4	752.5	927.9	175.4	3010.0	3185.4	12545.0	0.0
Emissions (pounds per year)	41.57	20.08	0.39	1.66	2.05	0.39	6.64	7.02	2.77E+01	0.00E+00
NHRA Vehicles Racing for Drags										
Emission Factors (g/mi)	12.916	6.791	0.0447	0.0751		0.0447	0.300		7.383	0
Number of vehicles … Note 3	3240	3240	3240	3240		3240	3240		3240	0
Miles per vehicle	0.75	0.75	0.75	0.75		0.75	0.75		0.75	0.75
Total miles	2430	2430	2430	2430		2430	2430		2430	0
Emissions (grams per year)	31385.9	16502.1	108.6	182.5	291.1	108.6	730.0	838.6	17940.7	0.0
Emissions (pounds per year)	69.19	36.38	0.24	0.40	0.64	0.24	1.61	1.85	3.96E+01	0.00E+00

NHRA Vehicles Staging and Return for Drags										
Emission Factors (g/mi)	9.469	17.469	0.115	0.0751		0.115	0.300		18.992	0
Number of vehicles ... Note 3	3240	3240	3240	3240		3240	3240		3240	0
Miles per vehicle	0.85	0.85	0.85	0.85		0.85	0.85		0.85	0.85
Total miles	2754	2754	2754	2754		2754	2754		2754	0
Emissions (grams per year)	26077.6	48109.6	316.7	206.8	523.5	316.7	827.3	1144.0	52304.0	0.0
Emissions (pounds per year)	57.49	106.06	0.70	0.46	1.15	0.70	1.82	2.52	1.15E+02	0.00E+00
Non-NHRA Vehicles Racing for Drags										
Emission Factors (g/mi)	12.916	6.791	0.0447	0.0751		0.0447	0.300		7.383	0
Number of vehicles ... Note 3	20720	20720	20720	20720		20720	20720		20720	0
Miles per vehicle	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5
Total miles	10360	10360	10360	10360		10360	10360		10360	0
Emissions (grams per year)	133809.8	70354.8	463.1	778.0	1241.1	463.1	3112.1	3575.2	76487.9	0.0
Emissions (pounds per year)	295.00	155.10	1.02	1.72	2.74	1.02	6.86	7.88	1.69E+02	0.00E+00
Non-NHRA Vehicles Staging and Return for Drags										
Emission Factors (g/mi)	9.469	17.469	0.115	0.0751		0.115	0.300		18.992	0
Number of vehicles ... Note 3	20720	20720	20720	20720		20720	20720		20720	0
Miles per vehicle	0.6	0.6	0.6	0.6		0.6	0.6		0.6	0.6
Total miles	12432	12432	12432	12432		12432	12432		12432	0
Emissions (grams per year)	117718.6	217174.6	1429.7	933.6	2363.3	1429.7	3734.6	5164.3	236108.5	0.0
Emissions (pounds per year)	259.52	478.78	3.15	2.06	5.21	3.15	8.23	11.39	5.21E+02	0.00E+00
Test and Tune Vehicles Racing for Drags										
Emission Factors (g/mi)	12.916	6.791	0.0447	0.0751		0.0447	0.300		7.383	0
Number of vehicles ... Note 3	6000	6000	6000	6000		6000	6000		6000	0
Miles per vehicle	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5
Total miles	3000	3000	3000	3000		3000	3000		3000	0
Emissions (grams per year)	38748.0	20373.0	134.1	225.3	359.4	134.1	901.2	1035.3	22149.0	0.0
Emissions (pounds per year)	85.42	44.91	0.30	0.50	0.79	0.30	1.99	2.28	4.88E+01	0.00E+00
Test and Tune Vehicles Staging and Return for Drags										
Emission Factors (g/mi)	9.469	17.469	0.115	0.0751		0.115	0.300		18.992	0
Number of vehicles ... Note 3	6000	6000	6000	6000		6000	6000		6000	0
Miles per vehicle	0.6	0.6	0.6	0.6		0.6	0.6		0.6	0.6
Total miles	3600	3600	3600	3600		3600	3600		3600	0
Emissions (grams per year)	34088.4	62888.4	414.0	270.4	684.4	414.0	1081.4	1495.4	68371.2	0.0
Emissions (pounds per year)	75.15	138.64	0.91	0.60	1.51	0.91	2.38	3.30	1.51E+02	0.00E+00
Total Annual Emissions (lb/yr) for Drags	**5235.96**	**1888.18**	**54.29**	**922.59**	**976.88**	**54.29**	**3690.37**	**3744.66**	**1112.88**	**2.69**
On-Site Spectator Emissions Used for Annual Dispersion Modeling (grams per second) ... Note 4	0.00842				0.000804			0.002431	0.00380	0.000226
On-Site Racing Area (Tow Vehicles + Non-Trailered Race Vehicles + Racing) Emissions Used for Annual Dispersion Modeling (grams per second) ... Note 4	0.0914				0.00155			0.00404	0.109	0.0000458

NA means that the emissions were not used in the toxics assessment. Although toxic organic compounds are emitted by vehicles traveling on public streets, they are not assessed herein.

Note 1: Number of diesel-fueled vehicles driven by spectators estimated from the ratio of EMFAC VMT/day for diesel-fueled vehicels to all-fueled vehicles for 2019 (11839/32298 = 0.367) x total spectator vehicles.

Note 2: All tow vehicles are diesel fueled.

Note 3: No race vehicles are diesel fueled.

Note 4: For dispersion modeling to assess potential impacts adjacent to the Raceway during Drag Racing; on-site annual emissions (not including travel to/from the Raceway) were totaled and divided by a total of 1,248 hours. The model was turned on for 10 hours each Saturday and Sunday and 4 hours each Wednesday, total 24 hrs/week x 52 weeks = 1,248 hours.

APPENDIX C-2

Drag Racing Maximum Daily Emissions

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SACRAMENTO RACEWAY 2019 EMISSIONS … Maximum Daily Emissions for a NHRA Event

	NOx	ROG	PM2.5 Tailpipe	PM2.5 Fugitive	Total PM2.5	PM10 Tailpipe	PM10 Fugitive	Total PM10	TOG	DPM
Spectator Vehicles to/from Raceway for Drags										
Emission Factors (g/mi)	0.133	0.034	0.00210	0.0751		0.00210	0.300		NA	NA
Number of vehicles per Day	2000	2000	2000	2000		2000	2000			
Miles per vehicle	110	110	110	110		110	110			
Total miles	220000	220000	220000	220000		220000	220000			
Emissions (grams per day)	29260	7480	462	16522.00	16984	462	66088.00	66550		
Emissions (lb/day)	64.5	16.5	1.0	36.4	37.4	1.0	145.7	146.7	NA	NA
Tow Vehicles to/from Raceway for Drags										
Emission Factors (g/mi)	2.262	0.174	0.0279	0.0751		0.0279	0.300		NA	NA
Number of vehicles per Day	180	180	180	180		180	180			
Miles per vehicle	110	110	110	110		110	110			
Total miles	19800	19800	19800	19800		19800	19800			
Emissions (grams per day)	44787.6	3445.2	552.42	1486.98	2039.40	552.42	5947.92	6500.34		
Emissions (lb/day)	98.74	7.60	1.22	3.28	4.50	1.22	13.11	14.33	NA	NA
Non-Trailered Race Vehicles to/from Raceway for Drags … Zero non-trailered NHRA vehicles during a NHRA event										
Emission Factors (g/mi)	1.426	0.365	0.00686	0.0751		0.00686	0.300		NA	NA
Number of vehicles per Day	0	0	0	0		0	0			
Miles per vehicle	110	110	110	110		110	110			
Total miles	0	0	0	0		0	0			
Emissions (grams per day)	0	0	0	0.00	0.00	0	0.00	0.00		
Emissions (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA
Spectator Vehicles On-Site at Raceway for Drags										
Emission Factors (g/mi)	1.166	0.424	0.0362	0.0751		0.0362	0.300		0.526	0.0852
Number of vehicles per Day … Note 1	2000	2000	2000	2000		2000	2000		2000	734
Miles per vehicle	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5
Total miles	1000	1000	1000	1000		1000	1000		1000	367
Emissions (grams per day)	1166.0	424.0	36.2	75.1	111.3	36.2	300.4	336.6	526.0	31.3
Emissions (lb/day)	2.57	0.93	0.08	0.17	0.25	0.08	0.66	0.74	1.16E+00	6.89E-02
Tow Vehicles On-Site at Raceway for Drags										
Emission Factors (g/mi)	2.0461	0.323	0.0415	0.0751		0.0415	0.300		0.368	0.0415
Number of vehicles per Day … Note 2	180	180	180	180		180	180		180	180
Miles per vehicle	1	1	1	1		1	1		1	1
Total miles	180	180	180	180		180	180		180	180
Emissions (grams per day)	368.3	58.1	7.5	13.5	21.0	7.5	54.1	61.5	66.2	7.5
Emissions (lb/day)	0.81	0.13	0.02	0.03	0.05	0.02	0.12	0.14	1.46E-01	1.65E-02
Non-Trailered Race Vehicles On-Site at Raceway for Drags … Zero non-trailered NHRA vehicles during a NHRA event										
Emission Factors (g/mi)	1.882	0.909	0.0175	0.0751		0.0175	0.300		1.252	0
Number of vehicles per Day	0	0	0	0		0	0		0	0
Miles per vehicle	1	1	1	1		1	1		1	1
Total miles	0	0	0	0		0	0		0	0
Emissions (grams per day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Emissions (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00
NHRA Vehicles Racing for Drags										
Emission Factors (g/mi)	12.916	6.791	0.0447	0.0751		0.0447	0.300		7.383	0
Number of vehicles per Day … Note 3	360	360	360	360		360	360		360	0
Miles per vehicle	0.75	0.75	0.75	0.75		0.75	0.75		0.75	0.75
Total miles	270	270	270	270		270	270		270	0
Emissions (grams per day)	3487.3	1833.6	12.1	20.3	32.3	12.1	81.1	93.2	1993.4	0.0
Emissions (lb/day)	7.69	4.04	0.03	0.04	0.07	0.03	0.18	0.21	4.39E+00	0.00E+00

NHRA Vehicles Staging and Return for Drags										
Emission Factors (g/mi)	9.469	17.469	0.115	0.0751		0.115	0.300		18.992	0
Number of vehicles per Day … Note 3	360	360	360	360		360	360		360	0
Miles per vehicle	0.85	0.85	0.85	0.85		0.85	0.85		0.85	0.85
Total miles	306	306	306	306		306	306		306	0
Emissions (grams per day)	2897.5	5345.5	35.2	23.0	58.2	35.2	91.9	127.1	5811.6	0.0
Emissions (lb/day)	6.39	11.78	0.08	0.05	0.13	0.08	0.20	0.28	1.28E+01	0.00E+00
Non-NHRA Vehicles Racing for Drags … Zero non-NHRA vehicles during a NHRA event										
Emission Factors (g/mi)	12.916	6.791	0.0447	0.0751		0.0447	0.300		7.383	0
Number of vehicles per Day … Note 3	0	0	0	0		0	0		0	0
Miles per vehicle	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5
Total miles	0	0	0	0		0	0		0	0
Emissions (grams per day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Emissions (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00
Non-NHRA Vehicles Staging and Return for Drags … Zero non-NHRA vehicles during a NHRA event										
Emission Factors (g/mi)	9.469	17.469	0.115	0.0751		0.115	0.300		18.992	0
Number of vehicles per Day … Note 3	0	0	0	0		0	0		0	0
Miles per vehicle	0.6	0.6	0.6	0.6		0.6	0.6		0.6	0.6
Total miles	0	0	0	0		0	0		0	0
Emissions (grams per day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Emissions (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00
Test and Tune Vehicles Racing for Drags … Zero Test and Tune vehicles during a NHRA event										
Emission Factors (g/mi)	12.916	6.791	0.0447	0.0751		0.0447	0.300		7.383	0
Number of vehicles per Day … Note 3	0	0	0	0		0	0		0	0
Miles per vehicle	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5
Total miles	0	0	0	0		0	0		0	0
Emissions (grams per day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Emissions (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00
Test and Tune Vehicles Staging and Return for Drags … Zero Test and Tune vehicles during a NHRA event										
Emission Factors (g/mi)	9.469	17.469	0.115	0.0751		0.115	0.300		18.992	0
Number of vehicles per Day … Note 3	0	0	0	0		0	0		0	0
Miles per vehicle	0.6	0.6	0.6	0.6		0.6	0.6		0.6	0.6
Total miles	0	0	0	0		0	0		0	0
Emissions (grams per day)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Emissions (lb/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00
Total Daily Emissions for Drags (lb/day)	**180.70**	**40.98**	**2.44**	**39.99**	**42.43**	**2.44**	**159.97**	**162.41**	**18.51**	**0.085**
On-Site Spectator Emissions Used for 8-hour and 24-hour Dispersion Modeling (grams per second) … Note 4	0.0324				0.00309			0.00935	0.0146	
On-Site Racing Area (Tow Vehicles + Racing) Emissions Used for 8-hour and 24-hour Dispersion Modeling (grams per second) … Note 4	0.188				0.00310			0.00783	0.219	

NA means that the emissions were not used in the toxics assessment. Although toxic organic compounds are emitted by vehicles traveling on public streets, they are not assessed herein.

Note 1: Number of diesel-fueled vehicles driven by spectators estimated from the ratio of EMFAC VMT/day for diesel-fueled vehicels to all-fueled vehicles for 2019 (11763/31972 = 0.368) x total spectator vehicles.

Note 2: All tow vehicles assumed diesel-fueled.

Note 3: There are no diesel-fueled race vehicles.

Note 4: For dispersion modeling to assess potential impacts adjacent to the Raceway during Drag Racing; dailly on-site emissions only (no emissions for travel to/from Raceway) were totaled and divided 10 hours per day, same number of hours that the model was turned on for Saturday and Sunday.

APPENDIX C-3

Drag Racing Maximum Hourly Emissions

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SACRAMENTO RACEWAY 2019 EMISSIONS … Maximum Hourly Emissions for a NHRA Event

	NOx	ROG	PM2.5 Tailpipe	PM2.5 Fugitive	Total PM2.5	PM10 Tailpipe	PM10 Fugitive	Total PM10	TOG	DPM
Spectator Vehicles to/from Raceway for Drags … Hourly Assessed Only for On-Site Emissions										
Emission Factors (g/mi)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Number of vehicles per Hour										
Miles per vehicle										
Total miles										
Emissions (grams per hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tow Vehicles to/from Raceway for Drags … Hourly Assessed Only for On-Site Emissions										
Emission Factors (g/mi)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Number of vehicles per Hour										
Miles per vehicle										
Total miles										
Emissions (grams per hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Non-Trailered Race Vehicles to/from Raceway for Drags … Zero Non-Trailered Race Vehicles During NHRA Event … Hourly Assessed Only for On-Site Emissions										
Emission Factors (g/mi)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Number of vehicles per Hour										
Miles per vehicle										
Total miles										
Emissions (grams per hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spectator Vehicles On-Site at Raceway for Drags … Do not arrive in same hour as racing … see Note 5										
Emission Factors (g/mi)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Number of vehicles per Hour … Note 1										
Miles per vehicle										
Total miles										
Emissions (grams per hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tow Vehicles On-Site at Raceway for Drags … Do not arrive in same hour as racing … see Note 5										
Emission Factors (g/mi)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Number of vehicles per Hour … Note 2										
Miles per vehicle										
Total miles										
Emissions (grams per hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Non-Trailered Race Vehicles On-Site at Raceway for Drags … Zero Non-Trailered Race Vehicles During NHRA Event										
Emission Factors (g/mi)	1.882	0.909	0.0175	0.0751		0.0175	0.300		1.252	0
Number of vehicles per Hour … Note 3	0	0	0	0		0	0		0	0
Miles per vehicle	1	1	1	1		1	1		1	1
Total miles	0	0	0	0		0	0		0	0
Emissions (grams per hour)	0	0	0	0	0.0	0	0	0.0	0.0	0.0
NHRA Vehicles Racing for Drags										
Emission Factors (g/mi)	12.916	6.791	0.0447	0.0751		0.0447	0.300		7.383	0
Number of vehicles per Hour … Note 3	40	40	40	40		40	40		40	0
Miles per vehicle	0.75	0.75	0.75	0.75		0.75	0.75		0.75	0.75
Total miles	30	30	30	30		30	30		30	0
Emissions (grams per hour)	387.48	203.73	1.34	2.25	3.59	1.34	9.01	10.35	221.5	0.0

NHRA Vehicles Staging and Return for Drags										
Emission Factors (g/mi)	9.469	17.469	0.115	0.0751		0.115	0.300		18.992	0
Number of vehicles per Hour … Note 3	40	40	40	40		40	40		40	0
Miles per vehicle	0.85	0.85	0.85	0.85		0.85	0.85		0.85	0.85
Total miles	34	34	34	34		34	34		34	0
Emissions (grams per hour)	321.95	593.95	3.91	2.55	6.46	3.91	10.21	14.12	645.7	0.0
Non-NHRA Vehicles Racing for Drags … Zero non-NHRA vehicles during a NHRA event										
Emission Factors (g/mi)	12.916	6.791	0.0447	0.0751		0.0447	0.300		7.383	0
Number of vehicles per Hour … Note 3	0	0	0	0		0	0		0	0
Miles per vehicle	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5
Total miles	0	0	0	0		0	0		0	0
Emissions (grams per hour)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-NHRA Vehicles Staging and Return for Drags … Zero non-NHRA vehicles during a NHRA event										
Emission Factors (g/mi)	9.469	17.469	0.115	0.0751		0.115	0.300		18.992	0
Number of vehicles per Hour … Note 3	0	0	0	0		0	0		0	0
Miles per vehicle	0.6	0.6	0.6	0.6		0.6	0.6		0.6	0.6
Total miles	0	0	0	0		0	0		0	0
Emissions (grams per hour)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Test and Tune Vehicles Racing for Drags … Zero Test and Tune vehicles during a NHRA event										
Emission Factors (g/mi)	12.916	6.791	0.0447	0.0751		0.0447	0.300		7.383	0
Number of vehicles per Hour … Note 3	0	0	0	0		0	0		0	0
Miles per vehicle	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5
Total miles	0	0	0	0		0	0		0	0
Emissions (grams per hour)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Test and Tune Vehicles Staging and Return for Drags … Zero Test and Tune vehicles during a NHRA event										
Emission Factors (g/mi)	9.469	17.469	0.115	0.0751		0.115	0.300		18.992	0
Number of vehicles per Hour … Note 3	0	0	0	0		0	0		0	0
Miles per vehicle	0.6	0.6	0.6	0.6		0.6	0.6		0.6	0.6
Total miles	0	0	0	0		0	0		0	0
Emissions (grams per hour)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Hourly Emissions for Drags (grams/hour)	**709.43**	**797.68**	**5.25**	**4.81**	**10.06**	**5.25**	**19.23**	**24.48**	**867.22**	**0.00**
On-Site Racing Area (Racing only) Emissions Used for 1-hour Dispersion Modeling (grams per second) … Note 4, 5	0.197								0.241	
Total Hourly Emissions for Drags (lb/hour)	**1.56**	**1.76**	**0.01**	**0.01**	**0.02**	**0.01**	**0.04**	**0.05**	**1.91**	**0.00**

NA means that the emissions were not used in the toxics assessment. Hourly emissions are relevant only for on-site speciated toxic organics emissions.

Note 1: Number of diesel-fueled vehicles driven by spectators estimated from the ratio of EMFAC VMT/day for diesel-fueled vehicels to all-fueled vehicles for 2019 (11839/32298 = 0.367) x total spectator vehicles.

Note 2: All tow vehicles are diesel fueled.

Note 3: No race vehicles are diesel fueled.

Note 4: For dispersion modeling to assess potential impacts adjacent to the Raceway during Drag Racing; hourly on-site emissions only (no emissions for travel to/from Raceway) were totaled and divided by 1 hour.

Note 5: For 1-hour dispersion modeling, only the maximum emissions that could occur in the same hour are modeled. Spectator, Tow Vehicle, and Racing do not occur during the same hour.
Thus, only Racing (larger emissions than Spectator or Tow Vehicles) is modeled.

APPENDIX C-4

Motocross Annual Emissions

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SACRAMENTO RACEWAY 2019 EMISSIONS … Annual Emissions for all Motocross Events

	NOx	ROG	PM2.5 Tailpipe	PM2.5 Fugitive	Total PM2.5	PM10 Tailpipe	PM10 Fugitive	Total PM10	TOG	DPM
Spectator Vehicles to/from Raceway for Motocross										
Emission Factors (g/mi)	0.133	0.034	0.00210	0.0751		0.00210	0.300			NA
Number of vehicles	900	900	900	900		900	900			
Miles per vehicle	Not Used	Not Used	Not Used	Not Used		Not Used	Not Used			
Total miles	54000	54000	54000	54000		54000	54000			
Emissions (grams per year)	7182	1836	113.4	4055.40	4168.8	113.4	16221.60	16335		
Emissions (lb/yr)	15.8	4.0	0.3	8.9	9.2	0.3	35.8	36.0		NA
Tow Vehicles to/from Raceway for Motocross										
Emission Factors (g/mi)	2.262	0.174	0.0279	0.0751		0.0279	0.300			NA
Number of vehicles	225	225	225	225		225	225			
Miles per vehicle	Not Used	Not Used	Not Used	Not Used		Not Used	Not Used			
Total miles	13500	13500	13500	13500		13500	13500			
Emissions (grams per year)	30537	2349	376.65	1013.85	1390.50	376.65	4055.40	4432.05		
Emissions (lb/yr)	67.32	5.18	0.83	2.24	3.07	0.83	8.94	9.77		NA
Spectator Vehicles On-Site at Raceway for Motocross										
Emission Factors (g/mi)	1.166	0.424	0.0362	0.0751		0.0362	0.300		0.526	0.0852
Number of vehicles … Note 1	900	900	900	900		900	900		900	330
Miles per vehicle	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5
Total miles	1350	1350	1350	1350		1350	1350		1350	495.45
Emissions (grams per year)	1574.1	572.4	48.9	101.4	150.3	48.9	405.5	454.4	710.1	42.2
Emissions (pounds per year)	3.47	1.26	0.11	0.22	0.33	0.11	0.89	1.00	1.57E+00	9.31E-02
Tow Vehicles On-Site at Raceway for Motocross										
Emission Factors (g/mi)	2.0461	0.323	0.0415	13.828		0.0415	13.828		0.368	0.0415
Number of vehicles … Note 2	135	135	135	135		135	135		135	135
Miles per vehicle	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5
Total miles	202.5	202.5	202.5	202.5		202.5	202.5		202.5	202.5
Emissions (grams per year)	414.3	65.4	8.4	2800.2	2808.6	8.4	2800.2	2808.6	74.5	8.4
Emissions (pounds per year)	0.91	0.14	0.02	6.17	6.19	0.02	6.17	6.19	1.64E-01	1.85E-02
Motocross Vehicles Racing for MX										
Emission Factors (g/mi)	1.149	2.660	0.00198	0		0.00198	0		3.238	0
Number of vehicles … Note 3	540	540	540	540		540	540		540	0
Miles per vehicle	15	15	15	15		15	15		15	15
Total miles	8100	8100	8100	8100		8100	8100		8100	0
Emissions (grams per year)	9306.9	21546.0	16.0	0.0	16.0	16.0	0.0	16.0	26227.8	0.0
Emissions (pounds per year)	20.52	47.50	0.04	0.00	0.035	0.04	0.00	0.035	5.78E+01	0.00E+00
Total Annual Emissions (lb/yr) for Motocross	**108.06**	**58.13**	**1.24**	**17.57**	**18.81**	**1.24**	**51.77**	**53.01**	**59.55**	**0.11**
On-Site MX1 Emissions Used for Annual Dispersion Modeling (grams per second) … Note 4, 5	0.0112				0.0000193			0.0000193	0.0315	Note 8
On-Site MX2 Emissions Used for Annual Dispersion Modeling (grams per second) … Note 4, 6	0.00124				0.00000214			0.00000214	0.00350	Note 8
On-Site Spectator and Tow Vehicle Emissions Used for Annual Dispersion Modeling (grams per second) … Note 4, 7	0.00266				0.00395			0.00436	0.00105	0.0000676

NA means that the emissions were not used in the toxics assessment. Although toxic organic compounds are emitted by vehicles traveling on public streets, they are not assessed herein.

Note 1: Number of diesel-fueled vehicles driven by spectators estimated from the ratio of EMFAC VMT/day for diesel-fueled vehicels to all-fueled vehicles for 2019 (11839/32298 = 0.367) x total spectator vehicles.

Note 2: All tow vehicles are diesel fueled.

Note 3: No motocross vehicles are diesel fueled.

Note 4: For dispersion modeling to assess potential impacts adjacent to the Raceway during Motocross; on-site annual emissions (not including travel to/from the Raceway) were totaled and divided by 208 hours, The model was turned on for 4 hours every Friday, 4 hr/wk x 52 wk/yr = 208 hours.

Note 5: MX1 is 90% of racing on the short track.

Note 6: MX2 is 10% of Racing on the long track.

Note 7: Spectator and Tow Vehicle emissions only.

Note 8: Assumed no diesel-fueled Motocross racing vehicles.

APPENDIX C-5

Motocross Maximum Daily Emissions

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SACRAMENTO RACEWAY 2019 EMISSIONS … Daily Emissions for all Motocross Events

	NOx	ROG	PM2.5 Tailpipe	PM2.5 Fugitive	Total PM2.5	PM10 Tailpipe	PM10 Fugitive	Total PM10	TOG	DPM
Spectator Vehicles to/from Raceway for Motocross										
Emission Factors (g/mi)	0.133	0.034	0.00210	0.0751		0.00210	0.300		NA	NA
Number of vehicles	100	100	100	100		100	100			
Miles per vehicle	Not Used	Not Used	Not Used	Not Used		Not Used	Not Used			
Total miles	6000	6000	6000	6000		6000	6000			
Emissions (grams per year)	798	204	12.6	450.60	463.2	12.6	1802.40	1815		
Emissions (lb/day)	1.8	0.4	0.0	1.0	1.0	0.0	4.0	4.0	NA	NA
Tow Vehicles to/from Raceway for Motocross										
Emission Factors (g/mi)	2.262	0.174	0.0279	0.0751		0.0279	0.300		NA	NA
Number of vehicles	25	25	25	25		25	25			
Miles per vehicle	Not Used	Not Used	Not Used	Not Used		Not Used	Not Used			
Total miles	13500	13500	13500	13500		13500	13500			
Emissions (grams per year)	30537	2349	376.65	1013.85	1390.50	376.65	4055.40	4432.05		
Emissions (lb/day)	67.32	5.18	0.83	2.24	3.07	0.83	8.94	9.77	NA	NA
Spectator Vehicles On-Site at Raceway for Motocross										
Emission Factors (g/mi)	1.166	0.424	0.0362	0.0751		0.0362	0.300		0.526	0.0852
Number of vehicles … Note 1	100	100	100	100		100	100		100	37
Miles per vehicle	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5
Total miles	150	150	150	150		150	150		150	55.05
Emissions (grams per day)	174.9	63.6	5.4	11.3	16.7	5.4	45.1	50.5	78.9	4.7
Emissions (lb/day)	0.39	0.14	0.01	0.02	0.04	0.01	0.10	0.11	1.74E-01	1.03E-02
Tow Vehicles On-Site at Raceway for Motocross										
Emission Factors (g/mi)	2.0461	0.323	0.0415	13.828		0.0415	13.828		0.368	0.0415
Number of vehicles … Note 2	15	15	15	15		15	15		15	15
Miles per vehicle	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5
Total miles	22.5	22.5	22.5	22.5		22.5	22.5		22.5	22.5
Emissions (grams per day)	46.0	7.3	0.9	311.1	312.1	0.9	311.1	312.1	8.3	0.9
Emissions (lb/day)	0.10	0.02	0.00	0.69	0.69	0.00	0.69	0.69	1.83E-02	2.06E-03
Motocross Vehicles Racing for MX										
Emission Factors (g/mi)	1.149	2.660	0.00198	0		0.00198	0		3.238	0
Number of vehicles … Note 3	60	60	60	60		60	60		60	0
Miles per vehicle	15	15	15	15		15	15		15	15
Total miles	900	900	900	900		900	900		900	0
Emissions (grams per day)	1034.1	2394.0	1.8	0.0	1.8	1.8	0.0	1.8	2914.2	0.0
Emissions (lb/day)	2.28	5.28	0.0039	0.00	0.00	0.0039	0.00	0.00	6.42E+00	0.00E+00
Total Daily Emissions (lb/day) for Motocross	**71.85**	**11.06**	**0.88**	**3.94**	**4.82**	**0.88**	**13.70**	**14.58**	**6.62**	**0.012**
On-Site MX1 Emissions Used for 8-hour and 24-hour Dispersion Modeling (grams per second) … Note 4, 5	0.0646				0.000111			0.000111	0.182	
On-Site MX2 Emissions Used for 8-hour and 24-hour Dispersion Modeling (grams per second) … Note 4, 6	0.00718				0.0000124			0.0000124	0.0202	
On-Site Spectator and Tow Vehicle Emissions Used for 8-hour and 24-hour Dispersion Modeling (grams per second) … Note 4, 7	0.0153				0.0228			0.0252	0.00605	

NA means that the emissions were not used in the toxics assessment. Although toxic organic compounds are emitted by vehicles traveling on public streets, they are not assessed herein.

Note 1: Number of diesel-fueled vehicles driven by spectators estimated from the ratio of EMFAC VMT/day for diesel-fueled vehicels to all-fueled vehicles for 2019 (11839/32298 = 0.367) x total spectator vehicles.

Note 2: All tow vehicles are diesel fueled.

Note 3: No motocross vehicles are diesel fueled.

Note 4: For dispersion modeling to assess potential impacts adjacent to the Raceway during Motocross; dailly on-site emissions (no emissions for travel to/from Raceway) were totaled and divided 4 hours per day, same number of hours that the model was turned on for Friday night.

Note 5: MX1 is 90% of racing on the short track.

Note 6: MX2 is 10% of Racing on the long track.

Note 7: Spectator and Tow Vehicle emissions only.

APPENDIX C-6

Motocross Maximum Hourly Emissions

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SACRAMENTO RACEWAY 2019 EMISSIONS … Hourly Emissions for all Motocross Events

	NOx	ROG	PM2.5 Tailpipe	PM2.5 Fugitive	Total PM2.5	PM10 Tailpipe	PM10 Fugitive	Total PM10	TOG	DPM
Spectator Vehicles to/from Raceway for Motocross … Hourly Assessed Only for On-Site Emissions										
Emission Factors (g/mi)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Number of vehicles										
Miles per vehicle										
Total miles										
Emissions (grams per hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tow Vehicles to/from Raceway for Motocross … Hourly Assessed Only for On-Site Emissions										
Emission Factors (g/mi)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Number of vehicles										
Miles per vehicle										
Total miles										
Emissions (grams per hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spectator Vehicles On-Site at Raceway for Motocross … Do not arrive at same hour as racing … see Note 8										
Emission Factors (g/mi)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Number of vehicles … Note 1, 8										
Miles per vehicle										
Total miles										
Emissions (grams per hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tow Vehicles On-Site at Raceway for Motocross … Do not arrive at same hour as racing … see Note 8										
Emission Factors (g/mi)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Number of vehicles … Note 2, 8										
Miles per vehicle										
Total miles										
Emissions (grams per hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Motocross Vehicles Racing for MX … Hourly Assessed Only for On-Site Emissions										
Emission Factors (g/mi)	1.149	2.660	0.00198	0		0.00198	0		3.238	0
Number of vehicles … Note 3	20	20	20	20		20	20		20	0
Miles per vehicle	15	15	15	15		15	15		15	15
Total miles	300	300	300	300		300	300		300	0
Emissions (grams per hour)	344.7	798.0	0.6	0.0	0.59	0.6	0.0	0.59	971.4	0.0
Total Hourly Emissions (grams per hour) for Motocross	**344.70**	**798.00**	**0.59**	**0.00**	**0.59**	**0.59**	**0.00**	**0.59**	**971.40**	**0.00**
On-Site MX1 Emissions Used for 1-hour Dispersion Modeling (grams per second) … Note 4, 5, 8	0.0862								0.243	
On-Site MX2 Emissions Used for 1-hour Dispersion Modeling (grams per second) … Note 4, 6, 8	0.00958								0.0270	
Total Hourly Emissions for Drags (lb/hour)	**0.76**	**1.76**	**0.0013**	**0.00**	**0.0013**	**0.0013**	**0.00**	**0.0013**	**2.14**	**0.00**

NA means that the emissions were not used in the toxics assessment. Although toxic organic compounds are emitted by vehicles traveling on public streets, they are not assessed herein.

Note 1: Number of diesel-fueled vehicles driven by spectators estimated from the ratio of EMFAC VMT/day for diesel-fueled vehicels to all-fueled vehicles for 2019 (11839/32298 = 0.367) x total spectator vehicles.

Note 2: All tow vehicles are diesel fueled.

Note 3: No motocross vehicles are diesel fueled.

Note 4: For dispersion modeling to assess potential impacts adjacent to the Raceway during Motocross; hourly on-site emissions (no emissions for travel to/from Raceway) were totaled and divided by 1 hour.

Note 5: MX1 is 90% of Racing on the short track.

Note 6: MX2 is 10% of Racing on the long track.

Note 7: Spectator and Tow Vehicle emissions only.

Note 8: For 1-hour dispersion modeling, only the maximum emissions that could occur in the same hour are modeled, and Spectator/Tow Vehicle and Racing do not occur during the same hour.
Thus, only Racing (larger emissions than Spectator/Tow) is modeled.

APPENDIX D
RACEWAY REGIONAL HEALTH EFFECTS ANALYSIS

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Strategic Area Project Health Effects Tool

Strategic Area Location	II. Rancho Cordova	**<-- Step 1: Input the area**
NOx Emissions	180.7	**<-- Step 2: Input NOx emissions in lbs./day**
ROG Emissions	40.98	**<-- Step 3: Input ROG emissions in lbs./day**
PM25 Emissions	42.43	**<-- Step 4: Input PM2.5 emissions in lbs./day**

PM2.5 Health Endpoint	Age Range1	Incidences Across the Reduced Sacramento 4-km Modeling Domain Resulting from Project Emissions (per year)[2,5] (Mean)	Incidences Across the 5-Air-District Region Resulting from Project Emissions (per year)[2] (Mean)	Percent of Background Health Incidences Across the 5-Air-District Region[3]	Total Number of Health Incidences Across the 5-Air-District Region (per year)[4]
Respiratory					
Emergency Room Visits, Asthma	0 - 99	1.9	1.7	0.0093%	18419
Hospital Admissions, Asthma	0 - 64	0.12	0.11	0.0060%	1846
Hospital Admissions, All Respiratory	65 - 99	0.72	0.65	0.0033%	19644
Cardiovascular					
Hospital Admissions, All Cardiovascular (less Myocardial Infarctions)	65 - 99	0.40	0.37	0.0015%	24037
Acute Myocardial Infarction, Nonfatal	18 - 24	0.00015	0.00014	0.0037%	4
Acute Myocardial Infarction, Nonfatal	25 - 44	0.013	0.013	0.0041%	308
Acute Myocardial Infarction, Nonfatal	45 - 54	0.035	0.033	0.0044%	741
Acute Myocardial Infarction, Nonfatal	55 - 64	0.056	0.053	0.0043%	1239
Acute Myocardial Infarction, Nonfatal	65 - 99	0.25	0.24	0.0047%	5052
Mortality					
Mortality, All Cause	30 - 99	4.7	4.3	0.0096%	44766

Ozone Health Endpoint	Age Range1	Incidences Across the Reduced Sacramento 4-km Modeling Domain Resulting from Project Emissions (per year)[2,5] (Mean)	Incidences Across the 5-Air-District Region Resulting from Project Emissions (per year)[2] (Mean)	Percent of Background Health Incidences Across the 5-Air-District Region[3]	Total Number of Health Incidences Across the 5-Air-District Region (per year)[4]
Respiratory					
Hospital Admissions, All Respiratory	65 - 99	0.17	0.14	0.00071%	19644
Emergency Room Visits, Asthma	0 - 17	0.67	0.55	0.0094%	5859
Emergency Room Visits, Asthma	18 - 99	1.2	0.96	0.0077%	12560
Mortality					
Mortality, Non-Accidental	0 - 99	0.11	0.092	0.00030%	30386

1. Affected age ranges are shown. Other age ranges are available, but the endpoints and age ranges shown here are the ones used by the USEPA in their health assessments. The age ranges are consistent with the epidemiological study that is the basis of the health function.
2. Health effects are shown in terms of incidences of each health endpoint and how it compares to the base (2035 base year health effect incidences, or "background health incidence") values. Health effects are shown for the Reduced Sacramento 4-km Modeling Domain and the 5-Air-District Region.
3. The percent of background health incidence uses the mean incidence. The background health incidence is an estimate of the average number of people that are affected by the health endpoint in a given population over a given period of time. In this case, the background incidence rates cover the 5-Air-District Region (estimated 2035 population of 3,271,451 persons). Health incidence rates and other health data are typically collected by the government as well as the World Health Organization. The background incidence rates used here are obtained from BenMAP.

4. The total number of health incidences across the 5-Air-District Region is calculated based on the modeling data. The information is presented to assist in providing overall health context.

5. The technical specifications and map for the Reduced Sacramento 4-km Modeling Domain are included in Appendix A, Table A-1 and Appendix B, Figure B-2 of the *Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District.*

Sac Metro Air District Strategic Area Project Health Effects Tool, version 2, published September 2020

APPENDIX E

RACEWAY SOURCES CONFIGURATION for DISPERSION MODELING

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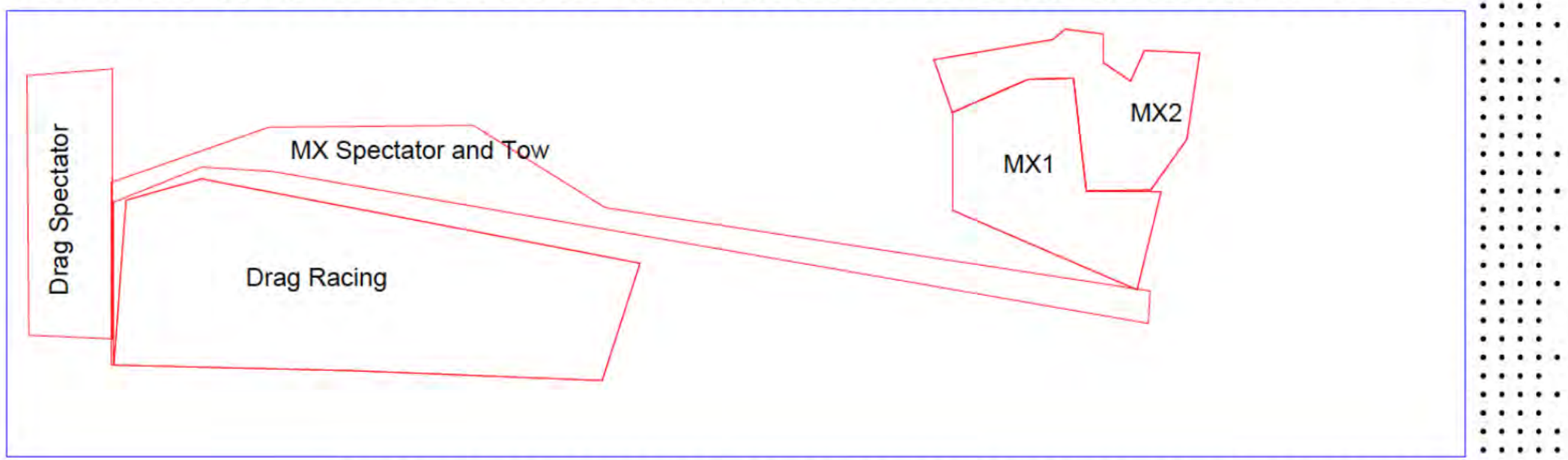

Date: 4/2/2021 User: ALeonard Path: \\azrgisstorp01\GIS_Projects\Client\Tsakopoulos\20214197\Tsakopoulos_SacRaceway\Tsakopoulos_SacRaceway.aprx

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PROJECT NO.	20214197
CREATED:	4/2/2021
CREATED BY:	ALeonard
CHECKED BY:	RErbes
FILE NAME:	SourcesConfig

Raceway Source Configuration

Appendix E Sacramento Raceway
Sources Config
Sacramento, California

APPENDIX

E

APPENDIX F
AERMOD DISPERSION MODELING OUTPUT REPORTS

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APPENDIX F-1

Drag Racing 1-Hour NO_2

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 1-hr NO2 DR 032921_5yrs_NO2.SUM 03/29/2021, 08:24:31 AM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 1-hour NO2
 ***        08:24:19

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. Ambient Ratio Method Ver 2 (ARM2) Used for NO2 Conversion
              with a Minimum NO2/NOx Ratio of  0.500
               and a Maximum NO2/NOx Ratio of  0.900

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  NO2

 **Note that special processing requirements apply for the 1-hour NO2 NAAQS - check available guidance.
   Model will process user-specified ranks of daily maximum 1-hour values averaged across the number of years
   modeled.
   For annual NO2 NAAQS modeling, the multi-year maximum of PERIOD values can be simulated using the MULTYEAR
   keyword.
   Multi-year PERIOD and 1-hour values should only be done in a single model run using the MULTYEAR option
   with a
   single multi-year meteorological data file using STARTEND keyword.

 **Model Calculates  1 Short Term Average(s) of:   1-HR

 **This Run Includes:      1 Source(s);       2 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:      0 VOLUME source(s)
                 and:      1 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.
```

```
 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
Angle =     0.0
                  Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                  0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr NO2 DR
032921_5yrs_NO2.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr NO2 DR
032921_5yrs_NO2.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr NO2 DR
032921_5yrs_NO2.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 1-hour NO2
 ***        08:24:19

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                    METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                (METERS/SEC)

                                        1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 1-hour NO2
 ***        08:24:19

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

                                   *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

*** AERMOD - VERSION 19191 *** *** Sac Raceway Drag and Motocross
*** 03/29/21
*** AERMET - VERSION 19191 *** *** Drag Racing 1-hour NO2
*** 08:24:19

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 1ST-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 1 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	75.13167 AT	648520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	74.55863 AT	648500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	74.20020 AT	648540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	72.65484 AT	648480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	72.55522 AT	648560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	71.55017 AT	648500.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	71.52983 AT	648520.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	71.26081 AT	648740.00,	4265460.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	70.80878 AT	648580.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	70.50039 AT	648760.00,	4265460.00,	0.00,	0.00,	0.00)	DC
DR_RC	1ST HIGHEST VALUE IS	75.13167 AT	648520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	74.55863 AT	648500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	74.20020 AT	648540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	72.65484 AT	648480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	72.55522 AT	648560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	71.55017 AT	648500.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	71.52983 AT	648520.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	71.26081 AT	648740.00,	4265460.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	70.80878 AT	648580.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	70.50039 AT	648760.00,	4265460.00,	0.00,	0.00,	0.00)	DC

```
 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 1-hour NO2
 ***        08:24:19

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     751       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     751       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-2

Motocross 1-Hour NO_2

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 1-hr NO2 MX 032921_5yrs_NO2.SUM 03/29/2021, 08:25:24 AM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 1-hour NO2
 ***        08:25:19

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. Ambient Ratio Method Ver 2 (ARM2) Used for NO2 Conversion
              with a Minimum NO2/NOx Ratio of  0.500
               and a Maximum NO2/NOx Ratio of  0.900

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  NO2

 **Note that special processing requirements apply for the 1-hour NO2 NAAQS - check available guidance.
   Model will process user-specified ranks of daily maximum 1-hour values averaged across the number of years
   modeled.
   For annual NO2 NAAQS modeling, the multi-year maximum of PERIOD values can be simulated using the MULTYEAR
   keyword.
   Multi-year PERIOD and 1-hour values should only be done in a single model run using the MULTYEAR option
   with a
   single multi-year meteorological data file using STARTEND keyword.

 **Model Calculates  1 Short Term Average(s) of:   1-HR

 **This Run Includes:      2 Source(s);       3 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:      0 VOLUME source(s)
                 and:      2 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.
```

```
 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
Angle =     0.0
                  Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                  0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr NO2 MX
032921_5yrs_NO2.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr NO2 MX
032921_5yrs_NO2.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr NO2 MX
032921_5yrs_NO2.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 1-hour NO2
 ***        08:25:19

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                    METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                (METERS/SEC)

                                          1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 1-hour NO2
 ***        08:25:19

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

                                   *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

*** AERMOD - VERSION 19191 *** *** Sac Raceway Drag and Motocross
*** 03/29/21
*** AERMET - VERSION 19191 *** *** Motocross 1-hour NO2
*** 08:25:19

PAGE 4
*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT ARM2 RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 1ST-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 1 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	104.18839 AT	649480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	101.38690 AT	649500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	99.06831 AT	649460.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	97.95233 AT	649540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	97.31627 AT	649520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	96.18940 AT	649480.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	92.19721 AT	649460.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	90.23466 AT	649500.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	90.09645 AT	649440.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	89.40014 AT	649560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
MX1_RC	1ST HIGHEST VALUE IS	98.88166 AT	649480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	94.21419 AT	649500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	93.93041 AT	649460.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	91.42017 AT	649480.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	90.60795 AT	649540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	90.45255 AT	649520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	87.79985 AT	649460.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	84.67746 AT	649440.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	84.33978 AT	649500.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	84.17074 AT	649480.00,	4266040.00,	0.00,	0.00,	0.00)	DC

MX2_RC	1ST HIGHEST VALUE IS	15.79764	AT (	649540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	13.83216	AT (	649500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	13.71132	AT (	649560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	13.51913	AT (	649540.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	12.72781	AT (	649640.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	12.53992	AT (	649660.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	12.47323	AT (	649520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	12.43740	AT (	649480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	11.80614	AT (	649540.00,	4266040.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	11.80392	AT (	649620.00,	4266000.00,	0.00,	0.00,	0.00)	DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 1-hour NO2
 ***        08:25:19

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     777       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     777       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-3

Drag Racing and Motocross Annual NO_2

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 Ann NO2 DR MX 033021_5yrs_NO2.SUM 03/30/2021, 12:37:46 PM

```
*** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
***        03/30/21
*** AERMET - VERSION  19191 ***   *** Drag Racing plus Motocross Annual NO2
***        12:37:18

         PAGE   1
*** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses RURAL Dispersion Only.

**Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. Ambient Ratio Method Ver 2 (ARM2) Used for NO2 Conversion
              with a Minimum NO2/NOx Ratio of  0.500
               and a Maximum NO2/NOx Ratio of  0.900

**Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  NO2

**NOTE: Special processing requirements applicable for the 1-hour NO2 NAAQS have been disabled!!!
        User has specified non-standard averaging periods:
        High ranked 1-hour values are NOT averaged across the number of years modeled, and
        complete years of data are NOT required.

**Model Calculates ANNUAL Averages Only

**This Run Includes:      5 Source(s);       6 Source Group(s); and     703 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     0 VOLUME source(s)
                 and:     5 AREA type source(s)
                 and:     0 LINE source(s)
                 and:     0 RLINE/RLINEXT source(s)
                 and:     0 OPENPIT source(s)
                 and:     0 BUOYANT LINE source(s) with      0 line(s)


**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date:  19191

**Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
```

```
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
 Angle =     0.0
                  Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                  0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann NO2 DR MX
 033021_5yrs_NO2.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann NO2 DR MX
 033021_5yrs_NO2.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann NO2 DR MX
 033021_5yrs_NO2.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing plus Motocross Annual NO2
 ***        12:37:18

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                  (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                     METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                       AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                  *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                  (METERS/SEC)

                                             1.54,   3.09,   5.14,   8.23,  10.80,
```

File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 Ann NO2 DR MX 033021_5yrs_NO2.SUM 03/30/2021, 12:37:46 PM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing plus Motocross Annual NO2
 ***        12:37:18

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

                                   *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing plus Motocross Annual NO2
 ***        12:37:18

          PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

                                  *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   1 YEARS ***

                                   ** CONC OF NO2      IN MICROGRAMS/M**3                        **

                                                                                                      NE
                                                                                                      T
                                                                                                      W
                                                                                                      O
                                                                                                      R
                                                                                                      K
GROUP ID                        AVERAGE CONC               RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE
GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

ALL       1ST HIGHEST VALUE IS       0.13994 AT (  648740.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.13989 AT (  648720.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.13925 AT (  648760.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.13893 AT (  648700.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.13798 AT (  648780.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.13687 AT (  648680.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.13622 AT (  648800.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.13404 AT (  648820.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.13366 AT (  648660.00,  4266000.00,     0.00,     0.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.13150 AT (  648840.00,  4266000.00,     0.00,     0.00,    0.00)  DC

DR_RC     1ST HIGHEST VALUE IS       0.13153 AT (  648760.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.13147 AT (  648740.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.13086 AT (  648780.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.13047 AT (  648720.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.12961 AT (  648800.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.12830 AT (  648700.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.12786 AT (  648820.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.12567 AT (  648840.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.12467 AT (  648680.00,  4266000.00,     0.00,     0.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.12306 AT (  648860.00,  4266000.00,     0.00,     0.00,    0.00)  DC
```

MX1_RC	1ST HIGHEST VALUE IS	0.01797	AT (	649540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.01770	AT (	649520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.01737	AT (	649560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.01686	AT (	649500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.01647	AT (	649580.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.01566	AT (	649480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.01541	AT (	649600.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.01490	AT (	649540.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.01468	AT (	649520.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.01458	AT (	649560.00,	4266020.00,	0.00,	0.00,	0.00)	DC
MX2_RC	1ST HIGHEST VALUE IS	0.00411	AT (	649560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.00396	AT (	649580.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.00395	AT (	649540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.00373	AT (	649520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.00370	AT (	649600.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.00356	AT (	649500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.00352	AT (	649620.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.00340	AT (	649640.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.00330	AT (	649480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.00323	AT (	649660.00,	4266000.00,	0.00,	0.00,	0.00)	DC

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing plus Motocross Annual NO2
 ***        12:37:18

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

                                  *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   1 YEARS ***

                                   ** CONC OF NO2      IN MICROGRAMS/M**3                        **

                                                                                                    NE
                                                                                                    T
                                                                                                    W
                                                                                                    O
                                                                                                    R
                                                                                                    K
GROUP ID                        AVERAGE CONC               RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE
GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

DR_SP     1ST HIGHEST VALUE IS       0.03954 AT (  648520.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.03804 AT (  648500.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.03725 AT (  648540.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.03534 AT (  648480.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.03368 AT (  648460.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.03260 AT (  648560.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.03257 AT (  648520.00,  4266020.00,     0.00,     0.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.03233 AT (  648540.00,  4266020.00,     0.00,     0.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.03161 AT (  648440.00,  4266000.00,     0.00,     0.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.03014 AT (  648420.00,  4266000.00,     0.00,     0.00,    0.00)  DC

MX_ST     1ST HIGHEST VALUE IS       0.00214 AT (  648880.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.00214 AT (  648860.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.00213 AT (  648900.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.00213 AT (  648840.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.00212 AT (  648820.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.00211 AT (  648800.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.00210 AT (  648920.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.00209 AT (  648780.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.00205 AT (  648940.00,  4266000.00,     0.00,     0.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.00203 AT (  648760.00,  4266000.00,     0.00,     0.00,    0.00)  DC
```

```
 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing plus Motocross Annual NO2
 ***        12:37:18

          PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  ARM2  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     831       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     831       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-4

Drag Racing 24-Hour $PM_{2.5}$

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 24-hr PM25 DR 033021_5yrs_OTHER.SUM 03/30/2021, 03:32:52 PM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 24-hr PM2.5
 ***        15:32:34

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  OTHER

 **Model Calculates  1 Short Term Average(s) of:  24-HR

 **This Run Includes:      2 Source(s);       3 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                  and:     0 VOLUME source(s)
                  and:     2 AREA type source(s)
                  and:     0 LINE source(s)
                  and:     0 RLINE/RLINEXT source(s)
                  and:     0 OPENPIT source(s)
                  and:     0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                0.10000E+07
                Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM25 DR
033021_5yrs_OTHER.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM25 DR
033021_5yrs_OTHER.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM25 DR
033021_5yrs_OTHER.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 24-hr PM2.5
 ***        15:32:34

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                    METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                  *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                (METERS/SEC)

                                         1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 24-hr PM2.5
 ***        15:32:34

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 24-hr PM2.5
 ***        15:32:34

          PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                    ** CONC OF OTHER    IN MICROGRAMS/M**3                        **

                                                  DATE
                                                                    NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL,
ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - -

ALL       HIGH   1ST HIGH VALUE IS       0.47948  ON 14121424: AT (  648400.00,  4266000.00,     0.00,
0.00,    0.00)  DC

DR_RC     HIGH   1ST HIGH VALUE IS       0.09685c ON 14010524: AT (  648880.00,  4265460.00,     0.00,
0.00,    0.00)  DC

DR_SP     HIGH   1ST HIGH VALUE IS       0.44736  ON 14121424: AT (  648400.00,  4266000.00,     0.00,
0.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 24-hr PM2.5
 ***        15:32:34

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     766       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     766       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-5

Motocross 24-Hour $PM_{2.5}$

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 24-hr PM25 MX 032921_5yrs_OTHER.SUM 03/30/2021, 03:31:47 PM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross 24-hr PM2.5
 ***        15:31:39

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  OTHER

 **Model Calculates  1 Short Term Average(s) of:  24-HR

 **This Run Includes:      3 Source(s);       4 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                  and:     0 VOLUME source(s)
                  and:     3 AREA type source(s)
                  and:     0 LINE source(s)
                  and:     0 RLINE/RLINEXT source(s)
                  and:     0 OPENPIT source(s)
                  and:     0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                0.10000E+07
                Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM25 MX
032921_5yrs_OTHER.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM25 MX
032921_5yrs_OTHER.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM25 MX
032921_5yrs_OTHER.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross 24-hr PM2.5
 ***        15:31:39

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                    METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                (METERS/SEC)

                                          1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross 24-hr PM2.5
 ***        15:31:39

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross 24-hr PM2.5
 ***        15:31:39

          PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                    ** CONC OF OTHER    IN MICROGRAMS/M**3                        **

                                                  DATE
                                                                    NETWORK
GROUP ID                           AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL,
ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - -

ALL       HIGH   1ST HIGH VALUE IS       1.01730  ON 14121224: AT (  648760.00,  4266000.00,     0.00,
0.00,    0.00)  DC
          HIGH   2ND HIGH VALUE IS       0.79830  ON 14121224: AT (  648840.00,  4266000.00,     0.00,
          0.00,    0.00)  DC

MX1_RC    HIGH   1ST HIGH VALUE IS       0.01316c ON 14011024: AT (  649500.00,  4266000.00,     0.00,
0.00,    0.00)  DC
          HIGH   2ND HIGH VALUE IS       0.00901  ON 14121224: AT (  649460.00,  4266000.00,     0.00,
          0.00,    0.00)  DC

MX2_RC    HIGH   1ST HIGH VALUE IS       0.00213  ON 14121224: AT (  649500.00,  4266000.00,     0.00,
0.00,    0.00)  DC
          HIGH   2ND HIGH VALUE IS       0.00169  ON 14121224: AT (  649540.00,  4266000.00,     0.00,
          0.00,    0.00)  DC

MX_ST     HIGH   1ST HIGH VALUE IS       1.01727  ON 14121224: AT (  648760.00,  4266000.00,     0.00,
0.00,    0.00)  DC
          HIGH   2ND HIGH VALUE IS       0.79815  ON 14121224: AT (  648840.00,  4266000.00,     0.00,
          0.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross 24-hr PM2.5
 ***        15:31:39

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     799       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     799       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-6

Drag Racing and Motocross Annual $PM_{2.5}$

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 Ann PM25 DR MX 033021_5yrs_OTHER.SUM 03/30/2021, 03:34:14 PM

```
*** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
***        03/30/21
*** AERMET - VERSION  19191 ***   *** Motocross and Drag Racing Annual PM2.5
***        15:33:48

         PAGE   1
*** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses RURAL Dispersion Only.

**Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

**Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  OTHER

**Model Calculates ANNUAL Averages Only

**This Run Includes:      5 Source(s);       6 Source Group(s); and     703 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     0 VOLUME source(s)
                 and:     5 AREA type source(s)
                 and:     0 LINE source(s)
                 and:     0 RLINE/RLINEXT source(s)
                 and:     0 OPENPIT source(s)
                 and:     0 BUOYANT LINE source(s) with      0 line(s)


**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date:  19191

**Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                 0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann PM25 DR MX
 033021_5yrs_OTHER.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann PM25 DR MX
 033021_5yrs_OTHER.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann PM25 DR MX
 033021_5yrs_OTHER.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross and Drag Racing Annual PM2.5
 ***        15:33:48

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                     METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                       AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                  *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                  (METERS/SEC)

                                             1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross and Drag Racing Annual PM2.5
 ***        15:33:48

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

*** AERMOD - VERSION 19191 ***   *** Sac Raceway Drag and Motocross
***   03/30/21
*** AERMET - VERSION 19191 ***   *** Motocross and Drag Racing Annual PM2.5
***   15:33:48

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   1 YEARS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	0.00697 AT	648520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.00695 AT	648540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.00670 AT	648560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.00659 AT	648500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.00642 AT	648780.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.00641 AT	648760.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.00641 AT	648580.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.00638 AT	648800.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.00638 AT	648740.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.00632 AT	648720.00,	4266000.00,	0.00,	0.00,	0.00)	DC
DR_RC	1ST HIGHEST VALUE IS	0.00248 AT	648760.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.00248 AT	648740.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.00247 AT	648780.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.00246 AT	648720.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.00244 AT	648800.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.00242 AT	648700.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.00241 AT	648820.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.00237 AT	648840.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.00235 AT	648680.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.00232 AT	648860.00,	4266000.00,	0.00,	0.00,	0.00)	DC

MX1_RC	1ST HIGHEST VALUE IS	0.00003	AT (	649540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.00003	AT (	649520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.00003	AT (	649560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.00003	AT (	649500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.00003	AT (	649580.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.00003	AT (	649480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.00003	AT (	649600.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.00003	AT (	649540.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.00003	AT (	649520.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.00003	AT (	649560.00,	4266020.00,	0.00,	0.00,	0.00)	DC
MX2_RC	1ST HIGHEST VALUE IS	0.00001	AT (	649560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.00001	AT (	649580.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.00001	AT (	649540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.00001	AT (	649520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.00001	AT (	649600.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.00001	AT (	649500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.00001	AT (	649620.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.00001	AT (	649640.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.00001	AT (	649480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.00001	AT (	649660.00,	4266000.00,	0.00,	0.00,	0.00)	DC

*** AERMOD - VERSION 19191 ***   *** Sac Raceway Drag and Motocross
***   03/30/21
*** AERMET - VERSION 19191 ***   *** Motocross and Drag Racing Annual PM2.5
***   15:33:48

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   1 YEARS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
DR_SP	1ST HIGHEST VALUE IS	0.00420 AT	648520.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.00404 AT	648500.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.00395 AT	648540.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.00375 AT	648480.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.00357 AT	648460.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.00346 AT	648560.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.00346 AT	648520.00,	4266020.00,	0.00,	0.00,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.00343 AT	648540.00,	4266020.00,	0.00,	0.00,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.00335 AT	648440.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.00320 AT	648420.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
MX_ST	1ST HIGHEST VALUE IS	0.00353 AT	648880.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.00353 AT	648860.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.00352 AT	648900.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.00351 AT	648840.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.00350 AT	648820.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.00348 AT	648800.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.00347 AT	648920.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.00344 AT	648780.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.00338 AT	648940.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.00336 AT	648760.00,	4266000.00,	0.00,	0.00,	0.00)	DC	

```
 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross and Drag Racing Annual PM2.5
 ***        15:33:48

          PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     831       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     831       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-7

Drag Racing 24-Hour PM_{10}

© 2021 Kleinfelder

File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 24-hr PM10 DR 033021_5yrs_OTHER.SUM 03/30/2021, 03:06:55 PM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 24-hr PM
 ***        15:06:36

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  OTHER

 **Model Calculates  1 Short Term Average(s) of:  24-HR

 **This Run Includes:      2 Source(s);       3 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                  and:     0 VOLUME source(s)
                  and:     2 AREA type source(s)
                  and:     0 LINE source(s)
                  and:     0 RLINE/RLINEXT source(s)
                  and:     0 OPENPIT source(s)
                  and:     0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                 0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM10 DR
 033021_5yrs_OTHER.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM10 DR
 033021_5yrs_OTHER.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM10 DR
 033021_5yrs_OTHER.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 24-hr PM
 ***        15:06:36

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                    METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                  *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                  (METERS/SEC)

                                             1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 24-hr PM
 ***        15:06:36

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 24-hr PM
 ***        15:06:36

          PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                    ** CONC OF OTHER    IN MICROGRAMS/M**3                        **

                                                  DATE
                                                                    NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL,
ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - -

ALL       HIGH   1ST HIGH VALUE IS       1.43479  ON 14121424: AT (  648400.00,  4266000.00,     0.00,
0.00,    0.00)  DC

DR_RC     HIGH   1ST HIGH VALUE IS       0.24463c ON 14010524: AT (  648880.00,  4265460.00,     0.00,
0.00,    0.00)  DC

DR_SP     HIGH   1ST HIGH VALUE IS       1.35365  ON 14121424: AT (  648400.00,  4266000.00,     0.00,
0.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 24-hr PM
 ***        15:06:36

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     766       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     766       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-8

Motocross 24-Hour PM_{10}

© 2021 Kleinfelder

File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 24-hr PM10 MX 032921_5yrs_OTHER.SUM 03/30/2021, 03:02:53 PM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross 24-hr PM10
 ***        15:02:45

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  OTHER

 **Model Calculates  1 Short Term Average(s) of:  24-HR

 **This Run Includes:      3 Source(s);       4 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                  and:     0 VOLUME source(s)
                  and:     3 AREA type source(s)
                  and:     0 LINE source(s)
                  and:     0 RLINE/RLINEXT source(s)
                  and:     0 OPENPIT source(s)
                  and:     0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                 0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM10 MX
 032921_5yrs_OTHER.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM10 MX
 032921_5yrs_OTHER.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 24-hr PM10 MX
 032921_5yrs_OTHER.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross 24-hr PM10
 ***        15:02:45

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                    METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                (METERS/SEC)

                                          1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross 24-hr PM10
 ***        15:02:45

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross 24-hr PM10
 ***        15:02:45

          PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                    ** CONC OF OTHER    IN MICROGRAMS/M**3                        **

                                                  DATE
                                                                    NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL,
ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - -

ALL       HIGH   1ST HIGH VALUE IS       1.12439  ON 14121224: AT (  648760.00,  4266000.00,     0.00,
0.00,    0.00)  DC
          HIGH   2ND HIGH VALUE IS       0.88232  ON 14121224: AT (  648840.00,  4266000.00,     0.00,
          0.00,    0.00)  DC

MX1_RC    HIGH   1ST HIGH VALUE IS       0.01316c ON 14011024: AT (  649500.00,  4266000.00,     0.00,
0.00,    0.00)  DC
          HIGH   2ND HIGH VALUE IS       0.00901  ON 14121224: AT (  649460.00,  4266000.00,     0.00,
          0.00,    0.00)  DC

MX2_RC    HIGH   1ST HIGH VALUE IS       0.00213  ON 14121224: AT (  649500.00,  4266000.00,     0.00,
0.00,    0.00)  DC
          HIGH   2ND HIGH VALUE IS       0.00169  ON 14121224: AT (  649540.00,  4266000.00,     0.00,
          0.00,    0.00)  DC

MX_ST     HIGH   1ST HIGH VALUE IS       1.12435  ON 14121224: AT (  648760.00,  4266000.00,     0.00,
0.00,    0.00)  DC
          HIGH   2ND HIGH VALUE IS       0.88217  ON 14121224: AT (  648840.00,  4266000.00,     0.00,
          0.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross 24-hr PM10
 ***        15:02:45

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     799       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     799       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-9

Drag Racing and Motocross Annual PM_{10}

© 2021 Kleinfelder

File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 Ann PM10 DR MX 033021_5yrs_OTHER.SUM 03/30/2021, 03:29:50 PM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross and Drag Racing Annual PM10
 ***        15:29:25

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  OTHER

 **Model Calculates ANNUAL Averages Only

 **This Run Includes:      5 Source(s);       6 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                  and:     0 VOLUME source(s)
                  and:     5 AREA type source(s)
                  and:     0 LINE source(s)
                  and:     0 RLINE/RLINEXT source(s)
                  and:     0 OPENPIT source(s)
                  and:     0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                0.10000E+07
                Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann PM10 DR MX
033021_5yrs_OTHER.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann PM10 DR MX
033021_5yrs_OTHER.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann PM10 DR MX
033021_5yrs_OTHER.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross and Drag Racing Annual PM10
 ***        15:29:25

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                     METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                      AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                  *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                  (METERS/SEC)

                                          1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross and Drag Racing Annual PM10
 ***        15:29:25

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

*** AERMOD - VERSION 19191 ***   *** Sac Raceway Drag and Motocross
***   03/30/21
*** AERMET - VERSION 19191 ***   *** Motocross and Drag Racing Annual PM10
***   15:29:25

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   1 YEARS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.01806 AT	648520.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.01766 AT	648540.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.01725 AT	648500.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.01653 AT	648560.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.01599 AT	648480.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.01568 AT	648540.00,	4266020.00,	0.00,	0.00,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.01549 AT	648520.00,	4266020.00,	0.00,	0.00,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.01531 AT	648580.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.01510 AT	648560.00,	4266020.00,	0.00,	0.00,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.01502 AT	648460.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
DR_RC	1ST HIGHEST VALUE IS	0.00646 AT	648760.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.00646 AT	648740.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.00643 AT	648780.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.00641 AT	648720.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.00637 AT	648800.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.00630 AT	648700.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.00628 AT	648820.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.00617 AT	648840.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.00612 AT	648680.00,	4266000.00,	0.00,	0.00,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.00604 AT	648860.00,	4266000.00,	0.00,	0.00,	0.00)	DC	

MX1_RC	1ST HIGHEST VALUE IS	0.00003	AT (	649540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.00003	AT (	649520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.00003	AT (	649560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.00003	AT (	649500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.00003	AT (	649580.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.00003	AT (	649480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.00003	AT (	649600.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.00003	AT (	649540.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.00003	AT (	649520.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.00003	AT (	649560.00,	4266020.00,	0.00,	0.00,	0.00)	DC
MX2_RC	1ST HIGHEST VALUE IS	0.00001	AT (	649560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.00001	AT (	649580.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.00001	AT (	649540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.00001	AT (	649520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.00001	AT (	649600.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.00001	AT (	649500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.00001	AT (	649620.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.00001	AT (	649640.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.00001	AT (	649480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.00001	AT (	649660.00,	4266000.00,	0.00,	0.00,	0.00)	DC

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross and Drag Racing Annual PM10
 ***        15:29:25

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                  *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   1 YEARS ***

                                   ** CONC OF OTHER    IN MICROGRAMS/M**3                        **

                                                                                                    NE
                                                                                                    T
                                                                                                    W
                                                                                                    O
                                                                                                    R
                                                                                                    K
GROUP ID                        AVERAGE CONC               RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE
GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

DR_SP     1ST HIGHEST VALUE IS       0.01268 AT (  648520.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.01220 AT (  648500.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.01195 AT (  648540.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.01134 AT (  648480.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.01081 AT (  648460.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.01046 AT (  648560.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.01045 AT (  648520.00,  4266020.00,     0.00,     0.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.01037 AT (  648540.00,  4266020.00,     0.00,     0.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.01014 AT (  648440.00,  4266000.00,     0.00,     0.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.00967 AT (  648420.00,  4266000.00,     0.00,     0.00,    0.00)  DC

MX_ST     1ST HIGHEST VALUE IS       0.00390 AT (  648880.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.00390 AT (  648860.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.00388 AT (  648900.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.00388 AT (  648840.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.00386 AT (  648820.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.00385 AT (  648800.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.00383 AT (  648920.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.00380 AT (  648780.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.00373 AT (  648940.00,  4266000.00,     0.00,     0.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.00370 AT (  648760.00,  4266000.00,     0.00,     0.00,    0.00)  DC
```

```
 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Motocross and Drag Racing Annual PM10
 ***        15:29:25

          PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     831       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     831       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-10

Drag Racing 1-hour TOG

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 1-hr TOG DR 032921_5yrs_TOG.SUM 03/29/2021, 08:29:19 AM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 1-hour TOG
 ***        08:29:07

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  TOG

 **Model Calculates  1 Short Term Average(s) of:   1-HR

 **This Run Includes:      1 Source(s);       2 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                  and:     0 VOLUME source(s)
                  and:     1 AREA type source(s)
                  and:     0 LINE source(s)
                  and:     0 RLINE/RLINEXT source(s)
                  and:     0 OPENPIT source(s)
                  and:     0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                 0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr TOG DR
 032921_5yrs_TOG.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr TOG DR
 032921_5yrs_TOG.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr TOG DR
 032921_5yrs_TOG.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 1-hour TOG
 ***        08:29:07

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                     METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                  *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                  (METERS/SEC)

                                             1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 1-hour TOG
 ***        08:29:07

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 1-hour TOG
 ***        08:29:07

          PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                    ** CONC OF TOG      IN MICROGRAMS/M**3                        **

                                                    DATE
                                                                        NETWORK
GROUP ID                           AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL,
ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - -

ALL       HIGH   1ST HIGH VALUE IS     102.12483  ON 14121409: AT (  648520.00,  4266000.00,     0.00,
0.00,    0.00)  DC

DR_RC     HIGH   1ST HIGH VALUE IS     102.12483  ON 14121409: AT (  648520.00,  4266000.00,     0.00,
0.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 1-hour TOG
 ***        08:29:07

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     751       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     751       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-11

Motocross 1-hour TOG

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 1-hr TOG MX 032921_5yrs_TOG.SUM 03/29/2021, 08:32:02 AM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 1-hour TOG
 ***        08:31:58

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  TOG

 **Model Calculates  1 Short Term Average(s) of:   1-HR

 **This Run Includes:      2 Source(s);       3 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                  and:     0 VOLUME source(s)
                  and:     2 AREA type source(s)
                  and:     0 LINE source(s)
                  and:     0 RLINE/RLINEXT source(s)
                  and:     0 OPENPIT source(s)
                  and:     0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                0.10000E+07
                Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr TOG MX
 032921_5yrs_TOG.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr TOG MX
 032921_5yrs_TOG.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 1-hr TOG MX
 032921_5yrs_TOG.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 1-hour TOG
 ***        08:31:58

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                    METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                (METERS/SEC)

                                          1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 1-hour TOG
 ***        08:31:58

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 1-hour TOG
 ***        08:31:58

          PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                    ** CONC OF TOG      IN MICROGRAMS/M**3                        **

                                                  DATE
                                                                    NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL,
ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - -

ALL       HIGH   1ST HIGH VALUE IS     328.73815  ON 14011020: AT (  649480.00,  4266000.00,     0.00,
0.00,    0.00)  DC

MX1_RC    HIGH   1ST HIGH VALUE IS     311.99788  ON 14011020: AT (  649480.00,  4266000.00,     0.00,
0.00,    0.00)  DC

MX2_RC    HIGH   1ST HIGH VALUE IS      49.47069  ON 14011020: AT (  649540.00,  4266000.00,     0.00,
0.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 1-hour TOG
 ***        08:31:58

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     777       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     777       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-12

Drag Racing 8-hour TOG

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 8-hr TOG DR 033021_5yrs_TOG.SUM 03/30/2021, 01:52:49 PM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 8-hour TOG
 ***        13:52:31

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  TOG

 **Model Calculates  1 Short Term Average(s) of:   8-HR

 **This Run Includes:      2 Source(s);       3 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                  and:     0 VOLUME source(s)
                  and:     2 AREA type source(s)
                  and:     0 LINE source(s)
                  and:     0 RLINE/RLINEXT source(s)
                  and:     0 OPENPIT source(s)
                  and:     0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                 0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 8-hr TOG DR
 033021_5yrs_TOG.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 8-hr TOG DR
 033021_5yrs_TOG.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 8-hr TOG DR
 033021_5yrs_TOG.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 8-hour TOG
 ***        13:52:31

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                    METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                (METERS/SEC)

                                          1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 8-hour TOG
 ***        13:52:31

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                   *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 8-hour TOG
 ***        13:52:31

          PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          *** THE SUMMARY OF HIGHEST  8-HR RESULTS ***


                                    ** CONC OF TOG      IN MICROGRAMS/M**3                        **

                                                  DATE
                                                                    NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL,
ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - -

ALL       HIGH   1ST HIGH VALUE IS      17.87155  ON 14111224: AT (  648400.00,  4266000.00,     0.00,
0.00,    0.00)  DC

DR_RC     HIGH   1ST HIGH VALUE IS      17.08493  ON 14111224: AT (  648400.00,  4266000.00,     0.00,
0.00,    0.00)  DC

DR_SP     HIGH   1ST HIGH VALUE IS       4.73353  ON 14102224: AT (  648420.00,  4266000.00,     0.00,
0.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing 8-hour TOG
 ***        13:52:31

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     766       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     766       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-13

Motocross 8-hour TOG

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 8-hr TOG MX 032921_5yrs_TOG.SUM 03/29/2021, 08:33:01 AM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 8-hour TOG
 ***        08:32:53

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  TOG

 **Model Calculates  1 Short Term Average(s) of:   8-HR

 **This Run Includes:      3 Source(s);       4 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                  and:     0 VOLUME source(s)
                  and:     3 AREA type source(s)
                  and:     0 LINE source(s)
                  and:     0 RLINE/RLINEXT source(s)
                  and:     0 OPENPIT source(s)
                  and:     0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                0.10000E+07
                Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 8-hr TOG MX
 032921_5yrs_TOG.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 8-hr TOG MX
 032921_5yrs_TOG.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 8-hr TOG MX
 032921_5yrs_TOG.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 8-hour TOG
 ***        08:32:53

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
           1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                    METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                (METERS/SEC)

                                          1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 8-hour TOG
 ***        08:32:53

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 8-hour TOG
 ***        08:32:53

          PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          *** THE SUMMARY OF HIGHEST  8-HR RESULTS ***


                                   ** CONC OF TOG      IN MICROGRAMS/M**3                        **

                                                 DATE
                                                                    NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL,
ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - -

ALL       HIGH   1ST HIGH VALUE IS      65.64551  ON 14121224: AT (  649420.00,  4266000.00,     0.00,
0.00,    0.00)  DC

MX1_RC    HIGH   1ST HIGH VALUE IS      58.55748c ON 14011024: AT (  649500.00,  4266000.00,     0.00,
0.00,    0.00)  DC

MX2_RC    HIGH   1ST HIGH VALUE IS      10.38882  ON 14121224: AT (  649500.00,  4266000.00,     0.00,
0.00,    0.00)  DC

MX_ST     HIGH   1ST HIGH VALUE IS       0.80980  ON 14121224: AT (  648760.00,  4266000.00,     0.00,
0.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/29/21
 *** AERMET - VERSION  19191 ***   *** Motocross 8-hour TOG
 ***        08:32:53

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     799       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     799       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-14

Drag Racing and Motocross Annual TOG

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 Ann TOG DR MX 033021_5yrs_TOG.SUM 03/30/2021, 01:55:48 PM

```
*** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
***        03/30/21
*** AERMET - VERSION  19191 ***   *** Drag Racing and Motocross Annual TOG
***        13:55:22

         PAGE   1
*** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses RURAL Dispersion Only.

**Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

**Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  TOG

**Model Calculates ANNUAL Averages Only

**This Run Includes:      5 Source(s);       6 Source Group(s); and     703 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     0 VOLUME source(s)
                 and:     5 AREA type source(s)
                 and:     0 LINE source(s)
                 and:     0 RLINE/RLINEXT source(s)
                 and:     0 OPENPIT source(s)
                 and:     0 BUOYANT LINE source(s) with      0 line(s)


**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date:  19191

**Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                 0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann TOG DR MX
 033021_5yrs_TOG.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann TOG DR MX
 033021_5yrs_TOG.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann TOG DR MX
 033021_5yrs_TOG.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing and Motocross Annual TOG
 ***        13:55:22

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                    METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                (METERS/SEC)

                                          1.54,   3.09,   5.14,   8.23,  10.80,
```

File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 Ann TOG DR MX 033021_5yrs_TOG.SUM 03/30/2021, 01:55:48 PM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing and Motocross Annual TOG
 ***        13:55:22

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing and Motocross Annual TOG
 ***        13:55:22

          PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                  *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   1 YEARS ***

                                   ** CONC OF TOG      IN MICROGRAMS/M**3                        **

                                                                                                    NE
                                                                                                    T
                                                                                                    W
                                                                                                    O
                                                                                                    R
                                                                                                    K
GROUP ID                        AVERAGE CONC               RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE
GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

ALL       1ST HIGHEST VALUE IS       0.17888 AT (  648740.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.17860 AT (  648760.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.17802 AT (  648720.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.17742 AT (  648780.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.17574 AT (  648700.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.17553 AT (  648800.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.17303 AT (  648820.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.17171 AT (  648680.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.17000 AT (  648840.00,  4266000.00,     0.00,     0.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.16645 AT (  648860.00,  4266000.00,     0.00,     0.00,    0.00)  DC

DR_RC     1ST HIGHEST VALUE IS       0.17429 AT (  648760.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.17420 AT (  648740.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.17340 AT (  648780.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.17288 AT (  648720.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.17174 AT (  648800.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.17000 AT (  648700.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.16942 AT (  648820.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.16652 AT (  648840.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.16520 AT (  648680.00,  4266000.00,     0.00,     0.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.16307 AT (  648860.00,  4266000.00,     0.00,     0.00,    0.00)  DC
```

MX1_RC	1ST HIGHEST VALUE IS	0.05615	AT (	649540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.05531	AT (	649520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.05430	AT (	649560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.05268	AT (	649500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.05147	AT (	649580.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.04895	AT (	649480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.04814	AT (	649600.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.04656	AT (	649540.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.04589	AT (	649520.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.04556	AT (	649560.00,	4266020.00,	0.00,	0.00,	0.00)	DC
MX2_RC	1ST HIGHEST VALUE IS	0.01290	AT (	649560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.01242	AT (	649580.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.01238	AT (	649540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.01171	AT (	649520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.01160	AT (	649600.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.01115	AT (	649500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.01105	AT (	649620.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.01068	AT (	649640.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.01034	AT (	649480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.01013	AT (	649660.00,	4266000.00,	0.00,	0.00,	0.00)	DC

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing and Motocross Annual TOG
 ***        13:55:22

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                  *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   1 YEARS ***

                                   ** CONC OF TOG      IN MICROGRAMS/M**3                        **

                                                                                                    NE
                                                                                                    T
                                                                                                    W
                                                                                                    O
                                                                                                    R
                                                                                                    K
GROUP ID                        AVERAGE CONC               RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE
GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

DR_SP     1ST HIGHEST VALUE IS       0.01983 AT (  648520.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.01907 AT (  648500.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.01868 AT (  648540.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.01772 AT (  648480.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.01689 AT (  648460.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.01635 AT (  648560.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.01633 AT (  648520.00,  4266020.00,     0.00,     0.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.01621 AT (  648540.00,  4266020.00,     0.00,     0.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.01585 AT (  648440.00,  4266000.00,     0.00,     0.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.01511 AT (  648420.00,  4266000.00,     0.00,     0.00,    0.00)  DC

MX_ST     1ST HIGHEST VALUE IS       0.00094 AT (  648880.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.00094 AT (  648860.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.00094 AT (  648900.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.00093 AT (  648840.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.00093 AT (  648820.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.00093 AT (  648800.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.00092 AT (  648920.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.00091 AT (  648780.00,  4266000.00,     0.00,     0.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.00090 AT (  648940.00,  4266000.00,     0.00,     0.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.00089 AT (  648760.00,  4266000.00,     0.00,     0.00,    0.00)  DC
```

```
 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing and Motocross Annual TOG
 ***        13:55:22

          PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     831       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     831       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX F-15

Drag Racing and Motocross Annual DPM

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File: /Users/rerbes/Documents/My Documents/Projects/California/Jackson Township/Sac Raceway/HRA 2021/AERMOD/Sac Raceway 2014 Ann DPM DR MX 033021_5yrs_TOG.SUM 03/30/2021, 01:59:14 PM

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing and Motocross Annual TOG
 ***        13:58:52

          PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         CCVR_Sub - Meteorological data includes CCVR substitutions
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  TOG

 **Model Calculates ANNUAL Averages Only

 **This Run Includes:      3 Source(s);       4 Source Group(s); and     703 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                  and:     0 VOLUME source(s)
                  and:     3 AREA type source(s)
                  and:     0 LINE source(s)
                  and:     0 RLINE/RLINEXT source(s)
                  and:     0 OPENPIT source(s)
                  and:     0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot.
```

```
 Angle =     0.0
                Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =
                0.10000E+07
                Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Input Runstream File:          C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann DPM DR MX
033021_5yrs_TOG.DTA
 **Output Print File:             C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann DPM DR MX
033021_5yrs_TOG.LST

 **File for Summary of Results:   C:\BEEST\Jackson Sac Raceway\Sac Raceway 2014 Ann DPM DR MX
033021_5yrs_TOG.SUM
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing and Motocross Annual TOG
 ***        13:58:52

          PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
            1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                     METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2014   1  1  1
                                                        AND END DATE: 2014  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE
                DATA FILE.


                                  *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                  (METERS/SEC)

                                             1.54,   3.09,   5.14,   8.23,  10.80,
```

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing and Motocross Annual TOG
 ***        13:58:52

          PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.SFC                                  Met
   Version:  19191
   Profile file:   C:\BEEST\Jackson Sac Raceway\Meteorology\14-18.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:    23232                  Upper air station no.:    23230
                 Name: SACRAMENTO EXECUTIVE AIRPORT, CA           Name: UNKNOWN

                 Year:   2014                                     Year:   2014

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT
 REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
 14 01 01   1 01   -1.4  0.061 -9.000 -9.000 -999.   36.     14.2  0.04   0.93   1.00    0.62  152.   10.1
 274.9    2.0
 14 01 01   1 02   -4.9  0.096 -9.000 -9.000 -999.   72.     16.7  0.16   0.93   1.00    1.08  107.   10.1
 274.2    2.0
 14 01 01   1 03   -5.3  0.100 -9.000 -9.000 -999.   76.     17.3  0.16   0.93   1.00    1.13   95.   10.1
 274.2    2.0
 14 01 01   1 04   -2.4  0.075 -9.000 -9.000 -999.   49.     15.4  0.16   0.93   1.00    0.70  117.   10.1
 273.8    2.0
 14 01 01   1 05   -3.8  0.084 -9.000 -9.000 -999.   59.     14.5  0.11   0.93   1.00    1.03  120.   10.1
 273.1    2.0
 14 01 01   1 06   -2.3  0.072 -9.000 -9.000 -999.   46.     14.5  0.11   0.93   1.00    0.74  128.   10.1
 273.1    2.0
 14 01 01   1 07   -1.3  0.061 -9.000 -9.000 -999.   36.     16.0  0.05   0.93   1.00    0.53  232.   10.1
 273.1    2.0
 14 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   0.76    0.00    0.   10.1
 273.1    2.0
 14 01 01   1 09   -1.5  0.085 -9.000 -9.000 -999.   60.     38.3  0.11   0.93   0.40    1.03  133.   10.1
 278.1    2.0
 14 01 01   1 10   40.2  0.170  0.461  0.019   88.  168.    -11.2  0.11   0.93   0.28    1.50  122.   10.1
 281.4    2.0
 14 01 01   1 11   74.7  0.195  0.704  0.017  170.  206.     -9.0  0.11   0.93   0.23    1.67  140.   10.1
 283.8    2.0
 14 01 01   1 12   94.4  0.181  0.832  0.016  222.  184.     -5.7  0.04   0.93   0.22    1.88  157.   10.1
 286.4    2.0
 14 01 01   1 13   97.3  0.170  0.891  0.014  265.  168.     -4.6  0.04   0.93   0.22    1.71  173.   10.1
 287.5    2.0
 14 01 01   1 14   84.1  0.178  0.894  0.013  309.  181.     -6.1  0.04   0.93   0.23    1.81  202.   10.1
 289.2    2.0
 14 01 01   1 15   54.8  0.119  0.824  0.012  371.   99.     -2.8  0.04   0.93   0.26    1.08  189.   10.1
 289.9    2.0
 14 01 01   1 16   12.2  0.060  0.506  0.012  384.   36.     -1.6  0.04   0.93   0.35    0.52  169.   10.1
 288.8    2.0
 14 01 01   1 17   -2.3  0.067 -9.000 -9.000 -999.   42.     11.9  0.04   0.93   0.60    0.96  173.   10.1
 286.4    2.0
 14 01 01   1 18   -1.7  0.066 -9.000 -9.000 -999.   40.     15.2  0.09   0.93   1.00    0.62  252.   10.1
 283.8    2.0
 14 01 01   1 19   -1.7  0.069 -9.000 -9.000 -999.   43.     17.0  0.15   0.93   1.00    0.55   79.   10.1
 281.4    2.0
 14 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
```

```
 280.4    2.0
 14 01 01   1 21   -1.7  0.062 -9.000 -9.000 -999.   37.     13.4  0.04   0.93   1.00    0.69    7.   10.1
 279.2    2.0
 14 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.08   0.93   1.00    0.00    0.   10.1
 278.1    2.0
 14 01 01   1 23   -1.3  0.060 -9.000 -9.000 -999.   35.     14.8  0.04   0.93   1.00    0.58   28.   10.1
 277.5    2.0
 14 01 01   1 24   -2.2  0.067 -9.000 -9.000 -999.   42.     12.2  0.04   0.93   1.00    0.87   24.   10.1
 277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  152.    0.62   274.9   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

*** AERMOD - VERSION 19191 ***   *** Sac Raceway Drag and Motocross
***   03/30/21
*** AERMET - VERSION 19191 ***   *** Drag Racing and Motocross Annual TOG
***   13:58:52

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   1 YEARS ***

** CONC OF TOG   IN MICROGRAMS/M**3   **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.00125 AT (648520.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	2ND HIGHEST VALUE IS	0.00120 AT (648500.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	3RD HIGHEST VALUE IS	0.00118 AT (648540.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	4TH HIGHEST VALUE IS	0.00111 AT (648480.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	5TH HIGHEST VALUE IS	0.00106 AT (648460.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	6TH HIGHEST VALUE IS	0.00105 AT (648560.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	7TH HIGHEST VALUE IS	0.00103 AT (648520.00, 4266020.00, 0.00, 0.00, 0.00)	DC
	8TH HIGHEST VALUE IS	0.00103 AT (648540.00, 4266020.00, 0.00, 0.00, 0.00)	DC
	9TH HIGHEST VALUE IS	0.00099 AT (648440.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	10TH HIGHEST VALUE IS	0.00096 AT (648500.00, 4266020.00, 0.00, 0.00, 0.00)	DC
DR_RC	1ST HIGHEST VALUE IS	0.00007 AT (648760.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	2ND HIGHEST VALUE IS	0.00007 AT (648740.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	3RD HIGHEST VALUE IS	0.00007 AT (648780.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	4TH HIGHEST VALUE IS	0.00007 AT (648720.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	5TH HIGHEST VALUE IS	0.00007 AT (648800.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	6TH HIGHEST VALUE IS	0.00007 AT (648700.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	7TH HIGHEST VALUE IS	0.00007 AT (648820.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	8TH HIGHEST VALUE IS	0.00007 AT (648840.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	9TH HIGHEST VALUE IS	0.00007 AT (648680.00, 4266000.00, 0.00, 0.00, 0.00)	DC
	10TH HIGHEST VALUE IS	0.00007 AT (648860.00, 4266000.00, 0.00, 0.00, 0.00)	DC

DR_SP	1ST HIGHEST VALUE IS	0.00118	AT (	648520.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.00113	AT (	648500.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.00111	AT (	648540.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.00105	AT (	648480.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.00100	AT (	648460.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.00097	AT (	648560.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.00097	AT (	648520.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.00096	AT (	648540.00,	4266020.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.00094	AT (	648440.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.00090	AT (	648420.00,	4266000.00,	0.00,	0.00,	0.00)	DC
MX_ST	1ST HIGHEST VALUE IS	0.00006	AT (	648880.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.00006	AT (	648860.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.00006	AT (	648900.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.00006	AT (	648840.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.00006	AT (	648820.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.00006	AT (	648800.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.00006	AT (	648920.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.00006	AT (	648780.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.00006	AT (	648940.00,	4266000.00,	0.00,	0.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.00006	AT (	648760.00,	4266000.00,	0.00,	0.00,	0.00)	DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

```
 *** AERMOD - VERSION  19191 ***   *** Sac Raceway Drag and Motocross
 ***        03/30/21
 *** AERMET - VERSION  19191 ***   *** Drag Racing and Motocross Annual TOG
 ***        13:58:52

          PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of          621 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of          188 Calm Hours Identified

 A Total of          433 Missing Hours Identified (  4.94 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     788       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     788       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

APPENDIX G
LOCAL HEALTH RISK CALCULATIONS

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SACRAMENTO RACEWAY SPECIATED ORGANICS HEALTH IMPACT ASSESSMENT

Residential Cancer Risk Calculation

				Organic Gas Speciation Percentage (% of TOG)	0.28%	2.47%	0.55%	1.05%	1.58%	0.05%	DPM Modeled Directly	
PMI Residential TOG Concentration (Conc)	0.179	ug/m3		Maximum Exposed Individual Residence (MEIR)								
from Annual Drag Racing and Motocross					**Acetaldehyde**	**Benzene**	**1,3-Butadiene**	**Ethylbenzene**	**Formaldehyde**	**Napthalene**	**DPM**	
				Cancer Potency Factor (CPF) (mg/kg-day)^-1	0.01	0.1	0.6	0.0087	0.021	0.12	1.1	
				TOG Conc * Speciation % = MEIR Conc (ug/m3)	5.01E-04	4.42E-03	9.85E-04	1.88E-03	2.83E-03	8.95E-05	1.25E-03	
Breathing Rates are 95th Percentile												
Breathing Rate 3rd Trimester	361	L/kg-day	1	Fraction Home 3rd Trimester		10	Age Sensitivity Factor					
Breathing Rate 0 to <2 yrs	1090	L/kg-day	1	Fraction Home 0 to <2 yrs		10	Age Sensitivity Factor					
Breathing Rate 2 to <16 yrs	745	L/kg-day	1	Fraction Home 2 to <16 yrs		3	Age Sensitivity Factor					
Breathing Rate 16 to <30 yrs	335	L/kg-day	0.73	Fraction Home 16 to <30 yrs		1	Age Sensitivity Factor					**Total Risk**
Cancer Risk 3rd Trimester	Conc x Breathe Rate x 1E-06 x 350/365 x Fraction Home x CPF x 0.3/70 x ASF				7.44E-11	6.56E-09	8.76E-09	2.43E-10	8.81E-10	1.59E-10	2.04E-08	3.71E-08
Cancer Risk 0 to <2yrs	Conc x Breathe Rate x 1E-06 x 350/365 x Fraction Home x CPF x 2/70 x ASF				1.50E-09	1.32E-07	1.76E-07	4.88E-09	1.77E-08	3.21E-09	4.11E-07	7.46E-07
Cancer Risk 2 to <16 yrs	Conc x Breathe Rate x 1E-06 x 350/365 x Fraction Home x CPF x 14/70 x ASF				2.15E-09	1.90E-07	2.53E-07	7.01E-09	2.55E-08	4.60E-09	5.89E-07	1.07E-06
Cancer Risk 16 to <30 yrs	Conc x Breathe Rate x 1E-06 x 350/365 x Fraction Home x CPF x 14/70 x ASF				2.35E-10	2.07E-08	2.77E-08	7.67E-10	2.79E-09	5.04E-10	6.45E-08	1.17E-07
30-year Risk	3rd Trimester + 0 to 2 year risk + 2 to 16 year risk + 16 to 30 year risk				3.95E-09	3.49E-07	4.66E-07	1.29E-08	4.69E-08	8.47E-09	1.08E-06	**1.97E-06**

Residential Acute 1-hour Hazard Index Calculation

PMI Residential TOG Concentration (Conc)	328.728	ug/m3	MEIR									
from Daily Motocross					**Acetaldehyde**	**Benzene**	**1,3-Butadiene**	**Ethylbenzene**	**Formaldehyde**	**Napthalene**	**DPM**	
				Reference Exposure Level (REL) (ug/m3)	470	1300	660	NA	55	NA	NA	
				TOG Conc * Speciation % = MEIR 1-Hour Concentration (ug/m3)	9.20E-01	8.12E+00	1.81E+00		5.19E+00			**HHI**
				Health Hazard Index (HHI): MEIR Concentration / REL	1.96E-03	6.25E-03	2.74E-03		9.44E-02			**0.11**

Residential Acute 8-hour Hazard Index Calculation

PMI Residential TOG Concentration (Conc)	65.646	ug/m3	MEIR									
from Daily Motocross					**Acetaldehyde**	**Benzene**	**1,3-Butadiene**	**Ethylbenzene**	**Formaldehyde**	**Napthalene**	**DPM**	
				Reference Exposure Level (REL) (ug/m3)	300	NA	9	NA	9	NA	NA	
				TOG Conc * Speciation % = MEIR 8-Hour Concentration (ug/m3)	1.84E-01		3.61E-01		1.04E+00			**HHI**
				Health Hazard Index (HHI): MEIR Concentration / REL	6.13E-04		4.01E-02		1.15E-01			**0.16**

Residential Chronic Hazard Index Calculation

PMI Residential TOG Concentration (Conc)	0.179	ug/m3	MEIR									
from Annual Drag Racing and Motocross					**Acetaldehyde**	**Benzene**	**1,3-Butadiene**	**Ethylbenzene**	**Formaldehyde**	**Napthalene**	**DPM**	
				Reference Exposure Level (REL) (ug/m3)	140	60	2	2000	9	9	5	
				TOG Conc * Speciation % = MEIR Concentration (ug/m3)	5.01E-04	4.42E-03	9.85E-04	1.88E-03	2.83E-03	8.95E-05	1.25E-03	**HHI**
				Health Hazard Index (HHI): MEIR Concentration / REL	3.58E-06	7.37E-05	4.92E-04	9.40E-07	3.14E-04	9.94E-06	2.50E-04	**0.0011**

Notes:

1 Cancer Potency Factors and Reference Exposure Levels from California OEHHA Appendix A and B for the Air Toxics Hotspots Program. www.oehha.ca.gov/air-toxics-hot-spots. Appendix A was updated October 2020 and Appendix G November 2019.

2 Acute impacts assessed for Motocross because Motocross had higher 1-hour and 8-hour ambient concentrations of TOG than for daily Drag Racing even though Drag Racing had higher emissions. See Text.

Appendix AQ-4

Potential Odors from the Sacramento Rendering Company at the Proposed Jackson Township Development

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TECHNICAL MEMORANDUM

POTENTIAL ODORS FROM THE SACRAMENTO RENDERING COMPANY AT THE PROPOSED JACKSON TOWNSHIP DEVELOPMENT

June 17, 2015

1 EXECUTIVE SUMMARY

The Sacramento Rendering Company (SRC) is located at 11350 Kiefer Boulevard, Sacramento, California. SRC has operated facilities in Sacramento County since 1913 and has been operating at its current location since the 1950s.[1] SRC receives restaurant grease and inedible animal byproduct materials and renders them into products used in the manufacturing of many everyday items such as soaps, cosmetics, candles, and animal feed.[2]

SRC is located approximately 1.5 miles east of the proposed Jackson Township Specific Plan (Jackson Township) and approximately 0.75 miles west of existing homes located on the east side of Sunrise Boulevard (See Figure 1, Attachment A). There have been reports to the Sacramento Metropolitan Air Quality Management District (SMAQMD) of detectable odors in the vicinity associated with SRC[3]. This study evaluates the potential for detectable and recognizable odors from SRC occurring at the proposed Jackson Township. The results of the study are summarized below, while the details are presented in the following sections of this Technical Memorandum.

SRC possesses 10 permits to operate from SMAQMD for potentially emitting devices and emission for control systems at the facility. These emission control systems remove from 69 to 99.7 percent of the potential emissions prior to their being exhausted through elevated stacks to the atmosphere. The emission control equipment and regulatory requirements of SMAQMD significantly reduce the possibility of odors being detected even at existing housing developments located about 0.75 miles east and north of SRC. Prevailing winds in the vicinity of SRC are from the south and west toward the existing homes, with the wind blowing away from the Jackson Township more than 95 percent of the time. Furthermore, experience in other

[1] *Regulatory Authority of the Sacramento Metropolitan Air Quality Management District Over the Sacramento Rendering Company*, SMAQMD, available at http://www.airquality.org/compliance/SRCFacts.pdf. Last accessed May 2015.

[2] ibid.
[3] ibid.

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regions with rendering plants indicates that the vast majority of odor complaints occur less than 0.5 miles from the plants.

A literature review was conducted to identify the nature and intensity of odorous compounds that could be emitted from SRC. Emissions of such compounds are often reported in terms of odor units (OU). An OU is the amount of odor-free air that must be introduced into a given sample to make the odor undetectable. Emissions are also reported in traditional terms of mass per unit time (e.g., tons per year). After obtaining emissions data, the emissions were modeled with an atmospheric dispersion model to evaluate the potential concentrations of the emissions at receptors located at the existing housing and the future Jackson Township. The dispersion modeling indicated that in almost all cases, there is no potential for odor at the nearest point (maximum impact point) of the Jackson Township.

Although detectable odors could occur at the Jackson Township, the likelihood of such an occurrence is very small. This is due to a number of facts, including:

- Extensive emission controls at SRC (some of which were installed in 2010, and subsequently reduced the number of odor complaints associated with SRC by nearly a factor of 10).
- Prevailing wind direction away from the Jackson Township. The wind direction frequency indicates that it is at least 10 times more likely for odors to be detected at the existing housing than at the Jackson Township.
- Distance of the Jackson Township from SRC.

The second section of this Technical Memorandum describes the SRC facility and emission controls, and the third discusses regulations that affect operations and reduce potential odor emissions from the facility. Section 4 summarizes odor complaints that have been received by SMAQMD and complaints at other similar facilities. Section 5 discusses odor perception and thresholds, while Section 6 discusses the potential for detectable and recognizable odors from SRC at the proposed Jackson Township.

2 DESCRIPTION OF SRC

SRC is a privately held rendering facility that accepts and processes (renders) inedible animal byproducts from supermarkets, butcher shops, restaurants, feedlots, ranches, and dairies. SRC takes these materials and recycles them into products that are used in the manufacturing of

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soap, paints, cosmetics, lubricants, candles, animal feed, and biofuel.[4] The facility possesses 10 permits to operate from the SMAQMD. The permits are for devices at the facility with the potential for emissions and devices that control potential emissions from the facility. Detailed information regarding all of the processes at the facility is not available, but the permits to operate indicate that at least the potentially emitting systems shown in Table 2-1 are present at the facility.

Table 2-1
SMAQMD Permits to Operate for SRC[5]

Permit	Issue Date	Device
21357	April 26, 2010	Tower Scrubber venting room air from process building. Outlet to the atmosphere.
21356	April 26, 2010	APC scrubber.
18424	November 8, 2005	Regenerative Thermal Oxidizer (RTO), inlet from the venturi scrubber and outlet to the Spray Tower Scrubber
18423	November 8, 2005	Spray Tower Scrubber venting room air from the loading area and the RTO. Outlet to the atmosphere.
17222	September 23, 2004	Venturi Scrubber. Outlet to the RTO. Inlet is from the two APC condensers.
17221	September 23, 2004	Cross Flow Scrubber. Inlet from room air in the cooking room. Outlet to the atmosphere.
17219	Re-issued September 23, 2004	Two APC Condensers. Inlet is from the process cookers. Outlet to the APC scrubber.
2822	Re-issued December 15, 2004, Issued October 20, 1979	Rendering Plant.
19480	Not Available	Boiler.
19479	Not Available	Boiler.

As Table 1 shows, the facility has a number of air pollution control devices to reduce the potential for emissions and potential odors. These devices can remove well over 90 percent of potential emissions (see Section 6.3).

[4] *Frequently Asked Questions about Sacramento Rendering Company.* http://www.saccounty.net/Pages/SacramentoRenderingCompany.aspx. Last accessed November 2014.
[5] *List of SMAQMD Permits to Operate*. E-mail from Todd Smith to Jim Wiley dated March 11, 2015.

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Both SRC and the SMAQMD have worked to reduce the potential for emissions and odor complaints from the facility; and the most recent emission control systems installed, the Tower Scrubber and APC scrubber installed in 2010, were as a result of a voluntary commitment to install additional control equipment because of new development in the Sunrise/Douglas area[6].

3 REGULATIONS AFFECTING POTENTIAL EMISSIONS AT SRC

3.1 SMAQMD REGULATIONS

The SMAQMD regulates facilities with the potential to emit any air contaminant and publishes regulations requiring permits to construct and operate any source of emissions and for any type of emission control equipment. SMAQMD also publishes prohibitory rules that apply to specific operations or contaminants. Two of the SMAQMD prohibitory rules that specifically apply to rendering plants such as SRC are Rule 410 – Reduction of Animal Matter and Rule 406 – Specific Contaminants[7]. Rule 410 specifies minimum standards for emission controls on animal rendering plants while Rule 406 specifies maximum emissions of sulfur compounds from any type of facility, including rendering plants. Some sulfur compounds can be odorous (e.g., mercaptans).

In addition to the device-specific prohibitory rules, SMAQMD has a general nuisance rule, Rule 402. Under most scenarios, Rule 402 would apply when a facility operating in compliance with permit conditions is still causing a public odor nuisance. However, California Civil Code Section 3482.6, "The Right to Farm Act", specifically (i) includes rendering plants in the definition of agricultural activity, and (ii) exempts agricultural processing facilities and rendering plants from nuisance rules if the nuisance is due to changed conditions that occur after an agricultural activity has been in continuous operation for more than three years (so long as it was not a nuisance at the time it began operation). This is the case for SRC, and thus the general nuisance rule does not apply to SRC[8].

3.2 OTHER CALIFORNIA REGULATIONS

Potential odors from rendering plants and similar facilities are the subject of regulations in other portions of California as well. For example, the Bay Area Air Quality Management District (BAAQMD) has published Regulation 7, Odorous Substances[9]. This regulation establishes an

[6] *Regulatory Authority*, op.cit.
[7] *SMAQMD Regulations*, available at http://www.airquality.org/rules/index.shtml. Last accessed May 2015.
[8] *Regulatory Authority*, op.cit.
[9] *BAAQMD Regulations*, available at http://www.baaqmd.gov/Divisions/Planning-and-Research/Rules-and-Regulations.aspx. Last accessed May 2015.

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ambient odor standard of 4 odor units (see Section 5.0 for discussion of odor units) and establishes maximum emission limits for some odorous compounds, such as mercaptans. However, Regulation 7 does not apply until there are at least 10 odor complaints within 90 days and exempts agricultural operations.

The South Coast Air Quality Management District (SCAQMD) recently proposed a regulation specifically addressing odors from rendering plants. This regulation, Proposed Rule 415, was initially proposed on November 18, 2014 and addresses potential odors through requirements for emission controls rather than an ambient standard[10].

4 ODOR COMPLAINTS

4.1 DISTANCE FROM FACILITIES

One indication of the effectiveness of emission control systems is the frequency of odor complaints associated with a rendering plant and the distance from the plant that odors occur. For example, the SCAQMD reported that nearly all of the odor complaints associated with four rendering plants in Vernon, California, occurred within 1.4 miles of the facilities[11]. Another study of odor complaints found that 20 of 21 odor complaints all occurred within 700 meters (0.4 miles) of the emitting facility[12].

4.2 ODOR COMPLAINTS ASSOCIATED WITH SRC

The SMAQMD provided a report of odor complaints in the vicinity of SRC for the period September 10, 2008 through September 11, 2013[13]. A summary of the number of complaints is shown in Table 4-1.

[10] *SCAQMD Proposed Rule 415*, available at http://www.aqmd.gov/home/regulations/rules/proposed-rules#415. Last accessed May 2015.
[11] *SCAQMD Proposed Rule 415 Preliminary Draft Staff Report*, Page 1-16, February 2015. Available at http://www.aqmd.gov/home/regulations/rules/proposed-rules#415. Last accessed May 2015.
[12] *Review of Odour Monitoring and Control Techniques at Rendering Plants*, SNIFFER Knowledge Brokers for a Resilient Scotland, ER32 Final Report, March 2013, pg. 15. Available at http://www.sniffer.org.uk/knowledge-hubs/environmental-regulation/tools-and-guidance/odour-monitoring-and-control-rendering-plants/. Last accessed May 2015.
[13] *SMAQMD Complaint System Report*. Provided via e-mail from Todd Smith to Jim Wiley dated February 25, 2015.

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Table 4-1
SMAQMD Reported Odor Complaints Associated with SRC

Calendar Year	Number of Complaints	Comments
2008	191	There were 27 complaints from September 10 through December 31, 2008. This value was extrapolated to an annual value for 2008 by calculating the ratio of the number of complaints from September 12 - December 31, 2009 to the number of complaints for January 1 - September 11, 2009. This ratio is 7.07 and was multiplied times the 27 complaints recorded from September 10, 2008 – December 31, 2008 to arrive at an estimated value of 191 complaints for all of 2008.
2009	106	Tower Scrubber and APC scrubber installed.
2010	25	
2011	29	
2012	15	
2013	24	There were 20 complaints from January 1, 2013 through September 11, 2013. This value was extrapolated to an annual value for 2013 by calculating the average ratio of the number of complaints from January 1 through September 11 of each of the years 2009, 2010, 2011, and 2012 to the number of complaints for September 12 through December 31 of each year. This ratio is 1.22 and was multiplied times the 20 complaints recorded from January 1 – September 11, 2013 to arrive at an estimated value of 24 complaints for all of 2013.

Table 4-1 shows the dramatic decrease in odor complaints as the result of the new emission control equipment installed at the facility in 2010. Note that the SMAQMD Complaint System did not record the distance from the facility that the odor complaints occurred. If the complaints were from the residences as opposed to persons driving by the facility, the complaints would most likely be from the residences located nearest the facility, about 0.75 miles away.

5 ODOR THRESHOLDS

Different individuals perceive odors differently. There is a wide range of response to an odor stimulant, and the variability in response is a function of the individual's sensitivity to specific compounds. A person can be hypersensitive to one chemical and virtually non-responsive to another. In addition, a person often detects the presence of an odor before he or she

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recognizes an odor quality. Detection and recognition thresholds have been published by several researchers and the American Industrial Hygiene Association (AIHA).[14] These thresholds are in terms of a concentration that can be detected/recognized by approximately 50 percent of the population. There are various studies that attempt to determine odor thresholds, and the range of results is often quite extensive. Table 5-1 shows odor detection and recognition thresholds used in this Technical Memorandum. The information in Table 5-1 came from AIHA[15], SCAQMD[16], and the Environmental Engineer's Handbook[17] publications.

Table 5-1
Odor Detection and Recognition Thresholds of Typical Chemicals Associated with Rendering Plants

Compound	Detection Threshold	Reference (Note 1)	Recognition Threshold	Reference (Note 1)
Butyric Acid	0.5 ppbv	Handbook	1.0 ppbv	Handbook, SCAQMD
Ethyl Mercaptan	0.35 ppbv	AIHA	0.40 – 1.0 ppbv	AIHA, SCAQMD
Methyl Mercaptan	0.54 ppbv	AIHA	1.0 – 2.2 ppbv	AIHA, SCAQMD
Hydrogen Sulfide	1.0 ppbv	AIHA (Note 2)	4.7 ppbv	SCAQMD
Indole	0.1 ppbv	Handbook	1.0 ppbv	SCAQMD

Note 1: See text for explanation of references.
Note 2: AIHA reported the geometric mean detection threshold from the literature for hydrogen sulfide to be 9.4 ppbv, which is greater than the recognition threshold geometric mean. Accordingly, the lowest detection value reported by AIHA was used.

Detection and recognition thresholds can have quite different responses in exposed individuals. For example, when a person is exposed to a very low concentration of hydrogen sulfide, on the order of 1.0 ppbv, the odor is characterized as musty or damp[18]. But if one is exposed to on the order of 30 ppb of hydrogen sulfide, the odor is more like the traditional rotten egg odor associated with hydrogen sulfide[19].

[14], *Odor Thresholds for Chemicals with Established Occupational Health Standards*, American Industrial Hygiene Association, 1995.
[15] ibid.
[16] SCAQMD, op cit.
[17] *Environmental Engineer's Handbook*, Second Edition, edited by David H.F. Liu and Bela G. Liptik, CRC Press, August 29, 1997.
[18] *Personal experience*. Russell E. Erbes, CCM. Field observations of hydrogen sulfide concentrations, 1980.
[19] ibid.

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When there is a mix of chemicals, the odor detection and recognition thresholds are not necessarily the same as for an individual chemical (e.g., a chemical with a very strong or unpleasant odor can mask a chemical that has a more pleasing odor). Accordingly, when there is a mix of chemicals the term "odor unit" is used to indicate the odor-causing potential of the chemical mix. An odor unit is the amount of dilution that must occur such that the odor of a given volume of a gas is no longer detectable for 50 percent of the population. For example, if four parts of odor-free air must be mixed with one part of a given gas, that gas has an odor unit of 4.0. As indicated previously, the BAAQMD has established a 4.0 odor unit ambient standard. Other agencies or groups have suggested an ambient odor standard of from 1 to 50 odor units[20].

6 POTENTIAL FOR ODORS FROM SRC AT JACKSON TOWNSHIP

6.1 ATMOSPHERIC DISPERSION MODEL

In order to assess the potential for odors from SRC at the Jackson Township, an atmospheric dispersion model was used. The dispersion model, AERMOD (Version 14134, as provided by BEE-Line Software, Version 10.16), was run with Sacramento Mather Airport meteorological data for the period 2009 to 2013, the most current processed data available. The Mather Airport is only about 3 miles north-northwest of the proposed Jackson Township and represents the meteorological conditions at SRC and vicinity extremely well. The AERMOD dispersion model is approved for use by the US Environmental Protection Agency, California Air Resources Board, and SMAQMD. The model was run with regulatory defaults in urban mode.

Attachment B shows a wind rose for the Mather Airport meteorological data. The spokes on the wind rose indicate the direction and frequency that the wind blows from. For example, approximately 9 percent of the time, the wind is from due south. The colors on the spokes represent the frequency of the wind speed category. For example, the wind speed for winds blowing from due south is less than 3.6 meters per second (8 miles per hour) about 5 percent of the time (the yellow portion of the south spoke in Attachment B). The wind rose shows that the prevailing winds in the vicinity of SRC are from the southern sector, and almost no wind blows from SRC towards the Jackson Township (i.e., easterly to westerly winds occur less than 5 percent of the time).

[20] Mahin, T.D., "Comparison of Different Approaches Used to Regulate Odors Around the World", Mahin, T.D., Water Science and Technology, Vol 44 No 9 pp. 87-102. Mr. Mahin was employed by the Massachusetts Department of Environmental Protection. His publication was reported in *Odor Measurement and Review*, a compilation commissioned by the Office of Odor, Noise and Vibration, Environmental Management Bureau, Ministry of the Environment, Government of Japan. Available at http://www.env.go.jp/en/air/odor/measure/. Last accessed May 2015.

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In order to use an atmospheric dispersion model, an emission rate has to be entered into the model (in terms of grams per second [g/sec] or other emission units per unit of time). If the emitting facility is modeled as a single stack, a normalized (unit) emission rate can be used to model ambient concentrations in terms of the normalized emission rate. For this study, SRC was modeled as a single effective stack. It is recognized that there are several stacks and emitting points at SRC, but data are not available regarding the individual stack characteristics, and as long as one is assessing ambient concentrations at relatively long distances (such as is the case for this study, 0.75 to 1.5 miles or more), a single effective stack representation is a reasonable approximation. The single stack parameters assumed for the model are shown in Table 6-1.

Table 6-1
Modeled Stack Parameters for SRC

Parameter	Value	Comments
Stack Height	35 feet, 10.67 meters	Reported by SRC in the permit application for the Tower Scrubber.
Stack Diameter	6 feet, 1.83 meters	Determined from aerial photos of SRC.
Exhaust Temperature	120 °F, 322.04 °K	Assumed conservatively low value for an exhaust temperature slightly greater than ambient because many of the systems vent both process and room air.
Exit Velocity	17.42 m/sec	SRC reported in the permit application for the Tower Scrubber that the exhaust flow is 92,000 scfm, which equals 97,068 acfm which equates to an exit velocity of 17.42 m/sec for a 1.83 meter diameter stack.
Normalized Emission Rate	1 gram per second	Unit emission rate.
Concentration of Normalized Emission Rate in Stack	23,000 ug/m^3	1 g/sec divided by 43.4 m^3/sec = 0.023 g/m^3 = 23,000 ug/m^3.
Building Dimensions	20 feet, 6.10 meters	Assumed building dimensions based on an aerial photo. Although downwash was included in the model, it will not be important due to the distant (at least 1.2 km) and thus actual building dimensions are not critical.

The dispersion model calculates ambient concentrations at defined geographic locations called receptors. For this study receptors were placed on the eastern side of the Jackson Township where housing or other permanent structures are proposed to be built and at locations of existing housing developments in the area as shown in Figure 1, Attachment A. Since odor

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detection is a short term phenomenon, the dispersion model was run for 1-hour concentrations. The AERMOD model output is provided in Attachment C. The maximum 1-hour ambient concentrations per normalized emission rate are shown in Table 6-2. Table 6-2 also shows the atmospheric dispersion factor, which is the ratio of the modeled in-stack concentration to the ambient concentration. Thus, if one knows the in-stack concentration of a given compound, the in-stack concentration can be multiplied by the atmospheric dilution factor to determine the ambient concentration of that compound.

Table 6-2
Maximum 1-hour Modeled Concentrations

Receptor	Receptor Number (see Figure 1)	Receptor Location	Date and Time	Normalized Concentration	Atmospheric Dilution Factor
Point of Maximum Impact at Existing Housing (PMI)	10	653808 m Easting, 4265626 m Northing	May 24, 2012; 2100	5.07 ug/m^3	0.00022
Point of Maximum Impact at Proposed Jackson Township (Jackson maximum impact point)	29	650708 m Easting, 4264227 m Northing	May 8, 2009; 2000	3.70 ug/m^3	0.00016

The overall PMI is near the housing east of SRC (east of Sunrise Boulevard) and the maximum Jackson impact point is the receptor to the southwest of SRC. This impact point is a proposed Jackson Township Specific Plan agricultural area but there is the possibility for housing development in that area and thus it has been included in the evaluation.

6.2 POTENTIAL EMISSIONS FROM SRC

Traditionally, emitting sources report only emissions of criteria pollutants. The criteria pollutants are sulfur oxides, nitrogen oxides, carbon monoxide, ozone, particulate matter, and lead. The criteria pollutants are not generally associated with adverse odors (unless present in extremely high concentrations). Ozone is not generally emitted, but emissions of reactive organic gases (ROG) can photochemically react in the atmosphere to create excess ozone. At times, facilities report the emissions of total organic gases (TOG) that include ROG plus other non-reactive

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organic compounds, such as methane. Typically, the term volatile organic compounds (VOC) is used interchangeably with ROG. Facilities in California are also required to report emissions of toxic air contaminants and other potentially toxic compounds, but these compounds are not generally associated with odors except in extremely high concentrations. Accordingly, facilities do not routinely report emissions of odor-causing compounds and emission rate data for specific odorous compounds from SRC are not available.

On the other hand, there has been research into emissions of odor causing chemicals at rendering plants. This research reports emissions in terms of a mass emission rate of a specific chemical (e.g., g/sec emissions of mercaptans) or in terms of an odor unit emission rate (e.g., odor units per second). Some of the research reports do not report the emission rate of the odor causing chemicals nor the emission rate of odor units, but rather the in-stack concentration of the compounds of interest.

Since information regarding emissions from SRC was not available, for this study, several research reports were consulted and used to estimate emissions from SRC. Emissions are a function not only of the process that generates the emissions but the nature and effectiveness of emission control systems, such as RTOs and scrubbers. Table 6-3 summarizes the results of the emission estimates found in various research studies. The literature cited for the data in Table 6-3 are noted in the footnotes.

Table 6-3
Typical Emissions from Rendering Plants

Case No.	Emission Source	Emission Controls	Emission Rate or In-Stack Concentration	Comments
1[21]	Process and Room Air	None	3,000 to 50,000 OU	
2[22]	Process Air Only	None	21,000 to 600,000 OU	
3[23]	Total Organic Gases	Unknown – Assumed Controlled	0.6 to 2.3 tons per year	
4[24]	Volatile Organic Gases	None	3,273 to 3,685 mg/m^3	

Table 6-3 (continued)

[21] Sironi, et al., Odour Emission Factors for Assessment and Prediction of Italian Rendering Plants Odour Impact, *Chemical Engineering Journal* 131 (2007), page 225 ff.
[22] ibid.
[23] Emission Reports of Four California Rendering Plants. Data obtained from the California Air Resources Board Facility Emission Inventory Database, available at http://www.arb.ca.gov/ei/disclaim.htm. The four plants are the D&D Disposal,
Vernon, CA; North State Rendering, Oroville, CA; Baker Commodities, Vernon, CA; and Baker Commodities, Kerman, CA.
[24] Bhatti, ZA, et. al., Rendering Plant Emissions of Volatile Organic Compounds During Sterilization and Cooking Processes, Environmental Technology, May – Jun 2014, 35(9-12):1321-7.

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Typical Emissions from Rendering Plants

Case No.	Emission Source	Emission Controls	Emission Rate or In-Stack Concentration	Comments
5[25]	Scrubber Outlet, Plant C	Scrubber	203,000 OU	
6[26]	Biofilter Outlet, Plant E	Biofilter	19,100 OU	
7[27]	Biofilter Inlet, Plant E	None	220,000 OU	
8[28]	Various Scrubber Inlets, Plant C	None	161,000 to 335,000 OU	
9[29]	Scrubber Inlet, Plant E	None	8,700,000 OU	Maximum value reported
10[30]	Methyl Mercaptan, Plant C	Scrubber	5,388 ppbv	
11[31]	Methyl Mercaptan, Plant D	None	429,414 ppbv	Inlet to a plant incinerator
12[32]	Hydrogen Sulfide, Plant D	None	475,739 ppbv	Inlet to a plant incinerator
13[33]	Methyl Mercaptan, Plant E	None	24,661 ppbv	
14[34]	Hydrogen Sulfide, Plant E	None	114,895 ppbv	

mg/m^3 = milligrams per cubic meter. ppbv = parts per billion by volume.

6.3 POTENTIAL AMBIENT CONCENTRATIONS OF ODOR-CAUSING CHEMICALS AT SRC

The emission rates shown in Table 6-3 for typical rendering plants and an assumed control efficiency of the air pollution control devices at SRC can be coupled with the atmospheric dilution factors found in the AERMOD model to calculate an estimated ambient concentration of odor-causing chemicals at the two maximally-exposed receptors: the PMI located at the existing housing east of SRC and the maximum impact point at the proposed Jackson Township to the west of SRC.

When the emission estimates are in terms of concentration (i.e., odor units, concentration of a specific compound in terms of parts per billion by volume [ppbv], or concentration of a specific

[25] Investigation of Odorous Gas Emissions from Meat and Rendering Plants, RPDA.303, Meat & Livestock Australia Research Final Report, CH2MHill Australia Pty. Ltd., ISBN 1 74036 073 7, August 1999.
[26] ibid.
[27] ibid.
[28] ibid.
[29] ibid.
[30] ibid.
[31] ibid.
[32] ibid.
[33] ibid.
[34] ibid.

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compound in terms of milligrams per cubic meter [mg/m^3]), the ambient concentration at the receptor of interest is calculated as follows:

> Ambient Concentration = Uncontrolled In-Stack Concentration (OU, ppbv, mg/m^3) x [(1 - Air Pollution Control Device Efficiency), percent] x Atmospheric Dilution Factor

When the emission estimates are in terms of tons per year, the ambient concentration is calculated as follows:

> Ambient Concentration = Uncontrolled Emissions (tons per year converted to g/sec) x [(1 - Air Pollution Control Device Efficiency), percent] x Normalized Concentration (ug/m^3 per g/sec)

The emission control effectiveness for scrubbers alone was conservatively assumed to be 69 percent based on a study that evaluated emission controls at rendering plants. (Note that this low efficiency is typically associated with plain water scrubbers. Addition of oxidizing agents to the scrubbing liquid can greatly increase the efficiency of scrubbers; but to be conservative, the 69 percent value was used.) Emission control effectiveness for RTOs was assumed to be 99% based on the same study[35]. The combination of emissions control for scrubbers plus an RTO (as is used for at least some of the emission streams at SRC, see Table 2-1) is, therefore, 99.7 percent [(1-0.69) x (1-0.99) = 0.003 = (1 – 0.997)].

Table 6-4 presents the results of the ambient concentration calculations for the cases in Table 6-3. The calculations in Table 6-4 use the air pollution control equipment that SRC employs. As noted in Table 2-1, some of the emission streams at SRC are controlled by two devices, a scrubber and an RTO, while some of the other emission streams are controlled only by scrubbers. Therefore, ambient concentrations for both types of emission control are shown in Table 6-4.

Example calculations for the values shown in Table 6-4 are as follows:

Example 1: Case 1, Emissions in Terms of Odor Units, Scrubber Alone, PMI

> Ambient Concentration = 3,000 OU Inlet Concentration to Scrubber x (1-0.69) Control Efficiency of a Scrubber x 0.00022 Atmospheric Dilution Factor at PMI = 0.20 OU.

Example 2: Case 3, Emissions in Terms of Tons Per Year, No Additional Control, Jackson Impact Point

> Ambient Concentration = [0.12 tons per year x (1 yr / 8760 hours x (1 hour / 3600 seconds) x 2000 pounds per ton x 453.6 grams per pound] x (1 – 0) Additional Emission Control Efficiency = 0.0034 g/sec x 3.7 ug/m^3 per 1 g/sec emissions = 0.013 ug/m^3.

[35] Sironi, et al., op.cit.

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Example 3: Case 13, Emissions in Terms of Compound Concentration, Scrubber + RTO, PMI

Ambient Concentration = 24,661 ppbv inlet concentration of methyl mercaptan x (1-0.997) Control Efficiency of a Scrubber + RTO x 0.00022 Atmospheric Dilution Factor at PMI = 0.02 ppbv methyl mercaptan.

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Table 6-4
Potential Ambient Concentration from Odor-Causing Emissions at Receptors of Interest

Case No.	Emission Rate or In-Stack Concentration After Noted Controls from Original Research	Air Pollution Control Systems Assumed for Emission Stream at SRC	Additional Control Efficiency (Note 1)	Ambient Concentration at PMI	Ambient Concentration at Jackson
1a	3,000 to 50,000 OU (no control)	Scrubber	69%	0.20 to 3.41 OU	0.15 to 2.48 OU
1b		Scrubber + RTO	99.7%	0.002 to 0.03 OU	0.001 to 0.02 OU
2	21,000 to 600,000 OU (no control)	Scrubber + RTO	99.7%	0.01 to 0.40 OU	0.01 to 0.29 OU
3	0.6 to 2.3 tons per year TOG, or 0.12 to 0.40 tpy odor-causing chemicals (assumed controlled) Equivalent to 0.0038 to 0.013 g/sec odor-causing chemicals (assumed controlled) (Note 2)	No Additional Control	No additional control	0.020 to 0.065 ug/m^3 = If Butyric Acid 0.05 to 0.18 ppbv If Ethyl Mercaptan 0.07 to 0.25 ppbv (Note 3)	0.014 to 0.047 ug/m^3 = If Butyric Acid 0.04 to 0.13 ppbv If Ethyl Mercaptan 0.05 to 0.18 ppbv (Note 3)
4	3,273 to 3,685 mg/m^3 VOC (no control)	Scrubber + RTO	99.7%	0.0022 to 0.0024 mg/m^3 Aliphatic HC 29.24% If half Butyric Acid 0.64 to 0.70 ug/m^3 = 0.85 to 0.96 ppbv Aromatic HC 18.32% If half Indole 0.40 to 0.44 ug/m^3 = 0.40 to 0.45 ppbv (Note 4)	0.0016 to 0.0018 mg/m^3 Aliphatic HC 29.24% If half Butyric Acid 0.47 to 0.53 ug/m^3 = 0.62 to 0.70 ppbv Aromatic HC 18.32% If half Indole 0.29 to 0.33 ug/m^3 = 0.29 to 0.32 ppbv (Note 4)

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Table 6-4 (continued)
Potential Ambient Concentration from Odor-Causing Emissions at Receptors of Interest

Case No.	Emission Rate or In-Stack Concentration After Noted Controls from Original Research	Air Pollution Control Systems Assumed for Emission Stream at SRC	Additional Control Efficiency (Note 1)	Ambient Concentration at PMI	Ambient Concentration at Jackson
5	203,000 OU (scrubber)	Scrubber + RTO	Additional 99%	0.45 OU	0.32 OU
6	19,100 OU (biofilter)	Biofilter	No additional control	4.2 OU	3.1 OU
6a		Biofilter + RTO	Additional 99%	0.04 OU	0.03 OU
7	220,000 OU (no control)	Scrubber + RTO	99.7%	0.15 OU	0.11 OU
8	161,000 to 335,000 OU (no control)	Scrubber + RTO	99.7%	0.11 to 0.22 OU	0.08 to 0.16 OU
9	8,700,000 OU (no control)	Scrubber + RTO	99.7%	5.74 OU	4.18 OU
10	Methyl Mercaptan 5,388 ppbv (scrubber)	Scrubber + RTO	Additional 99%	0.012 ppbv	0.009 ppbv
11	Methyl Mercaptan 429,414 ppbv (no control)	Scrubber + RTO	99.7%	0.28 ppbv	0.21 ppbv
12	Hydrogen Sulfide 475,739 ppbv (no control)	Scrubber + RTO	99.7%	0.31 ppbv	0.23 ppbv

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Table 6-4 (continued)
Potential Ambient Concentration from Odor-Causing Emissions at Receptors of Interest

Case No.	Emission Rate or In-Stack Concentration After Noted Controls from Original Research	Air Pollution Control Systems Assumed for Emission Stream at SRC	Additional Control Efficiency (Note 1)	Ambient Concentration at PMI	Ambient Concentration at Jackson
13	Methyl Mercaptan 24,661 ppbv (no control)	Scrubber + RTO	99.7%	0.02 ppbv	0.01 ppbv
14	Hydrogen Sulfide 114,895 ppbv (no control)	Scrubber + RTO	99.7%	0.08 ppbv	0.06 ppbv

Note 1: When the emissions from the original research for a specific case already include a scrubber (i.e., the emission estimates were after the scrubber), then the additional control efficiency is zero for scrubbers and only 99% for the RTO. When the case has extremely high concentrations of odor-causing chemicals, it is assumed that SRC controls those emission streams with both a scrubber and RTO.

Note 2: Research indicates that less than about 20 percent of the TOG emissions from rendering plants are associated with odors.[36]

Note 3: A conservative assumption was made that all of the odor-causing chemicals have an odor detection and recognition threshold of butyric acid or ethyl Mercaptan. For butyric acid, 1 ug/m^3 is equivalent to 2.7 ppb and for ethyl mercaptan, 1 ug/m^3 is equivalent to 3.8 ppbv.

Note 4: Research indicates that 29.24 percent of VOC emissions from rendering plants are aliphatic hydrocarbons, and 18.32 percent are aromatic hydrocarbons[37]. A conservative assumption was made that half of the aliphatic hydrocarbons are butyric acid and half of the aromatic hydrocarbons are indole. For butyric acid, 1 ug/m^3 is equivalent to 2.7 ppb and for indole, 1 ug/m^3 is equivalent to 2.0 ppbv.

[36] Van Langenhove, HJ., Gas Chromatography/Mass Spectrometry Identification of Organic Volatiles Contributing to Rendering Odors, *Environmental Science & Technology*, Vol 16., No. 12, 1982, pages 883 ff.
[37] Bhatti, ZA, et al., op. cit.

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6.4 Interpretation of Model Results

The ambient concentration results for the PMI and the Jackson maximum impact point can be interpreted in terms of odor detection thresholds and odor recognition thresholds. As discussed previously, the BAAQMD established an odor standard of 4 OU. This standard could be used as a recognition threshold. Detection of odors is more complex, but considering the definition of the odor unit, an OU of 1 or less could be considered a detection threshold. For specific chemicals, Table 5-1 shows the applicable detection and recognition thresholds. The ambient concentrations calculated in Table 6-4 are compared to these thresholds as shown in Table 6-5.

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Table 6-5
Comparison of Ambient Concentrations to Odor Thresholds

Case No.	Ambient Conc. Unit	Odor Detection Threshold	Odor Recognition Threshold	Ambient Conc. at PMI	PMI Exceeds Detect.?	PMI Exceeds Recog.?	Ambient Conc. at Jackson	Jackson Exceeds Detect.?	Jackson Exceeds Recog.?
1a	OU	<1	4	0.20 to 3.41	Poss.	No	0.15 - 2.48	Poss.	No
1b	OU	<1	4	0.002 to 0.03	No	No	0.001 - 0.02	No	No
2	OU	<1	4	0.01 to 0.40	No	No	0.01 - 0.29	No	No
3	ppbv	Butyric Acid 0.5	Butyric Acid 1.0	0.05 to 0.18	No	No	0.04 to 0.13	No	No
3	ppbv	Ethyl Mercaptan 0.35	Ethyl Mercaptan 1.0	0.07 to 0.25	No	No	0.05 to 0.18	No	No
4	ppbv	Butyric Acid 0.5	Butyric Acid 1.0	0.85 to 0.96	Yes	No	0.62 to 0.70	Yes	No
4	ppbv	Indole 0.1	Indole 1.0	0.40 to 0.45	Yes	No	0.29 to 0.32	Yes	No
5	OU	<1	4	0.45	No	No	0.32	No	No
6	OU	<1	4	4.2	Yes	Yes	3.1	Yes	No
6a	OU	<1	4	0.04	No	No	0.03	No	No
7	OU	<1	4	0.15	No	No	0.11	No	No
8	OU	<1	4	0.11 to 0.22	No	No	0.08 to 0.16	No	No
9	OU	<1	4	5.74	Yes	Yes	4.18	Yes	Poss.

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Table 6-5 (continued)
Comparison of Ambient Concentrations to Odor Thresholds

Case No.	Ambient Conc. Unit	Odor Detection Threshold	Odor Recognition Threshold	Ambient Conc. at PMI	PMI Exceeds Detect.?	PMI Exceeds Recog.?	Ambient Conc. at Jackson	Jackson Exceeds Detect.?	Jackson Exceeds Recog.?
10	ppbv	Methyl Mercaptan 0.54	Methyl Mercaptan 1.0	0.012	No	No	0.009	No	No
11	ppbv	Methyl Mercaptan 0.54	Methyl Mercaptan 1.0	0.28	No	No	0.21	No	No
12	ppbv	Hydrogen Sulfide 0.5	Hydrogen Sulfide 4.7	0.31	No	No	0.23	No	No
13	ppbv	Methyl Mercaptan 0.54	Methyl Mercaptan 1.0	0.02	No	No	0.01	No	No
14	ppbv	Methyl Mercaptan 0.54	Methyl Mercaptan 1.0	0.08	No	No	0.06	No	No

Conc. – Concentration
Detect. – Detection
Poss. – Possible
Recog. – Recognition

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There are a total of 18 different emission estimates presented in Table 6-5, and in only one case did the calculations indicated the possibility of a detectable and recognizable odor at the Jackson maximum impact point (Case 9). However, the modeled concentration for that case is only 5 percent greater than the 4.0 OU BAAQMD ambient standard. In 4 more of the 18 cases, the calculations indicated a potential for a detectable, but not recognizable, odor at the Jackson maximum impact point. Note that the results of Table 6-5 do not indicate that an odor would necessarily actually be detected at the Jackson Township, but only that if the assumed emissions and maximum modeled concentration occur at the same time, there is a potential for odor detection.

Table 6-5 also shows that the potential for detectable and recognizable odors at the existing housing to the east of SRC is greater than at Jackson Township, because the atmospheric dilution from SRC to the eastern housing is not as great as for Jackson Township, so the ambient concentrations would be higher. However, for both Jackson and the PMI, the potential for odors appears very small because the emissions from SRC are well controlled and the distance from SRC to the housing is considerable. This result is consistent with the recent dramatic decline in odor complaints associated with SRC recorded by SMAQMD.

Note also that the results shown in Table 6-5 are for the maximum impact points only and the maximum 1-hour concentration out of five years of meteorological data (the maximum single hour out of a total of 43,800 hours). As shown in the wind rose of Attachment B, the wind is more than 10 times more likely to blow from SRC toward the housing to the east and north of SRC than from SRC toward the Jackson Township. The wind rose also shows that for over 95 percent of the time, the wind blows from SRC away from the Jackson Township.

Furthermore, it is important to recognize that the results in Table 6-5 are for the closest point of the Jackson Township to SRC. The Jackson Township extends for another 1.5 miles further west of the Jackson maximum impact point, and since odor detection falls off rapidly with distance, for the vast majority of the Jackson Township, no odors from SRC should be detectable or recognizable.

7 CONCLUSION

This evaluation of the potential for odors at the Jackson Township arising from the SRC facility indicate that although it is possible for detectable odors to occur at the maximum

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impact point at the Jackson Township, the frequency of such odors, if any, will be very low. Any detectable odors at the Jackson Township are at least 10 times less likely than for the existing housing to the north and east of SRC. This conclusion is based on the effectiveness of the emission control systems employed by SRC, the distance from SRC to the Jackson Township, and the documented prevailing wind direction in the vicinity.

8 LIMITATIONS

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions, and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee, or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided. This report may be used only for the Jackson Township Specific Plan by Tsakopoulos Investments and only for the purposes stated for this specific engagement within a reasonable time from its issuance, but in no event later than two years from the date of the report.

The work performed was based on project information provided by Tsakopoulos Investments. Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. It should be recognized that definition and evaluation of environmental conditions are a difficult and inexact science. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the facility and conditions present due to the limitations of data. Although risk can never be eliminated, more detailed and extensive studies yield more information, which may help understand and manage the level of risk. Since detailed study and analysis involves greater expense, our clients participate in determining levels of service that provide adequate information for their purposes at acceptable levels of risk. More extensive studies should be performed to reduce uncertainties. Acceptance of this report will indicate that Tsakopoulos Investments has reviewed the document and determined that it does not need or want a greater level of service than provided. Tsakopoulos Investments is solely responsible for required notifications, if any, to all regulatory and governmental agencies regarding observations contained in this report.

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ATTACHMENT A

Figure 1: SRC Location and Modeling Receptors



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PROJECT NO.	20160234
DRAWN:	5/28/15
DRAWN BY:	SAW/JWD
CHECKED BY:	REE
FILE NAME:	Odor Study_Fig1.ppt

SRC Location and Modeling Receptors

POTENTIAL ODORS FROM SACRAMENTO RENDERING COMPANY AT THE PROPOSED JACKSON TOWNSHIP SACRAMENTO, CALIFORNIA

FIGURE

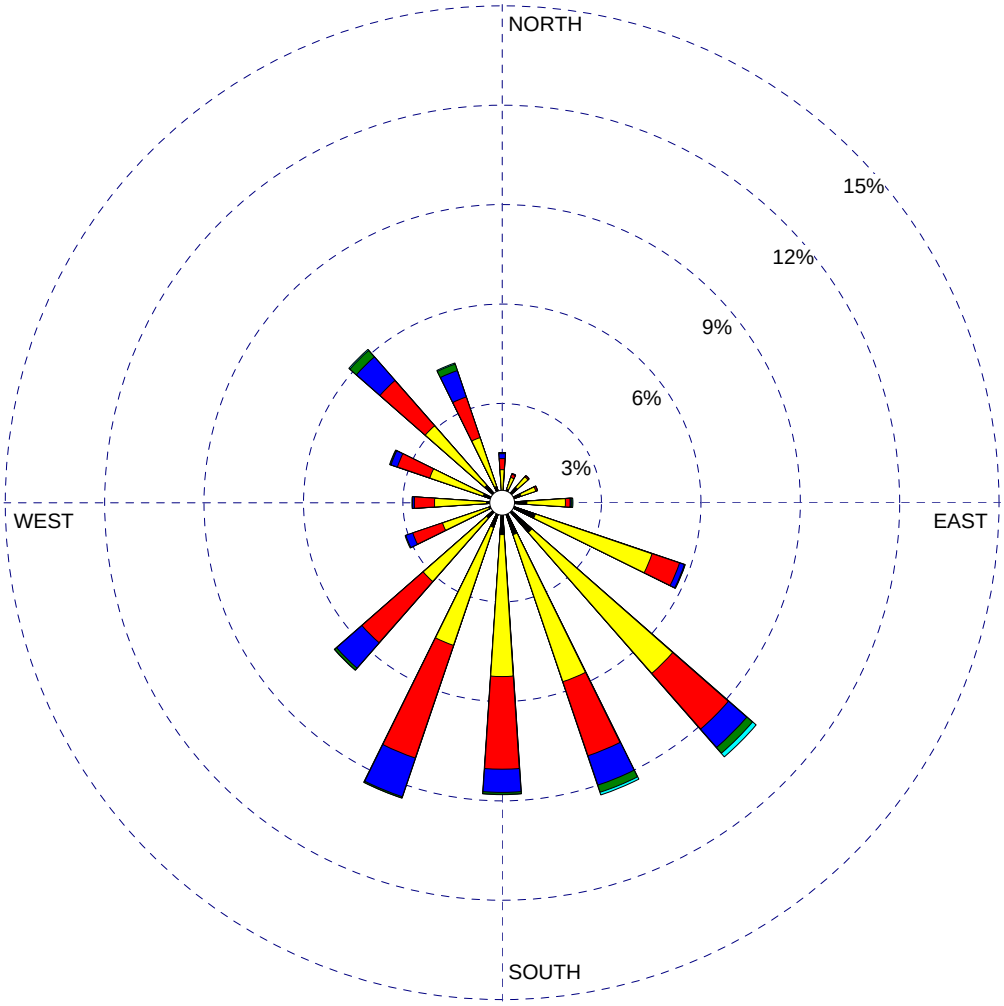
1

ATTACHMENT B

Mather Airport Wind Rose 2009 - 2013

WIND ROSE PLOT:

Figure 2 Jackson Township Development
Sacramento Mather Airport 2009-2013



COMMENTS:

Wind Speed (m/s)
Direction (blowing from)

DATE:

4/28/2015

PROJECT NO.:

20160234.001A

ATTACHMENT C

Dispersion Model Output Report

```
**BEE-Line Software: BEEST for Windows (Version 10.16) data input file
**  Model: AERMOD.EXE     Input File Creation Date: 4/17/2015  Time: 9:12:07 AM
NO ECHO




  BEE-Line AERMOD "BEEST" Version ****


  Input File - C:\Beework\Jackson Township Development\Jackson_TownshipMather.DTA

 Output File - C:\Beework\Jackson Township Development\Jackson_TownshipMather.LST

    Met File - C:\Beework\Jackson Township Development\Mather MET\724833\724833.SFC


***********************************
*** SETUP Finishes Successfully ***
***********************************


*** AERMOD - VERSION  14134 ***   *** Jackson Township Development                                        ***        04/17/15
*** AERMET - VERSION  14134 ***   *** Odor Modeling - Sacramento Mather Airport MET Data                  ***        09:12:09
                                                                                                                   PAGE   1
**MODELOPTs:   RegDFAULT CONC      ELEV      NODRYDPLT NOWETDPLT

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses URBAN Dispersion Algorithm for the SBL for     1 Source(s),
  for Total of    1 Urban Area(s):
  Urban Population =    479686.0 ;  Urban Roughness Length =  1.000 m

**Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay for URBAN/Non-SO2.
        6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  OTHER

**Model Calculates  1 Short Term Average(s) of:   1-HR

**This Run Includes:      1 Source(s);       1 Source Group(s); and     152 Receptor(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date:  14134

**Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    30.48 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                           ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.5 MB of RAM.

**Input Runstream File:          Jackson_TownshipMather.DTA
**Output Print File:             Jackson_TownshipMather.LST

**File for Summary of Results:   C:\Beework\Jackson Township Development\Jackson_TownshipMather.SUM

*** AERMOD - VERSION  14134 ***   *** Jackson Township Development                                        ***        04/17/15
*** AERMET - VERSION  14134 ***   *** Odor Modeling - Sacramento Mather Airport MET Data                  ***        09:12:09
                                                                                                                   PAGE   2
**MODELOPTs:   RegDFAULT CONC      ELEV      NODRYDPLT NOWETDPLT
```

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BLDG EXISTS	URBAN SOURCE	CAP/ HOR	EMIS RATE SCALAR VARY BY
REN	0	0.10000E+01	652517.0	4265346.0	44.1	10.67	322.04	17.42	1.83	YES	YES	NO	

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	REN ,

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
	479686.	REN ,

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: REN

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	6.1,	92.6,	77.8,	-19.8,	-18.6,	2	6.1,	100.3,	90.3,	-22.9,	-15.6,
3	6.1,	105.0,	100.1,	-25.4,	-12.2,	4	6.1,	106.5,	106.8,	-27.0,	-8.4,
5	6.1,	104.8,	110.2,	-27.9,	-4.3,	6	6.1,	99.9,	110.3,	-27.9,	-0.1,
7	6.1,	91.9,	107.1,	-27.1,	4.1,	8	6.1,	81.2,	100.6,	-25.4,	8.2,
9	6.1,	69.0,	91.0,	-23.0,	12.5,	10	6.1,	77.8,	92.6,	-27.7,	19.2,
11	6.1,	90.3,	100.3,	-34.5,	22.3,	12	6.1,	100.1,	105.0,	-40.3,	24.7,
13	6.1,	106.8,	106.5,	-44.9,	26.3,	14	6.1,	110.2,	104.8,	-48.1,	27.2,
15	6.1,	110.3,	99.9,	-49.8,	27.2,	16	6.1,	107.1,	91.9,	-50.1,	26.4,
17	6.1,	100.6,	81.2,	-48.8,	24.9,	18	6.1,	91.0,	69.0,	-47.0,	22.5,
19	6.1,	92.6,	77.8,	-58.1,	18.6,	20	6.1,	100.3,	90.3,	-67.4,	15.6,
21	6.1,	105.0,	100.1,	-74.7,	12.2,	22	6.1,	106.5,	106.8,	-79.7,	8.4,
23	6.1,	104.8,	110.2,	-82.3,	4.3,	24	6.1,	99.9,	110.3,	-82.4,	0.1,
25	6.1,	91.9,	107.1,	-80.0,	-4.1,	26	6.1,	81.2,	100.6,	-75.1,	-8.2,
27	6.1,	69.0,	91.0,	-68.0,	-12.5,	28	6.1,	77.8,	92.6,	-64.9,	-19.2,
29	6.1,	90.3,	100.3,	-65.8,	-22.3,	30	6.1,	100.1,	105.0,	-64.7,	-24.7,
31	6.1,	106.8,	106.5,	-61.6,	-26.3,	32	6.1,	110.2,	104.8,	-56.7,	-27.2,
33	6.1,	110.3,	99.9,	-50.0,	-27.2,	34	6.1,	107.1,	91.9,	-41.9,	-26.4,
35	6.1,	100.6,	81.2,	-32.4,	-24.9,	36	6.1,	91.0,	69.0,	-22.0,	-22.5,

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(649746.0,	4266713.0,	33.0,	33.0,	0.0);	(650450.0,	4266995.0,	35.9,	35.9,	0.0);
(650816.0,	4267310.0,	37.8,	37.8,	0.0);	(650824.0,	4267891.0,	37.5,	37.5,	0.0);
(653174.0,	4267141.0,	49.5,	49.5,	0.0);	(653512.0,	4267154.0,	50.0,	50.0,	0.0);
(653533.0,	4266892.0,	49.5,	49.5,	0.0);	(653826.0,	4266949.0,	49.7,	49.7,	0.0);
(654067.0,	4267505.0,	49.9,	49.9,	0.0);	(653808.0,	4265626.0,	46.7,	46.7,	0.0);
(654422.0,	4266037.0,	49.5,	49.5,	0.0);	(654749.0,	4265739.0,	41.1,	41.1,	0.0);
(654758.0,	4266883.0,	52.5,	52.5,	0.0);	(654810.0,	4266076.0,	50.3,	50.3,	0.0);
(654157.0,	4265797.0,	41.7,	41.7,	0.0);	(654393.0,	4265739.0,	39.5,	39.5,	0.0);
(650708.0,	4264027.0,	40.8,	40.8,	0.0);	(650808.0,	4264027.0,	41.3,	41.3,	0.0);
(650308.0,	4264127.0,	41.4,	41.4,	0.0);	(650408.0,	4264127.0,	40.9,	40.9,	0.0);
(650508.0,	4264127.0,	40.5,	40.5,	0.0);	(650608.0,	4264127.0,	41.5,	41.5,	0.0);
(650708.0,	4264127.0,	41.9,	41.9,	0.0);	(650808.0,	4264127.0,	41.8,	41.8,	0.0);
(650308.0,	4264227.0,	41.7,	41.7,	0.0);	(650408.0,	4264227.0,	42.0,	42.0,	0.0);
(650508.0,	4264227.0,	39.9,	39.9,	0.0);	(650608.0,	4264227.0,	40.8,	40.8,	0.0);
(650708.0,	4264227.0,	41.9,	41.9,	0.0);	(650808.0,	4264227.0,	41.8,	41.8,	0.0);

(650308.0, 4264327.0,	41.9,	41.9,	0.0);	(650408.0, 4264327.0,	41.1,	41.1,	0.0);
(650508.0, 4264327.0,	40.0,	40.0,	0.0);	(650608.0, 4264327.0,	40.4,	40.4,	0.0);
(650708.0, 4264327.0,	40.3,	40.3,	0.0);	(650808.0, 4264327.0,	41.0,	41.0,	0.0);
(650308.0, 4264427.0,	41.4,	41.4,	0.0);	(650408.0, 4264427.0,	40.5,	40.5,	0.0);
(650508.0, 4264427.0,	39.5,	39.5,	0.0);	(650608.0, 4264427.0,	41.9,	41.9,	0.0);
(650708.0, 4264427.0,	41.8,	41.8,	0.0);	(650808.0, 4264427.0,	41.0,	41.0,	0.0);
(650308.0, 4264527.0,	40.6,	40.6,	0.0);	(650408.0, 4264527.0,	38.8,	38.8,	0.0);
(650508.0, 4264527.0,	39.7,	39.7,	0.0);	(650608.0, 4264527.0,	41.8,	41.8,	0.0);
(650708.0, 4264527.0,	41.9,	41.9,	0.0);	(650808.0, 4264527.0,	41.6,	41.6,	0.0);
(650308.0, 4264126.0,	41.4,	41.4,	0.0);	(650008.0, 4264226.0,	39.3,	39.3,	0.0);
(650108.0, 4264226.0,	40.2,	40.2,	0.0);	(650208.0, 4264226.0,	41.0,	41.0,	0.0);
(650308.0, 4264226.0,	41.7,	41.7,	0.0);	(649908.0, 4264326.0,	38.1,	38.1,	0.0);
(650008.0, 4264326.0,	39.1,	39.1,	0.0);	(650108.0, 4264326.0,	40.0,	40.0,	0.0);
(650208.0, 4264326.0,	40.9,	40.9,	0.0);	(650308.0, 4264326.0,	41.9,	41.9,	0.0);
(649908.0, 4264426.0,	37.9,	37.9,	0.0);	(650008.0, 4264426.0,	39.3,	39.3,	0.0);
(650108.0, 4264426.0,	39.9,	39.9,	0.0);	(650208.0, 4264426.0,	40.7,	40.7,	0.0);
(650308.0, 4264426.0,	41.4,	41.4,	0.0);	(649908.0, 4264526.0,	38.4,	38.4,	0.0);
(650008.0, 4264526.0,	39.2,	39.2,	0.0);	(650108.0, 4264526.0,	40.4,	40.4,	0.0);
(650208.0, 4264526.0,	40.2,	40.2,	0.0);	(650308.0, 4264526.0,	40.6,	40.6,	0.0);
(649908.0, 4264626.0,	37.3,	37.3,	0.0);	(650008.0, 4264626.0,	37.7,	37.7,	0.0);
(650108.0, 4264626.0,	38.1,	38.1,	0.0);	(650208.0, 4264626.0,	39.2,	39.2,	0.0);
(650308.0, 4264626.0,	39.4,	39.4,	0.0);	(649908.0, 4264726.0,	39.8,	39.8,	0.0);
(650008.0, 4264726.0,	39.6,	39.6,	0.0);	(650108.0, 4264726.0,	38.6,	38.6,	0.0);
(650208.0, 4264726.0,	38.6,	38.6,	0.0);	(650308.0, 4264726.0,	38.4,	38.4,	0.0);
(649908.0, 4264826.0,	40.8,	40.8,	0.0);	(650008.0, 4264826.0,	41.3,	41.3,	0.0);
(650108.0, 4264826.0,	39.7,	39.7,	0.0);	(650208.0, 4264826.0,	40.6,	40.6,	0.0);
(650308.0, 4264826.0,	40.4,	40.4,	0.0);	(649908.0, 4264926.0,	41.4,	41.4,	0.0);
(650008.0, 4264926.0,	41.6,	41.6,	0.0);	(650108.0, 4264926.0,	40.7,	40.7,	0.0);
(650208.0, 4264926.0,	40.4,	40.4,	0.0);	(650308.0, 4264926.0,	40.5,	40.5,	0.0);
(649908.0, 4265026.0,	41.5,	41.5,	0.0);	(650008.0, 4265026.0,	42.4,	42.4,	0.0);

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(650108.0, 4265026.0,	40.7,	40.7,	0.0);	(650208.0, 4265026.0,	39.8,	39.8,	0.0);
(650308.0, 4265026.0,	40.3,	40.3,	0.0);	(649908.0, 4265126.0,	40.8,	40.8,	0.0);
(650008.0, 4265126.0,	41.2,	41.2,	0.0);	(650108.0, 4265126.0,	39.3,	39.3,	0.0);
(650208.0, 4265126.0,	40.1,	40.1,	0.0);	(650308.0, 4265126.0,	39.8,	39.8,	0.0);
(649908.0, 4265226.0,	39.5,	39.5,	0.0);	(650008.0, 4265226.0,	39.1,	39.1,	0.0);
(650108.0, 4265226.0,	37.9,	37.9,	0.0);	(650208.0, 4265226.0,	38.4,	38.4,	0.0);
(650308.0, 4265226.0,	38.8,	38.8,	0.0);	(649908.0, 4265326.0,	37.1,	37.1,	0.0);
(650008.0, 4265326.0,	38.4,	38.4,	0.0);	(650108.0, 4265326.0,	40.0,	40.0,	0.0);
(650208.0, 4265326.0,	40.3,	40.3,	0.0);	(650308.0, 4265326.0,	39.7,	39.7,	0.0);
(649908.0, 4265426.0,	39.4,	39.4,	0.0);	(650008.0, 4265426.0,	40.8,	40.8,	0.0);
(650108.0, 4265426.0,	41.8,	41.8,	0.0);	(650208.0, 4265426.0,	40.3,	40.3,	0.0);
(650308.0, 4265426.0,	42.0,	42.0,	0.0);	(649908.0, 4265526.0,	40.8,	40.8,	0.0);
(650008.0, 4265526.0,	41.2,	41.2,	0.0);	(650108.0, 4265526.0,	40.5,	40.5,	0.0);
(650208.0, 4265526.0,	40.5,	40.5,	0.0);	(650308.0, 4265526.0,	41.7,	41.7,	0.0);
(649908.0, 4265626.0,	40.4,	40.4,	0.0);	(650008.0, 4265626.0,	40.5,	40.5,	0.0);
(650108.0, 4265626.0,	39.5,	39.5,	0.0);	(650208.0, 4265626.0,	41.1,	41.1,	0.0);
(650308.0, 4265626.0,	42.3,	42.3,	0.0);	(649908.0, 4265726.0,	39.3,	39.3,	0.0);
(650008.0, 4265726.0,	38.8,	38.8,	0.0);	(650108.0, 4265726.0,	38.8,	38.8,	0.0);
(650208.0, 4265726.0,	39.9,	39.9,	0.0);	(650308.0, 4265726.0,	40.0,	40.0,	0.0);
(649908.0, 4265826.0,	38.3,	38.3,	0.0);	(650008.0, 4265826.0,	39.4,	39.4,	0.0);
(650108.0, 4265826.0,	40.0,	40.0,	0.0);	(650208.0, 4265826.0,	39.3,	39.3,	0.0);
(650308.0, 4265826.0,	40.4,	40.4,	0.0);	(649908.0, 4265926.0,	39.2,	39.2,	0.0);
(650008.0, 4265926.0,	39.3,	39.3,	0.0);	(650108.0, 4265926.0,	41.0,	41.0,	0.0);
(650208.0, 4265926.0,	41.7,	41.7,	0.0);	(650308.0, 4265926.0,	40.2,	40.2,	0.0);
(649908.0, 4266026.0,	40.5,	40.5,	0.0);	(650008.0, 4266026.0,	38.9,	38.9,	0.0);
(650108.0, 4266026.0,	40.6,	40.6,	0.0);	(650208.0, 4266026.0,	42.6,	42.6,	0.0);
(650308.0, 4266026.0,	41.7,	41.7,	0.0);	(649908.0, 4266126.0,	41.7,	41.7,	0.0);
(650008.0, 4266126.0,	40.9,	40.9,	0.0);	(650108.0, 4266126.0,	39.5,	39.5,	0.0);
(650208.0, 4266126.0,	42.2,	42.2,	0.0);	(650308.0, 4266126.0,	42.2,	42.2,	0.0);
(649908.0, 4266226.0,	38.8,	38.8,	0.0);	(650008.0, 4266226.0,	39.7,	39.7,	0.0);
(650108.0, 4266226.0,	39.0,	39.0,	0.0);	(650208.0, 4266226.0,	42.2,	42.2,	0.0);

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

| | | | | | | | |

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: 724833.SFC Met Version: 14134
Profile file: 724833.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 23206 Upper air station no.: 23230
Name: SACRAMENTO MATHER AIRPORT, CA Name: OAKLAND METROPOLITAN ARPT, CA
Year: 2009 Year: 2009

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
09	01	01	1	01	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.02	1.02	1.00	0.00	0.	10.0	277.1	2.0
09	01	01	1	02	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.02	1.02	1.00	0.00	0.	10.0	277.1	2.0
09	01	01	1	03	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.02	1.02	1.00	0.00	0.	10.0	277.1	2.0
09	01	01	1	04	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.02	1.02	1.00	0.00	0.	10.0	277.1	2.0
09	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.02	1.02	1.00	0.00	0.	10.0	277.1	2.0
09	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.02	1.02	1.00	0.00	0.	10.0	277.1	2.0
09	01	01	1	07	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.02	1.02	1.00	0.00	0.	10.0	276.1	2.0
09	01	01	1	08	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.02	1.02	0.76	0.00	0.	10.0	276.1	2.0
09	01	01	1	09	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.02	1.02	0.41	0.00	0.	10.0	276.1	2.0
09	01	01	1	10	5.8	0.115	0.242	0.013	89.	94.	-24.1	0.01	1.02	0.29	1.76	61.	10.0	276.1	2.0
09	01	01	1	11	14.7	0.126	0.408	0.014	168.	108.	-12.5	0.01	1.02	0.24	1.76	284.	10.0	277.1	2.0
09	01	01	1	12	19.5	-9.000	-9.000	-9.000	233.	-999.	-99999.0	0.02	1.02	0.23	0.00	0.	10.0	277.1	2.0
09	01	01	1	13	20.1	0.192	0.540	0.015	284.	201.	-31.8	0.01	1.02	0.23	2.86	243.	10.0	277.1	2.0
09	01	01	1	14	16.6	-9.000	-9.000	-9.000	322.	-999.	-99999.0	0.02	1.02	0.24	0.00	0.	10.0	278.1	2.0
09	01	01	1	15	8.9	-9.000	-9.000	-9.000	340.	-999.	-99999.0	0.02	1.02	0.27	0.00	0.	10.0	278.1	2.0
09	01	01	1	16	-1.3	0.117	-9.000	-9.000	-999.	96.	109.5	0.04	1.02	0.36	1.76	204.	10.0	278.1	2.0
09	01	01	1	17	-6.9	0.127	-9.000	-9.000	-999.	108.	26.7	0.04	1.02	0.62	2.36	181.	10.0	279.1	2.0
09	01	01	1	18	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.02	1.02	1.00	0.00	0.	10.0	279.1	2.0
09	01	01	1	19	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.02	1.02	1.00	0.00	0.	10.0	279.1	2.0
09	01	01	1	20	-8.8	0.153	-9.000	-9.000	-999.	144.	37.0	0.02	1.02	1.00	2.86	147.	10.0	279.1	2.0
09	01	01	1	21	-2.6	0.057	-9.000	-9.000	-999.	39.	6.5	0.02	1.02	1.00	1.76	140.	10.0	279.1	2.0
09	01	01	1	22	-11.0	0.193	-9.000	-9.000	-999.	203.	58.7	0.02	1.02	1.00	3.36	152.	10.0	279.1	2.0
09	01	01	1	23	-15.2	0.265	-9.000	-9.000	-999.	328.	111.3	0.02	1.02	1.00	4.36	140.	10.0	279.1	2.0
09	01	01	1	24	-19.2	0.335	-9.000	-9.000	-999.	465.	176.5	0.02	1.02	1.00	5.36	160.	10.0	278.1	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
09	01	01	01	10.0	1	-999.	-99.00	277.2	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
649746.00	4266713.00	3.01259	(12081324)	650450.00	4266995.00	3.14743	(13070402)
650816.00	4267310.00	2.89378	(13022718)	650824.00	4267891.00	2.78570	(12082923)
653174.00	4267141.00	3.82672	(12081120)	653512.00	4267154.00	3.78706	(11070220)
653533.00	4266892.00	4.08385	(09062820)	653826.00	4266949.00	4.00458	(10092918)
654067.00	4267505.00	3.22712	(10090619)	653808.00	4265626.00	5.07375	(12052421)
654422.00	4266037.00	3.29038	(12042001)	654749.00	4265739.00	2.90283	(10082302)
654758.00	4266883.00	3.99468	(13060720)	654810.00	4266076.00	3.08095	(12101520)
654157.00	4265797.00	3.52527	(12052421)	654393.00	4265739.00	3.24666	(12052421)
650708.00	4264027.00	3.03011	(09092606)	650808.00	4264027.00	3.14208	(09042023)
650308.00	4264127.00	3.31748	(09050820)	650408.00	4264127.00	3.56516	(09050820)
650508.00	4264127.00	3.62756	(09050820)	650608.00	4264127.00	3.53094	(09050820)
650708.00	4264127.00	3.15266	(09050820)	650808.00	4264127.00	3.07959	(09092606)
650308.00	4264227.00	3.57415	(10092720)	650408.00	4264227.00	3.54725	(10092720)
650508.00	4264227.00	3.36834	(09050820)	650608.00	4264227.00	3.64083	(09050820)
650708.00	4264227.00	3.70263	(09050820)	650808.00	4264227.00	3.40845	(09050820)
650308.00	4264327.00	3.31845	(10101320)	650408.00	4264327.00	3.47300	(10092720)
650508.00	4264327.00	3.53457	(10092720)	650608.00	4264327.00	3.48141	(10092720)
650708.00	4264327.00	3.47299	(09050820)	650808.00	4264327.00	3.67724	(09050820)
650308.00	4264427.00	3.05331	(10092802)	650408.00	4264427.00	3.14753	(10101320)
650508.00	4264427.00	3.22733	(10101320)	650608.00	4264427.00	3.53497	(10092720)
650708.00	4264427.00	3.63552	(10092720)	650808.00	4264427.00	3.47537	(10092720)
650308.00	4264527.00	3.27186	(10082321)	650408.00	4264527.00	2.94653	(10092802)
650508.00	4264527.00	3.01188	(10092802)	650608.00	4264527.00	3.15536	(10101320)
650708.00	4264527.00	3.32094	(10101320)	650808.00	4264527.00	3.47655	(10092720)
650308.00	4264126.00	3.32254	(09050820)	650008.00	4264226.00	3.07666	(10101320)

650108.00	4264226.00	3.19487	(10101320)	650208.00	4264226.00	3.42253	(10092720)
650308.00	4264226.00	3.57439	(10092720)	649908.00	4264326.00	2.84588	(10092802)
650008.00	4264326.00	2.92873	(10092802)	650108.00	4264326.00	2.93114	(10101320)
650208.00	4264326.00	3.16945	(10101320)	650308.00	4264326.00	3.31855	(10101320)
649908.00	4264426.00	3.26221	(10082321)	650008.00	4264426.00	3.17311	(10082321)
650108.00	4264426.00	2.98262	(10082321)	650208.00	4264426.00	3.02727	(10092802)
650308.00	4264426.00	3.05166	(10092802)	649908.00	4264526.00	3.41536	(10082321)
650008.00	4264526.00	3.50222	(10082321)	650108.00	4264526.00	3.54099	(10082321)
650208.00	4264526.00	3.43246	(10082321)	650308.00	4264526.00	3.26473	(10082321)
649908.00	4264626.00	2.95663	(10082321)	650008.00	4264626.00	3.17470	(10082321)
650108.00	4264626.00	3.36245	(10082321)	650208.00	4264626.00	3.53527	(10082321)
650308.00	4264626.00	3.59287	(10082321)	649908.00	4264726.00	2.95191	(10100820)
650008.00	4264726.00	2.99606	(11012119)	650108.00	4264726.00	3.01127	(11012119)
650208.00	4264726.00	3.00904	(11012119)	650308.00	4264726.00	3.18944	(10082321)
649908.00	4264826.00	2.98046	(10120501)	650008.00	4264826.00	3.04981	(10120501)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
650108.00	4264826.00	3.02096	(10120501)	650208.00	4264826.00	3.04032	(10100820)
650308.00	4264826.00	3.12184	(11012119)	649908.00	4264926.00	3.16908	(11092406)
650008.00	4264926.00	3.18695	(11092406)	650108.00	4264926.00	3.13855	(11092406)
650208.00	4264926.00	3.08144	(11092406)	650308.00	4264926.00	3.01548	(11092406)
649908.00	4265026.00	3.59268	(09040619)	650008.00	4265026.00	3.62207	(09040619)
650108.00	4265026.00	3.50575	(09040619)	650208.00	4265026.00	3.40163	(09040619)
650308.00	4265026.00	3.33906	(09040619)	649908.00	4265126.00	3.53454	(09040619)
650008.00	4265126.00	3.61892	(09040619)	650108.00	4265126.00	3.58535	(09040619)
650208.00	4265126.00	3.66386	(09040619)	650308.00	4265126.00	3.67680	(09040619)
649908.00	4265226.00	3.12103	(10022819)	650008.00	4265226.00	3.16031	(10022819)
650108.00	4265226.00	3.17630	(10022819)	650208.00	4265226.00	3.22526	(10022819)
650308.00	4265226.00	3.26688	(10022819)	649908.00	4265326.00	2.92422	(12100221)
650008.00	4265326.00	2.99027	(12100221)	650108.00	4265326.00	3.07092	(12100221)
650208.00	4265326.00	3.09011	(12100221)	650308.00	4265326.00	3.04383	(12100221)
649908.00	4265426.00	3.11680	(13042119)	650008.00	4265426.00	3.21517	(13042119)
650108.00	4265426.00	3.28818	(13042119)	650208.00	4265426.00	3.20535	(13042119)
650308.00	4265426.00	3.31007	(13042119)	649908.00	4265526.00	3.40852	(09091021)
650008.00	4265526.00	3.48035	(09091021)	650108.00	4265526.00	3.49485	(09091021)
650208.00	4265526.00	3.53164	(09091021)	650308.00	4265526.00	3.62080	(09091021)
649908.00	4265626.00	3.37833	(09091021)	650008.00	4265626.00	3.37259	(09091021)
650108.00	4265626.00	3.29953	(09091021)	650208.00	4265626.00	3.32731	(09091021)
650308.00	4265626.00	3.32448	(09091021)	649908.00	4265726.00	2.97302	(11122917)
650008.00	4265726.00	3.04590	(09012017)	650108.00	4265726.00	3.18626	(09012017)
650208.00	4265726.00	3.35097	(09012017)	650308.00	4265726.00	3.46294	(09012017)
649908.00	4265826.00	3.41132	(09012017)	650008.00	4265826.00	3.50365	(09012017)
650108.00	4265826.00	3.54285	(09012017)	650208.00	4265826.00	3.49803	(09012017)
650308.00	4265826.00	3.47106	(09012017)	649908.00	4265926.00	3.27061	(09012017)
650008.00	4265926.00	3.17119	(09012017)	650108.00	4265926.00	3.08359	(09012017)
650208.00	4265926.00	3.10600	(09082622)	650308.00	4265926.00	2.98201	(09082622)
649908.00	4266026.00	2.99117	(09082622)	650008.00	4266026.00	2.94519	(13032319)
650108.00	4266026.00	3.06367	(13032319)	650208.00	4266026.00	3.18055	(13062902)
650308.00	4266026.00	3.36880	(13062902)	649908.00	4266126.00	3.09980	(13062902)
650008.00	4266126.00	3.27914	(13062902)	650108.00	4266126.00	3.37964	(13062902)
650208.00	4266126.00	3.60541	(13062902)	650308.00	4266126.00	3.62011	(13062902)
649908.00	4266226.00	3.35036	(13062902)	650008.00	4266226.00	3.42010	(13062902)
650108.00	4266226.00	3.34454	(13062902)	650208.00	4266226.00	3.40526	(09042122)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 2ND HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
649746.00	4266713.00	2.93635	(12061523)	650450.00	4266995.00	2.91293	(12081406)
650816.00	4267310.00	2.82578	(12070701)	650824.00	4267891.00	2.78570	(13062801)
653174.00	4267141.00	3.77355	(13062920)	653512.00	4267154.00	3.65615	(10062722)
653533.00	4266892.00	3.94792	(10090619)	653826.00	4266949.00	3.45517	(09092520)
654067.00	4267505.00	3.19155	(13070405)	653808.00	4265626.00	4.88517	(12100818)
654422.00	4266037.00	3.05954	(12080619)	654749.00	4265739.00	2.81989	(10120618)
654758.00	4266883.00	3.32317	(11082319)	654810.00	4266076.00	2.88998	(12042001)
654157.00	4265797.00	3.49500	(10052719)	654393.00	4265739.00	3.00833	(12100818)
650708.00	4264027.00	2.89167	(12020723)	650808.00	4264027.00	3.09329	(09092707)
650308.00	4264127.00	3.30617	(13081906)	650408.00	4264127.00	3.08221	(13081906)
650508.00	4264127.00	2.97618	(10092421)	650608.00	4264127.00	3.04734	(12100224)

650708.00	4264127.00	3.02464	(12100224)	650808.00	4264127.00	2.88081	(10090204)
650308.00	4264227.00	3.29712	(13081906)	650408.00	4264227.00	3.41727	(13081906)
650508.00	4264227.00	3.24427	(13081906)	650608.00	4264227.00	3.01569	(13081906)
650708.00	4264227.00	3.07839	(10092421)	650808.00	4264227.00	3.06419	(12100224)
650308.00	4264327.00	3.24943	(10092720)	650408.00	4264327.00	3.26071	(10101320)
650508.00	4264327.00	3.25540	(13081906)	650608.00	4264327.00	3.35575	(13081906)
650708.00	4264327.00	3.22077	(13081906)	650808.00	4264327.00	2.94591	(10092421)
650308.00	4264427.00	2.95611	(09052606)	650408.00	4264427.00	3.05504	(13012606)
650508.00	4264427.00	3.13467	(10092720)	650608.00	4264427.00	3.32724	(10101320)
650708.00	4264427.00	3.34320	(13081906)	650808.00	4264427.00	3.35269	(13081906)
650308.00	4264527.00	3.01326	(10092522)	650408.00	4264527.00	2.91373	(10082321)
650508.00	4264527.00	2.90479	(09052606)	650608.00	4264527.00	3.07248	(13012606)
650708.00	4264527.00	3.20063	(10092720)	650808.00	4264527.00	3.28289	(10101320)
650308.00	4264126.00	3.30310	(13081906)	650008.00	4264226.00	2.95268	(13012606)
650108.00	4264226.00	3.15246	(10092720)	650208.00	4264226.00	3.19984	(10101320)
650308.00	4264226.00	3.30023	(13081906)	649908.00	4264326.00	2.78004	(09052606)
650008.00	4264326.00	2.85769	(09052606)	650108.00	4264326.00	2.92819	(13012606)
650208.00	4264326.00	3.04866	(13012606)	650308.00	4264326.00	3.25513	(10092720)
649908.00	4264426.00	2.92897	(10092522)	650008.00	4264426.00	2.92966	(10092522)
650108.00	4264426.00	2.91351	(10092802)	650208.00	4264426.00	2.93914	(09052606)
650308.00	4264426.00	2.95777	(13012606)	649908.00	4264526.00	2.81677	(10092522)
650008.00	4264526.00	2.96319	(10092522)	650108.00	4264526.00	3.07696	(10092522)
650208.00	4264526.00	3.07002	(10092522)	650308.00	4264526.00	3.00956	(10092522)
649908.00	4264626.00	2.88512	(10121023)	650008.00	4264626.00	2.94001	(10121023)
650108.00	4264626.00	2.94756	(10121023)	650208.00	4264626.00	2.91784	(10121023)
650308.00	4264626.00	3.01791	(10092522)	649908.00	4264726.00	2.93431	(11012119)
650008.00	4264726.00	2.92662	(10100820)	650108.00	4264726.00	2.84856	(13032923)
650208.00	4264726.00	2.96735	(10082321)	650308.00	4264726.00	3.01149	(10121023)
649908.00	4264826.00	2.89865	(10012417)	650008.00	4264826.00	2.96410	(10012417)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 2ND HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
650108.00	4264826.00	2.95678	(10100820)	650208.00	4264826.00	3.03333	(10120501)
650308.00	4264826.00	3.04230	(10100820)	649908.00	4264926.00	2.93232	(09040619)
650008.00	4264926.00	2.87772	(09041904)	650108.00	4264926.00	2.87967	(09041904)
650208.00	4264926.00	2.90910	(11011724)	650308.00	4264926.00	2.97231	(10120501)
649908.00	4265026.00	2.97482	(10120503)	650008.00	4265026.00	3.05061	(11092406)
650108.00	4265026.00	3.06216	(11092406)	650208.00	4265026.00	3.08791	(11092406)
650308.00	4265026.00	3.15774	(11092406)	649908.00	4265126.00	2.96470	(10022819)
650008.00	4265126.00	2.99390	(10120503)	650108.00	4265126.00	2.97792	(10120503)
650208.00	4265126.00	3.03292	(10120503)	650308.00	4265126.00	3.04163	(10120503)
649908.00	4265226.00	2.94279	(11062124)	650008.00	4265226.00	2.92065	(11062124)
650108.00	4265226.00	2.88192	(09040619)	650208.00	4265226.00	2.97056	(09040619)
650308.00	4265226.00	3.05386	(09040619)	649908.00	4265326.00	2.82524	(10101321)
650008.00	4265326.00	2.88588	(10101321)	650108.00	4265326.00	2.95607	(10101321)
650208.00	4265326.00	2.98076	(10101321)	650308.00	4265326.00	2.96449	(10022819)
649908.00	4265426.00	2.99188	(10101321)	650008.00	4265426.00	3.06215	(10101321)
650108.00	4265426.00	3.11254	(10101321)	650208.00	4265426.00	3.05369	(10101321)
650308.00	4265426.00	3.15311	(11012118)	649908.00	4265526.00	3.24507	(13042119)
650008.00	4265526.00	3.24780	(13042119)	650108.00	4265526.00	3.21966	(11012118)
650208.00	4265526.00	3.25660	(11012118)	650308.00	4265526.00	3.31547	(11012118)
649908.00	4265626.00	2.98372	(12042024)	650008.00	4265626.00	3.03324	(12042024)
650108.00	4265626.00	3.02940	(12042024)	650208.00	4265626.00	3.10888	(12042024)
650308.00	4265626.00	3.16484	(12042024)	649908.00	4265726.00	2.95933	(12081002)
650008.00	4265726.00	2.97639	(10121421)	650108.00	4265726.00	3.00302	(10121421)
650208.00	4265726.00	3.08286	(10120420)	650308.00	4265726.00	3.12037	(10120420)
649908.00	4265826.00	2.99639	(10120420)	650008.00	4265826.00	3.01618	(10120420)
650108.00	4265826.00	2.98924	(10120420)	650208.00	4265826.00	2.96721	(13050302)
650308.00	4265826.00	3.01127	(13050302)	649908.00	4265926.00	2.89708	(13050302)
650008.00	4265926.00	2.90500	(09082622)	650108.00	4265926.00	3.04995	(09082622)
650208.00	4265926.00	3.02408	(10101420)	650308.00	4265926.00	2.97937	(13032319)
649908.00	4266026.00	2.91682	(10101420)	650008.00	4266026.00	2.90222	(12072103)
650108.00	4266026.00	3.02181	(12072103)	650208.00	4266026.00	3.15163	(13032319)
650308.00	4266026.00	3.27689	(13083022)	649908.00	4266126.00	3.02557	(13032319)
650008.00	4266126.00	3.19385	(13083022)	650108.00	4266126.00	3.29059	(13083022)
650208.00	4266126.00	3.50820	(13083022)	650308.00	4266126.00	3.52113	(13083022)
649908.00	4266226.00	3.26460	(13083022)	650008.00	4266226.00	3.33128	(13083022)
650108.00	4266226.00	3.30206	(09042122)	650208.00	4266226.00	3.35532	(13062902)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 3RD HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
649746.00	4266713.00	2.83234	(12102718)	650450.00	4266995.00	2.79621	(12042022)
650816.00	4267310.00	2.81022	(13071921)	650824.00	4267891.00	2.77597	(12121017)
653174.00	4267141.00	3.71757	(13070420)	653512.00	4267154.00	3.38073	(12072220)
653533.00	4266892.00	3.65742	(12081019)	653826.00	4266949.00	3.38959	(12081320)
654067.00	4267505.00	3.04177	(12100219)	653808.00	4265626.00	4.64072	(13041420)
654422.00	4266037.00	2.98746	(10061620)	654749.00	4265739.00	2.66366	(12100918)
654758.00	4266883.00	3.12699	(10082322)	654810.00	4266076.00	2.88502	(10061620)
654157.00	4265797.00	3.45925	(12100818)	654393.00	4265739.00	2.82914	(11100318)
650708.00	4264027.00	2.86855	(09092707)	650808.00	4264027.00	2.93182	(09092606)
650308.00	4264127.00	3.29427	(10092720)	650408.00	4264127.00	2.99399	(13012508)
650508.00	4264127.00	2.94749	(09012117)	650608.00	4264127.00	3.04234	(10092421)
650708.00	4264127.00	3.00620	(10090204)	650808.00	4264127.00	2.83997	(12020723)
650308.00	4264227.00	3.16882	(12020618)	650408.00	4264227.00	3.28850	(12020618)
650508.00	4264227.00	3.22419	(10092720)	650608.00	4264227.00	2.95845	(13012508)
650708.00	4264227.00	3.02896	(09012117)	650808.00	4264227.00	2.98938	(10092421)
650308.00	4264327.00	3.05804	(13012606)	650408.00	4264327.00	3.06542	(10090205)
650508.00	4264327.00	3.14576	(12020618)	650608.00	4264327.00	3.24501	(12020618)
650708.00	4264327.00	3.19089	(10092720)	650808.00	4264327.00	2.90099	(13081906)
650308.00	4264427.00	2.95377	(13012606)	650408.00	4264427.00	2.95714	(13050324)
650508.00	4264427.00	3.01465	(13012606)	650608.00	4264427.00	3.10863	(10090205)
650708.00	4264427.00	3.21222	(12020618)	650808.00	4264427.00	3.23475	(12020618)
650308.00	4264527.00	2.88923	(10092802)	650408.00	4264527.00	2.86066	(11012021)
650508.00	4264527.00	2.83590	(13012606)	650608.00	4264527.00	3.01775	(10092802)
650708.00	4264527.00	3.09629	(13012606)	650808.00	4264527.00	3.04687	(10090205)
650308.00	4264126.00	3.28853	(10092720)	650008.00	4264226.00	2.86523	(11092207)
650108.00	4264226.00	2.93955	(13012606)	650208.00	4264226.00	3.02739	(13081906)
650308.00	4264226.00	3.17206	(12020618)	649908.00	4264326.00	2.72325	(11012021)
650008.00	4264326.00	2.74020	(13031223)	650108.00	4264326.00	2.92650	(10092802)
650208.00	4264326.00	2.96133	(11092207)	650308.00	4264326.00	3.05538	(13012606)
649908.00	4264426.00	2.78803	(10021220)	650008.00	4264426.00	2.86637	(10021220)
650108.00	4264426.00	2.83705	(10092522)	650208.00	4264426.00	2.84610	(11012021)
650308.00	4264426.00	2.95438	(09052606)	649908.00	4264526.00	2.79109	(10121023)
650008.00	4264526.00	2.81148	(13050306)	650108.00	4264526.00	2.91531	(13050306)
650208.00	4264526.00	2.90647	(13050306)	650308.00	4264526.00	2.89345	(10092802)
649908.00	4264626.00	2.79549	(11012119)	650008.00	4264626.00	2.77385	(09011521)
650108.00	4264626.00	2.78163	(09011521)	650208.00	4264626.00	2.88959	(10092522)
650308.00	4264626.00	2.85518	(13050306)	649908.00	4264726.00	2.85589	(10120501)
650008.00	4264726.00	2.80977	(13032923)	650108.00	4264726.00	2.84762	(09041901)
650208.00	4264726.00	2.95441	(10121023)	650308.00	4264726.00	2.95636	(11012119)
649908.00	4264826.00	2.89442	(11011724)	650008.00	4264826.00	2.94116	(10100820)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 3RD HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
650108.00	4264826.00	2.93208	(10012417)	650208.00	4264826.00	3.02822	(11012119)
650308.00	4264826.00	2.96599	(10120501)	649908.00	4264926.00	2.86203	(10011519)
650008.00	4264926.00	2.87333	(10011519)	650108.00	4264926.00	2.86002	(11011724)
650208.00	4264926.00	2.87347	(10120501)	650308.00	4264926.00	2.94684	(11020818)
649908.00	4265026.00	2.92133	(11092406)	650008.00	4265026.00	2.98546	(10120503)
650108.00	4265026.00	2.89766	(10120503)	650208.00	4265026.00	2.86602	(10012419)
650308.00	4265026.00	2.88289	(10012419)	649908.00	4265126.00	2.93051	(10120503)
650008.00	4265126.00	2.98065	(10022819)	650108.00	4265126.00	2.93706	(10022819)
650208.00	4265126.00	2.97211	(10121120)	650308.00	4265126.00	2.98048	(10121120)
649908.00	4265226.00	2.90866	(13042120)	650008.00	4265226.00	2.89797	(09102320)
650108.00	4265226.00	2.87005	(09102320)	650208.00	4265226.00	2.89360	(09102320)
650308.00	4265226.00	2.90707	(09102320)	649908.00	4265326.00	2.80170	(09011319)
650008.00	4265326.00	2.86204	(11082301)	650108.00	4265326.00	2.93176	(11082301)
650208.00	4265326.00	2.95865	(11091002)	650308.00	4265326.00	2.95700	(10101321)
649908.00	4265426.00	2.94763	(10120504)	650008.00	4265426.00	3.00389	(10120504)
650108.00	4265426.00	3.04320	(10120504)	650208.00	4265426.00	3.05247	(11012118)
650308.00	4265426.00	3.12345	(10101321)	649908.00	4265526.00	3.13307	(11012118)
650008.00	4265526.00	3.19087	(11012118)	650108.00	4265526.00	3.17710	(13042119)
650208.00	4265526.00	3.13149	(13042119)	650308.00	4265526.00	3.14320	(13042119)
649908.00	4265626.00	2.88059	(11012118)	650008.00	4265626.00	2.88013	(11091303)
650108.00	4265626.00	2.90120	(11122917)	650208.00	4265626.00	3.00885	(11122917)
650308.00	4265626.00	3.09726	(11122917)	649908.00	4265726.00	2.94568	(10101023)
650008.00	4265726.00	2.96087	(11122917)	650108.00	4265726.00	2.99334	(10120420)
650208.00	4265726.00	3.03997	(10121421)	650308.00	4265726.00	3.02263	(10121421)
649908.00	4265826.00	2.89347	(13050605)	650008.00	4265826.00	2.91302	(13050605)
650108.00	4265826.00	2.94904	(13050302)	650208.00	4265826.00	2.92490	(13012601)
650308.00	4265826.00	2.96632	(12101523)	649908.00	4265926.00	2.86489	(13012601)
650008.00	4265926.00	2.87547	(13050302)	650108.00	4265926.00	2.97106	(10101420)
650208.00	4265926.00	2.98477	(13013019)	650308.00	4265926.00	2.94248	(10011118)
649908.00	4266026.00	2.89675	(13032319)	650008.00	4266026.00	2.85929	(09082622)
650108.00	4266026.00	2.95151	(10011118)	650208.00	4266026.00	3.11459	(12072103)
650308.00	4266026.00	3.06073	(13032319)	649908.00	4266126.00	3.02048	(13083022)
650008.00	4266126.00	2.94912	(13032319)	650108.00	4266126.00	3.05270	(09012217)
650208.00	4266126.00	3.34182	(09042122)	650308.00	4266126.00	3.46465	(09042122)
649908.00	4266226.00	3.11347	(09042122)	650008.00	4266226.00	3.27306	(09042122)

650108.00	4266226.00	3.25695	(13083022)	650208.00	4266226.00	3.26586	(13083022)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 4TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
649746.00	4266713.00	2.82501	(13053123)	650450.00	4266995.00	2.79351	(12010217)
650816.00	4267310.00	2.80658	(11072301)	650824.00	4267891.00	2.77473	(11092021)
653174.00	4267141.00	3.71571	(09071720)	653512.00	4267154.00	3.30274	(10071521)
653533.00	4266892.00	3.64074	(11081619)	653826.00	4266949.00	3.17536	(12080120)
654067.00	4267505.00	2.96560	(13051120)	653808.00	4265626.00	4.53933	(10052719)
654422.00	4266037.00	2.92078	(10100421)	654749.00	4265739.00	2.64853	(12052421)
654758.00	4266883.00	3.00158	(10062721)	654810.00	4266076.00	2.88060	(10010608)
654157.00	4265797.00	3.19976	(11100318)	654393.00	4265739.00	2.81265	(10082302)
650708.00	4264027.00	2.74961	(09121908)	650808.00	4264027.00	2.93033	(12020723)
650308.00	4264127.00	3.18355	(12020618)	650408.00	4264127.00	2.95497	(12020618)
650508.00	4264127.00	2.88938	(10120424)	650608.00	4264127.00	3.00361	(09012117)
650708.00	4264127.00	2.88606	(09092606)	650808.00	4264127.00	2.83248	(09121908)
650308.00	4264227.00	3.07980	(10101320)	650408.00	4264227.00	3.07443	(09050820)
650508.00	4264227.00	3.13593	(12020618)	650608.00	4264227.00	2.88675	(12020618)
650708.00	4264227.00	2.99096	(12100224)	650808.00	4264227.00	2.96110	(10090204)
650308.00	4264327.00	2.99726	(10090205)	650408.00	4264327.00	3.05895	(13081906)
650508.00	4264327.00	3.04167	(10101320)	650608.00	4264327.00	3.10783	(09050820)
650708.00	4264327.00	3.10676	(12020618)	650808.00	4264327.00	2.88379	(09012117)
650308.00	4264427.00	2.94453	(10101320)	650408.00	4264427.00	2.95142	(11092207)
650508.00	4264427.00	2.91112	(13050324)	650608.00	4264427.00	3.10081	(13081906)
650708.00	4264427.00	3.11939	(10101320)	650808.00	4264427.00	3.20545	(09050820)
650308.00	4264527.00	2.87951	(10021220)	650408.00	4264527.00	2.84632	(09052606)
650508.00	4264527.00	2.81769	(11012021)	650608.00	4264527.00	2.98718	(13050324)
650708.00	4264527.00	3.00706	(13050324)	650808.00	4264527.00	3.03312	(13081906)
650308.00	4264126.00	3.18049	(12020618)	650008.00	4264226.00	2.84982	(13050324)
650108.00	4264226.00	2.90944	(10090205)	650208.00	4264226.00	3.02672	(10090205)
650308.00	4264226.00	3.07486	(10101320)	649908.00	4264326.00	2.72118	(10013120)
650008.00	4264326.00	2.72222	(13012606)	650108.00	4264326.00	2.84548	(11092207)
650208.00	4264326.00	2.95270	(13050324)	650308.00	4264326.00	2.99991	(10090205)
649908.00	4264426.00	2.78609	(13050306)	650008.00	4264426.00	2.77903	(13050306)
650108.00	4264426.00	2.83478	(11012021)	650208.00	4264426.00	2.79834	(10013120)
650308.00	4264426.00	2.95068	(10101320)	649908.00	4264526.00	2.67303	(13050306)
650008.00	4264526.00	2.70023	(10121023)	650108.00	4264526.00	2.78435	(10021220)
650208.00	4264526.00	2.86782	(10021220)	650308.00	4264526.00	2.87875	(11012021)
649908.00	4264626.00	2.78241	(13032923)	650008.00	4264626.00	2.76024	(13032923)
650108.00	4264626.00	2.71589	(09121718)	650208.00	4264626.00	2.75490	(09011521)
650308.00	4264626.00	2.79438	(10121023)	649908.00	4264726.00	2.77616	(10012417)
650008.00	4264726.00	2.80813	(09041901)	650108.00	4264726.00	2.84242	(10121023)
650208.00	4264726.00	2.87839	(09041901)	650308.00	4264726.00	2.84929	(09041901)
649908.00	4264826.00	2.87003	(11091807)	650008.00	4264826.00	2.90217	(11011724)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 4TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
650108.00	4264826.00	2.88699	(11012119)	650208.00	4264826.00	2.94105	(10012417)
650308.00	4264826.00	2.87126	(10012417)	649908.00	4264926.00	2.83102	(10082502)
650008.00	4264926.00	2.82420	(09040619)	650108.00	4264926.00	2.83293	(10011519)
650208.00	4264926.00	2.87262	(09041904)	650308.00	4264926.00	2.94661	(11011724)
649908.00	4265026.00	2.91549	(10121120)	650008.00	4265026.00	2.94509	(10082502)
650108.00	4265026.00	2.88050	(10082502)	650208.00	4265026.00	2.83698	(10082502)
650308.00	4265026.00	2.85194	(10011519)	649908.00	4265126.00	2.87247	(10121120)
650008.00	4265126.00	2.93410	(10121120)	650108.00	4265126.00	2.91879	(10121120)
650208.00	4265126.00	2.94118	(10022819)	650308.00	4265126.00	2.90933	(10022819)
649908.00	4265226.00	2.89086	(09102320)	650008.00	4265226.00	2.87745	(13042120)
650108.00	4265226.00	2.85369	(11062124)	650208.00	4265226.00	2.85416	(11062124)
650308.00	4265226.00	2.86241	(11033123)	649908.00	4265326.00	2.80167	(11082301)
650008.00	4265326.00	2.85596	(09011319)	650108.00	4265326.00	2.92432	(11091002)
650208.00	4265326.00	2.95696	(11082301)	650308.00	4265326.00	2.94378	(11091002)
649908.00	4265426.00	2.92360	(10120507)	650008.00	4265426.00	2.98753	(10120507)
650108.00	4265426.00	3.03538	(10120507)	650208.00	4265426.00	2.99950	(10120507)
650308.00	4265426.00	3.08667	(09091021)	649908.00	4265526.00	2.89087	(13021520)
650008.00	4265526.00	2.94782	(13021520)	650108.00	4265526.00	2.96891	(13021520)
650208.00	4265526.00	3.00091	(13021520)	650308.00	4265526.00	3.06120	(13021520)
649908.00	4265626.00	2.86910	(13021520)	650008.00	4265626.00	2.87798	(11012118)
650108.00	4265626.00	2.88517	(10101023)	650208.00	4265626.00	2.99949	(10101023)

650308.00	4265626.00	3.09478	(10101023)	649908.00	4265726.00	2.94390	(10121421)
650008.00	4265726.00	2.94394	(13072402)	650108.00	4265726.00	2.96694	(13072402)
650208.00	4265726.00	3.01049	(13072402)	650308.00	4265726.00	2.99461	(13072402)
649908.00	4265826.00	2.87822	(10122120)	650008.00	4265826.00	2.89541	(10122120)
650108.00	4265826.00	2.91559	(10021623)	650208.00	4265826.00	2.92189	(12101523)
650308.00	4265826.00	2.96106	(13012601)	649908.00	4265926.00	2.85929	(12101523)
650008.00	4265926.00	2.83684	(12101523)	650108.00	4265926.00	2.93132	(13013019)
650208.00	4265926.00	2.91617	(09012017)	650308.00	4265926.00	2.93674	(12072103)
649908.00	4266026.00	2.86178	(12072103)	650008.00	4266026.00	2.84565	(10011118)
650108.00	4266026.00	2.92319	(11010518)	650208.00	4266026.00	3.09532	(13083022)
650308.00	4266026.00	3.02310	(09072706)	649908.00	4266126.00	2.99037	(12072103)
650008.00	4266126.00	2.94304	(09072706)	650108.00	4266126.00	3.04343	(09042122)
650208.00	4266126.00	3.23460	(09012217)	650308.00	4266126.00	3.23957	(09012217)
649908.00	4266226.00	3.05395	(09012217)	650008.00	4266226.00	3.10538	(09012217)
650108.00	4266226.00	3.02728	(09012217)	650208.00	4266226.00	3.16318	(10062805)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 5TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
649746.00	4266713.00	2.77388	(10101019)	650450.00	4266995.00	2.78180	(12071203)
650816.00	4267310.00	2.80220	(09080824)	650824.00	4267891.00	2.77359	(10071422)
653174.00	4267141.00	3.62981	(11070620)	653512.00	4267154.00	3.29896	(09061820)
653533.00	4266892.00	3.61608	(12061520)	653826.00	4266949.00	3.13254	(09090919)
654067.00	4267505.00	2.79704	(10072421)	653808.00	4265626.00	4.24905	(11100318)
654422.00	4266037.00	2.85383	(10090924)	654749.00	4265739.00	2.64544	(10120218)
654758.00	4266883.00	2.59187	(12071206)	654810.00	4266076.00	2.82284	(11040520)
654157.00	4265797.00	3.15995	(12101520)	654393.00	4265739.00	2.80604	(10052719)
650708.00	4264027.00	2.73500	(09042023)	650808.00	4264027.00	2.86949	(11101502)
650308.00	4264127.00	3.06484	(13012508)	650408.00	4264127.00	2.94382	(10092720)
650508.00	4264127.00	2.83471	(12100224)	650608.00	4264127.00	2.94418	(10120424)
650708.00	4264127.00	2.86646	(10092421)	650808.00	4264127.00	2.77400	(09092707)
650308.00	4264227.00	3.02883	(10090205)	650408.00	4264227.00	3.03284	(13012508)
650508.00	4264227.00	3.04675	(13012508)	650608.00	4264227.00	2.88424	(10092421)
650708.00	4264227.00	2.97031	(10120424)	650808.00	4264227.00	2.92400	(09012117)
650308.00	4264327.00	2.97749	(11092207)	650408.00	4264327.00	2.92773	(12020618)
650508.00	4264327.00	2.98285	(10090205)	650608.00	4264327.00	3.01444	(13012508)
650708.00	4264327.00	3.04662	(13012508)	650808.00	4264327.00	2.88073	(11090921)
650308.00	4264427.00	2.89986	(13031223)	650408.00	4264427.00	2.91038	(10092802)
650508.00	4264427.00	2.89677	(11092207)	650608.00	4264427.00	2.99336	(11021808)
650708.00	4264427.00	3.04649	(10090205)	650808.00	4264427.00	3.02570	(13012508)
650308.00	4264527.00	2.87712	(11012021)	650408.00	4264527.00	2.78634	(12012001)
650508.00	4264527.00	2.81549	(13031223)	650608.00	4264527.00	2.96794	(11092207)
650708.00	4264527.00	2.98454	(11092207)	650808.00	4264527.00	3.01128	(11021808)
650308.00	4264126.00	3.06470	(13012508)	650008.00	4264226.00	2.80709	(10092720)
650108.00	4264226.00	2.85921	(11092207)	650208.00	4264226.00	2.89886	(12020618)
650308.00	4264226.00	3.02655	(10090205)	649908.00	4264326.00	2.72118	(11012120)
650008.00	4264326.00	2.70793	(11012021)	650108.00	4264326.00	2.84464	(09052606)
650208.00	4264326.00	2.87262	(09122707)	650308.00	4264326.00	2.97495	(11092207)
649908.00	4264426.00	2.63547	(13012306)	650008.00	4264426.00	2.75093	(11012021)
650108.00	4264426.00	2.82842	(09052606)	650208.00	4264426.00	2.79834	(11012120)
650308.00	4264426.00	2.90087	(13031223)	649908.00	4264526.00	2.65529	(10102723)
650008.00	4264526.00	2.65482	(13012306)	650108.00	4264526.00	2.74919	(13012306)
650208.00	4264526.00	2.75161	(11012021)	650308.00	4264526.00	2.87825	(10021220)
649908.00	4264626.00	2.77911	(09041901)	650008.00	4264626.00	2.75889	(09041901)
650108.00	4264626.00	2.69305	(09041901)	650208.00	4264626.00	2.73271	(13050306)
650308.00	4264626.00	2.71789	(09012922)	649908.00	4264726.00	2.75396	(09092507)
650008.00	4264726.00	2.78429	(09092507)	650108.00	4264726.00	2.83432	(10100820)
650208.00	4264726.00	2.87830	(13032923)	650308.00	4264726.00	2.84710	(13032923)
649908.00	4264826.00	2.85391	(10121422)	650008.00	4264826.00	2.87809	(11091807)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 5TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
650108.00	4264826.00	2.81651	(11011724)	650208.00	4264826.00	2.83926	(11020624)
650308.00	4264826.00	2.85004	(11020624)	649908.00	4264926.00	2.82212	(09041904)
650008.00	4264926.00	2.81935	(10022305)	650108.00	4264926.00	2.82476	(11091807)
650208.00	4264926.00	2.86048	(11091807)	650308.00	4264926.00	2.89055	(11091807)
649908.00	4265026.00	2.85418	(10082502)	650008.00	4265026.00	2.92570	(10121120)
650108.00	4265026.00	2.87233	(10012419)	650208.00	4265026.00	2.81300	(10120503)
650308.00	4265026.00	2.84651	(10082502)	649908.00	4265126.00	2.84964	(10012506)

650008.00	4265126.00	2.88450	(10012506)	650108.00	4265126.00	2.84531	(10012506)
650208.00	4265126.00	2.86911	(10012506)	650308.00	4265126.00	2.89753	(11020819)
649908.00	4265226.00	2.87230	(12100221)	650008.00	4265226.00	2.84897	(09040619)
650108.00	4265226.00	2.81153	(09042002)	650208.00	4265226.00	2.82138	(09042002)
650308.00	4265226.00	2.84184	(11062124)	649908.00	4265326.00	2.79454	(11013118)
650008.00	4265326.00	2.85086	(11013118)	650108.00	4265326.00	2.91601	(09011319)
650208.00	4265326.00	2.94262	(09011319)	650308.00	4265326.00	2.93565	(11013118)
649908.00	4265426.00	2.84176	(11012118)	650008.00	4265426.00	2.93581	(11012118)
650108.00	4265426.00	3.02189	(11012118)	650208.00	4265426.00	2.99718	(10120504)
650308.00	4265426.00	3.05977	(10120507)	649908.00	4265526.00	2.84922	(12022122)
650008.00	4265526.00	2.88239	(10021301)	650108.00	4265526.00	2.88225	(10021301)
650208.00	4265526.00	2.89118	(10021301)	650308.00	4265526.00	2.97136	(11020808)
649908.00	4265626.00	2.86753	(13070303)	650008.00	4265626.00	2.87054	(13070303)
650108.00	4265626.00	2.86027	(12081002)	650208.00	4265626.00	2.98611	(12081002)
650308.00	4265626.00	3.09018	(12081002)	649908.00	4265726.00	2.91983	(13072402)
650008.00	4265726.00	2.93103	(10101023)	650108.00	4265726.00	2.94088	(11122917)
650208.00	4265726.00	2.96314	(13050605)	650308.00	4265726.00	2.99151	(13050605)
649908.00	4265826.00	2.83999	(09092003)	650008.00	4265826.00	2.88274	(11122918)
650108.00	4265826.00	2.91163	(11122918)	650208.00	4265826.00	2.89400	(10120420)
650308.00	4265826.00	2.87630	(09012919)	649908.00	4265926.00	2.81214	(09082622)
650008.00	4265926.00	2.83650	(13012601)	650108.00	4265926.00	2.87298	(13050302)
650208.00	4265926.00	2.90762	(13032319)	650308.00	4265926.00	2.92807	(13013019)
649908.00	4266026.00	2.84918	(13013019)	650008.00	4266026.00	2.81731	(11010518)
650108.00	4266026.00	2.86751	(10120801)	650208.00	4266026.00	3.03213	(09072706)
650308.00	4266026.00	3.02178	(12072103)	649908.00	4266126.00	2.94418	(09072706)
650008.00	4266126.00	2.93954	(09012217)	650108.00	4266126.00	2.99811	(10120908)
650208.00	4266126.00	3.16895	(10120908)	650308.00	4266126.00	3.18189	(10120908)
649908.00	4266226.00	2.98068	(10120908)	650008.00	4266226.00	3.03437	(10120908)
650108.00	4266226.00	2.97255	(10120908)	650208.00	4266226.00	3.14205	(10120903)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 6TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
649746.00	4266713.00	2.71653	(09052722)	650450.00	4266995.00	2.75235	(10101020)
650816.00	4267310.00	2.74972	(13072424)	650824.00	4267891.00	2.75907	(10062821)
653174.00	4267141.00	3.61265	(09071420)	653512.00	4267154.00	3.29226	(09081719)
653533.00	4266892.00	3.59092	(09082619)	653826.00	4266949.00	3.10716	(12081019)
654067.00	4267505.00	2.79676	(12072204)	653808.00	4265626.00	3.87582	(13050620)
654422.00	4266037.00	2.82670	(13100419)	654749.00	4265739.00	2.63527	(11111418)
654758.00	4266883.00	2.59046	(13070820)	654810.00	4266076.00	2.63584	(10120620)
654157.00	4265797.00	3.03599	(13041420)	654393.00	4265739.00	2.72217	(10091418)
650708.00	4264027.00	2.72390	(10090204)	650808.00	4264027.00	2.78563	(12020705)
650308.00	4264127.00	2.95953	(11050422)	650408.00	4264127.00	2.85169	(11050422)
650508.00	4264127.00	2.80459	(11011802)	650608.00	4264127.00	2.87340	(10090204)
650708.00	4264127.00	2.79871	(12100107)	650808.00	4264127.00	2.75018	(13021508)
650308.00	4264227.00	2.88593	(11020320)	650408.00	4264227.00	2.99029	(11020320)
650508.00	4264227.00	2.87511	(10012505)	650608.00	4264227.00	2.86652	(10092720)
650708.00	4264227.00	2.83685	(11090921)	650808.00	4264227.00	2.87102	(10120424)
650308.00	4264327.00	2.97494	(13050324)	650408.00	4264327.00	2.91194	(11021808)
650508.00	4264327.00	2.88414	(11020320)	650608.00	4264327.00	2.97189	(11020320)
650708.00	4264327.00	2.87733	(10012505)	650808.00	4264327.00	2.87356	(13012508)
650308.00	4264427.00	2.88397	(13050324)	650408.00	4264427.00	2.89369	(10122319)
650508.00	4264427.00	2.89390	(10090205)	650608.00	4264427.00	2.95889	(12020618)
650708.00	4264427.00	2.96883	(11021808)	650808.00	4264427.00	2.97727	(11020320)
650308.00	4264527.00	2.84579	(13050306)	650408.00	4264527.00	2.77449	(10092522)
650508.00	4264527.00	2.78958	(10101320)	650608.00	4264527.00	2.92363	(10122319)
650708.00	4264527.00	2.95008	(10122319)	650808.00	4264527.00	2.91421	(13012606)
650308.00	4264126.00	2.95932	(11050422)	650008.00	4264226.00	2.78429	(09122707)
650108.00	4264226.00	2.85203	(13050324)	650208.00	4264226.00	2.82906	(11021808)
650308.00	4264226.00	2.88856	(11020320)	649908.00	4264326.00	2.68325	(12012001)
650008.00	4264326.00	2.70446	(10092703)	650108.00	4264326.00	2.84209	(13050324)
650208.00	4264326.00	2.87245	(10122319)	650308.00	4264326.00	2.97263	(13050324)
649908.00	4264426.00	2.59504	(11012021)	650008.00	4264426.00	2.73756	(10092802)
650108.00	4264426.00	2.82071	(10021220)	650208.00	4264426.00	2.78822	(12012001)
650308.00	4264426.00	2.88724	(13050324)	649908.00	4264526.00	2.63585	(09011521)
650008.00	4264526.00	2.65460	(10010507)	650108.00	4264526.00	2.66723	(09012922)
650208.00	4264526.00	2.74440	(13012306)	650308.00	4264526.00	2.84218	(13050306)
649908.00	4264626.00	2.72261	(09011521)	650008.00	4264626.00	2.74821	(11012119)
650108.00	4264626.00	2.69161	(13032923)	650208.00	4264626.00	2.72195	(10102723)
650308.00	4264626.00	2.70417	(13012306)	649908.00	4264726.00	2.74575	(11020624)
650008.00	4264726.00	2.76469	(10120501)	650108.00	4264726.00	2.75327	(09020324)
650208.00	4264726.00	2.78936	(09020324)	650308.00	4264726.00	2.84199	(09011521)
649908.00	4264826.00	2.82197	(11092406)	650008.00	4264826.00	2.84437	(12082924)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 6TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
650108.00	4264826.00	2.77331	(11091807)	650208.00	4264826.00	2.78466	(10092501)
650308.00	4264826.00	2.80251	(09092507)	649908.00	4264926.00	2.80828	(10022305)
650008.00	4264926.00	2.80123	(11011724)	650108.00	4264926.00	2.78015	(10022305)
650208.00	4264926.00	2.81845	(11020818)	650308.00	4264926.00	2.87674	(10012417)
649908.00	4265026.00	2.84052	(12083006)	650008.00	4265026.00	2.89131	(12083006)
650108.00	4265026.00	2.84050	(10121120)	650208.00	4265026.00	2.79209	(10011519)
650308.00	4265026.00	2.79867	(10022305)	649908.00	4265126.00	2.84084	(10110420)
650008.00	4265126.00	2.85539	(10110420)	650108.00	4265126.00	2.79008	(11033123)
650208.00	4265126.00	2.81577	(11020819)	650308.00	4265126.00	2.84943	(10012506)
649908.00	4265226.00	2.84960	(09042002)	650008.00	4265226.00	2.84681	(09042002)
650108.00	4265226.00	2.80191	(13042120)	650208.00	4265226.00	2.81754	(11033123)
650308.00	4265226.00	2.82087	(09042002)	649908.00	4265326.00	2.78773	(10120504)
650008.00	4265326.00	2.84421	(11091002)	650108.00	4265326.00	2.91314	(11013118)
650208.00	4265326.00	2.94218	(11013118)	650308.00	4265326.00	2.93477	(11082301)
649908.00	4265426.00	2.77530	(09051001)	650008.00	4265426.00	2.86346	(09091021)
650108.00	4265426.00	2.96324	(09091021)	650208.00	4265426.00	2.95843	(09091021)
650308.00	4265426.00	3.04801	(10120504)	649908.00	4265526.00	2.84705	(10021301)
650008.00	4265526.00	2.86231	(12022122)	650108.00	4265526.00	2.83691	(12022122)
650208.00	4265526.00	2.82031	(12022122)	650308.00	4265526.00	2.95983	(11020724)
649908.00	4265626.00	2.86435	(11091303)	650008.00	4265626.00	2.86646	(12061601)
650108.00	4265626.00	2.84178	(09020605)	650208.00	4265626.00	2.94616	(09020605)
650308.00	4265626.00	3.03155	(09020605)	649908.00	4265726.00	2.91422	(09020605)
650008.00	4265726.00	2.92455	(12081002)	650108.00	4265726.00	2.91351	(10101023)
650208.00	4265726.00	2.95568	(10122120)	650308.00	4265726.00	2.98974	(10122120)
649908.00	4265826.00	2.83999	(09092004)	650008.00	4265826.00	2.88230	(10021623)
650108.00	4265826.00	2.90859	(12101523)	650208.00	4265826.00	2.88886	(10021623)
650308.00	4265826.00	2.87305	(10021623)	649908.00	4265926.00	2.78003	(09012919)
650008.00	4265926.00	2.83134	(10101420)	650108.00	4265926.00	2.87105	(09012919)
650208.00	4265926.00	2.87467	(12072103)	650308.00	4265926.00	2.90197	(10101420)
649908.00	4266026.00	2.77673	(11070124)	650008.00	4266026.00	2.78713	(10101420)
650108.00	4266026.00	2.86566	(09072706)	650208.00	4266026.00	3.02712	(10011118)
650308.00	4266026.00	2.99068	(13061422)	649908.00	4266126.00	2.89962	(13061422)
650008.00	4266126.00	2.91790	(11012117)	650108.00	4266126.00	2.89969	(13050606)
650208.00	4266126.00	3.00950	(11011602)	650308.00	4266126.00	3.04029	(11011602)
649908.00	4266226.00	2.84039	(11012117)	650008.00	4266226.00	2.87014	(10022820)
650108.00	4266226.00	2.92993	(10021521)	650208.00	4266226.00	3.14173	(10121108)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 7TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
649746.00	4266713.00	2.70210	(13062901)	650450.00	4266995.00	2.72341	(11011604)
650816.00	4267310.00	2.68528	(13012603)	650824.00	4267891.00	2.71357	(10082323)
653174.00	4267141.00	3.60039	(11090719)	653512.00	4267154.00	3.25008	(11072120)
653533.00	4266892.00	3.56403	(12080920)	653826.00	4266949.00	3.10155	(09082619)
654067.00	4267505.00	2.73334	(10061622)	653808.00	4265626.00	3.55915	(10032518)
654422.00	4266037.00	2.80116	(11020606)	654749.00	4265739.00	2.60696	(10120619)
654758.00	4266883.00	2.53456	(09050103)	654810.00	4266076.00	2.60576	(13050405)
654157.00	4265797.00	2.84925	(11040520)	654393.00	4265739.00	2.70085	(10120403)
650708.00	4264027.00	2.67902	(09013101)	650808.00	4264027.00	2.77298	(11092106)
650308.00	4264127.00	2.89494	(11020320)	650408.00	4264127.00	2.82489	(10012505)
650508.00	4264127.00	2.74087	(13012508)	650608.00	4264127.00	2.82485	(12100107)
650708.00	4264127.00	2.79392	(09121908)	650808.00	4264127.00	2.74137	(12100224)
650308.00	4264227.00	2.87754	(10120506)	650408.00	4264227.00	2.90081	(11050422)
650508.00	4264227.00	2.87289	(11020320)	650608.00	4264227.00	2.82862	(09012117)
650708.00	4264227.00	2.82146	(11011802)	650808.00	4264227.00	2.82830	(12100107)
650308.00	4264327.00	2.88674	(10122319)	650408.00	4264327.00	2.87462	(13012606)
650508.00	4264327.00	2.87960	(11021808)	650608.00	4264327.00	2.84719	(10012505)
650708.00	4264327.00	2.86326	(11020320)	650808.00	4264327.00	2.83321	(10120424)
650308.00	4264427.00	2.87392	(11092207)	650408.00	4264427.00	2.87844	(09122707)
650508.00	4264427.00	2.86518	(10122319)	650608.00	4264427.00	2.93692	(13012606)
650708.00	4264427.00	2.95240	(11020320)	650808.00	4264427.00	2.85889	(10012505)
650308.00	4264527.00	2.81040	(12012001)	650408.00	4264527.00	2.74559	(10013120)
650508.00	4264527.00	2.77977	(10092703)	650608.00	4264527.00	2.92345	(13031223)
650708.00	4264527.00	2.94875	(10090205)	650808.00	4264527.00	2.89860	(12020618)
650308.00	4264126.00	2.89241	(11020320)	650008.00	4264226.00	2.77512	(10122319)
650108.00	4264226.00	2.78506	(10120508)	650208.00	4264226.00	2.80715	(13012606)
650308.00	4264226.00	2.87808	(10120506)	649908.00	4264326.00	2.66578	(10021220)
650008.00	4264326.00	2.68188	(10013120)	650108.00	4264326.00	2.83069	(13031223)
650208.00	4264326.00	2.86438	(10092720)	650308.00	4264326.00	2.88443	(10122319)
649908.00	4264426.00	2.55331	(10013120)	650008.00	4264426.00	2.72612	(10013120)
650108.00	4264426.00	2.80719	(10013120)	650208.00	4264426.00	2.77872	(13031223)
650308.00	4264426.00	2.87760	(11092207)	649908.00	4264526.00	2.59978	(10120622)
650008.00	4264526.00	2.65111	(09012922)	650108.00	4264526.00	2.66471	(10010507)
650208.00	4264526.00	2.68604	(12012001)	650308.00	4264526.00	2.81214	(12012001)
649908.00	4264626.00	2.68110	(09020324)	650008.00	4264626.00	2.71115	(09121718)

650108.00	4264626.00	2.67953	(10092522)	650208.00	4264626.00	2.68726	(09121718)
650308.00	4264626.00	2.70273	(10010507)	649908.00	4264726.00	2.71279	(13032923)
650008.00	4264726.00	2.72966	(11020624)	650108.00	4264726.00	2.75020	(09092507)
650208.00	4264726.00	2.78886	(09011521)	650308.00	4264726.00	2.77049	(09020324)
649908.00	4264826.00	2.82070	(10100820)	650008.00	4264826.00	2.82932	(10121422)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 7TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
650108.00	4264826.00	2.76822	(12082924)	650208.00	4264826.00	2.77989	(12082924)
650308.00	4264826.00	2.78384	(10092501)	649908.00	4264926.00	2.77901	(10012419)
650008.00	4264926.00	2.78716	(10082502)	650108.00	4264926.00	2.76860	(10120501)
650208.00	4264926.00	2.81485	(09012021)	650308.00	4264926.00	2.85584	(09041904)
649908.00	4265026.00	2.80228	(10012419)	650008.00	4265026.00	2.88188	(10012419)
650108.00	4265026.00	2.82948	(12083006)	650208.00	4265026.00	2.77764	(12083006)
650308.00	4265026.00	2.75981	(12083006)	649908.00	4265126.00	2.84084	(11090204)
650008.00	4265126.00	2.85539	(11090204)	650108.00	4265126.00	2.77646	(10110420)
650208.00	4265126.00	2.81169	(11033123)	650308.00	4265126.00	2.79634	(11033123)
649908.00	4265226.00	2.79281	(11012521)	650008.00	4265226.00	2.84062	(12100221)
650108.00	4265226.00	2.77908	(11012521)	650208.00	4265226.00	2.79339	(11012521)
650308.00	4265226.00	2.80275	(10110420)	649908.00	4265326.00	2.77511	(11091002)
650008.00	4265326.00	2.83887	(10120504)	650108.00	4265326.00	2.89612	(10120504)
650208.00	4265326.00	2.93556	(10022819)	650308.00	4265326.00	2.93352	(09011319)
649908.00	4265426.00	2.77262	(12022122)	650008.00	4265426.00	2.84389	(12022122)
650108.00	4265426.00	2.90107	(12022122)	650208.00	4265426.00	2.88081	(12022122)
650308.00	4265426.00	2.97644	(10122904)	649908.00	4265526.00	2.80817	(09121522)
650008.00	4265526.00	2.81640	(09121522)	650108.00	4265526.00	2.76606	(09121522)
650208.00	4265526.00	2.79081	(11020808)	650308.00	4265526.00	2.93752	(11020722)
649908.00	4265626.00	2.86304	(12061601)	650008.00	4265626.00	2.86283	(13021520)
650108.00	4265626.00	2.84126	(11091303)	650208.00	4265626.00	2.90415	(09092601)
650308.00	4265626.00	2.96015	(09092601)	649908.00	4265726.00	2.90977	(09012017)
650008.00	4265726.00	2.91828	(10120420)	650108.00	4265726.00	2.90172	(09092105)
650208.00	4265726.00	2.94369	(09092105)	650308.00	4265726.00	2.95744	(09092003)
649908.00	4265826.00	2.81380	(10121421)	650008.00	4265826.00	2.86743	(09092003)
650108.00	4265826.00	2.90595	(13012601)	650208.00	4265826.00	2.87681	(11122918)
650308.00	4265826.00	2.86705	(10123122)	649908.00	4265926.00	2.74199	(10101420)
650008.00	4265926.00	2.82048	(09012919)	650108.00	4265926.00	2.83873	(12101523)
650208.00	4265926.00	2.86996	(11070124)	650308.00	4265926.00	2.86234	(11010518)
649908.00	4266026.00	2.77000	(10011118)	650008.00	4266026.00	2.77869	(13013019)
650108.00	4266026.00	2.83711	(13061422)	650208.00	4266026.00	2.99920	(13061422)
650308.00	4266026.00	2.98844	(09012217)	649908.00	4266126.00	2.86620	(11010518)
650008.00	4266126.00	2.91348	(12072103)	650108.00	4266126.00	2.88965	(11050423)
650208.00	4266126.00	2.98116	(13050606)	650308.00	4266126.00	2.97951	(10021521)
649908.00	4266226.00	2.81507	(13050606)	650008.00	4266226.00	2.86676	(11011602)
650108.00	4266226.00	2.87987	(10022820)	650208.00	4266226.00	3.09986	(10021521)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 8TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
649746.00	4266713.00	2.68820	(11082322)	650450.00	4266995.00	2.72119	(09080924)
650816.00	4267310.00	2.68034	(09052602)	650824.00	4267891.00	2.69856	(13071001)
653174.00	4267141.00	3.50060	(12080919)	653512.00	4267154.00	3.21183	(12081119)
653533.00	4266892.00	3.54853	(09062320)	653826.00	4266949.00	3.09730	(10121017)
654067.00	4267505.00	2.72753	(10121017)	653808.00	4265626.00	3.25775	(10091418)
654422.00	4266037.00	2.70316	(12070920)	654749.00	4265739.00	2.59535	(10120403)
654758.00	4266883.00	2.49939	(10080205)	654810.00	4266076.00	2.55003	(10012718)
654157.00	4265797.00	2.78346	(12080105)	654393.00	4265739.00	2.59118	(13041420)
650708.00	4264027.00	2.66645	(12012002)	650808.00	4264027.00	2.77055	(10122406)
650308.00	4264127.00	2.88761	(10012505)	650408.00	4264127.00	2.79556	(10092421)
650508.00	4264127.00	2.69971	(13081906)	650608.00	4264127.00	2.77985	(10101506)
650708.00	4264127.00	2.79157	(09012117)	650808.00	4264127.00	2.69900	(09013101)
650308.00	4264227.00	2.84116	(11021808)	650408.00	4264227.00	2.87624	(10090205)
650508.00	4264227.00	2.85552	(11050422)	650608.00	4264227.00	2.79570	(11011802)
650708.00	4264227.00	2.76399	(12100107)	650808.00	4264227.00	2.79408	(11090921)
650308.00	4264327.00	2.88083	(09122707)	650408.00	4264327.00	2.81597	(13050324)
650508.00	4264327.00	2.77607	(13012508)	650608.00	4264327.00	2.80356	(10090205)
650708.00	4264327.00	2.79904	(11050422)	650808.00	4264327.00	2.79460	(11011802)
650308.00	4264427.00	2.86607	(10092703)	650408.00	4264427.00	2.86893	(13031223)
650508.00	4264427.00	2.84129	(09122707)	650608.00	4264427.00	2.87808	(13050324)
650708.00	4264427.00	2.84451	(13012508)	650808.00	4264427.00	2.77210	(10090205)

650308.00	4264527.00	2.79942	(10013120)	650408.00	4264527.00	2.74559	(11012120)
650508.00	4264527.00	2.76628	(13050324)	650608.00	4264527.00	2.89278	(09052606)
650708.00	4264527.00	2.91373	(09122707)	650808.00	4264527.00	2.84659	(13050324)
650308.00	4264126.00	2.88748	(10012505)	650008.00	4264226.00	2.72268	(10122321)
650108.00	4264226.00	2.77548	(09022008)	650208.00	4264226.00	2.76559	(09022008)
650308.00	4264226.00	2.83917	(11021808)	649908.00	4264326.00	2.66339	(10082321)
650008.00	4264326.00	2.68188	(11012120)	650108.00	4264326.00	2.79375	(10092703)
650208.00	4264326.00	2.83487	(13031223)	650308.00	4264326.00	2.87838	(09122707)
649908.00	4264426.00	2.55331	(11012120)	650008.00	4264426.00	2.72612	(11012120)
650108.00	4264426.00	2.80719	(11012120)	650208.00	4264426.00	2.74793	(10092703)
650308.00	4264426.00	2.86703	(10092703)	649908.00	4264526.00	2.59954	(10010507)
650008.00	4264526.00	2.63578	(10102723)	650108.00	4264526.00	2.65132	(10082304)
650208.00	4264526.00	2.67713	(10092802)	650308.00	4264526.00	2.80150	(10013120)
649908.00	4264626.00	2.66353	(09121718)	650008.00	4264626.00	2.66583	(09020324)
650108.00	4264626.00	2.67643	(10102723)	650208.00	4264626.00	2.67633	(09012922)
650308.00	4264626.00	2.67088	(10102723)	649908.00	4264726.00	2.71208	(10092501)
650008.00	4264726.00	2.72233	(10121023)	650108.00	4264726.00	2.71128	(10082321)
650208.00	4264726.00	2.73666	(10012219)	650308.00	4264726.00	2.76702	(09121718)
649908.00	4264826.00	2.81426	(12061602)	650008.00	4264826.00	2.81702	(12061602)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 8TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
650108.00	4264826.00	2.76465	(11020624)	650208.00	4264826.00	2.76706	(11011724)
650308.00	4264826.00	2.77612	(09041901)	649908.00	4264926.00	2.75651	(12121523)
650008.00	4264926.00	2.78399	(11091807)	650108.00	4264926.00	2.76548	(11030602)
650208.00	4264926.00	2.78299	(10012417)	650308.00	4264926.00	2.85535	(09012021)
649908.00	4265026.00	2.78656	(13090624)	650008.00	4265026.00	2.80195	(13090624)
650108.00	4265026.00	2.75738	(10011519)	650208.00	4265026.00	2.75815	(10121120)
650308.00	4265026.00	2.75078	(10120503)	649908.00	4265126.00	2.79288	(11033123)
650008.00	4265126.00	2.82304	(11033123)	650108.00	4265126.00	2.77646	(11090204)
650208.00	4265126.00	2.78112	(10110420)	650308.00	4265126.00	2.74310	(13090624)
649908.00	4265226.00	2.78426	(09040619)	650008.00	4265226.00	2.79914	(11012521)
650108.00	4265226.00	2.76662	(11033123)	650208.00	4265226.00	2.79147	(13042120)
650308.00	4265226.00	2.80275	(11090204)	649908.00	4265326.00	2.72476	(09041902)
650008.00	4265326.00	2.79878	(10022819)	650108.00	4265326.00	2.87948	(10022819)
650208.00	4265326.00	2.91673	(10120504)	650308.00	4265326.00	2.89845	(10120504)
649908.00	4265426.00	2.76034	(09120119)	650008.00	4265426.00	2.83345	(09051001)
650108.00	4265426.00	2.87430	(09051001)	650208.00	4265426.00	2.83383	(09120119)
650308.00	4265426.00	2.95101	(12022122)	649908.00	4265526.00	2.73966	(12020718)
650008.00	4265526.00	2.74645	(12020718)	650108.00	4265526.00	2.73607	(11091303)
650208.00	4265526.00	2.77956	(11091303)	650308.00	4265526.00	2.92504	(10021301)
649908.00	4265626.00	2.82063	(09092601)	650008.00	4265626.00	2.86149	(11122917)
650108.00	4265626.00	2.84100	(11012118)	650208.00	4265626.00	2.88500	(11091303)
650308.00	4265626.00	2.94655	(13092104)	649908.00	4265726.00	2.88844	(12042024)
650008.00	4265726.00	2.90150	(09020605)	650108.00	4265726.00	2.88960	(12081002)
650208.00	4265726.00	2.92885	(11122917)	650308.00	4265726.00	2.95744	(09092004)
649908.00	4265826.00	2.81313	(11122918)	650008.00	4265826.00	2.86743	(09092004)
650108.00	4265826.00	2.88351	(13050605)	650208.00	4265826.00	2.81558	(10123122)
650308.00	4265826.00	2.85805	(11020723)	649908.00	4265926.00	2.74115	(12073006)
650008.00	4265926.00	2.81727	(13013019)	650108.00	4265926.00	2.82256	(11070124)
650208.00	4265926.00	2.86504	(10011521)	650308.00	4265926.00	2.83694	(11012908)
649908.00	4266026.00	2.75826	(09050205)	650008.00	4266026.00	2.76448	(10120801)
650108.00	4266026.00	2.83333	(13062902)	650208.00	4266026.00	2.99571	(11010518)
650308.00	4266026.00	2.98761	(10011118)	649908.00	4266126.00	2.85854	(10011118)
650008.00	4266126.00	2.90033	(13061422)	650108.00	4266126.00	2.88851	(11012117)
650208.00	4266126.00	2.97237	(11050423)	650308.00	4266126.00	2.97374	(10022820)
649908.00	4266226.00	2.80908	(11011602)	650008.00	4266226.00	2.80625	(13090924)
650108.00	4266226.00	2.86599	(10062805)	650208.00	4266226.00	3.07762	(12120319)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 9TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
649746.00	4266713.00	2.68324	(12092123)	650450.00	4266995.00	2.72039	(09011518)
650816.00	4267310.00	2.67197	(12070923)	650824.00	4267891.00	2.68907	(12030818)
653174.00	4267141.00	3.37399	(11082819)	653512.00	4267154.00	3.21107	(12061520)
653533.00	4266892.00	3.52409	(09061820)	653826.00	4266949.00	3.09268	(11080819)
654067.00	4267505.00	2.72713	(12100618)	653808.00	4265626.00	2.88263	(09080719)
654422.00	4266037.00	2.69224	(09122617)	654749.00	4265739.00	2.50939	(10091418)
654758.00	4266883.00	2.41903	(10071520)	654810.00	4266076.00	2.53686	(10090924)

654157.00	4265797.00	2.76500	(12080619)	654393.00	4265739.00	2.45264	(09080719)
650708.00	4264027.00	2.66377	(11101502)	650808.00	4264027.00	2.75276	(10090121)
650308.00	4264127.00	2.79896	(12110523)	650408.00	4264127.00	2.75752	(11011802)
650508.00	4264127.00	2.68143	(10122803)	650608.00	4264127.00	2.73202	(10122803)
650708.00	4264127.00	2.75649	(10101506)	650808.00	4264127.00	2.66764	(13101624)
650308.00	4264227.00	2.78307	(13012508)	650408.00	4264227.00	2.86046	(10012505)
650508.00	4264227.00	2.76593	(12110523)	650608.00	4264227.00	2.79561	(10012505)
650708.00	4264227.00	2.76156	(10122803)	650808.00	4264227.00	2.78721	(10101506)
650308.00	4264327.00	2.85798	(09022008)	650408.00	4264327.00	2.80961	(09022008)
650508.00	4264327.00	2.74955	(09012022)	650608.00	4264327.00	2.79205	(11050422)
650708.00	4264327.00	2.76174	(12110523)	650808.00	4264327.00	2.76889	(12100224)
650308.00	4264427.00	2.80008	(10122319)	650408.00	4264427.00	2.84092	(10122321)
650508.00	4264427.00	2.82211	(11021808)	650608.00	4264427.00	2.85065	(09012022)
650708.00	4264427.00	2.80354	(09012022)	650808.00	4264427.00	2.76982	(11021808)
650308.00	4264527.00	2.79942	(11012120)	650408.00	4264527.00	2.73265	(13123121)
650508.00	4264527.00	2.75299	(10122322)	650608.00	4264527.00	2.89272	(09122707)
650708.00	4264527.00	2.89743	(10122321)	650808.00	4264527.00	2.81756	(09012022)
650308.00	4264126.00	2.79875	(12110523)	650008.00	4264226.00	2.71577	(13031223)
650108.00	4264226.00	2.77209	(09122707)	650208.00	4264226.00	2.75892	(09012022)
650308.00	4264226.00	2.78848	(13012508)	649908.00	4264326.00	2.60908	(10092522)
650008.00	4264326.00	2.66333	(13050324)	650108.00	4264326.00	2.76309	(10122319)
650208.00	4264326.00	2.83449	(10092802)	650308.00	4264326.00	2.85824	(09022008)
649908.00	4264426.00	2.54502	(12012001)	650008.00	4264426.00	2.70263	(12012001)
650108.00	4264426.00	2.78395	(12012001)	650208.00	4264426.00	2.72182	(10082321)
650308.00	4264426.00	2.80350	(10122319)	649908.00	4264526.00	2.59382	(09012922)
650008.00	4264526.00	2.56463	(10021220)	650108.00	4264526.00	2.60113	(10092403)
650208.00	4264526.00	2.67083	(10013120)	650308.00	4264526.00	2.80150	(11012120)
649908.00	4264626.00	2.63466	(10012219)	650008.00	4264626.00	2.62723	(12121106)
650108.00	4264626.00	2.66286	(11012119)	650208.00	4264626.00	2.66529	(10010507)
650308.00	4264626.00	2.64232	(09011521)	649908.00	4264726.00	2.71148	(09041901)
650008.00	4264726.00	2.70283	(09020324)	650108.00	4264726.00	2.70254	(10012219)
650208.00	4264726.00	2.73446	(10100820)	650308.00	4264726.00	2.71614	(10012219)
649908.00	4264826.00	2.78429	(12082924)	650008.00	4264826.00	2.79235	(09012021)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 9TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
650108.00	4264826.00	2.72466	(09012021)	650208.00	4264826.00	2.74341	(09092507)
650308.00	4264826.00	2.77194	(13032923)	649908.00	4264926.00	2.72028	(11030602)
650008.00	4264926.00	2.77026	(11030602)	650108.00	4264926.00	2.76430	(09012021)
650208.00	4264926.00	2.77863	(10011519)	650308.00	4264926.00	2.79909	(11121918)
649908.00	4265026.00	2.69074	(11012907)	650008.00	4265026.00	2.72769	(10011519)
650108.00	4265026.00	2.70652	(10022305)	650208.00	4265026.00	2.74048	(10022305)
650308.00	4265026.00	2.74860	(12121523)	649908.00	4265126.00	2.74897	(09102320)
650008.00	4265126.00	2.78237	(13090624)	650108.00	4265126.00	2.71403	(13090624)
650208.00	4265126.00	2.78112	(11090204)	650308.00	4265126.00	2.73498	(11020422)
649908.00	4265226.00	2.75056	(11091002)	650008.00	4265226.00	2.75063	(10110420)
650108.00	4265226.00	2.76501	(12100221)	650208.00	4265226.00	2.77479	(10110420)
650308.00	4265226.00	2.79839	(11012521)	649908.00	4265326.00	2.72437	(10022819)
650008.00	4265326.00	2.77994	(09041902)	650108.00	4265326.00	2.84893	(11062124)
650208.00	4265326.00	2.87006	(11062124)	650308.00	4265326.00	2.86286	(10122904)
649908.00	4265426.00	2.74935	(09091021)	650008.00	4265426.00	2.81965	(09120119)
650108.00	4265426.00	2.86437	(09120119)	650208.00	4265426.00	2.82434	(09051001)
650308.00	4265426.00	2.94664	(11020806)	649908.00	4265526.00	2.73408	(10120806)
650008.00	4265526.00	2.71822	(10120806)	650108.00	4265526.00	2.70962	(12020718)
650208.00	4265526.00	2.77634	(11020722)	650308.00	4265526.00	2.86293	(11091303)
649908.00	4265626.00	2.78449	(10101023)	650008.00	4265626.00	2.86049	(10101023)
650108.00	4265626.00	2.82219	(09092601)	650208.00	4265626.00	2.86923	(13062201)
650308.00	4265626.00	2.94466	(13072402)	649908.00	4265726.00	2.85613	(09092105)
650008.00	4265726.00	2.87950	(09092105)	650108.00	4265726.00	2.88098	(09020605)
650208.00	4265726.00	2.92601	(09092003)	650308.00	4265726.00	2.92809	(09092105)
649908.00	4265826.00	2.81091	(10021623)	650008.00	4265826.00	2.86464	(13050302)
650108.00	4265826.00	2.86774	(10122120)	650208.00	4265826.00	2.79701	(12073006)
650308.00	4265826.00	2.85321	(11122918)	649908.00	4265926.00	2.71913	(13013019)
650008.00	4265926.00	2.71870	(12073006)	650108.00	4265926.00	2.81890	(13012601)
650208.00	4265926.00	2.86504	(10012906)	650308.00	4265926.00	2.80845	(10120801)
649908.00	4266026.00	2.75526	(11010518)	650008.00	4266026.00	2.72168	(11081601)
650108.00	4266026.00	2.83260	(09082622)	650208.00	4266026.00	2.93791	(10120801)
650308.00	4266026.00	2.95957	(10120908)	649908.00	4266126.00	2.84022	(11012220)
650008.00	4266126.00	2.90000	(13050606)	650108.00	4266126.00	2.86331	(11011602)
650208.00	4266126.00	2.96966	(11012117)	650308.00	4266126.00	2.94937	(13090924)
649908.00	4266226.00	2.79655	(11050423)	650008.00	4266226.00	2.80390	(12042023)
650108.00	4266226.00	2.85192	(10120903)	650208.00	4266226.00	3.00250	(09050303)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 10TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
649746.00	4266713.00	2.67365	(10120423)	650450.00	4266995.00	2.69252	(10101018)
650816.00	4267310.00	2.65870	(09070121)	650824.00	4267891.00	2.66637	(10120906)
653174.00	4267141.00	3.36822	(12071020)	653512.00	4267154.00	3.18162	(13082001)
653533.00	4266892.00	3.51275	(12080119)	653826.00	4266949.00	3.08430	(11020601)
654067.00	4267505.00	2.68985	(12042722)	653808.00	4265626.00	2.83126	(12080619)
654422.00	4266037.00	2.67135	(10010608)	654749.00	4265739.00	2.46100	(12021618)
654758.00	4266883.00	2.35040	(10103123)	654810.00	4266076.00	2.51363	(12121308)
654157.00	4265797.00	2.69937	(10091418)	654393.00	4265739.00	2.43808	(10120218)
650708.00	4264027.00	2.60868	(13031124)	650808.00	4264027.00	2.71300	(12061105)
650308.00	4264127.00	2.75551	(10061304)	650408.00	4264127.00	2.74035	(09012117)
650508.00	4264127.00	2.65670	(12120722)	650608.00	4264127.00	2.70983	(13012220)
650708.00	4264127.00	2.74252	(10120424)	650808.00	4264127.00	2.61525	(12012002)
650308.00	4264227.00	2.75768	(09012022)	650408.00	4264227.00	2.83852	(10061304)
650508.00	4264227.00	2.70117	(10061304)	650608.00	4264227.00	2.77765	(10120424)
650708.00	4264227.00	2.73901	(10090204)	650808.00	4264227.00	2.74733	(09092606)
650308.00	4264327.00	2.83299	(10122321)	650408.00	4264327.00	2.80660	(09012022)
650508.00	4264327.00	2.74180	(09020101)	650608.00	4264327.00	2.78301	(10061304)
650708.00	4264327.00	2.74531	(11090921)	650808.00	4264327.00	2.76837	(12020618)
650308.00	4264427.00	2.79867	(10122322)	650408.00	4264427.00	2.83378	(10092703)
650508.00	4264427.00	2.81411	(10122321)	650608.00	4264427.00	2.84894	(11092207)
650708.00	4264427.00	2.79655	(09020101)	650808.00	4264427.00	2.76795	(10061304)
650308.00	4264527.00	2.78321	(09052606)	650408.00	4264527.00	2.70861	(09020920)
650508.00	4264527.00	2.73332	(11092207)	650608.00	4264527.00	2.89098	(10092703)
650708.00	4264527.00	2.89502	(11021808)	650808.00	4264527.00	2.80410	(11092207)
650308.00	4264126.00	2.75311	(10061304)	650008.00	4264226.00	2.70183	(10090205)
650108.00	4264226.00	2.77001	(10122319)	650208.00	4264226.00	2.75558	(13050324)
650308.00	4264226.00	2.75558	(09012022)	649908.00	4264326.00	2.57906	(09020920)
650008.00	4264326.00	2.65983	(12012001)	650108.00	4264326.00	2.76176	(09122707)
650208.00	4264326.00	2.81853	(10122321)	650308.00	4264326.00	2.83280	(10120508)
649908.00	4264426.00	2.53490	(10082304)	650008.00	4264426.00	2.65048	(09052606)
650108.00	4264426.00	2.68311	(09020920)	650208.00	4264426.00	2.71331	(13012606)
650308.00	4264426.00	2.79957	(10122322)	649908.00	4264526.00	2.57990	(09121718)
650008.00	4264526.00	2.56089	(10120202)	650108.00	4264526.00	2.58313	(11012021)
650208.00	4264526.00	2.67083	(11012120)	650308.00	4264526.00	2.78769	(09052606)
649908.00	4264626.00	2.59048	(10010506)	650008.00	4264626.00	2.61781	(10012219)
650108.00	4264626.00	2.63480	(12121106)	650208.00	4264626.00	2.61003	(12121106)
650308.00	4264626.00	2.62556	(10120202)	649908.00	4264726.00	2.65297	(12082924)
650008.00	4264726.00	2.68731	(10092501)	650108.00	4264726.00	2.68535	(09011521)
650208.00	4264726.00	2.71896	(09121718)	650308.00	4264726.00	2.69140	(12121106)
649908.00	4264826.00	2.77822	(09012021)	650008.00	4264826.00	2.77847	(11012119)

**MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT

*** THE 10TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): REN ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
650108.00	4264826.00	2.71196	(10092501)	650208.00	4264826.00	2.73115	(11020818)
650308.00	4264826.00	2.75563	(11020818)	649908.00	4264926.00	2.69747	(11011724)
650008.00	4264926.00	2.76761	(12121523)	650108.00	4264926.00	2.74353	(12061602)
650208.00	4264926.00	2.76621	(12061602)	650308.00	4264926.00	2.78705	(12061602)
649908.00	4265026.00	2.67409	(13101622)	650008.00	4265026.00	2.72026	(11012907)
650108.00	4265026.00	2.66743	(13090624)	650208.00	4265026.00	2.69183	(12121523)
650308.00	4265026.00	2.71282	(09041904)	649908.00	4265126.00	2.73043	(13090624)
650008.00	4265126.00	2.74446	(09102320)	650108.00	4265126.00	2.70020	(12010220)
650208.00	4265126.00	2.76055	(13090624)	650308.00	4265126.00	2.73408	(10110420)
649908.00	4265226.00	2.74450	(11082301)	650008.00	4265226.00	2.75063	(11090204)
650108.00	4265226.00	2.73813	(10110420)	650208.00	4265226.00	2.77479	(11090204)
650308.00	4265226.00	2.76770	(13042120)	649908.00	4265326.00	2.70692	(11062124)
650008.00	4265326.00	2.77107	(11062124)	650108.00	4265326.00	2.84281	(09041902)
650208.00	4265326.00	2.86590	(09041902)	650308.00	4265326.00	2.86008	(13070222)
649908.00	4265426.00	2.74150	(10101402)	650008.00	4265426.00	2.80193	(10101402)
650108.00	4265426.00	2.84422	(10101402)	650208.00	4265426.00	2.79348	(13010820)
650308.00	4265426.00	2.88930	(09120119)	649908.00	4265526.00	2.71806	(10120507)
650008.00	4265526.00	2.71356	(10120507)	650108.00	4265526.00	2.69009	(13070303)
650208.00	4265526.00	2.77386	(11020724)	650308.00	4265526.00	2.82850	(12022122)
649908.00	4265626.00	2.78370	(12081002)	650008.00	4265626.00	2.85619	(09092601)
650108.00	4265626.00	2.81232	(13021520)	650208.00	4265626.00	2.85874	(13092104)
650308.00	4265626.00	2.93718	(10121421)	649908.00	4265726.00	2.84097	(10120420)
650008.00	4265726.00	2.83824	(12042024)	650108.00	4265726.00	2.87828	(13050605)
650208.00	4265726.00	2.92601	(09092004)	650308.00	4265726.00	2.86829	(10021623)
649908.00	4265826.00	2.79332	(13072402)	650008.00	4265826.00	2.82643	(12101523)
650108.00	4265826.00	2.84893	(09092003)	650208.00	4265826.00	2.78045	(13050605)
650308.00	4265826.00	2.83756	(12073006)	649908.00	4265926.00	2.70752	(10021623)
650008.00	4265926.00	2.70955	(10011521)	650108.00	4265926.00	2.81840	(10011521)
650208.00	4265926.00	2.86384	(09050205)	650308.00	4265926.00	2.79974	(10011521)
649908.00	4266026.00	2.75084	(10011521)	650008.00	4266026.00	2.70695	(09050106)
650108.00	4266026.00	2.83020	(11081601)	650208.00	4266026.00	2.91367	(11081601)

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       650308.00   4266026.00        2.94900  (11050423)               649908.00   4266126.00        2.83729  (11012117)
       650008.00   4266126.00        2.88955  (10120908)               650108.00   4266126.00        2.86053  (09072706)
       650208.00   4266126.00        2.94494  (12080824)               650308.00   4266126.00        2.94237  (10083124)
       649908.00   4266226.00        2.76612  (11013117)               650008.00   4266226.00        2.80345  (10021521)
       650108.00   4266226.00        2.85114  (10121108)               650208.00   4266226.00        2.98353  (09012217)

 *** AERMOD - VERSION  14134 ***   *** Jackson Township Development                                        ***        04/17/15
 *** AERMET - VERSION  14134 ***   *** Odor Modeling - Sacramento Mather Airport MET Data                  ***        09:12:09
                                                                                                                   PAGE  30
 **MODELOPTs:   RegDFAULT CONC      ELEV      NODRYDPLT NOWETDPLT

                                        *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                    ** CONC OF OTHER    IN MICROGRAMS/M**3                        **

                                                 DATE
NETWORK
GROUP ID                           AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE
GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
-

ALL      HIGH   1ST HIGH VALUE IS       5.07375  ON 12052421: AT (  653808.00,  4265626.00,    46.66,    46.66,    0.00)  DC
         HIGH   2ND HIGH VALUE IS       4.88517  ON 12100818: AT (  653808.00,  4265626.00,    46.66,    46.66,    0.00)  DC
         HIGH   3RD HIGH VALUE IS       4.64072  ON 13041420: AT (  653808.00,  4265626.00,    46.66,    46.66,    0.00)  DC
         HIGH   4TH HIGH VALUE IS       4.53933  ON 10052719: AT (  653808.00,  4265626.00,    46.66,    46.66,    0.00)  DC
         HIGH   5TH HIGH VALUE IS       4.24905  ON 11100318: AT (  653808.00,  4265626.00,    46.66,    46.66,    0.00)  DC
         HIGH   6TH HIGH VALUE IS       3.87582  ON 13050620: AT (  653808.00,  4265626.00,    46.66,    46.66,    0.00)  DC
         HIGH   7TH HIGH VALUE IS       3.60039  ON 11090719: AT (  653174.00,  4267141.00,    49.53,    49.53,    0.00)  DC
         HIGH   8TH HIGH VALUE IS       3.54853  ON 09062320: AT (  653533.00,  4266892.00,    49.50,    49.50,    0.00)  DC
         HIGH   9TH HIGH VALUE IS       3.52409  ON 09061820: AT (  653533.00,  4266892.00,    49.50,    49.50,    0.00)  DC
         HIGH  10TH HIGH VALUE IS       3.51275  ON 12080119: AT (  653533.00,  4266892.00,    49.50,    49.50,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR

 *** AERMOD - VERSION  14134 ***   *** Jackson Township Development                                        ***        04/17/15
 *** AERMET - VERSION  14134 ***   *** Odor Modeling - Sacramento Mather Airport MET Data                  ***        09:12:09
                                                                                                                   PAGE  31
 **MODELOPTs:   RegDFAULT CONC      ELEV      NODRYDPLT NOWETDPLT

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
 A Total of        16147 Informational Message(s)

 A Total of        43872 Hours Were Processed

 A Total of         8436 Calm Hours Identified

 A Total of         7711 Missing Hours Identified ( 17.58 Percent)

 CAUTION!:  Number of Missing Hours Exceeds 10 Percent of Total!
            Data May Not Be Acceptable for Regulatory Applications.
            See Section 5.3.2 of "Meteorological Monitoring Guidance
            for Regulatory Modeling Applications" (EPA-454/R-99-005).


    ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


    ********   WARNING MESSAGES   ********
              ***  NONE  ***


    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
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Appendix BR-1

Biological Resources Assessment

Biological Resources Assessment

±1,367-Acre Jackson Township Specific Plan Area
Sacramento County, California

Prepared for:

Tsakopoulos Investments

Date:

December 16, 2015

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1.0 EXECUTIVE SUMMARY

The Jackson Township Specific Plan Area (JTSPA or Plan Area) is located central Sacramento County, north of Jackson Highway approximately four miles east of Sacramento City limits. The proposed JTSPA consists of ±1,367 acres of land that is currently utilized for a variety of purposes: livestock grazing, cropland, rural residential, and the Sacramento Raceway. Land uses surrounding the project site include: rangeland, cropland, rural residential and aggregate mining.

Foothill Associates has evaluated the biological resources in the JTSPA. This evaluation included review of relevant natural resource documents and also included field survey of portions of the Specific Plan Area conducted at various times between 2004 and 2013. The purpose of this document is to summarize the general biological resources on the site, to assess the suitability of the site to support special-status species and sensitive habitat types, and to provide recommendations for regulatory permitting or further analysis required prior to development activities occurring within the project site.

This report contains information and analysis for both the participating property (the ±889-acre Excelsior Estates property owned by Tsakopoulos Investments) and non-participating properties (the balance of the JTSPA). Foothill Associates had access to participating properties and therefore specific details about biological resources on that property is included in this document. For non-participating properties information and analysis relies on review of aerial photography, published studies, and visual observations at ground-level from participating properties and from public roadways.

Habitat types occurring on the site include: annual grassland, irrigated pasture and ditch, northern hardpan vernal pool, seasonal wetland, marsh, irrigation pond, and ephemeral drainages. Rural residential properties may contain some of these natural communities, but they also typically support non-native cultivated species typically planted around homes and gardens.

Known or potential biological constraints in the JTSPA include:

- Existing and potential habitat for special-status vernal pool plant and animal species, including state and federally listed species and critical habitat for those species;
- Potential habitat for other special-status aquatic plant and animal species;
- Potential foraging and nesting habitat for Swainson's hawk, a state-listed species;
- Potential foraging and nesting habitat for other special-status birds species;
- Sensitive habitats including: Morrison Creek, vernal pools, marshes, other potential waters of the U.S.; and
- Potential for protected trees.

2.0 INTRODUCTION

This report summarizes the findings of a Biological Resources Assessment (BRA) completed for the ±1,367-acre Jackson Township Specific Plan Area (JTSPA or Plan Area), located within Sacramento County, California (**Figure 1**). This document addresses the onsite physical features, the plant communities present, and the common plant and wildlife species occurring, or potentially occurring on the site. Further, the suitability of habitats to support special-status species and sensitive habitats are analyzed and recommendations for any regulatory permitting or for further analysis required prior to development activities on the project site are included.

This report analyzes natural resource information for the entire JTSPA, but on-the-ground field surveys only occurred on the participating property, in this case the ±889-acre Excelsior Estates property (**Figure 2**). No field survey was conducted on the balance of the JTSPA and review of natural resource documents, soil surveys, aerial photography, and observations made while on participating properties or from public rights-of-way form the basis for analyzing resources on non-participating properties.

2.1 Specific Plan Project Overview

The proposed Jackson Township Specific Plan Area (JTSPA) (Plan Area), approximately 1,367 acres, is located in southeastern Sacramento County, lying south of the Mather Specific Plan Area (MSPA), east of Excelsior Road, north of Jackson Highway and west of Eagles Nest Road in the Vineyard Community (**Figure 1**). The largest landowner, Excelsior Estates LLC, represented by Angelo G. Tsakopoulos, owns and/or controls approximately 889 acres (approximately 65%) within the Plan Area boundaries, referred to as Excelsior Estates. The remaining area is referred to as the "non-participating properties."

The Proposed Project includes a mix of land uses including low density, medium density, and high density residential, commercial and office development, and open space. Proposed open space includes lands along the northern and eastern portions of the site, intended to provide preservation of vernal pool grassland habitat. These preserves are contiguous with similar preserves on lands to the north and east and are consistent with the conservation strategy in the proposed South Sacramento Habitat Conservation Plan (SSHCP).

Additional open-space within the Plan Area includes two drainage corridors, intended to maintain surface drainage across the subject property. These corridors will contain meandering low-flow channels and will be planted with native trees and shrubs, forming two riparian woodland corridors within the Plan Area. The natural open space uses within the Plan Area encompass approximately 300 acres.

3.0 METHODS AND SOURCES OF INFORMATION

Available information pertaining to the natural resources of the region was reviewed. All references reviewed for this assessment are listed in the **References** section of this document. Site-specific information reviewed includes:

- California Department of Fish and Wildlife (CDFW). 2013. *Rarefind California Natural Diversity Database* (CNDDB). July 24, 2013. California Department of Fish and Wildlife, Sacramento, CA.;
- California Native Plant Society. 2013. *Inventory of Rare and Endangered Plants* (online edition, v6-04d). California Native Plant Society. Sacramento, CA;
- Natural Resource Conservation Service (NRCS). 1993. *Soil Survey of Sacramento County, California*. U.S. Department of Agriculture;
- Foothill Associates. 2004a. *Excelsior Estates ±866.3-Acre Site Wetland Delineation Report. Prepared for Tsakopoulos Real Estate Investments*;
- Foothill Associates. 2004b. *Draft Biological Resources Assessment, ±866-Acre Excelsior Estates, Sacramento County, California*;
- Foothill Associates. 2006. *Results of a Focused Survey for Sacramento Orcutt Grass (Orcuttia viscida) and Slender Orcutt grass (Orcuttia tenuis) on the Excelsior Estates ±866.3-Acre Site* (**Appendix C**);
- Foothill Associates. 2007a. *Delineation of Waters of U.S. Supplemental Report Regulatory #200400791, Excelsior Estates ±866-Acre Site Sacramento County, California*;
- Foothill Associates. 2007b. *Orcutt Grass Survey on the ±866- Acre Excelsior Estates Site, Sacramento County, California* (**Appendix C**);
- Foothill Associates. 2010. *90-Day 2009-2010 Wet-Season Survey for Listed Vernal Pool Branchiopods, Excelsior Estates, Sacramento County, California* (**Appendix E**);
- Foothill Associates. 2014. *Special-Status Plant Surveys on the ±886-Acre Excelsior Estates Site, Sacramento County, California*. August 5, 2014 (**Appendix D**);
- U.S. Fish and Wildlife Service (USFWS). 2013. *Federal Endangered and Threatened Species that may be affected by Projects in the Carmichael 7.5 minute series quadrangle Sacramento, CA*.; and
- U.S. Geological Survey. 1992. *Carmichael, California*. 7.5-minute series topographic quadrangle. United States Department of Interior, U.S. Geological Survey, Reston, Virginia.

Foothill Associates' biologists conducted site visits, a wetland delineation, and various field surveys of the Excelsior Estates site on a variety of dates between 2004 and 2013. These site visits included inspections in all seasons. Some surveys were general in nature, including site visits with resource agency and County personnel. Other surveys were targeted address specific plants or animals. Specific survey dates are listed in the enclosed reports (see **Appendices A through F**).

For non-participating properties, Foothill Associates' biologists relied on relevant natural resource studies, soil surveys, aerial photography, and ground-level observations made from participating properties and from public rights-of-way. The extent of aquatic habitat and upland communities within these areas was made through aerial photo interpretation, with aquatic habitats digitized into a Geographic Information System (GIS). "Windshield surveys" provided limited ground-truthing of aerial photo observations.

4.0 REGULATORY SETTING

4.1 Federal Laws and Policies

4.1.1 Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in take can result in civil or criminal penalties.

FESA and Clean Water Act (CWA) Section 404 guidelines prohibit the issuance of wetland permits for projects that jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat of such species. The U.S. Army Corps of Engineers (Corps) must consult with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) when threatened or endangered species under their jurisdiction may be affected by a proposed project. In the context of the proposed project, FESA would be initiated if development resulted in take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could jeopardize the continued existence of an endangered or threatened species or adversely modify critical habitat of such a species.

4.1.2 Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA), first enacted in 1916, prohibits any person, unless permitted by regulations, to: "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird." (16 U.S.C. 703).

The list of migratory birds includes nearly all bird species native to the United States. The Migratory Bird Treaty Reform Act (MBTRA) of 2004 further defined species

protected under the act and excluded all non-native species. The statute was extended in 1974 to include parts of birds, as well as eggs and nests. Thus, it is illegal under MBTA to directly kill, or destroy a nest of, nearly any bird species, not just endangered species. Activities that result in removal or destruction of an active nest (a nest with eggs or young being attended by one or more adults) would violate the MBTA. Removal of unoccupied nests, or bird mortality resulting indirectly from disturbance activities, is not considered a violation of the MBTA.

4.1.3 Clean Water Act, Section 404

The U.S. Army Corps of Engineers (Corps) regulates discharge of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act (CWA). "Discharge of fill material" is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines." [33 C.F.R. §328.2(f)]. Section 404 of the Clean Water Act requires that a permit be obtained from the Corps prior to discharging dredged or fill material into the "waters of the United States." Typical activities requiring Section 404 permits are:

- Depositing fill or dredged material in waters of the U.S. or adjacent wetlands to facilitate site development for residential, commercial, or recreational uses. Construction of revetments, groins, breakwaters, levees, dams, dikes, and weirs.
- Placement of riprap and road fills.

A new rule published on June 29, 2015 and which went into effect on August 28, 2015 clarified the extent of the Corps' jurisdiction over wetlands and other, non-navigable waters. The term "waters of the United States" includes (a) traditional navigable waters, (b) interstate waters, (c) territorial seas, (d) impoundments of jurisdictional waters, and (e) their tributaries. Tributaries must have a bed and bank and ordinary high water mark and may have ephemeral, intermittent, or perennial flow. Additionally the rule defines "adjacent waters" as jurisdictional due to their significant nexus with a jurisdictional water in class (a) through (e). Adjacent waters include any waters located in whole or part within 100 feet of a jurisdictional water in class (a) through (e); any waters located within the 100-year floodplain and within 1,500 feet of a jurisdictional water in class (a) through (e); and any waters within 1,500 feet f the ordinary high water mark of a traditionally navigable water, territorial sea, or the Great Lakes. Five classes of waters, prairie potholes, Carolina bays and Delmarva bays, pocosins, western vernal pools, and Texas coastal prairie wetlands, were determined to be jurisdictional due to their nexus with jurisdictional waters when considered in combination with similarly situated waters. Other waters not previously defined as jurisdictional that are located within the 100-year floodplain of a traditionally navigable water, interstate water, or territorial sea or are within 4,000 feet of the ordinary high water mark of a jurisdictional water in class (a) through (e) are evaluated on a case-specific basis. The rule specifically exempts the following types of features from Federal jurisdiction: waste treatment systems, including

ponds or lagoons designed to meet the requirements of the Clean Water Act, prior converted cropland, ditches with ephemeral or intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands, ditches that do not flow directly or indirectly into a jurisdictional water, artificially irrigated areas that would revert to dry land should irrigation cease, artificial constructed lakes, ponds, reflecting pools, or swimming pools constructed in uplands, water filled depressions created in uplands incidental to mining or construction activity, erosional features, puddles, and stormwater control features and wastewater recycling structures constructed in uplands [33 C.F.R. § 328.3].

The new rule was challenged in court and on October 9, 2015 the U.S. Court of Appeals for the Sixth Circuit stayed the new rule nationwide. Until a final ruling is made, the Corps will continue to operate pursuant to the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208) and agency guidance subsequent to this decision. Under these rules, the Corps will assert jurisdiction over wetlands adjacent to traditional navigable waters, relatively permanent non-navigable tributaries (i.e., waters that have a continuous flow at least three months out of the year), and wetlands that abut relatively permanent tributaries. The Corps will determine jurisdiction over waters that are non-navigable tributaries that are not relatively permanent, and wetlands adjacent to these tributaries, by making a determination whether such waters "significantly affect the chemical, physical, and biological integrity of other jurisdictional waters more readily understood as "navigable." Finally, the Corps generally does not consider the following to be "waters of the United States": swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow) and ditches "wholly in and draining only uplands…which do not carry a relatively permanent flow of water."

4.1.4 Clean Water Act, Section 401

Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. This program is meant to protect waters of the United States by ensuring that waste discharged into them meets state water quality standards. Because the water quality certification program is triggered by the need for a Section 404 permit, the definition of "waters of the United States" under Section 401 is the same as that used by the Corps under Section 404.

4.2 State of California Laws and Policies

4.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires evaluations of project effects on biological resources. Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study

checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if the project would result in any of the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by California Department of Fish and Wildlife or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. This is necessary because although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

4.2.2 California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to FESA but pertains to state-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Wildlife (CDFW) when preparing California Environmental Quality Act (CEQA) documents. The purpose is to ensure that the state lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse

modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). The CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the state's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

4.2.3 California Porter-Cologne Water Quality Control Act

Water quality in California is governed by the Porter-Cologne Water Quality Control Act (Porter Cologne; Ca. Water Code, Div. 7, §13000 et seq.). Under the California Porter-Cologne Water Quality Control Act, discharges to wetlands and other "waters of the state" are subject to state regulation. Under California State law, "waters of the state" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state". Waters of the State may include waters that not considered a Water of the U.S. This law assigns overall responsibility for water rights and water quality protection to the State Water Resource Control Board (SWRCB) and directs the nine statewide Regional Water Quality Control Boards to develop and enforce water quality standards within their boundaries. In general, the Regional Water Quality Control Boards regulate discharges to isolated waters in much the same way as they do for federal-jurisdictional waters, using the Porter-Cologne Act rather than CWA authority.

4.2.4 California Department of Fish and Game Code

Fish and Game Code, Section 1600 *et. sq.* (Streambed and Lakebed Alteration)

CDFW is a trustee agency that has jurisdiction under Section 1600 *et seq.* of the California Fish and Game Code. Under Section 1602, a private party must notify CDFW if a proposed project will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds except when the department has been notified pursuant to Section 1601." If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures.

Fish and Game Code, Section 3503.5 (Raptor Nests)

Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

4.2.5 CDFW Species of Concern

In addition to formal listing under FESA and CESA, species receive additional consideration by CDFW and local lead agencies during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern," developed by CDFW. It tracks species in California whose numbers, reproductive success, or habitat may be threatened.

4.2.6 California Native Plant Society

The California Native Plant Society (CNPS) maintains a list of plant species native to California that has low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the *Inventory of Rare and Endangered Plants of California* (CNPS 2013). Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS rankings:

- Rank 1A: Plants presumed Extinct in California
- Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- Rank 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere
- Rank 3: Plants about which we need more information – A Review List
- Rank 4: Plants of limited distribution – A Watch List

4.3 County Laws and Policies

4.3.1 Sacramento County General Plan

In addition to federal and State regulations, the *Sacramento County General Plan* identifies goals, objectives, and policies to provide further protection to biological resources within the County's limits (Sacramento County 2011). The General Plan's Conservation Element sets forth the goal of "preserving and managing natural habitats and their ecological functions throughout Sacramento County." In furtherance of this goal, Policy CO-58 provides that projects should "ensure no net loss of wetlands, riparian woodlands, and oak woodlands," while Policy CO-59 provides that mitigation should occur for impacts to vernal pools, wetlands, riparian habitats, native vegetation habitats and special status species habitat. The General Plan also seeks to protect native trees. Policy CO-138 encourages protection and preservation of native oak trees measuring a minimum of 6 inches in diameter at breast height. Policy CO-139 requires that native trees, other than oaks, which cannot be protected through development, shall be replaced with in-kind species, the combined diameter of which shall equal the combined diameter of the trees removed. Policy CO-145 requires that non-native tree canopy removed for development be replaced with the equivalent acreage of new tree canopy.

4.3.2 Sacramento County Tree Ordinance

Sacramento County has two tree ordinances. The Tree Ordinance (County Code Chapter 19.04) regulates removal and impacts to public trees, heritage trees, and landmark trees. Public trees are defined as any tree or shrub planted or maintained by the County on an easement, planting easement, street, County park, or public premises; heritage trees are any California oak tree with a trunk sixty inches or greater in girth, which equates to a trunk diameter of approximately 19 inches; landmark trees include any especially prominent or stately tree. The Tree Preservation Ordinance (County Code Chapter 19.12) regulates removal and impacts to any native oak tree. Native oak trees are defined as any valley oak (*Quercus lobata*), interior live oak (*Quercus wislizeni*), blue oak (*Quercus douglasii*), or oracle oak (*Quercus x morehus*) with a trunk diameter of at least 6 inches at 4-1/2 feet above the ground (DBH) or an aggregate DBH of at least 10 inches for multi-trunk trees. Tree permits are required prior to the removal or disturbance, including trenching, grading, or fill within the dripline, of a protected tree.

Additionally, native trees that are 4 inches or diameter or larger at breast height are considered in the County's CEQA review process. Tree species considered through the County's CEQA process include valley oak (*Quercus lobata*), interior live oak (*Quercus wislizeni*), blue oak(*Quercus douglasii*), coast live oak (*Quercus agrifolia*) (in the Delta area), oracle oak (*Quercus x morehus*), native oak hybrids, California sycamore (*Platanus racemosa*), Northern California black walnut (*Juglans hindsii*), Oregon ash (*Fraxinus latifolia*), Goodding's black willow (*Salix gooddingii*), box elder (*Acer negundo* v. *californicum*), white alder (*Alnus rhombifolia*), and California buckeye (*Aesculus californica*). Large, healthy non-native trees are considered in the CEQA review.

4.3.3 Swainson's Hawk Ordinance

The Sacramento County and CDFW jointly developed a methodology for determining foraging habitat impacts in unincorporated Sacramento County. The methodology recognizes that Swainson's hawk foraging habitat value is greater in large expansive open spaces and agricultural areas than in areas which have been fragmented by agricultural-residential or urban development. As a baseline, County staff assumes that properties zoned AG-40 and larger have 100% habitat value, AG-20 properties have 75% and AR-10 properties have 25% habitat value. Properties zoned AR-5 and smaller, such as AR-2, AR-1, the urban residential densities (RD-1 through 40), commercial and industrial zonings, retain no habitat value.

If a project will result in impacts to foraging habitat, there are several options to mitigate this impact. The Sacramento County worked with staff of CDFW to develop an ordinance that provides a simplified means for individual development projects to mitigate impacts to Swainson's hawk foraging habitat on a region-wide basis. The ordinance (Chapter 16.130 of the County Code) which was last amended in 2009 requires mitigation of impacts to Swainson's hawk foraging habitat by preserving similar habitat at a 1:1 mitigation ratio. Projects impacting 40 acres of foraging habitat or more must preserve foraging habitat through conservation easements or transfer of title to either the County or an approved conservation entity. Projects impacting less than 40 acres may preserve foraging habitat through conservation easements or transfer of title to the

County or an approved conservation entity or may pay an impact mitigation fee as determined by the County. The current impact mitigation fees, approved on December 15, 2009, are $10,550 per acre for land acquisition and $2,375 per acre for operations and management. Applicants can also mitigate pursuant to CDFW's 1994 *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks* (*Buteo swainsoni*) *in the Central Valley of California*. According to that staff report, projects within ten miles of an active nest but greater five miles from an active nest shall provide ½ acre of managed habitat, protected via a conservation easement, for each acre of suitable habitat impacted.

4.3.4 South Sacramento Habitat Conservation Plan

The anticipated South Sacramento Habitat Conservation Plan (SSHCP) is a regional approach to conserving species and addressing issues related to urban development, habitat conservation, open space preservation, and agricultural protection. The intent of the SSHCP is to provide a mechanism by which Sacramento County and its partners would be authorized to issue permits that allow landowners to engage in specific development activities (covered activities) that could result in the incidental take of listed species (covered species). Sacramento County would adopt a developer-paid fee based on the projected loss of habitat acreage, habitat type and long-term management costs. These fees would then fund the preservation, restoration and management elements of the anticipated SSHCP. As currently envisioned, the SSHCP would consolidate environmental efforts to protect and enhance vernal pool habitat and other aquatic and upland habitats to provide ecologically viable conservation areas in south Sacramento County for numerous species (Sacramento County 2012).

5.1.1 Site History and Overview

The ±1,367-acre site is located east of Excelsior Road, north of Jackson Highway and west of Eagles Nest Road in the Vineyard Community. The site is located within portions of Sections 23, 24, 25, and 26, Township 8 North, Range 6 East, Mount Diablo Baseline and Meridian, found on the USGS 7.5-minute series *Carmichael, California* topographic quadrangle (**Figure 1**). The site is currently being used for a variety of uses including cattle grazing, cropland, rural residential dwellings, and the Sacramento Raceway.

The majority of the site consists of open rangeland and irrigated pasture. The northwestern portion of the site was formerly used as a nursery and koi farm, which is evidenced by the presence of several large man-made impoundments for holding koi. The Sacramento Raceway occupies approximately 180 acres in the west central portion of the Plan Area. The raceway contains a drag strip, dirt track, motocross track, and associated infrastructure (lights, grandstands, parking etc.). The raceway dates from the mid-1960s.

Rural residences and associated out buildings within the site occur along Excelsior Road along Jackson Highway, and along Tree View Lane. Small areas of cropland (strawberry production) occur along Excelsior Road. The unimproved alignment of Kiefer Boulevard occurs along the northern boundary of the site. While the County has attempted to control access to this dirt road, significant trespass and litter dumping has occurred here. In addition, the portion of the Plan Area north of the Kiefer right-of-way receives significant use by off-road vehicles. There is abundant evidence of campfires, target practice, etc. in this area.

Land uses surrounding the site include open rangeland and residential subdivisions to the north, a large gravel pit and rural residential to the west, open rangeland and rural residential to the south and east.

5.1.2 Topography and Drainage

Moderate rolling hills and extensive flatlands characterize the topography of the site and the surrounding area. Slopes are dominantly convex and incised by shallow drainageways and depressions. Elevation ranges from 75 to 140 feet above mean sea level (MSL). Man-made aquatic features include irrigation and farm ponds, irrigation ditches, and abandoned Koi farm impoundments.

The hydrologic regime on the site is dominated by seasonal rainfall and storm water run-off, primarily between November and April. The site drains primarily to the west via four drainage features. These drainage features consist of a tributary to Morrison Creek, which passes through the northeast corner of the site, an ephemeral drainage within the northwest corner of the site that crosses beneath Excelsior Road and is ultimately

tributary to the mining pit west of Excelsior Road, and two riverine features in the southern half of the site that merge together and form a perennial marsh. From here the drainage flows toward the intersection of Jackson Highway and Excelsior Road. This riverine system forms the headwaters of Elder Creek.

The hydrology of the perennial marsh habitat on the site is largely dependent on nearby artificially irrigated pasture. The pastures are flood irrigated via three irrigation ditches. One of these ditches runs north to south and irrigates the pasture area immediately to the west, as well as directing irrigation water to another ditch that runs east-west and irrigates the pasture area to the south. These ditches are fed irrigation water from a pond via a valve gate. The pond is filled periodically with groundwater pumped from a nearby well. Another north-south running ditch occurs to west of the aforementioned ditch. This ditch irrigates pasture areas to the east and the west. Irrigation water for this ditch comes from groundwater pumped from another well located in the vicinity of this ditch.

5.1.3 Soils

The Natural Resources Conservation Service (NRCS) has mapped eight soil units within the Plan Area (**Figure 3**). The soil units that occur on the Plan Area include: **Hedge loam, 0 to 2 percent slopes**; **Hicksville gravelly loam, 0 to 2 percent slopes**, **occasionally flooded**; **Red Bluff loam, 0 to 2 percent slopes**; **Red Bluff loam, 2 to 5 percent slopes**; **Red Bluff-Redding complex, 0 to 5 percent slopes**; **Redding gravelly loam**, **0 to 8 percent slopes**; **San Joaquin silt loam, 0 to 3 percent slopes**; and **Xerarents-Redding Complex, 0 and 2 percent slopes** (NRCS 1993)**.** General characteristics associated with these soils types are described below.

- **Hedge loam, 0 to 2 percent slopes**: Hedge loam is a moderately deep, moderately well drained soil located on low terraces commonly adjacent to drainageways, on flood plains, and on low stream terraces. This soil formed in alluvium derived from granitic rocks. Permeability is moderately slow and available water capacity is low or moderate. Vegetation typically found on this soil unit consists of non-native annual grasses and herbaceous plant species (NRCS 1993). The hydric soils list for Sacramento County identifies one hydric inclusion within this soil type: Columbia, found on low floodplains (NRCS 2015).

- **Hicksville gravelly loam, 0 to 2 percent slopes, occasionally flooded**: Hicksville gravelly loam is a very deep, moderately well drained soil on low stream terraces and the alluvial flats adjacent to drainageways on high terraces and hills. This soil unit formed in alluvium derived from mixed rock sources. Permeability is moderately slow and the available water capacity is high. Vegetation typically found on this soil unit consists of non-native annual grasses and herbaceous plant species (NRCS 1993). The hydric soils list for Sacramento County identifies two hydric inclusions within this soil type: Cosumnes, found on low floodplains and Columbia, found on floodplains (NRCS 2015).

- **Red Bluff loam, 0 to 2 percent slopes**: Red Bluff loam is a very deep, well drained soil located on intermediate terraces. This soil unit formed in alluvium derived from

mixed rock sources. Permeability is moderately slow and available water capacity is high. Vegetation typically found on this soils unit consists of non-native annual grasses and herbaceous plant species (NRCS 1993). The hydric soils list for Sacramento County identifies one unnamed hydric inclusion found within depressions of this soil type (NRCS 2015).

- **Red Bluff loam, 2 to 5 percent slopes**: Red Bluff loam is a very deep, well drained soil located on high terraces. This soil unit formed in alluvium derived from mixed rock sources. Permeability is slow and available water capacity is high. Vegetation typically found on this soil unit consists of non-native annual grasses and herbaceous plant species (NRCS 1993). The hydric soils list for Sacramento County identifies one unnamed hydric inclusion found within depressions of this soil type (NRCS 2015).

- **Red Bluff-Redding complex, 0 to 5 percent slopes**: Red Bluff soil is a very deep and well drained soil formed in alluvium derived from mixed rock sources. Permeability is slow and available water capacity is high. Redding soil is a moderately deep, moderately well drained formed in gravel and cobble alluvium derived from mixed rock sources. Permeability is very slow and available water capacity is low. This complex is found on high terraces, and usually supports annual grasses and forbs (NRCS 1993). The hydric soils list for Sacramento County identifies one unnamed hydric inclusion found within depressions of this soil complex (NRCS 2015).

- **Redding gravelly loam, 0 to 8 percent slopes**: Redding gravelly loam is a moderately deep, moderately well drained soil located on high terraces and terrace remnants. This soil unit formed in gravel and cobble alluvium derived from mixed rock sources. Permeability is very slow and available water capacity is low. Vegetation typically found on this soil unit consists of non-native annual grasses and herbaceous plant species. The hydric soils list for Sacramento County identifies one unnamed hydric inclusion found within depressions of this soil type.

- **San Joaquin silt loam, 0 to 3 percent slopes**: San Joaquin silt loam is a moderately deep, moderately well drained soil located on low terraces. This soil formed in alluvium derived from dominantly granitic rocks. Permeability is very slow and available water capacity is low. Vegetation typically found on this soil unit consists of non-native annual grasses and forbs, and a few scattered native oaks (NRCS 1993). The hydric soils list for Sacramento County identifies one hydric inclusion within this soil type: Galt, found within depressions (NRCS 2015).

- **Xerarents-Redding complex, 0 to 2 percent slopes**: Xerarents is a moderately deep to very deep, well drained and altered soil formed in fill material mixed by leveling activities. This fill material is derived from nearby soils of mixed origin. Permeability is moderate to very slow and available water capacity is moderate or high. Redding soil is moderately deep and moderately well drained soil formed in gravel and cobble alluvium derived from mixed rock sources. Permeability is very slow and available water capacity is low. Vegetation typically found on this soil complex consists of irrigated pasture grasses and legumes (NRCS 1993). The hydric

soils list for Sacramento County identifies one hydric inclusion within this soil complex: Sailboat, found on low floodplains (NRCS 2015).

5.1.4 Habitats

Excelsior Estates

Annual Grassland

The biological community covering the majority of the Excelsior Estates property is annual grassland. Central Valley annual grassland communities are composed largely of non-native annual grasses and forbs. The dominant plant species observed in the annual grassland consists of soft brome (*Bromus hordeaceus*), wild oat *(Avena* sp.), medusa head (*Elymus caput-medusae*), long-beaked filaree (*Erodium botrys*), hawkbit (*Leontodon taraxacoides*), mouse-tail grass *(Vulpia myuros*), Spanish clover (*Acmispon americanus*), tarplant (*Holocarpha virgata*), Fitch's tarweed (*Centromadia fitchii*), barley (*Hordeum murinum* ssp. *leporinum*), and Italian ryegrass (*Festuca perennis*).

Annual grassland typically supports breeding, foraging, and shelter habitat for several species of wildlife including raptors and migratory birds. Wildlife species observed in the grasslands during site surveys include: western kingbird (*Tyrannus verticalis*), European starling (*Sturnus vulgaris*), Brewer's blackbird (*Euphagus cyanocephalus*), western meadowlark (*Sturnella neglecta*), killdeer *(Charadrius vociferous*), northern mockingbird (*Mimus polyglottos*), northern harrier (*Circus cyaneus*), turkey vulture (*Cathartes aura*), savannah sparrow (*Passerculus sandwichensis*), white-tailed kites (*Elanus leucurus*), red-tailed hawks (*Buteo jamaicensis),* California ground squirrel (*Spermophilus beecheyi*), cottontail *(Sylvilagus* sp.), and black-tailed jackrabbit (*Lepus californicus*).

Northern Hardpan Vernal Pools

The vernal pools on the Excelsior Estates property can be best characterized as Northern Hardpan Vernal Pool according to A Manual of California Vegetation (Sawyer and Keeler-Wolf, 1995). These pools occur on old, acidic, iron-silica cemented soils including Corning, Redding, and San Joaquin soils series (Sawyer and Keeler-Wolf, 1995). Northern hardpan vernal pools are seasonally flooded depressions found on soils with an impermeable hardpan layer. The impermeable layer allows the pools to retain water much longer than the surrounding uplands; nonetheless, the pools are shallow enough to dry up each season. Vernal pools are scattered throughout the site, with the highest density of pools occurring in the east – central portion. Some vernal pools on site are inter-connected by riverine seasonal wetland. This typically occurs where one pool overflows into another relatively regularly.

Whereas California grasslands now contain mostly non-native species, vernal pools typically support a predominance of native plants. Plant species observed within the vernal pools throughout the site are typical of species which are adapted to seasonally inundated conditions. Plant species observed within the vernal pool habitat on site include manna grass (*Glyceria declinata*), coyote thistle *(Eryngium vaseyi*), spikerush (*Eleocharis macrostachya*), hedge-hyssop (*Gratiola ebracteata*), white-headed navarretia

(*Navarretia leucocephala*), annual hairgrass (*Deschampsia danthonioides*), woolly marbles (*Psilocarphus* sp.), and popcorn flower (*Plagiobothrys stipitatus*).

Vernal pools play a valuable role in the food chain for a wide array of animals, including birds of prey, migratory waterfowl, shorebirds, frogs, toads, salamanders and pollinating insects. They are also home for listed vernal pool crustaceans.

Seasonal Wetlands

Seasonal wetland habitat is typically associated with shallow drainages and swales (riverine features) or depressions, that inundate long enough to support hydric soils and hydrophytic vegetation, but do not inundate sufficiently to support vernal pool species. Riverine seasonal wetlands are characterized by the seasonal flow of water induced by the onset of heavy rains. A depressional seasonal wetland is characterized by shallow land depressions that remain saturated for extended periods.

Dominant plant species observed within the seasonal wetland habitat on site include quaking grass (*Briza minor*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), Italian ryegrass, annual beard grass (*Polypogon monspeliensis*), annual hairgrass, toad rush, and curly dock (*Rumex crispus*).

Marsh

Both perennial and seasonal marsh habitat occur within the Excelsior Estates property. Aside from perennial marshes remaining inundated or saturated throughout the year, both support perennial herbaceous plant species that tolerate high soil moisture and seasonal to permanent soil saturation or inundation. For both aquatic habitat types, inundation/saturation persists well into the warm season.

Plant species observed within the marsh habitat on site include broad-leaved cattail (*T. latifolia*), narrow-leaved cattail (*T. angustifolia*), bulrush (*Scirpus* spp.), water primrose (*Ludwigia peploides*), pennyroyal (*Mentha pulegium*), nutsedge (*Cyperus eragrostis*), creeping spikerush (*Eleocharis macrostachya*), and four angled spikerush (*Eleocharis quadrangulata*). In addition, wildlife species observed within the marsh habitat include: black phoebe (*Sayornis nigricans*), Brewer's blackbird, red-winged blackbird, ring-necked pheasant, and song sparrow (*Melospiza melodia*).

Marshes provide shelter and foraging habitat for several species of wildlife on the site including resident and migratory bird species, amphibians, reptiles, aquatic invertebrates, and foraging mammals. Wildlife expected to occur in the marsh habitat on the site include: egret, heron, waterfowl, bullfrog, pacific tree frog, opossum *(Didelphis virginiana*), and raccoon (*Procyon lotor*). Most of the marsh habitats on site are supported by summer irrigation runoff.

Irrigated Pasture, Ditch, Drainages, and Farm Ponds

Irrigated pasture habitat is found mainly in the south-central portion of the Excelsior Estates property. Irrigated pasture vegetation is typically a mix of warm-season plants dependent on summer irrigation. The abundance of the vegetation can vary, according to

season and livestock stocking levels, from a few inches to a foot or more. Irrigation ditches and drainages occur on site in association with the pastures. Common species observed in this habitat include: Bermuda grass (*Cynodon dactylon*), nutsedge (*Cyperus eragrostis*), dallis grass (*Paspalum dilatatum*), cattails (*Typha* sp.) and canary grass (*Phalaris* sp.).

The irrigated pasture habitat on site supports breeding, foraging, and shelter habitat for species of wildlife similar to annual grassland habitat discussed above. The irrigation ditches also provide suitable foraging habitat for egrets and herons as well as breeding habitat for amphibians such as bullfrog (*Rana catesbiana*) and pacific tree frog (*Hyla regilla*). Species observed in this habitat during the site surveys include ring-necked pheasant (*Phasianus colchicus*), red-winged black bird *(Agelaius phoeniceus*), yellow-billed magpie (*Pica nuttallii*), phainopepla (*Phainopepla nitens*), and American robin (*Turdus migratorius*).

A number of farm ponds and other impoundments are found in the JTSPA, primarily associated with rural residences. These ponds were constructed by excavation, damming a drainage swale, or some combination of the two. Water supply is assumed to be derived from runoff, although groundwater pumping could also play a role in filling these ponds.

Irrigation Ponds

The largest pond in the Plan Area is found on the Excelsior Estates property. This pond serves as the irrigation water supply for irrigated pastures located in the south-central portion of the site. The pond is located at a relatively high elevation and appears to have been excavated solely for the purpose of irrigation supply.

Aquatic plant species observed in this pond habitat include: cattail, spikerush, meadow fescue (*Festuca pratensis*), hairy willow herb (*Epilobium ciliatum*), bird's-foot trefoil (*Lotus conriculatus*), and water primrose. Willow trees (*Salix* spp.) were observed along the banks of the irrigation pond.

Several species of bird and aquatic wildlife were observed using the irrigation pond, such as great egret, great blue heron, double-crested cormorant (*Phalacrocorax auritus*), green heron (*Butorides virescens*), common moorhen (*Gallinula chloropus*), white-tailed kite, Brewer's blackbird, mallard (*Anas platyrhynchos*), bullfrog, ground squirrel (burrows), and raccoon (tracks).

Rural Residential

A section of rural residential is located in the northwest portion of the Excelsior Estates property and several small areas are located throughout the southern portion of the site. This community consists largely of widely scattered residential houses, driveways, outbuildings, and open pasture and annual grassland. This community has been heavily disturbed by past construction activity and is largely limited to ruderal and annual grassland species, such as filaree, soft brome, hawkbit and pineapple weed (*Matricaria discoidea*).

Non-Participating Properties

Industrial/Commercial

The most extensive biological community in the non-participating properties is the industrial/commercial community, which surrounds the Sacramento Raceway, in the northwestern portion of the JTSPA. As mentioned above, this community consists of a drag strip, dirt track, motocross track, and associated infrastructure (lights, grandstands, parking etc.). As a result of these developments, soil disturbance has been extensive and plant species are largely limited to ruderal and annual grassland species, such as filaree, soft brome, hawkbit and pineapple weed. Wetland habitats are found within this community, but will be discussed separately below.

Due to past disturbance and current activities, wildlife in this community is also limited, consisting mostly of species found in the annual grassland habitat, such as European starling, Brewer's blackbird, California ground squirrel, and black-tailed jackrabbit (*Lepus californicus*).

Rural Residential

Most of the rural residential community is found in the non-participating properties, and consists largely of widely scattered residential houses, driveways, outbuildings, and open pasture and annual grassland. This community is also highly disturbed, and therefore plant and wildlife species are similar to those found in the industrial/commercial community.

Annual Grassland

The annual grassland community is commonly found throughout the non-participating properties in upland areas. Although these grasslands may experience more disturbances due to their proximity to residential and commercial development, these areas support most of the plant and animal species listed in the annual grassland description above under the discussion of Excelsior Estates.

Northern Hardpan Vernal Pools

Although not common in non-participating properties, vernal pools were documented at various locations along Jackson Highway and near the Sacramento Raceway. As discussed above, the northern hardpan vernal pool habitat is characterized by seasonally flooded depressions found on soils with an impermeable hardpan layer. Similar plant and animal species found in the Excelsior Estates vernal pools would be expected in non-participating properties as well.

Seasonal Wetlands

Seasonal wetlands are frequently found on non-participating properties, especially in the southwest and southeast corners of the JTSPA. These wetlands differ from vernal pools in that they are shallower drainages and swales or depressions that are inundated for a shorter time. Hence, seasonal wetlands support a different array of plant species, documented above under the discussion of Excelsior Estates, than do vernal pools.

Marsh

Perennial marsh in the non-participating properties is located along Jackson Highway in the lower middle boundary of the JTSPA. Perennial marshes remain inundated or saturated throughout the year, and support perennial herbaceous plant species that tolerate high soil moisture. Plant and wildlife species likely to be present in the marsh community are documented in the Excelsior Estates section above.

Irrigated Pasture, Ditch, Drainages, and Farm Ponds

Farm ponds are found within the non-participating properties south of the Sacramento Raceway and in the southeast corner of the JTSPA. Irrigated pasture, ditches and drainages may be found in various locations in the non-participating properties. Plant and wildlife species are discussed above.

5.1.5 Native and Non-Native Trees

Historically the JTSPA supported few or no trees, due to the presence of hardpan soils and the absence of summer water. Growth of trees within the Plan Area was promoted by the development of irrigation facilities, the establishment of rural residential uses, and tree planting. While the site is still mostly treeless, there are considerable areas of non-native tree species on site, mostly associated with rural residential parcels. Eucalyptus is probably the most common tree species within the Plan Area, but other typical landscape and ornamental species (mulberry, palm, etc.) are found as well. See **Appendix A** for a copy of the Arborist Report prepared specifically for the ±889-acre Excelsior Estates property within the JTSPA and the surrounding non-participating properties.

As detailed in the Arborist Report (**Appendix A**), five native oak trees, which are protected by the Sacramento County Tree Ordinance, were identified in the JTSPA. In addition, there are approximately 95 native trees of other species, most of which are found around the ponds and marsh areas and thus may be considered riparian trees. Approximately 700 landscape trees of various species are located in the JTSPA. Although not protected by the Sacramento County Tree Ordinance, removal of landscape trees is subject to General Plan Policy CO-145, which requires equal replacement of tree canopy.

5.1.6 Special-Status Species

Special-status species are plant and animal species that have been afforded special recognition by federal, State, or local resource agencies or organizations. Special-status species are defined as:

- Listed or proposed for listing under CESA and/or FESA;
- Protected under other regulations (e.g. Migratory Bird Treaty Act);
- Listed by CDFW as a Species of Special Concern;
- Ranked by CNPS as being rare (a ranking of 1A, 1B, or 2); or
- Any other species that would receive consideration according to the CEQA Guidelines.

Special-status species considered for this analysis are based on queries of the CNDDB for the *Carmichael* quadrangle, the USFWS Online Species List for the *Carmichael* quadrangle, and the CNPS Inventory of Rare and Endangered Plants List for the *Carmichael* quadrangle (online version) (**Appendix B**). **Appendix B** includes the common name and scientific name for each species, regulatory status (federal, State, local, CNPS), habitat descriptions, and potential for occurrence on the project site. **Figure 4** depicts the locations of special-status species recorded in the CNDDB within five miles of the Plan Area. The following set of criteria has been used to determine each species potential for occurrence on the site:

- **High**: Species is known to occur on or near the site (based on CNDDB records within 8 km or 5 mi, and/or based on professional expertise specific to the site or species) and there is suitable habitat on site.

- **Medium**: Species is known to occur in the vicinity of the site, and there is marginal habitat on site. -OR- Species is not known to occur in the vicinity of the site; however there is suitable habitat on site.

- **Low**: Species is not known to occur in the vicinity of the site and there is not suitable habitat for the species on site.

- **No**: Species was surveyed for during the appropriate season with negative results for the species occurrence on site. -OR- The site is out of the known range of the species.

Only those species that are known to be present or that have a medium to high to low potential for occurrence will be discussed further in this BRA.

Listed and Special-Status Plants

Excelsior Estates

As indicated in **Appendix B**, seven special-status plant species have a high potential to occur within both the Excelsior Estates and non-participating properties and include: Ahart's dwarf rush, Bogg's Lake hedge-hyssop, Dwarf downingia, Legenere, Sacramento orcutt grass, slender Orcutt grass, and Sanford's arrowhead. Focused surveys were performed only on Excelsior Estates for all of these species, which none of these species have been observed within the Excelsior Estates property (**Appendices C and D**). The special-status plant species that have a potential to occur on the site are discussed further in detail in the following paragraphs.

Ahart's Dwarf Rush

Ahart's dwarf rush is an annual herb that occurs primarily on the margins of vernal pools in areas that are sparsely vegetated. The vernal pools on site represent potential habitat for this species. There are thirteen reported occurrences of this species within California, one within five miles of the site. The nearest occurrence is less than a ¼ mile northeast of the site boundary (**Figure 4**) (CDFW 2013). Based on the presence of suitable habitat

and documented occurrences within the site vicinity, this species has a *medium* to *high* potential to occur on site.

Bogg's Lake Hedge-hyssop

Bogg's Lake hedge-hyssop is and annual herb that occurs in vernal pools primarily on saturated clay (adobe) soils and, at the Bogg's Lake Preserve, on shallow lake margins (CNPS 2013). The vernal pools on site represent potential habitat for this species. There are 93 reported occurrences of this species within California, one of which is within five miles of the site. The nearest occurrence is less than ¼ mile northeast of the site boundary (**Figure 4**) (CDFW 2013). Based on the presence of suitable habitat and documented occurrences within the vicinity, this species has a *high* potential to occur on site.

Dwarf Downingia

Dwarf downingia is an annual herb that occurs in vernal pools and swales. The vernal pools on site represent potential habitat for this species. There are 127 reported occurrences of this species within California, 11 of which are within Sacramento County (CDFW 2013). There are no reported occurrences of this species within five miles of the site, the presence of suitable habitat on site creates a *medium* potential for this species to occur there.

Legenere

Legenere is an annual herb that occurs in vernal pools and swales, seasonal marshes, artificial ponds, floodplains of intermittent streams, and other seasonally inundated habitats (CNPS 2013). The vernal pools and seasonal wetlands on site represent potential habitat for this species. There are 79 reported occurrences of this species within California, six of which are within five miles of the site (**Figure 4**) (CDFW 2013). The nearest occurrence borders the site to the north. Based on the presence of suitable habitat and documented occurrences within the vicinity, this species has a *high* potential to occur on site.

Sacramento and Slender Orcutt Grasses

Though Sacramento and slender Orcutt grasses have been documented within five miles of the site, surveys of the Excelsior Estates property for these species in 2006 and 2007 produced negative results (**Appendix C**). Although a portion of the JTSPA is within critical habitat for these two species, neither of these species has ever been observed with the JTSPA.

Sanford's Arrowhead

Sanford's arrowhead is a perennial herb that occurs in shallow, fresh-water conditions. The seasonal and perennial marshes represent habitat for this species. There are 93 reported occurrences of this species within California, five of which are within five miles

of the site (**Figure 4**) (CDFW 2013). The nearest occurrence is approximately 2 miles west of the site. Based on the presence of suitable habitat and documented occurrences within the vicinity this species has a *high* potential to occur on site.

Non-Participating Properties

As mentioned above, no focused surveys for potential special-status plant species were performed on the non-participating properties. However, because wetland habitat does occur in the non-participating properties, the special-status plant species listed above have the potential to occur within those properties.

Listed and Special-Status Animals

Excelsior Estates

As indicated in **Appendix B**, several special-status animal species have a *medium* to *high* potential to occur on both Excelsior Estates and non-participating properties. The special-status animal species that have a potential to occur on the Excelsior Estates site are discussed further in detail in the following paragraphs.

Listed Vernal Pool Crustaceans

Two species of listed vernal pool crustaceans, vernal pool fairy shrimp and vernal pool tadpole shrimp, occur on the Excelsior Estates property (**Figure 4**) (CDFW 2013). Vernal pools on the Excelsior Estates property represent potential habitat for these species, but marsh habitats and pond habitats do not support these species. Wet-season surveys for vernal pool crustaceans were performed during 2009-2010 on the Excelsior Estates property and are included in **Appendix E** of this report. These surveys indicated that both species exist in the vernal pools on the Excelsior Estates property.

Approximately 648 acres of the Excelsior Estates property is within an area designated as critical habitat for both vernal pool fairy shrimp and vernal pool tadpole shrimp (**Figure 5**).

Northwestern Pond Turtle

Northwestern pond turtle is associated with permanent or nearly permanent water in a variety of habitats. This species requires basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks (Zeiner *et. al.*, 1990). Nests are built in uplands in a variety of soil types with a relatively high humidity. Though there is suitable habitat on site and there is a reported occurrence in the vicinity, it is believed that there is a *low* potential for this species to occur on site due to the fact that there is no substantial hydrologic connection between the pond and known occupied habitat.

This species has not been observed on the Excelsior Estates property, during any of Foothill Associates' previous visits to that property.

Western Spadefoot Toad

Western spadefoot toad occurs throughout the Central Valley and adjacent foothills. Breeding and egg-laying occur almost exclusively in shallow, temporary pools that fill during winter rains (Zeiner *et. al.*, 1990). This activity occurs primarily from late winter to the end of March. This species spends the majority of the year in burrows that they construct themselves, though mammal burrows may also be used. The nearest CNDDB occurrence for this species is within a ¼ mile northeast of the site (**Figure 4**) (CDFW 2013). The vernal pools onsite represent potential habitat for this species, but the species has not been observed onsite during aquatic invertebrate surveys or spring rare-plant surveys. Based on the presence of suitable habitat and the proximity of a reported occurrence, it is believed that there is a *high* potential for this species to occur onsite.

Non-Participating Properties

No focused surveys for potential special-status wildlife species were performed on the non-participating properties. However, because wetland habitat does occur in the non-participating properties, the special-status animal species listed above have the potential to occur within those properties.

Approximately 131 acres of the non-participating properties are designated as critical habitat for both vernal pool fairy shrimp and vernal pool tadpole shrimp (**Figure 5**).

Listed and Special-Status Nesting Raptors/Other Birds

Excelsior Estates

Several special-status raptors and other bird species have a potential to occur on the Excelsior Estates property as indicated in **Appendix B**. Each of these species is discussed in detail in the following paragraphs. No focused surveys for nesting raptors or other birds were conducted for Excelsior Estates. However, sightings were recorded for various species, as documented below.

Loggerhead Shrike

Loggerhead shrikes are a common resident and winter visitor in lowlands and foothills throughout California. The trees surrounding the pond and the adjacent pasture and annual grassland represent potential nesting and foraging habitat for this species, respectively. Although this species has not been observed on the site, there is a *high* potential for this species to occur on the Excelsior Estates property.

Swainson's Hawk

Swainson's hawk is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen Co., and Mojave Desert (Zeiner *et. al*., 1990). This species is known to occur in the Central Valley from March to September. They are known to breed in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. They forage in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. Breeding occurs from late March to late August, peaking in late May through July (Zeiner *et. al*., 1990). Swainson's hawk begin

their migration to their wintering grounds during the months of September and October. The nearest reported CNDDB occurrence is about 2 miles south of the site. According to the CNDDB, there are several active nests within five to 10 miles of the site (**Figure 4**) (CDFW 2013). Nests are considered active when they have been actively used at least once in the preceding five years. The annual grassland areas of the site present potential foraging habitat for this species. The trees surrounding the pond and those adjacent to the site represent potential nesting habitat for this species. Although this species has not been observed on the site, there is a *high* potential for this species to occur on the Excelsior Estates property.

Tricolored Blackbird

Tricolored blackbirds are found throughout the Central Valley and in coastal districts from Sonoma County to the south. This species nests near fresh water, typically in emergent wetlands with tall, dense cattails or tules, and also in thickets of willow, blackberry, and wild rose (Zeiner *et. al*., 1990). They typically feed in flocks in grassland and cropland habitats. The CNDDB shows occurrences of this species within five miles of the site (**Figure 4**) (CDFW 2013). The marsh habitat and pasture and annual grasslands represent potential nesting and foraging habitat for this species, respectively. Although this species has not been observed on the site, there is a *high* potential for this species to occur on the Excelsior Estates property.

Western Burrowing Owl

Western burrowing owls are found primarily in grasslands and agricultural areas throughout California. Burrowing owls utilize mammal burrows for nesting and roosting, but may also use pipes, culverts, and nest boxes where burrows are not available (Zeiner *et. al*., 1990). This species typically nests in small colonies. The nearest reported CNDDB occurrence is approximately ½ mile from the site (**Figure 4**) (CDFW 2013). The annual grasslands represent potential nesting and foraging habitat for this species. Though not in very high densities, ground squirrel burrows were observed throughout the Excelsior Estates site. All burrow colonies observed were surveyed for signs of use by burrowing owls. Typical signs of use include: cast pellets, molted feathers, prey remains, eggshell fragments, or excrement at or near a burrow entrance. None of these indicators were observed in association with the burrow colonies occurring on site. A burrowing owl was observed on the Excelsior Estates property in the winter of 2010, but it was not observed occupying a burrow. Therefore, there is a *high* potential for this species to occur on the Excelsior Estates property.

White-tailed kite

White-tailed kites are found in grasslands and agricultural areas in valley and coastal lowlands. This species builds nest in dense stands of oaks, willows, or other tree species near open foraging areas (Zeiner *et. al*., 1990). The pasture and annual grassland areas of the site present potential foraging habitat for this species. The trees around the ponds and associated with residential uses represent potential nesting habitat for this species. During several site visits to Excelsior Estates, white-tailed kites were observed foraging

in the annual grassland areas of the site; however no nests sites for this species were observed. Therefore, there is a *high* potential for this species to nest on the Excelsior Estates property.

Other Raptor Species

Other raptor species forage and nest in a variety of habitats throughout Sacramento County. Raptor nests are protected under the MBTA and Section 3503.5 of the California Fish and Game Code, which makes it illegal to destroy any active raptor nest. Trees on site and in the vicinity of the site may provide potential nesting habitat for raptor species. In addition, potential foraging for raptors occurs within the pasture and annual grassland habitat on the site. Raptors observed in flight over the Excelsior Estates property include: northern harrier, red-tailed hawk, turkey vulture, and white-tailed kite. Therefore, there is a *high* potential for raptors to nest on the Excelsior Estates property and in the vicinity.

Non-Participating Properties

No focused surveys or sightings of nesting raptors or other birds were documented for the non-participating properties. However, all of the species listed above under the discussion of Excelsior Estates have the potential to occur in the non-participating properties.

Sensitive Habitats

Sensitive habitats are those habitats that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the California Fish and Game Code, or Section 404 of the Clean Water Act. Additionally, sensitive habitats are protected under the specific policies outlined in the Sacramento County General Plan.

Excelsior Estates

Sensitive habitats identified on Excelsior Estates include: native tree stands, Morrison Creek, vernal pools, marshes, and other potential waters of the U.S. (**Figure 6**). These sensitive resources represent potential habitat for several of the special-status species discussed above.

Potential Jurisdictional Waters

As described above in **Section 4.0**, **Regulatory Setting**, the term "waters of the United States" includes a variety of waters including navigable rivers, some tributaries to these rivers and certain wetlands adjacent to such navigable and non-navigable tributaries. Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratories 1987). The majority of jurisdictional wetlands in the United States meet three wetland assessment criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. Jurisdictional waters can also be defined by exhibiting a defined bed and bank and ordinary high water mark (OHWM). As discussed

in **Section 4.1.3**, jurisdictional waters of the U.S. are subject to Section 404 of CWA and are regulated by the Corps. Waters of the State, which may include waters not subject to federal jurisdiction, are regulated under Section 401 if the CWA and the Porter-Cologne Water Quality Control Act (see Sections 4.1.4 and 4.2.3). Taken together waters of the U.S. and state are considered jurisdictional waters.

Foothill Associates delineated jurisdictional waters on the Excelsior Estates property. The Corps concurred with Foothill's delineation and issued a Preliminary Jurisdictional Determination (PJD) for the Excelsior Estates property on November 6, 2015. A copy of this PJD is enclosed as **Appendix F** of this report. There are no waters that are subject to State jurisdiction which are not also subject to Federal jurisdiction. The acreages of potential jurisdictional waters are depicted on **Figure 7** and summarized in **Table 1** below.

Table 1 — Summary of Aquatic Features

Classification	Jurisdictional Waters (acres)	
	Excelsior Estates	Non-Participating Properties
Depressional Wetlands		
Seasonal Wetlands	4.41	0.44
Perennial Marsh	1.03	0.06
Vernal Pool	27.85	4.71
Riverine Wetlands		
Seasonal Wetland	3.70	7.06
Perennial Marsh	10.05	1.19
Other Waters of the U.S.		
Intermittent Drainage	1.19	0.30
Ephemeral Drainage	0.23	0.04
Pond	5.04	1.55
Ditch/Canal	0.31	0.00
TOTAL	**53.80**	**15.35**

Trees

The trees on the Excelsior Estates property were surveyed in 2015 as documented in the Arborist Report (**Appendix A**). There are 28 native trees and 147 landscape trees on the Excelsior Estates property (**Figure 6**). None of the trees on the Excelsior Estates property are Heritage trees or recommended for preservation as Landmark Trees.

Non-Participating Properties

Potential Jurisdictional Waters

Potential jurisdictional waters for non-participating properties were estimated through a combination of aerial photo interpretation and limited ground-truthing. The estimated extent of wetlands and other aquatic habitat were digitally mapped by observing aerial

photographs in different years/seasons, noting standing water, changes in vegetation patterns, and other markers of periodically inundated areas. Ground-truthing, consisting of observations conducted from participating properties and from public right-of-ways, was used to supplement and confirm aerial photo interpretation. Sensitive habitats identified on the non-participating properties include: vernal pools, marshes, and other potential waters of the U.S. (**Figure 7**). These sensitive resources represent potential habitat for several of the special-status species discussed above. The acreages of potential jurisdictional waters are summarized in **Table 1** above. Potential jurisdictional waters within the non-participating properties were digitized from existing aerial photography and total approximately 15.35 acres.

Trees

The trees on the non-participating properties were inventoried from participating properties and from public right-of-ways in 2015 as documented in the Arborist Report (**Appendix A**). There are estimated to be 628 trees on the non-participating properties, of which approximately 50 are native species (**Figure 6**). None of the trees on the non-participating properties are Heritage trees or recommended for preservation as Landmark Trees.

5.1.7 Existing Land Use Effects on Biological Resources

While the JTSPA is largely open rangeland, this rangeland shares considerable edge with various existing land uses that may impact the habitat and habitat quality of the biological resources occupying the site.

Rural Residences

Rural residences (non-participating properties) are common along the southern (Jackson Highway) and western (Excelsior Road) portions of the Plan Area. The density of houses in these areas is fairly low, but there are other elements present that reduce the biological resource value on and around these parcels.

While these parcels typically support natural plant communities and often contain aquatic habitat many residential parcels have tracts of cultivated plants, irrigated areas, outbuildings, livestock enclosures, paving and grading, and other improvements that reduce or alter biological communities.

Sacramento Raceway

The Sacramento Raceway property (non-participating) contains some aquatic habitat, including vernal pools. While the eastern end of the property is relatively undisturbed, the western 75% contains various improvements to support raceway activities including a drag strip, dirt track, motocross track, and associated infrastructure (lights, grandstands, parking etc.).

The northern tributary to Elder Creek flows across and through the raceway property. Various ditches and culverts are used to move water around and beneath the drag strip,

and periodic grading of firebreaks introduces sediment into the drainage ways and downstream wetlands.

Kiefer Boulevard

Kiefer Boulevard runs along the northern portion of the JTSPA. This right-of-way is currently unimproved and consists of a bare dirt track with numerous stretches of deep tire ruts. Vehicles drive across the Morrison Creek tributary at-grade, through the streambed.

There is typically open access on both ends of the right-of-way, although the County has attempted periodically to block off access. There is significant trash dumping occurring along this stretch of Kiefer Boulevard including construction rubble, electronics, furniture, etc. Dump sites are scattered along the right-of-way, including into the bed of the Morrison Creek tributary.

The frequent vehicle travel, especially in wet weather, has resulted in noticeable turbidity in downstream vernal pools within the JTSPA. **Figure 8** illustrates the extent of this turbidity.

6.0 DISCUSSION AND RECOMMENDATIONS

6.1 Summary

This BRA has documented the Jackson Township Specific Plan Area's physical features, biological communities, and sensitive habitats, and its potential to support special-status species. Known or potential biological constraints on the site include:

- Existing and potential habitat for special-status vernal pool plant and animal species, including federally-listed vernal pool species and their critical habitat;
- Potential habitat for other special-status aquatic plant and animal species;
- Potential foraging and nesting habitat for Swainson's hawk, a state-listed species;
- Potential foraging and nesting habitat for other special-status birds species;
- Sensitive habitats including: Morrison Creek, vernal pools, marshes, other potential waters of the U.S.; and
- Potential for protected trees.

6.2 Recommendations

If any future activity on the site would result in significant effects to the sensitive resources identified on site, measures should be taken to avoid, minimize, and/or mitigate for these effects. Section 15382 of the CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, …." (CELSOC, 2004). As referenced in **Section 4.2.1** of this BRA, a project would result in potential significant impacts to biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional or state habitat conservation plan.

6.2.1 Impacts to Special-Status Plants

Excelsior Estates

Impacts to Vernal Pool Plants

As discussed, several special-status vernal pool plants have the potential to occur on site (See **Section 5.1.6**). Botanical surveys for these species were conducted in May of 2014 in accordance with applicable protocols during the appropriate flowering periods for these species (**Appendix D**). No populations of any special-status plants were observed. The results of these surveys are typically valid for two years. If future surveys are conducted and populations of any of these species are identified on site, then the project proponent shall either avoid these plants or, if avoidance is not feasible, shall mitigate for potential impacts to these species. Mitigation of non-listed species could include propagation of special-status plants to suitable areas within the proposed on-site wetland preserve through seed or seedbank collection. If mitigation is required, a mitigation plan should be prepared that identifies avoidance and preservation measures, seed or plant harvesting procedures, locations where the plants will be transplanted in the on-site preserve, success criteria, and monitoring protocols. Additionally, since mitigation for impacts to vernal pool habitat (discussed in **Section 6.2.2** below) will also preserve and create potential habitat for rare vernal pool plant species, coordination between habitat and species mitigation is possible. Alternatively, if the SSHCP is adopted and the SSHCP covers the proposed project, then the project proponent may elect to compensate for unavoidable impacts through participation in the SSHCP.

If State or federally-listed plants (Bogg's Lake hedge hyssop, Sacramento Orcutt grass, slender Orcutt grass) are identified on site, then additional mitigation measures may be required by CDFW and the USFWS. These measures may include avoidance and minimization through the establishment of an on-site preserve managed in perpetuity and protected by a conservation easement, the salvage of a seed bank from vernal pools to be impacted for the re-establishment of the population at a nearby location (preferably on site), or the enhancement/restoration of habitat at known locations of populations of these species. Coordination with the appropriate agencies should be completed, if listed plants are found.

Impacts to Sanford's Arrowhead

Botanical surveys for Sanford's Arrowhead were conducted in June 2014 (**Appendix D**). No populations of Sanford's Arrowhead were observed. The results of this survey are valid for two years. If future botanical surveys for this species are conducted and populations of this species are identified on site, the project proponent shall either avoid these plants or, if avoidance is not feasible, the project proponent shall mitigate for potential impacts to these species. If mitigation is required, a mitigation plan should be prepared that identifies avoidance and preservation measures, seed or plant harvesting procedures, locations where the plants will be transplanted in the on-site preserve, success criteria, and monitoring protocols. Alternatively, if the SSHCP is adopted and the SSHCP covers the proposed project, then the project proponent may elect to compensate for unavoidable impacts through participation in the SSHCP.

Non-Participating Properties

As previously mentioned, the non-participating properties have vernal pool and marsh habitat, and therefore have the potential to contain special-status plants. Since Foothill Associates did not have authorization to access the non-participant properties, botanical surveys of these properties have not yet been conducted. Prior to the commencement of ground-disturbing activities within the non-participating properties, botanical surveys will be conducted within the appropriate flowering periods for these species. If special-status plant species are identified, the project proponent shall either avoid these plants or, if avoidance is not feasible, the project proponent shall mitigate for potential impacts to these species as described above.

6.2.2 Impacts to Special-Status Animals

Impacts to Vernal Pool Crustaceans

Excelsior Estates

As discussed, vernal pools and other wetlands on the site represent known and potential habitat for special-status crustacean species including vernal pool fairy shrimp and vernal pool tadpole shrimp. The USFWS typically considers vernal pool invertebrate habitat to be indirectly impacted by fill or development activities within 250 feet of the habitat. However, the 250 foot indirect impact area may be reduced based on site-specific information such as topography or hydrologic data indicating that activities can encroach closer than 250 feet without impacting those habitats.

For the Excelsior Estates portion of the JTSPA, the acreage of listed vernal pool crustacean habitat is shown in **Table 2**. This estimate generally excludes aquatic habitat that either has inappropriate hydrology (e.g. warm-season inundation), significant disturbance, or other factors that reduce or minimize habitat value for vernal pool crustaceans.

Table 2 — Vernal Pool Crustacean Habitat within Excelsior Estates

Classification	Acreage
Depressional Seasonal Wetland	4.41
Vernal Pool	27.85
Riverine Seasonal Wetland	3.70
Total	**35.96**

The development of Excelsior Estates, as proposed, will result in direct impacts to approximately 29.95 acres and preservation of ±6.02 acres of vernal pool crustacean habitat.

As mentioned above, listed vernal pool crustaceans (vernal pool fairy shrimp and vernal pool tadpole shrimp) have been found within several pools on the Excelsior Estates property. Accordingly, the project proponent will implement one or a combination of both of the following mitigation measures to address these impacts:

1. Total Avoidance: Unless a smaller buffer is approved through formal consultation with the USFWS, the project proponent will maintain a minimum 250 foot no disturbance buffer from all delineated vernal pools. If total avoidance is implemented for a pool, no further action is required for that pool.

2. Compensation: The project proponent will consult with the USFWS regarding any impacts to potential vernal pool crustacean habitat which cannot be avoided. The project proponent will compensate for unavoidable impacts in accordance with the Biological Opinion issued by USFWS and the Clean Water Act Section 404 Permit and/or RWQCB Waste Discharge Requirements obtained for the project. Typically, the USFWS requires compensatory mitigation for direct impacts to these species at a 3:1 ratio (2:1 preservation and 1:1 creation). Possible mitigation opportunities include on-site or off-site preservation and creation of vernal pools or purchase of vernal pool credits at a qualified mitigation bank. Alternatively, if the SSHCP is adopted and the SSHCP covers the proposed project, then the project proponent may elect to compensate for unavoidable impacts through participation in the SSHCP.

Non-Participating Properties

The non-participating properties contain wetlands which may represent habitat for vernal pool crustaceans. Since Foothill Associates was not able to access these properties, no focused surveys have been conducted in these areas. Prior to commencing work within suitable habitat, the non-participating property owners will conduct surveys to determine whether the wetlands contain protected vernal pool crustaceans. The owners may choose to assume that special-status crustaceans are present in-lieu of conducting these surveys. The owners will then address any impacts to protected species through the mitigation measures described above in the discussion of Excelsior Estates vernal pool crustacean impacts.

Impacts to Critical Habitat for Vernal Pool Species

Excelsior Estates

The JTPSA includes a portion of Vernal Pool Critical Habitat Subunit 11E. This subunit includes critical habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, Sacramento orcutt grass, and slender orcutt grass (multiple surveys for the latter two species on the Excelsior Estates property were negative). Approximately 779 acres (57%) of this subunit occurs within the JTSPA, 648 acres of which exist on the Excelsior Estates property. Approximately 258 acres of this critical habitat unit will be preserved as part of the JTSPA development.

As mentioned above, for projects where the Corps or another federal agency is issuing a federal permit or license, that agency must ensure that the effects of its permit do not "adversely modify" the critical habitat of a species protected by the FESA. The term "adverse modification" is defined as "a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species." (50 C.F.R., § 402.02.) Guidance issued by USFWS provides that the adverse modification threshold is exceeded "when the proposed action will adversely affect the critical habitat's constituent elements or their management in a manner likely to appreciably diminish or preclude the role of that habitat in both the survival and recovery of the species" (USFWS, Section 7 Handbook at 4-39.), An analysis of adverse modification of critical habitat normally focuses on the entire critical habitat area designated and not just discrete units of critical habitat (*Id*.).

Development of the JTSPA is not expected to result in adverse modification of this Critical Habitat subunit for the following reasons:

1) Both Orcutt grass species have never been found in this subunit, and surveys covering a large portion of the subunit have not found these species. Additionally, the dense vegetation in the larger pools makes them unsuitable for both species of Orcutt grass.

2) Past and current disturbances (dry-season irrigation, erosion and sedimentation, contamination from certain land uses, adjacent land uses, etc.) impact portions of the critical habitat unit, primarily in the westernmost portions. Primary constituent elements (PCEs), while present in the overall subunit, are compromised in portions of the subunit affected by these existing conditions.

3) Protection of a significant portion of the critical habitat unit where all PCEs are present provides protection for the species and maintains a contiguous critical habitat unit that coordinates with potential future preserves on adjacent properties.

For impacts to designated critical habitat on the Excelsior Estates property, the project proponent will consult with the USFWS to ensure that its proposed development does not adversely modify critical habitat. The mitigation measures identified above for impacts to vernal pool crustaceans will ensure that adverse modification will not occur. Alternatively, if the SSHCP is adopted and the SSHCP covers the proposed project, then

the project proponent may elect to compensate for unavoidable impacts to critical habitat through participation in the SSHCP.

Non-Participating Properties

As mentioned previously, approximately 131 acres of the non-participating properties have been designated as critical habitat for vernal pool species. To ensure that development of these properties will not result in adverse modification of critical habitat, where a 404 permit is required for development of a property, the owner(s) of that property will consult with USFWS pursuant to Section 7 of the Endangered Species Act. The mitigation measures identified above in the discussion of mitigation for impacts to vernal pool crustaceans on Excelsior Estates will ensure that adverse modification will not occur.

Impacts to Northwestern Pond Turtle

Excelsior Estates

As discussed in **Section 6.2.2**, the pond on the Excelsior Estates property represents potential habitat for northwestern pond turtle and the surrounding uplands provide potential overwintering and breeding habitat. If the pond or surrounding uplands within 300 feet are to be impacted by any future activity it is recommended that surveys be conducted for this species no more than 30 days prior to construction. If western pond turtles are found, then the project biologist should conduct a pre-construction worker awareness training and be on-site to monitor construction during initial vegetation clearing and ground disturbance. If any western pond turtles or eggs must be relocated during the project, a relocation plan should be submitted to CDFW for approval prior to relocation. The relocation plan should establish western pond turtle handling procedures and identify suitable habitat where the western pond turtles will be released. Release sites should be suitable habitat located as close as possible to the project site. Alternatively, if the SSHCP is adopted and the SSHCP covers the proposed project, then the project proponent may elect to compensate for unavoidable impacts through participation in the SSHCP.

Non-Participating Properties

Ponds and the surrounding uplands on the non-participating properties may also provide habitat for the northwestern pond turtle. To ensure that development of these properties does not have an adverse effect on this species, the owner(s) will conduct preconstruction surveys and, if western pond turtles are found, implement mitigation as discussed above with respect to Excelsior Estates.

Impacts to Western Spadefoot

Excelsior Estates

Any impacts to vernal pools within the Excelsior Estates property could potentially impact western spadefoots. Prior to construction in or around vernal pools it is recommended that surveys be conducted for this species no more than 30 days prior to construction. If western spadefoots are found, then the project biologist should conduct a

pre-construction worker awareness training and be on-site to monitor construction during initial vegetation clearing and ground disturbance. If any western spadefoots must be relocated during the project, a relocation plan should be submitted to CDFW for approval prior to relocation. The relocation plan should establish western spadefoot handling procedures and identify suitable habitat where the western spadefoot will be released. Release sites should be suitable habitat located as close as possible to the project site.

Non-Participating Properties

Vernal pools and the surrounding uplands on the non-participating properties may also provide habitat for the western spadefoot. To ensure that development of these properties does not have an adverse effect on this species, the owner(s) will conduct preconstruction surveys and, if western spadefoots are found, implement mitigation as discussed above with respect to Excelsior Estates.

Impacts to Swainson's Hawk Foraging and Nesting Habitat

Excelsior Estates

At the time of preparation of this BRA there were no active Swainson's hawk nests within five miles of the site, however there are several within five to 10 miles of the site. Any impacts to the pasture and grasslands on site could impact potential foraging habitat for Swainson's hawk. If Sacramento County, in conjunction with CDFW, determines that impacts to Swainson's hawk foraging habitat will occur as a result of the project, these impacts can be mitigated through participation in the Sacramento County's Swainson's Hawk Mitigation Program or pursuant to CDFW's 1994 *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks* (*Buteo swainsoni*) *in the Central Valley of California* as described above in **Section 4.3.3**.

In addition, trees on and adjacent to the site represent potential nesting habitat for this species. All trees on site and within a ½ mile of the site should be surveyed for nesting Swainson's hawks. These surveys should be conducted prior to any intensive new disturbances associated with construction or other project-related activities that may cause nest abandonment or forced fledging between March 1 and September 15. If project related activities may cause nest abandonment or forced fledging, the nest site should be monitored by a qualified biologist.

If the SSHCP is adopted and the SSHCP covers the proposed project, then the project proponent may elect to compensate for unavoidable impacts to Swainson's hawk nesting and foraging habitat through participation in the SSHCP.

Non-Participating Properties

The annual grassland and trees on the non-participating properties also provides suitable Swainson's hawk foraging and nesting habitat. Prior to development of these properties, the owner(s) will consult with the County to determine whether impacts to Swainson's hawk foraging habitat will occur as a result of construction activities. With respect to the trees on the non-participating properties, the owners will conduct preconstruction surveys

and, if Swainson's hawks are found, implement mitigation as discussed above with respect to Excelsior Estates.

Impacts to Western Burrowing Owl

Excelsior Estates

Any impacts to the grasslands and associated ground squirrel burrow colonies could potentially impact western burrowing owls. Since burrowing owls have been observed on the site, but are not known to nest on the site, a protocol nesting survey is recommended during the nesting season prior to construction. Currently, CDFW's 2012 *Staff Report on Burrowing Owl Mitigation* recommends conducting four surveys of the project site and surrounding 500 feet, where accessible, during the breeding season: one survey between February 15 and April 15 and three between April 15 and July 15. If an active burrowing owl nest is determined to be present within 500 feet of the project site during the surveys, then an avoidance plan should be developed and approved by CDFW. The avoidance plan should identify measures to minimize impacts to burrowing owls, such as worker awareness training, buffer zones, work scheduling, and biological monitoring.

If no burrowing owls are identified during the breeding season surveys, a pre-construction survey for burrowing owls is recommended within 24 hours prior to the start of ground disturbance. If burrowing owls are found during the pre-construction survey, CDFW should be contacted to develop an avoidance plan, as described above.

Alternatively, if the SSHCP is adopted and the SSHCP covers the proposed project, then the project proponent may elect to compensate for unavoidable impacts to western burrowing owl through participation in the SSHCP.

Non-Participating Properties

The annual grassland on the non-participating properties also provides suitable burrowing owl habitat. To ensure that development of these properties does not have an adverse effect on this species, the owner(s) will conduct preconstruction surveys and, if western burrowing owls are found, implement mitigation as discussed above with respect to Excelsior Estates.

Impacts to Other Raptors and Migratory Birds

Excelsior Estates

As discussed earlier, the Excelsior Estates property represents potential foraging and nesting habitat for raptors. Raptors with a *high* potential to occur on site include: northern harrier, red-tailed hawk, and white-tailed kite. Additionally, suitable nesting habitat for migratory birds such as loggerhead shrike and tri-colored blackbird occurs on site. Active raptor nests are protected by the California Fish and Game Code Section 3503.5 and the MBTA. For this reason, if any project related activity or other disturbance is expected to occur during the nesting season (February through August), a pre-construction raptor survey is recommended to determine whether raptors are actively nesting on or within 500 feet of the site. The survey should be conducted by a qualified

biologist no more than 30 days from the onset of disturbance to the site. If the nests are found and considered to be active, project related disturbance should not occur within 500 feet of the nests until the young have fledged. If active migratory bird nests are found the CDFW should be consulted for mitigation measures that may be required. If construction activities are proposed to occur during non-breeding season (September through January), a pre-construction survey is not required and no further studies are necessary. Alternatively, if the SSHCP is adopted and the SSHCP covers the proposed project, then the project proponent may elect to compensate for unavoidable impacts to nesting and foraging habitat of raptors and migratory birds through participation in the SSHCP.

Non-Participating Properties

The non-participating properties have the potential to contain nesting raptors and other birds. Accordingly, prior to commencing ground disturbance or construction during the nesting season, the non-participating owner(s) shall conduct pre-construction surveys and implement mitigation, if needed, as described above.

6.2.3 Impacts to Sensitive Habitats

Impacts to Jurisdictional Waters

Excelsior Estates

Sensitive habitats identified include: Morrison Creek, vernal pools, marshes, and other potential jurisdictional waters. The site supports approximately 53.80 acres of jurisdictional waters (**Table 1 and Figure 7**). These areas are subject to regulation by the Corps pursuant to Section 404 of the Clean Water Act and the RWQCB pursuant to Section 401 of the Clean Water Act. Additionally, these areas are protected under the *Sacramento County General Plan*. Prior to discharging into waters of the U.S., the project proponent shall comply with Sections 401 and 404 of the Clean Water Act. Any waters of the U.S. that would be lost or disturbed should be replaced or restored on a "no-net-loss" basis in accordance with the Corps' current mitigation guidelines.

Non-Participating Properties

The non-participating properties support approximately 15.35 acres of wetlands and other potential jurisdictional waters. Prior to impacting the wetland resources on the non-participating properties, the non-participating owner(s) shall obtain a wetland delineation to determine whether the wetlands are subject to the jurisdiction of the Corps and/or the RWQCB. Depending on the results of the delineation, the non-participating owner(s) shall consult with the Corps and/or RWQCB, as appropriate, to determine whether permits are required for their proposed activities.

Impacts to Riparian Habitats

Excelsior Estates

The intermittent drainage on the northeastern corner of the Excelsior Estates property is expected to be subject to CDFW jurisdiction. Additionally, CDFW may exert

jurisdiction over the riverine seasonal marsh and wetlands. If project activities will affect the bed, bank or associated riparian vegetation of a stream or lake, the applicant shall notify the CDFW pursuant to Section 1600 of the Fish and Game Code before engaging in such activities. If appropriate, the project applicant shall enter into a Streambed Alteration Agreement with CDFW and coordinate with CDFW in developing appropriate mitigation, and should abide by the conditions of any executed agreements.

Non-Participating Properties

While it is unlikely that the riverine seasonal wetlands on the non-participating properties would be subject to CDFW jurisdiction, CDFW recommends that a 1600 Streambed Alteration Notification be submitted for all projects. If CDFW determines that they do not have jurisdiction, then the application fee will be refunded. Prior to impacting potential riparian habitat, the property owners will consult with CDFW to determine if a 1600 Streambed Alteration Agreement is required.

Impacts to Protected Trees

Excelsior Estates

A Tree Permit is required prior to removal of any native oak tree. Other native trees and landscape trees are protected by General Plan Policies CO-139 and CO-145, which require replacement of trees removed based on trunk diameter and canopy cover, respectively. Although on-site mitigation planting is preferred, other mitigation options, including off-site planting or payment to the County's Tree Preservation Fund, may be considered. A total of 175, consisting of 28 native trees and 147 landscape trees were mapped on the Excelsior Estates site. There is one native oak tree located in the northwest corner of the property, which will require a Tree Permit prior to removal or pruning. The trunk diameter of the native trees totals 1,004 inches. Per Policy CO-139, these trees should be replaced with like species. There is approximately 1.75 total acres of tree canopy on the Excelsior Estates site, which would need to be replaced in accordance with the General Plan Policy CO-145.

Once construction documents are prepared, impacts to protected trees should be evaluated and mitigation requirements calculated in accordance with applicable Sacramento County policies. The construction documents should be reviewed during the approval process to ensure that required mitigation measures are being met.

Non-Participating Properties

Prior to development on the non-participating properties, a tree survey should be completed by an ISA-Certified Arborist to identify the species and size of trees located on these properties. Removal of any trees must comply with the Sacramento County Tree Ordinance and General Plan.

7.0 REFERENCES

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Participating Property ± 889 Acres

Non-Participating Property ± 478 Acres

38.536° N
-121.2924° W

38.511° N
-121.2669° W

EXCELSIOR ESTATES
± 889 Acres

JACKSON TOWNSHIP
± 1367 Acres

DETAIL AREA

Roseville
Granite Bay
Rio Linda
Citrus Heights
Orangevale
North Highlands
Fair Oaks
Folsom
Carmichael
Gold River
Arden-Arcade
Sacramento
Rancho Cordova
Rosemont
Rancho Murieta
Florin
Vineyard
Elk Grove
Laguna
Wilton

Mather Airport
Mather Golf Course
Cordova Golf Course
Kiefer Blvd
Bradshaw Rd
Mayhew Rd
Jackson Rd
Woodring Dr
McRoberts Dr
Morrison Creek
Elder Creek Rd
Excelsior Rd
Eagles Nest Rd
Sunrise Blvd
Jackson Highway
CA-16
CR-E2
Florin Rd
Grant Line Rd
Mossy Stone Way

USGS 7.5 Min. Carmichael Quad
Township 8N, Range 6E, Portions of
Sections 23, 24, 25, & 26
Datum: NAD 83 State Plane CA Zone II
Approximate acreage: ± 1367 Acres

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SITE AND VICINITY

N

0 2500 5000
Scale in Feet
1 inch = 3,000 feet

Drawn By: MUB
Date: 08/10/2015

FIGURE 1

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PROJECT SITE
± 1367 Acres

Keifer Blvd

Jackson Highway

Excelsior Rd

Eagles Nest Rd

Jackson Highway

LEGEND

Participating Property ± 889 Acres

Non-Participating Property ± 478 Acres

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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PARTICIPATING AND NON-PARTICIPATING PROPERTY OWNERS

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N

0 960 1920
Scale in Feet
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FIGURE 2

JACKSON TOWNSHIP SPECIFIC PLAN AREA

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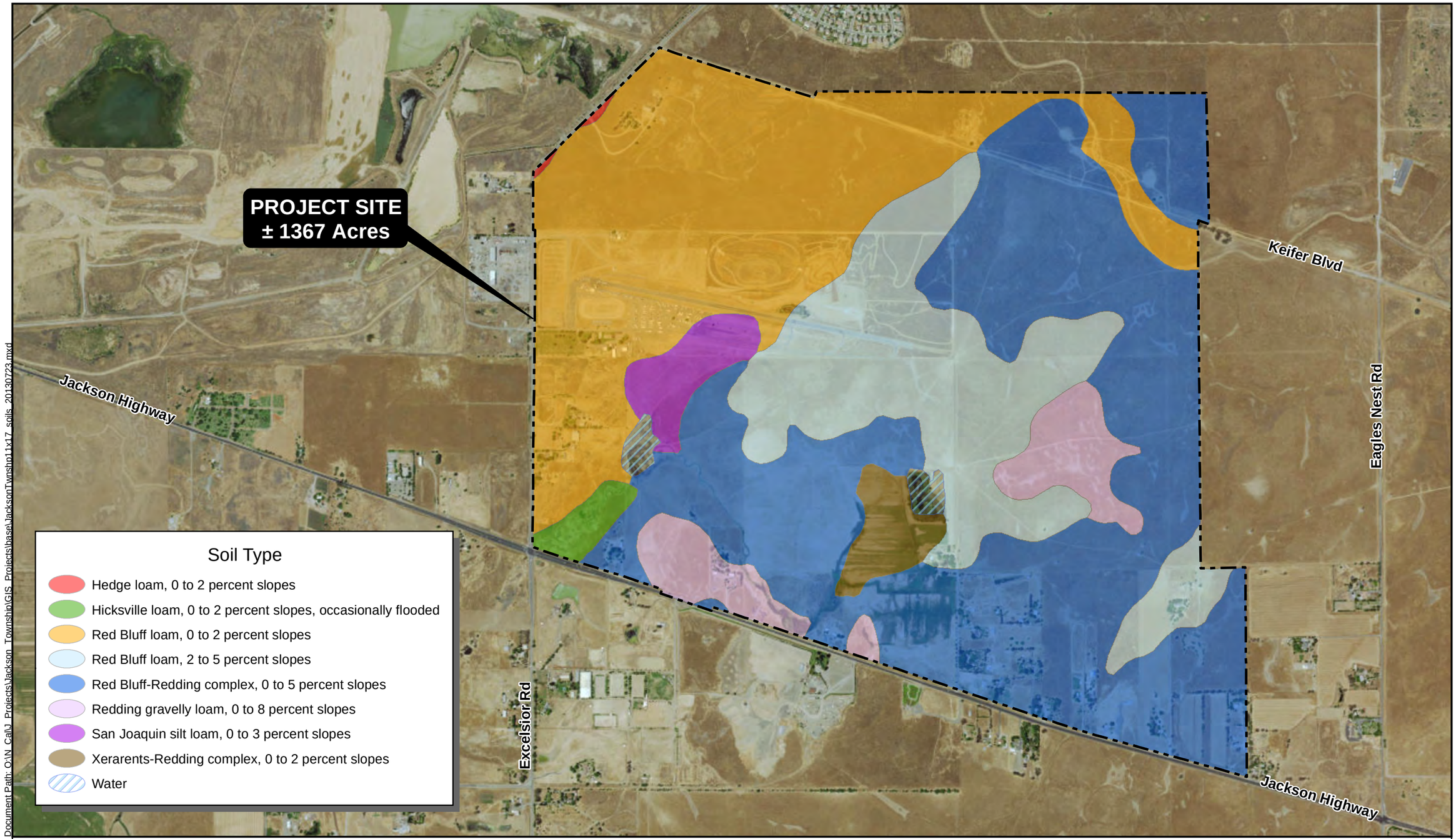

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SOILS

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N

0 1000 2000
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FIGURE 3

JACKSON TOWNSHIP SPECIFIC PLAN AREA

Document Name: JacksonTwnshp11x17_soils_20130723

CNDDB
5 Mile Buffer

CNDDB

Common Name

- Ahart's dwarf rush
- Boggs Lake hedge-hyssop
- legenere
- Sacramento orcutt grass
- Sanford's arrowhead
- slender orcutt grass
- California linderiella
- midvalley fairy shrimp
- vernal pool tadpole shrimp
- vernal pool fairy shrimp
- Ricksecker's water scavenger beetle
- hairy water flea
- valley elderberry longhorn beetle
- western pond turtle
- western spadefoot
- American badger
- burrowing owl
- Cooper's hawk
- ferruginous hawk
- golden eagle
- great blue heron
- great egret
- Swainson's hawk
- tricolored blackbird
- white-tailed kite

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CALIFORNIA NATURAL DIVERSITY DATABASE

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JACKSON TOWNSHIP

N

0 2 4
Scale in Miles
1 inch = 2 miles

Drawn By: MUB
Date: 08/10/2015

FIGURE 4

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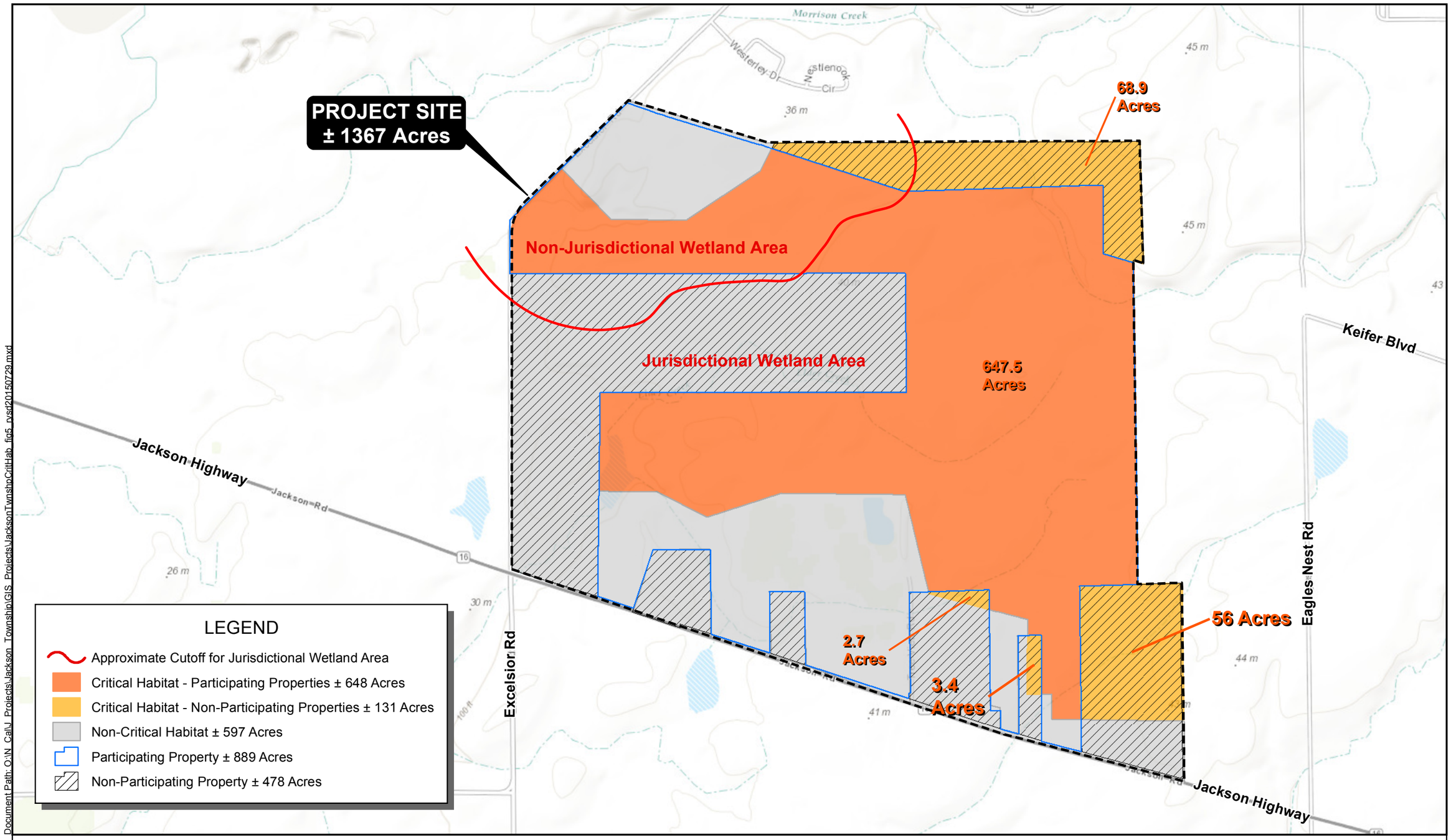

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CRITICAL HABITAT

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0 800 1600
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FIGURE 5

Document Name: JacksonTwnshpCritHab_fig5_rvsd20150729

PROJECT BOUNDARY
± 1367 Acres

Wetlands

- Depressional Perennial Marsh - 1.10 Acres
- Depressional Seasonal Wetland - 4.86 Acres
- Vernal Pool - 32.56 Acres
- Riverine Perennial Marsh - 11.24 Acres
- Riverine Seasonal Wetland - 10.75 Acres
- Ephemeral Drainage - 0.27 Acres
- Intermittent Drainage - 1.49 Acres
- Ditch - 0.31 Acres
- Pond - 6.58 Acres

Biological Communities

- Annual Grassland - 912.69 Acres
- Developed/Disturbed - 3.38 Acres
- Industrial / Commercial - 160.53 Acres
- Irrigated Pasture - 95.68 Acres
- Rural Residential - 125.80 Acres

Other Features

- Native Tree
- Landscape Tree
- Non-Participating Property
- Site Boundary - 1367 Acres

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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BIOLOGICAL COMMUNITIES
Jackson Township Specific Plan Area

N

0 500 1,000
SCALE IN FEET

FIGURE 6

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WETLAND DELINEATION	PARTICIPATING PROPERTIES	NON-PARTICIPATING PROPERTIES	TOTAL
DEPRESSIONAL WETLANDS			
Depressional Seasonal Wetland	4.41	0.44	4.86
Depressional Perennial Marsh	1.03	0.06	1.10
Vernal Pool	27.85	4.71	32.56
RIVERINE WETLANDS			
Riverine Seasonal Wetland	3.70	7.06	10.75
Riverine Perennial Marsh	10.05	1.19	11.24
OTHER WATERS OF THE U.S.			
Intermittent Drainage	1.19	0.30	1.49
Ephemeral Drainage	0.23	0.04	0.27
Pond	5.04	1.55	6.58
Ditch/Canal	0.31	0.00	0.31
Total Acres:	53.80	15.35	69.16

OTHER FEATURES

- Culvert
- Data Point
- Topographic Contour
- Excelsior Estates Boundary
- Participating Property
- Non-Participating Property

N

0 300 600 1,200

Feet

1 inch = 300 feet

DELINEATED WATERS OF THE U.S.

JACKSON TOWNSHIP SPECIFIC PLAN AREA

FIGURE 7

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VERNAL POOL TURBIDITY FROM KIEFER BOULEVARD

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N

0 350 700
SCALE IN FEET

Drawn By: RJM
Date: 06/12/09

FIGURE 8

display_graphics/linked_nw_panhandle_aerial_exhibit.pdf © 2015

Appendix A — Arborist Report [for the] Jackson Township Specific Plan Area, Sacramento County, California, dated February 10, 2015

Arborist Report

Jackson Township Specific Plan Area
Sacramento County, California

Prepared for: Tsakopoulos Investments

Date: February 10, 2015

Submitted by:

FOOTHILL ASSOCIATES

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2.0 Methods 2
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2.2 Non-Participating Properties 2
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Appendix A — Excelsior Estates Tree Survey Data

Appendix B — Non-Participating Properties Tree Survey Data

1.0 INTRODUCTION

This report presents the results of a tree survey conducted for the approximately 1,391 acre Jackson Township Specific Plan Area (JTSPA) (Plan Area) (**Figure 1**). The largest owner within the JTSPA, Excelsior Estates LLC (Excelsior Estates), owns and/or controls approximately 866 acres (approximately 62%) within the Plan Area boundaries. The remainder of the JTSPA is owned by other, non-participating property owners.

The survey area is located within Sacramento County, north of Jackson Highway approximately four miles east of Sacramento City limits. The Excelsior Estates property is currently used for livestock grazing and includes two residences. The non-participating properties are mostly rural residential rangeland as well as a racetrack. Land uses surrounding the study area include rangeland, rural residential, and cropland. Habitat types occurring on Excelsior Estates property include annual grasslands, irrigated pasture and ditches, northern hardpan vernal pools, seasonal wetlands, marsh, irrigation ponds, and ephemeral drainages. The purpose of this report is to present information on the species, size, and condition of the trees located on the Excelsior Estates property and an estimate of protected trees occurring on the non-participating properties.

The County of Sacramento regulates removal and impacts of protected trees under the Tree Preservation Ordinance, Chapter 19.12 of the County Code. Under the Ordinance, all native oak trees, defined as valley oak (*Quercus lobata*), interior live oak (*Quercus wislizeni*), blue oak (*Quercus douglasii*), or oracle oak (*Quercus morehus*), with at least one trunk of six inches or more in diameter at breast height or an aggregate diameter of ten inches or more for multi-trunk trees, are protected. The Ordinance also gives special consideration to Landmark Trees, which are prominent or stately trees of any species that are in good health and structural condition, and Heritage Trees, which are any native oak with a trunk diameter of 19 inches or larger.

In addition, as part of the environmental review process, the Sacramento County Community Development Department, Planning and Environmental Review considers both the removal of certain native and non-native trees and the encroachment of construction activities into the protected zones of these trees. Native trees are defined as native oaks Northern California black walnut (*Juglans hindsii*), California sycamore (*Platanus racemosa*), Oregon ash (*Fraxinus latifolia*), Goodding's black willow (*Salix gooddingii*), California box elder (*Acer negundo* var. *californicum*), California buckeye (*Aesculus californica*), and white alder (*Alnus rhombifolia*) with a trunk diameter of four inches or greater. The County's General Plan establishes a goal of protecting both oaks and other non-oak native species. Policy CO-139 provides that non-oak native trees which cannot be protected through preservation should be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed. For impacts to non-native trees, Policy CO-145 requires that removal of non-native tree canopy shall be mitigated by creating equivalent canopy on-site.

2.0 METHODS

The methods utilized by Foothill Associates' arborists in this survey vary depending on the property. Access was granted to the Excelsior Estates property, which was surveyed on foot. Non-participating properties were surveyed remotely, as described below.

2.1 Excelsior Estates Property

The Excelsior Estates property was surveyed by an International Society of Arboriculture (ISA) Certified Arborist on March 5 and 6, 2014. All existing trees were closely examined to determine their species type and diameter at breast height (DBH). A diameter tape or calipers was used to verify each trunk diameter at the industry standard of 54 inches above grade. All trees with trunks greater than four inches in diameter were inventoried, or otherwise described. The measurement from the trunk to the end of the longest lateral limb was used as the dripline radius (DLR). All of the inventoried trees have been numbered in the field with an aluminum tag, which corresponds to the numbering in **Appendix A**.

The health and structural condition of each tree was rated according to **Table 1** below. The health rating considers factors such as the size, color, and density of the foliage; the amount of deadwood within the canopy; bud viability; evidence of wound closure; and the presence or evidence of stress, disease, nutrient deficiency, and insect infestation. The structural rating reflects the trunk and branch configuration; canopy balance; the presence of included bark and other structural defects such as decay; and the potential for structural failure. In cases where conditions fall between the Good, Fair, and Poor ratings, intermediate ratings Fair-Good and Poor-Fair were used.

2.2 Non-Participating Properties

The non-participating properties were visually surveyed from public roads by an International Society of Arboriculture (ISA) Certified Arborist on April 14, 2014. The non-participatory properties were subdivided into 21 areas (**Figure 2**). Trees in each area were identified by species and approximate size, as shown in **Appendix B**.

Table 1 — Tree Rating System

Rating	Tree Health
Good	There is an average or below-average amount of deadwood/dieback with respect to the tree's size and growing environment; leaf size, color, and density are typical for the species; buds are normal size, viable, abundant, and uniform throughout the canopy; current and past growth increments are generally average or better; any callusing is vigorous. This health rating indicates that there is very little, if any, evidence of stress, disease, nutrient deficiency, and/or insect infestation.
Fair	There is an above-average amount of deadwood/dieback with respect to the tree's size and growing environment; leaf size, color, and density may be below what is typically expected for the species; buds are normal size and viable, but slightly sparse throughout the canopy; current and past growth increments may be below average; tree may be slow to callus around old wounds. This health rating indicates that there is moderate evidence of stress, disease, nutrient deficiency, and/or insect infestation.
Poor	There is an extreme amount of deadwood/dieback with respect to the tree's size and growing environment; leaf size, color, and density are clearly compromised; very few viable buds are present throughout the canopy; current and past growth increments are meager; no evidence of callusing around old wounds. This health rating indicates that there is widespread evidence of stress, disease, nutrient deficiency, and/or insect infestation.
	Tree Structure
Good	No wounds, cavities, decay, or indication of hollowness are evident in the root crown, trunk, or primary and secondary limbs; no anchor roots are exposed; no codominant branching or multiple trunk attachments are present; very little included bark at branch attachments exists; no dead primary or secondary limbs are present in canopy; there have been no major limb failures; limbs are not overburdened; branching structure is appropriate for species; any decay is limited to small dead branches/stubs. This structure rating represents a low potential for failure.
Fair	With respect to the size of the tree, small to moderate wounds, cavities, decay, and indication of hollowness may be evident in the root crown, trunk, and/or primary and secondary limbs; some anchor roots may be exposed; codominant branching or multiple trunk attachments may be present, but included bark does not exist or is not well developed; minor to moderate amounts of included bark at branch attachments may exist; there may be small to moderate amounts of large dead limbs in canopy, but there is no evidence of large limb failures; limbs may be slightly overburdened; branching structure and/or canopy balance may be moderately altered by the tree's growing environment. This structure rating represents a moderate potential for failure.
Poor	With respect to the size of the tree, significant wounds, cavities, decay, and/or indication of hollowness may be evident in the root crown, trunk, and/or primary and secondary limbs; anchor roots may be exposed and/or the tree may have lost anchorage; codominant branching or multiple trunk attachments may be present; significant amounts of included bark may exist in trunk and branch attachments; there may be significant amounts of large dead limbs in the canopy; there may be evidence of trunk or large limb failures; limbs may be severely overburdened; branching structure and/or canopy balance may be drastically altered by the tree's growing environment. This structure rating represents a high potential for failure.

3.0 RESULTS AND DISCUSSION

3.1 Excelsior Estates Property

A total of 175 trees were inventoried on the Excelsior Estates property. Most trees were non-native trees planted near existing residences. Native willows and cottonwoods were observed in mesic sites. Native trees included: 25 black willow (*Salix gooddingii*), 13 black walnut (*Juglans hindsii*), 3 California sycamore (*Platanus racemosa*), 6 Fremont cottonwoods (*Populus fremontii*), and 1 interior live oak (*Quercus wislizeni*). Non-native trees inventoried on the site included 45 eucalyptus (*Eucalyptus* spp.), 8 pine (*Pinus* spp.), 24 black locust (*Robinia pseudoacacia*), 18 tree of heaven (*Ailanthus altissima*), 8 elm (*Ulmus* sp.), 3 plum (*Prunus* sp.), 1 Chinese pistache (*Pistacia chinensis*), 1 cork oak (*Quercus suber*), 3 edible fig (*Ficus carica*), 1 sweetgum (*Liquidambar styraciflua*), 1 southern magnolia (*Magnolia grandiflora*), 10 white mulberry (*Morus alba*), 3 willow (*Salix* spp.), and 1 Lombardy poplar (*Populus nigra*) (**Figure 2**). There are no Heritage Trees on the Excelsior Estates property and no trees are recommended for preservation as Landmark Trees.

Table 2 summarizes the surveyed trees by their health and structure ratings. **Appendix A** shows detailed tree data for all surveyed trees.

Table 2 — Excelsior Estates Protected Trees by Health and Structure Ratings

		Structure					
		Good	**Fair-Good**	**Fair**	**Poor-Fair**	**Poor**	**Total Trees**
Health	**Good**	40	23				63
	Fair-Good	7	15	3			25
	Fair	4	15	19	6		44
	Poor-Fair			9	13		22
	Poor			2	3	16	21
	Total Trees	**51**	**53**	**33**	**22**	**16**	**175**

As a whole, most of the trees are in relatively good condition. Seventy-five percent (132 out of 175) of all inventoried trees rated Fair or better in health, and 59 percent (104 out of 175) rated Fair or better in structure. Many of the black willows surrounding the large pond in the center of the site are old trees that are in Poor condition.

3.2 Non-Participating Properties

A total of 628 trees were recorded on the non-participating properties. Forty-eight native trees were identified, including 5 black walnut, 31 Fremont cottonwood, 2 interior live oak, 3 red willow (*Salix laevigata*), 5 California sycamore, and 2 valley oak (*Quercus lobata*). Non-native species identified on the non-participating properties included tree of

heaven, black locust, catalpa (*Catalpa* sp.), coast redwood (*Sequoia sempervirens*), cork oak, deodar cedar (*Cedrus deodara*), domestic almond (*Prunus dulcis*), elm, eucalyptus, Italian cypress (*Cupressus sempervirens*), sweetgum, Lombardy poplar, maple (*Acer* sp.), white mulberry, olive (*Olea europaea*), pine, plum, privet (*Ligustrum* sp.), red maple (*Acer rubrum*), silver wattle (*Acacia dealbata*), and willows. Most of these trees were planted as landscape trees around existing residences and appeared to be in Fair or better health. None of the native oaks appear large enough to be considered Heritage Trees. No trees are recommended for preservation as Landmark Trees. **Appendix B** includes estimated data for trees observed on the non-participating properties.

3.3 Environmental Review and Mitigation

In accordance with the Tree Preservation Ordinance, removal of the 3 interior live oaks and 2 valley oaks must be authorized as a condition of approval of the JTSPA entitlements (Sacramento County Code, Section 19.12.060). In addition, the impact of removing other native trees will be considered during the environmental review of the project during the California Environmental Quality Act (CEQA) process. As previously discussed, any native trees removed during development must be mitigated in-kind on an inch per inch basis as required by Policy CO-139. Policy CO-140 specifies the various methods for mitigating such impacts, including planting replacement trees on-site or off-site, or the payment of a sum equivalent to the replacement cost of the impacted trees into the County's Tree Preservation Fund or another appropriate tree preservation fund. Additionally, according to General Plan Policy CO-145, mitigation for the loss of non-native tree canopy may be required by the County as part of the project review and approval process. This mitigation would include creation of new tree canopy equivalent to the acreage of non-native tree canopy removed. Although on-site mitigation is generally preferred, payment of in-lieu fees to the County's Tree Preservation Fund or the Greenprint Initiative may be considered (See Policy CO-146).

38.536° N
-121.2924° W

EXCELSIOR ESTATES
± 886 Acres

JACKSON TOWNSHIP
± 1391 Acres

38.511° N
-121.2669° W

DETAIL AREA

Roseville
Granite Bay
Rio Linda
Citrus Heights
Orangevale
North Highlands
Fair Oaks
Folsom
Carmichael
Arden-Arcade
Gold River
Sacramento
Rancho Cordova
Rosemont
Rancho Murieta
Florin
Vineyard
Elk Grove
Laguna
Wilton

USGS 7.5 Min. Carmichael Quad
Township 8N, Range 6E, Portions of Sections 23, 24, 25, & 26
Datum: NAD 83 State Plane CA Zone II
Approximate acreage: ± 1391 Acres

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SITE AND VICINITY

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0 2500 5000
Scale in Feet
1 inch = 3,000 feet

Drawn By: MUB
Date: 02/10/2015

FIGURE 1

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PROJECT BOUNDARY

- Approximate Tree Locations
- Tree Survey Area (Non-Participatory Areas)
- Excelsior Estates Boundary (±886 Acres)
- Jackson Township Boundary (±1391 Acres)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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APPROXIMATE TREE LOCATIONS
JACKSON TOWNSHIP

N

0 500 1,000
SCALE IN FEET

FIGURE 2

JACKSON TOWNSHIP SPECIFIC PLAN AREA

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Appendix A — Excelsior Estates Tree Survey Data

Appendix A — Excelsior Estates
Tree Survey Data

Tree #	Species	# of Trunks	DBH (inches)	DLR (feet)	Health	Structure	Notes
301	Black Walnut	1	33	15	Poor	Fair	dead wood, rot
302	Black Willow	1	8	6	Fair	Poor-Fair	sprouts from old trunk
303	Black Willow	1	37	15	Fair-Good	Fair-Good	
304	Fremont Cottonwood	1	6	4	Poor	Poor	1 limb alive
305	Fremont Cottonwood	1	12	6	Poor-Fair	Fair	
306	Black Willow	1	27	10	Poor	Poor	dead top
307	Black Willow	1	15	6	Poor	Poor	dead top
308	Black Willow	1	8	3	Poor	Poor	
309	Black Willow	2	8,6	5	Poor-Fair	Poor-Fair	
310	Black Willow	1	21	10	Poor	Poor	
311	Black Willow	2	16,16	9	Poor-Fair	Poor-Fair	
312	Black Willow	1	16	5	Poor	Poor	nearly dead
313	Black Willow	3	14,9,7	10	Poor-Fair	Poor-Fair	
314	Black Willow	1	18	9	Fair	Poor-Fair	
315	Black Willow	1	20	15	Fair-Good	Fair-Good	
316	Black Willow	2	18,10	10	Poor-Fair	Poor-Fair	
317	Black Willow	5	10,9,8,7,7	10	Fair	Poor-Fair	
318	Black Willow	1	28	20	Fair	Fair	
319	Black Willow	3	18,18,15	15	Fair-Good	Fair-Good	
320	Black Willow	2	10,7	12	Poor-Fair	Poor-Fair	
321	Black Willow	1	35	25	Fair-Good	Fair-Good	
322	Black Willow	2	40,18	20	Poor-Fair	Poor-Fair	
323	Black Willow	2	16,5	8	Poor-Fair	Poor-Fair	
324	Black Willow	2	4,3	6	Fair	Fair	
325	Black Willow	2	15,4	8	Poor-Fair	Poor-Fair	
326	Black Willow	1	15	12	Poor-Fair	Poor-Fair	
327	Black Willow	1	16	6	Poor	Poor	
330	Pine	1	28	10	Good	Good	
331	Pine	1	32	12	Good	Good	
332	Pine	1	19	10	Good	Good	
333	Fremont Cottonwood	3	16,13,12	12	Fair	Fair	
334	California Sycamore	1	9	11	Good	Fair-Good	
335	California Sycamore	1	13	10	Good	Fair-Good	
336	California Sycamore	1	15	12	Good	Good	
337	Eucalyptus	4	12,12,9,5	12	Good	Good	
338	Fremont Cottonwood	5	12,12,12,10,10	12	Fair-Good	Fair-Good	
339	Sweetgum	1	6	5	Fair-Good	Fair-Good	
340	Interior Live Oak	3	6,6,6	8	Fair-Good	Fair-Good	
341	Fremont Cottonwood	1	6	4	Good	Fair-Good	
342	Fremont Cottonwood	1	4	5	Good	Fair-Good	
343	Elm	1	5	6	Good	Fair-Good	
345	Elm	1	8	8	Good	Good	
346	Plum	1	5	5	Good	Good	
347	Eucalyptus	2	7	16	Fair	Good	
348	Pine	5	12,6,6,8,8	6	Fair	Fair-Good	
349	Pine	1	16	8	Fair	Fair	
350	Pine	2	16,14	8	Fair	Fair	

Appendix A — Excelsior Estates
Tree Survey Data

Tree #	Species	# of Trunks	DBH (inches)	DLR (feet)	Health	Structure	Notes
351	Elm	1	14	10	Good	Good	
352	Eucalyptus	1	18	8	Good	Good	
353	Elm	2	8,8	5	Poor	Poor	
354	Eucalyptus	1	17	10	Good	Good	
355	Cork oak	1	17	10	Good	Good	
356	Eucalyptus	1	7	6	Good	Good	
357	Eucalyptus	1	6	5	Poor	Poor	
358	Eucalyptus	3	8,6,4	6	Poor-Fair	Fair	
359	Eucalyptus	4	12,6,8,6	8	Fair	Fair	
360	Eucalyptus	2	14,10	6	Good	Fair-Good	
361	Eucalyptus	1	7	6	Fair	Fair	
362	Eucalyptus	1	10	5	Poor-Fair	Poor-Fair	
363	Eucalyptus	2	10,6	5	Fair	Fair	
364	Eucalyptus	1	8	5	Fair	Fair	
365	Eucalyptus	3	12,10,10	8	Good	Good	
366	Eucalyptus	1	9	10	Good	Good	
367	Eucalyptus	1	10	10	Good	Good	
368	Eucalyptus	2	12,12	8	Fair-Good	Good	
369	Eucalyptus	1	9	6	Poor-Fair	Fair	
370	Eucalyptus	2	4,4	3	Poor-Fair	Poor-Fair	
371	Eucalyptus	1	9	4	Good	Fair-Good	
372	Eucalyptus	2	13,14	6	Good	Good	
373	Eucalyptus	1	9	6	Good	Good	
374	Eucalyptus	1	10	4	Good	Good	
375	Eucalyptus	4	8,6,6,6	8	Good	Good	
376	Eucalyptus	1	17	10	Fair-Good	Good	
377	Eucalyptus	1	12	6	Poor	Poor	
378	Eucalyptus	1	14	3	Poor	Poor	Nearly Dead
379	Eucalyptus	1	16	8	Fair	Fair	
380	Eucalyptus	1	16	6	Fair	Fair	
381	Eucalyptus	2	12,12	10	Good	Good	
382	Eucalyptus	1	13	8	Good	Good	
383	Eucalyptus	5	12,10,5,7,9	12	Fair-Good	Good	
384	Pine	1	14	10	Good	Good	
385	Elm	1	15	10	Good	Good	
386	Chinese Pistache	1	9	4	Poor	Poor	Dead Top
387	Eucalyptus	4	14,14,6,9	12	Good	Good	Nest
388	Willow	1	12	6	Fair	Fair	No tag, data estimated
389	Willow	1	12	6	Fair	Fair	No tag, data estimated
390	Willow	3	6,8,6	8	Fair	Poor-Fair	No tag, data estimated
3054	Black Locust	1	14	6	Fair	Fair-Good	
3055	Black Locust	1	9	4	Poor	Poor-Fair	
3056	Black Locust	1	5	5	Poor-Fair	Fair	
3057	Black Locust	1	7	5	Fair-Good	Fair-Good	
3058	Black Locust	2	5,3	6	Good	Fair-Good	
3059	Black Locust	1	11	12	Fair	Fair-Good	trunk wound
3060	Black Locust	3	6,5,5	8	Fair-Good	Fair-Good	

Appendix A — Excelsior Estates
Tree Survey Data

Tree #	Species	# of Trunks	DBH (inches)	DLR (feet)	Health	Structure	Notes
3061	Black Locust	1	4	5	Fair-Good	Fair	
3062	Black Locust	1	8	6	Good	Fair-Good	
3063	Black Locust	2	10,11	10	Fair	Fair-Good	
3064	Tree of Heaven	1	4	5	Poor-Fair	Fair	trunk wound
3065	Black Locust	2	8,5	6	Fair	Fair	
3066	Black Locust	1	7	4	Poor	Poor-Fair	
3067	Black Locust	3	9,9,8	4	Fair-Good	Fair-Good	
3068	Black Locust	1	9	6	Poor	Fair	
3069	Tree of Heaven	2	12,10	6	Good	Fair-Good	
3070	Tree of Heaven	1	13	12	Good	Fair-Good	
3071	Tree of Heaven	1	6	6	Fair-Good	Fair	
3072	Tree of Heaven	1	8	6	Good	Fair-Good	
3073	Tree of Heaven	1	5	3	Fair-Good	Fair-Good	
3074	Tree of Heaven	2	8,6	10	Good	Fair-Good	
3075	Tree of Heaven	2	20,15	25	Good	Good	tree house
3076	Tree of Heaven	2	8,8	12	Good	Good	
3077	Black Locust	1	26	15	Fair	Good	basal wound
3078	Tree of Heaven	1	11	12	Good	Fair-Good	
3079	Tree of Heaven	1	7	8	Good	Fair-Good	
3080	Tree of Heaven	4	8,7,7,6	10	Good	Fair-Good	
3081	Tree of Heaven	3	8,3,3	6	Good	Fair-Good	
3082	Tree of Heaven	1	5	8	Good	Fair-Good	
3083	Tree of Heaven	1	6	6	Good	Fair-Good	
3084	Tree of Heaven	1	8	6	Good	Fair-Good	
3085	Tree of Heaven	2	5,4	8	Good	Fair-Good	
3086	Tree of Heaven	2	5,5	5	Good	Fair-Good	
3087	Black Locust	1	8	5	Poor-Fair	Fair	
3088	Black Locust	1	14	10	Fair-Good	Fair-Good	
3089	Black Locust	1	11	6	Fair	Fair-Good	trunk wound
3090	Black Walnut	1	22	20	Good	Good	
3091	Black Walnut	1	23	15	Good	Good	
3092	Lombardy Popular	1	6	2	Fair	Fair	
3093	Black Walnut	1	6	5	Fair	Fair-Good	
3094	Black Walnut	2	8,7	6	Fair	Fair-Good	
4681	Black Walnut	1	8	6	Good	Fair-Good	
4682	Black Locust	1	17	10	Poor-Fair	Poor-Fair	trunk wound
4683	Black Walnut	1	7	8	Fair-Good	Fair-Good	
4684	Plum	1	6	6	Good	Good	
4685	Black Locust	1	19	12	Fair	Fair-Good	trunk wound
4686	Black Walnut	1	9	10	Good	Good	
4687	Black Locust	1	21	15	Fair-Good	Fair-Good	
4688	White Mulberry	1	19	12	Good	Good	
4689	White Mulberry	1	25	15	Poor-Fair	Fair	
4690	Black Walnut	1	30	25	Good	Good	
4691	Southern Magnolia	1	8	6	Fair	Poor-Fair	
4692	White Mulberry	1	22	15	Fair-Good	Good	
4693	Black Walnut	1	17	12	Fair	Fair	

Appendix A — Excelsior Estates
Tree Survey Data

Tree #	Species	# of Trunks	DBH (inches)	DLR (feet)	Health	Structure	Notes
4694	Elm	1	18	12	Fair	Fair-Good	trunk wound
4695	White Mulberry	1	25	20	Good	Good	
4696	White Mulberry	1	20	20	Good	Good	
4697	White Mulberry	1	27	20	Good	Good	
4698	Elm	1	12	10	Good	Good	
4699	White Mulberry	1	23	20	Fair-Good	Good	
4700	Edible Fig	1	37	12	Poor-Fair	Fair	trunk cavity
4701	Edible Fig	1	27	10	Fair	Fair	
4702	White Mulberry	1	23	20	Good	Good	
4703	White Mulberry	1	18	10	Fair-Good	Good	
4704	Black Walnut	1	14	10	Fair	Poor-Fair	prostrate
4705	Black Walnut	1	26	15	Fair-Good	Fair-Good	
4706	White Mulberry	1	26	20	Good	Good	
4707	Elm	2	15,14	20	Fair-Good	Good	
4708	Eucalyptus	4	72,12,12,6	40	Fair	Good	trunk wound
4709	Edible Fig	1	6	6	Fair	Fair	scars
4710	Pine	1	19	10	Fair-Good	Fair	
4711	Black Willow	2	25,12	12	Fair	Fair	
4712	Plum	4	6,9,6,6	9	Good	Good	
5705	Eucalyptus	1	39	30	Fair	Fair-Good	trunk wound, offsite
5706	Eucalyptus	1	36	25	Fair	Fair-Good	trunk wound, offsite
5707	Eucalyptus	1	24	10	Poor	Poor	trunk wound, offsite
5708	Eucalyptus	1	24	12	Poor-Fair	Poor-Fair	trunk wound dead branches, offsite
5709	Eucalyptus	1	29	15	Fair	Fair-Good	trunk wound, offsite
5710	Eucalyptus	1	23	25	Good	Good	offsite
5711	Eucalyptus	1	47	30	Fair	Good	trunk wound, offsite
5712	Eucalyptus	1	20	12	Poor	Poor	major trunk wound, offsite
5713	Eucalyptus	1	27	25	Fair	Fair-Good	trunk wound, offsite
5714	Eucalyptus	1	45	30	Fair	Fair-Good	trunk wound, offsite
5715	Eucalyptus	1	12	6	Poor	Poor-Fair	rot
5716	Black Locust	1	12	6	Poor	Poor	No tree tag
5717	Black Locust	1	15	8	Poor	Poor	No tree tag
5718	Black Locust	1	6	8	Fair	Fair-Good	No tree tag
5719	Black Walnut	1	28	12	Poor-Fair	Fair	No tree tag

Appendix B — Non-Participating Properties
Tree Survey Data

Appendix B — Non-Participating Properties
Tree Data

Map Area	Species	Native Tree	# of Trees	Estimated DBH (inches)
1	Eucalyptus		1	12
2	Eucalyptus		5	8
3	Elm		6	5
3	Eucalyptus		6	15
3	White Mulberry		3	8
3	White Mulberry		1	15
3	Pine		1	8
3	Pine		3	12
3	Pine		6	12
3	Plum		4	5
3	Red Maple		1	8
3	Silver Wattle		6	10
4	Catalpa		1	6
4	Pine		1	10
4	Privet		10	10
5	Elm		1	10
5	White Mulberry		1	12
5	Pine		11	18
6	Eucalyptus		9	10
6	Pine		1	15
6	Willow		5	8
7	Eucalyptus		22	18
7	White Mulberry		5	10
7	Pine		6	18
8	Fremont Cottonwood	Yes	1	20
8	Black Locust		4	10
8	Sweetgum		15	10
8	White Mulberry		4	10
9	Fremont Cottonwood	Yes	2	24
9	Sweetgum		4	10
9	Pine		10	12
9	Privet		3	12
10	Interior Live Oak	Yes	1	8
10	Tree of Heaven		1	15
10	Black Walnut	Yes	2	10
10	Silver Wattle		10	8
11	Black Locust		1	6
11	Black Locust		1	15
11	Black Walnut	Yes	1	18
11	Eucalyptus		10	12

Appendix B — Non-Participating Properties
Tree Data

Map Area	Species	Native Tree	# of Trees	Estimated DBH (inches)
11	Eucalyptus		1	8
11	Eucalyptus		4	14
11	White Mulberry		2	4
11	White Mulberry		4	8
11	Pine		3	6
12	Black Locust		9	15
12	Black Walnut	Yes	1	20
12	Coast Redwood		6	10
12	Eucalyptus		7	15
12	Eucalyptus		8	12
12	Pine		2	15
12	Pine		6	6
13	Fremont Cottonwood	Yes	6	18
13	Black Locust		1	24
13	Cork oak		12	10
13	Elm		12	8
13	Pine		2	18
13	Willow		20	15
14	Eucalyptus		30	18
14	Eucalyptus		45	15
14	White Mulberry		15	12
14	Pine		33	12
14	Pine		15	12
15	Interior Live Oak	Yes	1	15
15	Valley Oak	Yes	1	6
15	Black Locust		2	10
15	Domestic Almond		1	6
15	Olive		6	8
16	Coast Redwood		2	20
16	Deodar Cedar		1	18
16	Eucalyptus		7	15
16	Maple		4	10
16	White Mulberry		6	10
16	Pine		5	15
16	Silver Wattle		6	12
17	Fremont Cottonwood	Yes	1	12
17	Valley Oak	Yes	1	12
17	Black Locust		6	10
17	Black Locust		2	16
17	Black Walnut	Yes	1	10

Appendix B — Non-Participating Properties
Tree Data

Map Area	Species	Native Tree	# of Trees	Estimated DBH (inches)
17	Coast Redwood		2	18
17	Domestic Almond		4	8
17	Olive		2	12
18	California Sycamore	Yes	1	16
18	California Sycamore	Yes	1	12
18	Black Locust		3	12
18	Coast Redwood		2	12
18	Elm		1	12
18	Elm		20	20
18	Eucalyptus		2	20
18	Italian Cypress		8	6
18	White Mulberry		3	15
18	White Mulberry		4	10
18	Pine		1	15
18	Pine		1	12
19	Fremont Cottonwood	Yes	15	12
19	California Sycamore	Yes	3	10
19	Coast Redwood		30	6
19	Coast Redwood		6	10
19	Eucalyptus		5	12
19	Italian Cypress		10	8
19	Lombardy Popular		3	15
19	Pine		2	12
19	Willow		3	15
20	Fremont Cottonwood	Yes	6	18
20	Red Willow	Yes	3	20
20	Willow		3	10
21	White Mulberry		1	20

Appendix B — Special-Status Species Table Potentially Occurring on or in the Vicinity of the Jackson Township Specific Plan Area

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
Ahart's (dwarf) rush *Juncus leiospermus* var. *ahartii*	--; --; --; 1B.2	Ahart's dwarf rush is known to occur on vernal pool margins and mesic valley and foothill grassland areas at elevations of 100–330 feet above MSL.	Blooming period: March – May.	**High**; suitable habitat on the site.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	--; CE; --; 1B.2	Clay soils around the margins of marshes and swamps and in vernal pools.	Blooming period: April – August.	**High**; suitable habitat on the site.
Dwarf downingia *Downingia pusilla*	--; --; --; 2.2	Dwarf downingia is known to occur in vernal pools and mesic valley and foothill grassland areas at elevations of 3-1500 feet above MSL.	Blooming period: March – May.	**Medium**; there is marginal habitat on the site.
Legenere *Legenere limosa*	--; CT; --; 1B.1	Legenere is known to occur in vernal pools at elevations of 3- 3,000 feet above mean sea level.	Blooming period: April – June.	**High**; suitable habitat on the site.
Sacramento Orcutt grass *Orcuttia viscicla*	FE; CE; --; 1B.1	Sacramento Orcutt grass is known to occur in large, relatively deep vernal pools within Sacramento county. This species will occur at elevations of 100-330 feet above MSL.	Blooming period: April – July.	**No**; focused survey conducted in 2006 and 2007 found no Sacramento Orcutt grass present on site. Critical habitat on the site.
Slender Orcutt grass *Orcuttia tenuis*	FT; CE; --; 1B.1	Slender Orcutt grass is known to occur in large, relatively deep vernal pools and the margins of stock ponds in elevations of 115 -5,700 feet above MSL.	Blooming period: May – July.	**No**; focused survey conducted in 2006 and 2007 found no slender Orcutt grass present on site. Critical habitat on the site.
Sanford's arrowhead *Sagittaria sanfordii*	--; --; --; 1B.2	Sanford's arrowhead is known to occur in shallow, standing, fresh water and sluggish waterways within marshes, ponds, vernal pools, ditches, canals, and streams. This species will occur in elevations of 0-2200 feet above MSL.	Blooming period: May – October.	**High**; suitable habitat on the site.
Wildlife				
Invertebrates				
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT; --; --; --	Complete life cycle associated with its host plant, elderberry shrubs (*Sambucus* sp.).	Adults emerge in spring until June. Exit holes visible year-round.	**Low**; no elderberry shrubs were observed on Excelsior Estates, potential in balance of Plan Area.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT; --; --; --	Vernal pools, swales, and ephemeral freshwater habitat.	Wet season.	**High**; found on site. Critical habitat on the site.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE; --; --; --	Vernal pools, swales, and ephemeral freshwater habitat.	Wet season.	**High**; found on site. Critical habitat on the site.
Fish				
Delta smelt *Hypomesus transpacificus*	FT; CE; --; --	Lower and middle reaches of Sacramento-San Joaquin Delta. Spawning takes place within side channels and sloughs in the middle reaches of the Delta.	Year-round.	**No**; no suitable habitat on the site.
Central Valley steelhead *Oncorhynchus mykiss*	FT; --; --; --	Sacramento and San Joaquin Rivers and their tributaries.	Year-round.	**No**; no suitable habitat on the site.
Central Valley fall/late fall-run chinook salmon *Oncorhynchus tshawytscha*	FE; CE; --; --	Sacramento and San Joaquin Rivers and their tributaries.	Year-round.	**No**; no suitable habitat on the site.
Central Valley spring-run Chinook salmon *Oncorhynchus tshawytscha*	FT; CT; --; --	Sacramento and San Joaquin Rivers and their tributaries.	Year-round.	**No**; no suitable habitat on the site.
Winter-run Chinook salmon *Oncorhynchus tshawytscha*	FE; CE; --; --	Sacramento and San Joaquin Rivers and their tributaries.	Year-round.	**No**; no suitable habitat on the site.
Amphibians/Reptiles				
California red-legged frog *Rana aurara draytonii*	FT; CSC; --; --	Requires a permanent water source and is typically found in deep pools (greater than 2½ feet) along quiet slow moving streams, ponds, or marsh communities with emergent vegetation.	Aquatic surveys of breeding sites: February 25 – April 30.	**No**; no substantiated historic records for the Sacramento Valley exist. In addition, the high density of bull frogs in the on site pond would make it less likely that this species occurs there.
California tiger salamander *Ambystoma californiense*	FT; CT; --; --	Breeds in temporary rain pools and permanent waters of grassland and open woodland of low hills and valleys. Require mammal burrows within the adjacent uplands for summer refugia.	Drift fence studies during fall and winter for upland habitats.	**No**; no substantiated historic records for the project vicinity exist. In addition, the high density of bull frogs in the on site pond would make it less likely that this species occurs there.
Giant garter snake *Thamnophis gigas*	FT; CT; --; --	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	Optimal detection early spring through mid fall (about mid March-early November) during their active period.	**No**; outside of historic range.
Northwestern western pond turtle *Actinemys marmorata*	--; CSC; --; --	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland.	Active outside of dormancy period November – February	**Low**; there is suitable habitat for this species on site but no known occurrences within 5 miles of the site.
Western spadefoot toad *Spea hammondii*	--; CSC; --; --	Open grasslands and woodlands. Requires vernal pools or seasonal wetlands for breeding.	Year-round.	**High**; suitable habitat on the site.
Birds				
Bank swallow *Riparia riparia*	--; CT; --; -- (Nesting)	Nests in large colonies, excavating nest burrows in steep riverbank cliffs, gravel pits, and highway cuts.	Spring - Fall	**No**; no suitable nesting habitat occurs on the site.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Loggerhead shrike *Lanius ludovicianus*	--; CSC; --; -- (Nesting)	Open habitats with scattered shrubs, trees, posts, fences and utility lines for perches. Nests in densely foliaged tree or shrub.	Spring - Fall	**High**; suitable habitat on the site.
Swainson's hawk *Buteo swainsoni*	--; CT; --; -- (nesting)	Breeding resident in the Central Valley. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Forage in adjacent grasslands or suitable grain fields and pastures.	Nesting: early March-early September.	**High**; suitable habitat on the site.
Tricolored blackbird *Agelaius tricolor*	--; CSC; --; -- (nesting colony)	Nests in dense thickets of blackberry, cattails, willow, or wild rose within emergent wetland habitats within the Central Valley and surrounding foothills.	Nesting: mid-April - late July.	**High**; suitable habitat on the site.
Western burrowing owl *Athene cunicularia hypugaea*	--; CSC; --; -- (burrow sites and some wintering sites)	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat.	Year-round.	**High**; ground-squirrel burrows found on site.
White-tailed kite *Elanus leucurus*	--; CFP; --; -- (nesting)	Nests in isolated trees or woodland areas with suitable open foraging habitat.	Year-round.	**High**; observed foraging and roosting, no nests were observed.
Other Raptors (Hawks, Owls and Vultures)	MBTA and §3503.5 Department of Fish and Game Code	Nests in a variety of communities including oak woodland, mixed coniferous forest, chaparral, montane meadow, riparian, and urban.	February – September.	**High**; raptors observed foraging and roosting, no nests were observed.
Mammals				
American Badger *Taxidea taxus*	--; CSC; --; --	Occurs primarily in grasslands, parklands, farms, and other treeless areas with friable soils and a supply of rodent prey. Also found in meadows, marshes, and brushy areas at elevations ranging up to 12,00o feet above MSL.	Year-round.	**Low**; potential habitat but no known occurrences.
Special-status bat species	--; CSC; --; --	Typically roost in crevices in rocks, caves, or manmade structures. Occasionally roost in hollow trees or shrubs.	Year-round.	**Low**; there is limited suitable habitat for some species and no known occurrences within 5 miles of the project site.

Federally Listed Species:

FE = federal endangered

FT = federal threatened

FC = candidate

PT = proposed threatened

FPD = proposed for delisting

FD = delisted

California State Listed Species:

CE = California state endangered

CT = California state threatened

CR = California state rare

CSC = California Species of Special Concern

CSC = California Species of Special Concern

CFP = California Fully Protected

CNPS* Rank Categories:

1A = plants presumed extinct in California

1B = plants rare, threatened, or endangered in California and elsewhere

2 = plants rare, threatened, or endangered in California, but common elsewhere

3 = plants about which we need more information

4 = plants of limited distribution

Other Special-Status Listing:

SLC = species of local or regional concern or conservation significance

Source: *Foothill Associates*

Appendix C — 2006 and 2007 Orcutt Grass Survey on the ±866- Acre Excelsior Estates Site, Sacramento County, California

July 20, 2006

Angelo Tsakopoulos
Tsakopoulos Real Estate Investments
7423 Fair Oaks Boulevard, Suite 10
Carmichael, CA 95608

Subject: Results of a Focused Survey for Sacramento Orcutt grass (*Orcuttia viscida*) and Slender Orcutt grass (*Orcuttia tenuis*) on the Excelsior Estates ±866.3-Acre Site.

Dear Angelo:

This report summarizes the results of a focused survey for Sacramento Orcutt grass (*Orcuttia viscida*) and slender Orcutt grass (*Orcuttia tenuis*). The purpose of this focused survey was to determine the presence or absence of these federally listed Orcutt grass species on the Excelsior Estates site located in Sacramento County, California. The ±866.3 site is located in an unincorporated area of Sacramento County immediately south of the City of Rancho Cordova, north of Jackson Highway (Highway 16), east of Excelsior Road, and bound on the north by the undeveloped Kiefer Boulevard right-of-way. The site is located within portions of Sections 23, 24, 25, and 26, Township 8 North, Range 6 East, Mount Diablo Baseline and Meridian, on the USGS 7.5-minute series "Carmichael, CA" topographic quadrangle (**Figure 1**).

The site is currently being used for cattle grazing and is occupied by two rural residences. The majority of the site consists of open rangeland. A small area in the southwestern portion of the site is composed of irrigated pasture. The northwestern portion of the site was formerly used as a nursery and Koi farm, which is evidenced by the presence of several large man-made ponds that saturate seasonally. Two rural residences and associated out buildings occur within the site along Excelsior Boulevard near the northwest corner of the site and at the terminus of Tree View Road in the southern-central portion of the site. These two sites are artificially irrigated and vegetated with large ornamental trees and shrubs. Additionally, the ±175-acre Sacramento Raceway Park occurs along the central-western boundary. This facility hosts vehicle and motorcycle races throughout the year.

Land uses surrounding the site include open rangeland and residential subdivisions to the north, a large gravel pit and rural residential developments to the west, as well as open rangeland and rural residential developments to the south and east.

Regulatory Framework

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA)

to help protect the ecosystems upon which endangered and threatened species depend. FESA prohibits the "take" of endangered or threatened wildlife species. "The term "take" means to harass, harm, pursue, hunt, shoot, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3).

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to FESA but pertains to state-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Game (CDFG) when preparing CEQA documents. The purpose is to ensure that the lead agency's actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFG on projects or actions that could affect listed species, directs CDFG to determine whether jeopardy would occur and allows CDFG to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFG to authorize exceptions to the state's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

California Native Plant Society

The California Native Plant Society (CNPS) maintains a list of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review. The following identifies the definitions of the CNPS listings:

- List 1A: Plants presumed Extinct in California
- List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- List 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere
- List 3: Plants about which we need more information – A Review List
- List 4: Plants of limited distribution – A Watch List

Species Description, Distribution and Habitat

Sacramento Orcutt Grass

Sacramento Orcutt grass (endangered (FE), state endangered (SE), CNPS list 1B) is endemic to southeastern Sacramento Valley and has always been restricted to Sacramento County. Sacramento Orcutt grass occurs in Northern Hardpan and Northern Volcanic Mudflow vernal pools within blue oak woodland and annual grassland. Occupied pools

are located on high terrace sites at elevations between 150 to 270 feet above mean sea level (MSL). Prior to 1998 and through examination of the known occurrences of Sacramento Orcutt grass at that time, it has been determined that this species occurs in pools that range from 0.25 to 2.03 acres in size, with a median size of 0.69 acre.

Sacramento Orcutt grass is an annual species that typically blooms between May and July. Like all members of the grass tribe Orcuttieae, this species is sticky and aromatic. This species is densely tufted, bluish green in color and densely hairy-glandular. Stems are erect or spreading and do not branch. The inflorescence occupies the upper one-third to one-half of the stem and consists of 5-15 spikelets. The spikelets are closely spaced and arranged in two opposing rows oriented towards one side of the inflorescence.

Slender Orcutt Grass

Slender Orcutt grass (FE, SE, CNPS list 1B) is found in Lake, Lassen, Plumas, Sacramento, Shasta, Siskiyou and Tehama counties. Slender Orcutt grass is typically found in vernal pools on remnant alluvial fans and high stream terraces and recent basalt flows that occur in valley grassland and blue oak woodland habitats, ranging in elevations from approximately 115 to 5,774 feet above MSL.

Slender Orcutt grass is a slender annual grass, which typically blooms between May and July. This species has branches that extend from the upper nodes and generally has several stems 2-6 inches tall, that end in a elongated inflorescence of relatively evenly spaced spikelets. Like all members of the grass tribe Orcuttieae, this species is sticky and aromatic. The foliage is grayish with sparse hairs. The lemmas are deeply cleft, of equal length, and have distinct teeth that are sharp-pointed or short-awned.

Methods

Foothill Associates' biologists conducted a focused survey for Orcutt grasses on June 28, 2006. Prior to the survey, soil data describing types of soils occurring on the site (**Figure 2**) was reviewed, as well as, a CNDDB records search for Orcutt grasses within five miles of the site (**Figure 3**). The survey was conducted during June when these species are flowering, for optimal identification. Prior to surveying for the Orcutt grasses, Sacramento Orcutt grass was observed immediately prior to the survey at the *Phoenix Field Ecological Preserve* located in Sacramento County, in order to review the condition and flowering status of this target species. This reference population of Sacramento Orcutt grass was photographed on June 28, 2006 and was in good condition and readily identifiable (**Figure 4**).

In accordance with the CNPS Botanical Survey Guidelines, the survey was conducted by personnel with the following qualifications: experience with conducting floristic surveys; intimate knowledge of plant taxonomy and plant community ecology and classification; familiarity with the plants of the area, including special-status and locally significant plants; familiarity with the appropriate state and federal statutes related to plants and plant collecting, and experience with analyzing impacts of project activities on native plants and plant communities.

The following available information pertaining to the natural resources of the region was reviewed for the survey and preparation of this report.

- Hickman, James C. (Ed). 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley California;
- Mason, Herbert L. 1957. *A Flora of the Marshes of California*. University of California Press, Berkeley, CA;
- Nakamura, G. and Nelson, J. Eds). 2001. *Selected Rare Plants of Northern California*. University of California Agricultural and Natural Resources, Oakland, CA; and
- U.S. Geological Survey. 1992. *Carmichael, California 7.5-minute series topographic quadrangle*. United States Department of the Interior.

The site was surveyed on foot to provide 100% search coverage. Particular attention was given to the vernal pools and depressional seasonal wetlands on the site which represent potential habitat for the special-status plant species of concern. While conducting the survey, a comprehensive botanical survey species list of all plant species observed on the site was compiled (**Appendix A**).

Results

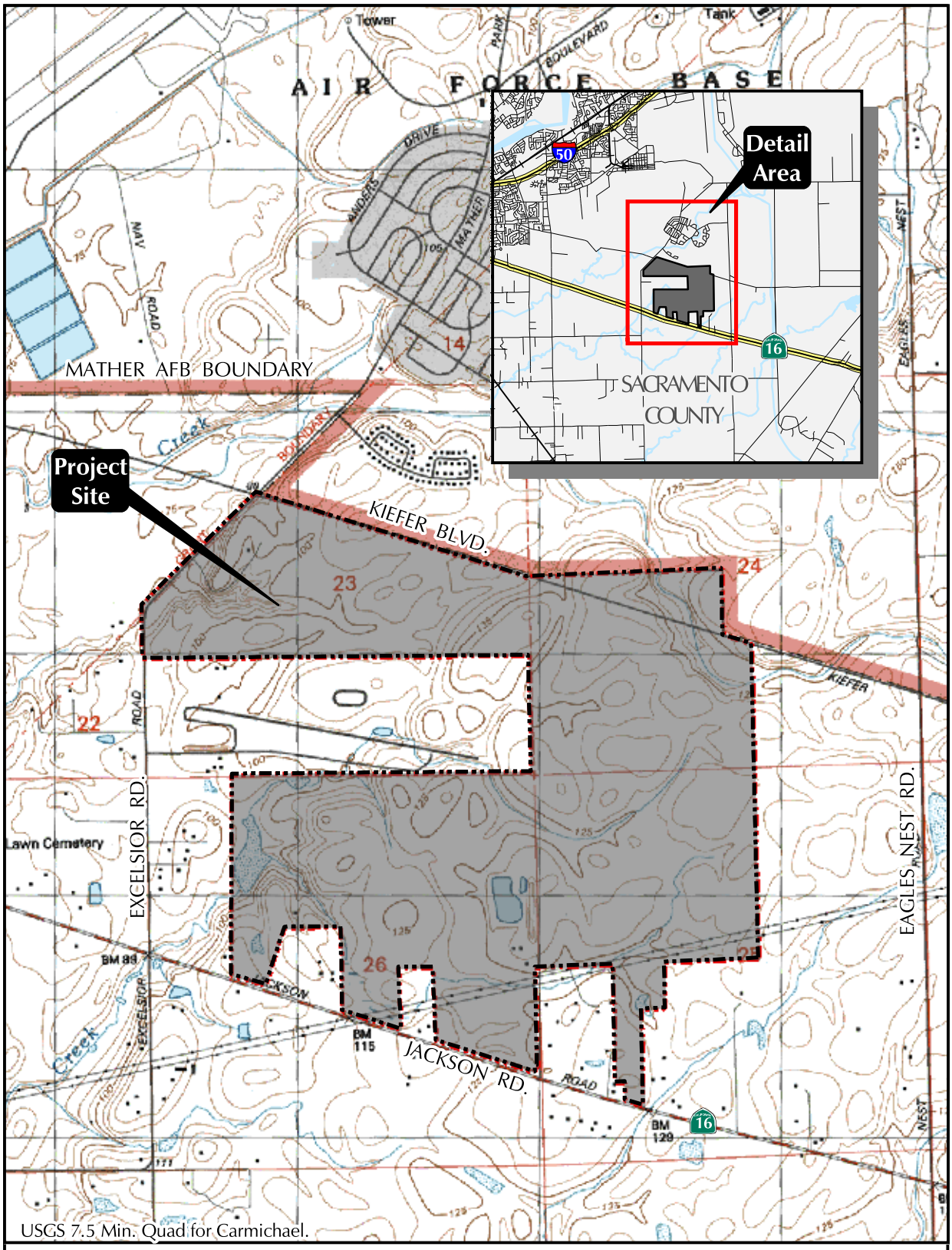
The site was thoroughly searched for Sacramento Orcutt grass and slender Orcutt grass. These species were not found during this focused survey.

Sincerely,

Carie Sears
Biologist

Enclosures:

Figure 1 — Site and Vicinity
Figure 2 — Soils
Figure 3 — CNDDB
Figure 4 — Sacramento Orcutt grass
Appendix A — Botanical Survey Species List



USGS 7.5 Min. Quad for Carmichael.

SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING
LANDSCAPE ARCHITECTURE

N

0 980 1960
SCALE IN FEET

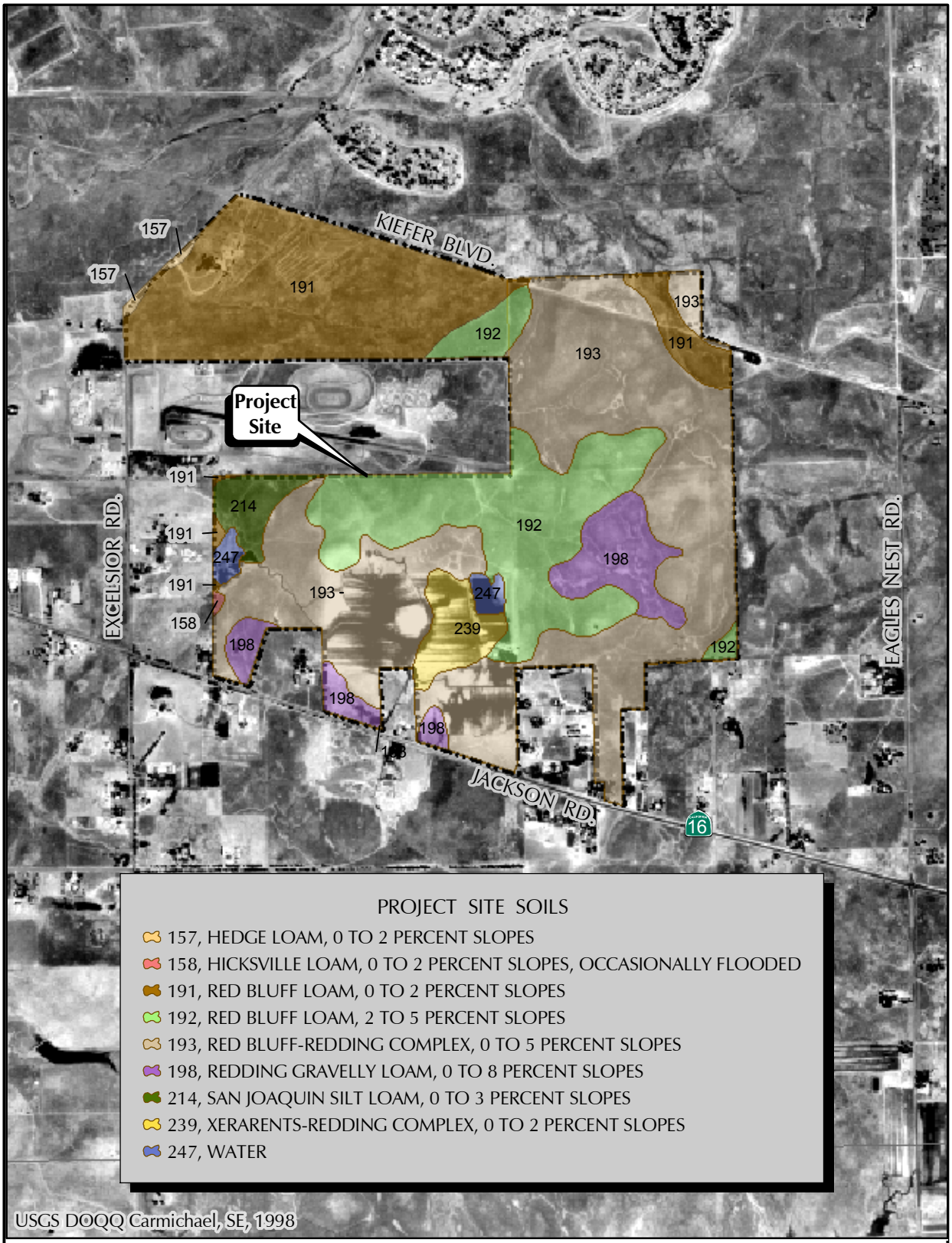
Drawn By: MMJ
Date: 07/07/04

FIGURE 1

EXCELSIOR ESTATES

site_and_vicinity.mxd

© 2004



SOILS

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SCALE IN FEET

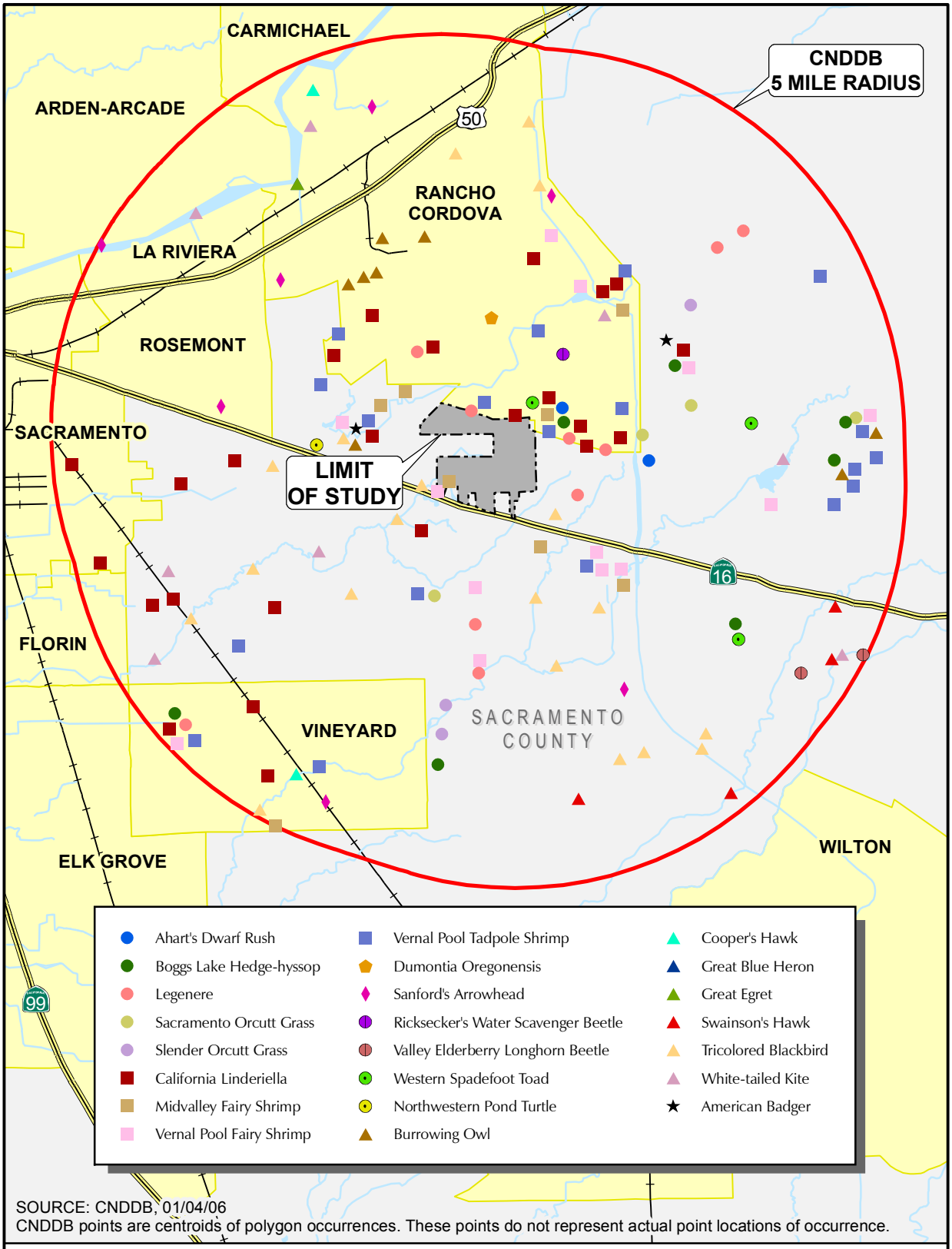
Drawn By: MMJ
Date: 07/07/04

FIGURE 2

EXCELSIOR ESTATES

soil.mxd

© 2004



SOURCE: CNDDB, 01/04/06
CNDDB points are centroids of polygon occurrences. These points do not represent actual point locations of occurrence.

CNDDB

FOOTHILL ASSOCIATES
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0 1 2
SCALE IN MILES

Drawn By: AH
Date: 06/29/06

FIGURE 3

EXCELSIOR ESTATES

cnddb.mxd

© 2006



Sacramento Orcutt grass (*Orcuttia viscida*) at Phoenix Park
Photo Date: 06/28/06

SACRAMETO ORCUTT GRASS

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

Figure 4

© 2006

Appendix A — Botanical Survey Species List

Scientific Name	Common Name
Agoseris heterophylla	Annual false dandelion
Amsinkia menziesii var. intermedia	Fiddleneck
Avena sp.	Wild oats
Brassica nigra	Black mustard
Briza minor	Rattlesnake grass
Bromus diandrus	Ripgut brome
B. hordeaceus	Soft chess
Calamagrostis sp.	Reed grass
Carduus pycnocephalus	Italian thistle
Castilleja attenuata	Valley tassels
Centaurea solstitialis	Yellow star-thistle
Centromadia fitchii	Fitch's tarplant
Cichorium intybus	Chicory
Convolvulus arvensis	Bindweed
Cotula coronopifolia	Brass buttons
Cuscuta sp.	Dodder
Cynodon dactylon	Bermudagrass
Cyperus eragrostis	Nutsedge
Deschampsia danthonioides	Annual hairgrass
Dianthus sp.	Pink
Digitaria ischaemum	Smooth crabgrass
Downingia bicornuta	Downingia
Eleocharis macrostachya	Spikerush
Eremocarpus setigerus	Doveweed
Eryngium vaseyi	Coyote thistle
Eucalyptus camaldulensis	Red gum
Glyceria occidentalis	Western mannagrass
Hemizonia fitchii	Spikeweed
Holocarpha virgata	Sticky tarweed
Hordeum marinum ssp. gussoneanum	Mediterranean barley
H. murinum	Barley
Hypochaeris glabra	Smooth cat's ear
H. radicata	Rough cat's ear
Juncus bufonius	Common toad rush
J. mexicanus	Mexican spikerush
Lasthenia fremontii	Goldfields
Leontodon taraxacoides	Hawkbit
Lepidium sp.	Peppergrass
Lolium perenne	Italian ryegrass
Lotus sp.	Lotus

Scientific Name	Common Name
Ludwigia peploides	Water primrose
Lythrum hyssopifolia	Loosestrife
Mentha pulegium	Pennyroyal
Navarretia leucocephala	White-headed navarretia
Paspalum dilatatum	Dallis grass
Plagiobothrys stipitatus	Vernal pool allocarya
Plantago lanceolata	English plantain
Pogogyne zizyphoroides	Mesamint
Polygonum sp.	Smartweed
P. monspeliensis	Rabbitsfoot grass
Populus fremontii	Fremont's cottonwood
Psilocarphus brevissimus	Wooly marbles
Ranunculus bonariensis	Vernal pool buttercup
Raphanus sativus	Field mustard
Rubus discolor	Himalyan blackberry
Rumex crispus	Curly dock
R. pulcher	Fiddle dock
Salix gooddingii	Black willow
Scirpus californicus	Bulrush
Taeniatherum caput-medusae	Medusa head grass
Taraxacum officianalis	Common dandelion
Trichostema lanceolatum	Vinegar weed
Trifolium hirtum	Rose clover
Triteleia laxa	Ithuriels's spear
Typha sp.	Cattail
Vulpia myruros	Foxtail fescue
Xanthium strumarium	Cocklebur

FOOTHILL ASSOCIATES

ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

July 25, 2007

Angelo G. Tsakopoulos
Tsakopoulos Real Estate Investments
7423 Fair Oaks Boulevard, Suite 10
Carmichael, CA 95608

Subject: **Orcutt Grass Survey on the ±866-Acre Excelsior Estates Site, Sacramento County, California**

Dear Angelo:

This report summarizes the results of a focused survey for Sacramento Orcutt grass (*Orcuttia viscida*) and slender Orcutt grass (*Orcuttia tenuis*). The purpose of this focused survey was to determine the presence or absence of these federally listed Orcutt grass species on the site.

The ±866-acre site is located in an unincorporated area of Sacramento County, just south of the City of Rancho Cordova. The site is irregularly shaped and bounded partially on the south by Jackson Road (Highway 16), on the west by Excelsior Road, and on the north by the unimproved Kiefer Boulevard right-of-way. The site occupies portions of Sections 23, 24, 25, and 26, Township 8 North, Range 6 East, Mount Diablo Baseline and Meridian, on the USGS 7.5-minute series *Carmichael, CA* topographic quadrangle (**Figure 1**).

The site is predominantly composed of open rangeland and is currently being used for cattle grazing. A small area in the southwestern portion of the site is composed of irrigated pasture. The northwestern portion of the site was formerly used as a nursery and Koi farm, and still supports several large man-made ponds that saturate seasonally. Two rural residences and associated outbuildings occur within the site along Excelsior Road near the northwest corner of the site and at the terminus of Tree View Road in the southern-central portion of the site. These two areas are artificially irrigated and vegetated with ornamental trees and shrubs. Additionally, the ±175-acre Sacramento Raceway Park occurs along the western-central boundary. This facility hosts vehicle races throughout the year.

Species Description, Distribution and Habitat

Sacramento Orcutt Grass

Sacramento Orcutt grass (endangered (FE), state endangered (SE), CNPS list 1B) is endemic to southeastern Sacramento Valley and has always been restricted to Sacramento

County. Sacramento Orcutt grass occurs in Northern Hardpan and Northern Volcanic Mudflow vernal pools within blue oak woodland and annual grassland. Occupied pools are located on high terrace sites at elevations between 150 to 270 feet above mean sea level (MSL). Prior to 1998 and through examination of the known occurrences of Sacramento Orcutt grass at that time, it has been determined that this species occurs in pools that range from 0.25 to 2.03 acres in size, with a median size of 0.69 acre.

Sacramento Orcutt grass is an annual species that typically blooms between May and July. Like all members of the grass tribe Orcuttieae, this species is sticky and aromatic. This species is densely tufted, bluish green in color and densely hairy-glandular. Stems are erect or spreading and do not branch. The inflorescence occupies the upper one-third to one-half of the stem and consists of 5-15 spikelets. The spikelets are closely spaced and arranged in two opposing rows oriented towards one side of the inflorescence.

Slender Orcutt Grass

Slender Orcutt grass (FE, SE, CNPS list 1B) is found in Butte, Lake, Lassen, Modoc, Plumas, Sacramento, Shasta, Siskiyou and Tehama counties. Slender Orcutt grass is typically found in vernal pools on remnant alluvial fans and high stream terraces and recent basalt flows that occur in valley grassland and blue oak woodland habitats, ranging in elevations from approximately 115 to 5,774 feet above MSL.

Slender Orcutt grass is a slender annual grass, which typically blooms between May and July. This species has branches that extend from the upper nodes and generally has several stems 2-6 inches tall, that end in a elongated inflorescence of relatively evenly spaced spikelets. Like all members of the grass tribe Orcuttieae, this species is sticky and aromatic. The foliage is grayish with sparse hairs. The lemmas are deeply cleft, of equal length, and have distinct teeth that are sharp-pointed or short-awned.

Methods

The focused survey for Orcutt grasses was conducted by Foothill Associates biologists on July 18, 2007. Immediately prior to surveying for the Orcutt grasses, Sacramento Orcutt grass was observed at the *Phoenix Field Ecological Preserve* and *Anatolia Preserve* located in Sacramento County, in order to review the condition and flowering status of this target species. Both reference populations of Sacramento Orcutt grass were photographed on July 18, 2007 and were in good condition and readily identifiable (**Figure 2**). It should be noted that this survey followed a June 8, 2007 site visit with Justin Cutler of the U.S. Fish and Wildlife Service, where the large vernal pools on the site were inspected for Orcutt grasses.

In accordance with the CNPS Botanical Survey Guidelines, the survey was conducted by personnel with the following qualifications: experience with conducting floristic surveys; intimate knowledge of plant taxonomy and plant community ecology and classification; familiarity with the plants of the area, including special-status and locally significant plants; familiarity with the appropriate state and federal statutes related to plants and plant collecting, and experience with analyzing impacts of project activities on native plants and plant communities.

The following available information pertaining to the natural resources of the region was reviewed for the survey and preparation of this report.

- Hickman, James C. (Ed). 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley California.

- Mason, Herbert L. 1957. *A Flora of the Marshes of California*. University of California Press, Berkeley, CA.

The site was surveyed on foot to provide total search coverage. Particular attention was given to the vernal pools and other seasonal wetland habitats, which represent potential habitat for *Orcuttia* species. While conducting the survey, a comprehensive botanical survey species list of all plant species observed was compiled (**Appendix A**).

Results

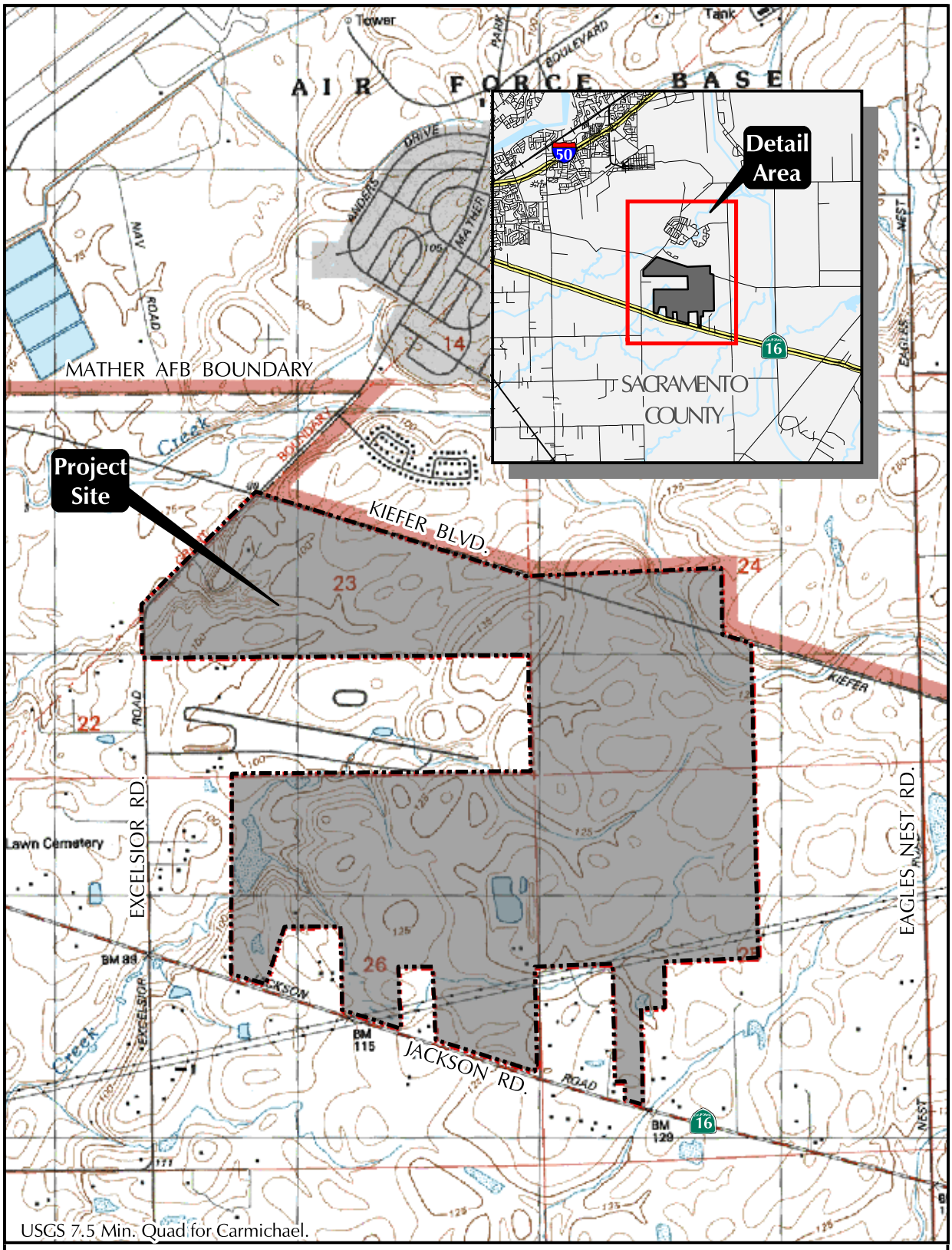
The site was thoroughly searched for Sacramento Orcutt grass and slender Orcutt grass. These species were not found during this focused survey.

Feel free to contact me if you have any questions or require additional information.

Sincerely,

Michael J. Farmer
Senior Biologist

Enclosures:
Figure 1 — Site and Vicinity
Figure 2 — Sacramento Orcutt Grass
Appendix A — Plant Species Observed on the Excelsior Estates Site



USGS 7.5 Min. Quad for Carmichael.

SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING
LANDSCAPE ARCHITECTURE

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0 980 1960
SCALE IN FEET

Drawn By: MMJ
Date: 07/07/04

FIGURE 1

EXCELSIOR ESTATES

site_and_vicinity.mxd

© 2004



Sacramento Orcutt grass (*Orcuttia viscida*) at *Phoenix Field Ecological Preserve*
Photo Date: July 18, 2007



Sacramento Orcutt grass (*Orcuttia viscida*) at *Anatolia Preserve*
Photo Date: July 18, 2007

SACRAMENTO ORCUTT GRASS

FOOTHILL ASSOCIATES
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Figure 2

© 2007

Appendix A — Plant Species Observed on the Excelsior Estates Site

Scientific Name	Common Name
Agoseris heterophylla	Annual false dandelion
Amsinkia menziesii var. intermedia	Fiddleneck
Avena sp.	Wild oats
Brassica nigra	Black mustard
Briza minor	Rattlesnake grass
Bromus diandrus	Ripgut brome
B. hordeaceus	Soft chess
Calamagrostis sp.	Reed grass
Carduus pycnocephalus	Italian thistle
Castilleja attenuata	Valley tassels
Centaurea solstitialis	Yellow star-thistle
Centromadia fitchii	Fitch's tarplant
Cichorium intybus	Chicory
Convolvulus arvensis	Bindweed
Cotula coronopifolia	Brass buttons
Cuscuta sp.	Dodder
Cynodon dactylon	Bermudagrass
Cyperus eragrostis	Nutsedge
Deschampsia danthonioides	Annual hairgrass
Dianthus sp.	Pink
Digitaria ischaemum	Smooth crabgrass
Downingia bicornuta	Downingia
Eleocharis macrostachya	Spikerush
Eremocarpus setigerus	Doveweed
Eryngium vaseyi	Coyote thistle
Eucalyptus camaldulensis	Red gum
Glyceria occidentalis	Western mannagrass
Hemizonia fitchii	Spikeweed
Holocarpha virgata	Sticky tarweed
Hordeum marinum ssp. gussoneanum	Mediterranean barley
H. murinum	Barley
Hypochaeris glabra	Smooth cat's ear
H. radicata	Rough cat's ear
Juncus bufonius	Common toad rush
J. mexicanus	Mexican spikerush
Juglans hindsii	Northern California black walnut
Lasthenia fremontii	Goldfields
Leontodon taraxacoides	Hawkbit
Lepidium sp.	Peppergrass
Lolium perenne	Italian ryegrass

Scientific Name	Common Name
Lotus sp.	Lotus
Ludwigia peploides	Water primrose
Lythrum hyssopifolia	Loosestrife
Maclura pomifera	Osage orange
Mentha pulegium	Pennyroyal
Morus alba	Mulberry
Navarretia leucocephala	White-headed navarretia
Paspalum dilatatum	Dallis grass
Pistachia sp.	Pistache
Plagiobothrys stipitatus	Vernal pool allocarya
Plantago lanceolata	English plantain
Pogogyne zizyphoroides	Mesamint
Polygonum sp.	Smartweed
P. monspeliensis	Rabbitsfoot grass
Populus fremontii	Fremont's cottonwood
Psilocarphus brevissimus	Wooly marbles
Pyracantha sp.	Firethorn
Ranunculus bonariensis	Vernal pool buttercup
Raphanus sativus	Field mustard
Rubus discolor	Himalyan blackberry
Rumex crispus	Curly dock
R. pulcher	Fiddle dock
Salix gooddingii	Black willow
Scirpus californicus	Bulrush
Taeniatherum caput-medusae	Medusa head grass
Taraxacum officianalis	Common dandelion
Trichostema lanceolatum	Vinegar weed
Trifolium hirtum	Rose clover
Triteleia laxa	Ithuriels's spear
Typha sp.	Cattail
Vulpia myruros	Foxtail fescue
Xanthium strumarium	Cocklebur

Appendix D — Final Excelsior Estates Special-Status Species Plant Survey, dated August 5, 2014

August 5, 2014

Angelo G. Tsakopoulos
Tsakopoulos Real Estate Investments
7423 Fair Oaks Boulevard, Suite 10
Carmichael, CA 95608

RE: Special-Status Plant Surveys on the ±886-Acre Excelsior Estates Site, Sacramento County, California

Dear Mr. Tsakopoulos:

This report summarizes the results of two special-status plant surveys. The first survey focused on species blooming between March and June including: Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Bogg's Lake hedgehyssop (*Gratiola heterosepala*), dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii* ssp. *myersii*), and Sanford's arrowhead (*Sagittaria sanfordii*). The second survey focused on later blooming species, specifically Sacramento Orcutt grass (*Orcuttia viscida*) and slender Orcutt grass (*Orcuttia tenuis*). Sanford's arrowhead was also included in the second survey, as it blooms in late spring through late summer. The purpose of this survey was to determine the presence or absence of these listed species on the project site.

The ±866-acre project site is located in an unincorporated area of Sacramento County, just south of the City of Rancho Cordova. The site is irregularly shaped and bounded partially on the south by Jackson Road (Highway 16), on the west by Excelsior Road, and on the north by the unimproved Kiefer Boulevard right-of-way. The site occupies portions of Sections 23, 24, 25, and 26, Township 8 North, Range 6 East, Mount Diablo Baseline and Meridian, on the USGS 7.5-minute series *Carmichael, CA* topographic quadrangle (**Figure 1**).

The site is predominantly composed of open rangeland and is currently being used for cattle grazing. A small area in the southwestern portion of the site is composed of irrigated pasture. The northwestern portion of the site was formerly used as a nursery and koi farm, and still supports several large man-made ponds that saturate seasonally. Two rural residences and associated outbuildings occur within the site along Excelsior Road near the northwest corner of the site and at the terminus of Tree View Road in the southern-central portion of the site. These two areas are artificially irrigated and vegetated with ornamental trees and shrubs. Additionally, the ±175-acre Sacramento Raceway Park is located along the western-central boundary. This facility hosts vehicle races throughout the year.

The surveys were conducted by a Foothill Associate's biologist on May 2, 5 and 6, and June 5 and 6, 2014. The survey was conducted by personnel with the following qualifications:

experience with conducting floristic surveys; intimate knowledge of plant taxonomy and plant community ecology and classification; familiarity with the plants of the area, including special-status and locally significant plants; familiarity with the appropriate state and federal statutes related to plants and plant collecting, and experience with analyzing impacts of project activities on native plants and plant communities.

The site was surveyed on foot to provide total search coverage. All species occur in vernal pool and other seasonal wetland habitats. Therefore, all surveys were focused within these habitats. The June surveys were focused on the larger, deeper vernal pool and marshy habitats. While conducting the surveys, a comprehensive botanical survey species list of all plant species observed was compiled (Appendix A).

Although the site has potential habitat for several of these special-status plant species, no special-status plant species were observed.

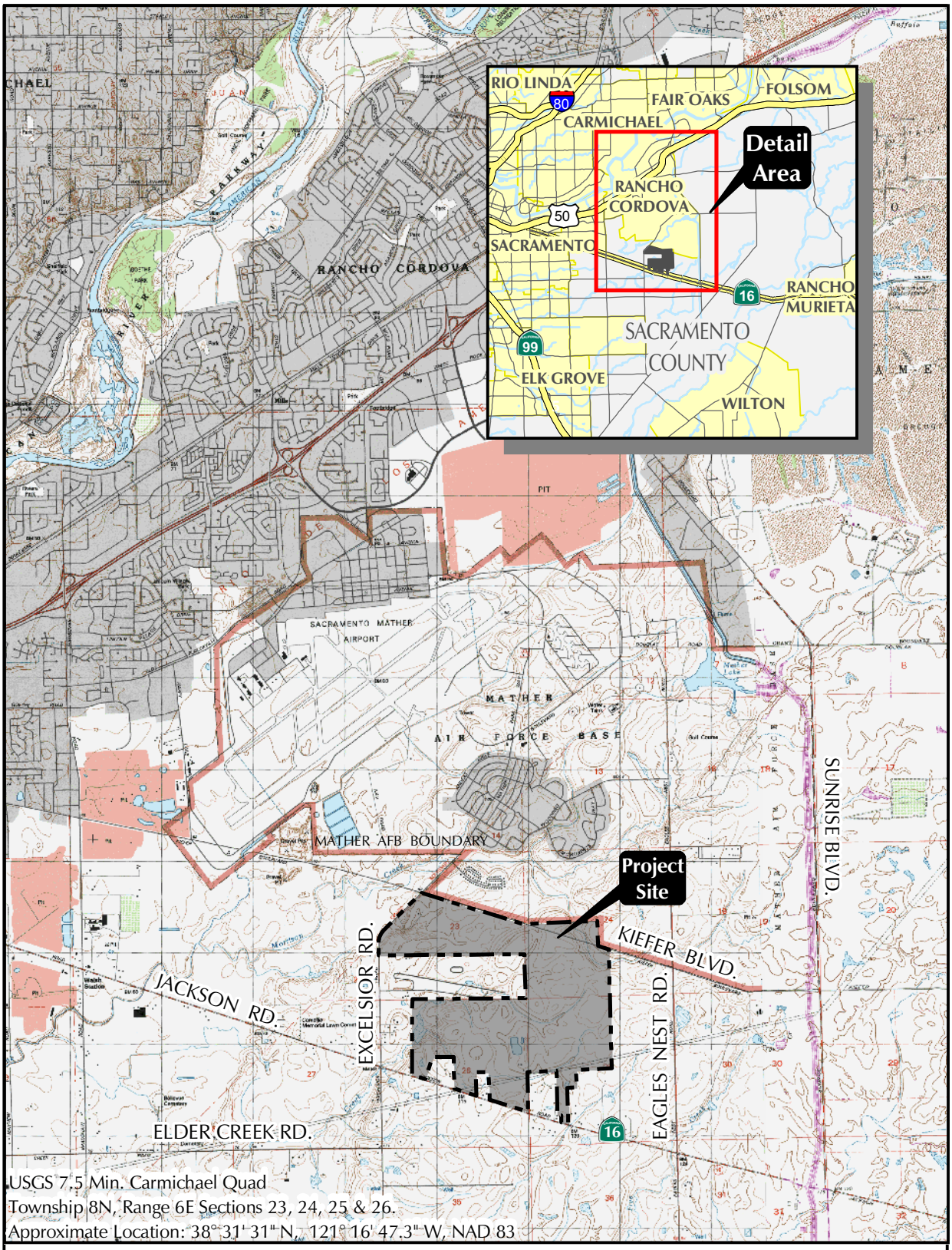
If you have any questions please contact me at your earliest convenience at (916) 435-1202 or email kvail@foothill.com.

Sincerely,



Kirk Vail
Biologist

Enclosures: Figure 1 — Site and Vicinity
Appendix A — Plant Species Observed on the Project Site



USGS 7.5 Min. Carmichael Quad
Township 8N, Range 6E Sections 23, 24, 25 & 26.
Approximate Location: 38° 31' 31" N, 121° 16' 47.3" W, NAD 83

PROJECT SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 0.5 1
SCALE IN MILES

Drawn By: MMJ, RJM
Date: 03/17/09

FIGURE 1

EXCELSIOR ESTATES

site_and_vicinity_2009.mxd

© 2014

Appendix A — Plant Species Observed on the Project Site

Scientific Name	Common Name
Agoseris heterophylla	Annual false dandelion
Amsinkia menziesii var. intermedia	Fiddleneck
Avena sp.	Wild oats
Brassica nigra	Black mustard
Briza minor	Rattlesnake grass
Bromus diandrus	Ripgut brome
B. hordeaceus	Soft chess
Calamagrostis sp.	Reed grass
Carduus pycnocephalus	Italian thistle
Castilleja attenuata	Valley tassels
Centaurea solstitialis	Yellow star-thistle
Centromadia fitchii	Fitch's tarplant
Cichorium intybus	Chicory
Convolvulus arvensis	Bindweed
Conyza canadensis	Horseweed
Croton setigerus	Dove weed
Cotula coronopifolia	Brass buttons
Cuscuta sp.	Dodder
Cynodon dactylon	Bermudagrass
Cyperus eragrostis	Nutsedge
Deschampsia danthonioides	Annual hairgrass
Dianthus sp.	Pink
Digitaria ischaemum	Smooth crabgrass
Downingia bicornuta	Downingia
Echinochloa crus-galli	Barnyard grass
Eleocharis macrostachya	Spikerush
Elymus caput-medusae	Medusa head grass
Eryngium vaseyi	Coyote thistle
Eucalyptus camaldulensis	Red gum
Festuca perennis	Italian ryegrass
Glyceria occidentalis	Western mannagrass
Holocarpha virgata	Sticky tarweed
Holcus lanatus	Velvet grass

Scientific Name	Common Name
Hordeum marinum ssp. gussoneanum	Mediterranean barley
H. murinum	Barley
Hypochaeris glabra	Smooth cat's ear
H. radicata	Rough cat's ear
Juncus bufonius	Common toad rush
J. effusus	Common rush
J. mexicanus	Mexican spikerush
Juglans hindsii	Northern California black walnut
Lactuca serriola	Prickly lettuce
Lasthenia fremontii	Goldfields
Leontodon taraxacoides	Hawkbit
Lepidium sp.	Peppergrass
Lotus corniculatus	Bird's foot trefoil
Ludwigia peploides	Water primrose
Lythrum hyssopifolia	Loosestrife
Maclura pomifera	Osage orange
Mentha pulegium	Pennyroyal
Morus alba	Mulberry
Navarretia leucocephala	White-headed navarretia
Paspalum dilatatum	Dallis grass
Paspalum distichum	Knotgrass
Pistachia sp.	Pistache
Plagiobothrys stipitatus	Vernal pool allocarya
Plantago lanceolata	English plantain
Pogogyne zizyphoroides	Mesamint
Polygonum sp.	Smartweed
P. monspeliensis	Rabbitsfoot grass
Populus fremontii	Fremont's cottonwood
Psilocarphus brevissimus	Wooly marbles
Pyracantha sp.	Firethorn
Ranunculus bonariensis	Vernal pool buttercup
Raphanus sativus	Field mustard
Rubus armeniacus	Himalayan blackberry
Rumex crispus	Curly dock
R. pulcher	Fiddle dock
Salix gooddingii	Black willow

Scientific Name	Common Name
Scirpus californicus	Bulrush
Taraxacum officianalis	Common dandelion
Trichostema lanceolatum	Vinegar weed
Trifolium hirtum	Rose clover
Triteleia laxa	Ithuriels's spear
Typha angustifolia.	Cattail
Veronica anagallis-aquatica	Water speedwell
Vulpia myruros	Foxtail fescue
Xanthium strumarium	Cocklebur

Appendix E — 90-Day 2009-2010 Wet-Season Survey for Listed Vernal Pool Branchiopods, Excelsior Estates, Sacramento County, California

90-Day Report
2009-2010 Wet-Season Survey for Listed Vernal Pool Branchiopods

Excelsior Estates
Sacramento County, California

Prepared for: Tsakopoulos Investments

July 23, 2010

Submitted by:

FOOTHILL ASSOCIATES

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SACRAMENTO COUNTY
EXCELSIOR ESTATES

90-Day Report

Prepared for:

Tsakopoulos Investments

Data Collection and Report Preparation by:

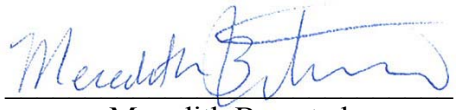
Foothill Associates
590 Menlo Drive, Suite 1
Rocklin, CA 95765

Permit TE810380-4

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.



David Bise



Meredith Branstad



Eric Christensen

July 23, 2010

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1.0 EXECUTIVE SUMMARY

This report presents the results of the 2009-2010 wet-season survey for listed vernal pool branchiopods conducted on the Excelsior Estates site located in Sacramento County, California. The purpose of this survey was to determine the presence of listed vernal pool branchiopods within historic pools on the site. Surveys focused on pools in the potential preserve area, although pools from throughout the site were randomly sampled.

A total of 290 wetlands on the site were surveyed between December 2009 and March 2010. Monitoring occurred on December 21, 2009, January 7, January 8, January 20, January 21, January 22, January 25, February 3, February 18, February 19, March 4, and March 5, 2010. Populations of vernal pool branchiopods were found in 137 of the sampled pools. The federally listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*) were observed throughout the site in 36 and 81 wetlands respectively. California linderiella (*Linderiella occidentalis*), a former federal species of concern, was also observed in 125 wetlands. All three species coexisted in 26 of the sampled pools. Forty-four pools had populations of tadpole shrimp and California linderiella only. Vernal pool fairy shrimp and California linderiella were found together without tadpole shrimp in nine pools.

2.0 INTRODUCTION

This report presents the results of the 2009-2010 wet-season survey for listed vernal pool branchiopods conducted on the Excelsior Estates site (site). The site is located north of Jackson Highway, State Route 16, approximately four miles east of the Sacramento city limits within Township 8 North, Range 6 East, Sections 23, 24, 25 and 26 of the *Carmichael* 7.5 minute USGS Quadrangle (**Figure 1**). A total of 286 vernal pools and 140 depressional seasonal wetlands occur on the site (**Figure 2**).

3.0 METHODS

Wet-season surveys for listed vernal pool branchiopods were conducted on the site on December 21, 2009, January 7, January 8, January 20, January 21, January 22, January 25, February 3, February 4, February 18, February 19, March 4, and March 5, 2010. Pools in the proposed preserve area were sampled, if inundated, on every site visit. A minimum of ten randomly chosen pools outside of the proposed preserve are were sampled during each survey.

The surveys were conducted in accordance with the U.S. Fish and Wildlife Service (USFWS) protocol survey for listed vernal pool branchiopods, as outlined in 1996 *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods*. Wetlands were sampled by pulling a D-frame, 150-micron aquatic dip-net through the water column. The dip-net was undulated up and down through the water column to ensure a representative sample from each wetland sampled. A minimum of three, five-foot passes were made with the dip-net per wetland sampled.

The number of listed branchiopods was estimated to be in the 10s, 100s, and 1,000s depending on the number of shrimp that were netted and the amount of inundation within the wetland during the survey. This estimated population data along with the presence of common invertebrates, insects, and other wildlife species within the wetland were indicated on the data sheets. In sampling some pools, only female vernal pool fairy shrimp were observed and no males were found. In such situations, female vernal pool fairy shrimp were identified as such based on the morphology of the brood sac and overall body size compared to identified males of the same species in other wetlands. If vernal pool fairy shrimp were identified from female individuals only in a pool, it was noted on the field survey data sheets by the presence of a female sign (♀) following the number of individuals estimated to be in the wetland. In pools where vernal pool tadpole shrimp carapaces were observed but no live shrimp were captured in the net the population was assumed to be in the 10s and 'carapace only' was noted on the data sheets. Other data collected during each sampling included the wetland number, water depth, estimated maximum depth, surface area of each wetland at time of sampling, estimated maximum surface area of wetland, water temperature, if a voucher specimen was collected, and habitat and weather conditions. The species were easily identifiable in the field; therefore no voucher specimens were collected. Representative site photographs were taken with a digital camera during the surveys.

4.0 RESULTS

4.1 Biological Community Description

The vernal pools on the site are surrounded by annual grassland habitat that supports numerous grasses and herbaceous species. Dominants include soft brome (*Bromus hordeaceus*), wild oat (*Avena* sp.), medusa head (*Taeniatherum caput-medusae*), long-beaked filaree (*Erodium botrys*), hawkbit (*Leontodon taraxacoides*), foxtail grass (*Vulpia myuros*), Spanish clover (*Lotus purshianus*), tarplant (*Holocarpha virgata*), Fitch's tarweed (*Centromadia fitchii*), foxtail barley (*Hordeum murinum*), and Italian ryegrass (*Lolium multiflorum*).

Dominant plant species observed in vernal pool habitat included waxy manna grass (*Glyceria declinata*), coyote thistle (*Eryngium vaseyi*), spikerush (*Eleocharis macrostachya*), and vernal pool buttercup (*Ranunculus bonariensis*).

4.2 Sampling Results

Invertebrate data were collected from 290 wetlands on the site. As shown in **Table 1**, vernal pool branchiopods were present in approximately half of the sampled pools. Populations of vernal pool fairy shrimp were identified in a total of 36 individual pools. Populations of vernal pool tadpole shrimp were identified in 81 separate pools. California linderiella was found in 125 pools. Vernal pool tadpole shrimp and California linderiella were found together in a total of 70 pools. Vernal pool fairy shrimp and California linderiella were found together in a total of 35 pools. The three species co-existed in 26 pools. Vernal pool tadpole shrimp and vernal pool fairy shrimp were never found in the same feature without California linderiella also being present. The number of pools with populations of branchiopods on each sampling date is shown in **Table 2**. **Figure 3** shows the locations of all populations of vernal pool fairy shrimp and vernal pool tadpole shrimp identified on the site. CNDDB reports have been submitted to the California Department of Fish and Game and are included as **Appendix C** of this report.

Table 1 — Frequency of Populations of Vernal Pool Branchiopods

Branchiopod Species Found (exclusive of other categories)	Number of Pools	Percent of Total Pools Sampled
All Three Species	26	9.0%
Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp	0	0%
Vernal Pool Tadpole Shrimp and California Linderiella	44	15.2%
Vernal Pool Fairy Shrimp and California Linderiella	9	3.1%
Vernal Pool Fairy Shrimp Only	1	0.3%
Vernal Pool Tadpole Shrimp Only	11	3.8%
California Linderiella Only	46	15.9%
No Branchiopod Species	153	52.7%

Table 2 — Populations of Vernal Pool Branchiopods by Sampling Date

Sampling Date	Number of Pools Sampled	Number of Pools with Populations		
		Branchinecta lynchi	***Lepidurus packardi***	***Linderiella occidentalis***
12/21/2009	13	0	0	2
1/7/2010	21	3	1	9
1/8/2010	14	1	0	9
1/20/2010	6	0	0	4
1/21/2010	73	4	2	9
1/22/2010	85	0	0	1
1/25/2010	92	0	0	1
2/3/2010	50	13	30	19
2/4/2010	46	14	28	33
2/18/2010	63	13	39	44
2/19/2010	48	9	23	33
3/4/2010	74	0	37	30
3/5/2010	70	2	21	29

Other non-listed aquatic invertebrates found during the survey included water fleas (cladocera), copepods (copepoda), seed shrimp (ostracoda), and flatworms (planaria), diving water beetles (dytiscidae), crawling water beetles (haliplidae), midges (chironomidae), and backswimmers (notonectidae). Bullfrog larvae (*Rana catesbiana*) and both larval and adult pacific tree frogs (*Hyla regilla*) were also found in the sampled

wetlands on the site. Ground-level photographs of the site and the field survey data sheets are included in **Appendix A** and **Appendix B**, respectively.

4.3 Site Conditions

During our survey, the site was found to be in good condition. There were cattle tracks and bovine fecal matter in many of the vernal pools and surrounding landscape, resulting in high variability of conditions between individual vernal pools. Some pools had little or no evidence of cattle presence and exhibited relatively clear water, while other pools had obvious signs of high cattle traffic and typically had turbid, foul-smelling water. Overall, there were no significant problems with trash dumping, off-road vehicle use, or other signs of disturbance on the majority of the site. Trash dumping and off-road vehicle damage was observed in portions of the site within and north of the decommissioned section of Kiefer Boulevard. Additionally, small pieces of trash that had likely been blown onto the site from the nearby road littered the southern edge of the site.

5.0 CONCLUSIONS

As discussed, populations of the federally listed vernal pool fairy shrimp and vernal pool tadpole shrimp were observed in approximately 12% (36) and 28% (81) of the total wetland features sampled, respectively. Many of the wetlands on the site provide suitable habitat for listed vernal pool branchiopods.

6.0 REFERENCES

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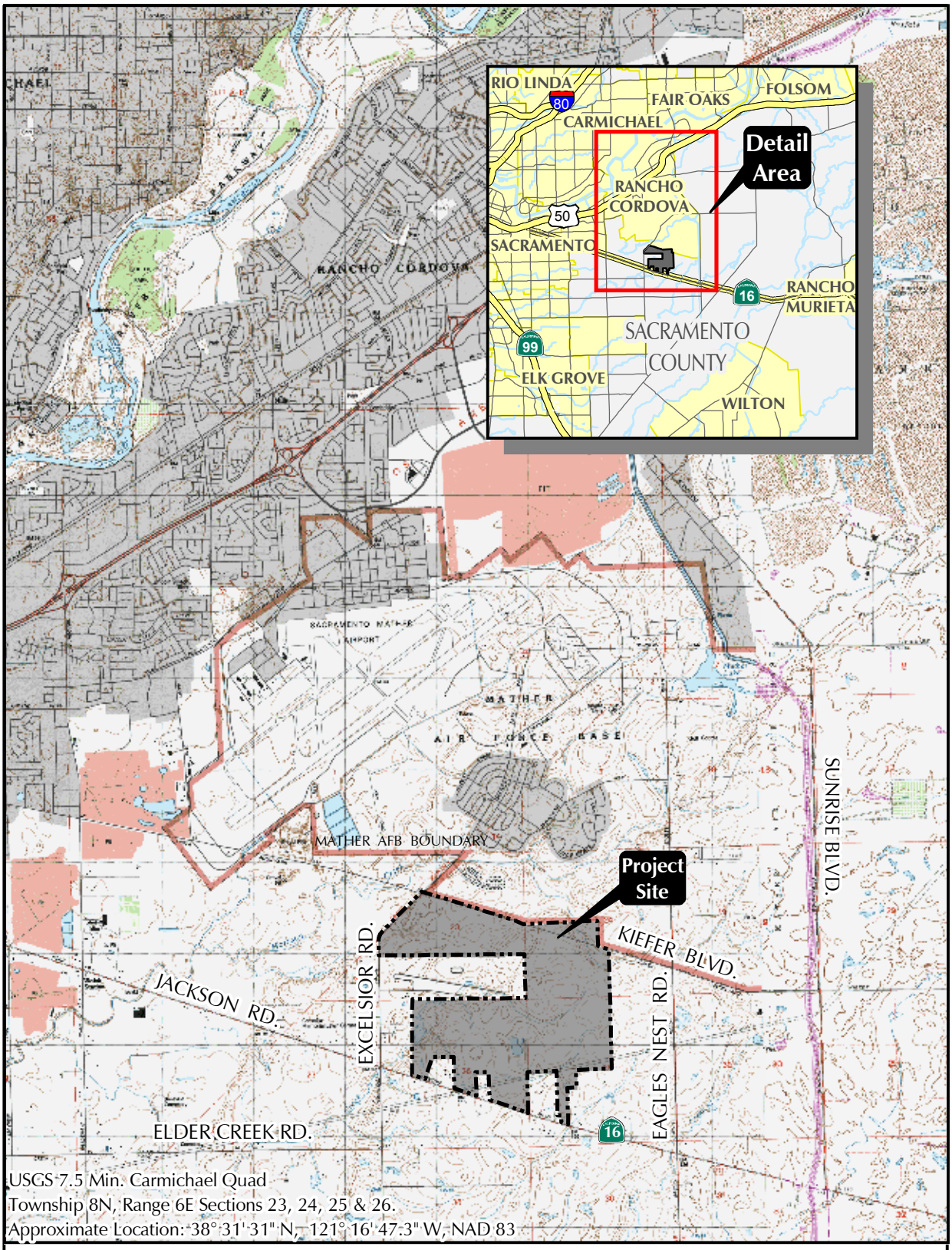


USGS 7.5 Min. Carmichael Quad
Township 8N, Range 6E Sections 23, 24, 25 & 26.
Approximate Location: 38° 31' 31" N, 121° 16' 47.3" W, NAD 83

SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 0.5 1
SCALE IN MILES

Drawn By: MMJ
Date: 07/24/07

FIGURE 1

EXCELSIOR ESTATES

site_and_vicinity_2007.mxd

© 2010

38° 32 min 09 sec N
-121° 17 min 33 sec W

KIEFER BOULEVARD

Morrison Creek

JACKSON HIGHWAY

WATERS OF THE U. S.	
CLASSIFICATION	ACREAGE
DEPRESSIONAL WETLANDS	
Seasonal Wetland	4.35
Perennial Marsh	1.03
Vernal Pool	27.78
RIVERINE WETLANDS	
Seasonal Wetland	3.45
Perennial Marsh	10.05
OTHER WATERS OF THE U.S.	
Ephemeral Drainage	0.23
Intermittent Drainage	1.19
Pond	5.04
Ditch	0.32
TOTAL	53.44

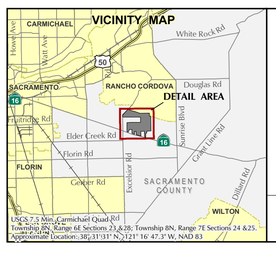
OTHER FEATURES

- Data Points
- Culverts
- Site Boundary

NOTES

- Wetland delineation verified by U.S. Army Corps of Engineers verification, 8/11/2009 (SPK-2004-00791).
- Digital base data provided by G.C. Wallace. Base data was moved and rotated to GPS reference points. Contour interval is 2 foot.
- The Hyrologic Unit Code for this site is 18020109
- This wetland delineation utilizes the Corps' 1987 three-parameter methodology and the Rapanos Guidance to delineate jurisdictional waters of the U.S.
- Wetlands and other waters of the U.S. were mapped using a Trimble GPS (Global Positioning System).

VICINITY MAP



USGS 7.5 Min. Carmichael Quad Rd
Township 8N, Range 6E Sections 21 & 28; Township 8N, Range 7E Sections 24 &25.
Approximate Location: 38°31'31" N, 121° 16' 47.3" W, NAD 83

0 300 600
SCALE IN FEET

FIGURE 2

DELINEATED WATERS OF THE U. S.

EXCELSIOR ESTATES

FOOTHILL ASSOCIATES
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© 2010

DATE: 09/01/04
REVISION: 05/05/05, 07/19/07, 12/13/07, 04/23/09, 05/12/09

FILE NAME: Delineation_Waters_of_the_US_20090421.MXD
DRAWN BY: MMJ, RJM
DELINEATED BY: CJS, JAH, RHB - 2004, MJF, BB - 2007

VERIFIED

PROJECT NAME: Excelsior Estates FILE NAME: Dineated Waters_of_the_US_20090421.MXD DATE: 09/01/04 REVISED: 05/05/05, 07/19/07, 12/13/07, 04/23/09, 05/12/09

LEGEND

- Seasonal Wetland (DSW)
- Vernal Pool (VP)
- Perennial Marsh (DPM)
- Seasonal Wetland (RSW)
- Perennial Marsh (RPM)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Ditch/Canal
- Ditch/Canal
- Pond

- *Branchinecta lynchi*
- *Lepidurus packardi*
- *Branchinecta lynchi & Lepidurus packardi*

- Site Boundary

FIGURE 3 - LISTED VERNAL POOL BRANCHIOPOD OCCURENCES

0 300 600

SCALE IN FEET

EXCELSIOR ESTATES

FOOTHILL ASSOCIATES

ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

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DATE:	03/24/10	FILE NAME:	2010_VP_Monitoring.MXD
		DRAWN BY:	MMJ, ACL
		DELINEATED BY:	CJS, JAH, RHB - 2004, MJF, BB - 2007

Appendix A — Ground-Level Photographs



Excelsior Estates
General Landscape
12/21/2009 Photographer: EMC



Excelsior Estates
General Landscape
3/4/2010 Photographer: BVDZ

GROUND-LEVEL PHOTOGRAPHS

© 2010



Excelsior Estates
Vernal Pool 277
12/21/2009 Photographer: EMC



Excelsior Estates
Seasonal Wetland 115
1/8/2010 Photographer: EMC

© 2010



Excelsior Estates
Seasonal Wetland 43
1/20/2010 Photographer: EMC



Excelsior Estates
Vernal Pool 390
1/21/2010 Photographer: EMC

GROUND-LEVEL PHOTOGRAPHS

© 2010



Excelsior Estates
Seasonal Wetland 32 (foreground), Vernal Pools 259 (background left) and 258 (background right)
2/18/2010 Photographer: EMC



Excelsior Estates
Vernal Pool 193
3/4/2010 Photographer: BVDZ

GROUND-LEVEL PHOTOGRAPHS

© 2010

Appendix B — Invertebrate Sampling Data Sheets

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: December 21, 2009
Collectors: David Bise, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:00-11:00am
Section: 23, 24, 25, and 26
Temp: 50-65°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
36		1000s					X	X					
260												X	
261						X							mosquito larva
274		100s						X					
300						X	X						
301				X		X						X	
352													
353						X							waterboatman
365						X		X				X	waterboatman
375				X									
380						X		X			X		waterboatman
398						X		X					waterboatman
401						X		X		X		X	waterboatman

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
36	yes	9	12	509	1,017	45	no	cattle tracks	cool, overcast, light wind
260	yes	5	7	501	1,001	44	no	cattle tracks	cool, overcast, light wind
261	yes	5	8	1,086	2,171	44	no	cattle tracks	cool, overcast, light wind
274	yes	12	14	1,484	2,474	44	no	cattle tracks	cool, overcast, light wind
300	yes	14	16	7,963	8,848	44	no	cattle tracks	cool, overcast, light wind
301	yes	6	10	967	1,612	45	no	cattle tracks	cool, overcast, light wind
352	yes	3	12	1,941	6,470	45	no	cattle tracks	cool, overcast, light wind
353	yes	10	13	8,216	27,387	45	no	cattle tracks	cool, overcast, light wind
365	yes	10	14	4,304	6,149	44	no	cattle tracks	cool, overcast, light wind
375	yes	13	16	3,926	5,609	43	no	cattle tracks	cool, overcast, light wind
380	yes	12	14	9,172	13,102	45	no	cattle tracks	cool, overcast, light wind
398	yes	5	10	12,612	42,041	43	no	cattle tracks	cool, overcast, light wind
401	yes	11	14	6,777	9,682	43	no	cattle tracks	cool, overcast, light wind

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 7, 2010
Collectors: Eric Christensen, Meredith Branstad
Range: 6 East

Quad: Carmichael
Time: 8:30-4:00
Section: 23, 24, 25, and 26
Temp: 50-65°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
43		1000s	10s	X		X	X	X					waterfowl feathers, water boatman
83				X		X		X	X				Hyla tadpoles in egg sack
127						X			X			X	
129	10s	100s		X		X		X					
198						X						X	water boatman
270		1000s		X		X	X	X					
277	100s	10s		X		X	X						
300	10s			X		X	X	X	X			X	geese
302		100s		X		X	X	X				X	
308		10s		X		X	X						Hyla tadpoles
353				X		X		X	X			X	
360						X		X	X				
365		100s		X		X	X	X					water boatman, waterfowl feathers
375				X		X	X	X					
378						X		X				X	
379						X	X	X					
380						X		X	X				dragonfly larva
394		1000s		X		X	X	X				X	
398		100s		X		X	X						water boatman, waterfowl feathers
399				X		X			X				snails, scuds
401				X		X		X	X				

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
43	yes	12	20	12,006	17,152	41	no	cattle tracks	misty, cool, overcast, light wind
83	yes	3	6	10,067	12,583	44	no	cattle tracks	misty, cool, overcast, light wind
127	yes	13	48	543	638	44	no	cattle tracks	misty, cool, overcast, light wind
129	yes	10	14	2,284	2,688	41	no	cattle tracks	misty, cool, overcast, light wind
198	yes	2	5	678	3,388	44	no	cattle tracks	misty, cool, overcast, light wind
270	yes	5	15	1,837	2,161	42	no	cattle tracks	misty, cool, overcast, light wind
277	yes	8	15	1,355	1,935	41	no	cattle tracks	misty, cool, overcast, light wind
300	yes	14+	24+	7,963	8,848	44	no	cattle tracks, deep	misty, cool, overcast, light wind
302	yes	4	12	2,781	6,953	44	no	cattle tracks	misty, cool, overcast, light wind
308	yes	3	16	478	1,594	44	no	cattle tracks	misty, cool, overcast, light wind
353	yes	8	36	8,216	27,387	41	no	cattle tracks	misty, cool, overcast, light wind
360	yes	7	7	1,127	1,127	41	no	cattle tracks, eroding	misty, cool, overcast, light wind
365	yes	7	12	5,534	6,149	41	no	cattle tracks	misty, cool, overcast, light wind
375	yes	10	11	4,487	5,609	41	no	cattle tracks	misty, cool, overcast, light wind
378	no	8	12	468	520	44	no	cattle tracks	misty, cool, overcast, light wind
379	yes	10	13	794	935	44	no	cattle tracks	misty, cool, overcast, light wind
380	yes	12	16	10,482	13,102	41	no	cattle tracks, foul smelling	misty, cool, overcast, light wind
394	yes	9	13	7,602	8,943	44	no	cattle tracks	misty, cool, overcast, light wind
398	no	6	18	6,306	42,041	41	no	cattle tracks	misty, cool, overcast, light wind
399	yes	9	13	1,758	1,954	44	no	cattle tracks, marshy	misty, cool, overcast, light wind
401	yes	3	6	1,452	9,682	41	no	cattle tracks	misty, cool, overcast, light wind

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 8, 2010
Collectors: Eric Christensen, Meredith Branstad
Range: 6 East

Quad: Carmichael
Time: 8:30-1:00
Section: 23, 24, 25, and 26
Temp: 50-65°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
5				X		X	X	X	X			X	
110						X		X					
115		10s		X			X	X					water boatman
117		100s				X	X	X	X			X	
118	10s	100s				X	X	X	X			X	
339		10s				X	X	X					water boatman
603		10s		X		X		X	X				
617		10s		X								X	
618						X			X				water boatman
619		100s					X	X	X				water boatman, snail
632						X		X					
656		1000s				X	X	X	X				water boatman
658		10s				X	X	X	X				
659						X	X	X	X				

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
5	yes	7	14	13,201	66,006	41	no	cattle tracks	cool, overcast, light wind
110	yes	14	15	7,845	8,258	41	no	degraded, turbid, in road	cool, overcast, light wind
115	yes	5	8	1,469	2,449	41	no	old pond	cool, overcast, light wind
117	yes	4	8	464	515	41	no	old pond	cool, overcast, light wind
118	yes	4	16	845	1,409	41	no	old pond	cool, overcast, light wind
339	yes	3	12	721	2,403	41	no	cattle tracks	cool, overcast, light wind
603	yes	16	20	4,605	5,117	41	no	degraded, in road	cool, overcast, light wind
617	no	14	16	4,571	6,530	41	no	cattle tracks	cool, overcast, light wind
618	yes	14	17	1,634	1,720	41	no	degraded, in road	cool, overcast, light wind
619	yes	6	7	4,333	4,562	41	no	cattle tracks	cool, overcast, light wind
632	yes	24	28	2,482	2,757	41	no	degraded, in road	cool, overcast, light wind
656	yes	6	10	51	102	41	no	old pond	cool, overcast, light wind
658	yes	4	7	1,934	2,418	41	no	old pond	cool, overcast, light wind
659	yes	3	6	1,356	2,260	41	no	old pond	cool, overcast, light wind

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 20, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 8:45-10:15am
Section: 23, 24, 25, and 26
Temp: 45-60°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
43		1000s			X	X	X	X					
47						X		X					
228						X	X	X					
270		100s				X	X	X					
271		10s				X	X						
273		10s				X	X	X					

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
43	yes	15	17	16,809	17,152	40	no	cattle tracks	Cold, windy (~20-50mph), constant rain
47	yes	4	6	1,143	1,345	40	no	cattle tracks	Cold, windy (~20-50mph), constant rain
228	yes	15	20	33,900	67,801	40	no	cattle tracks	Cold, windy (~20-50mph), constant rain
270	yes	12	14	2,118	2,161	40	no	cattle tracks	Cold, windy (~20-50mph), constant rain
271	yes	3	6	469	521	40	no	cattle tracks	Cold, windy (~20-50mph), constant rain
273	yes	13	16	7,472	7,624	40	no	cattle tracks	Cold, windy (~20-50mph), constant rain

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 21, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 8:45am - 4:00pm
Section: 23, 24, 25, and 26
Temp: 45-60°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
37						X	X			X			grub
51						X	X	X				X	
52								X					grubs
54													no life observed
58								X				X	spider
61							X	X		X			grub, spider
82						X		X		X		X	
88							X	X		X		X	
90												X	
91						X		X					
92						X		X					
93							X	X					
96							X					X	spider
97							X					X	
99						X		X				X	scud
128				X		X	X	X					spider, waterfowl feathers
129	10s ♀	1000s				X	X			X			
260		10s				X	X						waterfowl feathers
261							X			X			spiders
274							X	X					
275							X	X	X			X	
276				X		X							spider, grub
277	1000s	1000s				X	X			X			scud
279		1000s			X	X	X						spider, grub
280							X			X			grub

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
37	yes	2	5	548	685	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
51	yes	4	6	542	602	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
52	yes	4	6	538	672	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
54	yes	4	6	186	190	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
58	yes	2	3	111	124	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
61	yes	6	7	721	759	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
82	yes	3	4	109	109	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
88	yes	4	5	151	167	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
90	yes	4	7	2,755	4,238	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
91	yes	3	7	741	1,853	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
92	yes	3	5	2,396	2,818	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
93	yes	7	8	634	704	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
96	yes	4	4	330	330	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
97	yes	4	4	58	58	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
99	yes	5	6	133	135	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
128	yes	14	14	13,786	13,786	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
129	yes	11	14	2,634	2,688	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
260	no	10	15	981	1,001	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
261	yes	5	8	1,954	2,171	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
274	yes	3	7	1,484	2,474	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
275	yes	5	8	2,413	3,713	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
276	yes	7	9	2,683	3,157	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
277	yes	12	12	1,935	1,935	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
279	yes	12	14	2,758	2,814	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
280	yes	3	5	263	309	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 21, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 8:45am - 4:00pm
Section: 23, 24, 25, and 26
Temp: 45-60°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
298						X		X	X			X	
299									X			X	scud
300				X		X	X		X		X		scud, grub
301							X						grub
302		100s		X		X	X	X	X			X	scud
303									X				
304									X				
305						X			X	X			
306						X		X		X		X	
307								X	X				
308						X	X	X	X				grub
309								X	X				scud
351						X	X	X				X	
352				X		X	X	X		X		X	
353		100s	100s	X		X	X	X		X	X	X	spider, Hyla tadpole
354						X		X					grubs
356							X						spider
357						X				X			spider
359							X	X				X	grub
360						X	X	X	X				
361							X						
363								X				X	
364						X	X	X					grubs, spiders, waterfowl feathers
365	10s	100s	10s	X	X	X	X	X		X			
367								X		X			grub

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
298	yes	4	4	254	254	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
299	yes	8	8	130	130	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
300	yes	18	24	8,405	8,848	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
301	yes	10	12	1,580	1,612	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
302	yes	15	15	6,953	6,953	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
303	yes	7	8	665	665	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
304	yes	6	7	1,139	1,199	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
305	yes	8	8	1,100	1,100	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
306	yes	11	11	2,188	2,188	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
307	yes	8	8	1,987	1,987	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
308	yes	13	13	1,594	1,594	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
309	yes	6	6	297	297	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
351	yes	3	4	232	244	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
352	yes	11	14	6,146	6,470	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
353	yes	14	24	20,541	27,387	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
354	yes	9	10	1,327	1,397	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
356	yes	9	15	3,754	3,952	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
357	yes	7	13	1,377	2,294	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
359	yes	3	7	665	1,108	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
360	yes	7	7	1,127	1,127	42	no	eroding	Cold, windy (~10 mph), intermittent rain
361	yes	6	6	263	263	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
363	yes	9	9	184	184	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
364	yes	13	15	7,901	8,317	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
365	yes	13	13	6,149	6,149	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
367	yes	7	10	723	803	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 21, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 8:45am - 4:00pm
Section: 23, 24, 25, and 26
Temp: 45-60°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
368							X	X					grub
369								X		X			grub
370								X					grub
371							X			X			
373							X	X	X			X	
374							X	X				X	
375				X		X	X	X				X	
376							X	X					
377						X		X					spider
378		10s				X	X	X					scud
379						X	X	X	X				scud
380				X		X	X	X			X	X	
383												X	spider
384								X			X		
385						X		X		X		X	spider
390						X	X			X			grub
393								X					spider
398		100s	100s			X	X	X					spider
399						X	X		X		X		scud, snail
401						X	X	X		X		X	
538								X				X	
620						X	X	X					spider
621												X	

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
368	yes	6	7	1,006	1,027	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
369	yes	6	8	322	358	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
370	yes	3	5	47	78	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
371	yes	4	5	232	258	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
373	yes	5	8	2,689	2,988	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
374	yes	6	10	249	276	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
375	yes	10	10	5,609	5,609	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
376	yes	9	9	650	650	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
377	yes	8	8	531	531	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
378	yes	12	12	520	520	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
379	yes	15	15	935	935	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
380	yes	15	15	13,102	13,102	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
383	yes	7	7	412	412	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
384	yes	6	10	1,053	1,170	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
385	yes	5	7	587	652	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
390	yes	8	9	566	577	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
393	yes	10	10	746	746	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
398	yes	9	18	35,735	42,041	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
399	yes	15	15	1,954	1,954	42	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
401	yes	14	24	9,488	9,682	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
538	yes	9	9	791	791	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
620	yes	10	10	2,273	2,273	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain
621	yes	2	14	2,627	6,567	40	no	cattle tracks	Cold, windy (~10 mph), intermittent rain

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 22, 2009
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:00am - 4:00 pm
Section: 23, 24, 25, and 26
Temp: 45°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
9										X			
23												X	
27							X	X		X			Spider
28								X		X			
31									X				
32								X		X			
56									X	X			
60								X					
83						X	X	X	X	X		X	Hyla tads, Slug
135								X					
181								X		X			Grub
183						X	X		X	X		X	
184								X		X		X	Spiders, Grub
185									X	X			
186										X			
187									X				
188										X			Spider
189								X		X			
190							X	X	X	X		X	Spiders, Grub
192								X		X			Grub
193				X				X	X				Spiders
194									X	X			Spiders
195							X	X		X		X	Spiders
196								X	X	X			Spiders
197							X	X		X			Spider

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
9	60	3	5	291	343	39	No	Cattle tracks	Cold, Windy (10mph), Raining
23	34	3	4	359	378	39	No	Cattle tracks	Cold, Windy (10mph), Raining
27	21	5	7	698	775	39	No	Cattle tracks	Cold, Windy (10mph), Raining
28	11	3	4	234	260	39	No	Cattle tracks	Cold, Windy (10mph), Raining
31	86	3	4	382	425	39	No	Cattle tracks	Cold, Windy (10mph), Raining
32	3	3	4	1,119	1,243	39	No	Cattle tracks	Cold, Windy (10mph), Raining
56	87	4	4	283	283	39	No	Cattle tracks	Cold, Windy (10mph), Raining
60	9	4	5	1,048	1,165	39	No	Cattle tracks	Cold, Windy (10mph), Raining
83	8	10	12	11,954	12,583	39	No	Cattle tracks	Cold, Windy (10mph), Raining
135	58	8	10	1,821	2,023	39	No	Cattle tracks	Cold, Windy (10mph), Raining
181	63	3	4	448	527	39	No	Cattle tracks	Cold, Windy (10mph), Raining
183	65	10	10	2,192	2,215	39	No	Cattle tracks	Cold, Windy (10mph), Raining
184	72	8	12	10,148	12,685	39	No	Cattle tracks	Cold, Windy (10mph), Raining
185	83	6	7	4,073	4,525	39	No	Cattle tracks	Cold, Windy (10mph), Raining
186	82	3	3	508	508	39	No	Cattle tracks	Cold, Windy (10mph), Raining
187	81	6	6	907	907	39	No	Cattle tracks	Cold, Windy (10mph), Raining
188	78	4	4	563	563	39	No	Cattle tracks	Cold, Windy (10mph), Raining
189	74	4	4	525	525	39	No	Cattle tracks	Cold, Windy (10mph), Raining
190	73	13	14	7,493	8,326	39	No	Cattle tracks	Cold, Windy (10mph), Raining
192	75	6	6	1,087	1,087	39	No	Cattle tracks	Cold, Windy (10mph), Raining
193	49	10	10	3,657	3,657	39	No	Cattle tracks	Cold, Windy (10mph), Raining
194	51	12	12	2,561	2,561	39	No	Cattle tracks	Cold, Windy (10mph), Raining
195	50	8	8	3,039	3,039	39	No	Cattle tracks	Cold, Windy (10mph), Raining
196	52	7	7	1,400	1,400	39	No	Cattle tracks	Cold, Windy (10mph), Raining
197	54	8	8	2,673	2,673	39	No	Cattle tracks	Cold, Windy (10mph), Raining

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 22, 2009
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:00am - 4:00 pm
Section: 23, 24, 25, and 26
Temp: 45°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
198						X	X	X		X	X		Spider
199							X	X	X	X			
200									X			X	
201										X		X	
202								X		X		X	
203													Spiders
204										X		X	
205												X	
206							X		X	X			
207										X		X	Spiders
208								X		X			
209							X	X	X	X			Spiders
210									X	X		X	Spiders
211								X					Spiders
212							X	X		X		X	
213									X	X			
214							X	X	X	X			Waterfowl Feathers
215								X		X			Spider
216								X		X			
217								X		X		X	
218										X			
219										X		X	Spiders
220								X		X			
221										X			
222							X	X		X			

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
198	53	9	15	2,541	3,388	39	No	Cattle tracks	Cold, Windy (10mph), Raining
199	56	7	8	1,779	1,873	39	No	Cattle tracks	Cold, Windy (10mph), Raining
200	57	6	7	1,054	1,110	39	No	Cattle tracks	Cold, Windy (10mph), Raining
201	55	6	6	1,395	1,395	39	No	Cattle tracks	Cold, Windy (10mph), Raining
202	40	4	7	1,949	2,165	39	No	Cattle tracks	Cold, Windy (10mph), Raining
203	39	10	12	2,006	2,111	39	No	Cattle tracks	Cold, Windy (10mph), Raining
204	35	5	12	2,601	3,715	39	No	Cattle tracks	Cold, Windy (10mph), Raining
205	33	7	7	903	903	39	No	Cattle tracks	Cold, Windy (10mph), Raining
206	32	10	13	4,006	5,008	39	No	Cattle tracks	Cold, Windy (10mph), Raining
207	31	3	5	1,337	1,574	39	No	Cattle tracks	Cold, Windy (10mph), Raining
208	30	3	5	1,376	1,619	39	No	Cattle tracks	Cold, Windy (10mph), Raining
209	29	8	12	14,500	17,059	39	No	Cattle tracks	Cold, Windy (10mph), Raining
210	42/43	12	12	5,418	5,418	39	No	Cattle tracks	Cold, Windy (10mph), Raining
211	44	9	9	1,182	1,182	39	No	Cattle tracks	Cold, Windy (10mph), Raining
212	14	8	9	9,144	9,626	39	No	Cattle tracks	Cold, Windy (10mph), Raining
213	19	6	8	1,325	1,394	39	No	Cattle tracks	Cold, Windy (10mph), Raining
214	20	9	10	5,583	5,877	39	No	Cattle tracks	Cold, Windy (10mph), Raining
215	22	9	9	4,711	4,711	39	No	Cattle tracks	Cold, Windy (10mph), Raining
216	45	7	8	1,726	1,817	39	No	Cattle tracks	Cold, Windy (10mph), Raining
217	38	5	5	1,224	1,224	39	No	Cattle tracks	Cold, Windy (10mph), Raining
218	36	4	6	401	471	39	No	Cattle tracks	Cold, Windy (10mph), Raining
219	37	10	10	2,029	2,029	39	No	Cattle tracks	Cold, Windy (10mph), Raining
220	15	8	8	2,034	2,034	39	No	Cattle tracks	Cold, Windy (10mph), Raining
221	16	8	8	1,822	1,822	39	No	Cattle tracks	Cold, Windy (10mph), Raining
222	18	7	7	2,575	2,575	39	No	Cattle tracks	Cold, Windy (10mph), Raining

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 22, 2009
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:00am - 4:00 pm
Section: 23, 24, 25, and 26
Temp: 45°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
223								X		X		X	
224									X	X			Spider
225										X			
226								X	X	X			
227						X	X	X		X			Spider, Grubs
230									X	X		X	Spiders
231								X	X	X		X	
232										X		X	
233										X			
234						X	X	X		X		X	Spiders
235							X			X		X	Spiders
236						X			X	X		X	Spiders, Waterfowl Feathers
237								X	X	X		X	
238							X	X	X	X			Spider, Snail
239								X					Spider
240							X	X		X			Waterfowl Feathers
242								X		X			
243										X			
244								X					
245							X			X			
246						X	X	X	X	X			Waterfowl Feathers
252									X				
253									X	X			
256						X	X	X		X			Snail, Waterfowl Feathers
257								X		X			

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
223	17	6	6	600	600	39	No	Cattle tracks	Cold, Windy (10mph), Raining
224	13	9	9	2,005	2,005	39	No	Cattle tracks	Cold, Windy (10mph), Raining
225	12	3	6	681	2,272	39	No	Cattle tracks	Cold, Windy (10mph), Raining
226	10	7	8	2,016	2,036	39	No	Cattle tracks	Cold, Windy (10mph), Raining
227	4	14	16	8,991	9,464	39	No	Cattle tracks	Cold, Windy (10mph), Raining
230	41	12	16	11,895	13,994	39	No	Cattle tracks	Cold, Windy (10mph), Raining
231	46	6	7	964	1,014	39	No	Cattle tracks	Cold, Windy (10mph), Raining
232	47	4	8	1,378	1,969	39	No	Cattle tracks	Cold, Windy (10mph), Raining
233	48	4	6	839	1,048	39	No	Cattle tracks	Cold, Windy (10mph), Raining
234	71	14	15	5,136	5,406	39	No	Cattle tracks	Cold, Windy (10mph), Raining
235	66	4	4	1,014	1,024	39	No	Cattle tracks	Cold, Windy (10mph), Raining
236	69	10	12	7,726	8,584	39	No	Cattle tracks	Cold, Windy (10mph), Raining
237	70	7	7	1,634	1,667	39	No	Cattle tracks	Cold, Windy (10mph), Raining
238	67	12	14	9,936	10,459	39	No	Cattle tracks	Cold, Windy (10mph), Raining
239	68	6	6	571	571	39	No	Cattle tracks	Cold, Windy (10mph), Raining
240	24	9	12	6,638	6,988	39	No	Cattle tracks	Cold, Windy (10mph), Raining
242	26	8	9	1,245	1,311	39	No	Cattle tracks	Cold, Windy (10mph), Raining
243	25	10	12	1,957	2,060	39	No	Cattle tracks	Cold, Windy (10mph), Raining
244	27	8	9	5,131	5,401	39	No	Cattle tracks	Cold, Windy (10mph), Raining
245	28	8	9	1,066	1,122	39	No	Cattle tracks	Cold, Windy (10mph), Raining
246	23	12	16	26,288	27,671	39	No	Cattle tracks	Cold, Windy (10mph), Raining
252	86	5	5	798	798	39	No	Cattle tracks	Cold, Windy (10mph), Raining
253	84	6	6	857	857	39	No	Cattle tracks	Cold, Windy (10mph), Raining
256	6	14	14	33,626	33,626	39	No	Cattle tracks	Cold, Windy (10mph), Raining
257	5	10	12	2,396	2,522	39	No	Cattle tracks	Cold, Windy (10mph), Raining

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 22, 2009
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:00am - 4:00 pm
Section: 23, 24, 25, and 26
Temp: 45°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
258						X	X	X	X	X			
259						X							
262										X			
281										X			
282										X			
287										X			
288							X			X			
295								X					
395		100s				X	X	X	X	X	X		
396						X	X	X	X	X		X	Spiders

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
258	1	14	18	5,281	6,601	39	No	Cattle tracks	Cold, Windy (10mph), Raining
259	2	3	4	2,477	2,607	39	No	Cattle tracks	Cold, Windy (10mph), Raining
262	76	3	3	496	496	39	No	Cattle tracks	Cold, Windy (10mph), Raining
281	79	4	4	588	588	39	No	Cattle tracks	Cold, Windy (10mph), Raining
282	80	6	6	374	374	39	No	Cattle tracks	Cold, Windy (10mph), Raining
287	64	4	4	447	452	39	No	Cattle tracks	Cold, Windy (10mph), Raining
288	62	4	5	676	751	39	No	Cattle tracks	Cold, Windy (10mph), Raining
295	77	4	4	268	268	39	No	Cattle tracks	Cold, Windy (10mph), Raining
395	59	13	15	17,010	17,906	39	No	Cattle tracks	Cold, Windy (10mph), Raining
396	61	13	17	21,686	24,095	39	No	Cattle tracks	Cold, Windy (10mph), Raining

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 25, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 8:45 AM-4:15 PM
Section: 23, 24, 25, and 26
Temp: 55°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
10								X				X	Spider
12													
14										X			
15								X					
17								X		X			
18						X				X		X	
19				X				X		X		X	Spider
20										X		X	
21								X		X		X	
39										X			
41													
42													
55												X	Grub, Waterfowl Feathers
57										X			
131								X		X			
132								X					
133						X		X		X			
134								X		X		X	
136								X		X		X	Spiders
137								X		X		X	
139								X		X		X	
140													
141								X	X			X	
142								X		X			
144				X				X		X		X	

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
10	10	6	6	519	519	42	No	Cattle Tracks	Intermittent rain
12	7	3	3	48	48	42	No	Cattle Tracks	Intermittent rain
14		4	4	607	607	42	No	Cattle Tracks	Intermittent rain
15	28	4	4	883	883	42	No	Cattle Tracks	Intermittent rain
17	19	4	5	287	303	42	No	Cattle Tracks	Intermittent rain
18	33	3	3	411	411	42	No	Cattle Tracks	Intermittent rain
19	32	7	7	1,224	1,249	42	No	Cattle Tracks	Intermittent rain
20	26	3	4	121	127	42	No	Cattle Tracks	Intermittent rain
21	29	4	4	88	88	42	No	Cattle Tracks	Intermittent rain
39	5	6	6	556	556	42	No	Cattle Tracks	Intermittent rain
41	11	5	5	825	825	42	No	Cattle Tracks	Intermittent rain
42	No	8	8	1,148	1,148	42	No	Cattle Tracks	Intermittent rain
55	9	5	6	244	271	42	No	Cattle Tracks	Intermittent rain
57	12	6	6	1,001	1,001	42	No	Cattle Tracks	Intermittent rain
131	6	13	13	973	973	42	No		Intermittent rain
132	4	6	6	225	225	42	No		Intermittent rain
133	5	6	6	201	201	42	No		Intermittent rain
134	15	12	12	1,494	1,494	42	No	Cattle Tracks	Intermittent rain
136	19	11	20	6,528	10,881	42	No	Cattle Tracks	Intermittent rain
137	18	12	12	3,796	3,796	42	No	Cattle Tracks	Intermittent rain
139	11	8	8	448	448	42	No	Cattle Tracks	Intermittent rain
140		6	6	976	976	42	No	Cattle Tracks	Intermittent rain
141	6	13	13	4,419	4,419	42	No	Cattle Tracks	Intermittent rain
142	27	6	6	2,123	2,167	42	No	Cattle Tracks	Intermittent rain
144	25	10	12	2,458	2,588	42	No	Cattle Tracks	Intermittent rain

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 25, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 8:45 AM-4:15 PM
Section: 23, 24, 25, and 26
Temp: 55°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
145								X		X		X	
146								X		X			
147						X		X		X			
148								X				X	
149				X			X	X		X			Spider
150													None
151				X				X		X			Spider
152										X			Grub
153								X		X		X	
154								X		X			Spider
155				X				X	X	X			Waterfowl Feathers
156								X				X	
157								X					
158								X		X		X	
159								X				X	
160								X		X		X	
161				X			X	X		X		X	Waterfowl Feathers
162							X			X			
163				X				X		X			Waterfowl Feathers
164								X		X			Waterfowl Feathers, Spider
165				X						X		X	Grub
166				X				X		X		X	
167									X	X		X	
168						X		X		X		X	
169								X		X		X	

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
145	15	6	6	774	774	42	No	Cattle tracks	Intermittent rain
146	16	9	9	1,841	1,841	42	No	Cattle tracks	Intermittent rain
147	14	5	5	520	520	42	No	Cattle tracks	Intermittent rain
148	23	3	4	385	428	42	No	Cattle tracks	Intermittent rain
149	22	13	13	8,899	8,899	42	No	Cattle tracks	Intermittent rain
150	24	8	8	2,237	2,237	42	No	Cattle tracks	Intermittent rain
151	21	14	14	6,233	6,233	42	No	Cattle tracks	Intermittent rain
152	20	5	5	1,357	1,357	42	No	Cattle tracks	Intermittent rain
153	17	13	13	1,566	1,566	42	No	Cattle tracks	Intermittent rain
154	12	11	11	1,549	1,549	42	No	Cattle tracks	Intermittent rain
155	11	12	12	11,265	11,265	42	No	Cattle tracks	Intermittent rain
156	18	5	5	620	620	42	No	Cattle tracks	Intermittent rain
157	9	6	7	703	740	42	No	Cattle tracks	Intermittent rain
158	8	4	4	429	429	42	No	Cattle tracks	Intermittent rain
159	7	7	7	322	322	42	No	Cattle tracks	Intermittent rain
160	6	4	5	283	298	42	No	Cattle tracks	Intermittent rain
161	1	12	14	5,197	5,471	42	No	Cattle tracks	Intermittent rain
162	2	10	10	4,115	4,115	42	No	Cattle tracks	Intermittent rain
163	4	9	9	3,186	3,186	42	No	Cattle tracks	Intermittent rain
164	5	5	5	288	288	42	No	Cattle tracks	Intermittent rain
165	10	9	9	2,054	2,054	42	No	Cattle tracks	Intermittent rain
166	31	12	12	4,131	4,131	42	No	Cattle tracks	Intermittent rain
167	30	9	9	417	417	42	No	Cattle tracks	Intermittent rain
168	40	9	9	4,985	4,985	42	No	Cattle tracks	Intermittent rain
169	39	8	9	620	652	42	No	Cattle tracks	Intermittent rain

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 25, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 8:45 AM-4:15 PM
Section: 23, 24, 25, and 26
Temp: 46°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
170								X	X	X		X	
171								X		X		X	Slug, Snail
172								X				X	
173				X				X		X		X	Snail
174								X		X		X	
175								X				X	
176								X		X		X	
177								X		X			
178								X	X	X		X	
229				X		X	X	X	X	X		X	Waterfowl Feathers, Spider
248								X					
249						X		X		X			
250						X	X	X		X			
251								X		X			
262													
263										X		X	
264				X		X	X	X		X		X	Hyla (male)
265										X			Grub
266									X	X		X	
267										X			
268				X				X		X			
278								X		X			
283				X				X	X	X		X	Spider
284										X		X	Spider
285				X								X	

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
170	38	9	10	3,000	3,158	42	No	Cattle tracks	Intermittent rain
171	37	15	15	4,753	4,753	42	No	Cattle tracks	Intermittent rain
172	34	6	6	639	639	42	No	Cattle tracks	Intermittent rain
173	35	11	11	4,678	4,678	42	No	Cattle tracks	Intermittent rain
174	36	7	7	2,187	2,187	42	No	Cattle tracks	Intermittent rain
175	27	7	8	1,151	1,212	42	No	Cattle tracks	Intermittent rain
176	24	10	11	3,757	3,954	42	No	Cattle tracks	Intermittent rain
177		3	4	738	753	42	No	Cattle tracks	Intermittent rain
178	28	6	6	446	446	42	No	Cattle tracks	Intermittent rain
229	26	15	15	40,491	40,491	42	No	Cattle tracks	Intermittent rain
248	18	12	12	6,214	6,214	42	No	Cattle tracks	Intermittent rain
249	17	13	13	3,609	3,609	42	No	Cattle tracks	Intermittent rain
250	16	13	13	4,547	4,547	42	No	Cattle tracks	Intermittent rain
251	15	12	12	5,650	5,650	42	No	Cattle tracks	Intermittent rain
262	7	6	6	496	496	42	No	Cattle tracks	Intermittent rain
263	8	6	6	1,328	1,328	42	No	Cattle tracks	Intermittent rain
264	4	10	10	5,436	5,436	42	No	Cattle tracks	Intermittent rain
265	3	8	8	403	403	42	No	Cattle tracks	Intermittent rain
266	2	5	6	287	319	42	No	Cattle tracks	Intermittent rain
267	10	5	5	624	624	42	No	Cattle tracks	Intermittent rain
268	14	10	10	3,763	3,763	42	No	Cattle tracks	Intermittent rain
278	13	6	6	628	628	42	No	Cattle tracks	Intermittent rain
283	25	13	13	46,582	46,582	42	No	Cattle tracks	Intermittent rain
284	14	8	8	1,077	1,077	42	No	Cattle tracks	Intermittent rain
285	21	9	9	2,239	2,239	42	No	Cattle tracks	Intermittent rain

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: January 25, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 8:45 AM-4:15 PM
Section: 23, 24, 25, and 26
Temp: 46°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
286				X				X				X	
289								X	X	X			
290								X		X			
291								X		X		X	Spider, Snail
292								X		X			
293						X	X	X					Spider
294				X		X		X		X		X	Snail, Waterfowl Feathers
397								X		X			
603								X			X		
604						X		X		X		X	Spider
618		10s		X		X	X				X		
624						X						X	
625													
626								X					
627								X		X			
628												X	
632						X	X	X					

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
286	22	8	8	1,109	1,109	42	No	Cattle tracks	Intermittent rain
289	13	4	6	553	582	42	No	Cattle tracks	Intermittent rain
290	16	13	13	1,843	1,843	42	No	Cattle tracks	Intermittent rain
291	13	7	7	2,861	2,861	42	No	Cattle tracks	Intermittent rain
292	23	4	4	457	457	42	No	Cattle tracks	Intermittent rain
293	1	8	14	5,414	7,219	42	No	Cattle tracks	Intermittent rain
294	6	14	14	47,382	47,382	42	No	Cattle tracks	Intermittent rain
397	3	13	13	8,732	8,732	42	No	Cattle tracks	Intermittent rain
603	3	36	40	4,605	5,117	42	No	In road bed	Intermittent rain
604	12	6	6	210	210	42	No	Cattle tracks	Intermittent rain
618	1	20	20	1,720	1,720	42	No	In road bed	Intermittent rain
624	17	9	9	1,896	1,896	42	No	Cattle tracks	Intermittent rain
625	9	6	7	1,213	1,277	42	No	Cattle tracks	Intermittent rain
626	30	5	6	302	308	42	No	Cattle tracks	Intermittent rain
627	8	4	4	1,332	1,332	42	No	Cattle tracks	Intermittent rain
628	29	9	9	97	97	42	No	Cattle tracks	Intermittent rain
632	2	36	36	2,757	2,757	42	No	In road bed	Intermittent rain

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: February 3, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:00am – 4:00pm
Section: 23, 24, 25, and 26
Temp: 64°F – 68°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
27								X					
39		10s				X		X				X	
40													
41								X					
42		10s								X			
55								X					Spider
57													
135		100s	10s	X		X	X	X		X			
179		10s				X							
180		10s				X							Waterfowl feathers
181		10s				X		X					
183		10s	10s			X			X			X	
185		10s				X		X		X			Waterfowl Feathers
186						X		X		X			Waterfowl Feathers
187		10s				X		X		X			
188				X		X		X		X			
189								X	X	X			
192				X		X		X				X	
193		10s	10s	X		X	X			X			
194		100s	10s	X		X		X		X		X	
195			10s	X		X		X	X			X	
196		10s	10s	X		X		X		X			Mosquito
197		10s	10s	X		X		X				X	
198			10s	X		X		X				X	
199		100s	10s	X		X		X		X			

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
27	yes	3	4	388	775	52	No	Cattle tracks	Clear, Slight Breeze
39	yes	4	4	556	556	49	No	Cattle tracks	Sunny, Slight Clouds
40	yes	2	2	50	50	49	No	Cattle tracks	Sunny, Slight Clouds
41	yes	2	4	660	825	49	No	Cattle tracks	Sunny, Slight Clouds
42	yes	2	5	115	1,148	49	No	Cattle tracks	Sunny, Slight Clouds
55	yes	3	3	271	271	49	No	Cattle tracks	Sunny, Slight Clouds
57	yes	2	4	851	1,001	49	No	Cattle tracks	Sunny, Slight Clouds
135	yes	12	12	2,023	2,023	55	No	Cattle tracks	Clear, Slight Breeze
179	yes	3	3	79	79	55	No	Cattle tracks	Clear, Slight Breeze
180	yes	5	5	697	697	55	No	Cattle tracks	Clear, Slight Breeze
181	yes	5	5	527	527	52	No	Cattle tracks	Clear, Slight Breeze
183	yes	10	10	2,215	2,215	52	No	Cattle tracks	Clear, Slight Breeze
185	yes	5	5	4,525	4,525	52	No	Cattle tracks	Clear, Slight Breeze
186	yes	5	5	508	508	52	No	Cattle tracks	Clear, Slight Breeze
187	yes	6	6	907	907	49	No	Cattle tracks	Sunny, Slight Clouds
188	yes	5	5	563	563	52	No	Cattle tracks	Clear, Slight Breeze
189	yes	4	4	525	525	52	No	Cattle tracks	Clear, Slight Breeze
192	yes	6	6	1,087	1,087	49	No	Cattle tracks	Sunny, Slight Clouds
193	yes	11	11	3,657	3,657	55	No	Cattle tracks	Clear, Slight Breeze
194	yes	13	14	2,433	2,561	55	No	Cattle tracks	Clear, Slight Breeze
195	yes	5	5	3,039	3,039	55	No	Cattle tracks	Clear, Slight Breeze
196	yes	6	6	1,400	1,400	55	No	Cattle tracks	Clear, Slight Breeze
197	yes	10	11	2,620	2,673	55	No	Cattle tracks	Clear, Slight Breeze
198	yes	10	11	3,218	3,388	55	No	Cattle tracks	Clear, Slight Breeze
199	yes	7	7	1,835	1,873	55	No	Cattle tracks	Clear, Slight Breeze

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: February 3, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:00am – 1:00pm
Section: 23, 24, 25, and 26
Temp: 64°F – 68°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
200		100s		X		X		X		X			
201			10s	X				X	X	X		X	
210			10s	X		X		X					
211			10s	X		X		X	X				
213		10s	10s	X				X					Grubs
214		1000s	10s	X		X		X				X	
215	10s	1000s	10s	X		X		X					
216	10s	100s	10s	X		X		X		X			
230		100s	100s	X		X		X		X		X	egg sac with 1 egg
231		10s		X		X		X					
232		10s				X		X		X			Mosquito
233						X	X	X		X		X	
234		100s	100s	X		X		X		X			Mosquitos
235	10s	10s				X		X		X			Grubs
236	10s	1000s	10s	X		X		X		X			
237	100s	100s	10s	X		X		X		X			Spider
238		100s	1000s	X		X		X		X			
239		10s						X					
240		100s	100s	X		X		X					
241	10s	100s	10s			X		X		X			
242	100s	1000s				X		X					Grubs
243	100s	100s				X		X					
244	10s	100s				X		X		X			
245	100s	10s						X					
246		100s	100s	X		X		X		X		X	Waterfowl feathers

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
200	yes	5	5	1,088	1,110	55	No	Cattle tracks	Clear, Slight Breeze
201	yes	6	6	1,395	1,395	55	No	Cattle tracks	Clear, Slight Breeze
210	yes	10	10	5,418	5,418	55	No	Cattle tracks	Clear, Slight Breeze
211	yes	9	9	1,182	1,182	55	No	Cattle tracks	Clear, Slight Breeze
213	yes	6	8	1,115	1,394	52	No	Cattle tracks	Clear, Slight Breeze
214	yes	15	16	5,583	5,877	52	No	Cattle tracks	Clear, Slight Breeze
215	yes	11	11	4,711	4,711	52	No	Cattle tracks	Clear, Slight Breeze
216	yes	7	10	1,272	1,817	55	No	Cattle tracks	Clear, Slight Breeze
230	yes	13	14	13,294	13,994	55	No	Cattle tracks	Clear, Slight Breeze
231	yes	7	7	994	1,014	55	No	Cattle tracks	Clear, Slight Breeze
232	yes	5	7	1,673	1,969	55	No	Cattle tracks	Clear, Slight Breeze
233	yes	3	6	419	1,048	55	No	Cattle tracks	Clear, Slight Breeze
234	yes	14	14	5,406	5,406	52	No	Cattle tracks	Clear, Slight Breeze
235	yes	4	4	1,024	1,024	52	No	Cattle tracks	Clear, Slight Breeze
236	yes	13	14	8,412	8,584	52	No	Cattle tracks	Clear, Slight Breeze
237	yes	9	10	1,634	1,667	52	No	Cattle tracks	Clear, Slight Breeze
238	yes	14	15	9,936	10,459	52	No	Cattle tracks	Clear, Slight Breeze
239	yes	6	6	571	571	52	No	Cattle tracks	Clear, Slight Breeze
240	yes	14	14	6,988	6,988	52	No	Cattle tracks	Clear, Slight Breeze
241	yes	10	12	1,856	2,063	52	No	Cattle tracks	Clear, Slight Breeze
242	yes	7	9	1,180	1,311	52	No	Cattle tracks	Clear, Slight Breeze
243	yes	8	10	1,648	2,060	52	No	Cattle tracks	Clear, Slight Breeze
244	yes	7	9	4,051	5,401	52	No	Cattle tracks	Clear, Slight Breeze
245	yes	5	7	897	1,122	52	No	Cattle tracks	Clear, Slight Breeze
246	yes	16	18	26,288	27,671	55	No	Cattle tracks	Clear, Slight Breeze

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: February 3, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:00am – 1:00pm
Section: 23, 24, 25, and 26
Temp: 64°F – 68°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
247	10s	1000s	10s	X		X	X	X		X			
248	10s	1000s	10s	X		X	X	X		X			Waterfowl Feathers
249	100s	1000s	10s	X		X		X					
250	10s ♀	1000s	100s	X		X		X		X			Waterfowl Feathers
251	10s	1000s	100s	X		X		X		X			
252													
253		10s						X		X		X	
262						X				X			
263		100s		X		X		X	X	X			Grubs
264		1000s	10s	X		X		X		X		X	Grubs
265				X		X		X					
266								X	X			X	
267		100s									X		Waterfowl Feathers
268		1000s	10s	X		X	X	X					Grub, Waterfowl Feathers
278								X				X	
281		10s				X		X		X		X	
282						X				X		X	
287													
288		10s								X		X	
294		100s	100s	X		X		X	X	X	X	X	Snails, Waterfowl Feathers
295						X	X	X					
296						X		X	X	X		X	
395		100s	100s	X		X		X	X	X		X	
396		100s	10s	X		X		X	X		X	X	Waterfowl feathers

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
247	yes	12	14	7,878	8,292	55	No	Cattle tracks	Clear, Slight Breeze
248	yes	12	13	6,090	6,214	49	No	Cattle tracks	Sunny, Slight Clouds
249	yes	14	14	3,609	3,609	49	No	Cattle tracks	Sunny, Slight Clouds
250	yes	14	14	4,547	4,547	49	No	Cattle tracks	Sunny, Slight Clouds
251	yes	13	13	5,650	5,650	49	No	Cattle tracks	Sunny, Slight Clouds
252	yes	5	5	798	798	49	No	Cattle tracks	Sunny, Slight Clouds
253	yes	5	5	857	857	49	No	Cattle tracks	Sunny, Slight Clouds
262	yes	6	6	496	496	49	No	Cattle tracks	Sunny, Slight Clouds
263	yes	8	8	1,328	1,328	49	No	Cattle tracks	Sunny, Slight Clouds
264	yes	12	12	5,436	5,436	49	No	Cattle tracks	Sunny, Slight Clouds
265	yes	9	9	403	403	49	No	Cattle tracks	Sunny, Slight Clouds
266	yes	4	4	319	319	49	No	Cattle tracks	Sunny, Slight Clouds
267	yes	3	4	593	624	49	No	Cattle tracks	Sunny, Slight Clouds
268	yes	10	11	3,687	3,763	49	No	Cattle tracks	Sunny, Slight Clouds
278	yes	5	6	596	628	49	No	Cattle tracks	Sunny, Slight Clouds
281	yes	6	6	588	588	52	No	Cattle tracks	Clear, Slight Breeze
282	yes	5	5	374	374	52	No	Cattle tracks	Clear, Slight Breeze
287	yes	4	4	452	452	52	No	Cattle tracks	Clear, Slight Breeze
288	yes	6	6	751	751	55	No	Cattle tracks	Clear, Slight Breeze
294	yes	14	17	45,013	47,382	49	No	Cattle tracks	Sunny, Slight Clouds
295	yes	4	4	268	268	49	No	Cattle tracks	Sunny, Slight Clouds
296	yes	4	4	964	964	49	No	Cattle tracks	Sunny, Slight Clouds
395	yes	15	16	17,010	17,906	55	No	Cattle tracks	Clear, Slight Breeze
396	yes	16	18	22,891	24,095	55	No	Cattle tracks	Clear, Slight Breeze

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: February 4, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:00am – 1:00pm
Section: 23, 24, 25, and 26
Temp: 50°F – 62°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawling Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
33				X				X					
83		10s		X		X		X	X	X		X	hyla and western toad tads, scud
134	10s	100s	10s	X		X		X	X				
136	10s	100s	10s	X		X		X		X	X	X	
137	100s	100s	10s	X		X		X		X			
139	10s	10s				X		X					
151		100s	10s	X		X	X	X		X	X	X	
163		100s	10s	X		X	X	X		X			waterfowl feathers
174		100s	10s	X		X		X		X			
175	10s	10s	10s	X		X		X					
176	10s	100s	10s	X		X		X					
177		100s				X		X					
202	10s	100s		X		X		X					
203		100s	10s	X		X		X		X			
204		10s	10s	X		X				X			
205				X		X		X		X		X	
206			10s	X		X				X		X	
207			10s	X		X		X		X		X	
209		100s	10s	X		X		X		X		X	
212		100s	10s	X		X		X	X	X		X	
217				X		X		X					
219			10s	X		X		X		X		X	
220			10s	X		X		X				X	
221			10s	X		X		X					
222		10s	10s	X		X		X				X	

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
33	yes	2	3	813	856	48	No	Cattle tracks	windy from SE and overcast
83	yes	12	14	11,954	12,583	48	No	Cattle tracks	windy from SE and overcast
134	yes	12	13	1,419	1,494	50	No	Cattle tracks	windy from SE and overcast
136	yes	12	18	9,248	10,881	50	No	Cattle tracks	windy from SE and overcast
137	yes	10	11	3,720	3,796	50	No	Cattle tracks	windy from SE and overcast
139	yes	5	9	314	448	50	No	Cattle tracks	windy from SE and overcast
151	yes	12	13	6,109	6,233	50	No	Cattle tracks	windy from SE and overcast
163	yes	8	9	3,026	3,186	50	No	Cattle tracks	windy from SE and overcast
174	yes	8	8	2,144	2,187	50	No	Cattle tracks	windy from SE and overcast
175	yes	6	7	969	1,212	50	No	Cattle tracks	windy from SE and overcast
176	yes	12	13	3,757	3,954	50	No	Cattle tracks	windy from SE and overcast
177	yes	5	5	753	753	50	No	Cattle tracks	windy from SE and overcast
202	yes	7	9	1,732	2,165	48	No	Cattle tracks	windy from SE and overcast
203	yes	14	16	2,006	2,111	48	No	Cattle tracks	windy from SE and overcast
204	yes	4	8	2,229	3,715	48	No	Cattle tracks	windy from SE and overcast
205	yes	7	9	813	903	48	No	Cattle tracks	windy from SE and overcast
206	yes	12	15	3,756	5,008	48	No	Cattle tracks	windy from SE and overcast
207	yes	4	8	1,259	1,574	48	No	Cattle tracks	windy from SE and overcast
209	yes	10	12	14,500	17,059	48	No	Cattle tracks	windy from SE and overcast
212	yes	7	12	6,257	9,626	48	No	Cattle tracks	windy from SE and overcast
217	yes	6	7	1,040	1,224	48	No	Cattle tracks	windy from SE and overcast
219	yes	8	9	1,826	2,029	48	No	Cattle tracks	windy from SE and overcast
220	yes	6	7	1,830	2,034	48	No	Cattle tracks	windy from SE and overcast
221	yes	8	9	1,731	1,822	48	No	Cattle tracks	windy from SE and overcast
222	yes	8	9	2,447	2,575	48	No	Cattle tracks	windy from SE and overcast

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: February 4, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:00am – 1:00pm
Section: 23, 24, 25, and 26
Temp: 50°F – 62°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawling Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
223				X		X	X					X	
224			10s	X		X		X		X			
225						X		X		X			
226		10s	10s			X		X		X		X	grubs
227			10s			X		X		X		X	mosquito fish, scud
228		1000s	100s	X		X	X	X	X	X	X	X	
254		10s				X		X					
256	10s	100s	10s	X		X		X	X	X			
257						X		X		X		X	
258		1000s		X		X		X	X	X		X	
259		1000s				X		X		X	X	X	
276	100s	10s		X		X		X	X	X			waterfowl feathers
277	100s	100s		X	X	X	X	X	X		X		cow back scratcher
279		100s				X	X	X	X				
283		1000s	100s	X		X		X	X	X	X	X	waterfowl feathers
284	10s	100s		X		X		X		X			
290	100s	1000s		X		X		X					
291	10s	100s	10s	X		X		X		X	X	X	
293		100s	10s	X		X		X				X	
396		100s	100s	X		X		X		X			
624	100s	100s	10s			X	X	X					

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
223	yes	4	4	570	600	48	No	Cattle tracks	windy from SE and overcast
224	yes	6	9	1,805	2,005	48	No	Cattle tracks	windy from SE and overcast
225	yes	4	7	681	2,272	48	No	Cattle tracks	windy from SE and overcast
226	yes	6	9	1,527	2,036	48	No	Cattle tracks	windy from SE and overcast
227	yes	13	16	7,571	9,464	48	No	Cattle tracks	windy from SE and overcast
228	yes	14	15	64,411	67,801	50	No	Cattle tracks	windy from SE and overcast
254	yes	6	8	1,687	2,109	48	No	Cattle tracks	windy from SE and overcast
256	yes	14	16	31,945	33,626	48	No	Cattle tracks	windy from SE and overcast
257	yes	10	11	2,471	2,522	48	No	Cattle tracks	windy from SE and overcast
258	yes	14	14	6,601	6,601	48	No	Cattle tracks	windy from SE and overcast
259	yes	10	10	2,607	2,607	48	No	Cattle tracks	windy from SE and overcast
276	yes	10	11	3,093	3,157	50	No	Cattle tracks	windy from SE and overcast
277	yes	14	14	1,896	1,935	50	No	Cattle tracks	windy from SE and overcast
279	yes	12	12	2,758	2,814	50	No	Cattle tracks	windy from SE and overcast
283	yes	14	15	45,650	46,582	50	No	Cattle tracks	windy from SE and overcast
284	yes	8	9	1,056	1,077	50	No	Cattle tracks	windy from SE and overcast
290	yes	13	14	1,806	1,843	50	No	Cattle tracks	windy from SE and overcast
291	yes	13	14	2,804	2,861	50	No	Cattle tracks	windy from SE and overcast
293	yes	7	15	4,692	7,219	48	No	Cattle tracks	windy from SE and overcast
396	yes	12	12	24,095	24,095	50	No	Cattle tracks	windy from SE and overcast
624	yes	6	7	1,858	1,896	50	No	Cattle tracks	windy from SE and overcast

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: February 18, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:15 am - 4:30 pm
Section: 23, 24, 25, and 26
Temp: 64°F - 68°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
25						X		X					
26		10s				X	X	X		X			
32						X	X	X					scuds
33						X							
83		100s				X	X	X	X	X		X	hyla tads, waterfowl feathers
135	10s	100s	100s	X		X	X	X	X				
180		100s				X		X	X				foamy
181						X		X					green beetle sp.?, foamy
183		100s	10s	X		X	X	X	X				
193		10s	10s	X		X		X	X	X		X	
194	10s	1000s	100s	X		X		X				X	
195		10s	10s	X		X		X		X		X	
196		10s				X		X					
197		10s	10s	X		X		X					
198			10s			X		X	X				
199		100s	10s			X		X		X			
200		100s	10s	X		X		X	X				
201		10s	10s	X		X		X	X				
202	100s	100s	10s			X	X	X					
203		100s	100s	X		X	X	X				X	
206			10s	X		X		X				X	hyla regilla
207			10s	X		X	X	X					
209		10s	100s	X		X	X	X	X	X		X	beetle sp.?
210			100s	X		X		X		X			
211			10s	X		X	X	X					scud

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
25	yes	5	7	873	970	59	No	Cattle tracks	Clear and warm, slight breeze
26	yes	6	7	1,235	1,372	59	No	Cattle tracks	Clear and warm, slight breeze
32	yes	2	4	746	1,243	49	No	Cattle tracks	Clear and warm, slight breeze
33	yes	3	4	770	856	49	No	Cattle tracks	Clear and warm, slight breeze
83	yes	12	14	11,954	12,583	51	No	Cattle tracks	Clear and warm, slight breeze
135	yes	10	12	1,922	2,023	62	No	Cattle tracks	Clear and warm, slight breeze
180	yes	6	7	683	697	62	No	Cattle tracks	Clear and warm, slight breeze
181	yes	6	7	517	527	62	No	Cattle tracks	Clear and warm, slight breeze
183	yes	9	10	2,170	2,215	62	No	Cattle tracks	Clear and warm, slight breeze
193	yes	10	11	3,474	3,657	62	No	Cattle tracks	Clear and warm, slight breeze
194	yes	11	12	2,433	2,561	62	No	Cattle tracks	Clear and warm, slight breeze
195	yes	5	6	2,887	3,039	62	No	Cattle tracks	Clear and warm, slight breeze
196	yes	6	7	1,372	1,400	62	No	Cattle tracks	Clear and warm, slight breeze
197	yes	7	9	2,540	2,673	62	No	Cattle tracks	Clear and warm, slight breeze
198	yes	13	15	3,049	3,388	62	No	Cattle tracks	Clear and warm, slight breeze
199	yes	9	11	1,686	1,873	60	No	Cattle tracks	Clear and warm, slight breeze
200	yes	8	10	999	1,110	60	No	Cattle tracks	Clear and warm, slight breeze
201	yes	6	7	1,367	1,395	60	No	Cattle tracks	Clear and warm, slight breeze
202	yes	5	8	1,840	2,165	59	No	Cattle tracks	Clear and warm, slight breeze
203	yes	15	18	2,069	2,111	59	No	Cattle tracks	Clear and warm, slight breeze
206	yes	11	14	4,006	5,008	59	No	Cattle tracks	Clear and warm, slight breeze
207	yes	9	11	1,495	1,574	59	No	Cattle tracks	Clear and warm, slight breeze
209	yes	12	14	15,353	17,059	59	No	Cattle tracks	Clear and warm, slight breeze
210	yes	12	13	4,876	5,418	60	No	Cattle tracks	Clear and warm, slight breeze
211	yes	7	7	1,158	1,182	60	No	Cattle tracks	Clear and warm, slight breeze

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: February 18, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:15 am - 4:30 pm
Section: 23, 24, 25, and 26
Temp: 64°F - 68°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
212		100s	10s	X		X	X	X	X				
213		10s		X		X		X					
214		100s	10s	X		X	X	X	X				green beetle sp?, waterfowl feathers
215	10s	1000s	10s	X		X	X	X				X	
216	10s	10s		X		X		X				X	
217				X		X	X	X					
219			10s	X		X	X	X	X				hyla egg mass
220			10s	X		X	X	X					
221			10s			X		X	X				
222		10s	10s	X		X	X	X	X			X	
223				X		X	X	X	X				
224			10s			X		X	X	X			dragonfly larvae
225		10s	10s	X		X		X		X		X	
226		10s	10s	X		X		X	X	X		X	scud
227			100s			X		X	X			X	large bullfrog tad (5")
230		100s	1000s	X		X		X	X	X		X	
231		10s		X		X		X					
232		10s		X		X		X	X				
234		100s	100s	X		X	X		X				waterfowl feathers
236	10s	1000s	1000s	X		X	X	X	X	X		X	waterfowl feathers
237	100s	100s				X	X	X		X			waterfowl feathers
238		1000s	100s	X		X	X	X		X			
239						X		X					
241	10s	100s	10s			X	X	X				X	
242	10s	100s				X	X	X				X	

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
212	yes	9	11	8,663	9,626	59	No	Cattle tracks	Clear and warm, slight breeze
213	yes	5	7	1,185	1,394	64	No	Cattle tracks	Clear and warm, slight breeze
214	yes	13	14	5,583	5,877	64	No	Cattle tracks	Clear and warm, slight breeze
215	yes	9	11	4,475	4,711	64	No	Cattle tracks	Clear and warm, slight breeze
216	yes	6	8	1,636	1,817	60	No	Cattle tracks	Clear and warm, slight breeze
217	yes	6	7	1,102	1,224	59	No	Cattle tracks	Clear and warm, slight breeze
219	yes	11	12	1,927	2,029	59	No	Cattle tracks	Clear and warm, slight breeze
220	yes	6	7	1,932	2,034	59	No	Cattle tracks	Clear and warm, slight breeze
221	yes	5	6	1,731	1,822	58	No	Cattle tracks	Clear and warm, slight breeze
222	yes	5	7	2,447	2,575	59	No	Cattle tracks	Clear and warm, slight breeze
223	yes	3	4	510	600	58	No	Cattle tracks	Clear and warm, slight breeze
224	yes	6	8	1,805	2,005	51	No	Cattle tracks	Clear and warm, slight breeze
225	yes	8	9	2,044	2,272	51	No	Cattle tracks	Clear and warm, slight breeze
226	yes	6	8	1,629	2,036	51	No	Cattle tracks	Clear and warm, slight breeze
227	yes	14	15	8,517	9,464	51	No	Cattle tracks	Clear and warm, slight breeze
230	yes	12	14	12,595	13,994	60	No	Cattle tracks	Clear and warm, slight breeze
231	yes	6	8	964	1,014	62	No	Cattle tracks	Clear and warm, slight breeze
232	yes	6	8	1,673	1,969	62	No	Cattle tracks	Clear and warm, slight breeze
234	yes	12	14	5,136	5,406	64	No	Cattle tracks	Clear and warm, slight breeze
236	yes	8	9	6,867	8,584	64	No	Cattle tracks	Clear and warm, slight breeze
237	yes	7	9	1,334	1,667	64	No	Cattle tracks	Clear and warm, slight breeze
238	yes	12	13	10,250	10,459	62	No	Cattle tracks	Clear and warm, slight breeze
239	yes	3	4	560	571	62	No	Cattle tracks	Clear and warm, slight breeze
241	yes	11	13	1,856	2,063	64	No	Cattle tracks	Clear and warm, slight breeze
242	yes	6	8	917	1,311	64	No	Cattle tracks	Clear and warm, slight breeze

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: February 18, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 9:15 am - 4:30 pm
Section: 23, 24, 25, and 26
Temp: 64°F - 68°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
243	100s	100s		X		X		X				X	
244	10s	100s		X		X	X		X			X	waterfowl feathers
245	100s	10s				X		X				X	
254		100s	10s	X		X		X	X				
256	10s	100s	10s	X		X	X	X	X	X		X	hyla tads, bullfrog
257			10s			X		X	X	X		X	waterfowl feathers
258		1000s				X		X	X			X	scud
259		1000s				X		X	X				scud
287						X							foamy
288		100s		X		X		X		X			
293		1000s	100s	X		X		X	X			X	waterfowl feathers
395		100s	100s	X		X		X	X	X		X	cow hip bone
396		1000s	1000s	X		X	X	X	X	X	X	X	hyla tadpoles, waterfowl feathers

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
243	yes	6	8	1,442	2,060	64	No	Cattle tracks	Clear and warm, slight breeze
244	yes	9	11	2,700	5,401	64	No	Cattle tracks	Clear and warm, slight breeze
245	yes	4	8	561	1,122	64	No	Cattle tracks	Clear and warm, slight breeze
254	yes	6	8	1,687	2,109	51	No	Cattle tracks	Clear and warm, slight breeze
256	yes	15	16	31,945	33,626	51	No	Cattle tracks	Clear and warm, slight breeze
257	yes	10	11	2,270	2,522	51	No	Cattle tracks	Clear and warm, slight breeze
258	yes	16	16	6,469	6,601	51	No	Cattle tracks	Clear and warm, slight breeze
259	yes	8	8	2,607	2,607	51	No	Cattle tracks	Clear and warm, slight breeze
287	yes	3	4	443	452	62	No	Cattle tracks	Clear and warm, slight breeze
288	yes	6	7	736	751	62	No	Cattle tracks	Clear and warm, slight breeze
293	yes	12	18	5,775	7,219	51	No	Cattle tracks	Clear and warm, slight breeze
395	yes	10	13	17,010	17,906	62	No	Cattle tracks	Clear and warm, slight breeze
396	yes	14	16+	22,891	24,095	62	No	Cattle tracks	Clear and warm, slight breeze

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: February 19, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 8:45 AM - 4:00 PM
Section: 23, 24, 25, and 26
Temp: 54°F - 64°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
134	10s	100s	10s			X	X	X	X				
136		1000s	10s			X	X	X	X	X		X	
137	10s	100s	10s			X	X	X	X				
141		1000s	10s	X		X	X	X	X			X	waterfowl feathers
154		100s	10s	X		X	X	X	X			X	
175		100s	10s			X	X	X	X	X		X	
176	10s	1000s	10s	X		X		X	X				
177						X		X				X	earthworm
185		10s				X		X	X				
186						X	X						
187						X		X				X	
188						X	X		X				
189						X			X				
190	10s	100s	100s	X	X	X		X	X	X		X	waterfowl feathers
192						X	X		X				
240		1000s	10s	X		X		X	X			X	
246		10s	100s	X		X	X	X	X	X		X	hyla tadpoles
247	10s	100	10s	X		X		X	X			X	waterfowl feathers
248		100s	10s	X		X		X	X			X	*L.p.* carapaces only
249	10s	1000s	10s	X		X		X	X			X	waterfowl feathers
250		100s	10s	X		X	X	X	X			X	
251		1000s	10s	X		X		X	X			X	
252						X		X					
253		10s					X						
260		100s		X	X	X	X		X				

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
134	yes	8	10	1,419	1,494	56	No	Cattle tracks	overcast, cool, slight breeze
136	yes	12	15	9,248	10,881	56	No	Cattle tracks	overcast, cool, slight breeze
137	yes	11	12	3,607	3,796	56	No	Cattle tracks	overcast, cool, slight breeze
141	yes	10	12	3,977	4,419	57	No	Cattle tracks	overcast, cool, slight breeze
154	yes	7	9	1,316	1,549	56	No	Cattle tracks	overcast, cool, slight breeze
175	yes	6	8	1,090	1,212	57	No	Cattle tracks	overcast, cool, slight breeze
176	yes	9	11	3,757	3,954	57	No	Cattle tracks	overcast, cool, slight breeze
177	yes	6	8	716	753	57	No	Cattle tracks	overcast, cool, slight breeze
185	yes	6	7	4,299	4,525	51	No	Cattle tracks	overcast, cool, slight breeze
186	yes	3	4	498	508	51	No	Cattle tracks	overcast, cool, slight breeze
187	yes	4	4	907	907	51	No	Cattle tracks	overcast, cool, slight breeze
188	yes	4	6	506	563	51	No	Cattle tracks	overcast, cool, slight breeze
189	yes	4	5	515	525	51	No	Cattle tracks	overcast, cool, slight breeze
190	yes	13	14	7,910	8,326	57	No	Cattle tracks	overcast, cool, slight breeze
192	yes	5	5	1,065	1,087	51	No	Cattle tracks	overcast, cool, slight breeze
240	yes	12	13	6,638	6,988	51	No	Cattle tracks	overcast, cool, slight breeze
246	yes	14	16	27,118	27,671	51	No	Cattle tracks	overcast, cool, slight breeze
247	yes	12	14	7,878	8,292	51	No	Cattle tracks	overcast, cool, slight breeze
248	yes	10	12	5,904	6,214	51	No	Cattle tracks	overcast, cool, slight breeze
249	yes	11	13	3,429	3,609	51	No	Cattle tracks	overcast, cool, slight breeze
250	yes	11	13	4,320	4,547	51	No	Cattle tracks	overcast, cool, slight breeze
251	yes	12	13	5,537	5,650	51	No	Cattle tracks	overcast, cool, slight breeze
252	yes	6	6	798	798	51	No	Cattle tracks	overcast, cool, slight breeze
253	yes	4	5	814	857	51	No	Cattle tracks	overcast, cool, slight breeze
260	yes	10	11	951	1,001	57	No	Cattle tracks	overcast, cool, slight breeze

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: February 19, 2010
Collectors: Meredith Branstad, Eric Christensen
Range: 6 East

Quad: Carmichael
Time: 8:45 AM - 4:00 PM
Section: 23, 24, 25, and 26
Temp: 54°F - 64°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawing Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
262		10s				X		X	X				
263			10s	X		X		X					
264		100s	10s	X		X	X	X	X			X	hyla tad
265				X		X		X					
266									X	X			
268		1000s	10s	X		X		X	X			X	*L.p* . carapaces only
281		10s				X	X		X	X		X	
282						X	X		X				
283		1000s	1000s	X		X	X	X	X	X	X	X	hyta eggmass, waterfowl feathers
284	10s	100s				X		X				X	
290		100s		X		X		X	X	X	X		
291	10s	1000s	10s	X		X	X	X	X				
294		100s	100s	X	X	X	X	X	X	X	X	X	waterfowl feathers
295						X			X				
296						X		X	X				
297		100s			X	X	X	X	X				worms, scud
312		100s				X	X		X				
314		10s		X		X		X	X				
320		100s		X		X	X	X	X	X			
350		100s		X		X	X		X				
386							X	X	X				
624	10s	100s	10s	X		X	X	X	X	X			

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
262	yes	7	8	471	496	51	No	Cattle tracks	overcast, cool, slight breeze
263	yes	7	8	1,262	1,328	51	No	Cattle tracks	overcast, cool, slight breeze
264	yes	12	14	5,164	5,436	52	No	Cattle tracks	overcast, cool, slight breeze
265	yes	7	8	363	403	51	No	Cattle tracks	overcast, cool, slight breeze
266	yes	3	5	191	319	51	No	Cattle tracks	overcast, cool, slight breeze
268	yes	8	10	3,198	3,763	51	No	Cattle tracks	overcast, cool, slight breeze
281	yes	4	4	588	588	51	No	Cattle tracks	overcast, cool, slight breeze
282	yes	3	3	374	374	51	No	Cattle tracks	overcast, cool, slight breeze
283	yes	15	18	44,252	46,582	57	No	Cattle tracks	overcast, cool, slight breeze
284	yes	6	10	862	1,077	57	No	Cattle tracks	overcast, cool, slight breeze
290	yes	12	15	1,659	1,843	56	No	Cattle tracks	overcast, cool, slight breeze
291	yes	10	14	2,718	2,861	57	No	Cattle tracks	overcast, cool, slight breeze
294	yes	13	15	42,644	47,382	51	No	Cattle tracks	overcast, cool, slight breeze
295	yes	2	4	107	268	51	No	Cattle tracks	overcast, cool, slight breeze
296	yes	3	4	944	964	51	No	Cattle tracks	overcast, cool, slight breeze
297	yes	13	13	2,518	2,518	57	No	Cattle tracks	overcast, cool, slight breeze
312	yes	6	10	1,051	1,751	58	No	Cattle tracks	overcast, cool, slight breeze
314	yes	10	12	3,894	5,191	60	No	Cattle tracks	overcast, cool, slight breeze
320	yes	12	13	3,760	4,178	60	No	Cattle tracks	overcast, cool, slight breeze
350	yes	9	12	1,838	2,042	58	No	Cattle tracks	overcast, cool, slight breeze
386	yes	4	7	846	1,302	58	No	Cattle tracks	overcast, cool, slight breeze
624	yes	5	7	1,706	1,896	59	No	Cattle tracks	overcast, cool, slight breeze

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: March 4, 2010
Collectors: Meredith Branstad, Bart van der Zeeuw
Range: 6 East

Quad: Carmichael
Time: 9:00 am - 2:30 pm
Section: 23, 24, 25, and 26
Temp: 50°F - 65°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawling Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
9										X			
23						X	X	X		X			
24							X	X		X			
25							X	X					
26		10s					X	X					
28							X	X					
29				X		X	X	X		X			
30							X			X			
32						X				X			
33													
60							X	X		X			
83				X		X		X	X			X	hyla tadpole, scud
135		1000s	10s			X		X	X			X	good linderiella pool
179						X			X				
180		10s							X				sludge
181						X			X				
183			10s	X				X				X	
193		100s	100s			X		X	X			X	
194		100s	10s				X	X	X			X	spider, feature thru fence
195			10s	X				X	X			X	
196			10s					X		X			
197			100s	X		X		X				X	
198				X		X		X				X	
199		10s	10s	X		X		X	X				
200		100s	10s	X		X		X					

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
9	yes	7	7	343	343	56	No	Cattle tracks	Clear, sunny, and warm
23	yes	4	4	378	378	50	No	Cattle tracks	Clear, sunny, and warm
24	yes	5	5	431	431	50	No	Cattle tracks	Clear, sunny, and warm
25	yes	7	7	970	970	50	No	Cattle tracks	Clear, sunny, and warm
26	yes	8	8	1,372	1,372	50	No	Cattle tracks	Clear, sunny, and warm
28	yes	5	5	260	260	50	No	Cattle tracks	Clear, sunny, and warm
29	yes	5	5	666	666	50	No	Cattle tracks	Clear, sunny, and warm
30	yes	4	4	723	723	56	No	Cattle tracks	Clear, sunny, and warm
32	yes	4	4	1,243	1,243	48	No	Cattle tracks	Clear, sunny, and warm
35	yes	5	5	617	617	48	No	Cattle tracks	Clear, sunny, and warm
60	yes	4	4	1,165	1,165	46	No	Cattle tracks	Clear, sunny, and warm
83	yes	9	9	12,583	12,583	46	No	Cattle tracks	Clear, sunny, and warm
135	yes	11	11	2,023	2,023	56	No	Cattle tracks	Clear, sunny, and warm
179	yes	6	6	79	79	56	No	Cattle tracks	Clear, sunny, and warm
180	yes	7	7	697	697	56	No	Cattle tracks	Clear, sunny, and warm
181	yes	7	7	527	527	56	No	Cattle tracks	Clear, sunny, and warm
183	yes	10	10	2,215	2,215	56	No	Cattle tracks	Clear, sunny, and warm
190	yes	6	10	6,661	8,326	56	No	Cattle tracks	Clear, sunny, and warm
193	yes	10	10	3,657	3,657	56	No	Cattle tracks	Clear, sunny, and warm
194	yes	12	12	2,561	2,561	56	No	Cattle tracks	Clear, sunny, and warm
195	yes	8	8	3,039	3,039	56	No	Cattle tracks	Clear, sunny, and warm
196	yes	8	8	1,400	1,400	56	No	Cattle tracks	Clear, sunny, and warm
197	yes	10	12	2,620	2,673	56	No	Cattle tracks	Clear, sunny, and warm
199	yes	10	12	1,835	1,873	56	No	Cattle tracks	Clear, sunny, and warm
200	yes	10	12	1,088	1,110	56	No	Cattle tracks	Clear, sunny, and warm

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: March 4, 2010
Collectors: Meredith Branstad, Bart van der Zeeuw
Range: 6 East

Quad: Carmichael
Time: 9:00 am - 4:00 pm
Section: 23, 24, 25, and 26
Temp: 50°F - 65°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawling Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
201				X				X	X				
202		100s	10s	X		X		X	X				
203		100s	10s	X		X		X	X			X	
204		100s	100s	X		X		X				X	scud
205				X		X		X				X	
206			10s	X		X			X			X	
207			10s	X		X		X	X	X			
208				X		X		X					
209		100s	1000s	X		X		X	X				mosquito, hyla tadpole
210			100s	X		X		X	X			X	scud
211			10s	X		X		X	X			X	
212		10s	100s	X		X		X	X			X	
216		10s	100s	X				X				X	
217						X	X		X			X	
218							X			X			
219			10s	X		X		X	X				
220						X		X	X	X		X	
221			10s			X		X	X			X	
222			10s	X		X	X	X	X			X	
223				X		X	X						
224			10s	X		X		X				X	
225				X		X	X	X	X				
226				X		X		X	X			X	
227				X		X		X	X				hyla tadpole
230		100s	1000s	X		X		X	X			X	

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
201	yes	10	10	1,395	1,395	56	No	Cattle tracks	Clear, sunny, and warm
202	yes	10	10	2,165	2,165	50	No	Cattle tracks	Clear, sunny, and warm
203	yes	12	12	2,111	2,111	50	No	Cattle tracks	Clear, sunny, and warm
204	yes	10	12	3,529	3,715	50	No	Cattle tracks	Clear, sunny, and warm
205	yes	7	7	903	903	50	No	Cattle tracks	Clear, sunny, and warm
206	yes	8	9	4,758	5,008	50	No	Cattle tracks	Clear, sunny, and warm
207	yes	9	9	1,574	1,574	56	No	Cattle tracks	Clear, sunny, and warm
208	yes	6	6	1,619	1,619	56	No	Cattle tracks	Clear, sunny, and warm
209	yes	10	12	16,206	17,059	56	No	Cattle tracks	Clear, sunny, and warm
210	yes	10	10	5,418	5,418	56	No	Cattle tracks	Clear, sunny, and warm
211	yes	10	10	1,182	1,182	56	No	Cattle tracks	Clear, sunny, and warm
212	yes	10	10	9,626	9,626	50	No	Cattle tracks	Clear, sunny, and warm
216	yes	10	10	1,817	1,817	56	No	Cattle tracks	Clear, sunny, and warm
217	yes	8	8	1,224	1,224	50	No	Cattle tracks	Clear, sunny, and warm
218	yes	5	5	471	471	50	No	Cattle tracks	Clear, sunny, and warm
219	yes	10	12	1,927	2,029	50	No	Cattle tracks	Clear, sunny, and warm
220	yes	9	9	2,034	2,034	46	No	Cattle tracks	Clear, sunny, and warm
221	yes	9	9	1,822	1,822	46	No	Cattle tracks	Clear, sunny, and warm
222	yes	10	10	2,575	2,575	46	No	Cattle tracks	Clear, sunny, and warm
223	yes	7	7	600	600	46	No	Cattle tracks	Clear, sunny, and warm
224	yes	8	9	1,965	2,005	50	No	Cattle tracks	Clear, sunny, and warm
225	yes	8	8	2,272	2,272	50	No	Cattle tracks	Clear, sunny, and warm
226	yes	11	11	2,036	2,036	46	No	Cattle tracks	Clear, sunny, and warm
227	yes	16	16	9,464	9,464	46	No	Cattle tracks	Clear, sunny, and warm
230	yes	12	12	13,994	13,994	56	No	Cattle tracks	Clear, sunny, and warm

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: March 4, 2010
Collectors: Meredith Branstad, Bart van der Zeeuw
Range: 6 East

Quad: Carmichael
Time: 9:00 am - 2:30 pm
Section: 23, 24, 25, and 26
Temp: 50°F - 65°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawling Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
231		10s	10s	X				X		X		X	
232								X	X	X			
233							X	X					
234		100s	100s	X		X		X	X			X	
235				X		X		X				X	
236		100s	100s	X		X		X				X	
237		10s	10s	X		X		X	X			X	photo with factory in background
238		10s	10s			X			X				
239						X			X			X	
242		10s	10s	X		X	X	X	X				worm
243		10s	10s	X		X		X				X	
244		100s		X		X		X		X			
245		10s	10s	X				X	X				
254		100s	100s	X		X		X				X	
255				X					X				clear
256		100s	10s	X		X	X	X	X	X	X	X	hyla tadpole, *L.p* . carapace only
257			10s	X		X	X			X		X	hyla tadpole
258		100s				X			X	X		X	
259		100s		X		X			X			X	scud
287									X				
288								X					
293		100s		X		X			X			X	
395		10s	10s	X		X		X	X	X		X	
396		100s	1000s	X		X			X	X		X	

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
231	yes	8	8	1,014	1,014	56	No	Cattle tracks	Clear, sunny, and warm
232	yes	6	6	1,969	1,969	56	No	Cattle tracks	Clear, sunny, and warm
233	yes	7	7	1,048	1,048	56	No	Cattle tracks	Clear, sunny, and warm
234	yes	12	12	5,406	5,406	56	No	Cattle tracks	Clear, sunny, and warm
235	yes	5	5	1,024	1,024	56	No	Cattle tracks	Clear, sunny, and warm
236	yes	8	8	8,584	8,584	56	No	Cattle tracks	Clear, sunny, and warm
237	yes	10	10	1,667	1,667	56	No	Cattle tracks	Clear, sunny, and warm
238	yes	12	12	10,459	10,459	56	No	Cattle tracks	Clear, sunny, and warm
239	yes	5	5	571	571	56	No	Cattle tracks	Clear, sunny, and warm
242	yes	6	6	1,311	1,311	56	No	Cattle tracks	Clear, sunny, and warm
243	yes	11	11	2,060	2,060	56	No	Cattle tracks	Clear, sunny, and warm
244	yes	7	7	5,401	5,401	56	No	Cattle tracks	Clear, sunny, and warm
245	yes	10	10	1,122	1,122	56	No	Cattle tracks	Clear, sunny, and warm
254	yes	10	10	2,109	2,109	46	No	Cattle tracks	Clear, sunny, and warm
255	yes	7	7	727	727	50	No	Cattle tracks	Clear, sunny, and warm
256	yes	12	12	33,626	33,626	46	No	Cattle tracks	Clear, sunny, and warm
257	yes	9	12	2,522	2,522	46	No	Cattle tracks	Clear, sunny, and warm
258	yes	14	14	6,601	6,601	46	No	Cattle tracks	Clear, sunny, and warm
259	yes	10	10	2,607	2,607	46	No	Cattle tracks	Clear, sunny, and warm
287	yes	6	6	452	452	56	No	Cattle tracks	Clear, sunny, and warm
288	yes	6	6	751	751	56	No	Cattle tracks	Clear, sunny, and warm
293	yes	13	13	7,219	7,219	46	No	Cattle tracks	Clear, sunny, and warm
395	yes	12	12	17,906	17,906	56	No	Cattle tracks	Clear, sunny, and warm
396	yes	16	16	24,095	24,095	56	No	Cattle tracks	Clear, sunny, and warm

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: March 5, 2010
Collectors: Meredith Branstad, Bard van der Zeeuw
Range: 6 East

Quad: Carmichael
Time: 8:45 am - 1:15 pm
Section: 23, 24, 25, and 26
Temp: 50°F - 66°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawling Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
10						X	X		X	X		X	
20							X						
21							X			X			
27						X		X				X	
31							X			X			
39							X	X	X	X		X	
40							X						
41							X			X			
42						X	X			X			
55							X			X			
56				X			X	X					
57							X	X				X	
134		100s	100s	X		X		X	X				
136		1000s	100s			X	X		X			X	
137	10s ♀	10s		X			X	X	X				
139		10s				X	X		X				
142		100s	10s	X		X		X	X				mosquito larvae
168		100s	10s	X		X		X				X	*L.p.* carapaces only
170		100s		X		X		X	X				
175		10s	10s	X		X		X					
176		100s	100s	X		X	X						
177				X		X	X	X				X	
178						X	X			X			
185			10s			X	X	X	X				
186								X					waterfowl feathers

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
10	yes	6	6	519	519	60	No	Cattle tracks	Clear, sunny, and warm
20	yes	3	3	127	127	54	No	Cattle tracks	Clear, sunny, and warm
21	yes	3	3	88	88	54	No	Cattle tracks	Clear, sunny, and warm
27	yes	5	5	775	775	42	No	Cattle tracks	Clear, sunny, and warm
31	yes	3	3	425	425	42	No	Cattle tracks	Clear, sunny, and warm
39	yes	4	4	556	556	48	No	Cattle tracks	Clear, sunny, and warm
40	yes	2	2	50	50	48	No	Cattle tracks	Clear, sunny, and warm
41	yes	4	4	825	825	48	No	Cattle tracks	Clear, sunny, and warm
42	yes	7	7	1,148	1,148	42	No	Cattle tracks	Clear, sunny, and warm
55	yes	3	3	271	271	48	No	Cattle tracks	Clear, sunny, and warm
56	yes	4	4	283	283	42	No	Cattle tracks	Clear, sunny, and warm
57	yes	5	5	1,001	1,001	48	No	Cattle tracks	Clear, sunny, and warm
134	yes	12	12	1,494	1,494	60	No	Cattle tracks	Clear, sunny, and warm
136	yes	16	16	10,881	10,881	60	No	Cattle tracks	Clear, sunny, and warm
137	yes	11	11	3,796	3,796	60	No	Cattle tracks	Clear, sunny, and warm
139	yes	8	8	448	448	54	No	Cattle tracks	Clear, sunny, and warm
142	yes	5	5	2,167	2,167	60	No	Cattle tracks	Clear, sunny, and warm
168	yes	12	12	4,985	4,985	60	No	Cattle tracks	Clear, sunny, and warm
170	yes	13	13	3,158	3,158	60	No	Cattle tracks	Clear, sunny, and warm
175	yes	8	8	1,212	1,212	54	No	Cattle tracks	Clear, sunny, and warm
176	yes	10	10	3,954	3,954	48	No	Cattle tracks	Clear, sunny, and warm
177	yes	6	6	753	753	54	No	Cattle tracks	Clear, sunny, and warm
178	yes	4	4	446	446	54	No	Cattle tracks	Clear, sunny, and warm
185	yes	8	8	4,525	4,525	42	No	Cattle tracks	Clear, sunny, and warm
186	yes	4	4	508	508	42	No	Cattle tracks	Clear, sunny, and warm

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: March 5, 2010
Collectors: Meredith Branstad, Bard van der Zeeuw
Range: 6 East

Quad: Carmichael
Time: 8:45 am - 1:15 pm
Section: 23, 24, 25, and 26
Temp: 50°F - 66°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawling Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
187				X			X		X			X	
188				X		X		X					
189				X		X		X					mosquito larvae
192				X		X	X	X	X			X	
213			10s	X		X		X	X				*L.p.* carapaces only
214		100s	100s	X		X		X				X	
215		100s	10s	X		X		X	X				*L.p.* carapaces only
240		100s	10s	X		X		X	X			X	
241	10s	10s	10s	X		X		X					
246		100s		X		X		X	X		X	X	large/deep, Hyla tadpole
247		100s	10s	X		X		X	X			X	*L.p.* carapaces only
248		100s	10s	X					X			X	
249		100s	10s	X		X	X	X	X	X			*L.p.* carapaces only
250		100s	10s	X		X			X			X	
251		100s		X		X		X	X				
252				X		X		X	X				
253		10s							X				
262				X		X			X				mosquito larvae
263						X		X	X	X			
264		10s				X		X	X			X	
265				X		X							
266				X		X		X					
267				X				X					
268		1000s	100s	X		X		X	X				
278							X		X				

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
187	yes	7	7	907	907	42	No	Cattle tracks	Clear, sunny, and warm
188	yes	4	4	563	563	42	No	Cattle tracks	Clear, sunny, and warm
189	yes	5	5	525	525	42	No	Cattle tracks	Clear, sunny, and warm
192	yes	7	7	1,087	1,087	48	No	Cattle tracks	Clear, sunny, and warm
213	yes	8	8	1,394	1,394	42	No	Cattle tracks	Clear, sunny, and warm
214	yes	12	12	5,877	5,877	42	No	Cattle tracks	Clear, sunny, and warm
215	yes	9	9	4,711	4,711	42	No	Cattle tracks	Clear, sunny, and warm
240	yes	11	11	6,988	6,988	42	No	Cattle tracks	Clear, sunny, and warm
241	yes	10	10	2,063	2,063	42	No	Cattle tracks	Clear, sunny, and warm
246	yes	18	18+	27,671	27,671	42	No	Cattle tracks	Clear, sunny, and warm
247	yes	12	12	8,292	8,292	42	No	Cattle tracks	Clear, sunny, and warm
248	yes	9	9	6,214	6,214	42	No	Cattle tracks	Clear, sunny, and warm
249	yes	10	10	3,609	3,609	42	No	Cattle tracks	Clear, sunny, and warm
250	yes	10	10	4,547	4,547	42	No	Cattle tracks	Clear, sunny, and warm
251	yes	12	12	5,650	5,650	42	No	Cattle tracks	Clear, sunny, and warm
252	yes	6	6	798	798	42	No	Cattle tracks	Clear, sunny, and warm
253	yes	6	6	857	857	42	No	Cattle tracks	Clear, sunny, and warm
262	yes	7	7	496	496	48	No	Cattle tracks	Clear, sunny, and warm
263	yes	9	9	1,328	1,328	48	No	Cattle tracks	Clear, sunny, and warm
264	yes	9	9	5,436	5,436	48	No	Cattle tracks	Clear, sunny, and warm
265	yes	8	8	403	403	48	No	Cattle tracks	Clear, sunny, and warm
266	yes	4	4	319	319	48	No	Cattle tracks	Clear, sunny, and warm
267	yes	5	5	624	624	48	No	Cattle tracks	Clear, sunny, and warm
268	yes	8	8	3,763	3,763	48	No	Cattle tracks	Clear, sunny, and warm
278	yes	7	7	628	628	48	No	Cattle tracks	Clear, sunny, and warm

N/I = No Inundation

Invertebrate Sampling Data

Project Site: Excelsior Estates
County: Sacramento
Township: 8 North
Permit #: TE-810380-4

Date: March 5, 2010
Collectors: Meredith Branstad, Bard van der Zeeuw
Range: 6 East

Quad: Carmichael
Time: 8:45 am - 1:15 pm
Section: 23, 24, 25, and 26
Temp: 50°F - 66°F

Vernal Pool Number	Crustacea							Turbellaria	Insecta				Incidental Observations
	Anostraca		Notostraca	Cladocera	Conchostraca	Copepoda	Ostracoda		Coleoptera	Coleoptera	Hemiptera	Diptera	
	Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Water Fleas	Clam Shrimps	Copepods	Seed Shrimp	Flatworms	Dytiscidae (Diving Water Beetles)	Haliplidae (Crawling Water Beetles)	Notonectidae (Backswimmers)	Chironomidae (Midge)	
281				X		X			X			X	
282				X									
283		1000s	1000s	X		X		X	X		X	X	hyla tadpoles
284		10s		X				X	X			X	
290		10s		X	X	X		X		X		X	hyla tadpole
291		1000s	100s			X		X		X			
294		100s	10s	X		X		X	X	X	X	X	waterfowl feathers, *L.p.* carapaces only
295						X		X				X	
296				X				X	X			X	
353				X	X	X	X	X		X			water fowl feathers, hyla tadpole
354				X		X	X	X				X	mosquito larvae
355						X		X				X	
368						X							dark, mucky
377				X		X		X	X			X	
393						X			X	X			dark
401				X		X		X	X			X	
604		10s				X	X	X		X			
621		100s				X	X	X					
624			100s				X		X				
625							X			X			

N/I = No Inundation

Invertebrate Sampling Data

Vernal Pool Number	Photos	Water Depth (inches)	Estimated Maximum Depth (inches)	Surface Area at time of sampling (ft^2)	Estimated Maximum Surface Area (ft^2)	Water Temperature (°F)	Voucher Specimens	Habitat Conditions	Weather Conditions/ Comments
281	yes	7	7	588	588	42	No	Cattle tracks	Clear, sunny, and warm
282	yes	7	7	374	374	42	No	Cattle tracks	Clear, sunny, and warm
283	yes	6	6	46,582	46,582	54	No	Cattle tracks	Clear, sunny, and warm
284	yes	11	11	1,077	1,077	60	No	Cattle tracks	Clear, sunny, and warm
290	yes	12	12	1,843	1,843	60	No	Cattle tracks	Clear, sunny, and warm
291	yes	12	12	2,861	2,861	60	No	Cattle tracks	Clear, sunny, and warm
294	yes	16	16+	47,382	47,382	48	No	Cattle tracks	Clear, sunny, and warm
295	yes	4	4	268	268	42	No	Cattle tracks	Clear, sunny, and warm
296	yes	6	6	964	964	48	No	Cattle tracks	Clear, sunny, and warm
353	yes	24	24	27,387	27,387	60	No	Cattle tracks	Clear, sunny, and warm
354	yes	6	6	1,397	1,397	60	No	Cattle tracks	Clear, sunny, and warm
355	yes	8	8	4,241	4,241	60	No	Cattle tracks	Clear, sunny, and warm
368	yes	9	9	1,027	1,027	60	No	Cattle tracks	Clear, sunny, and warm
377	yes	8	8	531	531	60	No	Cattle tracks	Clear, sunny, and warm
393	yes	11	11	746	746	60	No	Cattle tracks	Clear, sunny, and warm
401	yes	17	17	9,682	9,682	60	No	Cattle tracks	Clear, sunny, and warm
604	yes	6	6	210	210	54	No	Cattle tracks	Clear, sunny, and warm
621	yes	14	14	6,567	6,567	60	No	Cattle tracks	Clear, sunny, and warm
624	yes	9	9	1,896	1,896	60	No	Cattle tracks	Clear, sunny, and warm
625	yes	6	6	1,277	1,277	60	No	Cattle tracks	Clear, sunny, and warm

N/I = No Inundation

Appendix C — CNDDB Reports

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/yyyy): 01/10 to 03/10

For Office Use Only

Source Code _____ Quad Code _____

Elm Code _____ Occ. No. _____

EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Lepiderus packardi*

Common Name: Vernal Pool Tadpole Shrimp

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 10,000s Subsequent Visit? ☑ yes ☐ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☑ no ☐ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Meredith Branstad and Eric Christensen

Address: 590 Menlo Drive, Suite 1
Rocklin, CA 95765

E-mail Address: meredith@foothill.com

Phone: (916) 435-1202

Plant Information

Phenology: _____% vegetative _____% flowering _____% fruiting

Animal Information

10,000	10,000			10,000
# adults	# juveniles	# larvae	# egg masses	# unknown

☐ wintering ☑ breeding ☐ nesting ☐ rookery ☐ burrow site ☑ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

County: Sacramento Landowner / Mgr.: Private

Quad Name: Carmichael, 7.5 minute quad Elevation: _____

T 8N R 6E Sec 23-, 26 ¼ of _____¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): GIS

T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____

DATUM: **NAD27** ☐ **NAD83** ☑ **WGS84** ☐ Horizontal Accuracy _____ meters/feet

Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ ***OR*** Geographic (Latitude & Longitude) ☐

Coordinates: 38d 31' 31"N, 121d 16"47.3"W

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*

Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Populations found in a number of natural vernal pools within non-native annual grassland currently being used as rangeland. Observations made during 8 site visits over the course of 3 months.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☑ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: Rangeland used for cattle grazing. Surrounded by agricultural, residential, and commercial (race track) uses

Visible disturbances: Cattle are actively grazing the area

Threats: Off-road vehicle use and trash dumping within decommissioned portion of Kiefer Blvd. and immediately to the north.

Comments:

Determination: *(check one or more, and fill in blanks)*

- ☐ Keyed (cite reference): _____
- ☐ Compared with specimen housed at: _____
- ☑ Compared with photo / drawing in: Belk and Ericsen, 1999
- ☐ By another person (name): _____
- ☐ Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☐ no ☐

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/yyyy): 01/10 to 03/10

For Office Use Only

Source Code _____ Quad Code _____

Elm Code _____ Occ. No. _____

EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Branchinecta lynchi*

Common Name: Vernal Pool Fairy Shrimp

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 1000s Subsequent Visit? ☑ yes ☐ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☑ no ☐ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Meredith Branstad and Eric Christensen

Address: 590 Menlo Drive, Suite 1
Rocklin, CA 95765

E-mail Address: meredith@foothill.com

Phone: (916) 435-1202

Plant Information

Phenology: _____% vegetative _____% flowering _____% fruiting

Animal Information

1,000	1,000			1,000
# adults	# juveniles	# larvae	# egg masses	# unknown

☐ wintering ☑ breeding ☐ nesting ☐ rookery ☐ burrow site ☑ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

County: Sacramento Landowner / Mgr.: Private

Quad Name: Carmichael, 7.5 minute quad Elevation: _____

T 8N R 6E Sec 23-, 26 ¼ of _____¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): GIS

T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____

DATUM: **NAD27** ☐ **NAD83** ☑ **WGS84** ☐ Horizontal Accuracy _____ meters/feet

Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ ***OR*** Geographic (Latitude & Longitude) ☐

Coordinates: 38d 31' 31"N, 121d 16"47.3"W

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*

Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Populations found in a number of natural vernal pools within non-native annual grassland currently being used as rangeland. Observations made during 8 site visits over the course of 3 months.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☑ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: Rangeland used for cattle grazing. Surrounded by agricultural, residential, and commercial (race track) uses

Visible disturbances: Cattle are actively grazing the area

Threats: Off-road vehicle use and trash dumping within decommissioned portion of Kiefer Blvd. and immediately to the north.

Comments:

Determination: *(check one or more, and fill in blanks)*

- ☐ Keyed (cite reference): _____
- ☐ Compared with specimen housed at: _____
- ☑ Compared with photo / drawing in: Belk and Ericsen, 1999
- ☐ By another person (name): _____
- ☐ Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☐ no ☐

Appendix F — Corps Jurisdictional Determination for the Jackson Township Project (formerly Excelsior Estates), November 6, 2015

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

November 6, 2015

Regulatory Division SPK-2004-00791

Tsakopoulos Investments
Attn: Mr. Angelo G. Tsakopoulos
7423 Fair Oaks Boulevard, Suite 10
Carmichael, California 95608

Dear Mr. Tsakopoulos:

We are writing in regards to the revised delineation of aquatic resources on the Jackson Township 900 (formerly Excelsior Estates) site. The approximately 862-acre site is located in unincorporated eastern Sacramento County, and is bordered on the north by Keifer Boulevard, on the south by Jackson Highway and on the west by Excelsior Road, Latitude 38.52393° North, Longitude 121.27833° West.

Based on available information, **we concur with the amount and location of aquatic resources on the site as depicted on the enclosed revised October 29, 2015, *Delineated Waters of the U.S. Excelsior Estates Specific Plan Area, Figure 1*, prepared by Foothill Associates**. The approximately 53.81 acres of aquatic resources, consisting of 4.41 acre of depressional seasonal wetlands, 1.03 acres of depressional perennial marsh, 27.85 acres of vernal pools, 3.70 acres of riverine seasonal wetlands, 10.05 acres of riverine perennial marsh, 1.19 acres of intermittent drainage, 0.23 acre of ephemeral drainage, 5.04 acres of ponds, and 0.31 acre of ditch canal, present within the survey area are potential waters of the United States regulated under Section 404 of the Clean Water. This preliminary jurisdictional determination supersedes our August 27, 2015, preliminary jurisdictional determination.

We have enclosed a copy of the *Preliminary Jurisdictional Determination Form* for this site. Please sign and return a copy of the completed form to this office. Once we receive a copy of the form with your signature we can accept and process a Pre-Construction Notification or permit application for your proposed project.

You should not start any work in potentially jurisdictional waters of the United States unless you have Department of the Army permit authorization for the activity. You may request an approved JD for this site at any time prior to starting work within waters. In certain circumstances, as described in RGL 08-02, an approved JD may later be necessary.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This preliminary determination has been conducted to identify the potential limits of wetlands and other water bodies which may be subject to Corps of Engineers' jurisdiction for the particular site identified in this request. A Notification of Appeal Process and Request for Appeal form is enclosed to notify you of your options with this determination. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2004-00791 in any correspondence concerning this project. If you have any questions, please contact me at 1325 J Street, Room 1350, Sacramento, California 95814, by email at *Lisa.M.Gibson2@usace.army.mil*, or telephone at 916-557-5288. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,

Lisa M Gibson

Lisa M. Gibson
Regulatory Permit Specialist
Regulatory Division

Enclosures

cc: (w/o encls)

Ms. Kate Wheatley, Taylor & Wiley, kwheatley@taylor-wiley.com
Mr. Ken Whitney, Foothill Associates, kwhitney@foothill.com
Ms. Leana Rosetti, U.S. Environmental Protection Agency, Rosetti.Leana@epa.gov
Ms. Tina Bartlett, California Department of Fish and Wildlife, Tina.bartlett@wildlife.ca.gov
Ms. Elizabeth Lee, Central Valley Regional Water Quality Control Board, Elizabeth.Lee@waterboards.ca.gov
Ms. Kellie Berry, Sacramento Valley Branch, Endangered Species Division, U.S. Fish and Wildlife Service, Kellie_Berry@fws.gov

PRELIMINARY JURISDICTIONAL DETERMINATION FORM
Sacramento District

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Regulatory Branch: **Sacramento District** File/ORM #: **SPK-2004-00791** PJD Date: **November 6, 2015**

State: **CA** City/County: **Sacramento County**
Nearest Waterbody: **Elder Creek, Morrison Creek**
Location (Lat/Long): **38.52509° North, 121.28180° West**
Size of Review Area: **862** acres

Name/Address Of Property Owner/ Potential Applicant: **Tsakopoulos Investments**
Attn: Mr. Angelo G. Tsakopoulos
7423 Fair Oaks Boulevard, Suite 10
Carmichael, California 95608

Identify (Estimate) Amount of Waters in the Review Area
Non-Wetland Waters:
linear feet ft wide **6.77** acre(s)
Stream Flow: **Mixed**

Wetlands: **47.04** acre(s)
Cowardin Class: **Palustrine, emergent**

Name of any Water Bodies on the site identified as Section 10 Waters: Tidal: Non-Tidal:

☐ Office (Desk) Determination
☐ Field Determination:
Date(s) of Site Visit(s):

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply – checked items should be included in case file and, where checked and requested, appropriately reference sources below)

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Revised 10/29/2015, Delineated Waters of the U.S., Excelsior Estates Specific Plan Area, drawing prepared by Foothill Associates, Inc**
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Data sheets prepared by the Corps.
☐ Corps navigable waters' study.
☐ U.S. Geological Survey Hydrologic Atlas:
  ☐ USGS NHD data.
  ☐ USGS HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-CARMICHAEL**
☐ USDA Natural Resources Conservation Service Soil Survey.
☐ National wetlands inventory map(s).
☐ State/Local wetland inventory map(s).
☐ FEMA/FIRM maps.
☐ 100-year Floodplain Elevation (if known):
☒ Photographs: ☐ Aerial ☐ Other
☒ Previous determination(s). File no. and date of response letter: **SPK-2004-00791, August 11, 2009, August 27, 2015**
☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

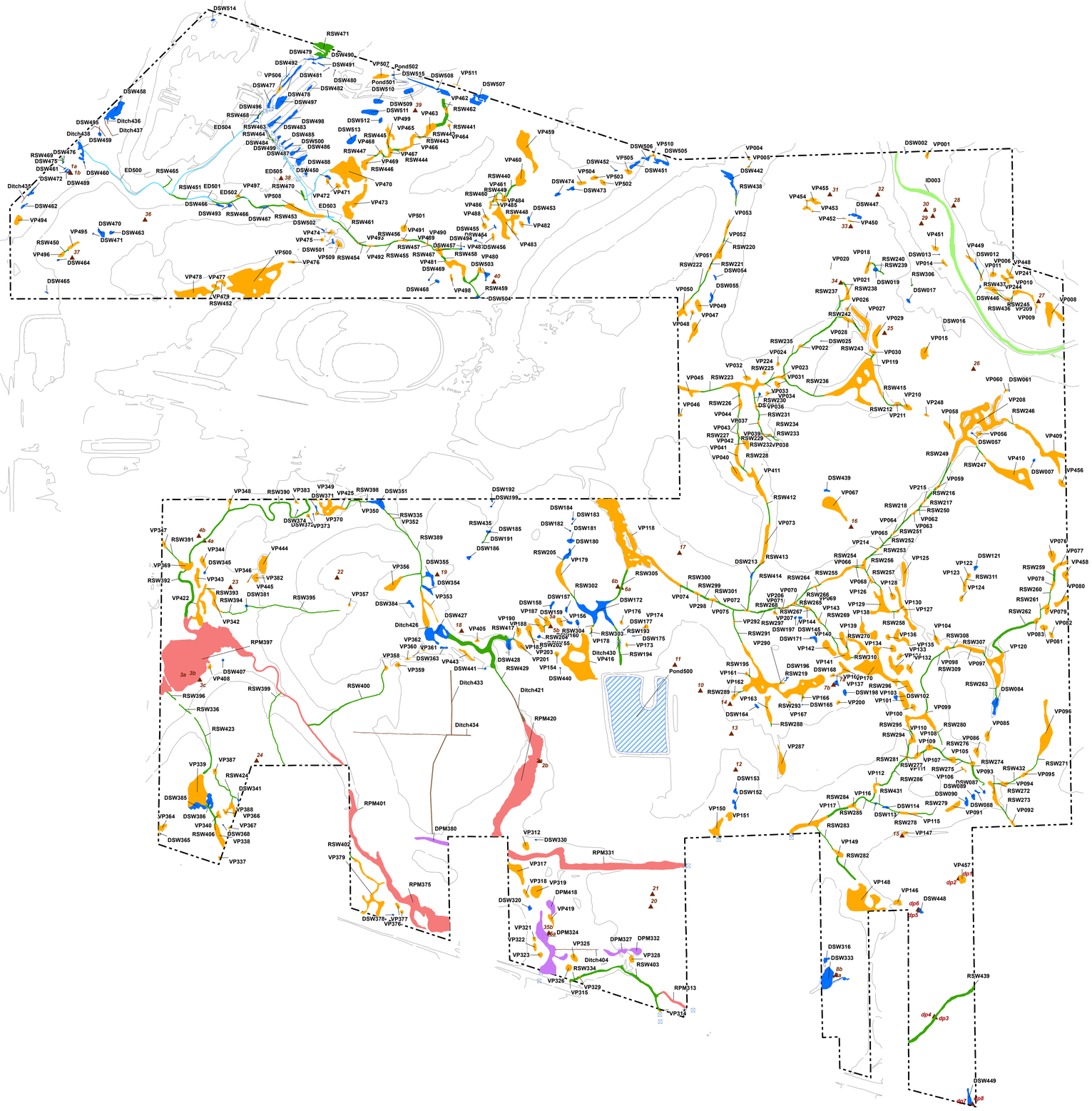
Noam Gibson 11/6/15
Signature and Date of Regulatory Project Manager (REQUIRED)

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.



JURISDICTIONAL AQUATIC FEATURES

Depressional Seasonal Wetland

Label	Acres
DSW002	0.002
DSW007	0.008
DSW012	0.012
DSW013	0.001
DSW016	0.001
DSW017	0.014
DSW019	0.020
DSW025	0.001
DSW035	0.007
DSW054	0.009
DSW055	0.029
DSW057	0.003
DSW061	0.002
DSW084	0.089
DSW087	0.009
DSW088	0.010
DSW089	0.022
DSW090	0.032
DSW102	0.018
DSW113	0.006
DSW114	0.015
DSW121	0.017
DSW145	0.010
DSW152	0.029
DSW153	0.020
DSW155	0.010
DSW157	0.014
DSW158	0.023
DSW159	0.016
DSW160	0.020
DSW164	0.013
DSW165	0.001
DSW168	0.019
DSW171	0.026
DSW172	0.394
DSW175	0.002
DSW177	0.002
DSW180	0.051
DSW181	0.031
DSW182	0.002
DSW183	0.002
DSW184	0.005
DSW185	0.014
DSW186	0.015
DSW191	0.002
DSW192	0.004
DSW196	0.006
DSW197	0.006
DSW198	0.023
DSW199	0.003
DSW213	0.015
DSW316	0.027
DSW320	0.017
DSW330	0.003
DSW333	0.289
DSW341	0.004
DSW345	0.006
DSW351	0.097
DSW354	0.043
DSW355	0.065
DSW363	0.016
DSW365	0.001
DSW368	0.002
DSW371	0.008
DSW372	0.001
DSW374	0.001
DSW378	0.003
DSW381	0.008
DSW384	0.028
DSW385	0.086
DSW386	0.090
DSW407	0.005
DSW427	0.316
DSW428	0.062
DSW439	0.014
DSW440	0.001
DSW441	0.004
DSW442	0.117
DSW446	0.005
DSW447	0.039
DSW448	0.018
DSW449	0.053
DSW450	0.018
DSW451	0.041
DSW452	0.004
DSW453	0.017
DSW454	0.006
DSW455	0.001
DSW456	0.004
DSW457	0.001
DSW458	0.220
DSW459	0.072
DSW460	0.004
DSW461	0.005
DSW462	0.014
DSW463	0.015
DSW464	0.005
DSW465	0.004
DSW466	0.017
DSW467	0.011
DSW468	0.014
DSW469	0.003
DSW470	0.042
DSW471	0.002
DSW472	0.023
DSW473	0.023
DSW474	0.019
DSW475	0.002
DSW476	0.003
DSW477	0.033
DSW478	0.052
DSW479	0.006
DSW480	0.001
DSW481	0.001
DSW482	0.015

Cont. in next column

Depressional Seasonal Wetland (Cont.)

Label	Acres
DSW483	0.056
DSW484	0.002
DSW485	0.012
DSW486	0.032
DSW487	0.072
DSW488	0.009
DSW489	0.006
DSW490	0.027
DSW491	0.007
DSW492	0.006
DSW493	0.015
DSW494	0.005
DSW495	0.012
DSW496	0.012
DSW497	0.113
DSW498	0.060
DSW499	0.011
DSW500	0.022
DSW501	0.009
DSW502	0.005
DSW503	0.031
DSW504	0.008
DSW505	0.062
DSW506	0.023
DSW507	0.150
DSW508	0.105
DSW509	0.055
DSW510	0.052
DSW511	0.101
DSW512	0.021
DSW513	0.071
DSW514	0.008
DSW515	0.004
Subtotal:	**4.41**

Depressional Perennial Marsh

Label	Acres
DPM324	0.650
DPM327	0.088
DPM332	0.074
DPM380	0.122
DPM418	0.100
Subtotal:	**1.03**

Vernal Pool

Label	Acres
VP001	0.022
VP004	0.005
VP005	0.005
VP006	0.034
VP008	0.250
VP009	0.087
VP010	0.004
VP011	0.010
VP014	0.022
VP015	0.101
VP018	0.050
VP020	0.001
VP021	0.059
VP022	0.018
VP023	0.042
VP024	0.012
VP026	0.018
VP027	0.204
VP028	0.051
VP029	0.143
VP030	0.031
VP031	0.036
VP032	0.036
VP033	0.259
VP034	0.014
VP036	0.017
VP037	0.010
VP038	0.007
VP039	0.007
VP040	0.126
VP041	0.094
VP042	0.073
VP043	0.007
VP044	0.047
VP045	0.095
VP046	0.010
VP047	0.114
VP048	0.015
VP049	0.072
VP050	0.109
VP051	0.015
VP052	0.107
VP053	0.050
VP056	0.028
VP058	0.091
VP059	0.017
VP060	0.010
VP062	0.002
VP063	0.016
VP064	0.012
VP065	0.001
VP066	0.051
VP067	0.291
VP068	0.104
VP069	0.012
VP070	0.021
VP071	0.013
VP072	0.012
VP073	0.191
VP074	0.006
VP075	0.025
VP076	0.084
VP077	0.070
VP078	0.032
VP079	0.061
VP080	0.078
VP081	0.043
VP082	0.025

Cont. in next column

Vernal Pool (Cont.)

Label	Acres
VP083	0.032
VP085	0.050
VP086	0.048
VP091	0.085
VP092	0.020
VP093	0.115
VP094	0.036
VP095	0.037
VP096	0.392
VP097	0.124
VP098	0.027
VP099	0.221
VP100	0.032
VP101	0.135
VP103	0.108
VP104	0.042
VP105	0.028
VP106	0.011
VP107	0.047
VP108	0.047
VP109	0.042
VP110	0.059
VP111	0.014
VP112	0.046
VP115	0.052
VP116	0.047
VP117	0.217
VP118	1.556
VP119	0.930
VP120	0.321
VP122	0.023
VP123	0.045
VP124	0.024
VP125	0.124
VP126	0.024
VP127	0.197
VP128	0.038
VP129	0.240
VP130	0.013
VP131	0.160
VP132	0.047
VP133	0.030
VP134	0.047
VP135	0.124
VP136	0.026
VP137	0.635
VP138	0.190
VP139	0.143
VP140	0.083
VP141	0.104
VP142	0.130
VP143	0.018
VP144	0.020
VP146	0.048
VP147	0.017
VP148	0.772
VP149	0.058
VP150	0.152
VP151	0.060
VP154	0.023
VP156	0.050
VP161	0.011
VP162	0.030
VP163	0.125
VP166	0.009
VP167	0.007
VP169	0.014
VP170	0.086
VP173	0.008
VP174	0.050
VP176	0.012
VP178	0.009
VP179	0.175
VP187	0.057
VP188	0.085
VP189	0.072
VP190	0.044
VP200	0.014
VP201	0.065
VP203	0.007
VP206	0.014
VP207	0.009
VP208	1.069
VP209	0.025
VP210	0.051
VP211	0.025
VP214	0.010
VP215	0.017
VP224	0.013
VP241	0.042
VP244	0.066
VP248	0.010
VP287	0.166
VP290	1.088
VP292	0.006
VP298	0.022
VP312	0.058
VP314	0.006
VP315	0.003
VP317	0.203
VP318	0.037
VP319	0.160
VP321	0.015
VP322	0.028
VP323	0.025
VP325	0.050
VP326	0.046
VP328	0.037
VP329	0.007
VP337	0.006
VP338	0.148
VP339	0.629
VP340	0.032
VP342	0.097
VP343	0.091

Cont. in next column

Riverine Seasonal Wetland

Label	Acres
RSW193	0.024
RSW194	0.047
RSW195	0.003
RSW202	0.001
RSW204	0.001
RSW205	0.001

Cont. in next column

Riverine Seasonal Wetland (Cont.)

Label	Acres
RSW212	0.002
RSW216	0.026
RSW217	0.005
RSW218	0.020
RSW219	0.001
RSW220	0.004
RSW221	0.003
RSW222	0.024
RSW223	0.015
RSW225	0.012
RSW226	0.003
RSW227	0.006
RSW228	0.006
RSW229	0.010
RSW230	0.006
RSW231	0.008
RSW232	0.005
RSW233	0.001
RSW234	0.005
RSW235	0.023
RSW236	0.034
RSW237	0.076
RSW238	0.006
RSW239	0.006
RSW240	0.005
RSW242	0.013
RSW243	0.006
RSW245	0.003
RSW246	0.001
RSW247	0.006
RSW249	0.021
RSW250	0.003
RSW251	0.010
RSW252	0.006
RSW253	0.014
RSW254	0.004
RSW255	0.002
RSW256	0.004
RSW257	0.002
RSW258	0.002
RSW259	0.024
RSW260	0.006
RSW261	0.004
RSW262	0.129
RSW263	0.008
RSW264	0.015
RSW265	0.001
RSW266	0.003
RSW267	0.009
RSW268	0.001
RSW269	0.017
RSW270	0.003
RSW271	0.006
RSW272	0.003
RSW273	0.008
RSW274	0.033
RSW275	0.010
RSW276	0.021
RSW277	0.009
RSW278	0.004
RSW279	0.008
RSW280	0.003
RSW281	0.002
RSW282	0.056
RSW283	0.010
RSW284	0.047
RSW285	0.033
RSW286	0.043
RSW287	0.001
RSW288	0.001
RSW289	0.002
RSW291	0.012
RSW293	0.000
RSW294	0.011
RSW295	0.006
RSW296	0.001
RSW297	0.039
RSW299	0.015
RSW300	0.022
RSW301	0.037
RSW302	0.007
RSW303	0.002
RSW304	0.002
RSW305	0.055
RSW306	0.002
RSW307	0.006
RSW308	0.003
RSW309	0.064
RSW310	0.002
RSW311	0.001
RSW334	0.020
RSW335	0.006
RSW336	0.008
RSW389	0.057
RSW390	0.256
RSW391	0.006
RSW392	0.153
RSW393	0.000
RSW394	0.010
RSW395	0.034
RSW396	0.007
RSW398	0.018
RSW399	0.029
RSW400	0.084
RSW402	0.003
RSW403	0.207
RSW406	0.032
RSW412	0.014
RSW413	0.007
RSW414	0.022
RSW415	0.007
RSW417	0.002
RSW423	0.048
RSW424	0.020
RSW429	0.451
RSW431	0.003

Riverine Seasonal Wetland (Cont.)

Label	Acres
RSW432	0.002
RSW435	0.004
RSW436	0.001
RSW437	0.001
RSW438	0.004
RSW439	0.242
RSW440	0.024
RSW441	0.068
RSW442	0.001
RSW443	0.001
RSW444	0.012
RSW445	0.004
RSW446	0.007
RSW447	0.005
RSW448	0.003
RSW449	0.003
RSW450	0.003
RSW451	0.018
RSW452	0.002
RSW453	0.044
RSW454	0.008
RSW455	0.019
RSW456	0.019
RSW457	0.006
RSW458	0.011
RSW459	0.051
RSW460	0.004
RSW461	0.030
RSW462	0.031
RSW463	0.002
RSW464	0.002
RSW465	0.007
RSW466	0.024
RSW467	0.013
RSW469	0.002
RSW470	0.015
RSW471	0.197
Subtotal:	**3.70**

Riverine Perennial Marsh

Label	Acres
RPM313	0.089
RPM331	1.578
RPM375	1.500
RPM397	4.480
RPM401	0.346
RPM420	2.053
Subtotal:	**10.05**

Ephemeral Drainage

Label	Acres
ED500	0.061
ED501	0.026
ED502	0.004
ED503	0.020
ED504	0.059
ED505	0.061
Subtotal:	**0.23**

Intermittent Drainage

Label	Acres
ID003	1.186
Subtotal:	**1.19**

Pond

Label	Acres
Pond500	5.029
Pond501	0.002
Pond502	0.004
Subtotal:	**5.04**

Ditch/Canal

Label	Acres
Ditch404	0.016
Ditch421	0.057
Ditch426	0.003
Ditch430	0.003
Ditch433	0.058
Ditch434	0.147
Ditch435	0.004
Ditch436	0.003
Ditch437	0.010
Ditch438	0.008
Subtotal:	**0.31**

TOTAL:	**53.80**

WETLAND DELINEATION

JURISDICTIONAL AQUATIC FEATURES

DEPRESSIONAL WETLANDS		
	Depressional Seasonal Wetland	4.41
	Depressional Perennial Marsh	1.03
	Vernal Pool	27.85
RIVERINE WETLANDS		
	Riverine Seasonal Wetland	3.70
	Riverine Perennial Marsh	10.05
OTHER WATERS OF THE U.S.		
	Intermittent Drainage	1.19
	Ephemeral Drainage	0.23
	Pond	5.04
	Ditch/Canal	0.31
	Total Acres:	53.80

N

0 800 1,600

Feet

1 inch = 400 feet

OTHER FEATURES

- Culvert
- Data Point
- Topographic Contour
- Excelsior Estates Boundary

DELINEATED WATERS OF THE U.S.

EXCELSIOR ESTATES SPECIFIC PLAN AREA

FIGURE 1

FOOTHILL ASSOCIATES

ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

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Drawn By: MUB
Date: 08/27/2013
Revised: 11/10/14, 09/03/15, 10/29/2015

Document Path: O:\N_Cal\J_Projects\Jackson_Township\GIS_Project\arcmxd\JacksonTownship_wous_delin_reverification_20151022.mxd

Document Name: JacksonTownship_wous_delin_reverification_20151022 : 10/29/2015 3:15:44 PM

Appendix BR-2

Special-Status Species Descriptions

Special-Status Species Descriptions

Special-Status Plants

[County- For brevity and ease of reading, it may be better to compile the following descriptions into Appendix B. Please advise if this is acceptable]

Based on the species table found in Appendix B of the Biological Resources Assessment (Appendix BR-1), the following seven special-status plant species have potential to occur in the Plan Area: Ahart's dwarf rush (*Juncus leiospermus var. ahartii*), Bogg's Lake hedge-hyssop (*Gratiola heterosepala*), legenere (*Legenere limosa*), Sacramento Orcutt grass, slender Orcutt grass, dwarf downingia (*Downingia pusilla)* and Sanford's arrowhead (*Sagittaria sanfordii*). Botanical surveys for special-status plant species were conducted on the Applicant-owned properties in May and June of 2014, and no populations of any special-status plant species were observed. However, because protocol-level surveys were not conducted over the entire Plan Area, the most recent surveys were conducted during a drought year and reference sites were not visited to confirm successful establishment of target species that year, and the surveys are outdated according to agency standards, the potential for these species to occur cannot be ruled out. Legenere has been documented previously on the non-participating properties at the border of the Mather Preserve (CNDDB 2018). Also, most of the Plan Area is within the Mather Core Area and is designated by the USFWS as critical habitat for slender orcutt grass and Sacramento orcutt grass.

Ahart's Dwarf Rush

Ahart's dwarf rush is an annual herb that occurs primarily on the margins of vernal pools in areas that are sparsely vegetated. The vernal pools onsite represent potential habitat for this species. There are 13 reported occurrences of this species within California, one within 5 miles of the site. There are several occurrences of this species in the vicinity including at the Mather Preserve. Based on the presence of suitable habitat and documented occurrences in the vicinity, this species has potential to occur in the Plan Area.

Bogg's Lake Hedge-hyssop

Bogg's Lake hedge-hyssop is and annual herb that occurs in vernal pools primarily on saturated clay (adobe) soils and, at the Bogg's Lake Preserve, on shallow lake margins (CNPS 2013). The vernal pools onsite represent potential habitat for this species. There are 93 reported occurrences of this species within California, one of which is within 5 miles of the site. The nearest occurrence is less than 0.25-mile northeast of the site boundary on the Mather Preserve. Based on the presence of suitable habitat and documented occurrences in the vicinity, this species has potential to occur onsite.

Dwarf Downingia

Dwarf downingia is an annual herb that occurs in vernal pools and swales. The vernal pools onsite represent potential habitat for this species. There are 127 reported

occurrences of this species within California, 11 of which are within Sacramento County and nine of which are within the nine-quad area containing and surrounding the Plan Area (CDFW 2018). There are no reported occurrences of this species within 5 miles of the site; however, the Plan Area is within the species' known range and the presence of suitable habitat creates potential for this species to occur.

LEGENERE

Legenere is an annual herb that occurs in vernal pools and swales, seasonal marshes, artificial ponds, floodplains of intermittent streams, and other seasonally inundated habitats (CNPS 2013). The vernal pools and seasonal wetlands on site represent potential habitat for this species. There are 79 reported occurrences of this species within California, six of which are within 5 miles of the Plan Area. The nearest occurrence borders the Plan Area to the north, at the Mather Preserve. Based on the presence of suitable habitat and documented occurrences in the vicinity, this species has potential to occur on site.

SACRAMENTO AND SLENDER ORCUTT GRASSES

Though Sacramento and slender Orcutt grasses have been documented within 5 miles of the Plan Area, surveys for these species in 2006 and 2007 produced negative results. Although a portion of the Plan Area is within critical habitat for these two species, neither of these species has ever been observed within the Plan Area.

SANFORD'S ARROWHEAD

Sanford's arrowhead occurs in emergent marsh habitats, including habitats which are modified or human-made. Sanford's arrowhead is designated as a federal species of special concern and is listed by the California Native Plant Society's Inventory of Rare and Endangered Plants as category 1B.2 (i.e., rare throughout its range in California with a moderate probability of going extinct). Sanford's arrowhead is fairly common in the Sacramento area. The nearest occurrence is approximately 2 miles west of the Plan Area. Potential suitable marsh habitats include the margins of rivers, streams, ponds, reservoirs, irrigation and drainage canals and ditches, and stock-ponds. Based on the presence of suitable habitat and documented occurrences in the vicinity, this species has a high potential to occur on site.

SPECIAL-STATUS ANIMALS

BIRDS

Based on the species table found in Appendix B of the Biological Resources Assessment (Appendix BR-1), the following special-status avian species are identified as having potential to occur on or near the Plan Area: Western burrowing owl (*Athene cunicularia*), tricolored blackbird (*Agelaius tricolor*), Swainson's hawk (*Buteo swainsoni*), loggerhead shrike (*Lanius ludovicianus)*, white-tailed kite (*Elanus leucurus*), grasshopper sparrow (*Ammodramus savannarum*), Cooper's Hawk (Accipiter cooperi), and song sparrow (*Melospiza melodia*)(Modesto population). The section also addresses nesting raptors in general, which are afforded minimum protections pursuant to the Fish and Game code regardless of status.

SWAINSON'S HAWK

The Swainson's hawk is listed as a Threatened species by the State of California and is a candidate for federal listing as threatened or endangered. It is a migratory raptor typically nesting in or near valley floor riparian habitats during spring and summer months. Swainson's hawks were once common throughout the state, but various habitat changes, including the loss of nesting habitat (trees) and the loss of foraging habitat through the conversion of native Central Valley grasslands to certain incompatible agricultural and urban uses has caused an estimated 90 percent decline in their population.

Swainson's hawks feed primarily upon small mammals, birds, and insects. Their typical foraging habitat includes native grasslands, alfalfa and other hay crops that provide suitable habitat for small mammals. Certain other row crops and open habitats also provide some foraging habitat. The availability of productive foraging habitat near a Swainson's hawk's nest site is a critical requirement for nesting and fledgling success. In central California, about 85 percent of Swainson's hawk nests are within riparian forest or remnant riparian trees. CEQA analysis of impacts to Swainson's hawks consists of separate analyses of impacts to nesting habitat and foraging habitat.

Swainson's hawks are known to forage up to 18 miles from their nest site; however, that is the extreme range of one individual bird's daily movement. It is more common for a Swainson's hawk to forage within 10 miles of its nest site. Therefore, it is generally accepted and CDFW recommends evaluating projects for foraging habitat impacts when they are within 10 miles of a known nest site.

Although this species has not been observed onsite, there is a high potential for it to occur in the Plan Area. According to the most recent data available on CNDDB, there are several active nests within 5 to 10 miles of the site and the closest occurrence is within 2 miles. The trees that surround the irrigation pond and are adjacent to the Plan Area represent potential nesting habitat, while the Plan Area also provides foraging habitat for the hawk.

TRICOLORED BLACKBIRD

The Fish and Game Commission voted to list the tricolored blackbird as threatened on April 19, 2018 and the official Notice of Findings was published on September 14, 2018 (OAL 2018); however, the species remains as a candidate until it is added to Title 14 Section 670.5b. According to CDFW's life history account for the tricolored blackbird, the species is mostly a resident in California, and common locally throughout the Central Valley. The species is a colonial nester that breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs. Nesting colonies usually support a minimum of 50 pairs. The species feeds in grassland and cropland habitats. The usual breeding season is mid-April into late-July.

According to the CNDDB, there is a record of this species in the Plan Area. The occurrence record states there were 15 adults observed in the colony, which is small, but the colony was successfully breeding amongst blackberry bushes on the site in 1994. Foraging tricolored blackbirds were also observed during the June 22, 2017 site

visit to the Plan Area. The site includes a variety of wetland habitats, including habitats that support reeds, blackberries, and other plants that provide suitable nesting habitat. The entire Plan Area provides suitable foraging habitat.

WHITE-TAILED KITE

According to the CDFW life history account for the white-tailed kite, the species is a resident in coastal and valley lowlands and is rarely found away from agricultural areas. The species forages in undisturbed grasslands, meadows, farmlands, and emergent wetlands. Groves of dense, broad-leafed deciduous trees are used for nesting and roosting. The species is listed as fully protected due to nesting impacts. The grassland habitat provides foraging habitat to the white-tailed Kite. During several site visits to the Plan Area, white-tailed kites were observed foraging in the annual grassland areas; however, no nest sites for this species were observed. There is high potential for this species to nest in the Plan Area.

WESTERN BURROWING OWL

Western burrowing owl is a California species of special concern that can be found in annual and perennial grasslands, deserts, and arid scrublands characterized by low-growing vegetation (Zarn 1974). Suitable owl habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat. Both natural and artificial burrows provide protection, shelter, and nesting habitat for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also use artificial structures such as cement culverts; wood debris piles; or openings beneath cement or asphalt pavement.

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Breeding takes place from February 1 to August 31 and wintering takes place from September 1 to January 31. Occupancy of suitable burrowing owl habitat can be verified at a site by detecting a burrowing owl, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance. Burrowing owls exhibit high site fidelity, reusing burrows year after year or year-round (Rich 1984, Feeney 1992).

The CNDDB documents burrowing owl sightings outside of the Plan Area, but within 0.5 mile. The occurrence record details multiple site visits which documented 16 active burrows in 1991. Given that burrowing owls tend to display high nest fidelity, it should be assumed that this burrow area is still active. The Plan Area contains many rodent and other burrows that could be suitable for nesting or wintering.

GRASSHOPPER SPARROW

Grasshopper sparrow is a California species of special concern and, according to the CDFW life history account, the species is an uncommon and local summer resident and breeder in foothills and lowlands, arriving in California from March to May and migrating south in August or September. The species occurs in dry, dense grasslands, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches.

Nests are built of grasses and forbs in a slight depression on the ground, hidden at the base of an overhanging clump of grasses or forbs.

Grasshopper sparrow is known to occur in southern half of Sacramento County. The CNDDB documents one occurrence of this species between 5 and 10 miles from the Plan Area. In 2007, two adults were documented north of Latrobe Road and east of Scott Road in the Deer Creek Hills Unit of the Prairie City State Vehicle Restoration Area.

LOGGERHEAD SHRIKE

According to the CDFW life history account for the loggerhead shrike*,* the species breeds mainly in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. They require tall shrubs or trees (they also use fences or power lines) for hunting perches, territorial advertisement, and pair maintenance; open areas of short grasses, forbs, or bare ground for hunting; and large shrubs or trees for nest placement. They also need impaling sites for prey manipulation or storage, which can include sharp, thorny, or multi-stemmed plants and barbed-wire fences. The breeding season for this species begins in mid-March to early-April and extends to July. The species is listed as a California species of special concern due to loss of nesting habitat. Although the loggerhead shrike has not been observed on site, the trees surrounding the pond, the adjacent pasture, and annual grassland all provide potential nesting and foraging habitat.

SONG SPARROW MODESTO POPULATION

Modesto song sparrow is endemic to California, where it resides only in the north-central portion of the Central Valley. Highest densities occur in the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin River Delta. It is a year-round resident that breeds from mid-March to early-August. The ecological requirements for this species are largely undescribed. Grinnell and Miller noted this population's affinity for emergent freshwater marshes dominated by tules and cattails, as well as riparian willow tickets. These song sparrows also nest in riparian forest of valley oak with a sufficient understory of blackberry along vegetated irrigation canals and levees, and in recently planted valley oak restoration sties. Modesto song sparrow is listed as a California species of special concern due to habitat loss, fragmentation, and degradation. Modesto song sparrow has been observed onsite (Foothill Associates 2015) and the freshwater emergent vegetation within the Plan Area provides potential nesting habitat for this species.

COOPER'S HAWK

Cooper's hawk is a resident of the Central Valley and nests in a in a variety of woodland habitats but is most often found nesting in oak woodlands (County of Sacramento et al. 2018). Cooper's hawk is listed as a watch list species by CDFW and is covered by the SSHCP. The CNDDB records Cooper's hawk occurrences within 5 miles of the Plan Area; however, the species is not known to occur within the Plan Area.

OTHER RAPTORS

Raptors observed in flight over the Plan Area included American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*),

turkey vulture (*Cathartes aura*), great-horned owl (*Bubo virginianus*), and barn owl (*Tyto alba*). Raptors, in general, build nests in large mature trees; though there are some ground-nesting species such as northern harrier and burrowing owl (refer to species-specific discussions above). Although no nests were observed, raptors were observed foraging and roosting onsite and there are many large trees on the site that are suitable for nesting raptors.

MAMMALS

PALLID BAT

Pallid bats, a California species of special concern, are not known to occur within the Plan Area but are known to occur in southern Sacramento County. The species typically uses caves, mines, rock crevices, hollow trees and buildings for roost sites (CWHR 2000). Foraging habitat for pallid bats consists of grasslands and open woodlands, and such habitats are found within the Plan Area.

WESTERN RED BAT

Western Red Bat is known to roost in the leaves of large shrubs and trees. Roosts are most often located in trees that are located near streams, grasslands, pastures, or agricultural areas. The species may also roost in mature trees within urban settings. The species is not known to occur within the Plan Area but is known to occur in southern Sacramento County (County of Sacramento et al. 2018).

AMERICAN BADGER

According to the CDFW life history account for the species, the American badger (*Taxidea taxus*) is an uncommon, permanent resident which is most often found in drier open stages of shrub, forest, and herbaceous habitats. Badgers dig burrows in soils which are easily crumbled and broken down, and regularly dig new burrows to use for cover during the night. Badgers may exhibit some torpor in winter, but do not hibernate. Home ranges vary by geography and season but are generally quite large (up to 1,500 acres for males). Badgers mate in the early summer and fall, and young are born in March and April; females bear and rear young within burrows. Badgers prey on small mammals, reptiles, and insects. The conversion of suitable habitat to either urban or agricultural uses has contributed to the decline of the species, as has the usage of rodenticides and other “pest” control mechanisms – which has resulted in direct mortality due to ingestion and also a substantial reduction in the prey base. The American badger is state-listed as a Species of Special Concern. There is no published regulatory guidance for the treatment of this species.

Although no American badgers have been observed on the Plan Area, they have historically been observed in the general area, which indicates that the area contains suitable soils for the creation of dens.

REPTILES AND AMPHIBIANS

WESTERN POND TURTLE

According to the CDFW life history account for the species, the western pond turtle (*Emys marmorata*), is an aquatic turtle that usually leaves the aquatic site to reproduce, to aestivate, or to overwinter. Western pond turtles require some slack- or slow-water

aquatic habitat. High-gradient streams with minimal cover or basking habitat are not suitable. In pond environments, the species typically only leaves the water to reproduce, whereas in stream environments, the turtles more commonly leave the water to aestivate or overwinter, in addition to leaving for reproduction. Turtles leave the water to overwinter in October or November, and typically become active in March or April. Mating typically occurs in late April or early May but may occur year-round. Most egg-laying occurs in May or June but may occur as early as April or as late as August. The hatchlings remain in the nest over the winter and emerge in the spring. Suitable nesting locations have dry soils (usually in a substrate with a high clay or silt fraction) on a slope that is unshaded and may be at least partially south-facing. The nest site can be up to 1,300 feet from the aquatic habitat, but it is more typical for the nest to be within 650 feet of aquatic habitat. The life history account conservatively recommends a buffer of 1,650 feet to ensure that neither adults nor nests will be disturbed.

This species has not been observed on the Applicant-owned properties during any of Foothill Associates' previous visits. Many of the wetlands on the site dry out seasonally and are not suitable for the species. The primary suitable habitat areas include the perennial marsh areas and the pond on the southern side of the Plan Area, but the species could nest in upland habitats up to several hundred feet from these aquatic habitats; therefore, this species could be present in the Plan Area.

WESTERN SPADEFOOT

The western spadefoot (*Spea hammondii)* breeds in shallow, seasonal wetlands in valley and foothill habitats such as grasslands, open chaparral, sage scrubland, short-grass plains, and pine woodlands. Spadefoot occur in both grazed and ungrazed habitat. Adult spadefoot occupy burrows up to 3 feet in depth in upland habitat during dry periods to avoid desiccation. Individuals may remain in these burrows for eight to nine months. Most surface activity is nocturnal. Spadefoot leave their upland burrows for wetlands during the breeding season, which lasts from January to August, depending on rainfall. It appears that vernal pools and other temporary wetlands may be optimal for breeding due to the absence or reduced abundance of both native and nonnative predators (e.g., bullfrogs, fish, and crawfish), many of which require more permanent water sources. Current research on amphibian conservation suggests that typical upland habitat utilization falls within 1,200 feet of aquatic habitats (USFWS 2005).

The Plan Area contains vernal pools; therefore, suitable habitat for western spadefoot is present in the Plan Area.

INVERTEBRATES

VERNAL POOL INVERTEBRATES

There are a variety of invertebrate species that rely on vernal pools and similar seasonal wetland habitat. Special-status invertebrate species associated with vernal pools in the region include midvalley fairy shrimp (*Branchinecta mesovallensis*), vernal pool fairy shrimp, vernal pool tadpole shrimp, and Ricksecker's water scavenger beetle (*Hydrochara ricksecker*i). All of these species spend their life cycle within vernal pools. None of these species are readily observed through casual observation. Thus, lack of recorded sightings is not evidence to conclude that the species is absent. Where

suitable habitat is present, these species should be assumed present unless protocol-level surveys have found them to be absent.

According to the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (vernal pool recovery plan) (USFWS 2005), midvalley fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp use the same habitat types. These species feed on algae, bacteria, protozoa, rotifers and bits of detritus. The females carry their eggs in a ventral brood sac until they are dropped to the bottom of the pool, or the mother dies and sinks. At the end of the rainy season, as occupied vernal pools dry up, the eggs, referred to as cysts, remain in a dormant stage in the dried pool until the rains of the next season, or other environmental stimuli cause them to hatch. Cysts will hatch when the pool refills, although not all cysts present will hatch during the following rainy season and they may remain dormant in the soil for multiple seasons.

The majority of the Plan Area is located within designated critical habitat for both vernal pool fairly shrimp and vernal pool tadpole shrimp. The Plan Area contains vernal pools; which represent potential habitat for these species. Wet season surveys were performed during 2009-2010 on the Applicant-owned property of the Plan Area (Appendix E of Appendix BR-1) and indicated that both species are present in the Plan Area.

VALLEY ELDERBERRY LONGHORN BEETLE

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is completely dependent on its host plant, elderberry (*Sambucus* spp.), which is a common component of the remaining riparian forests and adjacent upland habitats of the Central Valley. The adult-stage of the species is short-lived, so the majority of the species' life is spent in larval form within the stem of an elderberry plant. Adults emerge from late-March through June, at around the same time as the elderberry produces flowers, producing an exit hole in the stem of the plant, which is often the only exterior evidence of the plant's use by the beetle. The species is federally-listed as threatened.

Although no elderberry shrubs were observed on the Applicant-owned property, there is potential for them to occur on the non-participating properties.

Appendix BR-3

South Sacramento Habitat Conservation Plan Conditions Avoidance and Minimization Measures

5.4.1 General Avoidance and Minimization Measures

General AMMs are designed to avoid or minimize effects of Covered Activities on SSHCP land cover types and Covered Species.

Condition 1. Avoid and Minimize Urban Development Impacts to Watershed Hydrology and Water Quality

National Pollution Discharge Elimination System permits are issued by the Regional Water Quality Control Board to jurisdictions in the region, including the jurisdictions that are also SSHCP Land Use Authority Permittees (i.e., County of Sacramento, and Cities of Rancho

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[16] In a situation like this, the Local Land Use Authority Permittee will suspend one or more local permits (e.g., grading permit, building permit) until compliance with terms of all SSHCP requirements is demonstrated.

[17] Post-construction monitoring by the Land Use Authority Permittee could continue for several years.

Cordova and Galt). The National Pollution Discharge Elimination System permit is issued to each of the Land Use Authority Permittees every 5 years, and is referred to as the Municipal Separate Storm Sewer System (MS4) permit. MS4 permits contain specific design measures required for all projects constructed within the region. The Stormwater Quality Design Manual for the Sacramento and South Placer Regions (Stormwater Manual) outlines planning tools and requirements to reduce urban runoff from new development and redevelopment projects within the region (Sacramento Stormwater Quality Partnership 2007). The Stormwater Manual is used as a general guidance document to aid with the selection, siting, design, operation, and long-term maintenance of stormwater quality control measures. The Stormwater Manual contains control measures intended to meet the standard of "reducing pollutants in urban runoff to the maximum extent practicable" set forth in the local agencies' MS4 permits issued by the Central Valley Regional Water Quality Control Board. AMM LID-1 (see below) is designed to ensure compliance with MS4 requirements by requiring Third-Party Project Proponents to minimize increases of peak discharge of stormwater and to eliminate or reduce runoff of pollutants.

Development Covered Activities may adversely alter watershed hydrology and degrade water quality, which, in turn, could diminish or eliminate the conservation benefits provided by the SSHCP Preserve System. Condition 1 is designed to conserve and/or rehabilitate on-site natural creeks and streams. This condition will require the provision of BMPs and low-impact development (LID) drainage control measures to ensure that runoff from developed lands will closely mimic the pre-development hydrograph and retain most pre-development hydrologic functions. Condition 1 will accomplish the hydrograph and hydrologic objectives through application of the listed AMMs to all UDA Covered Activities that occur at the parcel, subdivision, or master plan scale.

LID-1 (Stormwater Quality): When the size of a Covered Activity project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3).

LID-2 (Groundwater Recharge): When siting SSHCP Preserves containing Riparian, Open Water, or Freshwater Marsh SSHCP land cover types, the Implementing Entity will prioritize locations that are suitable for groundwater recharge.

LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.

Condition 2. Avoid and Minimize Urban Development Direct and Indirect Impacts to Existing Preserves and SSHCP Preserves

Development Covered Activities adjacent to Preserves may adversely impact species that use the Preserve, and erode or eliminate the conservation benefits provided by the Preserve. Condition 2 seeks to avoid or minimize the following Covered Activity environmental stressors that may result in direct and indirect impacts to the SSHCP Preserve System:

- Alterations to landscape hydrology from new impervious surfaces may adversely affect natural communities in the lower watershed, the ecology of a Preserve, and/or downstream aquatic resources.
- Water runoff from development or from roadways directed into Preserves may introduce harmful substances into Preserves. Unseasonal and/or additional water entering a Preserve may eliminate vernal pools and other seasonal wetlands native to the region by converting them to low-functioning perennial wetlands.
- Development adjacent to Preserves may partially to fully remove the soil's "perched aquifer" (see Chapter 3) and reduce or eliminate the micro-watersheds that support the hydrology of vernal pools within the Preserve boundary. These changes may adversely affect the existing hydrologic regime of vernal pools by changing the timing, depth, and/or duration of vernal pool saturation and/or ponding, causing long-term changes to a suite of vernal pool functions. For example, changes to water chemistry could adversely affect species habitat. Although the vernal pools remain, the environmental conditions of the pools may no longer provide habitat for vernal pool Covered Species, or provide the benefit of other wetland functions (e.g., stormwater attenuation) compared to pre-project conditions.
- Introduction or proliferation of non-native or invasive plant and wildlife species may displace native species.
- Landscaping in the interface of a development and a Vernal Pool–Grassland Preserve often includes native or non-native trees and other plant species that are not found in California grasslands and, therefore, cannot survive on the Vernal Pool–Grassland Preserve border without intensive irrigation and cultivation. In addition to adverse effects from irrigation and landscape maintenance, adult trees may become landscape barriers that inhibit species movement and may act to isolate individual Preserves from the larger SSHCP Preserve System.
- Recreational use of Preserves near developed areas may compact soils, eliminate vegetation, impair hydrologic functions, introduce weeds or invasive plant species, and disturb plants and wildlife.

- Introduction of light, noise, or vibrations may disrupt normal nocturnal and diurnal cycles of native species.

AMMs associated with Condition 2 must be applied to all UDA Covered Activities that border an existing Preserve or planned SSHCP Preserve.

EDGE-1 (Compatible Land Uses): To the maximum extent practicable, development project Covered Activities will locate compatible land uses (e.g., designated open space such as parks and ball fields, detention basins, and other land uses with less-intensive human activity) in areas immediately adjacent to existing or planned Preserve boundaries. The compatible land use will provide additional buffering of Preserves from potential indirect effects of adjacent urban development. The soil surfaces in a compatible land use area may be re-contoured provided that the soil restrictive layer remains undamaged and most of the soil profile above the restrictive layer remains intact. The Land Use Authority will determine when it is not practicable to locate a compatible land use adjacent to existing or planned Preserve boundaries.

EDGE-2 (Single-Loaded Streets): To the maximum extent practicable, the design of Urban Development Covered Activities will locate single-loaded streets adjacent to existing or planned Preserve. The Land Use Authority will determine when single-loaded streets are not practicable.

EDGE-3 (Preserve Setbacks): Urban Development Covered Activities constructed adjacent to existing or planned Preserves must establish a minimum 50-foot-wide setback outward from the boundary of any existing Preserve or planned SSHCP Preserve. This minimum 50-foot-wide setback will function as a transition between Urban Development and the Preserve, and must be managed to maintain the natural community of vegetation present in the adjacent Preserve. As much of the setback as possible should remain in the same natural habitat as the Preserve.

However, as discussed in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA, where an existing or planned Preserve is adjacent to an existing roadway (e.g., collectors, arterials, thoroughfares), the 50-foot Preserve Setback will not be required, and any bicycle or pedestrian trail will be established in the road right-of-way. In addition, where a planned roadway crosses an existing or planned Preserve, no Preserve Setback will be required, and any bicycle or pedestrian trail will be established in the road right-of-way.

EDGE-3a (Setback Recreational Trails): Trails are best suited outside of the setback; however, certain types of recreational trails or facilities (e.g., benches, trash receptacles, shade structures, fencing) that can be constructed with minimum ground disturbance and in compliance with EDGE-7 may be allowed within a Preserve Setback, as specified in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA. Preserve Setback design must locate trails on the side nearest development, away from the Preserve boundary. Trails may be permeable or semi-permeable hiking trails or paved community trials. The maximum trail width will be 16 feet total, including 2-foot-wide shoulders. Post and cable fencing, split rail, or other open fencing will be installed adjacent to recreation trails to keep pedestrians on the trail.

EDGE-3b (Setback Firebreaks): If approved by the local authorities, the Preserve Setback trail may also be used as a firebreak. In instances where a trail cannot act as a firebreak, the firebreak will be located between the trail and the Preserve boundary (see Section 5.2.7). Firebreaks allowed inside the setbacks must be created by methods that will not disturb the soil's restrictive layer, such as mowing, minor scraping of surface vegetation, or shallow tilling, to comply with EDGE-7. Firebreak width within Preserve Setbacks is the minimum width needed to comply with applicable local codes.

EDGE-3c (Setback Shade Trees and Landscaping): To prevent potential impacts from irrigation water or from accumulation of leaf litter onto the grasslands or vernal pools of a Preserve, planting of shade trees or landscaping vegetation will be limited to the area of the Preserve Setback located between the recreation trail and the adjacent urban development (i.e., away from Preserves).

- Only drought-tolerant plant species will be planted. The planting pallet used for Preserve Setback landscaping will not include invasive plant species listed in the California Invasive Plant Council's (Cal-IPC) California Invasive Plant Inventory Database or listed in the Cal-IPC California Invasive Plant Watch List (see http://www.cal-ipc.org/paf/). Any shade trees planted along Preserve Setback trails will be native species that are found in California grasslands and that can survive in the Vernal Pool–Grassland border without long-term irrigation or fertilization (e.g., valley oak, black oak, blue oak, oracle oak). In general, no more than 30% of any 1,000-foot-long segment of a Preserve Setback trail will have canopy cover from tree plantings (to be consistent with maximum tree densities naturally found within native California grasslands and savanna).

- Drip irrigation will be allowed for a maximum of 5 years to establish shade trees or landscape vegetation between the recreation trail and adjacent urban development. The Implementing Entity has the discretion to allow irrigation to continue past 5 years if extenuating circumstances necessitate it (e.g., during a drought) and the continuance of irrigation will not affect the Preserve. Any irrigation systems located within Preserve Setbacks will be inspected quarterly to determine if such systems are affecting soils or vegetation not part of the intended plantings. Irrigation system repairs will be completed immediately if it is determined that the irrigation system is affecting vegetation or soil moisture not part of the intended tree planting.
- If, during annual monitoring of the adjacent Preserve (see Chapter 8), adverse indirect effects (e.g., leaf litter accumulation, irrigation runoff, plant encroachment) of the Preserve Setback's planted vegetation are detected, then the SSHCP Implementing Entity, the Preserve Manager, and the entity responsible for the Preserve Setback will identify appropriate adaptive management of the Preserve Setback tree or landscape plantings in accordance with the Preserve Setback Easement (see Section 5.2.5 and Chapter 9).

EDGE-4 (Locate Stormwater Control Outside Preserves): Roads, sidewalks, and other impermeable surfaces of Urban Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks)[18] (see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves).

EDGE-5 (Stormwater Control in Preserve Setbacks): If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development.

[18] Detention basins are allowed in some Linkage Preserves consistent with the requirements of EDGE-6. At the time of SSHCP preparation, seven Linkage Preserves with drainages are planned SSHCP Preserves: L1, L2, L4, L7, L8, L9, and L10 (see Section 5.2.7 and Section 7.5). Also see project-specific measures in Section 5.5.1.

EDGE-6 (Detention Basins in Linkage Preserves): Because planned SSHCP Linkage Preserves L1, L2, L4, L7, L8, L9, and L10 (see Section 7.5) surround natural creeks or streams that must receive stormwater from planned adjacent Urban Development Covered Activities, a limited number of stormwater detention basins will be allowed on those Linkage Preserves. Detention basins within Linkage Preserves (see Section 5.2.7) will be designed and constructed with fill material to build up the perimeter of the detention basin so as not to impact the soil restrictive layer (duripan or hardpan) and function of the soil perched aquifer. Detention basins within Linkage Preserves will capture stormwater flows and runoff, and will discharge water to the stream/creek or percolate collected water to the soil perched aquifer. Detention basin structures that collect stormwater entering the basin or convey stormwater leaving the basin must be designed to avoid and minimize effects to Covered Species habitat in the Linkage Preserve.

EDGE-7 (Hardpan/Duripan Protection): To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of the Preserve System, may result in punctures[19] or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.

EDGE-8 (Outdoor Lighting): All outdoor lighting in Urban Development Covered Activity projects will be designed to minimize light pollution into existing and planned Preserves, except where a Land Use Authority Permittee determines lighting is necessary for public safety or security. Minimization measures may include light fixture placement (e.g., as low to the ground as possible), lamp designs (e.g., shielding, low glare, or no lighting), directing light away from Preserves, or other means to avoid or minimize light pollution. The Third-Party Project Proponent will use the best information available at the time of project design to minimize effects of light pollution on target SSHCP Covered Species (e.g., western spadefoot (*Spea*

[19] Punctures may include small holes that penetrate the soil hardpan or duripan such as might occur when digging or drilling holes for the installation of fence posts, sign posts, or trees.

hammondii), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*)).

EDGE-9 (Livestock Access to Preserves): Urban Development Covered Activity projects that include on-site Preserves will include in their design an adequate number of access points and facilities for delivery and pick up of grazing animals (livestock), such that these activities will not significantly alter the Preserve's habitat and are consistent with the protection of livestock and protection of adjacent public property, and include adequate public safety measures.

EDGE-10 (Prevent Invasive Species Spread): Completed Covered Activities (including roads) will be maintained in a manner that avoids the spread of invasive species into Preserve and Open Space areas. Such maintenance measures will include the following:

- To prevent the transport of non-native invasive species onto Preserves, before bringing any equipment onto an SSHCP Preserve or Preserve Setback, equipment must be cleaned of mud, dirt, and plant material. Cleaning will occur in the infested area or another appropriate location as approved by a Plan Permittee.
- Mowing rotation will start in un-infested areas and move to infested areas.
- Invasive plant prevention techniques will be incorporated into maintenance plans.
- The SSHCP Implementing Entity will survey road shoulders, ditches, and rights-of-way that border SSHCP Preserves for invasive weeds or other exotic plant species. Where roadside weed infestations have reached a critical control point, the Implementing Entity or Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment.

Condition 3. Implement Construction Best Management Practices

AMMs associated with Condition 3 must be applied to all UDA Covered Activities.

BMP-1 (Construction Fencing): Orange construction fencing will be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint (i.e., the limit of project construction plus equipment staging areas and access roads). Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will mark the outer boundary of any Preserve Setback or Stream Setback adjacent to or within the project site with orange construction fencing prior to ground disturbance. This fencing will remain in place until project completion, as identified by the Plan Permittee.

BMP-2 (Erosion Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will install temporary control measures for sediment, stormwater, and pollutant runoff as required by the Plan Permittee to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) will be installed downslope of any Covered Activity that disturbs soils.

Fiber rolls and seed mixtures used for erosion control will be certified as free of viable noxious weed seed. As discussed in Section 5.4.2, Covered Species Take Avoidance and Minimization Measures, erosion controls installed in or adjacent to Plan Area modeled habitat for giant gartersnake (*Thamnophis gigas*), western pond turtle (*Actinemys marmorata*), California tiger salamander (*California tiger salamander*), or western spadefoot (see Chapter 3) must be of appropriate design and materials that will not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures will be conducted until project completion to ensure effective operation of erosion control measures.

BMP-3 (Equipment Storage and Fueling): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will ensure that equipment storage and staging will occur in the development footprint only (not sited in any existing on-site Preserve, planned on-site Preserve, Preserve Setback, Stream Setback, or aquatic land cover type). Fuel storage and equipment fueling will occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint.

However, certain equipment storage and fueling activities can be allowed on Preserves within habitat re-establishment/establishment sites (refer to Section 5.2.7) if no location outside of the site is available. If a Covered Activity results in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill will be absorbed and waste disposed of in a manner to prevent pollutants from entering a waterway, Preserve, Preserve Setback, or Stream Setback.

BMP-4 (Erodible Materials): Plan Permittees and Third-Party Project Proponents implementing Covered Activities must not deposit erodible materials into waterways. Vegetation clippings, brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, Preserve, Preserve Setback, Stream Setback, or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material will be conveyed to a temporary settling basin to prevent sediment from entering a waterway.

BMP-5 (Dust Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will water active construction sites regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water will be used from aquatic land covers; water will be obtained from a municipal source or existing groundwater well.

BMP-6 (Construction Lighting): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will direct all temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) away from adjacent natural habitats, and particularly Riparian and Wetland habitats and wildlife movement areas.

BMP-7 (Biological Monitor): If a Covered Activity includes ground disturbance within Covered Species modeled habitat, an approved biologist will be on site during the period of ground disturbance, and may need to be on site during other construction activities depending on the Covered Species affected. After ground-disturbing project activities are complete, the approved biologist will train an individual to act as the on-site construction monitor for the remainder of construction, with the concurrence of the Permitting Agencies. The on-site monitor will attend the training described in BMP-8. The approved biologist and the on-site monitor will have oversight over implementation of Avoidance and Minimization Measures, and will have the authority to stop activities if any of the requirements associated with those measures are not met. If the monitor requests that work be stopped, the Wildlife Agencies will be notified within one working day by email. The approved biologist and/or on-site monitor will record all observations of listed species on California Natural Diversity Database field sheets and submit them to the California Department of Fish and Wildlife. The approved biologist or on-site monitor will be the contact source for any employee or contractor who might inadvertently kill or injure a Covered Species or who finds a dead, injured or entrapped individual. The approved biologist and on-site monitor's names and telephone numbers will be provided to the Wildlife Agencies prior to the initiation of ground-disturbing activities. Refer to species-specific measures for details on requirements for biological monitors.

BMP-8 (Training of Construction Staff): A mandatory Worker Environmental Awareness Program will be conducted by an approved biologist for all construction workers, including contractors, prior to the commencement of construction activities. The training will include how to identify Covered Species that might enter the construction site, relevant life history information and habitats, SSHCP and

statutory requirements and the consequences of non-compliance, the boundaries of the construction area and permitted disturbance zones, litter control training (SPECIES-2), and appropriate protocols if a Covered Species is encountered. Supporting materials containing training information will be prepared and distributed by the approved biologist. When necessary, training and supporting materials will also be provided in Spanish. Upon completion of training, construction personnel will sign a form stating that they attended the training and understand all of the Avoidance and Minimization Measures. Written documentation of the training must be submitted to the Implementing Entity within 30 days of completion of the training, and the Implementing Entity will provide this information to the Wildlife Agencies.

BMP-9 (Soil Compaction): After construction is complete, all temporarily disturbed areas will be restored similar to pre-project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.

BMP-10 (Revegetation): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will revegetate any cut-and-fill slopes with native or existing non-invasive, non-native plants (e.g., non-native grasses) suitable for the altered soil conditions and in compliance with EDGE-2 and EDGE-8, if applicable.

BMP-11 (Speed Limit): Project-related vehicles will observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews will be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.

Condition 4. Avoid and Minimize Impacts that May Result from Implementation of Covered Transportation Projects

Urban Development transportation project and Rural Transportation Project Covered Activities, including bridge projects, can affect Covered Species. AMMs included for Condition 4 seek to avoid or minimize direct and indirect impacts that may result from construction of roadways or roadway improvements. Condition 4 applies to all transportation-related Covered Activities (see Sections 5.2.1 and 5.2.3).

Plan Permittees and Third-Party Project Proponents implementing Urban Development transportation or Rural Transportation Project Covered Activities must comply with the roadway siting, design, and construction AMMs described below.

ROAD-1 (Road Project Location): Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project alignments will follow existing roads, road easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation.

ROAD-2 (Wildlife Crossing Structures): Road projects that are Urban Development Covered Activities (see Section 5.2.1) (including the Capital Southeast Connector, see Section 5.2.1.1) or are Rural Transportation Covered Activities (see Section 5.2.3) will include an adequate number of wildlife crossing structures, as depicted in Figure 5-10. An adequate number of wildlife crossing structures within the Urban Development Area (UDA) and outside the UDA will provide for continued dispersal and movement of native wildlife throughout the SSHCP Plan Area, as required by the SSHCP Biological Goals and Objectives (see Chapter 7).

The Plan defines "wildlife crossing structure" as a physical structure specifically designed or retrofitted to facilitate undercrossing for target wildlife species. The Plan further classifies wildlife crossings as hydrologic crossings and dry crossings. Hydrologic crossings are built where there is an existing stream, creek, or intermittent drainage to maintain existing hydrologic connectivity within the Plan Area. As described below, hydrologic crossings require specialized features to be built into the crossing structure, such as elevated platforms to allow wildlife to pass under a crossing structure when it is inundated with water. Dry wildlife crossings are built where there is no hydrologic feature but where a crossing is needed to provide for overland connectivity. SSHCP wildlife crossing structures may include structures such as bridges, arches, or box and pipe culverts.

Plan Permittees expect that future wildlife movement and dispersal within the UDA will occur almost entirely within the boundaries of the future interconnected SSHCP Preserve System (see Section 7.5). Therefore, wildlife crossings are needed wherever a roadway crosses (bisects) the conceptual SSHCP Preserve System (see Figure 5-10). Wildlife crossing structures inside the UDA will be sized to accommodate movement of a highly mobile native indicator species (i.e., coyote (*Canis latrans*)). By designing UDA wildlife crossing structures to meet the movement and dispersal requirements of coyote, the Plan Permittees anticipate that the crossing structure will also accommodate most native wildlife species that currently occupy the UDA (see Chapter 3).

The Plan Permittees expect that most of the Plan Area outside of the UDA will remain as Open Space over the 50-year Permit Term (see Chapter 4). Therefore,

the Plan Permittees expect that the Rural Transportation Project Covered Activities proposed outside the UDA will have a relatively small effect on the movement and dispersal of larger or more mobile native wildlife species, including coyote. Consequently, the Plan Permittees anticipate that the design of Rural Transportation Project Covered Activities outside the UDA will need to include wildlife crossing structures primarily where the Rural Transportation Project Covered Activities occur within California tiger salamander modeled habitat (see CTS-3 and also Chapter 3, Figure 3-16).

The design and location of wildlife crossing structures both inside the UDA and outside the UDA will be determined by collaboration between the Third-Party Project Proponent, the Land Use Authority, and the Implementing Entity. Crossing design will use the best available scientific and commercial information for the target species. The design of crossing structures will be based on demonstrated effectiveness of design for the target species when such information is available, or will be designed with a high level of certainty of success based on studies of similar taxa in similar environmental settings. The proposed wildlife crossing structures designs will be reviewed and approved by the Implementing Entity prior to final design.

The Implementing Entity will develop a Wildlife Crossing Maintenance Manual to be provided to the entity responsible for maintaining the wildlife crossing. The Wildlife Crossing Maintenance Manual will identify vegetation management, clearing of obstructions, and other techniques to maintain the desired movement and hydrologic connectivity, and to avoid effects to adjacent Preserves.

All SSHCP wildlife crossing structures in the UDA will include the following design elements:

- Open-bottom bridges or arches where the roadway crosses a river or stream. Where an open-bottom bridge or arch is used, the span of the crossing will be at least 1.2 times the bankfull width of the stream and span the banks to allow for dry wildlife passage along each side of the stream and to avoid or minimize piers or footings within the stream. (Bankfull width refers to the width of a stream channel at the point where over-bank flow begins during a flood event.)
- Any wildlife crossing structure that also maintains hydrologic connectivity will be designed to maintain pre-construction water capacity, depth, and velocity. The crossing structure will not restrict or impede normal flows or flood flows, unless a primary purpose of the structure is to manage such

flow(s). Wildlife crossing structures must be designed to provide a dry passage (e.g., a platform ledge) higher than flows for a 10-year storm event to allow wildlife to pass through an inundated crossing structure.

- Wildlife crossing structures in the UDA will be designed and sized to accommodate movement of at least medium-sized mammals (e.g., coyote). The opening must be at least 3 feet high and the crossing structure must have a minimum openness ratio of at least 0.4.
- Vegetation leading up to the entrance of a crossing structure and the substrate leading into and within the crossing structure will be natural and appropriate to provide for continuity of habitat, attract the target animal species for which the crossing is designed, and facilitate use of the crossing structure.
- A wildlife crossing under six-lane roads or larger will be designed to provide ambient light and temperature in the longer crossing structures (e.g., either by providing a larger opening or a grate at the top of the structure to improve the attractiveness of the crossing to certain Covered Species and wildlife that may hesitate to cross through dark, confined structures or one with a temperature gradient (Jackson and Griffin 2000)). If a road is less than six lanes in width, these designs will be optional.
- Lighting will not be placed at or near the entrance of a wildlife crossing structure to maintain natural ambient light conditions at night and to increase chances of wildlife use. However, a Land Use Authority Permittees may allow lighting if necessary for human health or safety.

Outside the UDA, wildlife crossing structures may be required for California tiger salamander (refer to CTS-1), and could also be required for other native species.

ROAD-3 (Roadside Pesticide Use[20]): If pesticide use is necessary along roadsides, the appropriate SSHCP Permittee will ensure that the pesticide application strictly complies with the pesticide label and all other applicable federal, state, and local authorities pertaining to the use, safety, storage, disposal, and reporting of the pesticide. Where roadside weed infestations have reached a critical control point, the Implementing Entity or a Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment. In addition, the Implementing Entity or appropriate Land Use Authority Permittee will post signs along road shoulders adjacent to sensitive areas that are within the SSHCP

[20] Use of pesticides (including rodenticides and herbicides) is not an SSHCP Covered Activity. However, pesticide use specified in Section 5.3 is an allowed land management tool, provided the pesticide application is otherwise legal and conforms to all conditions in Section 5.4.

Preserve System (e.g., California tiger salamander breeding ponds, endemic plant populations, vertebrates that rely on insects for part of their diet). The signs will identify pesticide use restrictions or other roadside maintenance restrictions.

Condition 5. Avoid and Minimize Impacts that Result from Public Use of Low-Impact Nature Trails in Preserves

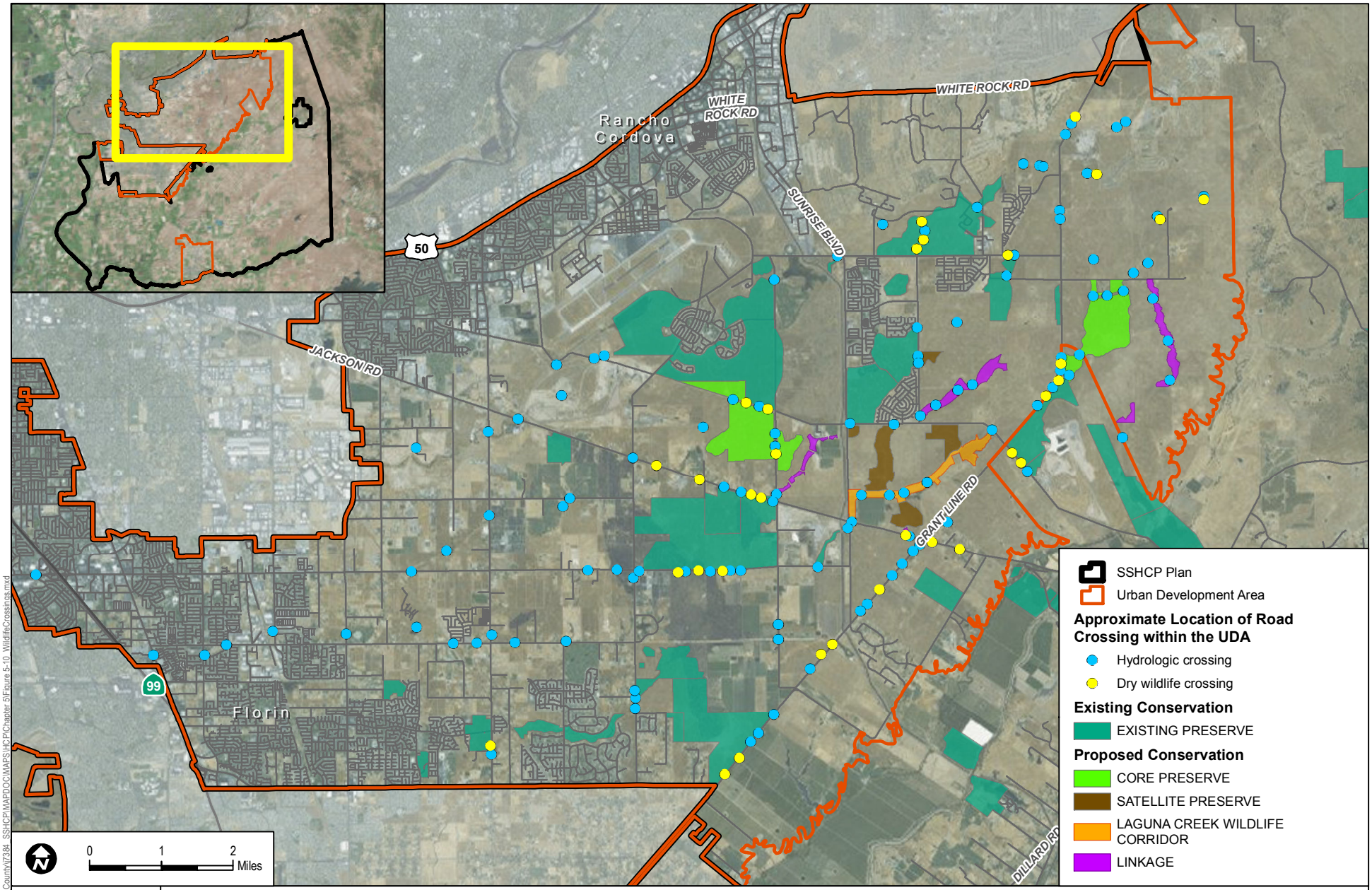
Preserves within the UDA are likely to be surrounded by urban development. As discussed in Section 5.2.7, allowing limited use of SSHCP Preserves will help to foster a sense of community ownership and will provide an opportunity to educate the community about the natural resources to be protected within the SSHCP Preserve System.

Low-impact nature trails will be designed following the AMMs outlined below.

NATURE TRAIL-1 (Nature Trail Plan): A nature trail plan must be prepared for each Preserve where a trail is allowed by the Preserve Management Plan. Nature trails will be unpaved trails that vary in width depending on terrain and existing constraints, but will never exceed 4 feet in width. Where a trail crosses a swale, wooden walkways elevated to a height no greater than 2 feet will be installed. Trail improvements may include mowing vegetation to create or maintain a trail, minor grading to remove trip hazards, and signs providing directional and educational information. Public access to land acquired for preservation will be prohibited until a trail plan can be prepared by the Implementing Entity and approved by the Permitting Agencies. A trail plan will include the following:

- Maps identifying areas that contain sensitive habitats or species occurrences.
- Maps that show the location and footprint of proposed trails.
- Methods used to control public access.
- Trail and use monitoring methods, schedules, and responsibilities.
- Trail operation and maintenance guidelines and responsibilities.
- Clear triggers for use restrictions or closure based on sensitive biological indicators (e.g., seasonal closures of some trails on the basis of activity periods of Covered Species or sensitive species).

NATURE TRAIL-2 (Nature Trail Protection of Duripan): Nature trails will be sited and constructed so as not to interfere with existing soil duripan and the perched aquifer that support the existing hydrologic regime of the Vernal Pool–Grassland, and will not interfere with existing pool hydrology. Trails within Preserves will not be paved.



Path: Z:\Projects\Sacramento_County\7384_SSHCP\MAPDOC\MAPS\HCP\Chapter 5\Figure 5-10_WildlifeCrossings.mxd

SOURCE: ESRI, County of Sacramento 2014, USFWS 2015

FIGURE 5-10

Wildlife Crossings

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

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NATURE TRAIL-3 (Nature Trail Location): Nature trails will be located away from sensitive natural resources (e.g., vernal pools, riparian habitat, woodland habitat, Covered Species occurrences, raptor nesting sites, tricolored blackbird (*Agelaius tricolor*) colony sites). The Wildlife Agencies will determine the distance necessary to avoid impacts to sensitive natural resources.

NATURE TRAIL-4 (Biological Studies Prior to Nature Trail Design): Biological studies will be conducted within the area being considered for nature trail construction prior to project design. The studies will include land cover type mapping and focused species surveys and/or wetland delineations. The biological studies will include assessments of potential effects of trail construction on Preserve System resources, and recommendations for avoidance and minimization that may be incorporated into project siting, design, construction, and operation.

NATURE TRAIL-5 (Monitoring of Nature Trail Impacts): Impacts that could result from use of a nature trail within a Preserve will be monitored according to the Preserve Management Plan (Chapter 8) to ensure that uses do not conflict with the individual Preserve Management Plan. If use of a trail is found to conflict with the individual Preserve Management Plan, use of that trail will be discontinued until adjustments in the use can be made to reduce or eliminate conflicts. The Implementing Entity will make decisions about discontinuing or modifying use of a trail in consultation with the Preserve Manager or other applicable Preserve management agency or organization.

Condition 6. Avoid and Minimize Impacts When Re-Establishing or Establishing Wetlands

As discussed in Chapter 7, the Plan Permittees anticipate that 389 acres of Vernal Pool habitat will be re-established or established[21] within the Plan Area as part of the SSHCP Conservation Strategy. Although re-establishment or establishment of vernal pools is a Measurable Objective under this Plan, if not done correctly, the action could have an adverse impact on existing vernal pools.

RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool): Re-establish or establish Vernal Pool Wetland according to the following guidelines:

- Re-establishment will always take priority over establishment of vernal pools. Establishment will be permitted only after it has been determined that sites with the potential to re-establish vernal pools no longer exist in the Plan Area or cannot be acquired through a willing seller/buyer agreement.

[21] In the context of this Plan, "establish" is synonymous with "create."

- When possible, re-established or established sites will be located adjacent to an existing Preserve(s) to maximize connectivity and Preserve area.
- Re-establishment or establishment will not result in direct or indirect adverse impacts to the hydrologic regime of existing vernal pools. Vernal pool re-establishment or establishment actions will not remove more than 10% of any existing vernal pool watershed, as defined by the SSHCP LIDAR analysis (see Section 3.3 and Conservation Action VPI1.2 in Table 7.1).
- Vernal pool re-establishment will attempt to restore the historical density and range of vernal pool sizes to the maximum extent feasible using historical aerial photography of the site, if available. Where aerial photography of the site's historical conditions is not available, vernal pool re-establishment will include a range of pool sizes (area and depth) to accommodate the different habitat needs and life history characteristics of the vernal pool invertebrate Covered Species.
- Established vernal pools must be located on sites with vernal pool soils, defined as any Plan Area soil type where vernal pools currently exist.
- Established vernal pool sites will include a range of pool sizes to accommodate the different habitat needs and life history characteristics of the three vernal pool invertebrate Covered Species.
- The total density of vernal pools will not exceed 10% of the suitable soil areas in any vernal pool re-establishment and/or establishment site, unless it can be shown that the suitable areas of that site historically supported greater densities.
- Re-establishment or establishment may include inoculation when it is likely that no seed or cyst bank of vernal pool species remains at a site. Vernal Pool inocula will come from nearby vernal pools that are on the same geologic formation and soil type.

RE-ESTABLISHMENT/ESTABLISHMENT-2 (Vernal Pool Inocula Bank): Vernal pool re-establishment or establishment may include "soil inoculation" when it is likely that no seed or cyst bank of vernal pool species remains at a re-establishment or establishment site.

- During conversion of Urban Development Area vernal pools to a developed land cover type, project proponents will excavate and retain soil from vernal pools following protocols developed by the SSHCP Technical Advisory Committee (Chapter 9).

- Inocula applied in re-established or established vernal pools must be harvested from a vernal pool that is on the same geologic formation and soil type shown on the County General Soil Map as the re-establishment/establishment site. Geologic formations and soil types will follow U.S. Department of Agriculture Soil Conservation Service's 1993 Soil Survey of Sacramento County, California. Proposed off-site inocula sources must be approved by the Wildlife Agencies.

RE-ESTABLISHMENT/ESTABLISHMENT-3 (Re-Establishment/Establishment of Freshwater Marsh or Open Water Near Airports): During review of proposed re-establishment/establishment projects for freshwater marsh or open water on SSHCP Preserves, the Implementing Entity shall consider the potential for the location of the re-establishment/establishment projects to increase the risk of wildlife strikes or generation of ground fog at airports. If a re-establishment/ establishment project would result in (1) a net increase in open water or freshwater marsh acreage over baseline conditions[22] within 5 miles of Mather Field, Sacramento Executive Airport, or Franklin Field; or (2) replacement of open water/freshwater marsh habitat that is located 2 or more miles from Mather Field or Sacramento Executive Airport with open water/freshwater marsh habitat that is located less than 2 miles from those airports, a qualified biologist shall prepare a concise letter report. The letter report shall summarize the biologist's findings regarding (1) the species likely to use the re-established/established habitat, (2) a rough order of magnitude estimate on the peak number of birds that might use the re-established/established habitat, and (3) potential movement patterns for birds using the re-established/established habitat and whether they might cross through the airport safety zones (e.g., to reach foraging habitat or another wildlife attractant). The letter report will also provide recommendations to the Implementing Entity on how they could reduce any of the identified wildlife hazards if there are any feasible means to do so that would not conflict with the biological goals and measurable objectives of the Conservation Plan.

Condition 7. Avoid and Minimize Impacts to Streams and Creeks

AMMs associated with Condition 7 must be applied to all Covered Activities where a stream or creek is located within a project footprint.

[22] For purposes of establishing baseline conditions, Freshwater Marsh and Open Water acreages will be calculated using that version of the SSHCP Land Cover Type Map in existence as of the date that the SSHCP permit was issued to the Plan Permittees by the USFWS.

STREAM-1 (Laguna Creek Wildlife Corridor): A 150-foot setback measured from the top of the bank on both sides of the stream will be applied to Laguna Creek within the Urban Development Area (minimum 300-foot corridor width). If trails are located within the Laguna Creek Wildlife Corridor, the nearest edge of the trail will be located at least 80 feet from the top of the bank.

STREAM-2 (UDA Stream Setbacks): A 100-foot setback measured from the top of the bank on both sides of the stream channel will be applied to all streams listed in Table 5-1 (see also Figure 2-4). If a stream reach supports woody riparian vegetation, the setback will be equal to the riparian edge plus 25 feet or will be the setback defined above, whichever is greater. If trails are located within the Stream Setback, the nearest edge of the trail will be located at least 50 feet from the top of the bank.

Table 5-1
Stream Setback Minimum Requirements in the Urban Development Area

Stream	Minimum Setback (from the Top of Bank Measured in Aerial Perspective) on Both Sides of the Stream
Elder Creek	100 feet
Frye Creek	100 feet or as depicted as part of the NewBridge development project hardline Preserve (see Appendix K)
Gerber Creek	100 feet
Morrison Creek	100 feet
Central Paseo	100 feet or as depicted as part of the Cordova Hills development project hardline Preserve (Appendix K)
Sun Creek	100 feet or as depicted as part of the Sun Creek development project hardline Preserve (see Appendix K)

STREAM-3 (Minor Tributaries to UDA Streams): A 25-foot setback measured from the top of the bank on both sides of the stream channel will be applied to all avoided first and second order tributaries to the streams listed in Table 5-1 and Laguna Creek. Refer to Objective W6 in Chapter 7 (Table 7-1) regarding avoided first and second order tributaries. Trails are not permitted within headwater ephemeral Stream Setbacks.

STREAM-4 (Minimize Effects from Temporary Channel Re-Routing): When an Urban Development Covered Activity temporarily re-routes a stream, creek, or drainage, the re-routing will be completed in a manner that minimizes impacts to beneficial uses and habitat. The following measures will be employed to minimize disturbances that will adversely impact water quality:

- No equipment will be operated in areas of flowing or standing water.
- Construction materials and heavy equipment must be stored outside of the active flow of any waters.

- When work within waters is necessary, the entire stream flow will be diverted around the work area.
- In the event of rain, the disturbed in-water work area will be temporarily stabilized before water body flow exceeds the capacity of the diversion structure. The disturbed water body will be stabilized so that the disturbed areas will not come in contact with the flow.
- Once construction is complete, all project-introduced material (e.g., pipes, gravel, cofferdam, sandbags) must be removed, leaving the water as it was before construction. Excess materials will be disposed of at an appropriate disposal site.
- All work areas will be effectively isolated from stream flows using suitable control measures before commencement of any in-water work. The diverted stream flow will not be contaminated by construction activities. Structures for isolating the in-water work area and/or diverting the stream flow (e.g., cofferdam, geo-textile silt curtain) will not be removed until all disturbed areas are cleaned and stabilized.
- Any flow diversion used during construction will be designed in a manner to prevent pollution and minimize siltation, and will provide flows to downstream reaches. Flows will be maintained to support existing aquatic life, riparian wetlands, and habitat that may be located upstream and downstream from any temporary diversion.
- All surface waters, including ponded waters, will be diverted away from areas undergoing grading, construction, excavation, vegetation removal, and/or any other activity that may result in a discharge to waters.
- All temporary dewatering methods will be designed to have the minimum necessary impacts to waters to isolate the immediate work area. All dewatering methods will be installed such that natural flow is maintained upstream and downstream of the diversion area. Any temporary dams and diversions will be installed such that the diversion does not cause sedimentation, siltation, or erosion upstream or downstream of the diversion area. All dewatering methods will be removed immediately upon completion of diversion activities.
- A method of containment must be used below any bridge, boardwalk, and/or temporary crossing to prevent debris from falling into the waters through the entire duration of a project.

- If temporary surface water diversions and/or dewatering are anticipated, the Third-Party Project Proponent will develop and maintain on site a surface water diversion and/or dewatering plan. The plan(s) must be developed prior to initiation of any water diversions and will include the proposed method and duration of diversion activities. The plan(s) must be made available to Central Valley Water Board staff upon request.
- When work in a flowing stream is unavoidable and any dam or other artificial obstruction is being constructed, maintained, or placed in operation, sufficient water will be allowed at all times to pass downstream to maintain beneficial uses of waters below the dam. Construction, dewatering, and removal of temporary cofferdams will not violate the turbidity, settle-able matter, pH, temperature, or dissolved oxygen requirements of any Water Quality Control Plan.
- Any temporary dam or other artificial obstruction will only be built from clean materials such as sandbags, gravel bags, water dams, or clean/washed gravel that will cause little or no siltation. Stream flow will be temporarily diverted using gravity flow through temporary culverts or pipes, or pumped around the work site with the use of hoses.

STREAM-5 (Design for Stream Channel Re-Routing, Widening, or Deepening): When an Urban Development Covered Activity alters a stream, creek, or drainage by re-routing, widening, or deepening a channel, the project design will include the following:

- The main channel of a re-routed channel will be free to migrate laterally over its active and terrace floodplain.
- Channel geometry (plan, profile, and cross-section) of the site will be appropriate for the watershed location and physical/hydrologic condition.
- Local, native materials will be used as fill material to the extent practicable.
- Bioengineering techniques will be used for construction and maintenance of bank stabilization. Bioengineered bank stabilization structures will use vegetation in combination with bank reshaping; biodegradeable geotextile materials; and, in some cases, a minimal amount of rock or wood to the extent practicable to dissipate erosive energy. Third-Party Project Proponents will consult a professional engineer when considering using bioengineering techniques.
- All re-routed, widened, or deepened streams are required to establish Stream Setbacks with minimum widths required under STREAM-1, STREAM-2, or STREAM-3. All re-routed, widened, or deepened streams must re-establish/

establish and maintain native Woody Riparian land cover and/or native Grassland Riparian land cover in the entire Stream Setback.

Condition 8. Avoid and Minimize Impacts to Covered Species from Utility and Utility Maintenance Covered Activities

AMMs associated with Condition 8 must be applied to all Covered Activities associated with construction and maintenance of infrastructure projects.

UTILITY-1 (Avian Collision Avoidance): Installation of new, or relocation of existing, utility poles, lines, and cell towers located within the Preserve System or within 1,000 feet of a Preserve boundary will be coordinated with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. The applicant or relevant utility/service provider will install utility poles, lines, and cell towers in conformance with Avian Powerline Interaction Committee (APLIC) standards for collision-reducing techniques, as outlined in Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2012), or any superseding document issued by the APLIC.

UTILITY-2 (Utility Maintenance on Preserves): Utility maintenance inside SSHCP Preserves and SSHCP Preserve Setbacks containing vernal pools will occur only when vernal pools have been dry for 30 days, except in emergency situations related to human health and safety.

UTILITY-3 (Trenchless Construction Methods): Where a pipeline or conduit crosses an existing or planned Preserve or will be located between adjacent Preserves (e.g., under a roadway that has a Preserve on both sides), trenchless construction methods will be used to minimize impacts to the existing soil profile (including impacts to a hardpan or duripan) to maintain the perched aquifer in Vernal Pool Grassland land cover type.

UTILITY-4 (Siting of Entry and Exit Location): The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.

Condition 9. Avoid and Minimize Impacts That Might Result From Removing or Breaching Levees to Establish or Re-establish Riparian Habitat

LEVEE-1 (Preparation of Hydrologic Analysis): Prior to approving a draft Preserve Management Plan that includes (1) modifying or breaching an existing levee, or (2) would place a potential impedance to high-water event flood-flows on the water side of an existing levee (including new riparian vegetation plantings or

other new Preserve facilities), a hydrologic analysis will be conducted. The Preserve activity will only be implemented if the hydrologic analysis concludes that the activity will not result in a substantial increase in flood stage elevations or flood risk on lands outside the Preserve.

Condition 10. Avoid and Minimize Impacts That Might Result From Potential Residual Contamination of Preserves and Related Exposure of People to Such Hazardous Materials

HAZARDOUS MATERIALS-1 (Preparation of Phase I Environmental Site Assessment): Prior to the acquisition of a preserve site or implementation of a stream or riparian restoration project, a Phase I Environmental Site Assessment shall be conducted in general accordance with the American Society for Testing and Materials Standard Practice E1527-05. The purpose of this Environmental Site Assessment is to identify, to the extent feasible pursuant to the American Society for Testing and Materials Standard, recognized environmental conditions in connection with the potential site. The term "recognized environmental condition" means the presence or likely presence of hazardous substances or petroleum products on the property under conditions that may indicate an existing release, a past release, or a material threat of release of these substances to the property. If the Phase 1 Environmental Site Assessment indicates the presence of a recognized environmental condition, the Implementing Entity shall consider the following options.

- Determine that the acquisition/project can proceed on the basis that the Habitat Plan goals and objectives can be met on the site even with the presence of a recognized environmental condition.
- Conduct a Phase II Environmental Site Assessment, including soil and groundwater testing, to further study the potential for contamination to limit the Implementing Entity's management activities.
- If the results of the Phase I (or Phase II) Environmental Site Assessment indicate that the Habitat Plan goals and objectives cannot be met on the site, the Implementing Entity should not acquire the site.

HAZARDOUS MATERIALS-2 (Contingency Plan): As part of each Preserve Management Plan or site restoration plan, a Contingency Plan shall be prepared to address the actions that would be taken during construction in the event that unexpected contaminated soil or groundwater is discovered. The Contingency Plan shall include health and safety considerations, handling and disposal of wastes, reporting requirements, and emergency procedures. The Contingency Plan shall include a requirement that if evidence of contaminated materials is encountered

during construction, construction would cease immediately and applicable requirements of the Comprehensive Environmental Release Compensation and Liability Act and the California Code of Regulations Title 22 regarding the disposal of waste would be implemented.

5.4.2 Covered Species Take Avoidance and Minimization Measures

The following section describes measures to avoid or minimize effects of Covered Activities on specific SSHCP Covered Species. Species-specific AMMs include species surveys, pre-construction surveys, and construction monitoring. Most species-specific AMMs require that species surveys be conducted if Covered Species modeled habitat is within the proposed Covered Activity footprint or within a specified distance of the proposed Covered Activity. Section 3.4 provides maps and descriptions of modeled habitat for each Covered Species. The AMMs described below apply to Covered Activities when Covered Species modeled habitat or a Covered Species occurrence are at a project site. The Implementing Entity and Wildlife Agencies may update specific SSHCP AMMs over the Permit Term to provide the best and most appropriate protective measures for a Covered Species.

General Covered Species Take Avoidance and Minimization Measures

The following AMMs will apply to all Covered Activities that are required to implement Covered Species take AMMs.

SPECIES-1 (Litter Removal Program): A litter control program will be instituted for the entire project site. All workers will ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. All garbage will be removed from the project site at the end of each work day, and construction personnel will not feed or otherwise attract wildlife to the area where construction activities are taking place.

SPECIES-2 (No Pets in Construction Areas): To avoid harm and harassment of native species, workers and visitors will not bring pets onto a project site.

SPECIES-3 (Take Report): If accidental injury or death of any Covered Species occurs, workers will immediately inform the approved biologist or on-site monitor and site supervisor. The approved biologist or on-site monitor will phone the appropriate contact person at the Implementing Entity. The Implementing Entity will immediately contact the Wildlife Agencies by telephone. A memorandum will be provided to the Implementing Entity and Wildlife Agencies within 1 working day of the incident. The report will provide the date and location of the incident, number of individuals taken,

the circumstances resulting in the take, and any corrective measures taken to prevent additional take.

SPECIES-4 (Post-Construction Compliance Report): A post-construction compliance report will be submitted to the SSHCP Implementing Entity within 30 calendar days of completion of construction activities or within 30 calendar days of any break in construction activity that lasts more than 30 days. The report will detail the construction start and completion dates, any information about meeting or failing to meet species take Avoidance and Minimization Measures (AMM), effectiveness of each AMM that was applied at the project site, and any known project effects to Covered Species.

Rare Plants

PLANT-1 (Rare Plant Surveys): If a Covered Activity project site contains modeled habitat for Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii)*, Bogg's Lake hedge-hyssop (*Gratiola heterosepala)*, dwarf downingia (*Downingia pusilla)*, Legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii)*, or Sanford's arrowhead (*Sagittaria sanfordii*), the Covered Activity project site will be surveyed for the rare plant by an approved biologist and following the California Department of Fish and Wildlife (CDFW) rare plant survey protocols (CDFG 2009) or the most recent CDFW rare plant survey protocols. An approved biologist will conduct the field surveys and will identify and map plant species occurrences according to the protocols. See Chapter 10 for the process to submit survey information to the Plan Permittee and the Permitting Agencies.

PLANT-2 (Rare Plant Protection): If a rare plant listed in AMM PLANT-1 is detected within an area proposed to be disturbed by a Covered Activity or is detected within 250 feet of the area proposed to be disturbed by a Covered Activity, the Implementing Entity will assure one unprotected occurrence of the species is protected within a SSHCP Preserve before any ground disturbance occurs a the project site.

Sacramento and Slender Orcutt Grass

Sacramento Orcutt grass (*Orcuttia viscida*) is a federally and state endangered species and is ranked by the California Native Plant Society as a California Rare Plant Rank 1B.1 species. Slender Orcutt grass (*Orcuttia tenuis*) is a federally threatened and state endangered species and is ranked by the California Native Plant Society as a California Rare Plant Rank 1B.1 species. Both Orcutt grasses are very rare, and the likelihood of finding new occurrences within the Plan Area is low. Due to their rarity, take of either of these species is not permitted under the SSHCP, with the exception of take related to Preserve management and monitoring (see Section 5.2.7, SSHCP Preserve System Covered Activities).

ORCUTT-1 (Orcutt Grass Surveys): If a Covered Activity project site is located within 1 mile of the Mather Core Recovery Area and contains the Vernal Pool land cover type, the project site will be surveyed for Sacramento and slender Orcutt grass by an approved biologist following California Department of Fish and Wildlife (CDFW) rare plant survey protocols (CDFG 2009) or most recent CDFW guidelines to determine if Sacramento and/or slender Orcutt grass is present. An approved biologist will conduct the field investigation to identify and map occurrences. See Chapter 10 for the process to conduct and submit survey information.

ORCUTT-2 (Orcutt Grass Protection): Where known or new Sacramento or slender Orcutt grass occurrences are found, they will be protected within an SSHCP Preserve that is at least 50 acres. The occurrence will be located interior to the Preserve at a distance of no less than 300 feet from the edge of the Preserve boundary. If a Third-Party Project Proponent encounters a previously undiscovered occurrence of Sacramento or slender Orcutt grass on a Covered Activity project site, the Third-Party Project Proponent will contact the Implementing Entity or Land Use Authority Permittee with authority over the project, who will coordinate with the Wildlife Agencies for written concurrence of avoidance to ensure that the project does not cause take of the species.

California Tiger Salamander

To avoid direct and indirect effects of Covered Activities on California tiger salamander (*Ambystoma californiense*), the following AMMs will be implemented.

CTS-1 (California Tiger Salamander Daily Construction Schedule): Ground-disturbing Covered Activities within California tiger salamander modeled habitat (Figure 3-16) will occur outside the breeding and dispersal season (occur after July 31 and before October 15), to the maximum extent practicable. If Covered Activities must be implemented in modeled habitat (Figure 3-16) during the breeding and dispersal season (after October 15 and before July 31), construction activities will not start until 30 minutes after sunrise and must be complete 30 minutes prior to sunset.

CTS-2 (California Tiger Salamander Exclusion Fencing): If a Covered Activity must be implemented in modeled habitat (Figure 3-16) during the breeding and dispersal season (after October 15 and before July 31), exclusion fencing will be installed around the project footprint before October 15. Temporary high-visibility construction fencing will be installed along the edge of work areas, and exclusion fencing will be installed immediately outside of the temporary high-visibility construction fencing to exclude California tiger salamanders from entering the construction area or becoming entangled in the construction fencing. Exclusion fencing will be at least 1 foot tall and be buried

at least 6 inches below the ground to prevent salamanders from going under the fencing. Fencing will remain in place until all construction activities within the construction area are complete. No project activities will occur outside the delineated project footprint. An approved biologist must inspect the exclusion fencing and project site every morning before 7:00 a.m. for integrity and for any entrapped California tiger salamanders. If a California tiger salamander is encountered, refer to CTS-5, below. (However, the Implementing Entity may, with approval of the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), determine that it is appropriate for a Covered Activity project to not implement CTS-2 for certain long and linear roadway Covered Activity projects if it appears that the exclusion fencing will likely trap individuals or cause more take of California tiger salamander than it would prevent.)

CTS-3 (California Tiger Salamander Monitoring): If Covered Activities must be implemented in modeled habitat (Figure 3-16), an approved biologist experienced with California tiger salamander identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place, and will inspect the project site for California tiger salamander every morning before 7:00 a.m., or prior to construction activities. As required by BMP-8 (Training of Construction Staff), the approved biologist will also train construction personnel on the required California tiger salamander avoidance procedures, exclusion fencing, and correct protocols in the event that a California tiger salamander enters an active construction zone. If a California tiger salamander is encountered, refer to CTS-5, below.

CTS-4 (Avoid California Tiger Salamander Entrapment): If Covered Activities must be implemented in modeled habitat, all excavated steep-walled holes or trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within California tiger salamander modeled habitat will be inspected for California tiger salamanders by the approved biologist prior to being moved. If a California tiger salamander is encountered, refer to CTS-5, below.

CTS-5 (California Tiger Salamander Encounter Protocol): If a California tiger salamander is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately (California Department of Fish and Wildlife (CDFW)

and U.S. Fish and Wildlife Service (USFWS)). Construction activities will be suspended in a 100-foot radius of the animal until the animal is relocated by an approved biologist with appropriate handling permits from the Wildlife Agencies. Prior to relocation, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the salamander, within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to USFWS and CDFW immediately. Any worker who inadvertently injures or kills a California tiger salamander or who finds dead, injured, or entrapped California tiger salamander(s) must immediately report the incident to the approved biologist.

CTS-6 (Erosion Control Materials in California Tiger Salamander Habitat): If erosion control (BMP-2) is implemented within California tiger salamander modeled habitat (Figure 3-16), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that salamanders are not trapped (no monofilament). Coconut coir matting and fiber rolls with burlap are examples of acceptable erosion control materials. This limitation will be communicated to the contractor through use of special provisions included in the bid solicitation package.

CTS-7 (Rodent Control): CTS-7 only applies to projects that are within California tiger salamander modeled habitat (Figure 3-16) and on Covered Activities. Rodent control will be allowed only in developed portions of a Covered Activity project site. Where rodent control is allowed, the method of rodent control will comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.

Western Spadefoot

To avoid direct and indirect effects of Covered Activities on western spadefoot (*Spea hammondii*), the following AMMs will be implemented.

WS-1 (Western Spadefoot Work Window): Ground-disturbing Covered Activities within western spadefoot modeled habitat (Figure 3-17) will occur outside the breeding and dispersal season (after May 15 and before October 15), to the maximum extent practicable.

WS-2 (Western Spadefoot Exclusion Fencing): If Covered Activities must be implemented in modeled habitat (Figure 3-17) after October 15 and before May 15, exclusion fencing

will be installed around the project footprint before October 15, and the project site must be monitored by an approved biologist following rain events. Temporary high-visibility construction fencing will be installed along the edge of work areas, and silt fencing will be installed immediately behind the temporary high-visibility construction fencing to exclude western spadefoot from entering the construction area. Fencing will remain in place until all construction activities within the construction area are completed. No project activities will occur outside the delineated project footprint. If a western spadefoot is encountered, refer to WS-6, below.

WS-3 (Western Spadefoot Monitoring): If Covered Activities must be implemented in modeled habitat (Figure 3-17) in the breeding and dispersal season (after October 15 and before May 15), an approved biologist experienced with western spadefoot identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place, and will inspect the project site daily for western spadefoot prior to construction activities. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western spadefoot enters an active construction zone (i.e., outside the buffer zone). If a western spadefoot is encountered, refer to WS-6, below.

WS-4 (Avoid Western Spadefoot Entrapment): If a Covered Activity occurs in western spadefoot modeled habitat (Figure 3-17), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western spadefoot modeled habitat will be inspected for western spadefoot by the approved biologist prior to being moved. If a western spadefoot is encountered, refer to WS-6, below.

WS-5 (Erosion Control Materials in Western Spadefoot Habitat): If erosion control (BMP-2) is implemented within western spadefoot modeled habitat (Figure 3-17), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that western spadefoots are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

WS-6 (Western Spadefoot Encounter Protocol): If Covered Activities must be implemented in modeled habitat (Figure 3-17) during the breeding and dispersal season (after October 15 and before May 15), and a western spadefoot is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the western spadefoot within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife immediately. Any worker who inadvertently injures or kills a western spadefoot or who finds dead, injured, or entrapped western spadefoot(s) must immediately report the incident to the approved biologist.

Giant Gartersnake

To avoid direct and indirect effects of Covered Activities on giant gartersnake (*Thamnophis gigas*), the following AMMs will be implemented.

GGS-1 (Giant Gartersnake Surveys): If the SSHCP giant gartersnake modeled habitat maps (Figure 3-18) show that modeled habitat for giant gartersnake is present within a Covered Activity's project footprint or within 300 feet of a project footprint, then an approved biologist will conduct a field investigation to delineate giant gartersnake aquatic habitat within the project footprint and adjacent areas within 300 feet of the project footprint. In addition to the SSHCP land cover types shown in Figure 3-18, giant gartersnake aquatic habitat includes, but is not limited to, low-gradient streams and creeks, open water, freshwater marsh, agricultural ditches, and rice fields. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential sites and provide these maps to the Local Land Use Permittees and the Implementing Entity. Locations of delineated giant gartersnake habitat must also be noted on plans that are submitted to a Local Land Use Permittee. The applicant will use this information to finalize project design. Covered Activities may occur throughout the year as long as giant gartersnake habitat is identified and fully avoided. Otherwise, Covered Activities must comply with GGS-2 through GGS-8, below. See Chapter 10 for the process to conduct and submit survey information.

GGS-2 (Giant Gartersnake Work Window): Covered Activities that do not fully avoid giant gartersnake modeled habitat (Figure 3-18) will be conducted during the snake's active

season. Construction and ground-disturbing activities will be initiated after May 1 and will end prior to September 15. If it appears that construction activities may go beyond September 15, the Third-Party Project Proponent or Plan Permittee will contact the Local Land Use Permittee and the Implementing Entity as soon as possible, but not later than September 1. The Local Land Use Permittee and the Implementing Entity will discuss with the Wildlife Agencies additional measures necessary to minimize take.

GGS-3 (Giant Gartersnake Monitoring): If a Covered Activity is occurring in giant gartersnake modeled habitat (Figure 3-18), an approved biologist experienced with giant gartersnake identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project site daily for giant gartersnake prior to construction activities. If a giant gartersnake is encountered, refer to GGS-7. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a giant gartersnake enters an active construction zone (i.e., outside the buffer zone).

GGS-4 (Giant Gartersnake Habitat Dewatering and Exclusion): If construction activities will occur in giant gartersnake aquatic habitat, aquatic habitat will be dewatered and then remain dry and absent of aquatic prey (e.g., fish and tadpoles) for 15 days prior to initiation of construction activities. If complete dewatering is not possible, the Implementing Entity will be contacted to determine what additional measures may be necessary to minimize effects to giant gartersnake. After aquatic habitat has been dewatered 15 days prior to construction activities, exclusion fencing will be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat. Exclusionary fencing will be erected 36 inches above ground and buried at least 6 inches below the ground to prevent snakes from attempting to move under the fence into the construction area. In addition, high-visibility fencing will be erected to identify the construction limits and to protect adjacent habitat from encroachment of personnel and equipment. Giant gartersnake habitat outside construction fencing will be avoided by all construction personnel. The fencing and the work area will be inspected by the approved biologist to ensure that the fencing is intact and that no snakes have entered the work area before the start of each work day. The fencing will be maintained by the contractor until completion of the project. If giant gartersnake is encountered, refer to GGS-7, below.

GGS-5 (Avoid Giant Gartersnake Entrapment): If a Covered Activity occurs in giant gartersnake modeled habitat (Figure 3-18), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or

provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within giant gartersnake modeled habitat will be inspected for giant gartersnake by the approved biologist prior to being moved. If a giant gartersnake is encountered, refer to GGS-7.

GGS-6 (Erosion Control Materials in Giant Gartersnake Habitat): If erosion control (BMP-2) is implemented within giant gartersnake modeled habitat (Figure 3-18), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure snakes are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

GGS-7 (Giant Gartersnake Encounter Protocol): If a giant gartersnake is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the giant gartersnake within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service immediately. Any worker who inadvertently injures or kills a giant gartersnake or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist.

GGS-8 (Giant Gartersnake Post-Construction Restoration): After completion of ground-disturbing Covered Activities, the applicant will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with a seed mix similar to pre-project conditions. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis in consultation with the Implementing Entity. Restoration work may include replanting emergent aquatic vegetation. Refer to the U.S. Fish and Wildlife Service's (USFWS) Guidelines for the Restoration and/or Replacement of Giant Gartersnake Habitat (USFWS 1997), or the most current USFWS guidelines at the time of the

activity. A photo documentation report showing pre- and post-project conditions will be submitted to the Implementing Entity 1 month after implementation of the restoration.

Western Pond Turtle

To avoid direct and indirect effects of Covered Activities on western pond turtle (*Actinemys marmorata*), the following AMMs will be implemented.

WPT-1 (Western Pond Turtle Surveys): If the SSHCP western pond turtle modeled habitat maps (Figure 3-19) show that modeled habitat for western pond turtle is present within a Covered Activity's project footprint or within 300 feet of a project footprint, then an approved biologist will conduct a field investigation to delineate western pond turtle aquatic habitat within the project footprint and within 300 feet of the project footprint. In addition to the SSHCP land cover types shown in Figure 3-19, western pond turtle aquatic habitat includes, but is not limited to, low-gradient streams and creeks, open water, freshwater marsh, and rice fields. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential sites and provide those maps to the Local Land Use Permittees and the Implementing Entity. Locations of delineated western pond turtle habitat must also be noted on plans that are submitted to a Local Land Use Permittee. The applicant will use this information to finalize project design. Covered Activities may occur throughout the year as long as western pond turtle habitat is identified and fully avoided. Otherwise, Covered Activities must comply with WPT-2 through WPT-9. See Chapter 10 for the process to conduct and submit survey information.

WPT-2 (Western Pond Turtle Work Window): Maintenance and improvements to existing structures may occur throughout the year as long as western pond turtle habitat is identified and avoided, and movement of equipment is confined to existing roads. Otherwise, construction and ground-disturbing Covered Activities must be conducted outside of western pond turtle's active season. Construction and ground-disturbing activities will be initiated after May 1 and will commence prior to September 15. If it appears that construction activities may go beyond September 15, the appropriate Plan Permittee will contact the Local Land Use Permittee and the Implementing Entity as soon as possible, but not later than September 1, to determine if additional measures are necessary to minimize take.

WPT-3 (Western Pond Turtle Monitoring): If a Covered Activity is occurring in western pond turtle modeled habitat (Figure 3-19), an approved biologist experienced with western pond turtle identification and behavior will monitor the project site, including the

integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project site daily for western pond turtle prior to construction activities. The approved biologist will also training construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western pond turtle enters an active construction zone (i.e., outside the buffer zone).

WPT-4 (Western Pond Turtle Habitat Dewatering and Exclusion): If construction activities will occur in western pond turtle aquatic habitat, aquatic habitat for the turtle will be dewatered and then remain dry and absent of aquatic prey (e.g., crustaceans and other aquatic invertebrates) for 15 days prior to the initiation of construction activities. If complete dewatering is not possible, the Implementing Entity will be contacted to determine what additional measures may be necessary to minimize effects to western pond turtle. After aquatic habitat has been dewatered 15 days prior to construction activities, exclusion fencing will be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat. Exclusionary fencing will be erected 36 inches above ground and buried at least 6 inches below the ground to prevent turtles from attempting to burrow or move under the fence into the construction area. In addition, high-visibility fencing will be erected to identify construction limits and to protect adjacent habitat from encroachment of personnel and equipment. Western pond turtle habitat outside construction fencing will be avoided by all construction personnel. The fencing and work area will be inspected by the approved biologist to ensure that the fencing is intact and that no turtles have entered the work area before the start of each work day. Fencing will be maintained by the contractor until completion of the project. If, after exclusion fencing and dewatering, western pond turtles are found within the project footprint or within 300 feet of the project footprint, the Third-Party Project Proponent will discuss the next best steps with the Implementing Entity and Wildlife Agencies.

WPT-5 (Avoid Western Pond Turtle Entrapment): If a Covered Activity occurs within western pond turtle modeled habitat (Figure 3-19), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western pond turtle modeled habitat will be inspected for western pond turtle by the approved biologist prior to being moved.

WPT-6 (Erosion Control Materials in Western Pond Turtle Habitat): If erosion control (BMP-2) is implemented within western pond turtle modeled habitat (Figure 3-19), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that turtles are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

WPT-7 (Western Pond Turtle Modeled Habitat Speed Limit): Covered Activity construction and maintenance vehicles will observe a 20-mile-per-hour speed limit within western pond turtle modeled upland habitat (Figure 3-19).

WPT-8 (Western Pond Turtle Encounter Protocol): If a western pond turtle is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the turtle, within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service immediately. Any worker who inadvertently injures or kills a western pond turtle or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist.

WPT-9 (Western Pond Turtle Post-Construction Restoration): After completion of ground-disturbing Covered Activities, the applicant will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with a seed mix similar to pre-project conditions. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis in consultation with the Implementing Entity. Restoration work may include replanting emergent aquatic vegetation and placing appropriate artificial or natural basking areas in waterways and wetlands. A photo documentation report showing pre- and post-project conditions will be submitted to the Implementing Entity 1 month after implementation of the restoration.

Tricolored Blackbird

To avoid direct and indirect effects of Covered Activities on tricolored blackbird (*Agelaius tricolor*), the following AMMs will be implemented.

TCB-1 (Tricolored Blackbird Surveys): If modeled habitat for tricolored blackbird is present within a Covered Activity's project footprint or within 500 feet of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential nesting or foraging sites are present within the project footprint and adjacent areas within 500 feet of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Within the Plan Area, potential tricolor blackbird nest sites are often associated with freshwater marsh and seasonal wetlands, or in thickets of willow, blackberry, wild rose, thistle, and other thorny vegetation. Tricolored blackbirds are also known to nest in crops associated with dairy farms. Foraging habitat is associated with annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules and recently tilled fields), cattle feedlots, and dairies. The Third-Party Project Proponent will map all existing or potential nesting or foraging sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

TCB-2 (Tricolored Blackbird Pre-Construction Surveys): Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 500 feet of a project footprint if existing or potential nest sites were found during design surveys and construction activities will occur during the breeding season (March 1 through September 15). An approved biologist will conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, and within the proposed project footprint and 500 feet of the proposed project footprint to determine the presence of nesting tricolored blackbird. Pre-construction surveys will be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-3 and TCB-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and the Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

TCB-3 (Tricolored Blackbird Nest Buffer): If active nests are found within the project footprint or within 500 feet of any project-related Covered Activity, the Third-Party Project Proponent will establish a 500-foot temporary buffer around the active nest until the young have fledged.

TCB-4 (Tricolored Blackbird Nest Buffer Monitoring): If nesting tricolored blackbirds are present within the project footprint or within 500 feet of any project-related Covered

Activity, then an approved biologist experienced with tricolored blackbird behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place near the disturbance buffer. Work within the nest disturbance buffer will not be permitted. If the approved biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction will cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with the Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will be held to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone).

TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserves): On SSHCP Agricultural Preserves, pesticides (including herbicides) will not be applied from January 1 through July 15.

Swainson's Hawk

To avoid direct and indirect effects of Covered Activities on Swainson's hawk (*Buteo swainsoni*), the following AMMs will be implemented.

SWHA-1 (Swainson's Hawk Surveys): If modeled habitat for Swainson's hawk (Figure 3-25) is present within a Covered Activity's project footprint or within 0.25 mile of a project footprint, then an approved biologist will conduct a survey to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Nest sites are often associated with Riparian land cover, but also include lone trees in fields, trees along roadways, and trees around structures. Nest trees may include, but are not limited to, Fremont's cottonwood (*Populus fremontii*), oaks (*Quercus* spp.), willows (*Salix* spp.), walnuts (*Juglans* spp.), eucalyptus (*Eucalyptus* spp.), pines (*Pinus* spp.), and Deodar cedar (*Cedrus deodara*). The Third-Party Project Proponent will map all existing and potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

SWHA-2 (Swainson's Hawk Pre-Construction Surveys): Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 0.25 mile of a project footprint if existing or potential nest sites were found during initial surveys and construction activities will occur during the breeding season (March 1 through September 15). An approved biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys will be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

SWHA-3 (Swainson's Hawk Nest Buffer): If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.25 mile disturbance buffer around the active nest until the young have fledged, with concurrence from the Wildlife Agencies.

SWHA-4 (Swainson's Hawk Nest Buffer Monitoring): If nesting Swainson's hawks are present within the project footprint or within 0.25 mile of any project-related Covered Activity, then an approved biologist experienced with Swainson's hawk behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone).

Greater Sandhill Crane

To avoid direct and indirect effects of Covered Activities on greater sandhill crane (*Grus canadensis*), the following AMMs will be implemented.

GSC-1 (Greater Sandhill Crane Surveys): If modeled habitat for greater sandhill crane (Figure 3-22) is present within a Covered Activity's project footprint or within 0.5 mile of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential roosting sites are present within the project footprint and adjacent areas within 0.5 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Roosting sites within the Plan Area are often associated with flooded fields, seasonal wetlands, and freshwater marsh. The Third-Party Project Proponent will map all existing or potential roosting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Roosting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

GSC-2 (Greater Sandhill Crane Pre-Construction Surveys): Pre-construction surveys will be required to determine if active roosting sites are present within a project footprint or within 0.5 mile of a project footprint if existing or potential roosting sites were found during initial surveys and construction activities will occur when wintering flocks are present within the Plan Area (September 1 through March 15). An approved biologist will conduct pre-construction surveys within 15 days of ground-disturbing activities, and within 0.5 mile of a project footprint, to determine presence of roosting greater sandhill cranes. Pre-construction surveys will be conducted September 1 through March 15, when wintering flocks are present within the Plan Area. If birds are present, then GSC-3, GSC-4, and GSC-5 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

GSC-3 (Greater Sandhill Crane Roosting Buffer): If active roosting sites are found within the project footprint or within 0.5 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.5 mile temporary roosting disturbance buffer around the roosting site until the cranes have left.

GSC-4 (Greater Sandhill Crane Visual Barrier): Greater sandhill cranes have low tolerance for human disturbance, and such disturbance has caused cranes to abandon foraging and roosting sites. Repeat disturbance affects their ability to feed and store energy needed for survival. If project-related activities occur within 0.5 mile of a known roosting site as identified by surveys conducted during implementation of GSC-1 or GSC-2, a visual barrier will be constructed.

GSC-5 (Greater Sandhill Crane Roosting Buffer Monitoring): If roosting sites are found within the project footprint or within 0.50 mile of any project-related Covered Activity, an

approved biologist experienced with greater sandhill crane behavior will be retained by the Third-Party Project Proponent to monitor the roosting site throughout the roosting season and to determine when the birds have left. The approved biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary disturbance buffer can only occur with the written permission of the Implementing Entity and Wildlife Agencies. If greater sandhill cranes are abandoning their roosting and/or forage sites, the approved biologist will have the authority to shut down construction activities. If roost abandonment occurs, the approved biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid harm and harassment of individuals. The approved biologist will also train construction personnel on the avoidance procedures, buffer zones, and protocols in the event that greater sandhill cranes move into an active construction zone (i.e., outside the buffer zone).

Western Burrowing Owl

To avoid direct and indirect effects of Covered Activities on western burrowing owl (*Athene cunicularia*), the following AMMs will be implemented.

WBO-1 (Western Burrowing Owl Surveys): Surveys within modeled habitat are required for both the breeding and non-breeding season. If the project site falls within modeled habitat, an approved biologist will survey the project site and map all burrows, noting any burrows that may be occupied. Occupied burrows are often (but not always) indicated by tracks, feathers, egg shell fragments, pellets, prey remains, and/or excrement. Surveying and mapping will be conducted by the approved biologist while walking transects throughout the entire project site plus all accessible areas within a 250-foot radius from the project site. The centerline of these transects will be no more than 50 feet apart and will vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects will be closer together, and in open areas with little vegetation, they can be 50 feet apart. This methodology is consistent with current survey protocols for this species (California Burrowing Owl Consortium 1993). Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. If suitable habitat is identified during the initial survey, and if the project does not fully avoid the habitat, pre-construction surveys will be required. Burrowing owl habitat is fully avoided if project-related activities do not impinge on a 250-foot buffer established by the approved biologist around suitable burrows. See Chapter 10 for the process to conduct and submit survey information.

WBO-2 (Western Burrowing Owl Pre-Construction Surveys): Prior to any Covered Activity ground disturbance, an approved biologist will conduct pre-construction surveys in all areas that were identified as suitable habitat during the initial surveys. The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activities. To maximize the likelihood of detecting owls, the pre-construction survey will last a minimum of 3 hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total), or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two pre-construction surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped. Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the Third-Party Project Proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last-minute changes in schedule or contracting that may occur if burrowing owls are found, the Third-Party Project Proponent may also conduct a preliminary survey up to 15 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.

WBO-3 (Burrowing Owl Avoidance): If western burrowing owl or evidence of western burrowing owl is observed on the project site or within 250 feet of the project site during pre-construction surveys, then the following will occur:

During Breeding Season: If the approved biologist finds evidence of western burrowing owls within a project site during the breeding season (February 1 through August 31), all project-related activities will avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance is establishment of a minimum 250-foot buffer zone around nests. Construction and other project-related activities may occur outside of the 250-foot buffer zone. Construction and other project-related activities may be allowed inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the Third-Party Project Proponent develops an avoidance, minimization, and monitoring plan that is approved by the Implementing Entity and Wildlife Agencies prior to project construction based on the following criteria:

- The Implementing Entity and Wildlife Agencies approve of the avoidance and minimization plan provided by the project applicant.

- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.

If there is any change in owl nesting and foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until any owls present are no longer affected by nearby construction activities, and with written concurrence from the Wildlife Agencies.

If monitoring by the approved biologist indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use, the non-disturbance buffer zone may be removed if approved by the Wildlife Agencies. The approved biologist will excavate the burrow in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl to prevent reoccupation after receiving approval from the Wildlife Agencies.

The Implementing Entity and Wildlife Agencies will respond to a request from the Third-Party Project Proponent to review the proposed construction monitoring plan within 21 days.

During Non-Breeding Season: During the non-breeding season (September 1 through January 31), the approved biologist will establish a minimum 250-foot non-disturbance buffer around occupied burrows. Construction activities outside of this 250-foot buffer will be allowed. Construction activities within the non-disturbance buffer will be allowed if the following criteria are met to prevent owls from abandoning over-wintering sites:

- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer.
- If the owls are gone for at least 1 week, the Third-Party Project Proponent may request approval from the Implementing Entity and Wildlife Agencies that an approved biologist excavate usable burrows and install one-way exclusionary

devices to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue.

Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

WBO-4 (Burrowing Owl Construction Monitoring): During construction of Covered Activities, 250-foot construction buffer zones will be established and maintained around any occupied burrow. An approved biologist will monitor the site to ensure that buffers are enforced and owls are not disturbed. The approved biologist will also train construction personnel on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.

WBO-5 (Burrowing Owl Passive Relocation): Passive relocation is not allowed without the express written approval of the Wildlife Agencies. Passive owl relocation may be allowed on a case-by-case basis on project sites during the non-breeding season (September 1 through January 31) with the written approval of the Wildlife Agencies if the other measures described in this condition preclude work from continuing. Passive relocation must be done in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl. Passive relocation will only be proposed if the burrow needing to be removed or with the potential to collapse from construction activities is the result of a Covered Activity. If passive relocation is approved by the Wildlife Agencies, an approved biologist can passively exclude birds from their burrows during the non-breeding season by installing one-way doors in burrow entrances. These doors will be in place for 48 hours to ensure that owls have left the burrow, and then the biologist will excavate the burrow to prevent reoccupation. Burrows will be excavated using hand tools only. During excavation, an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies over the 50-year Permit Term.

WBO-6 (Burrowing Owl Timing of Maintenance Activities): All activities adjacent to existing or planned Preserves, Preserve Setbacks, or Stream Setback areas will be seasonally timed, when safety permits, to avoid or minimize adverse effects on occupied burrows.

WBO-7 (Rodent Control): Rodent control will be allowed only in developed portions of a Covered Activity project site within western burrowing owl modeled habitat. Where rodent control is allowed, the method of rodent control will comply with the methods of

rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.

Covered Raptor Species

To avoid direct and indirect effects of Covered Activities on covered raptor species, the following AMMs will be implemented. This measure applies to Cooper's hawk (*Accipiter cooperii*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*). The following AMMs do not apply to ferruginous hawk (*Buteo regalis*), as they do not nest in the Plan Area. The following AMMs also do not apply to Swainson's hawk or burrowing owl, as specific AMMs have been developed for these covered raptor species.

RAPTOR-1 (Raptor Surveys): If modeled habitat for a covered raptor species (Figures 3-20, 3-23, 3-24, or 3-28) is present within a Covered Activity's project footprint or within 0.25 mile of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

RAPTOR-2 (Raptor Pre-Construction Surveys): Pre-construction surveys will be required to determine if active nests are present with a project footprint or within 0.25 mile of a project footprint if existing or potential nest sites are found during initial surveys and construction activities will occur during the raptor breeding season. An approved biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities within the proposed project footprint and within 0.25 mile of the proposed project footprint to determine presence of nesting covered raptor species. Pre-construction surveys will be conducted during the raptor breeding season. If a nest is present, then RAPTOR-3 and RAPTOR-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

RAPTOR-3 (Raptor Nest/Roost Buffer): If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, the Third-Party Project

Proponent will establish a 0.25 mile temporary nest disturbance buffer around the active nest until the young have fledged.

RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring): If project-related Covered Activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then an approved biologist experienced with raptor behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist/monitor will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone).

Western Red Bat

To avoid direct and indirect effects of Covered Activities on western red bat (*Lasiurus blossevillii*), the following AMMs will be implemented.

BAT-1 (Winter Hibernaculum Surveys): If modeled habitat (Figure 3-30) for western red bat is present within 300 feet of a Covered Activity's project footprint, then an approved biologist will conduct a field investigation of the project footprint and adjacent areas within 300 feet of a project footprint to determine if a potential winter hibernaculum is present, and to identify and map potential hibernaculum sites. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. If potential hibernaculum sites are found, the Third-Party Project Proponent will note their locations on project designs and will design the project to avoid all areas within a 300-foot buffer around the potential hibernaculum sites. Winter hibernaculum habitat is fully avoided if project-related activities do not impinge on a 300-foot buffer established by the approved biologist around an existing or potential winter hibernaculum site. See Chapter 10 for the process to conduct and submit survey information.

BAT-2 (Winter Hibernaculum Pre-Construction Surveys): If the Third-Party Project Proponent elects not to avoid potential winter hibernaculum sites within the project footprint plus a 300-foot buffer, additional surveys are required. Prior to any ground disturbance related to Covered Activities, an approved biologist will conduct a pre-construction survey within 3 days of ground-disturbing activities within the project footprint and 300 feet of the project footprint to determine the presence of winter hibernaculum sites. Pre-construction surveys will be conducted during the winter hibernaculum season (November 1 through March 31). If a winter hibernaculum is present, then BAT-3 and BAT-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

BAT-3 (Winter Hibernaculum Buffer): If active winter hibernaculum sites are found within the project footprint or within 300 feet of the project footprint, the Third-Party Project Proponent will establish a 300-foot temporary disturbance buffer around the active winter hibernaculum site until bats have vacated the hibernaculum and the Implementing Entity and Wildlife Agencies concur.

BAT-4 (Bat Eviction Methods): An approved biologist will determine if non-maternity and non-hibernaculum day and night roosts are present on the project site. If necessary, an approved biologist will use safe eviction methods to remove bats if direct impacts to non-maternity and non-hibernaculum day and night roosts cannot be avoided. If a winter hibernaculum site is present, Covered Activities will not occur until the hibernaculum is vacated, or, if necessary, safely evicted using methods acceptable to the Wildlife Agencies.

Appendix CC-1

GHG Emissions from the Existing Sacramento Raceway

KLEINFELDER
Bright People. Right Solutions.

April 19, 2021

Mr. Angelo Tsakopoulos
Tsakopoulos Investments
1435 River Park Drive, Suite 500
Sacramento, CA 95815

SUBJECT: GHG Emissions from the Existing Sacramento Raceway Operations

Dear Mr. Tsakopoulos:

This letter summarizes the greenhouse gas (GHG) emissions from the existing Sacramento Raceway (Raceway) operations. The emission estimates herein are provided as a point of information because they were not addressed in the previously prepared Air Quality Management Plan[1] (AQMP) or Greenhouse Gas Reduction Plan[2] (GHGRP). These emissions were not subtracted or credited in the AQMP or GHGRP, even though when the housing, schools, and parks that are included on the Raceway property as part of the Jackson Township Specific Plan (Jackson Township) are built, Raceway operations will cease and the emissions reported herein would be eliminated.

Attachment 1 shows the potential GHG emissions from the operation of the Raceway. The emissions were calculated for future calendar year 2035 to be consistent with the AQMP and GHGRP. The vehicle miles traveled (VMT) and GHG emission factors used in Attachment 1 were calculated consistent with the Sacramento Raceway health effects report[3], but with the emission factors updated to calendar year 2035. Table 1 shows the total annual GHG emissions in terms of metric tons per year (MT/yr). The VMT and Raceway operation assumptions were based on estimated actual operations in calendar year 2019 as explained in the health effects report.

Table 1

Estimated Sacramento Raceway GHG Emissions

Description	Annual GHG Emissions (MT/yr)
Drag Racing	1,586
Motocross	24
TOTAL	**1,610**

[1] *Revision 2 Updated Air Quality Mitigation Plan and Greenhouse Gas Reduction Plan for The Proposed Jackson Township Specific Plan, dated May 30, 2019.*

[2] *Revision 3a Updated Greenhouse Gas Reduction Plan for the Proposed Jackson Township Specific Plan, dated January 4, 2021.*

[3] *Air Quality Health Effects Assessment of the Sacramento Raceway, dated April 19, 2021.*

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If you have additional questions or concerns, please feel free to contact the undersigned at rerbes@kleinfelder.com or by phone at 303.748.7190. In the alternative you may contact Ms. Amal Hijazi at ahijazi@kleinfelder.com or by phone at 303.237.6601.

Sincerely,

KLEINFELDER



Russell E. Erbes, CCM
Senior Principal Air Quality Scientist

Attachment 1

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ATTACHMENT 1

ESTIMATED SACRAMENTO RACEWAY GHG EMISSIONS

SACRAMENTO RACEWAY 2019 EMISSIONS

Annual Emissions for all NHRA, non-NHRA, and Test & Tune Events

	CO2e
Spectator Vehicles to/from Raceway for Drags	
Emission Factors (g/mi)	235.47
Number of vehicles	64900
Miles per vehicle	Not Used
Total miles	4719000
Emissions (grams per year)	1111182930
Emissions (MT/yr)	1111.2
Tow Vehicles to/from Raceway for Drags	
Emission Factors (g/mi)	549.92
Number of vehicles	4960
Miles per vehicle	Not Used
Total miles	237700
Emissions (grams per year)	130715984
Emissions (MT/yr)	130.7
Non-Trailered Race Vehicles to/from Raceway for Drags	
Emission Factors (g/mi)	490.10
Number of vehicles	10020
Miles per vehicle	NA
Total miles	533700
Emissions (grams per year)	261566370
Emissions (MT/yr)	261.6
Spectator Vehicles On-Site at Raceway for Drags	
Emission Factors (g/mi)	1377.31
Number of vehicles	64900
Miles per vehicle	0.5
Total miles	32450
Emissions (grams per year)	44693709.5
Emissions (MT/yr)	44.7
Tow Vehicles On-Site at Raceway for Drags	
Emission Factors (g/mi)	672.68
Number of vehicles	4960
Miles per vehicle	1
Total miles	4960
Emissions (grams per year)	3336492.8
Emissions (MT/yr)	3.3
Non-Trailered Race Vehicles On-Site at Raceway for Drags	
Emission Factors (g/mi)	787.30
Number of vehicles	10020
Miles per vehicle	1
Total miles	10020
Emissions (grams per year)	7888746.0
Emissions (MT/yr)	7.9

NHRA Vehicles Racing for Drags	
Emission Factors (g/mi)	554.27
Number of vehicles	3240
Miles per vehicle	0.75
Total miles	2430
Emissions (grams per year)	1346876.1
Emissions (MT/yr)	1.3

NHRA Vehicles Staging and Return for Drags	
Emission Factors (g/mi)	956.59
Number of vehicles	3240
Miles per vehicle	0.85
Total miles	2754
Emissions (grams per year)	2634448.9
Emissions (MT/yr)	2.6

Non-NHRA Vehicles Racing for Drags	
Emission Factors (g/mi)	554.27
Number of vehicles	20720
Miles per vehicle	0.5
Total miles	10360
Emissions (grams per year)	5742237.2
Emissions (MT/yr)	5.7

Non-NHRA Vehicles Staging and Return for Drags	
Emission Factors (g/mi)	956.59
Number of vehicles	20720
Miles per vehicle	0.6
Total miles	12432
Emissions (grams per year)	11892326.9
Emissions (MT/yr)	11.9

Test and Tune Vehicles Racing for Drags	
Emission Factors (g/mi)	554.27
Number of vehicles	6000
Miles per vehicle	0.5
Total miles	3000
Emissions (grams per year)	1662810.0
Emissions (MT/yr)	1.7

Test and Tune Vehicles Staging and Return for Drags	
Emission Factors (g/mi)	956.59
Number of vehicles	6000
Miles per vehicle	0.6
Total miles	3600
Emissions (grams per year)	3443724.0
Emissions (MT/yr)	3.4

Total Annual Emissions (MT/yr) for Drags	**1586**

Total Miles 5810106

SACRAMENTO RACEWAY 2019 EMISSIONS

Annual Emissions for all Motocross Events

	NOx
Spectator Vehicles to/from Raceway for Motocross	
Emission Factors (g/mi)	235.47
Number of vehicles	900
Miles per vehicle	Not Used
Total miles	54000
Emissions (grams per year)	12715380
Emissions (MT/yr)	12.7
Tow Vehicles to/from Raceway for Motocross	
Emission Factors (g/mi)	549.92
Number of vehicles	225
Miles per vehicle	Not Used
Total miles	13500
Emissions (grams per year)	7423920
Emissions (MT/yr)	7.4
Spectator Vehicles On-Site at Raceway for Motocross	
Emission Factors (g/mi)	1377.31
Number of vehicles … Note 1	900
Miles per vehicle	1.5
Total miles	1350
Emissions (grams per year)	1859368.5
Emissions (MT/yr)	1.9
Tow Vehicles On-Site at Raceway for Motocross	
Emission Factors (g/mi)	672.68
Number of vehicles … Note 2	135
Miles per vehicle	1.5
Total miles	202.5
Emissions (grams per year)	136217.7
Emissions (MT/yr)	0.1
Motocross Vehicles Racing for MX	
Emission Factors (g/mi)	242.54
Number of vehicles … Note 3	540
Miles per vehicle	15
Total miles	8100
Emissions (grams per year)	1964574.0
Emissions (MT/yr)	2.0
Total Annual Emissions (MT/yr) for Motocross	**24**

Total Miles 77153

Appendix EN-1

Energy Consumption Estimates

Original Project

Natural Gas

	NaturalGa s Use
Land Use	kBTU/yr
Apartments Mid Rise	2.08E+07
Apartments Mid Rise	974810
City Park	0
Convenience Market (24 Hour)	17344
Discount Club	1.05E+06
Elementary School	3.43E+06
Fast Food Restaurant with Drive Thru	6.88E+06
Gasoline/Service Station	107430
Gasoline/Service Station	232765
General Office Building	3.91E+06
Hardware/Paint Store	175066
High School	3.82E+06
Home Improvement Superstore	874788
Hospital	2.93E+07
Library	0
Office Park	0
Parking Lot	0
Pharmacy/Drugst ore with Drive Thru	175066
Single Family Housing	4.58E+07
Single Family Housing	5.51E+07
Strip Mall	1.02E+06
Strip Mall	1.35E+06
Strip Mall	612460
Supermarket	1.64E+06
Unenclosed Parking with Elevator	0
User Defined Industrial	0
Total	177,268,689

Electricity

	Electricity Use
Land Use	kWh/yr
Apartments Mid Rise	425646
Apartments Mid Rise	9.10E+06
City Park	0
Convenience Market (24 Hour)	37024
Discount Club	2.24E+06
Elementary School	1.65E+06
Fast Food Restaurant with Drive Thru	1.61E+06
Gasoline/Service Station	45540
Gasoline/Service Station	98670
General Office Building	4.31E+06
Hardware/Paint Store	373711
High School	1.83E+06
Home Improvement Superstore	1.87E+06
Hospital	8.81E+06
Library	0
Office Park	0
Parking Lot	0
Parking Lot	119525
Parking Lot	135380
Parking Lot	158200
Parking Lot	162820
Parking Lot	213430
Parking Lot	2730
Parking Lot	27440
Parking Lot	32935
Parking Lot	47880
Parking Lot	53970
Parking Lot	5495
Parking Lot	60690
Parking Lot	83545
Parking Lot	95130
Pharmacy/Drugst ore with Drive Thru	373711
Single Family Housing	1.50E+07
Single Family Housing	1.80E+07
Strip Mall	1.31E+06
Strip Mall	2.18E+06
Strip Mall	2.87E+06
Supermarket	2.61E+06
Unenclosed Parking with Elevator	0
Unenclosed Parking with Elevator	336396
User Defined Industrial	0
Total	76,260,928.00

	NaturalGa s Use	Electricity Use
	kBTU/yr	kWh/yr
Residential Designations	122,716,810	42,503,106
Commercial + Office Zones	47,303,379	28,745,256
Public/Quasi Public Zones	7,248,500	3,477,000
Parking Lots/Parking Garages	0	1,535,566
Total	177,268,689	76,260,928

	NaturalGa s Use	Electricity Use
	kBTU/yr	MWh/yr
Residential Designations	122,717	42,503
Commercial + Office Zones	47,303	28,745
Public/Quasi Public Zones	7,249	3,477
Parking Lots/Parking Garages	-	1,536
Total	177,269	76,261

Original Project with Mitigation Measures

Natural Gas

	NaturalGa s Use
Land Use	kBTU/yr
Apartments Mid Rise	865363
Apartments Mid Rise	1.85E+07
City Park	0
Convenience Market (24 Hour)	15117
Discount Club	915048
Elementary School	2.92E+06
Fast Food Restaurant with Drive Thru	6.52E+06
Gasoline/Service Station	209200
Gasoline/Service Station	96553.7
General Office Building	3.33E+06
Hardware/Paint Store	152587
High School	3.25E+06
Home Improvement Superstore	762462
Hospital	2.54E+07
Library	0
Office Park	0
Parking Lot	0
Pharmacy/Drugst ore with Drive Thru	152587
Single Family Housing	3.94E+07
Single Family Housing	4.75E+07
Strip Mall	1.17E+06
Strip Mall	533818
Strip Mall	890956
Supermarket	1.48E+06
Unenclosed Parking with Elevator	0
User Defined Industrial	0
Total	154,036,562

Electricity

	Electricity Use
Land Use	kWh/yr
Apartments Mid Rise	425,646
Apartments Mid Rise	9,096,060
City Park	-
Convenience Market (24 Hour)	37,024
Discount Club	2,241,110
Elementary School	1,647,000
Fast Food Restaurant with Drive Thru	1,614,180
Gasoline/Service Station	45,540
Gasoline/Service Station	98,670
General Office Building	4,308,900
Hardware/Paint Store	373,711
High School	1,830,000
Home Improvement Superstore	1,867,400
Hospital	8,811,020
Library	-
Office Park	-
Parking Lot	-
Parking Lot	119,525
Parking Lot	135,380
Parking Lot	158,200
Parking Lot	162,820
Parking Lot	213,430
Parking Lot	2,730
Parking Lot	59166.8
Parking Lot	60894.7
Parking Lot	79822.8
Pharmacy/Drugst ore with Drive Thru	133664
Single Family Housing	5.53E+06
Single Family Housing	6.66E+06
Strip Mall	1.03E+06
Strip Mall	467616
Strip Mall	780464
Supermarket	954939
Unenclosed Parking with Elevator	0
Unenclosed Parking with Elevator	125812
User Defined Industrial	0
Total	49,059,955

	NaturalGa s Use	Electricity Use
	kBTU/yr	kWh/yr
Residential Designations	106,254,163	21,703,006
Commercial + Office Zones	41,608,819	22,762,168
Public/Quasi Public Zones	6,173,580	3,477,000
Parking Lots/Parking Garages	0	1,117,781
Total	154,036,562	49,059,955

	NaturalGa s Use	Electricity Use	
	kBTU/yr	kWh/yr	
Residential Designations	106,254.16	21,703.01	
Commercial + Office Zones	41,608.82	22,762.17	
Public/Quasi Public Zones	6,173.58	3,477.00	
Parking Lots/Parking Garages	-	1,117.78	
Total	154,036.56	49,059.96	(0.36)

Alternative 2

Natural Gas

	NaturalGa s Use
Land Use	kBTU/yr
Apartments Mid Rise	2.00E+07
Apartments Mid Rise	974810
City Park	0
Convenience Market (24 Hour)	17886
Discount Club	1.06E+06
Elementary School	3.43E+06
Fast Food Restaurant with Drive Thru	6.93E+06
Gasoline/Service Station	107430
Gasoline/Service Station	232765
General Office Building	1.00E+07
Hardware/Paint Store	176150
High School	3.82E+06
Home Improvement Superstore	880750
Library	0
Parking Lot	0
Pharmacy/Drugst ore with Drive Thru	176150
Single Family Housing	9.15E+07
Strip Mall	1.36E+06
Strip Mall	616796
Strip Mall	939828
Supermarket	1.65E+06
User Defined Industrial	0
Total	143,847,335

Electricity

	Electricity Use
Land Use	kWh/yr
Apartments Mid Rise	425646
Apartments Mid Rise	8.73E+06
City Park	0
Convenience Market (24 Hour)	38181
Discount Club	2.26E+06
Elementary School	1.65E+06
Fast Food	1.63E+06
Gasoline/Service	45540
Gasoline/Service	98670
General Office	1.11E+07
Hardware/Paint	376025
High School	1.83E+06
Home Improvement	1.88E+06
Library	0
Parking Lot	0
Parking Lot	120120
Parking Lot	136605
Parking Lot	145600
Parking Lot	163905
Parking Lot	213430
Parking Lot	214655
Parking Lot	2590
Parking Lot	2730
Parking Lot	27300
Parking Lot	32795
Parking Lot	47880
Parking Lot	54880
Parking Lot	5495
Parking Lot	95585
Pharmacy/Drugst ore with Drive Thru	376025
Single Family Housing	2.99E+07
Strip Mall	1.32E+06
Strip Mall	2.01E+06
Strip Mall	2.90E+06
Supermarket	2.63E+06
User Defined Industrial	0
Total	70,396,757

	NaturalGa s Use	Electricity Use
	kBTU/yr	kWh/yr
Residential Designations	112,413,210	39,042,386
Commercial + Office Zones	24,185,625	26,613,801
Public/Quasi Public Zones	7,248,500	3,477,000
Parking Lots/Parking Garages	0	1,263,570
Total	143,847,335	70,396,757

	NaturalGa s Use	Electricity Use
	kBTU/yr	kWh/yr
Residential Designations	112,413	39,042
Commercial + Office Zones	24,186	26,614
Public/Quasi Public Zones	7,249	3,477
Parking Lots/Parking Garages	-	1,264
Total	143,847	70,397

Alternative 2 with Mitigation Measures

Natural Gas

	NaturalGa s Use
Land Use	kBTU/yr
Apartments Mid Rise	871718
Apartments Mid Rise	1.79E+07
City Park	0
Convenience Market (24 Hour)	15722.7
Discount Club	929070
Elementary School	2.95E+06
Fast Food Restaurant with Drive Thru	6.59E+06
Gasoline/Service Station	210568
Gasoline/Service Station	97185.2
General Office Building	8.65E+06
Hardware/Paint Store	154845
High School	3.28E+06
Home Improvement Superstore	774225
Library	0
Parking Lot	0
Pharmacy/Drugst ore with Drive Thru	154845
Single Family Housing	7.95E+07
Strip Mall	1.19E+06
Strip Mall	542196
Strip Mall	826157
Supermarket	1.50E+06
User Defined Industrial	0
Total	126,108,882

Electricity

	Electricity Use
Land Use	kWh/yr
Apartments Mid Rise	157932
Apartments Mid Rise	3.24E+06
City Park	0
Convenience Market (24 Hour)	13802.1
Discount Club	815578
Elementary School	595531
Fast Food Restaurant with Drive Thru	594372
Gasoline/Service Station	16605.5
Gasoline/Service Station	35978.6
General Office Building	3.96E+06
Hardware/Paint Store	135930
High School	661701
Home Improvement Superstore	679649
Library	0
Parking Lot	0
Parking Lot	1029.21
Parking Lot	10292.1
Parking Lot	12363.7
Parking Lot	18050.8
Parking Lot	20689.8
Parking Lot	2071.61
Parking Lot	36035.5
Parking Lot	45285.2
Parking Lot	51500.1
Parking Lot	54891.2
Parking Lot	61792.2
Parking Lot	80463.1
Parking Lot	80924.9
Parking Lot	976.43
Pharmacy/Drugst ore with Drive Thru	135930
Single Family Housing	1.11E+07
Strip Mall	1.05E+06
Strip Mall	475963
Strip Mall	725237
Supermarket	969818
User Defined Industrial	0
Total	25,875,033

	NaturalGa s Use	Electricity Use
	kBTU/yr	kWh/yr
Residential Designations	98,233,118	14,532,132
Commercial + Office Zones	21,639,774	9,609,303
Public/Quasi Public Zones	6,235,990	1,257,232
Parking Lots/Parking Garages	0	476,366
Total	126,108,882	25,875,033

	NaturalGa s Use	Electricity Use
	kBTU/yr	kWh/yr
Residential Designations	98,233	14,532
Commercial + Office Zones	21,640	9,609
Public/Quasi Public Zones	6,236	1,257
Parking Lots/Parking Garages	-	476
Total	126,109	25,875

Energy Calculations Summary (Original Project)

Operational Fuel Use Summary

Vehicle Class	Diesel (Gallons)	Gasoline Gallons	Natural Gas (DEG)	Electricity (MWh)
Passenger	17,325	2,584,696	-	-
Truck	661,025	505,025	15,413	
Bus	19,365	54,010	48,586	
Total	**697,715**	**3,143,731**	**64,000**	**-**

1. Fleet mix calculated from CalEEMod default values.
2. Gallons per mile calculated from EMFAC 2017.
3. Annual VMT obtained from EMFAC Sacramento County output file.

Vehicle Type	Diesel (gal/year)	Gasoline (gal/year)	Natural Gas (DEG/year)	Electricity (MWh/year)
Passenger Vehicles	17,325	2,584,696	-	N/A
Trucks	661,025	505,025	15,413	N/A
Buses	19,365	54,010	48,586	N/A
Total	**697,715**	**3,143,731**	**64,000**	**N/A**
Total	**624,456**	**2,813,641**	**57,280**	**6,307**
	-10%	**-10%**	**-10%**	**#VALUE!**

Notes: gal/year = gallons per year, DEG/year = diesel equivalent gallons per year, MWh/year = megawatt hours per year, N/A = not applicable

Source: Calculations by Ascent Environmental in 2019

Energy Calculations Summary

Construction Fuel Usage Summary

	Diesel	Gasoline	Diesel	Diesel
Construction Phase	Off-road Equipment (gallons)	On-road (gallons)	On-road (gallons)	Total
1	547,986	5,097,465	2,192,103	**2,740,088**
TOTAL	**547,986**	**5,097,465**	**2,192,103**	**2,740,088**

Total Gasoline	**5,097,465**	**gallons**
Total Diesel	**2,740,088**	**gallons**

Phase 3 Construction Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Site Preparation	Rubber Tired Dozers	3	8	247	0.4	125	14,820
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37	125	7,178
Grading	Excavators	2	8.00	158	0.38	322	15,466
Grading	Rubber Tired Dozers	1	8.00	247	0.40	322	12,725
Grading	Scrapers	2	8.00	367	0.48	322	45,379
Grading	Grader	1	8.00	187	0.41	322	9,875
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37	322	9,245
Building Construction	Cranes	1	7.00	231	0.29	3224	75,592
Building Construction	Forklifts	3	8.00	89	0.20	3224	68,865
Building Construction	Generator Sets	1	8.00	84	0.74	3224	80,162
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37	3224	121,495
Building Construction	Welders	1	8.00	46	0.45	3224	26,695
Paving	Pavers	2	8.00	130	0.42	229	10,003
Paving	Paving Equipment	2	8.00	132	0.36	229	8,706
Paving	Rollers	2	8.00	80	0.38	229	5,569
Architectural Coating	Air Compressors	1	6.00	78	0.48	3224	36,212
						TOTAL	547,986

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

	Diesel	**Gasoline On-road (gallons)**	Gasoline
Site Preparation	21,998		706
Grading	92,691		2,022
Building Construction	2,564,910		4,244,378
Paving	24,278		849,280
Architectural Coating	36,212		1,079
Total	2,740,088	-	5,097,465
Annual	195,721		364,105

Trips and VMT

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Haul Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	**Total gallons of gasoline**	**Total gallons of diesel**
Site Preparation	18	0	0	125	2250	0	0	10.00	6.50	20.00	22500	0	-	706	0
Architectural Coating	839	0	0	3224	2,704,936	0	0	10.00	6.50	20.00	27,049,360.00	0.00	-	849,280	0
Building Construction	4,193	1,018	0	3224	13,518,232	3,282,032	0	10.00	6.50	20.00	135,182,320.00	21,333,208.00	-	4,244,378	2,192,103
Grading	20	0	0	322	6,440	0	0	10.00	6.50	20.00	64,400.00	0.00	-	2,022	0
Paving	15	0	0	229	3,435	0	0	10.00	6.50	20.00	34,350.00	0.00	-	1,079	0
													TOTAL	5,097,465	2,192,103

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SACRAMENTO
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
SACRAMENTO	2032	LDA	Aggregated	Aggregated	GAS	777,204	24,598,561	3,615,040	596.1	0.00	41.27	31.85	9.73
SACRAMENTO	2032	LDT1	Aggregated	Aggregated	GAS	252,032	7,697,955	1,158,594	219.5	0.00	35.07		
SACRAMENTO	2032	LDT2	Aggregated	Aggregated	GAS	13,901	436,235	207,100	44.5	0.00	9.79		
SACRAMENTO	2032	T7 tractor construction	Aggregated	Aggregated	DSL	1,124	135,551	14,278	0.00	13.93	9.73		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SACRAMENTO
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	Column1	MdlYr	Speed	Fuel	Population	VMT (mi/day)	Trips	Fuel_Consumption (1000 gal/d	Fuel (gal/day)	mi/gal	CO2_RUNEX (tons/da	CO2 (lb/day)	% of vehicle class	VMT by project vehicle cl	Gallons of fuel
SACRAMENTO	2032	LDA	Passenger	Aggregated	Aggregated	DSL	9165.966703	300064.331	43173.70701	4.616796805	4616.796805	64.99405187	51.80251146	103,605	0.7%	835,857.6	12,861
SACRAMENTO	2032	LDT1	Passenger	Aggregated	Aggregated	DSL	38.03557668	615.1503412	137.3927489	0.023682153	23.68215294	25.97527103	0.265724278	531	0.0%	1,713.6	66
SACRAMENTO	2032	LDT2	Passenger	Aggregated	Aggregated	DSL	2367.713174	76467.56923	11137.26911	1.57907521	1579.07521	48.42553966	17.71792546	35,436	0.2%	213,007.6	4,399
SACRAMENTO	2032	T7 tractor	Truck	Aggregated	Aggregated	DSL	1124.24932	135550.6769	14277.96636	13.9285652	13928.5652	9.731847823	151.342581	302,685	0.3%	377,589.2	38,799
SACRAMENTO	2032	LDA	Passenger	Aggregated	Aggregated	GAS	777204.2827	24598561.32	3615039.809	596.0729678	596072.9678	41.26770152	5480.073378	10,960,147	54.2%	68,521,620.2	1,660,418
SACRAMENTO	2032	LDT1	Passenger	Aggregated	Aggregated	GAS	252032.144	7697954.798	1158593.661	219.5071626	219507.1626	35.06926474	2014.240107	4,028,480	17.0%	21,443,381.5	611,458
SACRAMENTO	2032	LDT2	Passenger	Aggregated	Aggregated	GAS	13900.71044	436235.1319	207099.8735	44.53976755	44539.76755	9.794283982	416.4475213	832,895	1.0%	1,215,174.2	124,070
Total								45415211.09							100%		

Gasoline Sum	3,153,742
Diesel Sum	695,510

Project VMT (mi/yr) 126,508,368 From CalEEMod output

	Gas (gal)	Diesel (gal)	Natural Gas (DEG)	Electricity (kWh)
Passenger	2,584,696	17,325		#REF!
Truck	505,025	661,025	15,413	
Bus	54,010	19,365	48,586	
Total	3,143,731	697,715	64,000	#REF!

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SACRAMENTO
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trip/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | Population | VMT | Trips | RUN_EXH | RUN_PM | RUN_PM10 | RUN_PM25 | RUN_HTX | RUN_NOX | RUN_ROG | RUN_RETEX | RUN_CO | RUN_SOX | TOG_EXH | TOG_RUNEX | TOG_STREX | TOG_DIURN | TOG_HTSK | TOG_RUNLS | TOG_RESTL | TOG_SOAK | TOG_TOTAL | CO2_RUNEX | CO2_IDLEX | CO2_STREX | CO2_TOTEX | NOx_RUNEX | NOx_IDLEX | NOx_STREX | NOx_TOTEX | CH4_RUNEX | CH4_IDLEX | CH4_STREX | CH4_TOTEX | PM10_RUNEX | PM10_IDLEX | PM10_STREX | PM10_TOTEX | PM25_RUNEX | PM25_IDLEX | PM25_STREX | PM25_TOTEX | PM10_PMTW | PM10_PMBW | PM10_TOTAL | PM25_PMTW | PM25_PMBW | PM25_TOTAL | SOx_RUNEX | SOx_STREX | SOx_TOTEX | N2O_RUNEX | N2O_IDLEX | N2O_STREX | N2O_TOTEX | Fuel Consumption |
|---|---|---

Energy Calculations Summary

Operational Fuel Use Summary

Vehicle Class	Diesel (Gallons)	Gasoline Gallons	Natural Gas (DEG)	Electricity (MWh)
Passenger	17,325	2,584,696	-	-
Truck	661,025	505,025	15,413	
Bus	19,365	54,010	48,586	
Total	**697,715**	**3,143,731**	**64,000**	**-**

1. Fleet mix calculated from CalEEMod default values.
2. Gallons per mile calculated from EMFAC 2017.
3. Annual VMT obtained from EMFAC Sacramento County output file.

Vehicle Type	Diesel (gal/year)	Gasoline (gal/year)	Natural Gas (DEG/year)	Electricity (MWh/year)
Passenger Vehicles	17,325	2,584,696	-	N/A
Trucks	661,025	505,025	15,413	N/A
Buses	19,365	54,010	48,586	N/A
Total	**697,715**	**3,143,731**	**64,000**	**N/A**
Total	**624,456**	**2,813,641**	**57,280**	**6,307**
	-10%	**-10%**	**-11%**	**#VALUE!**

Notes: gal/year = gallons per year, DEG/year = diesel equivalent gallons per year, MWh/year = megawatt hours per year, N/A = not applicable

Source: Calculations by Ascent Environmental in 2019

Energy Calculations Summary

Construction Fuel Usage Summary

	Diesel	Gasoline	Diesel	Diesel
Construction Phase	Off-road Equipment (gallons)	On-road (gallons)	On-road (gallons)	Total
1	547,986	5,507,428	2,159,802	**2,707,788**
TOTAL	**547,986**	**5,507,428**	**2,159,802**	**2,707,788**

Total Gasoline	**5,507,428**	**gallons**
Total Diesel	**2,707,788**	**gallons**

Phase 3 Construction Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Site Preparation	Rubber Tired Dozers	3	8	247	0.4	125	14,820
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37	125	7,178
Grading	Excavators	2	8.00	158	0.38	322	15,466
Grading	Rubber Tired Dozers	1	8.00	247	0.40	322	12,725
Grading	Scrapers	2	8.00	367	0.48	322	45,379
Grading	Grader	1	8.00	187	0.41	322	9,875
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37	322	9,245
Building Construction	Cranes	1	7.00	231	0.29	3224	75,592
Building Construction	Forklifts	3	8.00	89	0.20	3224	68,865
Building Construction	Generator Sets	1	8.00	84	0.74	3224	80,162
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37	3224	121,495
Building Construction	Welders	1	8.00	46	0.45	3224	26,695
Paving	Pavers	2	8.00	130	0.42	229	10,003
Paving	Paving Equipment	2	8.00	132	0.36	229	8,706
Paving	Rollers	2	8.00	80	0.38	229	5,569
Architectural Coating	Air Compressors	1	6.00	78	0.48	3224	36,212
						TOTAL	547,986

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

	Diesel	Gasoline On-road (gallons)	Gasoline
Site Preparation	21,998		706
Grading	92,691		2,022
Building Construction	2,532,610		4,586,519
Paving	24,278		917,101
Architectural Coating	36,212		1,079
Total	2,707,788	-	5,507,428
Annual	193,413		393,388

Trips and VMT

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Haul Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Site Preparation	18	0	0	125	2250	0	0	10.00	6.50	20.00	22500	0	-	706	0
Architectural Coating	906	0	0	3224	2,920,944	0	0	10.00	6.50	20.00	29,209,440.00	0.00	-	917,101	0
Building Construction	4,531	1,003	0	3224	14,607,944	3,233,672	0	10.00	6.50	20.00	146,079,440.00	21,018,868.00	-	4,586,519	2,159,802
Grading	20	0	0	322	6,440	0	0	10.00	6.50	20.00	64,400.00	0.00	-	2,022	0
Paving	15	0	0	229	3,435	0	0	10.00	6.50	20.00	34,350.00	0.00	-	1,079	0
													TOTAL	5,507,428	2,159,802

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SACRAMENTO
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
SACRAMENTO	2032	LDA	Aggregated	Aggregated	GAS	777,204	24,598,561	3,615,040	596.1	0.00	41.27	31.85	9.73
SACRAMENTO	2032	LDT1	Aggregated	Aggregated	GAS	252,032	7,697,955	1,158,594	219.5	0.00	35.07		
SACRAMENTO	2032	LDT2	Aggregated	Aggregated	GAS	13,901	436,235	207,100	44.5	0.00	9.79		
SACRAMENTO	2032	T7 tractor construction	Aggregated	Aggregated	DSL	1,124	135,551	14,278	0.00	13.93	9.73		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SACRAMENTO
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	Column1	MdlYr	Speed	Fuel	Population	VMT (mi/day)	Trips	Fuel_Consumption (1000 gal/d	Fuel (gal/day)	mi/gal	CO2_RUNEX (tons/da	CO2 (lb/day)	% of vehicle class	VMT by project vehicle cl	Gallons of fuel
SACRAMENTO	2032	LDA	Passenger	Aggregated	Aggregated	DSL	9165.966703	300064.331	43173.70701	4.616796805	4616.796805	64.99405187	51.80251146	103,605	0.7%	835,857.6	12,861
SACRAMENTO	2032	LDT1	Passenger	Aggregated	Aggregated	DSL	38.03557668	615.1503412	137.3927489	0.023682153	23.68215294	25.97527103	0.265724278	531	0.0%	1,713.6	66
SACRAMENTO	2032	LDT2	Passenger	Aggregated	Aggregated	DSL	2367.713174	76467.56923	11137.26911	1.57907521	1579.07521	48.42553966	17.71792546	35,436	0.2%	213,007.6	4,399
SACRAMENTO	2032	T7 tractor	Truck	Aggregated	Aggregated	DSL	1124.24932	135550.6769	14277.96636	13.9285652	13928.5652	9.731847823	151.342581	302,685	0.3%	377,589.2	38,799
SACRAMENTO	2032	LDA	Passenger	Aggregated	Aggregated	GAS	777204.2827	24598561.32	3615039.809	596.0729678	596072.9678	41.26770152	5480.073378	10,960,147	54.2%	68,521,620.2	1,660,418
SACRAMENTO	2032	LDT1	Passenger	Aggregated	Aggregated	GAS	252032.144	7697954.798	1158593.661	219.5071626	219507.1626	35.06926474	2014.240107	4,028,480	17.0%	21,443,381.5	611,458
SACRAMENTO	2032	LDT2	Passenger	Aggregated	Aggregated	GAS	13900.71044	436235.1319	207099.8735	44.53976755	44539.76755	9.794283982	416.4475213	832,895	1.0%	1,215,174.2	124,070
Total								45415211.09							100%		

Gasoline Sum	3,153,742
Diesel Sum	695,510

Project VMT (mi/yr) 126,508,368 From CalEEMod output

	Gas (gal)	Diesel (gal)	Natural Gas (DEG)	Electricity (kWh)
Passenger	2,584,696	17,325		#REF!
Truck	505,025	661,025	15,413	
Bus	54,010	19,365	48,586	
Total	3,143,731	697,715	64,000	#REF!

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SACRAMENTO
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trip/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | Population | VMT | Trips | RUN_EXH | RUN_PM | RUN_PM10 | RUN_PM25 | RUN_HTX | RUN_NOX | RUN_ROG | RUN_RETEX | RUN_CO | RUN_SOX | TOG_EXH | TOG_RUNEX | TOG_STREX | TOG_DIURN | TOG_HTSK | TOG_RUNLS | TOG_RESTL | TOG_SOAK | TOG_TOTAL | CO2_RUNEX | CO2_IDLEX | CO2_STREX | CO2_TOTEX | NOx_RUNEX | NOx_IDLEX | NOx_STREX | NOx_TOTEX | CH4_RUNEX | CH4_IDLEX | CH4_STREX | CH4_TOTEX | PM10_RUNEX | PM10_IDLEX | PM10_STREX | PM10_TOTEX | PM25_RUNEX | PM25_IDLEX | PM25_STREX | PM25_TOTEX | PM10_PMTW | PM10_PMBW | PM10_TOTAL | PM25_PMTW | PM25_PMBW | PM25_TOTAL | SOx_RUNEX | SOx_STREX | SOx_TOTEX | N2O_RUNEX | N2O_IDLEX | N2O_STREX | N2O_TOTEX | Fuel Consumption |
|---|---|---

Energy Calculations Summary

Operational Fuel Use Summary

Vehicle Class	Diesel (Gallons)	Gasoline Gallons	Natural Gas (DEG)	Electricity (MWh)
Passenger	15,506	2,313,304	-	6,307
Truck	591,618	451,998	13,795	
Bus	17,332	48,339	43,485	
Total	**624,456**	**2,813,641**	**57,280**	**6,307**

1. Fleet mix calculated from CalEEMod default values.
2. Gallons per mile calculated from EMFAC 2017.
3. Annual VMT obtained from EMFAC Sacramento County output file.

Energy Calculations Summary

Construction Fuel Usage Summary

	Diesel	Gasoline	Diesel	Diesel
Construction Phase	Off-road Equipment (gallons)	On-road (gallons)	On-road (gallons)	Total
1	547,986	5,097,465	2,192,103	**2,740,088**
TOTAL	**547,986**	**5,097,465**	**2,192,103**	**2,740,088**

Total Gasoline	**5,097,465**	**gallons**
Total Diesel	**2,740,088**	**gallons**

Phase 3 Construction Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Site Preparation	Rubber Tired Dozers	3	8	247	0.4	125	14,820
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37	125	7,178
Grading	Excavators	2	8.00	158	0.38	322	15,466
Grading	Rubber Tired Dozers	1	8.00	247	0.40	322	12,725
Grading	Scrapers	2	8.00	367	0.48	322	45,379
Grading	Grader	1	8.00	187	0.41	322	9,875
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37	322	9,245
Building Construction	Cranes	1	7.00	231	0.29	3224	75,592
Building Construction	Forklifts	3	8.00	89	0.20	3224	68,865
Building Construction	Generator Sets	1	8.00	84	0.74	3224	80,162
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37	3224	121,495
Building Construction	Welders	1	8.00	46	0.45	3224	26,695
Paving	Pavers	2	8.00	130	0.42	229	10,003
Paving	Paving Equipment	2	8.00	132	0.36	229	8,706
Paving	Rollers	2	8.00	80	0.38	229	5,569
Architectural Coating	Air Compressors	1	6.00	78	0.48	3224	36,212
						TOTAL	547,986

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

	Diesel	Gasoline On-road (gallons)	Gasoline
Site Preparation	21,998		706
Grading	92,691		2,022
Building Construction	2,564,910		4,244,378
Paving	24,278		1,079
Architectural Coating	36,212		849,280
Total	2,740,088	-	5,097,465
Annual	182,673		339,831

Trips and VMT

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Haul Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Site Preparation	18	0	0	125	2250	0	0	10.00	6.50	20.00	22500	0	-	706	0
Architectural Coating	839	0	0	3224	2,704,936	0	0	10.00	6.50	20.00	27,049,360.00	0.00	-	849,280	0
Building Construction	4,193	1,018	0	3224	13,518,232	3,282,032	0	10.00	6.50	20.00	135,182,320.00	21,333,208.00	-	4,244,378	2,192,103
Grading	20	0	0	322	6,440	0	0	10.00	6.50	20.00	64,400.00	0.00	-	2,022	0
Paving	15	0	0	229	3,435	0	0	10.00	6.50	20.00	34,350.00	0.00	-	1,079	0
													TOTAL	5,097,465	2,192,103

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SACRAMENTO
Calendar Year: 2032
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
SACRAMENTO	2032	LDA	Aggregated	Aggregated	GAS	777,204	24,598,561	3,615,040	596.1	0.00	41.27	31.85	9.73
SACRAMENTO	2032	LDT1	Aggregated	Aggregated	GAS	252,032	7,697,955	1,158,594	219.5	0.00	35.07		
SACRAMENTO	2032	LDT2	Aggregated	Aggregated	GAS	13,901	436,235	207,100	44.5	0.00	9.79		
SACRAMENTO	2032	T7 tractor construction	Aggregated	Aggregated	DSL	1,124	135,551	14,278	0.00	13.93	9.73		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

Home	Alternative 2 Project-Related VMT	113,259,971	miles (100% of Total):	LD and MD DUs Pre-Wired	3,540
Charging	Total	5,690	DU	HD Dus Pre-Wired (10% of	205
	Alternative 2 Dwelling Units		total):		
Stations --	Annual VMT per DU	19,905	mi/yr	Total DU Pre-Wired	3,745
Project-	Percent of Pre-Wired DU with EV	15%			
Related VMT	Total EV miles	11,181,685	% Pre-Wired with EV * Number of Pre-Wired		
Alternative 2 Project-Related Mobile Only		13.5	tpy		
Alternative 2 Project-Related Mobile Only		71.4	tpy		
Alternative 2 Project-Related Mobile Only		35,957	metric tons per year		
ROG Emissions Saved		**1.33**	tpy … ROG *(EV miles / Project miles)		
NOX Emissions Saved		**7.05**	tpy … NOX *(EV miles / Project miles)		
CO2e Emissions Saved		3,550	MT/yr … CO2e *(EV miles / Project miles)		
Required electricity for charging (MWh/yr)		3,522	EV miles * kWh/100 miles		
Emissions from charging electricity (MT/yr)		379			
Net CO2e Emissions Saved		**3,171**	MT/yr		

1	Number of Charging Stations	480	From calcualted number of electrically	
2	Connections per Charging Station	2	2 Connections at each charging station	
3	Average Charging Hours per Connection per Day	3	Note 1	
4	Average Total Hours Charging per year for all Connections	1,051,200	Item 1 * Item 2 * Item 3 * 365	
5	Typical Average Charging Rate (kWh/hr)	6	Note 2	
6	Total kWh charged per year	6,307,200	Item 4 * Item 5	
7	Total MWh charged per year	6,307	Item 6 / 1000	
8			**Public Charging Stations**	
9	Average Efficiency of EV LDV (kWh/100 mi)	31.5	Note 3	
10	Average Efficiency of EV LDV (miles per kWh)	3.2	100 mi / Item 9	
11	Number of Equivalent Miles Charged per year (gasoline miles avoided)	20,022,857	Item 6 * Item 10	
12				
13	SMUD CO2 intensity in 2030 (lbs/MWh)	236.9	Note 4	
14				
15	ROG Running Only emission factor for gasoline vehicles in 2035 (g/mi)	0.01476	Note 5	
16				
17	NOx running emission factor for gasoline vehicles in 2035 (g/mi)	0.02840	Note 5	
18				
19	CO2 running emission factor for gasoline vehicles in 2035 (g/mi)	234.61	Note 5	
20				
21				
22	**Annual ROG Emissions Saved through Charging (tons per year)**	0.33	Item 11 * Item 15 converted to tons	
23	**Annual NOx Emissions Saved through Charging (tons per year)**	0.63	Item 11 * Item 17 converted to tons	
24				
25	Annual CO2 Emissions Saved through Charging (tons per year)	5178	Item 11 * Item 19 converted to tons	
26	Annual CO2 Emissions Saved through Charging (metric tons per year)	4701	Convert Item 23 to metric tons	
27	Annual CO2 Emissions from Electricity required to charge (metric tons per year)	678	Item 7 * Item 13 converted to metric tons	
28	**Net Annual CO2 Emissions Saved (metric tons peryear)**	**4022**	Item 26 minus Item 27	

Home	Alternative 2 Project-Related VMT	90,802,301	miles (100% of Total):	LD and MD DUs Pre-Wired	3,540
Charging	Total	5,690	DU	HD Dus Pre-Wired (10% of	205
Stations -- Cumulative	Annual VMT per	15,958	mi/yr	Total DU Pre-Wired	3,745
	Percent of Pre-Wired DU with EV	15%			
VMT	Total EV miles	8,964,533	% Pre-Wired with EV * Number of Pre-Wired		
Alternative 2 Project-Related Mobile Only		11.5	tpy		
Alternative 2 Project-Related Mobile Only		61.1	tpy		
Alternative 2 Project-Related Mobile Only		28,405	metric tons per year		
ROG Emissions Saved		**1.14**	tpy … ROG *(EV miles / Project miles)		
NOX Emissions Saved		**6.03**	tpy … NOX *(EV miles / Project miles)		
CO2e Emissions Saved		2,804	MT/yr … CO2e *(EV miles / Project miles)		
Required electricity for charging (MWh/yr)		2,824	EV miles * kWh/100 miles		
Emissions from charging electricity (MT/yr)		304	MT/yr		
Net CO2e Emissions Saved		**2,501**	MT/yr		

Note 1: Drive Clean California states that it takes 4 to 6 hours to fully charge an EV. But one would not typically allow the vehicle to be empty before charging, thus assumed 3 hrs/charge.

Note 2: Drive Clean California states that EVs have battery capacities of 24 to 36 kWh and fully charge in 4 to 6 hours, so 6 kWh/hr.

Note 3: Average effeciency of 24 model year 2019 electric vehicles, per USDOE. Used only model year 2019 because vehicles will be more efficient in 2035 than in the past.

Note 4: From SMUD for calendar year 2030, per Memo dated January 11, 2019 from Mr. Todd Smith, Sacramento County PER.

Note 5: From EMFAC 2017 for gasoline engines, all models and model years; calendar year 2035.

References:

Drive Clean California = https://www.driveclean.ca.gov/pev/Plug-in_Electric_Vehicles/Find_the_Right_PEV.php

USDOE = https://fueleconomy.gov/feg/PowerSearch.do?action=noform&path=1&year1=1984&year2=2019&vtype=Electric CAPCOA = Quantifying Greenhouse Gase Mitigation Measures, August 2010 (SDT-1, page 187, footnote 45).

EMFAC2017 = EMFAC2017 Web Database for Calendar year 2035, Sacramento County Emissions

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SACRAMENTO
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	Column1	MdlYr	Speed	Fuel	Population	VMT (mi/day)	Trips	Fuel_Consumption (1000 gal/d	Fuel (gal/day)	mi/gal	CO2_RUNEX (tons/da	CO2 (lb/day)	% of vehicle class	VMT by project vehicle c	Gallons of fuel
SACRAMENTO	2032	LDA	Passenger	Aggregated	Aggregated	DSL	9165.966703	300064.331	43173.70701	4.616796805	4616.796805	64.99405187	51.80251146	103,605	0.7%	748,093	11,510
SACRAMENTO	2032	LDT1	Passenger	Aggregated	Aggregated	DSL	38.03557668	615.1503412	137.3927489	0.023682153	23.68215294	25.97527103	0.265724278	531	0.0%	1,534	59
SACRAMENTO	2032	LDT2	Passenger	Aggregated	Aggregated	DSL	2367.713174	76467.56923	11137.26911	1.57907521	1579.07521	48.42553966	17.71792546	35,436	0.2%	190,642	3,937
SACRAMENTO	2032	T7 tractor	Truck	Aggregated	Aggregated	DSL	1124.24932	135550.6769	14277.96636	13.9285652	13928.5652	9.731847823	151.342581	302,685	0.3%	337,943	34,725
SACRAMENTO	2032	LDA	Passenger	Aggregated	Aggregated	GAS	777204.2827	24598561.32	3615039.809	596.0729678	596072.9678	41.26770152	5480.073378	10,960,147	54.2%	61,326,898	1,486,075
SACRAMENTO	2032	LDT1	Passenger	Aggregated	Aggregated	GAS	252032.144	7697954.798	1158593.661	219.5071626	219507.1626	35.06926474	2014.240107	4,028,480	17.0%	19,191,841	547,255
SACRAMENTO	2032	LDT2	Passenger	Aggregated	Aggregated	GAS	13900.71044	436235.1319	207099.8735	44.53976755	44539.76755	9.794283982	416.4475213	832,895	1.0%	1,087,582	111,043
Total								45415211.09							100%		

Gasoline Sum	2,822,602
Diesel Sum	622,482

Project VMT (mi/yr) 113,225,078 From CalEEMod output

	Gas (gal)	Diesel (gal)	Natural Gas (DEG)	Electricity (kWh)
Passenger	2,313,304	15,506		#REF!
Truck	451,998	591,618	13,795	
Bus	48,339	17,332	43,485	
Total	2,813,641	624,456	57,280	#REF!

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SACRAMENTO
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	Column1	MdlYr	Speed	Fuel	Population	VMT (mi/day)	Trips	Fuel_Consumption (1000 gal/d	Fuel (gal/day)	mi/gal	CO2_RUNEX (tons/da	CO2 (lb/day)	% of vehicle class	VMT by project vehicle c	Gallons of fuel
SACRAMENTO	2032	LDA	Passenger	Aggregated	Aggregated	DSL	9165.966703	300064.331	43173.70701	4.616796805	4616.796805	64.99405187	51.80251146	103,605	0.7%	748,093	11,510
SACRAMENTO	2032	LDT1	Passenger	Aggregated	Aggregated	DSL	38.03557668	615.1503412	137.3927489	0.023682153	23.68215294	25.97527103	0.265724278	531	0.0%	1,534	59
SACRAMENTO	2032	LDT2	Passenger	Aggregated	Aggregated	DSL	2367.713174	76467.56923	11137.26911	1.57907521	1579.07521	48.42553966	17.71792546	35,436	0.2%	190,642	3,937
SACRAMENTO	2032	T7 tractor	Truck	Aggregated	Aggregated	DSL	1124.24932	135550.6769	14277.96636	13.9285652	13928.5652	9.731847823	151.342581	302,685	0.3%	337,943	34,725
SACRAMENTO	2032	LDA	Passenger	Aggregated	Aggregated	GAS	777204.2827	24598561.32	3615039.809	596.0729678	596072.9678	41.26770152	5480.073378	10,960,147	54.2%	61,326,898	1,486,075
SACRAMENTO	2032	LDT1	Passenger	Aggregated	Aggregated	GAS	252032.144	7697954.798	1158593.661	219.5071626	219507.1626	35.06926474	2014.240107	4,028,480	17.0%	19,191,841	547,255
SACRAMENTO	2032	LDT2	Passenger	Aggregated	Aggregated	GAS	13900.71044	436235.1319	207099.8735	44.53976755	44539.76755	9.794283982	416.4475213	832,895	1.0%	1,087,582	111,043
Total								45415211.09							100%		

Gasoline Sum	2,822,602
Diesel Sum	622,482

Project VMT (mi/yr) 113,225,078 From CalEEMod output

	Gas (gal)	Diesel (gal)	Natural Gas (DEG)	Electricity (kWh)
Passenger	2,299,425	15,413		#REF!
Truck	449,286	591,618	13,795	
Bus	48,339	17,332	43,485	
Total	2,797,049	624,363	57,280	#REF!

P. 64 of the AQMP/GHG Report
Enhanced Transit Program. The VMT reduction resulting from the program is 0.6 percent
that reduces mobile CO2 emissions by the same amount.

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SACRAMENTO
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trip/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | Population | VMT | Trips | ROG_RUNEX | ROG_PMBW | ROG_PMTW | ROG_HTSK | ROG_RUNLS | ROG_RESTL | TOG_RUNEX | TOG_PMBW | TOG_PMTW | TOG_HTSK | TOG_RUNLS | TOG_RESTL | TOG_TOTAL | NOx_RUNEX | NOx_PMBW | NOx_PMTW | NOx_HTSK | NOx_RUNLS | NOx_RESTL | NOx_TOTAL | CO2_RUNEX | CO2_PMBW | CO2_PMTW | CO2_HTSK | CO2_RUNLS | CO2_RESTL | CO2_TOTAL | CH4_RUNEX | CH4_PMBW | CH4_PMTW | CH4_HTSK | CH4_RUNLS | CH4_RESTL | CH4_TOTAL | PM10_RUNEX | PM10_PMBW | PM10_PMTW | PM10_HTSK | PM10_RUNLS | PM10_RESTL | PM10_TOTAL | PM2_5_RUNEX | PM2_5_PMBW | PM2_5_PMTW | PM2_5_HTSK | PM2_5_RUNLS | PM2_5_RESTL | PM2_5_TOTAL | SOx_RUNEX | SOx_PMBW | SOx_PMTW | SOx_HTSK | SOx_RUNLS | SOx_RESTL | SOx_TOTAL | N2O_RUNEX | N2O_PMBW | N2O_PMTW | N2O_HTSK | N2O_RUNLS | N2O_RESTL | N2O_TOTAL | Fuel Consumption |
|---|---|---

Appendix HM-1

Phase 1 Environmental Site Assessment

PHASE I ENVIRONMENTAL SITE ASSESSMENT

JACKSON TOWNSHIP
UNINCORPORATED SACRAMENTO COUNTY
CALIFORNIA

BSK PROJECT E1304001S

PREPARED FOR:
EXCELSIOR ESTATES, LLC
7423 FAIR OAKS BOULEVARD, SUITE 10
CARMICHAEL, CALIFORNIA

SEPTEMBER 11, 2013

PHASE I ENVIRONMENTAL SITE ASSESSMENT
PROPOSED JACKSON TOWNSHIP SPECIFIC PLAN PROJECT
(1,400 CONTIGUOUS ACRES)
UNINCORPORATED SACRAMENTO COUNTY
CALIFORNIA

Prepared for:

Excelsior Estates, LLC
7423 Fair Oaks Boulevard, Suite 10
Carmichael, CA 95608

BSK Project E1304001S

September 11, 2013

Prepared by:

Megan Cambridge
Project Manager

Kurt Balásek, P.G.
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Environmental Engineering • Geotechnical Engineering • Materials Testing • Water Resources

EXECUTIVE SUMMARY

BSK Associates (BSK) performed a Phase I Environmental Site Assessment (ESA) in general accordance with the scope and limitations of ASTM Practice E 1527-05 of the approximately 1,400 acres comprised of 39 parcels, generally bordered by Jackson Road to the south, Excelsior Road to the west, Keifer Boulevard to the north and just west of Eagles Nest Road to the east (the Site). Sacramento County's APN's and associated acres are provided in Table 1: Property Information.

The Site consists of generally vacant, undeveloped land, with single family agricultural residences located primarily along Excelsior Road and Jackson Highway in an area designated for agriculture, and industrial land uses. The properties appear through historical aerial photos to have been used primarily for agricultural, residential and industrial purposes.

RECOGNIZED ENVIRONMENTAL CONDITIONS

The goal of the ASTM E 1527-05 Standard practice is to identify Recognized Environmental Conditions (RECs), as defined in the Standard and in Section 1 of this Report. This assessment has revealed evidence of RECs in connection with the subject Site as defined in the Standard. The RECs are associated with disposal piles on several parcels and potential soil and groundwater contamination associated with Sacramento Raceway activities.

HISTORICAL RECS AND KNOWN OR SUSPECT ENVIRONMENTAL CONDITIONS

The ASTM E 1527-05 Standard also requires identification of historical RECs (HRECs) and other known or suspect environmental conditions, as defined in the Standard and in Section 1 of this Report. The assessment has revealed evidence of HRECs or known environmental conditions in connection with the subject Site, specifically with the Sacramento Raceway.

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PHASE I ENVIRONMENTAL SITE ASSESSMENT
PROPOSED JACKSON TOWNSHIP SPECIFIC PLAN – EXCELSIOR ESTATES, LLC
1,400 ACRES, UNINCORPORATED SACRAMENTO COUNTY, CALIFORNIA

1. INTRODUCTION

BSK Associates (BSK) has performed a Phase I Environmental Site Assessment (ESA) for the property identified as the proposed Jackson Township Specific Plan located in unincorporated Sacramento County, see Figure 1: Vicinity Map. The Site is generally bordered by Jackson Road to the south, Excelsior Road to the west, Keifer Boulevard to the north, and just west of Eagles Nest Road to the east (the Site), see Figure 2: Site Location Map. The former Mather Air Force Base, which has been converted to Mather Air Park, is located north of the Site. Sacramento County's APN's and associated acres and land uses are provided in Table 1: Property Information. This ESA was conducted as authorized by Excelsior Estates, LLC.

1.1 Purpose

The purpose of this Phase I ESA is to identify, to the extent feasible, recognized environmental conditions (RECs) in connection with the property. Typical RECs include the possible presence of hazardous substances or petroleum products on the Site (or adjoining properties) under conditions that indicate an existing release, a past release, or a material threat of a release of the substance/product into structures, the ground, groundwater, or surface water of the property. An additional use of the Phase I ESA is to permit the user to satisfy one of the requirements to qualify for what is commonly known as the "innocent landowner" defense to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability as described by 42 U.S.C. Section 9601 (35)(B).

1.2 Scope of Services

BSK conducted this Phase I ESA in accordance with the methods described in the American Society for Testing and Materials (ASTM) Standard E1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The scope of services provided for this ESA included:

- A general description of the property;
- Review of the property's history using aerial photography, USGS topographic maps, directories, and other readily available information;
- Review of the reasonably ascertainable regulatory information published by local, state, and federal agencies;
- Site reconnaissance;
- Interviews with the current owner of the property; and
- Preparation of this Report.

1.3 Non-Scope Issues

Non-scope issues are those conditions and concerns that are beyond the scope of services of this Phase I ESA and include, but are not limited to: asbestos containing materials, radon, lead-based paint, lead in drinking water, wetlands delineation or identification, regulatory compliance, cultural concerns, industrial hygiene, ecological resources, endangered species, indoor air quality, and high voltage power lines. Sampling and analytical testing of soil, groundwater, air, radon gas, radioactive materials, urea-formaldehyde, mold, pesticides or polychlorinated biphenyls (PCBs) are also considered non-scope issues.

1.4 Significant Assumptions

No significant assumptions were made regarding this Phase I ESA.

1.5 Limitations

The findings presented in this Report were based upon field observations during a Site reconnaissance and discussions with local regulatory agencies and persons knowledgeable of the property. Observations describe only the conditions present at the time of this investigation. The data reviewed and observations made are limited to accessible areas and available records searched during the course of this investigation. BSK cannot guarantee the completeness or accuracy of the regulatory agency records reviewed. Unless BSK otherwise expressly agrees in writing, no other party is entitled to rely upon the observations, research information, or conclusions presented in this report or in any other material obtained by BSK from the sources identified in this Report. Additionally, in evaluating the property, BSK has relied in good faith upon information provided by the interview sources noted in the report with respect to existing property conditions, and the historic uses of the property. It must also be understood that changing circumstances in the property usage, proposed property usage, property zoning, and changes in the environmental status of the other nearby properties can alter the validity of conclusions and information contained in this Report. Therefore, the data obtained are clear and accurate only to the degree implied by the sources and methods used.

This Phase I ESA report provides neither certification nor guarantee that the property is free of hazardous-material and/or petroleum-product contamination or that there are no recognized environmental conditions associated with the property that potentially pose an environmental risk/liability or that the property is in compliance with current applicable federal, state, or local regulations. Findings of this Phase I ESA may have a potential for negative impact on the value or suitability of the property for the purpose intended. BSK cannot assume liability for such negative impact. No warranties, expressed or implied, are made as to the findings or conclusions presented in this report. Sampling and analytical testing of soil, groundwater, air, radon gas, biological agents and/or construction/building materials was not part of the scope of services for this Phase I ESA. This assessment did not include non-scope issues identified in Section 1.3 of this Report.

1.6 Exceptions

Exceptions to this Report include: title reports for the past 50 years were not provided or reviewed and site visits were not conducted on properties not owned by Excelsior Estates, LLC, however visual examinations were completed from the fence line. Excelsior Estates, LLC is aware of these exceptions and requested BSK to provide our opinions and conclusions understanding there would be data gaps.

1.7 Special Terms and Conditions

Excelsior Estates, LLC requested BSK to not access properties that were not owned by them, which is limited to 27 parcels of mostly private residences and the Sacramento Raceway (see Table 1: Property Information).

1.8 User Reliance

This Report may be distributed and relied upon by Excelsior Estates, LLC and Sacramento County for environmental review purposes. Reliance on the information and conclusions in this Report by any other person or entity is not authorized without the written consent of BSK Associates.

2. PROPERTY DESCRIPTION

2.1 Location and Legal Description

The Site is comprised of the property identified as the proposed Jackson Township Specific Plan that is approximately 1,400 acres and comprised of at least 39 parcels, in the unincorporated area of Sacramento County. Individual Title Reports or detailed legal descriptions for properties were not provided as part of the Phase I. Thirty-nine separate parcels encompass the project area. Table 1: Property Information provides the assessor's parcel number (APN), address, estimated number of acres, land use and zoning, and general site description for each parcel. The study did not evaluate the potential presence of environmental liens or indebtedness for properties not owned by Excelsior Estates, LLC.

Table 1: Property Information

No	APN/ Address	Acres	Land Use Activities (*Zoning)*	E. E. LLC owns	General Site Description andProperty Improvements
1	067-0050-002 5051 Excelsior Rd	143.5	Agricultural dry pasture *AG 80*	Yes	Residential home and abandoned fenced area. Piles of clay-like material. Contains remnants of aquiculture production.

Table 1: Property Information					
2	067-0050-004 Keifer Blvd	34.6	Agricultural dry pasture *AG 80*	Yes	Vacant undeveloped land. Public utilities run along Keifer Blvd.
3	067-0050-045 Keifer Blvd	84	Agricultural dry pasture *M1*	No	Vacant undeveloped land. Trails created from off road vehicles; debris piles.
4	067-0050-022 Keifer Blvd	6	Agricultural dry pasture *IR*	Yes	Vacant undeveloped land. Trails created from off road vehicles. Debris piles along Keifer Rd.
5	067-0050-021 Keifer Blvd	17	Agricultural dry pasture *IR*	Yes	Vacant undeveloped land. Trails created from off road vehicles, significant number of debris and burn piles.
6	067-0050-005 5305 Excelsior Rd	191.3	Recreational Sacramento Raceway *M1*	No	Paved and dirt race tracks, paved parking lots, fencing surrounds the parcel, several structures, hazardous materials storage, and propane gas storage.
7	067-0050-019 Keifer Blvd	71.5	Agricultural dry pasture *M1*	Yes	Vacant, undeveloped grazing land with variable topography.
8	067-0050-020 Keifer Blvd	60.5	Agricultural dry pasture *M1*	Yes	Vacant, undeveloped grazing land with variable topography.
9	067-0060-007 Excelsior Rd	13	Residential *AG 80*	No	Vacant property.
10	067-0060-008 5751 Excelsior Rd	9.7	Residential *AG 80*	No	Single family rural home with at least three large structures and multiple smaller sheds; dirt tracks in rear of property.
11	067-0060-010 5777 Excelsior Rd	7.3	Residential *AG 80*	No	Single family rural home with at least three large structures and multiple smaller sheds; apparent dirt piles in rear of property.
12	067-0060-012 5801 Excelsior Rd	1.9	Residential *AG 80*	No	Two single family units with several smaller sheds.
13	067-0060-011 5809 Excelsior Rd	5.3	Residential *AG 80*	No	Single family rural home.
14	067-0060-013 5817 Excelsior Rd	5	Residential *AG 80*	No	Single family rural home. Elder Creek is located on the eastern portion of property.
15	067-0060-014 Excelsior Rd	18.3	Residential *AG 80*	No	Vacant undeveloped land. Elder Creek runs through property. Small fruit stand with cash crops grown on property.
16	067-0060-016 10591 Jackson Rd	4.8	Residential *AG 80*	No	Single family rural home. Some dirt piles in rear of the property.
17	067-0050-058 Jackson Rd	76.6	Agricultural *AG 80*	Yes	Large vacant property - dry pasture. Elder Creek and variable topography runs through

Table 1: Property Information					
					the property; Sacramento Raceway on north border.
18	067-0050-028 Jackson Rd	10.4	Residential *AG 80*	No	Vacant land with variable topography.
19	067-0050-029 10685 Jackson Rd	10	Residential *AG 80*	No	Single family rural home with at least three structures.
20	067-0050-051 10891 Jackson Rd	213.4	Agricultural *AG 80*	Yes	Irrigated and dry pastures. Residential dwelling on the eastern border. Pond fed by water supply on approximately two acres. Overhead electrical transmission line.
21	067-0070-002 10775 Jackson Rd	10	Residential *AG 80*	No	Single family with several structures. Overhead electrical transmission line. Man-made ditch traverses property.
22	067-0050-047 Keifer Blvd	199.3	Agricultural *M1*	Yes	Vacant unimproved land, as dry pasture; variable topography throughout property.
23	067-0080-031 6001 Tree View Rd	15.6	Residential *AG 80*	No	Single family residence, at least two structures. Overhead electrical transmission line.
24	067-0080-023 6031 Tree View Rd	1.8	Residential *AG 80*	No	Single family residence with at least one structure.
25	067-0080-028 6101 Tree View Rd	5	Residential *AG 80*	No	Single family rural home with at least four structures and paved driveway.
26	067-0080-033 6161 Tree View Rd	4.7	Residential *AG 80*	No	Single family rural home with at least one structure.
27	067-0080-061 10917 Jackson Rd	5.6	Residential *AG 80*	No	Single family rural home with at least one structure.
28	067-0080-032 10951 Jackson Rd	6.6	Residential *AG 80*	No	Single family rural home.
29	067-0080-048 10961 Jackson Rd	0.48	Residential *AG 80*	No	Single family residence.
30	067-0080-049 Jackson Rd	0.6	Residential *AG 80*	No	Single family residence.
31	067-0080-050 Jackson Rd	4.5	Residential *AG 80*	Yes	Undeveloped, vacant land.

Table 1: Property Information					
32	067-0080-051 Jackson Rd.	5.5	Residential *AG 80*	Yes	Undeveloped, vacant land.
33	067-0080-059 11013 Jackson Rd	5.9	Residential *AG 80*	No	Single family rural home.
34	067-0080-039 11027 Jackson Rd	4.4	Residential *AG 80*	No	Single family rural home.
35	067-0080-004 Jackson Rd	10	Agricultural *AG 80*	Yes	Dry pasture.
36	067-0080-040 11151 Jackson Rd	24	Residential *AG 80*	No	Single family rural home.
37	067-0080-057 11075 Jackson Rd	19.5	Residential *AG 80*	No	Two single family units.
38	067-0080-042 11101 Jackson Rd	35	Residential *AG 80*	No	Single family rural home with at least one structure; variable topography.
39	067-0080-045 11169 Jackson Rd	19.9	Residential *AG 80*	No	Single family rural home. Variable topography with detention basin.

AG 80 – Agricultural M1 – Light Industrial IR – Industrial Reserve

2.2 Property Vicinity and General Characteristics

The properties are zoned as agricultural (AG 80), light industrial (M1) and industrial Reserve (IR) as designated by the County of Sacramento. Table 1: Property Information provides the specific land use designation for each property. Table 2: Surrounding Property Designated Land Uses provides the designated Sacramento County zoning and land uses for surrounding properties (Sacramento County Planning Department, 2013).

Table 2: Surrounding Property Designated Land Uses		
Direction from Site	**County Zoning**	**Observed Adjoining Property Uses**
North	SPA	Site bordered by Keifer Blvd. Single family residential and rural residential vacant, undeveloped pasture land; agricultural land; and wetland preserves. The town of Mather and Mather Air Park and airport are located north of the Site.
East	M-1 M-2 & AG 80	Single family rural residential homes, vacant, undeveloped grazing land, agricultural land, Greater Sacramento Muslim Cemetery, and a pet cemetery.

South	AG 160	Jackson Road borders the property to the south and includes single family rural residential homes, an equestrian center, aggregate quarries, and wetland preserves.
West	M-1, AG 80, IR , SM	Rock and garden center, single family rural residential homes, vacant undeveloped grazing land, and aggregate quarries.

SPA – Special Planning Area; M-1 – Light Industrial; M-2 – Heavy Industrial; AG 80 - Agricultural 80 acres IR – Industrial Reserve SM- Surface Mining

2.3 Current Use of the Property

The properties consist of several land use activities including:

- Vacant undeveloped grazing land
- Irrigated pasture land
- Agricultural – strawberries and other cash crops
- Grazing – cattle, sheep
- Commercial (Sacramento Raceway)
- Residential - single family rural
- Open space including creeks, vernal pools and wetland features

2.4 Property Improvements

General property improvements include:

- For residential properties: building structures, water wells, septic system, paved driveways, lighting, fencing
- Farmsteads: barns and other structures, irrigation wells, ponds and water features, fencing
- Sacramento Raceway: paved driveway, dirt track and raceway, structures to store oil and hazardous materials, waste storage location, fencing, lighting, concession stand, propane tank, structures; water well and septic system
- Agriculture: fencing and paved and unpaved roads

For specific permits associated with property improvements see Table 3.

2.5 Current Uses of Adjoining Properties

Based on observations by BSK during the site and vicinity reconnaissance, Table 2: Surrounding Property Designated Land Use summarizes the current use of properties immediately adjacent to the property.

2.6 Physical Setting

2.6.1 Topography

The property is located in the California Central Valley at an approximate elevation of 132 feet above mean sea level. The Site is located in Section 23, 24, 25, and 26 of Township 8 North, Range 6 East of the Mount Diablo Base Line and Meridian (Google Earth, 2013). The geographic coordinates at the estimated center of the Site is 38.522654/-121.276071 (Google Earth, 2013).

2.6.2 Geologic Information

To the east are the foothills of the Sierra Nevada, and to the west is the California Coast Range. The project area is located in the Sacramento Valley within the Great Valley Geomorphic Province. The Great Valley Province is a long, narrow northwest-trending alluvial valley that lies between the Sierra Nevada Range to the east and the Coast Ranges to the west. The Sacramento Valley sediments range from Jurassic to Holocene in age and record a history of alternating marine and terrestrial depositional environments (The Planning Center, 2012).

The soils are composed of San Joaquin Class D and are characteristic of very slow infiltration, clayey and have a high water table, or are shallow to an impervious layer. The soil drainage class is moderately well drained.

2.6.3 Ground Water and Surface Water Information

The subject Site is located in the South American subbasin of the Sacramento Valley Groundwater Basin. While local groundwater flow is influenced by production well pumping, regional flow in the basin is predominately directed toward the Sacramento River Delta to the southwest. Based on a groundwater contour map, groundwater is expected to be located about 150 feet below ground surface on the site (SCGA, 2012).

According to the USGS 1992 topographic map, the nearest surface water (Elder Creek) is located onsite with it headwaters on the eastern portion of the Site. Morrison Creek traverses across the northeastern portion of the Site. Based on surface topography, the surface water flows generally from a north east to a south west direction.

3. USER-PROVIDED INFORMATION

As part of the AAI requirements, Excelsior Estates, LLC provided BSK with a completed user's questionnaire dated July 22, 2013. A copy of the questionnaire is included in Appendix A .

4. RECORDS REVIEW

The purpose of the records review is to obtain and review records to identify properties, including the subject property, having potential recognized conditions.

4.1 Standard Environmental Record Sources

Federal, State, and local regulatory agencies maintain databases of businesses and properties that handle, store, and dispose of hazardous materials and/or wastes, and locations known to have had unauthorized releases of hazardous substances to soil and/or groundwater. These databases are available for review at the various regulatory agencies, or the information may be obtained from commercial data collection services. BSK Associates retained Environmental Data Resources (EDR) to perform the regulatory agency database search. The record search meets the government records search requirements of ASTM E 1527-05. EDR's findings are documented in The EDR-DataMap™ Area Study dated June 14, 2013, which is included in Appendix B.

4.2 Database Search Findings

The subject property was identified in the regulatory databases as identified in the EDR-DataMap™ Area Study Report.

Sacramento Raceway: 5305 Excelsior Road. Track was built in 1965 and has operated for 40 years. Water wells were drilled in 1966 and in November 1977, the facility applied for a water supply system (small water supply) with the County of Sacramento Department of Community Health. As an emergency provision for fire protection, a 100,000 gallon water storage pond was installed and permitted in 1990. The Sacramento County Environmental Management Department (SCEMD) has issued Notice to Comply for violations related to storage issues and mishandling of hazardous substances and waste on multiple occasions including but not limited to:

- October 30, 1991 - noted over 134 drums onsite that did not appear to be handled properly, drums were turned upside that caused surface contamination (SCEMD, 1991);
- April 21, 1993 - soil contamination around several drums from spillage of waste oil (SCEMD, 1993);
- June 12, 1997 - leaking oil containers that contaminated the soil; soil contamination between two above ground storage tanks; batteries stored on the ground; steam cleaning engines without containing waste water; and numerous stained and discolored soil areas around the property (SCEMD, 1997);
- November 6, 2002 - leaking waste oil containers and punching holes in oil drums (SCEM, 2002);
- April 9, 2006 - extensive spillage of diesel fuel from tank and nozzle located at motor-cross area and saturated soil; oil contaminated soil in the storage yard area; oil spills in the area of the 500 gallon fuel tank; and used batteries inappropriately stored (SCEMD, 2006);
- December 3 and 4, 2008 - waste oil spills that contaminated soil (SCEHD, 2008); and

- March 30, 2012 – spills of Track Bite and oil stains under the tractor; 94-55 gallon drums of waste accumulated and many drums had related spills. No records for proper waste oil disposal in three years (SCEHD, 2012).

Additionally, in September 2008, a natural gas leak was reported to the Sacramento County Fire Department that reportedly was caused when an earth mover ruptured the 12-inch steel line. The line supposedly was repaired. The Site represents a recognized environmental condition for historic and ongoing releases.

Adjacent facilities of interest identified in the EDR-DataMap™ Area Study Report as discussed below.

Mather Air Force Base: Is identified under multiple databases including but not limited to CERCLIS, DOD, UST and CORRACTS. Mather was constructed in 1918 and its primary mission was a flight school and operated as a military base as an air training command to provide support for the Strategic Air Command.

In 1989, the entire site, consisting of over 5,700 acres, was listed as a federal Superfund site for significant soil and groundwater contamination from the release of volatile organic compounds (VOCs), mainly trichloroethylene (TCE) and tetrachloroethylene (PCE), and hydrocarbons associated with fuels. The Site has been divided into approximately six multiple operating units with a total of 89 potential sites. Mather AFB was officially closed in 1993. In October 1989, the U.S. Air Force, EPA and DTSC entered into a Federal Facilities Agreement (FFA) for Mather AFB. The FFA allows for state oversight at contaminated sites. Since the closure of Mather in 1993, approximately 1,300 acres have been transferred for realignment (DTSC, 2013). This facility is considered a historical REC and a current REC.

PG&E: 5400 Excelsior Road. The site was listed under the Emergency Response Notification System for a steel tank rupture incident in 2006 that released two gallons of crude oil. The incident appeared to have occurred on the Teichert Property. This is not considered a REC.

Teichert Aggregate: 5400 Excelsior Road. An incident in 2003 resulted in 50 gallons of hydraulic fluid. This is not considered a REC.

Round Tree Rock and Gardening: 5300 Excelsior Road. The site was identified for generating small quantities of oil containing waste, organic solids. This is not considered a REC.

Barlow Trucking: 10960 Jackson Road, The facility historically had two underground storage tanks (a 500 gallon tank and a 4,000 gallon diesel tank), however no leaks were ever reported. This is not considered a REC.

Samuel D Tarpin Trust: 11118 Jackson Road. The site was listed for a former underground gasoline storage tank. The case was closed in in March 1996. This is not considered a REC.

4.3 Other Records Reviewed

BSK contacted the following regulatory agencies either in person or by visiting their web sites to review reasonably ascertainable and practically reviewable documentation regarding RECs present at the subject property and adjacent facilities:

- *Sacramento County Environmental Management Department (SCEMD)*

Table 3: Information Obtained from SCEMD Database provide highlights of records obtained through the Sacramento County public records for a 50 year period from June 26, 1963 to June 26, 2013. Information below does not reflect permits that may have been issued before June 26, 1963, and is not intended to identify all wells and septic tanks for all properties located in the project area. Additionally, properties without an address were not searchable under the Sacramento County Environmental Management Records Search since the records can only be searched by Business or address and not APN number.

Table 3: Information Obtained From SCEMD Database

Address	Date(s)	Comments
5777 Excelsior Road	9/24/1987 4/17/1979	Groundwater studies associated with Mather AFB; shallow well evaluation for VOC compounds Permit to repair of septic system
5751 Excelsior Road	10/27/1983 4/23/1992	Permit to repair of septic system Permit for new 1500 gallon septic tank septic tank - old system to be abandoned and old tank pumped out and cleaned and filled.
5801 Excelsior Road	7/30/1969 3/1/1984 9/24/1987 6/30/03	Permit for domestic water well – 150' deep Permit to repair of septic system Groundwater studies associated with Mather AFB; shallow well evaluation for VOC compounds Permit for new septic system
5817 Excelsior Road	11/18/1980 12/1 /1980 10/15/93	Permit for new sewage disposal system Permit for new domestic well – 160' deep Permit for new sewage disposal system: 1500 gallon septic tank
5809 Excelsior Road	6/16/1980 10/12/1983	Permit for new septic system Permit for new irrigation well – 250' deep
5305 Excelsior Road Sacramento Raceway	8/7/1972 6/21/90 to 5/90/13	Permit for septic system Permit to repair septic system Hazardous waste management and concession stand. Multiple violations and permits (see description below)
6001 Tree View Road	7/31/1980	Permit to repair and install new septic system

Table 3: Information Obtained From SCEMD Database

Address	Date(s)	Comments
6031 Tree View Road	10/20/1992	Permit to repair water well to add 270'
6101 Tree View Road	6/23/2000	Permit for new septic tank
6161 Tree View Road	2/7/1986 3/9/1993	Permit to repair septic system Permit to repair and expand septic system
11031 Jackson Road	5/27/98	Permit to repair existing septic system
11027 Jackson Road	4/8/1991 5/7/2012	Permit to repair existing septic system Permit (not identified but assumed for the existing septic system)
10591 Jackson Road	5/20/1975 9/3/1976 9/10/1986	Permit for new domestic well – 150' deep Permit to repair well to deepened to 200' Permit to repair septic system
10685 Jackson Road	11/9/1977 7/10/2002	Permit for new septic system Permit to repair septic system
10891 Jackson Road	6/25/1984	Permit for new irrigation well – 200' deep
10775 Jackson Road	12/27/2006	Permit to repair septic system – new tank replaces old cracked
10917 Jackson Road	10/20/1972 7/30/1980 8/29/1988	Permit for new domestic well – 200' deep Permit for new septic system Permit for new well for "windmill" – 250' deep Permit for new well for "windmill" – 250' deep
10951 Jackson Road	11/1/1976	Permit for new domestic well -225' deep
11013 Jackson Road	5/27/1998	Permit to repair septic system
11027 Jackson Road	12/17/1976 8/1/1980 2/29/1984 4/2/1984 1/20/1987 4/8/1991 5/7/2012	Permit for new septic system Permit for new domestic well -250' deep Permit for new domestic well -275' deep Permit for new septic system Permit for new septic system Permit to repair septic system Liquid Waste Permit for system repair
11075 Jackson	3/27/1979	Permit for new domestic well -200' deep

In addition to the information provided above, the following information regards activities at 5305 Excelsior Road for the Sacramento Raceway:

- State Water Resources Control Board (SWRCB), GeoTracker Web Site
- Department of Toxic Substances Control (DTSC), EnviroStor Web Site

No sites were identified on either SWRCB or DTSC databases within the project area. However the following sites were identified within 1mile of the property boundary:

- Camellia Memorial Lawn, 10221 Jackson Road – LUST Cleanup Site, Case Closed
- Samuel D. Tarpin Trust, 11118 Jackson Road – LUST Cleanup Site, Case Closed
- Mather Air Force Base, 10503 Armstrong Avenue Mather CA – Multiple targets as separate operable units. Several sites remain open and are under investigation and remediation (GeoTracker, 2013).

5. HISTORICAL RECORDS REVIEW

BSK researched, historical topographic maps, historical aerial photographs, and an environmental lien report to assess the history of the property. No Sanborn Fire Insurance maps were available for this area. The following sections summarize the findings.

5.1 Historical Sanborn Fire Insurance Maps

BSK consulted with Environmental Data Resources, Inc. (EDR) regarding a search of available historical Sanborn Fire Insurance maps to obtain information regarding the former uses of the property. No specific search was conducted since similar projects in the area did not result in the findings of EDR's Sanborn® Maps. Sandborn maps are fire insurance maps covering primarily urban area and would not have been conducted for the target area.

5.2 Historical Topographic Maps

BSK reviewed available historical topographic maps obtained from EDR for the years 1893, 1902, 1911, 1954, 1967, 1975, 1980, and 1992 to gather information regarding the developmental history and land use of the property and immediate vicinity. Appendix B includes a copy of the Historical Topographic Map Report dated June 11, 2013. Table 4: Review of Historical Topographic Maps summarizes information obtained from the review of the subject topographic maps.

Table 4: Review of Historical Topographic Maps

Year	Property and Adjoining Property Observations
1893	Information on the 1893 map does not indicate any site use on or surrounding the area. Sacramento Placerville Railroad, Jackson Road, Excelsior Road and Keifer Blvd are visible. Morrison and Elder Creeks are identified. A few scattered dwellings are identified in and around the project area. *Walsh* and *12 mile house* are identified.
1902	The American River is identified. Small communities are identified including Manlove, Mayhews, Mills along the Southern Pacific RR north of the Site and Walsh Station on the corner of Jackson Road and Excelsior Road. Morrison and Elder Creeks are identified on the Site.

Table 4: Review of Historical Topographic Maps	
Year	**Property and Adjoining Property Observations**
1911	No significant change from 1901. A dirt road appears in the project area on the south east quadrant. Information does not indicate any development on the Site.
1954	Mather Air Force Base is visible to the north along with the notation of Mather Field Housing Authority, likely used as base housing. Dredge tailings are visible northeast of the project area. A landing strip and small reservoir are located west of the property. A reservoir appears in the center area of the sSite with several ponds along Elder Creek and its tributaries. At least 14 dwellings are located on Site with at least eight of these dwellings along Jackson Road.
1967	Overhead electrical lines are visible along the south end of the Site. A Drag Strip is identified on the west side of the Site. To the north is an embarkation of Military Reservation Boundary along Keifer Blvd. Gravel pits are seen west of the Site, south of Mather Air Force Base.
1975	A new dwelling is visible in the area identified as Property 1. Several new roads and connecting dwellings are identified along Excelsior Road. New dwellings are visible in the area of the drag strip.
1980	No significant changes from 1975 with the exception of half dozen or more dwelling in the project area. The Camellia Memorial Lawn Cemetery is visible west of Excelsior Road.
1992	No significant changes from 1980.

5.3 Historical Aerial Photographs

BSK reviewed available historical aerial photographs obtained from EDR for the years 1937, 1947, 1952, 1961, 1971, 1981, 1993, and 1998 to gather information regarding the developmental history and land use of the property and vicinity. Appendix B includes a copy of EDR's Aerial Photo Decade Package. Additionally, aerial views from 2005, 2012 and 2013 available through Google Earth were reviewed. Table 5: Review of Historical Aerial Photographs summarizes information obtained from the review of the subject aerial photographs:

Table 5: Review of Historical Aerial Photographs		
Year	**Observed Property Use**	**Property and Adjoining Property Observations**
1937	Undeveloped	The Site appears largely undeveloped and likely has been cultivated. A few dwelling are visible along Jackson Road.

Table 5: Review of Historical Aerial Photographs		
Year	**Observed Property Use**	**Property and Adjoining Property Observations**
1947	Undeveloped	Soil disturbance is visible in the area of Mather AFB and may be related to firing ranges. The properties are used for pasture land; several ponds are visible.
1952	Undeveloped	A reservoir is visible in the center of the Site. The properties are used for pasture land; several ponds are visible.
1961	Developed	Housing developments are visible north of the property boundary. A reservoir is visible in the center of the Site. The properties are used for pasture; several wetted drainages are visible.
1971	Developed	The Sacramento Raceway is visible. Several additional homes are visible along Excelsior Road.
1981	Developed	A significant unidentified operation appears on Property 1 on the corner of Excelsior Road and Keifer Blvd. Debris piles are evident east of this operation. Several acres on this property encompass a series of pond-like features, typically used for fish aquiculture.
1993	Developed	Unknown features and operations on the northwest portion of Site on Property 1 including debris piles and large undulations likely associated with the fish aquiculture. Debris piles seen in 1981 appears to have been naturalized and likely the material still present. Rural residential development is visible along Jackson Road.
1998	Developed	The *tree and rock* commercial operations appear just west of the race track.
2005	Developed	Property 1 contains an apparent vehicle storage or salvage yard. Debris piles are visible along Keifer Blvd .
2009	Developed	The vehicle storage or salvage yard is no longer present. The remains of the fisheries are visible. Debris piles are visible on Properties 4 and 5, which are also apparently used for off-road recreational uses.
2012	Developed	Significantly more soil disturbance is visible on Properties 4 and 5. Debris piles are seen along Keifer Blvd, which has been somewhat naturalized.

5.4 Historical Directories

Since the land use activities have not changed significantly, BSK did not order a directory reports from EDR that potentially would provide former property occupants.

6. SITE RECONNAISSANCE

A site reconnaissance, which included an observation of the property and adjacent properties, was conducted by Ms. Megan Cambridge and Mr. Kurt Balasek of BSK on June 14, 19 and 20, 2013. The parcels were accessed when possible either on foot or from a vehicle. No site was accessed that was not owned by Excelsior Estates, LLC . A general survey was conducted to get an overall condition of the environment and was comprehensive of all environmental concerns. Site photographs are included in Appendix C that highlight the activities noted on Site. The objective of the site reconnaissance was to obtain information indicating the likelihood of identifying RECs, including hazardous substances and petroleum products, in connection with the property and/or adjacent properties (including soils, surface waters, and groundwater).

The site reconnaissance included observations of the property including the exterior periphery, and immediately adjacent properties. In addition, BSK personnel conducted a windshield survey of nearby properties to determine if any adverse impacts to the property from these properties could be ascertained. Limiting conditions to the property reconnaissance were encountered when properties could not be accessed, however field observations were made with field glasses. Table 6: Site Observations, summarizes structures and conditions that were observed on the property during the reconnaissance.

Table 6: Site Observations

Observations or environmental conditions that may involve the use, storage, disposal or generation of hazardous substances or petroleum products	Observed	Not Observed	Description
Aboveground storage tank (AST)	X		Property 6 - associated with the Sacramento Raceway
Air Emissions		X	
Below grade vaults		X	
Burned or buried debris	X		Several burn piles of domestic waste on Properties 4 and 5
Chemical storage	X		Property 6 - oil and propane tanks
Chemical mixing areas		X	
Discolored soil or water		X	
Ditches, streams	X		Properties along Jackson Road and Tree View Road

Table 6: Site Observations			
Observations or environmental conditions that may involve the use, storage, disposal or generation of hazardous substances or petroleum products	**Observed**	**Not Observed**	**Description**
Drains and piping (e.g. floor drains, floor trenches, bay drains, sand traps, grease traps)		X	
Drums	X		Property 6 - on north border along fence
Electrical or hydraulic equipment (Polychlorinated biphenyls [PCBs])	X		Electrical poles and overhead high tension power lines. No indication of potential for hydraulic equipment
Fill dirt from unknown source	X		On Property 1 - multiple piles 4' high of gray clay like material, and Properties 1 – 5 along Keifer Blvd
Fill dirt from known source		X	
Hazardous chemical and petroleum products in connection with unknown use		X	
Non-hazardous containers with contents		X	
Hazardous Waste Storage		X	
Heating and cooling system and fuel source		X	
Industrial waste treatment equipment		X	
Loading and unloading areas		X	
Odors		X	
Pits, Ponds, or Lagoons		X	
Pools of Liquid		X	
Process waste water		X	
Sanitary Sewer System		X	
Septic system (e.g. tank and leach fields)	X		Assumed with all residential properties and Property 6.

Table 6: Site Observations			
Observations or environmental conditions that may involve the use, storage, disposal or generation of hazardous substances or petroleum products	**Observed**	**Not Observed**	**Description**
Soil piles	X		On Property 1 - multiple piles, 4' high of gray clay- like material. Soil piles on properties 1 – 5 along Keifer Blvd.
Solid Waste/Evidence of Unauthorized Dumping	X		Car battery on Property 2; Several burn piles of domestic waste, spa carcass, tires and metal objects, the approximate six of 50' by 150 ' on Properties 4 and 5; Properties 1 – 5 along Keifer Blvd large piles of domestic waste, tires, scrap wood, mattresses.
Stained pavement, soil or concrete		X	None observed
Stains or corrosion (interior, non-water)		X	
Storm drains/catch basins		X	None observed
Stressed vegetation		X	
Sumps and clarifiers		X	
Surface Water	X		Elder Creek and Morrison Creek and tributaries, and reservoir on Property 20
Underground storage tank(s) including heating oil tanks and oil/water separators		X	No evidence
Unidentified substance containers	X		Observed various small containers in areas of dumping
Utilities	X		Electrical services
Waste Water Discharge		X	
Water supplies (potable and process)		X	Assumed to be private wells

Table 6: Site Observations			
Observations or environmental conditions that may involve the use, storage, disposal or generation of hazardous substances or petroleum products	**Observed**	**Not Observed**	**Description**
Wells (irrigation, monitoring, or domestic)		X	No wells were observed however small water tanks commonly used to store water from private wells were observed on many private residences.
Wells (dry)		X	Unknown but likely
Wells (Oil and Gas)		X	Unknown

7. INTERVIEWS

On July 19, 2013, Ms. Megan Cambridge of BSK Associates conducted an interview with Mr. Gregg Jones and Mr. Pete Dwelley of Excelsior Estates, LLC, the current property management company, in order to gain a better understanding of the past and current site uses. According to the questionnaire, a portion of the Site is owned as Excelsior Estates, LLC. Properties had been purchased over the past 50 years. A copy of the Owner/Occupant Questionnaire was completed by Gregg Jones of Excelsior Estates, LLC and is attached as Appendix D.

8. FINDINGS

BSK Associates (BSK) has performed a Phase I Environmental Site Assessment (ESA) for the property identified as the Proposed Jackson Township Specific Plan located in unincorporated Sacramento County. The Site is generally bordered by Jackson Road to the south, Excelsior Road to the west, Keifer Boulevard to the north, and just west of Eagles Nest Road to the east. The former Mather Air Force Base, located north of the Study Area, was recently converted to Mather Air Park.

Environmental Data Resources Inc. (EDR) conducted a search of available environmental records. Available local, state, and federal databases were searched and significant findings were summarized in this Report as well as included in the Appendices. Online regulatory records were reviewed including SCEHD, DTSC's EnviroStor and SWRCB's GeoTracker. No properties were identified for current environmental concerns. However the Sacramento Raceway was identified in the SCEHD for having previous environmental concerns and violations. It is assumed the rural residents have private well and septic systems.

9. OPINION

The project area consists of 39 parcels. Land uses include rural residential, agricultural, grazing, commercial (Sacramento Raceway and cash crops), and open space. Debris piles were observed on Properties 1 to 5 along Keifer Road that may contain hazardous substances. The Sacramento Raceway is considered a current and historic REC for previous activities including numerous oil spills and soil contamination, and non-compliance that may not have been fully addressed. Additionally, uncertain activities occurred historically on Property 1 and along Keifer Blvd. Mather AFB was listed as a Federal Superfund site; however significant progress has been made to remediate environmental conditions. Groundwater was significantly contaminated; it is unknown if the groundwater beneath the Site has been impacted. Based on historic uses of the Site and features observed, a limited Phase II is recommended to further evaluate features associated with the Sacramento Raceway and various debris piles along Keifer Road and Property 1. The Phase II would include soil and possibly groundwater investigation

10. CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM practice E 1527 of the property located in the unincorporated area of Sacramento County as described above. Any exceptions to, or deletions from, this practice are described in Section 1.5 of this Report. This assessment has revealed evidence of recognized environmental conditions and historical recognized environmental condition in connection with the Site. While no information indicates that underground fuel tanks were part of the historic property use, BSK cannot rule out that these types of features could be identified during future excavations or site clearings.

11. DATA GAPS AND DEVIATIONS

No significant exceptions or data gaps that would raise reasonable concerns regarding our opinions and conclusions in the Report were made or noted.

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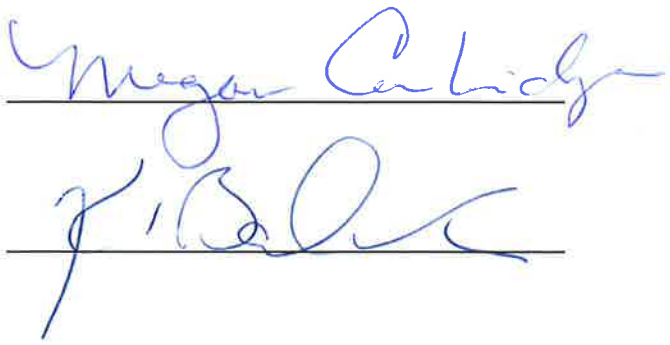
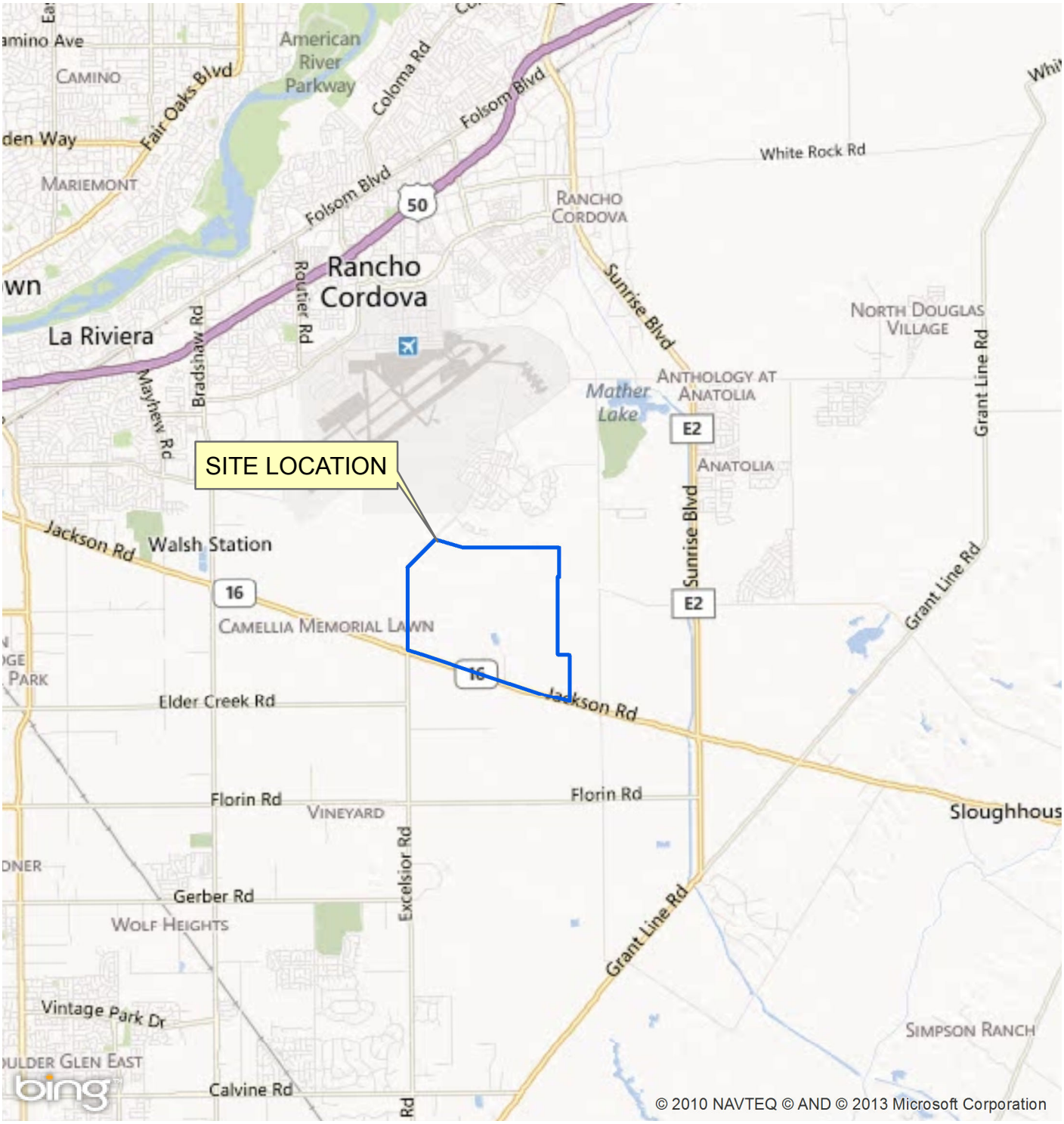
13. ENVIRONMENTAL PROFESSIONAL STATEMENT AND SIGNATURES

We declare that to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in general conformance with the standards and practices set forth in 40 CFR Part 312.



FIGURES



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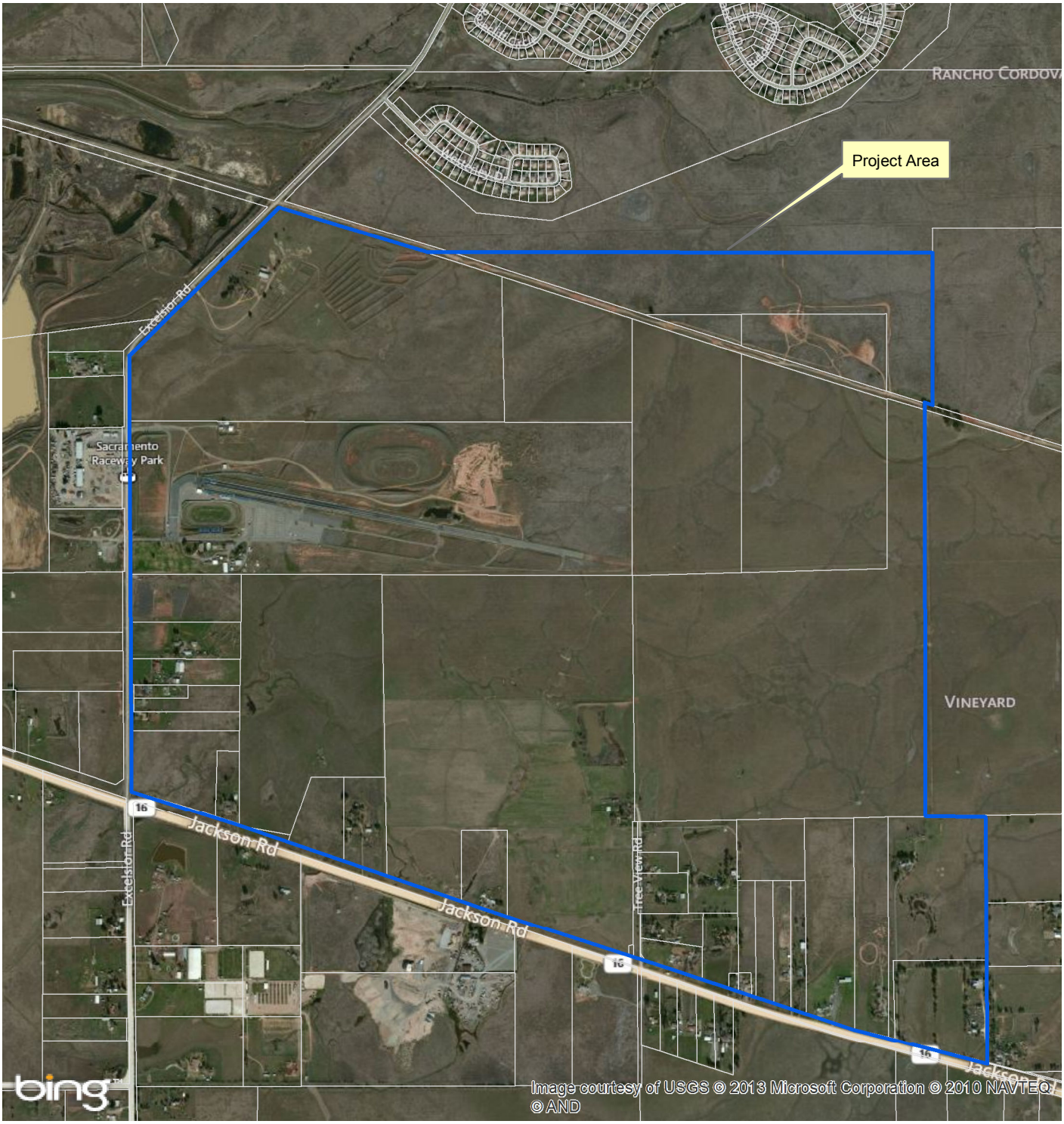
BSK Associates Engineers & Laboratories

Phase I Environmental Site Assessment
Jackson Township Specific Plan Property
Northeast Corner Jackson Hwy and Excelsior Rd
Sacramento County, California

FIGURE 1
VICINITY MAP
BSK Project E1304001S



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BSK Associates Engineers & Laboratories

Phase I Environmental Site Assessment
Jackson Township Specific Plan Property
Northeast Corner Jackson Hwy and Excelsior Rd
Sacramento County, California

FIGURE 2
SITE LOCATION MAP
BSK Project E1304001S

Appendix HYD-1

Drainage Report

Jackson Township

SACRAMENTO COUNTY, CA

Drainage Report

December 2017

Prepared By:

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JOB # 2012.21



The status of this report is PRELIMINARY unless the appropriate signature is provided to the left. Signature will be provided after review is complete.

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PROJECT PLAN SUMMARY

The Jackson Township Master Plan (JTMP) area is a sparsely populated area encompassing roughly 1,379 acres located to the south and west of the City of Rancho Cordova, in the middle portion of Sacramento County.

The area is designated Extensive Industrial and 20 Acre Agricultural on the Sacramento County November 9, 2011.General Plan Land Use Diagram. The JTMP proposes a diversity of land uses from parks and schools through residential and commercial while retaining areas of wetlands and agricultural designation.

The JTMP is roughly bounded by Kiefer Blvd. on the north, Wetland Preserve to the east, Jackson Road (State Hwy. 16) on the south and Excelsior Road on the west. The proposed development area is currently tributary to Morrison Creek and Elder Creek with 450 acres draining north and/or west into Morrison Creek while 929 acres drains to Elder Creek. The proposed development would drain 462 acres to Morrison Creek, a 12 acre increase, and 917 acres to Elder Creek, a 12 acre reduction.

This plan analyzes the following:-

- Pre-project conditions based on 2004 land use;
- JTMP Post-Project Total Project Conditions.
- JTMP Post-Project Phase 1 Project Alternative 1 Conditions.
- JTMP Post-Project Total Project Alternative 1 Conditions.

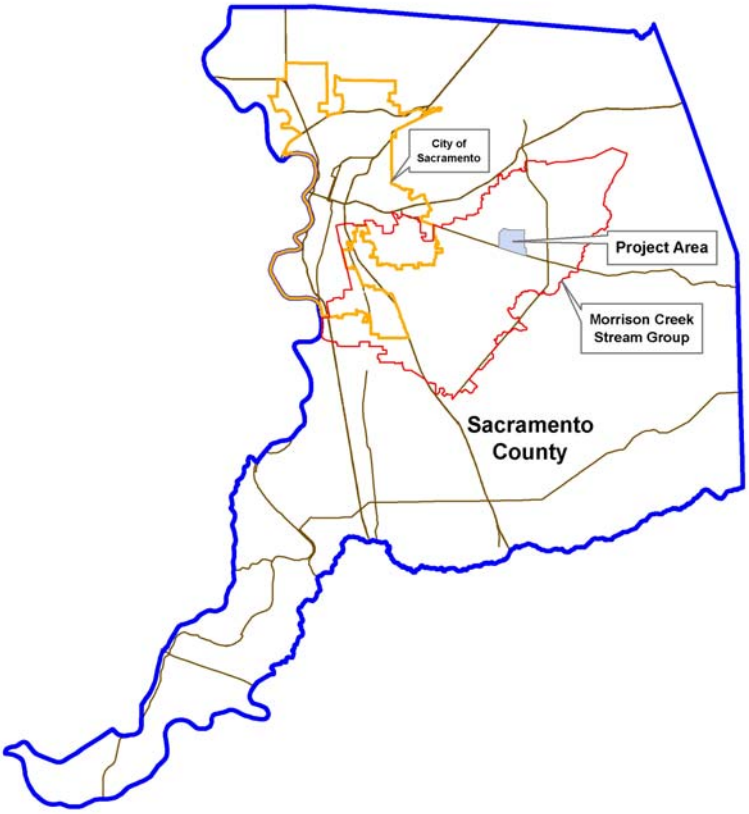
Alternative 1 would construct the same land use plan as the Total Project alternative, but will allow for phasing of the major drainage improvements in the elder Creek watershed. The Detention 1 basin would be enlarged to accommodate all peak flow, Water Quality and hydrograph modification impacts of the Phase 1 development area. Detention 2 in Elder Creek would be built with a later phase and provide the remaining mitigation for the remaining development areas.

Overall increases in runoff volumes and peak flow increases from the proposed project development areas will be mitigated through the implementation of detention facilities. Potential water quality impacts will be mitigated through the implementation of Low Impact Development (LID) measures and water quality treatment features. Improvements to mitigate Hydrograph Modification consistent with the Sacramento County HMP will also be implemented with this plan. Oversize exhibit DF-1 shows the drainage facilities that need to be developed with each watershed area. For stormwater quality analysis, the point of connection will be considered the point at which waters leave the project site.

The improvements needed to accomplish the development concept analyzed in this report are as follows:

- Realign and excavate Elder Creek and a tributary of Morrison Creek within the project area.
- Provide flood control and water quality detention basins along the new channels.
- Construct storm drain pipes for the project area

In the pre-project condition, flows to the Morrison Creek watersheds exit the site at six locations. Four locations cross Excelsior Road, one crosses Kiefer Road and one leaves at the northwest corner of the project area near the intersection of Excelsior and Kiefer. The JTMP would consolidate three of the existing Excelsior Road crossings into a single outlet with only minor roadside drainage being collected and conveyed at the remaining location. Storm drain pipe systems would be added for minor road runoff collection at the northeast corner and the Kiefer Road crossing locations.



There are seven locations where flows in the Elder Creek watershed portion of the project cross Jackson Road, the largest crossing diagonally at the intersection of Jackson and Excelsior.

With the implementation of the various channel improvements, detention and water quality facilities identified in the report, the JTMP would build out at the designated land use densities with the proposed mitigation measures identified in this report, to reduce impacts to downstream hydraulic conditions and stormwater quality.

1.1 ASSUMED PRINCIPLES OF THIS PLAN

This drainage master plan assumes certain principles of the project plan will remain static and are attainable. If in the future these aspects of the plan change, this would necessitate a revision of the drainage master plan for those changes, and a new review of the plan by Sacramento County.

- **LAND USE PLAN:** The analysis is based on the Land Use Plan for the project revised in JUNE 2017. (these revisions pertained to park locations and were provided right before submittal of this version of the document. The exhibits have been updated but some calculations may not be fully revised)

- **RECONSTRUCTION OF STREAM CORRIDORS:** It is assumed that the reconstruction of the stream corridors proposed in this plan will be performed with the project, and that no permitting issues will arise.

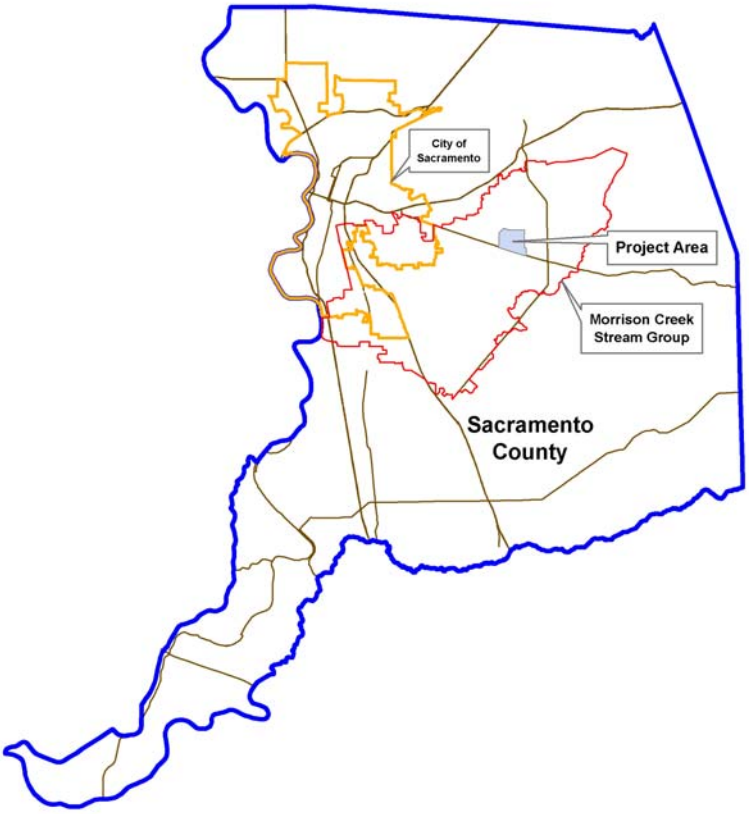
- **RECONSTRUCTED STREAMS ARE NOT WATERS OF THE STATE:** It is assumed that the reconstructed streams will not be considered waters of the State, and that stormwater quality treatment and County maintenance activities will be allowed occur within these streams.

- **MORRISON CREEK COOPERATIVE OUTFALL:** The project intends to combine all Morrison Creek discharges into a single outfall location. In order for this water to be conveyed safely to the existing Quarry, the Jackson Township and adjacent downstream property owners will need to reach an agreement on a new outfall channel.

2.0 DRAINAGE PLAN SUMMARY

2.1 PURPOSE

This drainage master plan is a part of the planning process to be used as a tool by community planners, engineers, and interested parties to evaluate drainage needs in the proposed Jackson Township Master Plan (JTMP) area. The drainage master plan analyzes the potential impacts of the proposed developments, and identifies the improvements necessary to mitigate those impacts.



This plan analyzes the following conditions:-

- Pre-project conditions based 2004 land use conditions.;
- JTMP post-project conditions, including detention basins, water quality treatment facilities, trunk storm drainage, and flood control channels. The incorporation of the recommended improvements into the JTMP will provide flood control and protection to the plan area, and ensure that impacts to peak 100-year flow rates are mitigated to less than the pre-project rates, and that stormwater will be properly treated prior to discharge. Improvements within JTMP will be constructed by the developers and maintained by Sacramento County.
- The included hydraulic and hydrologic analysis were performed for the 10-year, 100-year and 200-year events (500-year event was calculated but not reported in the results).

2.2 BACKGROUND

The area included in the JTMP is a sparsely populated area encompassing roughly 1,379 acres located in the middle portion of Sacramento County. About 1,060 acres of this is proposed for development while the balance would remain as agricultural and wetlands. Each applicant will be required to demonstrate compliance with the master drainage plan prior to improvement plan approval.

2.3 PLANNING AND DESIGN CRITERIA

The parameters of the watersheds for the pre-project conditions come from the existing Sacramento County land use as shown in 2004 aerial photographs, and hydrologic soils shown in exhibit SOIL-1. The parameters for JTMP post-project conditions were determined from the proposed land use plan. The following list briefly describes some critical design criteria implemented with this project and analysis.

1. Refinement of drainage sub shed boundaries as they relate to proposed tentative map development and lot configurations.

2. Sizing and alignment of stormwater conveyance systems, including routing of overland release to natural or improved drainage ways.

3. Functionality of detention basins to maintain pre-project peak 100-year runoff rates downstream of those basins

4. The ability to provide treatment to stormwater runoff prior to discharge into the jurisdictional drainage ways.

5. Incorporation of Low Impact Development measures into design assumptions for stormwater quality treatment and hydrograph modification mitigation.

6. Development of preliminary sizing for hydrograph modification mitigation facilities using SAHM software.

7. The lands of the entire specific plan area are not owned by participating property owners. As a result this plan will demonstrate an alternative drainage plan in which phase facilities could serve the participating properties in Phase 1 (Phase 1 Alternative 1), and the remaining properties in Phase II (Total Project Alternative 1)

Each watershed is described by its hydrologic and hydraulic characteristics for pre-project and proposed development. Hydrology quantifies the rainfall runoff generated from the land surface within the JTMP and is a function of the land surface imperviousness, infiltration rate and capacity, slope, soils characteristics, vegetation and rainfall distribution. Runoff will be collected in storm drainage systems and

conveyed to the regional trunk facilities. The runoff will be conveyed through trunk facilities consisting of open channels, piped storm drainage systems, swales and flood control channels. Hydraulic analysis identifies limitations or constraints within existing systems and provides a tool to size proposed conveyance systems to adequately and safely convey flood event runoff to the receiving streams.

The JTMP project sits at the ridge of three major watersheds for south Sacramento County. Significant areas of the project drain to portions of Morrison Creek (north area of project), and Elder Creek (south area of project) and a portion (southeast corner) of the project drains to a tributary of Laguna Creek.

2.4 SCOPE OF WORK

The low-lying areas of Sacramento County are susceptible to local and regional flooding due to prolonged heavy rains characterized by high peak flows and large volumes of runoff that occur during the winter and early spring. The potential for local flooding also occurs from short duration, high intensity cloudbursts. As urban growth expands into rural areas and increased impervious surfaces accelerate runoff and generate additional runoff volumes, the potential for increased flooding occurs. This report will document computer models which estimate the system response to the predicted flood events. The computer models also can estimate the impacts which the proposed development would have on the existing watershed, downstream and upstream of the project.

Stormwater detention facilities ensure that the increased future peak flow rates do not exceed the receiving creek's pre-project peak flow. To comply with regulatory and clean water issues, water quality treatment facilities are to be provided within the regional stormwater detention facilities of the plan.

Guidelines established as drainage goals within the proposed JTMP include enhancement of the channel flow characteristics of existing creek channels and providing 100-year flood protection within the channel open space corridors.

Hydrologic models are used to determine a quantitative estimate of the runoff flow rates that the JTMP area will discharge for the design storm events (100-year for regional hydrology). Impacts resulting from the proposed changed land use conditions are also evaluated. These models provide a tool to determine and evaluate potential areas of flooding, increased peak flow rates, increased water surface elevations, and provide the engineer a basis upon which to recommend improvements to mitigate and attenuate that flooding to meet Sacramento County Municipal Services Agency Department of Water Resources (MSA-DWR) criteria.

The JTMP is subject to the jurisdiction of the County of Sacramento. The drainage and surface water runoff analysis will be reviewed by MSA-DWR. All new developments and drainage improvements within the County are required to follow

specific guidelines in design, rehabilitation, and maintenance of drainage facilities and natural waters as set forth by MSA-DWR. The County's General Plan and Drainage Master Plan Program require that no adverse downstream impact shall occur due to development. This is achieved by ensuring that the proposed improvements result in no water surface increases outside of the plan area upstream and downstream, and no peak flow increases downstream. Other elements for consideration revolve around public health and safety issues, maintaining compliance with regulatory agencies, and providing the public with aesthetic natural appearing features. Additionally, dual use facilities including parks (active and passive) and trails are encouraged. The JTMP drainage master plan is an integrated part of an overall regional plan.

Stormwater runoff from developing areas is a major focus, especially where historical flooding is known to occur. In most cases, additional flood control facilities are added with modifications to the areas around existing creeks to add attenuation and treatment facilities. In still other circumstances, where there is no intrinsic value to the creek or it is impractical to leave the creek channel intact, a new flood control channel may be proposed to increase flood control capacity. In addition the new drainage corridors help enhance and benefit the environmental and esthetic values.

Within development areas flow events such as the "Nolte" design event will be piped, while major flows will be conveyed via overland release, primarily in streets or along other designated overland or channel release paths.

2.5 DESIGN CRITERIA

All criteria used and the analysis performed for this master plan are in accordance with the "Hydrology Standards, Volume 2 of the Sacramento City/County Drainage Manual", dated December 1996, the Drainage Study Requirements dated June 12, 2008, and "Section 9 Storm Drainage Design" of the Improvement Standards.

2.6 DESIGN EVENTS

A design event of a 100-year recurrence interval was used to evaluate the watershed impacts, regional hydrology and stream flow hydraulics. In addition, hydrologic and Hydraulic analysis of the proposed channel and stream improvements was performed for the 10-year event, 200-year event and 500-year event. All hydrology was performed for the 24-hour storm event, unless noted otherwise herein.

For Trunk Storm Drainage System evaluations, the "Nolte" flow was used to size facilities. (XPSWMM)

For the systems which were analyzed using the XPSWMM software, required parameters including composite percent impervious and infiltration rates were

computed for input into the XPSWMM models. The XPSWMM software then computes and routes the resulting flows.

2.7 STUDY TEAM

Civil Engineering Solutions, Inc. (CESI) was requested to prepare this document in 2013. In 2016 CESI completed this edition of the Master Drainage Plan, which responds to Sacramento County's comments, adds Alternative 1, and responds to project ownership comments.

The hydrologic and hydraulic analyses for the JTMP study (this document) were prepared by Civil Engineering Solutions, Inc. (CESI). Engineering and Grading design for the project were performed by Au Clair Consulting, Inc.

3.0 STUDY AREA CONDITIONS

3.1 STUDY AREA CONDITIONS

The JTMP area boundary includes approximately 1,379 acres roughly bounded by Kiefer Blvd. on the north, Wetland Preserve on the east, the Jackson Road/Highway 16 on the south and Excelsior Road on the west. The project area is a portion of the Morrison Creek Stream Group (MCSG) as shown in Figure 3.1 with 929 acres draining to Elder Creek and 450 acres draining into Morrison Creek.

The drainage master plan is organized to give the reader an overview of the JTMP study area, then develops the hydrology and hydraulic components, including land use changes, adjustments of sub-shed boundaries, and drainage improvements for the individual creek watersheds. This is accomplished by describing the drainage

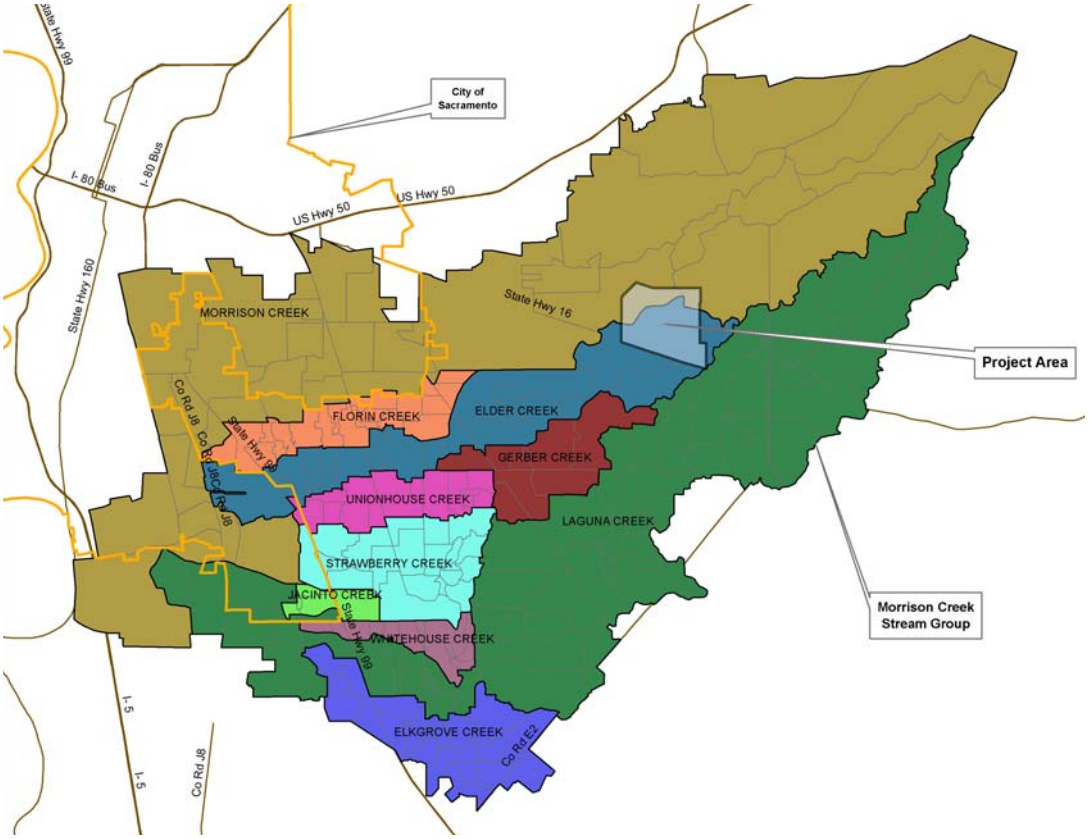


Figure 3.1 Watershed Boundaries

characteristics and proposed improvements within the individual watersheds for Elder Creek, tributaries to Morrison Creek, and the southeast area tributary to Laguna Creek.

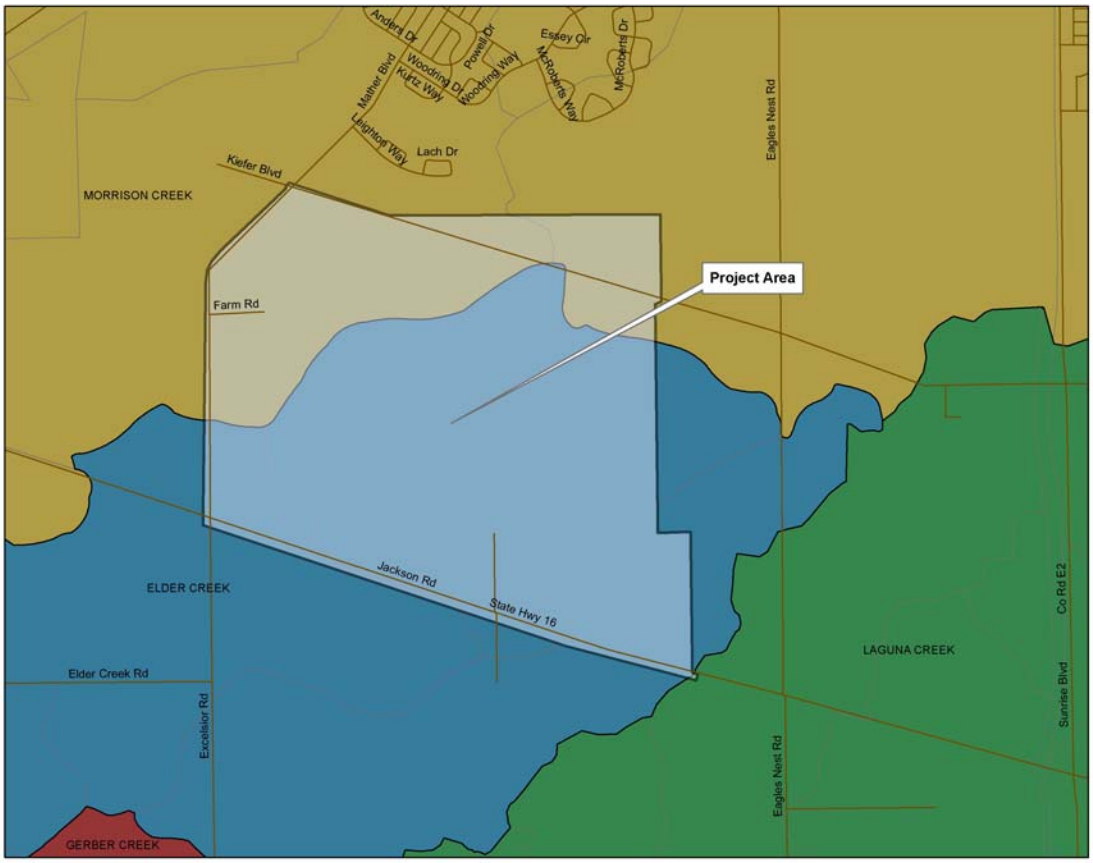


Figure 3.2.1 – Plan Area Boundary

3.2 PRE-PROJECT CONDITIONS AND FACILITIES

The JTMP is primarily located within the watershed boundaries of Elder and Morrison Creeks in Figure 3.2.1. These creeks are tributary to the Morrison Creek Stream Group (MCSG) (see Figure 3.1).

- **Elder Creek**

Elder Creek, with a total watershed area of 7,636 acres, has the largest area within the area of the JTMP. The contributing area within the JTMP is approximately 967 acres and is roughly 13 percent of the Elder Creek total watershed.



Figure 2.2.6 Elder Creek Upstream of Jackson Highway

Elder Creek within the plan area is subdivided into three sub-reaches. Runoff from each of these three sub-reaches makes its way to the south side of Jackson Road through a separate culvert. Portions of two of these sub-reaches

originate outside the proposed development area and will be collected and conveyed through the JTMP. The existing flows are conveyed within natural swales and

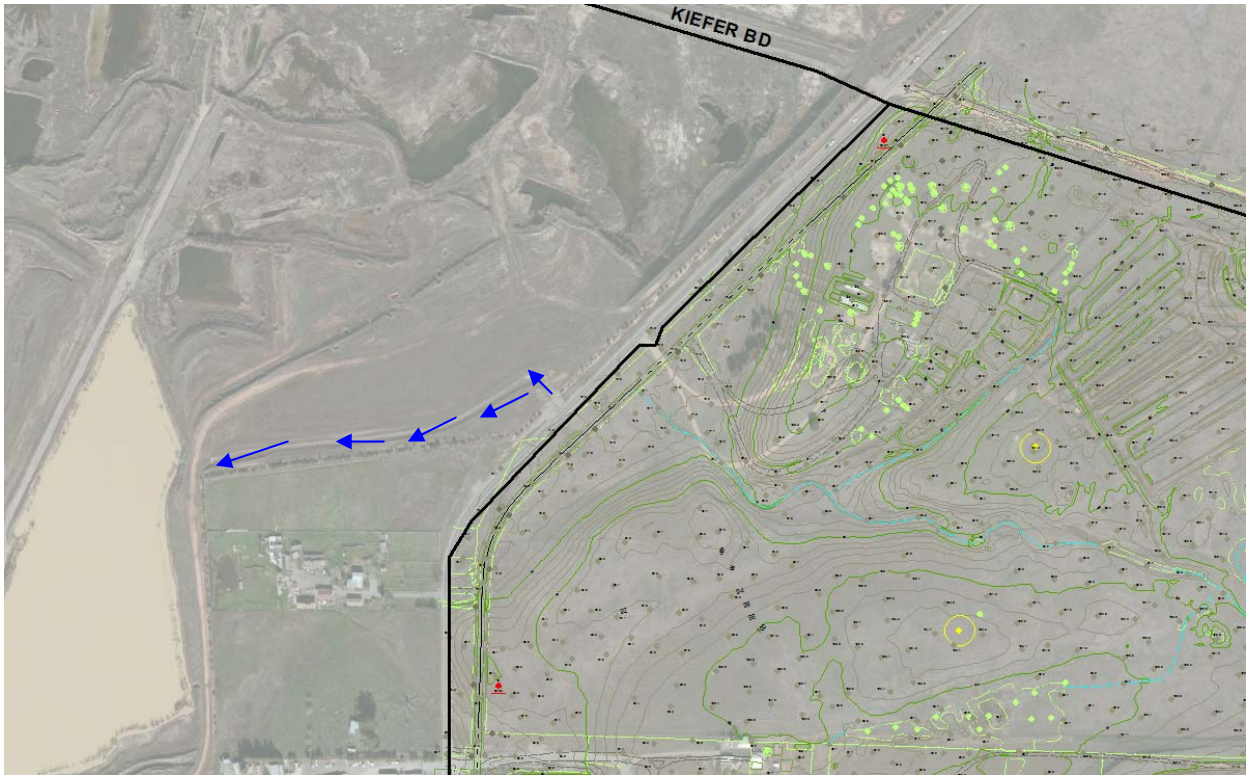


Figure 3.3 Morrison Creek Tributary Main Discharge Location

existing channels. Flow then continues in a southwesterly direction through natural channels with a broad and shallow flood plain for the next two to three miles. Elder Creek eventually discharges into Morrison Creek near Brookfield Drive in the City of Sacramento, approximately ten miles west of the Plan Area.

- **Morrison Creek Tributaries**

Morrison Creek, with a total watershed area of about 40,714 acres, has the largest single area within the Morrison Creek Stream Group. The area contributing to Morrison Creek within the JTMP is approximately 450 acres or roughly 1 percent of the total watershed.

Morrison Creek within the plan area is also subdivided into three sub-reaches, all draining across Excelsior road toward the west through individual culverts. These reaches converge with the main channel of Morrison Creek slightly over two miles downstream.

The main discharge location for the Morrison Creek tributaries leaving the JTMP site crosses Excelsior Road to a channelized swale which conveys the drainage to aggregate quarries west of Excelsior Road and south of Morrison Creek.

3.3 TOPOGRAPHY AND GEOGRAPHICAL SETTING

The Morrison Creek Streams Group (MCSG) area is a fairly gently sloping region located south of the American River roughly between Folsom Lake and the Sacramento River. These streams flow in a generally west-southwest direction, from their beginning near the base of the Sierra Nevada foothills to nearly the Sacramento River. The MCSG is contained east of the Sacramento River Levee system, and conveys flows south to the discharge into the Cosumnes River.

Stream slopes in the two main streams flowing through the area of the JTMP range from 0.2% to 0.8%. This results in somewhat faster moving flow.

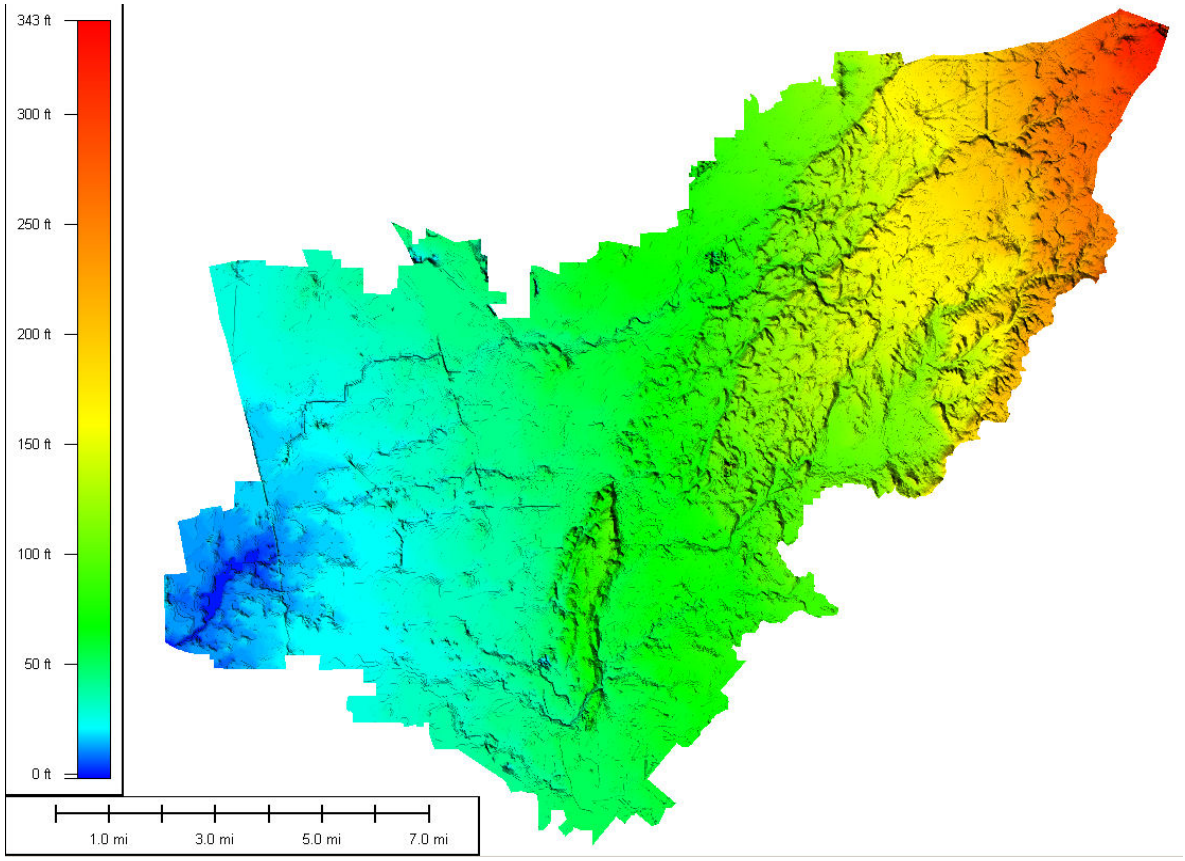


Figure 3.4 Morrison Creek Stream Group Color Shaded Topography

4.0 DEVELOPMENT OF RUNOFF MODEL

4.1 METHODOLOGY

The current standard application in Sacramento County for creating U.S Army Corps of Engineers (USACE) HEC-1 (Hydrologic Engineering Center) hydrologic models is the SACCALC preprocessor program software. The FEMA basis analysis for Elder Creek from the Letter of Map Revision (LOMR) prepared by CESI for the Elder/Gerber stream group hydrology was based on this software. Similarly current base analysis for the Morrison Creek stream group use equivalent methodologies.

For each watershed, the area of each land use type in each hydrologic soil type was determined and input into the SACCALC pre-processor software to generate the HEC-1 hydrologic models. This data was developed using GIS based land use mapping generated from the existing General Plan data and newly created post-project land use mapping for the project area. Soils maps were obtained from the United States Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS, previously the Soils Conservation Service or SCS).

Hydrographs representing the flows generated by each watershed are transferred to the hydraulic un-steady state modeling which now performs the tasks of combining and routing the hydrographs through the various systems. HEC-RAS is used for the unsteady state modeling of creeks and open channels, and XP-SWMM is used for the unsteady state modeling of systems with pipe networks.

4.2 WATERSHEDS

The proposed development area is contained primarily within one existing Morrison Creek shed and three existing Elder Creek sheds. For the onsite pre-project existing conditions model these sheds were broken out into twenty-two Morrison Creek sheds and thirty-eight Elder Creek sheds for a total of sixty onsite sheds. See oversized Exhibit SH-1 for project area drainage shed locations.

4.3 LAND USE CLASSIFICATIONS

Sacramento County Hydrology Standards specify the use and/or computation of various hydrologic parameters based on a set of 18 land use classifications. The mapping for the land use in Geographic Information System (GIS) was coded with a numeric designation for each land use based on these 18 classifications. In many cases the planning land uses specified had no direct correlation to the hydrologic land use. Where this occurred the planning land use was mapped to the closest corresponding hydrologic land use. The table on page 13-12 of the Hydrology

Standards, which describes each index, is reproduced here in Table 4.3. These land use index numbers are used in all further references to land use.

Table 4.3
Sacramento County Hydrologic Land Use Index Numbers

Impervious Area/Infiltration Land Use	Index
Highways, Parking	1
Commercial, Offices	2
Intensive Industrial	3
Apartments, High Density Res.	4
Mobil Home Park	5
Condominiums, Medium Density Res.	6
Residential: 8-10 du/ac (20-25 du/ha), Ext. Indust.	7
Residential: 6-8 du/ac (15-20 du/ha), Low Dens. Res., School	8
Residential: 4-6 du/ac (10-15 du/ha)	9
Residential: 3-4 du/ac (7.5-10 du/ha)	10
Residential: 2-3 du/ac (5-7.5 du/ha)	11
Residential: 1-2 du/ac (2.5-5 du/ha)	12
Residential: 0.5-1 du/ac (1-2.5 du/ha)	13
Residential: 0.2-0.5 du/ac (0.5-1 du/ha), Ag Res	14
Residential: 0.2 du/ac (0.5 du/ha), Recreation	15
Open Space, Grassland, Ag	16
Open Space, Woodland, Natural	17
Dense Oak, Shrubs, Vines	18

4.4 PRE-PROJECT CONDITIONS LAND USE FACTORS

New pre-project condition land use mapping was created for the area of Elder and Morrison Creeks affected by the proposed JTMP development.

Oversized Exhibit SH-1 shows the pre-project land use mapping. Table 4.4 summarizes the pre-project land use acreage for each of the sheds affected by the JTMP.

Existing Topography for the site is included on the TOPO-1, TOPO-2, TOPO-3 and TOPO-4 oversized exhibits requested by the County.

Table - 4.4 Pre-Project Land Use (acres)

	Land Use Index							Total Acres
Shed	1	7	10	12	13	14	16	
1001	0.499			1.216			9.217	10.932
101							39.975	39.975
102							25.723	25.723
103							34.657	34.657
104							20.479	20.479
105							28.572	28.572
106							12.535	12.535
107	0.215					12.175	15.755	28.145
108	0.303						6.210	6.513
201	1.008						32.594	33.602
202	0.578						33.324	33.902
203							30.285	30.285
204	0.223						37.124	37.347
205							18.784	18.784
206							30.845	30.845
207							27.718	27.718
208							6.012	6.012
300	0.649			9.492			33.925	44.066
301							32.322	32.322
302							30.836	30.836
303							28.177	28.177
304					1.867		29.023	30.890
305							38.506	38.506
306				7.977	0.275		24.610	32.862
307				2.289			27.081	29.370
308				0.068	3.567		14.559	18.194
309					0.471		44.497	44.968
310	0.721			5.094			34.902	40.717
311							37.802	37.802
312				0.321			22.555	22.876
313							31.262	31.262
314							21.495	21.495
315							26.188	26.188
316							24.231	24.231
317							34.461	34.461
318	1.375						14.427	15.802
319							34.520	34.520
320							29.699	29.699
321							28.439	28.439
322	0.725						50.493	51.218
323	2.170	8.334					11.874	22.378
325	0.053	5.881		0.924			3.571	10.429
326							32.940	32.940
327		0.256					26.232	26.488
328				0.619			28.548	29.167
4001	2.192	10.425		11.752			24.353	48.722
401	0.024				0.204		39.380	39.608
402	0.351				5.704		28.976	35.031
403					0.843	5.938	21.387	28.168
404					1.105		21.697	22.802
405	0.836			3.535	0.026		21.782	26.179
501	0.878				4.240	0.187	27.948	33.253
502	0.414			2.608	0.819	2.192	23.801	29.834
503	1.982				0.917	4.181	36.824	43.904
601	0.675			1.206	3.542		16.408	21.831
602	0.488			1.611			5.113	7.212
701	0.621			3.405	8.881		11.729	24.636
702	0.584			0.167	0.200		26.830	27.781
800							16.109	16.109
801	1.224	0.065					17.848	19.137
802	1.697	1.277	0.804				34.178	37.956
803	0.261						15.206	15.467
901	0.161					0.782	8.303	9.246

4.5 POST-PROJECT LAND USE

Proposed land use mapping for the JTMP area consistent with the ”Planning Options Plan” land use scenario was provided by AuClair Consulting, Inc. The post-project proposed land use conditions are shown on oversized exhibit SH-2.

Table 4.5 – Post-Project Land Use

	Land Use Index												
Outfall	1	2	3	4	7	8	9	12	13	14	15	16	Total
elder1	55.6	47.8	4.7	42.2	61.8	77.6	217.9	0.5	5.6	0.0	48.7	267.0	829.2
elder2	7.0	48.3	0.0	0.0	18.7	0.0	16.6	0.0	0.0	0.0	0.0	0.0	90.6
elder3	2.9	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	19.4
elder4	1.7	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	10.3
morrison1	39.7	17.1	0.0	34.1	53.5	20.1	115.4	0.0	0.0	0.0	24.9	48.1	352.8
morrison2	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	4.4
Total	109.2	129.1	4.7	84.6	133.9	97.6	349.9	0.5	5.6	0.0	74.7	316.9	1306.7

4.6 SOILS

Soils information was obtained from the NRCS. Hydrologic soils groups were mapped using GIS and used together with the land use mapping to develop the shed characteristics for the hydrologic models. Figure 4.6.1 shows the soils distribution for the pre-project sheds. These Soil Types can be reviewed for the project area on the oversized exhibit SOIL-1.

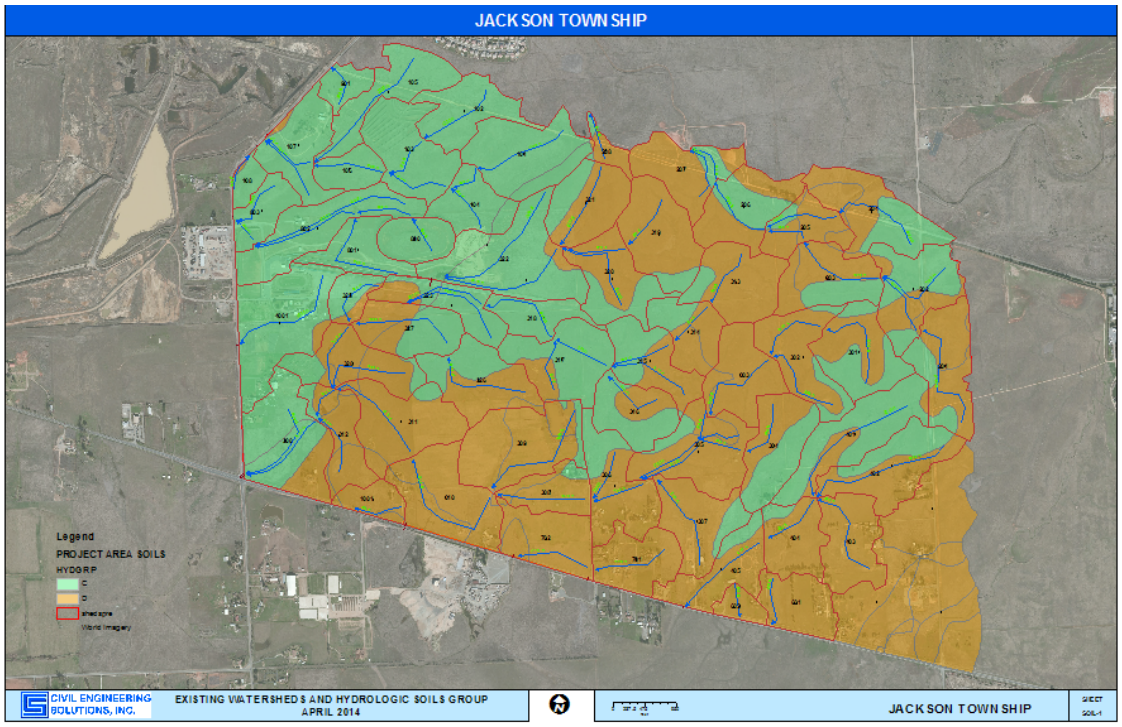


Figure 4.6.1 – Pre-Project Soils and Sheds

5.0 HYDRAULIC MODEL DEVELOPMENT

5.1 HYDRAULIC MODEL DEVELOPMENT

The hydrologic modeling provides runoff hydrographs for the various watersheds in the JTMP study area. The hydrographs developed in these models are used as input in the unsteady state (dynamic) hydraulic routing modeling using HEC-RAS and XPSWMM. For the pre-project conditions, a 3-D surface is built from the existing topography for the project (project topography and County LiDAR). Cross section transects are identified along stream corridors, perpendicular to the estimated direction of flow, and hydraulic model cross sections are developed from the 3-D terrain model at these transect locations. N-value (friction) parameters are developed based on review of the existing conditions aerial photographs and field visits.

For the post-project conditions model, a 3-D terrain model is built from the proposed grading plan received from Au Clair Consulting. CESI performed additional grading refinements for mitigation facilities within the proposed stream corridors. Similar to the pre-project model development, transects are located along the streams, perpendicular to the direction of flow, and model cross sections are developed at these transect locations, from the 3-D terrain model. N-values are estimated based on the long term vegetation outlook for the channels and detention areas assuming only minimal maintenance would occur. N-Values are increased where water will have longer residence times at shallow depths for stormwater quality treatment areas and hydrograph modification mitigation areas, to account for the likely vegetation growth that would occur in these areas.

For Elder Creek downstream of the project, the regional model developed for Sacramento County for The Elder Creek and Gerber Creek Watersheds, ultimate conditions scenario was imported. Some minor stability issues occurred when calculating this extended model with the Jackson Township model, and some interpolated sections, and minor invert modifications were made to the imported portion for model stability.

5.2 VERTICAL DATUM

The vertical datum used for all mapping and calculations with this project is NAVD 88.

5.3 METHODOLOGY

Dynamic Hydraulic modeling for the open channel and creek systems was performed with the USACE HEC-RAS (River Analysis System) modeling software (referred to hereafter as HEC-RAS). This allows for unsteady flow conditions modeling using the flow hydrographs generated by the SACCALC and HEC-1 hydrologic modeling software as direct input to the program (via the DSS interface). Sacramento County uses unsteady flow modeling to evaluate the flow and water surface attenuation characteristics of the open channel systems and the effect of any associated structures including bridges and culverts.

The overall approach for the hydraulic analysis was to apply the proposed land use for the JTMP to the affected sheds, calculate the resulting outflow hydrographs using HEC-1 for each shed, and use the computed flow data as input to the unsteady flow RAS model for each stream. Each of the three streams/stream groups was modeled for both pre-project and proposed post-project conditions.

The HEC-RAS Analysis Plans are summarized below:

EG ULT _ JT PRE_ 500y24h no laguna split : PRE-PROJECT 500-year 24-hour

EG ULT _ JT PRE_ 200y24h no laguna split : PRE-PROJECT 200-year 24-hour

EG ULT _ JT PRE_ 100y24h no laguna split : PRE-PROJECT 100-year 24-hour

EG ULT _ JT PRE_ 10y24h no laguna split : PRE-PROJECT 10-year 24-hour

EG ULT _ JT Post_200y24h : POST-PROJECT (Total) 200-year 24-hour

EG ULT _ JT Post_100y24h : POST-PROJECT (Total) 100-year 24-hour

EG ULT _ JT Post_10y24h : POST-PROJECT (Total) 10-year 24-hour

EG ULT _ JT Post_500y24h : POST-PROJECT (Total) 500-year 24-hour

EG ULT _ JT Ph1A_100y24h : POST-PROJECT Phase 1 100-year 24-hour

EG ULT _ JT Ph1A_10y24h : POST-PROJECT Phase 1 10-year 24-hour

EG ULT _ JT Ph1A_200y24h : POST-PROJECT Phase 1 200-year 24-hour

EG ULT _ JT Ph1A_500y24h : POST-PROJECT Phase 1 500-year 24-hour

EG ULT _ JT Ph2_100y24h : POST-PROJECT Phase 2 100-year 24-hour

EG ULT _ JT Ph2_10y24h : POST-PROJECT Phase 2 10-year 24-hour

EG ULT _ JT Ph2_200y24h : POST-PROJECT Phase 2 200-year 24-hour

EG ULT _ JT Ph2_500y24h : POST-PROJECT Phase 2 500-year 24-hour

EGUltJtPost100y24hNoMorrDet : Post Project scenario for minimized detention at Morrison creek discharge

EG ULT _ JT PRE_ 100y10d no laguna split : PRE-PROJECT 100-year 10-day

EG ULT _ JT Post_ 100y10d : POST-PROJECT (total) 100-year 10-day

Trunk storm drainage systems were prepared and analyzed for the various areas of the JTMP. For Trunk Storm Drainage System evaluations, the “Nolte” flow was used to size facilities. Simple pipe systems and pipe/open channel systems where attenuation (detention) was not a factor were modeled using the XPSWMM software. The XPSWMM pipe systems analysis results are included in Appendix D XPSWMM Storm Drainage System Analysis. For trunk systems where attenuation and/or detention were a factor the XP-SWMM software was used to evaluate the trunk facilities.

Appendix D Oversized Exhibits contains larger scale presentations of the JTMP area proposed drainage facilities including pipe and drainage channel layouts (“SD-“ Exhibits), SWMM model pipes and channels and the major stream channel alignments.

- **Elder Creek**

For the Elder Creek project areas, a new unsteady flow HEC-RAS model was constructed for the pre-project conditions which terminates a few hundred feet offsite at the downstream end near the intersection of Excelsior and Jackson Highway. Most streams estimated to have flooding more than a couple feet deep within the project were modeled with this analysis, and pre-project 100-year onsite floodplains are shown on Exhibit FP-1.

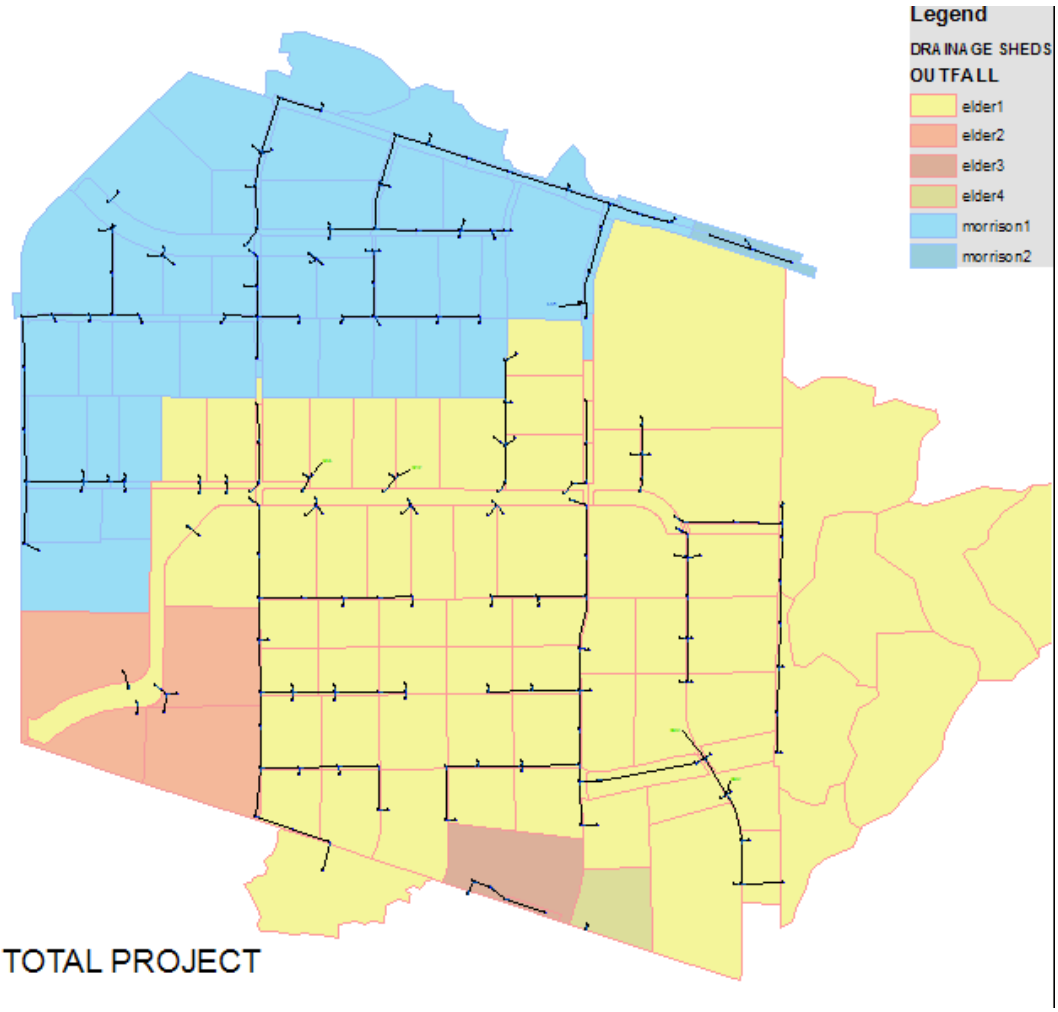


Figure 4.1.1 - Storm Drain Layout and Watersheds by Outfall Location:

The project proposes to completely reconstruct Elder Creek Onsite as a drainage corridor system with inline stormwater quality treatment and hydrograph modification attenuation at the downstream end of the creek within the onsite portion of the project drainage corridor improvements. The attenuation at the downstream area within the proposed drainage corridor will provide a significant part of the 100-year peak flow mitigation due to the project impacts resulting from conversion of ground to a higher level of imperviousness.

Elder Creek will include two detention basin areas in the southwest area of the project. Detention 1 is the upstream basin which occurs in the new alignment of the channel where it widens at a bend. Detention 2 occurs in the widened channel upstream of the Jackson Highway crossing.

For the Total Project, Detention 1 will store up to 47.2 acre feet in the 100-year event. Within that volume, 13.7 acre feet of stormwater quality treatment volume, and 14

acre feet of hydrograph modification volume are proposed. Detention 2 will store up to 110.6 acre feet in the 100-year event. Within that volume, 7.2 acre feet of stormwater quality treatment volume, and 55.1 acre feet of hydrograph modification volume are proposed.

In Phase 1 of Alternative 1, only Detention 1 will be constructed. Detention 1 will store up to 76.0 acre feet in the 100-year event. Within that volume, 14.2 acre feet of stormwater quality treatment volume, and 44.3 acre feet of hydrograph modification volume are proposed.

In Phase II of Alternative 1, Detention 2 is added. Detention 2 will store up to 129.6 acre feet in the 100-year event. Within that volume, 1.12 acre feet of stormwater quality treatment volume, and 67.9 acre feet of hydrograph modification volume are proposed.

The Point of Connection for Elder Creek will be considered to be at the downstream end of the proposed drainage corridor at Jackson Highway crossing, and all treatment, hydrograph modification, and stormwater quality treatment will occur within the project channel, upstream of this location.

- **Morrison Creek:**

The other main system being reconstructed through the project is for a large area that is tributary to Morrison Creek through the western boundary of the project. Identified as Point of Connection Area 107, the swale for this area will be reconstructed into a channel system which also will include volumes for attenuation, hydrograph modification, and stormwater quality treatment mitigations.

Within the segments of the proposed Morrison Creek tributary drainage corridor where attenuation is proposed the combined 100-year floodplain volume would be about 38.7 Acre feet. This includes 7.4 AF of stormwater quality treatment volume for the Dry Basin methodology of treatment. Hydrograph Modification storage at this location has been removed per Sacramento County comments, as these discharges will flow to an existing aggregate quarry with limited discharge.

Since the entire onsite drainage corridor for the proposed tributary to Morrison Creek will be reconstructed, the Point of Connection for Morrison Creek will be considered to be at the downstream end of the proposed corridor at Excelsior Road, and all treatment, hydrograph modification, and stormwater quality treatment will occur within the project drainage corridor, upstream of this location.

5.4 ELDER CREEK MODELING RESULTS

The Elder Creek proposed condition proposes reconstruction of the stream drainage corridors. As previously noted, improvements would include excavation of an enhanced drainage corridor. Drainage Corridor improvements include deepening and widening of the main channel as well as the overbank areas, and creating peak flow mitigation attenuation, hydrograph modification attenuation, and stormwater quality treatment areas. Figure 4.2 shows an illustration of a representative improved channel cross-section. Proposed channel cross sections are shown in Appendix E.

The model results indicate that the peak 100-year water surface elevations for Elder Creek would be higher than the existing condition in the downstream reaches and lower than the existing conditions in the upstream reaches.

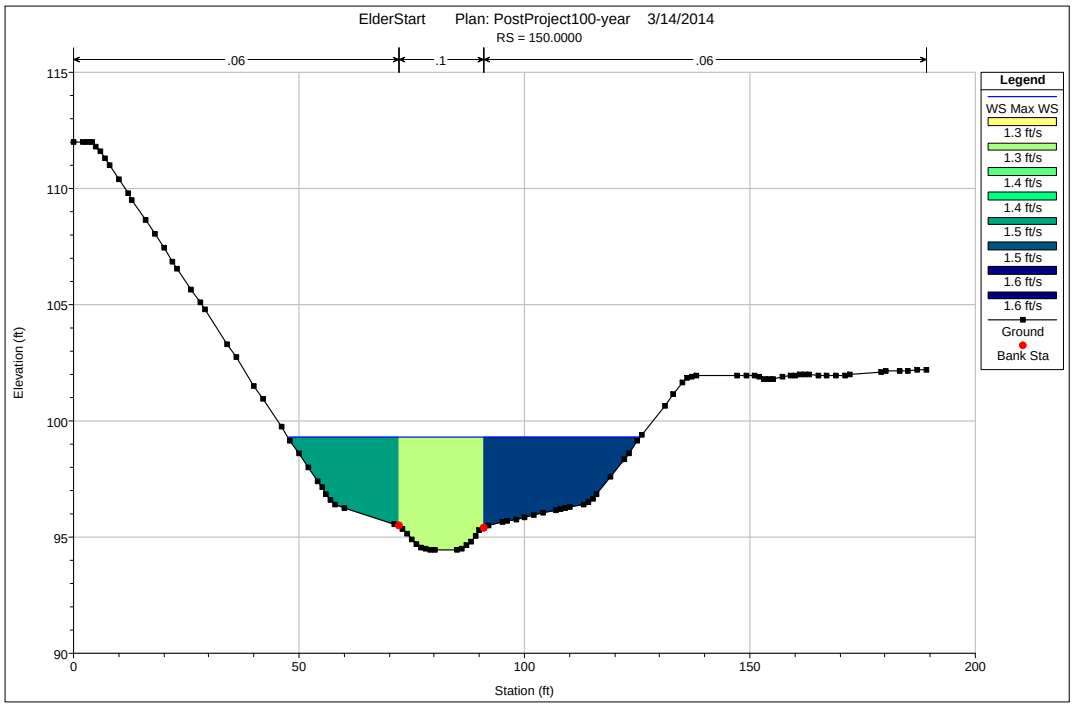


FIGURE 4.2 Sample Proposed Improved Channel Cross-Section Elder Creek (Upstream of Detention 1)

The analysis results demonstrate that the Peak Flow rates will be reduced at the site boundary and downstream of that location. Runoff hydrographs at the Point of Connection are compared in Figure 4.3 for the 10-year, 100-year and 200-year pre-development and post-development conditions.

Exhibit SH-2 in Appendix D identifies the approximate proposed locations and sizes of the storm Drain facilities, and shows the proposed watershed boundaries..

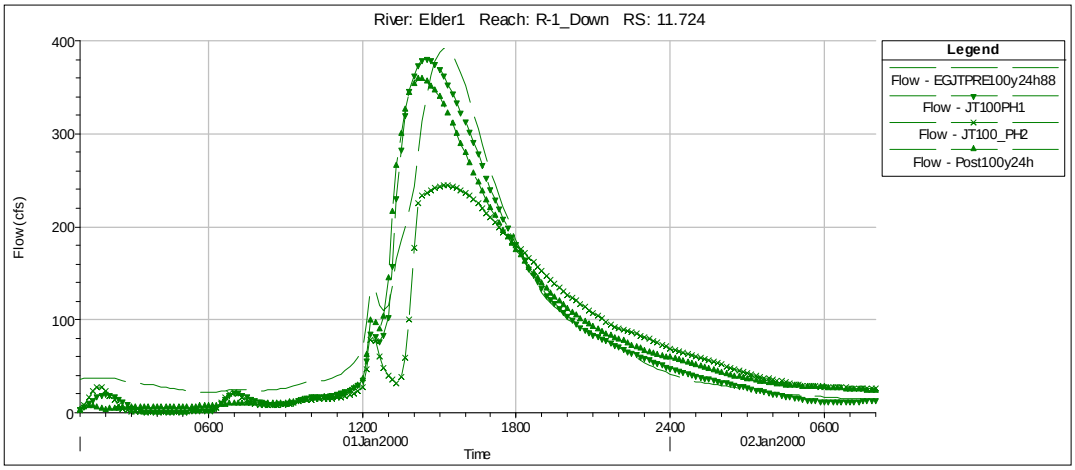


FIGURE 4.3 Comparison of 100-year Hydrograph at Elder Creek POC

5.5 MORRISON CREEK MODELING RESULTS

The Morrison Creek tributary proposed condition proposes reconstruction of the stream drainage corridors. As previously noted, improvements would include

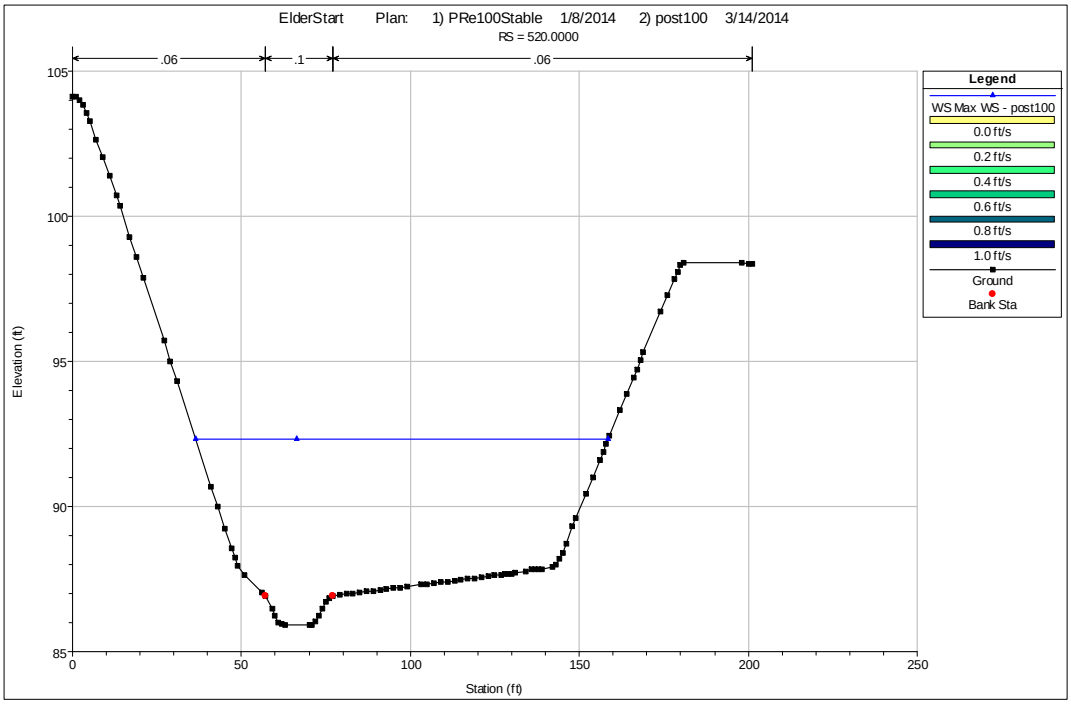


FIGURE 4.4 Sample Proposed Improved Channel Cross-Section Morrison Creek Tributary (Upstream of Excelsior Road)

excavation of enhanced channel. Drainage corridor improvements include deepening and widening of the main channel as well as the overbank areas, and creating peak flow mitigation attenuation, hydrograph modification attenuation, and stormwater quality treatment areas. Figure 4.4 shows an illustration of a representative improved channel cross-section. Proposed drainage corridor cross sections are shown in Appendix E.

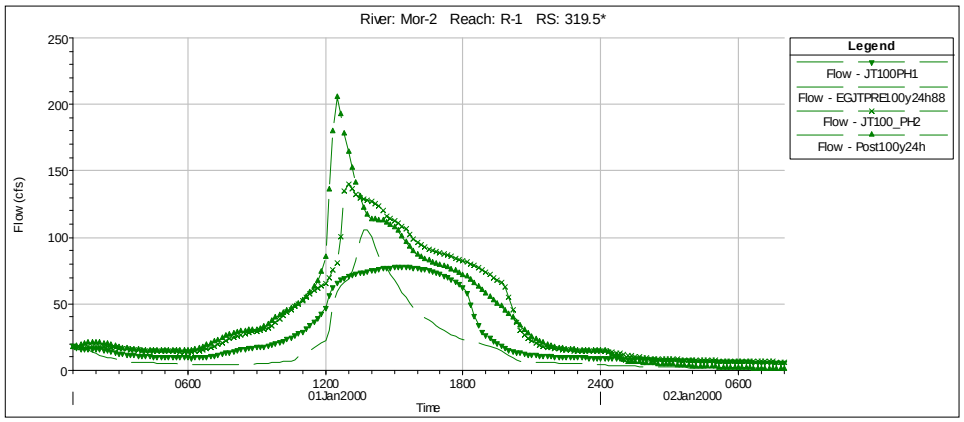


FIGURE 4.5 Comparison of 100-year Hydrograph at Morrison Creek POC (At Downstream limit of project)

The model results indicate that the peak 100-year peak flow rates and water surface elevations for the discharge tributary to Morrison Creek (actually discharges into a Quarry), at the point of discharge would increase. The combined discharges to Morrison Creek would decrease, however, the project proposes to combine the different discharges into a single location. As a result of the increase, the project is coordinating with the adjacent property owner for the future construction of a channel outfall system. See figure 4.5 for comparison of pre-project to post-project runoff hydrographs for the 100-year event.

Exhibit SD-1 in Appendix D identifies the approximate proposed locations and sizes of the storm Drain facilities, and shows the proposed watershed boundaries.

5.5.1. MORRISON CREEK ALTERNATIVE FOR NO DETENTION ANALYSIS

The County of Sacramento has requested that the project consider an alternative to eliminate onsite channelized peak flow mitigation and stormwater quality improvements onsite at the Morrison Creek Tributary discharge location.

An analysis was performed which narrowed the project's proposed channels in Morrison Creek. The removal of onsite attenuation volume areas in the

channels has the results of increasing peak flow rates. For example; The Culverts at the onsite crossing would need to become 2-54 inch pipe culverts instead of the single 48 inch pipe culvert proposed in the plan. Upstream of this location flow rates are less than 200 cfs in the 100-year event and could be feasibly piped, eliminating the proposed channel for this condition.

For the reach in the analysis between the onsite crossing and Excelsior Road, the 200-feet wide open space buffer for the channel was narrowed to 100 feet, and the channel was narrowed similarly.

The proposed channel between the onsite crossing and Excelsior Road cannot be piped and peak flow rates in the 100-year event would become approximately 500 cfs (see figure 4.5.2) without onsite peak flow mitigation. Comparing this to the approximately 200 cfs peak 100-year flow rate shown in figure 4.5 we see that flow rates crossing Excelsior Road could increase by 300 cfs in the 100-year event.

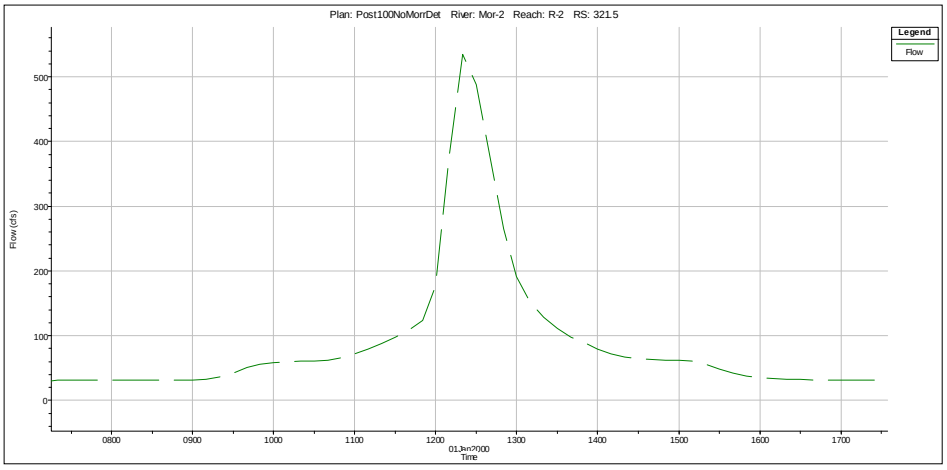


FIGURE 4.5.2 100-year Hydrograph at Morrison Creek POC for non-mitigated condition

The proposed culvert at Excelsior Road would need to be revised to become a 12' wide by 6' tall box culvert to convey this much flow. And the roadway would need to be raised to elevation 83. Downstream of the crossing the existing channel would need to be reconstructed to accept the higher flow rates to the discharge point at the ultimate Quarry Detention Basin. There is significant vertical fall between Excelsior Road and the invert of the quarry, and the channel would like need to use drop structures to step the flows down to the quarry bottom. Currently sheet flows overtop the quarry banks, and the flood waters flow down the banks in an erosive manner. It is the desire of the Jackson Township developer to work with the adjacent property owner to find an equitable solution for the offsite outfall downstream of Excelsior Road.

5.5.2. MORRISON CREEK OUTFALL VOLUMETRIC IMPACTS

To determine the Volumetric Impacts of the Jackson Township Project to the downstream properties at the Morrison Creek Outfall location, the Unsteady State HEC-RAS model (v4.1) was converted to an extended duration 10-day analysis for the 100-year. The Combined volume of outflow for the 10-day 100-year event in the pre-project condition is 179.8 AF. In the post project condition it is 245.8 AF providing a difference of 66 Acre Feet.

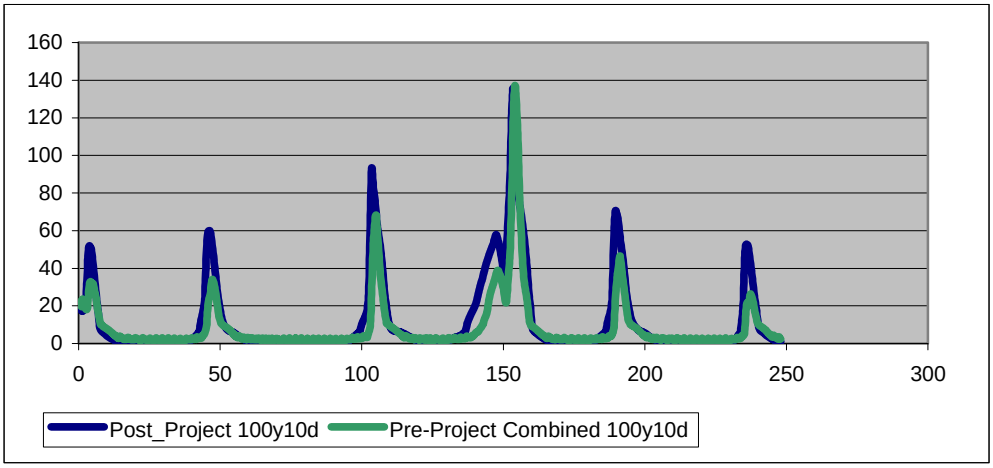


FIGURE 4.5.3 10-day 100-year Hydrograph Comparison at Morrison Creek POC

Figure 4.5.3 Compares the pre-project combined discharges across Excelsior Road, to the Post Project discharges for the 10-day 100-year event.

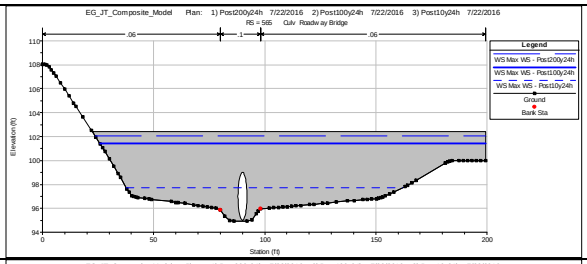
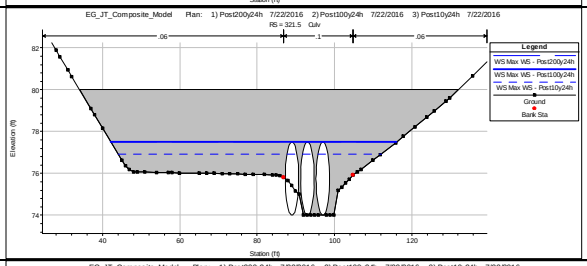
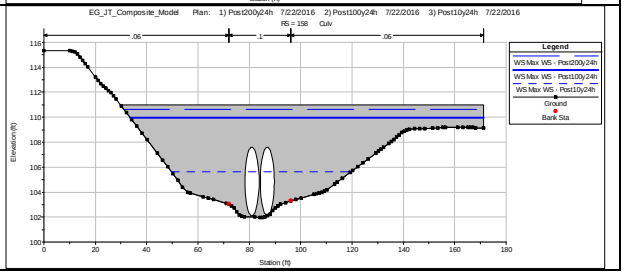
5.6 FLOOD CONTROL DETENTION BASINS

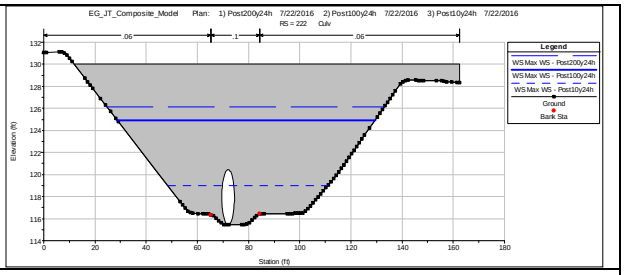
Three flood control detention basins are to be constructed with the JTMP along Elder Creek and the Morrison Creek Tributary. The detention basins will function inline within the drainage corridors and will contain components for stormwater Quality Treatment and Hydrograph Modification mitigation storage. Oversize exhibit DR-1 shows the detention basins that need to be constructed with the different areas in the JTMP project.

5.7 BRIDGES AND CULVERTS

Table 4.5.3 shows the recommended culvert sizes at proposed channel crossing locations.

Table 4.5.3 – Crossing Culvert Sizes

Location	Recommended Culvert Size	Section in HEC-RAS
Morrison Creek – Road Crossing	1-48” Pipe Culvert	
Morrison Creek – Excelsior Road Crossing	3-42” Pipe Culvert	
Elder Creek – Western Road Crossing	2-66” Pipe Culverts	

Elder Creek – Middle Road Crossing	1-60” Pipe Culvert	
Elder Creek – East Road Crossing	1-48” Pipe Culvert	

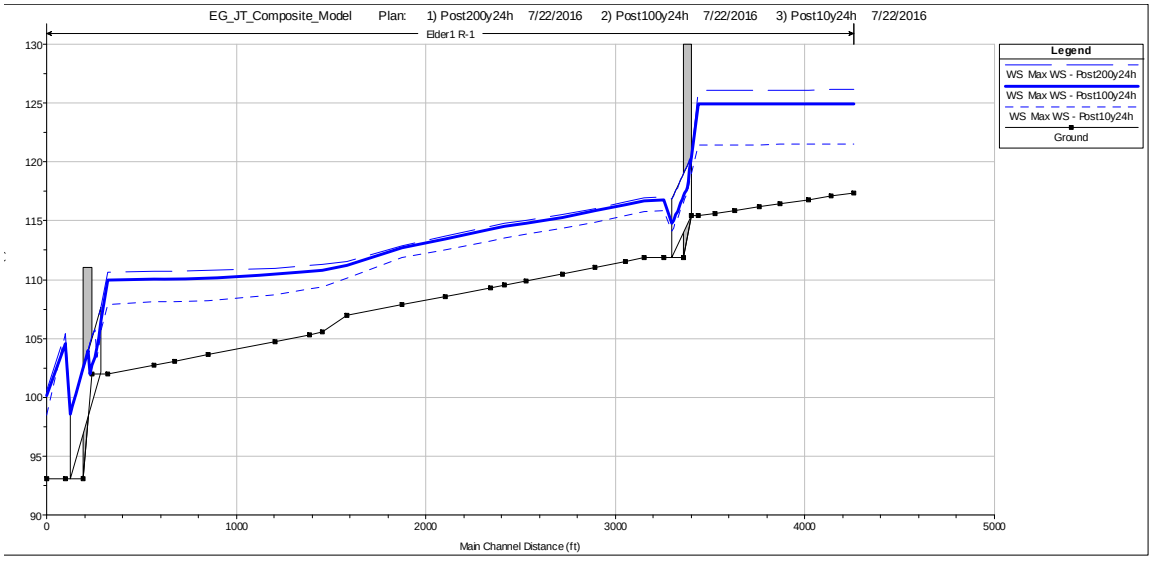


Figure 4.5.1 Elder Creek Max W.S

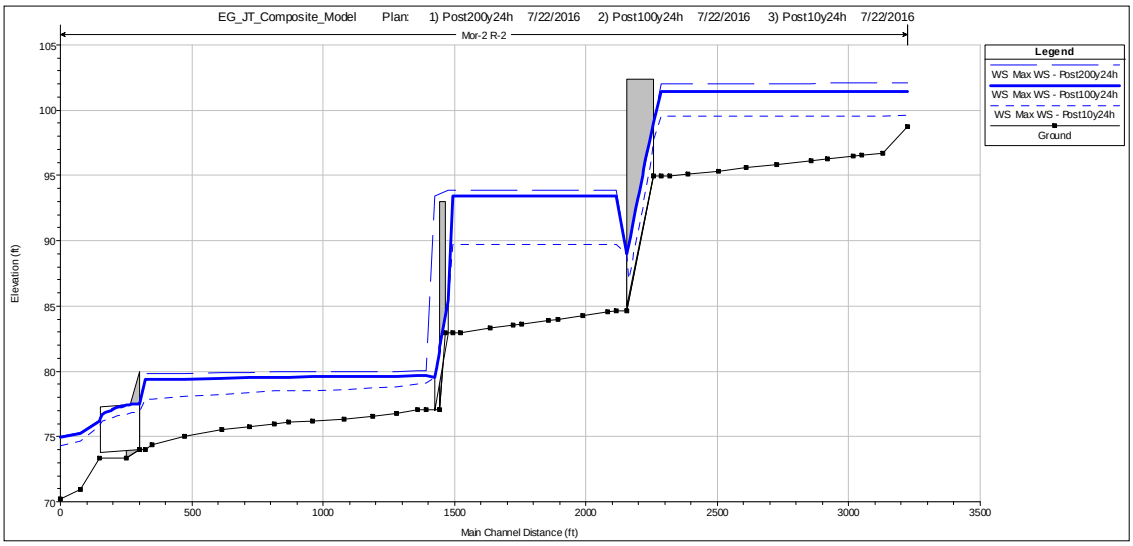


Figure 4.5.2 Morrison Creek Max W.S

5.8 FUTURE BUILDOUT CONDITIONS

Future combined build-out analysis modeling outside of the JTMP for the combined watershed impacts at Elder Creek and Morrison Creek has not been performed for this master plan. Future development in watersheds EL301, EL302, EL303, EL304, EL305, N376 and N462 upstream of the JTMP will be required to mitigate their impacts to existing conditions as shown in this plan.

5.9 TRUNK PIPES AND PIPE SHED GROUPS

A preliminary evaluation was undertaken to determine possible alignments and feasibility of trunk pipe drainage (serving 30 acres or more) for the various portions of the JTMP area. The XP-SWMM model was used for this analysis. Nodes and Pipe linkages are shown in Exhibit SD-1. The results of this analysis are included in the swmm section Appendix C and shown on the oversize exhibits in Appendix D. The results of these analyses are presented in Appendix D.

5.10 FEMA FLOODPLAIN

Existing FIRM Panels show Zone AE floodplain in the south western corner of the site (see Exhibit FP-1). A CLOMR will be required for any necessary mapping changes to this floodzone required for the proposed development, and for proposed improvements such as fill to be placed within this floodzone.

6.0 POST CONSTRUCTION STORM WATER QUALITY MEASURES

6.1 METHODOLOGY AND RESULTS

The volume for each of the water quality basins was computed in accordance with the WEF method as described in the stormwater quality manual. Each shed was assigned to a group. A composite land use percent impervious was calculated for each group and the WEF water quality volume was computed for each discharge point from the project. The Dry Basin Design Criteria will be applied to the SWQ treatment in this project. The required volume for the basins is summarized in the Table 5.1. Calculation of outflow from the detention basins is based on the “March 2007 Draft Stormwater Quality Design Manual”.

The included water quality treatment measures of the JTMP do not include treatment capacity for areas which are outside the JTMP boundary. If/When these areas develop, additional measures may be needed within those projects, or supplemental capacity added to the JTMP facilities such that treatment of the runoff from these additional areas can be accomplished. Areas that cannot drain directly into water quality treatment basins as shown on Oversize Sheet SD-1 will need to be provided with local water quality treatment facilities.

Where water quality treatment is to take place within a detention basin a portion of the basin volume was reserved by including a downstream structure in the hydraulic model which will emulate the release characteristics of the Stormwater Quality Basin outlet. All water quality in the plan is assumed to be sized and configured per the “Dry Design Criteria” BMP alternative.

Tables 6.1.1, 6.1.2 and 6.1.3 demonstrate how the WEF Water Quality volumes were calculated for each watershed, for the Total Project, Alternative 1 Phase 1 Project, and Alternative 1 Total Project scenarios. Refer to Figure 4.1.1 for watershed identification.

The stormwater quality and hydrograph modification analysis include Low Impact Development credit reductions to imperviousness of each watershed, based on the credit system established in the “LID_CREDITS” Spreadsheets for commercial and residential (included in the Appendix).

The regional stormwater quality treatment facilities identified in this section include reductions for possible “Low Impact Development” (LID) measures as may ultimately

be required by Sacramento County. Implementing LID measures with these projects effectively reduces the amount of stormwater which would runoff from the project development areas by reducing the effective imperviousness of the project, and promoting infiltration and pre-treatment. For example, LID measures may include features such as disconnected roof drains, planting of trees, and Hollywood driveways at residential areas.

TABLE 6.1.1 – TOTAL PROJECT WEF SWQ TREATMENT VOLUME DRY BASIN

WQBasin	Area acres	Post LID %Imperv	C	ModC	48-hr Po(in)	WEF WQV(af)	Dry Basin Volume (af)	WET BASIN PERM POOL VOLUME	COMBO BASIN TOTAL VOLUME	COMBO BASIN PERM POOL VOLUME	COMBO BASIN DRY POOL VOLUME	Optional for Grassy Swale
elder1	829.2	28.04		0.215	0.232	16.011	16.011	20.014	18.013	10.007	8.006	
elder2	90.6	48.86		0.332	0.358	2.707	2.707	3.383	3.045	1.692	1.353	
elder3	19.4	49.68		0.337	0.364	0.589	0.589	0.736	0.662	0.368	0.294	
elder4	10.3	56.98		0.387	0.417	0.358	0.358	0.448	0.403	0.224	0.179	
morrison1	352.8	37.05		0.263	0.284	8.359	8.359	10.448	9.403	5.224	4.179	
morrison2	4.4	27.57		0.212	0.229	0.084	0.084	0.105	0.094	0.052	0.042	X

TABLE 6.1.2 – ALTERNATIVE 1 PHASE 1 WEF SWQ TREATMENT VOLUME DRY BASIN

WQBasin	Area acres	Post LID %Imperv	C	ModC	48-hr Po(in)	WEF WQV(af)	Dry Basin Volume (af)	WET BASIN PERM POOL VOLUME	COMBO BASIN TOTAL VOLUME	COMBO BASIN PERM POOL VOLUME	COMBO BASIN DRY POOL VOLUME	Optional for Grassy Swale
elder1	878.10	26.05		0.204	0.220	16.106	16.106	20.132	18.119	10.066	8.053	
elder3	19.40	49.68		0.337	0.364	0.589	0.589	0.736	0.662	0.368	0.294	
elder4	10.30	56.98		0.387	0.417	0.358	0.358	0.448	0.403	0.224	0.179	
morrison1	233.80	33.99		0.247	0.266	5.189	5.189	6.486	5.837	3.243	2.594	
morrison2	4.40	27.57		0.212	0.229	0.084	0.084	0.105	0.094	0.052	0.042	X
morrison3	71.60	3.91		0.069	0.075	0.445	0.445	0.557	0.501	0.278	0.223	
morrison4	48.70	19.89		0.170	0.183	0.744	0.744	0.930	0.837	0.465	0.372	

TABLE 6.1.3 – ALTERNATIVE 1 TOTAL PROJECT WEF SWQ TREATMENT VOLUME DRY BASIN

WQBasin	Area acres	Post LID %Imperv	C	ModC	48-hr Po(in)	WEF WQV(af)	Dry Basin Volume (af)	WET BASIN PERM POOL VOLUME	COMBO BASIN TOTAL VOLUME	COMBO BASIN PERM POOL VOLUME	COMBO BASIN DRY POOL VOLUME	Optional for Grassy Swale
elder1	864.10	28.94		0.219	0.237	17.062	17.062	21.328	19.195	10.664	8.531	
elder2	37.60	42.54		0.294	0.318	0.995	0.995	1.244	1.119	0.622	0.498	
elder3	19.40	49.68		0.337	0.364	0.589	0.589	0.736	0.662	0.368	0.294	
elder4	10.30	56.98		0.387	0.417	0.358	0.358	0.448	0.403	0.224	0.179	
morrison1	370.80	37.10		0.264	0.285	8.794	8.794	10.993	9.894	5.496	4.397	
morrison2	4.40	27.57		0.212	0.229	0.084	0.084	0.105	0.094	0.052	0.042	X

Drawdown calculations for the outfall structures at the main Elder Creek and Morrison Creek Outfalls are provided in the "\Models\SWQ_LID" directory of the data files provided with this report. The drawdown is calculated such that no more than 75% of the design basin volume occurs in the 1st 24 hours, with most of the water draining in 48 hours.

6.2 LOW IMPACT DEVELOPMENT

The Sacramento Hydrograph Management Plan (HMP) requires the use of Low Impact Development Measures, which will be utilized within this plan. With the development of the HMP, a credit system has been developed to determine the amount of LID that is necessary with any individual project. At the time of development, individual project will be required to perform the credit system calculations. Table 5.2.1 demonstrates the imperviousness adjustment applied for LID improvements within each land use type of the project.

To determine the credits to apply to land uses, a sample area for each land use type was calculated using the Residential and Commercial LID calculators. Sample LID was assumed here to meet the 100 criteria, however, at final development the engineer may choose a different set of LID practices which also meet the 100% criteria for each land use.

For Residential Low Density Land Use, the following LID was included:

1. Disconnected roof drains (assumed 80%)
2. Separated pavement areas (30% divided sidewalks)
3. Interceptor trees (1 evergreen, 1 deciduous per lot)
4. Alternative Driveways (50%)
5. Amended Soils (500 sf per lot)

For Residential Medium Density Land Use, the following LID was included:

1. Disconnected roof drains (assumed 80%)
2. Separated pavement areas (25% divided sidewalks)
3. Interceptor trees (1 evergreen, 1 deciduous per lot)
4. Alternative Driveways (50%)
5. Amended Soils (285 sf per lot)

For Residential High Density Land Use, the following LID was included:

1. Disconnected roof drains (assumed 80%)
2. Separated pavement areas (50% divided sidewalks includes onsite)
3. Interceptor trees (10 evergreen, 10 deciduous per acre)
4. Alternative Driveways (25% of some paving areas)
5. Amended Soils (144 sf per unit)

For PQP and School Land Use, the following LID was included:

1. Disconnected pavement (assumed 20%)
2. Disconnected roof drains (75%)
3. Interceptor trees (10 evergreen, 10 deciduous per acre)

4. Alternative Pavement (25% of some paving areas)

For Roadway Land Use, the following LID was included:

1. Disconnected pavement (assumed 17%)
2. Interceptor trees (10 evergreen, 10 deciduous per acre)
3. Alternative Pavement (25% of some paving areas)
4. Amended Soils (385 sf per acre)

For Commercial Land Use, the following LID was included:

5. Disconnected pavement (assumed 20%)
6. Disconnected roof drains (75%)
7. Interceptor trees (10 evergreen, 10 deciduous per acre)
8. Amended Soils (335 sf per acre)

TABLE 6.2.1 – Impervious Area Reductions For LID by Land Use

Sacramento County Hydrologic Land Use Table			
Index	Description	Percent Impervious	LID Frac
1	Highways, Parking	95	0.48
2	Commercial, Offices	90	0.43
3	Intensive Industrial	85	0.43
4	Apartments, High Density Res.	80	0.24
5	Mobil Home Park	75	0.2
6	Condominiums, Medium Density Res.	70	0.157
7	Residential: 8-10 du/ac (20-25 du/ha), Ext. Indust.	60	0.12
8	Residential: 6-8 du/ac (15-20 du/ha), Low Dens. Res., School	50	0.077
9	Residential: 4-6 du/ac (10-15 du/ha)	40	0.07
10	Residential: 3-4 du/ac (7.5-10 du/ha)	30	0.065
11	Residential: 2-3 du/ac (5-7.5 du/ha)	25	0.06
12	Residential: 1-2 du/ac (2.5-5 du/ha)	20	0.055
13	Residential: 0.5-1 du/ac (1-2.5 du/ha)	15	0.05
14	Residential: 0.2-0.5 du/ac (0.5-1 du/ha), Ag Res	10	0.05
15	Residential: <0.2 du/ac (0.5 du/ha), Recreation	5	0

For the remaining Stormwater Quality and Hydrograph modification calculations performed in this plan, it was assumed the imperviousness changes shown in Table 5.2.1 were made for each type of development.

6.3 HYDROGRAPH MODIFICATION ATTENUATION SIZING

The SAHM program was used to perform continuous simulation analysis of the project drainage system and discharges to develop estimated Hydrograph Modification Attenuation sizing requirements for each discharge location within the project. Along the main creek areas of Elder Creek and Morrison Creek these will occur in the creek areas, regulated by outflow control devices as described here, and by the supplemental detention basins proposed for the Racetrack areas. For the remaining areas, detention basins could be built per the parameters described herein

or other practices, such as additional LID or best management practices could be used to mitigate the impacts.

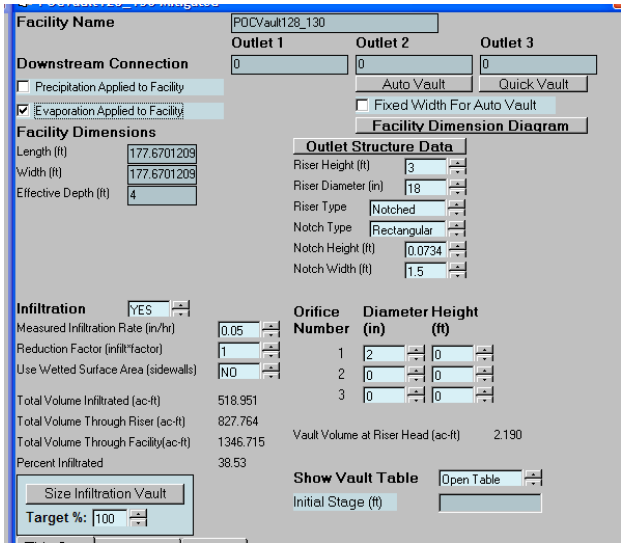
A pre-project watershed analysis was built from parameters used in the SACCALC model for the pre-project. For input to the SAHM analysis for post project conditions, each storm drain watershed was input using three input watersheds… One impervious shed for the Impervious area that would not be mitigated by LID, one Impervious shed for the area that would pass through LID measures, and one Non-impervious shed for the non-impervious areas. The impervious shed that would pass through LID was allowed to pass through the non-impervious shed to simulate the LID actions.

Models were built for each discharge location and attenuation mitigation volumes and control devises were computed as follows:

morrison 1 – No HMP features are required due to discharge to an existing quarry pit. (per county)

morrison 2 – No HMP Features are required (reduced area)

elder3 & elder 4 –Per table below:



TOTAL PROJECT SCENARIO for elder1 and elder2:

elder1 – Figure 6.3.1 shows the stage-storage and discharge relationships for the detention facility of the Total Project detention basin 1 location. Figure 6.3.2 graphically shows the discharge structure which includes a 10 inch low flow pipe, and 35 foot long overtopping weir at elevation 95.10.

Figure 6.3.1 – Total Project Detention 1 Stage-Storage-Discharge

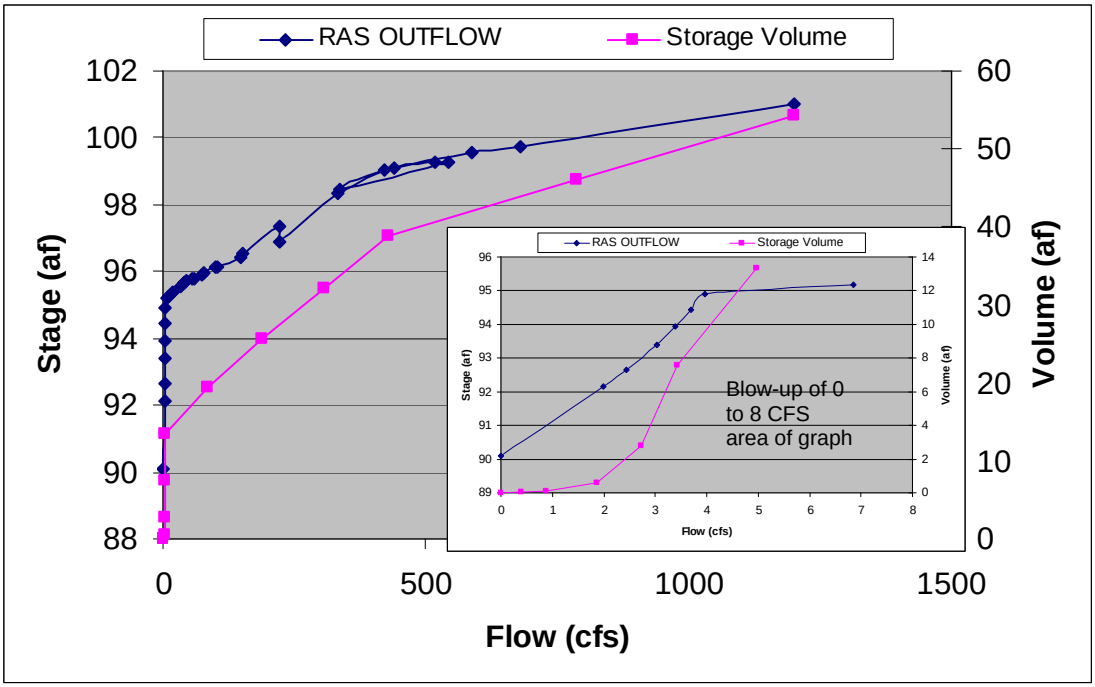
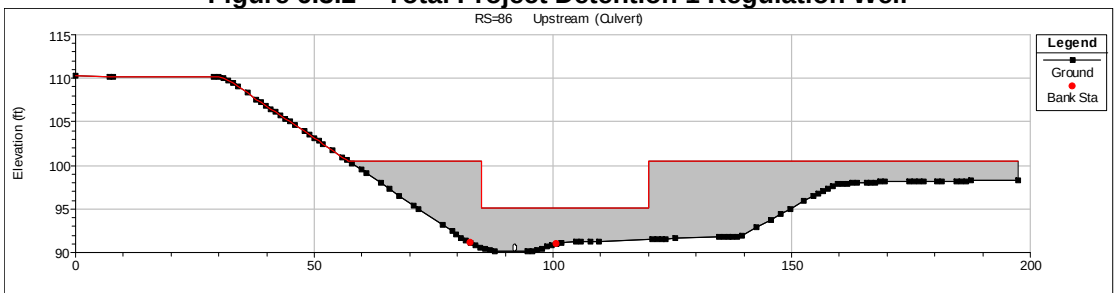


Figure 6.3.2 – Total Project Detention 1 Regulation Weir



elder2 – Figure 6.3.3 shows the stage-storage and discharge relationships for the detention facility of the Total Project detention basin 2 location. Figure 6.3.4 graphically shows the discharge structure which includes a 10 inch low flow pipe, V-notch weir(3.8'hx2'w Invert=91.2) and 15 foot long overtopping weir at elevation 95.10.

Figure 6.3.3 – Total Project Detention 2 Stage-Storage-Discharge

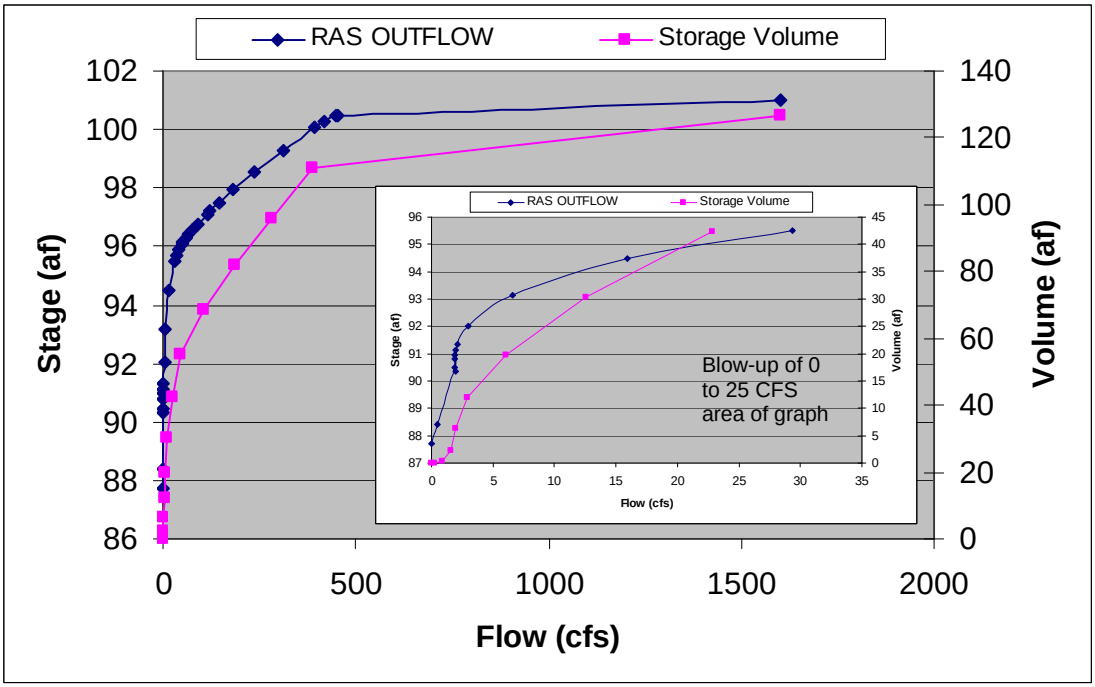
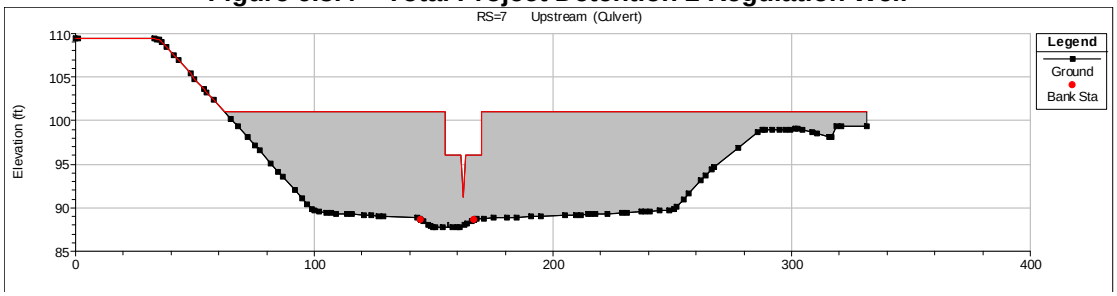


Figure 6.3.4 – Total Project Detention 2 Regulation Weir



ALTERNATIVE 1 PHASE 1 PROJECT SCENARIO for elder1:

elder1 – Figure 6.3.5 shows the stage-storage and discharge relationships for the detention facility of the Total Project detention basin 1 location. Figure 6.3.6 graphically shows the discharge structure which includes a 10 inch low flow pipe, V-notch weir (2.8'hx2'w) and 35 foot long overtopping weir at elevation 96.80.

Figure 6.3.5 – Total Project Detention 1 Stage-Storage-Discharge

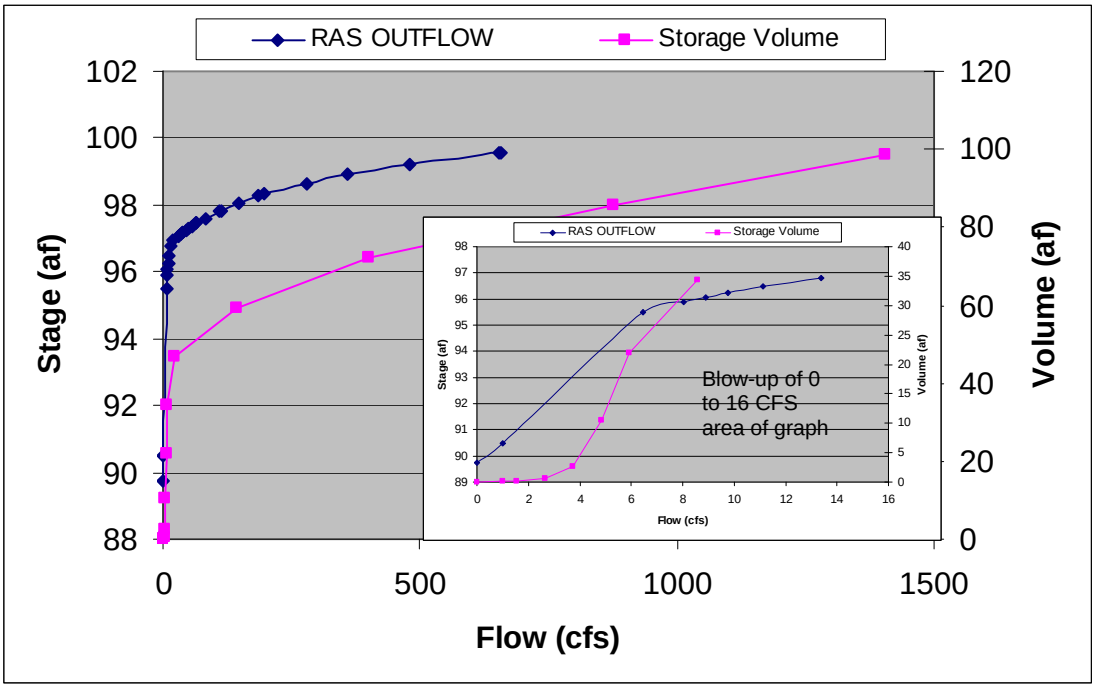
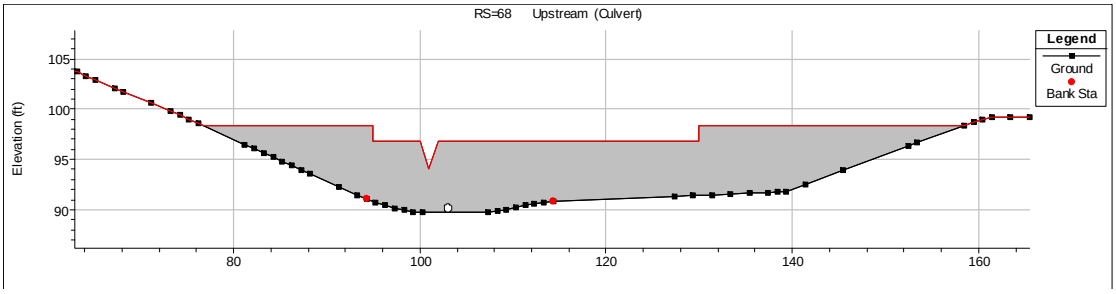


Figure 6.3.6 – Total Project Detention 1 Regulation Weir



ALTERNATIVE 1 PHASE 2 PROJECT SCENARIO for elder2:

elder2 – Figure 6.3.7 shows the stage-storage and discharge relationships for the detention facility of the Total Project detention basin 2 location. Figure 6.3.8 graphically shows the discharge structure which includes a 8 inch low flow pipe, V-notch weir(3.8'hx2'w Invert=91.2) and 15 foot long overtopping weir at elevation 96.00.

Figure 6.3.7 – Total Project Detention 2 Stage-Storage-Discharge

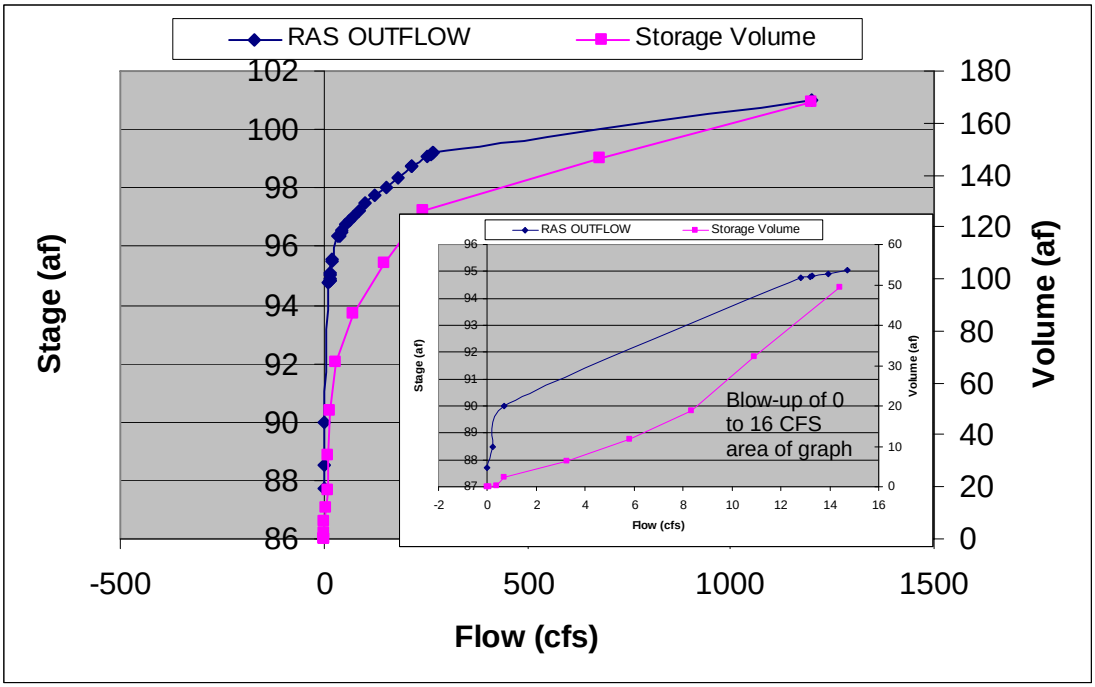
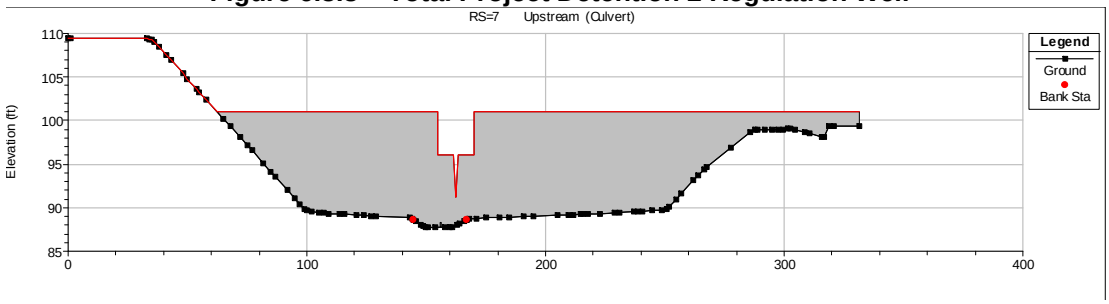


Figure 6.3.8 – Total Project Detention 2 Regulation Weir



7.0 Conclusion

The included master drainage study identifies improvements that the Jackson Township Master Plan will be required to install in order to collect, convey and discharge rain event's runoff per the County's requirements. The Total Project Plan and an Alternative for a Phased Plan are included. The project drainage improvements include:

- Drainage collection and pipe systems
- Drainage Corridors to convey runoff in open channels, and for detention of peak flow impact volumes.
- Drainage Corridors to perform treatment of stormwater quality prior to discharge.
- Drainage Corridors to perform hydrograph modification storage of runoff volumes, to mitigate potential impacts to the downstream geomorphology at all points of discharge.

Appendices

APPENDIX A

SACCALC (HYDROLOGIC) MODELS

Jackson Township

Existing Conditions

SacCalc Report

Sacramento Hydrologic Calculator Report

December 13, 2017 15:39

Project Title: Elder Gerber & Morrison Creek Trib - Jackson Township Pre-Project
Method: Sacramento County HEC-1 method
Comments: Elder Creek & Morrison Creek Watersheds Modified 6/2017 for Rev JT Anal - TSP
Date: 6/14/2017
Prepared by: TSP

Watershed Hydrologic Summary Data

Watershed	Area (acres)	Mean Elevation (ft)	Lag Times		Basin "n"		Loss Rates		Percent Impervious	
			Method	Lag Time (min)	Method	Basin "n"	Method	Loss Rate (in/hr)	Method	Impervious Area (%)
EL301	91.3	146	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL304	98.8	140	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL306	32.9	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL308	63.2	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL310	51.6	116	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL311	67	116	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL313	103.2	134	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL317	50.2	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL319	92.7	136	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL322	51.2	122	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL323	22.4	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL326	59.4	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL300	67	108	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL325	10.4	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
W4001	48.7	96	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL401	102.8	140	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL404	49.04	137	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3AA	416.4	67	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3CB	149.8	54.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3D	129.5	66.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3AP	112.6	68	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AA	45.9	63.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AP	154.2	61.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AB	177.8	53.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P1	3.6	59	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P2	13.9	59.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P3	7	57.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3BA	59.8	60.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3BB	11.6	60	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3CA	20.2	60.5	Travel Time	-	-	-	Computed	-	Computed	-
E2	629	69.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3	157.5	74	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3B	19.7	68.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3C	88.4	65.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3A	36.4	70.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B1	141.5	54.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B2	511.8	115	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C3	135.9	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2A	799.7	95.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3D	163.3	61.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3DB	50.2	59.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3A1	119.2	57	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3A2	18.2	54	Basin "n"	-	Computed	-	Computed	-	Computed	-
G4	104.4	58.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
G4A	128.5	57.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3DC	21.4	56.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G5	197.1	49	Basin "n"	-	Computed	-	Computed	-	Computed	-
NV3	21	50	Basin "n"	-	Computed	-	Computed	-	Computed	-
E5	142.6	53.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
E6	207.7	45.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7A	143.4	42.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7B	157.1	41.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7C	181.5	39.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
E8	154.4	40.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E9	280.7	34.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
E10	185.6	31.2	Basin "n"	-	Computed	-	Computed	-	Computed	-

E11	147.5	30.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E12	276.5	29.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
E13	100.2	27.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E14	891.8	20	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3E	64.7	58.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B2	332.6	57	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B3	141.5	55.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4A2	11.6	51.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
NV1	109	50.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BB	2.6	65.6	Travel Time	-	-	-	Computed	-	Computed	-
G2BA	119.78	75	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BC	4.9	79.7	Travel Time	-	-	-	Computed	-	Computed	-
G2BD	35.9	64.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BE	27.8	66.2	Travel Time	-	-	-	Computed	-	Computed	-
G2BF	33	64.8	Travel Time	-	-	-	Computed	-	Computed	-
G2BG	52.3	67.4	Travel Time	-	-	-	Computed	-	Computed	-
G2BH	17.4	69	Travel Time	-	-	-	Computed	-	Computed	-
G2BI	28.4	65.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BJ	77.7	62.9	Travel Time	-	-	-	Computed	-	Computed	-
G2A50	799.7	95.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C2	52.5	96.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B3	6.7	135	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B4	22.2	142	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B6	14.9	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B5	28.6	135	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B7	48.8	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C5	55.7	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C4	60	114	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C6	543.8	88	Basin "n"	-	Computed	-	Computed	-	Computed	-
W901	9.3	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
W107	28.2	104	Basin "n"	-	Computed	-	Computed	-	Computed	-
W105	28.6	105	Basin "n"	-	Computed	-	Computed	-	Computed	-
W106	72.9	98	Basin "n"	-	Computed	-	Computed	-	Computed	-
W101	60.5	111	Basin "n"	-	Computed	-	Computed	-	Computed	-
W208	6	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
W207	27.7	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
W206	30.8	123	Basin "n"	-	Computed	-	Computed	-	Computed	-
W204	56.1	135	Basin "n"	-	Computed	-	Computed	-	Computed	-
W803	15.5	98	Basin "n"	-	Computed	-	Computed	-	Computed	-
W802	53.4	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
W801	19.1	109	Basin "n"	-	Computed	-	Computed	-	Computed	-
W800	16.1	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
W108	6.5	109	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1A	885.18	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C	860.69	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL329	24.1	116	Basin "n"	-	Computed	-	Computed	-	Computed	-
W202	97.8	135	Basin "n"	-	Computed	-	Computed	-	Computed	-

Basin "n" Method Data for Lag Time Computation

Watershed	Channel Length (ft)	Centroid Length (ft)	Slope (ft/ft)	Channelization	Land Use Impervious Area Percent (% or acres)																
					95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	2	1	1*
EL301	2876	1845	.0028	Undeveloped																91.3		
				Developed																0		
EL304	2727	1376	.0039	Undeveloped												0	0			94.6		
				Developed												2.3	1.9			0		
EL306	760	322	.0064	Undeveloped												0	0			24.6		
				Developed												8	0.3			0		
EL308	1931	643	0.0029	Undeveloped												0	0			59.1		
				Developed												0.1	4			0		
EL310	2583	784	0.0049	Undeveloped	0											0				44.1		
				Developed	1.2											6.3				0		
EL311	1605	1172	0.0087	Undeveloped												0				66.3		
				Developed												0.6				0		
EL313	2753	1205	.0010	Undeveloped																103.2		
				Developed																0		
EL317	2234	1492	.0039	Undeveloped	0															48.9		
				Developed	1.4															0		
EL319	1929	988	.0054	Undeveloped																92.7		
				Developed																0		
EL322	2181	1065	.0129	Undeveloped	0															50.5		
				Developed	0.7															0		
EL323	1655	643	.0156	Undeveloped	0						0									11.9		
				Developed	2.2						8.3									0		
EL326	3291	1697	.0043	Undeveloped							0									59.1		
				Developed							0.3									0		
EL300	2314	1179	.0116	Undeveloped	0											0				56.5		
				Developed	0.6											9.9				0		
EL325	951	473	.0052	Undeveloped	0						0					0				3.6		
				Developed	0.1						5.9					0.9				0		
W4001	1850	925	0.0062	Undeveloped	0						0					0				24.3		
				Developed	2.2						10.4					11.7				0		
EL401	2209	1288	0.0025	Undeveloped	0												0	0		89.8		
				Developed	0.4												6.8	5.9		0		
EL404	2549	1127	0.0013	Undeveloped	0											0	0			43.4		
				Developed	0.8											3.5	1.3			0		
G3AA	8226	3782	.00236	Undeveloped	0	0		0		0		0	0		0	0	0		0	21.2		
				Developed	25.7	1.6		3		6.9		35.5	115.2		175.7	0.1	11.4		20.1	0		
G3CB	3200	1600	0.004	Undeveloped	0	0		0				0	0						0	20.2		
				Developed	9.9	2.9		7.4				48.4	50.3						10.7	0		
E3D	3951	2548	0.00276	Undeveloped	0	0				0		0			0	0	0	0	0	3.8		
				Developed	7.1	2				14.1		68.2			30.8	0.1	1.5	0.3	1.5	0		
G3AP	4812	2428	.00353	Undeveloped	0					0		0	0		0			0	0	40.8		
				Developed	5.4					0.6		2.1	46.4		12.9			0.8	3.5	0		
E4AA	1464	744	.0076	Undeveloped	0	0						0			0				0	0.2		
				Developed	3.9	11.7						18.4			3.2				8.5	0		
E4AP	3435	2161	.00359	Undeveloped	0	0		0				0	0		0		0		0	50.6		
				Developed	12	13.1		12.3				27.8	26.8		6		0.2		5.3	0		
E4AB	3948	1980	.00303	Undeveloped	0	0		0			0	0	0						0	25.5		
				Developed	13.1	1.2		14.6			5.3	18.2	77.5						22.1	0		
G3P1	634	326	0.0012	Undeveloped	0																	

Jackson Township

Full Development Conditions

SacCalc Report

Sacramento Hydrologic Calculator Report

December 13, 2017 15:40

Project Title: Elder Gerber - Jackson Township Post-Project

Method: Sacramento County HEC-1 method

Comments: Elder and Gerber Creek basins. Ultimate/Future Conditions with current Wildhawk Proposed conditions Revised sheds composited from several different models/studies. Includes preserves areas and subdivided shed E3. Includes Jackson Township portion of Morrison Creek. Also includes Vineyard Point as developed. Most routing removed as not required for RAS modeling.

Date:

Prepared by: TSP

Watershed Hydrologic Summary Data

Watershed	Area (acres)	Mean Elevation (ft)	Lag Times		Basin "n"		Loss Rates		Percent Impervious	
			Method	Lag Time (min)	Method	Basin "n"	Method	Loss Rate (in/hr)	Method	Impervious Area (%)
N291	19.638	96	Basin "n"	-	Computed	-	Computed	-	Computed	-
N223	0.901	109	Basin "n"	-	Computed	-	Computed	-	Computed	-
N228	15.5	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N227	13.443	109	Basin "n"	-	Computed	-	Computed	-	Computed	-
N231	5.527	103.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
N233	0.54	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N221	15.507	110.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
N235	1.36	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
N239	0.83	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N240	1.28	123	Basin "n"	-	Computed	-	Computed	-	Computed	-
N238	2.05	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N248	2.63	115	Basin "n"	-	Computed	-	Computed	-	Computed	-
N241	0.936	122	Basin "n"	-	Computed	-	Computed	-	Computed	-
N242	1.13	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N243	0.8	114	Basin "n"	-	Computed	-	Computed	-	Computed	-
N249	11.63	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
N245	1.44	110	Basin "n"	-	Computed	-	Computed	-	Computed	-
N246	0.59	105	Basin "n"	-	Computed	-	Computed	-	Computed	-
N250	9.18	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
N247	1.156	107.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
N530	0.564	111.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
N255	0.571	117.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
N257	7.65	116.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
N256	6.846	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N254	4.094	121.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
N252	0.732	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N251	19.87	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N259	1.429	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N261	10.85	106	Basin "n"	-	Computed	-	Computed	-	Computed	-
N526	1.194	129	Basin "n"	-	Computed	-	Computed	-	Computed	-
N524	1.225	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N290	18.76	96	Basin "n"	-	Computed	-	Computed	-	Computed	-
N283	0.627	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
N286	0.521	100.13	Basin "n"	-	Computed	-	Computed	-	Computed	-
N285	10.02	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N281	0.339	91	Basin "n"	-	Computed	-	Computed	-	Computed	-
N282	0.492	94	Basin "n"	-	Computed	-	Computed	-	Computed	-
N280	8.515	96	Basin "n"	-	Computed	-	Computed	-	Computed	-
N284	5.037	98	Basin "n"	-	Computed	-	Computed	-	Computed	-
N517	0.373	89.54	Basin "n"	-	Computed	-	Computed	-	Computed	-
N279	6.84	98.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
N276	5.68	100.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
N274	0.384	101	Basin "n"	-	Computed	-	Computed	-	Computed	-
N273	4.99	104	Basin "n"	-	Computed	-	Computed	-	Computed	-
N272	0.363	103	Basin "n"	-	Computed	-	Computed	-	Computed	-
N268	8.95	110	Basin "n"	-	Computed	-	Computed	-	Computed	-
N270	11.33	106	Basin "n"	-	Computed	-	Computed	-	Computed	-
N271	1.536	103	Basin "n"	-	Computed	-	Computed	-	Computed	-
N266	0.218	106	Basin "n"	-	Computed	-	Computed	-	Computed	-
N265	6.757	108	Basin "n"	-	Computed	-	Computed	-	Computed	-
N262	7.257	110	Basin "n"	-	Computed	-	Computed	-	Computed	-
N344	10.4	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
N333	7.323	124	Basin "n"	-	Computed	-	Computed	-	Computed	-

N336	6.737	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N338	6.733	116	Basin "n"	-	Computed	-	Computed	-	Computed	-
N339	8.408	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
N222	1.358	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
N224	0.612	106	Basin "n"	-	Computed	-	Computed	-	Computed	-
N230	0.431	103.22	Basin "n"	-	Computed	-	Computed	-	Computed	-
N275	0.313	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3AA	416.4	67	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3CB	149.8	54.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3D	129.5	66.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3AP	112.6	68	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AA	45.9	63.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AP	154.2	61.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AB	177.8	53.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P1	3.6	59	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P2	13.9	59.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P3	7	57.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3BA	59.8	60.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3BB	11.6	60	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3CA	20.2	60.5	Travel Time	-	-	-	Computed	-	Computed	-
E2	629	69.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3	157.5	74	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3B	19.7	68.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3C	88.4	65.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3A	36.4	70.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B1	141.5	54.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B2	511.8	115	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C3	134	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2A	799.7	95.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3D	163.3	61.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3DB	50.2	59.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3A1	119.2	57	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3A2	18.2	54	Basin "n"	-	Computed	-	Computed	-	Computed	-
G4	104.4	58.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
G4A	128.5	57.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3DC	21.4	56.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G5	223.3	49	Basin "n"	-	Computed	-	Computed	-	Computed	-
E5	142.6	53.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
E6	207.7	45.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7A	143.4	42.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7B	157.1	41.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7C	181.5	39.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
E8	154.4	40.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E9	280.7	34.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
E10	185.6	31.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
E11	147.5	30.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E12	276.5	29.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
E13	100.2	27.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E14	891.8	20	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3E	64.7	58.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B2	332.6	57	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B3	141.5	55.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4A2	11.6	51.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
NV1	109	50.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BB	2.6	65.6	Travel Time	-	-	-	Computed	-	Computed	-
G2BA	119.78	75	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BC	4.9	79.7	Travel Time	-	-	-	Computed	-	Computed	-
G2BD	35.9	64.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BE	27.8	66.2	Travel Time	-	-	-	Computed	-	Computed	-
G2BF	33	64.8	Travel Time	-	-	-	Computed	-	Computed	-
G2BG	52.3	67.4	Travel Time	-	-	-	Computed	-	Computed	-
G2BH	17.4	69	Travel Time	-	-	-	Computed	-	Computed	-
G2BI	28.4	65.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BJ	77.7	62.9	Travel Time	-	-	-	Computed	-	Computed	-
G2A50	799.7	95.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL401										

	39.6	142.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B3	6.7	136.55	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B4	22.3	141	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B6	14.9	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B5	28.5	135	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B7	48.8	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C5	55.7	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C4	58.5	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C6	542	87	Basin "n"	-	Computed	-	Computed	-	Computed	-
N500	1.896	93.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
N317	10.02	96	Basin "n"	-	Computed	-	Computed	-	Computed	-
N319	7.866	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
N318	0.708	93.65	Basin "n"	-	Computed	-	Computed	-	Computed	-
N320	0.322	95.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
N321	5.398	96.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
N325	0.525	96.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
N327	7.076	98	Basin "n"	-	Computed	-	Computed	-	Computed	-
N326	5.006	100.39	Basin "n"	-	Computed	-	Computed	-	Computed	-
N328	0.966	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
N329	8.081	104	Basin "n"	-	Computed	-	Computed	-	Computed	-
N332	7.726	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N330	0.438	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N315	1.373	106.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
N314	0.522	107	Basin "n"	-	Computed	-	Computed	-	Computed	-
N313	0.335	108	Basin "n"	-	Computed	-	Computed	-	Computed	-
N308	7.936	108	Basin "n"	-	Computed	-	Computed	-	Computed	-
N305	7.802	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
N297	7.793	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N300	7.796	116	Basin "n"	-	Computed	-	Computed	-	Computed	-
N345	0.981	129	Basin "n"	-	Computed	-	Computed	-	Computed	-
N349	8.479	129	Basin "n"	-	Computed	-	Computed	-	Computed	-
N350	9.002	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N353	12.067	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N352	8.603	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N358	0.84	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N357	0.838	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N356	0.825	129	Basin "n"	-	Computed	-	Computed	-	Computed	-
N361	70.085	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N367	5.87	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
N366	24.436	136	Basin "n"	-	Computed	-	Computed	-	Computed	-
N312	10.68	116	Basin "n"	-	Computed	-	Computed	-	Computed	-
N309	9.581	119	Basin "n"	-	Computed	-	Computed	-	Computed	-
N296	8.023	122	Basin "n"	-	Computed	-	Computed	-	Computed	-
N293	7.988	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N304	7.947	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N301	16.682	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N457	5.739	122	Basin "n"	-	Computed	-	Computed	-	Computed	-
N454	6.411	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N451	6.206	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N448	6.894	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N446	5.469	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N443	5.431	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N444	8.893	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N440	5.709	122	Basin "n"	-	Computed	-	Computed	-	Computed	-
N441	8.523	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
N436	6.363	124.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
N437	9.941	123	Basin "n"	-	Computed	-	Computed	-	Computed	-
N434	6.183	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N430	6.36	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N425	7.4	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N423	9.3	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N420	14	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N418	7.792	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N416	9.699	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N412	9.955	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N415										

	9.301	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N497	16.117	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
N506	18.046	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
N504	21.484	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
N511	9.841	109	Basin "n"	-	Computed	-	Computed	-	Computed	-
N509	22	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N513	19.24	114	Basin "n"	-	Computed	-	Computed	-	Computed	-
N398	5.479	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N395	9.806	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N405	10.144	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
N407	7.678	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N473	3.993	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N472	5.432	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
N471	6.589	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N467	5.6	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N465	27.2	135	Basin "n"	-	Computed	-	Computed	-	Computed	-
N462	11.6	138	Basin "n"	-	Computed	-	Computed	-	Computed	-
N391	16.212	130.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
N390	11.59	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N386	13.481	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N387	7.709	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N384	9.413	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
N383	11.641	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N490	18.7	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N492	10.3	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
N478	6.16	133.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL303	28.2	134	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL304	30.9	140	Basin "n"	-	Computed	-	Computed	-	Computed	-
N376	39.822	136	Basin "n"	-	Computed	-	Computed	-	Computed	-
W61	2.4	101.62	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL329	23.2	119.82	Basin "n"	-	Computed	-	Computed	-	Computed	-
NV3	21	50	Basin "n"	-	Computed	-	Computed	-	Computed	-
N529	1.9	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
EC30	3.17	123	Basin "n"	-	Computed	-	Computed	-	Computed	-
EC20	10.2	114.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
EC10	18.1	95.55	Basin "n"	-	Computed	-	Computed	-	Computed	-
MC10	8.3	87.66	Basin "n"	-	Computed	-	Computed	-	Computed	-
MC20	4.7	91	Basin "n"	-	Computed	-	Computed	-	Computed	-
N491	0.73	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N527	1.94	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL402	35	143	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL403	28.2	138	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL404	22.1	137	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL405	19.25	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL301	32.3	141	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL302	30.8	140	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL305	22.5	132	Basin "n"	-	Computed	-	Computed	-	Computed	-

Basin "n" Method Data for Lag Time Computation

Watershed	Channel Length (ft)	Centroid Length (ft)	Slope (ft/ft)	Channelization	Land Use Impervious Area Percent (% or acres)																
					95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	2	1	1*
N291	835	359	0.0001	Undeveloped	0			0														
				Developed	3.06			16.58														
N223	394	175	0.014	Undeveloped	0															0.145		
				Developed	0.757															0		
N228	892	403	0.0115	Undeveloped	0						0									0.57		
				Developed	1.368						13.558									0		
N227	1059	450	0.0001	Undeveloped	0								0							0.701		
				Developed	0.037								12.705							0		
N231	505	193	0.0122	Undeveloped	0														4.972			
				Developed	0.555														0			
N233	364	190	0.010	Undeveloped	0								0							0.014		
				Developed	0.526								0.001							0		
N221	660	216	0.0132	Undeveloped	0															15.44		
				Developed	0.066															0		
N235	549	203	0.0287	Undeveloped															0.322	1.034		
				Developed															0	0		
N239	240	208	.0068	Undeveloped	0															0.019		
				Developed	0.813															0		
N240	394	149	0.0072	Undeveloped	0															0.019		
				Developed	0.813															0		
N238	785	328	0.0087	Undeveloped	0														0.007	0.069		
				Developed	1.971														0	0		
N248	356	96	0.0222	Undeveloped																2.634		
				Developed																0		
N241	363	188	0.0146	Undeveloped	0																	

Jackson Township

Phased Development Conditions
Phase1

SacCalc Report

Sacramento Hydrologic Calculator Report

December 13, 2017 15:41

Project Title: Elder Gerber - Jackson Township Post-Project

Method: Sacramento County HEC-1 method

Comments: Elder and Gerber Creek basins. Ultimate/Future Conditions with current Wildhawk Proposed conditions Revised sheds composited from several different models/studies. Includes preserves areas and subdivided shed E3. Includes Jackson Township portion of Morrison Creek. Also includes Vineyard Point as developed. Most routing removed as not required for RAS modeling. This version Alt1Ph1 for JT Development.

Date:

Prepared by: jdh

Watershed Hydrologic Summary Data

Watershed	Area (acres)	Mean Elevation (ft)	Lag Times		Basin "n"		Loss Rates		Percent Impervious	
			Method	Lag Time (min)	Method	Basin "n"	Method	Loss Rate (in/hr)	Method	Impervious Area (%)
WS803	5.5	89	Basin "n"	-	Computed	-	Computed	-	Computed	-
WS802	22.3	99	Basin "n"	-	Computed	-	Computed	-	Computed	-
WS400	48.701	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
WS801	19.1	109	Basin "n"	-	Computed	-	Computed	-	Computed	-
WS800	16.1	111	Basin "n"	-	Computed	-	Computed	-	Computed	-
WS104	7.7	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL325	10	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL327	6.4	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL323	16.2	106	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL318	7.2	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL320	19.5	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL321	5.7	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL322	28.5	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N291	19.638	96	Basin "n"	-	Computed	-	Computed	-	Computed	-
N223	0.901	109	Basin "n"	-	Computed	-	Computed	-	Computed	-
N228	15.5	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N227	13.443	109	Basin "n"	-	Computed	-	Computed	-	Computed	-
N231	5.527	103.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
N233	0.54	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N221	15.507	110.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
N235	1.36	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N239	0.83	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N240	1.28	123	Basin "n"	-	Computed	-	Computed	-	Computed	-
N238	2.05	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N248	2.63	115	Basin "n"	-	Computed	-	Computed	-	Computed	-
N241	0.936	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
N242	1.13	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N243	0.8	114	Basin "n"	-	Computed	-	Computed	-	Computed	-
N249	11.63	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
N245	1.44	110	Basin "n"	-	Computed	-	Computed	-	Computed	-
N246	0.59	105	Basin "n"	-	Computed	-	Computed	-	Computed	-
N250	9.18	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
N247	1.156	107.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
N530	0.564	111.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
N255	0.571	117.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
N257	7.65	116.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
N256	6.49	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N254	3.87	121.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
N252	0.732	123	Basin "n"	-	Computed	-	Computed	-	Computed	-
N251	19.15	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N259	1.429	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N261	10.85	106	Basin "n"	-	Computed	-	Computed	-	Computed	-
N526	1.194	129	Basin "n"	-	Computed	-	Computed	-	Computed	-
N524	1.225	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N290	18.924	96	Basin "n"	-	Computed	-	Computed	-	Computed	-
N517	0.373	89.54	Basin "n"	-	Computed	-	Computed	-	Computed	-
N279	6.84	98.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
N276	5.68	100.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
N274	0.384	101	Basin "n"	-	Computed	-	Computed	-	Computed	-
N273	4.99	104	Basin "n"	-	Computed	-	Computed	-	Computed	-
N272	0.363	103	Basin "n"	-	Computed	-	Computed	-	Computed	-
N265	6.365	108	Basin "n"	-	Computed	-	Computed	-	Computed	-
N262	6.816	110	Basin "n"	-	Computed	-	Computed	-	Computed	-

N344	9.87	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
N222	1.358	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
N224	0.612	106	Basin "n"	-	Computed	-	Computed	-	Computed	-
N230	0.431	103.22	Basin "n"	-	Computed	-	Computed	-	Computed	-
N275	0.313	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3AA	416.4	67	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3CB	149.8	54.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3D	129.5	66.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3AP	112.6	68	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AA	45.9	63.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AP	154.2	61.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AB	177.8	53.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P1	3.6	59	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P2	13.9	59.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P3	7	57.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3BA	59.8	60.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3BB	11.6	60	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3CA	20.2	60.5	Travel Time	-	-	-	Computed	-	Computed	-
E2	629	69.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3	157.5	74	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3B	19.7	68.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3C	88.4	65.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3A	36.4	70.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B1	141.5	54.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B2	511.8	115	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C3	134	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2A	799.7	95.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3D	163.3	61.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3DB	50.2	59.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3A1	119.2	57	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3A2	18.2	54	Basin "n"	-	Computed	-	Computed	-	Computed	-
G4	104.4	58.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
G4A	128.5	57.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3DC	21.4	56.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G5	223.3	49	Basin "n"	-	Computed	-	Computed	-	Computed	-
E5	142.6	53.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
E6	207.7	45.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7A	143.4	42.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7B	157.1	41.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7C	181.5	39.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
E8	154.4	40.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E9	280.7	34.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
E10	185.6	31.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
E11	147.5	30.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E12	276.5	29.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
E13	100.2	27.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E14	891.8	20	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3E	64.7	58.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B2	332.6	57	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B3	141.5	55.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4A2	11.6	51.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
NV1	109	50.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BB	2.6	65.6	Travel Time	-	-	-	Computed	-	Computed	-
G2BA	119.78	75	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BC	4.9	79.7	Travel Time	-	-	-	Computed	-	Computed	-
G2BD	35.9	64.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BE	27.8	66.2	Travel Time	-	-	-	Computed	-	Computed	-
G2BF	33	64.8	Travel Time	-	-	-	Computed	-	Computed	-
G2BG	52.3	67.4	Travel Time	-	-	-	Computed	-	Computed	-
G2BH	17.4	69	Travel Time	-	-	-	Computed	-	Computed	-
G2BI	28.4	65.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BJ	77.7	62.9	Travel Time	-	-	-	Computed	-	Computed	-
G2A50	799.7	95.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL401	39.6	140	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B3	6.7	136	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B4										

	22.3	141	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B6	14.9	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B5	28.5	135	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B7	48.8	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C5	55.7	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C4	58.5	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C6	542	87	Basin "n"	-	Computed	-	Computed	-	Computed	-
N345	0.482	129	Basin "n"	-	Computed	-	Computed	-	Computed	-
N358	0.32	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N357	0.353	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N356	0.374	129	Basin "n"	-	Computed	-	Computed	-	Computed	-
N361	70.085	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N367	5.87	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
N366	24.436	136	Basin "n"	-	Computed	-	Computed	-	Computed	-
N312	10.68	116	Basin "n"	-	Computed	-	Computed	-	Computed	-
N309	9.581	119	Basin "n"	-	Computed	-	Computed	-	Computed	-
N296	8.023	122	Basin "n"	-	Computed	-	Computed	-	Computed	-
N293	7.988	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N304	7.947	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N301	16.682	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N457	5.739	122	Basin "n"	-	Computed	-	Computed	-	Computed	-
N454	6.411	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N451	6.206	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N448	6.894	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N446	5.469	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N443	5.431	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N444	8.893	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N440	5.709	122	Basin "n"	-	Computed	-	Computed	-	Computed	-
N441	8.523	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
N436	6.363	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N437	9.941	123	Basin "n"	-	Computed	-	Computed	-	Computed	-
N434	6.183	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N430	6.36	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N425	7.4	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N423	9.3	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N420	14	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N418	7.792	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N416	9.699	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N412	9.955	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N415	9.301	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N497	8.43	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
N509	22	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N513	19.24	114	Basin "n"	-	Computed	-	Computed	-	Computed	-
N398	5.479	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
N395	9.806	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N405	10.144	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
N407	7.678	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N473	3.993	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N472	5.432	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
N471	6.589	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N467	5.6	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N465	27.2	135	Basin "n"	-	Computed	-	Computed	-	Computed	-
N462	11.6	138	Basin "n"	-	Computed	-	Computed	-	Computed	-
N391	16.212	130.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
N390	11.59	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N386	13.481	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N387	7.709	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N384	9.413	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
N383	11.641	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N490	18.7	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N492	10.3	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
N478	6.16	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL303	28.2	134	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL304	30.9	140	Basin "n"	-	Computed	-	Computed	-	Computed	-
N376	39.822	136	Basin "n"	-	Computed	-	Computed	-	Computed	-
W61										

	2.4	101.62	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL329	23.2	119.82	Basin "n"	-	Computed	-	Computed	-	Computed	-
NV3	21	50	Basin "n"	-	Computed	-	Computed	-	Computed	-
N529	1.9	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
EC30	3.2	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
EC20	13.827	104	Basin "n"	-	Computed	-	Computed	-	Computed	-
EC10	20.289	95.55	Basin "n"	-	Computed	-	Computed	-	Computed	-
MC10	8.3	87.66	Basin "n"	-	Computed	-	Computed	-	Computed	-
MC20	4.7	91	Basin "n"	-	Computed	-	Computed	-	Computed	-
N491	0.73	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N527	1.94	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL402	35	143	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL403	28.2	138	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL404	22.1	137	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL405	19.25	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL301	32.3	146	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL302	30.8	140	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL305	22.5	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL300	40.368	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL312	2.27	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL328	4.371	100	Basin "n"	-	Computed	-	Computed	-	Computed	-

Basin "n" Method Data for Lag Time Computation

Watershed	Channel Length (ft)	Centroid Length (ft)	Slope (ft/ft)	Channelization	Land Use Impervious Area Percent (% or acres)																
					95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	2	1	1*
WS803	403	294	.0022	Undeveloped	0															5.3		
				Developed	0.2															0		
WS802	1148	456	.0088	Undeveloped	0						0			0						18.6		
				Developed	1.7						1.3			0.8						0		
WS400	905	526	.0048	Undeveloped	0						0					0				22.566		
				Developed	3.973						10.425					11.733				0		
WS801	1693	413	.0018	Undeveloped	0						0									17.8		
				Developed	1.2						0.1									0		
WS800	580	306	.0010	Undeveloped																16.1		
				Developed																0		
WS104	506	118	.0364	Undeveloped																7.7		
				Developed																0		
EL325	725	531	.0056	Undeveloped	0						0					0				3.1		
				Developed	0.1						5.9					0.9				0		
EL327	1093	559	.0092	Undeveloped							0									6.1		
				Developed							0.3									0		
EL323	1718	928	.0090	Undeveloped	0						0									5.7		
				Developed	2.2						8.3									0		
EL318	1175	451	.0093	Undeveloped	0															5.8		
				Developed	1.4															0		
EL320																						

Jackson Township

Phased Development Conditions
Phase2

SacCalc Report

Sacramento Hydrologic Calculator Report

December 13, 2017 15:41

Project Title: Elder Gerber - Jackson Township Post-Project

Method: Sacramento County HEC-1 method

Comments: Elder and Gerber Creek basins. Ultimate/Future Conditions with current Wildhawk Proposed conditions Revised sheds composited from several different models/studies. Includes preserves areas and subdivided shed E3. Includes Jackson Township portion of Morrison Creek. Also includes Vineyard Point as developed. Most routing removed as not required for RAS modeling.

Date:

Prepared by: jdh

Watershed Hydrologic Summary Data

Watershed	Area (acres)	Mean Elevation (ft)	Lag Times		Basin "n"		Loss Rates		Percent Impervious	
			Method	Lag Time (min)	Method	Basin "n"	Method	Loss Rate (in/hr)	Method	Impervious Area (%)
N291	19.638	96	Basin "n"	-	Computed	-	Computed	-	Computed	-
N223	0.901	109	Basin "n"	-	Computed	-	Computed	-	Computed	-
N228	15.5	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N227	13.443	109	Basin "n"	-	Computed	-	Computed	-	Computed	-
N231	5.527	103.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
N233	0.54	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N221	15.507	110.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
N235	1.36	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N239	0.83	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N240	1.28	123	Basin "n"	-	Computed	-	Computed	-	Computed	-
N238	2.05	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N248	2.63	115	Basin "n"	-	Computed	-	Computed	-	Computed	-
N241	0.936	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
N242	1.13	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N243	0.8	114	Basin "n"	-	Computed	-	Computed	-	Computed	-
N249	11.63	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
N245	1.44	110	Basin "n"	-	Computed	-	Computed	-	Computed	-
N246	0.59	105	Basin "n"	-	Computed	-	Computed	-	Computed	-
N250	9.18	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
N247	1.156	107.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
N530	0.564	111.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
N255	0.571	117.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
N257	7.65	116.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
N256	6.846	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N254	4.094	121.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
N252	0.732	123	Basin "n"	-	Computed	-	Computed	-	Computed	-
N251	19.87	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N259	1.429	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N261	10.85	106	Basin "n"	-	Computed	-	Computed	-	Computed	-
N526	1.194	129	Basin "n"	-	Computed	-	Computed	-	Computed	-
N524	1.225	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N290	18.76	96	Basin "n"	-	Computed	-	Computed	-	Computed	-
N283	0.627	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
N286	0.521	100.13	Basin "n"	-	Computed	-	Computed	-	Computed	-
N285	10.02	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N281	0.339	91	Basin "n"	-	Computed	-	Computed	-	Computed	-
N282	0.492	94	Basin "n"	-	Computed	-	Computed	-	Computed	-
N280	8.515	96	Basin "n"	-	Computed	-	Computed	-	Computed	-
N284	5.037	98	Basin "n"	-	Computed	-	Computed	-	Computed	-
N517	0.373	89.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
N279	6.84	98.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
N276	5.68	100.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
N274	0.384	101	Basin "n"	-	Computed	-	Computed	-	Computed	-
N273	4.99	104	Basin "n"	-	Computed	-	Computed	-	Computed	-
N272	0.363	103	Basin "n"	-	Computed	-	Computed	-	Computed	-
N268	8.95	110	Basin "n"	-	Computed	-	Computed	-	Computed	-
N270	11.33	106	Basin "n"	-	Computed	-	Computed	-	Computed	-
N271	1.536	103	Basin "n"	-	Computed	-	Computed	-	Computed	-
N266	0.218	106	Basin "n"	-	Computed	-	Computed	-	Computed	-
N265	6.757	108	Basin "n"	-	Computed	-	Computed	-	Computed	-
N262	7.257	110	Basin "n"	-	Computed	-	Computed	-	Computed	-
N344	10.4	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
N333	7.323	124	Basin "n"	-	Computed	-	Computed	-	Computed	-

N336	6.737	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N338	6.733	116	Basin "n"	-	Computed	-	Computed	-	Computed	-
N339	8.408	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
N222	1.358	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
N224	0.612	106	Basin "n"	-	Computed	-	Computed	-	Computed	-
N230	0.431	103.22	Basin "n"	-	Computed	-	Computed	-	Computed	-
N275	0.313	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3AA	416.4	67	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3CB	149.8	54.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3D	129.5	66.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3AP	112.6	68	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AA	45.9	63.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AP	154.2	61.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4AB	177.8	53.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P1	3.6	59	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P2	13.9	59.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3P3	7	57.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3BA	59.8	60.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3BB	11.6	60	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3CA	20.2	60.5	Travel Time	-	-	-	Computed	-	Computed	-
E2	629	69.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3	157.5	74	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3B	19.7	68.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3C	88.4	65.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3A	36.4	70.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B1	141.5	54.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B2	511.8	115	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C3	134	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2A	799.7	95.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3D	163.3	61.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3DB	50.2	59.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3A1	119.2	57	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3A2	18.2	54	Basin "n"	-	Computed	-	Computed	-	Computed	-
G4	104.4	58.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
G4A	128.5	57.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
G3DC	21.4	56.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
G5	223.3	49	Basin "n"	-	Computed	-	Computed	-	Computed	-
E5	142.6	53.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
E6	207.7	45.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7A	143.4	42.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7B	157.1	41.1	Basin "n"	-	Computed	-	Computed	-	Computed	-
E7C	181.5	39.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
E8	154.4	40.6	Basin "n"	-	Computed	-	Computed	-	Computed	-
E9	280.7	34.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
E10	185.6	31.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
E11	147.5	30.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E12	276.5	29.2	Basin "n"	-	Computed	-	Computed	-	Computed	-
E13	100.2	27.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E14	891.8	20	Basin "n"	-	Computed	-	Computed	-	Computed	-
E3E	64.7	58.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B2	332.6	57	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4B3	141.5	55.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
E4A2	11.6	51.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
NV1	109	50.9	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BB	2.6	65.6	Travel Time	-	-	-	Computed	-	Computed	-
G2BA	119.78	75	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BC	4.9	79.7	Travel Time	-	-	-	Computed	-	Computed	-
G2BD	35.9	64.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BE	27.8	66.2	Travel Time	-	-	-	Computed	-	Computed	-
G2BF	33	64.8	Travel Time	-	-	-	Computed	-	Computed	-
G2BG	52.3	67.4	Travel Time	-	-	-	Computed	-	Computed	-
G2BH	17.4	69	Travel Time	-	-	-	Computed	-	Computed	-
G2BI	28.4	65.3	Basin "n"	-	Computed	-	Computed	-	Computed	-
G2BJ	77.7	62.9	Travel Time	-	-	-	Computed	-	Computed	-
G2A50	799.7	95.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL401										

	39.6	140	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B3	6.7	136	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B4	22.3	141	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B6	14.9	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B5	28.5	135	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1B7	48.8	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C5	55.7	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C4	58.5	113	Basin "n"	-	Computed	-	Computed	-	Computed	-
E1C6	542	87	Basin "n"	-	Computed	-	Computed	-	Computed	-
N500	1.896	93.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
N317	10.02	96	Basin "n"	-	Computed	-	Computed	-	Computed	-
N319	7.866	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
N318	0.708	93.65	Basin "n"	-	Computed	-	Computed	-	Computed	-
N320	0.322	95.5	Basin "n"	-	Computed	-	Computed	-	Computed	-
N321	5.398	96.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
N325	0.525	96.8	Basin "n"	-	Computed	-	Computed	-	Computed	-
N327	7.076	98	Basin "n"	-	Computed	-	Computed	-	Computed	-
N326	5.006	100.39	Basin "n"	-	Computed	-	Computed	-	Computed	-
N328	0.966	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
N329	8.081	104	Basin "n"	-	Computed	-	Computed	-	Computed	-
N332	7.726	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N330	0.438	102	Basin "n"	-	Computed	-	Computed	-	Computed	-
N315	1.373	106.7	Basin "n"	-	Computed	-	Computed	-	Computed	-
N314	0.522	107	Basin "n"	-	Computed	-	Computed	-	Computed	-
N313	0.335	108	Basin "n"	-	Computed	-	Computed	-	Computed	-
N308	7.936	108	Basin "n"	-	Computed	-	Computed	-	Computed	-
N305	7.802	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
N297	7.793	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N300	7.796	116	Basin "n"	-	Computed	-	Computed	-	Computed	-
N345	0.981	129	Basin "n"	-	Computed	-	Computed	-	Computed	-
N349	8.479	129	Basin "n"	-	Computed	-	Computed	-	Computed	-
N350	9.002	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N353	12.067	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N352	8.603	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N358	0.84	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N357	0.838	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N356	0.825	129	Basin "n"	-	Computed	-	Computed	-	Computed	-
N361	70.085	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N367	5.87	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
N366	24.436	136	Basin "n"	-	Computed	-	Computed	-	Computed	-
N312	10.68	116	Basin "n"	-	Computed	-	Computed	-	Computed	-
N309	9.581	119	Basin "n"	-	Computed	-	Computed	-	Computed	-
N296	8.023	122	Basin "n"	-	Computed	-	Computed	-	Computed	-
N293	7.988	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N304	7.947	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N301	16.682	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N457	5.739	122	Basin "n"	-	Computed	-	Computed	-	Computed	-
N454	6.411	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N451	6.206	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N448	6.894	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N446	5.469	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N443	5.431	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N444	8.893	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N440	5.709	122	Basin "n"	-	Computed	-	Computed	-	Computed	-
N441	8.523	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
N436	6.363	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N437	9.941	123	Basin "n"	-	Computed	-	Computed	-	Computed	-
N434	6.183	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N430	6.36	128	Basin "n"	-	Computed	-	Computed	-	Computed	-
N425	7.4	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N423	9.3	120	Basin "n"	-	Computed	-	Computed	-	Computed	-
N420	14	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N418	7.792	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N416	9.699	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N412	9.955	125	Basin "n"	-	Computed	-	Computed	-	Computed	-
N415										

	9.301	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N497	8.43	112	Basin "n"	-	Computed	-	Computed	-	Computed	-
N506	18.046	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
N504	21.484	100	Basin "n"	-	Computed	-	Computed	-	Computed	-
N511	9.841	109	Basin "n"	-	Computed	-	Computed	-	Computed	-
N509	22	118	Basin "n"	-	Computed	-	Computed	-	Computed	-
N513	19.24	114	Basin "n"	-	Computed	-	Computed	-	Computed	-
N398	5.479	121	Basin "n"	-	Computed	-	Computed	-	Computed	-
N395	9.806	126	Basin "n"	-	Computed	-	Computed	-	Computed	-
N405	10.144	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
N407	7.678	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N473	3.993	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N472	5.432	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
N471	6.589	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N467	5.6	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N465	27.2	135	Basin "n"	-	Computed	-	Computed	-	Computed	-
N462	11.6	138	Basin "n"	-	Computed	-	Computed	-	Computed	-
N391	16.212	130.4	Basin "n"	-	Computed	-	Computed	-	Computed	-
N390	11.59	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N386	13.481	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N387	7.709	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
N384	9.413	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
N383	11.641	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
N490	18.7	124	Basin "n"	-	Computed	-	Computed	-	Computed	-
N492	10.3	130	Basin "n"	-	Computed	-	Computed	-	Computed	-
N478	6.16	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL303	28.2	134	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL304	30.9	140	Basin "n"	-	Computed	-	Computed	-	Computed	-
N376	39.822	136	Basin "n"	-	Computed	-	Computed	-	Computed	-
W61	2.4	101.62	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL329	23.2	119.82	Basin "n"	-	Computed	-	Computed	-	Computed	-
NV3	21	50	Basin "n"	-	Computed	-	Computed	-	Computed	-
N529	1.9	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
EC30	3.17	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
EC20	10.2	104	Basin "n"	-	Computed	-	Computed	-	Computed	-
EC10	18.1	95.55	Basin "n"	-	Computed	-	Computed	-	Computed	-
MC10	8.3	87.66	Basin "n"	-	Computed	-	Computed	-	Computed	-
MC20	4.7	91	Basin "n"	-	Computed	-	Computed	-	Computed	-
N491	0.73	127	Basin "n"	-	Computed	-	Computed	-	Computed	-
N527	1.94	131	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL402	35	143	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL403	28.2	138	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL404	22.1	137	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL405	19.25	133	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL301	32.3	146	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL302	30.8	140	Basin "n"	-	Computed	-	Computed	-	Computed	-
EL305	22.5	132	Basin "n"	-	Computed	-	Computed	-	Computed	-
EC10S	6.3	100	Basin "n"	-	Computed	-	Computed	-	Computed	-

Basin “n” Method Data for Lag Time Computation

Watershed	Channel Length (ft)	Centroid Length (ft)	Slope (ft/ft)	Channelization	Land Use Impervious Area Percent (% or acres)																	
					95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	2	1	1*
N291	835	359	0.0001	Undeveloped	0			0														
				Developed	3.06			16.58														
N223	394	175	.014	Undeveloped	0															0.145		
				Developed	0.757															0		
N228	892	403	0.0115	Undeveloped	0						0									0.57		
				Developed	1.368						13.558									0		
N227	1059	450	0.0001	Undeveloped	0								0							0.701		
				Developed	0.037								12.705							0		
N231	505	193	0.0122	Undeveloped	0														4.972			
				Developed	0.555														0			
N233	364	190	0.010	Undeveloped	0								0							0.014		
				Developed	0.526								0.001							0		
N221	660	216	0.0132	Undeveloped	0															15.44		
				Developed	0.066															0		
N235	549	203	0.0287	Undeveloped															0.322	1.034		

APPENDIX B

RAS (HYDRAULIC) MODELS

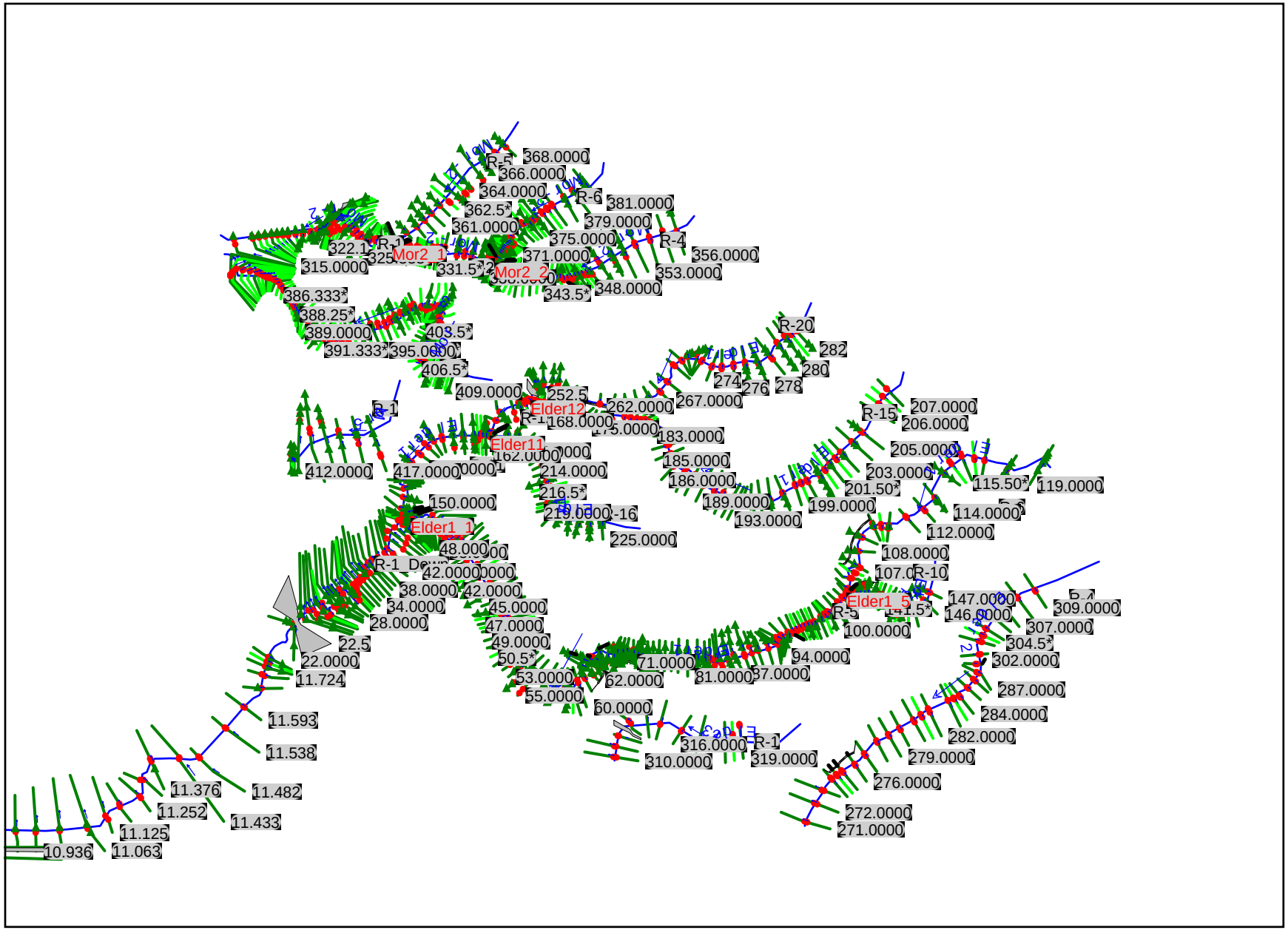
Jackson Township

Existing Conditions

RAS Model Layout

and

10 & 100-Year Summary Results



R-5
368.0000
366.0000
364.0000
R-6
381.0000
362.5*
361.0000
379.0000
375.0000
R-4
356.0000
322.1
R-1
325
Mor2_1
371.0000
315.0000
331.5*
Mor2_2
353.0000
343.5*
348.0000
386.333*
388.25*
389.0000
403.5*
391.333*
395.0000
406.5*
409.0000
R-20
282
280
274
276
278
252.5
Elder12
262.0000
267.0000
R-1
168.0000
R-15
207.0000
206.0000
Elder11
183.0000
205.0000
412.0000
417.0000
214.0000
185.0000
203.0000
186.0000
115.50*
119.0000
216.5*
201.50*
150.0000
189.0000
199.0000
114.0000
Elder1_1
193.0000
112.0000
225.0000
48.0000
108.0000
R-1
42.0000
38.0000
42.0000
R-10
34.0000
45.0000
Elder1_5
147.0000
309.0000
28.0000
47.0000
R-5
146.0000
307.0000
100.0000
22.5
49.0000
304.5*
22.0000
50.5*
71.0000
94.0000
302.0000
11.724
53.0000
62.0000
81.0000
37.0000
287.0000
55.0000
60.0000
11.593
284.0000
316.0000
R-1
282.0000
11.538
310.0000
319.0000
279.0000
11.376
11.482
276.0000
11.252
11.433
272.0000
11.125
271.0000
10.936
11.063

HEC-RAS Plan: EGJTPRE100y24h88 Profile: Max WS

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Mor-2	R-1	327.0000	Max WS	102.42	86.52	88.54		88.59	0.010015	2.15	58.54	143.77	0.34
Mor-2	R-1	326.5*	Max WS	102.40	85.61	87.69		87.78	0.015491	2.70	45.97	74.14	0.42
Mor-2	R-1	326.0000	Max WS	102.39	84.70	87.06		87.10	0.005501	1.79	63.71	68.00	0.26
Mor-2	R-1	325.666*	Max WS	103.10	83.77	86.38		86.47	0.011800	2.34	44.20	36.75	0.37
Mor-2	R-1	325.333*	Max WS	103.80	82.83	85.46		85.55	0.013508	2.49	41.69	33.22	0.39
Mor-2	R-1	325.0000	Max WS	104.50	81.90	84.57		84.66	0.011171	2.44	42.81	30.34	0.36
Mor-2	R-1	324.666*	Max WS	105.23	81.37	83.72		83.79	0.011617	2.18	48.26	42.17	0.36
Mor-2	R-1	324.333*	Max WS	105.97	80.84	82.54		82.62	0.019332	2.30	45.98	54.42	0.44
Mor-2	R-1	324.0000	Max WS	106.69	80.31	81.30		81.34	0.014344	1.81	68.32	198.83	0.37
Mor-2	R-1	323.666*	Max WS	107.48	79.20	80.23		80.26	0.011809	1.62	77.33	197.87	0.34
Mor-2	R-1	323.333*	Max WS	108.27	78.08	79.04		79.08	0.016743	1.70	70.77	198.25	0.39
Mor-2	R-1	323.0000	Max WS	108.87	76.97	78.32		78.32	0.000934	0.55	193.49	304.89	0.10
Mor-2	R-1	322.7*	Max WS	110.26	76.18	78.23		78.24	0.001317	0.70	175.14	337.07	0.12
Mor-2	R-1	322.4*	Max WS	110.19	75.39	78.12		78.13	0.001681	0.83	180.62	421.47	0.14
Mor-2	R-1	322.1	Max WS	109.42	74.60	77.86		77.88	0.005127	1.38	109.92	472.74	0.23
Mor-2	R-1	322.0000	Max WS	107.09	74.60	77.78		77.81	0.008930	1.75	85.36	441.27	0.30
Mor-2	R-1	321.5		Culvert									
Mor-2	R-1	321.0000	Max WS	105.18	74.66	77.70		77.70	0.000061	0.27	508.19	594.05	0.03
Mor-2	R-1	320.9	Max WS	105.18	74.66	77.70		77.70	0.000061	0.27	507.91	593.79	0.03
Mor-2	R-1	320.5*	Max WS	105.13	74.86	77.70		77.70	0.000032	0.19	707.56	658.88	0.02
Mor-2	R-1	320.0000	Max WS	105.06	75.05	77.70		77.70	0.000031	0.19	695.39	621.81	0.02
Mor-2	R-1	319.5*	Max WS	105.00	74.90	77.69		77.69	0.000066	0.23	529.94	428.61	0.03
Mor-2	R-1	319.0000	Max WS	104.98	74.76	77.36		77.40	0.010384	1.96	76.65	143.37	0.33
Mor-2	R-1	318.5*	Max WS	104.97	74.23	76.09		76.16	0.017293	2.45	61.37	147.47	0.43
Mor-2	R-1	318.0000	Max WS	104.49	73.70	75.29		75.30	0.001133	0.79	186.08	238.17	0.12
Mor-2	R-1	317.666*	Max WS	104.39	73.68	75.21		75.21	0.001424	0.84	181.58	273.82	0.13
Mor-2	R-1	317.333*	Max WS	104.23	73.66	75.10		75.10	0.001824	0.88	173.79	313.16	0.14
Mor-2	R-1	317.0000	Max WS	104.05	73.64	74.96		74.96	0.002308	0.89	165.62	339.85	0.16
Mor-2	R-1	316.666*	Max WS	103.71	73.34	74.76		74.76	0.002389	0.89	168.66	352.63	0.16
Mor-2	R-1	316.333*	Max WS	103.40	73.03	74.56		74.57	0.002431	0.95	172.94	388.01	0.16
Mor-2	R-1	316.0000	Max WS	103.21	72.73	74.39		74.40	0.002000	0.91	183.61	427.63	0.15
Mor-2	R-1	315.0000	Max WS	16.00	72.97	74.00	73.35	74.00	0.000050	0.11	197.72	436.32	0.02
Elder1	R-1_Down	48.000	Max WS	443.35	95.15	97.40		97.43	0.005147	0.98	323.30	485.57	0.14
Elder1	R-1_Down	47.000	Max WS	443.09	94.47	96.99		97.02	0.003072	0.87	366.39	419.29	0.11
Elder1	R-1_Down	46.5*	Max WS	444.21	94.53	96.88		96.90	0.002200	0.80	453.46	426.07	0.10
Elder1	R-1_Down	46.0000	Max WS	445.24	94.59	96.71		96.75	0.004475	1.23	309.04	425.12	0.16
Elder1	R-1_Down	45.0000	Max WS	447.65	94.42	96.47		96.47	0.000843	0.65	617.26	382.80	0.08
Elder1	R-1_Down	44.0000	Max WS	450.02	94.14	96.38		96.39	0.000855	0.67	640.73	362.02	0.09
Elder1	R-1_Down	43.0000	Max WS	452.32	93.91	96.25		96.26	0.001977	1.02	445.68	249.02	0.13
Elder1	R-1_Down	42.0000	Max WS	455.42	92.98	95.84		95.93	0.003586	2.32	201.82	134.30	0.29
Elder1	R-1_Down	41.0000	Max WS	457.16	92.78	95.62		95.69	0.003108	2.41	225.50	151.63	0.28
Elder1	R-1_Down	40.000	Max WS	457.08	92.55	95.19		95.25	0.003344	2.00	232.90	159.07	0.27
Elder1	R-1_Down	39.000	Max WS	457.00	91.54	94.75		94.81	0.002668	2.12	257.30	182.29	0.26
Elder1	R-1_Down	38.0000	Max WS	456.96	91.27	94.59		94.64	0.002781	2.66	280.37	220.94	0.27
Elder1	R-1_Down	37.0000	Max WS	456.95	91.15	94.43		94.46	0.001133	1.50	372.98	265.55	0.17
Elder1	R-1_Down	36.0000	Max WS	456.88	90.67	94.01		94.15	0.007661	3.64	197.73	264.32	0.43
Elder1	R-1_Down	35.0000	Max WS	456.79	90.64	93.66		93.72	0.004026	2.48	265.13	287.26	0.31
Elder1	R-1_Down	34.0000	Max WS	456.68	90.63	93.45		93.49	0.002879	2.12	307.75	295.42	0.26
Elder1	R-1_Down	33.0000	Max WS	456.54	90.66	93.27		93.31	0.002722	1.82	328.11	323.00	0.25
Elder1	R-1_Down	32.5*	Max WS	456.38	90.73	93.09		93.12	0.002274	1.69	324.38	266.02	0.23
Elder1	R-1_Down	32.0000	Max WS	455.95	90.79	92.92		92.96	0.001984	1.61	336.58	324.61	0.21
Elder1	R-1_Down	31.0000	Max WS	450.11	89.65	92.45		92.48	0.001985	1.59	363.30	333.47	0.21
Elder1	R-1_Down	30.0000	Max WS	437.15	89.41	92.12		92.15	0.001643	1.58	392.01	379.01	0.20
Elder1	R-1_Down	29.0000	Max WS	434.83	89.21	92.05		92.07	0.000959	1.37	480.01	407.14	0.16
Elder1	R-1_Down	28.0000	Max WS	433.11	88.77	92.01		92.02	0.000561	0.97	579.78	431.46	0.12
Elder1	R-1_Down	27.0000	Max WS	431.57	88.01	91.95		91.95	0.000141	0.55	892.24	444.24	0.06
Elder1	R-1_Down	26.5*	Max WS	431.55	88.28	91.94		91.94	0.000155	0.57	895.54	476.96	0.06
Elder1	R-1_Down	26.0000	Max WS	431.51	88.54	91.93		91.93	0.000246	0.67	788.56	485.94	0.08
Elder1	R-1_Down	25.0000	Max WS	431.11	88.53	91.90		91.90	0.000135	0.51	1025.78	593.52	0.06
Elder1	R-1_Down	24.0000	Max WS	431.06	88.24	91.89		91.89	0.000082	0.43	1203.34	637.42	0.05
Elder1	R-1_Down	23.0000	Max WS	430.97	88.09	91.88		91.88	0.000150	0.62	1032.71	707.10	0.06
Elder1	R-1_Down	22.5		Culvert									
Elder1	R-1_Down	22.0000	Max WS	430.95	88.07	90.75		90.77	0.001496	1.38	409.62	391.27	0.18
Elder1	R-1_Down	21.0000	Max WS	430.81	86.60	89.15		89.22	0.004383	2.52	241.38	242.49	0.32
Elder1	R-1_Down	20.550*	Max WS	439.44	86.10	88.80		88.83	0.001663	1.63	339.39	245.27	0.20
Elder1	R-1_Down	20.1000	Max WS	439.43	85.60	88.72		88.74	0.001153	1.54	382.19	256.22	0.17
Elder1	R-1_Down	11.724	Max WS	439.33	85.65	88.46		88.50	0.002643	2.00	292.83	248.48	0.25
Elder1	R-1_Down	11.659	Max WS	439.17	84.72	87.60		87.64	0.002445	2.33	304.97	252.61	0.25
Elder1	R-1_Down	11.593	Max WS	453.06	83.92	86.84		86.87	0.002362	2.13	332.92	298.02	0.24
Elder1	R-1_Down	11.538	Max WS	464.44	82.92	86.34		86.37	0.001357	1.87	360.89	242.96	0.19
Elder1	R-1_Down	11.482	Max WS	477.24	82.27	85.43		85.49	0.004604	2.82	261.40	263.41	0.34
Elder1	R-1_Down	11.433	Max WS	488.35	81.55	84.80		84.81	0.000506	1.56	705.73	568.77	0.17
Elder1	R-1_Down	11.376	Max WS	560.67	80.86	84.65		84.67	0.000447	1.67	612.57	340.38	0.17
Elder1	R-1_Down	11.313	Max WS	574.40	80.70	84.47		84.50	0.000631	1.88	503.81	294.93	0.20
Elder1	R-1_Down	11.252	Max WS	587.66	80.24	84.11		84.18	0.001559	3.03	375.66	274.91	0.31
Elder1	R-1_Down	11.175	Max WS	602.27	79.60	83.45		83.56	0.002044	3.33	358.54	385.27	0.35
Elder1	R-1_Down	11.125	Max WS	602.03	79.27	83.10		83.15	0.000792	2.15	498.12	397.23	0.22
Elder1	R-1_Down	11.063	Max WS	624.76	78.95	82.89		82.92	0.000755	2.12	758.19	817.42	0.22
Elder1	R-1_Down	10.995	Max WS	735.98	78.76	82.44		82.48	0.001713	2.70	645.79	678.73	0.31
Elder1	R-1_Down	10.936	Max WS	728.13	76.97	81.91		81.97	0.001663	3.03	577.60	561.58	0.31
Elder1	R-1_Down	10.884	Max WS	727.82	76.68	81.68		81.69	0.000238	1.52	1034.31	505.44	0.13
Elder1	R-1_Down	10.834	Max WS	727.75	76.47	81.62		81.63	0.000230	1.53	995.62	455.26	0.13
Elder1	R-1_Down	10.775	Max WS	727.63	76.23	81.54		81.56	0.000257	1.65	957.54	559.09	0.13
Elder1	R-1_Down	10.7475*	Max WS	727.62	75.69	81.46		81.51	0.000534	2.44	680.02	411.82	0.19
Elder1	R-1_Down	10.720	Max WS	727.58	75.15	81.30		81.41	0.001220	3.70	508.37	407.60	0.29
Elder1	R-1_Down	10.705	Max WS	727.52	75.34	81.14		81.29	0.002034	4.09	462.24	568.45	0.36

HEC-RAS Plan: EGJTPRE100y24h88 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	10.704	Max WS	727.54	75.44	81.18		81.20	0.000474	1.68	888.26	612.38	0.17
Elder1	R-1_Down	10.689		Mult Open									
Elder1	R-1_Down	10.686	Max WS	727.55	75.07	81.16		81.17	0.000331	1.44	1065.41	635.80	0.14
Elder1	R-1_Down	10.681	Max WS	727.54	75.23	81.15		81.16	0.000232	1.46	1086.13	644.76	0.12
Elder1	R-1_Down	10.65	Max WS	727.52	74.93	81.09		81.13	0.000209	1.60	684.45	364.97	0.12
Elder1	R-1_Down	10.63		Lat Struct									
Elder1	R-1_Down	10.619	Max WS	727.50	75.38	80.98		81.03	0.000825	2.11	509.55	297.24	0.22
Elder1	R-1_Down	10.613		Culvert									
Elder1	R-1_Down	10.607	Max WS	727.47	75.04	78.33		79.35	0.011091	8.11	89.71	484.30	0.83
Elder1	R-1_Down	10.562	Max WS	727.43	74.78	77.84		77.91	0.001718	2.52	494.16	563.03	0.31
Elder1	R-1_Down	10.507	Max WS	727.41	74.62	77.09		77.27	0.004622	3.81	267.71	311.80	0.49
Elder1	R-1_Down	10.442	Max WS	732.53	74.36	76.05		76.09	0.002101	1.89	479.18	516.21	0.31
Elder1	R-1_Down	10.361	Max WS	738.44	72.88	75.41		75.43	0.001089	1.96	738.05	594.29	0.24
Elder1	R-1_Down	10.312	Max WS	743.27	71.78	74.95		75.01	0.002327	3.11	486.80	600.52	0.36
Elder1	R-1_Down	10.272	Max WS	746.66	71.03	74.36		74.47	0.002929	3.54	392.23	353.10	0.41
Elder1	R-1_Down	10.214	Max WS	829.57	69.83	73.69		73.76	0.001794	3.08	500.98	336.27	0.33
Elder1	R-1_Down	10.141	Max WS	931.49	68.54	72.98		73.07	0.002042	3.47	509.58	335.45	0.35
Elder1	R-1_Down	10.09	Max WS	935.76	68.60	72.38		72.52	0.002408	3.89	454.25	338.99	0.39
Elder1	R-1_Down	10.034	Max WS	940.66	68.74	71.77		71.82	0.002118	3.05	673.55	589.11	0.35
Elder1	R-1_Down	9.974	Max WS	945.65	67.83	71.33		71.36	0.000822	2.07	929.13	662.14	0.22
Elder1	R-1_Down	9.919	Max WS	950.44	67.56	71.13		71.15	0.000558	1.98	975.14	594.77	0.19
Elder1	R-1_Down	9.878	Max WS	953.63	67.52	70.78		70.90	0.002243	3.44	525.95	586.53	0.37
Elder1	R-1_Down	9.813	Max WS	958.23	67.00	70.06		70.14	0.001974	3.17	589.87	611.63	0.34
Elder1	R-1_Down	9.749	Max WS	962.73	65.60	69.53		69.60	0.001159	2.64	647.40	426.99	0.27
Elder1	R-1_Down	9.701	Max WS	966.55	64.81	69.34		69.38	0.000468	1.98	923.07	512.20	0.18
Elder1	R-1_Down	9.633	Max WS	971.95	64.72	69.13		69.17	0.000653	2.10	766.16	668.32	0.20
Elder1	R-1_Down	9.566	Max WS	976.71	63.42	67.84		68.28	0.005723	5.80	251.20	212.86	0.59
Elder1	R-1_Down	9.524	Max WS	979.38	62.22	67.14		67.21	0.002374	2.67	550.32	625.62	0.35
Elder1	R-1_Down	9.49		Lat Struct									
Elder1	R-1_Down	9.486	Max WS	981.38	61.46	66.68		66.81	0.001860	3.57	507.68	540.80	0.34
Elder1	R-1_Down	9.438	Max WS	984.86	59.47	66.39		66.47	0.000952	2.71	626.60	578.86	0.25
Elder1	R-1_Down	9.387	Max WS	987.84	59.78	66.01		66.11	0.001741	3.15	519.25	454.54	0.32
Elder1	R-1_Down	9.329	Max WS	990.37	58.24	65.41		65.62	0.001634	3.83	376.17	401.10	0.33
Elder1	R-1_Down	9.282	Max WS	990.99	57.97	64.97		65.20	0.001829	4.03	394.34	444.67	0.35
Elder1	R-1_Down	9.228	Max WS	991.82	57.48	64.56		64.75	0.001204	3.65	392.18	460.80	0.29
Elder1	R-1_Down	9.185	Max WS	993.47	57.64	64.43		64.50	0.000653	2.58	776.14	606.17	0.21
Elder1	R-1_Down	9.143	Max WS	994.83	57.35	64.24		64.35	0.000853	2.95	721.70	775.96	0.24
Elder1	R-1_Down	9.091	Max WS	997.12	57.48	64.08		64.14	0.000534	2.38	916.40	859.37	0.19
Elder1	R-1_Down	9.039	Max WS	999.80	57.06	63.90		63.98	0.000660	2.63	759.51	673.24	0.21
Elder1	R-1_Down	8.975	Max WS	1003.54	57.39	63.69		63.76	0.000621	2.55	802.12	1084.91	0.21
Elder1	R-1_Down	8.969	Max WS	1003.91	57.00	63.69	59.83	63.73	0.000475	1.88	971.70	843.86	0.18
Elder1	R-1_Down	8.961		Bridge									
Elder1	R-1_Down	8.954	Max WS	1003.81	57.10	63.54		63.60	0.000447	2.31	941.84	865.86	0.18
Elder1	R-1_Down	8.89	Max WS	1005.74	57.04	62.85		63.18	0.003711	5.24	357.86	588.52	0.48
Elder1	R-1_Down	8.811	Max WS	1009.42	56.79	61.95		62.03	0.001460	3.13	609.81	1151.50	0.30
Elder1	R-1_Down	8.752	Max WS	1011.74	57.25	61.04		61.24	0.003867	4.52	448.96	1051.59	0.48
Elder1	R-1_Down	8.697	Max WS	1011.90	56.74	60.43		60.45	0.000760	1.80	1218.64	2511.24	0.21
Elder1	R-1_Down	8.598	Max WS	1013.19	55.92	60.06		60.07	0.000979	1.09	1227.39	1828.35	0.20
Elder1	R-1_Down	8.565	Max WS	1012.53	55.85	59.90		59.92	0.001343	1.34	1084.66	1797.17	0.24
Elder1	R-1_Down	8.466	Max WS	1013.22	55.58	59.59		59.60	0.000483	1.48	1662.50	2197.35	0.17
Elder1	R-1_Down	8.258	Max WS	1000.96	55.90	58.80		58.82	0.001212	1.53	1006.27	2252.87	0.24
Elder1	R-1_Down	8.195	Max WS	998.63	55.61	58.47		58.48	0.000585	0.94	1415.88	1369.85	0.16
Elder1	R-1_Down	8.105	Max WS	999.35	55.58	58.34		58.34	0.000293	0.77	1772.05	1724.67	0.12
Elder1	R-1_Down	7.93	Max WS	991.94	54.96	57.51		57.60	0.002225	2.49	471.36	1835.43	0.34
Elder1	R-1_Down	7.863	Max WS	987.15	53.97	57.16		57.16	0.000191	0.83	2286.46	2760.79	0.10
Elder1	R-1_Down	7.862		Lat Struct									
Elder1	R-1_Down	7.783	Max WS	882.29	52.32	56.58		56.69	0.002829	3.02	392.71	1126.99	0.38
Elder1	R-1_Down	7.740	Max WS	750.79	52.21	56.22		56.25	0.001101	2.07	736.18	835.98	0.25
Elder1	R-1_Down	7.689	Max WS	610.81	51.89	56.08		56.08	0.000046	0.38	2755.21	1992.21	0.05
Elder1	R-1_Down	7.625	Max WS	571.75	50.92	56.01	54.09	56.09	0.001050	2.48	406.78	538.17	0.25
Elder1	R-1_Down	7.6225		Bridge									
Elder1	R-1_Down	7.620	Max WS	571.80	51.00	56.02		56.06	0.000554	1.87	540.63	624.05	0.18
Elder1	R-1_Down	7.619		Lat Struct									
Elder1	R-1_Down	7.543	Max WS	480.70	50.76	55.53		55.77	0.002506	3.89	123.44	39.12	0.39
Elder1	R-1_Down	7.516	Max WS	436.39	50.67	55.18		55.39	0.001668	3.72	122.82	192.56	0.33
Elder1	R-1_Down	7.317	Max WS	95.39	49.76	54.53		54.53	0.000010	0.26	949.61	842.69	0.02
Elder1	R-1_Down	7.259		Lat Struct									
Elder1	R-1_Down	7.258	Max WS	942.09	49.57	54.22		54.30	0.001567	3.40	650.98	552.85	0.30
Elder1	R-1_Down	7.0770	Max WS	944.98	47.10	53.45	49.98	53.61	0.003098	3.50	337.23	112.45	0.25
Elder1	R-1_Down	7.05		Inl Struct									
Elder1	R-1_Down	7.0130	Max WS	944.95	46.84	53.30		53.45	0.003012	3.53	393.39	175.11	0.24
Elder1	R-1_Down	6.98		Lat Struct									
Elder1	R-1_Down	6.9650	Max WS	977.51	46.68	52.00	49.56	52.25	0.006412	4.53	271.99	88.59	0.35
Elder1	R-1_Down	6.94		Inl Struct									
Elder1	R-1_Down	6.9350	Max WS	977.31	42.39	51.96		52.03	0.001678	2.36	481.28	116.63	0.14
Elder1	R-1_Down	6.9141	Max WS	976.87	42.35	51.85		51.96	0.001267	2.29	371.05	110.52	0.13
Elder1	R-1_Down	6.91405*	Max WS	976.65	42.35	51.82		51.94	0.001436	2.44	349.25	110.33	0.14
Elder1	R-1_Down	6.9140	Max WS	976.43	42.35	51.79		51.93	0.001644	2.60	326.91	110.10	0.15
Elder1	R-1_Down	6.9135		Culvert									
Elder1	R-1_Down	6.9131	Max WS	975.23	41.36	51.52		51.65	0.001573	2.71	340.34	142.68	0.15
Elder1	R-1_Down	6.9130	Max WS	975.23	41.36	51.54		51.64	0.001253	2.42	380.47	142.97	0.13
Elder1	R-1_Down	6.9129		Lat Struct									
Elder1	R-1_Down	6.9128		Lat Struct									
Elder1	R-1_Down	6.89		Lat Struct									
Elder1	R-1_Down	6.8860	Max WS	1104.88	41.22	51.44		51.48	0.000661	1.75	769.64	144.63	0.10
Elder1	R-1_Down	6.8850	Max WS	1104.66	41.10	51.38		51.40	0.000520	1.58	861.86	156.79	0.09

HEC-RAS Plan: EGJTPRE100y24h88 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	6.8620	Max WS	1104.21	40.98	51.31		51.34	0.000501	1.55	855.95	153.23	0.09
Elder1	R-1_Down	6.8450	Max WS	1104.00	40.88	51.29		51.30	0.000213	1.02	1225.43	197.53	0.06
Elder1	R-1_Down	6.8330	Max WS	1104.02	40.82	51.28		51.29	0.000179	0.94	1143.01	225.52	0.05
Elder1	R-1_Down	6.8210	Max WS	1103.82	40.76	51.26		51.28	0.000226	1.06	968.62	236.65	0.06
Elder1	R-1_Down	6.82		Lat Struct									
Elder1	R-1_Down	6.8100	Max WS	1104.45	40.70	51.22		51.26	0.000448	1.48	682.08	159.42	0.08
Elder1	R-1_Down	6.791	Max WS	1103.74	40.66	51.00		51.18	0.002015	3.09	332.54	114.01	0.17
Elder1	R-1_Down	6.790		Culvert									
Elder1	R-1_Down	6.7890	Max WS	1102.22	40.64	50.73		50.91	0.002183	3.16	324.44	118.66	0.18
Elder1	R-1_Down	6.7730	Max WS	1102.01	40.60	50.70		50.76	0.001113	2.26	594.97	109.47	0.13
Elder1	R-1_Down	6.7610	Max WS	1100.76	40.54	50.61		50.68	0.001600	2.70	558.44	131.36	0.15
Elder1	R-1_Down	6.7480	Max WS	1100.51	40.48	50.58		50.60	0.000451	1.45	900.65	158.04	0.08
Elder1	R-1_Down	6.7410	Max WS	1100.52	40.44	50.56		50.58	0.000432	1.41	1029.37	221.75	0.08
Elder1	R-1_Down	6.7400	Max WS	1100.26	40.42	50.56		50.58	0.000345	1.26	1114.66	226.17	0.07
Elder1	R-1_Down	6.7190	Max WS	1099.70	40.30	50.52		50.54	0.000356	1.29	1168.97	266.55	0.07
Elder1	R-1_Down	6.7180	Max WS	1099.70	40.30	50.52		50.53	0.000371	1.32	1145.85	263.11	0.07
Elder1	R-1_Down	6.7110	Max WS	1099.42	40.26	50.50		50.52	0.000376	1.33	1109.36	257.25	0.07
Elder1	R-1_Down	6.7000	Max WS	1098.87	40.20	50.46		50.49	0.000632	1.72	855.66	225.59	0.10
Elder1	R-1_Down	6.6910	Max WS	1098.30	40.16	50.42		50.46	0.000793	1.93	709.70	168.52	0.11
Elder1	R-1_Down	6.6650	Max WS	1096.55	40.02	50.30		50.34	0.000936	2.10	737.58	277.85	0.12
Elder1	R-1_Down	6.6530	Max WS	1095.96	40.00	50.24		50.29	0.000844	1.99	764.64	316.46	0.11
Elder1	R-1_Down	6.6340	Max WS	1094.76	39.96	50.16		50.20	0.001020	2.18	811.57	373.41	0.12
Elder1	R-1_Down	6.6040	Max WS	1092.66	39.96	49.99		50.03	0.001045	2.18	755.11	326.38	0.12
Elder1	R-1_Down	6.59		Lat Struct									
Elder1	R-1_Down	6.5500	Max WS	1082.87	39.54	49.78		49.80	0.000609	1.70	1152.39	452.25	0.09
Elder1	R-1_Down	6.5290	Max WS	1081.66	39.40	49.70		49.73	0.000664	1.76	1017.35	441.10	0.10
Elder1	R-1_Down	6.5070	Max WS	1079.89	39.40	49.58		49.63	0.001228	2.39	862.92	436.42	0.13
Elder1	R-1_Down	6.4940	Max WS	1079.29	39.22	49.53		49.55	0.000776	1.91	1186.27	655.71	0.11
Elder1	R-1_Down	6.4750	Max WS	1078.14	39.16	49.44		49.47	0.000821	1.98	1060.59	664.63	0.11
Elder1	R-1_Down	6.4420	Max WS	1076.25	39.04	49.29		49.32	0.000882	2.02	1105.04	671.38	0.11
Elder1	R-1_Down	6.4020	Max WS	1074.24	38.84	49.09		49.12	0.001052	2.21	1046.59	637.06	0.12
Elder1	R-1_Down	6.3630	Max WS	1072.84	38.64	48.89		48.92	0.000860	2.01	1153.83	681.72	0.11
Elder1	R-1_Down	6.3330	Max WS	1072.22	38.48	48.78		48.80	0.000522	1.57	860.47	501.48	0.09
Elder1	R-1_Down	6.2980	Max WS	1071.67	38.34	48.69		48.71	0.000493	1.53	909.16	418.14	0.08
Elder1	R-1_Down	6.2750	Max WS	1071.34	38.26	48.61		48.64	0.000694	1.81	849.08	380.34	0.10
Elder1	R-1_Down	6.2560	Max WS	1071.18	38.16	48.54		48.57	0.000556	1.61	795.68	291.87	0.09
Elder1	R-1_Down	6.2340	Max WS	1071.58	38.04	48.47		48.49	0.000698	1.83	906.86	403.43	0.10
Elder1	R-1_Down	6.2070	Max WS	1071.82	37.90	48.38		48.40	0.000648	1.77	1218.46	582.68	0.10
Elder1	R-1_Down	6.1800	Max WS	1072.38	37.76	48.29		48.31	0.000576	1.67	1129.60	432.16	0.09
Elder1	R-1_Down	6.1590	Max WS	1072.87	37.66	48.24		48.26	0.000512	1.58	1129.81	560.97	0.09
Elder1	R-1_Down	6.1400	Max WS	1073.24	37.56	48.18		48.21	0.000463	1.51	854.60	481.01	0.08
Elder1	R-1_Down	6.1190	Max WS	1073.80	37.46	48.13		48.15	0.000706	1.87	1169.96	990.76	0.10
Elder1	R-1_Down	6.1010	Max WS	1074.16	37.36	48.09		48.10	0.000370	1.35	1481.54	931.50	0.07
Elder1	R-1_Down	6.0850	Max WS	1074.60	37.28	48.05		48.07	0.000412	1.44	1354.55	854.27	0.08
Elder1	R-1_Down	6.0690	Max WS	1074.05	37.22	47.86		48.00	0.002895	3.78	602.46	699.34	0.21
Elder1	R-1_Down	6.05		Culvert									
Elder1	R-1_Down	6.0400	Max WS	1070.21	37.00	47.53		47.70	0.003839	4.28	447.56	572.36	0.24
Elder1	R-1_Down	6.0150	Max WS	1068.16	36.92	47.37		47.39	0.000768	1.90	1040.41	585.38	0.11
Elder1	R-1_Down	5.9940	Max WS	1066.80	36.84	47.28		47.31	0.000961	2.12	1068.52	573.28	0.12
Elder1	R-1_Down	5.9800	Max WS	1065.43	36.76	47.21		47.24	0.000883	2.03	991.37	620.47	0.11
Elder1	R-1_Down	5.9340	Max WS	1063.30	36.62	47.03		47.05	0.000597	1.66	1097.42	561.49	0.09
Elder1	R-1_Down	5.8910	Max WS	1062.26	36.46	46.96		46.98	0.000392	1.36	1186.26	541.62	0.08
Elder1	R-1_Down	5.8530	Max WS	1062.01	36.46	46.93		46.95	0.000402	1.37	1174.04	531.80	0.08

HEC-RAS Plan: EGJTPRE10y24h88 Profile: Max WS

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Mor-2	R-1	327.0000	Max WS	61.55	86.52	88.34		88.38	0.009558	1.87	38.87	120.77	0.32
Mor-2	R-1	326.5*	Max WS	61.54	85.61	87.43		87.52	0.018130	2.51	28.36	55.97	0.44
Mor-2	R-1	326.0000	Max WS	61.53	84.70	86.68		86.71	0.006573	1.62	41.18	53.18	0.27
Mor-2	R-1	325.666*	Max WS	61.91	83.77	85.95		86.02	0.012657	2.08	29.81	29.73	0.37
Mor-2	R-1	325.333*	Max WS	62.29	82.83	84.96		85.04	0.014312	2.30	27.06	25.28	0.39
Mor-2	R-1	325.0000	Max WS	62.66	81.90	84.09		84.16	0.009826	2.09	30.00	24.39	0.33
Mor-2	R-1	324.666*	Max WS	63.05	81.37	83.31		83.37	0.011011	1.91	33.00	33.75	0.34
Mor-2	R-1	324.333*	Max WS	63.45	80.84	82.30		82.36	0.015746	1.86	34.03	47.46	0.39
Mor-2	R-1	324.0000	Max WS	63.83	80.31	81.16		81.19	0.015100	1.60	44.74	172.34	0.37
Mor-2	R-1	323.666*	Max WS	64.25	79.20	80.10		80.12	0.010866	1.36	53.19	154.27	0.31
Mor-2	R-1	323.333*	Max WS	64.66	78.08	78.90		78.93	0.018457	1.53	46.96	153.62	0.39
Mor-2	R-1	323.0000	Max WS	64.89	76.97	78.13		78.14	0.000830	0.45	145.99	269.93	0.09
Mor-2	R-1	322.7*	Max WS	65.55	76.18	78.06		78.07	0.001136	0.58	127.26	246.51	0.11
Mor-2	R-1	322.4*	Max WS	65.51	75.39	77.96		77.97	0.001559	0.72	117.64	324.23	0.13
Mor-2	R-1	322.1	Max WS	65.21	74.60	77.75		77.77	0.003926	1.15	78.98	430.05	0.20
Mor-2	R-1	322.0000	Max WS	62.74	74.60	77.70		77.72	0.005511	1.32	63.72	404.06	0.24
Mor-2	R-1	321.5		Culvert									
Mor-2	R-1	321.0000	Max WS	60.87	74.66	77.39		77.39	0.000051	0.23	371.41	524.80	0.03
Mor-2	R-1	320.9	Max WS	60.67	74.66	77.39		77.39	0.000050	0.23	371.20	524.73	0.03
Mor-2	R-1	320.5*	Max WS	60.65	74.86	77.39		77.39	0.000025	0.16	514.34	583.47	0.02
Mor-2	R-1	320.0000	Max WS	60.62	75.05	77.39		77.39	0.000017	0.13	526.44	597.51	0.02
Mor-2	R-1	319.5*	Max WS	60.59	74.90	77.39		77.39	0.000054	0.19	399.77	419.19	0.03
Mor-2	R-1	319.0000	Max WS	60.57	74.76	77.08		77.11	0.009205	1.52	44.98	134.70	0.29
Mor-2	R-1	318.5*	Max WS	60.55	74.23	75.86		75.91	0.015710	1.97	37.11	127.24	0.39
Mor-2	R-1	318.0000	Max WS	60.40	73.70	75.07		75.08	0.000916	0.64	133.91	223.62	0.10
Mor-2	R-1	317.666*	Max WS	60.32	73.68	75.00		75.00	0.001176	0.68	126.26	254.08	0.11
Mor-2	R-1	317.333*	Max WS	60.27	73.66	74.91		74.91	0.001456	0.70	123.94	268.34	0.12
Mor-2	R-1	317.0000	Max WS	60.24	73.64	74.78		74.78	0.002454	0.81	111.84	293.41	0.16
Mor-2	R-1	316.666*	Max WS	60.18	73.34	74.58		74.59	0.002614	0.85	113.79	319.73	0.16
Mor-2	R-1	316.333*	Max WS	60.11	73.03	74.39		74.39	0.002635	0.90	111.72	347.48	0.16
Mor-2	R-1	316.0000	Max WS	60.08	72.73	74.23		74.23	0.001557	0.73	125.40	297.33	0.13
Mor-2	R-1	315.0000	Max WS	16.00	72.97	74.00	73.35	74.00	0.000050	0.11	197.72	436.32	0.02
Elder1	R-1_Down	48.000	Max WS	234.23	95.15	97.02		97.04	0.006617	0.92	206.23	457.41	0.15
Elder1	R-1_Down	47.000	Max WS	234.12	94.47	96.53		96.55	0.003127	0.74	244.53	366.45	0.10
Elder1	R-1_Down	46.5*	Max WS	234.64	94.53	96.40		96.41	0.002956	0.77	267.00	346.58	0.11
Elder1	R-1_Down	46.0000	Max WS	235.09	94.59	96.19		96.21	0.005996	1.14	186.47	322.59	0.18
Elder1	R-1_Down	45.0000	Max WS	236.05	94.42	95.85		95.85	0.001115	0.57	385.40	368.97	0.09
Elder1	R-1_Down	44.0000	Max WS	237.08	94.14	95.75		95.75	0.000970	0.55	415.80	346.19	0.09
Elder1	R-1_Down	43.0000	Max WS	238.10	93.91	95.60		95.61	0.002121	0.82	291.48	231.71	0.13
Elder1	R-1_Down	42.0000	Max WS	239.49	92.98	95.25		95.30	0.003073	1.76	136.03	93.47	0.26
Elder1	R-1_Down	41.0000	Max WS	240.27	92.78	95.05		95.10	0.002691	1.86	147.72	124.23	0.25
Elder1	R-1_Down	40.000	Max WS	240.22	92.55	94.65		94.69	0.003263	1.56	154.21	135.54	0.26
Elder1	R-1_Down	39.000	Max WS	240.17	91.54	94.25		94.29	0.002240	1.63	170.64	153.71	0.22
Elder1	R-1_Down	38.0000	Max WS	240.14	91.27	94.11		94.15	0.002410	2.19	179.53	193.51	0.25
Elder1	R-1_Down	37.0000	Max WS	240.12	91.15	93.98		94.00	0.000750	1.06	264.90	219.05	0.13
Elder1	R-1_Down	36.0000	Max WS	240.09	90.67	93.57		93.70	0.007670	3.14	96.99	200.14	0.42
Elder1	R-1_Down	35.0000	Max WS	240.07	90.64	93.23		93.28	0.003703	2.03	160.01	202.81	0.29
Elder1	R-1_Down	34.0000	Max WS	240.02	90.63	93.03		93.06	0.002984	1.85	188.73	266.92	0.26
Elder1	R-1_Down	33.0000	Max WS	239.97	90.66	92.84		92.87	0.002685	1.48	202.48	274.80	0.23
Elder1	R-1_Down	32.5*	Max WS	239.94	90.73	92.66		92.68	0.002228	1.38	213.39	249.10	0.21
Elder1	R-1_Down	32.0000	Max WS	239.88	90.79	92.51		92.53	0.001793	1.28	229.71	282.07	0.19
Elder1	R-1_Down	31.0000	Max WS	239.84	89.65	92.07		92.09	0.001894	1.31	240.30	313.60	0.20
Elder1	R-1_Down	30.0000	Max WS	239.13	89.41	91.55		91.59	0.003705	1.89	184.57	337.84	0.28
Elder1	R-1_Down	29.0000	Max WS	237.88	89.21	91.36		91.40	0.002799	1.87	214.16	360.51	0.25
Elder1	R-1_Down	28.0000	Max WS	236.06	88.77	91.22		91.24	0.001827	1.29	253.56	386.49	0.20
Elder1	R-1_Down	27.0000	Max WS	234.15	88.01	91.05		91.05	0.000219	0.52	513.98	400.95	0.07
Elder1	R-1_Down	26.5*	Max WS	233.94	88.28	91.03		91.04	0.000263	0.56	494.93	411.84	0.08
Elder1	R-1_Down	26.0000	Max WS	233.57	88.54	91.00		91.01	0.000700	0.80	368.28	412.33	0.12
Elder1	R-1_Down	25.0000	Max WS	233.09	88.53	90.92		90.92	0.000343	0.57	497.21	492.50	0.09
Elder1	R-1_Down	24.0000	Max WS	232.97	88.24	90.90		90.90	0.000167	0.45	619.20	530.14	0.06
Elder1	R-1_Down	23.0000	Max WS	232.96	88.09	90.85		90.86	0.000714	1.01	354.38	602.84	0.13
Elder1	R-1_Down	22.5		Culvert									
Elder1	R-1_Down	22.0000	Max WS	232.90	88.07	90.44		90.45	0.001136	1.05	294.39	374.68	0.16
Elder1	R-1_Down	21.0000	Max WS	232.81	86.60	88.73		88.79	0.005192	2.33	145.10	218.12	0.34
Elder1	R-1_Down	20.550*	Max WS	236.36	86.10	88.35		88.36	0.001475	1.30	231.77	219.99	0.18
Elder1	R-1_Down	20.1000	Max WS	236.35	85.60	88.27		88.29	0.000939	1.22	270.63	244.82	0.15
Elder1	R-1_Down	11.724	Max WS	236.29	85.65	88.01		88.04	0.002971	1.78	184.34	232.16	0.25
Elder1	R-1_Down	11.659	Max WS	236.18	84.72	87.14		87.17	0.002176	1.93	198.33	218.80	0.23
Elder1	R-1_Down	11.593	Max WS	243.06	83.92	86.33		86.37	0.002737	1.96	194.43	237.80	0.25
Elder1	R-1_Down	11.538	Max WS	248.73	82.92	85.82		85.84	0.001146	1.51	241.13	205.39	0.17
Elder1	R-1_Down	11.482	Max WS	254.98	82.27	84.89		84.95	0.005225	2.50	146.52	181.29	0.34
Elder1	R-1_Down	11.433	Max WS	260.33	81.55	84.18		84.19	0.000837	1.67	370.90	493.35	0.21
Elder1	R-1_Down	11.376	Max WS	295.43	80.86	83.98		84.00	0.000436	1.40	393.12	317.79	0.16
Elder1	R-1_Down	11.313	Max WS	301.76	80.70	83.83		83.85	0.000494	1.41	339.42	233.67	0.17
Elder1	R-1_Down	11.252	Max WS	307.85	80.24	83.51		83.57	0.001427	2.50	224.56	219.94	0.28
Elder1	R-1_Down	11.175	Max WS	314.41	79.60	82.94		83.03	0.001667	2.63	197.31	234.44	0.31
Elder1	R-1_Down	11.125	Max WS	308.03	79.27	82.69		82.72	0.000469	1.50	345.40	354.64	0.17
Elder1	R-1_Down	11.063	Max WS	319.32	78.95	82.54		82.56	0.000576	1.70	482.79	743.83	0.18
Elder1	R-1_Down	10.995	Max WS	390.84	78.76	82.12		82.15	0.001323	2.16	438.23	610.59	0.26
Elder1	R-1_Down	10.936	Max WS	416.40	76.97	81.42		81.48	0.001962	2.91	329.93	432.37	0.33
Elder1	R-1_Down	10.884	Max WS	415.23	76.68	81.15		81.16	0.000159	1.14	786.71	443.47	0.10
Elder1	R-1_Down	10.834	Max WS	415.13	76.47	81.11		81.12	0.000146	1.13	774.89	420.09	0.10
Elder1	R-1_Down	10.775	Max WS	415.04	76.23	81.06		81.07	0.000160	1.21	739.87	468.79	0.10
Elder1	R-1_Down	10.7475*	Max WS	415.01	75.69	81.01		81.04	0.000348	1.84	504.92	367.24	0.15
Elder1	R-1_Down	10.720	Max WS	414.99	75.15	80.90		80.98	0.000841	2.91	356.34	372.74	0.24
Elder1	R-1_Down	10.705	Max WS	355.53	75.34	80.77		80.89	0.001292	3.05	258.31	524.76	0.28

HEC-RAS Plan: EGJTPRE10y24h88 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	10.704	Max WS	359.87	75.44	80.81		80.82	0.000253	1.13	672.84	554.52	0.12
Elder1	R-1_Down	10.689		Mult Open									
Elder1	R-1_Down	10.686	Max WS	359.87	75.07	80.78		80.78	0.000175	0.97	827.23	624.54	0.10
Elder1	R-1_Down	10.681	Max WS	359.32	75.23	80.78		80.78	0.000108	0.94	844.46	644.76	0.08
Elder1	R-1_Down	10.65	Max WS	341.30	74.93	80.75		80.77	0.000065	0.85	562.43	358.04	0.07
Elder1	R-1_Down	10.63		Lat Struct									
Elder1	R-1_Down	10.619	Max WS	334.50	75.38	80.72		80.73	0.000268	1.13	433.21	289.43	0.12
Elder1	R-1_Down	10.613		Culvert									
Elder1	R-1_Down	10.607	Max WS	414.94	75.04	77.78		78.28	0.007070	5.66	73.32	354.69	0.64
Elder1	R-1_Down	10.562	Max WS	414.91	74.78	77.39		77.45	0.001718	2.15	292.71	361.31	0.29
Elder1	R-1_Down	10.507	Max WS	414.89	74.62	76.69		76.82	0.004055	3.03	177.78	198.66	0.44
Elder1	R-1_Down	10.442	Max WS	417.17	74.36	75.68		75.72	0.002362	1.61	306.51	434.88	0.31
Elder1	R-1_Down	10.361	Max WS	419.77	72.88	74.97		74.99	0.001156	1.72	488.93	552.73	0.24
Elder1	R-1_Down	10.312	Max WS	421.38	71.78	74.52		74.57	0.002307	2.69	316.86	495.36	0.35
Elder1	R-1_Down	10.272	Max WS	422.85	71.03	73.84		73.96	0.003753	3.39	217.05	284.88	0.44
Elder1	R-1_Down	10.214	Max WS	450.51	69.83	73.05		73.11	0.001950	2.69	302.94	278.59	0.33
Elder1	R-1_Down	10.141	Max WS	484.73	68.54	72.33		72.41	0.001951	2.90	309.44	272.33	0.33
Elder1	R-1_Down	10.09	Max WS	486.47	68.60	71.83		71.93	0.001844	3.00	285.39	263.09	0.33
Elder1	R-1_Down	10.034	Max WS	488.46	68.74	71.24		71.28	0.002354	2.72	381.81	502.50	0.35
Elder1	R-1_Down	9.974	Max WS	490.34	67.83	70.72		70.74	0.000998	1.93	564.60	610.65	0.23
Elder1	R-1_Down	9.919	Max WS	492.27	67.56	70.51		70.53	0.000451	1.55	636.69	494.39	0.16
Elder1	R-1_Down	9.878	Max WS	493.61	67.52	70.16		70.28	0.002294	2.95	229.35	514.77	0.35
Elder1	R-1_Down	9.813	Max WS	495.91	67.00	69.35		69.44	0.002498	2.91	265.22	361.98	0.37
Elder1	R-1_Down	9.749	Max WS	497.92	65.60	68.69		68.76	0.001566	2.47	330.45	337.51	0.29
Elder1	R-1_Down	9.701	Max WS	499.44	64.81	68.46		68.49	0.000463	1.66	531.36	398.17	0.17
Elder1	R-1_Down	9.633	Max WS	501.67	64.72	68.23		68.27	0.000750	1.82	444.16	445.10	0.21
Elder1	R-1_Down	9.566	Max WS	503.78	63.42	67.20		67.48	0.004431	4.34	136.68	131.43	0.50
Elder1	R-1_Down	9.524	Max WS	505.24	62.22	66.48		66.55	0.003325	2.42	285.85	348.05	0.39
Elder1	R-1_Down	9.49		Lat Struct									
Elder1	R-1_Down	9.486	Max WS	506.48	61.46	65.86		66.00	0.002301	3.29	231.84	305.68	0.36
Elder1	R-1_Down	9.438	Max WS	508.77	59.47	65.56		65.63	0.000660	2.26	318.71	327.12	0.20
Elder1	R-1_Down	9.387	Max WS	509.25	59.78	64.90		65.10	0.003488	3.72	182.23	238.79	0.44
Elder1	R-1_Down	9.329	Max WS	509.64	58.24	64.24		64.37	0.001208	2.93	173.95	64.99	0.27
Elder1	R-1_Down	9.282	Max WS	509.40	57.97	63.90		64.05	0.001387	3.10	165.70	121.51	0.29
Elder1	R-1_Down	9.228	Max WS	509.48	57.48	63.67		63.76	0.000632	2.41	211.69	328.57	0.20
Elder1	R-1_Down	9.185	Max WS	509.72	57.64	63.53		63.61	0.000681	2.35	295.52	442.72	0.21
Elder1	R-1_Down	9.143	Max WS	510.02	57.35	63.35		63.45	0.000762	2.52	203.07	475.49	0.22
Elder1	R-1_Down	9.091	Max WS	510.87	57.48	63.21		63.27	0.000477	2.05	323.51	312.54	0.18
Elder1	R-1_Down	9.039	Max WS	511.98	57.06	63.09		63.14	0.000474	2.00	361.11	341.80	0.18
Elder1	R-1_Down	8.975	Max WS	513.47	57.39	62.92		62.98	0.000480	2.05	390.03	526.00	0.18
Elder1	R-1_Down	8.969	Max WS	513.63	57.00	62.92	58.92	62.96	0.000466	1.62	454.50	563.20	0.17
Elder1	R-1_Down	8.961		Bridge									
Elder1	R-1_Down	8.954	Max WS	513.59	57.10	62.80		62.85	0.000357	1.86	390.78	624.45	0.16
Elder1	R-1_Down	8.89	Max WS	514.20	57.04	62.01		62.33	0.003628	4.51	120.97	290.82	0.46
Elder1	R-1_Down	8.811	Max WS	514.79	56.79	61.24		61.29	0.001075	2.29	382.37	858.30	0.25
Elder1	R-1_Down	8.752	Max WS	515.66	57.25	60.52		60.66	0.002957	3.50	234.97	734.35	0.40
Elder1	R-1_Down	8.697	Max WS	515.87	56.74	60.03		60.04	0.000650	1.46	712.03	1730.76	0.19
Elder1	R-1_Down	8.598	Max WS	517.31	55.92	59.73		59.74	0.000704	0.89	729.18	1167.82	0.17
Elder1	R-1_Down	8.565	Max WS	517.08	55.85	59.56		59.57	0.001638	1.17	575.67	1268.66	0.25
Elder1	R-1_Down	8.466	Max WS	515.96	55.58	59.20		59.21	0.000469	1.30	1044.72	1722.04	0.16
Elder1	R-1_Down	8.258	Max WS	514.60	55.90	58.35		58.36	0.001369	1.37	595.41	1955.04	0.24
Elder1	R-1_Down	8.195	Max WS	515.01	55.61	57.95		57.96	0.000747	0.79	826.15	1028.62	0.17
Elder1	R-1_Down	8.105	Max WS	515.88	55.58	57.80		57.81	0.000273	0.58	1136.92	1262.14	0.11
Elder1	R-1_Down	7.93	Max WS	514.34	54.96	57.00		57.06	0.002215	1.95	296.91	1417.77	0.32
Elder1	R-1_Down	7.863	Max WS	511.86	53.97	56.63		56.63	0.000231	0.75	1217.66	1933.14	0.11
Elder1	R-1_Down	7.862		Lat Struct									
Elder1	R-1_Down	7.783	Max WS	472.68	52.32	56.09		56.16	0.002562	2.37	243.28	835.26	0.35
Elder1	R-1_Down	7.740	Max WS	420.62	52.21	55.69		55.73	0.001389	2.01	376.50	565.53	0.27
Elder1	R-1_Down	7.689	Max WS	383.73	51.89	55.51		55.51	0.000076	0.38	1692.72	1780.43	0.06
Elder1	R-1_Down	7.625	Max WS	371.04	50.92	55.42	53.53	55.51	0.001257	2.36	189.61	228.54	0.27
Elder1	R-1_Down	7.6225		Bridge									
Elder1	R-1_Down	7.620	Max WS	370.98	51.00	55.40		55.44	0.000763	1.92	341.64	399.44	0.21
Elder1	R-1_Down	7.619		Lat Struct									
Elder1	R-1_Down	7.543	Max WS	338.22	50.76	54.93		55.10	0.002174	3.35	100.83	36.02	0.35
Elder1	R-1_Down	7.516	Max WS	324.38	50.67	54.57		54.73	0.001626	3.28	101.73	80.45	0.32
Elder1	R-1_Down	7.317	Max WS	116.40	49.76	53.91		53.91	0.000092	0.72	447.66	753.92	0.07
Elder1	R-1_Down	7.259		Lat Struct									
Elder1	R-1_Down	7.258	Max WS	385.75	49.57	52.91		53.26	0.005013	4.75	88.86	72.39	0.52
Elder1	R-1_Down	7.0770	Max WS	388.74	47.10	51.97	48.75	52.03	0.001490	2.03	215.44	61.63	0.16
Elder1	R-1_Down	7.05		Inl Struct									
Elder1	R-1_Down	7.0130	Max WS	388.50	46.84	51.28		51.36	0.002122	2.31	190.20	56.28	0.19
Elder1	R-1_Down	6.98		Lat Struct									
Elder1	R-1_Down	6.9650	Max WS	432.48	46.68	50.15	48.42	50.30	0.006054	3.31	146.26	53.65	0.31
Elder1	R-1_Down	6.94		Inl Struct									
Elder1	R-1_Down	6.9350	Max WS	431.09	42.39	48.71		48.77	0.002138	1.92	225.42	61.97	0.15
Elder1	R-1_Down	6.9141	Max WS	430.82	42.35	48.63		48.69	0.001115	1.61	236.10	74.85	0.12
Elder1	R-1_Down	6.91405*	Max WS	430.82	42.35	48.62		48.68	0.001256	1.71	222.70	74.77	0.12
Elder1	R-1_Down	6.9140	Max WS	430.73	42.35	48.59		48.66	0.001431	1.82	208.78	74.67	0.13
Elder1	R-1_Down	6.9135		Culvert									
Elder1	R-1_Down	6.9131	Max WS	430.14	41.36	48.46		48.51	0.001188	1.84	226.88	82.01	0.12
Elder1	R-1_Down	6.9130	Max WS	430.14	41.36	48.46		48.50	0.000977	1.67	251.18	82.01	0.11
Elder1	R-1_Down	6.9129		Lat Struct									
Elder1	R-1_Down	6.9128		Lat Struct									
Elder1	R-1_Down	6.89		Lat Struct									
Elder1	R-1_Down	6.8860	Max WS	580.62	41.22	48.33		48.36	0.000722	1.42	429.80	90.25	0.10
Elder1	R-1_Down	6.8850	Max WS	580.55	41.10	48.25		48.28	0.000559	1.28	490.34	102.28	0.09

HEC-RAS Plan: EGJTPRE10y24h88 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	6.8620	Max WS	580.38	40.98	48.19		48.21	0.000520	1.24	492.60	98.24	0.08
Elder1	R-1_Down	6.8450	Max WS	580.40	40.88	48.16		48.17	0.000220	0.81	727.26	140.35	0.05
Elder1	R-1_Down	6.8330	Max WS	580.41	40.82	48.15		48.16	0.000247	0.87	704.93	160.98	0.06
Elder1	R-1_Down	6.8210	Max WS	580.34	40.76	48.13		48.14	0.000270	0.91	624.30	157.04	0.06
Elder1	R-1_Down	6.82		Lat Struct									
Elder1	R-1_Down	6.8100	Max WS	580.47	40.70	48.09		48.12	0.000503	1.23	447.68	107.77	0.08
Elder1	R-1_Down	6.791	Max WS	580.16	40.66	47.92		48.02	0.002071	2.45	224.63	70.92	0.16
Elder1	R-1_Down	6.790		Culvert									
Elder1	R-1_Down	6.7890	Max WS	579.98	40.64	47.83		47.94	0.002119	2.47	223.12	70.60	0.16
Elder1	R-1_Down	6.7730	Max WS	579.71	40.60	47.75		47.79	0.001234	1.88	341.36	73.39	0.13
Elder1	R-1_Down	6.7610	Max WS	579.63	40.54	47.65		47.71	0.001553	2.10	311.13	69.66	0.14
Elder1	R-1_Down	6.7480	Max WS	579.45	40.48	47.62		47.64	0.000430	1.12	537.72	106.49	0.07
Elder1	R-1_Down	6.7410	Max WS	579.46	40.44	47.61		47.62	0.000351	1.00	594.95	118.07	0.07
Elder1	R-1_Down	6.7400	Max WS	579.37	40.42	47.60		47.62	0.000309	0.94	634.42	126.97	0.06
Elder1	R-1_Down	6.7190	Max WS	579.36	40.30	47.56		47.57	0.000429	1.12	551.93	115.57	0.07
Elder1	R-1_Down	6.7180	Max WS	579.36	40.30	47.55		47.57	0.000433	1.12	551.86	115.02	0.07
Elder1	R-1_Down	6.7110	Max WS	579.27	40.26	47.54		47.55	0.000402	1.09	572.43	119.54	0.07
Elder1	R-1_Down	6.7000	Max WS	579.18	40.20	47.50		47.52	0.000687	1.42	448.51	97.06	0.09
Elder1	R-1_Down	6.6910	Max WS	579.09	40.16	47.45		47.49	0.000847	1.58	396.33	82.27	0.10
Elder1	R-1_Down	6.6650	Max WS	578.82	40.02	47.33		47.37	0.000838	1.58	396.60	82.11	0.10
Elder1	R-1_Down	6.6530	Max WS	578.72	40.00	47.28		47.32	0.000816	1.55	398.89	82.34	0.10
Elder1	R-1_Down	6.6340	Max WS	578.54	39.96	47.21		47.24	0.000819	1.55	404.82	83.63	0.10
Elder1	R-1_Down	6.6040	Max WS	578.25	39.96	47.07		47.10	0.000889	1.59	393.33	82.78	0.11
Elder1	R-1_Down	6.59		Lat Struct									
Elder1	R-1_Down	6.5500	Max WS	584.00	39.54	46.87		46.89	0.000645	1.39	463.89	123.25	0.09
Elder1	R-1_Down	6.5290	Max WS	583.81	39.40	46.78		46.81	0.000800	1.54	412.02	98.23	0.10
Elder1	R-1_Down	6.5070	Max WS	583.52	39.40	46.66		46.70	0.000996	1.71	343.99	89.63	0.11
Elder1	R-1_Down	6.4940	Max WS	583.32	39.22	46.61		46.64	0.000745	1.49	423.66	86.14	0.10
Elder1	R-1_Down	6.4750	Max WS	583.13	39.16	46.54		46.57	0.000650	1.41	438.32	86.92	0.09
Elder1	R-1_Down	6.4420	Max WS	582.84	39.04	46.42		46.45	0.000738	1.48	424.25	85.53	0.10
Elder1	R-1_Down	6.4020	Max WS	582.44	38.84	46.27		46.30	0.000718	1.47	425.69	88.06	0.10
Elder1	R-1_Down	6.3630	Max WS	582.14	38.64	46.12		46.15	0.000676	1.43	421.20	94.28	0.09
Elder1	R-1_Down	6.3330	Max WS	581.94	38.48	46.02		46.04	0.000648	1.42	462.98	131.67	0.09
Elder1	R-1_Down	6.2980	Max WS	581.65	38.34	45.90		45.92	0.000611	1.37	461.38	119.84	0.09
Elder1	R-1_Down	6.2750	Max WS	581.37	38.26	45.82		45.84	0.000611	1.37	451.53	97.41	0.09
Elder1	R-1_Down	6.2560	Max WS	581.28	38.16	45.76		45.78	0.000573	1.32	459.94	88.60	0.09
Elder1	R-1_Down	6.2340	Max WS	581.54	38.04	45.69		45.72	0.000547	1.31	477.25	102.20	0.08
Elder1	R-1_Down	6.2070	Max WS	581.92	37.90	45.64		45.65	0.000363	1.08	629.58	142.48	0.07
Elder1	R-1_Down	6.1800	Max WS	582.37	37.76	45.58		45.60	0.000458	1.22	511.65	105.13	0.08
Elder1	R-1_Down	6.1590	Max WS	582.69	37.66	45.53		45.55	0.000501	1.28	518.26	188.55	0.08
Elder1	R-1_Down	6.1400	Max WS	583.01	37.56	45.47		45.49	0.000574	1.37	499.29	133.16	0.09
Elder1	R-1_Down	6.1190	Max WS	583.29	37.46	45.41		45.43	0.000510	1.30	505.20	136.33	0.08
Elder1	R-1_Down	6.1010	Max WS	583.59	37.36	45.36		45.39	0.000481	1.26	495.50	158.71	0.08
Elder1	R-1_Down	6.0850	Max WS	583.93	37.28	45.33		45.35	0.000407	1.17	531.54	105.56	0.07
Elder1	R-1_Down	6.0690	Max WS	584.12	37.22	45.23		45.29	0.001020	1.85	290.01	78.85	0.12
Elder1	R-1_Down	6.05		Culvert									
Elder1	R-1_Down	6.0400	Max WS	583.44	37.00	44.86		44.93	0.001064	1.85	281.60	110.52	0.12
Elder1	R-1_Down	6.0150	Max WS	583.27	36.92	44.82		44.84	0.000551	1.32	466.82	109.53	0.08
Elder1	R-1_Down	5.9940	Max WS	583.10	36.84	44.76		44.78	0.000548	1.33	462.76	104.47	0.08
Elder1	R-1_Down	5.9800	Max WS	583.01	36.76	44.72		44.74	0.000567	1.35	459.74	103.48	0.09
Elder1	R-1_Down	5.9340	Max WS	582.56	36.62	44.58		44.61	0.000531	1.30	470.30	109.72	0.08
Elder1	R-1_Down	5.8910	Max WS	582.29	36.46	44.51		44.53	0.000503	1.28	486.12	135.61	0.08
Elder1	R-1_Down	5.8530	Max WS	582.10	36.46	44.47		44.49	0.000514	1.29	481.53	131.54	0.08

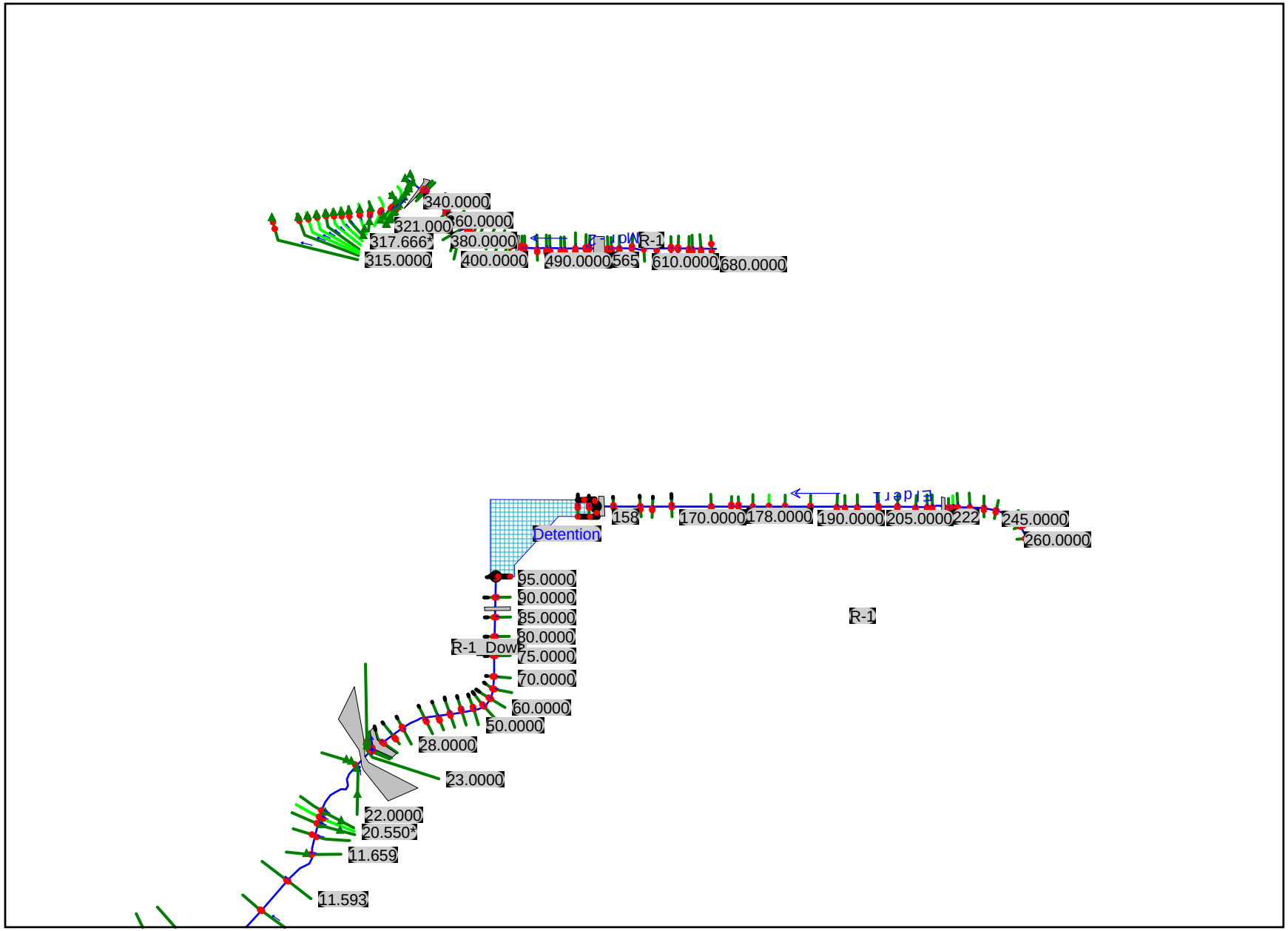
Jackson Township

Full Development Conditions

RAS Model Layout

and

10 & 100-Year Summary Results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158
170.0000
178.0000
190.0000
205.0000
222
245.0000
260.0000
Detention
95.0000
90.0000
85.0000
80.0000
R-1_Down
75.0000
70.0000
60.0000
50.0000
28.0000
23.0000
22.0000
20.550
11.659
11.593
R-1

HEC-RAS Plan: Post100y24h Profile: Max WS

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Mor-2	R-1	680.0000	Max WS	25.30	98.71	101.58		101.58	0.000013	0.10	241.82	119.81	0.01
Mor-2	R-1	670.0000	Max WS	25.25	96.72	101.58		101.58	0.000001	0.05	447.86	138.01	0.00
Mor-2	R-1	660.0000	Max WS	25.54	96.54	101.58		101.58	0.000001	0.04	471.14	140.26	0.00
Mor-2	R-1	650.0000	Max WS	25.65	96.48	101.58		101.58	0.000001	0.04	478.36	140.59	0.00
Mor-2	R-1	640.0000	Max WS	26.00	96.26	101.58		101.58	0.000001	0.04	508.77	141.53	0.00
Mor-2	R-1	630.0000	Max WS	26.23	96.12	101.58		101.58	0.000001	0.04	526.77	143.20	0.00
Mor-2	R-1	620.0000	Max WS	83.75	95.84	101.58		101.58	0.000007	0.12	567.94	146.08	0.01
Mor-2	R-1	610.0000	Max WS	90.99	95.58	101.58		101.58	0.000007	0.12	619.26	160.01	0.01
Mor-2	R-1	600.0000	Max WS	91.35	95.34	101.58		101.58	0.000006	0.12	677.42	178.61	0.01
Mor-2	R-1	590.0000	Max WS	91.73	95.10	101.58		101.58	0.000005	0.11	725.85	175.91	0.01
Mor-2	R-1	580.0000	Max WS	127.42	94.94	101.58		101.58	0.000007	0.14	759.72	174.01	0.01
Mor-2	R-1	570.0000	Max WS	127.53	94.94	101.58		101.58	0.000008	0.14	759.66	174.01	0.01
Mor-2	R-1	565		Culvert									
Mor-2	R-1	560.0000	Max WS	82.44	84.60	93.56		93.56	0.000002	0.09	796.27	132.89	0.01
Mor-2	R-1	550.0000	Max WS	82.42	84.52	93.56		93.56	0.000002	0.08	844.27	134.76	0.00
Mor-2	R-1	540.0000	Max WS	87.26	84.24	93.56		93.56	0.000002	0.08	899.52	137.78	0.00
Mor-2	R-1	530.0000	Max WS	88.90	83.99	93.56		93.56	0.000001	0.08	952.70	140.24	0.00
Mor-2	R-1	520.0000	Max WS	88.89	83.90	93.56		93.56	0.000001	0.07	977.32	142.48	0.00
Mor-2	R-1	510.0000	Max WS	88.84	83.64	93.56		93.56	0.000001	0.07	1046.41	149.86	0.00
Mor-2	R-1	500.0000	Max WS	88.83	83.54	93.56		93.56	0.000001	0.07	1054.64	151.40	0.00
Mor-2	R-1	490.0000	Max WS	88.79	83.30	93.56		93.56	0.000005	0.15	1095.75	154.01	0.01
Mor-2	R-1	480.0000	Max WS	88.74	82.98	93.56		93.56	0.000001	0.06	1126.24	155.28	0.00
Mor-2	R-1	470.0000	Max WS	88.72	82.93	93.56		93.56	0.000001	0.07	1105.34	153.73	0.00
Mor-2	R-1	465		Culvert									
Mor-2	R-1	460.0000	Max WS	59.47	77.05	80.09		80.09	0.000217	0.43	127.76	68.66	0.05
Mor-2	R-1	450.0000	Max WS	59.46	77.05	80.07		80.08	0.000222	0.43	126.98	68.57	0.05
Mor-2	R-1	440.0000	Max WS	67.04	76.76	80.06		80.06	0.000172	0.41	156.19	78.36	0.04
Mor-2	R-1	430.0000	Max WS	66.94	76.54	80.05		80.05	0.000110	0.34	180.73	84.20	0.03
Mor-2	R-1	410.0000	Max WS	66.84	76.32	80.03		80.04	0.000097	0.33	184.32	79.82	0.03
Mor-2	R-1	400.0000	Max WS	66.79	76.16	80.03		80.03	0.000055	0.25	229.74	91.64	0.02
Mor-2	R-1	390.0000	Max WS	65.91	76.08	80.02		80.02	0.000038	0.22	257.15	97.72	0.02
Mor-2	R-1	380.0000	Max WS	65.82	75.96	80.02		80.02	0.000036	0.21	263.15	97.53	0.02
Mor-2	R-1	370.0000	Max WS	169.25	75.76	80.00		80.00	0.000190	0.51	276.81	96.67	0.05
Mor-2	R-1	360.0000	Max WS	169.22	75.54	79.98		79.99	0.000161	0.48	294.98	96.40	0.04
Mor-2	R-1	350.0000	Max WS	185.39	75.00	79.95		79.96	0.000185	0.55	295.40	93.71	0.05
Mor-2	R-1	340.0000	Max WS	185.28	74.40	79.93		79.94	0.000136	0.49	319.69	95.07	0.04
Mor-2	R-1	330.0000	Max WS	185.25	74.00	79.93		79.94	0.000127	0.48	331.24	97.41	0.04
Mor-2	R-1	321.5		Culvert									
Mor-2	R-1	321.000	Max WS	183.11	74.66	77.96		77.96	0.000101	0.37	654.70	698.25	0.04
Mor-2	R-1	320.9	Max WS	182.77	74.66	77.96		77.96	0.000101	0.37	654.08	697.89	0.04
Mor-2	R-1	320.45*	Max WS	182.77	74.86	77.96		77.96	0.000050	0.26	888.96	715.04	0.03
Mor-2	R-1	320.0000	Max WS	182.76	75.05	77.96		77.96	0.000050	0.25	859.44	655.93	0.03
Mor-2	R-1	319.5*	Max WS	182.74	74.90	77.95		77.95	0.000108	0.32	642.42	437.40	0.04
Mor-2	R-1	319.0000	Max WS	182.75	74.76	77.59		77.64	0.010915	2.27	110.16	147.51	0.35
Mor-2	R-1	318.5*	Max WS	182.69	74.23	76.32		76.40	0.016076	2.71	96.91	159.91	0.43
Mor-2	R-1	318.0000	Max WS	182.15	73.70	75.57		75.58	0.001360	0.98	252.44	244.62	0.13
Mor-2	R-1	317.666*	Max WS	181.84	73.68	75.47		75.47	0.001595	1.00	254.06	283.93	0.14
Mor-2	R-1	317.333*	Max WS	181.39	73.66	75.34		75.35	0.001882	1.01	251.52	322.87	0.15
Mor-2	R-1	317.0000	Max WS	180.70	73.64	75.19		75.20	0.002327	1.03	242.94	356.02	0.16
Mor-2	R-1	316.666*	Max WS	179.48	73.34	75.00		75.01	0.002301	1.01	255.72	401.81	0.16
Mor-2	R-1	316.333*	Max WS	178.14	73.03	74.83		74.84	0.001895	0.94	276.85	424.98	0.15
Mor-2	R-1	316.0000	Max WS	177.56	72.73	74.71		74.71	0.001320	0.84	317.99	460.58	0.12
Mor-2	R-1	315.0000	Max WS	15.00	72.97	74.00	73.34	74.00	0.000044	0.10	197.72	436.32	0.02
Elder1	R-1_Down	95.0000	Max WS	319.04	90.16	99.92		99.92	0.000013	0.24	1060.24	145.66	0.01
Elder1	R-1_Down	90.0000	Max WS	318.39	90.00	99.91		99.92	0.000012	0.23	1084.50	146.14	0.01
Elder1	R-1_Down	86		Culvert									
Elder1	R-1_Down	85.0000	Max WS	318.39	89.81	99.90		99.90	0.000011	0.22	1114.86	146.43	0.01
Elder1	R-1_Down	80.0000	Max WS	318.37	89.63	99.90		99.90	0.000010	0.21	1146.67	146.89	0.01
Elder1	R-1_Down	77.5*	Max WS	323.89	89.56	99.90		99.90	0.000010	0.21	1160.78	147.09	0.01
Elder1	R-1_Down	75.0000	Max WS	323.87	89.47	99.90		99.90	0.000009	0.21	1174.72	147.17	0.01
Elder1	R-1_Down	70.0000	Max WS	323.83	89.28	99.90		99.90	0.000009	0.21	1201.28	148.51	0.01
Elder1	R-1_Down	65.0000	Max WS	334.87	89.16	99.90		99.90	0.000007	0.18	1413.52	177.42	0.01
Elder1	R-1_Down	60.0000	Max WS	334.85	89.06	99.90		99.90	0.000004	0.14	1753.88	212.87	0.01
Elder1	R-1_Down	55.0000	Max WS	334.81	88.94	99.89		99.90	0.000003	0.12	2032.31	238.96	0.01
Elder1	R-1_Down	50.0000	Max WS	334.78	88.81	99.89		99.90	0.000004	0.14	1825.65	214.40	0.01
Elder1	R-1_Down	45.0000	Max WS	334.74	88.69	99.89		99.89	0.000004	0.14	1776.15	208.36	0.01
Elder1	R-1_Down	40.0000	Max WS	334.69	88.54	99.89		99.89	0.000004	0.15	1725.79	202.82	0.01
Elder1	R-1_Down	35.0000	Max WS	334.65	88.41	99.89		99.89	0.000004	0.15	1745.32	204.01	0.01
Elder1	R-1_Down	30.0000	Max WS	334.62	88.25	99.89		99.89	0.000004	0.14	1753.61	198.21	0.01
Elder1	R-1_Down	28.0000	Max WS	334.55	87.97	99.89		99.89	0.000003	0.14	1816.22	197.10	0.01
Elder1	R-1_Down	27.0000	Max WS	334.51	87.84	99.89		99.89	0.000003	0.13	1860.34	200.38	0.01
Elder1	R-1_Down	26.0000	Max WS	334.48	87.72	99.89		99.89	0.000003	0.13	2007.26	223.80	0.01
Elder1	R-1_Down	25.5		Culvert									
Elder1	R-1_Down	25.0000	Max WS	334.39	87.53	92.14		92.15	0.000117	0.43	623.20	200.93	0.04
Elder1	R-1_Down	24.0000	Max WS	334.35	87.48	92.13		92.14	0.000162	0.50	561.18	190.13	0.04
Elder1	R-1_Down	23.0000	Max WS	132.18	87.40	91.24		91.28	0.002847	1.64	80.62	165.52	0.16
Elder1	R-1_Down	22.5		Culvert									
Elder1	R-1_Down	22.0000	Max WS	131.57	87.40	91.22		91.22	0.000044	0.30	601.52	414.30	0.03
Elder1	R-1_Down	21.0000	Max WS	333.67	86.60	88.84		88.92	0.007147	2.86	167.66	219.81	0.40
Elder1	R-1_Down	20.550*	Max WS	346.02	86.10	88.60		88.63	0.001663	1.53	291.08	241.09	0.20
Elder1	R-1_Down	20.1000	Max WS	345.99	85.60	88.52		88.54	0.001096	1.42	332.46	252.96	0.17
Elder1	R-1_Down	11.724	Max WS	345.94	85.65	88.26		88.30	0.002828	1.92	243.84	241.96	0.25
Elder1	R-1_Down	11.659	Max WS	345.92	84.72	87.42		87.45	0.002126	2.07	260.57	227.05	0.23
Elder1	R-1_Down	11.593	Max WS	368.52	83.92	86.67		86.71	0.002463	2.08	285.49	290.49	0.25
Elder1	R-1_Down	11.538	Max WS	387.82	82.92	86.17		86.20	0.001307	1.77	320.85	236.39	0.19
Elder1	R-1_Down	11.482	Max WS	410.86	82.27	85.36		85.42	0.003850	2.54	245.14	251.82	0.31

HEC-RAS Plan: Post100y24h Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	11.433	Max WS	431.40	81.55	84.83		84.84	0.000369	1.34	723.87	574.62	0.15
Elder1	R-1_Down	11.376	Max WS	566.44	80.86	84.70		84.72	0.000419	1.63	630.63	341.86	0.16
Elder1	R-1_Down	11.313	Max WS	593.11	80.70	84.53		84.56	0.000616	1.88	521.17	298.40	0.19
Elder1	R-1_Down	11.252	Max WS	618.73	80.24	84.17		84.25	0.001542	3.06	392.81	278.45	0.31
Elder1	R-1_Down	11.175	Max WS	645.90	79.60	83.52		83.63	0.001996	3.35	387.11	388.15	0.35
Elder1	R-1_Down	11.125	Max WS	666.90	79.27	83.17		83.23	0.000860	2.27	527.17	424.45	0.23
Elder1	R-1_Down	11.063	Max WS	688.81	78.95	82.95		82.98	0.000778	2.18	807.14	823.59	0.22
Elder1	R-1_Down	10.995	Max WS	797.68	78.76	82.50		82.54	0.001675	2.72	688.50	687.93	0.31
Elder1	R-1_Down	10.936	Max WS	781.95	76.97	81.98		82.03	0.001631	3.04	613.21	579.88	0.31
Elder1	R-1_Down	10.884	Max WS	775.75	76.68	81.74		81.75	0.000248	1.57	1066.03	508.51	0.13
Elder1	R-1_Down	10.834	Max WS	774.56	76.47	81.67		81.69	0.000244	1.59	1022.91	463.02	0.13
Elder1	R-1_Down	10.775	Max WS	773.66	76.23	81.59		81.61	0.000271	1.71	984.54	573.97	0.14
Elder1	R-1_Down	10.7475*	Max WS	773.34	75.69	81.51		81.56	0.000562	2.52	701.21	423.94	0.20
Elder1	R-1_Down	10.720	Max WS	772.59	75.15	81.34		81.46	0.001270	3.80	526.19	410.53	0.30
Elder1	R-1_Down	10.705	Max WS	771.83	75.34	81.18		81.33	0.002041	4.13	487.86	569.62	0.36
Elder1	R-1_Down	10.704	Max WS	772.07	75.44	81.23		81.24	0.000490	1.73	915.49	618.64	0.17
Elder1	R-1_Down	10.689		Mult Open									
Elder1	R-1_Down	10.686	Max WS	772.07	75.07	81.20		81.21	0.000343	1.48	1093.51	636.52	0.14
Elder1	R-1_Down	10.681	Max WS	772.06	75.23	81.20		81.21	0.000244	1.51	1114.41	644.76	0.13
Elder1	R-1_Down	10.65	Max WS	771.96	74.93	81.13		81.17	0.000227	1.67	699.01	367.85	0.13
Elder1	R-1_Down	10.63		Lat Struct									
Elder1	R-1_Down	10.619	Max WS	771.87	75.38	81.01		81.06	0.000884	2.20	518.86	298.18	0.23
Elder1	R-1_Down	10.613		Culvert									
Elder1	R-1_Down	10.607	Max WS	748.30	75.04	78.35		79.42	0.011413	8.27	90.47	500.44	0.84
Elder1	R-1_Down	10.562	Max WS	772.15	74.78	77.90		77.97	0.001670	2.54	530.07	607.14	0.30
Elder1	R-1_Down	10.507	Max WS	772.00	74.62	77.15		77.33	0.004581	3.86	285.48	332.91	0.49
Elder1	R-1_Down	10.442	Max WS	778.21	74.36	76.09		76.14	0.002055	1.92	502.64	518.37	0.31
Elder1	R-1_Down	10.361	Max WS	785.75	72.88	75.46		75.48	0.001094	2.00	770.50	604.46	0.24
Elder1	R-1_Down	10.312	Max WS	790.54	71.78	75.00		75.07	0.002327	3.16	509.12	610.12	0.36
Elder1	R-1_Down	10.272	Max WS	793.50	71.03	74.41		74.53	0.002940	3.60	410.21	355.83	0.41
Elder1	R-1_Down	10.214	Max WS	871.47	69.83	73.74		73.81	0.001819	3.13	516.73	338.98	0.33
Elder1	R-1_Down	10.141	Max WS	969.60	68.54	73.02		73.12	0.002048	3.51	524.10	336.99	0.35
Elder1	R-1_Down	10.09	Max WS	973.95	68.60	72.42		72.56	0.002438	3.95	466.82	341.54	0.39
Elder1	R-1_Down	10.034	Max WS	977.35	68.74	71.81		71.86	0.002102	3.07	693.54	598.17	0.35
Elder1	R-1_Down	9.974	Max WS	981.37	67.83	71.37		71.39	0.000825	2.09	950.63	664.27	0.22
Elder1	R-1_Down	9.919	Max WS	986.19	67.56	71.16		71.19	0.000569	2.01	994.52	598.38	0.19
Elder1	R-1_Down	9.878	Max WS	988.89	67.52	70.81		70.93	0.002250	3.47	543.75	588.05	0.37
Elder1	R-1_Down	9.813	Max WS	987.73	67.00	70.09		70.17	0.001952	3.18	609.43	623.62	0.34
Elder1	R-1_Down	9.749	Max WS	988.53	65.60	69.57		69.64	0.001148	2.65	663.22	429.60	0.27
Elder1	R-1_Down	9.701	Max WS	991.54	64.81	69.38		69.41	0.000469	2.00	942.52	519.16	0.18
Elder1	R-1_Down	9.633	Max WS	996.90	64.72	69.17		69.21	0.000654	2.12	780.35	672.76	0.20
Elder1	R-1_Down	9.566	Max WS	1001.45	63.42	67.86		68.31	0.005767	5.85	256.80	214.96	0.59
Elder1	R-1_Down	9.524	Max WS	1002.53	62.22	67.16		67.24	0.002373	2.69	563.10	651.23	0.35
Elder1	R-1_Down	9.49		Lat Struct									
Elder1	R-1_Down	9.486	Max WS	1002.74	61.46	66.71		66.84	0.001861	3.58	516.53	544.61	0.34
Elder1	R-1_Down	9.438	Max WS	1004.95	59.47	66.41		66.50	0.000980	2.76	636.65	582.86	0.25
Elder1	R-1_Down	9.387	Max WS	1006.65	59.78	66.03		66.13	0.001744	3.16	526.28	462.01	0.32
Elder1	R-1_Down	9.329	Max WS	1007.24	58.24	65.43		65.64	0.001656	3.87	382.28	408.86	0.33
Elder1	R-1_Down	9.282	Max WS	1003.42	57.97	64.98		65.21	0.001853	4.06	397.93	446.44	0.35
Elder1	R-1_Down	9.228	Max WS	998.36	57.48	64.56		64.76	0.001218	3.67	392.88	461.00	0.29
Elder1	R-1_Down	9.185	Max WS	997.92	57.64	64.43		64.50	0.000659	2.59	776.40	606.30	0.21
Elder1	R-1_Down	9.143	Max WS	996.31	57.35	64.24		64.35	0.000857	2.96	721.22	775.42	0.24
Elder1	R-1_Down	9.091	Max WS	997.06	57.48	64.07		64.14	0.000535	2.38	915.63	859.26	0.19
Elder1	R-1_Down	9.039	Max WS	998.99	57.06	63.90		63.98	0.000660	2.63	758.93	673.11	0.21
Elder1	R-1_Down	8.975	Max WS	1002.76	57.39	63.69		63.76	0.000620	2.55	801.71	1084.57	0.21
Elder1	R-1_Down	8.969	Max WS	1003.16	57.00	63.69	59.84	63.73	0.000475	1.88	971.13	843.66	0.18
Elder1	R-1_Down	8.961		Bridge									
Elder1	R-1_Down	8.954	Max WS	1003.07	57.10	63.54		63.60	0.000447	2.30	941.26	865.76	0.18
Elder1	R-1_Down	8.89	Max WS	1003.56	57.04	62.85		63.18	0.003719	5.24	356.60	588.24	0.48
Elder1	R-1_Down	8.811	Max WS	1006.16	56.79	61.95		62.03	0.001456	3.12	607.67	1149.74	0.30
Elder1	R-1_Down	8.752	Max WS	1006.81	57.25	61.04		61.24	0.003880	4.52	446.08	1042.10	0.48
Elder1	R-1_Down	8.697	Max WS	1003.14	56.74	60.42		60.45	0.000760	1.79	1209.16	2490.11	0.21
Elder1	R-1_Down	8.598	Max WS	1001.80	55.92	60.05		60.07	0.000984	1.09	1214.43	1820.26	0.20
Elder1	R-1_Down	8.565	Max WS	1000.18	55.85	59.89		59.91	0.001356	1.34	1069.47	1782.46	0.24
Elder1	R-1_Down	8.466	Max WS	998.20	55.58	59.58		59.59	0.000483	1.48	1646.08	2185.42	0.17
Elder1	R-1_Down	8.258	Max WS	972.73	55.90	58.77		58.79	0.001229	1.52	984.12	2243.02	0.24
Elder1	R-1_Down	8.195	Max WS	967.37	55.61	58.44		58.45	0.000595	0.93	1377.44	1342.11	0.16
Elder1	R-1_Down	8.105	Max WS	967.99	55.58	58.31		58.31	0.000292	0.76	1733.07	1690.49	0.12
Elder1	R-1_Down	7.93	Max WS	954.62	54.96	57.48		57.56	0.002228	2.45	458.44	1827.27	0.34
Elder1	R-1_Down	7.863	Max WS	948.06	53.97	57.12		57.13	0.000195	0.83	2207.34	2748.14	0.10
Elder1	R-1_Down	7.862		Lat Struct									
Elder1	R-1_Down	7.783	Max WS	848.21	52.32	56.54		56.66	0.002814	2.98	380.95	1118.67	0.38
Elder1	R-1_Down	7.740	Max WS	722.81	52.21	56.18		56.21	0.001134	2.08	708.80	825.57	0.25
Elder1	R-1_Down	7.689	Max WS	592.57	51.89	56.03		56.03	0.000047	0.38	2670.62	1951.67	0.05
Elder1	R-1_Down	7.625	Max WS	555.81	50.92	55.96	54.05	56.04	0.001089	2.50	382.50	522.61	0.26
Elder1	R-1_Down	7.6225		Bridge									
Elder1	R-1_Down	7.620	Max WS	555.81	51.00	55.98		56.01	0.000562	1.86	526.66	587.33	0.18
Elder1	R-1_Down	7.619		Lat Struct									
Elder1	R-1_Down	7.543	Max WS	470.21	50.76	55.49		55.72	0.002488	3.86	121.81	38.90	0.38
Elder1	R-1_Down	7.516	Max WS	428.80	50.67	55.13		55.34	0.001675	3.69	121.22	188.72	0.33
Elder1	R-1_Down	7.317	Max WS	96.98	49.76	54.49		54.49	0.000011	0.28	909.48	838.15	0.03
Elder1	R-1_Down	7.259		Lat Struct									
Elder1	R-1_Down	7.258	Max WS	905.38	49.57	54.14		54.24	0.001694	3.50	611.89	550.26	0.32
Elder1	R-1_Down	7.0770	Max WS	908.28	47.10	53.37	49.91	53.53	0.003029	3.43	328.75	108.70	0.24
Elder1	R-1_Down	7.05		Inl Struct									
Elder1	R-1_Down	7.0130	Max WS	908.25	46.84	53.22		53.37	0.002991	3.49	379.00	172.81	0.24

HEC-RAS Plan: Post100y24h Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	6.98		Lat Struct									
Elder1	R-1_Down	6.9650	Max WS	943.27	46.68	51.88	49.50	52.14	0.006619	4.53	261.75	87.92	0.35
Elder1	R-1_Down	6.94		Inl Struct									
Elder1	R-1_Down	6.9350	Max WS	943.00	42.39	51.84		51.91	0.001686	2.35	467.40	114.65	0.14
Elder1	R-1_Down	6.9141	Max WS	942.15	42.35	51.72		51.82	0.001237	2.24	365.68	109.63	0.13
Elder1	R-1_Down	6.91405*	Max WS	941.86	42.35	51.69		51.81	0.001404	2.39	344.07	109.42	0.14
Elder1	R-1_Down	6.9140	Max WS	941.56	42.35	51.65		51.79	0.001610	2.55	321.90	109.17	0.15
Elder1	R-1_Down	6.9135		Culvert									
Elder1	R-1_Down	6.9131	Max WS	939.33	41.36	51.40		51.53	0.001526	2.64	335.83	139.31	0.15
Elder1	R-1_Down	6.9130	Max WS	939.33	41.36	51.41		51.51	0.001217	2.36	375.32	139.63	0.13
Elder1	R-1_Down	6.9129		Lat Struct									
Elder1	R-1_Down	6.9128		Lat Struct									
Elder1	R-1_Down	6.89		Lat Struct									
Elder1	R-1_Down	6.8860	Max WS	1071.11	41.22	51.32		51.35	0.000653	1.72	751.99	141.88	0.10
Elder1	R-1_Down	6.8850	Max WS	1070.54	41.10	51.25		51.28	0.000510	1.55	842.99	152.56	0.09
Elder1	R-1_Down	6.8620	Max WS	1070.01	40.98	51.19		51.22	0.000494	1.53	837.64	149.74	0.08
Elder1	R-1_Down	6.8450	Max WS	1070.11	40.88	51.17		51.18	0.000208	1.00	1201.86	193.63	0.06
Elder1	R-1_Down	6.8330	Max WS	1070.17	40.82	51.16		51.17	0.000177	0.92	1126.20	221.23	0.05
Elder1	R-1_Down	6.8210	Max WS	1069.94	40.76	51.14		51.16	0.000222	1.04	955.45	234.23	0.06
Elder1	R-1_Down	6.82		Lat Struct									
Elder1	R-1_Down	6.8100	Max WS	1070.31	40.70	51.10		51.14	0.000439	1.45	673.19	150.18	0.08
Elder1	R-1_Down	6.791	Max WS	1069.07	40.66	50.89		51.06	0.001967	3.03	328.63	112.76	0.17
Elder1	R-1_Down	6.790		Culvert									
Elder1	R-1_Down	6.7890	Max WS	1066.98	40.64	50.64		50.81	0.002114	3.09	321.27	117.95	0.17
Elder1	R-1_Down	6.7730	Max WS	1066.75	40.60	50.61		50.66	0.001093	2.23	584.91	108.62	0.13
Elder1	R-1_Down	6.7610	Max WS	1065.84	40.54	50.51		50.59	0.001594	2.68	546.43	130.51	0.15
Elder1	R-1_Down	6.7480	Max WS	1065.59	40.48	50.49		50.51	0.000444	1.43	886.18	157.37	0.08
Elder1	R-1_Down	6.7410	Max WS	1065.63	40.44	50.47		50.49	0.000430	1.40	1009.05	221.53	0.08
Elder1	R-1_Down	6.7400	Max WS	1065.65	40.42	50.47		50.48	0.000344	1.25	1093.93	225.86	0.07
Elder1	R-1_Down	6.7190	Max WS	1065.32	40.30	50.43		50.44	0.000349	1.27	1145.01	259.89	0.07
Elder1	R-1_Down	6.7180	Max WS	1065.02	40.30	50.43		50.44	0.000364	1.29	1122.33	256.51	0.07
Elder1	R-1_Down	6.7110	Max WS	1065.02	40.26	50.41		50.43	0.000356	1.28	1086.54	246.21	0.07
Elder1	R-1_Down	6.7000	Max WS	1064.72	40.20	50.37		50.40	0.000606	1.68	836.57	207.00	0.09
Elder1	R-1_Down	6.6910	Max WS	1064.44	40.16	50.33		50.37	0.000775	1.90	696.02	162.02	0.11
Elder1	R-1_Down	6.6650	Max WS	1063.57	40.02	50.21		50.26	0.000927	2.08	714.37	256.89	0.12
Elder1	R-1_Down	6.6530	Max WS	1063.28	40.00	50.16		50.20	0.000834	1.96	738.72	281.67	0.11
Elder1	R-1_Down	6.6340	Max WS	1062.72	39.96	50.07		50.12	0.001005	2.15	780.50	352.07	0.12
Elder1	R-1_Down	6.6040	Max WS	1061.35	39.96	49.91		49.95	0.001011	2.13	729.62	306.69	0.12
Elder1	R-1_Down	6.59		Lat Struct									
Elder1	R-1_Down	6.5500	Max WS	1056.65	39.54	49.71		49.73	0.000572	1.64	1119.78	447.47	0.09
Elder1	R-1_Down	6.5290	Max WS	1055.53	39.40	49.63		49.66	0.000679	1.78	986.27	438.57	0.10
Elder1	R-1_Down	6.5070	Max WS	1053.76	39.40	49.51		49.55	0.001206	2.35	830.48	418.67	0.13
Elder1	R-1_Down	6.4940	Max WS	1052.82	39.22	49.45		49.47	0.000828	1.96	1135.12	650.30	0.11
Elder1	R-1_Down	6.4750	Max WS	1050.58	39.16	49.36		49.39	0.000847	2.00	1013.93	626.94	0.11
Elder1	R-1_Down	6.4420	Max WS	1033.63	39.04	49.20		49.23	0.000921	2.06	1048.41	625.64	0.12
Elder1	R-1_Down	6.4020	Max WS	1028.09	38.84	48.99		49.03	0.001087	2.24	986.81	621.74	0.13
Elder1	R-1_Down	6.3630	Max WS	1025.39	38.64	48.79		48.81	0.000920	2.06	1083.72	653.57	0.12
Elder1	R-1_Down	6.3330	Max WS	1024.46	38.48	48.67		48.70	0.000481	1.50	843.29	475.59	0.08
Elder1	R-1_Down	6.2980	Max WS	1024.19	38.34	48.58		48.61	0.000479	1.49	890.37	382.05	0.08
Elder1	R-1_Down	6.2750	Max WS	1023.96	38.26	48.51		48.54	0.000652	1.75	828.94	346.75	0.10
Elder1	R-1_Down	6.2560	Max WS	1023.76	38.16	48.45		48.47	0.000532	1.57	780.09	248.57	0.09
Elder1	R-1_Down	6.2340	Max WS	1024.31	38.04	48.38		48.41	0.000638	1.74	882.63	372.59	0.10
Elder1	R-1_Down	6.2070	Max WS	1025.03	37.90	48.30		48.32	0.000643	1.76	1174.07	564.81	0.10
Elder1	R-1_Down	6.1800	Max WS	1025.65	37.76	48.22		48.24	0.000549	1.62	1099.96	387.06	0.09
Elder1	R-1_Down	6.1590	Max WS	1026.18	37.66	48.17		48.19	0.000440	1.46	1098.65	528.00	0.08
Elder1	R-1_Down	6.1400	Max WS	1026.72	37.56	48.12		48.14	0.000437	1.46	838.24	445.96	0.08
Elder1	R-1_Down	6.1190	Max WS	1027.31	37.46	48.08		48.10	0.000397	1.40	1121.67	953.48	0.08
Elder1	R-1_Down	6.1010	Max WS	1027.82	37.36	48.04		48.05	0.000357	1.32	1439.77	907.04	0.07
Elder1	R-1_Down	6.0850	Max WS	1028.17	37.28	48.01		48.02	0.000396	1.41	1317.60	824.60	0.08
Elder1	R-1_Down	6.0690	Max WS	1028.36	37.22	47.82		47.96	0.002809	3.71	576.01	672.48	0.20
Elder1	R-1_Down	6.05		Culvert									
Elder1	R-1_Down	6.0400	Max WS	1026.51	37.00	47.44		47.62	0.003907	4.30	401.37	477.07	0.24
Elder1	R-1_Down	6.0150	Max WS	1025.39	36.92	47.29		47.32	0.000770	1.89	1002.94	527.91	0.11
Elder1	R-1_Down	5.9940	Max WS	1024.79	36.84	47.20		47.22	0.000936	2.09	1024.39	531.53	0.12
Elder1	R-1_Down	5.9800	Max WS	1023.97	36.76	47.13		47.16	0.000896	2.03	953.92	597.65	0.11
Elder1	R-1_Down	5.9340	Max WS	1022.07	36.62	46.95		46.97	0.000600	1.66	1067.41	532.80	0.09
Elder1	R-1_Down	5.8910	Max WS	1021.64	36.46	46.88		46.90	0.000386	1.34	1155.00	508.52	0.07
Elder1	R-1_Down	5.8530	Max WS	1021.22	36.46	46.85		46.87	0.000395	1.35	1143.40	499.84	0.08
Elder1	R-1	260.0000	Max WS	34.13	117.38	125.28		125.28	0.000001	0.06	513.83	97.79	0.00
Elder1	R-1	255.0000	Max WS	33.90	117.08	125.28		125.28	0.000001	0.05	556.90	100.40	0.00
Elder1	R-1	250.0000	Max WS	179.91	116.80	125.28		125.28	0.000023	0.29	563.71	101.00	0.02
Elder1	R-1	245.0000	Max WS	180.02	116.44	125.27		125.28	0.000019	0.27	585.87	96.36	0.02
Elder1	R-1	240.0000	Max WS	251.98	116.16	125.27		125.27	0.000033	0.36	603.39	97.71	0.02
Elder1	R-1	235.0000	Max WS	252.05	115.88	125.27		125.27	0.000029	0.35	637.31	100.91	0.02
Elder1	R-1	230.0000	Max WS	252.09	115.64	125.26		125.27	0.000024	0.32	680.50	104.24	0.02
Elder1	R-1	227.5*	Max WS	252.11	115.54	125.26		125.26	0.000025	0.33	672.97	104.71	0.02
Elder1	R-1	225.0000	Max WS	252.13	115.44	125.26		125.26	0.000025	0.33	671.23	102.92	0.02
Elder1	R-1	222		Culvert									
Elder1	R-1	220.0000	Max WS	215.35	111.88	116.79		116.81	0.000824	1.14	182.63	61.07	0.10
Elder1	R-1	219	Max WS	212.12	111.88	116.70		116.72	0.000891	1.16	177.28	60.54	0.10
Elder1	R-1	215.0000	Max WS	432.91	111.56	116.36		116.45	0.003282	2.26	182.70	61.63	0.19
Elder1	R-1	210.0000	Max WS	434.31	111.04	115.80		115.89	0.003431	2.29	181.25	62.09	0.19
Elder1	R-1	205.0000	Max WS	434.52	110.48	115.28		115.36	0.002830	2.12	194.57	66.30	0.18
Elder1	R-1	200.0000	Max WS	434.75	109.88	114.76		114.84	0.002637	2.04	201.85	67.50	0.17
Elder1	R-1	197.0000	Max WS	434.43	109.56	114.46		114.54	0.002686	2.05	199.87	66.13	0.17
Elder1	R-1	195.0000	Max WS	474.71	109.32	114.21		114.30	0.003406	2.27	198.90	65.62	0.19

HEC-RAS Plan: Post100y24h Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1	190.0000	Max WS	498.16	108.56	113.39		113.48	0.003360	2.32	201.85	68.01	0.19
Elder1	R-1	185.0000	Max WS	497.72	107.84	112.56		112.67	0.003737	2.40	194.98	66.27	0.20
Elder1	R-1	182.5*	Max WS	497.00	107.38	111.94		112.06	0.004629	2.61	182.17	65.55	0.22
Elder1	R-1	180.0000	Max WS	488.50	106.50	111.14		111.28	0.005970	2.85	165.41	62.99	0.25
Elder1	R-1	178.0000	Max WS	492.54	105.52	110.67		110.74	0.002155	1.94	233.80	71.32	0.16
Elder1	R-1	177.0000	Max WS	501.90	105.32	110.54		110.60	0.001949	1.89	243.05	74.25	0.15
Elder1	R-1	175.0000	Max WS	495.09	104.76	110.23		110.29	0.001517	1.71	269.36	79.77	0.13
Elder1	R-1	170.0000	Max WS	491.66	103.64	109.84		109.88	0.000781	1.35	339.09	90.24	0.10
Elder1	R-1	167.0000	Max WS	504.51	103.08	109.75		109.77	0.000388	1.00	444.43	104.61	0.07
Elder1	R-1	165.0000	Max WS	504.62	102.76	109.71		109.73	0.000410	1.04	450.06	103.71	0.07
Elder1	R-1	160.0000	Max WS	516.13	101.98	109.63		109.64	0.000306	0.96	517.55	120.77	0.06
Elder1	R-1	158		Culvert									
Elder1	R-1	155.0000	Max WS	282.66	92.97	99.93		99.94	0.000140	0.62	406.08	86.53	0.04
Elder1	R-1	150.0000	Max WS	280.16	92.75	99.91	94.76	99.92	0.000118	0.58	426.07	88.14	0.04

HEC-RAS Plan: Post10y24h Profile: Max WS

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Mor-2	R-1	680.0000	Max WS	18.30	98.71	99.91		99.91	0.000502	0.30	62.67	89.19	0.06
Mor-2	R-1	670.0000	Max WS	17.71	96.72	99.89		99.89	0.000006	0.07	223.49	126.36	0.01
Mor-2	R-1	660.0000	Max WS	17.84	96.54	99.89		99.89	0.000005	0.07	244.14	127.15	0.01
Mor-2	R-1	650.0000	Max WS	17.89	96.48	99.89		99.89	0.000004	0.06	250.79	127.48	0.01
Mor-2	R-1	640.0000	Max WS	18.05	96.26	99.89		99.89	0.000003	0.06	279.65	128.31	0.01
Mor-2	R-1	630.0000	Max WS	18.15	96.12	99.89		99.89	0.000003	0.05	295.13	129.61	0.01
Mor-2	R-1	620.0000	Max WS	59.22	95.84	99.88		99.88	0.000018	0.15	332.49	131.36	0.01
Mor-2	R-1	610.0000	Max WS	64.02	95.58	99.88		99.88	0.000016	0.15	370.29	137.87	0.01
Mor-2	R-1	600.0000	Max WS	64.15	95.34	99.88		99.88	0.000012	0.13	408.34	143.09	0.01
Mor-2	R-1	590.0000	Max WS	64.30	95.10	99.88		99.88	0.000010	0.12	442.38	146.99	0.01
Mor-2	R-1	580.0000	Max WS	89.50	94.94	99.88		99.88	0.000015	0.16	470.04	151.41	0.01
Mor-2	R-1	570.0000	Max WS	89.53	94.94	99.88		99.88	0.000015	0.16	469.97	151.41	0.01
Mor-2	R-1	565		Culvert									
Mor-2	R-1	560.0000	Max WS	54.75	84.60	90.09		90.09	0.000008	0.13	379.36	105.99	0.01
Mor-2	R-1	550.0000	Max WS	54.75	84.52	90.09		90.09	0.000006	0.11	417.66	111.23	0.01
Mor-2	R-1	540.0000	Max WS	57.51	84.24	90.09		90.09	0.000005	0.11	460.25	115.40	0.01
Mor-2	R-1	530.0000	Max WS	58.60	83.99	90.09		90.09	0.000004	0.10	503.88	118.46	0.01
Mor-2	R-1	520.0000	Max WS	58.59	83.90	90.09		90.09	0.000004	0.09	520.88	120.64	0.01
Mor-2	R-1	510.0000	Max WS	58.58	83.64	90.09		90.09	0.000003	0.08	566.82	126.52	0.01
Mor-2	R-1	500.0000	Max WS	58.58	83.54	90.09		90.09	0.000003	0.08	572.37	126.64	0.01
Mor-2	R-1	490.0000	Max WS	58.57	83.30	90.09		90.09	0.000013	0.18	604.86	128.85	0.01
Mor-2	R-1	480.0000	Max WS	58.55	82.98	90.09		90.09	0.000002	0.08	632.21	129.28	0.01
Mor-2	R-1	470.0000	Max WS	58.55	82.93	90.09		90.09	0.000002	0.08	616.42	128.09	0.01
Mor-2	R-1	465		Culvert									
Mor-2	R-1	460.0000	Max WS	48.27	77.05	79.22		79.23	0.000899	0.68	71.38	61.14	0.09
Mor-2	R-1	450.0000	Max WS	47.92	77.05	79.17		79.18	0.001009	0.71	68.50	60.71	0.09
Mor-2	R-1	440.0000	Max WS	52.53	76.76	79.10		79.11	0.000762	0.67	83.92	72.23	0.08
Mor-2	R-1	430.0000	Max WS	52.33	76.54	79.05		79.05	0.000455	0.54	99.62	78.08	0.06
Mor-2	R-1	410.0000	Max WS	51.74	76.32	79.00		79.00	0.000354	0.50	104.86	73.80	0.06
Mor-2	R-1	400.0000	Max WS	51.29	76.16	78.97		78.97	0.000171	0.35	136.53	84.89	0.04
Mor-2	R-1	390.0000	Max WS	50.72	76.08	78.96		78.96	0.000110	0.29	156.94	90.47	0.03
Mor-2	R-1	380.0000	Max WS	50.68	75.96	78.95		78.95	0.000100	0.28	162.47	90.78	0.03
Mor-2	R-1	370.0000	Max WS	120.75	75.76	78.91		78.92	0.000412	0.60	175.70	89.88	0.06
Mor-2	R-1	360.0000	Max WS	120.71	75.54	78.88		78.88	0.000313	0.55	192.86	88.67	0.06
Mor-2	R-1	350.0000	Max WS	131.25	75.00	78.83		78.84	0.000340	0.61	194.69	85.36	0.06
Mor-2	R-1	340.0000	Max WS	131.21	74.40	78.79		78.80	0.000220	0.53	217.17	84.83	0.05
Mor-2	R-1	330.0000	Max WS	131.20	74.00	78.79		78.79	0.000201	0.52	226.03	86.59	0.05
Mor-2	R-1	321.5		Culvert									
Mor-2	R-1	321.000	Max WS	128.61	74.66	77.78		77.78	0.000076	0.31	544.81	617.82	0.03
Mor-2	R-1	320.9	Max WS	128.31	74.66	77.78		77.78	0.000076	0.31	544.45	617.65	0.03
Mor-2	R-1	320.45*	Max WS	128.30	74.86	77.78		77.78	0.000039	0.22	760.56	684.32	0.02
Mor-2	R-1	320.0000	Max WS	128.29	75.05	77.78		77.78	0.000038	0.21	744.95	636.46	0.02
Mor-2	R-1	319.5*	Max WS	128.26	74.90	77.77		77.77	0.000081	0.26	563.97	431.83	0.03
Mor-2	R-1	319.0000	Max WS	128.24	74.76	77.43		77.47	0.010778	2.08	87.01	144.56	0.34
Mor-2	R-1	318.5*	Max WS	128.23	74.23	76.16		76.23	0.017196	2.55	72.13	149.87	0.43
Mor-2	R-1	318.0000	Max WS	127.58	73.70	75.39		75.39	0.001202	0.85	208.14	240.02	0.12
Mor-2	R-1	317.666*	Max WS	127.32	73.68	75.29		75.30	0.001465	0.89	205.80	277.03	0.13
Mor-2	R-1	317.333*	Max WS	127.07	73.66	75.18		75.18	0.001871	0.93	198.44	319.62	0.15
Mor-2	R-1	317.0000	Max WS	126.77	73.64	75.03		75.04	0.002298	0.93	189.50	346.37	0.16
Mor-2	R-1	316.666*	Max WS	126.24	73.34	74.84		74.85	0.002279	0.91	196.10	373.32	0.16
Mor-2	R-1	316.333*	Max WS	125.49	73.03	74.66		74.66	0.002133	0.93	207.08	407.85	0.15
Mor-2	R-1	316.0000	Max WS	125.18	72.73	74.49		74.49	0.001838	0.91	223.07	449.10	0.14
Mor-2	R-1	315.0000	Max WS	15.00	72.97	74.00	73.34	74.00	0.000044	0.10	197.72	436.32	0.02
Elder1	R-1_Down	95.0000	Max WS	157.55	90.16	98.24		98.24	0.000007	0.15	822.51	137.61	0.01
Elder1	R-1_Down	90.0000	Max WS	157.52	90.00	98.24		98.24	0.000006	0.15	846.12	138.11	0.01
Elder1	R-1_Down	86		Culvert									
Elder1	R-1_Down	85.0000	Max WS	156.48	89.81	98.22		98.22	0.000005	0.14	875.04	138.72	0.01
Elder1	R-1_Down	80.0000	Max WS	156.47	89.63	98.22		98.22	0.000005	0.13	905.61	139.88	0.01
Elder1	R-1_Down	77.5*	Max WS	159.10	89.56	98.22		98.22	0.000005	0.13	919.47	140.08	0.01
Elder1	R-1_Down	75.0000	Max WS	159.41	89.47	98.22		98.22	0.000005	0.13	933.29	140.23	0.01
Elder1	R-1_Down	70.0000	Max WS	159.38	89.28	98.22		98.22	0.000004	0.13	958.03	141.15	0.01
Elder1	R-1_Down	65.0000	Max WS	165.92	89.16	98.22		98.22	0.000003	0.11	1124.02	167.45	0.01
Elder1	R-1_Down	60.0000	Max WS	165.91	89.06	98.22		98.22	0.000002	0.09	1405.07	202.62	0.01
Elder1	R-1_Down	55.0000	Max WS	165.88	88.94	98.22		98.22	0.000001	0.07	1639.32	229.20	0.00
Elder1	R-1_Down	50.0000	Max WS	165.65	88.81	98.22		98.22	0.000002	0.08	1473.55	205.09	0.00
Elder1	R-1_Down	45.0000	Max WS	165.64	88.69	98.22		98.22	0.000002	0.09	1434.15	199.20	0.01
Elder1	R-1_Down	40.0000	Max WS	165.64	88.54	98.22		98.22	0.000002	0.09	1394.55	191.99	0.01
Elder1	R-1_Down	35.0000	Max WS	165.75	88.41	98.22		98.22	0.000002	0.09	1412.17	193.09	0.01
Elder1	R-1_Down	30.0000	Max WS	165.72	88.25	98.21		98.22	0.000002	0.09	1428.61	189.30	0.00
Elder1	R-1_Down	28.0000	Max WS	165.63	87.97	98.21		98.21	0.000001	0.08	1493.18	188.13	0.00
Elder1	R-1_Down	27.0000	Max WS	165.62	87.84	98.21		98.21	0.000001	0.08	1531.94	191.28	0.00
Elder1	R-1_Down	26.0000	Max WS	165.61	87.72	98.21		98.21	0.000001	0.08	1640.76	211.72	0.00
Elder1	R-1_Down	25.5		Culvert									
Elder1	R-1_Down	25.0000	Max WS	163.58	87.53	91.48		91.48	0.000061	0.28	491.33	198.01	0.03
Elder1	R-1_Down	24.0000	Max WS	163.48	87.48	91.48		91.48	0.000085	0.32	438.75	183.74	0.03
Elder1	R-1_Down	23.0000	Max WS	161.30	87.40	91.26		91.33	0.004136	1.98	81.23	166.01	0.20
Elder1	R-1_Down	22.5		Culvert									
Elder1	R-1_Down	22.0000	Max WS	161.30	87.40	91.22		91.23	0.000065	0.37	605.45	414.68	0.04
Elder1	R-1_Down	21.0000	Max WS	200.97	86.60	88.54		88.63	0.009149	2.82	103.08	212.66	0.44
Elder1	R-1_Down	20.550*	Max WS	206.57	86.10	88.26		88.28	0.001475	1.26	212.67	218.56	0.18
Elder1	R-1_Down	20.1000	Max WS	206.00	85.60	88.19		88.20	0.000905	1.16	249.90	243.35	0.15
Elder1	R-1_Down	11.724	Max WS	204.94	85.65	87.93		87.96	0.003078	1.74	164.60	228.55	0.26
Elder1	R-1_Down	11.659	Max WS	202.91	84.72	87.06		87.08	0.002077	1.85	180.83	216.20	0.22
Elder1	R-1_Down	11.593	Max WS	211.49	83.92	86.24		86.27	0.002886	1.95	172.69	229.32	0.26
Elder1	R-1_Down	11.538	Max WS	218.88	82.92	85.72		85.74	0.001123	1.46	221.02	198.69	0.17
Elder1	R-1_Down	11.482	Max WS	228.50	82.27	84.82		84.87	0.004731	2.32	133.95	155.44	0.32

HEC-RAS Plan: Post10y24h Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	11.433	Max WS	231.60	81.55	84.14		84.15	0.000770	1.58	350.07	472.12	0.20
Elder1	R-1_Down	11.376	Max WS	280.43	80.86	83.95		83.97	0.000421	1.37	383.43	316.69	0.16
Elder1	R-1_Down	11.313	Max WS	289.35	80.70	83.81		83.83	0.000476	1.37	333.60	231.29	0.16
Elder1	R-1_Down	11.252	Max WS	298.43	80.24	83.49		83.55	0.001400	2.47	220.60	217.89	0.28
Elder1	R-1_Down	11.175	Max WS	308.16	79.60	82.93		83.02	0.001630	2.60	195.63	234.14	0.30
Elder1	R-1_Down	11.125	Max WS	315.32	79.27	82.69		82.72	0.000495	1.54	344.22	354.36	0.17
Elder1	R-1_Down	11.063	Max WS	323.05	78.95	82.53		82.55	0.000609	1.75	475.82	743.08	0.19
Elder1	R-1_Down	10.995	Max WS	376.72	78.76	82.11		82.14	0.001284	2.12	431.18	607.87	0.26
Elder1	R-1_Down	10.936	Max WS	413.66	76.97	81.40		81.47	0.002029	2.94	322.87	426.66	0.33
Elder1	R-1_Down	10.884	Max WS	408.07	76.68	81.14		81.14	0.000158	1.14	779.38	442.71	0.10
Elder1	R-1_Down	10.834	Max WS	407.16	76.47	81.10		81.10	0.000144	1.12	768.21	419.65	0.10
Elder1	R-1_Down	10.775	Max WS	406.41	76.23	81.05		81.06	0.000157	1.20	733.30	466.93	0.10
Elder1	R-1_Down	10.7475*	Max WS	405.91	75.69	81.00		81.03	0.000340	1.82	499.84	366.30	0.15
Elder1	R-1_Down	10.720	Max WS	405.28	75.15	80.89		80.97	0.000820	2.87	352.33	371.75	0.23
Elder1	R-1_Down	10.705	Max WS	404.04	75.34	80.73		80.90	0.001866	3.64	236.59	500.75	0.34
Elder1	R-1_Down	10.704	Max WS	404.41	75.44	80.78		80.79	0.000340	1.30	658.83	553.94	0.14
Elder1	R-1_Down	10.689		Mult Open									
Elder1	R-1_Down	10.686	Max WS	404.23	75.07	80.75		80.75	0.000238	1.12	807.01	624.20	0.11
Elder1	R-1_Down	10.681	Max WS	404.22	75.23	80.74		80.75	0.000146	1.08	822.86	644.76	0.10
Elder1	R-1_Down	10.65	Max WS	404.03	74.93	80.71		80.73	0.000095	1.02	547.79	357.33	0.08
Elder1	R-1_Down	10.63		Lat Struct									
Elder1	R-1_Down	10.619	Max WS	404.01	75.38	80.65		80.68	0.000438	1.42	415.01	287.54	0.16
Elder1	R-1_Down	10.613		Culvert									
Elder1	R-1_Down	10.607	Max WS	403.95	75.04	77.76		78.24	0.006924	5.56	72.60	351.04	0.63
Elder1	R-1_Down	10.562	Max WS	403.88	74.78	77.37		77.43	0.001729	2.14	285.19	356.41	0.30
Elder1	R-1_Down	10.507	Max WS	403.85	74.62	76.68		76.80	0.004035	3.00	174.36	197.86	0.44
Elder1	R-1_Down	10.442	Max WS	406.83	74.36	75.67		75.71	0.002367	1.60	300.93	432.90	0.31
Elder1	R-1_Down	10.361	Max WS	410.12	72.88	74.96		74.97	0.001161	1.71	480.65	551.20	0.24
Elder1	R-1_Down	10.312	Max WS	412.29	71.78	74.50		74.55	0.002324	2.69	311.14	493.93	0.35
Elder1	R-1_Down	10.272	Max WS	414.12	71.03	73.82		73.95	0.003739	3.37	213.52	284.11	0.44
Elder1	R-1_Down	10.214	Max WS	445.02	69.83	73.04		73.10	0.001929	2.67	301.38	278.37	0.32
Elder1	R-1_Down	10.141	Max WS	483.05	68.54	72.33		72.41	0.001951	2.89	308.67	272.22	0.33
Elder1	R-1_Down	10.09	Max WS	485.10	68.60	71.83		71.93	0.001843	3.00	284.75	262.68	0.33
Elder1	R-1_Down	10.034	Max WS	486.25	68.74	71.23		71.28	0.002375	2.73	379.06	501.95	0.35
Elder1	R-1_Down	9.974	Max WS	486.33	67.83	70.72		70.74	0.001006	1.93	559.99	609.90	0.23
Elder1	R-1_Down	9.919	Max WS	488.08	67.56	70.50		70.52	0.000452	1.55	632.38	493.85	0.16
Elder1	R-1_Down	9.878	Max WS	489.19	67.52	70.15		70.27	0.002297	2.94	227.44	514.36	0.35
Elder1	R-1_Down	9.813	Max WS	490.74	67.00	69.34		69.43	0.002519	2.91	262.04	342.86	0.37
Elder1	R-1_Down	9.749	Max WS	489.89	65.60	68.67		68.74	0.001591	2.47	323.52	335.50	0.30
Elder1	R-1_Down	9.701	Max WS	490.53	64.81	68.44		68.46	0.000463	1.65	522.45	390.85	0.17
Elder1	R-1_Down	9.633	Max WS	492.71	64.72	68.21		68.24	0.000759	1.82	436.28	430.55	0.21
Elder1	R-1_Down	9.566	Max WS	495.05	63.42	67.18		67.46	0.004382	4.30	134.82	126.34	0.50
Elder1	R-1_Down	9.524	Max WS	496.47	62.22	66.46		66.53	0.003369	2.41	280.86	344.29	0.39
Elder1	R-1_Down	9.49		Lat Struct									
Elder1	R-1_Down	9.486	Max WS	497.68	61.46	65.84		65.98	0.002306	3.28	227.66	299.23	0.36
Elder1	R-1_Down	9.438	Max WS	500.09	59.47	65.54		65.61	0.000650	2.24	314.01	322.10	0.20
Elder1	R-1_Down	9.387	Max WS	499.36	59.78	64.85		65.06	0.003670	3.79	170.05	230.17	0.45
Elder1	R-1_Down	9.329	Max WS	498.30	58.24	64.17		64.30	0.001218	2.92	170.59	48.71	0.28
Elder1	R-1_Down	9.282	Max WS	495.61	57.97	63.83		63.97	0.001384	3.08	161.98	104.07	0.29
Elder1	R-1_Down	9.228	Max WS	493.00	57.48	63.60		63.69	0.000618	2.36	208.46	311.84	0.20
Elder1	R-1_Down	9.185	Max WS	492.04	57.64	63.46		63.54	0.000693	2.35	266.58	410.09	0.21
Elder1	R-1_Down	9.143	Max WS	491.34	57.35	63.28		63.38	0.000742	2.47	199.63	465.84	0.22
Elder1	R-1_Down	9.091	Max WS	491.58	57.48	63.15		63.21	0.000472	2.02	305.54	263.07	0.18
Elder1	R-1_Down	9.039	Max WS	492.23	57.06	63.02		63.08	0.000472	1.98	340.22	324.81	0.18
Elder1	R-1_Down	8.975	Max WS	493.73	57.39	62.86		62.92	0.000487	2.05	358.83	493.31	0.18
Elder1	R-1_Down	8.969	Max WS	493.89	57.00	62.86	58.88	62.90	0.000484	1.63	418.62	556.90	0.17
Elder1	R-1_Down	8.961		Bridge									
Elder1	R-1_Down	8.954	Max WS	493.81	57.10	62.75		62.80	0.000353	1.83	358.69	570.55	0.15
Elder1	R-1_Down	8.89	Max WS	494.15	57.04	61.96		62.26	0.003573	4.43	115.27	273.31	0.45
Elder1	R-1_Down	8.811	Max WS	493.82	56.79	61.19		61.24	0.001088	2.28	369.65	842.46	0.25
Elder1	R-1_Down	8.752	Max WS	493.99	57.25	60.48		60.62	0.002955	3.46	223.80	698.99	0.40
Elder1	R-1_Down	8.697	Max WS	493.40	56.74	60.00		60.02	0.000645	1.45	686.28	1700.33	0.18
Elder1	R-1_Down	8.598	Max WS	494.54	55.92	59.71		59.72	0.000675	0.88	707.32	1129.44	0.17
Elder1	R-1_Down	8.565	Max WS	493.81	55.85	59.54		59.55	0.001668	1.16	549.65	1244.23	0.25
Elder1	R-1_Down	8.466	Max WS	491.31	55.58	59.17		59.18	0.000476	1.30	1002.61	1698.50	0.16
Elder1	R-1_Down	8.258	Max WS	486.69	55.90	58.31		58.33	0.001370	1.35	569.61	1932.98	0.24
Elder1	R-1_Down	8.195	Max WS	486.34	55.61	57.92		57.93	0.000760	0.78	791.65	1018.07	0.17
Elder1	R-1_Down	8.105	Max WS	486.95	55.58	57.77		57.77	0.000270	0.56	1098.11	1255.65	0.11
Elder1	R-1_Down	7.93	Max WS	484.22	54.96	56.96		57.02	0.002223	1.91	284.25	1372.10	0.32
Elder1	R-1_Down	7.863	Max WS	481.63	53.97	56.58		56.59	0.000236	0.74	1141.41	1814.07	0.11
Elder1	R-1_Down	7.862		Lat Struct									
Elder1	R-1_Down	7.783	Max WS	445.87	52.32	56.05		56.12	0.002537	2.32	233.72	784.18	0.35
Elder1	R-1_Down	7.740	Max WS	398.11	52.21	55.65		55.69	0.001420	2.00	352.71	515.93	0.27
Elder1	R-1_Down	7.689	Max WS	366.45	51.89	55.46		55.46	0.000081	0.39	1607.80	1762.20	0.06
Elder1	R-1_Down	7.625	Max WS	355.43	50.92	55.37	53.48	55.46	0.001254	2.33	178.78	216.59	0.27
Elder1	R-1_Down	7.6225		Bridge									
Elder1	R-1_Down	7.620	Max WS	355.37	51.00	55.34		55.38	0.000799	1.94	323.08	360.48	0.21
Elder1	R-1_Down	7.619		Lat Struct									
Elder1	R-1_Down	7.543	Max WS	326.10	50.76	54.87		55.04	0.002144	3.30	98.71	35.72	0.35
Elder1	R-1_Down	7.516	Max WS	314.05	50.67	54.51		54.67	0.001617	3.24	99.78	72.19	0.31
Elder1	R-1_Down	7.317	Max WS	130.32	49.76	53.83		53.84	0.000145	0.89	388.61	715.77	0.09
Elder1	R-1_Down	7.259		Lat Struct									
Elder1	R-1_Down	7.258	Max WS	361.02	49.57	52.83		53.16	0.004981	4.63	82.76	65.75	0.52
Elder1	R-1_Down	7.0770	Max WS	364.01	47.10	51.89	48.68	51.95	0.001389	1.94	210.82	61.26	0.16
Elder1	R-1_Down	7.05		Inl Struct									
Elder1	R-1_Down	7.0130	Max WS	363.75	46.84	51.18		51.25	0.002028	2.22	184.58	55.71	0.19

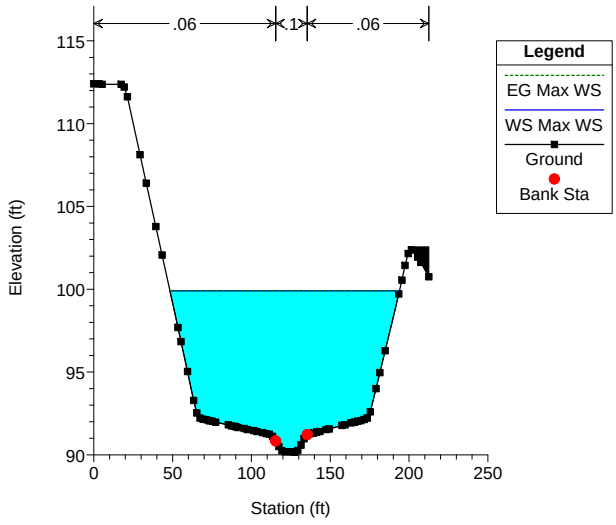
HEC-RAS Plan: Post10y24h Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	6.98		Lat Struct									
Elder1	R-1_Down	6.9650	Max WS	411.40	46.68	50.09	48.37	50.23	0.005874	3.22	142.80	53.21	0.31
Elder1	R-1_Down	6.94		Inl Struct									
Elder1	R-1_Down	6.9350	Max WS	410.10	42.39	48.58		48.64	0.002154	1.90	217.38	61.30	0.15
Elder1	R-1_Down	6.9141	Max WS	409.94	42.35	48.50		48.55	0.001093	1.57	230.54	74.27	0.11
Elder1	R-1_Down	6.91405*	Max WS	409.94	42.35	48.48		48.54	0.001232	1.67	217.42	74.18	0.12
Elder1	R-1_Down	6.9140	Max WS	409.85	42.35	48.46		48.52	0.001405	1.77	203.78	74.08	0.13
Elder1	R-1_Down	6.9135		Culvert									
Elder1	R-1_Down	6.9131	Max WS	409.40	41.36	48.33		48.38	0.001156	1.79	222.07	81.19	0.12
Elder1	R-1_Down	6.9130	Max WS	409.40	41.36	48.33		48.37	0.000952	1.63	245.70	81.19	0.11
Elder1	R-1_Down	6.9129		Lat Struct									
Elder1	R-1_Down	6.9128		Lat Struct									
Elder1	R-1_Down	6.89		Lat Struct									
Elder1	R-1_Down	6.8860	Max WS	559.98	41.22	48.20		48.22	0.000728	1.41	418.01	89.46	0.10
Elder1	R-1_Down	6.8850	Max WS	559.91	41.10	48.12		48.14	0.000565	1.27	476.89	101.51	0.09
Elder1	R-1_Down	6.8620	Max WS	559.75	40.98	48.05		48.08	0.000523	1.23	479.63	97.45	0.08
Elder1	R-1_Down	6.8450	Max WS	559.69	40.88	48.03		48.04	0.000222	0.81	708.65	139.56	0.05
Elder1	R-1_Down	6.8330	Max WS	559.70	40.82	48.01		48.02	0.000251	0.86	686.29	160.17	0.06
Elder1	R-1_Down	6.8210	Max WS	559.63	40.76	47.99		48.01	0.000272	0.90	609.65	156.24	0.06
Elder1	R-1_Down	6.82		Lat Struct									
Elder1	R-1_Down	6.8100	Max WS	559.85	40.70	47.96		47.98	0.000504	1.22	437.71	107.04	0.08
Elder1	R-1_Down	6.791	Max WS	559.55	40.66	47.79		47.89	0.002064	2.42	220.07	70.17	0.16
Elder1	R-1_Down	6.790		Culvert									
Elder1	R-1_Down	6.7890	Max WS	559.29	40.64	47.71		47.81	0.002108	2.43	218.67	69.94	0.16
Elder1	R-1_Down	6.7730	Max WS	559.14	40.60	47.62		47.66	0.001244	1.87	331.91	72.60	0.13
Elder1	R-1_Down	6.7610	Max WS	558.97	40.54	47.52		47.58	0.001570	2.08	302.11	68.84	0.14
Elder1	R-1_Down	6.7480	Max WS	558.89	40.48	47.49		47.51	0.000433	1.11	523.79	105.72	0.07
Elder1	R-1_Down	6.7410	Max WS	558.90	40.44	47.47		47.49	0.000353	0.99	579.49	117.26	0.07
Elder1	R-1_Down	6.7400	Max WS	558.81	40.42	47.47		47.48	0.000311	0.93	617.78	126.06	0.06
Elder1	R-1_Down	6.7190	Max WS	558.72	40.30	47.42		47.44	0.000432	1.11	536.88	113.53	0.07
Elder1	R-1_Down	6.7180	Max WS	558.72	40.30	47.42		47.44	0.000437	1.12	536.76	113.99	0.07
Elder1	R-1_Down	6.7110	Max WS	558.72	40.26	47.41		47.42	0.000405	1.08	556.72	118.53	0.07
Elder1	R-1_Down	6.7000	Max WS	558.63	40.20	47.36		47.39	0.000694	1.41	435.76	96.01	0.09
Elder1	R-1_Down	6.6910	Max WS	558.54	40.16	47.32		47.35	0.000854	1.56	385.49	81.46	0.10
Elder1	R-1_Down	6.6650	Max WS	558.20	40.02	47.20		47.23	0.000845	1.56	385.72	81.31	0.10
Elder1	R-1_Down	6.6530	Max WS	558.11	40.00	47.15		47.18	0.000823	1.53	387.94	81.54	0.10
Elder1	R-1_Down	6.6340	Max WS	557.93	39.96	47.07		47.10	0.000825	1.53	393.65	82.80	0.10
Elder1	R-1_Down	6.6040	Max WS	557.65	39.96	46.93		46.97	0.000898	1.58	382.17	81.94	0.11
Elder1	R-1_Down	6.59		Lat Struct									
Elder1	R-1_Down	6.5500	Max WS	563.39	39.54	46.73		46.76	0.000653	1.38	450.17	109.77	0.09
Elder1	R-1_Down	6.5290	Max WS	563.20	39.40	46.64		46.67	0.000805	1.52	400.49	88.21	0.10
Elder1	R-1_Down	6.5070	Max WS	562.81	39.40	46.52		46.57	0.001002	1.69	334.88	81.96	0.11
Elder1	R-1_Down	6.4940	Max WS	562.81	39.22	46.47		46.50	0.000753	1.47	411.73	85.27	0.10
Elder1	R-1_Down	6.4750	Max WS	562.52	39.16	46.40		46.43	0.000655	1.39	426.22	86.07	0.09
Elder1	R-1_Down	6.4420	Max WS	562.12	39.04	46.28		46.31	0.000746	1.46	412.24	84.67	0.10
Elder1	R-1_Down	6.4020	Max WS	561.71	38.84	46.12		46.15	0.000726	1.46	413.62	84.17	0.10
Elder1	R-1_Down	6.3630	Max WS	561.30	38.64	45.98		46.01	0.000684	1.42	409.68	91.87	0.09
Elder1	R-1_Down	6.3330	Max WS	560.88	38.48	45.87		45.90	0.000653	1.41	444.86	124.42	0.09
Elder1	R-1_Down	6.2980	Max WS	560.57	38.34	45.75		45.78	0.000617	1.36	444.95	113.83	0.09
Elder1	R-1_Down	6.2750	Max WS	560.37	38.26	45.68		45.70	0.000614	1.36	438.65	86.07	0.09
Elder1	R-1_Down	6.2560	Max WS	560.17	38.16	45.62		45.64	0.000576	1.31	447.50	87.75	0.09
Elder1	R-1_Down	6.2340	Max WS	560.53	38.04	45.55		45.57	0.000551	1.30	462.90	100.35	0.08
Elder1	R-1_Down	6.2070	Max WS	560.89	37.90	45.50		45.51	0.000369	1.07	609.39	140.52	0.07
Elder1	R-1_Down	6.1800	Max WS	561.34	37.76	45.43		45.45	0.000460	1.20	497.83	100.77	0.08
Elder1	R-1_Down	6.1590	Max WS	561.56	37.66	45.39		45.41	0.000472	1.22	497.78	178.25	0.08
Elder1	R-1_Down	6.1400	Max WS	561.88	37.56	45.33		45.35	0.000585	1.37	483.77	129.48	0.09
Elder1	R-1_Down	6.1190	Max WS	562.23	37.46	45.27		45.29	0.000515	1.29	490.77	133.12	0.08
Elder1	R-1_Down	6.1010	Max WS	562.52	37.36	45.22		45.24	0.000482	1.24	475.30	140.60	0.08
Elder1	R-1_Down	6.0850	Max WS	562.79	37.28	45.19		45.20	0.000407	1.16	517.81	101.99	0.07
Elder1	R-1_Down	6.0690	Max WS	562.96	37.22	45.09		45.15	0.001012	1.82	284.42	76.74	0.12
Elder1	R-1_Down	6.05		Culvert									
Elder1	R-1_Down	6.0400	Max WS	562.22	37.00	44.74		44.81	0.001043	1.81	277.05	107.00	0.12
Elder1	R-1_Down	6.0150	Max WS	562.14	36.92	44.70		44.73	0.000545	1.30	456.69	108.24	0.08
Elder1	R-1_Down	5.9940	Max WS	562.05	36.84	44.64		44.67	0.000542	1.31	452.80	103.33	0.08
Elder1	R-1_Down	5.9800	Max WS	561.87	36.76	44.60		44.63	0.000561	1.32	449.93	102.35	0.09
Elder1	R-1_Down	5.9340	Max WS	561.60	36.62	44.47		44.49	0.000525	1.28	459.93	107.59	0.08
Elder1	R-1_Down	5.8910	Max WS	561.35	36.46	44.39		44.42	0.000497	1.26	473.61	126.44	0.08
Elder1	R-1_Down	5.8530	Max WS	561.26	36.46	44.36		44.38	0.000508	1.27	469.40	123.04	0.08
Elder1	R-1	260.0000	Max WS	23.66	117.38	122.11		122.11	0.000005	0.09	238.77	75.66	0.01
Elder1	R-1	255.0000	Max WS	23.53	117.08	122.11		122.11	0.000004	0.08	270.42	80.44	0.01
Elder1	R-1	250.0000	Max WS	126.04	116.80	122.10		122.10	0.000094	0.42	275.25	79.15	0.03
Elder1	R-1	245.0000	Max WS	126.14	116.44	122.09		122.09	0.000060	0.35	308.90	77.47	0.03
Elder1	R-1	240.0000	Max WS	175.93	116.16	122.08		122.08	0.000101	0.47	322.36	78.27	0.03
Elder1	R-1	235.0000	Max WS	175.57	115.88	122.06		122.07	0.000084	0.44	346.42	80.84	0.03
Elder1	R-1	230.0000	Max WS	175.79	115.64	122.06		122.06	0.000066	0.40	378.32	84.18	0.03
Elder1	R-1	227.5*	Max WS	175.87	115.54	122.05		122.06	0.000069	0.42	371.54	83.65	0.03
Elder1	R-1	225.0000	Max WS	175.96	115.44	122.05		122.05	0.000066	0.41	373.45	82.64	0.03
Elder1	R-1	222		Culvert									
Elder1	R-1	220.0000	Max WS	163.55	111.88	116.04		116.06	0.001109	1.17	138.57	56.54	0.11
Elder1	R-1	219	Max WS	158.59	111.88	115.92		115.94	0.001238	1.20	131.79	55.78	0.11
Elder1	R-1	215.0000	Max WS	280.15	111.56	115.61		115.67	0.003277	1.99	137.96	57.37	0.18
Elder1	R-1	210.0000	Max WS	280.95	111.04	115.05		115.11	0.003494	2.04	135.91	57.73	0.19
Elder1	R-1	205.0000	Max WS	281.06	110.48	114.51		114.56	0.002935	1.90	145.00	61.60	0.17
Elder1	R-1	200.0000	Max WS	281.32	109.88	113.97		114.02	0.002754	1.83	150.04	62.43	0.17
Elder1	R-1	197.0000	Max WS	281.34	109.56	113.65		113.71	0.002824	1.83	148.32	60.92	0.17
Elder1	R-1	195.0000	Max WS	301.57	109.32	113.41		113.47	0.003399	1.98	148.28	60.44	0.19

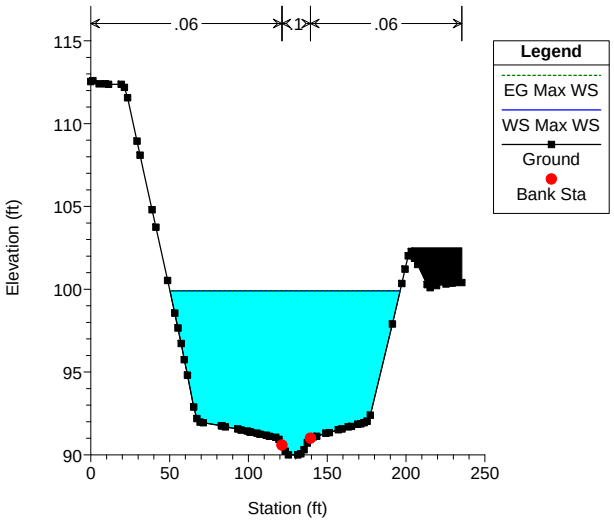
HEC-RAS Plan: Post10y24h Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1	190.0000	Max WS	313.65	108.56	112.60		112.67	0.003273	2.02	150.54	62.79	0.18
Elder1	R-1	185.0000	Max WS	313.83	107.84	111.81		111.89	0.003538	2.06	147.18	61.62	0.19
Elder1	R-1	182.5*	Max WS	313.94	107.38	111.22		111.30	0.004506	2.27	136.52	61.05	0.21
Elder1	R-1	180.0000	Max WS	313.85	106.50	110.26		110.38	0.008263	2.84	111.98	57.47	0.28
Elder1	R-1	178.0000	Max WS	320.74	105.52	109.58		109.64	0.002941	1.91	159.65	64.02	0.18
Elder1	R-1	177.0000	Max WS	327.48	105.32	109.38		109.45	0.002854	1.91	162.10	66.28	0.17
Elder1	R-1	175.0000	Max WS	324.75	104.76	108.89		108.95	0.002591	1.83	169.97	68.49	0.17
Elder1	R-1	170.0000	Max WS	321.39	103.64	108.18		108.22	0.001517	1.51	202.38	73.98	0.13
Elder1	R-1	167.0000	Max WS	327.86	103.08	108.00		108.02	0.000687	1.08	274.51	89.37	0.09
Elder1	R-1	165.0000	Max WS	327.60	102.76	107.93		107.95	0.000707	1.10	279.90	87.08	0.09
Elder1	R-1	160.0000	Max WS	334.07	101.98	107.79		107.81	0.000453	0.96	325.71	91.99	0.07
Elder1	R-1	158		Culvert									
Elder1	R-1	155.0000	Max WS	137.94	92.97	98.25		98.25	0.000114	0.46	269.55	75.97	0.04
Elder1	R-1	150.0000	Max WS	135.86	92.75	98.24	94.26	98.24	0.000091	0.42	286.89	77.85	0.03

EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

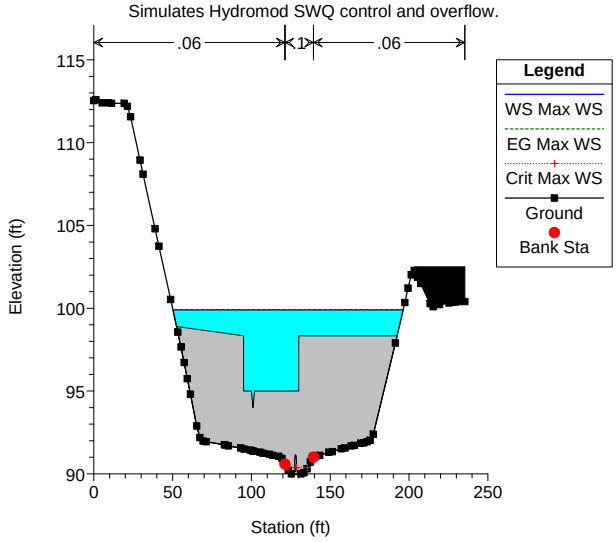


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



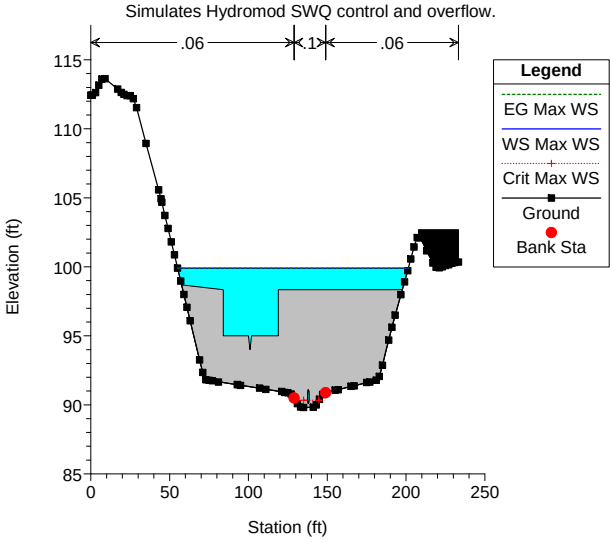
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

Simulates Hydromod SWQ control and overflow.

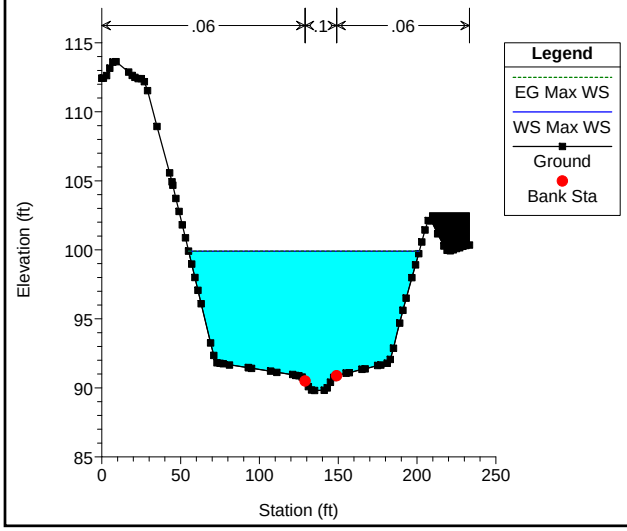


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

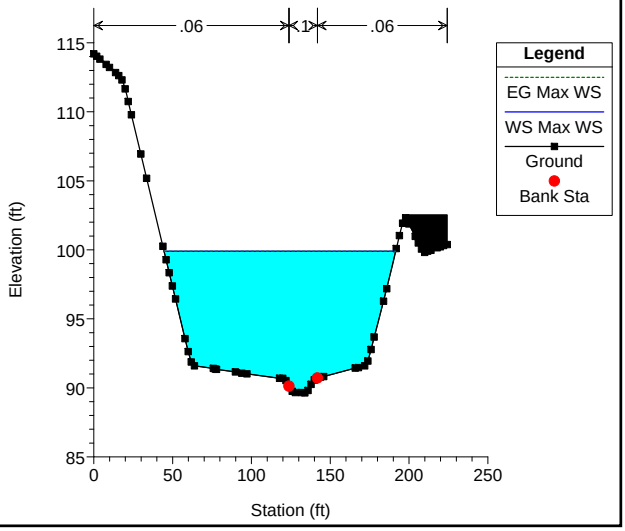
Simulates Hydromod SWQ control and overflow.

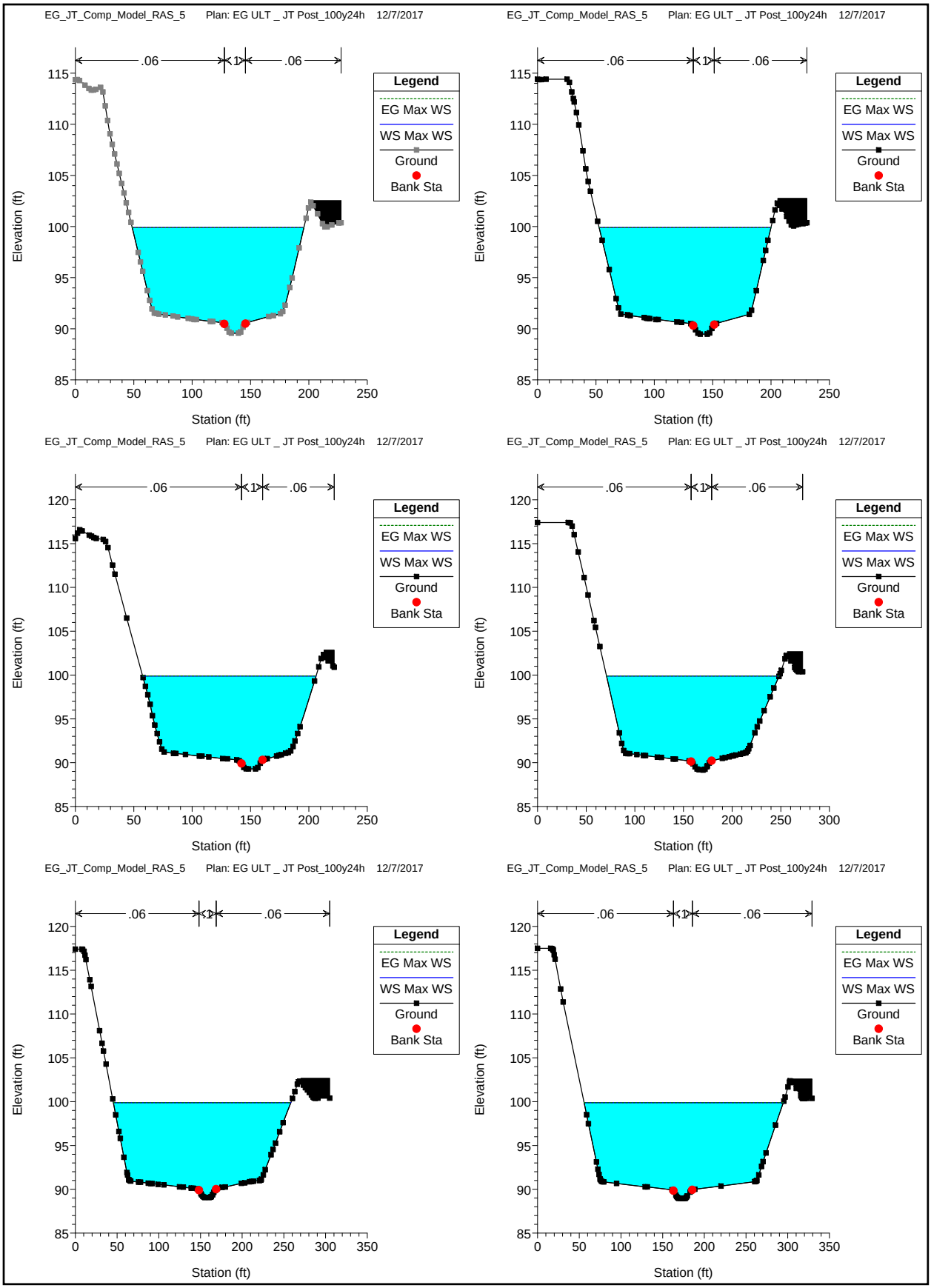


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017




EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG Max WS
WS Max WS
Ground
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG Max WS
WS Max WS
Ground
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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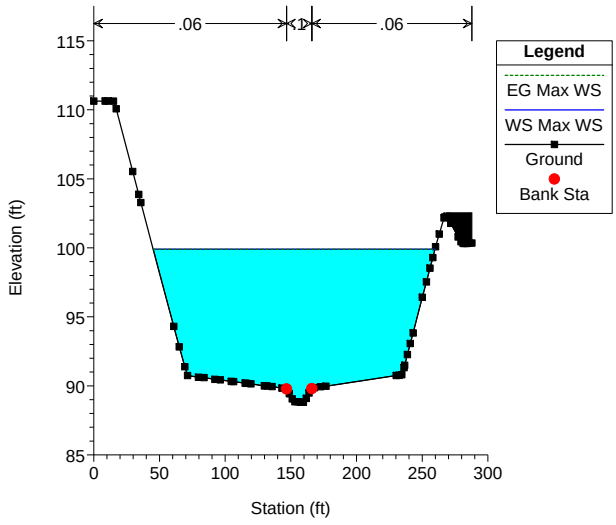
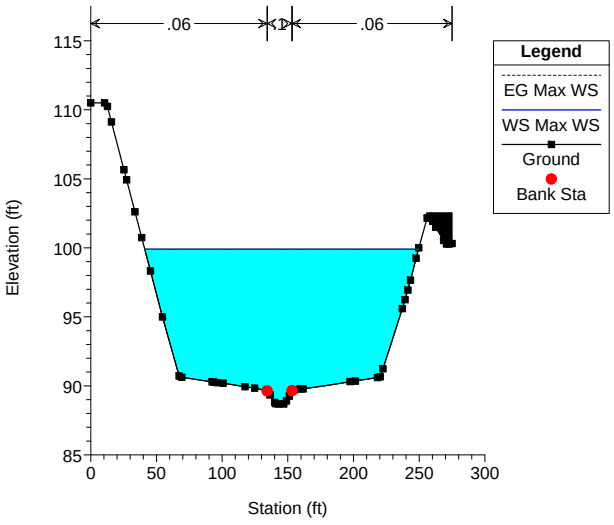
EG Max WS
WS Max WS
Ground
Bank Sta
Elevation (ft)
Station (ft)

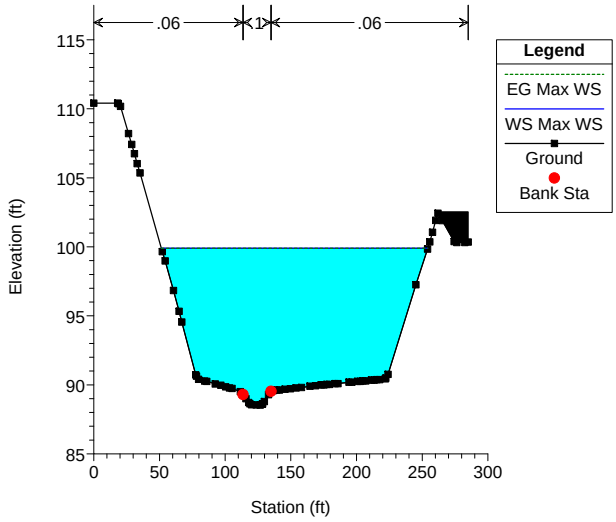
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



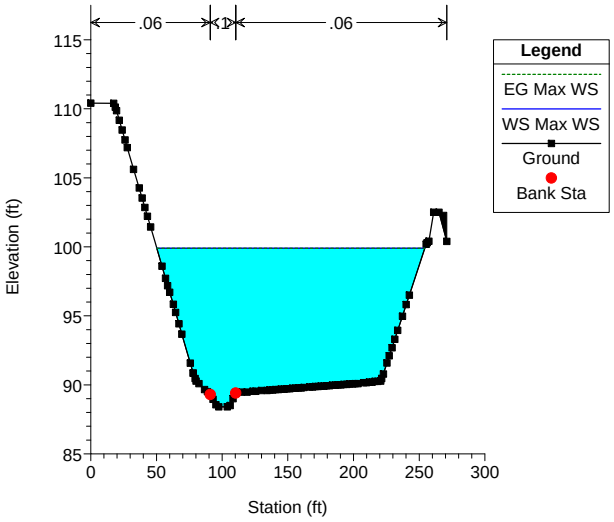
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



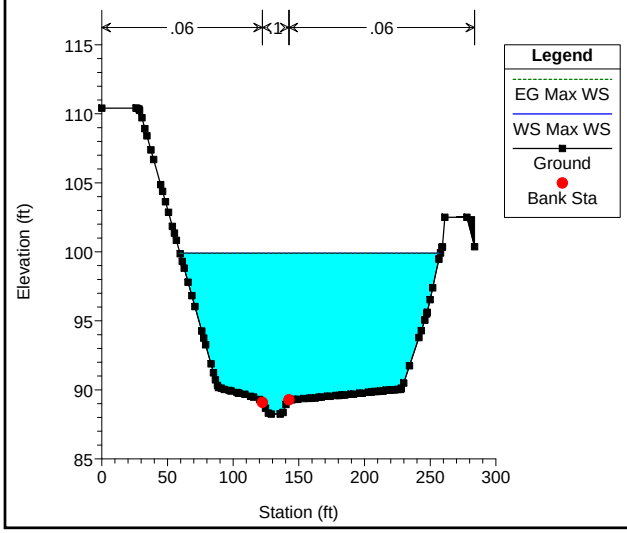
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



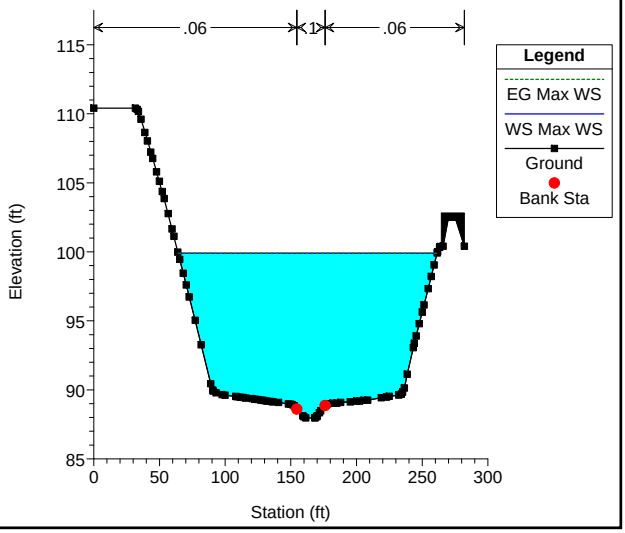
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



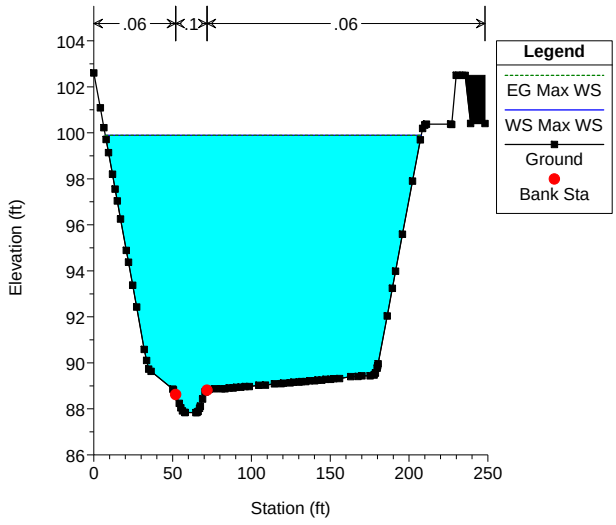
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



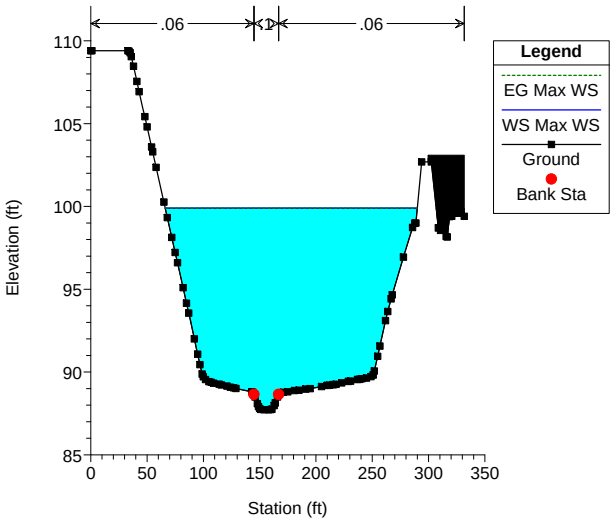
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

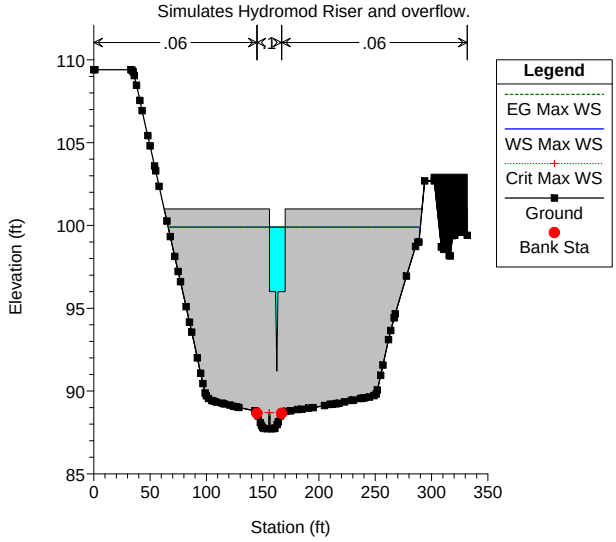


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



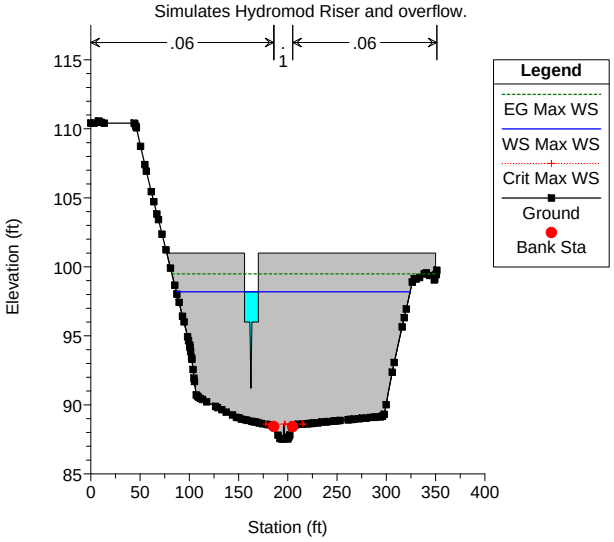
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

Simulates Hydromod Riser and overflow.

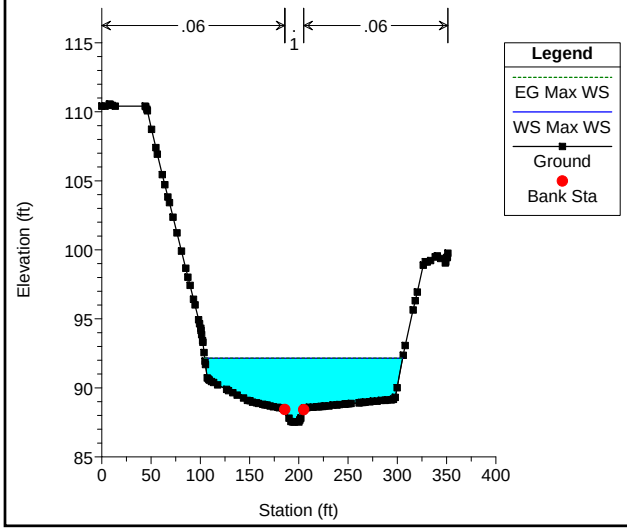


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

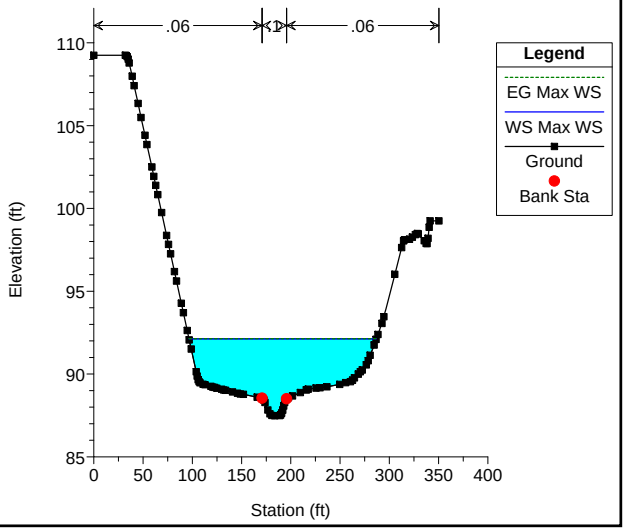
Simulates Hydromod Riser and overflow.

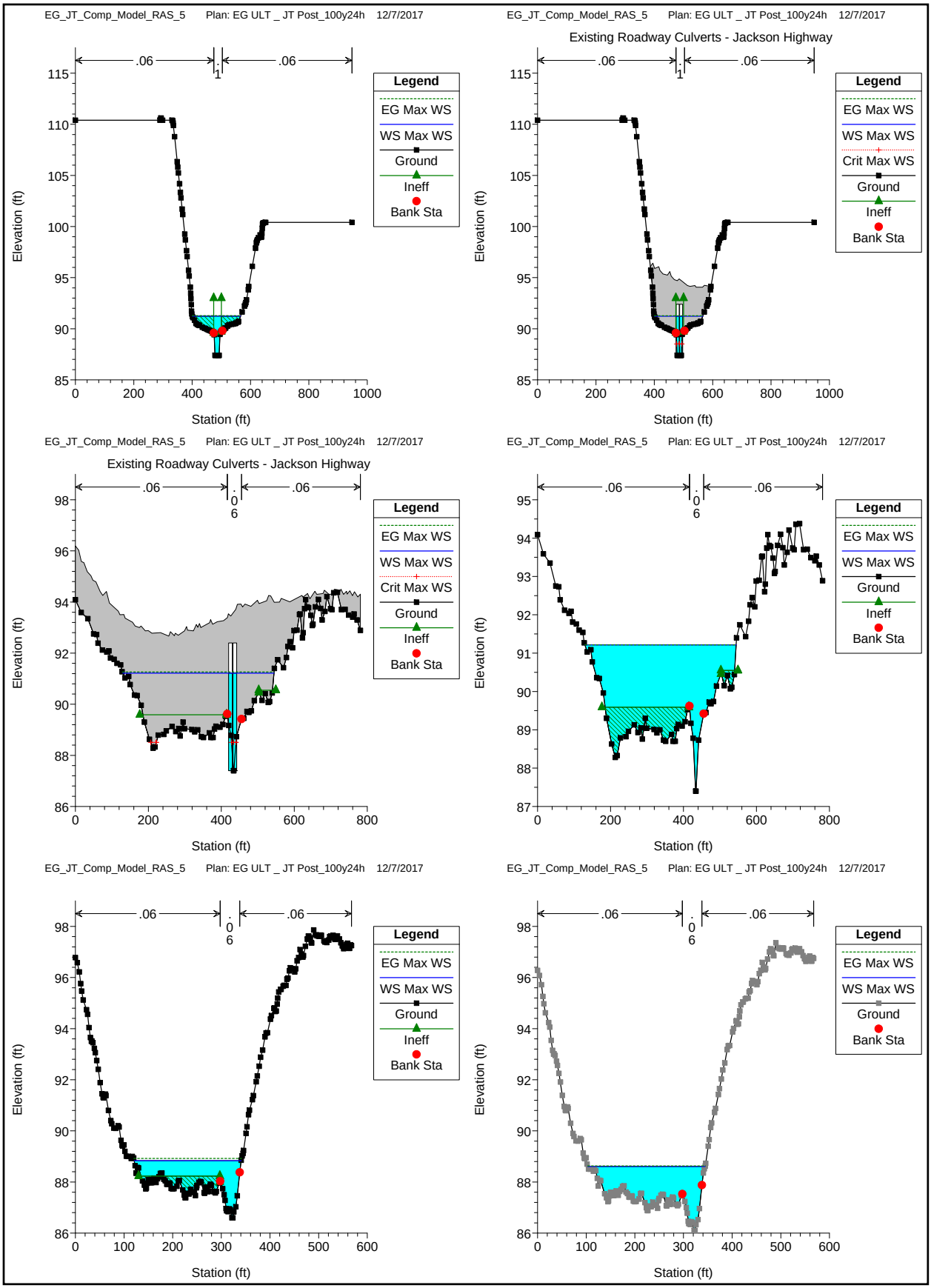


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017




EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
Existing Roadway Culverts - Jackson Highway
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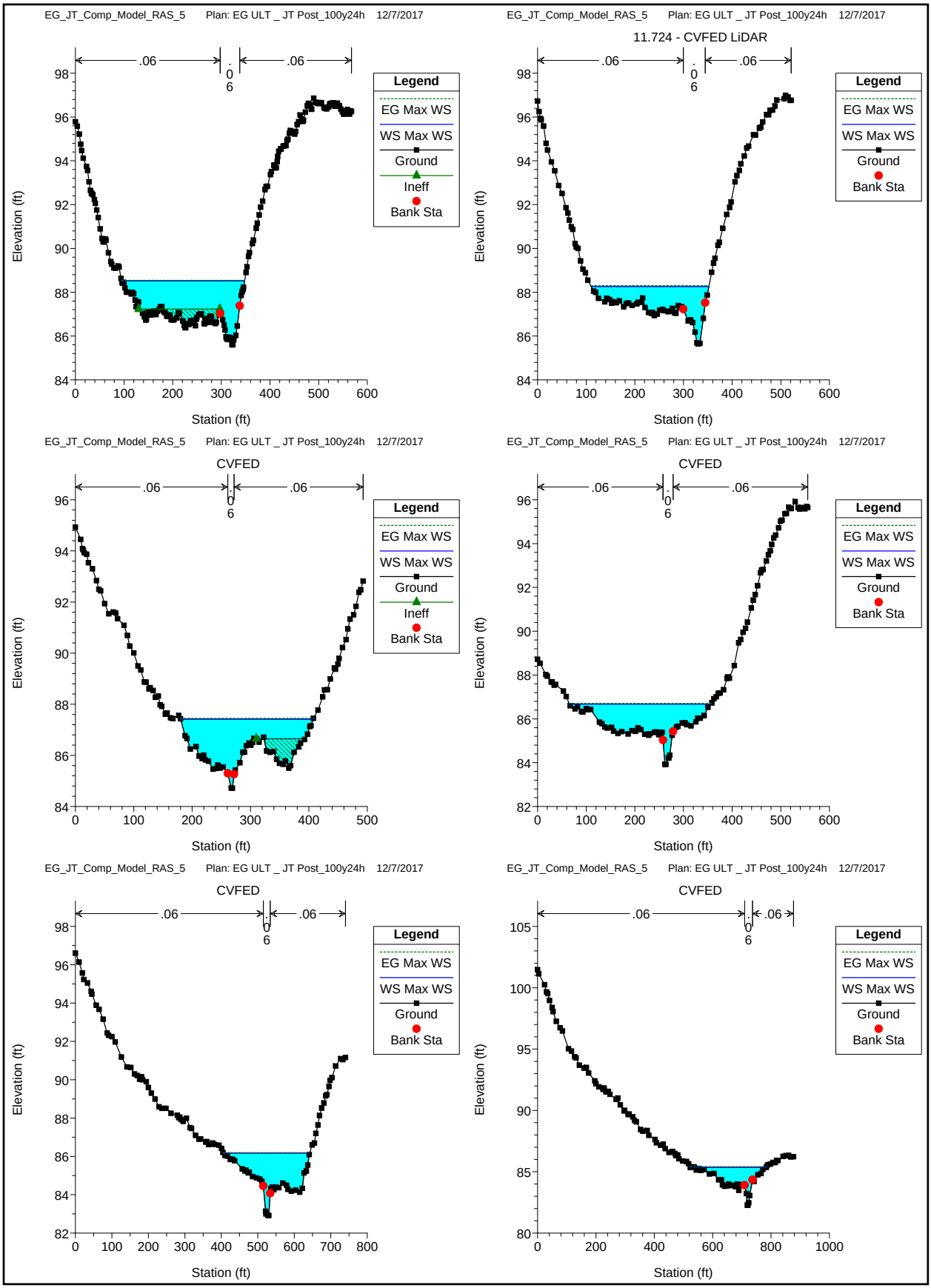
Legend
EG Max WS
WS Max WS
Crit Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
11.724 - CVFED LiDAR
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Legend
EG Max WS
WS Max WS
Ground
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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Legend
EG Max WS
WS Max WS
Ground
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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Legend
EG Max WS
WS Max WS
Ground
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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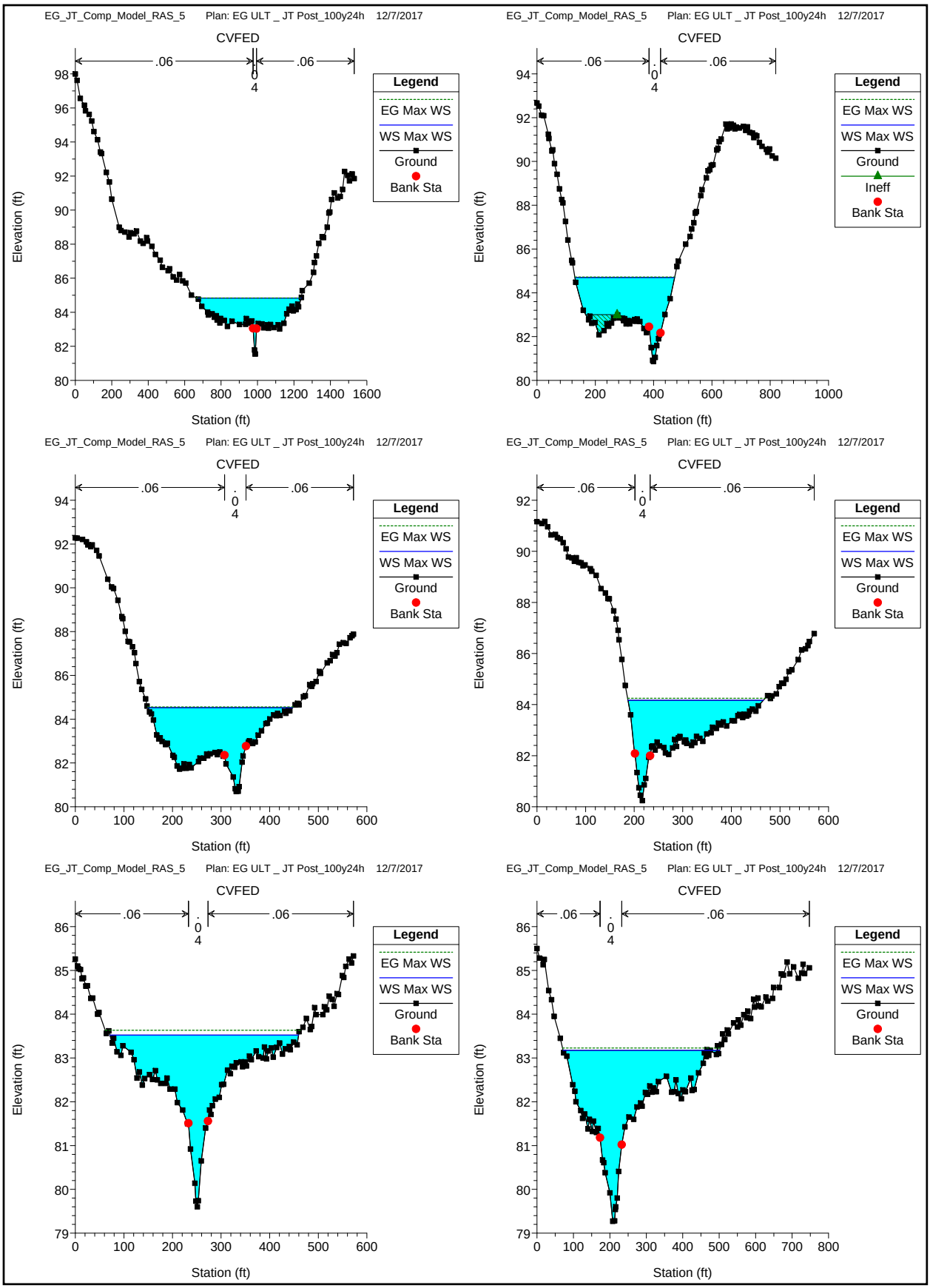
Legend
EG Max WS
WS Max WS
Ground
Bank Sta
Elevation (ft)
Station (ft)


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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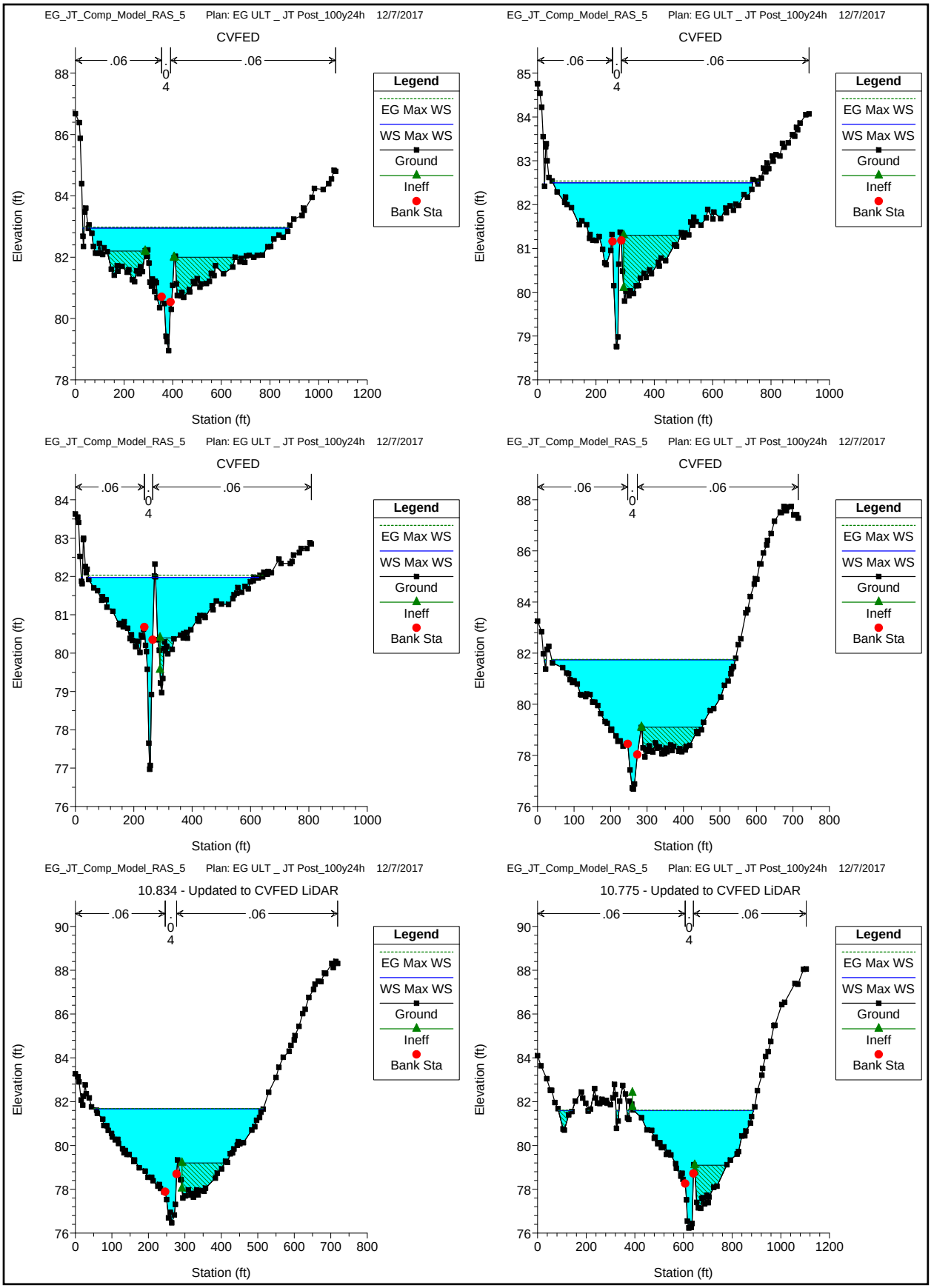
Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
10.834 - Updated to CVFED LiDAR
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
10.775 - Updated to CVFED LiDAR
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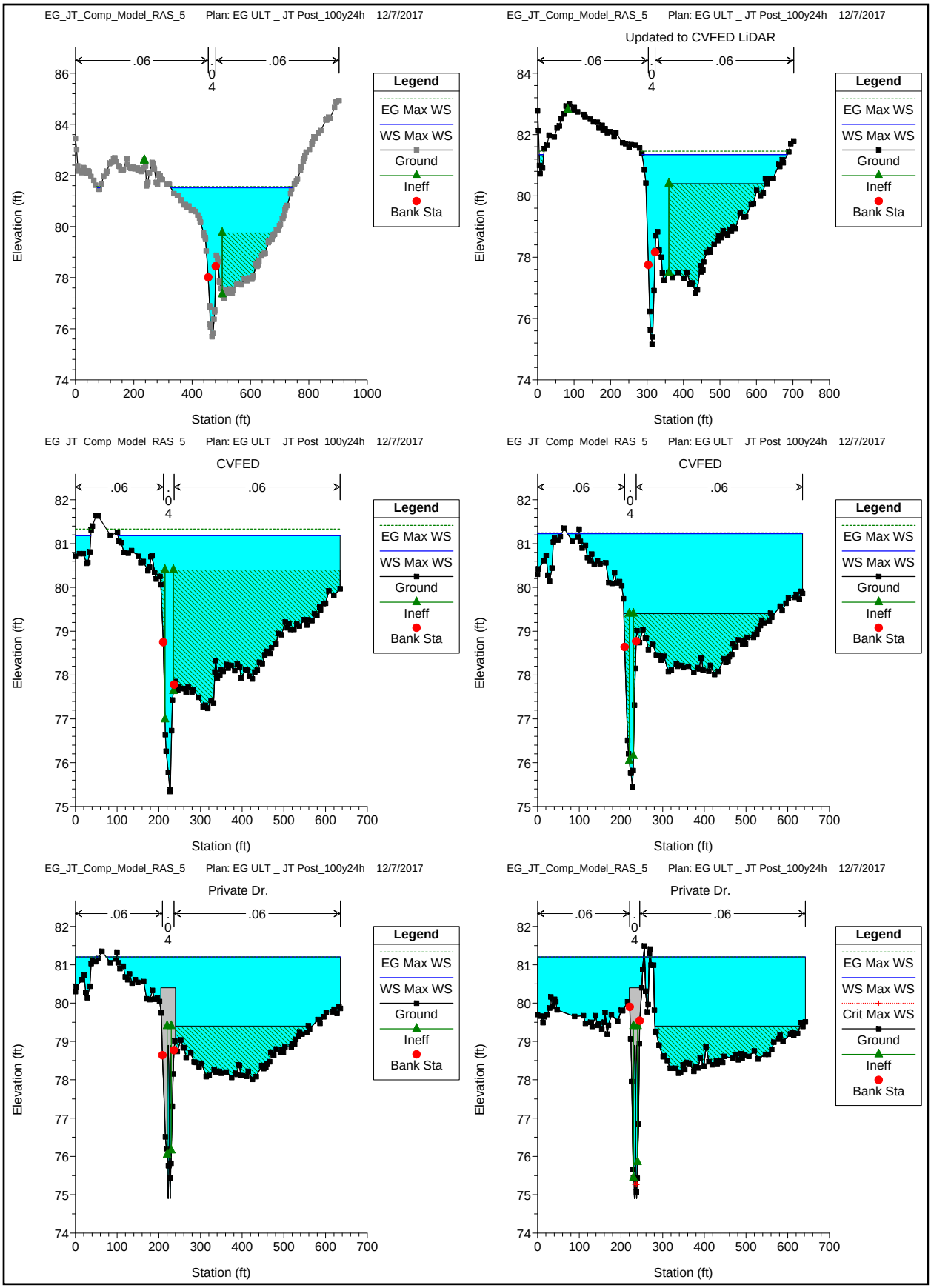
Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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.04
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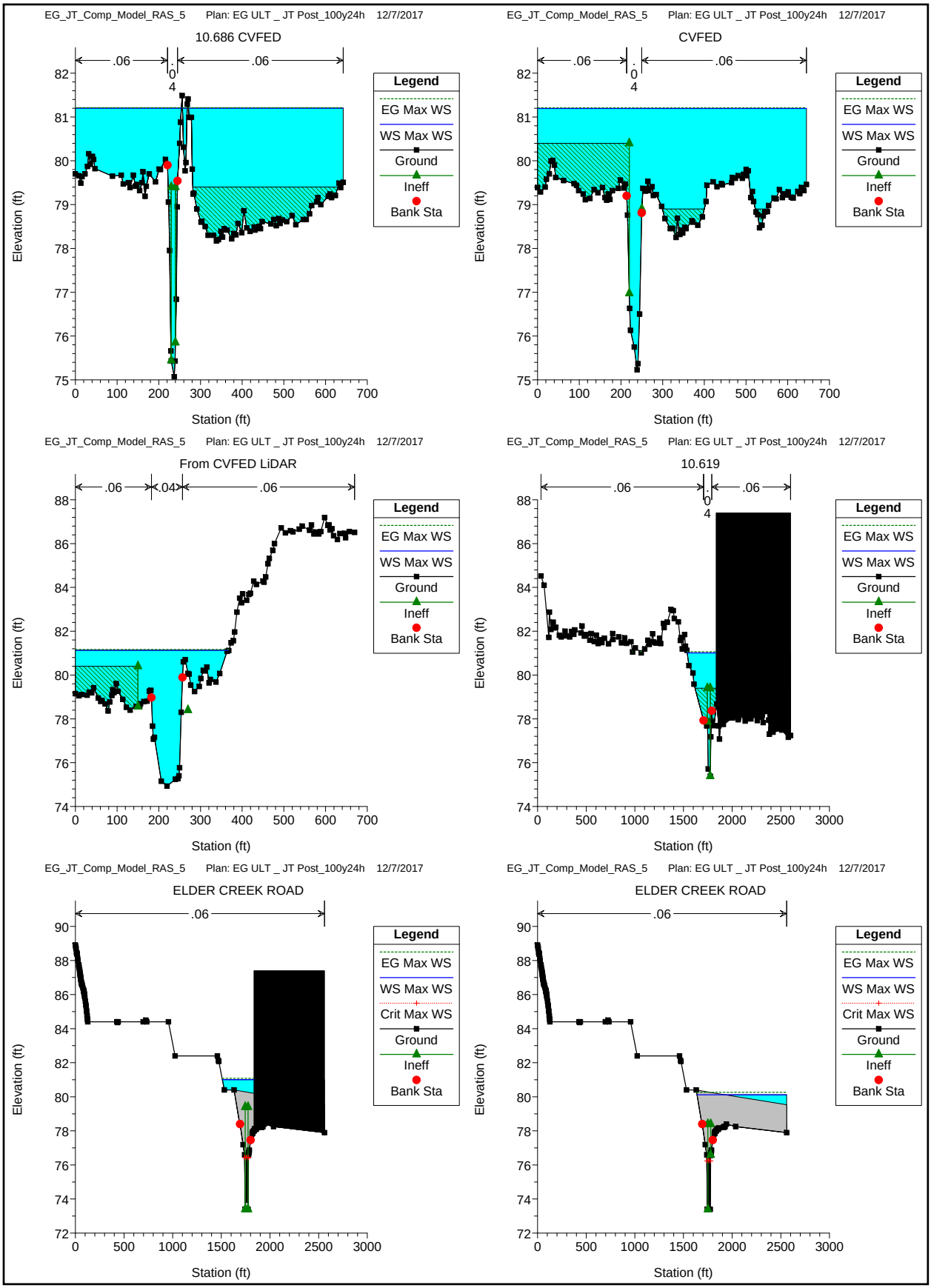
Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
Updated to CVFED LiDAR
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
Private Dr.
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
Private Dr.
Crit Max WS


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
10.686 CVFED
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
From CVFED LiDAR
.06
.04
.06
Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
10.619
.06
.04
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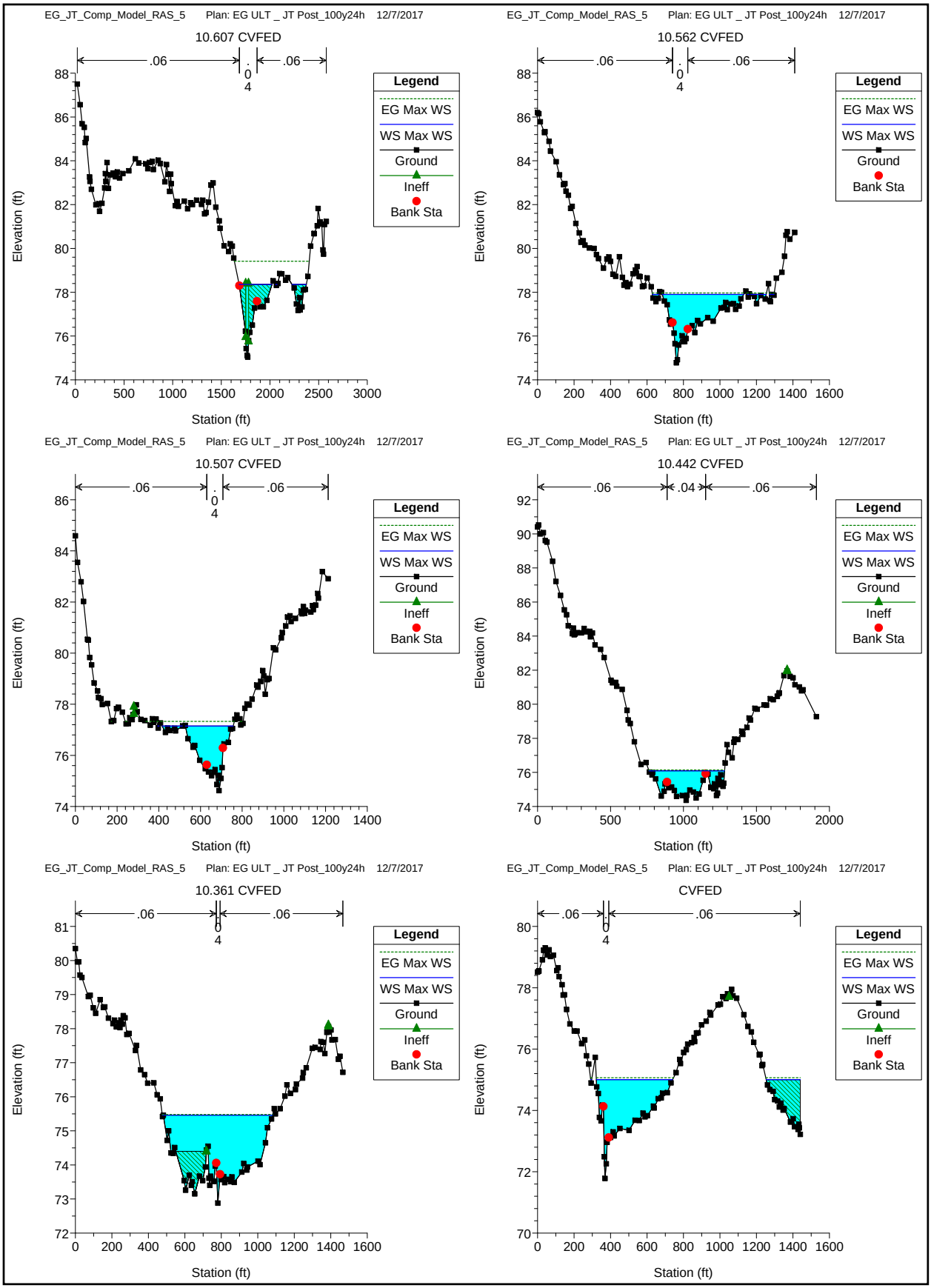
Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
ELDER CREEK ROAD
.06
Legend
EG Max WS
WS Max WS
Crit Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
ELDER CREEK ROAD
.06
Legend
EG Max WS
WS Max WS
Crit Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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10.607 CVFED
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
10.562 CVFED
.06
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Legend
EG Max WS
WS Max WS
Ground
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
10.507 CVFED
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.04
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
10.442 CVFED
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
10.361 CVFED
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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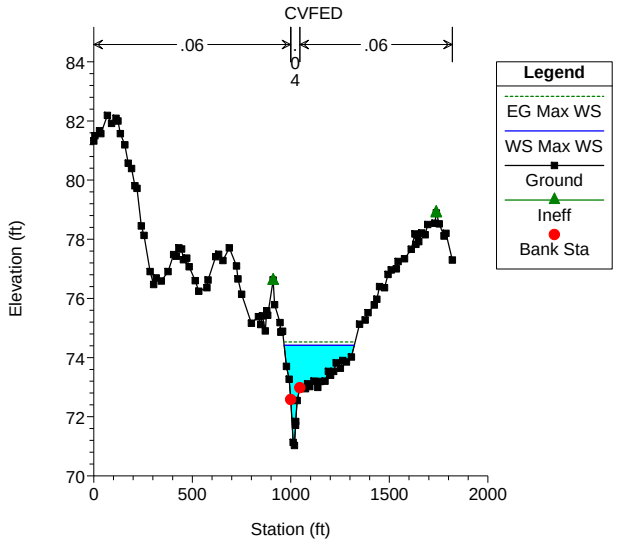
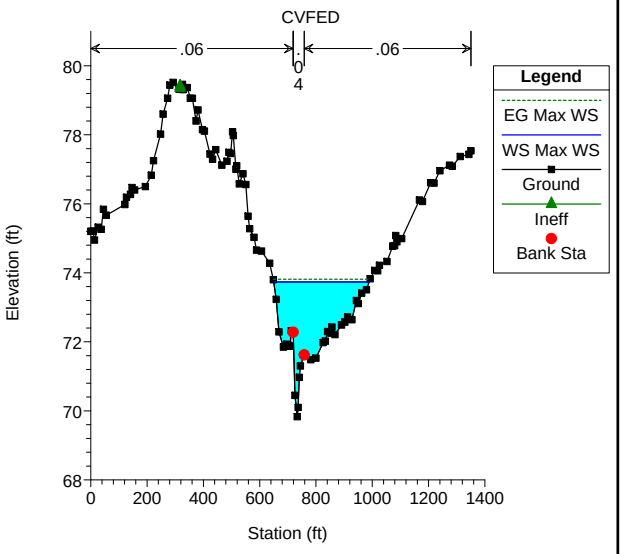
Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

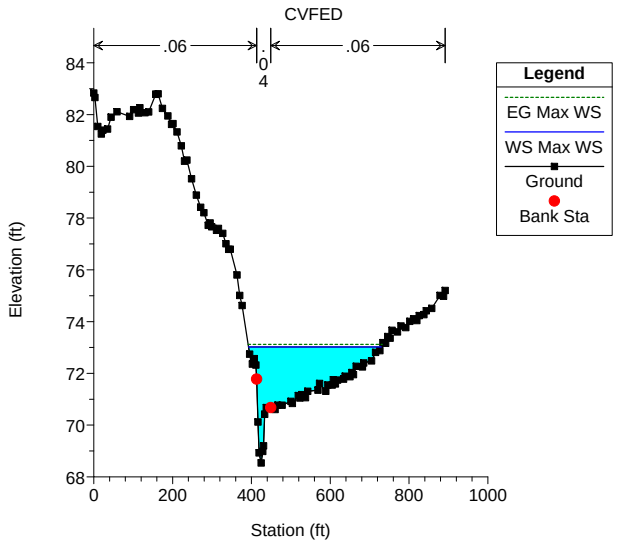
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



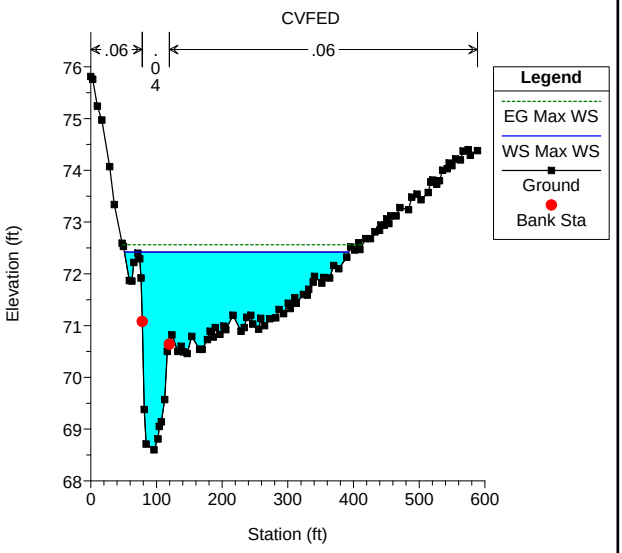
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



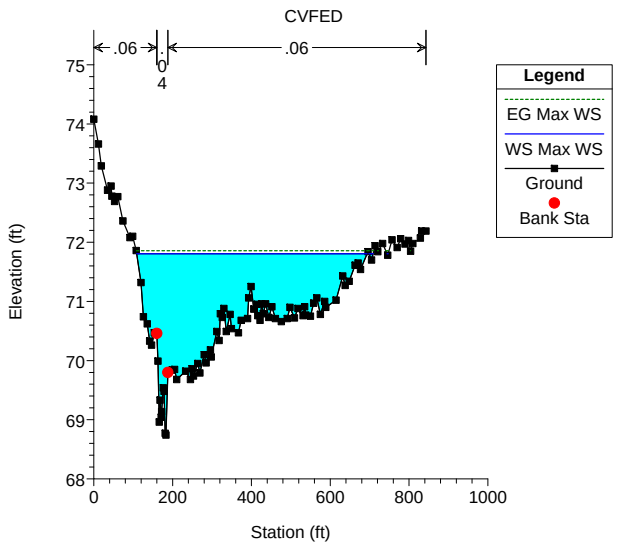
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



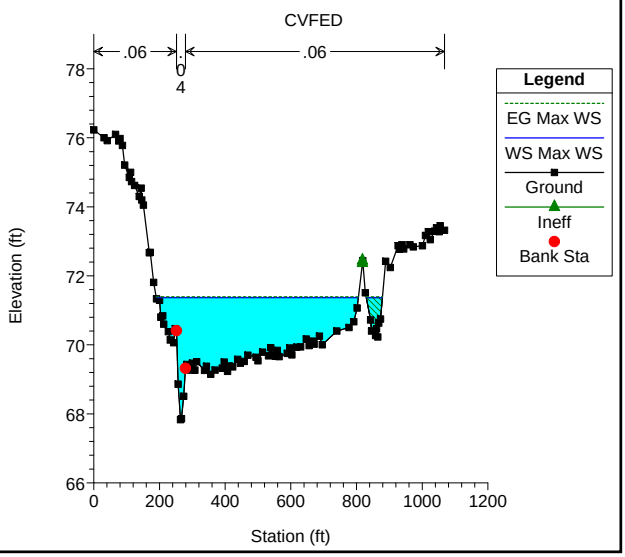
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

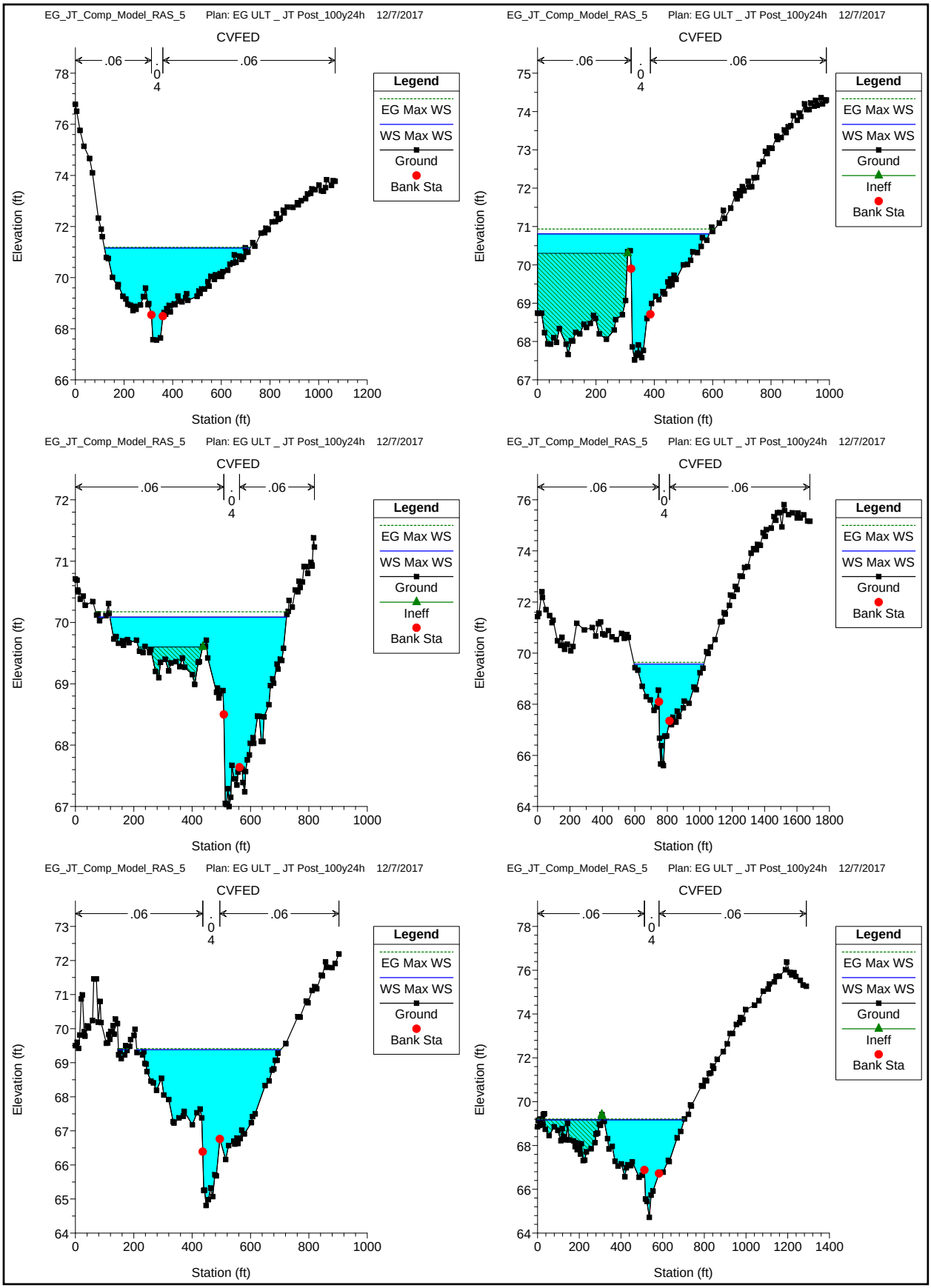


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017




EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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Legend
EG Max WS
WS Max WS
Ground
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CVFED
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Legend
EG Max WS
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Elevation (ft)
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
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Ground
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Elevation (ft)
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
EG Max WS
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Elevation (ft)
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
EG Max WS
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
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Ground
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Elevation (ft)
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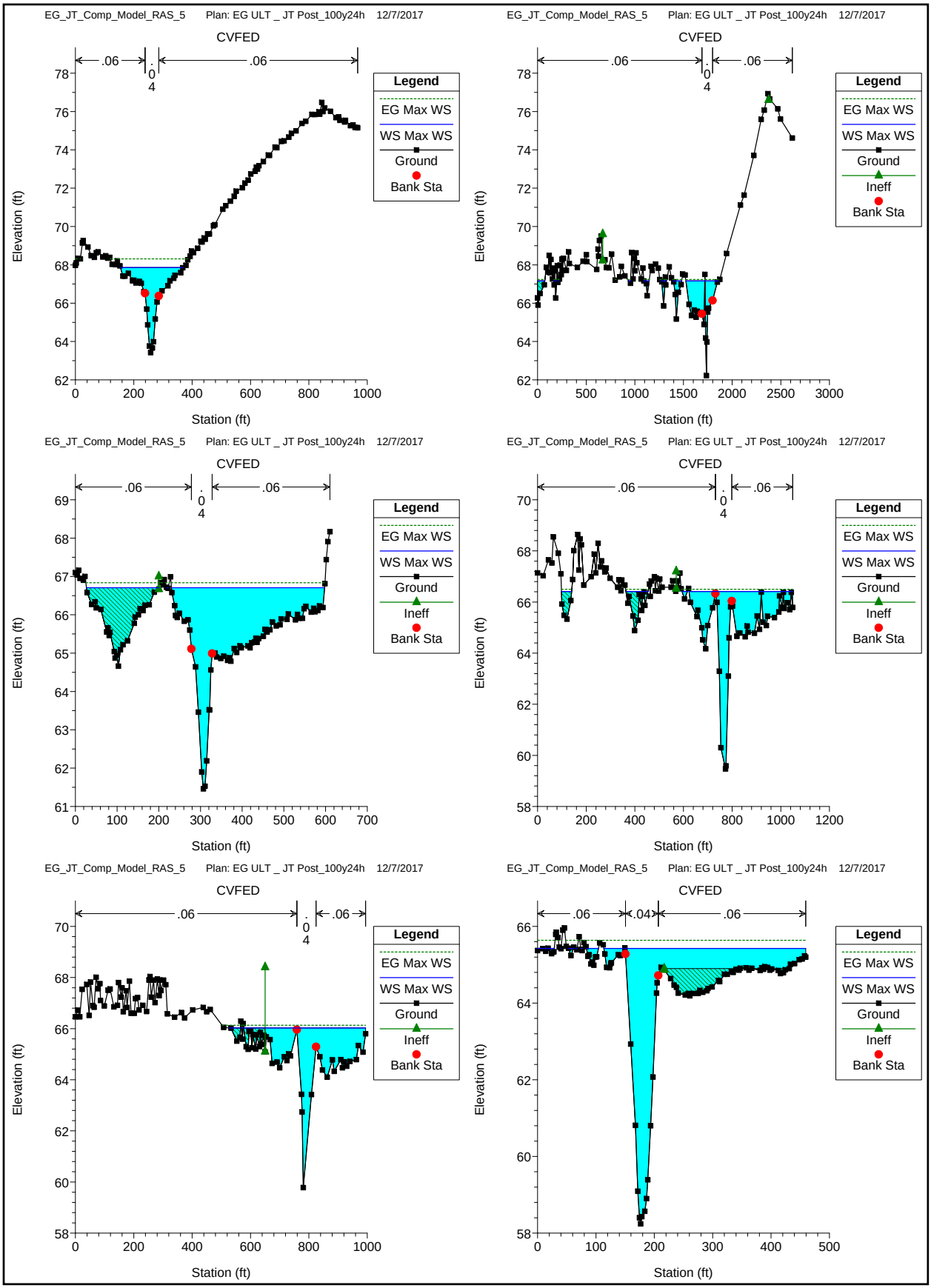
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
EG Max WS
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
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Ground
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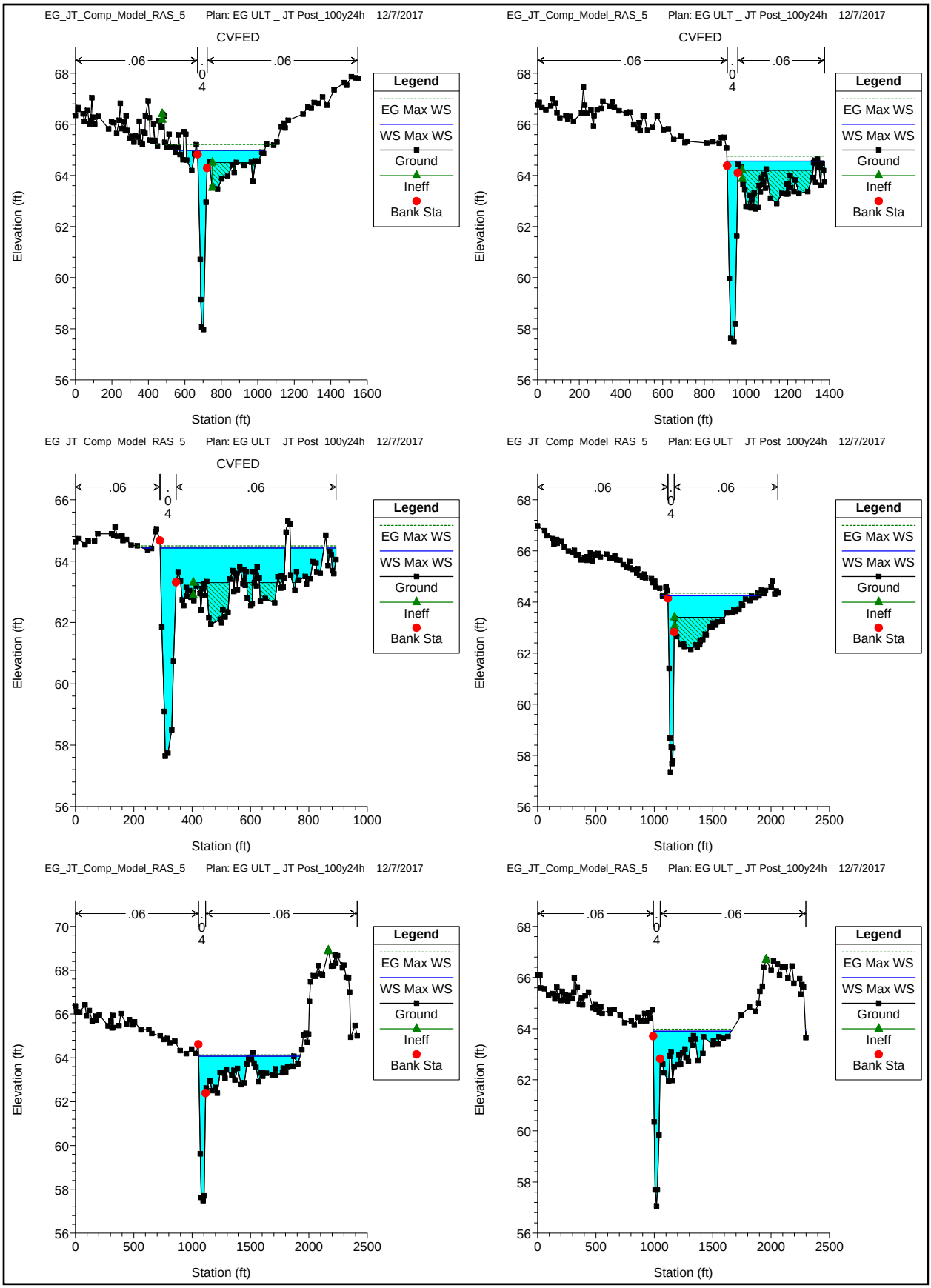
Station (ft)


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
EG Max WS
WS Max WS
Ground
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Elevation (ft)
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
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Elevation (ft)
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
EG Max WS
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Ground
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Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
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WS Max WS
Ground
Ineff
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Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
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WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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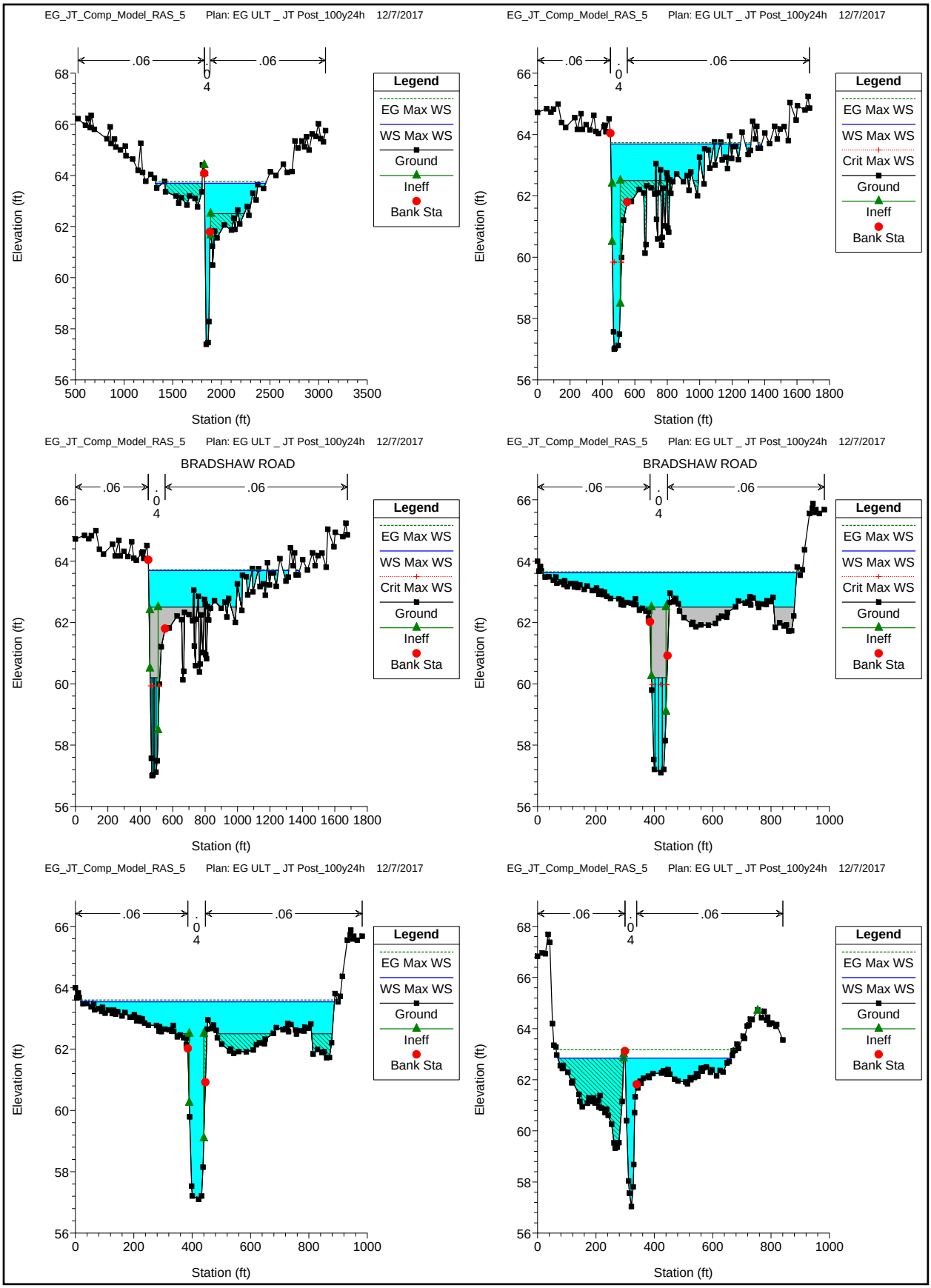
Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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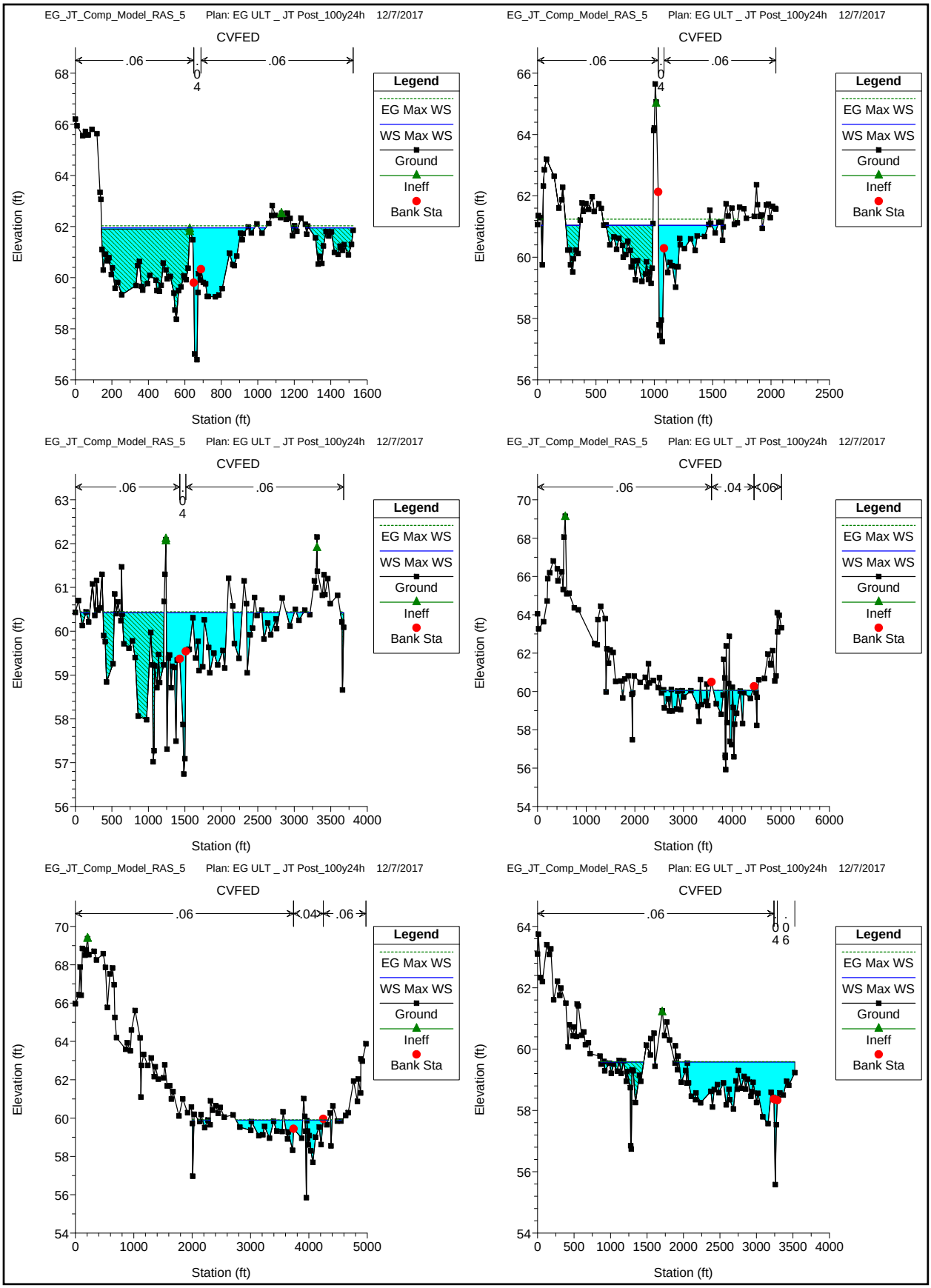
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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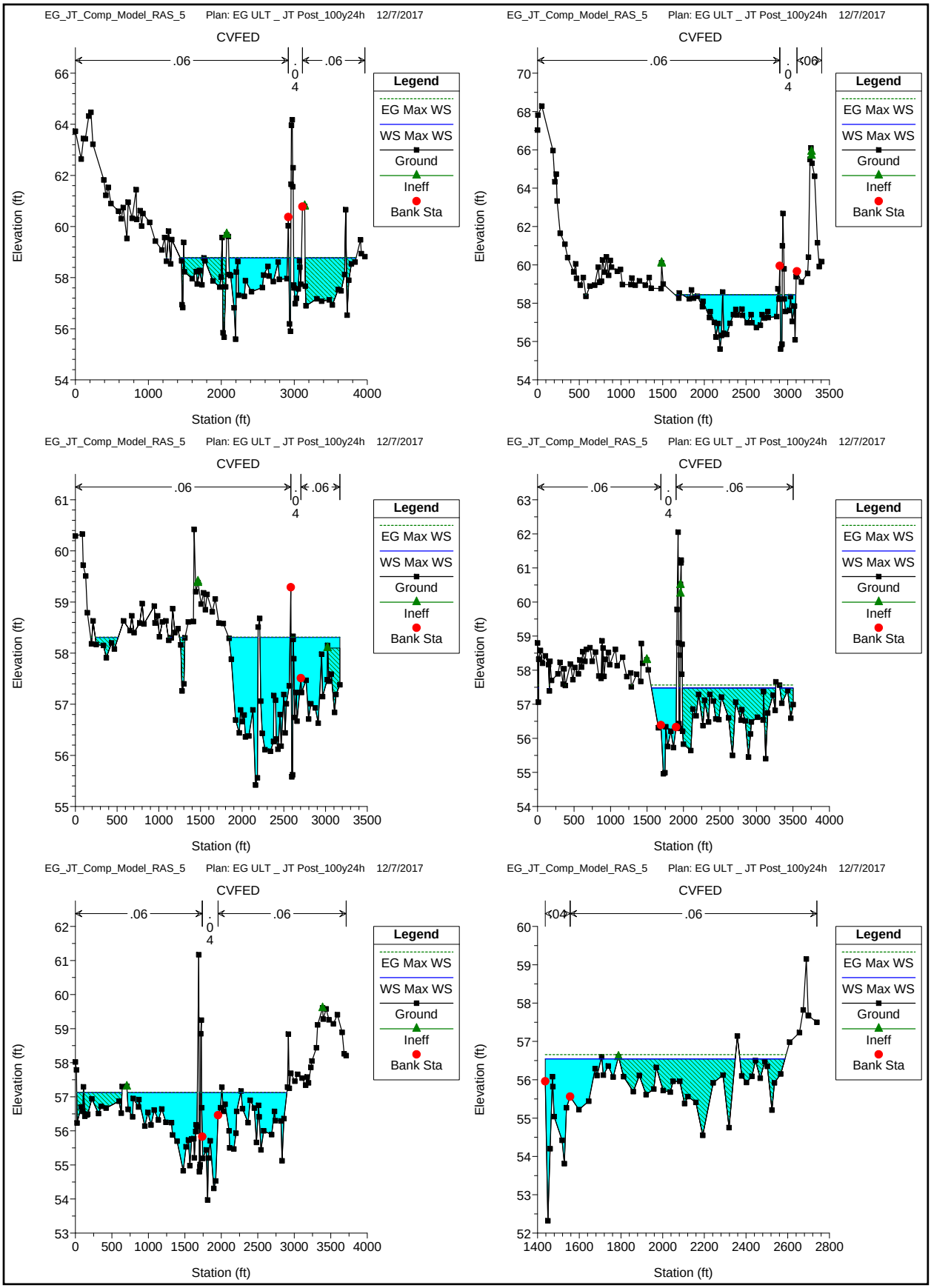
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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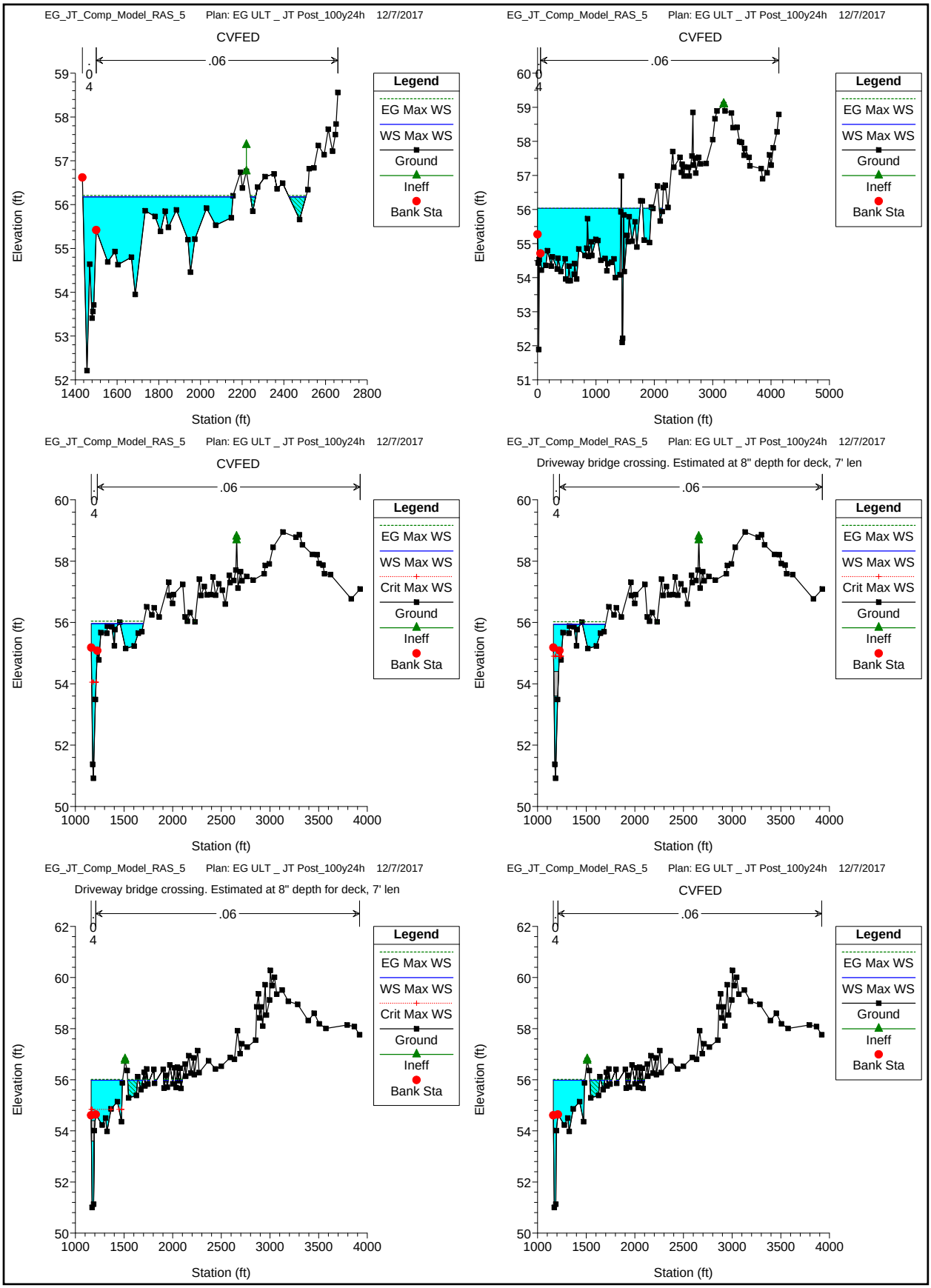
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
Driveway bridge crossing. Estimated at 8" depth for deck, 7' len
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
Driveway bridge crossing. Estimated at 8" depth for deck, 7' len
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Legend
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Elevation (ft)
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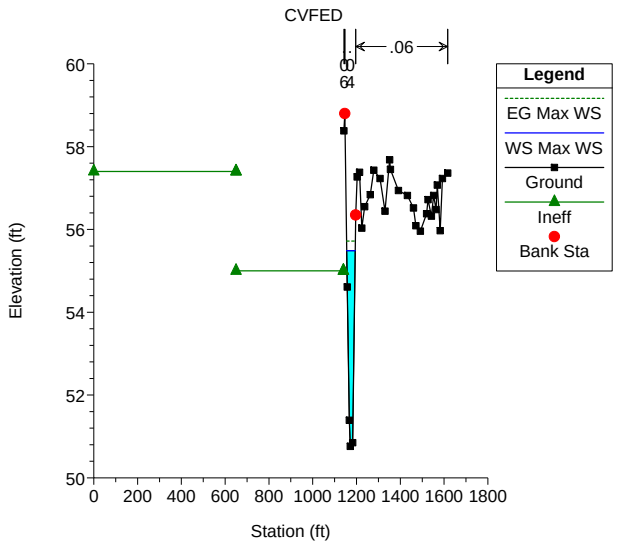
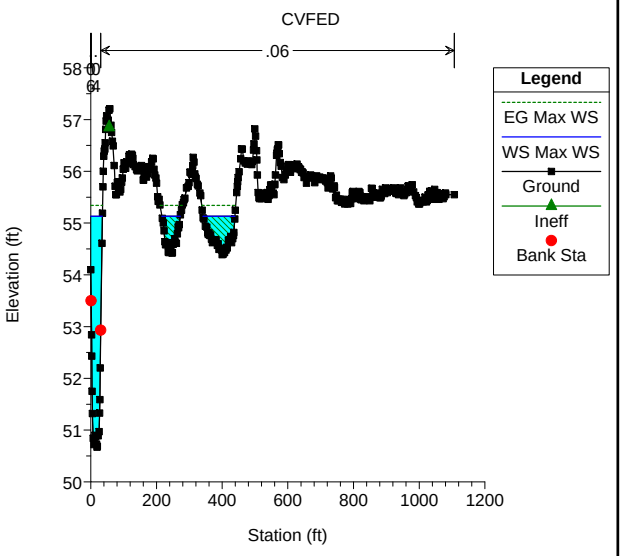
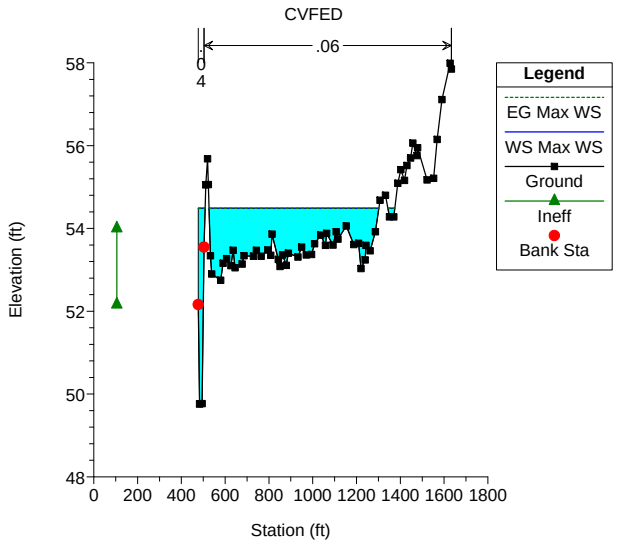
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



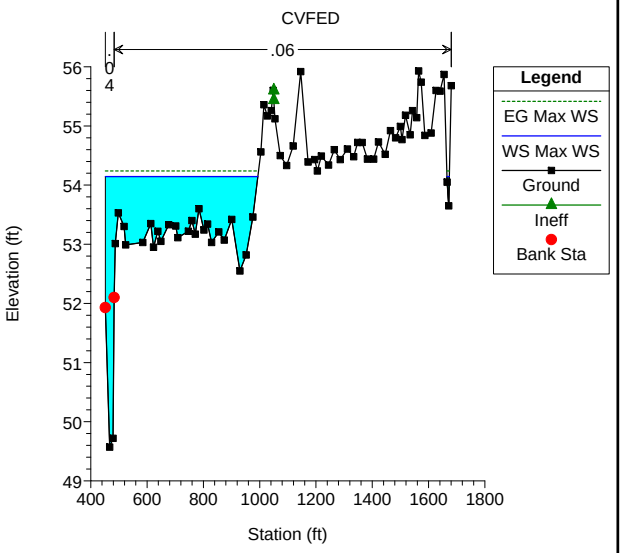
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



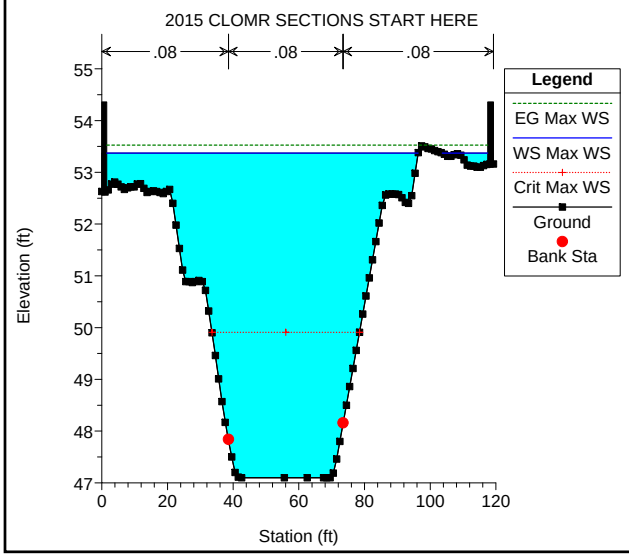
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



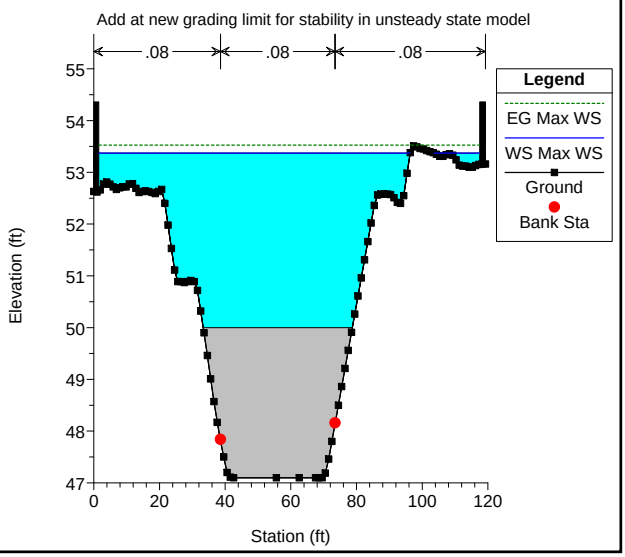
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

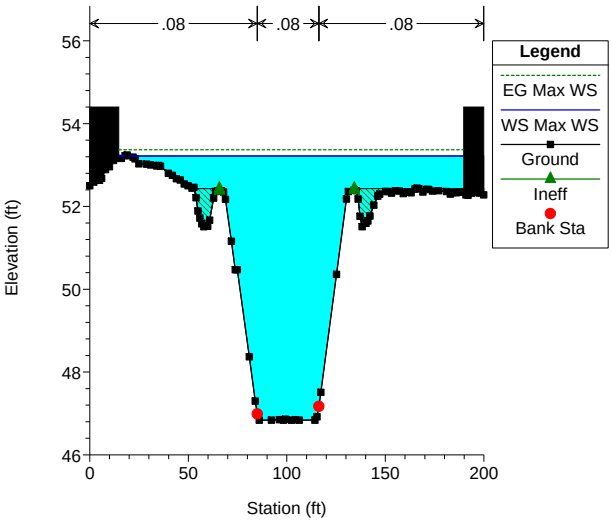


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

2015 CLOMR NEW SECTION



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

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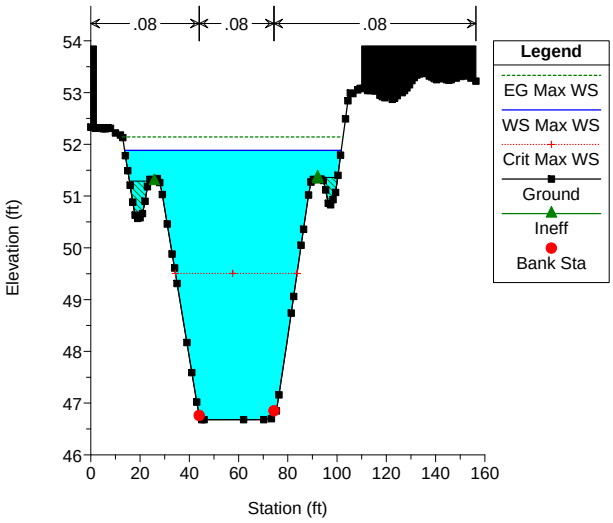
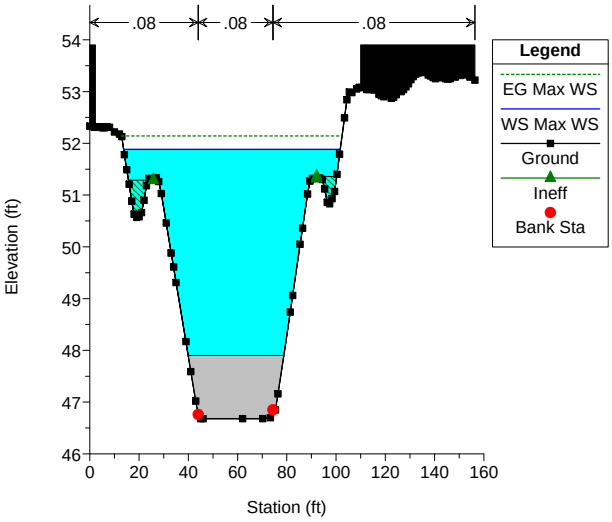


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

Add at new grading limit for stability in unsteady state model



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

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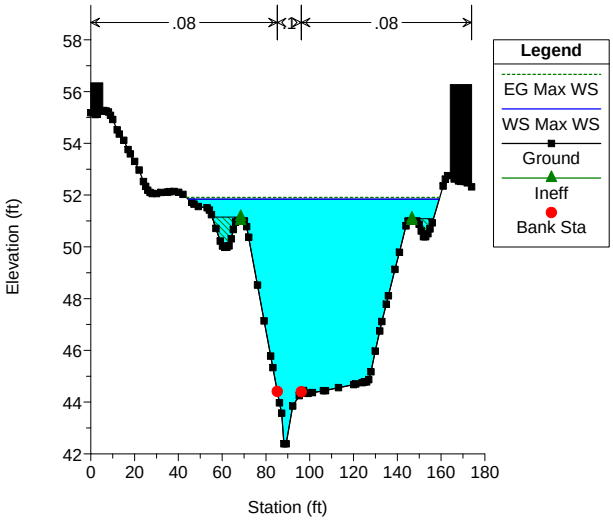
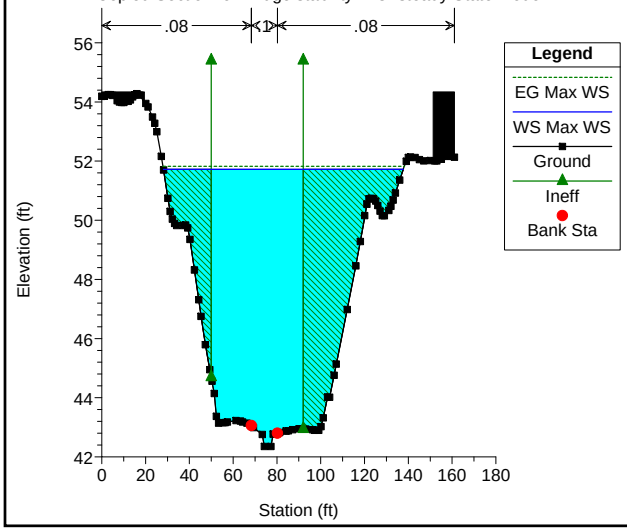
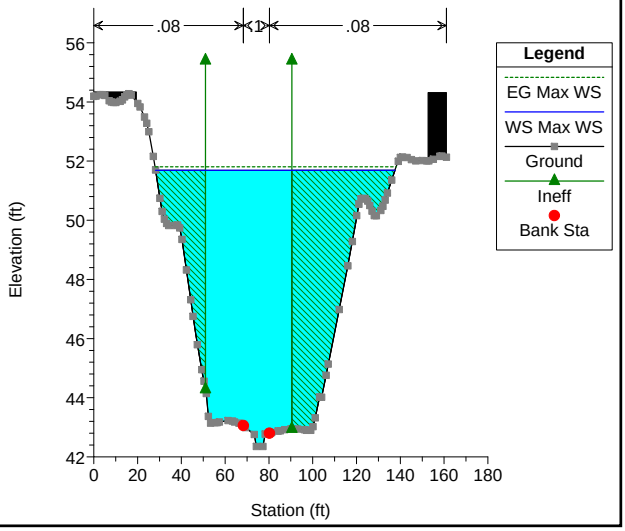


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

Copied Section for Bridge stability in Unsteady State model

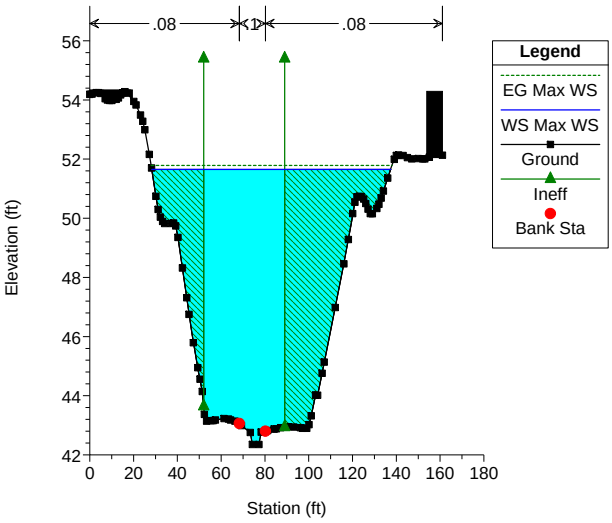


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



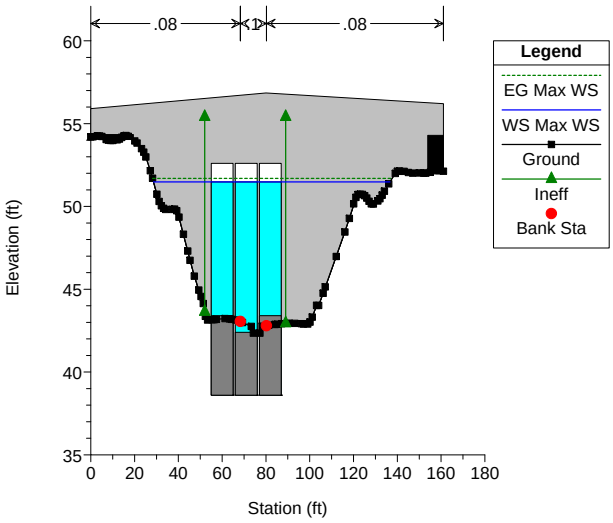
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

2015 CLOMR NEW SECTION



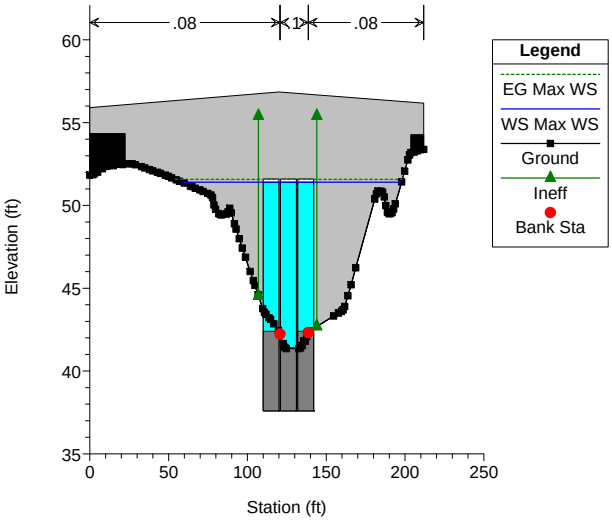
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

RECONSTRUCTED FLORIN ROAD WITH BOX CULVERTS. 3- 12hx10'wide Box



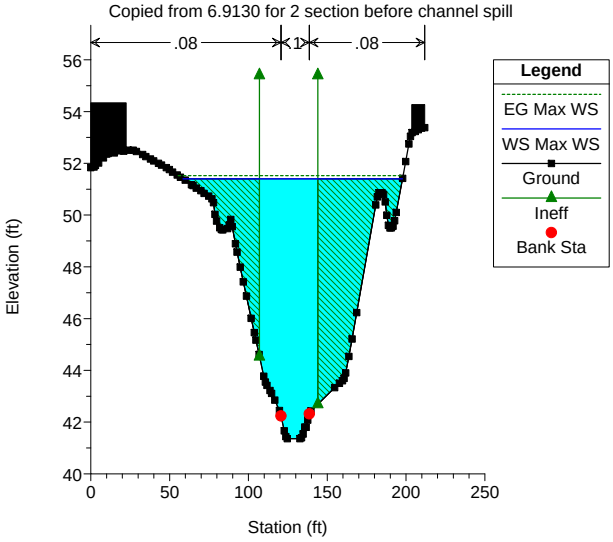
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

RECONSTRUCTED FLORIN ROAD WITH BOX CULVERTS. 3- 12hx10'wide Box



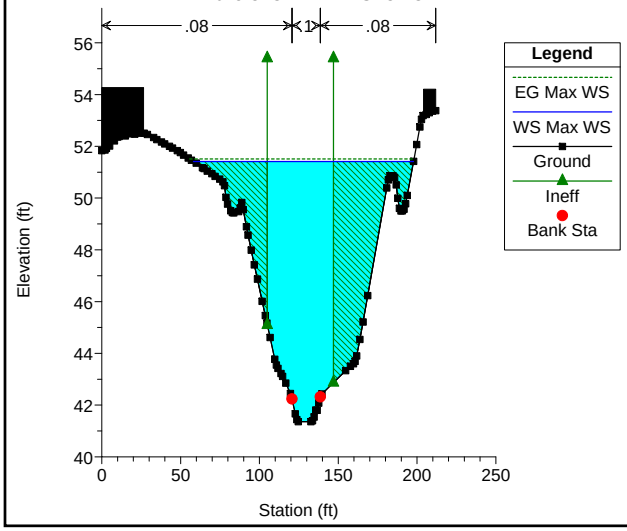
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

Copied from 6.9130 for 2 section before channel spill



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

2015 CLOMR NEW SECTION



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

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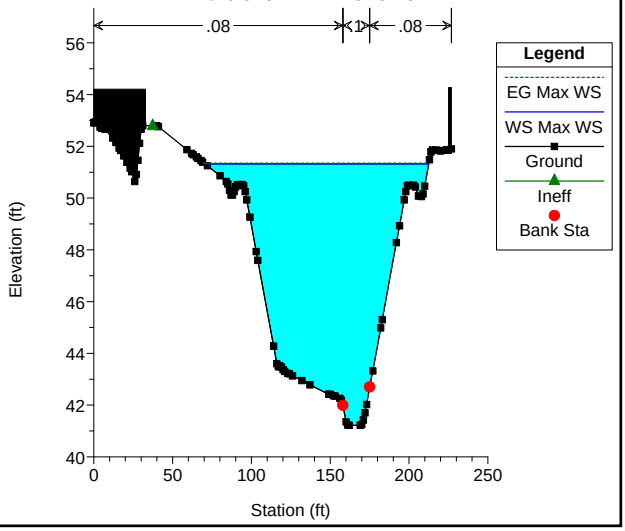

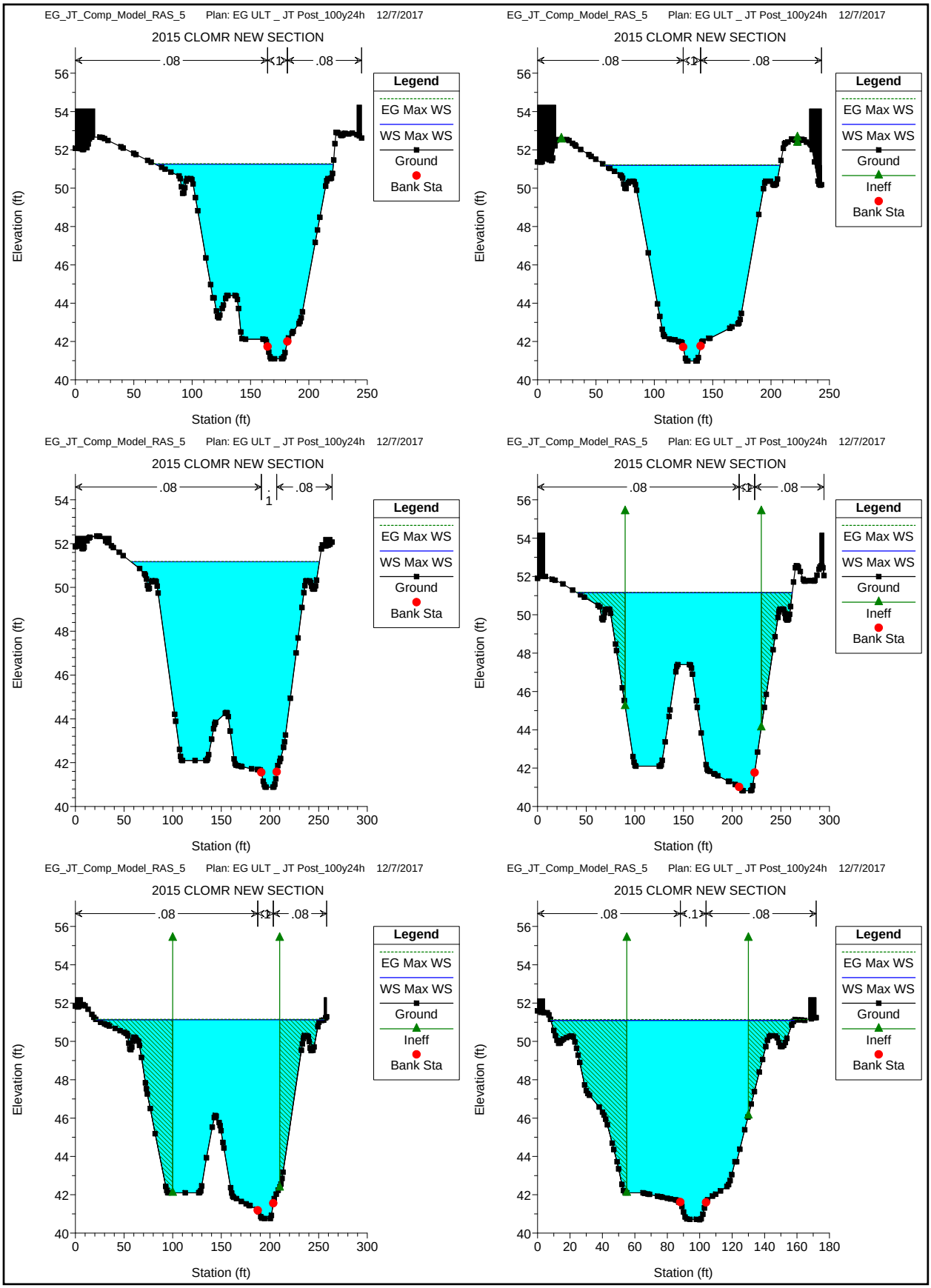
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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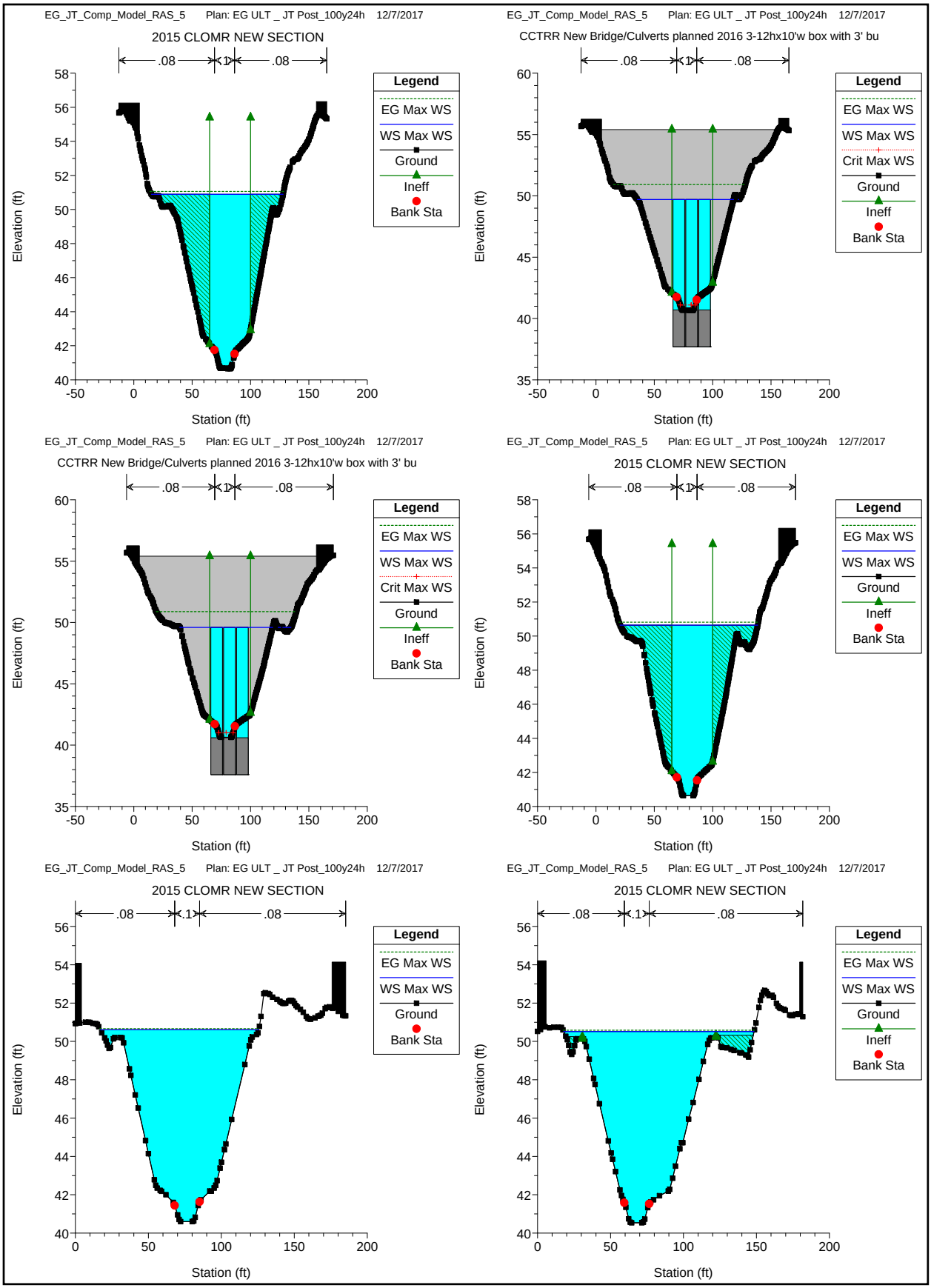
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
CCTRR New Bridge/Culverts planned 2016 3-12hx10'w box with 3' bu
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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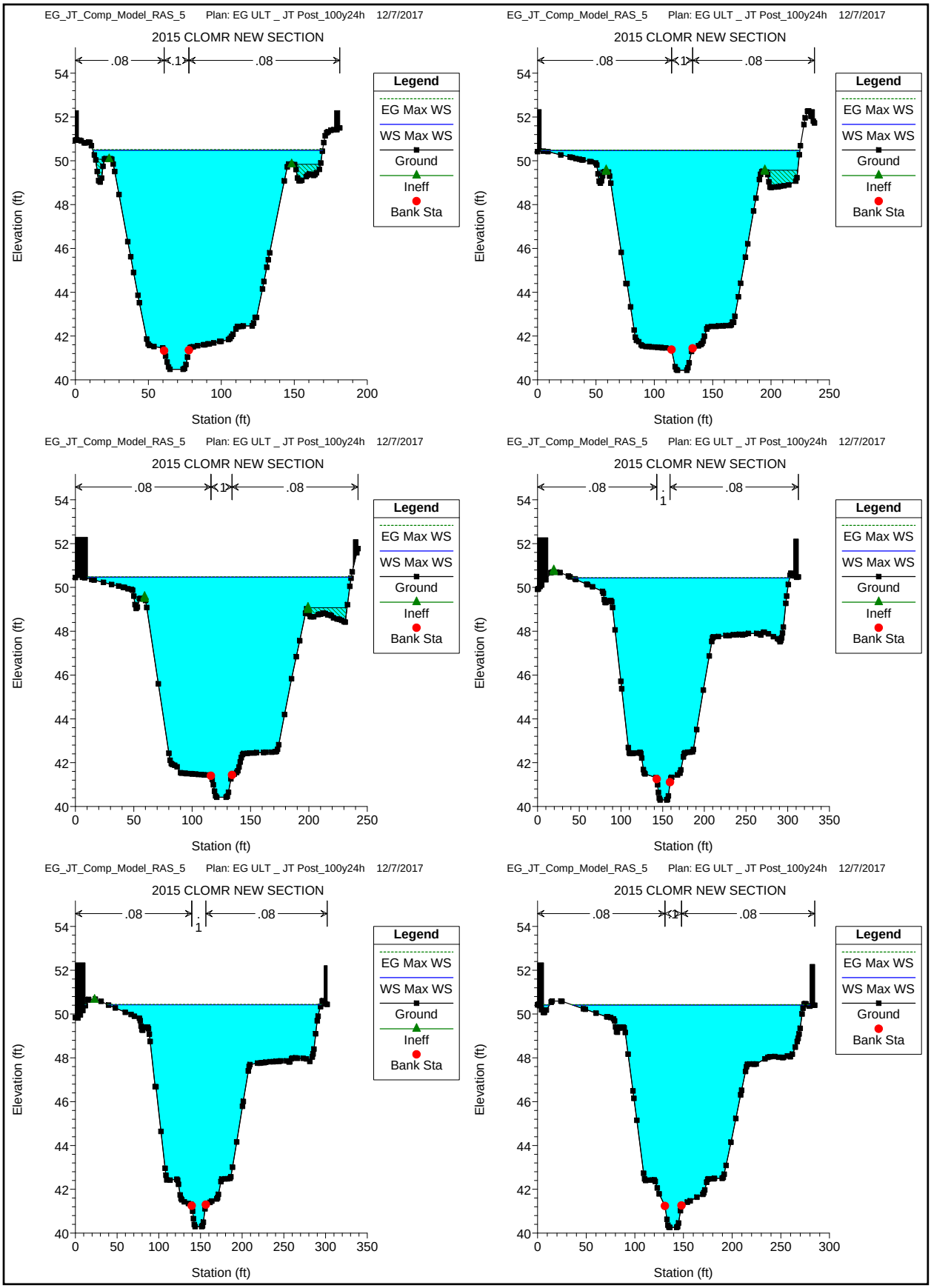
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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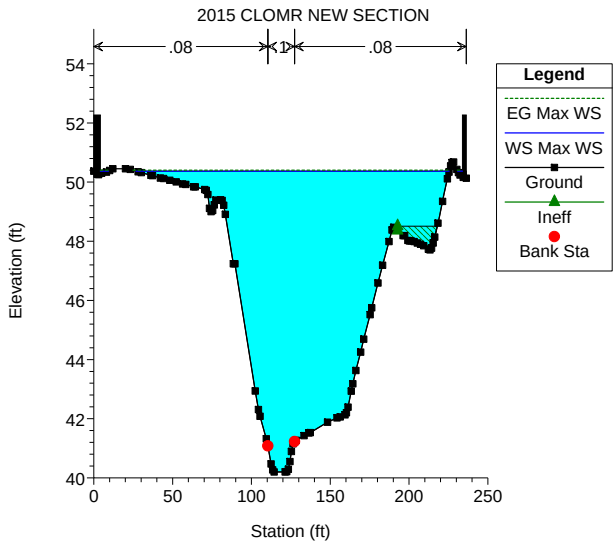
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



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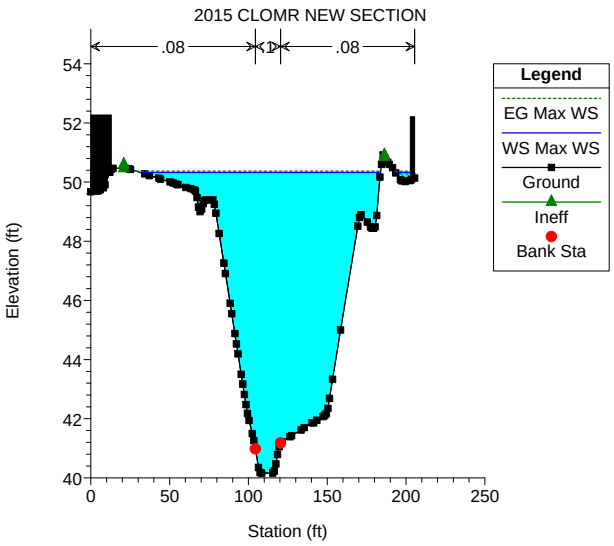

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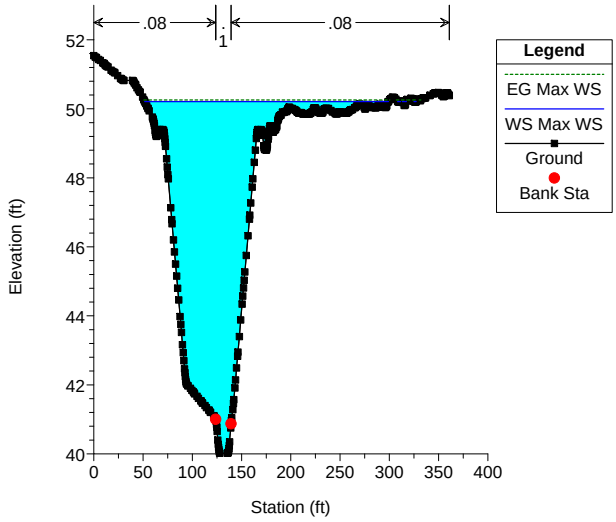

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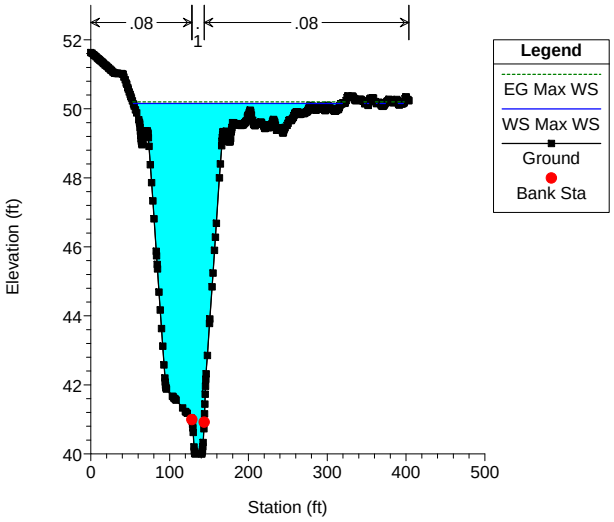
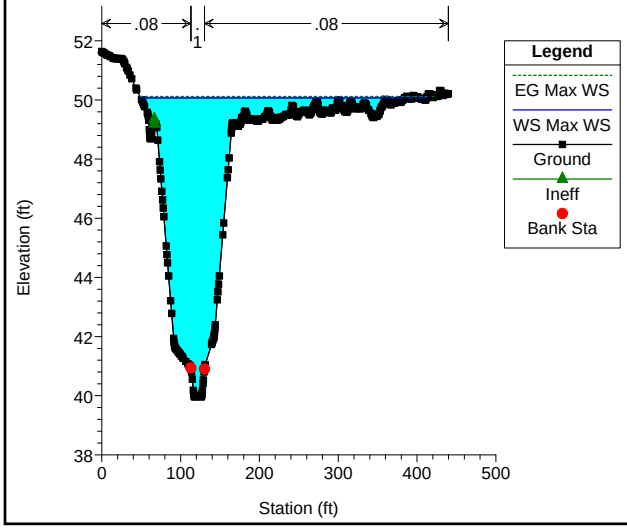
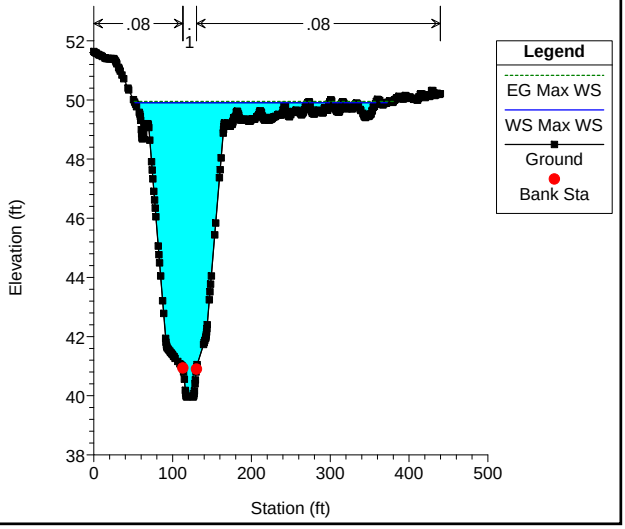
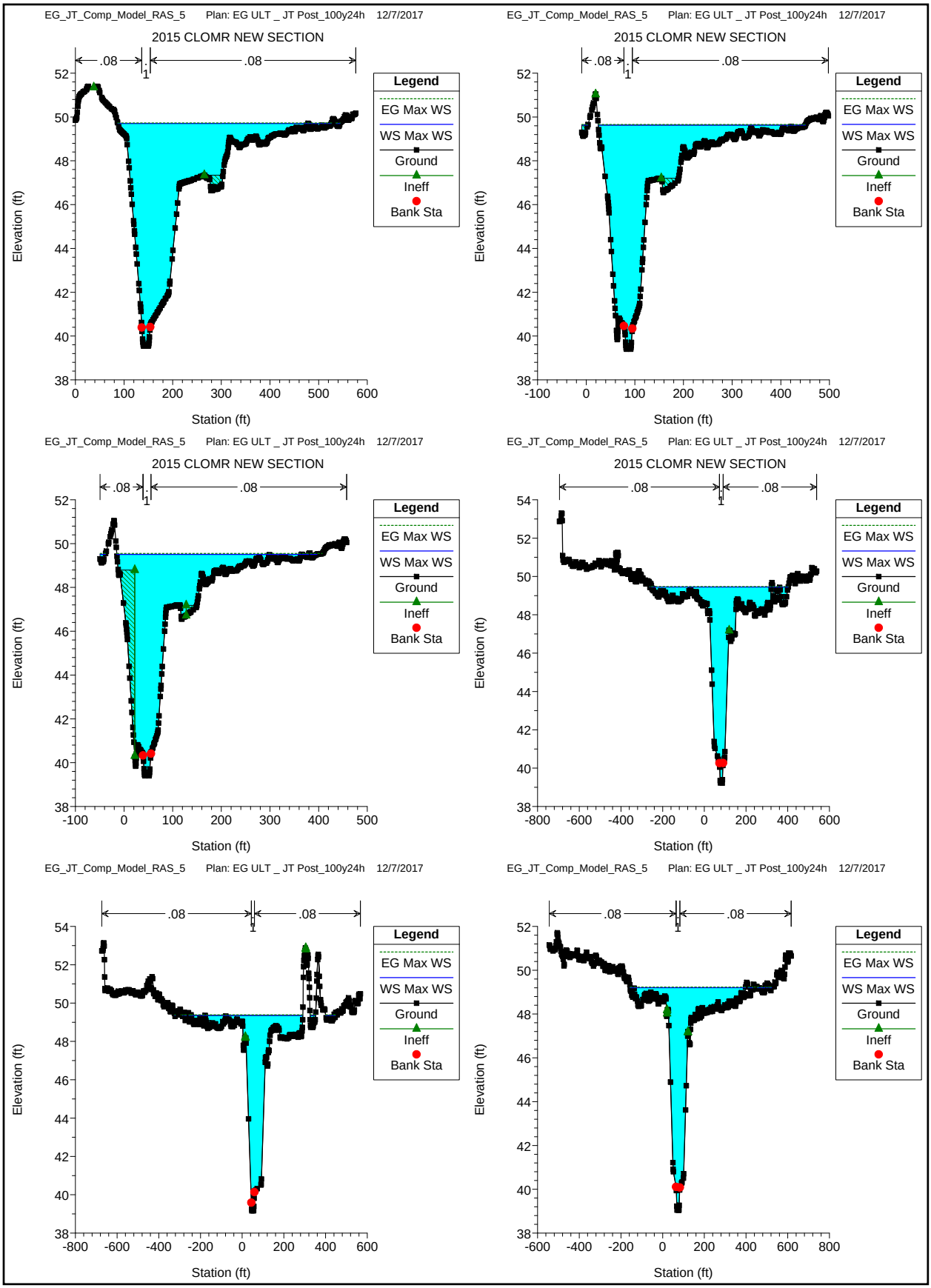


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

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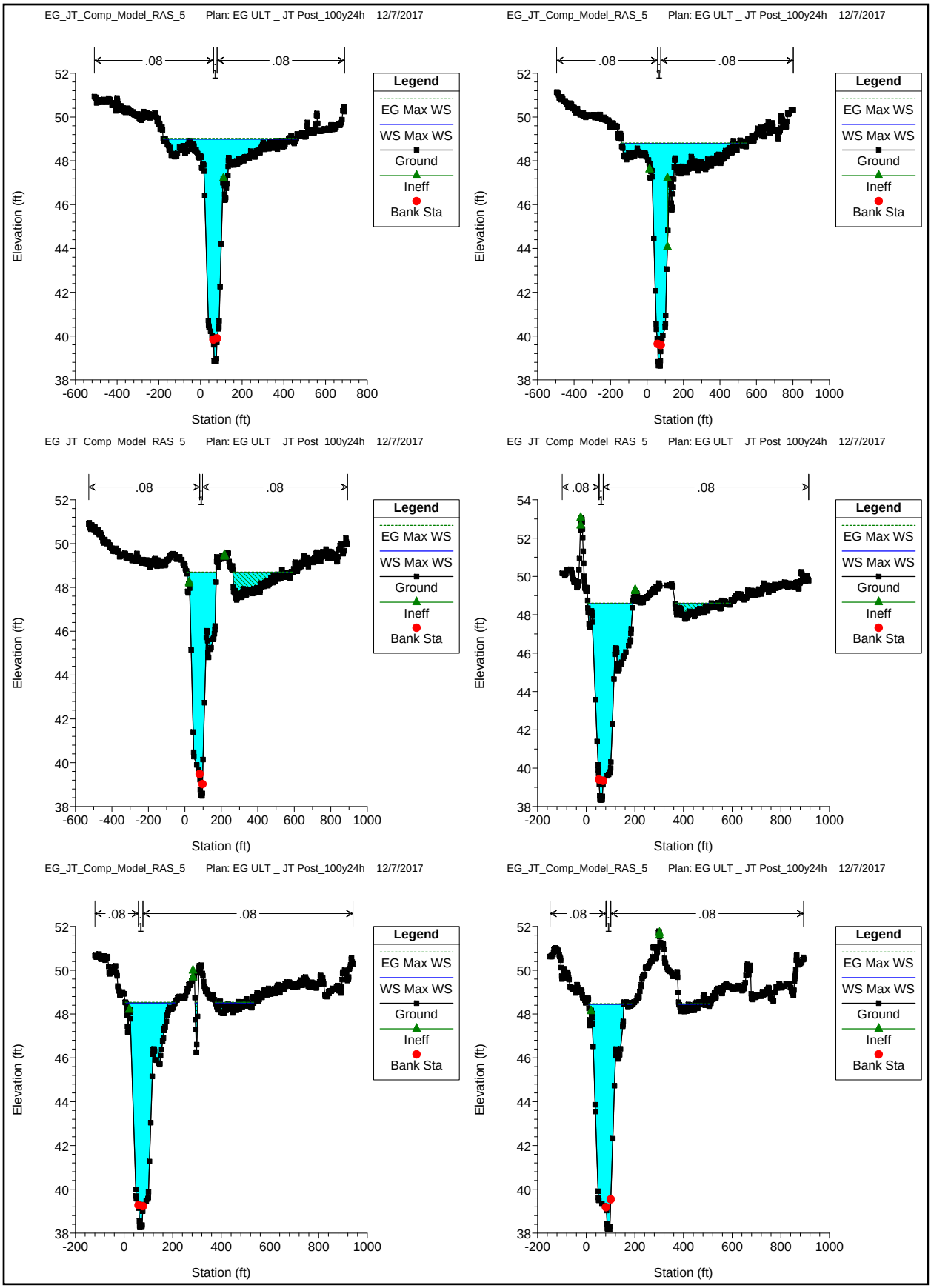
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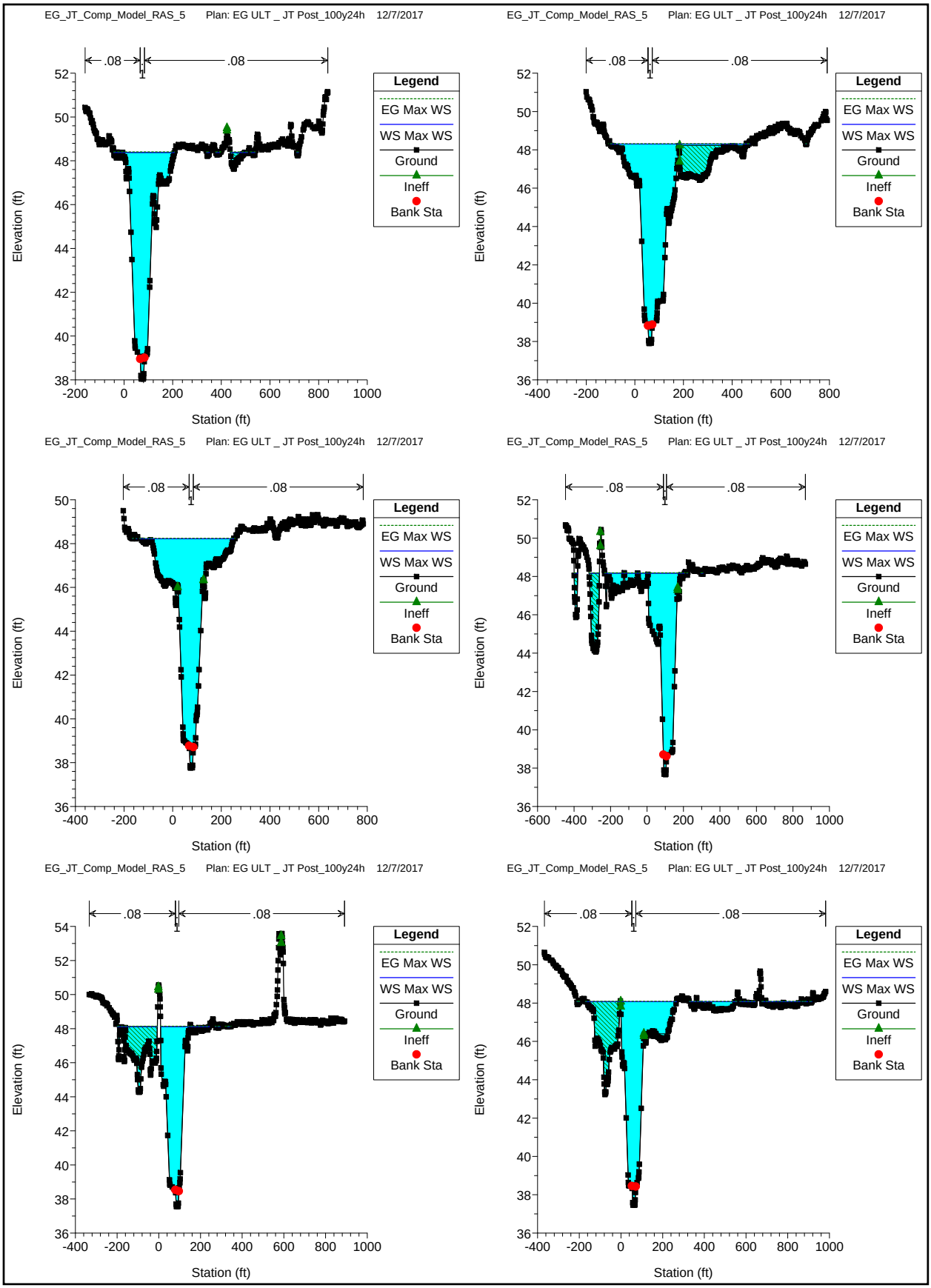
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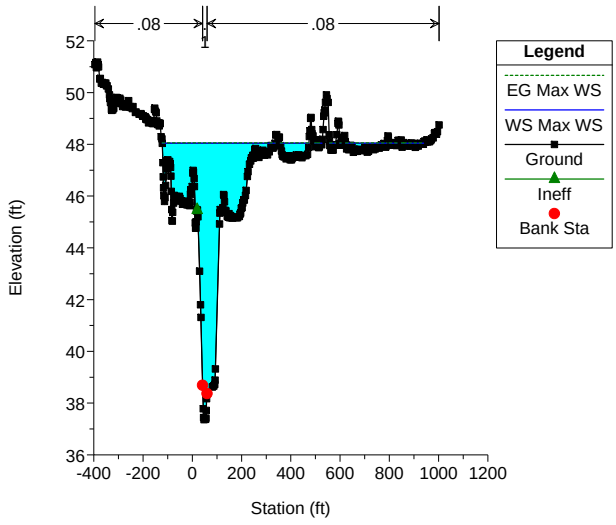

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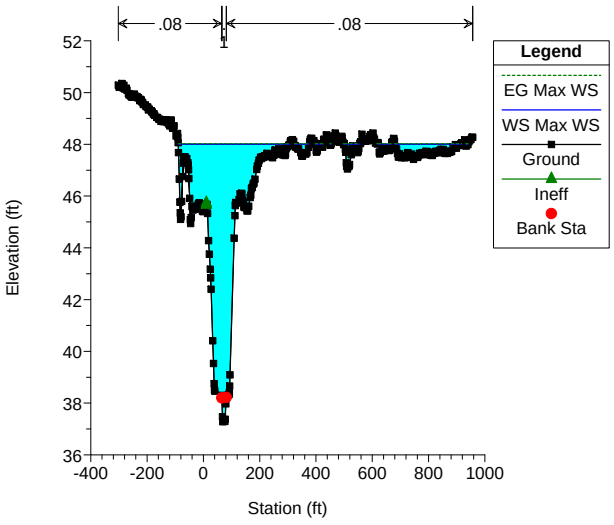
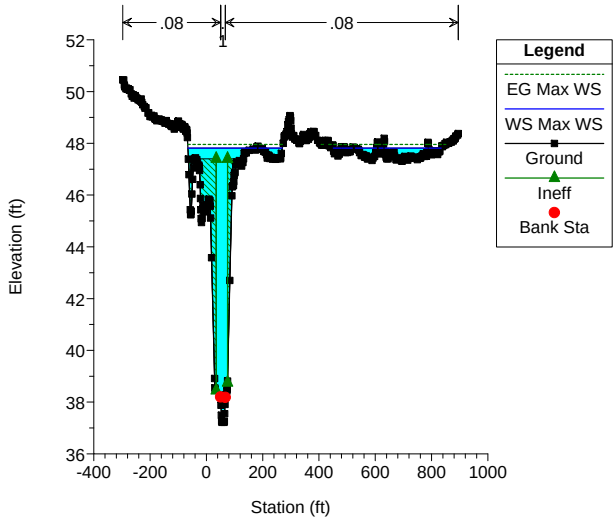
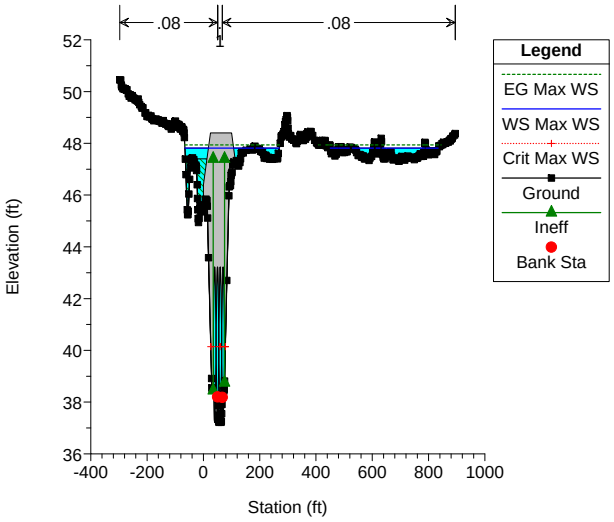


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

MCKOY AVE - Proposed Reconstruction - Pipes lowered and lengthen



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

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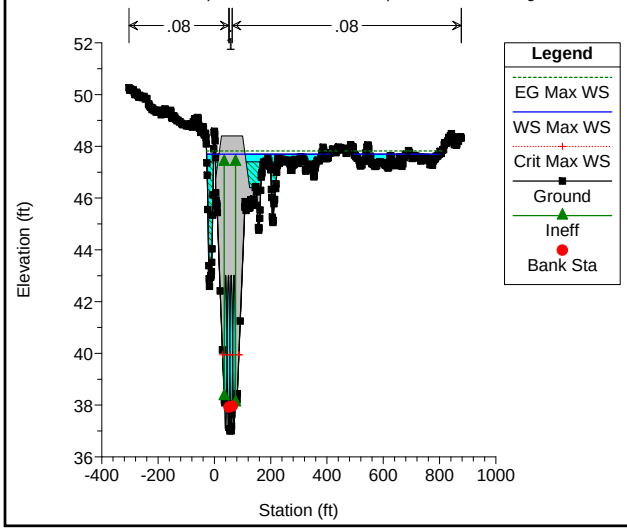
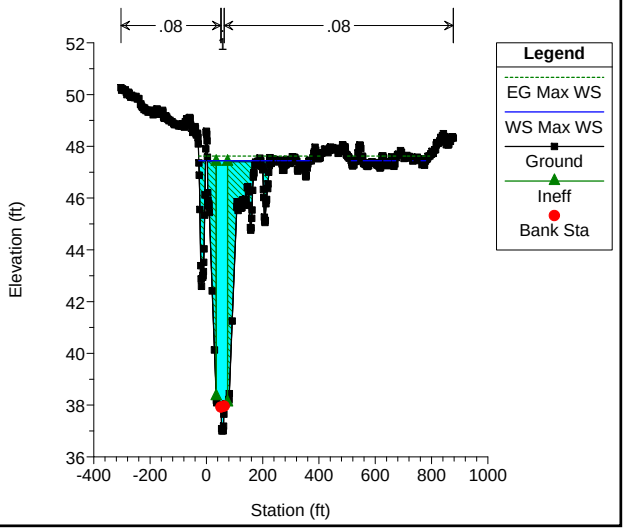
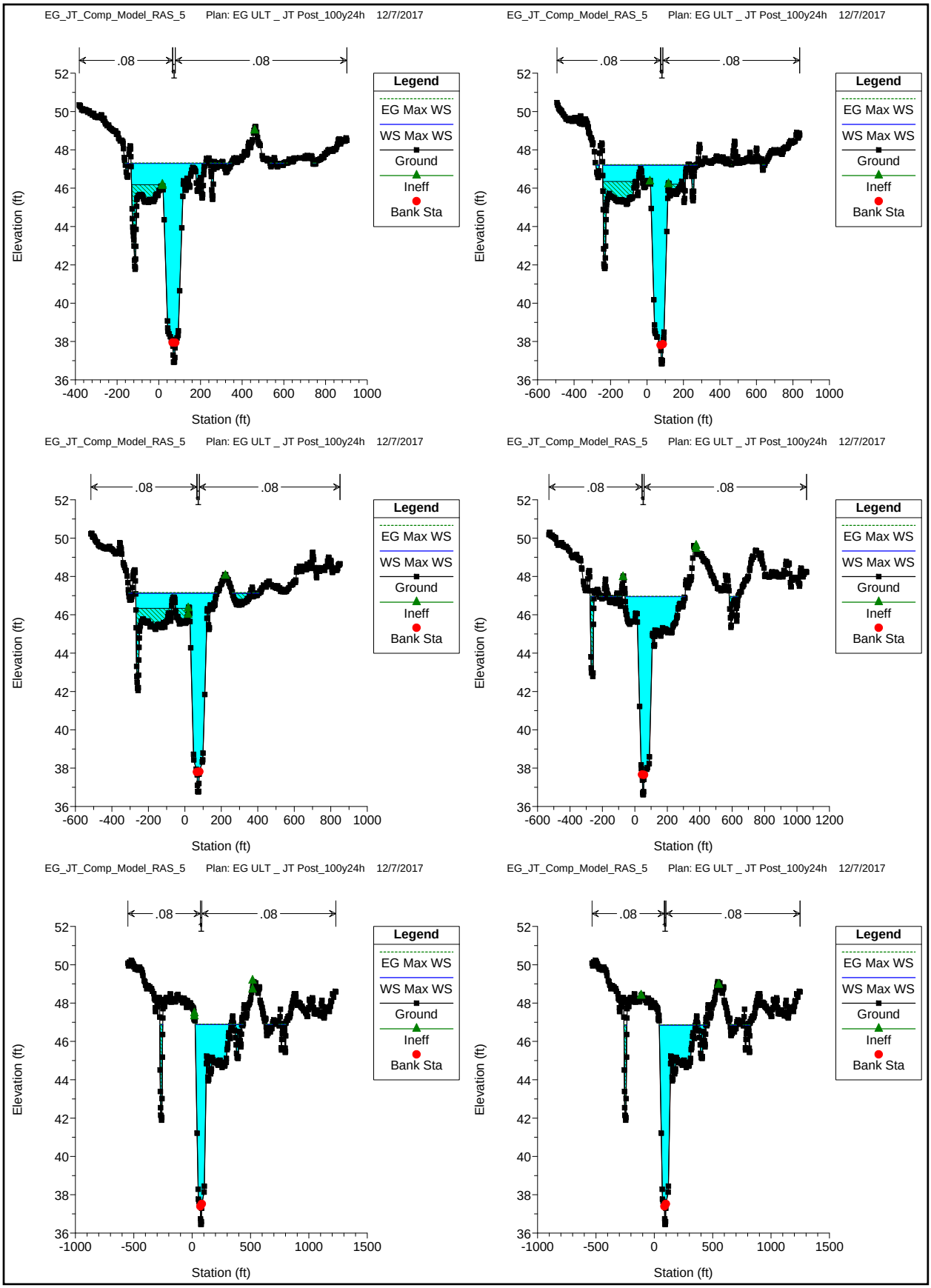


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017




EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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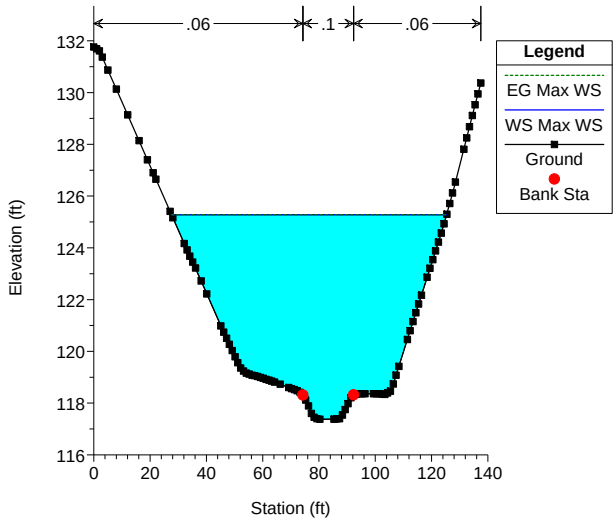

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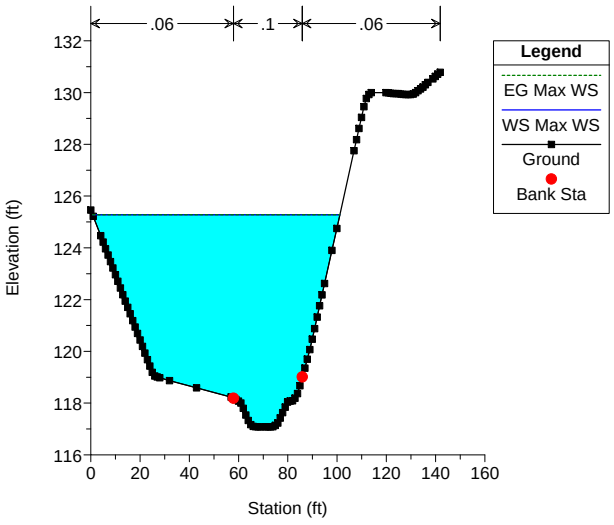
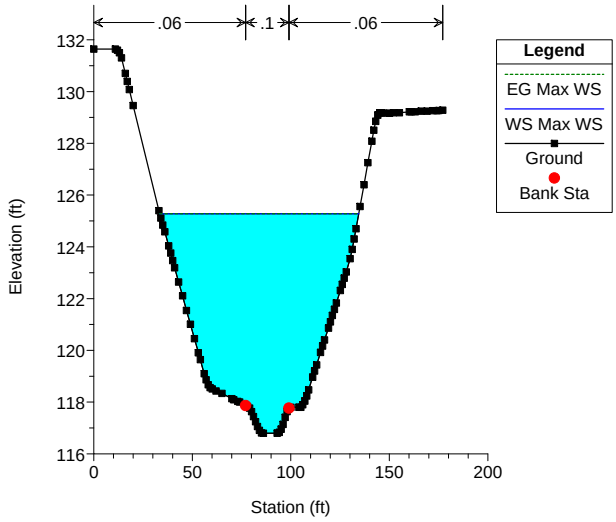


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



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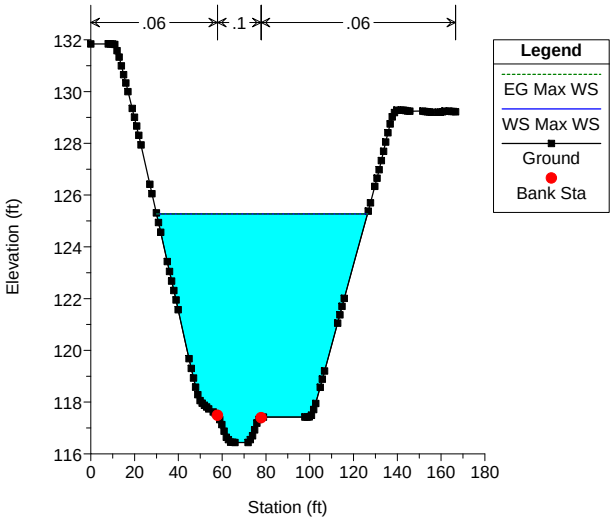

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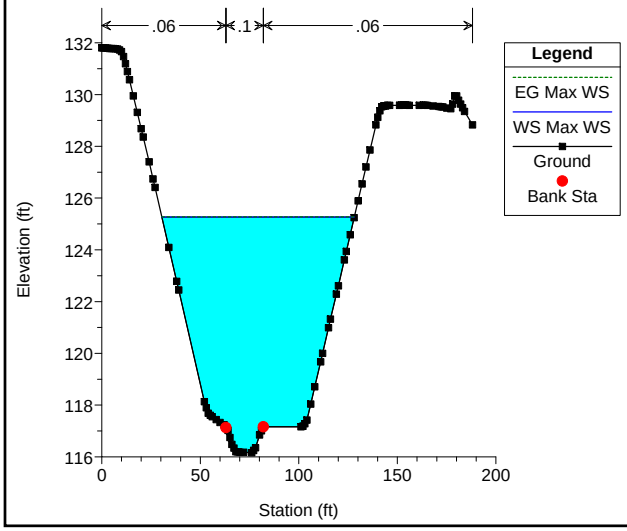
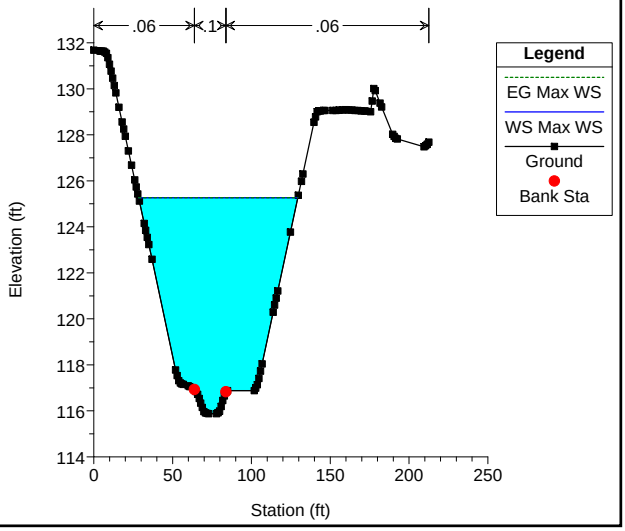
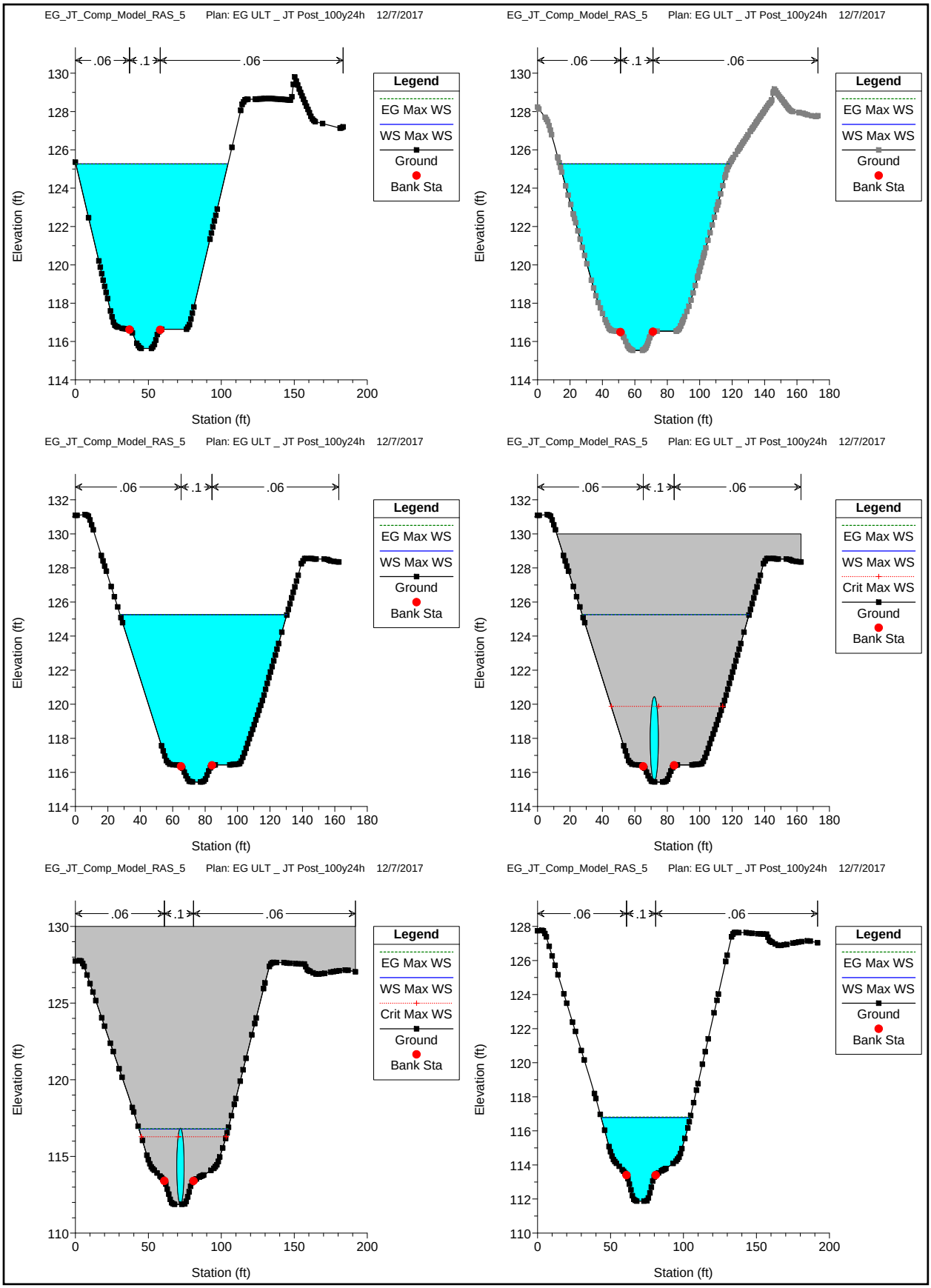


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017




EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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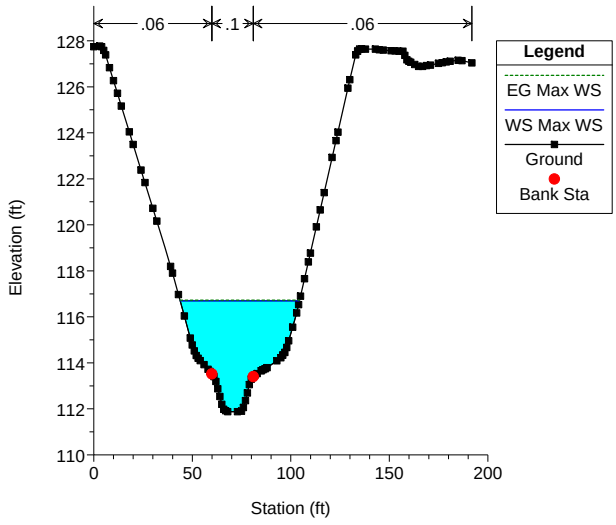

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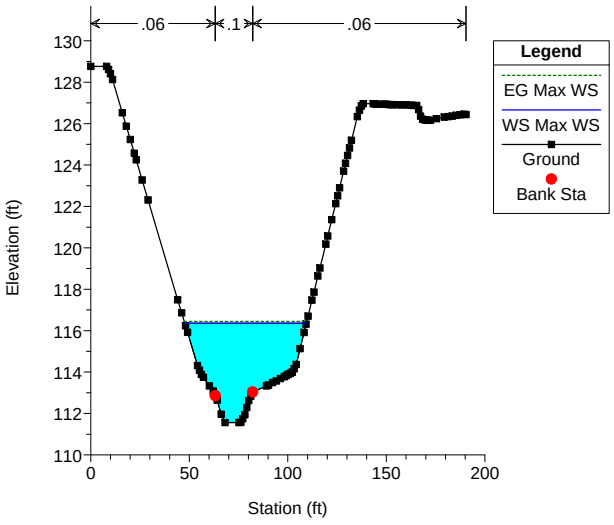

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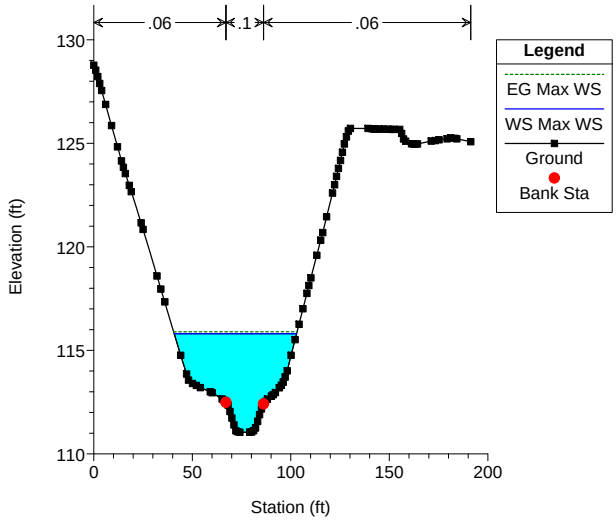

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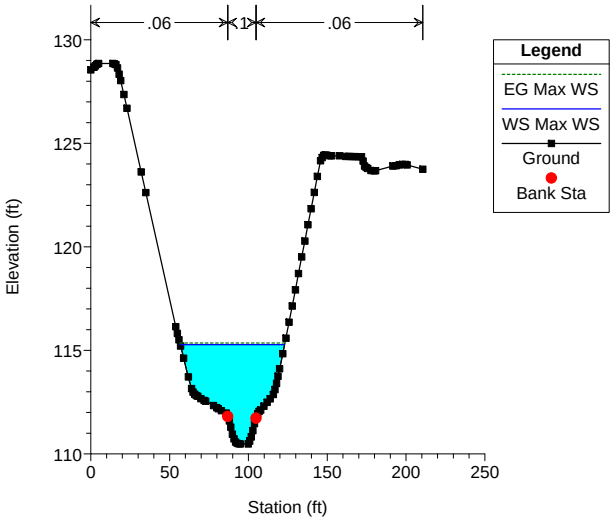

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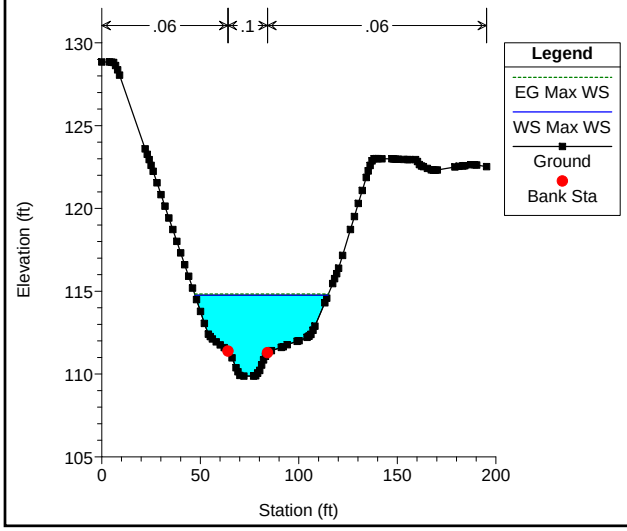

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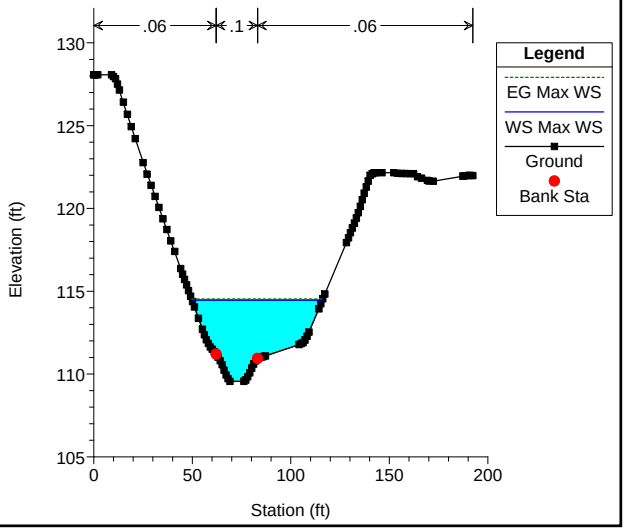

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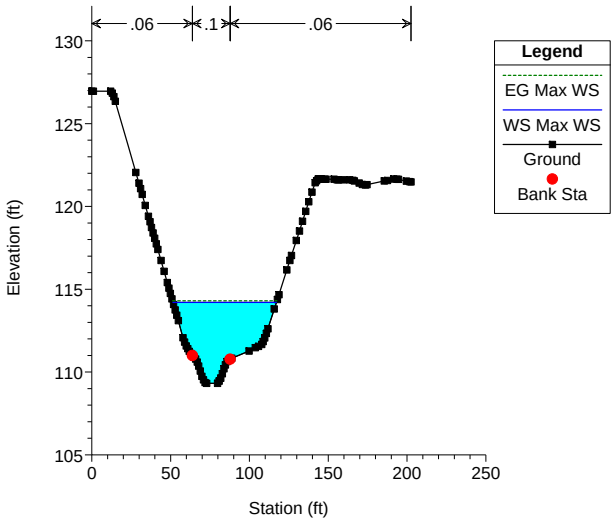

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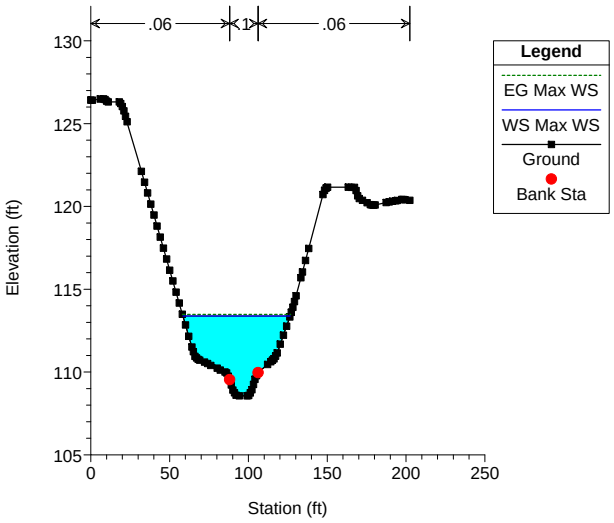

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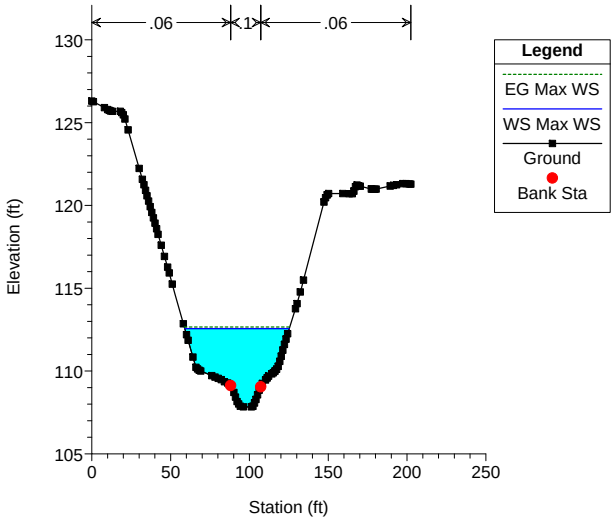

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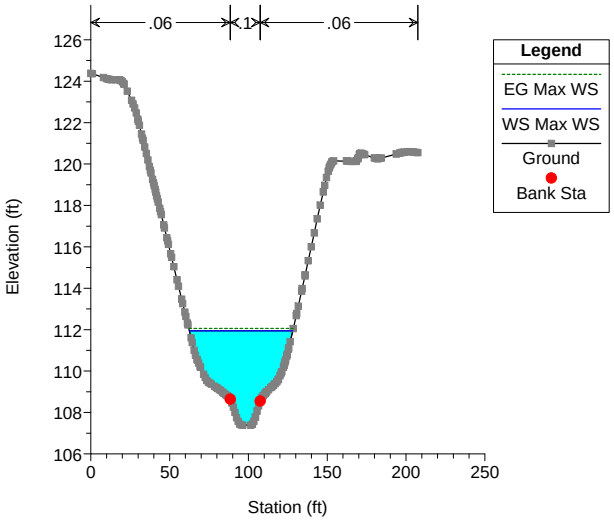

EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

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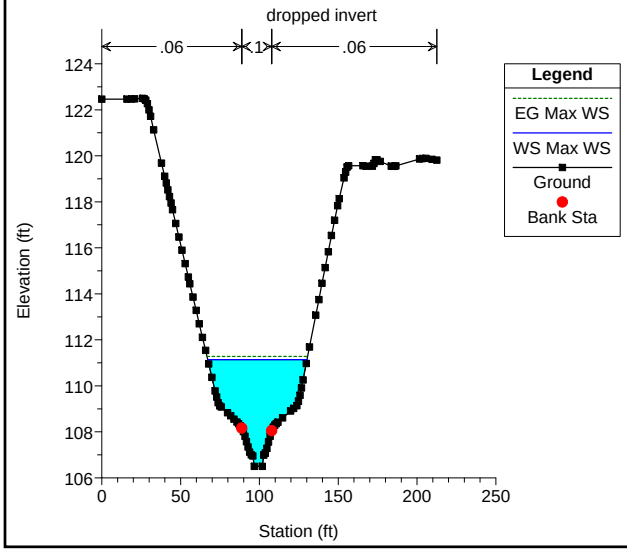
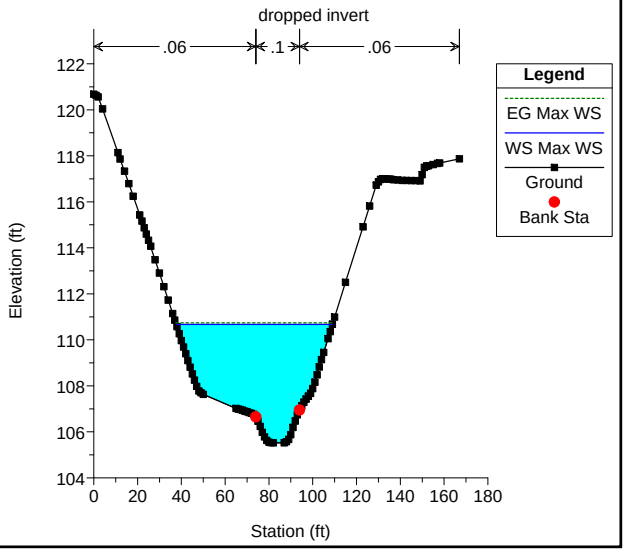
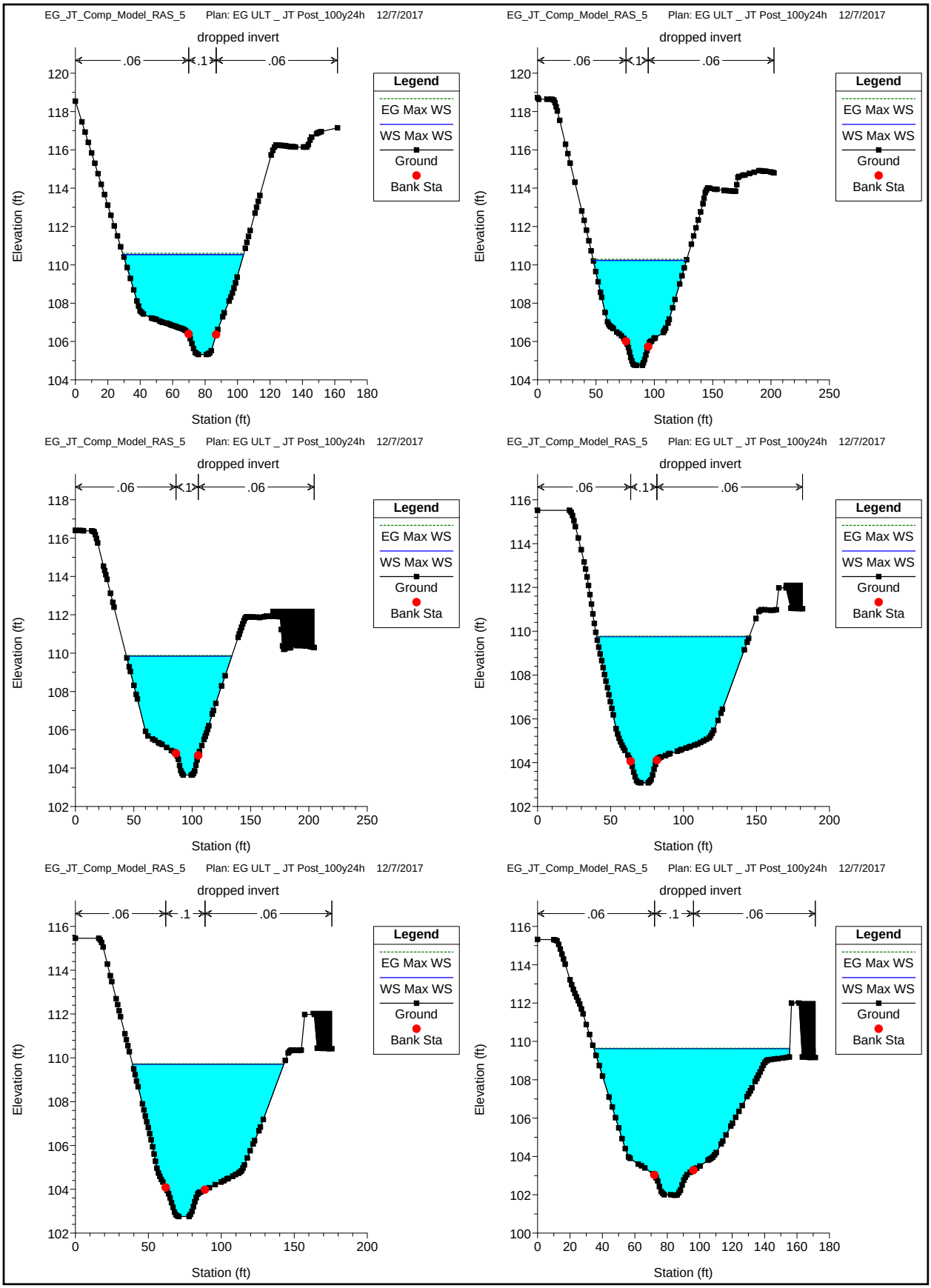


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

dropped invert




EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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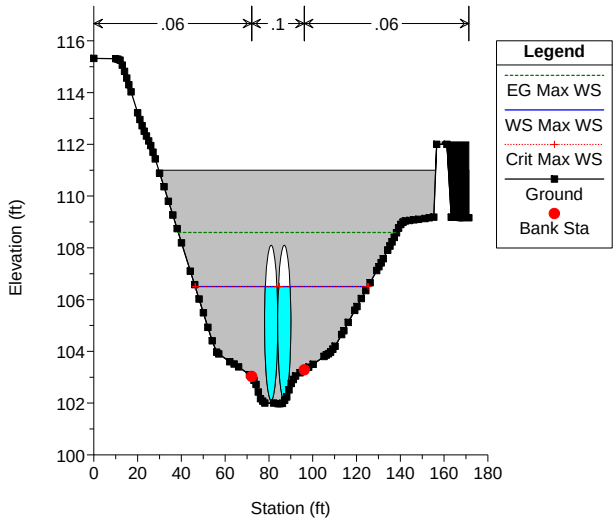
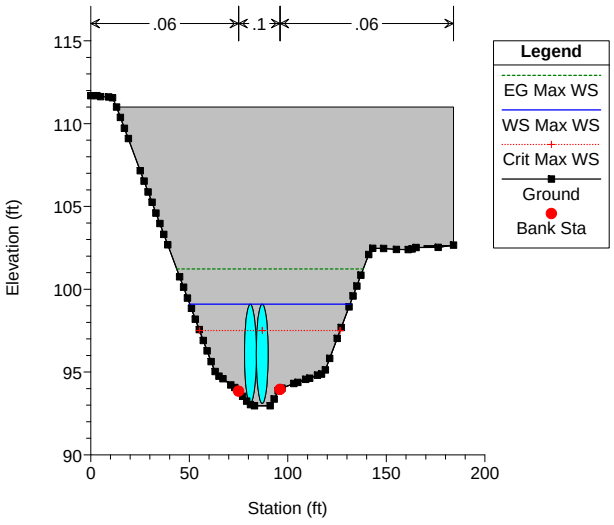
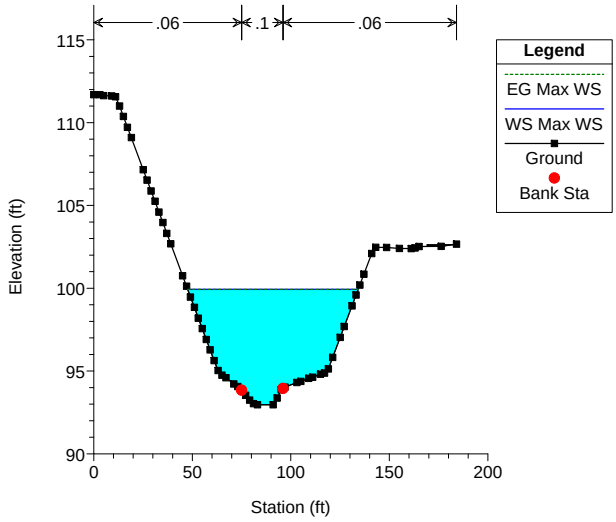
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



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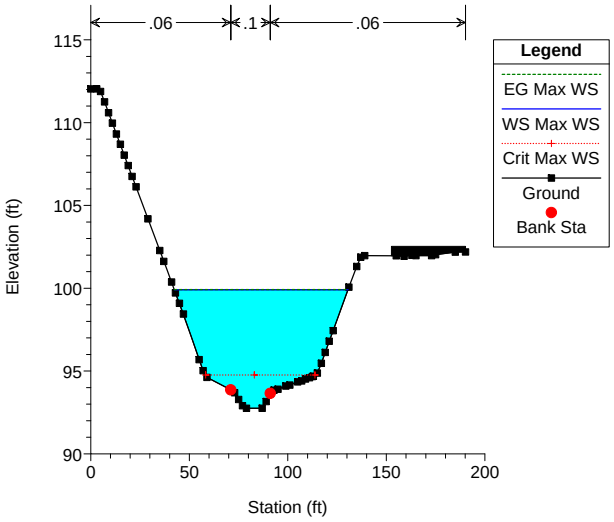

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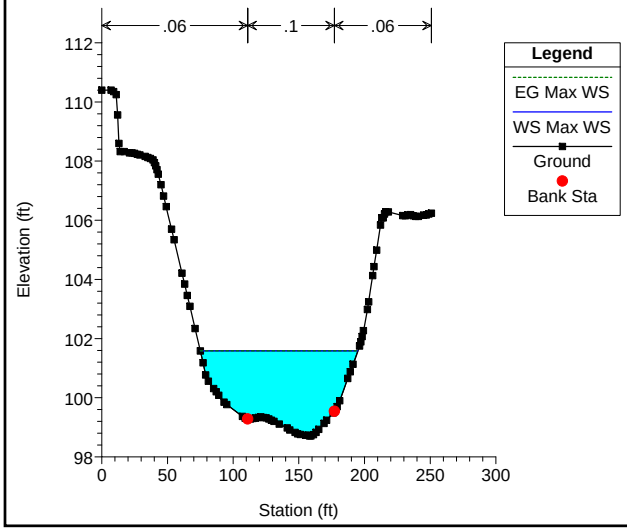
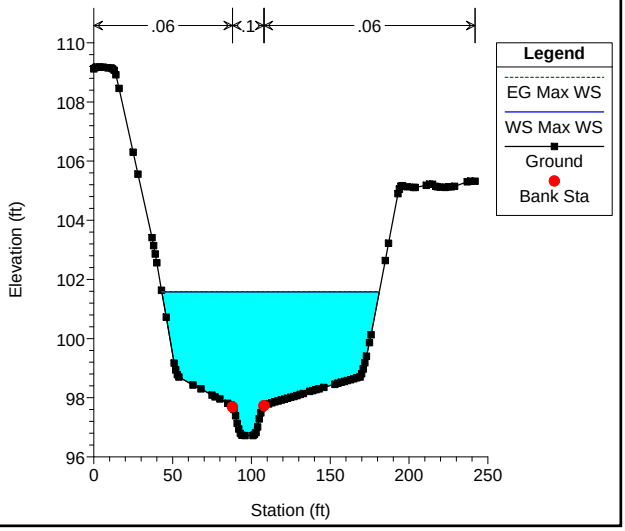
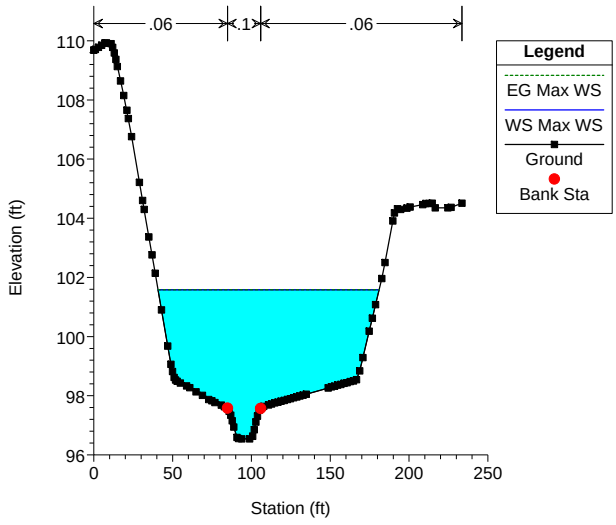


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



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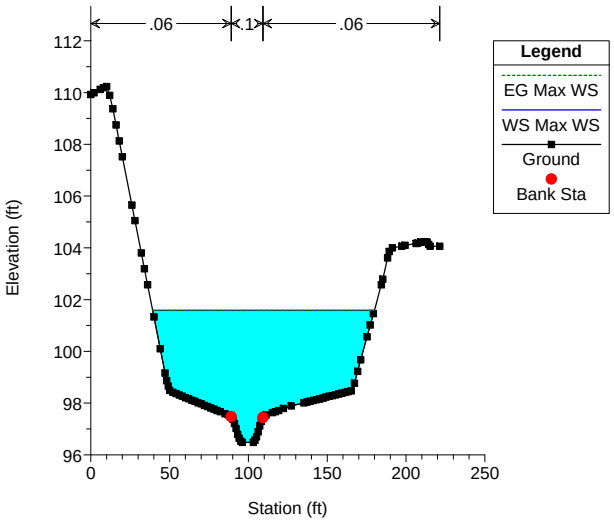

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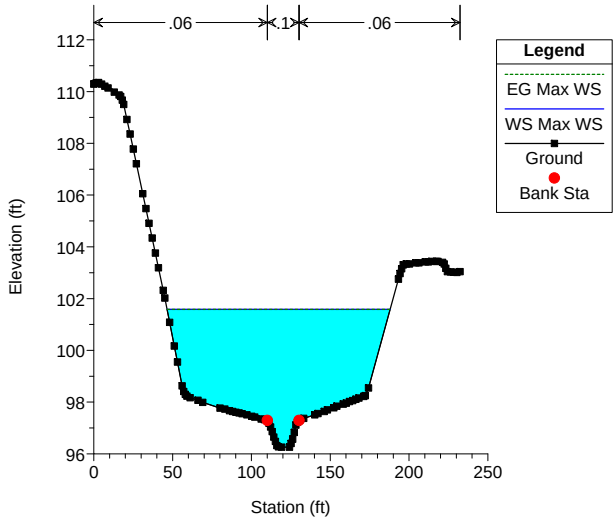

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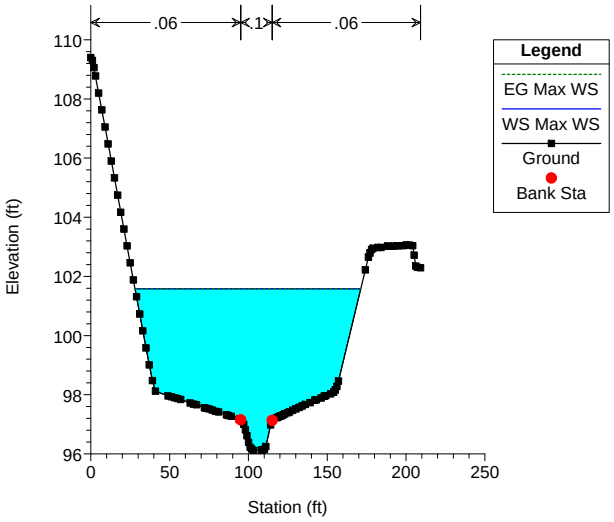

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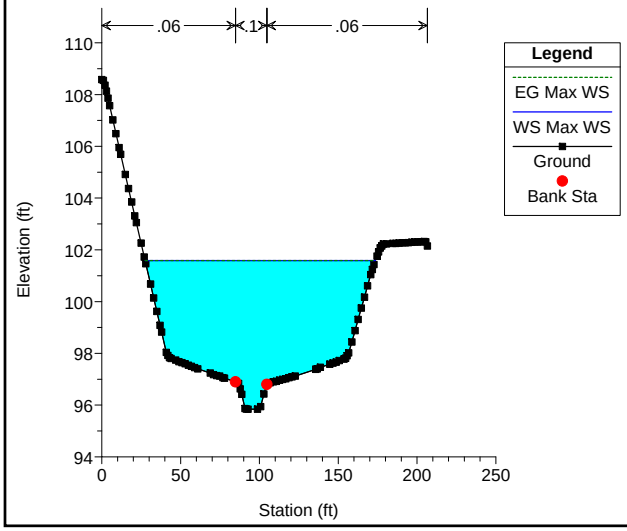

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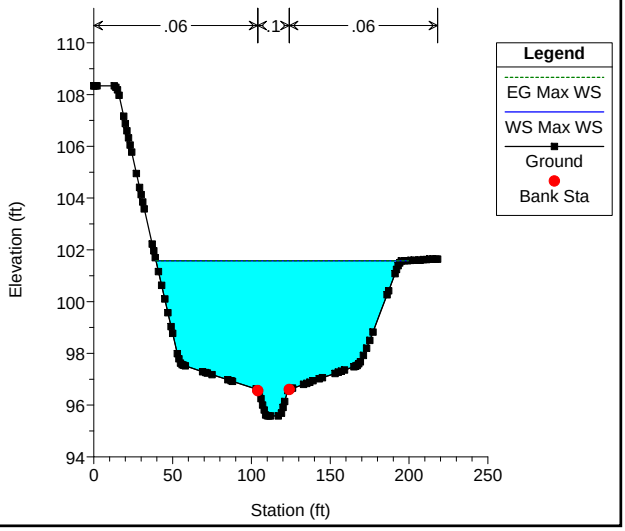

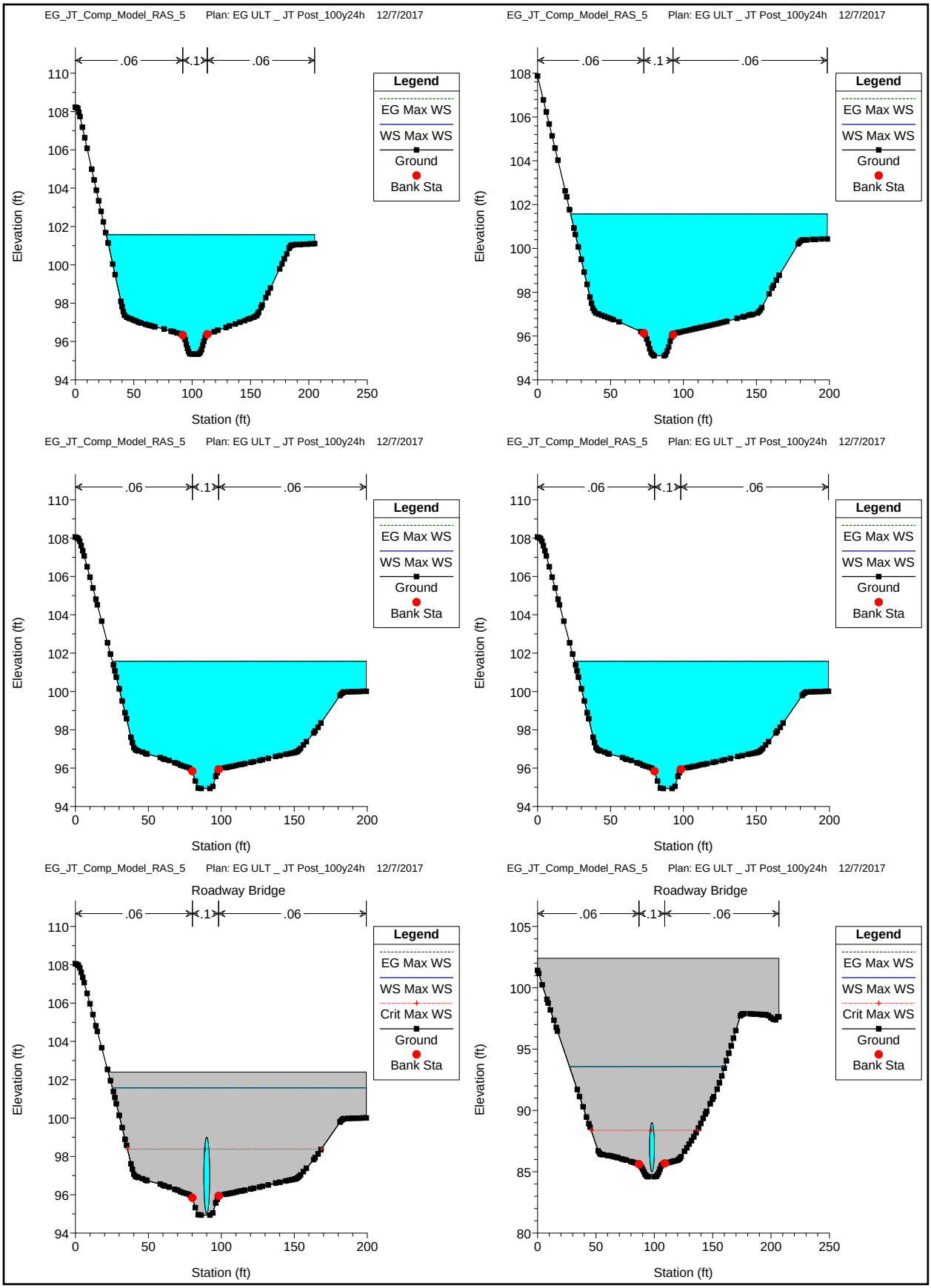
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
Roadway Bridge
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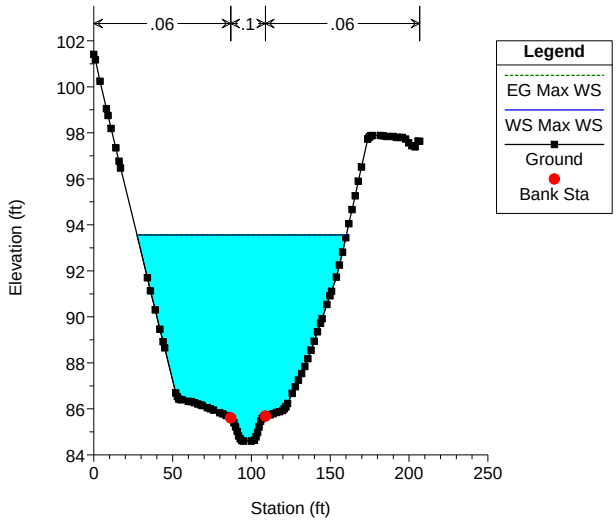
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



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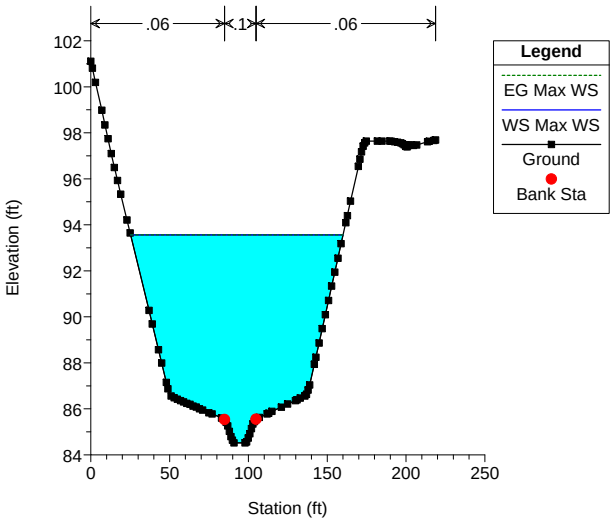

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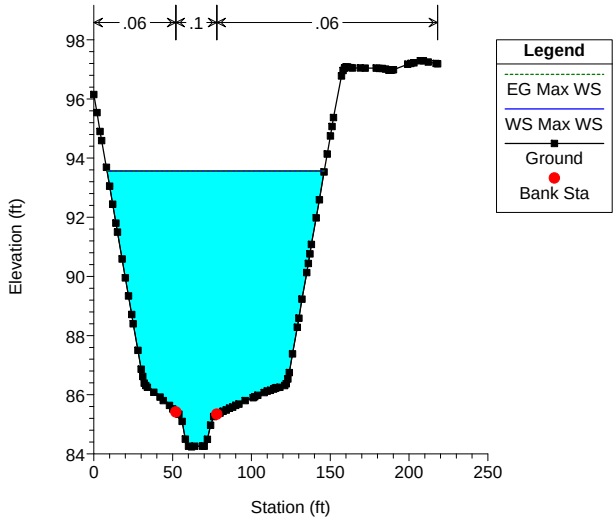

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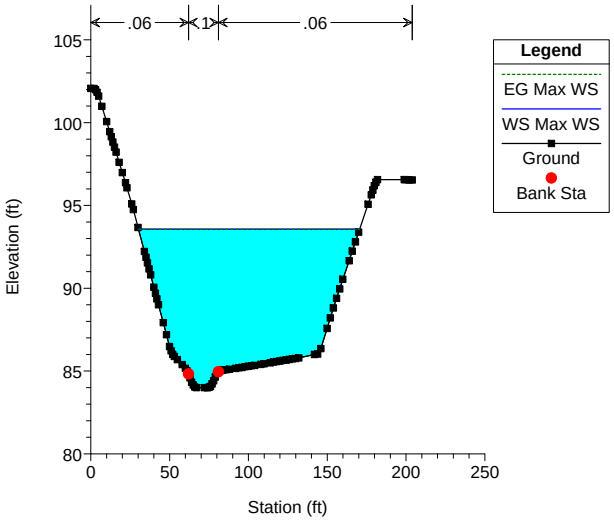

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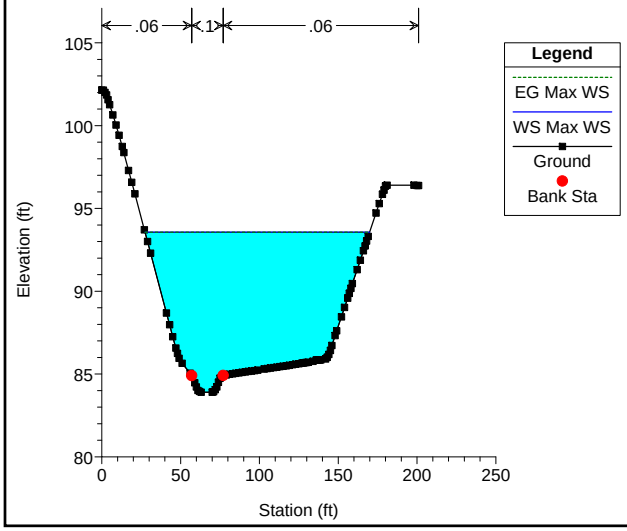

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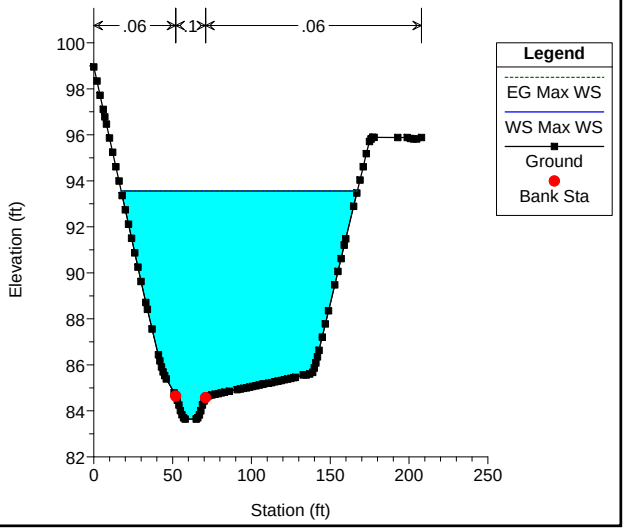

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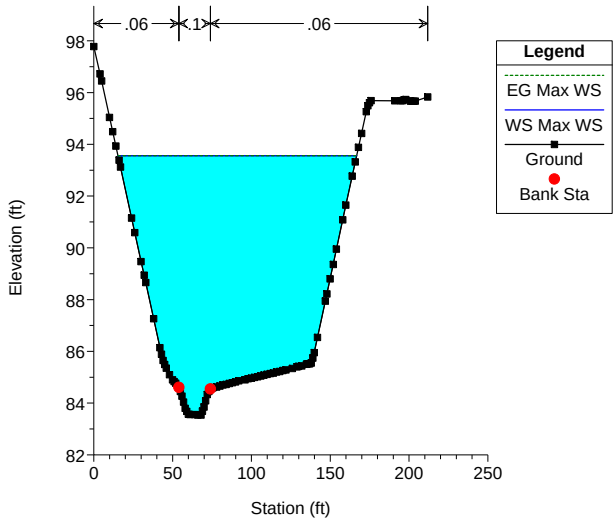
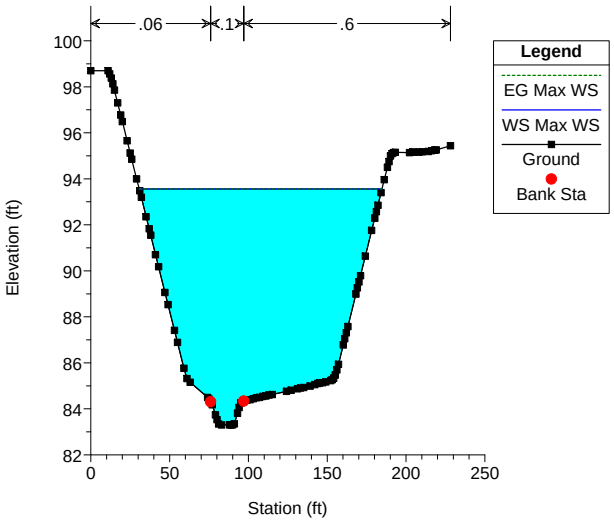
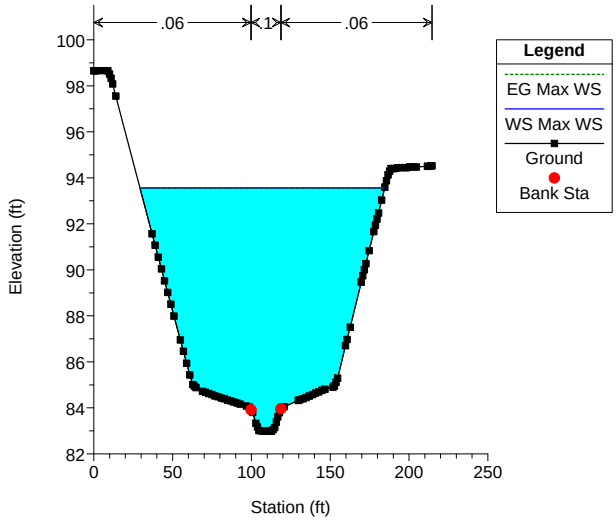


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



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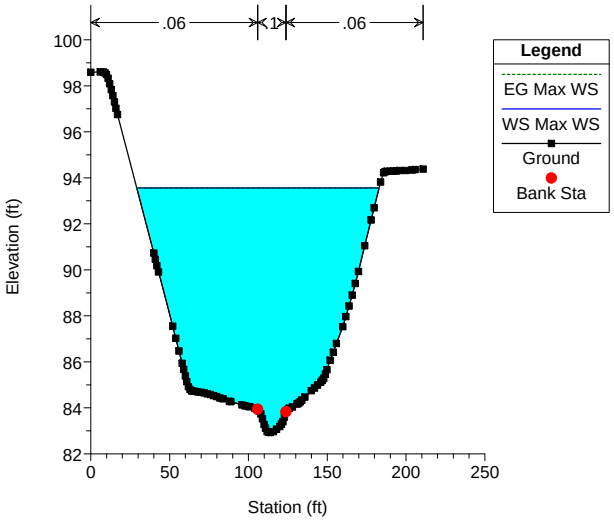

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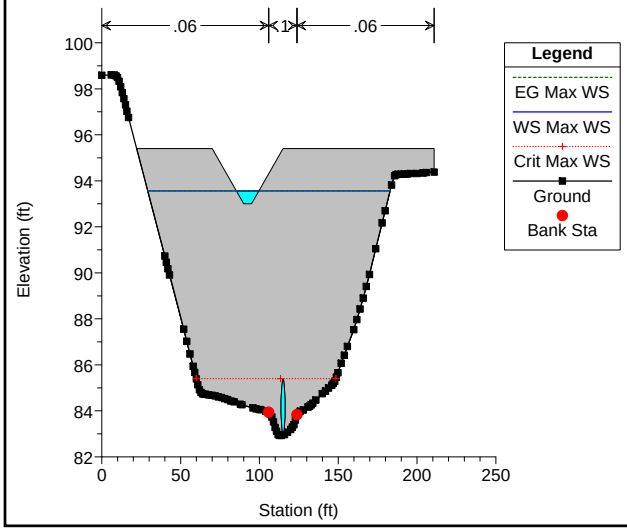

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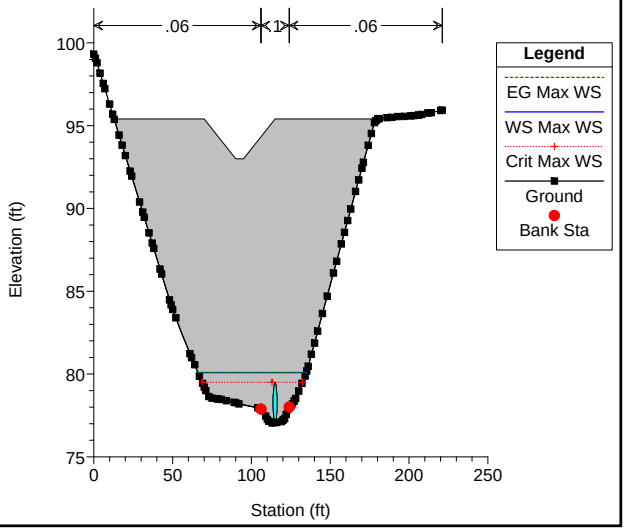

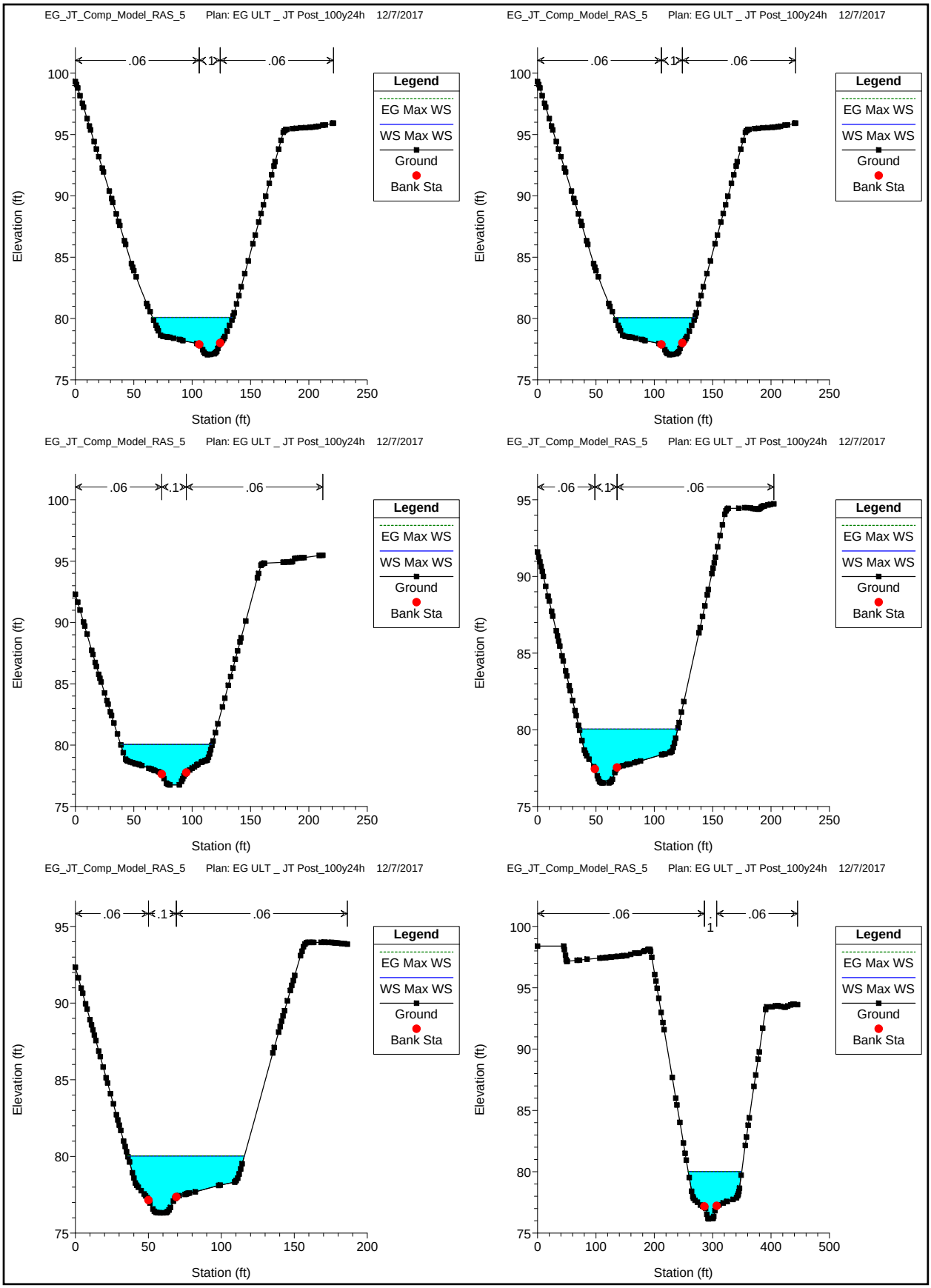
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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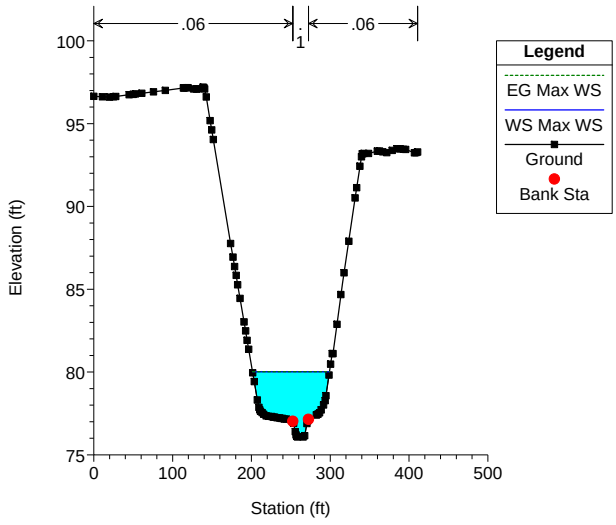
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



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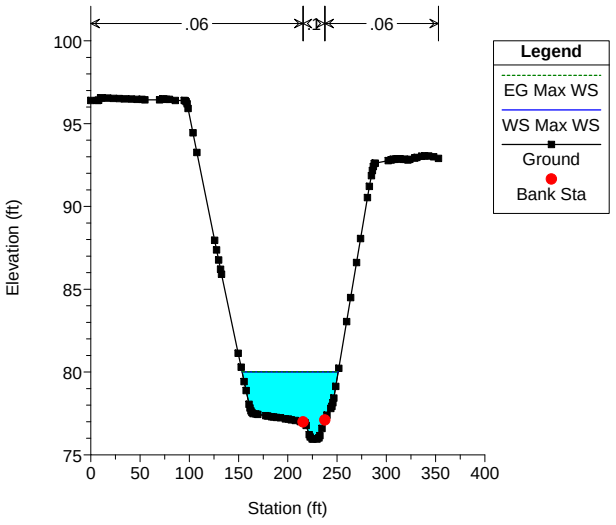

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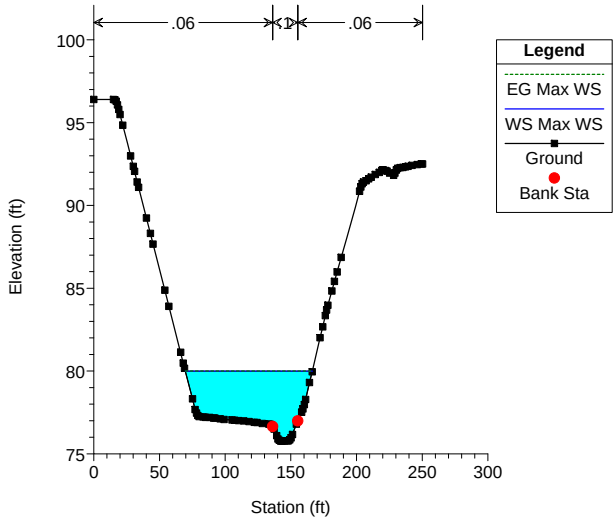

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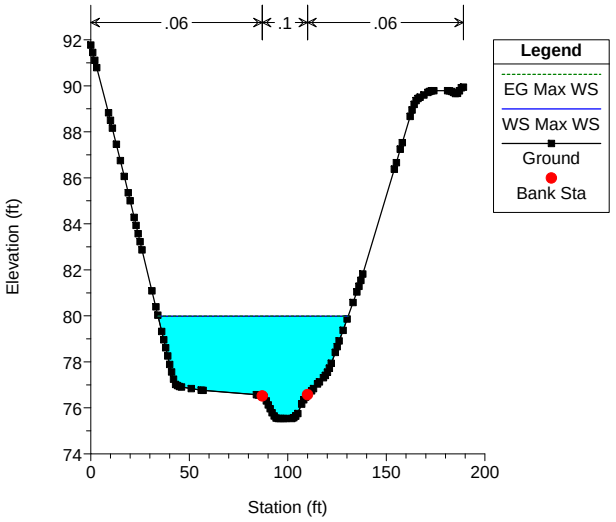

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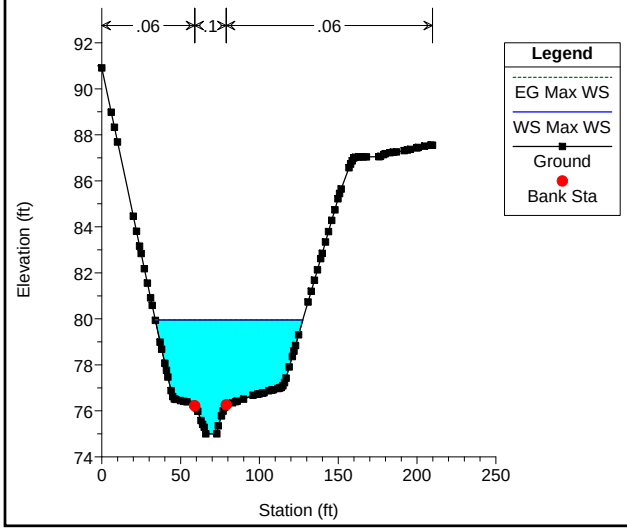

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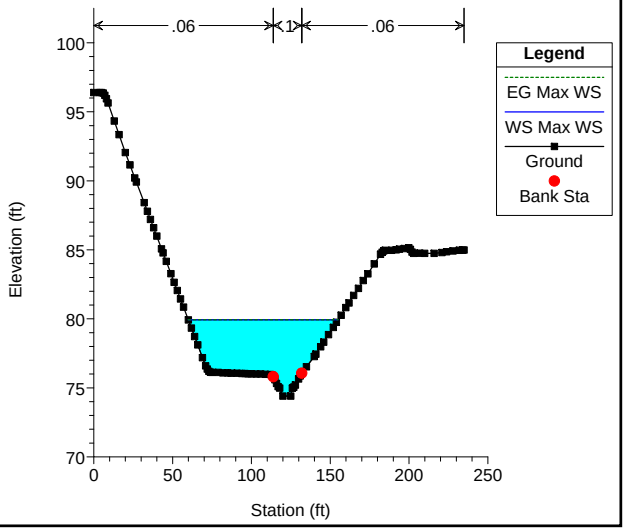

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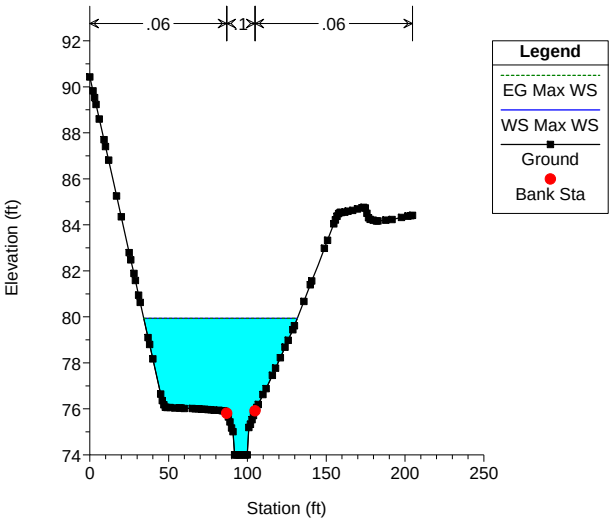

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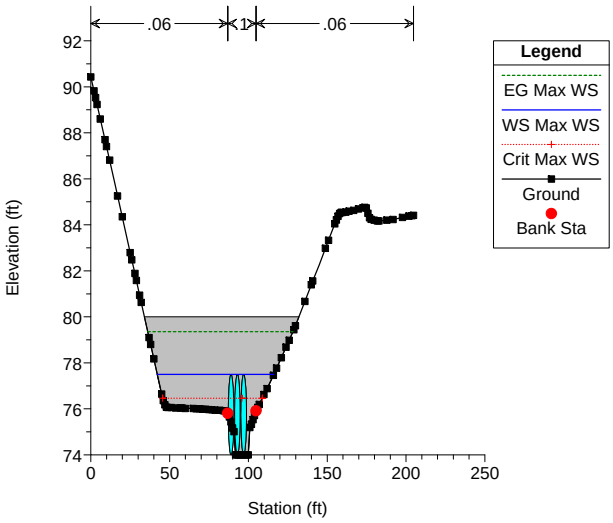

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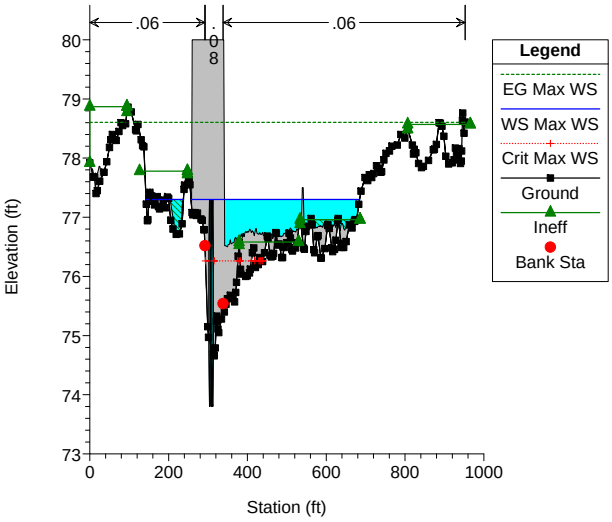

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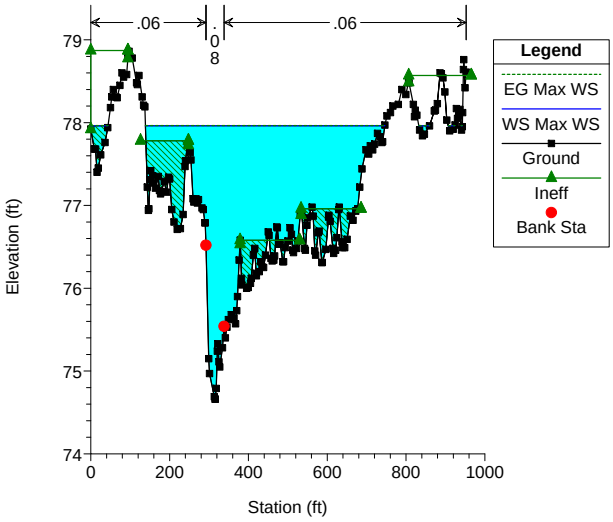

EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017

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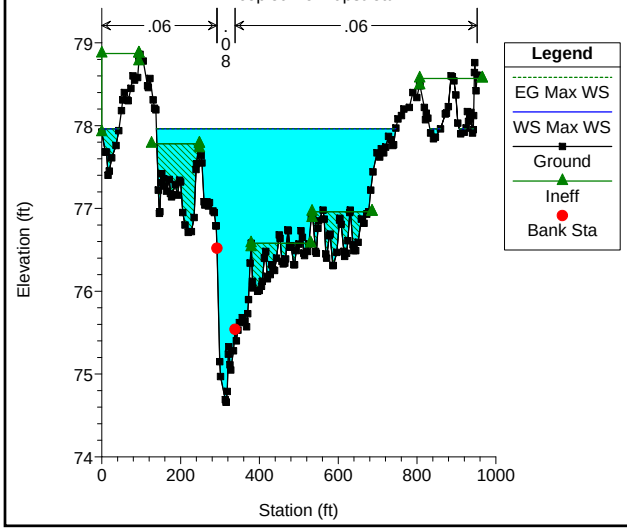
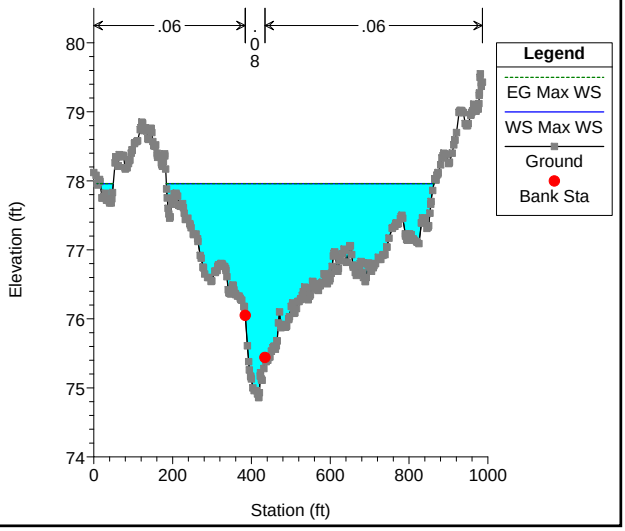
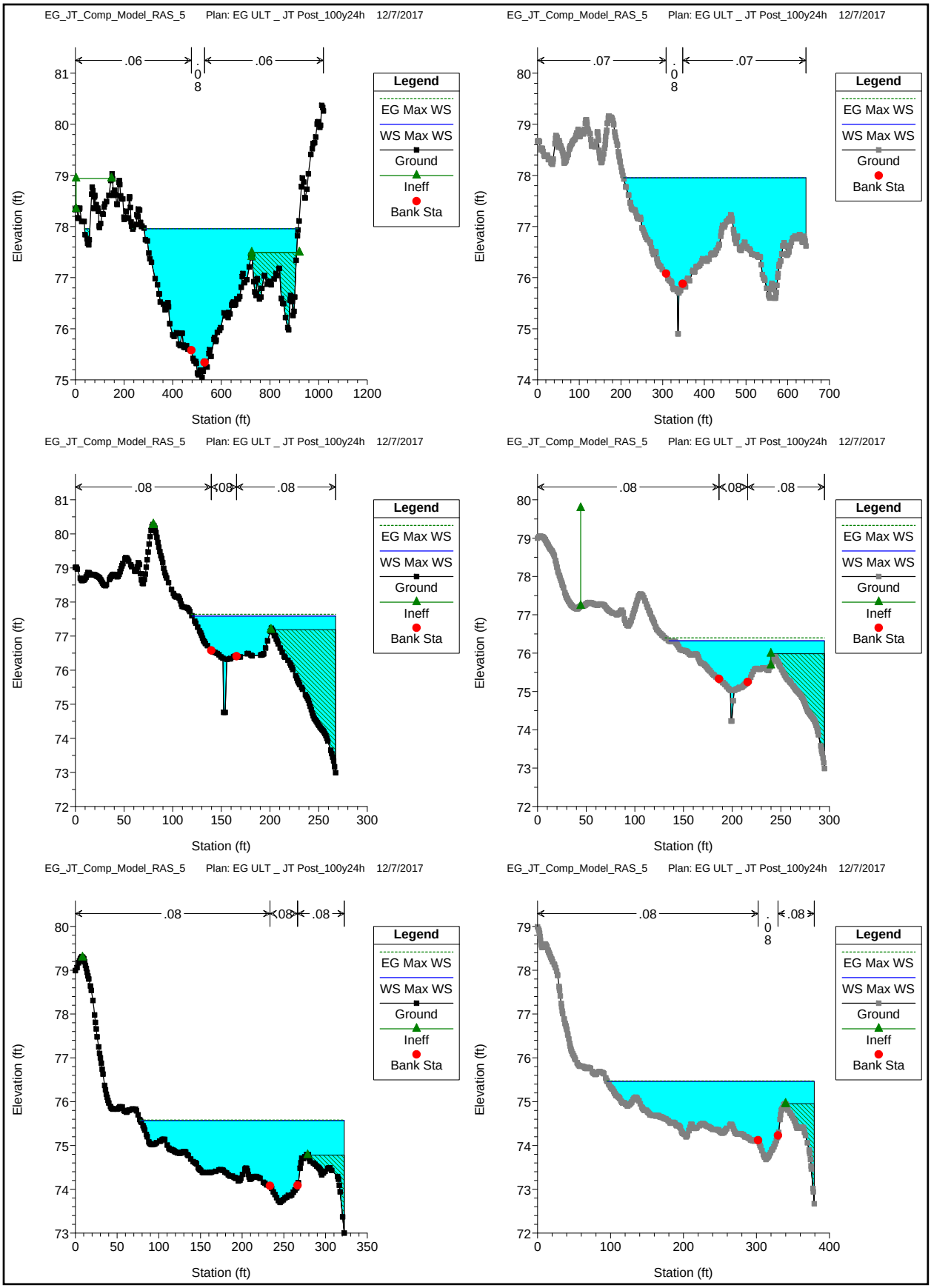


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017




EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
.06
.06
Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
.07
.07
Legend
EG Max WS
WS Max WS
Ground
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
.08
.08
.08
Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
.08
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Legend
EG Max WS
WS Max WS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
EG Max WS
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Elevation (ft)
Station (ft)
EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017
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Legend
EG Max WS
WS Max WS
Ground
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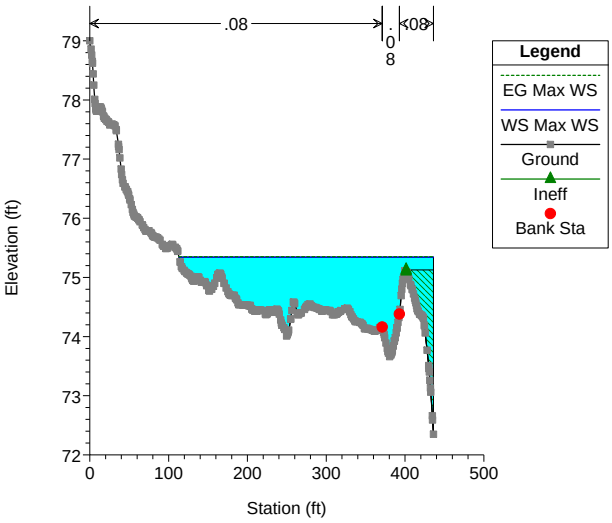
Elevation (ft)
Station (ft)

EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



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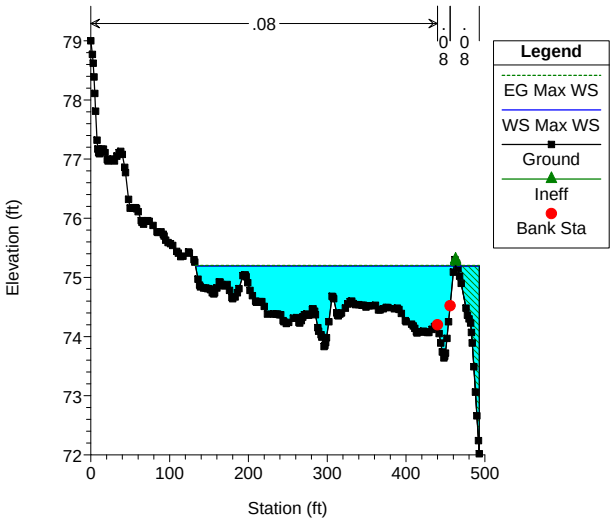

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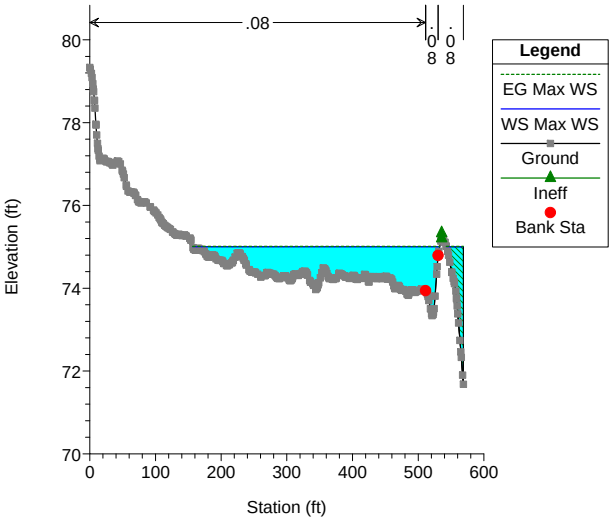

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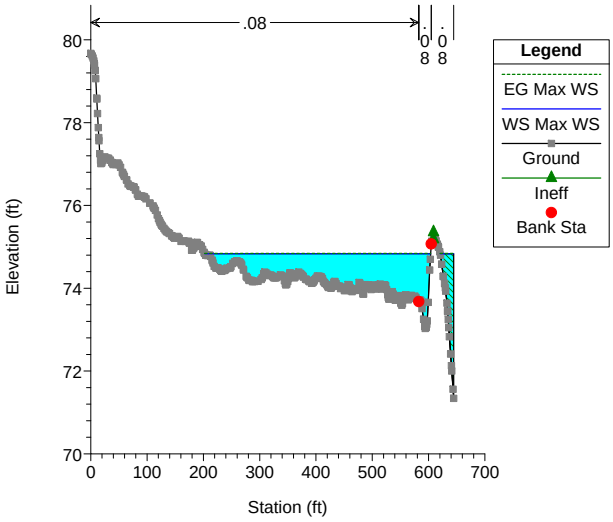

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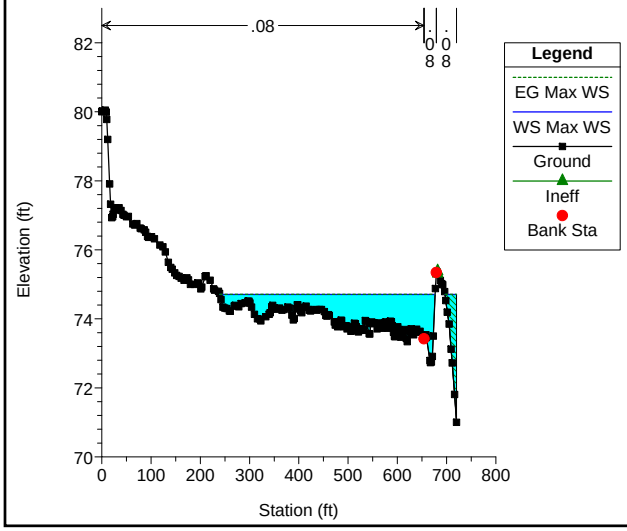
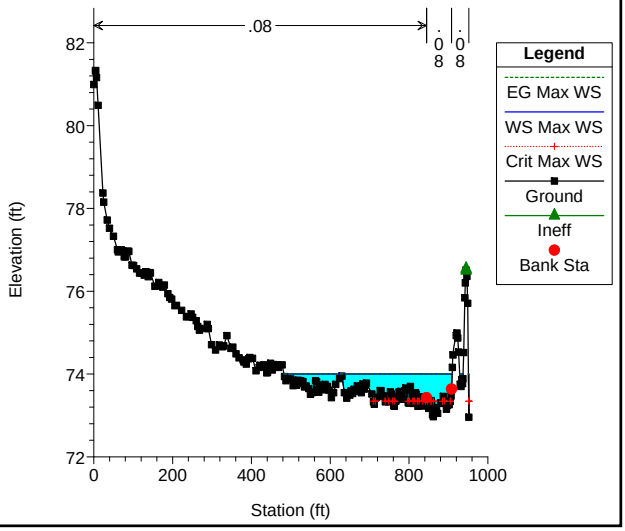


EG_JT_Comp_Model_RAS_5 Plan: EG ULT _ JT Post_100y24h 12/7/2017



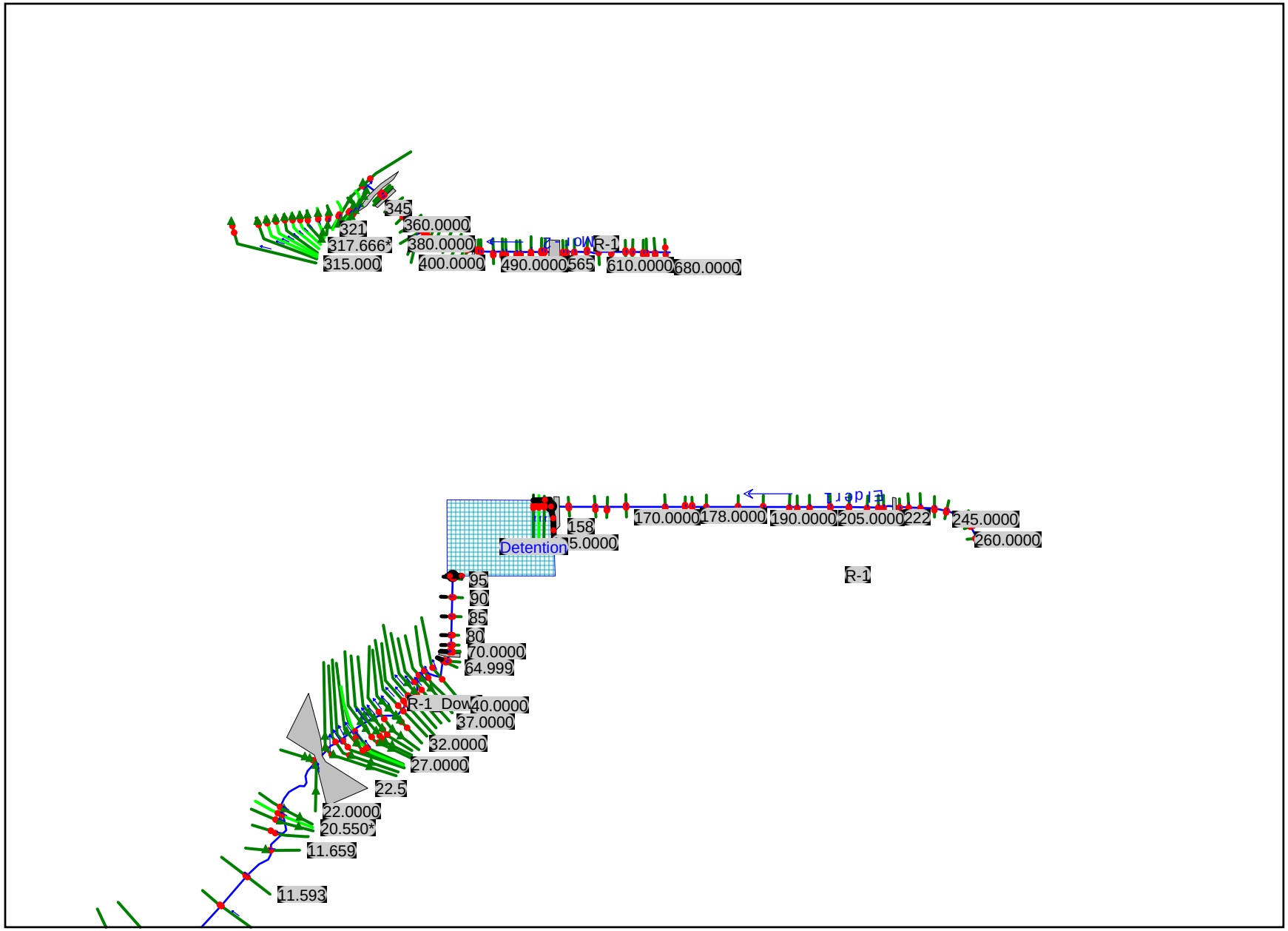
Jackson Township

Phased Development Conditions Phase1

RAS Model Layout

and

10 & 100-Year Summary Results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317.666
315.000
360.0000
380.0000
400.0000
490.0000
565
610.0000
680.0000
R-1
158
5.0000
Detention
170.0000
178.0000
190.0000
205.0000
222
245.0000
260.0000
R-1
95
90
85
80
70.0000
64.999
R-1_Dow
40.0000
37.0000
32.0000
27.0000
22.5
22.0000
20.550
11.659
11.593

HEC-RAS Plan: JT100PH1 Profile: Max WS

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Mor-2	R-1	680.0000	Max WS	7.17	98.71	100.70		100.70	0.000006	0.05	141.15	107.91	0.01
Mor-2	R-1	670.0000	Max WS	7.01	96.72	100.70		100.70	0.000000	0.02	328.75	131.94	0.00
Mor-2	R-1	660.0000	Max WS	7.24	96.54	100.70		100.70	0.000000	0.02	350.37	133.48	0.00
Mor-2	R-1	650.0000	Max WS	7.33	96.48	100.70		100.70	0.000000	0.02	357.31	133.78	0.00
Mor-2	R-1	640.0000	Max WS	7.63	96.26	100.70		100.70	0.000000	0.02	386.89	134.67	0.00
Mor-2	R-1	630.0000	Max WS	7.82	96.12	100.70		100.70	0.000000	0.02	403.52	136.14	0.00
Mor-2	R-1	620.0000	Max WS	63.08	95.84	100.70		100.70	0.000008	0.12	442.58	138.18	0.01
Mor-2	R-1	610.0000	Max WS	70.35	95.58	100.70		100.70	0.000008	0.12	486.38	146.02	0.01
Mor-2	R-1	600.0000	Max WS	70.63	95.34	100.70		100.70	0.000007	0.11	529.22	152.25	0.01
Mor-2	R-1	590.0000	Max WS	70.93	95.10	100.70		100.70	0.000006	0.11	571.88	172.79	0.01
Mor-2	R-1	580.0000	Max WS	111.24	94.94	100.70		100.70	0.000012	0.16	607.26	171.13	0.01
Mor-2	R-1	570.0000	Max WS	111.32	94.94	100.70		100.70	0.000012	0.16	607.19	171.13	0.01
Mor-2	R-1	565		Culvert									
Mor-2	R-1	560.0000	Max WS	76.26	86.60	91.61		91.61	0.000024	0.20	329.51	101.87	0.02
Mor-2	R-1	550.0000	Max WS	76.24	86.52	91.61		91.61	0.000018	0.18	365.03	107.98	0.01
Mor-2	R-1	540.0000	Max WS	77.25	86.24	91.61		91.61	0.000014	0.16	405.50	112.23	0.01
Mor-2	R-1	530.0000	Max WS	79.48	85.99	91.61		91.61	0.000010	0.15	447.53	115.44	0.01
Mor-2	R-1	520.0000	Max WS	79.48	85.90	91.61		91.61	0.000010	0.14	463.46	117.67	0.01
Mor-2	R-1	510.0000	Max WS	79.62	85.64	91.61		91.61	0.000007	0.13	506.56	123.32	0.01
Mor-2	R-1	500.0000	Max WS	79.60	85.54	91.61		91.61	0.000007	0.13	512.08	123.26	0.01
Mor-2	R-1	490.0000	Max WS	79.55	85.30	91.61		91.61	0.000032	0.28	543.37	125.39	0.02
Mor-2	R-1	480.0000	Max WS	79.48	84.98	91.61		91.61	0.000005	0.12	570.43	125.60	0.01
Mor-2	R-1	470.0000	Max WS	79.48	84.93	91.60		91.61	0.000006	0.12	555.17	124.45	0.01
Mor-2	R-1	465		Culvert									
Mor-2	R-1	460.0000	Max WS	70.45	77.05	83.41		83.42	0.000010	0.15	396.55	92.44	0.01
Mor-2	R-1	450.0000	Max WS	70.44	77.05	83.41		83.41	0.000010	0.15	396.51	92.44	0.01
Mor-2	R-1	440.0000	Max WS	71.93	76.76	83.41		83.41	0.000007	0.14	453.89	99.06	0.01
Mor-2	R-1	430.0000	Max WS	71.92	76.54	83.41		83.41	0.000005	0.12	498.31	104.48	0.01
Mor-2	R-1	410.0000	Max WS	71.89	76.32	83.41		83.41	0.000005	0.12	487.31	99.46	0.01
Mor-2	R-1	400.0000	Max WS	71.87	76.16	83.41		83.41	0.000004	0.10	577.09	113.65	0.01
Mor-2	R-1	390.0000	Max WS	71.85	76.08	83.41		83.41	0.000003	0.09	628.40	120.71	0.01
Mor-2	R-1	380.0000	Max WS	71.83	75.96	83.41		83.41	0.000003	0.09	630.77	119.16	0.01
Mor-2	R-1	370.0000	Max WS	75.05	75.76	83.41		83.41	0.000003	0.09	642.55	117.71	0.01
Mor-2	R-1	360.0000	Max WS	75.02	75.54	83.41		83.41	0.000003	0.09	665.82	119.20	0.01
Mor-2	R-1	350.0000	Max WS	78.21	75.24	83.41		83.41	0.000003	0.10	661.12	118.97	0.01
Mor-2	R-1	345		Culvert									
Mor-2	R-1	340.0000	Max WS	78.20	74.96	83.39		83.39	0.000002	0.09	698.37	126.07	0.01
Mor-2	R-1	339.999	Max WS	78.21	74.96	83.39		83.39	0.000002	0.09	698.37	126.07	0.01
Mor-2	R-1	330.001	Max WS	78.20	74.96	83.39		83.39	0.000002	0.09	712.44	128.14	0.01
Mor-2	R-1	330.0000	Max WS	78.20	74.96	83.39		83.39	0.000002	0.09	712.44	128.14	0.01
Mor-2	R-1	321.5		Culvert									
Mor-2	R-1	321	Max WS	78.11	75.08	77.35		77.35	0.000032	0.15	568.45	592.54	0.02
Mor-2	R-1	320.9	Max WS	78.10	74.66	77.35		77.35	0.000097	0.31	352.02	518.44	0.04
Mor-2	R-1	320.45*	Max WS	78.10	74.86	77.35		77.35	0.000047	0.21	489.00	567.42	0.03
Mor-2	R-1	320.0000	Max WS	78.10	75.05	77.34		77.34	0.000031	0.17	508.26	591.70	0.02
Mor-2	R-1	319.5*	Max WS	78.10	74.90	77.34		77.34	0.000104	0.25	381.34	417.04	0.04
Mor-2	R-1	319.000	Max WS	78.09	74.76	77.07		77.12	0.015879	1.99	44.43	134.43	0.38
Mor-2	R-1	318.5*	Max WS	78.09	74.23	75.81		75.91	0.035398	2.82	33.33	124.66	0.58
Mor-2	R-1	318	Max WS	78.09	73.70	74.97		74.98	0.002504	0.99	112.19	211.13	0.17
Mor-2	R-1	317.666*	Max WS	78.09	73.68	74.91		74.92	0.003109	1.04	106.20	234.18	0.18
Mor-2	R-1	317.333*	Max WS	78.09	73.66	74.83		74.84	0.003881	1.08	106.26	257.88	0.20
Mor-2	R-1	317.000	Max WS	78.09	73.64	74.71		74.72	0.007040	1.29	93.86	279.89	0.26
Mor-2	R-1	316.666*	Max WS	78.09	73.34	74.53		74.54	0.007182	1.36	96.82	308.69	0.27
Mor-2	R-1	316.333*	Max WS	78.09	73.03	74.38		74.39	0.004863	1.21	107.92	343.52	0.22
Mor-2	R-1	316.000	Max WS	78.09	72.73	74.30		74.30	0.001958	0.85	146.13	362.52	0.15
Mor-2	R-1	315.000	Max WS	15.00	72.97	74.00	73.34	74.00	0.000044	0.10	197.72	436.32	0.02
Elder1	R-1_Down	95	Max WS	345.72	90.20	99.57		99.58	0.000043	0.43	721.36	121.94	0.02
Elder1	R-1_Down	90	Max WS	345.69	90.10	99.57		99.57	0.000050	0.46	724.98	137.91	0.03
Elder1	R-1_Down	85	Max WS	347.44	90.00	99.56		99.56	0.000054	0.48	692.82	128.10	0.03
Elder1	R-1_Down	80	Max WS	348.27	89.92	99.55		99.55	0.000063	0.52	665.97	126.39	0.03
Elder1	R-1_Down	75.0000	Max WS	348.57	89.80	99.53		99.54	0.000078	0.58	611.33	119.05	0.03
Elder1	R-1_Down	73.3333*	Max WS	353.51	89.78	99.52		99.53	0.000080	0.59	600.20	113.24	0.03
Elder1	R-1_Down	71.6666*	Max WS	353.50	89.76	99.52		99.53	0.000082	0.59	587.17	107.38	0.03
Elder1	R-1_Down	70.0000	Max WS	353.49	89.74	99.51		99.52	0.000084	0.60	572.39	101.57	0.03
Elder1	R-1_Down	69.99	Max WS	363.15	89.74	99.50		99.51	0.000090	0.62	571.34	101.54	0.04
Elder1	R-1_Down	68		Culvert									
Elder1	R-1_Down	65.0000	Max WS	363.14	89.54	95.00		95.02	0.000574	1.06	300.31	83.25	0.08
Elder1	R-1_Down	64.999	Max WS	363.14	89.54	94.99		95.02	0.000576	1.06	300.07	83.23	0.08
Elder1	R-1_Down	40.0000	Max WS	363.13	89.45	94.88		94.93	0.002855	1.75	209.07	144.85	0.25
Elder1	R-1_Down	39.0000	Max WS	364.10	89.35	94.50		94.55	0.002451	1.94	222.41	173.18	0.24
Elder1	R-1_Down	38.0000	Max WS	364.49	89.30	94.34		94.40	0.002656	2.64	236.66	208.63	0.25
Elder1	R-1_Down	37.0000	Max WS	365.04	89.25	94.20		94.23	0.001004	1.35	324.19	239.26	0.16
Elder1	R-1_Down	36.0000	Max WS	365.53	89.20	93.75		93.91	0.008115	3.61	142.25	220.38	0.43
Elder1	R-1_Down	35.0000	Max WS	365.92	89.15	93.42		93.48	0.003689	2.38	215.11	245.86	0.30
Elder1	R-1_Down	34.0000	Max WS	366.30	89.10	93.23		93.28	0.002681	2.10	258.42	279.03	0.25
Elder1	R-1_Down	33.0000	Max WS	366.63	89.05	93.07		93.10	0.002467	1.71	279.08	289.63	0.23
Elder1	R-1_Down	32.0000	Max WS	367.29	88.95	92.75		92.77	0.001842	1.50	298.78	306.62	0.20
Elder1	R-1_Down	31.0000	Max WS	362.14	88.85	92.30		92.32	0.001874	1.48	318.16	324.91	0.20
Elder1	R-1_Down	30.0000	Max WS	354.43	88.75	92.01		92.03	0.001432	1.45	352.55	372.74	0.18
Elder1	R-1_Down	29.0000	Max WS	353.31	88.70	91.95		91.96	0.000805	1.24	440.53	400.93	0.14
Elder1	R-1_Down	28.0000	Max WS	352.92	88.65	91.91		91.92	0.000465	0.86	538.99	428.04	0.11
Elder1	R-1_Down	27.0000	Max WS	353.01	88.01	91.87		91.87	0.000107	0.47	854.77	440.49	0.05
Elder1	R-1_Down	26.5*	Max WS	353.02	88.28	91.86		91.86	0.000116	0.48	855.74	468.84	0.05
Elder1	R-1_Down	26.0000	Max WS	353.28	88.54	91.85		91.85	0.000192	0.58	750.38	482.68	0.07
Elder1	R-1_Down	25.0000	Max WS	353.74	88.53	91.82		91.83	0.000102	0.44	983.37	584.15	0.05
Elder1	R-1_Down	24.0000	Max WS	353.99	88.24	91.82		91.82	0.000062	0.37	1158.74	634.12	0.04

HEC-RAS Plan: JT100PH1 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	23.0000	Max WS	354.34	88.09	90.89		91.37	0.015660	5.60	63.28	604.40	0.63
Elder1	R-1_Down	22.5		Culvert									
Elder1	R-1_Down	22.0000	Max WS	354.27	88.09	90.73		90.75	0.001072	1.24	402.91	389.98	0.16
Elder1	R-1_Down	21.0000	Max WS	354.18	86.60	88.94		89.01	0.005541	2.62	191.11	224.49	0.35
Elder1	R-1_Down	20.1	Max WS	365.27	85.60	88.56		88.58	0.001117	1.45	342.36	253.66	0.17
Elder1	R-1_Down	11.724	Max WS	365.19	85.65	88.30		88.34	0.002813	1.95	253.35	243.24	0.25
Elder1	R-1_Down	11.659	Max WS	365.16	84.72	87.45		87.49	0.002171	2.12	268.61	231.21	0.24
Elder1	R-1_Down	11.593	Max WS	384.90	83.92	86.71		86.74	0.002450	2.09	294.64	292.35	0.25
Elder1	R-1_Down	11.538	Max WS	401.15	82.92	86.21		86.23	0.001309	1.79	328.73	238.16	0.19
Elder1	R-1_Down	11.482	Max WS	418.48	82.27	85.35		85.41	0.004113	2.62	242.51	248.41	0.32
Elder1	R-1_Down	11.433	Max WS	430.29	81.55	84.79		84.80	0.000403	1.39	699.33	566.64	0.15
Elder1	R-1_Down	11.376	Max WS	545.65	80.86	84.65		84.67	0.000419	1.62	614.60	340.55	0.16
Elder1	R-1_Down	11.313	Max WS	569.52	80.70	84.48		84.51	0.000608	1.85	507.71	295.72	0.19
Elder1	R-1_Down	11.252	Max WS	592.59	80.24	84.13		84.20	0.001525	3.01	381.38	276.09	0.31
Elder1	R-1_Down	11.175	Max WS	617.94	79.60	83.48		83.60	0.001997	3.32	372.30	386.68	0.35
Elder1	R-1_Down	11.125	Max WS	638.09	79.27	83.14		83.19	0.000836	2.23	513.55	413.03	0.23
Elder1	R-1_Down	11.063	Max WS	659.46	78.95	82.92		82.95	0.000771	2.16	783.89	820.48	0.22
Elder1	R-1_Down	10.995	Max WS	768.94	78.76	82.47		82.51	0.001677	2.70	670.82	682.53	0.31
Elder1	R-1_Down	10.936	Max WS	760.79	76.97	81.95		82.01	0.001646	3.04	598.89	564.33	0.31
Elder1	R-1_Down	10.884	Max WS	757.14	76.68	81.71		81.73	0.000245	1.55	1052.88	507.24	0.13
Elder1	R-1_Down	10.834	Max WS	756.41	76.47	81.65		81.67	0.000239	1.57	1011.47	459.98	0.13
Elder1	R-1_Down	10.775	Max WS	755.83	76.23	81.57		81.59	0.000266	1.68	973.08	566.24	0.14
Elder1	R-1_Down	10.7475*	Max WS	755.63	75.69	81.49		81.54	0.000553	2.49	692.06	419.71	0.20
Elder1	R-1_Down	10.720	Max WS	755.17	75.15	81.32		81.43	0.001259	3.77	517.98	409.18	0.29
Elder1	R-1_Down	10.705	Max WS	754.72	75.34	81.16		81.31	0.002065	4.13	475.12	569.04	0.37
Elder1	R-1_Down	10.704	Max WS	754.85	75.44	81.21		81.22	0.000488	1.72	902.21	615.60	0.17
Elder1	R-1_Down	10.689		Mult Open									
Elder1	R-1_Down	10.686	Max WS	754.85	75.07	81.18		81.19	0.000343	1.47	1078.54	636.14	0.14
Elder1	R-1_Down	10.681	Max WS	754.84	75.23	81.17		81.19	0.000242	1.49	1099.27	644.76	0.13
Elder1	R-1_Down	10.65	Max WS	754.72	74.93	81.11		81.15	0.000222	1.64	690.81	366.68	0.13
Elder1	R-1_Down	10.63		Lat Struct									
Elder1	R-1_Down	10.619	Max WS	754.70	75.38	80.99		81.04	0.000873	2.18	512.75	297.56	0.23
Elder1	R-1_Down	10.613		Culvert									
Elder1	R-1_Down	10.607	Max WS	754.56	75.04	78.35		79.43	0.011622	8.34	90.43	499.55	0.85
Elder1	R-1_Down	10.562	Max WS	766.75	74.78	77.88		77.95	0.001725	2.56	518.26	592.70	0.31
Elder1	R-1_Down	10.507	Max WS	757.37	74.62	77.13		77.31	0.004603	3.85	279.34	325.77	0.49
Elder1	R-1_Down	10.442	Max WS	763.00	74.36	76.08		76.13	0.002065	1.91	495.22	517.69	0.31
Elder1	R-1_Down	10.361	Max WS	770.46	72.88	75.44		75.46	0.001086	1.98	760.16	600.62	0.24
Elder1	R-1_Down	10.312	Max WS	775.08	71.78	74.99		75.05	0.002324	3.14	502.08	607.11	0.36
Elder1	R-1_Down	10.272	Max WS	778.33	71.03	74.40		74.51	0.002933	3.58	404.62	354.99	0.41
Elder1	R-1_Down	10.214	Max WS	858.19	69.83	73.72		73.80	0.001810	3.11	511.92	338.15	0.33
Elder1	R-1_Down	10.141	Max WS	958.08	68.54	73.01		73.10	0.002045	3.50	519.78	336.54	0.35
Elder1	R-1_Down	10.09	Max WS	962.58	68.60	72.41		72.55	0.002429	3.93	463.10	341.06	0.39
Elder1	R-1_Down	10.034	Max WS	966.73	68.74	71.80		71.85	0.002108	3.07	687.60	595.24	0.35
Elder1	R-1_Down	9.974	Max WS	970.73	67.83	71.36		71.38	0.000824	2.08	944.31	663.65	0.22
Elder1	R-1_Down	9.919	Max WS	975.54	67.56	71.15		71.18	0.000566	2.00	988.81	597.32	0.19
Elder1	R-1_Down	9.878	Max WS	978.54	67.52	70.80		70.93	0.002248	3.47	538.58	587.61	0.37
Elder1	R-1_Down	9.813	Max WS	979.13	67.00	70.08		70.17	0.001957	3.17	603.98	620.30	0.34
Elder1	R-1_Down	9.749	Max WS	981.08	65.60	69.56		69.63	0.001150	2.64	658.93	428.90	0.27
Elder1	R-1_Down	9.701	Max WS	984.39	64.81	69.37		69.40	0.000469	1.99	937.14	516.74	0.18
Elder1	R-1_Down	9.633	Max WS	989.97	64.72	69.16		69.20	0.000654	2.11	776.39	671.60	0.20
Elder1	R-1_Down	9.566	Max WS	994.62	63.42	67.86		68.30	0.005753	5.84	255.25	214.16	0.59
Elder1	R-1_Down	9.524	Max WS	996.18	62.22	67.16		67.23	0.002374	2.69	559.50	644.70	0.35
Elder1	R-1_Down	9.49		Lat Struct									
Elder1	R-1_Down	9.486	Max WS	996.62	61.46	66.70		66.83	0.001860	3.58	514.05	543.24	0.34
Elder1	R-1_Down	9.438	Max WS	999.41	59.47	66.41		66.49	0.000979	2.75	633.83	581.89	0.25
Elder1	R-1_Down	9.387	Max WS	1001.49	59.78	66.02		66.13	0.001744	3.16	524.30	457.05	0.32
Elder1	R-1_Down	9.329	Max WS	1002.39	58.24	65.42		65.63	0.001650	3.86	380.50	407.03	0.33
Elder1	R-1_Down	9.282	Max WS	999.72	57.97	64.98		65.21	0.001846	4.05	396.73	445.85	0.35
Elder1	R-1_Down	9.228	Max WS	995.98	57.48	64.56		64.75	0.001214	3.66	392.48	460.88	0.29
Elder1	R-1_Down	9.185	Max WS	996.08	57.64	64.43		64.50	0.000657	2.59	776.06	606.12	0.21
Elder1	R-1_Down	9.143	Max WS	995.67	57.35	64.24		64.35	0.000856	2.96	720.98	775.16	0.24
Elder1	R-1_Down	9.091	Max WS	996.77	57.48	64.07		64.14	0.000534	2.38	915.45	859.24	0.19
Elder1	R-1_Down	9.039	Max WS	998.84	57.06	63.90		63.98	0.000660	2.63	758.79	673.08	0.21
Elder1	R-1_Down	8.975	Max WS	1002.59	57.39	63.69		63.76	0.000620	2.55	801.57	1084.46	0.21
Elder1	R-1_Down	8.969	Max WS	1002.98	57.00	63.69	59.83	63.73	0.000475	1.88	970.96	843.60	0.18
Elder1	R-1_Down	8.961		Bridge									
Elder1	R-1_Down	8.954	Max WS	1002.83	57.10	63.54		63.60	0.000447	2.30	941.08	865.73	0.18
Elder1	R-1_Down	8.89	Max WS	1003.71	57.04	62.85		63.18	0.003717	5.24	356.72	588.27	0.48
Elder1	R-1_Down	8.811	Max WS	1006.77	56.79	61.95		62.03	0.001457	3.12	607.81	1149.86	0.30
Elder1	R-1_Down	8.752	Max WS	1007.59	57.25	61.04		61.24	0.003876	4.52	446.61	1042.65	0.48
Elder1	R-1_Down	8.697	Max WS	1005.10	56.74	60.42		60.45	0.000760	1.79	1211.06	2494.36	0.21
Elder1	R-1_Down	8.598	Max WS	1004.32	55.92	60.05		60.07	0.000983	1.09	1217.13	1821.95	0.20
Elder1	R-1_Down	8.565	Max WS	1002.70	55.85	59.89		59.91	0.001353	1.34	1072.52	1785.43	0.24
Elder1	R-1_Down	8.466	Max WS	997.95	55.58	59.58		59.59	0.000480	1.47	1649.32	2187.77	0.17
Elder1	R-1_Down	8.258	Max WS	978.44	55.90	58.78		58.80	0.001225	1.53	988.62	2245.03	0.24
Elder1	R-1_Down	8.195	Max WS	973.95	55.61	58.45		58.45	0.000593	0.93	1385.11	1347.68	0.16
Elder1	R-1_Down	8.105	Max WS	974.31	55.58	58.31		58.32	0.000293	0.76	1740.85	1696.71	0.12
Elder1	R-1_Down	7.93	Max WS	962.18	54.96	57.49		57.57	0.002227	2.46	461.03	1828.70	0.34
Elder1	R-1_Down	7.863	Max WS	955.87	53.97	57.13		57.13	0.000194	0.83	2223.31	2750.70	0.10
Elder1	R-1_Down	7.862		Lat Struct									
Elder1	R-1_Down	7.783	Max WS	855.07	52.32	56.55		56.66	0.002818	2.99	383.29	1120.33	0.38
Elder1	R-1_Down	7.740	Max WS	728.46	52.21	56.18		56.22	0.001127	2.08	714.25	827.49	0.25
Elder1	R-1_Down	7.689	Max WS	596.33	51.89	56.04		56.04	0.000047	0.38	2687.34	1960.29	0.05
Elder1	R-1_Down	7.625	Max WS	559.09	50.92	55.97	54.06	56.05	0.001082	2.49	387.29	525.72	0.25
Elder1	R-1_Down	7.6225		Bridge									

HEC-RAS Plan: JT100PH1 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	7.620	Max WS	559.09	51.00	55.99		56.02	0.000560	1.87	529.48	594.74	0.18
Elder1	R-1_Down	7.619		Lat Struct									
Elder1	R-1_Down	7.543	Max WS	472.44	50.76	55.50		55.73	0.002493	3.87	122.13	38.95	0.39
Elder1	R-1_Down	7.516	Max WS	430.41	50.67	55.14		55.35	0.001675	3.70	121.52	189.37	0.33
Elder1	R-1_Down	7.317	Max WS	96.75	49.76	54.49		54.49	0.000011	0.28	916.36	838.93	0.03
Elder1	R-1_Down	7.259		Lat Struct									
Elder1	R-1_Down	7.258	Max WS	911.72	49.57	54.16		54.25	0.001671	3.48	618.59	550.70	0.31
Elder1	R-1_Down	7.0770	Max WS	914.66	47.10	53.38	49.92	53.54	0.003042	3.44	330.15	109.23	0.24
Elder1	R-1_Down	7.05		Inl Struct									
Elder1	R-1_Down	7.0130	Max WS	914.63	46.84	53.23		53.38	0.002997	3.49	381.37	174.29	0.24
Elder1	R-1_Down	6.98		Lat Struct									
Elder1	R-1_Down	6.9650	Max WS	948.43	46.68	51.89	49.51	52.15	0.006651	4.55	262.34	87.96	0.35
Elder1	R-1_Down	6.94		Inl Struct									
Elder1	R-1_Down	6.9350	Max WS	947.51	42.39	51.85		51.92	0.001696	2.35	468.13	114.76	0.14
Elder1	R-1_Down	6.9141	Max WS	947.26	42.35	51.74		51.84	0.001242	2.25	366.42	109.76	0.13
Elder1	R-1_Down	6.91405*	Max WS	947.26	42.35	51.71		51.83	0.001408	2.39	344.93	109.57	0.14
Elder1	R-1_Down	6.9140	Max WS	947.00	42.35	51.68		51.82	0.001612	2.55	322.89	109.35	0.15
Elder1	R-1_Down	6.9135		Culvert									
Elder1	R-1_Down	6.9131	Max WS	945.22	41.36	51.43		51.55	0.001531	2.65	336.77	140.08	0.15
Elder1	R-1_Down	6.9130	Max WS	945.54	41.36	51.44		51.54	0.001221	2.37	376.39	140.41	0.13
Elder1	R-1_Down	6.9129		Lat Struct									
Elder1	R-1_Down	6.9128		Lat Struct									
Elder1	R-1_Down	6.89		Lat Struct									
Elder1	R-1_Down	6.8860	Max WS	1076.45	41.22	51.34		51.38	0.000653	1.72	755.66	142.51	0.10
Elder1	R-1_Down	6.8850	Max WS	1076.17	41.10	51.28		51.31	0.000511	1.55	846.94	153.45	0.09
Elder1	R-1_Down	6.8620	Max WS	1075.91	40.98	51.22		51.24	0.000495	1.53	841.50	150.49	0.08
Elder1	R-1_Down	6.8450	Max WS	1075.65	40.88	51.19		51.21	0.000208	1.00	1206.84	194.46	0.06
Elder1	R-1_Down	6.8330	Max WS	1075.67	40.82	51.18		51.19	0.000177	0.93	1129.78	222.14	0.05
Elder1	R-1_Down	6.8210	Max WS	1075.69	40.76	51.16		51.18	0.000222	1.04	958.27	234.95	0.06
Elder1	R-1_Down	6.82		Lat Struct									
Elder1	R-1_Down	6.8100	Max WS	1075.81	40.70	51.12		51.16	0.000440	1.45	675.10	156.87	0.08
Elder1	R-1_Down	6.791	Max WS	1075.18	40.66	50.92		51.08	0.001972	3.04	329.49	113.05	0.17
Elder1	R-1_Down	6.790		Culvert									
Elder1	R-1_Down	6.7890	Max WS	1073.99	40.64	50.66		50.84	0.002126	3.10	321.99	118.11	0.17
Elder1	R-1_Down	6.7730	Max WS	1073.76	40.60	50.63		50.69	0.001095	2.24	587.20	108.81	0.13
Elder1	R-1_Down	6.7610	Max WS	1073.27	40.54	50.54		50.61	0.001594	2.68	549.18	130.71	0.15
Elder1	R-1_Down	6.7480	Max WS	1073.02	40.48	50.51		50.53	0.000445	1.43	889.51	157.53	0.08
Elder1	R-1_Down	6.7410	Max WS	1072.78	40.44	50.49		50.51	0.000430	1.40	1013.73	221.58	0.08
Elder1	R-1_Down	6.7400	Max WS	1072.78	40.42	50.49		50.51	0.000343	1.25	1098.71	225.93	0.07
Elder1	R-1_Down	6.7190	Max WS	1072.52	40.30	50.45		50.47	0.000351	1.28	1150.49	261.39	0.07
Elder1	R-1_Down	6.7180	Max WS	1072.52	40.30	50.45		50.46	0.000365	1.30	1127.72	258.03	0.07
Elder1	R-1_Down	6.7110	Max WS	1072.52	40.26	50.43		50.45	0.000357	1.29	1091.71	248.61	0.07
Elder1	R-1_Down	6.7000	Max WS	1072.27	40.20	50.39		50.42	0.000608	1.68	840.88	209.41	0.09
Elder1	R-1_Down	6.6910	Max WS	1072.02	40.16	50.35		50.39	0.000779	1.90	699.15	163.53	0.11
Elder1	R-1_Down	6.6650	Max WS	1071.27	40.02	50.23		50.28	0.000930	2.08	719.60	261.46	0.12
Elder1	R-1_Down	6.6530	Max WS	1070.77	40.00	50.18		50.22	0.000838	1.97	744.49	291.82	0.11
Elder1	R-1_Down	6.6340	Max WS	1070.27	39.96	50.09		50.13	0.001004	2.15	787.55	357.12	0.12
Elder1	R-1_Down	6.6040	Max WS	1069.01	39.96	49.93		49.97	0.001013	2.14	735.43	311.77	0.12
Elder1	R-1_Down	6.59		Lat Struct									
Elder1	R-1_Down	6.5500	Max WS	1063.11	39.54	49.73		49.75	0.000622	1.71	1127.50	448.63	0.10
Elder1	R-1_Down	6.5290	Max WS	1061.70	39.40	49.65		49.68	0.000676	1.77	993.59	439.21	0.10
Elder1	R-1_Down	6.5070	Max WS	1058.53	39.40	49.52		49.57	0.001217	2.37	837.92	421.49	0.13
Elder1	R-1_Down	6.4940	Max WS	1055.14	39.22	49.47		49.49	0.000809	1.94	1147.19	651.59	0.11
Elder1	R-1_Down	6.4750	Max WS	1046.60	39.16	49.38		49.41	0.000834	1.99	1025.62	637.05	0.11
Elder1	R-1_Down	6.4420	Max WS	1042.83	39.04	49.23		49.26	0.000904	2.04	1064.19	636.09	0.11
Elder1	R-1_Down	6.4020	Max WS	1039.59	38.84	49.02		49.05	0.001085	2.24	1004.59	631.32	0.13
Elder1	R-1_Down	6.3630	Max WS	1037.38	38.64	48.82		48.85	0.000896	2.04	1105.28	663.81	0.11
Elder1	R-1_Down	6.3330	Max WS	1036.59	38.48	48.71		48.73	0.000486	1.51	848.72	486.35	0.08
Elder1	R-1_Down	6.2980	Max WS	1036.35	38.34	48.62		48.64	0.000481	1.50	896.48	398.38	0.08
Elder1	R-1_Down	6.2750	Max WS	1035.96	38.26	48.54		48.57	0.000669	1.77	835.52	361.41	0.10
Elder1	R-1_Down	6.2560	Max WS	1035.78	38.16	48.48		48.51	0.000536	1.58	785.18	259.90	0.09
Elder1	R-1_Down	6.2340	Max WS	1036.34	38.04	48.41		48.44	0.000680	1.80	890.69	388.96	0.10
Elder1	R-1_Down	6.2070	Max WS	1036.91	37.90	48.33		48.35	0.000638	1.75	1188.15	572.10	0.10
Elder1	R-1_Down	6.1800	Max WS	1037.50	37.76	48.24		48.26	0.000559	1.64	1108.88	401.77	0.09
Elder1	R-1_Down	6.1590	Max WS	1038.02	37.66	48.19		48.21	0.000495	1.55	1108.14	536.08	0.09
Elder1	R-1_Down	6.1400	Max WS	1038.54	37.56	48.14		48.16	0.000443	1.47	843.12	454.89	0.08
Elder1	R-1_Down	6.1190	Max WS	1039.01	37.46	48.09		48.11	0.000406	1.41	1136.56	964.15	0.08
Elder1	R-1_Down	6.1010	Max WS	1039.60	37.36	48.06		48.07	0.000359	1.33	1453.37	915.61	0.07
Elder1	R-1_Down	6.0850	Max WS	1039.83	37.28	48.02		48.04	0.000399	1.41	1329.76	836.11	0.08
Elder1	R-1_Down	6.0690	Max WS	1039.94	37.22	47.83		47.97	0.002810	3.71	585.96	680.93	0.20
Elder1	R-1_Down	6.05		Culvert									
Elder1	R-1_Down	6.0400	Max WS	1037.14	37.00	47.46		47.64	0.003916	4.31	409.41	501.23	0.24
Elder1	R-1_Down	6.0150	Max WS	1035.75	36.92	47.31		47.33	0.000774	1.90	1009.58	537.94	0.11
Elder1	R-1_Down	5.9940	Max WS	1034.50	36.84	47.21		47.24	0.000936	2.09	1031.71	538.65	0.12
Elder1	R-1_Down	5.9800	Max WS	1033.71	36.76	47.14		47.17	0.000899	2.04	960.11	599.50	0.11
Elder1	R-1_Down	5.9340	Max WS	1031.04	36.62	46.96		46.98	0.000602	1.66	1072.03	536.43	0.09
Elder1	R-1_Down	5.8910	Max WS	1030.22	36.46	46.89		46.91	0.000389	1.35	1159.61	512.55	0.07
Elder1	R-1_Down	5.8530	Max WS	1029.68	36.46	46.86		46.88	0.000398	1.36	1147.88	503.32	0.08
Elder1	R-1	260.0000	Max WS	21.29	117.38	127.16		127.16	0.000000	0.03	708.59	109.88	0.00
Elder1	R-1	255.0000	Max WS	21.25	117.08	127.16		127.16	0.000000	0.02	750.60	105.51	0.00
Elder1	R-1	250.0000	Max WS	150.36	116.80	127.16		127.16	0.000006	0.18	763.27	111.49	0.01
Elder1	R-1	245.0000	Max WS	150.69	116.44	127.15		127.16	0.000006	0.17	777.32	107.20	0.01
Elder1	R-1	240.0000	Max WS	189.36	116.16	127.15		127.15	0.000008	0.21	798.27	109.18	0.01
Elder1	R-1	235.0000	Max WS	189.63	115.88	127.15		127.15	0.000007	0.20	839.13	112.93	0.01
Elder1	R-1	230.0000	Max WS	189.86	115.64	127.15		127.15	0.000006	0.19	883.50	112.55	0.01
Elder1	R-1	225.0000	Max WS	190.04	115.44	127.15		127.15	0.000007	0.19	877.02	114.88	0.01

HEC-RAS Plan: JT100PH1 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1	222		Culvert									
Elder1	R-1	220.0000	Max WS	164.50	111.88	116.49		116.51	0.000658	0.97	164.88	59.32	0.08
Elder1	R-1	219	Max WS	163.73	111.88	116.42		116.44	0.000717	1.00	160.75	58.90	0.09
Elder1	R-1	215.0000	Max WS	378.11	111.56	116.09		116.17	0.003344	2.19	166.31	60.10	0.19
Elder1	R-1	210.0000	Max WS	378.47	111.04	115.52		115.60	0.003558	2.23	163.79	60.44	0.19
Elder1	R-1	205.0000	Max WS	378.13	110.48	114.97		115.04	0.003018	2.08	174.08	64.41	0.18
Elder1	R-1	200.0000	Max WS	378.36	109.88	114.40		114.47	0.002952	2.04	177.74	65.19	0.18
Elder1	R-1	197.0000	Max WS	378.49	109.56	114.05		114.13	0.003159	2.08	173.32	63.51	0.18
Elder1	R-1	195.0000	Max WS	378.75	109.32	113.82		113.89	0.003291	2.10	173.61	63.08	0.19
Elder1	R-1	190.0000	Max WS	399.92	108.56	113.03		113.11	0.003166	2.13	178.22	65.65	0.18
Elder1	R-1	185.0000	Max WS	399.18	107.84	112.30		112.38	0.003184	2.13	177.88	64.60	0.19
Elder1	R-1	180.0000	Max WS	394.86	106.93	111.40		111.47	0.003042	2.09	179.05	64.56	0.18
Elder1	R-1	178.0000	Max WS	398.18	106.52	111.02		111.09	0.002708	1.98	188.76	67.06	0.17
Elder1	R-1	177.0000	Max WS	395.51	106.32	110.86		110.93	0.002384	1.89	194.35	69.52	0.16
Elder1	R-1	175.0000	Max WS	387.04	105.76	110.48		110.53	0.001902	1.72	211.60	73.43	0.15
Elder1	R-1	170.0000	Max WS	381.80	104.64	109.99		110.03	0.000958	1.35	265.76	81.94	0.11
Elder1	R-1	167.0000	Max WS	391.28	104.08	109.88		109.90	0.000447	0.98	356.46	97.02	0.07
Elder1	R-1	165.0000	Max WS	391.76	103.76	109.83		109.85	0.000468	1.00	362.54	95.59	0.08
Elder1	R-1	160.0000	Max WS	392.74	102.98	109.74		109.76	0.000302	0.88	417.74	101.10	0.06
Elder1	R-1	158		Culvert									
Elder1	R-1	155.0000	Max WS	274.25	93.10	99.57		99.57	0.000013	0.16	1275.23	327.80	0.01
Elder1	R-1	152.5*	Max WS	274.24	93.08	99.57		99.57	0.000012	0.16	1319.54	333.68	0.01
Elder1	R-1	150.0000	Max WS	307.05	93.06	99.57	95.28	99.57	0.000014	0.18	1371.54	339.46	0.01

HEC-RAS Plan: JT10PH1 Profile: Max WS

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Mor-2	R-1	680.0000	Max WS	15.00	98.71	99.26		99.28	0.023624	1.07	14.00	43.56	0.33
Mor-2	R-1	670.0000	Max WS	4.42	96.72	99.10		99.10	0.000002	0.04	126.12	120.24	0.00
Mor-2	R-1	660.0000	Max WS	4.58	96.54	99.10		99.10	0.000002	0.03	146.22	121.07	0.00
Mor-2	R-1	650.0000	Max WS	4.64	96.48	99.10		99.10	0.000001	0.03	152.62	121.40	0.00
Mor-2	R-1	640.0000	Max WS	4.84	96.26	99.10		99.10	0.000001	0.03	180.86	122.17	0.00
Mor-2	R-1	630.0000	Max WS	4.97	96.12	99.10		99.10	0.000001	0.02	195.39	123.29	0.00
Mor-2	R-1	620.0000	Max WS	39.15	95.84	99.09		99.09	0.000026	0.15	231.44	124.77	0.02
Mor-2	R-1	610.0000	Max WS	43.52	95.58	99.09		99.09	0.000021	0.15	264.51	129.98	0.01
Mor-2	R-1	600.0000	Max WS	43.71	95.34	99.09		99.09	0.000015	0.13	298.86	133.95	0.01
Mor-2	R-1	590.0000	Max WS	43.92	95.10	99.09		99.09	0.000011	0.12	330.07	137.13	0.01
Mor-2	R-1	580.0000	Max WS	68.02	94.94	99.09		99.09	0.000021	0.17	354.24	141.53	0.02
Mor-2	R-1	570.0000	Max WS	68.08	94.94	99.09		99.09	0.000021	0.17	354.14	141.52	0.02
Mor-2	R-1	565		Culvert									
Mor-2	R-1	560.0000	Max WS	56.37	86.60	89.42		89.42	0.000253	0.43	127.59	81.74	0.05
Mor-2	R-1	550.0000	Max WS	56.18	86.52	89.41		89.41	0.000188	0.38	143.80	93.05	0.04
Mor-2	R-1	540.0000	Max WS	56.95	86.24	89.40		89.40	0.000118	0.31	173.02	97.80	0.03
Mor-2	R-1	530.0000	Max WS	59.04	85.99	89.39		89.39	0.000067	0.26	206.48	101.88	0.03
Mor-2	R-1	520.0000	Max WS	59.03	85.90	89.39		89.39	0.000058	0.24	217.61	103.61	0.02
Mor-2	R-1	510.0000	Max WS	59.00	85.64	89.38		89.38	0.000038	0.21	249.08	107.91	0.02
Mor-2	R-1	500.0000	Max WS	58.99	85.54	89.38		89.38	0.000035	0.20	255.31	107.38	0.02
Mor-2	R-1	490.0000	Max WS	58.90	85.30	89.37		89.38	0.000122	0.39	281.65	109.20	0.04
Mor-2	R-1	480.0000	Max WS	58.89	84.98	89.37		89.37	0.000019	0.16	308.08	108.89	0.01
Mor-2	R-1	470.0000	Max WS	58.89	84.93	89.37		89.37	0.000021	0.17	296.43	106.30	0.01
Mor-2	R-1	465		Culvert									
Mor-2	R-1	460.0000	Max WS	58.12	77.05	81.48		81.48	0.000033	0.22	230.94	78.94	0.02
Mor-2	R-1	450.0000	Max WS	58.12	77.05	81.48		81.48	0.000033	0.22	230.80	78.93	0.02
Mor-2	R-1	440.0000	Max WS	59.21	76.76	81.48		81.48	0.000023	0.19	273.71	87.15	0.02
Mor-2	R-1	430.0000	Max WS	59.20	76.54	81.48		81.48	0.000016	0.17	307.34	92.82	0.01
Mor-2	R-1	410.0000	Max WS	59.19	76.32	81.48		81.48	0.000016	0.17	305.46	88.24	0.01
Mor-2	R-1	400.0000	Max WS	59.19	76.16	81.47		81.47	0.000010	0.13	369.23	100.97	0.01
Mor-2	R-1	390.0000	Max WS	59.18	76.08	81.47		81.47	0.000008	0.12	406.40	108.26	0.01
Mor-2	R-1	380.0000	Max WS	59.18	75.96	81.47		81.47	0.000007	0.12	411.70	106.79	0.01
Mor-2	R-1	370.0000	Max WS	61.81	75.76	81.47		81.47	0.000007	0.12	425.97	105.66	0.01
Mor-2	R-1	360.0000	Max WS	61.81	75.54	81.47		81.47	0.000006	0.11	446.57	106.86	0.01
Mor-2	R-1	350.0000	Max WS	64.41	75.24	81.47		81.47	0.000006	0.12	443.96	104.78	0.01
Mor-2	R-1	345		Culvert									
Mor-2	R-1	340.0000	Max WS	64.40	74.96	81.40		81.40	0.000005	0.12	465.21	108.17	0.01
Mor-2	R-1	339.999	Max WS	64.40	74.96	81.40		81.40	0.000005	0.12	465.21	108.16	0.01
Mor-2	R-1	330.001	Max WS	64.40	74.96	81.40		81.40	0.000005	0.11	474.86	110.39	0.01
Mor-2	R-1	330.0000	Max WS	64.40	74.96	81.40		81.40	0.000005	0.11	474.85	110.39	0.01
Mor-2	R-1	321.5		Culvert									
Mor-2	R-1	321	Max WS	64.33	75.08	77.26		77.27	0.000028	0.14	515.90	582.96	0.02
Mor-2	R-1	320.9	Max WS	64.32	74.66	77.26		77.26	0.000091	0.29	314.00	494.47	0.04
Mor-2	R-1	320.45*	Max WS	64.32	74.86	77.26		77.26	0.000042	0.20	440.01	542.44	0.02
Mor-2	R-1	320.0000	Max WS	64.32	75.05	77.26		77.26	0.000026	0.15	472.38	580.28	0.02
Mor-2	R-1	319.5*	Max WS	64.32	74.90	77.25		77.25	0.000096	0.23	345.16	407.43	0.03
Mor-2	R-1	319.000	Max WS	64.32	74.76	76.99		77.03	0.016745	1.90	38.37	130.47	0.39
Mor-2	R-1	318.5*	Max WS	64.32	74.23	75.74		75.84	0.037841	2.73	28.18	119.69	0.59
Mor-2	R-1	318	Max WS	64.32	73.70	74.91		74.92	0.002310	0.92	100.09	209.36	0.16
Mor-2	R-1	317.666*	Max WS	64.32	73.68	74.86		74.87	0.002801	0.96	96.49	229.54	0.17
Mor-2	R-1	317.333*	Max WS	64.32	73.66	74.79		74.80	0.003490	0.99	96.75	251.18	0.19
Mor-2	R-1	317.000	Max WS	64.32	73.64	74.67		74.68	0.006527	1.20	84.51	274.30	0.25
Mor-2	R-1	316.666*	Max WS	64.32	73.34	74.49		74.50	0.006703	1.28	85.90	306.59	0.26
Mor-2	R-1	316.333*	Max WS	64.32	73.03	74.33		74.34	0.004836	1.17	92.94	324.22	0.22
Mor-2	R-1	316.000	Max WS	64.32	72.73	74.24		74.25	0.001631	0.76	129.75	307.60	0.13
Mor-2	R-1	315.000	Max WS	15.00	72.97	74.00	73.34	74.00	0.000044	0.10	197.72	436.32	0.02
Elder1	R-1_Down	95	Max WS	199.15	90.16	96.72		96.73	0.000173	0.67	269.37	58.19	0.05
Elder1	R-1_Down	90	Max WS	199.14	90.00	96.69		96.70	0.000242	0.80	239.81	53.40	0.06
Elder1	R-1_Down	85	Max WS	200.09	89.81	96.65		96.66	0.000248	0.82	237.01	51.39	0.06
Elder1	R-1_Down	80	Max WS	200.35	89.63	96.60		96.62	0.000257	0.83	235.62	50.26	0.06
Elder1	R-1_Down	75.0000	Max WS	200.46	89.56	96.58		96.59	0.000247	0.80	239.11	48.73	0.06
Elder1	R-1_Down	70.0000	Max WS	202.99	89.47	96.57		96.58	0.000203	0.75	264.07	51.20	0.05
Elder1	R-1_Down	69.99	Max WS	208.22	89.45	96.57		96.58	0.000217	0.76	268.96	51.93	0.05
Elder1	R-1_Down	68		Culvert									
Elder1	R-1_Down	65.0000	Max WS	208.21	89.45	94.51		94.52	0.000137	0.51	377.60	97.61	0.04
Elder1	R-1_Down	64.999	Max WS	208.21	89.45	94.51		94.51	0.000103	0.44	410.54	111.66	0.03
Elder1	R-1_Down	40.0000	Max WS	208.21	89.45	94.41		94.44	0.002965	1.44	145.01	129.56	0.24
Elder1	R-1_Down	39.0000	Max WS	208.61	89.35	94.03		94.07	0.002221	1.56	149.72	138.17	0.22
Elder1	R-1_Down	38.0000	Max WS	208.76	89.30	93.88		93.93	0.002646	2.38	148.73	166.22	0.25
Elder1	R-1_Down	37.0000	Max WS	208.97	89.25	93.75		93.77	0.000813	1.04	226.26	199.08	0.14
Elder1	R-1_Down	36.0000	Max WS	209.18	89.20	93.35		93.48	0.007391	3.00	80.35	164.43	0.40
Elder1	R-1_Down	35.0000	Max WS	209.35	89.15	93.05		93.10	0.003274	1.96	139.16	176.28	0.27
Elder1	R-1_Down	34.0000	Max WS	209.50	89.10	92.87		92.91	0.002707	1.87	162.38	247.48	0.25
Elder1	R-1_Down	33.0000	Max WS	209.60	89.05	92.71		92.74	0.002465	1.45	181.03	240.45	0.22
Elder1	R-1_Down	32.0000	Max WS	209.77	88.95	92.40		92.42	0.001695	1.24	211.93	273.45	0.19
Elder1	R-1_Down	31.0000	Max WS	209.97	89.65	91.98		91.99	0.001540	1.13	214.34	309.09	0.18
Elder1	R-1_Down	30.0000	Max WS	210.44	89.41	91.60		91.63	0.002316	1.53	201.64	347.36	0.22
Elder1	R-1_Down	29.0000	Max WS	210.47	89.21	91.50		91.52	0.001227	1.30	266.30	374.10	0.17
Elder1	R-1_Down	28.0000	Max WS	210.43	88.77	91.45		91.46	0.000617	0.84	345.38	405.91	0.12
Elder1	R-1_Down	27.0000	Max WS	210.39	88.01	91.39		91.39	0.000085	0.37	653.35	412.54	0.05
Elder1	R-1_Down	26.5*	Max WS	210.52	88.28	91.39		91.39	0.000096	0.38	644.54	434.43	0.05
Elder1	R-1_Down	26.0000	Max WS	209.97	88.54	91.38		91.38	0.000192	0.50	531.80	449.75	0.07
Elder1	R-1_Down	25.0000	Max WS	209.32	88.53	91.35		91.36	0.000090	0.35	721.29	537.55	0.05
Elder1	R-1_Down	24.0000	Max WS	208.19	88.24	91.35		91.35	0.000050	0.29	869.30	593.47	0.03
Elder1	R-1_Down	23.0000	Max WS	206.70	88.09	91.34		91.34	0.000123	0.49	663.22	670.56	0.06
Elder1	R-1_Down	22.5		Culvert									

HEC-RAS Plan: JT10PH1 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	22.0000	Max WS	174.83	88.07	91.17		91.17	0.000090	0.39	576.26	412.84	0.05
Elder1	R-1_Down	21.0000	Max WS	247.66	86.60	88.65		88.74	0.008481	2.86	126.32	216.70	0.42
Elder1	R-1_Down	20.550*	Max WS	253.45	86.10	88.38		88.40	0.001519	1.34	240.07	220.79	0.18
Elder1	R-1_Down	20.1	Max WS	253.14	85.60	88.31		88.33	0.000976	1.26	279.62	245.39	0.15
Elder1	R-1_Down	11.724	Max WS	252.58	85.65	88.05		88.08	0.002976	1.81	193.33	235.05	0.26
Elder1	R-1_Down	11.659	Max WS	250.92	84.72	87.18		87.21	0.002150	1.95	207.98	220.97	0.23
Elder1	R-1_Down	11.593	Max WS	259.06	83.92	86.39		86.42	0.002596	1.95	207.52	245.35	0.25
Elder1	R-1_Down	11.538	Max WS	267.04	82.92	85.88		85.90	0.001150	1.55	254.96	216.86	0.17
Elder1	R-1_Down	11.482	Max WS	275.61	82.27	84.95		85.01	0.004950	2.50	158.21	185.37	0.33
Elder1	R-1_Down	11.433	Max WS	278.84	81.55	84.26		84.27	0.000747	1.62	411.03	507.11	0.20
Elder1	R-1_Down	11.376	Max WS	323.91	80.86	84.08		84.09	0.000426	1.42	423.39	321.19	0.16
Elder1	R-1_Down	11.313	Max WS	332.34	80.70	83.93		83.95	0.000500	1.46	361.71	237.14	0.17
Elder1	R-1_Down	11.252	Max WS	340.74	80.24	83.60		83.67	0.001420	2.56	245.56	240.16	0.29
Elder1	R-1_Down	11.175	Max WS	349.65	79.60	83.02		83.11	0.001716	2.73	215.85	251.80	0.31
Elder1	R-1_Down	11.125	Max WS	356.55	79.27	82.75		82.78	0.000553	1.65	366.98	359.70	0.18
Elder1	R-1_Down	11.063	Max WS	363.59	78.95	82.58		82.61	0.000646	1.82	513.86	747.14	0.20
Elder1	R-1_Down	10.995	Max WS	405.43	78.76	82.11		82.14	0.001465	2.27	433.56	608.79	0.28
Elder1	R-1_Down	10.936	Max WS	456.02	76.97	81.48		81.55	0.001964	2.96	359.33	449.58	0.33
Elder1	R-1_Down	10.884	Max WS	452.80	76.68	81.22		81.23	0.000172	1.20	815.96	450.19	0.11
Elder1	R-1_Down	10.834	Max WS	452.09	76.47	81.17		81.18	0.000158	1.18	801.18	422.89	0.10
Elder1	R-1_Down	10.775	Max WS	451.59	76.23	81.12		81.13	0.000174	1.27	765.75	476.08	0.11
Elder1	R-1_Down	10.7475*	Max WS	451.44	75.69	81.07		81.10	0.000377	1.94	525.18	374.22	0.16
Elder1	R-1_Down	10.720	Max WS	451.32	75.15	80.95		81.03	0.000905	3.04	373.36	375.85	0.25
Elder1	R-1_Down	10.705	Max WS	450.78	75.34	80.77		80.96	0.002081	3.87	257.79	515.49	0.36
Elder1	R-1_Down	10.704	Max WS	451.00	75.44	80.83		80.84	0.000379	1.39	684.28	554.99	0.15
Elder1	R-1_Down	10.689		Mult Open									
Elder1	R-1_Down	10.686	Max WS	450.90	75.07	80.80		80.80	0.000265	1.19	836.68	624.70	0.12
Elder1	R-1_Down	10.681	Max WS	450.89	75.23	80.79		80.80	0.000166	1.16	853.09	644.76	0.10
Elder1	R-1_Down	10.65	Max WS	450.82	74.93	80.76		80.77	0.000114	1.12	562.70	358.06	0.09
Elder1	R-1_Down	10.63		Lat Struct									
Elder1	R-1_Down	10.619	Max WS	450.81	75.38	80.69		80.71	0.000516	1.55	423.93	288.47	0.17
Elder1	R-1_Down	10.613		Culvert									
Elder1	R-1_Down	10.607	Max WS	450.72	75.04	77.85		78.41	0.007584	5.97	75.45	365.48	0.66
Elder1	R-1_Down	10.562	Max WS	450.61	74.78	77.45		77.51	0.001726	2.21	314.03	376.50	0.30
Elder1	R-1_Down	10.507	Max WS	450.57	74.62	76.74		76.87	0.004151	3.14	188.00	201.02	0.45
Elder1	R-1_Down	10.442	Max WS	453.30	74.36	75.73		75.77	0.002315	1.65	327.21	442.16	0.31
Elder1	R-1_Down	10.361	Max WS	456.23	72.88	75.03		75.05	0.001135	1.75	522.44	557.36	0.24
Elder1	R-1_Down	10.312	Max WS	458.16	71.78	74.58		74.64	0.002379	2.80	340.82	527.46	0.35
Elder1	R-1_Down	10.272	Max WS	459.94	71.03	73.91		74.04	0.003756	3.48	238.02	316.32	0.45
Elder1	R-1_Down	10.214	Max WS	490.84	69.83	73.13		73.19	0.001912	2.73	324.92	283.51	0.32
Elder1	R-1_Down	10.141	Max WS	528.67	68.54	72.42		72.50	0.001932	2.95	332.83	282.82	0.33
Elder1	R-1_Down	10.09	Max WS	530.69	68.60	71.91		72.01	0.001866	3.07	305.73	278.15	0.33
Elder1	R-1_Down	10.034	Max WS	532.29	68.74	71.30		71.35	0.002542	2.90	415.49	512.50	0.37
Elder1	R-1_Down	9.974	Max WS	532.85	67.83	70.80		70.82	0.000942	1.91	608.42	616.54	0.23
Elder1	R-1_Down	9.919	Max WS	534.65	67.56	70.60		70.61	0.000455	1.59	678.49	510.00	0.17
Elder1	R-1_Down	9.878	Max WS	535.81	67.52	70.25		70.37	0.002284	3.01	246.53	518.37	0.36
Elder1	R-1_Down	9.813	Max WS	537.55	67.00	69.43		69.53	0.002498	2.99	285.30	419.13	0.37
Elder1	R-1_Down	9.749	Max WS	537.89	65.60	68.78		68.85	0.001486	2.47	361.07	344.66	0.29
Elder1	R-1_Down	9.701	Max WS	538.73	64.81	68.55		68.58	0.000470	1.71	570.15	412.28	0.17
Elder1	R-1_Down	9.633	Max WS	541.02	64.72	68.33		68.37	0.000717	1.83	477.95	474.19	0.20
Elder1	R-1_Down	9.566	Max WS	543.41	63.42	67.26		67.56	0.004663	4.53	145.07	140.37	0.51
Elder1	R-1_Down	9.524	Max WS	544.86	62.22	66.55		66.61	0.003152	2.44	308.14	366.75	0.38
Elder1	R-1_Down	9.49		Lat Struct									
Elder1	R-1_Down	9.486	Max WS	545.91	61.46	65.94		66.09	0.002300	3.36	253.46	355.41	0.37
Elder1	R-1_Down	9.438	Max WS	548.20	59.47	65.63		65.71	0.000700	2.34	341.88	349.11	0.21
Elder1	R-1_Down	9.387	Max WS	547.44	59.78	65.03		65.21	0.003237	3.64	212.52	257.64	0.42
Elder1	R-1_Down	9.329	Max WS	546.85	58.24	64.36		64.51	0.001268	3.03	180.21	102.65	0.28
Elder1	R-1_Down	9.282	Max WS	544.53	57.97	64.00		64.16	0.001465	3.21	171.61	149.76	0.30
Elder1	R-1_Down	9.228	Max WS	541.78	57.48	63.76		63.86	0.000674	2.51	216.22	349.97	0.21
Elder1	R-1_Down	9.185	Max WS	540.92	57.64	63.62		63.70	0.000672	2.37	339.06	484.00	0.21
Elder1	R-1_Down	9.143	Max WS	539.61	57.35	63.44		63.54	0.000797	2.61	224.51	486.08	0.23
Elder1	R-1_Down	9.091	Max WS	539.52	57.48	63.30		63.36	0.000484	2.08	357.63	486.62	0.18
Elder1	R-1_Down	9.039	Max WS	540.26	57.06	63.17		63.23	0.000478	2.03	390.76	362.25	0.18
Elder1	R-1_Down	8.975	Max WS	541.82	57.39	63.01		63.07	0.000471	2.05	431.58	587.51	0.18
Elder1	R-1_Down	8.969	Max WS	541.99	57.00	63.01	58.98	63.05	0.000445	1.61	503.21	576.50	0.16
Elder1	R-1_Down	8.961		Bridge									
Elder1	R-1_Down	8.954	Max WS	541.92	57.10	62.87		62.93	0.000362	1.89	435.92	642.47	0.16
Elder1	R-1_Down	8.89	Max WS	541.97	57.04	62.08		62.41	0.003715	4.62	129.54	319.90	0.47
Elder1	R-1_Down	8.811	Max WS	541.39	56.79	61.30		61.35	0.001062	2.32	398.00	871.58	0.25
Elder1	R-1_Down	8.752	Max WS	542.02	57.25	60.56		60.71	0.002970	3.54	248.10	770.16	0.41
Elder1	R-1_Down	8.697	Max WS	541.52	56.74	60.05		60.07	0.000659	1.49	739.46	1762.27	0.19
Elder1	R-1_Down	8.598	Max WS	542.50	55.92	59.75		59.76	0.000734	0.91	752.96	1208.31	0.17
Elder1	R-1_Down	8.565	Max WS	541.83	55.85	59.58		59.59	0.001617	1.18	601.80	1291.09	0.25
Elder1	R-1_Down	8.466	Max WS	539.45	55.58	59.22		59.23	0.000464	1.30	1083.26	1748.09	0.16
Elder1	R-1_Down	8.258	Max WS	535.36	55.90	58.37		58.38	0.001367	1.38	614.57	1971.19	0.24
Elder1	R-1_Down	8.195	Max WS	535.43	55.61	57.98		57.98	0.000736	0.80	851.40	1036.28	0.17
Elder1	R-1_Down	8.105	Max WS	536.30	55.58	57.83		57.83	0.000273	0.59	1165.36	1266.87	0.11
Elder1	R-1_Down	7.93	Max WS	533.31	54.96	57.03		57.08	0.002212	1.97	304.68	1444.14	0.32
Elder1	R-1_Down	7.863	Max WS	530.15	53.97	56.65		56.66	0.000244	0.78	1265.21	1990.14	0.11
Elder1	R-1_Down	7.862		Lat Struct									
Elder1	R-1_Down	7.783	Max WS	488.78	52.32	56.11		56.19	0.002573	2.40	248.89	861.04	0.35
Elder1	R-1_Down	7.740	Max WS	433.65	52.21	55.72		55.75	0.001376	2.02	390.05	586.50	0.27
Elder1	R-1_Down	7.689	Max WS	393.59	51.89	55.54		55.54	0.000074	0.38	1737.04	1789.87	0.06
Elder1	R-1_Down	7.625	Max WS	379.98	50.92	55.45	53.56	55.53	0.001263	2.38	195.33	234.61	0.27
Elder1	R-1_Down	7.6225		Bridge									
Elder1	R-1_Down	7.620	Max WS	379.94	51.00	55.43		55.47	0.000745	1.91	351.89	400.64	0.21

HEC-RAS Plan: JT10PH1 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	7.619		Lat Struct									
Elder1	R-1_Down	7.543	Max WS	344.85	50.76	54.96		55.14	0.002189	3.38	102.00	36.19	0.36
Elder1	R-1_Down	7.516	Max WS	329.45	50.67	54.60		54.77	0.001623	3.30	102.85	90.47	0.32
Elder1	R-1_Down	7.317	Max WS	105.63	49.76	53.96		53.96	0.000066	0.62	483.42	766.08	0.06
Elder1	R-1_Down	7.259		Lat Struct									
Elder1	R-1_Down	7.258	Max WS	400.82	49.57	52.97		53.32	0.005027	4.82	92.72	77.59	0.52
Elder1	R-1_Down	7.0770	Max WS	403.81	47.10	52.01	48.79	52.07	0.001551	2.08	218.20	61.86	0.17
Elder1	R-1_Down	7.05		Inl Struct									
Elder1	R-1_Down	7.0130	Max WS	403.60	46.84	51.35		51.43	0.002156	2.35	194.25	56.69	0.20
Elder1	R-1_Down	6.98		Lat Struct									
Elder1	R-1_Down	6.9650	Max WS	448.31	46.68	50.20	48.46	50.36	0.006184	3.38	148.83	53.97	0.32
Elder1	R-1_Down	6.94		Inl Struct									
Elder1	R-1_Down	6.9350	Max WS	446.63	42.39	48.81		48.87	0.002111	1.94	231.90	62.50	0.15
Elder1	R-1_Down	6.9141	Max WS	446.33	42.35	48.74		48.79	0.001126	1.64	240.44	75.30	0.12
Elder1	R-1_Down	6.91405*	Max WS	446.33	42.35	48.72		48.78	0.001269	1.74	226.77	75.22	0.12
Elder1	R-1_Down	6.9140	Max WS	446.23	42.35	48.70		48.77	0.001446	1.85	212.58	75.12	0.13
Elder1	R-1_Down	6.9135		Culvert									
Elder1	R-1_Down	6.9131	Max WS	445.55	41.36	48.56		48.61	0.001209	1.87	230.49	82.63	0.12
Elder1	R-1_Down	6.9130	Max WS	445.55	41.36	48.56		48.60	0.000993	1.70	255.29	82.63	0.11
Elder1	R-1_Down	6.9129		Lat Struct									
Elder1	R-1_Down	6.9128		Lat Struct									
Elder1	R-1_Down	6.89		Lat Struct									
Elder1	R-1_Down	6.8860	Max WS	596.68	41.22	48.43		48.45	0.000718	1.43	438.71	90.85	0.10
Elder1	R-1_Down	6.8850	Max WS	596.48	41.10	48.35		48.38	0.000555	1.29	500.50	102.86	0.09
Elder1	R-1_Down	6.8620	Max WS	596.27	40.98	48.29		48.31	0.000518	1.25	502.40	98.83	0.08
Elder1	R-1_Down	6.8450	Max WS	596.18	40.88	48.26		48.27	0.000219	0.82	741.28	140.94	0.05
Elder1	R-1_Down	6.8330	Max WS	596.19	40.82	48.25		48.26	0.000244	0.87	718.90	161.56	0.06
Elder1	R-1_Down	6.8210	Max WS	596.20	40.76	48.23		48.24	0.000269	0.92	635.29	157.64	0.06
Elder1	R-1_Down	6.82		Lat Struct									
Elder1	R-1_Down	6.8100	Max WS	596.32	40.70	48.19		48.22	0.000502	1.24	455.15	108.32	0.08
Elder1	R-1_Down	6.791	Max WS	595.93	40.66	48.02		48.13	0.002078	2.48	228.05	71.48	0.16
Elder1	R-1_Down	6.790		Culvert									
Elder1	R-1_Down	6.7890	Max WS	595.50	40.64	47.93		48.04	0.002125	2.49	226.45	71.07	0.17
Elder1	R-1_Down	6.7730	Max WS	595.29	40.60	47.84		47.89	0.001227	1.89	348.51	73.98	0.13
Elder1	R-1_Down	6.7610	Max WS	594.95	40.54	47.75		47.81	0.001539	2.11	317.96	70.28	0.14
Elder1	R-1_Down	6.7480	Max WS	594.84	40.48	47.72		47.74	0.000428	1.12	548.23	107.06	0.07
Elder1	R-1_Down	6.7410	Max WS	594.85	40.44	47.70		47.72	0.000349	1.01	606.62	118.68	0.07
Elder1	R-1_Down	6.7400	Max WS	594.86	40.42	47.70		47.72	0.000307	0.95	646.98	127.65	0.06
Elder1	R-1_Down	6.7190	Max WS	594.74	40.30	47.66		47.67	0.000426	1.13	563.54	119.89	0.07
Elder1	R-1_Down	6.7180	Max WS	594.74	40.30	47.65		47.67	0.000432	1.13	563.26	116.11	0.07
Elder1	R-1_Down	6.7110	Max WS	594.63	40.26	47.64		47.65	0.000399	1.09	584.28	120.51	0.07
Elder1	R-1_Down	6.7000	Max WS	594.52	40.20	47.60		47.62	0.000682	1.43	458.16	97.86	0.09
Elder1	R-1_Down	6.6910	Max WS	594.52	40.16	47.55		47.59	0.000842	1.59	404.51	82.88	0.10
Elder1	R-1_Down	6.6650	Max WS	594.07	40.02	47.43		47.47	0.000832	1.58	404.83	82.70	0.10
Elder1	R-1_Down	6.6530	Max WS	593.96	40.00	47.38		47.42	0.000810	1.56	407.18	82.94	0.10
Elder1	R-1_Down	6.6340	Max WS	593.74	39.96	47.31		47.34	0.000812	1.56	413.29	84.26	0.10
Elder1	R-1_Down	6.6040	Max WS	593.39	39.96	47.17		47.20	0.000880	1.60	401.82	83.41	0.11
Elder1	R-1_Down	6.59		Lat Struct									
Elder1	R-1_Down	6.5500	Max WS	599.21	39.54	46.97		46.99	0.000666	1.43	474.15	128.75	0.09
Elder1	R-1_Down	6.5290	Max WS	598.98	39.40	46.88		46.91	0.000796	1.55	420.53	105.45	0.10
Elder1	R-1_Down	6.5070	Max WS	598.53	39.40	46.76		46.81	0.000990	1.72	351.37	97.16	0.11
Elder1	R-1_Down	6.4940	Max WS	598.41	39.22	46.71		46.74	0.000739	1.49	432.45	91.72	0.10
Elder1	R-1_Down	6.4750	Max WS	598.18	39.16	46.64		46.67	0.000645	1.41	447.23	87.54	0.09
Elder1	R-1_Down	6.4420	Max WS	597.71	39.04	46.52		46.55	0.000731	1.48	433.11	86.15	0.10
Elder1	R-1_Down	6.4020	Max WS	597.23	38.84	46.37		46.40	0.000711	1.47	434.63	90.34	0.10
Elder1	R-1_Down	6.3630	Max WS	596.63	38.64	46.23		46.26	0.000667	1.44	429.73	95.94	0.09
Elder1	R-1_Down	6.3330	Max WS	596.27	38.48	46.13		46.15	0.000675	1.46	477.37	133.55	0.09
Elder1	R-1_Down	6.2980	Max WS	595.91	38.34	46.01		46.03	0.000601	1.37	474.83	124.28	0.09
Elder1	R-1_Down	6.2750	Max WS	595.68	38.26	45.93		45.95	0.000603	1.38	462.95	109.04	0.09
Elder1	R-1_Down	6.2560	Max WS	595.46	38.16	45.87		45.89	0.000565	1.32	469.88	89.28	0.09
Elder1	R-1_Down	6.2340	Max WS	595.69	38.04	45.81		45.83	0.000538	1.32	488.87	103.66	0.08
Elder1	R-1_Down	6.2070	Max WS	596.13	37.90	45.75		45.77	0.000354	1.07	645.90	143.62	0.07
Elder1	R-1_Down	6.1800	Max WS	596.46	37.76	45.69		45.71	0.000451	1.22	522.88	107.94	0.08
Elder1	R-1_Down	6.1590	Max WS	596.77	37.66	45.64		45.67	0.000487	1.27	535.79	192.06	0.08
Elder1	R-1_Down	6.1400	Max WS	597.07	37.56	45.59		45.61	0.000557	1.37	512.36	136.22	0.09
Elder1	R-1_Down	6.1190	Max WS	597.42	37.46	45.53		45.55	0.000499	1.30	517.48	146.73	0.08
Elder1	R-1_Down	6.1010	Max WS	597.70	37.36	45.48		45.50	0.000572	1.39	514.46	183.39	0.09
Elder1	R-1_Down	6.0850	Max WS	597.96	37.28	45.44		45.46	0.000402	1.18	542.74	116.97	0.07
Elder1	R-1_Down	6.0690	Max WS	598.12	37.22	45.34		45.41	0.001015	1.86	294.57	83.12	0.12
Elder1	R-1_Down	6.05		Culvert									
Elder1	R-1_Down	6.0400	Max WS	597.02	37.00	44.95		45.02	0.001065	1.86	285.37	112.60	0.12
Elder1	R-1_Down	6.0150	Max WS	596.91	36.92	44.91		44.94	0.000548	1.33	475.33	110.61	0.08
Elder1	R-1_Down	5.9940	Max WS	596.70	36.84	44.85		44.88	0.000545	1.33	471.18	105.47	0.08
Elder1	R-1_Down	5.9800	Max WS	596.48	36.76	44.81		44.84	0.000564	1.35	468.12	104.45	0.09
Elder1	R-1_Down	5.9340	Max WS	595.91	36.62	44.68		44.70	0.000527	1.31	479.47	111.57	0.08
Elder1	R-1_Down	5.8910	Max WS	595.43	36.46	44.60		44.63	0.000499	1.29	497.91	140.38	0.08
Elder1	R-1_Down	5.8530	Max WS	595.19	36.46	44.56		44.59	0.000509	1.30	493.11	139.48	0.08
Elder1	R-1	260.0000	Max WS	21.26	117.38	122.53		122.53	0.000003	0.07	271.10	78.57	0.01
Elder1	R-1	255.0000	Max WS	21.21	117.08	122.53		122.53	0.000002	0.06	304.69	83.03	0.00
Elder1	R-1	250.0000	Max WS	99.65	116.80	122.53		122.53	0.000042	0.29	309.66	82.53	0.02
Elder1	R-1	245.0000	Max WS	99.84	116.44	122.52		122.52	0.000028	0.25	342.91	80.06	0.02
Elder1	R-1	240.0000	Max WS	132.62	116.16	122.51		122.52	0.000042	0.32	357.33	80.96	0.02
Elder1	R-1	235.0000	Max WS	132.77	115.88	122.51		122.51	0.000036	0.30	383.05	83.61	0.02
Elder1	R-1	230.0000	Max WS	132.89	115.64	122.51		122.51	0.000028	0.28	416.82	87.06	0.02
Elder1	R-1	225.0000	Max WS	132.99	115.44	122.50		122.51	0.000028	0.28	411.55	85.51	0.02
Elder1	R-1	222		Culvert									

HEC-RAS Plan: JT10PH1 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1	220.0000	Max WS	122.75	111.88	115.73		115.74	0.000943	1.02	121.22	54.56	0.10
Elder1	R-1	219	Max WS	122.42	111.88	115.62		115.64	0.001107	1.07	115.57	53.90	0.10
Elder1	R-1	215.0000	Max WS	231.69	111.56	115.32		115.38	0.003295	1.89	121.91	55.76	0.18
Elder1	R-1	210.0000	Max WS	231.87	111.04	114.76		114.82	0.003557	1.94	119.44	56.06	0.19
Elder1	R-1	205.0000	Max WS	231.90	110.48	114.20		114.25	0.003063	1.83	126.39	59.74	0.18
Elder1	R-1	200.0000	Max WS	232.03	109.88	113.62		113.67	0.002998	1.78	128.99	60.25	0.17
Elder1	R-1	197.0000	Max WS	232.17	109.56	113.27		113.32	0.003221	1.82	125.62	58.44	0.18
Elder1	R-1	195.0000	Max WS	232.31	109.32	113.03		113.08	0.003350	1.82	126.02	58.06	0.18
Elder1	R-1	190.0000	Max WS	242.13	108.56	112.24		112.30	0.003185	1.86	128.49	60.41	0.18
Elder1	R-1	185.0000	Max WS	242.32	107.84	111.51		111.56	0.003228	1.86	128.42	59.77	0.18
Elder1	R-1	180.0000	Max WS	242.42	106.93	110.55		110.61	0.003350	1.88	126.65	59.31	0.18
Elder1	R-1	178.0000	Max WS	247.42	106.52	110.12		110.18	0.003227	1.83	131.13	61.01	0.18
Elder1	R-1	177.0000	Max WS	247.04	106.32	109.92		109.97	0.003087	1.82	131.79	63.11	0.18
Elder1	R-1	175.0000	Max WS	244.91	105.76	109.37		109.42	0.002962	1.77	135.06	63.96	0.17
Elder1	R-1	170.0000	Max WS	240.48	104.64	108.52		108.56	0.001863	1.49	155.71	67.56	0.14
Elder1	R-1	167.0000	Max WS	246.28	104.08	108.30		108.32	0.000827	1.06	213.82	83.18	0.09
Elder1	R-1	165.0000	Max WS	246.50	103.76	108.21		108.23	0.000832	1.07	219.79	80.49	0.09
Elder1	R-1	160.0000	Max WS	246.85	102.98	108.06		108.07	0.000476	0.89	260.89	84.59	0.07
Elder1	R-1	158		Culvert									
Elder1	R-1	155.0000	Max WS	165.65	93.10	100.75		100.75	0.000002	0.07	1666.92	336.57	0.00
Elder1	R-1	152.5*	Max WS	162.68	93.08	100.75		100.75	0.000002	0.07	1718.27	342.58	0.00
Elder1	R-1	150.0000	Max WS	180.32	93.06	96.72	94.93	96.72	0.000203	0.45	433.55	318.31	0.04

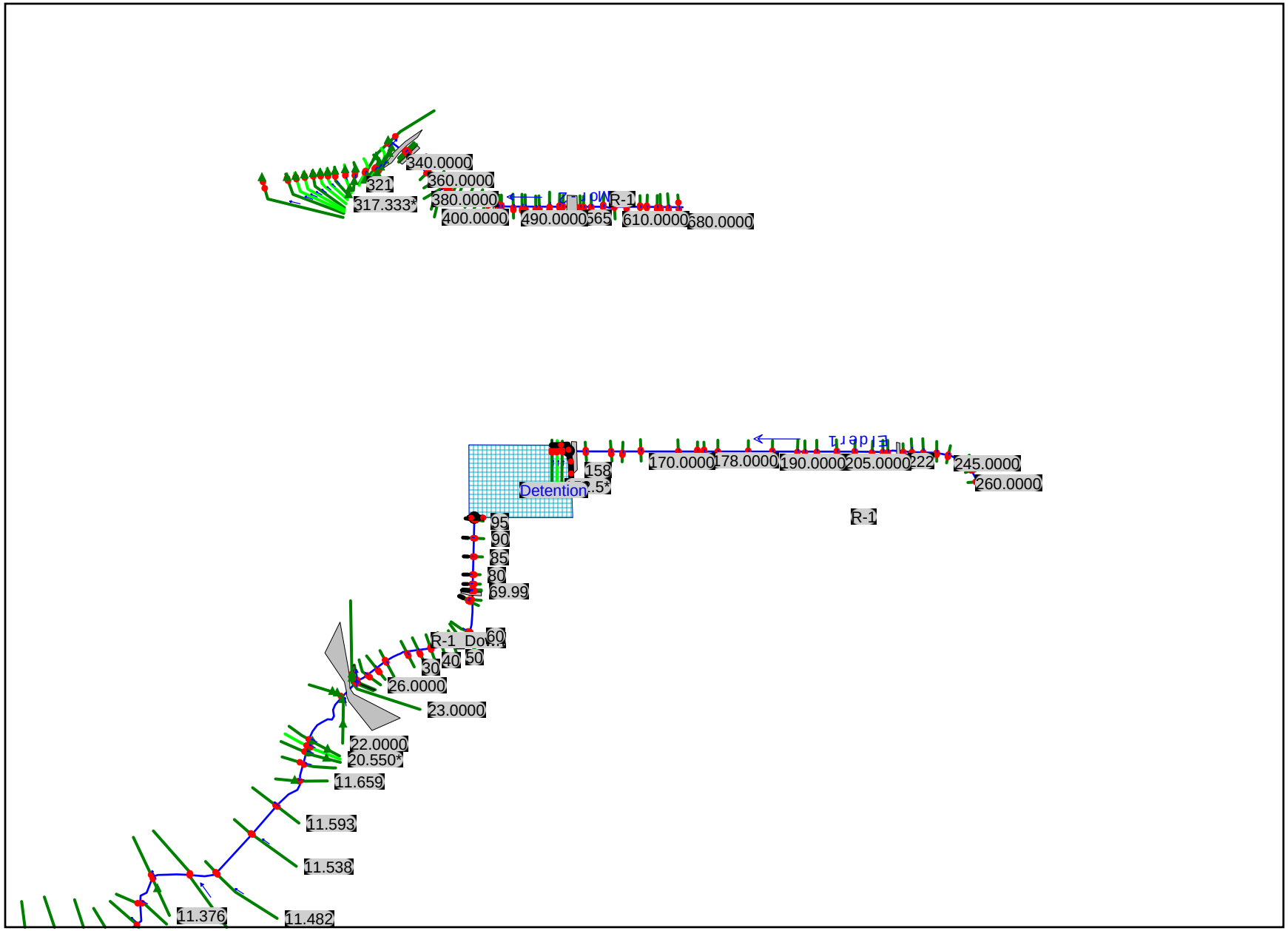
Jackson Township

Phased Development Conditions Phase2

RAS Model Layout

and

10 & 100-Year Summary Results


340.0000
360.0000
321
317.333*
380.0000
400.0000
490.0000
565
610.0000
680.0000
R-1
170.0000
178.0000
190.0000
205.0000
222
245.0000
260.0000
158
Detention
R-1
95
90
85
80
69.99
60
R-1_Do
50
40
30
26.0000
23.0000
22.0000
20.550*
11.659
11.593
11.538
11.376
11.482

HEC-RAS Plan: JT100_PH2 Profile: Max WS

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Mor-2	R-1	680.0000	Max WS	24.35	98.71	101.46		101.46	0.000015	0.10	226.58	118.13	0.01
Mor-2	R-1	670.0000	Max WS	24.20	96.72	101.46		101.46	0.000001	0.05	430.24	137.13	0.00
Mor-2	R-1	660.0000	Max WS	24.44	96.54	101.46		101.46	0.000001	0.04	453.24	139.27	0.00
Mor-2	R-1	650.0000	Max WS	24.52	96.48	101.46		101.46	0.000001	0.04	460.41	139.60	0.00
Mor-2	R-1	640.0000	Max WS	24.81	96.26	101.46		101.46	0.000001	0.04	490.69	140.54	0.00
Mor-2	R-1	630.0000	Max WS	24.99	96.12	101.46		101.46	0.000001	0.04	508.48	142.17	0.00
Mor-2	R-1	620.0000	Max WS	79.12	95.84	101.45		101.45	0.000007	0.12	549.29	144.82	0.01
Mor-2	R-1	610.0000	Max WS	86.43	95.58	101.45		101.45	0.000007	0.12	599.42	153.79	0.01
Mor-2	R-1	600.0000	Max WS	86.69	95.34	101.45		101.45	0.000006	0.11	654.59	178.13	0.01
Mor-2	R-1	590.0000	Max WS	86.97	95.10	101.45		101.45	0.000005	0.11	703.33	175.45	0.01
Mor-2	R-1	580.0000	Max WS	125.09	94.94	101.45		101.45	0.000008	0.14	737.44	173.56	0.01
Mor-2	R-1	570.0000	Max WS	125.16	94.94	101.45		101.45	0.000008	0.14	737.40	173.56	0.01
Mor-2	R-1	565		Culvert									
Mor-2	R-1	560.0000	Max WS	90.88	86.60	93.43		93.43	0.000008	0.15	528.57	117.46	0.01
Mor-2	R-1	550.0000	Max WS	90.87	86.52	93.43		93.43	0.000006	0.13	572.18	120.22	0.01
Mor-2	R-1	540.0000	Max WS	95.93	86.24	93.43		93.43	0.000006	0.13	620.03	124.00	0.01
Mor-2	R-1	530.0000	Max WS	98.31	85.99	93.43		93.43	0.000005	0.12	667.58	126.81	0.01
Mor-2	R-1	520.0000	Max WS	98.30	85.90	93.43		93.43	0.000004	0.12	687.54	129.03	0.01
Mor-2	R-1	510.0000	Max WS	98.27	85.64	93.43		93.43	0.000004	0.11	741.74	135.48	0.01
Mor-2	R-1	500.0000	Max WS	98.26	85.54	93.43		93.43	0.000003	0.11	747.79	136.12	0.01
Mor-2	R-1	490.0000	Max WS	98.23	85.30	93.43		93.43	0.000016	0.24	783.33	138.48	0.01
Mor-2	R-1	480.0000	Max WS	98.19	84.98	93.42		93.42	0.000003	0.10	811.43	139.33	0.01
Mor-2	R-1	470.0000	Max WS	98.18	84.93	93.42		93.42	0.000003	0.10	793.84	137.84	0.01
Mor-2	R-1	465		Culvert									
Mor-2	R-1	460.0000	Max WS	80.77	77.05	85.28		85.28	0.000004	0.12	580.12	104.25	0.01
Mor-2	R-1	450.0000	Max WS	80.46	77.05	85.28		85.28	0.000004	0.12	580.08	104.25	0.01
Mor-2	R-1	440.0000	Max WS	84.86	76.76	85.28		85.28	0.000003	0.11	649.20	110.53	0.01
Mor-2	R-1	430.0000	Max WS	84.51	76.54	85.28		85.28	0.000003	0.10	703.37	115.64	0.01
Mor-2	R-1	410.0000	Max WS	73.26	76.32	85.27		85.27	0.000002	0.09	682.71	110.36	0.01
Mor-2	R-1	400.0000	Max WS	70.31	76.16	85.27		85.27	0.000001	0.07	800.22	126.13	0.00
Mor-2	R-1	390.0000	Max WS	87.63	76.08	85.27		85.27	0.000002	0.08	864.00	132.72	0.00
Mor-2	R-1	380.0000	Max WS	87.34	75.96	85.27		85.27	0.000002	0.08	863.45	130.97	0.00
Mor-2	R-1	370.0000	Max WS	147.24	75.76	85.27		85.27	0.000004	0.14	872.84	129.95	0.01
Mor-2	R-1	360.0000	Max WS	146.52	75.54	85.27		85.27	0.000004	0.13	898.52	130.98	0.01
Mor-2	R-1	350.0000	Max WS	153.98	75.24	85.27		85.27	0.000005	0.15	895.12	132.61	0.01
Mor-2	R-1	345		Culvert									
Mor-2	R-1	340.0000	Max WS	108.75	74.96	85.26		85.26	0.000002	0.10	967.07	192.47	0.01
Mor-2	R-1	339.999	Max WS	108.35	74.96	85.26		85.26	0.000002	0.10	967.04	192.47	0.01
Mor-2	R-1	330.001	Max WS	107.53	74.96	85.25		85.25	0.000002	0.10	1004.94	187.79	0.01
Mor-2	R-1	330.0000	Max WS	107.32	74.96	85.25		85.25	0.000002	0.10	1004.89	187.78	0.01
Mor-2	R-1	321.5		Culvert									
Mor-2	R-1	321	Max WS	138.57	75.08	77.67		77.67	0.000043	0.20	758.31	611.98	0.02
Mor-2	R-1	320.9	Max WS	138.62	74.66	77.66		77.66	0.000116	0.37	488.74	573.37	0.04
Mor-2	R-1	320.45*	Max WS	138.55	74.86	77.66		77.66	0.000062	0.27	680.70	645.92	0.03
Mor-2	R-1	320.0000	Max WS	138.54	75.05	77.66		77.66	0.000059	0.26	670.20	616.47	0.03
Mor-2	R-1	319.5*	Max WS	138.54	74.90	77.65		77.65	0.000128	0.32	512.37	426.96	0.04
Mor-2	R-1	319.000	Max WS	138.53	74.76	77.37		77.44	0.016786	2.51	78.69	143.60	0.42
Mor-2	R-1	318.5*	Max WS	138.53	74.23	76.05		76.20	0.037352	3.50	55.53	141.60	0.62
Mor-2	R-1	318	Max WS	138.51	73.70	75.18		75.20	0.003162	1.25	159.49	235.98	0.19
Mor-2	R-1	317.666*	Max WS	138.48	73.68	75.10		75.12	0.003988	1.33	154.03	268.17	0.21
Mor-2	R-1	317.333*	Max WS	138.48	73.66	75.01		75.02	0.004429	1.30	149.69	295.85	0.22
Mor-2	R-1	317.000	Max WS	138.44	73.64	74.88		74.90	0.006429	1.41	141.66	328.02	0.26
Mor-2	R-1	316.666*	Max WS	138.34	73.34	74.72		74.73	0.005392	1.31	155.70	345.94	0.24
Mor-2	R-1	316.333*	Max WS	138.25	73.03	74.60		74.61	0.003447	1.15	187.01	392.25	0.19
Mor-2	R-1	316.000	Max WS	138.17	72.73	74.53		74.54	0.001877	0.94	242.73	455.82	0.15
Mor-2	R-1	315.000	Max WS	15.00	72.97	74.00	73.34	74.00	0.000044	0.10	197.72	436.32	0.02
Elder1	R-1_Down	95	Max WS	372.86	90.16	99.77		99.78	0.000121	0.73	464.42	70.07	0.04
Elder1	R-1_Down	90	Max WS	372.85	90.00	99.74		99.76	0.000163	0.85	424.87	67.98	0.05
Elder1	R-1_Down	85	Max WS	375.02	89.81	99.72		99.73	0.000172	0.88	417.29	66.18	0.05
Elder1	R-1_Down	80	Max WS	375.00	89.62	99.69		99.70	0.000180	0.89	409.47	62.79	0.05
Elder1	R-1_Down	75.0000	Max WS	381.14	89.56	99.67		99.68	0.000189	0.91	407.75	60.79	0.05
Elder1	R-1_Down	70.0000	Max WS	381.12	89.47	99.64		99.65	0.000161	0.86	436.55	61.53	0.05
Elder1	R-1_Down	69.99	Max WS	395.40	89.45	99.64		99.65	0.000176	0.88	444.78	62.83	0.05
Elder1	R-1_Down	68		Culvert									
Elder1	R-1_Down	65.0000	Max WS	302.66	89.16	99.47		99.47	0.000032	0.39	668.96	94.24	0.02
Elder1	R-1_Down	64.999	Max WS	303.09	89.16	99.47		99.47	0.000032	0.39	668.93	94.24	0.02
Elder1	R-1_Down	60	Max WS	303.66	89.09	99.47		99.47	0.000013	0.25	1011.12	138.40	0.01
Elder1	R-1_Down	55	Max WS	304.33	88.97	99.47		99.47	0.000004	0.14	1661.78	212.08	0.01
Elder1	R-1_Down	50	Max WS	304.94	88.82	99.47		99.47	0.000004	0.14	1649.63	206.02	0.01
Elder1	R-1_Down	45	Max WS	304.64	88.69	99.47		99.47	0.000004	0.14	1642.23	201.02	0.01
Elder1	R-1_Down	40	Max WS	304.64	88.54	99.47		99.47	0.000004	0.14	1636.40	199.81	0.01
Elder1	R-1_Down	35	Max WS	304.64	88.41	99.47		99.47	0.000004	0.14	1679.01	203.57	0.01
Elder1	R-1_Down	30	Max WS	304.78	88.25	99.47		99.47	0.000004	0.14	1674.64	196.20	0.01
Elder1	R-1_Down	28.0000	Max WS	304.71	87.97	99.47		99.47	0.000003	0.13	1731.74	194.80	0.01
Elder1	R-1_Down	27.0000	Max WS	304.68	87.83	99.47		99.47	0.000003	0.13	1774.82	197.96	0.01
Elder1	R-1_Down	26.0000	Max WS	304.65	87.69	99.47		99.47	0.000003	0.12	1917.31	212.18	0.01
Elder1	R-1_Down	25.0000	Max WS	304.63	87.53	99.47		99.47	0.000002	0.10	2251.84	263.08	0.01
Elder1	R-1_Down	24.5		Culvert									
Elder1	R-1_Down	24.0000	Max WS	304.63	87.48	91.89		91.90	0.000176	0.50	515.79	187.83	0.04
Elder1	R-1_Down	23.0000	Max WS	254.41	87.40	91.33		91.48	0.009558	3.06	83.04	167.49	0.30
Elder1	R-1_Down	22.5		Culvert									
Elder1	R-1_Down	22.0000	Max WS	251.99	87.40	91.23		91.23	0.000157	0.58	607.50	414.87	0.06
Elder1	R-1_Down	21.0000	Max WS	335.22	86.60	88.83		88.92	0.007285	2.88	167.08	219.77	0.40
Elder1	R-1_Down	20.550*	Max WS	348.75	86.10	88.60		88.62	0.001725	1.55	289.08	240.79	0.20
Elder1	R-1_Down	20.1000	Max WS	346.69	85.60	88.51		88.53	0.001127	1.43	329.88	252.78	0.17
Elder1	R-1_Down	11.724	Max WS	341.70	85.65	88.24		88.28	0.002913	1.94	239.39	241.36	0.26

HEC-RAS Plan: JT100_PH2 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	11.659	Max WS	334.00	84.72	87.39		87.42	0.002135	2.06	254.08	226.32	0.23
Elder1	R-1_Down	11.593	Max WS	345.42	83.92	86.63		86.66	0.002502	2.06	271.60	287.66	0.25
Elder1	R-1_Down	11.538	Max WS	360.69	82.92	86.13		86.16	0.001230	1.70	311.11	234.25	0.18
Elder1	R-1_Down	11.482	Max WS	376.45	82.27	85.25		85.31	0.004286	2.57	216.59	226.45	0.32
Elder1	R-1_Down	11.433	Max WS	385.10	81.55	84.66		84.67	0.000448	1.41	625.35	554.69	0.16
Elder1	R-1_Down	11.376	Max WS	483.78	80.86	84.52		84.54	0.000413	1.56	568.55	336.74	0.16
Elder1	R-1_Down	11.313	Max WS	503.81	80.70	84.35		84.38	0.000576	1.75	470.34	283.74	0.19
Elder1	R-1_Down	11.252	Max WS	523.08	80.24	84.01		84.08	0.001481	2.89	349.79	269.48	0.30
Elder1	R-1_Down	11.175	Max WS	542.70	79.60	83.37		83.48	0.001998	3.23	329.21	378.49	0.34
Elder1	R-1_Down	11.125	Max WS	557.85	79.27	83.04		83.09	0.000753	2.07	475.10	377.87	0.21
Elder1	R-1_Down	11.063	Max WS	574.34	78.95	82.83		82.86	0.000745	2.08	713.92	811.80	0.21
Elder1	R-1_Down	10.995	Max WS	679.42	78.76	82.38		82.42	0.001752	2.69	605.84	673.49	0.31
Elder1	R-1_Down	10.936	Max WS	671.94	76.97	81.83		81.89	0.001736	3.04	531.07	540.68	0.32
Elder1	R-1_Down	10.884	Max WS	668.04	76.68	81.59		81.60	0.000228	1.47	987.62	496.32	0.13
Elder1	R-1_Down	10.834	Max WS	667.23	76.47	81.53		81.54	0.000216	1.46	955.21	449.74	0.12
Elder1	R-1_Down	10.775	Max WS	666.64	76.23	81.45		81.47	0.000239	1.57	917.09	537.35	0.13
Elder1	R-1_Down	10.7475*	Max WS	666.45	75.69	81.38		81.42	0.000506	2.35	647.35	405.77	0.19
Elder1	R-1_Down	10.720	Max WS	666.16	75.15	81.23		81.33	0.001169	3.59	479.60	402.84	0.28
Elder1	R-1_Down	10.705	Max WS	665.72	75.34	81.06		81.22	0.002093	4.09	417.32	566.39	0.37
Elder1	R-1_Down	10.704	Max WS	665.72	75.44	81.11		81.12	0.000458	1.63	842.31	592.45	0.16
Elder1	R-1_Down	10.689		Mult Open									
Elder1	R-1_Down	10.686	Max WS	665.84	75.07	81.08		81.09	0.000320	1.39	1017.25	634.57	0.13
Elder1	R-1_Down	10.681	Max WS	665.72	75.23	81.08		81.09	0.000220	1.40	1037.44	644.76	0.12
Elder1	R-1_Down	10.65	Max WS	665.67	74.93	81.02		81.05	0.000188	1.50	658.91	362.72	0.12
Elder1	R-1_Down	10.63		Lat Struct									
Elder1	R-1_Down	10.619	Max WS	665.62	75.38	80.92		80.96	0.000760	2.00	491.57	295.42	0.21
Elder1	R-1_Down	10.613		Culvert									
Elder1	R-1_Down	10.607	Max WS	665.50	75.04	78.23		79.15	0.010354	7.67	86.82	449.97	0.79
Elder1	R-1_Down	10.562	Max WS	665.36	74.78	77.76		77.83	0.001753	2.48	451.07	513.30	0.31
Elder1	R-1_Down	10.507	Max WS	665.29	74.62	77.02		77.19	0.004559	3.68	246.34	258.43	0.49
Elder1	R-1_Down	10.442	Max WS	670.67	74.36	75.98		76.03	0.002124	1.83	446.43	509.17	0.31
Elder1	R-1_Down	10.361	Max WS	677.27	72.88	75.33		75.35	0.001094	1.92	695.35	588.07	0.24
Elder1	R-1_Down	10.312	Max WS	681.47	71.78	74.88		74.94	0.002332	3.05	456.98	588.50	0.36
Elder1	R-1_Down	10.272	Max WS	684.78	71.03	74.29		74.40	0.002966	3.49	365.32	348.98	0.41
Elder1	R-1_Down	10.214	Max WS	767.31	69.83	73.61		73.68	0.001782	3.01	474.39	331.64	0.32
Elder1	R-1_Down	10.141	Max WS	868.98	68.54	72.91		73.00	0.002037	3.41	484.92	332.80	0.35
Elder1	R-1_Down	10.09	Max WS	872.98	68.60	72.32		72.46	0.002354	3.80	433.25	332.51	0.38
Elder1	R-1_Down	10.034	Max WS	876.64	68.74	71.71		71.76	0.002166	3.03	636.64	577.26	0.35
Elder1	R-1_Down	9.974	Max WS	880.30	67.83	71.27		71.29	0.000817	2.03	887.17	649.94	0.22
Elder1	R-1_Down	9.919	Max WS	884.53	67.56	71.06		71.09	0.000541	1.92	936.84	587.56	0.19
Elder1	R-1_Down	9.878	Max WS	887.26	67.52	70.71		70.84	0.002261	3.40	487.86	583.28	0.37
Elder1	R-1_Down	9.813	Max WS	889.37	67.00	69.97		70.06	0.002081	3.18	537.44	598.35	0.35
Elder1	R-1_Down	9.749	Max WS	891.18	65.60	69.43		69.49	0.001195	2.61	602.00	419.07	0.27
Elder1	R-1_Down	9.701	Max WS	893.88	64.81	69.23		69.27	0.000450	1.91	869.17	474.12	0.17
Elder1	R-1_Down	9.633	Max WS	898.95	64.72	69.03		69.07	0.000645	2.04	726.49	653.25	0.20
Elder1	R-1_Down	9.566	Max WS	903.42	63.42	67.75		68.18	0.005667	5.66	233.05	208.95	0.58
Elder1	R-1_Down	9.524	Max WS	905.24	62.22	67.05		67.12	0.002450	2.64	506.54	550.75	0.35
Elder1	R-1_Down	9.49		Lat Struct									
Elder1	R-1_Down	9.486	Max WS	905.81	61.46	66.58		66.71	0.001920	3.55	469.14	526.09	0.35
Elder1	R-1_Down	9.438	Max WS	908.23	59.47	66.28		66.36	0.000939	2.66	579.34	550.18	0.24
Elder1	R-1_Down	9.387	Max WS	909.88	59.78	65.89		66.00	0.001806	3.14	479.63	438.86	0.33
Elder1	R-1_Down	9.329	Max WS	910.65	58.24	65.29		65.49	0.001621	3.74	330.41	356.13	0.33
Elder1	R-1_Down	9.282	Max WS	908.73	57.97	64.85		65.07	0.001851	3.97	338.89	410.83	0.35
Elder1	R-1_Down	9.228	Max WS	906.83	57.48	64.44		64.63	0.001147	3.51	340.56	448.84	0.28
Elder1	R-1_Down	9.185	Max WS	907.18	57.64	64.32		64.39	0.000645	2.53	712.10	572.04	0.21
Elder1	R-1_Down	9.143	Max WS	907.67	57.35	64.14		64.24	0.000844	2.89	641.57	707.27	0.24
Elder1	R-1_Down	9.091	Max WS	908.61	57.48	63.97		64.03	0.000516	2.32	825.63	828.75	0.19
Elder1	R-1_Down	9.039	Max WS	910.72	57.06	63.80		63.88	0.000643	2.56	691.32	657.75	0.21
Elder1	R-1_Down	8.975	Max WS	914.26	57.39	63.60		63.67	0.000561	2.40	746.46	1026.96	0.20
Elder1	R-1_Down	8.969	Max WS	914.63	57.00	63.60	59.68	63.64	0.000459	1.82	897.42	799.78	0.17
Elder1	R-1_Down	8.961		Bridge									
Elder1	R-1_Down	8.954	Max WS	914.56	57.10	63.45		63.51	0.000429	2.23	861.38	838.91	0.18
Elder1	R-1_Down	8.89	Max WS	915.54	57.04	62.74		63.08	0.003791	5.20	316.58	579.43	0.48
Elder1	R-1_Down	8.811	Max WS	918.66	56.79	61.85		61.93	0.001371	2.97	549.22	1079.74	0.29
Elder1	R-1_Down	8.752	Max WS	919.73	57.25	60.97		61.17	0.003802	4.41	412.05	1006.39	0.47
Elder1	R-1_Down	8.697	Max WS	917.28	56.74	60.37		60.39	0.000741	1.74	1128.63	2313.17	0.20
Elder1	R-1_Down	8.598	Max WS	917.55	55.92	60.01		60.02	0.000940	1.04	1132.78	1740.94	0.20
Elder1	R-1_Down	8.565	Max WS	916.39	55.85	59.84		59.86	0.001386	1.31	986.30	1699.16	0.24
Elder1	R-1_Down	8.466	Max WS	916.32	55.58	59.53		59.54	0.000464	1.43	1560.62	2119.81	0.16
Elder1	R-1_Down	8.258	Max WS	897.97	55.90	58.72		58.73	0.001256	1.50	929.72	2210.40	0.24
Elder1	R-1_Down	8.195	Max WS	895.76	55.61	58.37		58.38	0.000622	0.91	1288.76	1276.12	0.16
Elder1	R-1_Down	8.105	Max WS	896.23	55.58	58.24		58.24	0.000294	0.74	1640.13	1605.55	0.12
Elder1	R-1_Down	7.93	Max WS	886.42	54.96	57.42		57.50	0.002207	2.38	436.31	1814.97	0.33
Elder1	R-1_Down	7.863	Max WS	881.25	53.97	57.06		57.06	0.000201	0.82	2073.03	2726.54	0.10
Elder1	R-1_Down	7.862		Lat Struct									
Elder1	R-1_Down	7.783	Max WS	791.83	52.32	56.49		56.60	0.002774	2.90	361.90	1103.86	0.38
Elder1	R-1_Down	7.740	Max WS	677.77	52.21	56.12		56.15	0.001192	2.10	664.86	810.09	0.25
Elder1	R-1_Down	7.689	Max WS	562.97	51.89	55.97		55.97	0.000050	0.38	2537.86	1935.70	0.05
Elder1	R-1_Down	7.625	Max WS	530.02	50.92	55.89	53.99	55.97	0.001147	2.52	345.71	498.12	0.26
Elder1	R-1_Down	7.6225		Bridge									
Elder1	R-1_Down	7.620	Max WS	530.02	51.00	55.91		55.94	0.000573	1.86	504.25	530.81	0.18
Elder1	R-1_Down	7.619		Lat Struct									
Elder1	R-1_Down	7.543	Max WS	453.05	50.76	55.42		55.65	0.002445	3.80	119.32	38.57	0.38
Elder1	R-1_Down	7.516	Max WS	416.61	50.67	55.07		55.27	0.001676	3.65	118.88	181.34	0.33
Elder1	R-1_Down	7.317	Max WS	98.00	49.76	54.42		54.42	0.000014	0.31	850.92	831.49	0.03
Elder1	R-1_Down	7.259		Lat Struct									

HEC-RAS Plan: JT100_PH2 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	7.258	Max WS	848.02	49.57	54.03		54.14	0.001925	3.66	550.64	546.01	0.34
Elder1	R-1_Down	7.0770	Max WS	850.99	47.10	53.25	49.80	53.39	0.002926	3.33	315.78	101.81	0.24
Elder1	R-1_Down	7.05		Inl Struct									
Elder1	R-1_Down	7.0130	Max WS	850.92	46.84	53.08		53.23	0.002979	3.43	356.46	165.76	0.24
Elder1	R-1_Down	6.98		Lat Struct									
Elder1	R-1_Down	6.9650	Max WS	888.75	46.68	51.65	49.41	51.93	0.007247	4.60	241.88	86.59	0.36
Elder1	R-1_Down	6.94		Inl Struct									
Elder1	R-1_Down	6.9350	Max WS	887.37	42.39	51.60		51.67	0.001747	2.34	439.87	110.05	0.15
Elder1	R-1_Down	6.9141	Max WS	886.78	42.35	51.49		51.59	0.001197	2.17	356.17	108.08	0.13
Elder1	R-1_Down	6.91405*	Max WS	886.78	42.35	51.47		51.58	0.001356	2.31	335.35	107.91	0.14
Elder1	R-1_Down	6.9140	Max WS	886.48	42.35	51.44		51.56	0.001551	2.46	313.98	107.70	0.15
Elder1	R-1_Down	6.9135		Culvert									
Elder1	R-1_Down	6.9131	Max WS	884.57	41.36	51.21		51.32	0.001456	2.55	328.55	134.09	0.14
Elder1	R-1_Down	6.9130	Max WS	884.90	41.36	51.22		51.31	0.001164	2.28	367.00	134.33	0.13
Elder1	R-1_Down	6.9129		Lat Struct									
Elder1	R-1_Down	6.9128		Lat Struct									
Elder1	R-1_Down	6.89		Lat Struct									
Elder1	R-1_Down	6.8860	Max WS	1018.29	41.22	51.12		51.15	0.000637	1.68	724.32	137.16	0.10
Elder1	R-1_Down	6.8850	Max WS	1017.76	41.10	51.06		51.08	0.000492	1.50	813.71	145.85	0.08
Elder1	R-1_Down	6.8620	Max WS	1017.56	40.98	51.00		51.02	0.000483	1.49	809.05	144.34	0.08
Elder1	R-1_Down	6.8450	Max WS	1017.34	40.88	50.98		50.99	0.000199	0.97	1164.94	187.37	0.05
Elder1	R-1_Down	6.8330	Max WS	1017.41	40.82	50.96		50.98	0.000173	0.90	1099.15	214.55	0.05
Elder1	R-1_Down	6.8210	Max WS	1017.47	40.76	50.94		50.96	0.000216	1.01	934.28	221.21	0.06
Elder1	R-1_Down	6.82		Lat Struct									
Elder1	R-1_Down	6.8100	Max WS	1017.47	40.70	50.91		50.94	0.000426	1.41	658.87	148.24	0.08
Elder1	R-1_Down	6.791	Max WS	1016.57	40.66	50.71		50.87	0.001898	2.94	322.30	105.86	0.17
Elder1	R-1_Down	6.790		Culvert									
Elder1	R-1_Down	6.7890	Max WS	1015.19	40.64	50.49		50.65	0.002023	2.99	316.02	116.37	0.17
Elder1	R-1_Down	6.7730	Max WS	1014.99	40.60	50.46		50.51	0.001070	2.18	568.40	107.22	0.12
Elder1	R-1_Down	6.7610	Max WS	1014.17	40.54	50.36		50.43	0.001599	2.65	526.53	129.12	0.15
Elder1	R-1_Down	6.7480	Max WS	1013.95	40.48	50.33		50.35	0.000436	1.40	862.08	156.33	0.08
Elder1	R-1_Down	6.7410	Max WS	1014.00	40.44	50.32		50.34	0.000407	1.35	976.15	207.85	0.08
Elder1	R-1_Down	6.7400	Max WS	1014.02	40.42	50.32		50.33	0.000332	1.22	1059.69	218.01	0.07
Elder1	R-1_Down	6.7190	Max WS	1013.73	40.30	50.28		50.29	0.000339	1.24	1106.17	250.40	0.07
Elder1	R-1_Down	6.7180	Max WS	1013.73	40.30	50.27		50.29	0.000352	1.26	1084.23	245.33	0.07
Elder1	R-1_Down	6.7110	Max WS	1013.72	40.26	50.26		50.28	0.000346	1.25	1050.47	231.00	0.07
Elder1	R-1_Down	6.7000	Max WS	1013.46	40.20	50.22		50.25	0.000593	1.64	806.90	188.97	0.09
Elder1	R-1_Down	6.6910	Max WS	1013.20	40.16	50.18		50.22	0.000751	1.85	673.99	151.12	0.10
Elder1	R-1_Down	6.6650	Max WS	1012.41	40.02	50.07		50.11	0.000889	2.01	679.63	226.99	0.11
Elder1	R-1_Down	6.6530	Max WS	1012.15	40.00	50.02		50.06	0.000799	1.90	702.26	242.02	0.11
Elder1	R-1_Down	6.6340	Max WS	1011.63	39.96	49.94		49.98	0.000915	2.03	735.82	315.45	0.11
Elder1	R-1_Down	6.6040	Max WS	1010.35	39.96	49.78		49.83	0.000948	2.05	693.73	276.50	0.12
Elder1	R-1_Down	6.59		Lat Struct									
Elder1	R-1_Down	6.5500	Max WS	1008.78	39.54	49.59		49.61	0.000583	1.64	1069.57	426.35	0.09
Elder1	R-1_Down	6.5290	Max WS	1008.03	39.40	49.52		49.55	0.000672	1.75	938.48	420.75	0.10
Elder1	R-1_Down	6.5070	Max WS	1007.05	39.40	49.40		49.44	0.001120	2.25	786.91	387.75	0.13
Elder1	R-1_Down	6.4940	Max WS	1006.32	39.22	49.34		49.37	0.000883	2.01	1064.47	637.51	0.11
Elder1	R-1_Down	6.4750	Max WS	1005.62	39.16	49.25		49.28	0.000863	2.00	952.77	596.76	0.11
Elder1	R-1_Down	6.4420	Max WS	1004.53	39.04	49.08		49.11	0.001019	2.15	974.88	575.58	0.12
Elder1	R-1_Down	6.4020	Max WS	1003.41	38.84	48.87		48.90	0.000896	2.01	913.36	564.07	0.11
Elder1	R-1_Down	6.3630	Max WS	1002.07	38.64	48.65		48.68	0.001081	2.21	998.24	617.43	0.12
Elder1	R-1_Down	6.3330	Max WS	1001.61	38.48	48.53		48.55	0.000495	1.51	819.97	435.22	0.08
Elder1	R-1_Down	6.2980	Max WS	1001.20	38.34	48.44		48.46	0.000502	1.51	862.88	335.95	0.09
Elder1	R-1_Down	6.2750	Max WS	1001.07	38.26	48.36		48.39	0.000668	1.75	799.30	283.64	0.10
Elder1	R-1_Down	6.2560	Max WS	1000.82	38.16	48.29		48.32	0.000550	1.58	757.28	193.34	0.09
Elder1	R-1_Down	6.2340	Max WS	1001.31	38.04	48.23		48.26	0.000588	1.66	845.02	274.63	0.09
Elder1	R-1_Down	6.2070	Max WS	1002.09	37.90	48.18		48.19	0.000292	1.17	1119.54	536.79	0.07
Elder1	R-1_Down	6.1800	Max WS	1002.86	37.76	48.12		48.13	0.000501	1.54	1060.31	367.02	0.09
Elder1	R-1_Down	6.1590	Max WS	1003.40	37.66	48.07		48.09	0.000360	1.31	1055.21	496.61	0.07
Elder1	R-1_Down	6.1400	Max WS	1003.87	37.56	48.02		48.05	0.000439	1.45	816.07	393.80	0.08
Elder1	R-1_Down	6.1190	Max WS	1004.48	37.46	47.98		48.00	0.000412	1.41	1054.42	836.81	0.08
Elder1	R-1_Down	6.1010	Max WS	1005.00	37.36	47.95		47.96	0.000377	1.35	1364.58	764.91	0.07
Elder1	R-1_Down	6.0850	Max WS	1005.26	37.28	47.92		47.93	0.000415	1.43	1244.84	757.39	0.08
Elder1	R-1_Down	6.0690	Max WS	1003.95	37.22	47.71		47.86	0.003026	3.82	507.32	573.69	0.21
Elder1	R-1_Down	6.05		Culvert									
Elder1	R-1_Down	6.0400	Max WS	1001.44	37.00	47.26		47.37	0.001175	2.33	377.56	274.07	0.13
Elder1	R-1_Down	6.0150	Max WS	1000.99	36.92	47.23		47.25	0.000787	1.90	973.58	470.51	0.11
Elder1	R-1_Down	5.9940	Max WS	1000.10	36.84	47.13		47.16	0.000974	2.12	989.75	516.84	0.12
Elder1	R-1_Down	5.9800	Max WS	999.42	36.76	47.06		47.09	0.000923	2.05	922.57	581.83	0.11
Elder1	R-1_Down	5.9340	Max WS	997.38	36.62	46.88		46.90	0.000608	1.66	1040.84	502.87	0.09
Elder1	R-1_Down	5.8910	Max WS	996.44	36.46	46.81		46.82	0.000389	1.34	1127.32	488.76	0.07
Elder1	R-1_Down	5.8530	Max WS	996.21	36.46	46.78		46.79	0.000399	1.36	1115.79	483.90	0.08
Elder1	R-1	260.0000	Max WS	21.84	117.38	127.24		127.24	0.000000	0.03	718.11	110.43	0.00
Elder1	R-1	255.0000	Max WS	21.77	117.08	127.24		127.24	0.000000	0.02	759.73	105.71	0.00
Elder1	R-1	250.0000	Max WS	148.84	116.80	127.24		127.24	0.000006	0.17	772.94	111.97	0.01
Elder1	R-1	245.0000	Max WS	149.14	116.44	127.24		127.24	0.000005	0.16	786.64	107.68	0.01
Elder1	R-1	240.0000	Max WS	190.33	116.16	127.24		127.24	0.000008	0.21	807.75	109.71	0.01
Elder1	R-1	235.0000	Max WS	190.58	115.88	127.24		127.24	0.000007	0.20	848.94	113.48	0.01
Elder1	R-1	230.0000	Max WS	190.78	115.64	127.24		127.24	0.000006	0.18	893.52	118.13	0.01
Elder1	R-1	225.0000	Max WS	190.95	115.44	127.24		127.24	0.000006	0.19	887.00	115.42	0.01
Elder1	R-1	222		Culvert									
Elder1	R-1	220.0000	Max WS	159.31	111.88	116.53		116.54	0.000596	0.93	166.78	59.51	0.08
Elder1	R-1	219	Max WS	158.36	111.88	116.46		116.48	0.000642	0.95	163.05	59.13	0.08
Elder1	R-1	215.0000	Max WS	381.61	111.56	116.14		116.22	0.003229	2.16	169.22	60.38	0.19
Elder1	R-1	210.0000	Max WS	383.73	111.04	115.59		115.67	0.003368	2.20	168.23	60.86	0.19
Elder1	R-1	205.0000	Max WS	383.90	110.48	115.08		115.15	0.002735	2.02	181.52	65.11	0.17

HEC-RAS Plan: JT100_PH2 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1	200.0000	Max WS	383.77	109.88	114.59		114.66	0.002462	1.92	190.30	66.41	0.16
Elder1	R-1	197.0000	Max WS	382.06	109.56	114.32		114.38	0.002415	1.90	190.28	65.19	0.16
Elder1	R-1	195.0000	Max WS	431.91	109.32	114.07		114.15	0.003242	2.17	190.04	64.74	0.19
Elder1	R-1	190.0000	Max WS	459.03	108.56	113.29		113.38	0.003135	2.21	195.69	67.40	0.19
Elder1	R-1	185.0000	Max WS	455.64	107.84	112.58		112.67	0.003071	2.19	196.23	66.39	0.18
Elder1	R-1	180.0000	Max WS	446.98	106.93	111.75		111.83	0.002674	2.07	202.51	66.79	0.17
Elder1	R-1	178.0000	Max WS	454.93	106.52	111.43		111.50	0.002313	1.94	216.81	69.75	0.16
Elder1	R-1	177.0000	Max WS	464.56	106.32	111.28		111.35	0.002120	1.90	224.58	72.48	0.15
Elder1	R-1	175.0000	Max WS	459.82	105.76	110.95		111.00	0.001691	1.74	247.05	77.41	0.14
Elder1	R-1	170.0000	Max WS	457.58	104.64	110.51		110.55	0.000880	1.38	309.63	86.98	0.10
Elder1	R-1	167.0000	Max WS	470.73	104.08	110.41		110.43	0.000432	1.02	408.88	101.67	0.07
Elder1	R-1	165.0000	Max WS	470.81	103.76	110.36		110.38	0.000455	1.05	414.41	100.45	0.08
Elder1	R-1	160.0000	Max WS	481.34	102.98	110.26		110.28	0.000380	1.04	475.28	135.22	0.07
Elder1	R-1	158		Culvert									
Elder1	R-1	155.0000	Max WS	321.50	93.10	99.77		99.77	0.000015	0.18	1339.53	329.26	0.01
Elder1	R-1	152.5*	Max WS	321.48	93.08	99.77		99.77	0.000014	0.18	1384.96	335.15	0.01
Elder1	R-1	150.0000	Max WS	357.97	93.06	99.77	95.28	99.77	0.000016	0.20	1437.11	340.88	0.01

HEC-RAS Plan: PH2_10 Profile: Max WS

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Mor-2	R-1	680.0000	Max WS	18.47	98.71	99.63		99.63	0.002265	0.48	39.07	79.01	0.11
Mor-2	R-1	670.0000	Max WS	14.97	96.72	99.55		99.55	0.000008	0.08	181.22	123.81	0.01
Mor-2	R-1	660.0000	Max WS	15.17	96.54	99.55		99.55	0.000006	0.07	201.59	124.53	0.01
Mor-2	R-1	650.0000	Max WS	15.24	96.48	99.55		99.55	0.000006	0.07	208.13	124.87	0.01
Mor-2	R-1	640.0000	Max WS	15.49	96.26	99.55		99.55	0.000004	0.06	236.69	125.68	0.01
Mor-2	R-1	630.0000	Max WS	15.65	96.12	99.55		99.55	0.000003	0.06	251.74	126.91	0.01
Mor-2	R-1	620.0000	Max WS	51.07	95.84	99.54		99.55	0.000021	0.15	288.51	128.51	0.01
Mor-2	R-1	610.0000	Max WS	55.82	95.58	99.54		99.54	0.000018	0.15	324.15	134.47	0.01
Mor-2	R-1	600.0000	Max WS	56.06	95.34	99.54		99.54	0.000014	0.13	360.49	139.17	0.01
Mor-2	R-1	590.0000	Max WS	56.33	95.10	99.54		99.54	0.000010	0.12	393.24	142.75	0.01
Mor-2	R-1	580.0000	Max WS	80.23	94.94	99.54		99.54	0.000017	0.16	419.42	147.09	0.01
Mor-2	R-1	570.0000	Max WS	80.30	94.94	99.54		99.54	0.000018	0.16	419.34	147.08	0.01
Mor-2	R-1	565		Culvert									
Mor-2	R-1	560.0000	Max WS	63.67	86.60	90.48		90.48	0.000059	0.26	219.27	91.88	0.02
Mor-2	R-1	550.0000	Max WS	63.66	86.52	90.47		90.47	0.000043	0.23	246.40	100.28	0.02
Mor-2	R-1	540.0000	Max WS	68.10	86.24	90.47		90.47	0.000035	0.21	281.60	104.90	0.02
Mor-2	R-1	530.0000	Max WS	69.99	85.99	90.47		90.47	0.000023	0.19	319.68	108.31	0.02
Mor-2	R-1	520.0000	Max WS	69.98	85.90	90.47		90.47	0.000021	0.18	333.02	110.45	0.02
Mor-2	R-1	510.0000	Max WS	69.94	85.64	90.46		90.47	0.000015	0.16	369.90	115.51	0.01
Mor-2	R-1	500.0000	Max WS	69.92	85.54	90.46		90.46	0.000015	0.16	375.69	115.07	0.01
Mor-2	R-1	490.0000	Max WS	69.89	85.30	90.46		90.46	0.000059	0.33	404.47	116.98	0.03
Mor-2	R-1	480.0000	Max WS	69.82	84.98	90.46		90.46	0.000009	0.14	431.19	117.02	0.01
Mor-2	R-1	470.0000	Max WS	69.82	84.93	90.46		90.46	0.000010	0.14	417.40	115.45	0.01
Mor-2	R-1	465		Culvert									
Mor-2	R-1	460.0000	Max WS	67.09	77.05	83.91		83.91	0.000006	0.13	443.02	95.78	0.01
Mor-2	R-1	450.0000	Max WS	67.08	77.05	83.91		83.91	0.000006	0.13	442.99	95.78	0.01
Mor-2	R-1	440.0000	Max WS	68.08	76.76	83.91		83.91	0.000005	0.12	503.59	102.07	0.01
Mor-2	R-1	430.0000	Max WS	68.07	76.54	83.91		83.91	0.000004	0.10	550.69	107.44	0.01
Mor-2	R-1	410.0000	Max WS	68.07	76.32	83.91		83.91	0.000004	0.11	537.23	102.41	0.01
Mor-2	R-1	400.0000	Max WS	68.06	76.16	83.91		83.91	0.000003	0.09	634.13	116.98	0.01
Mor-2	R-1	390.0000	Max WS	68.05	76.08	83.91		83.91	0.000002	0.08	688.90	123.83	0.01
Mor-2	R-1	380.0000	Max WS	68.05	75.96	83.91		83.91	0.000002	0.08	690.51	122.28	0.01
Mor-2	R-1	370.0000	Max WS	78.89	75.76	83.91		83.91	0.000002	0.09	701.58	120.92	0.01
Mor-2	R-1	360.0000	Max WS	78.88	75.54	83.91		83.91	0.000002	0.09	725.59	122.33	0.01
Mor-2	R-1	350.0000	Max WS	81.34	75.24	83.91		83.91	0.000002	0.10	720.92	122.65	0.01
Mor-2	R-1	345		Culvert									
Mor-2	R-1	340.0000	Max WS	81.33	74.96	83.89		83.89	0.000002	0.09	761.82	130.47	0.01
Mor-2	R-1	339.999	Max WS	81.34	74.96	83.89		83.89	0.000002	0.09	761.82	130.47	0.01
Mor-2	R-1	330.001	Max WS	81.33	74.96	83.89		83.89	0.000002	0.09	776.91	132.50	0.01
Mor-2	R-1	330.0000	Max WS	81.33	74.96	83.89		83.89	0.000002	0.09	776.90	132.50	0.01
Mor-2	R-1	321.5		Culvert									
Mor-2	R-1	321	Max WS	81.27	75.08	77.37		77.37	0.000033	0.16	580.55	594.72	0.02
Mor-2	R-1	320.9	Max WS	81.27	74.66	77.37		77.37	0.000098	0.31	360.73	520.98	0.04
Mor-2	R-1	320.45*	Max WS	81.26	74.86	77.37		77.37	0.000048	0.22	500.53	571.47	0.03
Mor-2	R-1	320.0000	Max WS	81.27	75.05	77.36		77.36	0.000033	0.17	516.59	594.89	0.02
Mor-2	R-1	319.5*	Max WS	81.27	74.90	77.36		77.36	0.000105	0.26	389.78	418.50	0.04
Mor-2	R-1	319.000	Max WS	81.26	74.76	77.09		77.14	0.015782	2.01	45.71	135.06	0.38
Mor-2	R-1	318.5*	Max WS	81.26	74.23	75.82		75.93	0.035301	2.85	34.33	125.31	0.58
Mor-2	R-1	318	Max WS	81.26	73.70	74.98		74.99	0.002538	1.01	114.90	211.49	0.17
Mor-2	R-1	317.666*	Max WS	81.26	73.68	74.92		74.93	0.003167	1.06	108.41	236.34	0.18
Mor-2	R-1	317.333*	Max WS	81.26	73.66	74.84		74.85	0.003952	1.10	108.44	259.24	0.20
Mor-2	R-1	317.000	Max WS	81.26	73.64	74.72		74.73	0.007103	1.30	96.04	280.92	0.26
Mor-2	R-1	316.666*	Max WS	81.26	73.34	74.54		74.55	0.007176	1.37	99.43	309.18	0.27
Mor-2	R-1	316.333*	Max WS	81.26	73.03	74.39		74.40	0.004832	1.22	111.58	347.34	0.22
Mor-2	R-1	316.000	Max WS	81.26	72.73	74.31		74.31	0.001969	0.86	150.34	374.41	0.15
Mor-2	R-1	315.000	Max WS	15.00	72.97	74.00	73.34	74.00	0.000044	0.10	197.72	436.32	0.02
Elder1	R-1_Down	95	Max WS	196.34	90.16	98.80		98.80	0.000053	0.45	398.22	66.14	0.03
Elder1	R-1_Down	90	Max WS	196.35	90.00	98.79		98.79	0.000071	0.52	362.02	63.21	0.03
Elder1	R-1_Down	85	Max WS	197.30	89.81	98.77		98.78	0.000074	0.54	357.05	61.54	0.03
Elder1	R-1_Down	80	Max WS	197.29	89.62	98.76		98.77	0.000076	0.54	353.21	58.83	0.03
Elder1	R-1_Down	75.0000	Max WS	200.19	89.56	98.75		98.76	0.000078	0.55	353.92	57.05	0.03
Elder1	R-1_Down	70.0000	Max WS	200.18	89.47	98.74		98.75	0.000065	0.51	382.92	58.23	0.03
Elder1	R-1_Down	69.99	Max WS	206.78	89.45	98.74		98.74	0.000071	0.53	389.98	59.51	0.03
Elder1	R-1_Down	68		Culvert									
Elder1	R-1_Down	65.0000	Max WS	159.43	89.16	98.04		98.04	0.000017	0.25	538.82	87.54	0.02
Elder1	R-1_Down	64.999	Max WS	159.45	89.16	98.04		98.04	0.000017	0.25	538.81	87.54	0.02
Elder1	R-1_Down	60	Max WS	159.59	89.09	98.04		98.04	0.000007	0.16	819.65	129.08	0.01
Elder1	R-1_Down	55	Max WS	159.76	88.97	98.04		98.04	0.000002	0.09	1365.27	202.02	0.01
Elder1	R-1_Down	50	Max WS	159.92	88.82	98.04		98.04	0.000002	0.09	1361.01	197.09	0.01
Elder1	R-1_Down	45	Max WS	159.90	88.69	98.04		98.04	0.000002	0.09	1360.18	193.09	0.01
Elder1	R-1_Down	40	Max WS	159.88	88.54	98.04		98.04	0.000002	0.09	1357.09	190.62	0.01
Elder1	R-1_Down	35	Max WS	159.87	88.41	98.04		98.04	0.000002	0.09	1394.53	193.99	0.00
Elder1	R-1_Down	30	Max WS	159.85	88.25	98.04		98.04	0.000002	0.09	1399.37	188.70	0.00
Elder1	R-1_Down	28.0000	Max WS	159.82	87.97	98.04		98.04	0.000002	0.08	1458.62	187.14	0.00
Elder1	R-1_Down	27.0000	Max WS	159.81	87.83	98.04		98.04	0.000001	0.08	1497.26	190.24	0.00
Elder1	R-1_Down	26.0000	Max WS	159.80	87.69	98.04		98.04	0.000001	0.07	1621.00	203.02	0.00
Elder1	R-1_Down	25.0000	Max WS	159.79	87.53	98.04		98.04	0.000001	0.06	1902.95	236.19	0.00
Elder1	R-1_Down	24.5		Culvert									
Elder1	R-1_Down	24.0000	Max WS	157.43	87.48	91.51		91.51	0.000075	0.31	445.36	184.10	0.03
Elder1	R-1_Down	23.0000	Max WS	156.28	87.40	91.35		91.40	0.003567	1.87	83.32	167.72	0.18
Elder1	R-1_Down	22.5		Culvert									
Elder1	R-1_Down	22.0000	Max WS	157.01	87.40	91.31		91.31	0.000052	0.34	639.93	417.27	0.04
Elder1	R-1_Down	21.0000	Max WS	201.30	86.60	88.53		88.63	0.009420	2.85	101.94	212.44	0.44
Elder1	R-1_Down	20.550*	Max WS	203.18	86.10	88.25		88.27	0.001475	1.25	210.42	218.39	0.18
Elder1	R-1_Down	20.1000	Max WS	202.48	85.60	88.18		88.19	0.000900	1.15	247.43	243.10	0.15
Elder1	R-1_Down	11.724	Max WS	201.21	85.65	87.92		87.95	0.003093	1.74	162.19	228.23	0.26

HEC-RAS Plan: PH2_10 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	11.659	Max WS	198.65	84.72	87.05		87.07	0.002093	1.84	177.70	215.84	0.22
Elder1	R-1_Down	11.593	Max WS	200.79	83.92	86.20		86.24	0.002984	1.95	164.36	227.43	0.26
Elder1	R-1_Down	11.538	Max WS	203.11	82.92	85.68		85.69	0.001078	1.41	212.67	196.41	0.16
Elder1	R-1_Down	11.482	Max WS	207.45	82.27	84.74		84.79	0.005059	2.30	121.76	146.06	0.33
Elder1	R-1_Down	11.433	Max WS	201.87	81.55	83.96		83.98	0.001169	1.83	271.28	435.64	0.24
Elder1	R-1_Down	11.376	Max WS	220.85	80.86	83.72		83.73	0.000463	1.34	310.09	308.13	0.16
Elder1	R-1_Down	11.313	Max WS	211.76	80.70	83.59		83.60	0.000405	1.18	283.17	221.90	0.15
Elder1	R-1_Down	11.252	Max WS	228.46	80.24	83.30		83.35	0.001260	2.21	180.11	201.87	0.26
Elder1	R-1_Down	11.175	Max WS	245.67	79.60	82.81		82.87	0.001362	2.29	167.54	204.49	0.27
Elder1	R-1_Down	11.125	Max WS	258.09	79.27	82.60		82.62	0.000404	1.35	312.53	348.52	0.15
Elder1	R-1_Down	11.063	Max WS	271.79	78.95	82.46		82.48	0.000560	1.65	422.58	737.37	0.18
Elder1	R-1_Down	10.995	Max WS	359.80	78.76	82.09		82.12	0.001238	2.07	422.28	604.42	0.26
Elder1	R-1_Down	10.936	Max WS	322.08	76.97	81.24		81.31	0.001865	2.70	260.87	359.61	0.32
Elder1	R-1_Down	10.884	Max WS	316.54	76.68	81.00		81.01	0.000119	0.96	720.48	436.55	0.09
Elder1	R-1_Down	10.834	Max WS	315.87	76.47	80.97		80.98	0.000105	0.94	716.58	416.24	0.08
Elder1	R-1_Down	10.775	Max WS	315.34	76.23	80.94		80.95	0.000112	0.99	685.32	449.94	0.09
Elder1	R-1_Down	10.7475*	Max WS	315.02	75.69	80.90		80.92	0.000241	1.51	464.82	359.74	0.13
Elder1	R-1_Down	10.720	Max WS	314.78	75.15	80.83		80.88	0.000562	2.35	329.70	366.31	0.19
Elder1	R-1_Down	10.705	Max WS	314.47	75.34	80.73		80.83	0.001122	2.82	237.96	501.72	0.26
Elder1	R-1_Down	10.704	Max WS	314.56	75.44	80.76		80.77	0.000215	1.03	648.27	553.50	0.11
Elder1	R-1_Down	10.689		Mult Open									
Elder1	R-1_Down	10.686	Max WS	314.38	75.07	80.74		80.75	0.000146	0.88	803.05	624.13	0.09
Elder1	R-1_Down	10.681	Max WS	314.38	75.23	80.74		80.74	0.000089	0.84	819.94	644.76	0.08
Elder1	R-1_Down	10.65	Max WS	314.34	74.93	80.72		80.73	0.000057	0.79	550.28	357.45	0.06
Elder1	R-1_Down	10.63		Lat Struct									
Elder1	R-1_Down	10.619	Max WS	314.32	75.38	80.69		80.70	0.000250	1.08	424.36	288.51	0.12
Elder1	R-1_Down	10.613		Culvert									
Elder1	R-1_Down	10.607	Max WS	314.29	75.04	77.55		77.90	0.005642	4.73	66.41	300.02	0.56
Elder1	R-1_Down	10.562	Max WS	314.21	74.78	77.20		77.25	0.001703	1.97	230.01	285.30	0.29
Elder1	R-1_Down	10.507	Max WS	314.19	74.62	76.53		76.63	0.003732	2.69	146.12	185.30	0.42
Elder1	R-1_Down	10.442	Max WS	315.94	74.36	75.55		75.58	0.002443	1.48	248.64	411.54	0.31
Elder1	R-1_Down	10.361	Max WS	317.76	72.88	74.80		74.81	0.001238	1.65	395.28	535.17	0.24
Elder1	R-1_Down	10.312	Max WS	318.99	71.78	74.33		74.38	0.002304	2.52	255.13	456.74	0.34
Elder1	R-1_Down	10.272	Max WS	320.15	71.03	73.64		73.76	0.003786	3.16	165.35	243.15	0.44
Elder1	R-1_Down	10.214	Max WS	340.92	69.83	72.82		72.88	0.002058	2.56	240.87	269.71	0.33
Elder1	R-1_Down	10.141	Max WS	368.52	68.54	72.11		72.18	0.001875	2.66	251.20	250.10	0.32
Elder1	R-1_Down	10.09	Max WS	370.85	68.60	71.65		71.73	0.001604	2.67	239.03	253.67	0.30
Elder1	R-1_Down	10.034	Max WS	372.51	68.74	71.06		71.11	0.002574	2.67	293.64	484.07	0.36
Elder1	R-1_Down	9.974	Max WS	371.06	67.83	70.49		70.51	0.001242	1.98	428.40	572.90	0.25
Elder1	R-1_Down	9.919	Max WS	372.36	67.56	70.24		70.26	0.000469	1.48	505.09	463.03	0.16
Elder1	R-1_Down	9.878	Max WS	373.59	67.52	69.91		70.01	0.002219	2.66	180.04	479.16	0.34
Elder1	R-1_Down	9.813	Max WS	376.26	67.00	69.11		69.19	0.002496	2.66	209.89	223.25	0.36
Elder1	R-1_Down	9.749	Max WS	376.55	65.60	68.39		68.46	0.001777	2.38	238.85	283.20	0.31
Elder1	R-1_Down	9.701	Max WS	377.56	64.81	68.13		68.16	0.000471	1.55	412.99	340.19	0.17
Elder1	R-1_Down	9.633	Max WS	379.92	64.72	67.88		67.91	0.000897	1.79	330.89	364.27	0.22
Elder1	R-1_Down	9.566	Max WS	382.40	63.42	67.01		67.21	0.003519	3.66	115.79	93.21	0.44
Elder1	R-1_Down	9.524	Max WS	384.01	62.22	66.25		66.32	0.004184	2.38	216.89	301.86	0.42
Elder1	R-1_Down	9.49		Lat Struct									
Elder1	R-1_Down	9.486	Max WS	384.96	61.46	65.51		65.65	0.002660	3.20	160.81	226.85	0.38
Elder1	R-1_Down	9.438	Max WS	387.29	59.47	65.18		65.24	0.000562	2.03	232.63	198.64	0.19
Elder1	R-1_Down	9.387	Max WS	383.89	59.78	64.38		64.60	0.004248	3.85	102.58	73.92	0.47
Elder1	R-1_Down	9.329	Max WS	385.21	58.24	63.68		63.78	0.001076	2.61	147.53	45.47	0.26
Elder1	R-1_Down	9.282	Max WS	386.17	57.97	63.39		63.50	0.001172	2.74	141.19	42.97	0.27
Elder1	R-1_Down	9.228	Max WS	387.13	57.48	63.20		63.26	0.000499	2.04	189.38	158.41	0.18
Elder1	R-1_Down	9.185	Max WS	387.98	57.64	63.07		63.14	0.000614	2.11	191.24	270.00	0.20
Elder1	R-1_Down	9.143	Max WS	388.75	57.35	62.93		63.00	0.000610	2.15	181.23	330.74	0.20
Elder1	R-1_Down	9.091	Max WS	389.88	57.48	62.81		62.86	0.000415	1.81	232.39	159.15	0.16
Elder1	R-1_Down	9.039	Max WS	391.02	57.06	62.70		62.75	0.000424	1.80	255.48	190.00	0.16
Elder1	R-1_Down	8.975	Max WS	392.52	57.39	62.54		62.60	0.000453	1.89	224.32	410.62	0.17
Elder1	R-1_Down	8.969	Max WS	392.69	57.00	62.55	58.64	62.58	0.000509	1.55	265.66	450.86	0.17
Elder1	R-1_Down	8.961		Bridge									
Elder1	R-1_Down	8.954	Max WS	392.63	57.10	62.36		62.41	0.000246	1.64	239.29	317.33	0.13
Elder1	R-1_Down	8.89	Max WS	393.66	57.04	61.65		61.89	0.003008	3.94	99.96	194.27	0.41
Elder1	R-1_Down	8.811	Max WS	395.22	56.79	60.97		61.01	0.001080	2.14	315.68	773.57	0.24
Elder1	R-1_Down	8.752	Max WS	396.52	57.25	60.32		60.45	0.002719	3.18	183.40	550.64	0.38
Elder1	R-1_Down	8.697	Max WS	397.53	56.74	59.88		59.90	0.000620	1.36	576.02	1572.27	0.18
Elder1	R-1_Down	8.598	Max WS	399.07	55.92	59.62		59.62	0.000563	0.82	607.38	1009.83	0.15
Elder1	R-1_Down	8.565	Max WS	399.41	55.85	59.44		59.46	0.001763	1.11	443.54	1057.70	0.25
Elder1	R-1_Down	8.466	Max WS	400.16	55.58	59.07		59.07	0.000479	1.26	847.61	1590.40	0.16
Elder1	R-1_Down	8.258	Max WS	402.48	55.90	58.22		58.23	0.001366	1.30	489.60	1843.66	0.24
Elder1	R-1_Down	8.195	Max WS	403.74	55.61	57.81		57.82	0.000819	0.75	685.69	984.38	0.17
Elder1	R-1_Down	8.105	Max WS	404.75	55.58	57.65		57.66	0.000266	0.52	977.17	1235.27	0.10
Elder1	R-1_Down	7.93	Max WS	405.60	54.96	56.85		56.90	0.002256	1.79	249.94	1240.62	0.31
Elder1	R-1_Down	7.863	Max WS	404.81	53.97	56.46		56.46	0.000252	0.72	950.22	1504.18	0.11
Elder1	R-1_Down	7.862		Lat Struct									
Elder1	R-1_Down	7.783	Max WS	377.73	52.32	55.94		56.00	0.002431	2.17	209.37	631.81	0.34
Elder1	R-1_Down	7.740	Max WS	341.81	52.21	55.54		55.58	0.001451	1.95	302.88	407.04	0.27
Elder1	R-1_Down	7.689	Max WS	321.74	51.89	55.35		55.35	0.000093	0.39	1407.21	1718.37	0.06
Elder1	R-1_Down	7.625	Max WS	314.30	50.92	55.26	53.34	55.34	0.001187	2.20	155.88	188.86	0.26
Elder1	R-1_Down	7.6225		Bridge									
Elder1	R-1_Down	7.620	Max WS	314.29	51.00	55.19		55.24	0.000892	1.97	275.34	316.54	0.22
Elder1	R-1_Down	7.619		Lat Struct									
Elder1	R-1_Down	7.543	Max WS	293.01	50.76	54.73		54.88	0.001999	3.13	93.76	35.00	0.34
Elder1	R-1_Down	7.516	Max WS	285.69	50.67	54.39		54.54	0.001514	3.06	95.82	34.30	0.30
Elder1	R-1_Down	7.317	Max WS	148.61	49.76	53.65		53.67	0.000347	1.33	271.15	595.86	0.14
Elder1	R-1_Down	7.259		Lat Struct									

HEC-RAS Plan: PH2_10 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1_Down	7.258	Max WS	309.12	49.57	52.63		52.92	0.004846	4.34	72.03	42.41	0.51
Elder1	R-1_Down	7.0770	Max WS	312.12	47.10	51.73	48.53	51.77	0.001172	1.74	200.76	60.45	0.14
Elder1	R-1_Down	7.05		Inl Struct									
Elder1	R-1_Down	7.0130	Max WS	311.65	46.84	50.94		50.99	0.001857	2.04	170.98	54.32	0.18
Elder1	R-1_Down	6.98		Lat Struct									
Elder1	R-1_Down	6.9650	Max WS	361.36	46.68	49.93	48.24	50.05	0.005415	2.99	134.37	52.17	0.29
Elder1	R-1_Down	6.94		Inl Struct									
Elder1	R-1_Down	6.9350	Max WS	361.03	42.39	48.27		48.32	0.002189	1.83	198.43	59.70	0.15
Elder1	R-1_Down	6.9141	Max WS	360.97	42.35	48.20		48.24	0.001027	1.47	217.67	72.85	0.11
Elder1	R-1_Down	6.91405*	Max WS	360.95	42.35	48.18		48.23	0.001154	1.56	205.45	72.77	0.12
Elder1	R-1_Down	6.9140	Max WS	360.94	42.35	48.16		48.22	0.001313	1.66	192.72	72.68	0.12
Elder1	R-1_Down	6.9135		Culvert									
Elder1	R-1_Down	6.9131	Max WS	360.82	41.36	48.04		48.09	0.001056	1.66	211.59	79.40	0.12
Elder1	R-1_Down	6.9130	Max WS	360.82	41.36	48.04		48.08	0.000873	1.51	233.79	79.39	0.10
Elder1	R-1_Down	6.9129		Lat Struct									
Elder1	R-1_Down	6.9128		Lat Struct									
Elder1	R-1_Down	6.89		Lat Struct									
Elder1	R-1_Down	6.8860	Max WS	513.19	41.22	47.91		47.94	0.000734	1.38	392.93	87.75	0.10
Elder1	R-1_Down	6.8850	Max WS	513.14	41.10	47.84		47.86	0.000571	1.24	448.28	99.84	0.09
Elder1	R-1_Down	6.8620	Max WS	513.12	40.98	47.77		47.79	0.000523	1.19	452.16	95.75	0.08
Elder1	R-1_Down	6.8450	Max WS	513.11	40.88	47.74		47.75	0.000222	0.79	669.11	137.87	0.05
Elder1	R-1_Down	6.8330	Max WS	513.12	40.82	47.73		47.74	0.000258	0.85	646.35	158.43	0.06
Elder1	R-1_Down	6.8210	Max WS	513.13	40.76	47.71		47.72	0.000273	0.88	578.28	154.50	0.06
Elder1	R-1_Down	6.82		Lat Struct									
Elder1	R-1_Down	6.8100	Max WS	513.32	40.70	47.67		47.70	0.000500	1.18	416.40	105.44	0.08
Elder1	R-1_Down	6.791	Max WS	513.23	40.66	47.51		47.61	0.002019	2.33	210.38	68.56	0.16
Elder1	R-1_Down	6.790		Culvert									
Elder1	R-1_Down	6.7890	Max WS	513.17	40.64	47.44		47.53	0.002055	2.34	209.27	68.60	0.16
Elder1	R-1_Down	6.7730	Max WS	513.11	40.60	47.35		47.39	0.001245	1.82	312.39	70.94	0.13
Elder1	R-1_Down	6.7610	Max WS	513.05	40.54	47.25		47.30	0.001581	2.03	283.61	67.12	0.14
Elder1	R-1_Down	6.7480	Max WS	513.02	40.48	47.22		47.23	0.000431	1.07	495.06	104.13	0.07
Elder1	R-1_Down	6.7410	Max WS	513.03	40.44	47.20		47.21	0.000353	0.97	547.60	115.56	0.07
Elder1	R-1_Down	6.7400	Max WS	513.04	40.42	47.20		47.21	0.000311	0.91	583.49	124.14	0.06
Elder1	R-1_Down	6.7190	Max WS	513.00	40.30	47.15		47.17	0.000433	1.09	506.06	111.48	0.07
Elder1	R-1_Down	6.7180	Max WS	513.00	40.30	47.15		47.16	0.000439	1.09	505.80	112.00	0.07
Elder1	R-1_Down	6.7110	Max WS	513.00	40.26	47.13		47.15	0.000407	1.05	524.51	116.44	0.07
Elder1	R-1_Down	6.7000	Max WS	512.96	40.20	47.09		47.12	0.000691	1.37	409.93	92.81	0.09
Elder1	R-1_Down	6.6910	Max WS	512.93	40.16	47.05		47.08	0.000854	1.52	363.47	79.82	0.10
Elder1	R-1_Down	6.6650	Max WS	512.86	40.02	46.93		46.96	0.000845	1.52	363.73	79.65	0.10
Elder1	R-1_Down	6.6530	Max WS	512.83	40.00	46.88		46.91	0.000823	1.49	365.89	79.90	0.10
Elder1	R-1_Down	6.6340	Max WS	512.76	39.96	46.80		46.83	0.000826	1.49	371.26	81.12	0.10
Elder1	R-1_Down	6.6040	Max WS	512.70	39.96	46.66		46.69	0.000903	1.54	359.98	80.28	0.11
Elder1	R-1_Down	6.59		Lat Struct									
Elder1	R-1_Down	6.5500	Max WS	518.86	39.54	46.45		46.48	0.000661	1.35	423.16	96.76	0.09
Elder1	R-1_Down	6.5290	Max WS	518.79	39.40	46.36		46.39	0.000800	1.48	377.94	80.63	0.10
Elder1	R-1_Down	6.5070	Max WS	518.76	39.40	46.25		46.29	0.000999	1.64	317.72	79.67	0.11
Elder1	R-1_Down	6.4940	Max WS	518.72	39.22	46.20		46.23	0.000757	1.44	388.50	83.55	0.10
Elder1	R-1_Down	6.4750	Max WS	518.69	39.16	46.13		46.15	0.000657	1.36	402.72	84.40	0.09
Elder1	R-1_Down	6.4420	Max WS	518.59	39.04	46.00		46.03	0.000751	1.43	389.09	83.00	0.10
Elder1	R-1_Down	6.4020	Max WS	518.53	38.84	45.85		45.87	0.000731	1.42	390.52	82.51	0.10
Elder1	R-1_Down	6.3630	Max WS	518.47	38.64	45.70		45.73	0.000693	1.40	387.64	84.66	0.09
Elder1	R-1_Down	6.3330	Max WS	518.41	38.48	45.59		45.62	0.000668	1.38	411.25	113.56	0.09
Elder1	R-1_Down	6.2980	Max WS	518.38	38.34	45.47		45.50	0.000627	1.33	414.29	102.12	0.09
Elder1	R-1_Down	6.2750	Max WS	518.36	38.26	45.39		45.42	0.000619	1.33	414.44	84.36	0.09
Elder1	R-1_Down	6.2560	Max WS	518.36	38.16	45.33		45.35	0.000582	1.28	422.76	86.02	0.09
Elder1	R-1_Down	6.2340	Max WS	518.78	38.04	45.27		45.29	0.000557	1.27	434.85	94.82	0.08
Elder1	R-1_Down	6.2070	Max WS	519.33	37.90	45.21		45.22	0.000375	1.05	569.96	134.58	0.07
Elder1	R-1_Down	6.1800	Max WS	519.86	37.76	45.15		45.17	0.000464	1.18	470.46	94.32	0.08
Elder1	R-1_Down	6.1590	Max WS	520.27	37.66	45.10		45.12	0.000478	1.20	460.70	157.39	0.08
Elder1	R-1_Down	6.1400	Max WS	520.67	37.56	45.04		45.06	0.000589	1.34	452.91	119.93	0.09
Elder1	R-1_Down	6.1190	Max WS	521.11	37.46	44.98		45.00	0.000523	1.27	461.91	126.82	0.08
Elder1	R-1_Down	6.1010	Max WS	521.48	37.36	44.93		44.95	0.000485	1.21	448.08	90.45	0.08
Elder1	R-1_Down	6.0850	Max WS	521.82	37.28	44.90		44.92	0.000410	1.13	490.25	94.58	0.07
Elder1	R-1_Down	6.0690	Max WS	522.14	37.22	44.80		44.86	0.000998	1.76	273.01	72.12	0.11
Elder1	R-1_Down	6.05		Culvert									
Elder1	R-1_Down	6.0400	Max WS	522.14	37.00	44.51		44.57	0.001010	1.74	267.67	104.55	0.11
Elder1	R-1_Down	6.0150	Max WS	522.13	36.92	44.47		44.49	0.000537	1.27	436.03	105.67	0.08
Elder1	R-1_Down	5.9940	Max WS	522.12	36.84	44.41		44.43	0.000534	1.27	432.47	100.98	0.08
Elder1	R-1_Down	5.9800	Max WS	522.13	36.76	44.37		44.39	0.000552	1.29	429.84	100.02	0.08
Elder1	R-1_Down	5.9340	Max WS	522.09	36.62	44.24		44.26	0.000516	1.25	439.28	101.71	0.08
Elder1	R-1_Down	5.8910	Max WS	522.04	36.46	44.16		44.18	0.000490	1.23	450.40	113.06	0.08
Elder1	R-1_Down	5.8530	Max WS	522.07	36.46	44.12		44.15	0.000500	1.24	446.70	112.04	0.08
Elder1	R-1	260.0000	Max WS	21.33	117.38	122.58		122.58	0.000003	0.07	275.02	78.92	0.01
Elder1	R-1	255.0000	Max WS	21.30	117.08	122.58		122.58	0.000002	0.06	308.84	83.33	0.00
Elder1	R-1	250.0000	Max WS	99.25	116.80	122.58		122.58	0.000040	0.29	313.81	82.93	0.02
Elder1	R-1	245.0000	Max WS	99.47	116.44	122.57		122.57	0.000026	0.25	346.93	80.36	0.02
Elder1	R-1	240.0000	Max WS	133.30	116.16	122.57		122.57	0.000042	0.32	361.41	81.27	0.02
Elder1	R-1	235.0000	Max WS	133.47	115.88	122.56		122.56	0.000035	0.30	387.28	83.93	0.02
Elder1	R-1	230.0000	Max WS	133.62	115.64	122.56		122.56	0.000028	0.27	421.22	87.38	0.02
Elder1	R-1	225.0000	Max WS	133.74	115.44	122.56		122.56	0.000028	0.28	415.88	85.83	0.02
Elder1	R-1	222		Culvert									
Elder1	R-1	220.0000	Max WS	120.61	111.88	115.73		115.75	0.000904	1.00	121.46	54.59	0.10
Elder1	R-1	219	Max WS	118.96	111.88	115.63		115.65	0.001030	1.03	116.11	53.96	0.10
Elder1	R-1	215.0000	Max WS	232.28	111.56	115.34		115.39	0.003243	1.88	122.73	55.84	0.18
Elder1	R-1	210.0000	Max WS	233.52	111.04	114.78		114.84	0.003481	1.93	120.82	56.20	0.19
Elder1	R-1	205.0000	Max WS	233.58	110.48	114.24		114.29	0.002910	1.80	129.09	60.01	0.17

HEC-RAS Plan: PH2_10 Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Elder1	R-1	200.0000	Max WS	233.65	109.88	113.72		113.76	0.002661	1.71	134.62	60.84	0.16
Elder1	R-1	197.0000	Max WS	233.12	109.56	113.42		113.46	0.002641	1.70	134.26	59.40	0.16
Elder1	R-1	195.0000	Max WS	256.87	109.32	113.18		113.24	0.003325	1.87	134.72	59.00	0.18
Elder1	R-1	190.0000	Max WS	269.33	108.56	112.39		112.45	0.003194	1.92	137.50	61.39	0.18
Elder1	R-1	185.0000	Max WS	268.85	107.84	111.65		111.71	0.003222	1.91	137.33	60.64	0.18
Elder1	R-1	180.0000	Max WS	268.35	106.93	110.72		110.78	0.003249	1.92	136.53	60.35	0.18
Elder1	R-1	178.0000	Max WS	274.08	106.52	110.30		110.36	0.003062	1.85	142.40	62.20	0.18
Elder1	R-1	177.0000	Max WS	279.11	106.32	110.10		110.16	0.003014	1.87	143.66	64.38	0.18
Elder1	R-1	175.0000	Max WS	273.64	105.76	109.58		109.63	0.002746	1.78	148.94	65.81	0.17
Elder1	R-1	170.0000	Max WS	268.09	104.64	108.83		108.87	0.001572	1.45	177.09	70.56	0.13
Elder1	R-1	167.0000	Max WS	273.88	104.08	108.65		108.67	0.000691	1.03	243.24	86.22	0.09
Elder1	R-1	165.0000	Max WS	273.96	103.76	108.57		108.59	0.000699	1.04	249.50	83.83	0.09
Elder1	R-1	160.0000	Max WS	279.09	102.98	108.44		108.45	0.000428	0.89	293.94	88.53	0.07
Elder1	R-1	158		Culvert									
Elder1	R-1	155.0000	Max WS	174.63	93.10	98.80		98.80	0.000011	0.13	1022.59	321.99	0.01
Elder1	R-1	152.5*	Max WS	173.95	93.08	98.80		98.80	0.000010	0.13	1062.36	327.86	0.01
Elder1	R-1	150.0000	Max WS	190.20	93.06	98.80	94.97	98.80	0.000011	0.14	1109.97	333.71	0.01

APPENDIX C

XP SWMM MODELS

(SEE MODELS ON DISK)

Jackson Township

Full Development Scenario

XP Swmm Output File Listing

```
 Current Directory:   C:\PROGRA~2\XPSOLU~1\XPSWMM~1
 Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE
 Input File : jects\2012.21\drainage\swmm\xp\JacksonTrunkNolte20160705_modf1.XP

          *================================================*
          |                    xpswmm                      |
          |     Storm and Wastewater Management Model      |
          |         Developed by XP Solutions Inc.         |
          |================================================|
          |                                                |
          | Last Update      : June, 2014                  |
          | Interface Version: 2012                        |
          | Engine Version   : 12.0                        |
          | Data File Version: 12.6                        |
          |                                                |
          |                                                |
          *================================================*

Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


*==================================================*
|       Input and Output file names by Layer       |
*==================================================*

 Input File  to Layer #     1 JOT.US
 Output File to Layer #     1 JOT.US

*============================================================*
|                Configuration Parameters                    |
|  Configuration Parameters, both those that are hardwired   |
|  and those added to the simulation are listed below.       |
|  Configuration Parameters that start with a $ are set in   |
|  the engine as defaults.  The remaining in UPPERCASE       |
|  have been added to the simulation in the Configuration->  |
|  Configuration Parameters dialog or as Engine Defaults in  |
|  the SWMXP.INI file.                                       |
|                                                            |
|  Consult the Help File for the specific meaning/purpose    |
|  of any particular parameter.                              |
|                                                            |
|  Note:                                                     |
|  The second column denotes the value of the parameter.     |
*============================================================*

 $powerstation                      0.0000         1         2
 $perv                              0.0000         0         4
 $oldegg                            0.0000         0         7
 $as                                0.0000         0        11
 $noflat                            0.0000         0        21
 $oldomega                          0.0000         0        24
 $oldvol                            0.0000         1        28
 $implicit                          0.0000         1        29
 $oldhot                            0.0000         1        31
 $oldscs                            0.0000         0        33
 $flood                             0.0000         1        40
 $nokeys                            0.0000         0        42
 $pzero                             0.0000         0        55
 $oldvol2                           0.0000         2        59
 $storage2                          0.0000         3        62
```

$oldhot1	0.0000	1	63
$pumpwt	0.0000	1	70
$ecloss	0.0000	1	77
$exout	0.0000	0	97
$spatial = 0.90	0.9000	5	124
$djref = -1.0	-0.1000	3	143
$weirlen = 50	50.0000	1	153
$oldbnd	0.0000	1	154
$nogrelev	0.0000	1	161
$ncmid	0.0000	0	164
$new_nl_97	0.0000	2	290
SCSIADEPTH=ON	0.0000	1	293
$best97	0.0000	1	294
$newbound	0.0000	1	295
$q_tol = 0.01	0.0001	1	316
$new_storage	0.0000	1	322
$old_iteration	0.0000	1	333
MINLEN=10	10.0000	1	346
$review_elevation	0.0000	1	383
$use_half_volume	0.0000	1	385
VERT_WALLS=ON	0.0000	1	389
$min_ts = 1.0	1.0000	1	407
$design_restart = on	0.0000	1	412
$zero_value=1.e-05	0.0000	1	415
SUBCATCHMENT_RES=ON	0.0000	1	419
$relax_depth = on	0.0000	1	427
$saveallpts = on	0.0000	1	434
$channel_geometry=1	0.0000	1	456

==
| Parameter Values on the Tapes Common Block.These are the |
| values read from the data file and dynamically allocated |
| by the model for this simulation. |
==

Number of Subcatchments in the Runoff Block (NW)....	0
Number of Channel/Pipes in the Runoff Block (NG)....	0
Runoff Water quality constituents (NRQ).....	0
Runoff Land Uses per Subcatchment (NLU).....	0
Number of Elements in the Transport Block (NET).....	0
Number of Storage Junctions in Transport (NTSE).....	0
Number of Input Hydrographs in Transport (NTH).....	0
Number of Elements in the Extran Block (NEE).....	269
Number of Groundwater Subcatchments in Runoff (NGW).	0
Number of Interface locations for all Blocks (NIE)..	269
Number of Pumps in Extran (NEP).....	0
Number of Orifices in Extran (NEO).....	0
Number of Tide Gates/Free Outfalls in Extran (NTG)..	30
Number of Extran Weirs (NEW).....	0
Number of scs hydrograph points.....	1
Number of Extran printout locations (NPO).....	0
Number of Tide elements in Extran (NTE).....	30
Number of Natural channels (NNC).....	0
Number of Storage junctions in Extran (NVSE).....	0
Number of Time history data points in Extran(NTVAL).	2
Number of Variable storage elements in Extran (NVST)	0
Number of Input Hydrographs in Extran (NEH).....	268
Number of Particle sizes in Transport Block (NPS)...	0
Number of User defined conduits (NHW).....	269
Number of Connecting conduits in Extran (NECC).....	20

```
 Number of Upstream elements in Transport (NTCC).....    10
 Number of Storage/treatment plants (NSTU)...........     1
 Number of Values for R1 lines in Transport (NR1)....     0
 Number of Nodes to be allowed for (NNOD)............   269
 Number of Plugs in a Storage Treatment Unit.........     1

XXX End of Header Section XXX

############################################################
#    Entry made to the HYDRAULIC Layer of XP-SWMM     #
#    Last Updated in June, 2014 by XP Solutions       #




*============================================================*
|        HYDRAULICS TABLES IN THE OUTPUT FILE                |
|  These are the more important tables in the output file.   |
|  You can use your editor to find the table numbers,        |
|  for example: search for Table E20 to check continuity.    |
|  This output file can be imported into a Word Processor    |
|  and printed on US letter or A4 paper using portrait       |
|  mode, courier font, a size of 8 pt. and margins of 0.75   |
|                                                            |
| Table E1   - Basic Conduit Data                            |
| Table E2   - Conduit Factor Data                           |
| Table E3a  - Junction Data                                 |
| Table E3b  - Junction Data                                 |
| Table E4   - Conduit Connectivity Data                     |
| Table E4a  - Dry Weather Flow Data                         |
| Table E4b  - Real Time Control Data                        |
| Table E5   - Junction Time Step Limitation Summary         |
| Table E5a  - Conduit Explicit Condition Summary            |
| Table E6   - Final Model Condition                         |
| Table E7   - Iteration Summary                             |
| Table E8   - Junction Time Step Limitation Summary         |
| Table E9   - Junction  Summary  Statistics                 |
| Table E10  - Conduit   Summary  Statistics                 |
| Table E11  - Area assumptions used in the analysis         |
| Table E12  - Mean conduit information                      |
| Table E13  - Channel losses(H) and culvert info            |
| Table E13a - Culvert Analysis Classification               |
| Table E14  - Natural Channel Overbank Flow Information     |
| Table E14a - Natural Channel Encroachment Information      |
| Table E14b - Floodplain Mapping                            |
| Table E15  - Spreadsheet Info List                         |
| Table E15a - Spreadsheet Reach List                        |
| Table E16  - New Conduit Output Section                    |
| Table E17  - Pump Operation                                |
| Table E18  - Junction Continuity Error                     |
| Table E19  - Junction Inflow & Outflow Listing             |
| Table E20  - Junction Flooding and Volume List             |
| Table E21  - Continuity balance at simulation end          |
| Table E22  - Model Judgement Section                       |
*============================================================*

Time Control from Hydraulics Job Control
Year.........    1995 Month.......       1
Day..........       1 Hour........       0
```

```
 Minute.......       0 Second......       0


 Control information for simulation
 ----------------------------------

 Integration cycles.................       360
 Length of integration step is......     60.00 seconds
 Simulation length..................      6.00 hours
 Do not create equiv. pipes(NEQUAL).         0
 Use U.S. customary units for I/O...         0
 Printing starts in cycle...........         1
 Intermediate printout intervals of.       500 cycles
 Intermediate printout intervals of.    500.00 minutes
 Summary printout intervals of......       500 cycles
 Summary printout time interval of..    500.00 minutes
 Hot start file parameter (REDO)....         0
 Initial time.......................      0.00 hours

 Iteration variables: Flow Tolerance.   0.00010
                      Head Tolerance.   0.00050
     Minimum depth (m or ft).........   0.00001
     Underrelaxation parameter.......   0.85000
     Time weighting parameter........   0.85000
     Conduit roughness factor........   1.00000
     Flow adjustment factor..........   1.00000
     Initial Condition Smoothing.....         0
     Courant Time Step Factor........   1.00000
     Default Expansion/Contraction K.   0.00000
     Default Entrance/Exit K.........   0.00000
     Routing Method..................   Dynamic Wave
 Default surface area of junctions...     12.57 square feet.
 Minimum Junction/Conduit Depth......   0.00001 feet.
 Ponding Area Coefficient............   5000.00
 Ponding Area Exponent...............    1.0000
 Minimum Orifice Length..............   1000.00 feet.
 NJSW input hydrograph junctions.....   268
      or user defined hydrographs....

 *==========================================================*
 |               Flap Gate Conduit Information              |
 |               ----------------------------               |
 | Positive Flap Gate - Flow only allowed from the upstream |
 |                      to the downstream junction          |
 | Negative Flap Gate - Flow only allowed from the          |
 |                      downstream to the upstream junction |
 *==========================================================*

    Conduit   Type of Flap Gate
    -------   -----------------
 L376        Positive Flap Gate

 *==================================================*
 |          Table E1 - Conduit Data                 |
 *==================================================*

                                                                                                  Trapezoid
Hazen
  Inp          Conduit     Length    Conduit      Area    Manning  Max Width      Depth       Side
Williams
```

Num	Name	(ft)	Class	(ft^2)	Coef.	(ft)	(ft)	Slopes	c-factor
1	L210	70.0000	Circular	0.7854	0.0150	1.0000	1.0000		
2	L211	408.0000	Circular	0.7854	0.0150	1.0000	1.0000		
3	L212	541.0000	Circular	1.2272	0.0150	1.2500	1.2500		
4	L213	107.0000	Circular	0.7854	0.0150	1.0000	1.0000		
5	L214	93.0000	Circular	1.7671	0.0150	1.5000	1.5000		
6	L217	86.0000	Circular	0.7854	0.0150	1.0000	1.0000		
7	L220	320.0000	Circular	2.4053	0.0150	1.7500	1.7500		
8	L221	395.0000	Circular	3.1416	0.0150	2.0000	2.0000		
9	L222	182.0000	Circular	3.1416	0.0150	2.0000	2.0000		
10	L223	72.0000	Circular	0.7854	0.0150	1.0000	1.0000		
11	L224	291.0000	Circular	0.7854	0.0150	1.0000	1.0000		
12	L225	290.0000	Circular	0.7854	0.0150	1.0000	1.0000		
13	L226	413.0000	Circular	0.7854	0.0150	1.0000	1.0000		
14	L227	236.0000	Circular	0.7854	0.0150	1.0000	1.0000		
15	L228	407.0000	Circular	0.7854	0.0150	1.0000	1.0000		
16	L229	572.0000	Circular	1.2272	0.0150	1.2500	1.2500		
17	L230	397.0000	Circular	1.2272	0.0150	1.2500	1.2500		
18	L231	399.0000	Circular	1.2272	0.0150	1.2500	1.2500		
19	L232	307.0000	Circular	1.7671	0.0150	1.5000	1.5000		
20	L233	479.0000	Circular	1.7671	0.0150	1.5000	1.5000		
21	L234	430.0000	Circular	3.1416	0.0150	2.0000	2.0000		
22	L235	50.0000	Circular	0.7854	0.0150	1.0000	1.0000		
23	L236	105.0000	Circular	0.7854	0.0150	1.0000	1.0000		
24	L237	100.0000	Circular	0.7854	0.0150	1.0000	1.0000		
25	L238	55.0000	Circular	0.7854	0.0150	1.0000	1.0000		
26	L239	124.0000	Circular	0.7854	0.0150	1.0000	1.0000		
27	L240	86.0000	Circular	0.7854	0.0150	1.0000	1.0000		
28	L241	296.0000	Circular	1.2272	0.0150	1.2500	1.2500		
29	L242	62.0000	Circular	0.7854	0.0150	1.0000	1.0000		
30	L243	95.0000	Circular	0.7854	0.0150	1.0000	1.0000		
31	L246	414.0000	Circular	4.9087	0.0150	2.5000	2.5000		
32	L247	92.0000	Circular	4.9087	0.0150	2.5000	2.5000		
33	L248	47.0000	Circular	0.7854	0.0150	1.0000	1.0000		
34	L249	73.0000	Circular	0.7854	0.0150	1.0000	1.0000		
35	L250	78.0000	Circular	0.7854	0.0150	1.0000	1.0000		
36	L251	69.0000	Circular	0.7854	0.0150	1.0000	1.0000		
37	L252	396.0000	Circular	0.7854	0.0150	1.0000	1.0000		
38	L253	70.0000	Circular	0.7854	0.0150	1.0000	1.0000		
39	L254	391.0000	Circular	0.7854	0.0150	1.0000	1.0000		
40	L255	79.0000	Circular	1.2272	0.0150	1.2500	1.2500		
41	L256	294.0000	Circular	1.7671	0.0150	1.5000	1.5000		
42	L257	280.0000	Circular	1.7671	0.0150	1.5000	1.5000		
43	L258	100.0000	Circular	0.7854	0.0150	1.0000	1.0000		
44	L259	281.0000	Circular	2.4053	0.0150	1.7500	1.7500		
45	L260	64.0000	Circular	2.4053	0.0150	1.7500	1.7500		
46	L261	138.0000	Circular	0.7854	0.0150	1.0000	1.0000		
47	L262	76.0000	Circular	0.7854	0.0150	1.0000	1.0000		
48	L263	117.0000	Circular	0.7854	0.0150	1.0000	1.0000		
49	L264	79.0000	Circular	1.2272	0.0150	1.2500	1.2500		
50	L265	347.0000	Circular	7.0686	0.0150	3.0000	3.0000		
51	L266	202.0000	Circular	7.0686	0.0150	3.0000	3.0000		
52	L267	63.0000	Circular	0.7854	0.0150	1.0000	1.0000		
53	L268	79.0000	Circular	0.7854	0.0150	1.0000	1.0000		
54	L269	248.0000	Circular	0.7854	0.0150	1.0000	1.0000		
55	L270	401.0000	Circular	7.0686	0.0150	3.0000	3.0000		
56	L271	398.0000	Circular	9.6211	0.0150	3.5000	3.5000		

57	L272	34.0000	Circular	15.9043	0.0150	4.5000	4.5000
58	L273	117.0000	Circular	2.4053	0.0150	1.7500	1.7500
59	L274	123.0000	Circular	1.7671	0.0150	1.5000	1.5000
60	L275	107.0000	Circular	0.7854	0.0150	1.0000	1.0000
61	L277	117.0000	Circular	0.7854	0.0150	1.0000	1.0000
62	L278	48.0000	Circular	0.7854	0.0150	1.0000	1.0000
63	L279	165.0000	Circular	0.7854	0.0150	1.0000	1.0000
64	L280	50.0000	Circular	0.7854	0.0150	1.0000	1.0000
65	L281	107.0000	Circular	0.7854	0.0150	1.0000	1.0000
66	L282	48.0000	Circular	0.7854	0.0150	1.0000	1.0000
67	L283	114.0000	Circular	0.7854	0.0150	1.0000	1.0000
68	L284	52.0000	Circular	0.7854	0.0150	1.0000	1.0000
69	L285	140.0000	Circular	1.7671	0.0150	1.5000	1.5000
70	L286	50.0000	Circular	1.2272	0.0150	1.2500	1.2500
71	L287	109.0000	Circular	0.7854	0.0150	1.0000	1.0000
72	L289	120.0000	Circular	0.7854	0.0150	1.0000	1.0000
73	L290	368.0000	Circular	0.7854	0.0150	1.0000	1.0000
74	L291	373.0000	Circular	0.7854	0.0150	1.0000	1.0000
75	L292	105.0000	Circular	0.7854	0.0150	1.0000	1.0000
76	L294	82.0000	Circular	0.7854	0.0150	1.0000	1.0000
77	L300	233.0000	Circular	1.7671	0.0150	1.5000	1.5000
78	L301	56.0000	Circular	0.7854	0.0150	1.0000	1.0000
79	L302	542.0000	Circular	3.9761	0.0150	2.2500	2.2500
80	L303	83.0000	Circular	0.7854	0.0150	1.0000	1.0000
81	L304	68.0000	Circular	0.7854	0.0150	1.0000	1.0000
82	L305	143.0000	Circular	1.7671	0.0150	1.5000	1.5000
83	L306	58.0000	Circular	0.7854	0.0150	1.0000	1.0000
84	L307	95.0000	Circular	3.1416	0.0150	2.0000	2.0000
85	L308	101.0000	Circular	1.7671	0.0150	1.5000	1.5000
86	L309	58.0000	Circular	0.7854	0.0150	1.0000	1.0000
87	L310	61.0000	Circular	0.7854	0.0150	1.0000	1.0000
88	L311	399.0000	Circular	0.7854	0.0150	1.0000	1.0000
89	L312	61.0000	Circular	0.7854	0.0150	1.0000	1.0000
90	L313	585.0000	Circular	0.7854	0.0150	1.0000	1.0000
91	L314	92.0000	Circular	0.7854	0.0150	1.0000	1.0000
92	L315	71.0000	Circular	0.7854	0.0150	1.0000	1.0000
93	L316	292.0000	Circular	0.7854	0.0150	1.0000	1.0000
94	L317	302.0000	Circular	1.7671	0.0150	1.5000	1.5000
95	L318	304.0000	Circular	1.7671	0.0150	1.5000	1.5000
96	L319	65.0000	Circular	1.7671	0.0150	1.5000	1.5000
97	L320	67.0000	Circular	0.7854	0.0150	1.0000	1.0000
98	L321	440.0000	Circular	0.7854	0.0150	1.0000	1.0000
99	L324	122.0000	Circular	0.7854	0.0150	1.0000	1.0000
100	L325	62.0000	Circular	0.7854	0.0150	1.0000	1.0000
101	L326	119.0000	Circular	0.7854	0.0150	1.0000	1.0000
102	L327	118.0000	Circular	0.7854	0.0150	1.0000	1.0000
103	L328	348.0000	Circular	1.7671	0.0150	1.5000	1.5000
104	L329	98.0000	Circular	1.7671	0.0150	1.5000	1.5000
105	L334	402.0000	Circular	0.7854	0.0150	1.0000	1.0000
106	L335	371.0000	Circular	0.7854	0.0150	1.0000	1.0000
107	L336	125.0000	Circular	0.7854	0.0150	1.0000	1.0000
108	L337	119.0000	Circular	0.7854	0.0150	1.0000	1.0000
109	L338	84.0000	Circular	7.0686	0.0150	3.0000	3.0000
110	L339	260.0000	Circular	7.0686	0.0150	3.0000	3.0000
111	L340	244.0000	Circular	9.6211	0.0150	3.5000	3.5000
112	L341	103.0000	Circular	9.6211	0.0150	3.5000	3.5000
113	L342	78.0000	Circular	1.2272	0.0150	1.2500	1.2500
114	L343	94.0000	Circular	0.7854	0.0150	1.0000	1.0000
115	L344	51.0000	Circular	4.9087	0.0150	2.5000	2.5000
116	L346	50.0000	Circular	9.6211	0.0150	3.5000	3.5000

117	L347	395.0000	Circular	12.5664	0.0150	4.0000	4.0000
118	L348	404.0000	Circular	12.5664	0.0150	4.0000	4.0000
119	L349	400.0000	Circular	12.5664	0.0150	4.0000	4.0000
120	L350	132.0000	Circular	12.5664	0.0150	4.0000	4.0000
121	L351	35.0000	Circular	3.1416	0.0150	2.0000	2.0000
122	L352	147.0000	Circular	3.1416	0.0150	2.0000	2.0000
123	L354	94.0000	Circular	15.9043	0.0150	4.5000	4.5000
124	L361	47.0000	Circular	0.7854	0.0150	1.0000	1.0000
125	L362	66.0000	Circular	0.7854	0.0150	1.0000	1.0000
126	L363	411.0000	Circular	1.7671	0.0150	1.5000	1.5000
127	L364	48.0000	Circular	0.7854	0.0150	1.0000	1.0000
128	L365	63.0000	Circular	0.7854	0.0150	1.0000	1.0000
129	L366	394.0000	Circular	3.1416	0.0150	2.0000	2.0000
130	L367	364.0000	Circular	3.1416	0.0150	2.0000	2.0000
131	L368	124.0000	Circular	0.7854	0.0150	1.0000	1.0000
132	L369	99.0000	Circular	0.7854	0.0150	1.0000	1.0000
133	L370	206.0000	Circular	7.0686	0.0150	3.0000	3.0000
134	L373	98.0000	Circular	7.0686	0.0150	3.0000	3.0000
135	L374	160.0000	Circular	0.7854	0.0150	1.0000	1.0000
136	L375	403.0000	Circular	1.7671	0.0150	1.5000	1.5000
137	L376	164.0000	Circular	5.9396	0.0150	2.7500	2.7500
138	L386	341.0000	Circular	12.5664	0.0150	4.0000	4.0000
139	L387	355.0000	Circular	12.5664	0.0150	4.0000	4.0000
140	L388	113.0000	Circular	0.7854	0.0150	1.0000	1.0000
141	L389	385.0000	Circular	15.9043	0.0150	4.5000	4.5000
142	L390	106.0000	Circular	0.7854	0.0150	1.0000	1.0000
143	L391	499.0000	Circular	15.9043	0.0150	4.5000	4.5000
144	L392	380.0000	Circular	15.9043	0.0150	4.5000	4.5000
145	L393	461.0000	Circular	15.9043	0.0150	4.5000	4.5000
146	L395	50.0000	Circular	1.2272	0.0150	1.2500	1.2500
147	L396	402.0000	Circular	7.0686	0.0150	3.0000	3.0000
148	L397	57.0000	Circular	1.2272	0.0150	1.2500	1.2500
149	L398	48.0000	Circular	1.2272	0.0150	1.2500	1.2500
150	L399	302.0000	Circular	3.1416	0.0150	2.0000	2.0000
151	L402	86.0000	Circular	2.4053	0.0150	1.7500	1.7500
152	L403	398.0000	Circular	2.4053	0.0150	1.7500	1.7500
153	L404	371.0000	Circular	2.4053	0.0150	1.7500	1.7500
154	L405	71.0000	Circular	1.7671	0.0150	1.5000	1.5000
155	L406	364.0000	Circular	4.9087	0.0150	2.5000	2.5000
156	L407	71.0000	Circular	1.2272	0.0150	1.2500	1.2500
157	L408	367.0000	Circular	5.9396	0.0150	2.7500	2.7500
158	L410	395.0000	Circular	7.0686	0.0150	3.0000	3.0000
159	L411	301.0000	Circular	7.0686	0.0150	3.0000	3.0000
160	L413	401.0000	Circular	1.7671	0.0150	1.5000	1.5000
161	L415	49.0000	Circular	0.7854	0.0150	1.0000	1.0000
162	L417	68.0000	Circular	0.7854	0.0150	1.0000	1.0000
163	L418	72.0000	Circular	1.7671	0.0150	1.5000	1.5000
164	L419	259.0000	Circular	3.1416	0.0150	2.0000	2.0000
165	L420	402.0000	Circular	3.1416	0.0150	2.0000	2.0000
166	L421	68.0000	Circular	0.7854	0.0150	1.0000	1.0000
167	L422	76.0000	Circular	1.2272	0.0150	1.2500	1.2500
168	L423	397.0000	Circular	4.9087	0.0150	2.5000	2.5000
169	L424	299.0000	Circular	5.9396	0.0150	2.7500	2.7500
170	L425	70.0000	Circular	0.7854	0.0150	1.0000	1.0000
171	L426	73.0000	Circular	1.2272	0.0150	1.2500	1.2500
172	L427	486.0000	Circular	9.6211	0.0150	3.5000	3.5000
173	L428	88.0000	Circular	0.7854	0.0150	1.0000	1.0000
174	L429	394.0000	Circular	9.6211	0.0150	3.5000	3.5000
175	L430	91.0000	Circular	0.7854	0.0150	1.0000	1.0000
176	L431	430.0000	Circular	0.7854	0.0150	1.0000	1.0000

177	L432	91.0000	Circular	0.7854	0.0150	1.0000	1.0000	
178	L435	90.0000	Circular	0.7854	0.0150	1.0000	1.0000	
179	L436	315.0000	Circular	0.7854	0.0150	1.0000	1.0000	
180	L437	328.0000	Circular	1.2272	0.0150	1.2500	1.2500	
181	L438	88.0000	Circular	0.7854	0.0150	1.0000	1.0000	
182	L439	374.0000	Circular	1.2272	0.0150	1.2500	1.2500	
183	L440	396.0000	Circular	1.7671	0.0150	1.5000	1.5000	
184	L441	405.0000	Circular	9.6211	0.0150	3.5000	3.5000	
185	L442	459.0000	Circular	9.6211	0.0150	3.5000	3.5000	
186	L443	96.0000	Circular	9.6211	0.0150	3.5000	3.5000	
187	L446	61.0000	Circular	1.7671	0.0150	1.5000	1.5000	
188	L448	79.0000	Circular	0.7854	0.0150	1.0000	1.0000	
189	L449	452.0000	Circular	2.4053	0.0150	1.7500	1.7500	
190	L450	400.0000	Circular	3.1416	0.0150	2.0000	2.0000	
191	L451	90.0000	Circular	3.1416	0.0150	2.0000	2.0000	
192	L452	50.0000	Circular	0.7854	0.0150	1.0000	1.0000	
193	L453	61.0000	Circular	0.7854	0.0150	1.0000	1.0000	
194	L454	70.0000	Circular	0.7854	0.0150	1.0000	1.0000	
195	L466	90.0000	Circular	1.2272	0.0150	1.2500	1.2500	
196	L468	496.0000	Circular	3.1416	0.0150	2.0000	2.0000	
197	L470	177.0000	Circular	2.4053	0.0150	1.7500	1.7500	
198	L471	390.0000	Circular	0.7854	0.0150	1.0000	1.0000	
199	L472	52.0000	Circular	0.7854	0.0150	1.0000	1.0000	
200	L475	98.0000	Circular	1.2272	0.0150	1.2500	1.2500	
201	L478	480.0000	Circular	3.9761	0.0150	2.2500	2.2500	
202	L479	591.0000	Circular	4.9087	0.0150	2.5000	2.5000	
203	L487	164.0000	Circular	2.4053	0.0150	1.7500	1.7500	
204	L490	121.0000	Circular	2.4053	0.0150	1.7500	1.7500	
205	L493	467.0000	Circular	4.9087	0.0150	2.5000	2.5000	
206	L496	392.0000	Circular	0.7854	0.0150	1.0000	1.0000	
207	L497	394.0000	Circular	0.7854	0.0150	1.0000	1.0000	
208	L498	98.0000	Circular	0.7854	0.0150	1.0000	1.0000	
209	L499	390.0000	Circular	0.7854	0.0150	1.0000	1.0000	
210	L500	398.0000	Circular	1.2272	0.0150	1.2500	1.2500	
211	L501	375.0000	Circular	7.0686	0.0150	3.0000	3.0000	
212	L502	423.0000	Circular	9.6211	0.0150	3.5000	3.5000	
213	L503	437.0000	Circular	15.9043	0.0150	4.5000	4.5000	
214	L504	465.0000	Circular	15.9043	0.0150	4.5000	4.5000	
215	L505	395.0000	Circular	2.4053	0.0150	1.7500	1.7500	
216	L506	397.0000	Circular	2.4053	0.0150	1.7500	1.7500	
217	L507	147.0000	Circular	0.7854	0.0150	1.0000	1.0000	
218	L509	134.0000	Circular	1.2272	0.0150	1.2500	1.2500	
219	L510	111.0000	Circular	1.2272	0.0150	1.2500	1.2500	
220	L511	178.0000	Circular	1.7671	0.0150	1.5000	1.5000	
221	L512	111.0000	Circular	3.1416	0.0150	2.0000	2.0000	
222	L513	275.0000	Circular	4.9087	0.0150	2.5000	2.5000	
223	L514	399.0000	Circular	2.4053	0.0150	1.7500	1.7500	
224	L515	145.0000	Circular	7.0686	0.0150	3.0000	3.0000	
225	CH21	925.0000	Rectangle	275.0000	0.0600	100.0000	2.7500	
226	L474	127.0000	Circular	1.7671	0.0150	1.5000	1.5000	
227	L523	171.0000	Trapezoid	15.7500	0.0600	6.0000	1.5000	3.0000
3.0000								
228	L525	533.0000	Circular	7.0686	0.0150	3.0000	3.0000	
229	L527	434.0000	Circular	1.7671	0.0150	1.5000	1.5000	
230	L528	452.0000	Circular	1.2272	0.0150	1.2500	1.2500	
231	L529	284.0000	Circular	1.7671	0.0150	1.5000	1.5000	
232	L533	725.0000	Circular	1.7671	0.0150	1.5000	1.5000	
233	L537	453.0000	Circular	1.7671	0.0150	1.5000	1.5000	
234	L394	157.0000	Circular	15.9043	0.0150	4.5000	4.5000	
235	L276	51.0000	Circular	0.7854	0.0150	1.0000	1.0000	

236	L288	61.0000	Circular	1.2272	0.0150	1.2500	1.2500
237	L412	53.0000	Circular	0.7854	0.0150	1.0000	1.0000
238	L447	394.0000	Circular	1.7671	0.0150	1.5000	1.5000
239	L546	577.0000	Circular	1.7671	0.0150	1.5000	1.5000

Total length of all conduits .... 53789.0000 feet

==========
| Table E2 - Conduit Factor Data |
==========

Conduit Name	Number of Barrels	Entrance Loss Coef	Exit Loss Coef	Exp/Contc Coefficnt	Time Weighting Parameter	Low Flow Roughness Factor	Depth at Which n Changes	Sediment Depth	Flow Routing
L376	1.0000	0.0000	1.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave

==========
| If there are messages about (sqrt(g*d)*dt/dx), or |
| the sqrt(wave celerity)*time step/conduit length |
| in the output file all it means is that the |
| program will lower the internal time step to |
| satisfy this condition (explicit condition). |
| You control the actual internal time step by |
| using the minimum courant time step factor in the |
| HYDRAULICS job control. The message put in words |
| states that the smallest conduit with the fastest |
| velocity will control the time step selection. |
| You have further control by using the modify |
| conduit option in the HYDRAULICS Job Control. |
==========

Conduit Name	Courant Ratio	
L210	4.86	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L211	0.83	
L212	0.70	
L213	3.18	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L214	4.48	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L217	3.96	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L220	1.41	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L221	1.22	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L222	2.65	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L223	4.73	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L224	1.17	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L225	1.17	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L226	0.82	
L227	1.44	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L228	0.84	
L229	0.67	
L230	0.96	
L231	0.95	
L232	1.36	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L233	0.87	
L234	1.12	===> Warning ! (sqrt(wave celerity)*time step/conduit length)

```
L235        6.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L236        3.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L237        3.40  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L238        6.19  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L239        2.75  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L240        3.96  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L241        1.29  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L242        5.49  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L243        3.58  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L246        1.30  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L247        5.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L248        7.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L249        4.66  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L250        4.37  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L251        4.93  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L252        0.86
L253        4.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L254        0.87
L255        4.82  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L256        1.42  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L257        1.49  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L258        3.40  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L259        1.60  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L260        7.04  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L261        2.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L262        4.48  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L263        2.91  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L264        4.82  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L265        1.70  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L266        2.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L267        5.40  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L268        4.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L269        1.37  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L270        1.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L271        1.60  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L272       21.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L273        3.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L274        3.39  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L275        3.18  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L277        2.91  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L278        7.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L279        2.06  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L280        6.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L281        3.18  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L282        7.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L283        2.99  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L284        6.55  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L285        2.98  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L286        7.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L287        3.12  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L289        2.84  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L290        0.93
L291        0.91
L292        3.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L294        4.15  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L300        1.79  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L301        6.08  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L302        0.94
L303        4.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L304        5.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
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L305        2.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L306        5.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L307        5.07  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L308        4.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L309        5.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L310        5.58  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L311        0.85
L312        5.58  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L313        0.58
L314        3.70  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L315        4.80  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L316        1.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L317        1.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L318        1.37  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L319        6.42  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L320        5.08  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L321        0.77
L324        2.79  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L325        5.49  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L326        2.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L327        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L328        1.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L329        4.25  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L334        0.85
L335        0.92
L336        2.72  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L337        2.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L338        7.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L339        2.27  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L340        2.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L341        6.18  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L342        4.88  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L343        3.62  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L344       10.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L346       12.74  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L347        1.72  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L348        1.69  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L349        1.70  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L350        5.16  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L351       13.76  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L352        3.28  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L354        7.68  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L361        7.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L362        5.16  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L363        1.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L364        7.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L365        5.40  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L366        1.22  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L367        1.32  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L368        2.75  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L369        3.44  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L370        2.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L373        6.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L374        2.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L375        1.03  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L376        3.44  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L386        2.00  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L387        1.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L388        3.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L389        1.88  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
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L390        3.21  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L391        1.45  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L392        1.90  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L393        1.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L395        7.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L396        1.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L397        6.68  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L398        7.93  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L399        1.59  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L402        5.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L403        1.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L404        1.21  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L405        5.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L406        1.48  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L407        5.36  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L408        1.54  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L410        1.49  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L411        1.96  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L413        1.04  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L415        6.95  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L417        5.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L418        5.79  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L419        1.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L420        1.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L421        5.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L422        5.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L423        1.36  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L424        1.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L425        4.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L426        5.21  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L427        1.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L428        3.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L429        1.62  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L430        3.74  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L431        0.79
L432        3.74  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L435        3.78  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L436        1.08  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L437        1.16  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L438        3.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L439        1.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L440        1.05  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L441        1.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L442        1.39  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L443        6.64  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L446        6.84  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L448        4.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L449        1.00
L450        1.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L451        5.35  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L452        6.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L453        5.58  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L454        4.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L466        4.23  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L468        0.97
L470        2.54  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L471        0.87
L472        6.55  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L475        3.88  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L478        1.06  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
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          L479        0.91
          L487        2.75  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L490        3.72  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L493        1.15  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L496        0.87
          L497        0.86
          L498        3.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L499        0.87
          L500        0.96
          L501        1.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L502        1.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L503        1.65  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L504        1.55  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L505        1.14  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L506        1.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L507        2.32  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L509        2.84  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L510        3.43  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L511        2.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L512        4.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L513        1.96  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L514        1.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L515        4.07  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          CH21        0.61
          L474        3.28  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L523        2.04  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L525        1.11  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L527        0.96
          L528        0.84
          L529        1.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L533        0.58
          L537        0.92
          L394        4.60  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L276        6.68  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L288        6.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L412        6.42  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L447        1.06  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L546        0.72

*==================*
|  Conduit Volume  |
*==================*

Full pipe or full open conduit volume
Input full depth volume.............    4.6145E+05 cubic feet


*================================================*
|           Table E3a - Junction Data            |
*================================================*

Inp         Junction     Ground     Crown    Invert    Qinst  Initial  Interface
Num             Name  Elevation Elevation Elevation      cfs Depth-ft   Flow (%)
---  ---------------  --------- --------- --------- -------- --------  ---------
  1             N221   114.0300  106.8400  105.8400   0.0000   0.0000   100.0000
  2             N222   112.0800  106.4400  104.4400   0.0000   0.0000   100.0000
  3             N223   106.2600  103.0600  100.8100   0.0000   0.0000   100.0000
  4             N224   106.3300   99.7200   96.9700   0.0000   0.0000   100.0000
  5             N227   109.4000   99.3400   98.3400   0.0000   0.0000   100.0000
  6             N228   102.4000   99.0300   97.5300   0.0000   0.0000   100.0000
```

7	N230	104.3900	100.3300	95.8300	0.0000	0.0000	100.0000
8	N231	104.4000	100.8400	99.8400	0.0000	0.0000	100.0000
9	N233	100.3500	96.9200	94.4200	0.0000	0.0000	100.0000
10	N234	100.0000	87.6000	85.6000	0.0000	0.0000	100.0000
11	N235	138.1500	120.6000	119.6000	0.0000	0.0000	100.0000
12	N236	126.2300	120.4100	118.6100	0.0000	0.0000	100.0000
13	N237	124.2900	118.8600	117.2600	0.0000	0.0000	100.0000
14	N238	122.3500	117.5100	115.1100	0.0000	0.0000	100.0000
15	N239	125.0800	118.6900	117.6900	0.0000	0.0000	100.0000
16	N240	122.0900	117.6200	116.6200	0.0000	0.0000	100.0000
17	N241	119.6000	115.0600	111.3600	0.0000	0.0000	100.0000
18	N242	115.6700	111.1300	108.6300	0.0000	0.0000	100.0000
19	N243	112.6900	109.1100	105.8600	0.0000	0.0000	100.0000
20	N244	109.7000	106.3500	103.8500	0.0000	0.0000	100.0000
21	N245	107.6800	104.8800	101.6800	0.0000	0.0000	100.0000
22	N246	104.7000	101.8100	99.5300	0.0000	0.0000	100.0000
23	N247	107.2000	100.3700	97.8700	0.0000	0.0000	100.0000
24	N248	116.0000	112.4800	111.4800	0.0000	0.0000	100.0000
25	N249	108.6300	105.6200	104.6200	0.0000	0.0000	100.0000
26	N250	113.4000	102.1400	101.1400	0.0000	0.0000	100.0000
27	N251	127.0200	116.3800	115.3800	0.0000	0.0000	100.0000
28	N252	121.2500	116.0600	113.0600	0.0000	0.0000	100.0000
29	N253	119.0300	113.3300	108.0800	0.0000	0.0000	100.0000
30	N254	120.4000	113.8300	112.8300	0.0000	0.0000	100.0000
31	N255	113.9100	108.0500	102.8000	0.0000	0.0000	100.0000
32	N256	119.8800	108.4100	107.4100	0.0000	0.0000	100.0000
33	N257	118.4000	108.6100	107.6100	0.0000	0.0000	100.0000
34	N259	102.6900	99.6600	97.1600	0.0000	0.0000	100.0000
35	N260	101.1000	99.5000	97.0000	0.0000	0.0000	100.0000
36	N261	106.3800	99.9300	98.9300	0.0000	0.0000	100.0000
37	N262	110.4000	105.8800	104.8800	0.0000	0.0000	100.0000
38	N263	109.4000	105.4600	104.4600	0.0000	0.0000	100.0000
39	N264	106.0000	97.6400	96.6400	0.0000	0.0000	100.0000
40	N265	108.4000	105.8600	104.8600	0.0000	0.0000	100.0000
41	N266	105.6100	101.3600	100.3600	0.0000	0.0000	100.0000
42	N267	104.2600	99.0500	97.5500	0.0000	0.0000	100.0000
43	N268	110.4200	101.7400	100.7400	0.0000	0.0000	100.0000
44	N269	110.0300	101.3300	100.3300	0.0000	0.0000	100.0000
45	N270	106.4000	100.3900	99.1400	0.0000	0.0000	100.0000
46	N271	102.3800	100.0500	98.5500	0.0000	0.0000	100.0000
47	N272	102.0600	98.1000	96.3500	0.0000	0.0000	100.0000
48	N273	104.4000	98.6800	97.6800	0.0000	0.0000	100.0000
49	N274	100.3100	97.3300	95.5800	0.0000	0.0000	100.0000
50	N275	101.7000	87.3500	85.6000	0.0000	0.0000	100.0000
51	N276	100.4000	95.2500	94.2500	0.0000	0.0000	100.0000
52	N277	99.4000	94.4400	93.4400	0.0000	0.0000	100.0000
53	N278	96.0000	79.0000	78.0000	0.0000	0.0000	100.0000
54	N279	98.4000	95.1200	94.1200	0.0000	0.0000	100.0000
55	N280	96.4000	86.5800	85.3300	0.0000	0.0000	100.0000
56	N281	91.9100	86.2400	83.2400	0.0000	0.0000	100.0000
57	N282	97.0800	85.7700	82.7700	0.0000	0.0000	100.0000
58	N283	100.0400	94.0000	82.5000	0.0000	0.0000	100.0000
59	N284	98.4000	86.1400	85.1400	0.0000	0.0000	100.0000
60	N285	102.4000	95.9100	94.9100	0.0000	0.0000	100.0000
61	N286	100.3900	95.4500	94.4500	0.0000	0.0000	100.0000
62	N287	96.9000	81.9600	78.4600	0.0000	0.0000	100.0000
63	N288	96.4000	81.5300	77.0300	0.0000	0.0000	100.0000
64	N289	96.4000	81.5000	77.0000	0.0000	0.0000	100.0000
65	N290	96.4000	79.8500	78.1000	0.0000	0.0000	100.0000
66	N291	96.2900	93.4200	91.9200	0.0000	0.0000	100.0000

67		N292	94.0000	78.1000	76.6000	0.0000	0.0000	100.0000
68		N293	126.4000	119.9200	118.9200	0.0000	0.0000	100.0000
69		N294	123.9600	119.3000	118.3000	0.0000	0.0000	100.0000
70		N296	122.4000	119.9800	118.9800	0.0000	0.0000	100.0000
71		N297	120.4000	114.2400	113.2400	0.0000	0.0000	100.0000
72		N298	118.4300	113.9600	112.9600	0.0000	0.0000	100.0000
73		N299	117.7600	107.3000	106.3000	0.0000	0.0000	100.0000
74		N300	116.4000	114.2500	113.2500	0.0000	0.0000	100.0000
75		N301	128.4000	123.9000	122.9000	0.0000	0.0000	100.0000
76		N302	128.3900	123.2800	122.2800	0.0000	0.0000	100.0000
77		N303	124.3000	111.6000	110.6000	0.0000	0.0000	100.0000
78		N304	126.4000	123.9500	122.9500	0.0000	0.0000	100.0000
79		N305	112.4000	106.5200	105.5200	0.0000	0.0000	100.0000
80		N306	110.3300	106.2200	104.7200	0.0000	0.0000	100.0000
81		N307	111.7000	105.7500	104.2500	0.0000	0.0000	100.0000
82		N308	108.4000	106.4400	105.1900	0.0000	0.0000	100.0000
83		N309	119.4000	114.1500	113.1500	0.0000	0.0000	100.0000
84		N310	116.6600	113.5100	112.2600	0.0000	0.0000	100.0000
85		N312	116.4000	114.2100	113.2100	0.0000	0.0000	100.0000
86		N313	107.7900	104.9300	103.9300	0.0000	0.0000	100.0000
87		N314	105.5100	102.7900	101.7900	0.0000	0.0000	100.0000
88		N315	103.3100	100.6100	99.6100	0.0000	0.0000	100.0000
89		N316	101.0000	95.1000	94.1000	0.0000	0.0000	100.0000
90		N317	96.4000	90.4200	89.1700	0.0000	0.0000	100.0000
91		N318	94.1000	89.9900	87.7400	0.0000	0.0000	100.0000
92		N319	100.4000	90.4700	89.4700	0.0000	0.0000	100.0000
93		N320	95.3200	90.7800	89.2800	0.0000	0.0000	100.0000
94		N321	96.4000	91.1100	90.1100	0.0000	0.0000	100.0000
95		N325	97.2700	91.2700	89.7700	0.0000	0.0000	100.0000
96		N326	100.4000	91.7500	90.7500	0.0000	0.0000	100.0000
97		N327	98.4000	91.6600	90.6600	0.0000	0.0000	100.0000
98		N328	100.2600	94.9400	93.4400	0.0000	0.0000	100.0000
99		N329	104.4000	95.0000	94.0000	0.0000	0.0000	100.0000
100		N330	101.6200	95.4400	93.4400	0.0000	0.0000	100.0000
101		N331	100.2600	94.2000	92.7000	0.0000	0.0000	100.0000
102		N332	101.4000	95.0000	94.0000	0.0000	0.0000	100.0000
103		N333	124.4600	109.8700	108.8700	0.0000	0.0000	100.0000
104		N334	121.3900	109.5100	108.5100	0.0000	0.0000	100.0000
105		N335	111.2600	107.1800	106.1800	0.0000	0.0000	100.0000
106		N336	120.3000	107.5400	106.5400	0.0000	0.0000	100.0000
107		N337	108.3300	103.7800	102.2800	0.0000	0.0000	100.0000
108		N338	116.4000	104.3100	103.3100	0.0000	0.0000	100.0000
109		N339	113.4000	105.8900	104.8900	0.0000	0.0000	100.0000
110		N340	110.4800	105.4700	104.4700	0.0000	0.0000	100.0000
111		N341	106.0600	102.7500	101.2500	0.0000	0.0000	100.0000
112		N342	106.8400	101.7200	100.2200	0.0000	0.0000	100.0000
113		N343	104.4000	101.5000	100.0000	0.0000	0.0000	100.0000
114		N344	112.0700	102.1100	101.1100	0.0000	0.0000	100.0000
115		N345	128.1400	119.8300	118.8300	0.0000	0.0000	100.0000
116		N347	126.9900	119.4500	118.4500	0.0000	0.0000	100.0000
117		N348	122.7000	117.6700	116.1700	0.0000	0.0000	100.0000
118		N349	129.4000	120.1600	119.1600	0.0000	0.0000	100.0000
119		N350	128.4000	118.8000	117.8000	0.0000	0.0000	100.0000
120		N351	124.8500	118.4400	117.1900	0.0000	0.0000	100.0000
121		N352	127.4000	118.3700	117.3700	0.0000	0.0000	100.0000
122		N353	125.4000	118.3600	117.3600	0.0000	0.0000	100.0000
123		N354	123.0000	117.1500	115.6500	0.0000	0.0000	100.0000
124		N355	121.1000	112.1000	110.6000	0.0000	0.0000	100.0000
125		N356	128.3900	126.3200	125.3200	0.0000	0.0000	100.0000
126		N357	126.5200	123.9800	122.9800	0.0000	0.0000	100.0000

127	N358	128.1900	121.8200	120.8200	0.0000	0.0000	100.0000
128	N359	126.7800	121.0900	120.0900	0.0000	0.0000	100.0000
129	N360	121.5000	113.8000	112.8000	0.0000	0.0000	100.0000
130	N361	133.4000	129.2400	126.2400	0.0000	0.0000	100.0000
131	N362	133.8500	129.1300	126.1300	0.0000	0.0000	100.0000
132	N363	135.6800	128.7800	125.2800	0.0000	0.0000	100.0000
133	N364	134.3100	128.5100	125.0100	0.0000	0.0000	100.0000
134	N365	129.0000	128.4000	117.4400	0.0000	0.0000	100.0000
135	N366	136.4000	129.1200	127.8700	0.0000	0.0000	100.0000
136	N367	131.4000	129.3300	128.3300	0.0000	0.0000	100.0000
137	N368	130.1000	126.7600	124.2600	0.0000	0.0000	100.0000
138	N369	130.1500	126.6700	123.6700	0.0000	0.0000	100.0000
139	N370	130.0300	125.7000	121.7000	0.0000	0.0000	100.0000
140	N371	130.3200	125.7600	122.2600	0.0000	0.0000	100.0000
141	N372	131.8100	125.3400	121.3400	0.0000	0.0000	100.0000
142	N373	131.3300	124.9700	120.9700	0.0000	0.0000	100.0000
143	N374	132.8200	124.6000	120.6000	0.0000	0.0000	100.0000
144	N375	132.2300	124.4800	119.9800	0.0000	0.0000	100.0000
145	N376	130.4700	124.9000	122.9000	0.0000	0.0000	100.0000
146	N377	130.5100	124.8200	122.8200	0.0000	0.0000	100.0000
147	N378	129.1900	123.7700	119.2700	0.0000	0.0000	100.0000
148	N379	128.2000	122.9000	118.4000	0.0000	0.0000	100.0000
149	N381	128.4700	126.2600	124.7600	0.0000	0.0000	100.0000
150	N382	128.0000	124.8600	122.8600	0.0000	0.0000	100.0000
151	N383	132.3000	126.5300	125.5300	0.0000	0.0000	100.0000
152	N384	131.1800	126.6400	125.6400	0.0000	0.0000	100.0000
153	N386	132.1700	125.1400	124.1400	0.0000	0.0000	100.0000
154	N387	132.9300	125.2300	124.2300	0.0000	0.0000	100.0000
155	N388	128.2100	123.9500	121.9500	0.0000	0.0000	100.0000
156	N389	128.3800	123.1100	120.1100	0.0000	0.0000	100.0000
157	N390	132.4000	123.8300	122.8300	0.0000	0.0000	100.0000
158	N391	131.4000	123.6900	122.6900	0.0000	0.0000	100.0000
159	N392	129.2100	122.8300	119.8300	0.0000	0.0000	100.0000
160	N394	130.0700	121.4000	118.4000	0.0000	0.0000	100.0000
161	N395	126.4000	119.6100	118.1100	0.0000	0.0000	100.0000
162	N396	124.6000	119.1800	117.6800	0.0000	0.0000	100.0000
163	N397	124.9400	118.8100	115.8100	0.0000	0.0000	100.0000
164	N398	128.0400	119.0600	116.3100	0.0000	0.0000	100.0000
165	N399	124.3000	118.6100	114.6000	0.0000	0.0000	100.0000
166	N403	125.5000	118.3000	114.3000	0.0000	0.0000	100.0000
167	N404	126.6900	117.9800	113.4800	0.0000	0.0000	100.0000
168	N405	131.2500	118.0000	117.0000	0.0000	0.0000	100.0000
169	N406	124.4900	117.6700	113.1700	0.0000	0.0000	100.0000
170	N407	132.5800	118.0000	117.0000	0.0000	0.0000	100.0000
171	N408	125.2200	117.2800	112.7800	0.0000	0.0000	100.0000
172	N409	123.3200	116.9800	112.4800	0.0000	0.0000	100.0000
173	N410	124.2200	116.6200	112.1200	0.0000	0.0000	100.0000
174	N412	125.2400	117.5500	116.3000	0.0000	0.0000	100.0000
175	N413	123.5000	118.8300	115.3300	0.0000	0.0000	100.0000
176	N414	122.0000	119.3700	115.8300	0.0000	0.0000	100.0000
177	N415	124.3800	117.5800	116.3300	0.0000	0.0000	100.0000
178	N416	125.2100	118.0800	116.8300	0.0000	0.0000	100.0000
179	N417	121.7600	119.5700	117.5700	0.0000	0.0000	100.0000
180	N418	124.4000	121.1500	119.9000	0.0000	0.0000	100.0000
181	N419	120.2000	112.6600	110.9100	0.0000	0.0000	100.0000
182	N420	123.9000	113.9900	112.2400	0.0000	0.0000	100.0000
183	N421	121.2100	113.7500	112.0000	0.0000	0.0000	100.0000
184	N422	118.3600	111.6300	109.1300	0.0000	0.0000	100.0000
185	N423	120.4000	111.8700	110.3700	0.0000	0.0000	100.0000
186	N424	118.5600	111.0100	108.2600	0.0000	0.0000	100.0000

187	N425	120.3900	111.3100	110.0600	0.0000	0.0000	100.0000
188	N426	117.2400	110.4500	107.4500	0.0000	0.0000	100.0000
189	N428	114.7900	109.9200	106.9200	0.0000	0.0000	100.0000
190	N429	116.1800	109.5200	106.0200	0.0000	0.0000	100.0000
191	N430	128.2200	120.0000	119.0000	0.0000	0.0000	100.0000
192	N431	123.0700	119.4000	116.6700	0.0000	0.0000	100.0000
193	N432	120.7300	119.5700	118.0700	0.0000	0.0000	100.0000
194	N434	126.2700	119.8000	118.8000	0.0000	0.0000	100.0000
195	N435	120.2500	112.1800	110.1800	0.0000	0.0000	100.0000
196	N436	125.4000	112.5700	111.5700	0.0000	0.0000	100.0000
197	N437	122.9000	112.4200	110.9200	0.0000	0.0000	100.0000
198	N438	119.8200	111.5800	109.5800	0.0000	0.0000	100.0000
199	N439	118.1400	110.6500	108.1500	0.0000	0.0000	100.0000
200	N440	122.4000	111.0500	110.0500	0.0000	0.0000	100.0000
201	N441	120.9000	110.9800	109.7300	0.0000	0.0000	100.0000
202	N442	116.2500	109.9700	107.2200	0.0000	0.0000	100.0000
203	N443	118.4000	110.3800	109.3800	0.0000	0.0000	100.0000
204	N444	118.4000	110.2800	109.0300	0.0000	0.0000	100.0000
205	N445	113.3000	108.9800	105.4800	0.0000	0.0000	100.0000
206	N446	118.4000	109.4900	108.4900	0.0000	0.0000	100.0000
207	N447	113.2000	108.5500	105.0500	0.0000	0.0000	100.0000
208	N448	125.6200	119.7700	118.7700	0.0000	0.0000	100.0000
209	N449	125.6000	119.2400	117.9900	0.0000	0.0000	100.0000
210	N450	125.2200	121.7400	120.7400	0.0000	0.0000	100.0000
211	N451	126.4000	122.2700	121.2700	0.0000	0.0000	100.0000
212	N453	119.8300	114.7600	113.7600	0.0000	0.0000	100.0000
213	N454	125.4000	115.2900	114.2900	0.0000	0.0000	100.0000
214	N455	118.2800	112.9300	111.6800	0.0000	0.0000	100.0000
215	N456	116.2800	111.5100	110.2600	0.0000	0.0000	100.0000
216	N457	122.4000	112.0200	111.0200	0.0000	0.0000	100.0000
217	N458	114.0000	109.8900	108.3900	0.0000	0.0000	100.0000
218	N459	110.2500	108.1100	104.6100	0.0000	0.0000	100.0000
219	N460	110.1000	107.6100	104.1100	0.0000	0.0000	100.0000
220	N461	110.1000	97.6000	94.1000	0.0000	0.0000	100.0000
221	N464	132.5200	126.8400	125.0900	0.0000	0.0000	100.0000
222	N465	135.1200	128.1500	126.6500	0.0000	0.0000	100.0000
223	N466	131.9700	127.9400	126.1900	0.0000	0.0000	100.0000
224	N467	130.9600	127.3000	126.3000	0.0000	0.0000	100.0000
225	N468	129.9500	125.5900	123.5900	0.0000	0.0000	100.0000
226	N469	128.6600	124.6600	118.6600	0.0000	0.0000	100.0000
227	N470	127.0000	120.4600	117.7100	0.0000	0.0000	100.0000
228	N471	133.3000	125.8800	124.8800	0.0000	0.0000	100.0000
229	N472	129.4500	125.9400	124.9400	0.0000	0.0000	100.0000
230	N473	126.2300	121.0700	120.0700	0.0000	0.0000	100.0000
231	N487	122.2200	120.5700	118.5700	0.0000	0.0000	100.0000
232	N489	124.6300	122.3300	118.4300	0.0000	0.0000	100.0000
233	N490	125.9100	123.6500	121.9000	0.0000	0.0000	100.0000
234	N491	127.1900	125.7700	124.1700	0.0000	0.0000	100.0000
235	N492	130.4000	127.3400	126.3400	0.0000	0.0000	100.0000
236	N493	129.9000	127.0400	126.0400	0.0000	0.0000	100.0000
237	N497	112.8000	109.3300	108.0800	0.0000	0.0000	100.0000
238	N499	111.0500	108.7500	91.2000	0.0000	0.0000	100.0000
239	N500	95.8800	88.9200	86.6700	0.0000	0.0000	100.0000
240	N501	94.9100	87.9700	85.4700	0.0000	0.0000	100.0000
241	N503	100.1000	91.5500	89.8000	0.0000	0.0000	100.0000
242	N504	100.4000	97.2900	95.5400	0.0000	0.0000	100.0000
243	N506	100.4000	93.1400	92.1400	0.0000	0.0000	100.0000
244	N509	117.9000	110.3800	108.8800	0.0000	0.0000	100.0000
245	N511	114.9500	103.4600	102.2100	0.0000	0.0000	100.0000
246	N513	117.8200	111.7600	110.0100	0.0000	0.0000	100.0000

247	N514	117.9000	111.6100	108.1100	0.0000	0.0000	100.0000
248	N516	111.0000	92.0000	90.0000	0.0000	0.0000	100.0000
249	N517	90.2800	86.4500	83.9500	0.0000	0.0000	100.0000
250	N518	89.2500	87.0600	84.3100	0.0000	0.0000	100.0000
251	N524	136.4600	134.4500	133.4500	0.0000	0.0000	100.0000
252	N525	136.2000	132.1700	131.1700	0.0000	0.0000	100.0000
253	N526	137.2000	134.4600	133.4600	0.0000	0.0000	100.0000
254	N527	136.0000	131.6000	130.6000	0.0000	0.0000	100.0000
255	N528	129.5000	126.1600	122.6600	0.0000	0.0000	100.0000
256	N529	134.2600	124.1400	119.6400	0.0000	0.0000	100.0000
257	N530	109.2400	103.4600	99.7100	0.0000	0.0000	100.0000
258	N689	123.2700	119.5000	118.0000	0.0000	0.0000	100.0000
259	N494	126.0000	123.1600	121.4100	0.0000	0.0000	100.0000
260	N541	120.0000	113.5900	112.0900	0.0000	0.0000	100.0000
261	EL329	118.0000	114.0200	112.5200	0.0000	0.0000	100.0000
262	N427	118.5000	111.1400	109.6400	0.0000	0.0000	100.0000
263	N411	128.9500	116.5000	112.0000	0.0000	0.0000	100.0000
264	N295	120.1000	108.9300	107.9300	0.0000	0.0000	100.0000
265	N311	114.3000	105.3500	104.1000	0.0000	0.0000	100.0000
266	N462	133.0000	129.2800	127.7800	0.0000	0.0000	100.0000
267	N554	94.5100	92.2800	90.6800	0.0000	0.0000	100.0000
268	N555	110.0000	91.0500	89.8000	0.0000	0.0000	100.0000
269	N322	101.6200	94.5000	92.5000	0.0000	0.0000	100.0000

Table E3b - Junction Data

Inp Num	Junction Name	X Coord.	Y Coord.	Type of Manhole	Type of Inlet	Maximum Capacity	Pavement Shape	Pavement Slope
1	N221	0.0000	0.0000	No P	Normal		0	0.0000
2	N222	0.0000	0.0000	No P	Normal		0	0.0000
3	N223	0.0000	0.0000	No P	Normal		0	0.0000
4	N224	0.0000	0.0000	No P	Normal		0	0.0000
5	N227	0.0000	0.0000	No P	Normal		0	0.0000
6	N228	0.0000	0.0000	F	Normal		0	0.0000
7	N230	0.0000	0.0000	No P	Normal		0	0.0000
8	N231	0.0000	0.0000	No P	Normal		0	0.0000
9	N233	0.0000	0.0000	No P	Normal		0	0.0000
10	N234	0.0000	0.0000	No P	Normal		0	0.0000
11	N235	0.0000	0.0000	No P	Normal		0	0.0000
12	N236	0.0000	0.0000	No P	Normal		0	0.0000
13	N237	0.0000	0.0000	No P	Normal		0	0.0000
14	N238	0.0000	0.0000	No P	Normal		0	0.0000
15	N239	0.0000	0.0000	No P	Normal		0	0.0000
16	N240	0.0000	0.0000	No P	Normal		0	0.0000
17	N241	0.0000	0.0000	No P	Normal		0	0.0000
18	N242	0.0000	0.0000	No P	Normal		0	0.0000
19	N243	0.0000	0.0000	No P	Normal		0	0.0000
20	N244	0.0000	0.0000	No P	Normal		0	0.0000
21	N245	0.0000	0.0000	No P	Normal		0	0.0000
22	N246	0.0000	0.0000	No P	Normal		0	0.0000
23	N247	0.0000	0.0000	No P	Normal		0	0.0000
24	N248	0.0000	0.0000	F	Normal		0	0.0000
25	N249	0.0000	0.0000	F	Normal		0	0.0000
26	N250	0.0000	0.0000	No P	Normal		0	0.0000
27	N251	0.0000	0.0000	No P	Normal		0	0.0000
28	N252	0.0000	0.0000	No P	Normal		0	0.0000

29	N253	0.0000	0.0000	No P	Normal	0	0.0000
30	N254	0.0000	0.0000	No P	Normal	0	0.0000
31	N255	0.0000	0.0000	No P	Normal	0	0.0000
32	N256	0.0000	0.0000	No P	Normal	0	0.0000
33	N257	0.0000	0.0000	No P	Normal	0	0.0000
34	N259	0.0000	0.0000	No P	Normal	0	0.0000
35	N260	0.0000	0.0000	No P	Normal	0	0.0000
36	N261	0.0000	0.0000	No P	Normal	0	0.0000
37	N262	0.0000	0.0000	No P	Normal	0	0.0000
38	N263	0.0000	0.0000	No P	Normal	0	0.0000
39	N264	0.0000	0.0000	No P	Normal	0	0.0000
40	N265	0.0000	0.0000	No P	Normal	0	0.0000
41	N266	0.0000	0.0000	No P	Normal	0	0.0000
42	N267	0.0000	0.0000	No P	Normal	0	0.0000
43	N268	0.0000	0.0000	No P	Normal	0	0.0000
44	N269	0.0000	0.0000	No P	Normal	0	0.0000
45	N270	0.0000	0.0000	No P	Normal	0	0.0000
46	N271	0.0000	0.0000	No P	Normal	0	0.0000
47	N272	0.0000	0.0000	No P	Normal	0	0.0000
48	N273	0.0000	0.0000	No P	Normal	0	0.0000
49	N274	0.0000	0.0000	No P	Normal	0	0.0000
50	N275	0.0000	0.0000	No P	Normal	0	0.0000
51	N276	0.0000	0.0000	No P	Normal	0	0.0000
52	N277	0.0000	0.0000	No P	Normal	0	0.0000
53	N278	0.0000	0.0000	No P	Normal	0	0.0000
54	N279	0.0000	0.0000	No P	Normal	0	0.0000
55	N280	0.0000	0.0000	No P	Normal	0	0.0000
56	N281	0.0000	0.0000	No P	Normal	0	0.0000
57	N282	0.0000	0.0000	No P	Normal	0	0.0000
58	N283	0.0000	0.0000	No P	Normal	0	0.0000
59	N284	0.0000	0.0000	No P	Normal	0	0.0000
60	N285	0.0000	0.0000	No P	Normal	0	0.0000
61	N286	0.0000	0.0000	No P	Normal	0	0.0000
62	N287	0.0000	0.0000	No P	Normal	0	0.0000
63	N288	0.0000	0.0000	No P	Normal	0	0.0000
64	N289	0.0000	0.0000	No P	Normal	0	0.0000
65	N290	0.0000	0.0000	No P	Normal	0	0.0000
66	N291	0.0000	0.0000	No P	Normal	0	0.0000
67	N292	0.0000	0.0000	No P	Normal	0	0.0000
68	N293	0.0000	0.0000	No P	Normal	0	0.0000
69	N294	0.0000	0.0000	No P	Normal	0	0.0000
70	N296	0.0000	0.0000	No P	Normal	0	0.0000
71	N297	0.0000	0.0000	No P	Normal	0	0.0000
72	N298	0.0000	0.0000	No P	Normal	0	0.0000
73	N299	0.0000	0.0000	No P	Normal	0	0.0000
74	N300	0.0000	0.0000	No P	Normal	0	0.0000
75	N301	0.0000	0.0000	No P	Normal	0	0.0000
76	N302	0.0000	0.0000	No P	Normal	0	0.0000
77	N303	0.0000	0.0000	No P	Normal	0	0.0000
78	N304	0.0000	0.0000	No P	Normal	0	0.0000
79	N305	0.0000	0.0000	No P	Normal	0	0.0000
80	N306	0.0000	0.0000	No P	Normal	0	0.0000
81	N307	0.0000	0.0000	No P	Normal	0	0.0000
82	N308	0.0000	0.0000	No P	Normal	0	0.0000
83	N309	0.0000	0.0000	No P	Normal	0	0.0000
84	N310	0.0000	0.0000	No P	Normal	0	0.0000
85	N312	0.0000	0.0000	No P	Normal	0	0.0000
86	N313	0.0000	0.0000	No P	Normal	0	0.0000
87	N314	0.0000	0.0000	No P	Normal	0	0.0000
88	N315	0.0000	0.0000	No P	Normal	0	0.0000

89	N316	0.0000	0.0000	No	P	Normal	0	0.0000
90	N317	0.0000	0.0000		F	Normal	0	0.0000
91	N318	0.0000	0.0000		F	Normal	0	0.0000
92	N319	0.0000	0.0000		F	Normal	0	0.0000
93	N320	0.0000	0.0000		F	Normal	0	0.0000
94	N321	0.0000	0.0000		F	Normal	0	0.0000
95	N325	0.0000	0.0000		F	Normal	0	0.0000
96	N326	0.0000	0.0000		F	Normal	0	0.0000
97	N327	0.0000	0.0000		F	Normal	0	0.0000
98	N328	0.0000	0.0000		F	Normal	0	0.0000
99	N329	0.0000	0.0000		F	Normal	0	0.0000
100	N330	0.0000	0.0000		F	Normal	0	0.0000
101	N331	0.0000	0.0000		F	Normal	0	0.0000
102	N332	0.0000	0.0000		F	Normal	0	0.0000
103	N333	0.0000	0.0000	No	P	Normal	0	0.0000
104	N334	0.0000	0.0000	No	P	Normal	0	0.0000
105	N335	0.0000	0.0000	No	P	Normal	0	0.0000
106	N336	0.0000	0.0000	No	P	Normal	0	0.0000
107	N337	0.0000	0.0000	No	P	Normal	0	0.0000
108	N338	0.0000	0.0000	No	P	Normal	0	0.0000
109	N339	0.0000	0.0000	No	P	Normal	0	0.0000
110	N340	0.0000	0.0000	No	P	Normal	0	0.0000
111	N341	0.0000	0.0000	No	P	Normal	0	0.0000
112	N342	0.0000	0.0000	No	P	Normal	0	0.0000
113	N343	0.0000	0.0000	No	P	Normal	0	0.0000
114	N344	0.0000	0.0000	No	P	Normal	0	0.0000
115	N345	0.0000	0.0000	No	P	Normal	0	0.0000
116	N347	0.0000	0.0000	No	P	Normal	0	0.0000
117	N348	0.0000	0.0000	No	P	Normal	0	0.0000
118	N349	0.0000	0.0000	No	P	Normal	0	0.0000
119	N350	0.0000	0.0000	No	P	Normal	0	0.0000
120	N351	0.0000	0.0000	No	P	Normal	0	0.0000
121	N352	0.0000	0.0000	No	P	Normal	0	0.0000
122	N353	0.0000	0.0000	No	P	Normal	0	0.0000
123	N354	0.0000	0.0000	No	P	Normal	0	0.0000
124	N355	0.0000	0.0000	No	P	Normal	0	0.0000
125	N356	0.0000	0.0000	No	P	Normal	0	0.0000
126	N357	0.0000	0.0000	No	P	Normal	0	0.0000
127	N358	0.0000	0.0000	No	P	Normal	0	0.0000
128	N359	0.0000	0.0000	No	P	Normal	0	0.0000
129	N360	0.0000	0.0000	No	P	Normal	0	0.0000
130	N361	0.0000	0.0000	No	P	Normal	0	0.0000
131	N362	0.0000	0.0000	No	P	Normal	0	0.0000
132	N363	0.0000	0.0000	No	P	Normal	0	0.0000
133	N364	0.0000	0.0000	No	P	Normal	0	0.0000
134	N365	0.0000	0.0000	No	P	Normal	0	0.0000
135	N366	0.0000	0.0000	No	P	Normal	0	0.0000
136	N367	0.0000	0.0000	No	P	Normal	0	0.0000
137	N368	0.0000	0.0000	No	P	Normal	0	0.0000
138	N369	0.0000	0.0000	No	P	Normal	0	0.0000
139	N370	0.0000	0.0000	No	P	Normal	0	0.0000
140	N371	0.0000	0.0000	No	P	Normal	0	0.0000
141	N372	0.0000	0.0000	No	P	Normal	0	0.0000
142	N373	0.0000	0.0000	No	P	Normal	0	0.0000
143	N374	0.0000	0.0000	No	P	Normal	0	0.0000
144	N375	0.0000	0.0000	No	P	Normal	0	0.0000
145	N376	0.0000	0.0000	No	P	Normal	0	0.0000
146	N377	0.0000	0.0000	No	P	Normal	0	0.0000
147	N378	0.0000	0.0000	No	P	Normal	0	0.0000
148	N379	0.0000	0.0000	No	P	Normal	0	0.0000

149	N381	0.0000	0.0000	No P	Normal	0	0.0000
150	N382	0.0000	0.0000	No P	Normal	0	0.0000
151	N383	0.0000	0.0000	No P	Normal	0	0.0000
152	N384	0.0000	0.0000	No P	Normal	0	0.0000
153	N386	0.0000	0.0000	No P	Normal	0	0.0000
154	N387	0.0000	0.0000	No P	Normal	0	0.0000
155	N388	0.0000	0.0000	No P	Normal	0	0.0000
156	N389	0.0000	0.0000	No P	Normal	0	0.0000
157	N390	0.0000	0.0000	No P	Normal	0	0.0000
158	N391	0.0000	0.0000	No P	Normal	0	0.0000
159	N392	0.0000	0.0000	No P	Normal	0	0.0000
160	N394	0.0000	0.0000	No P	Normal	0	0.0000
161	N395	0.0000	0.0000	No P	Normal	0	0.0000
162	N396	0.0000	0.0000	No P	Normal	0	0.0000
163	N397	0.0000	0.0000	No P	Normal	0	0.0000
164	N398	0.0000	0.0000	No P	Normal	0	0.0000
165	N399	0.0000	0.0000	No P	Normal	0	0.0000
166	N403	0.0000	0.0000	No P	Normal	0	0.0000
167	N404	0.0000	0.0000	No P	Normal	0	0.0000
168	N405	0.0000	0.0000	No P	Normal	0	0.0000
169	N406	0.0000	0.0000	No P	Normal	0	0.0000
170	N407	0.0000	0.0000	No P	Normal	0	0.0000
171	N408	0.0000	0.0000	No P	Normal	0	0.0000
172	N409	0.0000	0.0000	No P	Normal	0	0.0000
173	N410	0.0000	0.0000	No P	Normal	0	0.0000
174	N412	0.0000	0.0000	No P	Normal	0	0.0000
175	N413	0.0000	0.0000	No P	Normal	0	0.0000
176	N414	0.0000	0.0000	No P	Normal	0	0.0000
177	N415	0.0000	0.0000	No P	Normal	0	0.0000
178	N416	0.0000	0.0000	No P	Normal	0	0.0000
179	N417	0.0000	0.0000	No P	Normal	0	0.0000
180	N418	0.0000	0.0000	No P	Normal	0	0.0000
181	N419	0.0000	0.0000	No P	Normal	0	0.0000
182	N420	0.0000	0.0000	No P	Normal	0	0.0000
183	N421	0.0000	0.0000	No P	Normal	0	0.0000
184	N422	0.0000	0.0000	No P	Normal	0	0.0000
185	N423	0.0000	0.0000	No P	Normal	0	0.0000
186	N424	0.0000	0.0000	No P	Normal	0	0.0000
187	N425	0.0000	0.0000	No P	Normal	0	0.0000
188	N426	0.0000	0.0000	No P	Normal	0	0.0000
189	N428	0.0000	0.0000	No P	Normal	0	0.0000
190	N429	0.0000	0.0000	No P	Normal	0	0.0000
191	N430	0.0000	0.0000	No P	Normal	0	0.0000
192	N431	0.0000	0.0000	No P	Normal	0	0.0000
193	N432	0.0000	0.0000	No P	Normal	0	0.0000
194	N434	0.0000	0.0000	No P	Normal	0	0.0000
195	N435	0.0000	0.0000	No P	Normal	0	0.0000
196	N436	0.0000	0.0000	No P	Normal	0	0.0000
197	N437	0.0000	0.0000	No P	Normal	0	0.0000
198	N438	0.0000	0.0000	No P	Normal	0	0.0000
199	N439	0.0000	0.0000	No P	Normal	0	0.0000
200	N440	0.0000	0.0000	No P	Normal	0	0.0000
201	N441	0.0000	0.0000	No P	Normal	0	0.0000
202	N442	0.0000	0.0000	No P	Normal	0	0.0000
203	N443	0.0000	0.0000	No P	Normal	0	0.0000
204	N444	0.0000	0.0000	No P	Normal	0	0.0000
205	N445	0.0000	0.0000	No P	Normal	0	0.0000
206	N446	0.0000	0.0000	No P	Normal	0	0.0000
207	N447	0.0000	0.0000	No P	Normal	0	0.0000
208	N448	0.0000	0.0000	No P	Normal	0	0.0000

209	N449	0.0000	0.0000	No	P	Normal	0 0.0000
210	N450	0.0000	0.0000	No	P	Normal	0 0.0000
211	N451	0.0000	0.0000	No	P	Normal	0 0.0000
212	N453	0.0000	0.0000		F	Normal	0 0.0000
213	N454	0.0000	0.0000	No	P	Normal	0 0.0000
214	N455	0.0000	0.0000	No	P	Normal	0 0.0000
215	N456	0.0000	0.0000	No	P	Normal	0 0.0000
216	N457	0.0000	0.0000	No	P	Normal	0 0.0000
217	N458	0.0000	0.0000	No	P	Normal	0 0.0000
218	N459	0.0000	0.0000	No	P	Normal	0 0.0000
219	N460	0.0000	0.0000	No	P	Normal	0 0.0000
220	N461	0.0000	0.0000	No	P	Normal	0 0.0000
221	N464	0.0000	0.0000	No	P	Normal	0 0.0000
222	N465	0.0000	0.0000	No	P	Normal	0 0.0000
223	N466	0.0000	0.0000	No	P	Normal	0 0.0000
224	N467	0.0000	0.0000	No	P	Normal	0 0.0000
225	N468	0.0000	0.0000	No	P	Normal	0 0.0000
226	N469	0.0000	0.0000	No	P	Normal	0 0.0000
227	N470	0.0000	0.0000	No	P	Normal	0 0.0000
228	N471	0.0000	0.0000	No	P	Normal	0 0.0000
229	N472	0.0000	0.0000	No	P	Normal	0 0.0000
230	N473	0.0000	0.0000	No	P	Normal	0 0.0000
231	N487	0.0000	0.0000	No	P	Normal	0 0.0000
232	N489	0.0000	0.0000	No	P	Normal	0 0.0000
233	N490	0.0000	0.0000	No	P	Normal	0 0.0000
234	N491	0.0000	0.0000	No	P	Normal	0 0.0000
235	N492	0.0000	0.0000	No	P	Normal	0 0.0000
236	N493	0.0000	0.0000	No	P	Normal	0 0.0000
237	N497	0.0000	0.0000	No	P	Normal	0 0.0000
238	N499	0.0000	0.0000	No	P	Normal	0 0.0000
239	N500	0.0000	0.0000	No	P	Normal	0 0.0000
240	N501	0.0000	0.0000	No	P	Normal	0 0.0000
241	N503	0.0000	0.0000	No	P	Normal	0 0.0000
242	N504	0.0000	0.0000	No	P	Normal	0 0.0000
243	N506	0.0000	0.0000	No	P	Normal	0 0.0000
244	N509	0.0000	0.0000	No	P	Normal	0 0.0000
245	N511	0.0000	0.0000	No	P	Normal	0 0.0000
246	N513	0.0000	0.0000	No	P	Normal	0 0.0000
247	N514	0.0000	0.0000	No	P	Normal	0 0.0000
248	N516	0.0000	0.0000	No	P	Normal	0 0.0000
249	N517	0.0000	0.0000	No	P	Normal	0 0.0000
250	N518	0.0000	0.0000	No	P	Normal	0 0.0000
251	N524	0.0000	0.0000	No	P	Normal	0 0.0000
252	N525	0.0000	0.0000	No	P	Normal	0 0.0000
253	N526	0.0000	0.0000	No	P	Normal	0 0.0000
254	N527	0.0000	0.0000	No	P	Normal	0 0.0000
255	N528	0.0000	0.0000	No	P	Normal	0 0.0000
256	N529	0.0000	0.0000	No	P	Normal	0 0.0000
257	N530	0.0000	0.0000	No	P	Normal	0 0.0000
258	N689	0.0000	0.0000	No	P	Normal	0 0.0000
259	N494	0.0000	0.0000	No	P	Normal	0 0.0000
260	N541	0.0000	0.0000	No	P	Normal	0 0.0000
261	EL329	0.0000	0.0000	No	P	Normal	0 0.0000
262	N427	0.0000	0.0000	No	P	Normal	0 0.0000
263	N411	0.0000	0.0000	No	P	Normal	0 0.0000
264	N295	0.0000	0.0000	No	P	Normal	0 0.0000
265	N311	0.0000	0.0000	No	P	Normal	0 0.0000
266	N462	0.0000	0.0000	No	P	Normal	0 0.0000
267	N554	0.0000	0.0000	No	P	Normal	0 0.0000
268	N555	0.0000	0.0000	No	P	Normal	0 0.0000

269 N322 0.0000 0.0000 No P Normal 0 0.0000

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| Table E4 - Conduit Connectivity |
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Input Number	Conduit Name	Upstream Node	Downstream Node	Upstream Elevation	Downstream Elevation	
1	L210	N221	N222	105.8400	105.4400	No Design
2	L211	N222	N223	104.4400	102.0600	No Design
3	L212	N223	N224	100.8100	98.4700	No Design
4	L213	N227	N224	98.3400	97.7200	No Design
5	L214	N228	N224	97.5300	97.2200	No Design
6	L217	N231	N230	99.8400	99.3300	No Design
7	L220	N224	N230	96.9700	96.0800	No Design
8	L221	N230	N233	95.8300	94.9200	No Design
9	L222	N233	N234	94.4200	85.6000	No Design
10	L223	N235	N236	119.6000	119.4100	No Design
11	L224	N236	N237	118.6100	117.8600	No Design
12	L225	N237	N238	117.2600	116.5100	No Design
13	L226	N239	N240	117.6900	116.6200	No Design
14	L227	N240	N238	116.6200	116.0100	No Design
15	L228	N238	N241	115.1100	114.0600	No Design
16	L229	N241	N242	111.3600	109.8800	No Design
17	L230	N242	N243	108.6300	107.8600	No Design
18	L231	N243	N244	105.8600	105.1000	No Design
19	L232	N244	N245	103.8500	103.3800	No Design
20	L233	N245	N246	101.9600	100.3100	No Design
21	L234	N246	N247	99.5600	98.3700	No Design
22	L235	N248	N241	111.4800	111.3600	No Design
23	L236	N249	N244	104.6200	104.3500	No Design
24	L237	N250	N246	101.1400	100.5600	No Design
25	L238	N251	N252	115.3800	115.0600	No Design
26	L239	N252	N253	113.0600	112.3300	No Design
27	L240	N254	N253	112.8300	112.3300	No Design
28	L241	N253	N255	108.0800	106.8000	No Design
29	L242	N256	N255	107.4100	107.0500	No Design
30	L243	N257	N255	107.6100	107.0500	No Design
31	L246	N247	N259	97.8700	97.1600	No Design
32	L247	N259	N260	97.1600	97.0000	No Design
33	L248	N261	N259	98.9300	98.6600	No Design
34	L249	N262	N263	104.8800	104.4600	No Design
35	L250	N263	N264	104.4600	96.6400	No Design
36	L251	N265	N263	104.8600	104.4600	No Design
37	L252	N266	N267	100.3600	98.0500	No Design
38	L253	N268	N269	100.7400	100.3300	No Design
39	L254	N269	N267	100.3300	98.0500	No Design
40	L255	N270	N271	99.1400	98.8000	No Design
41	L256	N271	N267	98.5500	97.5500	No Design
42	L257	N267	N272	97.5500	96.6000	No Design
43	L258	N273	N272	97.6800	97.1000	No Design
44	L259	N272	N274	96.3500	95.5800	No Design
45	L260	N274	N275	95.5800	85.6000	No Design
46	L261	N276	N277	94.2500	93.4400	No Design
47	L262	N277	N278	93.4400	78.0000	No Design
48	L263	N279	N277	94.1200	93.4400	No Design
49	L264	N280	N281	85.3300	84.9900	No Design
50	L265	N281	N282	83.2400	82.7700	No Design

51	L266	N282	N283	82.7700	82.5000	No Design
52	L267	N284	N282	85.1400	84.7700	No Design
53	L268	N285	N286	94.9100	94.4500	No Design
54	L269	N286	N283	94.4500	93.0000	No Design
55	L270	N283	N287	82.5000	78.4600	No Design
56	L271	N287	N288	78.4600	77.0300	No Design
57	L272	N288	N289	77.0300	77.0000	No Design
58	L273	N290	N288	78.1000	77.7800	No Design
59	L274	N291	N292	91.9200	76.6000	No Design
60	L275	N293	N294	118.9200	118.3000	No Design
61	L277	N296	N294	118.9800	118.3000	No Design
62	L278	N297	N298	113.2400	112.9600	No Design
63	L279	N298	N299	112.9600	106.3000	No Design
64	L280	N300	N298	113.2500	112.9600	No Design
65	L281	N301	N302	122.9000	122.2800	No Design
66	L282	N302	N303	122.2800	110.6000	No Design
67	L283	N304	N302	122.9500	122.2800	No Design
68	L284	N305	N306	105.5200	105.2200	No Design
69	L285	N306	N307	104.7200	104.2500	No Design
70	L286	N308	N306	105.1900	104.9700	No Design
71	L287	N309	N310	113.1500	112.5100	No Design
72	L289	N312	N310	113.2100	112.5100	No Design
73	L290	N313	N314	103.9300	101.7900	No Design
74	L291	N314	N315	101.7900	99.6100	No Design
75	L292	N315	N316	99.6100	94.1000	No Design
76	L294	N319	N318	89.4700	88.9900	No Design
77	L300	N320	N318	89.2800	88.4900	No Design
78	L301	N321	N320	90.1100	89.7800	No Design
79	L302	N318	N500	87.7400	86.6700	No Design
80	L303	N326	N325	90.7500	90.2700	No Design
81	L304	N327	N325	90.6600	90.2700	No Design
82	L305	N325	N320	89.7700	89.2800	No Design
83	L306	N329	N330	94.0000	93.4400	No Design
84	L307	N330	N322	93.4400	92.5000	No Design
85	L308	N328	N331	93.4400	92.7000	No Design
86	L309	N332	N328	94.0000	93.4400	No Design
87	L310	N333	N334	108.8700	108.5100	No Design
88	L311	N334	N335	108.5100	106.1800	No Design
89	L312	N336	N335	106.5400	106.1800	No Design
90	L313	N335	N337	106.1800	102.7800	No Design
91	L314	N338	N337	103.3100	102.7800	No Design
92	L315	N339	N340	104.8900	104.4700	No Design
93	L316	N340	N337	104.4700	102.7800	No Design
94	L317	N337	N341	102.2800	101.2500	No Design
95	L318	N341	N342	101.2500	100.2200	No Design
96	L319	N342	N343	100.2200	100.0000	No Design
97	L320	N344	N342	101.1100	100.7200	No Design
98	L321	N345	N239	118.8300	117.6900	No Design
99	L324	N349	N347	119.1600	118.4500	No Design
100	L325	N350	N351	117.8000	117.4400	No Design
101	L326	N352	N348	117.3700	116.6700	No Design
102	L327	N353	N348	117.3600	116.6700	No Design
103	L328	N348	N354	116.1700	115.6500	No Design
104	L329	N354	N355	115.6500	110.6000	No Design
105	L334	N356	N357	125.3200	122.9800	No Design
106	L335	N357	N358	122.9800	120.8200	No Design
107	L336	N358	N359	120.8200	120.0900	No Design
108	L337	N359	N360	120.0900	112.8000	No Design
109	L338	N361	N362	126.2400	126.1300	No Design
110	L339	N362	N363	126.1300	125.7800	No Design

111	L340	N363	N364	125.2800	125.0100	No Design
112	L341	N364	N365	125.0100	124.9000	No Design
113	L342	N366	N363	127.8700	127.5300	No Design
114	L343	N367	N363	128.3300	127.7800	No Design
115	L344	N368	N369	124.2600	124.1700	No Design
116	L346	N371	N370	122.2600	122.2000	No Design
117	L347	N370	N372	121.7000	121.3400	No Design
118	L348	N372	N373	121.3400	120.9700	No Design
119	L349	N373	N374	120.9700	120.6000	No Design
120	L350	N374	N375	120.6000	120.4800	No Design
121	L351	N376	N377	122.9000	122.8200	No Design
122	L352	N377	N375	122.8200	122.4800	No Design
123	L354	N378	N379	119.2700	118.4000	No Design
124	L361	N383	N381	125.5300	125.2600	No Design
125	L362	N384	N381	125.6400	125.2600	No Design
126	L363	N381	N382	124.7600	123.3600	No Design
127	L364	N386	N382	124.1400	123.8600	No Design
128	L365	N387	N382	124.2300	123.8600	No Design
129	L366	N382	N388	122.8600	121.9500	No Design
130	L367	N388	N389	121.9500	121.1100	No Design
131	L368	N390	N389	122.8300	122.1100	No Design
132	L369	N391	N389	122.6900	122.1100	No Design
133	L370	N389	N392	120.1100	119.8300	No Design
134	L373	N392	N394	119.8300	118.4000	No Design
135	L374	N395	N396	118.6100	118.1800	No Design
136	L375	N396	N397	117.6800	117.3100	No Design
137	L376	N398	N397	116.3100	116.0600	No Design
138	L386	N399	N403	114.6100	114.3000	No Design
139	L387	N403	N404	114.3000	113.9800	No Design
140	L388	N405	N404	117.0000	116.7000	No Design
141	L389	N404	N406	113.4800	113.1700	No Design
142	L390	N407	N406	117.0000	116.6000	No Design
143	L391	N406	N408	113.1700	112.7800	No Design
144	L392	N408	N409	112.7800	112.4800	No Design
145	L393	N409	N410	112.4800	112.1200	No Design
146	L395	N412	N413	116.3000	115.3300	No Design
147	L396	N414	N413	116.3700	115.8300	No Design
148	L397	N415	N413	116.3300	115.3300	No Design
149	L398	N416	N414	116.8300	115.8700	No Design
150	L399	N417	N414	117.5700	116.8700	No Design
151	L402	N420	N421	112.2400	112.0000	No Design
152	L403	N421	N419	112.0000	110.9100	No Design
153	L404	N419	N422	110.9100	109.8800	No Design
154	L405	N423	N422	110.3700	110.1300	No Design
155	L406	N422	N424	109.1300	108.5100	No Design
156	L407	N425	N424	110.0600	109.7600	No Design
157	L408	N424	N426	108.2600	107.7000	No Design
158	L410	N426	N428	107.4500	106.9200	No Design
159	L411	N428	N429	106.9200	106.5200	No Design
160	L413	N432	N431	118.0700	116.6700	No Design
161	L415	N434	N432	118.8000	118.4800	No Design
162	L417	N436	N435	111.5700	111.1800	No Design
163	L418	N437	N435	110.9200	110.6800	No Design
164	L419	N435	N438	110.1800	109.5800	No Design
165	L420	N438	N439	109.5800	108.6500	No Design
166	L421	N440	N439	110.0500	109.6500	No Design
167	L422	N441	N439	109.7300	109.4000	No Design
168	L423	N439	N442	108.1500	107.4700	No Design
169	L424	N442	N429	107.2200	106.7700	No Design
170	L425	N443	N442	109.3800	108.9700	No Design

171	L426	N444	N442	109.0300	108.7200	No Design
172	L427	N429	N445	106.0200	105.4800	No Design
173	L428	N446	N445	108.4900	107.9800	No Design
174	L429	N445	N447	105.4800	105.0500	No Design
175	L430	N448	N449	118.7700	117.9900	No Design
176	L431	N450	N449	120.7400	118.2400	No Design
177	L432	N451	N450	121.2700	120.7400	No Design
178	L435	N454	N453	114.2900	113.7600	No Design
179	L436	N453	N455	113.7600	111.9300	No Design
180	L437	N455	N456	111.6800	110.2600	No Design
181	L438	N457	N456	111.0200	110.5100	No Design
182	L439	N456	N458	110.2600	108.6400	No Design
183	L440	N458	N447	108.3900	107.0500	No Design
184	L441	N447	N459	105.0500	104.6100	No Design
185	L442	N459	N460	104.6100	104.1100	No Design
186	L443	N460	N461	104.1100	94.1000	No Design
187	L446	N465	N466	126.6500	126.4400	No Design
188	L448	N467	N464	126.3000	125.8400	No Design
189	L449	N464	N468	125.0900	123.8400	No Design
190	L450	N468	N469	123.5900	122.6600	No Design
191	L451	N469	N470	118.6600	118.4600	No Design
192	L452	N471	N468	124.8800	124.5900	No Design
193	L453	N472	N468	124.9400	124.5900	No Design
194	L454	N473	N469	120.0700	119.6600	No Design
195	L466	N418	N487	119.9000	119.3200	No Design
196	L468	N487	N417	118.5700	117.5700	No Design
197	L470	N490	N494	121.9000	121.4100	No Design
198	L471	N491	N490	124.7700	121.9000	No Design
199	L472	N492	N493	126.3400	126.0400	No Design
200	L475	N317	N318	89.1700	88.7400	No Design
201	L478	N500	N501	86.6700	85.7200	No Design
202	L479	N501	N518	85.4700	84.5600	No Design
203	L487	N504	N503	95.5400	89.8000	No Design
204	L490	N513	N514	110.0100	109.8600	No Design
205	L493	N518	N517	84.3100	83.9500	No Design
206	L496	N524	N525	133.4500	131.1700	No Design
207	L497	N526	N525	133.4600	131.1700	No Design
208	L498	N525	N527	131.1700	130.6000	No Design
209	L499	N347	N351	118.4500	117.4400	No Design
210	L500	N351	N348	117.1900	116.4200	No Design
211	L501	N369	N528	123.6700	123.1600	No Design
212	L502	N528	N370	122.6600	122.2000	No Design
213	L503	N375	N529	119.9800	119.6400	No Design
214	L504	N529	N378	119.6400	119.2700	No Design
215	L505	N255	N530	102.8000	101.7100	No Design
216	L506	N530	N247	99.7100	98.6200	No Design
217	L507	N506	N554	92.1400	91.2800	No Design
218	L509	N497	N499	108.0800	107.5000	No Design
219	L510	N511	N555	102.2100	89.8000	No Design
220	L511	N509	N514	108.8800	108.6100	No Design
221	L512	N514	N516	108.1100	90.0000	No Design
222	L513	N517	N281	83.9500	83.7400	No Design
223	L514	N466	N464	126.1900	125.0900	No Design
224	L515	N397	N399	115.8100	115.6100	No Design
225	CH21	N470	N398	117.7100	116.3100	No Design
226	L474	N489	N689	118.4300	118.0000	No Design
227	L523	N494	N489	121.4100	120.8300	No Design
228	L525	N413	N399	115.8300	115.1100	No Design
229	L527	N431	N404	116.6700	115.2500	No Design
230	L528	N449	N408	117.9900	116.0300	No Design

231	L529	EL329	N541	112.5200	112.0900	No Design
232	L533	N541	N427	112.0900	109.6400	No Design
233	L537	N427	N426	109.6400	108.9500	No Design
234	L394	N410	N411	112.1200	112.0000	No Design
235	L276	N294	N295	118.3000	107.9300	No Design
236	L288	N310	N311	112.2600	104.1000	No Design
237	L412	N430	N431	119.0000	118.4000	No Design
238	L447	N462	N466	127.7800	126.4400	No Design
239	L546	N554	N500	90.7800	87.4200	No Design

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| FREE OUTFALL DATA (DATA GROUP I1) |
| BOUNDARY CONDITION ON DATA GROUP J1 |
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Outfall at Junction....N234	has boundary condition number...	1
Outfall at Junction....N260	has boundary condition number...	2
Outfall at Junction....N264	has boundary condition number...	3
Outfall at Junction....N275	has boundary condition number...	4
Outfall at Junction....N278	has boundary condition number...	5
Outfall at Junction....N289	has boundary condition number...	6
Outfall at Junction....N292	has boundary condition number...	7
Outfall at Junction....N299	has boundary condition number...	8
Outfall at Junction....N303	has boundary condition number...	9
Outfall at Junction....N307	has boundary condition number...	10
Outfall at Junction....N316	has boundary condition number...	11
Outfall at Junction....N331	has boundary condition number...	12
Outfall at Junction....N343	has boundary condition number...	13
Outfall at Junction....N355	has boundary condition number...	14
Outfall at Junction....N360	has boundary condition number...	15
Outfall at Junction....N365	has boundary condition number...	16
Outfall at Junction....N379	has boundary condition number...	17
Outfall at Junction....N394	has boundary condition number...	18
Outfall at Junction....N461	has boundary condition number...	19
Outfall at Junction....N493	has boundary condition number...	20
Outfall at Junction....N499	has boundary condition number...	21
Outfall at Junction....N503	has boundary condition number...	22
Outfall at Junction....N516	has boundary condition number...	23
Outfall at Junction....N527	has boundary condition number...	24
Outfall at Junction....N689	has boundary condition number...	25
Outfall at Junction....N411	has boundary condition number...	26
Outfall at Junction....N295	has boundary condition number...	27
Outfall at Junction....N311	has boundary condition number...	28
Outfall at Junction....N555	has boundary condition number...	29
Outfall at Junction....N322	has boundary condition number...	30

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| INTERNAL CONNECTIVITY INFORMATION |
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CONDUIT	JUNCTION	JUNCTION
FREE # 1	N234	BOUNDARY
FREE # 2	N260	BOUNDARY
FREE # 3	N264	BOUNDARY
FREE # 4	N275	BOUNDARY
FREE # 5	N278	BOUNDARY
FREE # 6	N289	BOUNDARY

FREE # 7	N292	BOUNDARY
FREE # 8	N299	BOUNDARY
FREE # 9	N303	BOUNDARY
FREE #10	N307	BOUNDARY
FREE #11	N316	BOUNDARY
FREE #12	N331	BOUNDARY
FREE #13	N343	BOUNDARY
FREE #14	N355	BOUNDARY
FREE #15	N360	BOUNDARY
FREE #16	N365	BOUNDARY
FREE #17	N379	BOUNDARY
FREE #18	N394	BOUNDARY
FREE #19	N461	BOUNDARY
FREE #20	N493	BOUNDARY
FREE #21	N499	BOUNDARY
FREE #22	N503	BOUNDARY
FREE #23	N516	BOUNDARY
FREE #24	N527	BOUNDARY
FREE #25	N689	BOUNDARY
FREE #26	N411	BOUNDARY
FREE #27	N295	BOUNDARY
FREE #28	N311	BOUNDARY
FREE #29	N555	BOUNDARY
FREE #30	N322	BOUNDARY

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| Boundary Condition Information |
| Data Groups J1-J4 |
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BC NUMBER.. 20 has no control water surface.
BC NUMBER.. 24 has no control water surface.
BC NUMBER.. 25 has no control water surface.

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| XP Note Field Summary |
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| Conduit Convergence Criteria |
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Conduit Name	Full Flow	Conduit Slope
L210	2.3341	0.0057
L211	2.3583	0.0058
L212	3.6820	0.0043
L213	2.3504	0.0058
L214	5.2561	0.0033
L217	2.3778	0.0059
L220	7.2421	0.0028
L221	9.4105	0.0023
L222	43.1608	0.0485
L223	1.5862	0.0026
L224	1.5676	0.0026

L225	1.5703	0.0026
L226	1.5717	0.0026
L227	1.5698	0.0026
L228	1.5683	0.0026
L229	2.8478	0.0026
L230	2.4656	0.0019
L231	2.4434	0.0019
L232	3.5621	0.0015
L233	5.3431	0.0034
L234	10.3141	0.0028
L235	1.5127	0.0024
L236	1.5658	0.0026
L237	2.3516	0.0058
L238	2.3553	0.0058
L239	2.3692	0.0059
L240	2.3544	0.0058
L241	3.6815	0.0043
L242	2.3529	0.0058
L243	2.3707	0.0059
L246	14.7213	0.0017
L247	14.8246	0.0017
L248	2.3403	0.0057
L249	2.3421	0.0058
L250	9.7769	0.1003
L251	2.3510	0.0058
L252	2.3583	0.0058
L253	2.3631	0.0059
L254	2.3579	0.0058
L255	3.6728	0.0043
L256	5.3094	0.0034
L257	5.3028	0.0034
L258	2.3516	0.0058
L259	7.1885	0.0027
L260	54.2277	0.1559
L261	2.3656	0.0059
L262	13.9175	0.2032
L263	2.3540	0.0058
L264	3.6728	0.0043
L265	21.2741	0.0014
L266	21.1336	0.0013
L267	2.3663	0.0059
L268	2.3562	0.0058
L269	2.3610	0.0058
L270	58.0211	0.0101
L271	52.2659	0.0036
L272	50.6250	0.0009
L273	7.1817	0.0027
L274	32.1290	0.1246
L275	2.3504	0.0058
L277	2.3540	0.0058
L278	2.3583	0.0058
L279	6.2035	0.0404
L280	2.3516	0.0058
L281	2.3504	0.0058
L282	15.2316	0.2433
L283	2.3672	0.0059
L284	2.3453	0.0058
L285	5.2748	0.0034
L286	3.7136	0.0044
L287	2.3660	0.0059

L289	2.3583	0.0058
L290	2.3547	0.0058
L291	2.3606	0.0058
L292	7.0734	0.0525
L294	2.3624	0.0059
L300	5.3010	0.0034
L301	2.3703	0.0059
L302	11.9259	0.0020
L303	2.3481	0.0058
L304	2.3384	0.0057
L305	5.3291	0.0034
L306	3.0341	0.0097
L307	19.5026	0.0099
L308	7.7925	0.0073
L309	3.0341	0.0097
L310	2.3721	0.0059
L311	2.3596	0.0058
L312	2.3721	0.0059
L313	2.3540	0.0058
L314	2.3436	0.0058
L315	2.3749	0.0059
L316	2.3491	0.0058
L317	5.3166	0.0034
L318	5.2991	0.0034
L319	5.2963	0.0034
L320	2.3558	0.0058
L321	1.5717	0.0026
L324	2.3556	0.0058
L325	2.3529	0.0058
L326	2.3682	0.0059
L327	2.3612	0.0058
L328	3.5191	0.0015
L329	20.6659	0.0515
L334	2.3558	0.0058
L335	2.3560	0.0058
L336	2.3597	0.0058
L337	7.6425	0.0613
L338	20.9182	0.0013
L339	21.2087	0.0013
L340	29.0054	0.0011
L341	28.4951	0.0011
L342	3.6963	0.0044
L343	2.3619	0.0059
L344	14.9332	0.0018
L346	30.2053	0.0012
L347	37.5829	0.0009
L348	37.6745	0.0009
L349	37.8624	0.0009
L350	37.5354	0.0009
L351	9.3735	0.0023
L352	9.4291	0.0023
L354	163.9607	0.0093
L361	2.3403	0.0057
L362	2.3430	0.0058
L363	5.3133	0.0034
L364	2.3583	0.0058
L365	2.3663	0.0059
L366	9.4224	0.0023
L367	9.4185	0.0023
L368	2.3529	0.0058

L369	2.3634	0.0059
L370	21.3114	0.0014
L373	69.8268	0.0146
L374	1.6007	0.0027
L375	2.7585	0.0009
L376	17.8956	0.0015
L386	37.5354	0.0009
L387	37.3765	0.0009
L388	1.5910	0.0027
L389	48.3609	0.0008
L390	1.8968	0.0038
L391	47.6460	0.0008
L392	47.8865	0.0008
L393	47.6261	0.0008
L395	7.7978	0.0194
L396	21.1861	0.0013
L397	7.4154	0.0175
L398	7.9175	0.0200
L399	9.4392	0.0023
L402	7.2544	0.0028
L403	7.1865	0.0027
L404	7.2356	0.0028
L405	5.2929	0.0034
L406	14.6711	0.0017
L407	3.6392	0.0042
L408	17.9044	0.0015
L410	21.1742	0.0013
L411	21.0724	0.0013
L413	5.3791	0.0035
L415	2.4953	0.0065
L417	2.3384	0.0057
L418	5.2561	0.0033
L419	9.4366	0.0023
L420	9.4302	0.0023
L421	2.3682	0.0059
L422	3.6891	0.0043
L423	14.7122	0.0017
L424	17.7815	0.0015
L425	2.3631	0.0059
L426	3.6483	0.0042
L427	29.0650	0.0011
L428	2.3506	0.0058
L429	28.8057	0.0011
L430	2.8587	0.0086
L431	2.3544	0.0058
L432	2.3565	0.0058
L435	2.3695	0.0059
L436	2.3535	0.0058
L437	3.6836	0.0043
L438	2.3506	0.0058
L439	3.6846	0.0043
L440	5.2957	0.0034
L441	28.7403	0.0011
L442	28.7787	0.0011
L443	281.5617	0.1043
L446	5.3415	0.0034
L448	2.3562	0.0058
L449	7.2216	0.0028
L450	9.4537	0.0023
L451	9.2424	0.0022

L452	2.3516	0.0058
L453	2.3389	0.0057
L454	2.3631	0.0059
L466	4.4943	0.0064
L468	8.8034	0.0020
L470	7.2253	0.0028
L471	2.6488	0.0074
L472	2.3453	0.0058
L475	3.7084	0.0044
L478	11.9409	0.0020
L479	13.9490	0.0015
L487	25.6909	0.0350
L490	4.8350	0.0012
L493	9.8698	0.0008
L496	2.3549	0.0058
L497	2.3540	0.0058
L498	2.3549	0.0058
L499	1.5713	0.0026
L500	2.4625	0.0019
L501	21.3175	0.0014
L502	28.7542	0.0011
L503	47.5382	0.0008
L504	48.0749	0.0008
L505	7.2137	0.0028
L506	7.1955	0.0027
L507	2.3618	0.0059
L509	3.6833	0.0043
L510	18.7195	0.1118
L511	3.5456	0.0015
L512	79.1933	0.1632
L513	9.8234	0.0008
L514	7.2103	0.0028
L515	21.4683	0.0014
CH21	321.7664	0.0015
L474	5.2973	0.0034
L523	22.9743	0.0034
L525	21.2457	0.0014
L527	5.2074	0.0033
L528	3.6866	0.0043
L529	3.5424	0.0015
L533	5.2922	0.0034
L537	3.5530	0.0015
L394	47.1178	0.0008
L276	13.9235	0.2033
L288	20.4763	0.1338
L412	3.2854	0.0113
L447	5.3092	0.0034
L546	6.9471	0.0058

```
 *================================*
 |    Initial Model Condition     |
 | Initial Time =      0.02 hours |
 *================================*
```

Junction / Depth / Elevation ===> "*" Junction is Surcharged.

N221/ 0.00 / 105.84	N222/ 0.00 / 104.44	N223/ 0.00 / 100.81
N224/ 0.00 / 96.97	N227/ 0.00 / 98.34	N228/ 0.00 / 97.53
N230/ 0.00 / 95.83	N231/ 0.00 / 99.84	N233/ 0.00 /

94.42
N234/ 4.52 / 90.12 N235/ 0.00 / 119.60 N236/ 0.00 /
118.61
N237/ 0.00 / 117.26 N238/ 0.00 / 115.11 N239/ 0.00 /
117.69
N240/ 0.00 / 116.62 N241/ 0.00 / 111.36 N242/ 0.00 /
108.63
N243/ 0.00 / 105.86 N244/ 0.00 / 103.85 N245/ 0.00 /
101.68
N246/ 0.00 / 99.53 N247/ 0.00 / 97.87 N248/ 0.00 /
111.48
N249/ 0.00 / 104.62 N250/ 0.00 / 101.14 N251/ 0.00 /
115.38
N252/ 0.00 / 113.06 N253/ 0.00 / 108.08 N254/ 0.00 /
112.83
N255/ 0.00 / 102.80 N256/ 0.00 / 107.41 N257/ 0.00 /
107.61
N259/ 0.00 / 97.16 N260/ 2.95 / 99.95 N261/ 0.00 /
98.93
N262/ 0.00 / 104.88 N263/ 0.00 / 104.46 N264/ 3.31 /
99.95
N265/ 0.00 / 104.86 N266/ 0.00 / 100.36 N267/ 0.00 /
97.55
N268/ 0.00 / 100.74 N269/ 0.00 / 100.33 N270/ 0.00 /
99.14
N271/ 0.00 / 98.55 N272/ 0.00 / 96.35 N273/ 0.00 /
97.68
N274/ 0.00 / 95.58 N275/ 4.52 / 90.12 N276/ 0.00 /
94.25
N277/ 0.00 / 93.44 N278/ 1.22 / 79.22 N279/ 0.00 /
94.12
N280/ 0.00 / 85.33 N281/ 0.00 / 83.24 N282/ 0.00 /
82.77
N283/ 0.00 / 82.50 N284/ 0.00 / 85.14 N285/ 0.00 /
94.91
N286/ 0.00 / 94.45 N287/ 0.00 / 78.46 N288/ 0.00 /
77.03
N289/ 2.04 / 79.04 N290/ 0.00 / 78.10 N291/ 0.00 /
91.92
N292/ 2.36 / 78.96 N293/ 0.00 / 118.92 N294/ 0.00 /
118.30
N296/ 0.00 / 118.98 N297/ 0.00 / 113.24 N298/ 0.00 /
112.96
N299/ 3.21 / 109.51 N300/ 0.00 / 113.25 N301/ 0.00 /
122.90
N302/ 0.00 / 122.28 N303/ 2.94 / 113.54 N304/ 0.00 /
122.95
N305/ 0.00 / 105.52 N306/ 0.00 / 104.72 N307/ 4.03 /
108.28
N308/ 0.00 / 105.19 N309/ 0.00 / 113.15 N310/ 0.00 /
112.26
N312/ 0.00 / 113.21 N313/ 0.00 / 103.93 N314/ 0.00 /
101.79
N315/ 0.00 / 99.61 N316/ 4.57 / 98.67 N317/ 0.00 /
89.17
N318/ 0.00 / 87.74 N319/ 0.00 / 89.47 N320/ 0.00 /
89.28
N321/ 0.00 / 90.11 N325/ 0.00 / 89.77 N326/ 0.00 /
90.75
N327/ 0.00 / 90.66 N328/ 0.00 / 93.44 N329/ 0.00 /

94.00

N330/ 0.00 / 93.44 N331/ 5.94 / 98.64 N332/ 0.00 /
94.00
N333/ 0.00 / 108.87 N334/ 0.00 / 108.51 N335/ 0.00 /
106.18
N336/ 0.00 / 106.54 N337/ 0.00 / 102.28 N338/ 0.00 /
103.31
N339/ 0.00 / 104.89 N340/ 0.00 / 104.47 N341/ 0.00 /
101.25
N342/ 0.00 / 100.22 N343/ 0.00 / 100.00 N344/ 0.00 /
101.11
N345/ 0.00 / 118.83 N347/ 0.00 / 118.45 N348/ 0.00 /
116.17
N349/ 0.00 / 119.16 N350/ 0.00 / 117.80 N351/ 0.00 /
117.19
N352/ 0.00 / 117.37 N353/ 0.00 / 117.36 N354/ 0.00 /
115.65
N355/ 3.18 / 113.78 N356/ 0.00 / 125.32 N357/ 0.00 /
122.98
N358/ 0.00 / 120.82 N359/ 0.00 / 120.09 N360/ 3.32 /
116.12
N361/ 0.00 / 126.24 N362/ 0.00 / 126.13 N363/ 0.00 /
125.28
N364/ 0.00 / 125.01 N365/ 4.62 / 122.06 N366/ 0.00 /
127.87
N367/ 0.00 / 128.33 N368/ 0.00 / 124.26 N369/ 0.00 /
123.67
N370/ 0.00 / 121.70 N371/ 0.00 / 122.26 N372/ 0.00 /
121.34
N373/ 0.00 / 120.97 N374/ 0.00 / 120.60 N375/ 0.00 /
119.98
N376/ 0.00 / 122.90 N377/ 0.00 / 122.82 N378/ 0.00 /
119.27
N379/ 3.70 / 122.10 N381/ 0.00 / 124.76 N382/ 0.00 /
122.86
N383/ 0.00 / 125.53 N384/ 0.00 / 125.64 N386/ 0.00 /
124.14
N387/ 0.00 / 124.23 N388/ 0.00 / 121.95 N389/ 0.00 /
120.11
N390/ 0.00 / 122.83 N391/ 0.00 / 122.69 N392/ 0.00 /
119.83
N394/ 3.11 / 121.51 N395/ 0.00 / 118.11 N396/ 0.00 /
117.68
N397/ 0.00 / 115.81 N398/ 0.00 / 116.31 N399/ 0.00 /
114.60
N403/ 0.00 / 114.30 N404/ 0.00 / 113.48 N405/ 0.00 /
117.00
N406/ 0.00 / 113.17 N407/ 0.00 / 117.00 N408/ 0.00 /
112.78
N409/ 0.00 / 112.48 N410/ 0.00 / 112.12 N412/ 0.00 /
116.30
N413/ 0.00 / 115.33 N414/ 0.00 / 115.83 N415/ 0.00 /
116.33
N416/ 0.00 / 116.83 N417/ 0.00 / 117.57 N418/ 0.00 /
119.90
N419/ 0.00 / 110.91 N420/ 0.00 / 112.24 N421/ 0.00 /
112.00
N422/ 0.00 / 109.13 N423/ 0.00 / 110.37 N424/ 0.00 /
108.26
N425/ 0.00 / 110.06 N426/ 0.00 / 107.45 N428/ 0.00 /

106.92

N429/	0.00 /	106.02	N430/	0.00 /	119.00	N431/	0.00 /	116.67
N432/	0.00 /	118.07	N434/	0.00 /	118.80	N435/	0.00 /	110.18
N436/	0.00 /	111.57	N437/	0.00 /	110.92	N438/	0.00 /	109.58
N439/	0.00 /	108.15	N440/	0.00 /	110.05	N441/	0.00 /	109.73
N442/	0.00 /	107.22	N443/	0.00 /	109.38	N444/	0.00 /	109.03
N445/	0.00 /	105.48	N446/	0.00 /	108.49	N447/	0.00 /	105.05
N448/	0.00 /	118.77	N449/	0.00 /	117.99	N450/	0.00 /	120.74
N451/	0.00 /	121.27	N453/	0.00 /	113.76	N454/	0.00 /	114.29
N455/	0.00 /	111.68	N456/	0.00 /	110.26	N457/	0.00 /	111.02
N458/	0.00 /	108.39	N459/	0.00 /	104.61	N460/	0.00 /	104.11
N461/	4.57 /	98.67	N464/	0.00 /	125.09	N465/	0.00 /	126.65
N466/	0.00 /	126.19	N467/	0.00 /	126.30	N468/	0.00 /	123.59
N469/	0.00 /	118.66	N470/	0.00 /	117.71	N471/	0.00 /	124.88
N472/	0.00 /	124.94	N473/	0.00 /	120.07	N487/	0.00 /	118.57
N489/	0.00 /	118.43	N490/	0.00 /	121.90	N491/	0.00 /	124.17
N492/	0.00 /	126.34	N493/	0.00 /	126.04	N497/	0.00 /	108.08
N499/	7.44 /	98.64	N500/	0.00 /	86.67	N501/	0.00 /	85.47
N503/	8.43 /	98.23	N504/	0.00 /	95.54	N506/	0.00 /	92.14
N509/	0.00 /	108.88	N511/	0.00 /	102.21	N513/	0.00 /	110.01
N514/	0.00 /	108.11	N516/	8.23 /	98.23	N517/	0.00 /	83.95
N518/	0.00 /	84.31	N524/	0.00 /	133.45	N525/	0.00 /	131.17
N526/	0.00 /	133.46	N527/	0.00 /	130.60	N528/	0.00 /	122.66
N529/	0.00 /	119.64	N530/	0.00 /	99.71	N689/	0.00 /	118.00
N494/	0.00 /	121.41	N541/	0.00 /	112.09	EL329/	0.00 /	112.52
N427/	0.00 /	109.64	N411/	4.12 /	116.12	N295/	2.45 /	110.38
N311/	4.24 /	108.34	N462/	0.00 /	127.78	N554/	0.00 /	90.68
N555/	8.43 /	98.23	N322/	6.14 /	98.64			

Conduit/ FLOW ===> "*" Conduit uses the normal flow option.

L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.00
L223/	0.00	L224/	0.00	L225/	0.00

L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00
L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00
L246/	0.00	L247/	0.00	L248/	0.00
L249/	0.00	L250/	0.00	L251/	0.00
L252/	0.00	L253/	0.00	L254/	0.00
L255/	0.00	L256/	0.00	L257/	0.00
L258/	0.00	L259/	0.00	L260/	0.00
L261/	0.00	L262/	0.00	L263/	0.00
L264/	0.00	L265/	0.00	L266/	0.00
L267/	0.00	L268/	0.00	L269/	0.00
L270/	0.00	L271/	0.00	L272/	0.00
L273/	0.00	L274/	0.00	L275/	0.00
L277/	0.00	L278/	0.00	L279/	0.00
L280/	0.00	L281/	0.00	L282/	0.00
L283/	0.00	L284/	0.00	L285/	0.00
L286/	0.00	L287/	0.00	L289/	0.00
L290/	0.00	L291/	0.00	L292/	0.00
L294/	0.00	L300/	0.00	L301/	0.00
L302/	0.00	L303/	0.00	L304/	0.00
L305/	0.00	L306/	0.00	L307/	0.00
L308/	0.00	L309/	0.00	L310/	0.00
L311/	0.00	L312/	0.00	L313/	0.00
L314/	0.00	L315/	0.00	L316/	0.00
L317/	0.00	L318/	0.00	L319/	0.00
L320/	0.00	L321/	0.00	L324/	0.00
L325/	0.00	L326/	0.00	L327/	0.00
L328/	0.00	L329/	0.00	L334/	0.00
L335/	0.00	L336/	0.00	L337/	0.00
L338/	0.00	L339/	0.00	L340/	0.00
L341/	0.00	L342/	0.00	L343/	0.00
L344/	0.00	L346/	0.00	L347/	0.00
L348/	0.00	L349/	0.00	L350/	0.00
L351/	0.00	L352/	0.00	L354/	0.00
L361/	0.00	L362/	0.00	L363/	0.00
L364/	0.00	L365/	0.00	L366/	0.00
L367/	0.00	L368/	0.00	L369/	0.00
L370/	0.00	L373/	0.00	L374/	0.00
L375/	0.00	L376/	0.00	L386/	0.00
L387/	0.00	L388/	0.00	L389/	0.00
L390/	0.00	L391/	0.00	L392/	0.00
L393/	0.00	L395/	0.00	L396/	0.00
L397/	0.00	L398/	0.00	L399/	0.00
L402/	0.00	L403/	0.00	L404/	0.00
L405/	0.00	L406/	0.00	L407/	0.00
L408/	0.00	L410/	0.00	L411/	0.00
L413/	0.00	L415/	0.00	L417/	0.00
L418/	0.00	L419/	0.00	L420/	0.00
L421/	0.00	L422/	0.00	L423/	0.00
L424/	0.00	L425/	0.00	L426/	0.00
L427/	0.00	L428/	0.00	L429/	0.00
L430/	0.00	L431/	0.00	L432/	0.00
L435/	0.00	L436/	0.00	L437/	0.00
L438/	0.00	L439/	0.00	L440/	0.00
L441/	0.00	L442/	0.00	L443/	0.00
L446/	0.00	L448/	0.00	L449/	0.00
L450/	0.00	L451/	0.00	L452/	0.00

L453/	0.00	L454/	0.00	L466/	0.00
L468/	0.00	L470/	0.00	L471/	0.00
L472/	0.00	L475/	0.00	L478/	0.00
L479/	0.00	L487/	0.00	L490/	0.00
L493/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L499/	0.00	L500/	0.00
L501/	0.00	L502/	0.00	L503/	0.00
L504/	0.00	L505/	0.00	L506/	0.00
L507/	0.00	L509/	0.00	L510/	0.00
L511/	0.00	L512/	0.00	L513/	0.00
L514/	0.00	L515/	0.00	CH21/	0.00
L474/	0.00	L523/	0.00	L525/	0.00
L527/	0.00	L528/	0.00	L529/	0.00
L533/	0.00	L537/	0.00	L394/	0.00
L276/	0.00	L288/	0.00	L412/	0.00
L447/	0.00	L546/	0.00	FREE # 1/	0.00
FREE # 2/	0.00	FREE # 3/	0.00	FREE # 4/	0.00
FREE # 5/	0.00	FREE # 6/	0.00	FREE # 7/	0.00
FREE # 8/	0.00	FREE # 9/	0.00	FREE #10/	0.00
FREE #11/	0.00	FREE #12/	0.00	FREE #13/	0.00
FREE #14/	0.00	FREE #15/	0.00	FREE #16/	0.00
FREE #17/	0.00	FREE #18/	0.00	FREE #19/	0.00
FREE #20/	0.00	FREE #21/	0.00	FREE #22/	0.00
FREE #23/	0.00	FREE #24/	0.00	FREE #25/	0.00
FREE #26/	0.00	FREE #27/	0.00	FREE #28/	0.00
FREE #29/	0.00	FREE #30/	0.00		

Conduit/	Velocity				
L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.00
L223/	0.00	L224/	0.00	L225/	0.00
L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00
L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00
L246/	0.00	L247/	0.00	L248/	0.00
L249/	0.00	L250/	0.00	L251/	0.00
L252/	0.00	L253/	0.00	L254/	0.00
L255/	0.00	L256/	0.00	L257/	0.00
L258/	0.00	L259/	0.00	L260/	0.00
L261/	0.00	L262/	0.00	L263/	0.00
L264/	0.00	L265/	0.00	L266/	0.00
L267/	0.00	L268/	0.00	L269/	0.00
L270/	0.00	L271/	0.00	L272/	0.00
L273/	0.00	L274/	0.00	L275/	0.00
L277/	0.00	L278/	0.00	L279/	0.00
L280/	0.00	L281/	0.00	L282/	0.00
L283/	0.00	L284/	0.00	L285/	0.00
L286/	0.00	L287/	0.00	L289/	0.00
L290/	0.00	L291/	0.00	L292/	0.00
L294/	0.00	L300/	0.00	L301/	0.00
L302/	0.00	L303/	0.00	L304/	0.00
L305/	0.00	L306/	0.00	L307/	0.00
L308/	0.00	L309/	0.00	L310/	0.00
L311/	0.00	L312/	0.00	L313/	0.00
L314/	0.00	L315/	0.00	L316/	0.00
L317/	0.00	L318/	0.00	L319/	0.00

L320/	0.00	L321/	0.00	L324/	0.00
L325/	0.00	L326/	0.00	L327/	0.00
L328/	0.00	L329/	0.00	L334/	0.00
L335/	0.00	L336/	0.00	L337/	0.00
L338/	0.00	L339/	0.00	L340/	0.00
L341/	0.00	L342/	0.00	L343/	0.00
L344/	0.00	L346/	0.00	L347/	0.00
L348/	0.00	L349/	0.00	L350/	0.00
L351/	0.00	L352/	0.00	L354/	0.00
L361/	0.00	L362/	0.00	L363/	0.00
L364/	0.00	L365/	0.00	L366/	0.00
L367/	0.00	L368/	0.00	L369/	0.00
L370/	0.00	L373/	0.00	L374/	0.00
L375/	0.00	L376/	0.00	L386/	0.00
L387/	0.00	L388/	0.00	L389/	0.00
L390/	0.00	L391/	0.00	L392/	0.00
L393/	0.00	L395/	0.00	L396/	0.00
L397/	0.00	L398/	0.00	L399/	0.00
L402/	0.00	L403/	0.00	L404/	0.00
L405/	0.00	L406/	0.00	L407/	0.00
L408/	0.00	L410/	0.00	L411/	0.00
L413/	0.00	L415/	0.00	L417/	0.00
L418/	0.00	L419/	0.00	L420/	0.00
L421/	0.00	L422/	0.00	L423/	0.00
L424/	0.00	L425/	0.00	L426/	0.00
L427/	0.00	L428/	0.00	L429/	0.00
L430/	0.00	L431/	0.00	L432/	0.00
L435/	0.00	L436/	0.00	L437/	0.00
L438/	0.00	L439/	0.00	L440/	0.00
L441/	0.00	L442/	0.00	L443/	0.00
L446/	0.00	L448/	0.00	L449/	0.00
L450/	0.00	L451/	0.00	L452/	0.00
L453/	0.00	L454/	0.00	L466/	0.00
L468/	0.00	L470/	0.00	L471/	0.00
L472/	0.00	L475/	0.00	L478/	0.00
L479/	0.00	L487/	0.00	L490/	0.00
L493/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L499/	0.00	L500/	0.00
L501/	0.00	L502/	0.00	L503/	0.00
L504/	0.00	L505/	0.00	L506/	0.00
L507/	0.00	L509/	0.00	L510/	0.00
L511/	0.00	L512/	0.00	L513/	0.00
L514/	0.00	L515/	0.00	CH21/	0.00
L474/	0.00	L523/	0.00	L525/	0.00
L527/	0.00	L528/	0.00	L529/	0.00
L533/	0.00	L537/	0.00	L394/	0.00
L276/	0.00	L288/	0.00	L412/	0.00
L447/	0.00	L546/	0.00		

Conduit/ Cross Sectional Area

L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.32
L223/	0.00	L224/	0.00	L225/	0.00
L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00
L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00

L246/	0.00	L247/	0.51	L248/	0.00
L249/	0.00	L250/	0.08	L251/	0.00
L252/	0.00	L253/	0.00	L254/	0.00
L255/	0.00	L256/	0.00	L257/	0.00
L258/	0.00	L259/	0.00	L260/	0.24
L261/	0.00	L262/	0.08	L263/	0.00
L264/	0.00	L265/	0.00	L266/	0.00
L267/	0.00	L268/	0.00	L269/	0.00
L270/	0.00	L271/	0.00	L272/	0.70
L273/	0.00	L274/	0.18	L275/	0.00
L277/	0.00	L278/	0.00	L279/	0.08
L280/	0.00	L281/	0.00	L282/	0.08
L283/	0.00	L284/	0.00	L285/	0.18
L286/	0.00	L287/	0.00	L289/	0.00
L290/	0.00	L291/	0.00	L292/	0.08
L294/	0.00	L300/	0.00	L301/	0.00
L302/	0.00	L303/	0.00	L304/	0.00
L305/	0.00	L306/	0.00	L307/	0.32
L308/	0.18	L309/	0.00	L310/	0.00
L311/	0.00	L312/	0.00	L313/	0.00
L314/	0.00	L315/	0.00	L316/	0.00
L317/	0.00	L318/	0.00	L319/	0.00
L320/	0.00	L321/	0.00	L324/	0.00
L325/	0.00	L326/	0.00	L327/	0.00
L328/	0.00	L329/	0.18	L334/	0.00
L335/	0.00	L336/	0.00	L337/	0.08
L338/	0.00	L339/	0.00	L340/	0.00
L341/	0.00	L342/	0.00	L343/	0.00
L344/	0.00	L346/	0.00	L347/	0.00
L348/	0.00	L349/	0.00	L350/	0.00
L351/	0.00	L352/	0.00	L354/	1.40
L361/	0.00	L362/	0.00	L363/	0.00
L364/	0.00	L365/	0.00	L366/	0.00
L367/	0.00	L368/	0.00	L369/	0.00
L370/	0.00	L373/	0.72	L374/	0.00
L375/	0.00	L376/	0.00	L386/	0.00
L387/	0.00	L388/	0.00	L389/	0.00
L390/	0.00	L391/	0.00	L392/	0.00
L393/	0.00	L395/	0.00	L396/	0.00
L397/	0.00	L398/	0.00	L399/	0.00
L402/	0.00	L403/	0.00	L404/	0.00
L405/	0.00	L406/	0.00	L407/	0.00
L408/	0.00	L410/	0.00	L411/	0.00
L413/	0.00	L415/	0.00	L417/	0.00
L418/	0.00	L419/	0.00	L420/	0.00
L421/	0.00	L422/	0.00	L423/	0.00
L424/	0.00	L425/	0.00	L426/	0.00
L427/	0.00	L428/	0.00	L429/	0.00
L430/	0.00	L431/	0.00	L432/	0.00
L435/	0.00	L436/	0.00	L437/	0.00
L438/	0.00	L439/	0.00	L440/	0.00
L441/	0.00	L442/	0.00	L443/	0.96
L446/	0.00	L448/	0.00	L449/	0.00
L450/	0.00	L451/	0.00	L452/	0.00
L453/	0.00	L454/	0.00	L466/	0.00
L468/	0.00	L470/	0.00	L471/	0.00
L472/	0.00	L475/	0.00	L478/	0.00
L479/	0.00	L487/	0.25	L490/	0.00
L493/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L499/	0.00	L500/	0.00

L501/	0.00	L502/	0.00	L503/	0.00
L504/	0.00	L505/	0.00	L506/	0.00
L507/	0.00	L509/	0.00	L510/	0.13
L511/	0.00	L512/	0.32	L513/	0.00
L514/	0.00	L515/	0.00	CH21/	0.00
L474/	0.00	L523/	0.00	L525/	0.00
L527/	0.00	L528/	0.00	L529/	0.00
L533/	0.00	L537/	0.00	L394/	1.53
L276/	0.08	L288/	0.12	L412/	0.00
L447/	0.00	L546/	0.00		

Conduit/ Hydraulic Radius

L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.05
L223/	0.00	L224/	0.00	L225/	0.00
L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00
L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00
L246/	0.00	L247/	0.07	L248/	0.00
L249/	0.00	L250/	0.03	L251/	0.00
L252/	0.00	L253/	0.00	L254/	0.00
L255/	0.00	L256/	0.00	L257/	0.00
L258/	0.00	L259/	0.00	L260/	0.05
L261/	0.00	L262/	0.03	L263/	0.00
L264/	0.00	L265/	0.00	L266/	0.00
L267/	0.00	L268/	0.00	L269/	0.00
L270/	0.00	L271/	0.00	L272/	0.12
L273/	0.00	L274/	0.04	L275/	0.00
L277/	0.00	L278/	0.00	L279/	0.03
L280/	0.00	L281/	0.00	L282/	0.03
L283/	0.00	L284/	0.00	L285/	0.04
L286/	0.00	L287/	0.00	L289/	0.00
L290/	0.00	L291/	0.00	L292/	0.03
L294/	0.00	L300/	0.00	L301/	0.00
L302/	0.00	L303/	0.00	L304/	0.00
L305/	0.00	L306/	0.00	L307/	0.05
L308/	0.04	L309/	0.00	L310/	0.00
L311/	0.00	L312/	0.00	L313/	0.00
L314/	0.00	L315/	0.00	L316/	0.00
L317/	0.00	L318/	0.00	L319/	0.00
L320/	0.00	L321/	0.00	L324/	0.00
L325/	0.00	L326/	0.00	L327/	0.00
L328/	0.00	L329/	0.04	L334/	0.00
L335/	0.00	L336/	0.00	L337/	0.03
L338/	0.00	L339/	0.00	L340/	0.00
L341/	0.00	L342/	0.00	L343/	0.00
L344/	0.00	L346/	0.00	L347/	0.00
L348/	0.00	L349/	0.00	L350/	0.00
L351/	0.00	L352/	0.00	L354/	0.15
L361/	0.00	L362/	0.00	L363/	0.00
L364/	0.00	L365/	0.00	L366/	0.00
L367/	0.00	L368/	0.00	L369/	0.00
L370/	0.00	L373/	0.08	L374/	0.00
L375/	0.00	L376/	0.00	L386/	0.00
L387/	0.00	L388/	0.00	L389/	0.00
L390/	0.00	L391/	0.00	L392/	0.00

L393/	0.00	L395/	0.00	L396/	0.00
L397/	0.00	L398/	0.00	L399/	0.00
L402/	0.00	L403/	0.00	L404/	0.00
L405/	0.00	L406/	0.00	L407/	0.00
L408/	0.00	L410/	0.00	L411/	0.00
L413/	0.00	L415/	0.00	L417/	0.00
L418/	0.00	L419/	0.00	L420/	0.00
L421/	0.00	L422/	0.00	L423/	0.00
L424/	0.00	L425/	0.00	L426/	0.00
L427/	0.00	L428/	0.00	L429/	0.00
L430/	0.00	L431/	0.00	L432/	0.00
L435/	0.00	L436/	0.00	L437/	0.00
L438/	0.00	L439/	0.00	L440/	0.00
L441/	0.00	L442/	0.00	L443/	0.10
L446/	0.00	L448/	0.00	L449/	0.00
L450/	0.00	L451/	0.00	L452/	0.00
L453/	0.00	L454/	0.00	L466/	0.00
L468/	0.00	L470/	0.00	L471/	0.00
L472/	0.00	L475/	0.00	L478/	0.00
L479/	0.00	L487/	0.05	L490/	0.00
L493/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L499/	0.00	L500/	0.00
L501/	0.00	L502/	0.00	L503/	0.00
L504/	0.00	L505/	0.00	L506/	0.00
L507/	0.00	L509/	0.00	L510/	0.03
L511/	0.00	L512/	0.05	L513/	0.00
L514/	0.00	L515/	0.00	CH21/	0.00
L474/	0.00	L523/	0.00	L525/	0.00
L527/	0.00	L528/	0.00	L529/	0.00
L533/	0.00	L537/	0.00	L394/	0.14
L276/	0.03	L288/	0.03	L412/	0.00
L447/	0.00	L546/	0.00		

Conduit/	Upstream/	Downstream Elevation						
L210/	104.44/	104.44	L211/	100.81/	100.81	L212/	96.97/	96.97
L213/	96.97/	96.97	L214/	96.97/	96.97	L217/	95.83/	95.83
L220/	95.83/	95.83	L221/	94.42/	94.42	L222/	94.42/	90.12
L223/	118.61/	118.61	L224/	117.26/	117.26	L225/	115.11/	115.11
L226/	116.62/	116.62	L227/	115.11/	115.11	L228/	111.36/	111.36
L229/	108.63/	108.63	L230/	105.86/	105.86	L231/	103.85/	103.85
L232/	101.68/	101.68	L233/	99.53/	99.53	L234/	97.87/	97.87
L235/	111.36/	111.36	L236/	103.85/	103.85	L237/	99.53/	99.53
L238/	113.06/	113.06	L239/	108.08/	108.08	L240/	108.08/	108.08
L241/	102.80/	102.80	L242/	102.80/	102.80	L243/	102.80/	102.80
L246/	97.16/	97.16	L247/	97.16/	99.95	L248/	97.16/	97.16
L249/	104.46/	104.46	L250/	104.46/	99.95	L251/	104.46/	104.46
L252/	97.55/	97.55	L253/	100.33/	100.33	L254/	97.55/	97.55

L255/ 98.55/ 98.55 L256/ 97.55/ 97.55 L257/ 96.35/ 96.35
L258/ 96.35/ 96.35 L259/ 95.58/ 95.58 L260/ 95.58/ 90.12
L261/ 93.44/ 93.44 L262/ 93.44/ 79.22 L263/ 93.44/ 93.44
L264/ 83.24/ 83.24 L265/ 82.77/ 82.77 L266/ 82.50/ 82.50
L267/ 82.77/ 82.77 L268/ 94.45/ 94.45 L269/ 82.50/ 82.50
L270/ 78.46/ 78.46 L271/ 77.03/ 77.03 L272/ 77.03/ 79.04
L273/ 77.03/ 77.03 L274/ 91.92/ 78.96 L275/ 118.30/ 118.30
L277/ 118.30/ 118.30 L278/ 112.96/ 112.96 L279/ 112.96/ 109.51
L280/ 112.96/ 112.96 L281/ 122.28/ 122.28 L282/ 122.28/ 113.54
L283/ 122.28/ 122.28 L284/ 104.72/ 104.72 L285/ 104.72/ 108.28
L286/ 104.72/ 104.72 L287/ 112.26/ 112.26 L289/ 112.26/ 112.26
L290/ 101.79/ 101.79 L291/ 99.61/ 99.61 L292/ 99.61/ 98.67
L294/ 87.74/ 87.74 L300/ 87.74/ 87.74 L301/ 89.28/ 89.28
L302/ 86.67/ 86.67 L303/ 89.77/ 89.77 L304/ 89.77/ 89.77
L305/ 89.28/ 89.28 L306/ 93.44/ 93.44 L307/ 93.44/ 98.64
L308/ 93.44/ 98.64 L309/ 93.44/ 93.44 L310/ 108.51/ 108.51
L311/ 106.18/ 106.18 L312/ 106.18/ 106.18 L313/ 102.28/ 102.28
L314/ 102.28/ 102.28 L315/ 104.47/ 104.47 L316/ 102.28/ 102.28
L317/ 101.25/ 101.25 L318/ 100.22/ 100.22 L319/ 100.00/ 100.00
L320/ 100.22/ 100.22 L321/ 117.69/ 117.69 L324/ 118.45/ 118.45
L325/ 117.19/ 117.19 L326/ 116.17/ 116.17 L327/ 116.17/ 116.17
L328/ 115.65/ 115.65 L329/ 115.65/ 113.78 L334/ 122.98/ 122.98
L335/ 120.82/ 120.82 L336/ 120.09/ 120.09 L337/ 120.09/ 116.12
L338/ 126.13/ 126.13 L339/ 125.28/ 125.28 L340/ 125.01/ 125.01
L341/ 122.06/ 122.06 L342/ 125.28/ 125.28 L343/ 125.28/ 125.28
L344/ 123.67/ 123.67 L346/ 121.70/ 121.70 L347/ 121.34/ 121.34
L348/ 120.97/ 120.97 L349/ 120.60/ 120.60 L350/ 119.98/ 119.98
L351/ 122.82/ 122.82 L352/ 119.98/ 119.98 L354/ 119.27/ 122.10
L361/ 124.76/ 124.76 L362/ 124.76/ 124.76 L363/ 122.86/ 122.86
L364/ 122.86/ 122.86 L365/ 122.86/ 122.86 L366/ 121.95/ 121.95

L367/ 120.11/ 120.11 L368/ 120.11/ 120.11 L369/ 120.11/ 120.11
L370/ 119.83/ 119.83 L373/ 119.83/ 121.51 L374/ 117.68/ 117.68
L375/ 115.81/ 115.81 L376/ 115.81/ 115.81 L386/ 114.30/ 114.30
L387/ 113.48/ 113.48 L388/ 113.48/ 113.48 L389/ 113.17/ 113.17
L390/ 113.17/ 113.17 L391/ 112.78/ 112.78 L392/ 112.48/ 112.48
L393/ 112.12/ 112.12 L395/ 115.33/ 115.33 L396/ 115.33/ 115.33
L397/ 115.33/ 115.33 L398/ 115.83/ 115.83 L399/ 115.83/ 115.83
L402/ 112.00/ 112.00 L403/ 110.91/ 110.91 L404/ 109.13/ 109.13
L405/ 109.13/ 109.13 L406/ 108.26/ 108.26 L407/ 108.26/ 108.26
L408/ 107.45/ 107.45 L410/ 106.92/ 106.92 L411/ 106.02/ 106.02
L413/ 116.67/ 116.67 L415/ 118.07/ 118.07 L417/ 110.18/ 110.18
L418/ 110.18/ 110.18 L419/ 109.58/ 109.58 L420/ 108.15/ 108.15
L421/ 108.15/ 108.15 L422/ 108.15/ 108.15 L423/ 107.22/ 107.22
L424/ 106.02/ 106.02 L425/ 107.22/ 107.22 L426/ 107.22/ 107.22
L427/ 105.48/ 105.48 L428/ 105.48/ 105.48 L429/ 105.05/ 105.05
L430/ 117.99/ 117.99 L431/ 117.99/ 117.99 L432/ 120.74/ 120.74
L435/ 113.76/ 113.76 L436/ 111.68/ 111.68 L437/ 110.26/ 110.26
L438/ 110.26/ 110.26 L439/ 108.39/ 108.39 L440/ 105.05/ 105.05
L441/ 104.61/ 104.61 L442/ 104.11/ 104.11 L443/ 104.11/ 98.67
L446/ 126.19/ 126.19 L448/ 125.09/ 125.09 L449/ 123.59/ 123.59
L450/ 118.66/ 118.66 L451/ 117.71/ 117.71 L452/ 123.59/ 123.59
L453/ 123.59/ 123.59 L454/ 118.66/ 118.66 L466/ 118.57/ 118.57
L468/ 117.57/ 117.57 L470/ 121.41/ 121.41 L471/ 121.90/ 121.90
L472/ 126.04/ 126.04 L475/ 87.74/ 87.74 L478/ 85.47/ 85.47
L479/ 84.31/ 84.31 L487/ 95.54/ 98.23 L490/ 108.11/ 108.11
L493/ 83.95/ 83.95 L496/ 131.17/ 131.17 L497/ 131.17/ 131.17
L498/ 130.60/ 130.60 L499/ 117.19/ 117.19 L500/ 116.17/ 116.17
L501/ 122.66/ 122.66 L502/ 121.70/ 121.70 L503/ 119.64/ 119.64
L504/ 119.27/ 119.27 L505/ 99.71/ 99.71 L506/ 97.87/ 97.87
L507/ 90.68/ 90.68 L509/ 98.64/ 98.64 L510/ 102.21/ 98.23

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           L511/   108.11/   108.11           L512/   108.11/    98.23           L513/    83.24/
83.24
           L514/   125.09/   125.09           L515/   114.60/   114.60           CH21/   116.31/
116.31
           L474/   118.00/   118.00           L523/   118.43/   118.43           L525/   114.60/
114.60
           L527/   113.48/   113.48           L528/   112.78/   112.78           L529/   112.09/
112.09
           L533/   109.64/   109.64           L537/   107.45/   107.45           L394/   112.12/
116.12
           L276/   118.30/   110.38           L288/   112.26/   108.34           L412/   116.67/
116.67
           L447/   126.19/   126.19           L546/    86.67/    86.67

 ######## Important Information ########
 Start time of user hydrographs was...    0.000000000000000E+000
 Start time of the simulation was.....    0.000000000000000E+000
 Found a match between user hydrograph and simulation start time.

 ===============================================================================
 ===> System inflows (data group K3) at     0.00 hours ( Junction / Inflow,cfs )

 N221      / 0.00E+00 N222      / 0.00E+00 N223      / 0.00E+00 N224      / 0.00E+00 N227      /
0.00E+00 N228      / 0.00E+00
 N230      / 0.00E+00 N231      / 0.00E+00 N233      / 0.00E+00 N234      / 0.00E+00 N235      /
0.00E+00 N236      / 0.00E+00
 N237      / 0.00E+00 N238      / 0.00E+00 N239      / 0.00E+00 N240      / 0.00E+00 N241      /
0.00E+00 N242      / 0.00E+00
 N243      / 0.00E+00 N244      / 0.00E+00 N245      / 0.00E+00 N246      / 0.00E+00 N247      /
0.00E+00 N248      / 0.00E+00
 N249      / 0.00E+00 N250      / 0.00E+00 N251      / 0.00E+00 N252      / 0.00E+00 N253      /
0.00E+00 N254      / 0.00E+00
 N255      / 0.00E+00 N256      / 0.00E+00 N257      / 0.00E+00 N259      / 0.00E+00 N260      /
0.00E+00 N261      / 0.00E+00
 N262      / 0.00E+00 N263      / 0.00E+00 N264      / 0.00E+00 N265      / 0.00E+00 N266      /
0.00E+00 N267      / 0.00E+00
 N268      / 0.00E+00 N269      / 0.00E+00 N270      / 0.00E+00 N271      / 0.00E+00 N272      /
0.00E+00 N273      / 0.00E+00
 N274      / 0.00E+00 N275      / 0.00E+00 N276      / 0.00E+00 N277      / 0.00E+00 N278      /
0.00E+00 N279      / 0.00E+00
 N280      / 0.00E+00 N281      / 0.00E+00 N282      / 0.00E+00 N283      / 0.00E+00 N284      /
0.00E+00 N285      / 0.00E+00
 N286      / 0.00E+00 N287      / 0.00E+00 N288      / 0.00E+00 N289      / 0.00E+00 N290      /
0.00E+00 N291      / 0.00E+00
 N292      / 0.00E+00 N293      / 0.00E+00 N294      / 0.00E+00 N296      / 0.00E+00 N297      /
0.00E+00 N298      / 0.00E+00
 N299      / 0.00E+00 N300      / 0.00E+00 N301      / 0.00E+00 N302      / 0.00E+00 N303      /
0.00E+00 N304      / 0.00E+00
 N305      / 0.00E+00 N306      / 0.00E+00 N307      / 0.00E+00 N308      / 0.00E+00 N309      /
0.00E+00 N310      / 0.00E+00
 N312      / 0.00E+00 N313      / 0.00E+00 N314      / 0.00E+00 N315      / 0.00E+00 N316      /
0.00E+00 N317      / 0.00E+00
 N318      / 0.00E+00 N319      / 0.00E+00 N320      / 0.00E+00 N321      / 0.00E+00 N325      /
0.00E+00 N326      / 0.00E+00
 N327      / 0.00E+00 N328      / 0.00E+00 N329      / 0.00E+00 N330      / 0.00E+00 N331      /
0.00E+00 N332      / 0.00E+00
 N333      / 0.00E+00 N334      / 0.00E+00 N335      / 0.00E+00 N336      / 0.00E+00 N337      /
0.00E+00 N338      / 0.00E+00
 N339      / 0.00E+00 N340      / 0.00E+00 N341      / 0.00E+00 N342      / 0.00E+00 N343      /
0.00E+00 N344      / 0.00E+00
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 N345      / 0.00E+00 N347      / 0.00E+00 N348      / 0.00E+00 N349      / 0.00E+00 N350      /
0.00E+00 N351      / 0.00E+00
 N352      / 0.00E+00 N353      / 0.00E+00 N354      / 0.00E+00 N355      / 0.00E+00 N356      /
0.00E+00 N357      / 0.00E+00
 N358      / 0.00E+00 N359      / 0.00E+00 N360      / 0.00E+00 N361      / 0.00E+00 N362      /
0.00E+00 N363      / 0.00E+00
 N364      / 0.00E+00 N365      / 0.00E+00 N366      / 0.00E+00 N367      / 0.00E+00 N368      /
0.00E+00 N369      / 0.00E+00
 N370      / 0.00E+00 N371      / 0.00E+00 N372      / 0.00E+00 N373      / 0.00E+00 N374      /
0.00E+00 N375      / 0.00E+00
 N376      / 0.00E+00 N377      / 0.00E+00 N378      / 0.00E+00 N379      / 0.00E+00 N381      /
0.00E+00 N382      / 0.00E+00
 N383      / 0.00E+00 N384      / 0.00E+00 N386      / 0.00E+00 N387      / 0.00E+00 N388      /
0.00E+00 N389      / 0.00E+00
 N390      / 0.00E+00 N391      / 0.00E+00 N392      / 0.00E+00 N394      / 0.00E+00 N395      /
0.00E+00 N396      / 0.00E+00
 N397      / 0.00E+00 N398      / 0.00E+00 N399      / 0.00E+00 N403      / 0.00E+00 N404      /
0.00E+00 N405      / 0.00E+00
 N406      / 0.00E+00 N407      / 0.00E+00 N408      / 0.00E+00 N409      / 0.00E+00 N410      /
0.00E+00 N412      / 0.00E+00
 N413      / 0.00E+00 N414      / 0.00E+00 N415      / 0.00E+00 N416      / 0.00E+00 N417      /
0.00E+00 N418      / 0.00E+00
 N419      / 0.00E+00 N420      / 0.00E+00 N421      / 0.00E+00 N422      / 0.00E+00 N423      /
0.00E+00 N424      / 0.00E+00
 N425      / 0.00E+00 N426      / 0.00E+00 N428      / 0.00E+00 N429      / 0.00E+00 N430      /
0.00E+00 N431      / 0.00E+00
 N432      / 0.00E+00 N434      / 0.00E+00 N435      / 0.00E+00 N436      / 0.00E+00 N437      /
0.00E+00 N438      / 0.00E+00
 N439      / 0.00E+00 N440      / 0.00E+00 N441      / 0.00E+00 N442      / 0.00E+00 N443      /
0.00E+00 N444      / 0.00E+00
 N445      / 0.00E+00 N446      / 0.00E+00 N447      / 0.00E+00 N448      / 0.00E+00 N449      /
0.00E+00 N450      / 0.00E+00
 N451      / 0.00E+00 N453      / 0.00E+00 N454      / 0.00E+00 N455      / 0.00E+00 N456      /
0.00E+00 N457      / 0.00E+00
 N458      / 0.00E+00 N459      / 0.00E+00 N460      / 0.00E+00 N461      / 0.00E+00 N464      /
0.00E+00 N465      / 0.00E+00
 N466      / 0.00E+00 N467      / 0.00E+00 N468      / 0.00E+00 N469      / 0.00E+00 N470      /
0.00E+00 N471      / 0.00E+00
 N472      / 0.00E+00 N473      / 0.00E+00 N487      / 0.00E+00 N489      / 0.00E+00 N490      /
0.00E+00 N491      / 0.00E+00
 N492      / 0.00E+00 N493      / 0.00E+00 N497      / 0.00E+00 N499      / 0.00E+00 N500      /
0.00E+00 N501      / 0.00E+00
 N503      / 0.00E+00 N504      / 0.00E+00 N506      / 0.00E+00 N509      / 0.00E+00 N511      /
0.00E+00 N513      / 0.00E+00
 N514      / 0.00E+00 N516      / 0.00E+00 N517      / 0.00E+00 N518      / 0.00E+00 N524      /
0.00E+00 N525      / 0.00E+00
 N526      / 0.00E+00 N527      / 0.00E+00 N528      / 0.00E+00 N529      / 0.00E+00 N530      /
0.00E+00 N689      / 0.00E+00
 N494      / 0.00E+00 N541      / 0.00E+00 EL329     / 0.00E+00 N427      / 0.00E+00 N411      /
0.00E+00 N295      / 0.00E+00
 N311      / 0.00E+00 N462      / 0.00E+00 N554      / 0.00E+00 N555      / 0.00E+00
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 ===> System inflows (data group K3) at     0.02 hours ( Junction / Inflow,cfs )

 N221      / 2.40E-01 N222      / 2.03E-02 N223      / 1.35E-02 N224      / 1.02E-02 N227      /
2.07E-01 N228      / 4.46E-01
 N230      / 8.21E-02 N231      / 7.89E-02 N233      / 1.48E-02 N234      / 0.00E+00 N235      /
1.91E-02 N236      / 0.00E+00
 N237      / 0.00E+00 N238      / 5.59E-02 N239      / 3.49E-02 N240      / 5.44E-02 N241      /
8.30E-04 N242      / 4.26E-02
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N243 / 2.84E-02 N244 / 9.25E-03 N245 / 2.40E-02 N246 / 2.66E-04 N247 / 3.36E-01 N248 / 3.72E-02
N249 / 1.76E-01 N250 / 2.56E-01 N251 / 3.07E-01 N252 / 3.07E-02 N253 / 5.24E-03 N254 / 1.03E-01
N255 / 7.46E-02 N256 / 1.54E-01 N257 / 2.06E-01 N259 / 2.04E-01 N260 / 0.00E+00 N261 / 1.65E-01
N262 / 1.31E-01 N263 / 9.62E-03 N264 / 0.00E+00 N265 / 1.08E-01 N266 / 9.36E-03 N267 / 7.84E-03
N268 / 1.44E-01 N269 / 0.00E+00 N270 / 3.29E-01 N271 / 6.40E-02 N272 / 2.80E-02 N273 / 7.08E-02
N274 / 1.65E-02 N275 / 1.34E-02 N276 / 8.13E-02 N277 / 1.04E-02 N278 / 0.00E+00 N279 / 9.96E-02
N280 / 3.14E-01 N281 / 3.53E-02 N282 / 5.21E-03 N283 / 9.75E-02 N284 / 7.11E-02 N285 / 2.20E-01
N286 / 2.23E-02 N287 / 0.00E+00 N288 / 7.60E-02 N289 / 0.00E+00 N290 / 7.84E-01 N291 / 7.10E-01
N292 / 0.00E+00 N293 / 1.25E-01 N294 / 1.07E-02 N296 / 1.25E-01 N297 / 1.30E-01 N298 / 1.00E-02
N299 / 0.00E+00 N300 / 1.30E-01 N301 / 2.84E-01 N302 / 8.22E-03 N303 / 0.00E+00 N304 / 1.24E-01
N305 / 1.30E-01 N306 / 1.08E-02 N307 / 0.00E+00 N308 / 1.17E-01 N309 / 1.51E-01 N310 / 5.80E-03
N312 / 1.88E-01 N313 / 1.44E-02 N314 / 2.25E-02 N315 / 5.86E-02 N316 / 0.00E+00 N317 / 3.62E-01
N318 / 5.93E-02 N319 / 1.16E-01 N320 / 1.41E-02 N321 / 1.55E-01 N325 / 0.00E+00 N326 / 7.06E-02
N327 / 2.04E-01 N328 / 4.17E-02 N329 / 2.34E-01 N330 / 1.83E-02 N331 / 0.00E+00 N332 / 2.24E-01
N333 / 1.33E-01 N334 / 0.00E+00 N335 / 9.70E-03 N336 / 1.06E-01 N337 / 2.42E-02 N338 / 1.06E-01
N339 / 1.35E-01 N340 / 0.00E+00 N341 / 0.00E+00 N342 / 9.94E-03 N343 / 0.00E+00 N344 / 1.56E-01
N345 / 4.22E-02 N347 / 0.00E+00 N348 / 1.64E-02 N349 / 1.42E-01 N350 / 1.35E-01 N351 / 9.23E-03
N352 / 1.63E-01 N353 / 1.84E-01 N354 / 0.00E+00 N355 / 0.00E+00 N356 / 3.54E-02 N357 / 3.59E-02
N358 / 3.59E-02 N359 / 0.00E+00 N360 / 0.00E+00 N361 / 1.76E+00 N362 / 0.00E+00 N363 / 1.41E-01
N364 / 0.00E+00 N365 / 0.00E+00 N366 / 3.81E-01 N367 / 2.19E-01 N368 / 1.02E+00 N369 / 0.00E+00
N370 / 1.53E+00 N371 / 2.12E+00 N372 / 0.00E+00 N373 / 0.00E+00 N374 / 0.00E+00 N375 / 7.35E-01
N376 / 6.85E-01 N377 / 0.00E+00 N378 / 0.00E+00 N379 / 0.00E+00 N381 / 4.30E-03 N382 / 8.31E-02
N383 / 1.92E-01 N384 / 1.79E-01 N386 / 2.20E-01 N387 / 1.36E-01 N388 / 0.00E+00 N389 / 2.94E-01
N390 / 1.89E-01 N391 / 2.90E-01 N392 / 0.00E+00 N394 / 0.00E+00 N395 / 2.78E-01 N396 / 0.00E+00
N397 / 6.16E-03 N398 / 1.59E-01 N399 / 1.49E-01 N403 / 0.00E+00 N404 / 5.79E-01 N405 / 1.85E-01
N406 / 2.70E-01 N407 / 1.33E-01 N408 / 4.54E-01 N409 / 0.00E+00 N410 / 0.00E+00 N412 / 3.52E-01
N413 / 0.00E+00 N414 / 0.00E+00 N415 / 3.80E-01 N416 / 3.59E-01 N417 / 0.00E+00 N418 / 3.36E-01
N419 / 0.00E+00 N420 / 5.91E-01 N421 / 0.00E+00 N422 / 0.00E+00 N423 / 4.03E-01 N424 / 0.00E+00
N425 / 3.17E-01 N426 / 0.00E+00 N428 / 0.00E+00 N429 / 1.58E-01 N430 / 1.86E-01 N431 / 8.47E-04
N432 / 0.00E+00 N434 / 1.88E-01 N435 / 0.00E+00 N436 / 2.36E-01 N437 / 4.29E-01 N438 / 0.00E+00

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 N439      / 1.37E-02 N440      / 1.38E-01 N441      / 3.16E-01 N442      / 0.00E+00 N443      /
7.73E-02 N444      / 3.29E-01
 N445      / 7.87E-02 N446      / 7.80E-02 N447      / 1.58E-01 N448      / 2.03E-01 N449      /
1.49E-04 N450      / 0.00E+00
 N451      / 1.89E-01 N453      / 0.00E+00 N454      / 2.38E-01 N455      / 0.00E+00 N456      /
8.38E-04 N457      / 1.39E-01
 N458      / 0.00E+00 N459      / 0.00E+00 N460      / 0.00E+00 N461      / 0.00E+00 N464      /
4.10E-02 N465      / 4.91E-01
 N466      / 0.00E+00 N467      / 8.06E-02 N468      / 1.38E-01 N469      / 5.39E-02 N470      /
0.00E+00 N471      / 1.07E-01
 N472      / 7.74E-02 N473      / 5.63E-02 N487      / 0.00E+00 N489      / 0.00E+00 N490      /
7.55E-01 N491      / 3.17E-02
 N492      / 3.70E-01 N493      / 0.00E+00 N497      / 4.72E-01 N499      / 0.00E+00 N500      /
2.05E-01 N501      / 0.00E+00
 N503      / 0.00E+00 N504      / 8.94E-01 N506      / 3.15E-01 N509      / 9.16E-01 N511      /
4.25E-01 N513      / 5.57E-01
 N514      / 1.26E-02 N516      / 0.00E+00 N517      / 1.07E-02 N518      / 0.00E+00 N524      /
5.03E-02 N525      / 0.00E+00
 N526      / 4.97E-02 N527      / 2.73E-02 N528      / 0.00E+00 N529      / 6.81E-02 N530      /
2.50E-02 N689      / 0.00E+00
 N494      / 0.00E+00 N541      / 0.00E+00 EL329     / 3.60E-01 N427      / 0.00E+00 N411      /
0.00E+00 N295      / 0.00E+00
 N311      / 0.00E+00 N462      / 1.76E-01 N554      / 0.00E+00 N555      / 0.00E+00
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 ===> System inflows (data group K3) at     0.08 hours ( Junction / Inflow,cfs )

 N221      / 2.89E+00 N222      / 2.44E-01 N223      / 1.62E-01 N224      / 1.23E-01 N227      /
2.49E+00 N228      / 5.37E+00
 N230      / 9.89E-01 N231      / 9.50E-01 N233      / 1.78E-01 N234      / 0.00E+00 N235      /
2.31E-01 N236      / 0.00E+00
 N237      / 0.00E+00 N238      / 6.74E-01 N239      / 4.21E-01 N240      / 6.55E-01 N241      /
1.00E-02 N242      / 5.13E-01
 N243      / 3.42E-01 N244      / 1.12E-01 N245      / 2.90E-01 N246      / 3.20E-03 N247      /
4.05E+00 N248      / 4.48E-01
 N249      / 2.13E+00 N250      / 3.08E+00 N251      / 3.69E+00 N252      / 3.70E-01 N253      /
6.31E-02 N254      / 1.24E+00
 N255      / 8.98E-01 N256      / 1.85E+00 N257      / 2.48E+00 N259      / 2.46E+00 N260      /
0.00E+00 N261      / 1.98E+00
 N262      / 1.58E+00 N263      / 1.16E-01 N264      / 0.00E+00 N265      / 1.30E+00 N266      /
1.13E-01 N267      / 9.44E-02
 N268      / 1.74E+00 N269      / 0.00E+00 N270      / 3.96E+00 N271      / 7.71E-01 N272      /
3.37E-01 N273      / 8.53E-01
 N274      / 1.99E-01 N275      / 1.61E-01 N276      / 9.79E-01 N277      / 1.25E-01 N278      /
0.00E+00 N279      / 1.20E+00
 N280      / 3.79E+00 N281      / 4.26E-01 N282      / 6.28E-02 N283      / 1.17E+00 N284      /
8.57E-01 N285      / 2.66E+00
 N286      / 2.69E-01 N287      / 0.00E+00 N288      / 9.16E-01 N289      / 0.00E+00 N290      /
9.45E+00 N291      / 8.56E+00
 N292      / 0.00E+00 N293      / 1.51E+00 N294      / 1.29E-01 N296      / 1.51E+00 N297      /
1.56E+00 N298      / 1.20E-01
 N299      / 0.00E+00 N300      / 1.57E+00 N301      / 3.42E+00 N302      / 9.90E-02 N303      /
0.00E+00 N304      / 1.50E+00
 N305      / 1.57E+00 N306      / 1.31E-01 N307      / 0.00E+00 N308      / 1.41E+00 N309      /
1.82E+00 N310      / 6.99E-02
 N312      / 2.26E+00 N313      / 1.73E-01 N314      / 2.71E-01 N315      / 7.07E-01 N316      /
0.00E+00 N317      / 4.36E+00
 N318      / 7.15E-01 N319      / 1.40E+00 N320      / 1.70E-01 N321      / 1.87E+00 N325      /
0.00E+00 N326      / 8.51E-01
 N327      / 2.46E+00 N328      / 5.03E-01 N329      / 2.82E+00 N330      / 2.21E-01 N331      /
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0.00E+00 N332      / 2.69E+00
 N333      / 1.60E+00 N334      / 0.00E+00 N335      / 1.17E-01 N336      / 1.28E+00 N337      /
2.92E-01 N338      / 1.28E+00
 N339      / 1.62E+00 N340      / 0.00E+00 N341      / 0.00E+00 N342      / 1.20E-01 N343      /
0.00E+00 N344      / 1.88E+00
 N345      / 5.08E-01 N347      / 0.00E+00 N348      / 1.98E-01 N349      / 1.71E+00 N350      /
1.63E+00 N351      / 1.11E-01
 N352      / 1.96E+00 N353      / 2.21E+00 N354      / 0.00E+00 N355      / 0.00E+00 N356      /
4.26E-01 N357      / 4.32E-01
 N358      / 4.33E-01 N359      / 0.00E+00 N360      / 0.00E+00 N361      / 2.13E+01 N362      /
0.00E+00 N363      / 1.70E+00
 N364      / 0.00E+00 N365      / 0.00E+00 N366      / 4.59E+00 N367      / 2.63E+00 N368      /
1.23E+01 N369      / 0.00E+00
 N370      / 1.84E+01 N371      / 2.56E+01 N372      / 0.00E+00 N373      / 0.00E+00 N374      /
0.00E+00 N375      / 8.86E+00
 N376      / 8.25E+00 N377      / 0.00E+00 N378      / 0.00E+00 N379      / 0.00E+00 N381      /
5.18E-02 N382      / 1.00E+00
 N383      / 2.31E+00 N384      / 2.16E+00 N386      / 2.65E+00 N387      / 1.64E+00 N388      /
0.00E+00 N389      / 3.54E+00
 N390      / 2.28E+00 N391      / 3.49E+00 N392      / 0.00E+00 N394      / 0.00E+00 N395      /
3.35E+00 N396      / 0.00E+00
 N397      / 7.42E-02 N398      / 1.92E+00 N399      / 1.80E+00 N403      / 0.00E+00 N404      /
6.97E+00 N405      / 2.23E+00
 N406      / 3.25E+00 N407      / 1.61E+00 N408      / 5.48E+00 N409      / 0.00E+00 N410      /
0.00E+00 N412      / 4.24E+00
 N413      / 0.00E+00 N414      / 0.00E+00 N415      / 4.58E+00 N416      / 4.32E+00 N417      /
0.00E+00 N418      / 4.05E+00
 N419      / 0.00E+00 N420      / 7.12E+00 N421      / 0.00E+00 N422      / 0.00E+00 N423      /
4.85E+00 N424      / 0.00E+00
 N425      / 3.83E+00 N426      / 0.00E+00 N428      / 0.00E+00 N429      / 1.91E+00 N430      /
2.24E+00 N431      / 1.02E-02
 N432      / 0.00E+00 N434      / 2.27E+00 N435      / 0.00E+00 N436      / 2.85E+00 N437      /
5.17E+00 N438      / 0.00E+00
 N439      / 1.65E-01 N440      / 1.66E+00 N441      / 3.80E+00 N442      / 0.00E+00 N443      /
9.32E-01 N444      / 3.97E+00
 N445      / 9.48E-01 N446      / 9.39E-01 N447      / 1.91E+00 N448      / 2.45E+00 N449      /
1.80E-03 N450      / 0.00E+00
 N451      / 2.28E+00 N453      / 0.00E+00 N454      / 2.87E+00 N455      / 0.00E+00 N456      /
1.01E-02 N457      / 1.67E+00
 N458      / 0.00E+00 N459      / 0.00E+00 N460      / 0.00E+00 N461      / 0.00E+00 N464      /
4.94E-01 N465      / 5.92E+00
 N466      / 0.00E+00 N467      / 9.71E-01 N468      / 1.66E+00 N469      / 6.49E-01 N470      /
0.00E+00 N471      / 1.29E+00
 N472      / 9.32E-01 N473      / 6.79E-01 N487      / 0.00E+00 N489      / 0.00E+00 N490      /
9.10E+00 N491      / 3.82E-01
 N492      / 4.46E+00 N493      / 0.00E+00 N497      / 5.68E+00 N499      / 0.00E+00 N500      /
2.47E+00 N501      / 0.00E+00
 N503      / 0.00E+00 N504      / 1.08E+01 N506      / 3.80E+00 N509      / 1.10E+01 N511      /
5.12E+00 N513      / 6.72E+00
 N514      / 1.52E-01 N516      / 0.00E+00 N517      / 1.29E-01 N518      / 0.00E+00 N524      /
6.06E-01 N525      / 0.00E+00
 N526      / 5.99E-01 N527      / 3.29E-01 N528      / 0.00E+00 N529      / 8.21E-01 N530      /
3.01E-01 N689      / 0.00E+00
 N494      / 0.00E+00 N541      / 0.00E+00 EL329     / 4.34E+00 N427      / 0.00E+00 N411      /
0.00E+00 N295      / 0.00E+00
 N311      / 0.00E+00 N462      / 2.13E+00 N554      / 0.00E+00 N555      / 0.00E+00
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 ===> System inflows (data group K3) at     1.00 hours ( Junction / Inflow,cfs )
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N221 / 2.89E+00 N222 / 2.44E-01 N223 / 1.62E-01 N224 / 1.23E-01 N227 / 2.49E+00 N228 / 5.37E+00
N230 / 9.89E-01 N231 / 9.50E-01 N233 / 1.78E-01 N234 / 0.00E+00 N235 / 2.31E-01 N236 / 0.00E+00
N237 / 0.00E+00 N238 / 6.74E-01 N239 / 4.21E-01 N240 / 6.55E-01 N241 / 1.00E-02 N242 / 5.13E-01
N243 / 3.42E-01 N244 / 1.12E-01 N245 / 2.90E-01 N246 / 3.20E-03 N247 / 4.05E+00 N248 / 4.48E-01
N249 / 2.13E+00 N250 / 3.08E+00 N251 / 3.69E+00 N252 / 3.70E-01 N253 / 6.31E-02 N254 / 1.24E+00
N255 / 8.98E-01 N256 / 1.85E+00 N257 / 2.48E+00 N259 / 2.46E+00 N260 / 0.00E+00 N261 / 1.98E+00
N262 / 1.58E+00 N263 / 1.16E-01 N264 / 0.00E+00 N265 / 1.30E+00 N266 / 1.13E-01 N267 / 9.44E-02
N268 / 1.74E+00 N269 / 0.00E+00 N270 / 3.96E+00 N271 / 7.71E-01 N272 / 3.37E-01 N273 / 8.53E-01
N274 / 1.99E-01 N275 / 1.61E-01 N276 / 9.79E-01 N277 / 1.25E-01 N278 / 0.00E+00 N279 / 1.20E+00
N280 / 3.79E+00 N281 / 4.26E-01 N282 / 6.28E-02 N283 / 1.17E+00 N284 / 8.57E-01 N285 / 2.66E+00
N286 / 2.69E-01 N287 / 0.00E+00 N288 / 9.16E-01 N289 / 0.00E+00 N290 / 9.45E+00 N291 / 8.56E+00
N292 / 0.00E+00 N293 / 1.51E+00 N294 / 1.29E-01 N296 / 1.51E+00 N297 / 1.56E+00 N298 / 1.20E-01
N299 / 0.00E+00 N300 / 1.57E+00 N301 / 3.42E+00 N302 / 9.90E-02 N303 / 0.00E+00 N304 / 1.50E+00
N305 / 1.57E+00 N306 / 1.31E-01 N307 / 0.00E+00 N308 / 1.41E+00 N309 / 1.82E+00 N310 / 6.99E-02
N312 / 2.26E+00 N313 / 1.73E-01 N314 / 2.71E-01 N315 / 7.07E-01 N316 / 0.00E+00 N317 / 4.36E+00
N318 / 7.15E-01 N319 / 1.40E+00 N320 / 1.70E-01 N321 / 1.87E+00 N325 / 0.00E+00 N326 / 8.51E-01
N327 / 2.46E+00 N328 / 5.03E-01 N329 / 2.82E+00 N330 / 2.21E-01 N331 / 0.00E+00 N332 / 2.69E+00
N333 / 1.60E+00 N334 / 0.00E+00 N335 / 1.17E-01 N336 / 1.28E+00 N337 / 2.92E-01 N338 / 1.28E+00
N339 / 1.62E+00 N340 / 0.00E+00 N341 / 0.00E+00 N342 / 1.20E-01 N343 / 0.00E+00 N344 / 1.88E+00
N345 / 5.08E-01 N347 / 0.00E+00 N348 / 1.98E-01 N349 / 1.71E+00 N350 / 1.63E+00 N351 / 1.11E-01
N352 / 1.96E+00 N353 / 2.21E+00 N354 / 0.00E+00 N355 / 0.00E+00 N356 / 4.26E-01 N357 / 4.32E-01
N358 / 4.33E-01 N359 / 0.00E+00 N360 / 0.00E+00 N361 / 2.13E+01 N362 / 0.00E+00 N363 / 1.70E+00
N364 / 0.00E+00 N365 / 0.00E+00 N366 / 4.59E+00 N367 / 2.63E+00 N368 / 1.23E+01 N369 / 0.00E+00
N370 / 1.84E+01 N371 / 2.56E+01 N372 / 0.00E+00 N373 / 0.00E+00 N374 / 0.00E+00 N375 / 8.86E+00
N376 / 8.25E+00 N377 / 0.00E+00 N378 / 0.00E+00 N379 / 0.00E+00 N381 / 5.18E-02 N382 / 1.00E+00
N383 / 2.31E+00 N384 / 2.16E+00 N386 / 2.65E+00 N387 / 1.64E+00 N388 / 0.00E+00 N389 / 3.54E+00
N390 / 2.28E+00 N391 / 3.49E+00 N392 / 0.00E+00 N394 / 0.00E+00 N395 / 3.35E+00 N396 / 0.00E+00
N397 / 7.42E-02 N398 / 1.92E+00 N399 / 1.80E+00 N403 / 0.00E+00 N404 / 6.97E+00 N405 / 2.23E+00
N406 / 3.25E+00 N407 / 1.61E+00 N408 / 5.48E+00 N409 / 0.00E+00 N410 / 0.00E+00 N412 / 4.24E+00
N413 / 0.00E+00 N414 / 0.00E+00 N415 / 4.58E+00 N416 / 4.32E+00 N417 / 0.00E+00 N418 / 4.05E+00

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 N419      / 0.00E+00 N420      / 7.12E+00 N421      / 0.00E+00 N422      / 0.00E+00 N423      /
4.85E+00 N424      / 0.00E+00
 N425      / 3.83E+00 N426      / 0.00E+00 N428      / 0.00E+00 N429      / 1.91E+00 N430      /
2.24E+00 N431      / 1.02E-02
 N432      / 0.00E+00 N434      / 2.27E+00 N435      / 0.00E+00 N436      / 2.85E+00 N437      /
5.17E+00 N438      / 0.00E+00
 N439      / 1.65E-01 N440      / 1.66E+00 N441      / 3.80E+00 N442      / 0.00E+00 N443      /
9.32E-01 N444      / 3.97E+00
 N445      / 9.48E-01 N446      / 9.39E-01 N447      / 1.91E+00 N448      / 2.45E+00 N449      /
1.80E-03 N450      / 0.00E+00
 N451      / 2.28E+00 N453      / 0.00E+00 N454      / 2.87E+00 N455      / 0.00E+00 N456      /
1.01E-02 N457      / 1.67E+00
 N458      / 0.00E+00 N459      / 0.00E+00 N460      / 0.00E+00 N461      / 0.00E+00 N464      /
4.94E-01 N465      / 5.92E+00
 N466      / 0.00E+00 N467      / 9.71E-01 N468      / 1.66E+00 N469      / 6.49E-01 N470      /
0.00E+00 N471      / 1.29E+00
 N472      / 9.32E-01 N473      / 6.79E-01 N487      / 0.00E+00 N489      / 0.00E+00 N490      /
9.10E+00 N491      / 3.82E-01
 N492      / 4.46E+00 N493      / 0.00E+00 N497      / 5.68E+00 N499      / 0.00E+00 N500      /
2.47E+00 N501      / 0.00E+00
 N503      / 0.00E+00 N504      / 1.08E+01 N506      / 3.80E+00 N509      / 1.10E+01 N511      /
5.12E+00 N513      / 6.72E+00
 N514      / 1.52E-01 N516      / 0.00E+00 N517      / 1.29E-01 N518      / 0.00E+00 N524      /
6.06E-01 N525      / 0.00E+00
 N526      / 5.99E-01 N527      / 3.29E-01 N528      / 0.00E+00 N529      / 8.21E-01 N530      /
3.01E-01 N689      / 0.00E+00
 N494      / 0.00E+00 N541      / 0.00E+00 EL329     / 4.34E+00 N427      / 0.00E+00 N411      /
0.00E+00 N295      / 0.00E+00
 N311      / 0.00E+00 N462      / 2.13E+00 N554      / 0.00E+00 N555      / 0.00E+00
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 ===> System inflows (data group K3) at     2.00 hours ( Junction / Inflow,cfs )

 N221      / 2.89E+00 N222      / 2.44E-01 N223      / 1.62E-01 N224      / 1.23E-01 N227      /
2.49E+00 N228      / 5.37E+00
 N230      / 9.89E-01 N231      / 9.50E-01 N233      / 1.78E-01 N234      / 0.00E+00 N235      /
2.31E-01 N236      / 0.00E+00
 N237      / 0.00E+00 N238      / 6.74E-01 N239      / 4.21E-01 N240      / 6.55E-01 N241      /
1.00E-02 N242      / 5.13E-01
 N243      / 3.42E-01 N244      / 1.12E-01 N245      / 2.90E-01 N246      / 3.20E-03 N247      /
4.05E+00 N248      / 4.48E-01
 N249      / 2.13E+00 N250      / 3.08E+00 N251      / 3.69E+00 N252      / 3.70E-01 N253      /
6.31E-02 N254      / 1.24E+00
 N255      / 8.98E-01 N256      / 1.85E+00 N257      / 2.48E+00 N259      / 2.46E+00 N260      /
0.00E+00 N261      / 1.98E+00
 N262      / 1.58E+00 N263      / 1.16E-01 N264      / 0.00E+00 N265      / 1.30E+00 N266      /
1.13E-01 N267      / 9.44E-02
 N268      / 1.74E+00 N269      / 0.00E+00 N270      / 3.96E+00 N271      / 7.71E-01 N272      /
3.37E-01 N273      / 8.53E-01
 N274      / 1.99E-01 N275      / 1.61E-01 N276      / 9.79E-01 N277      / 1.25E-01 N278      /
0.00E+00 N279      / 1.20E+00
 N280      / 3.79E+00 N281      / 4.26E-01 N282      / 6.28E-02 N283      / 1.17E+00 N284      /
8.57E-01 N285      / 2.66E+00
 N286      / 2.69E-01 N287      / 0.00E+00 N288      / 9.16E-01 N289      / 0.00E+00 N290      /
9.45E+00 N291      / 8.56E+00
 N292      / 0.00E+00 N293      / 1.51E+00 N294      / 1.29E-01 N296      / 1.51E+00 N297      /
1.56E+00 N298      / 1.20E-01
 N299      / 0.00E+00 N300      / 1.57E+00 N301      / 3.42E+00 N302      / 9.90E-02 N303      /
0.00E+00 N304      / 1.50E+00
 N305      / 1.57E+00 N306      / 1.31E-01 N307      / 0.00E+00 N308      / 1.41E+00 N309      /
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1.82E+00 N310 / 6.99E-02
N312 / 2.26E+00 N313 / 1.73E-01 N314 / 2.71E-01 N315 / 7.07E-01 N316 /
0.00E+00 N317 / 4.36E+00
N318 / 7.15E-01 N319 / 1.40E+00 N320 / 1.70E-01 N321 / 1.87E+00 N325 /
0.00E+00 N326 / 8.51E-01
N327 / 2.46E+00 N328 / 5.03E-01 N329 / 2.82E+00 N330 / 2.21E-01 N331 /
0.00E+00 N332 / 2.69E+00
N333 / 1.60E+00 N334 / 0.00E+00 N335 / 1.17E-01 N336 / 1.28E+00 N337 /
2.92E-01 N338 / 1.28E+00
N339 / 1.62E+00 N340 / 0.00E+00 N341 / 0.00E+00 N342 / 1.20E-01 N343 /
0.00E+00 N344 / 1.88E+00
N345 / 5.08E-01 N347 / 0.00E+00 N348 / 1.98E-01 N349 / 1.71E+00 N350 /
1.63E+00 N351 / 1.11E-01
N352 / 1.96E+00 N353 / 2.21E+00 N354 / 0.00E+00 N355 / 0.00E+00 N356 /
4.26E-01 N357 / 4.32E-01
N358 / 4.33E-01 N359 / 0.00E+00 N360 / 0.00E+00 N361 / 2.13E+01 N362 /
0.00E+00 N363 / 1.70E+00
N364 / 0.00E+00 N365 / 0.00E+00 N366 / 4.59E+00 N367 / 2.63E+00 N368 /
1.23E+01 N369 / 0.00E+00
N370 / 1.84E+01 N371 / 2.56E+01 N372 / 0.00E+00 N373 / 0.00E+00 N374 /
0.00E+00 N375 / 8.86E+00
N376 / 8.25E+00 N377 / 0.00E+00 N378 / 0.00E+00 N379 / 0.00E+00 N381 /
5.18E-02 N382 / 1.00E+00
N383 / 2.31E+00 N384 / 2.16E+00 N386 / 2.65E+00 N387 / 1.64E+00 N388 /
0.00E+00 N389 / 3.54E+00
N390 / 2.28E+00 N391 / 3.49E+00 N392 / 0.00E+00 N394 / 0.00E+00 N395 /
3.35E+00 N396 / 0.00E+00
N397 / 7.42E-02 N398 / 1.92E+00 N399 / 1.80E+00 N403 / 0.00E+00 N404 /
6.97E+00 N405 / 2.23E+00
N406 / 3.25E+00 N407 / 1.61E+00 N408 / 5.48E+00 N409 / 0.00E+00 N410 /
0.00E+00 N412 / 4.24E+00
N413 / 0.00E+00 N414 / 0.00E+00 N415 / 4.58E+00 N416 / 4.32E+00 N417 /
0.00E+00 N418 / 4.05E+00
N419 / 0.00E+00 N420 / 7.12E+00 N421 / 0.00E+00 N422 / 0.00E+00 N423 /
4.85E+00 N424 / 0.00E+00
N425 / 3.83E+00 N426 / 0.00E+00 N428 / 0.00E+00 N429 / 1.91E+00 N430 /
2.24E+00 N431 / 1.02E-02
N432 / 0.00E+00 N434 / 2.27E+00 N435 / 0.00E+00 N436 / 2.85E+00 N437 /
5.17E+00 N438 / 0.00E+00
N439 / 1.65E-01 N440 / 1.66E+00 N441 / 3.80E+00 N442 / 0.00E+00 N443 /
9.32E-01 N444 / 3.97E+00
N445 / 9.48E-01 N446 / 9.39E-01 N447 / 1.91E+00 N448 / 2.45E+00 N449 /
1.80E-03 N450 / 0.00E+00
N451 / 2.28E+00 N453 / 0.00E+00 N454 / 2.87E+00 N455 / 0.00E+00 N456 /
1.01E-02 N457 / 1.67E+00
N458 / 0.00E+00 N459 / 0.00E+00 N460 / 0.00E+00 N461 / 0.00E+00 N464 /
4.94E-01 N465 / 5.92E+00
N466 / 0.00E+00 N467 / 9.71E-01 N468 / 1.66E+00 N469 / 6.49E-01 N470 /
0.00E+00 N471 / 1.29E+00
N472 / 9.32E-01 N473 / 6.79E-01 N487 / 0.00E+00 N489 / 0.00E+00 N490 /
9.10E+00 N491 / 3.82E-01
N492 / 4.46E+00 N493 / 0.00E+00 N497 / 5.68E+00 N499 / 0.00E+00 N500 /
2.47E+00 N501 / 0.00E+00
N503 / 0.00E+00 N504 / 1.08E+01 N506 / 3.80E+00 N509 / 1.10E+01 N511 /
5.12E+00 N513 / 6.72E+00
N514 / 1.52E-01 N516 / 0.00E+00 N517 / 1.29E-01 N518 / 0.00E+00 N524 /
6.06E-01 N525 / 0.00E+00
N526 / 5.99E-01 N527 / 3.29E-01 N528 / 0.00E+00 N529 / 8.21E-01 N530 /
3.01E-01 N689 / 0.00E+00
N494 / 0.00E+00 N541 / 0.00E+00 EL329 / 4.34E+00 N427 / 0.00E+00 N411 /

0.00E+00 N295 / 0.00E+00
N311 / 0.00E+00 N462 / 2.13E+00 N554 / 0.00E+00 N555 / 0.00E+00
# # # #

N269	244.2417	600.0000	0.0000
N270	152.6241	381.5603	0.0000
N271	83.1877	207.9692	0.0000
N272	100.8395	252.0987	0.0000
N273	210.6236	526.5591	0.0000
N274	111.4131	278.5328	0.0000
N275	600.0000	600.0000	0.0000
N276	234.9990	587.4975	0.0000
N277	442.0940	600.0000	0.0000
N278	600.0000	600.0000	0.0000
N279	137.3005	343.2513	0.0000
N280	154.8166	387.0416	0.0000
N281	97.4407	243.6018	0.0000
N282	244.0467	600.0000	0.0000
N283	255.9469	600.0000	0.0000
N284	169.8662	424.6655	0.0000
N285	39.1332	97.8331	0.0000
N286	44.7207	111.8017	0.0000
N287	41.9661	104.9153	0.0000
N288	30.5525	76.3812	0.0000
N289	600.0000	600.0000	0.0000
N290	2.2664	5.6661	0.0000
N291	315.3231	600.0000	0.0000
N292	600.0000	600.0000	0.0000
N293	220.4121	551.0302	0.0000
N294	341.1898	600.0000	0.0000
N296	128.3143	320.7857	0.0000
N297	195.4708	488.6770	0.0000
N298	290.6164	600.0000	0.0000
N299	600.0000	600.0000	0.0000
N300	101.1241	252.8103	0.0000
N301	88.7709	221.9272	0.0000
N302	382.7287	600.0000	0.0000
N303	600.0000	600.0000	0.0000
N304	136.6436	341.6091	0.0000
N305	2.0656	5.1641	0.0000
N306	0.4445	1.1111	60.0000
N307	600.0000	600.0000	0.0000
N308	1.3224	3.3061	18660.0000
N309	195.4506	488.6266	0.0000
N310	314.0354	600.0000	0.0000
N312	139.7987	349.4968	0.0000
N313	600.0000	600.0000	0.0000
N314	455.4452	600.0000	0.0000
N315	539.0377	600.0000	0.0000
N316	600.0000	600.0000	0.0000
N317	19.7946	49.4865	0.0000
N318	28.1061	70.2652	0.0000
N319	18.0066	45.0164	0.0000
N320	15.0429	37.6072	0.0000
N321	14.2907	35.7268	0.0000
N325	25.3484	63.3709	0.0000
N326	8.7133	21.7832	0.0000
N327	12.4981	31.2453	0.0000
N328	11.9130	29.7826	0.0000
N329	1.3010	3.2525	60.0000
N330	3.3527	8.3818	0.0000
N331	600.0000	600.0000	0.0000
N332	9.4475	23.6187	0.0000
N333	54.4139	136.0348	0.0000

N334	38.0308	95.0769	0.0000
N335	23.7456	59.3640	0.0000
N336	22.6044	56.5109	0.0000
N337	107.1131	267.7828	0.0000
N338	76.2638	190.6595	0.0000
N339	182.7556	456.8889	0.0000
N340	214.4845	536.2114	0.0000
N341	164.4481	411.1203	0.0000
N342	253.8417	600.0000	0.0000
N343	600.0000	600.0000	0.0000
N344	130.8658	327.1644	0.0000
N345	383.5407	600.0000	0.0000
N347	16.8697	42.1743	0.0000
N348	41.2656	103.1641	0.0000
N349	15.9241	39.8102	0.0000
N350	18.4964	46.2409	60.0000
N351	20.0583	50.1459	0.0000
N352	32.2310	80.5774	0.0000
N353	30.2317	75.5793	60.0000
N354	303.2658	600.0000	0.0000
N355	600.0000	600.0000	0.0000
N356	372.6250	600.0000	0.0000
N357	327.1010	600.0000	0.0000
N358	250.6997	600.0000	0.0000
N359	347.0855	600.0000	0.0000
N360	600.0000	600.0000	0.0000
N361	95.3649	238.4121	0.0000
N362	98.4270	246.0675	0.0000
N363	41.4723	103.6808	0.0000
N364	155.3061	388.2653	0.0000
N365	600.0000	600.0000	0.0000
N366	95.0359	237.5897	0.0000
N367	124.2998	310.7495	0.0000
N368	37.7959	94.4898	0.0000
N369	66.0127	165.0318	0.0000
N370	17.0489	42.6223	0.0000
N371	11.5917	28.9792	0.0000
N372	65.6185	164.0462	0.0000
N373	37.6488	94.1220	0.0000
N374	27.1260	67.8150	0.0000
N375	39.3076	98.2691	0.0000
N376	147.5711	368.9278	0.0000
N377	65.4586	163.6465	0.0000
N378	85.7474	214.3684	0.0000
N379	600.0000	600.0000	0.0000
N381	124.5699	311.4247	0.0000
N382	77.4759	193.6896	0.0000
N383	96.8947	242.2367	0.0000
N384	125.3402	313.3505	0.0000
N386	108.2062	270.5156	0.0000
N387	137.1532	342.8831	0.0000
N388	135.5359	338.8397	0.0000
N389	32.7902	81.9756	0.0000
N390	140.8816	352.2040	0.0000
N391	46.5669	116.4173	0.0000
N392	31.5098	78.7745	0.0000
N394	600.0000	600.0000	0.0000
N395	11.2668	28.1669	0.0000
N396	128.3597	320.8991	0.0000
N397	18.9569	47.3922	300.0000

N398	253.9360	600.0000	0.0000
N399	28.1842	70.4604	0.0000
N403	34.9207	87.3018	180.0000
N404	8.5553	21.3883	120.0000
N405	121.6810	304.2024	0.0000
N406	17.5361	43.8402	0.0000
N407	144.5750	361.4376	0.0000
N408	16.2229	40.5574	0.0000
N409	20.0658	50.1645	0.0000
N410	6.0313	15.0783	0.0000
N412	94.9018	237.2545	0.0000
N413	23.8132	59.5330	0.0000
N414	23.7947	59.4866	0.0000
N415	53.7014	134.2535	1200.0000
N416	102.1814	255.4534	0.0000
N417	176.1792	440.4479	0.0000
N418	173.6102	434.0254	0.0000
N419	62.7373	156.8432	0.0000
N420	18.9914	47.4784	0.0000
N421	53.4545	133.6361	0.0000
N422	92.5128	231.2819	0.0000
N423	69.3797	173.4494	0.0000
N424	93.0222	232.5555	0.0000
N425	38.4723	96.1807	0.0000
N426	68.6249	171.5622	0.0000
N428	99.9744	249.9361	0.0000
N429	70.2650	175.6625	0.0000
N430	255.4107	600.0000	0.0000
N431	170.8947	427.2367	0.0000
N432	158.7983	396.9956	0.0000
N434	101.9121	254.7802	0.0000
N435	42.8079	107.0199	0.0000
N436	44.7051	111.7628	0.0000
N437	40.3202	100.8006	0.0000
N438	73.1261	182.8153	0.0000
N439	98.1267	245.3168	0.0000
N440	68.5044	171.2609	0.0000
N441	71.6145	179.0362	0.0000
N442	86.7740	216.9351	0.0000
N443	95.4545	238.6363	0.0000
N444	49.2535	123.1338	0.0000
N445	205.3946	513.4865	0.0000
N446	91.9473	229.8683	0.0000
N447	225.9455	564.8636	0.0000
N448	29.7683	74.4208	0.0000
N449	45.3955	113.4887	0.0000
N450	17.0118	42.5294	0.0000
N451	29.2773	73.1933	0.0000
N453	53.0705	132.6762	0.0000
N454	29.3414	73.3536	0.0000
N455	135.4961	338.7402	0.0000
N456	133.6644	334.1611	0.0000
N457	72.3562	180.8904	0.0000
N458	136.9001	342.2502	0.0000
N459	209.5542	523.8854	0.0000
N460	351.3442	600.0000	0.0000
N461	600.0000	600.0000	0.0000
N464	35.4417	88.6042	0.0000
N465	22.6365	56.5914	0.0000
N466	28.0026	70.0065	0.0000

N467	29.3617	73.4043	0.0000
N468	101.3662	253.4156	0.0000
N469	112.4060	281.0151	0.0000
N470	600.0000	600.0000	0.0000
N471	121.9625	304.9062	0.0000
N472	135.8138	339.5345	0.0000
N473	212.6372	531.5929	0.0000
N487	135.3633	338.4083	0.0000
N489	100.8508	252.1270	0.0000
N490	108.9029	272.2573	0.0000
N491	32.9818	82.4544	0.0000
N492	47.0319	117.5798	240.0000
N493	600.0000	600.0000	0.0000
N497	71.3428	178.3570	0.0000
N499	600.0000	600.0000	0.0000
N500	36.9616	92.4040	0.0000
N501	60.5916	151.4789	0.0000
N503	600.0000	600.0000	0.0000
N504	1.2618	3.1544	120.0000
N506	63.0949	157.7372	0.0000
N509	63.8394	159.5984	0.0000
N511	341.3318	600.0000	0.0000
N513	91.3064	228.2660	0.0000
N514	205.6908	514.2271	0.0000
N516	600.0000	600.0000	0.0000
N517	232.4254	581.0635	0.0000
N518	58.6265	146.5663	0.0000
N524	276.0380	600.0000	0.0000
N525	172.9788	432.4471	0.0000
N526	334.6337	600.0000	0.0000
N527	600.0000	600.0000	0.0000
N528	43.4215	108.5537	0.0000
N529	4.2342	10.5854	0.0000
N530	7.6967	19.2418	420.0000
N689	600.0000	600.0000	0.0000
N494	162.8212	407.0530	0.0000
N541	33.1590	82.8976	0.0000
EL329	30.7094	76.7735	0.0000
N427	54.0515	135.1288	0.0000
N411	600.0000	600.0000	0.0000
N295	600.0000	600.0000	0.0000
N311	600.0000	600.0000	0.0000
N462	29.1670	72.9174	0.0000
N554	52.4017	131.0042	0.0000
N555	600.0000	600.0000	0.0000
N322	600.0000	600.0000	0.0000

The junction requiring the smallest time step was...N308

```
 *=========================================================*
 |       Table E5a - Conduit Explicit Condition Summary    |
 |       Courant   =         Conduit Length                |
 |       Time step = -------------------------------       |
 |                       Velocity + sqrt(g*depth)          |
 |                                                         |
 |                  Conduit Implicit Condition Summary     |
 |       Courant   =         Conduit Length                |
 |       Time step = -------------------------------       |
 |                             Velocity                    |
 *=========================================================*
```

The 3rd column is the Explicit time step times the minimum courant time step factor
Minimum Conduit Time Step in seconds in the 4th column in the list. Maximum possible is 10 * maximum time step
The 5th column is the maximum change at any time step during the simulation. The 6th column is the wobble value which is an indicator of the flow stability.
You should use this section to find those conduits that are slowing your model down. Use modify conduits to alter the length of the slow conduits to make your simulation faster, or change the conduit name to "CHME?????" where ????? are any characters, this will lengthen the conduit based on the model time step, not the value listed in modify conduits.

Conduit	Time(exp)	Expl*Cmin	Time(imp)	Time(min)	Max Qchange	Wobble	Type of Soln
L210	6.2515	6.2515	18.7592	1.0000	0.0110	1.3556	Normal Soln
L211	31.1457	31.1457	101.2091	0.0000	0.0036	1.4139	Normal Soln
L212	52.2637	52.2637	164.6416	0.0000	0.0061	0.9304	Normal Soln
L213	8.6695	8.6695	33.1072	0.0000	0.0097	1.1843	Normal Soln
L214	7.1669	7.1669	30.8016	0.0000	0.0102	1.2109	Normal Soln
L217	12.9886	12.9886	30.4267	0.0000	0.0017	0.3996	Normal Soln
L220	21.3513	21.3513	68.8686	0.0000	0.0118	1.6019	Normal Soln
L221	30.7605	30.7605	94.9061	0.0000	0.0149	1.4231	Normal Soln
L222	8.4001	8.4001	18.9537	0.0000	0.0163	0.3144	Normal Soln
L223	16.5400	16.5400	50.1321	0.0000	0.0004	0.1454	Normal Soln
L224	67.1259	67.1259	218.6507	0.0000	0.0003	0.1471	Normal Soln
L225	44.3093	44.3093	212.4372	0.0000	0.0009	0.1800	Normal Soln
L226	49.1405	49.1405	218.6669	0.0000	0.0018	0.6783	Normal Soln
L227	25.8165	25.8165	103.1866	0.0000	0.0018	1.1188	Normal Soln
L228	33.4838	33.4838	125.9101	0.0000	0.0029	1.6577	Normal Soln
L229	65.7559	65.7559	220.5148	0.0000	0.0026	1.0348	Normal Soln
L230	38.4211	38.4211	138.6116	0.0000	0.0030	1.4605	Normal Soln
L231	30.8539	30.8539	129.8951	0.0000	0.0059	1.6469	Normal Soln
L232	22.6248	22.6248	90.4561	0.0000	0.0091	1.7661	Normal Soln
L233	32.8848	32.8848	135.0030	0.0000	0.0076	1.2575	Normal Soln
L234	29.7041	29.7041	144.3863	0.0000	0.0997	1.3159	Normal Soln
L235	7.5038	7.5038	45.9431	0.0000	0.0008	0.4470	Normal Soln
L236	8.4742	8.4742	39.0865	0.0000	0.0043	1.6882	Normal Soln
L237	7.0663	7.0663	25.8093	0.0000	0.0091	1.5234	Normal Soln
L238	4.9304	4.9304	11.5673	0.0000	0.0122	1.5697	Normal Soln
L239	9.0896	9.0896	23.9116	0.0000	0.0057	1.7378	Normal Soln
L240	12.0804	12.0804	28.5367	0.0000	0.0023	0.5257	Normal Soln
L241	22.4340	22.4340	66.7490	0.0000	0.0075	1.5011	Normal Soln
L242	7.7300	7.7300	18.2402	0.0000	0.0030	0.7871	Normal Soln
L243	10.7957	10.7957	26.3322	0.0000	0.0039	1.0474	Normal Soln
L246	24.1884	24.1884	83.8451	0.0000	-3.1015	3.7803	Normal Soln
L247	5.6535	5.6535	15.7806	0.0000	6.7858	7.4152	Normal Soln
L248	4.5606	4.5606	18.7177	0.0000	-1.5000	4.1062	Normal Soln
L249	9.4630	9.4630	22.3152	0.0000	0.0030	0.6747	Normal Soln
L250	4.0558	4.0558	8.7562	0.0000	0.0034	0.3070	Normal Soln
L251	9.4845	9.4845	22.3803	0.0000	0.0020	0.5553	Normal Soln
L252	57.2662	57.2662	436.7928	0.0000	0.0002	0.0479	Normal Soln
L253	8.8987	8.8987	21.3283	0.0000	0.0035	0.7383	Normal Soln
L254	42.7703	42.7703	126.2419	0.0000	0.0021	0.7372	Normal Soln

L255	8.3740	8.3740	21.5609	0.0000	0.0073	1.1081	Normal Soln
L256	29.1236	29.1236	96.8065	0.0000	0.0068	0.9051	Normal Soln
L257	25.4074	25.4074	76.1891	0.0000	0.0080	1.2772	Normal Soln
L258	13.9876	13.9876	39.9961	0.0000	0.0016	0.3667	Normal Soln
L259	25.9458	25.9458	70.7199	0.0000	0.0097	1.0940	Normal Soln
L260	2.6985	2.6985	5.4923	0.0000	0.0123	0.1487	Normal Soln
L261	20.6903	20.6903	51.3702	0.0000	0.0014	0.4139	Normal Soln
L262	4.7749	4.7749	7.8766	0.0000	0.0027	0.1655	Normal Soln
L263	16.4832	16.4832	40.3636	0.0000	0.0020	0.5097	Normal Soln
L264	8.4259	8.4259	20.8396	0.0000	0.0066	1.0316	Normal Soln
L265	27.7485	27.7485	87.6450	0.0000	0.0233	1.0544	Normal Soln
L266	15.7403	15.7403	42.3876	0.0000	0.0244	1.1050	Normal Soln
L267	9.7860	9.7860	22.8801	0.0000	0.0015	0.3623	Normal Soln
L268	7.4193	7.4193	23.4623	0.0000	0.0076	1.2172	Normal Soln
L269	22.9535	22.9535	65.3736	0.0000	0.0039	1.3016	Normal Soln
L270	25.8683	25.8683	51.5533	0.0000	0.0317	0.4731	Normal Soln
L271	29.5240	29.5240	76.2899	0.0000	0.1618	1.0663	Normal Soln
L272	2.5336	2.5336	6.5940	2.0000	14.7681	3.9973	Normal Soln
L273	10.3277	10.3277	27.9934	0.0000	0.3535	4.3102	Normal Soln
L274	5.7658	5.7658	9.7500	0.0000	0.1262	0.2668	Normal Soln
L275	14.0902	14.0902	34.1511	0.0000	0.0021	0.6406	Normal Soln
L277	15.4072	15.4072	37.6495	0.0000	0.0026	0.6425	Normal Soln
L278	6.3135	6.3135	14.8598	0.0000	0.0039	0.6638	Normal Soln
L279	9.9209	9.9209	25.5230	0.0000	0.0039	0.5246	Normal Soln
L280	6.5736	6.5736	15.4991	0.0000	0.0024	0.6674	Normal Soln
L281	8.5693	8.5693	23.1348	0.0000	0.0095	1.5502	Normal Soln
L282	1.9577	1.9577	3.2456	356.0000	0.0076	0.3394	Normal Soln
L283	15.1101	15.1101	36.7067	0.0000	0.0024	0.6326	Normal Soln
L284	3.4788	3.4788	8.7124	1.0000	-3.3058	10.4233	Normal Soln
L285	9.2108	9.2108	36.7644	0.0000	0.6895	4.1655	Normal Soln
L286	4.3969	4.3969	56.1137	0.0000	3.0483	6.8009	Normal Soln
L287	13.6881	13.6881	32.8380	0.0000	0.0026	0.7713	Normal Soln
L289	14.0922	14.0922	34.5708	0.0000	0.0039	0.9601	Normal Soln
L290	78.6962	78.6962	230.1393	0.0000	0.0004	0.0737	Normal Soln
L291	66.3719	66.3719	166.5362	0.0000	0.0010	0.1884	Normal Soln
L292	6.6017	6.6017	27.8197	0.0000	0.0034	0.1628	Normal Soln
L294	6.9134	6.9134	27.1866	0.0000	-0.0037	0.8291	Normal Soln
L300	16.8061	16.8061	68.5998	0.0000	-0.0107	1.2373	Normal Soln
L301	4.5009	4.5009	16.9989	0.0000	-0.0090	1.0209	Normal Soln
L302	36.3234	36.3234	183.3575	0.0000	0.0151	1.0544	Normal Soln
L303	7.7765	7.7765	31.0188	0.0000	-0.0097	0.6565	Normal Soln
L304	5.3328	5.3328	18.6093	0.0000	-0.0087	1.5058	Normal Soln
L305	11.2383	11.2383	54.4653	0.0000	0.0205	0.8743	Normal Soln
L306	3.5227	3.5227	16.5844	0.0000	0.0647	7.1818	Normal Soln
L307	6.3256	6.3256	99.2217	0.0000	0.1411	1.3576	Normal Soln
L308	6.4705	6.4705	56.7637	0.0000	0.0981	4.3653	Normal Soln
L309	3.5304	3.5304	17.3643	0.0000	0.0790	6.5653	Normal Soln
L310	5.7726	5.7726	19.1733	0.0000	0.0034	0.8151	Normal Soln
L311	31.4100	31.4100	137.1818	0.0000	0.0023	0.7612	Normal Soln
L312	4.9627	4.9627	27.6946	0.0000	0.0030	0.6916	Normal Soln
L313	40.4957	40.4957	155.4600	0.0000	-0.0032	1.3622	Normal Soln
L314	10.6430	10.6430	33.8019	0.0000	0.0024	0.6997	Normal Soln
L315	8.9796	8.9796	21.8679	0.0000	0.0031	0.6980	Normal Soln
L316	30.4550	30.4550	94.8023	0.0000	0.0019	0.7485	Normal Soln
L317	25.9998	25.9998	86.7174	0.0000	0.0075	1.2551	Normal Soln
L318	28.2215	28.2215	90.3327	0.0000	0.0079	1.2260	Normal Soln
L319	5.5975	5.5975	13.5686	0.0000	0.0090	1.5834	Normal Soln
L320	8.0688	8.0688	22.0753	0.0000	0.0031	0.8379	Normal Soln
L321	64.8006	64.8006	262.1752	0.0000	0.0010	0.3257	Normal Soln
L324	8.8872	8.8872	42.8019	0.0000	0.0095	0.9265	Normal Soln

L325	4.6170	4.6170	24.2957	0.0000	0.0028	0.7759	Normal Soln
L326	9.2741	9.2741	44.6891	0.0000	0.0085	0.9476	Normal Soln
L327	8.9762	8.9762	42.4629	0.0000	-0.0054	1.0583	Normal Soln
L328	22.1097	22.1097	75.2755	0.0000	0.0093	2.2986	Normal Soln
L329	5.3240	5.3240	11.8240	0.0000	0.0097	0.3865	Normal Soln
L334	69.2836	69.2836	188.2975	0.0000	0.0010	0.1811	Normal Soln
L335	53.5685	53.5685	140.9656	0.0000	0.0019	0.3647	Normal Soln
L336	17.2315	17.2315	42.2257	0.0000	0.0020	0.5475	Normal Soln
L337	7.5719	7.5719	22.1331	0.0000	0.0017	0.1691	Normal Soln
L338	6.8569	6.8569	21.4681	0.0000	0.0781	1.0183	Normal Soln
L339	21.1432	21.1432	64.2430	0.0000	0.0269	1.0020	Normal Soln
L340	18.5450	18.5450	55.0650	0.0000	0.0382	1.0401	Normal Soln
L341	7.6907	7.6907	19.5133	0.0000	0.0412	1.0587	Normal Soln
L342	7.7612	7.7612	19.2025	0.0000	0.0093	1.2413	Normal Soln
L343	10.4487	10.4487	25.7250	0.0000	0.0042	1.1146	Normal Soln
L344	4.3042	4.3042	12.3379	0.0000	-0.0800	2.2235	Normal Soln
L346	3.3938	3.3938	18.1423	0.0000	0.0771	6.7902	Normal Soln
L347	22.9869	22.9869	88.3538	0.0000	0.1024	15.8413	Normal Soln
L348	24.5491	24.5491	94.1258	0.0000	0.2296	4.0541	Normal Soln
L349	24.9687	24.9687	90.8253	0.0000	-0.2616	2.2468	Normal Soln
L350	8.4532	8.4532	28.6462	0.0000	-0.2429	2.3411	Normal Soln
L351	3.4130	3.4130	10.0074	0.0000	0.0396	0.9478	Normal Soln
L352	14.1738	14.1738	40.9922	0.0000	0.0106	0.9267	Normal Soln
L354	5.3485	5.3485	14.1140	0.0000	16.5193	1.5500	Normal Soln
L361	5.4554	5.4554	12.7955	0.0000	0.0035	0.9881	Normal Soln
L362	7.8495	7.8495	18.7038	0.0000	0.0034	0.9219	Normal Soln
L363	43.4745	43.4745	124.2088	0.0000	0.0050	0.8513	Normal Soln
L364	5.3147	5.3147	12.4812	0.0000	0.0066	1.1239	Normal Soln
L365	8.0772	8.0772	19.4487	0.0000	0.0026	0.6968	Normal Soln
L366	36.3136	36.3136	112.4325	0.0000	0.0113	1.0412	Normal Soln
L367	33.2557	33.2557	97.3313	0.0000	0.0143	1.0416	Normal Soln
L368	14.5352	14.5352	35.7882	0.0000	0.0040	0.9684	Normal Soln
L369	8.7136	8.7136	21.9892	0.0000	0.0058	1.4966	Normal Soln
L370	17.2160	17.2160	49.2805	0.0000	0.2933	3.4037	Normal Soln
L373	6.6709	6.6709	20.9241	0.0000	3.7037	1.6527	Normal Soln
L374	12.0246	12.0246	37.1557	0.0000	0.0056	2.1623	Normal Soln
L375	44.0929	44.0929	176.7072	0.0000	0.0035	1.3279	Normal Soln
L376	14.2137	14.2137	78.3495	0.0000	0.0150	0.7140	Normal Soln
L386	23.8328	23.8328	125.2899	0.0000	-0.2282	1.3977	Normal Soln
L387	24.7069	24.7069	131.3000	0.0000	-0.5494	1.8097	Normal Soln
L388	10.8488	10.8488	39.1305	0.0000	0.0040	1.5595	Normal Soln
L389	25.1217	25.1217	129.5674	0.0000	-0.5405	1.9586	Normal Soln
L390	12.5196	12.5196	37.5836	0.0000	0.0029	1.0141	Normal Soln
L391	31.9441	31.9441	141.0504	0.0000	-0.5343	2.6760	Normal Soln
L392	23.4862	23.4862	87.8080	0.0000	-0.6915	3.4971	Normal Soln
L393	28.8519	28.8519	95.2627	0.0000	-20.2049	4.6121	Normal Soln
L395	3.4431	3.4431	14.5362	0.0000	0.0376	0.7327	Normal Soln
L396	34.8270	34.8270	218.5989	0.0000	0.0177	0.4823	Normal Soln
L397	3.8526	3.8526	15.3445	0.0000	0.0097	0.7832	Normal Soln
L398	3.4537	3.4537	13.3895	0.0000	0.0153	0.7060	Normal Soln
L399	29.9877	29.9877	118.1631	0.0000	0.0046	0.5354	Normal Soln
L402	7.1766	7.1766	24.8528	0.0000	0.0198	1.1661	Normal Soln
L403	33.0824	33.0824	116.1692	0.0000	0.0091	1.1819	Normal Soln
L404	30.6635	30.6635	104.5351	0.0000	-0.0090	1.2294	Normal Soln
L405	6.2092	6.2092	18.3899	0.0000	0.0106	1.1298	Normal Soln
L406	27.7072	27.7072	114.0696	0.0000	0.0173	0.9383	Normal Soln
L407	6.0310	6.0310	18.5725	0.0000	0.0081	1.3120	Normal Soln
L408	26.3866	26.3866	115.7992	0.0000	0.0201	0.9628	Normal Soln
L410	27.1993	27.1993	133.6908	0.0000	0.0230	0.9839	Normal Soln
L411	20.6552	20.6552	105.9398	0.0000	0.0242	0.9671	Normal Soln

L413	38.3892	38.3892	160.1767	0.0000	0.0038	0.5376	Normal Soln
L415	5.6453	5.6453	13.0492	0.0000	0.0034	1.0122	Normal Soln
L417	5.8832	5.8832	17.8127	0.0000	0.0045	1.4368	Normal Soln
L418	6.2687	6.2687	18.5320	0.0000	0.0113	1.1458	Normal Soln
L419	21.0701	21.0701	77.2644	0.0000	0.0108	0.9819	Normal Soln
L420	31.6178	31.6178	122.3524	0.0000	0.0088	1.0005	Normal Soln
L421	6.4509	6.4509	20.6496	0.0000	0.0027	0.9385	Normal Soln
L422	6.3270	6.3270	19.9830	0.0000	0.0078	1.2738	Normal Soln
L423	28.6671	28.6671	125.6468	0.0000	0.0195	1.0529	Normal Soln
L424	20.5528	20.5528	93.0287	0.0000	0.0193	1.1051	Normal Soln
L425	7.1395	7.1395	25.4224	0.0000	-0.0021	0.5700	Normal Soln
L426	5.8951	5.8951	19.2765	0.0000	-0.0376	1.3533	Normal Soln
L427	29.2809	29.2809	115.7345	0.0000	0.0429	1.3979	Normal Soln
L428	10.0652	10.0652	32.3323	0.0000	0.0017	0.5819	Normal Soln
L429	24.5883	24.5883	91.6764	0.0000	0.0434	1.4769	Normal Soln
L430	7.4295	7.4295	27.6811	0.0000	0.0066	1.0136	Normal Soln
L431	37.1130	37.1130	132.6148	0.0000	0.0044	1.0740	Normal Soln
L432	8.1140	8.1140	26.9138	0.0000	0.0027	1.2396	Normal Soln
L435	7.5019	7.5019	24.7419	0.0000	0.0065	1.3866	Normal Soln
L436	27.3473	27.3473	84.8191	0.0000	0.0036	1.3179	Normal Soln
L437	32.3027	32.3027	111.3220	0.0000	0.0039	0.8676	Normal Soln
L438	9.2879	9.2879	31.4810	0.0000	0.0028	0.8624	Normal Soln
L439	32.2509	32.2509	98.9096	0.0000	0.0051	1.3235	Normal Soln
L440	38.3201	38.3201	121.6139	0.0000	0.0051	0.9306	Normal Soln
L441	25.2294	25.2294	81.9432	0.0000	0.0494	1.7028	Normal Soln
L442	28.9437	28.9437	77.2274	0.0000	0.0532	1.7005	Normal Soln
L443	3.3560	3.3560	5.8269	0.0000	0.0612	0.1738	Normal Soln
L446	4.5793	4.5793	17.2406	0.0000	0.0135	1.2537	Normal Soln
L448	8.0270	8.0270	32.1498	0.0000	0.0100	0.5692	Normal Soln
L449	32.6426	32.6426	115.0008	0.0000	0.0115	1.4024	Normal Soln
L450	30.6032	30.6032	93.8944	0.0000	0.0141	1.4346	Normal Soln
L451	7.1048	7.1048	17.6776	0.0000	0.0156	1.6067	Normal Soln
L452	5.9967	5.9967	18.0854	0.0000	0.0020	0.6437	Normal Soln
L453	7.7414	7.7414	24.8767	0.0000	0.0016	0.4840	Normal Soln
L454	10.3094	10.3094	30.3036	0.0000	0.0012	0.3101	Normal Soln
L466	9.2963	9.2963	21.2436	0.0000	0.0081	0.9016	Normal Soln
L468	51.8338	51.8338	182.0257	0.0000	0.0052	0.4889	Normal Soln
L470	15.4248	15.4248	41.0688	0.0000	0.0134	1.3127	Normal Soln
L471	43.8959	43.8959	227.0363	0.0000	0.0011	0.1441	Normal Soln
L472	3.9352	3.9352	9.2028	0.0000	0.0326	2.2040	Normal Soln
L475	6.8886	6.8886	26.1523	0.0000	0.0070	1.4187	Normal Soln
L478	29.1107	29.1107	106.1190	0.0000	0.0184	1.5521	Normal Soln
L479	41.4576	41.4576	161.4982	0.0000	0.0284	1.3371	Normal Soln
L487	7.8412	7.8412	36.9414	0.0000	-0.0568	1.0605	Normal Soln
L490	12.0033	12.0033	34.1207	0.0000	0.0092	1.3896	Normal Soln
L493	33.9849	33.9849	126.5363	0.0000	0.0203	1.8404	Normal Soln
L496	61.2675	61.2675	166.3291	0.0000	0.0014	0.2575	Normal Soln
L497	61.6959	61.6959	168.0343	0.0000	0.0014	0.2545	Normal Soln
L498	13.8903	13.8903	32.5163	0.0000	0.0017	0.5120	Normal Soln
L499	28.4181	28.4181	182.8343	0.0000	0.0079	1.3394	Normal Soln
L500	27.4291	27.4291	143.8998	0.0000	0.0077	1.4639	Normal Soln
L501	30.0323	30.0323	140.7230	0.0000	-0.0177	4.8336	Normal Soln
L502	31.7808	31.7808	320.8339	0.0000	0.0701	13.7509	Normal Soln
L503	26.6733	26.6733	90.2873	0.0000	0.2617	2.4216	Normal Soln
L504	28.4399	28.4399	85.7577	0.0000	-9.1191	3.3146	Normal Soln
L505	24.2032	24.2032	90.4568	0.0000	0.0279	1.5256	Normal Soln
L506	22.7717	22.7717	88.6595	0.0000	0.0849	1.9884	Normal Soln
L507	11.1488	11.1488	30.2504	0.0000	0.0069	1.6385	Normal Soln
L509	10.9754	10.9754	28.4949	0.0000	0.0089	1.5519	Normal Soln
L510	4.4084	4.4084	12.7536	0.0000	0.0616	0.2736	Normal Soln

L511	10.4981	10.4981	28.4512	0.0000	0.0151	3.1170	Normal Soln
L512	3.4412	3.4412	6.9472	0.0000	0.0219	0.2261	Normal Soln
L513	21.8602	21.8602	70.3512	0.0000	0.0200	1.8546	Normal Soln
L514	29.2377	29.2377	119.9845	0.0000	-0.0255	1.2522	Normal Soln
L515	11.8485	11.8485	65.2539	0.0000	-0.0813	0.8844	Normal Soln
CH21	98.2353	98.2353	600.0000	0.0000	0.0174	0.0661	Normal Soln
L474	8.9345	8.9345	23.7515	0.0000	-0.0334	1.9802	Normal Soln
L523	28.8755	28.8755	140.7912	0.0000	0.0100	0.4128	Normal Soln
L525	40.6422	40.6422	176.8007	0.0000	0.0876	1.0478	Normal Soln
L527	35.2824	35.2824	164.4677	0.0000	0.0102	0.9447	Normal Soln
L528	34.8526	34.8526	114.9064	0.0000	0.0048	1.3731	Normal Soln
L529	25.2469	25.2469	104.9074	0.0000	0.0054	1.4778	Normal Soln
L533	58.9742	58.9742	228.0878	0.0000	0.0050	1.0057	Normal Soln
L537	36.8704	36.8704	178.8806	0.0000	0.0066	1.5119	Normal Soln
L394	8.7540	8.7540	24.4676	0.0000	12.3766	6.4328	Normal Soln
L276	2.5197	2.5197	4.4901	0.0000	0.0037	0.2260	Normal Soln
L288	2.8270	2.8270	6.1658	0.0000	0.0052	0.2031	Normal Soln
L412	5.7151	5.7151	11.7777	0.0000	0.0073	0.7063	Normal Soln
L447	35.4182	35.4182	166.4408	0.0000	-0.0110	0.5866	Normal Soln
L546	43.6321	43.6321	162.7051	0.0000	0.0056	0.6369	Normal Soln

The conduit with the smallest time step limitation was..L282
The conduit with the largest wobble was.....L347
The conduit with the largest flow change in any
consecutive time step.....L393

Table E6. Final Model Condition
This table is used for steady state flow comparison and is the information saved to the hot-restart file.
Final Time = 6.017 hours

Junction / Depth / Elevation ===> "*" Junction is Surcharged.

N221/	1.76*/	107.60/	N222/	2.55*/	106.99/	N223/	1.31 /	102.12/
N224/	3.32*/	100.29/	N227/	2.63*/	100.97/	N228/	3.08 /	100.61/
N230/	2.34 /	98.17/	N231/	0.45 /	100.29/	N233/	0.81 /	95.23/
N234/	4.52 /	90.12/	N235/	0.26 /	119.86/	N236/	0.28 /	118.89/
N237/	0.40 /	117.66/	N238/	2.47*/	117.58/	N239/	0.87 /	118.56/
N240/	1.58*/	118.20/	N241/	1.16 /	112.52/	N242/	1.74 /	110.37/
N243/	3.02 /	108.88/	N244/	3.22*/	107.07/	N245/	4.05*/	105.73/
N246/	3.92*/	103.45/	N247/	4.61*/	102.48/	N248/	1.05 /	112.53/
N249/	2.93 /	107.55/	N250/	3.28*/	104.42/	N251/	1.27*/	116.65/
N252/	2.22 /	115.28/	N253/	2.38 /	110.46/	N254/	0.52 /	113.35/
N255/	4.44 /	107.24/	N256/	0.66 /	108.07/	N257/	0.84 /	108.45/
N259/	3.39*/	100.55/	N260/	2.95 /	99.95/	N261/	1.81*/	100.74/
N262/	0.61 /	105.49/	N263/	0.39 /	104.85/	N264/	3.31 /	99.95/

N265/ 0.55 / 105.41/ N266/ 0.15 / 100.51/ N267/ 1.68*/ 99.23/
N268/ 0.64 / 101.38/ N269/ 0.66 / 100.99/ N270/ 1.14 / 100.28/
N271/ 1.39 / 99.94/ N272/ 1.46 / 97.81/ N273/ 0.44 / 98.12/
N274/ 0.46 / 96.04/ N275/ 4.52 / 90.12/ N276/ 0.49 / 94.74/
N277/ 0.28 / 93.72/ N278/ 1.22 / 79.22/ N279/ 0.55 / 94.67/
N280/ 0.97 / 86.30/ N281/ 2.27 / 85.51/ N282/ 2.02 / 84.79/
N283/ 1.46 / 83.96/ N284/ 0.42 / 85.56/ N285/ 1.65*/ 96.56/
N286/ 1.53*/ 95.98/ N287/ 1.85 / 80.31/ N288/ 2.12 / 79.15/
N289/ 2.04 / 79.04/ N290/ 1.60 / 79.70/ N291/ 0.53 / 92.45/
N292/ 2.36 / 78.96/ N293/ 0.62 / 119.54/ N294/ 0.32 / 118.62/
N296/ 0.63 / 119.61/ N297/ 0.59 / 113.83/ N298/ 0.58 / 113.54/
N299/ 3.21 / 109.51/ N300/ 0.60 / 113.85/ N301/ 1.92*/ 124.82/
N302/ 0.40 / 122.68/ N303/ 2.94 / 113.54/ N304/ 0.61 / 123.56/
N305/ 3.00*/ 108.52/ N306/ 3.67*/ 108.39/ N307/ 4.03 / 108.28/
N308/ 3.21*/ 108.40/ N309/ 0.67 / 113.82/ N310/ 0.39 / 112.65/
N312/ 0.79 / 114.00/ N313/ 0.18 / 104.11/ N314/ 0.29 / 102.08/
N315/ 0.35 / 99.96/ N316/ 4.57 / 98.67/ N317/ 3.57 / 92.74/
N318/ 4.42 / 92.16/ N319/ 2.85 / 92.32/ N320/ 3.67 / 92.95/
N321/ 3.03 / 93.14/ N325/ 3.36 / 93.13/ N326/ 2.44 / 93.19/
N327/ 2.89 / 93.55/ N328/ 5.32 / 98.76/ N329/ 5.12 / 99.12/
N330/ 5.22 / 98.66/ N331/ 5.94 / 98.64/ N332/ 5.18 / 99.18/
N333/ 2.07*/ 110.94/ N334/ 2.27*/ 110.78/ N335/ 3.54*/ 109.72/
N336/ 3.29*/ 109.83/ N337/ 2.05*/ 104.33/ N338/ 1.18*/ 104.49/
N339/ 0.64 / 105.53/ N340/ 0.75 / 105.22/ N341/ 1.70*/ 102.95/
N342/ 1.45*/ 101.67/ N343/ 1.11 / 101.11/ N344/ 0.79 / 101.90/
N345/ 0.40 / 119.23/ N347/ 4.17*/ 122.62/ N348/ 3.84*/ 120.01/
N349/ 3.82*/ 122.98/ N350/ 3.84*/ 121.64/ N351/ 4.28*/ 121.47/
N352/ 3.11*/ 120.48/ N353/ 3.24*/ 120.60/ N354/ 0.73 / 116.38/
N355/ 3.18 / 113.78/ N356/ 0.29 / 125.61/ N357/ 0.42 / 123.40/
N358/ 0.57 / 121.39/ N359/ 0.28 / 120.37/ N360/ 3.32 / 116.12/

N361/ 2.17 / 128.41/ N362/ 2.11 / 128.24/ N363/ 2.36 / 127.64/
N364/ 2.04 / 127.05/ N365/ 4.62 / 122.06/ N366/ 1.11 / 128.98/
N367/ 0.89 / 129.22/ N368/ 2.73*/ 126.99/ N369/ 3.26*/ 126.93/
N370/ 5.03*/ 126.73/ N371/ 4.51*/ 126.77/ N372/ 4.58*/ 125.92/
N373/ 4.19*/ 125.16/ N374/ 3.76 / 124.36/ N375/ 4.14 / 124.12/
N376/ 1.56 / 124.46/ N377/ 1.57 / 124.39/ N378/ 2.90 / 122.17/
N379/ 3.70 / 122.10/ N381/ 1.08 / 125.84/ N382/ 1.68 / 124.54/
N383/ 0.76 / 126.29/ N384/ 0.74 / 126.38/ N386/ 0.84 / 124.98/
N387/ 0.63 / 124.86/ N388/ 1.61 / 123.56/ N389/ 1.88 / 121.99/
N390/ 0.80 / 123.63/ N391/ 1.46*/ 124.15/ N392/ 1.57 / 121.40/
N394/ 3.11 / 121.51/ N395/ 3.07*/ 121.18/ N396/ 1.67*/ 119.35/
N397/ 3.02*/ 118.83/ N398/ 2.71*/ 119.02/ N399/ 4.13*/ 118.73/
N403/ 4.17*/ 118.47/ N404/ 4.73*/ 118.21/ N405/ 1.79*/ 118.79/
N406/ 4.74*/ 117.91/ N407/ 1.19*/ 118.19/ N408/ 4.66*/ 117.44/
N409/ 4.45*/ 116.93/ N410/ 4.19 / 116.31/ N412/ 3.14*/ 119.44/
N413/ 3.83*/ 119.16/ N414/ 3.40*/ 119.23/ N415/ 3.20*/ 119.53/
N416/ 2.68*/ 119.51/ N417/ 1.77 / 119.34/ N418/ 0.92 / 120.82/
N419/ 2.56*/ 113.47/ N420/ 2.52*/ 114.76/ N421/ 2.53*/ 114.53/
N422/ 3.35*/ 112.48/ N423/ 2.31*/ 112.68/ N424/ 3.81*/ 112.07/
N425/ 2.34*/ 112.40/ N426/ 4.18*/ 111.63/ N428/ 4.24*/ 111.16/
N429/ 4.77*/ 110.79/ N430/ 0.65 / 119.65/ N431/ 2.60 / 119.27/
N432/ 1.43 / 119.50/ N434/ 0.94 / 119.74/ N435/ 2.78*/ 112.96/
N436/ 1.96*/ 113.53/ N437/ 2.27*/ 113.19/ N438/ 2.95*/ 112.53/
N439/ 3.71*/ 111.86/ N440/ 2.01*/ 112.06/ N441/ 2.48*/ 112.21/
N442/ 4.06*/ 111.28/ N443/ 1.96*/ 111.34/ N444/ 2.61*/ 111.64/
N445/ 4.27*/ 109.75/ N446/ 1.34*/ 109.83/ N447/ 3.83*/ 108.88/
N448/ 2.39*/ 121.16/ N449/ 2.61*/ 120.60/ N450/ 2.16*/ 122.90/
N451/ 2.12*/ 123.39/ N453/ 1.94 / 115.70/ N454/ 2.17*/ 116.46/
N455/ 1.34*/ 113.02/ N456/ 1.93*/ 112.19/ N457/ 1.43*/ 112.45/
N458/ 1.39 / 109.78/ N459/ 3.05 / 107.66/ N460/ 0.99 / 105.10/

N461/	4.57 /	98.67/	N464/	3.05*/	128.14/	N465/	3.10*/	129.75/
N466/	3.31*/	129.50/	N467/	1.92*/	128.22/	N468/	2.41*/	126.00/
N469/	1.78 /	120.44/	N470/	1.31 /	119.02/	N471/	1.21*/	126.09/
N472/	1.12*/	126.06/	N473/	0.46 /	120.53/	N487/	1.17 /	119.74/
N489/	2.44 /	120.87/	N490/	1.60 /	123.50/	N491/	0.86 /	125.03/
N492/	1.78*/	128.12/	N493/	1.00 /	127.04/	N497/	1.75*/	109.83/
N499/	7.44 /	98.64/	N500/	4.45*/	91.12/	N501/	3.49*/	88.96/
N503/	8.43 /	98.23/	N504/	3.67*/	99.21/	N506/	2.15*/	94.29/
N509/	3.56*/	112.44/	N511/	0.54 /	102.75/	N513/	1.33 /	111.34/
N514/	0.65 /	108.76/	N516/	8.23 /	98.23/	N517/	2.33 /	86.28/
N518/	3.14*/	87.45/	N524/	0.35 /	133.80/	N525/	0.51 /	131.68/
N526/	0.34 /	133.80/	N527/	0.51 /	131.11/	N528/	4.10*/	126.76/
N529/	3.71 /	123.35/	N530/	5.21*/	104.92/	N689/	1.50 /	119.50/
N494/	0.95 /	122.36/	N541/	2.20*/	114.29/	EL329/	2.41*/	114.93/
N427/	3.01*/	112.65/	N411/	4.12 /	116.12/	N295/	2.45 /	110.38/
N311/	4.24 /	108.34/	N462/	1.93*/	129.71/	N554/	1.40 /	92.08/
N555/	8.43 /	98.23/	N322/	6.14 /	98.64/			

Conduit/ Flow ===> "*" Conduit uses the normal flow option.

L210/	2.89 /	L211/	3.14 /	L212/	3.30 /
L213/	2.49 /	L214/	5.37 /	L217/	0.95 /
L220/	11.28 /	L221/	13.22 /	L222/	13.39 /
L223/	0.23 /	L224/	0.23 /	L225/	0.23 /
L226/	0.93 /	L227/	1.58 /	L228/	2.49 /
L229/	2.95 /	L230/	3.46 /	L231/	3.80 /
L232/	6.04 /	L233/	6.33 /	L234/	9.41 /
L235/	0.45 /	L236/	2.13 /	L237/	3.08 /
L238/	3.69 /	L239/	4.06 /	L240/	1.24 /
L241/	5.36 /	L242/	1.85 /	L243/	2.48 /
L246/	24.36 /	L247/	28.80 /	L248/	1.98 /
L249/	1.58 /	L250/	3.00 /	L251/	1.30 /
L252/	0.11*/	L253/	1.74 /	L254/	1.74 /
L255/	3.96 /	L256/	4.73 /	L257/	6.67 /
L258/	0.85 /	L259/	7.86 /	L260/	8.06*/
L261/	0.98 /	L262/	2.30*/	L263/	1.20 /
L264/	3.79 /	L265/	22.43 /	L266/	23.35 /
L267/	0.86 /	L268/	2.66 /	L269/	2.92 /
L270/	27.45 /	L271/	27.45 /	L272/	37.82 /
L273/	9.45 /	L274/	8.56*/	L275/	1.51 /
L277/	1.51 /	L278/	1.56 /	L279/	3.25 /
L280/	1.57 /	L281/	3.42 /	L282/	5.02*/
L283/	1.50 /	L284/	1.57 /	L285/	2.56 /
L286/	0.86 /	L287/	1.82 /	L289/	2.26 /
L290/	0.17*/	L291/	0.44*/	L292/	1.15 /

L294/	1.40 /	L300/	5.35 /	L301/	1.87 /
L302/	11.83 /	L303/	0.85 /	L304/	2.46 /
L305/	3.31 /	L306/	2.82 /	L307/	3.04 /
L308/	3.20 /	L309/	2.69 /	L310/	1.60 /
L311/	1.60 /	L312/	1.28 /	L313/	3.00 /
L314/	1.28 /	L315/	1.62 /	L316/	1.62 /
L317/	6.20 /	L318/	6.20 /	L319/	8.20 /
L320/	1.88 /	L321/	0.51 /	L324/	1.71 /
L325/	1.63 /	L326/	1.96 /	L327/	2.21 /
L328/	7.82 /	L329/	7.82 /	L334/	0.43*/
L335/	0.86*/	L336/	1.29 /	L337/	1.29*/
L338/	21.25 /	L339/	21.25 /	L340/	30.17 /
L341/	30.17 /	L342/	4.59 /	L343/	2.63 /
L344/	12.34 /	L346/	25.60 /	L347/	56.34 /
L348/	56.31 /	L349/	56.34 /	L350/	56.33 /
L351/	8.25 /	L352/	8.25 /	L354/	74.27 /
L361/	2.31 /	L362/	2.16 /	L363/	4.52 /
L364/	2.65 /	L365/	1.64 /	L366/	9.81 /
L367/	9.81 /	L368/	2.28 /	L369/	3.49 /
L370/	19.12 /	L373/	19.12 /	L374/	3.35 /
L375/	3.35 /	L376/	12.39 /	L386/	34.73 /
L387/	34.71 /	L388/	2.23 /	L389/	48.42 /
L390/	1.61 /	L391/	53.26 /	L392/	63.44 /
L393/	63.43 /	L395/	4.24 /	L396/	8.34 /
L397/	4.58 /	L398/	4.32 /	L399/	4.03 /
L402/	7.12 /	L403/	7.12 /	L404/	7.12 /
L405/	4.85 /	L406/	11.97 /	L407/	3.83 /
L408/	15.80 /	L410/	20.14 /	L411/	20.14 /
L413/	2.27 /	L415/	2.27 /	L417/	2.85 /
L418/	5.17 /	L419/	8.02 /	L420/	8.02 /
L421/	1.66 /	L422/	3.80 /	L423/	13.65 /
L424/	18.55 /	L425/	0.93 /	L426/	3.97 /
L427/	40.59 /	L428/	0.94 /	L429/	42.48 /
L430/	2.45 /	L431/	2.28 /	L432/	2.28 /
L435/	2.87 /	L436/	2.87 /	L437/	2.87 /
L438/	1.67 /	L439/	4.55 /	L440/	4.55 /
L441/	48.94 /	L442/	48.94 /	L443/	48.94*/
L446/	5.92 /	L448/	0.97 /	L449/	9.51 /
L450/	13.39 /	L451/	14.72 /	L452/	1.29 /
L453/	0.93 /	L454/	0.68 /	L466/	4.05 /
L468/	4.04 /	L470/	9.48 /	L471/	0.38*/
L472/	4.46 /	L475/	4.36 /	L478/	18.09 /
L479/	18.09 /	L487/	10.77 /	L490/	6.72 /
L493/	18.09 /	L496/	0.61*/	L497/	0.60*/
L498/	1.21 /	L499/	1.71 /	L500/	3.45 /
L501/	12.37 /	L502/	12.23 /	L503/	73.45 /
L504/	74.27 /	L505/	10.60 /	L506/	10.90 /
L507/	3.80 /	L509/	5.68 /	L510/	5.12 /
L511/	11.04 /	L512/	17.90 /	L513/	18.22 /
L514/	8.04 /	L515/	15.80 /	CH21/	12.61 /
L474/	9.48 /	L523/	9.48 /	L525/	17.14 /
L527/	4.52 /	L528/	4.73 /	L529/	4.34 /
L533/	4.34 /	L537/	4.34 /	L394/	63.43 /
L276/	3.15*/	L288/	4.16 /	L412/	2.24 /
L447/	2.13 /	L546/	3.80 /	FREE # 1/	13.39 /
FREE # 2/	28.80 /	FREE # 3/	3.00 /	FREE # 4/	8.22 /
FREE # 5/	2.30 /	FREE # 6/	37.82 /	FREE # 7/	8.56 /
FREE # 8/	3.25 /	FREE # 9/	5.02 /	FREE #10/	2.56 /
FREE #11/	1.15 /	FREE #12/	3.20 /	FREE #13/	8.20 /
FREE #14/	7.82 /	FREE #15/	1.29 /	FREE #16/	30.17 /

FREE #17/	74.27 /	FREE #18/	19.12 /	FREE #19/	48.94 /
FREE #20/	4.46 /	FREE #21/	5.68 /	FREE #22/	10.77 /
FREE #23/	17.90 /	FREE #24/	1.53 /	FREE #25/	9.48 /
FREE #26/	63.43 /	FREE #27/	3.15 /	FREE #28/	4.16 /
FREE #29/	5.12 /	FREE #30/	3.04 /		

Conduit/	Velocity				
L210/	3.66 /	L211/	4.03 /	L212/	2.64 /
L213/	3.14 /	L214/	3.02 /	L217/	2.83 /
L220/	4.65 /	L221/	4.16 /	L222/	9.60 /
L223/	1.44 /	L224/	1.33 /	L225/	0.67 /
L226/	1.27 /	L227/	2.01 /	L228/	3.23 /
L229/	2.59 /	L230/	2.85 /	L231/	3.07 /
L232/	3.39 /	L233/	3.55 /	L234/	2.98 /
L235/	0.56 /	L236/	2.67 /	L237/	3.87 /
L238/	4.75 /	L239/	5.19 /	L240/	3.01 /
L241/	4.43 /	L242/	3.40 /	L243/	3.61 /
L246/	4.94 /	L247/	5.83 /	L248/	2.51 /
L249/	3.27 /	L250/	8.91 /	L251/	3.08 /
L252/	0.76 /	L253/	3.24 /	L254/	2.99 /
L255/	3.37 /	L256/	2.75 /	L257/	3.68 /
L258/	2.37 /	L259/	3.97 /	L260/	11.65 /
L261/	2.69 /	L262/	9.65 /	L263/	2.90 /
L264/	3.79 /	L265/	3.96 /	L266/	4.77 /
L267/	2.75 /	L268/	3.37 /	L269/	3.79 /
L270/	7.78 /	L271/	5.22 /	L272/	5.16 /
L273/	4.15 /	L274/	12.62 /	L275/	3.13 /
L277/	3.11 /	L278/	3.23 /	L279/	6.46 /
L280/	3.23 /	L281/	4.63 /	L282/	14.79 /
L283/	3.11 /	L284/	1.97 /	L285/	1.43 /
L286/	0.69 /	L287/	3.32 /	L289/	3.47 /
L290/	1.60 /	L291/	2.24 /	L292/	3.77 /
L294/	1.76 /	L300/	3.00 /	L301/	2.35 /
L302/	2.96 /	L303/	1.07 /	L304/	3.10 /
L305/	1.86 /	L306/	3.50 /	L307/	0.96 /
L308/	1.78 /	L309/	3.34 /	L310/	2.02 /
L311/	2.02 /	L312/	1.61 /	L313/	3.76 /
L314/	1.57 /	L315/	3.00 /	L316/	2.51 /
L317/	3.48 /	L318/	3.37 /	L319/	4.79 /
L320/	2.79 /	L321/	1.50 /	L324/	2.14 /
L325/	2.03 /	L326/	2.46 /	L327/	2.78 /
L328/	4.62 /	L329/	8.29 /	L334/	2.13 /
L335/	2.63 /	L336/	2.96 /	L337/	5.38 /
L338/	3.90 /	L339/	4.05 /	L340/	4.43 /
L341/	5.28 /	L342/	4.06 /	L343/	3.65 /
L344/	2.42 /	L346/	2.66 /	L347/	4.46 /
L348/	4.29 /	L349/	4.40 /	L350/	4.61 /
L351/	3.14 /	L352/	3.11 /	L354/	6.66 /
L361/	3.67 /	L362/	3.53 /	L363/	3.29 /
L364/	3.85 /	L365/	3.12 /	L366/	3.50 /
L367/	3.74 /	L368/	3.46 /	L369/	4.50 /
L370/	4.18 /	L373/	4.68 /	L374/	4.21 /
L375/	1.82 /	L376/	2.10 /	L386/	2.72 /
L387/	2.70 /	L388/	2.82 /	L389/	2.97 /
L390/	1.97 /	L391/	3.27 /	L392/	3.93 /
L393/	4.02 /	L395/	3.42 /	L396/	1.19 /
L397/	3.69 /	L398/	3.50 /	L399/	1.35 /
L402/	2.95 /	L403/	2.95 /	L404/	2.95 /
L405/	2.74 /	L406/	2.43 /	L407/	3.10 /
L408/	2.65 /	L410/	2.84 /	L411/	2.84 /

L413/	1.30 /	L415/	2.96 /	L417/	3.61 /
L418/	2.92 /	L419/	2.55 /	L420/	2.54 /
L421/	2.10 /	L422/	3.08 /	L423/	2.77 /
L424/	3.11 /	L425/	1.18 /	L426/	3.21 /
L427/	4.20 /	L428/	1.19 /	L429/	4.30 /
L430/	3.09 /	L431/	2.88 /	L432/	2.88 /
L435/	3.63 /	L436/	3.62 /	L437/	2.27 /
L438/	2.12 /	L439/	3.71 /	L440/	2.65 /
L441/	4.94 /	L442/	5.94 /	L443/	16.48 /
L446/	3.33 /	L448/	1.23 /	L449/	3.93 /
L450/	4.26 /	L451/	5.09 /	L452/	1.60 /
L453/	1.14 /	L454/	1.77 /	L466/	4.24 /
L468/	2.01 /	L470/	4.31 /	L471/	1.72 /
L472/	5.65 /	L475/	3.51 /	L478/	4.52 /
L479/	3.66 /	L487/	4.44 /	L490/	3.55 /
L493/	3.69 /	L496/	2.36 /	L497/	2.34 /
L498/	3.01 /	L499/	2.13 /	L500/	2.77 /
L501/	1.69 /	L502/	1.22 /	L503/	4.84 /
L504/	5.42 /	L505/	4.36 /	L506/	4.48 /
L507/	4.86 /	L509/	4.70 /	L510/	8.70 /
L511/	6.26 /	L512/	15.98 /	L513/	3.91 /
L514/	3.33 /	L515/	2.22 /	CH21/	0.09 /
L474/	5.35 /	L523/	1.21 /	L525/	2.32 /
L527/	2.55 /	L528/	3.81 /	L529/	2.45 /
L533/	2.45 /	L537/	2.44 /	L394/	4.12 /
L276/	11.36 /	L288/	9.89 /	L412/	3.99 /
L447/	1.20 /	L546/	2.31 /		

Conduit/	Width				
L210/	0.01 /	L211/	0.09 /	L212/	0.43 /
L213/	0.01 /	L214/	0.01 /	L217/	0.99 /
L220/	0.04 /	L221/	0.57 /	L222/	1.77 /
L223/	0.87 /	L224/	0.89 /	L225/	0.92 /
L226/	0.61 /	L227/	0.01 /	L228/	0.10 /
L229/	0.71 /	L230/	0.10 /	L231/	0.01 /
L232/	0.01 /	L233/	0.01 /	L234/	0.01 /
L235/	0.36 /	L236/	0.01 /	L237/	0.01 /
L238/	0.08 /	L239/	0.08 /	L240/	1.00 /
L241/	0.11 /	L242/	0.95 /	L243/	0.76 /
L246/	0.01 /	L247/	0.06 /	L248/	0.01 /
L249/	0.97 /	L250/	0.88 /	L251/	0.99 /
L252/	0.66 /	L253/	0.96 /	L254/	0.87 /
L255/	0.70 /	L256/	0.75 /	L257/	0.53 /
L258/	0.98 /	L259/	1.32 /	L260/	1.38 /
L261/	0.99 /	L262/	0.81 /	L263/	0.98 /
L264/	1.06 /	L265/	2.60 /	L266/	2.83 /
L267/	0.99 /	L268/	0.01 /	L269/	0.09 /
L270/	2.99 /	L271/	3.48 /	L272/	4.49 /
L273/	1.02 /	L274/	1.29 /	L275/	0.97 /
L277/	0.96 /	L278/	0.98 /	L279/	0.89 /
L280/	0.98 /	L281/	0.10 /	L282/	0.88 /
L283/	0.97 /	L284/	0.01 /	L285/	0.01 /
L286/	0.01 /	L287/	0.94 /	L289/	0.83 /
L290/	0.79 /	L291/	0.91 /	L292/	0.86 /
L294/	0.01 /	L300/	0.01 /	L301/	0.01 /
L302/	0.01 /	L303/	0.01 /	L304/	0.01 /
L305/	0.01 /	L306/	0.01 /	L307/	0.01 /
L308/	0.01 /	L309/	0.01 /	L310/	0.01 /
L311/	0.01 /	L312/	0.01 /	L313/	0.01 /
L314/	0.18 /	L315/	0.95 /	L316/	0.78 /

L317/	0.05 /	L318/	0.43 /	L319/	0.66 /
L320/	0.78 /	L321/	0.95 /	L324/	0.01 /
L325/	0.01 /	L326/	0.01 /	L327/	0.01 /
L328/	0.16 /	L329/	1.35 /	L334/	0.91 /
L335/	0.99 /	L336/	0.98 /	L337/	0.81 /
L338/	2.69 /	L339/	2.75 /	L340/	3.29 /
L341/	3.45 /	L342/	0.81 /	L343/	0.66 /
L344/	0.85 /	L346/	0.02 /	L347/	0.12 /
L348/	1.09 /	L349/	1.55 /	L350/	1.90 /
L351/	1.66 /	L352/	1.63 /	L354/	4.22 /
L361/	0.87 /	L362/	0.89 /	L363/	1.34 /
L364/	0.76 /	L365/	0.96 /	L366/	1.48 /
L367/	1.62 /	L368/	0.82 /	L369/	0.08 /
L370/	2.91 /	L373/	2.81 /	L374/	0.03 /
L375/	0.49 /	L376/	1.08 /	L386/	1.54 /
L387/	1.52 /	L388/	0.01 /	L389/	1.69 /
L390/	0.15 /	L391/	1.69 /	L392/	1.73 /
L393/	1.81 /	L395/	0.01 /	L396/	1.21 /
L397/	0.01 /	L398/	0.01 /	L399/	1.18 /
L402/	0.01 /	L403/	0.01 /	L404/	0.01 /
L405/	0.01 /	L406/	0.01 /	L407/	0.01 /
L408/	0.01 /	L410/	0.01 /	L411/	0.01 /
L413/	0.58 /	L415/	0.47 /	L417/	0.01 /
L418/	0.01 /	L419/	0.01 /	L420/	0.01 /
L421/	0.01 /	L422/	0.01 /	L423/	0.01 /
L424/	0.01 /	L425/	0.01 /	L426/	0.01 /
L427/	0.05 /	L428/	0.01 /	L429/	0.41 /
L430/	0.01 /	L431/	0.01 /	L432/	0.01 /
L435/	0.01 /	L436/	0.04 /	L437/	0.41 /
L438/	0.01 /	L439/	0.08 /	L440/	0.72 /
L441/	1.29 /	L442/	2.41 /	L443/	2.84 /
L446/	0.01 /	L448/	0.01 /	L449/	0.02 /
L450/	0.43 /	L451/	1.30 /	L452/	0.11 /
L453/	0.28 /	L454/	0.98 /	L466/	1.11 /
L468/	1.90 /	L470/	1.06 /	L471/	0.79 /
L472/	0.04 /	L475/	0.01 /	L478/	0.01 /
L479/	0.07 /	L487/	0.01 /	L490/	1.52 /
L493/	0.13 /	L496/	0.96 /	L497/	0.95 /
L498/	1.00 /	L499/	0.01 /	L500/	0.01 /
L501/	0.97 /	L502/	0.65 /	L503/	2.54 /
L504/	3.51 /	L505/	0.01 /	L506/	0.01 /
L507/	0.08 /	L509/	0.11 /	L510/	1.12 /
L511/	0.11 /	L512/	1.69 /	L513/	1.33 /
L514/	0.01 /	L515/	1.17 /	CH21/	100.00 /
L474/	0.07 /	L523/	11.35 /	L525/	0.90 /
L527/	0.01 /	L528/	0.04 /	L529/	0.01 /
L533/	0.01 /	L537/	0.01 /	L394/	2.27 /
L276/	0.84 /	L288/	1.04 /	L412/	0.92 /
L447/	0.01 /	L546/	0.92 /		

Junction/	EGL				
N221/	1.76 /	N222/	2.76 /	N223/	2.26 /
N224/	3.47 /	N227/	2.63 /	N228/	3.08 /
N230/	4.03 /	N231/	0.45 /	N233/	2.08 /
N234/	5.95 /	N235/	0.26 /	N236/	1.03 /
N237/	0.82 /	N238/	2.54 /	N239/	0.90 /
N240/	1.60 /	N241/	3.54 /	N242/	2.04 /
N243/	3.15 /	N244/	3.36 /	N245/	4.23 /
N246/	4.16 /	N247/	4.92 /	N248/	1.05 /
N249/	2.93 /	N250/	3.28 /	N251/	1.27 /

N252/ 3.17 / N253/ 5.52 / N254/ 0.52 /
N255/ 5.24 / N256/ 0.66 / N257/ 0.84 /
N259/ 3.77 / N260/ 3.48 / N261/ 1.81 /
N262/ 0.61 / N263/ 0.56 / N264/ 4.54 /
N265/ 0.55 / N266/ 0.15 / N267/ 1.81 /
N268/ 0.64 / N269/ 0.83 / N270/ 1.14 /
N271/ 1.56 / N272/ 1.67 / N273/ 0.44 /
N274/ 0.70 / N275/ 6.63 / N276/ 0.49 /
N277/ 0.41 / N278/ 2.67 / N279/ 0.55 /
N280/ 0.97 / N281/ 2.76 / N282/ 2.50 /
N283/ 11.46 / N284/ 0.42 / N285/ 1.65 /
N286/ 1.70 / N287/ 2.79 / N288/ 2.54 /
N289/ 2.45 / N290/ 1.60 / N291/ 0.53 /
N292/ 4.83 / N293/ 0.62 / N294/ 0.48 /
N296/ 0.63 / N297/ 0.59 / N298/ 0.74 /
N299/ 3.86 / N300/ 0.60 / N301/ 1.92 /
N302/ 0.73 / N303/ 6.34 / N304/ 0.61 /
N305/ 3.00 / N306/ 3.73 / N307/ 4.06 /
N308/ 3.21 / N309/ 0.67 / N310/ 1.08 /
N312/ 0.79 / N313/ 0.18 / N314/ 0.33 /
N315/ 0.43 / N316/ 4.79 / N317/ 3.57 /
N318/ 4.61 / N319/ 2.85 / N320/ 3.75 /
N321/ 3.03 / N325/ 3.51 / N326/ 2.44 /
N327/ 2.89 / N328/ 5.49 / N329/ 5.12 /
N330/ 5.41 / N331/ 5.99 / N332/ 5.18 /
N333/ 2.07 / N334/ 2.33 / N335/ 3.61 /
N336/ 3.29 / N337/ 2.27 / N338/ 1.18 /
N339/ 0.64 / N340/ 0.89 / N341/ 1.89 /
N342/ 1.62 / N343/ 1.46 / N344/ 0.79 /
N345/ 0.40 / N347/ 4.24 / N348/ 3.96 /
N349/ 3.82 / N350/ 3.84 / N351/ 4.35 /
N352/ 3.11 / N353/ 3.24 / N354/ 1.06 /
N355/ 4.25 / N356/ 0.29 / N357/ 0.49 /
N358/ 0.68 / N359/ 0.41 / N360/ 3.77 /
N361/ 2.17 / N362/ 2.35 / N363/ 3.40 /
N364/ 2.35 / N365/ 9.59 / N366/ 1.11 /
N367/ 0.89 / N368/ 2.73 / N369/ 3.35 /
N370/ 5.14 / N371/ 4.51 / N372/ 4.89 /
N373/ 4.48 / N374/ 4.06 / N375/ 4.47 /
N376/ 1.56 / N377/ 1.72 / N378/ 3.36 /
N379/ 4.39 / N381/ 1.36 / N382/ 1.93 /
N383/ 0.76 / N384/ 0.74 / N386/ 0.84 /
N387/ 0.63 / N388/ 1.80 / N389/ 3.11 /
N390/ 0.80 / N391/ 1.46 / N392/ 1.84 /
N394/ 3.45 / N395/ 3.07 / N396/ 1.94 /
N397/ 3.09 / N398/ 2.71 / N399/ 4.21 /
N403/ 4.29 / N404/ 4.85 / N405/ 1.79 /
N406/ 4.88 / N407/ 1.19 / N408/ 4.89 /
N409/ 4.69 / N410/ 4.44 / N412/ 3.14 /
N413/ 4.04 / N414/ 3.59 / N415/ 3.20 /
N416/ 2.68 / N417/ 1.84 / N418/ 0.92 /
N419/ 2.70 / N420/ 2.52 / N421/ 2.67 /
N422/ 3.48 / N423/ 2.31 / N424/ 3.96 /
N425/ 2.34 / N426/ 4.29 / N428/ 4.36 /
N429/ 4.92 / N430/ 0.65 / N431/ 2.84 /
N432/ 1.56 / N434/ 0.94 / N435/ 2.98 /
N436/ 1.96 / N437/ 2.27 / N438/ 3.05 /
N439/ 3.86 / N440/ 2.01 / N441/ 2.48 /
N442/ 4.22 / N443/ 1.96 / N444/ 2.61 /
N445/ 4.54 / N446/ 1.34 / N447/ 4.12 /

N448/ 2.39 / N449/ 2.75 / N450/ 2.29 /
N451/ 2.12 / N453/ 2.14 / N454/ 2.17 /
N455/ 1.54 / N456/ 2.01 / N457/ 1.43 /
N458/ 1.60 / N459/ 3.43 / N460/ 1.54 /
N461/ 8.78 / N464/ 3.23 / N465/ 3.10 /
N466/ 3.48 / N467/ 1.92 / N468/ 2.65 /
N469/ 5.60 / N470/ 2.53 / N471/ 1.21 /
N472/ 1.12 / N473/ 0.46 / N487/ 1.84 /
N489/ 2.82 / N490/ 1.64 / N491/ 0.86 /
N492/ 1.78 / N493/ 1.50 / N497/ 1.75 /
N499/ 17.61 / N500/ 4.58 / N501/ 3.80 /
N503/ 8.74 / N504/ 3.67 / N506/ 2.15 /
N509/ 3.56 / N511/ 0.54 / N513/ 1.33 /
N514/ 2.90 / N516/ 12.19 / N517/ 2.55 /
N518/ 3.35 / N524/ 0.35 / N525/ 0.59 /
N526/ 0.34 / N527/ 0.65 / N528/ 4.15 /
N529/ 4.07 / N530/ 5.51 / N689/ 1.94 /
N494/ 1.23 / N541/ 2.29 / EL329/ 2.41 /
N427/ 3.10 / N411/ 4.38 / N295/ 4.45 /
N311/ 5.76 / N462/ 1.93 / N554/ 1.80 /
N555/ 9.61 / N322/ 6.15 /

Junction/ Freeboard
N221/ 6.43 / N222/ 5.09 / N223/ 4.14 /
N224/ 6.04 / N227/ 8.43 / N228/ 1.79 /
N230/ 6.22 / N231/ 4.11 / N233/ 5.12 /
N234/ 9.88 / N235/ 18.29 / N236/ 7.34 /
N237/ 6.63 / N238/ 4.77 / N239/ 6.52 /
N240/ 3.89 / N241/ 7.08 / N242/ 5.30 /
N243/ 3.81 / N244/ 2.63 / N245/ 1.95 /
N246/ 1.25 / N247/ 4.72 / N248/ 3.47 /
N249/ 1.08 / N250/ 8.98 / N251/ 10.37 /
N252/ 5.97 / N253/ 8.57 / N254/ 7.05 /
N255/ 6.67 / N256/ 11.81 / N257/ 9.95 /
N259/ 2.14 / N260/ 1.15 / N261/ 5.64 /
N262/ 4.91 / N263/ 4.55 / N264/ 6.05 /
N265/ 2.99 / N266/ 5.10 / N267/ 5.03 /
N268/ 9.04 / N269/ 9.04 / N270/ 6.12 /
N271/ 2.44 / N272/ 4.25 / N273/ 6.28 /
N274/ 4.27 / N275/ 11.58 / N276/ 5.66 /
N277/ 5.68 / N278/ 16.78 / N279/ 3.73 /
N280/ 10.10 / N281/ 6.40 / N282/ 12.29 /
N283/ 16.08 / N284/ 12.84 / N285/ 5.84 /
N286/ 4.41 / N287/ 16.59 / N288/ 17.25 /
N289/ 17.36 / N290/ 16.70 / N291/ 3.84 /
N292/ 15.04 / N293/ 6.86 / N294/ 5.34 /
N296/ 2.79 / N297/ 6.57 / N298/ 4.89 /
N299/ 8.25 / N300/ 2.55 / N301/ 3.58 /
N302/ 5.71 / N303/ 10.76 / N304/ 2.84 /
N305/ 3.88 / N306/ 1.94 / N307/ 3.42 /
N308/ 0.00 / N309/ 5.58 / N310/ 4.01 /
N312/ 2.40 / N313/ 3.68 / N314/ 3.43 /
N315/ 3.35 / N316/ 2.33 / N317/ 3.66 /
N318/ 1.94 / N319/ 8.08 / N320/ 2.37 /
N321/ 3.26 / N325/ 4.14 / N326/ 7.21 /
N327/ 4.85 / N328/ 1.50 / N329/ 5.28 /
N330/ 2.96 / N331/ 1.62 / N332/ 2.22 /
N333/ 13.52 / N334/ 10.61 / N335/ 1.54 /
N336/ 10.47 / N337/ 4.00 / N338/ 11.91 /
N339/ 7.87 / N340/ 5.26 / N341/ 3.11 /

N342/ 5.17 / N343/ 3.29 / N344/ 10.17 /
N345/ 8.91 / N347/ 4.37 / N348/ 2.69 /
N349/ 6.42 / N350/ 6.76 / N351/ 3.38 /
N352/ 6.92 / N353/ 4.80 / N354/ 6.62 /
N355/ 7.32 / N356/ 2.78 / N357/ 3.12 /
N358/ 6.80 / N359/ 6.41 / N360/ 5.38 /
N361/ 4.99 / N362/ 5.61 / N363/ 8.04 /
N364/ 7.26 / N365/ 6.94 / N366/ 7.42 /
N367/ 2.18 / N368/ 3.11 / N369/ 3.22 /
N370/ 3.30 / N371/ 3.55 / N372/ 5.89 /
N373/ 6.17 / N374/ 8.46 / N375/ 8.11 /
N376/ 6.01 / N377/ 6.12 / N378/ 7.02 /
N379/ 6.10 / N381/ 2.63 / N382/ 3.46 /
N383/ 6.01 / N384/ 4.80 / N386/ 7.19 /
N387/ 8.07 / N388/ 4.65 / N389/ 6.39 /
N390/ 8.77 / N391/ 7.25 / N392/ 7.81 /
N394/ 8.56 / N395/ 5.22 / N396/ 5.25 /
N397/ 6.11 / N398/ 9.02 / N399/ 5.57 /
N403/ 7.03 / N404/ 8.48 / N405/ 12.46 /
N406/ 6.58 / N407/ 14.39 / N408/ 7.78 /
N409/ 6.39 / N410/ 7.91 / N412/ 5.80 /
N413/ 4.34 / N414/ 2.77 / N415/ 4.85 /
N416/ 5.70 / N417/ 2.42 / N418/ 3.58 /
N419/ 6.73 / N420/ 9.14 / N421/ 6.68 /
N422/ 5.88 / N423/ 7.72 / N424/ 6.49 /
N425/ 7.99 / N426/ 5.61 / N428/ 3.63 /
N429/ 5.39 / N430/ 8.57 / N431/ 3.80 /
N432/ 1.23 / N434/ 6.53 / N435/ 7.29 /
N436/ 11.87 / N437/ 9.71 / N438/ 7.29 /
N439/ 6.28 / N440/ 10.34 / N441/ 8.69 /
N442/ 4.97 / N443/ 7.06 / N444/ 6.76 /
N445/ 3.55 / N446/ 8.57 / N447/ 4.32 /
N448/ 4.46 / N449/ 5.00 / N450/ 2.32 /
N451/ 3.01 / N453/ 4.13 / N454/ 8.94 /
N455/ 5.26 / N456/ 4.09 / N457/ 9.95 /
N458/ 4.22 / N459/ 2.59 / N460/ 5.00 /
N461/ 11.43 / N464/ 4.38 / N465/ 5.37 /
N466/ 2.47 / N467/ 2.74 / N468/ 3.95 /
N469/ 8.22 / N470/ 7.98 / N471/ 7.21 /
N472/ 3.39 / N473/ 5.70 / N487/ 2.48 /
N489/ 3.76 / N490/ 2.41 / N491/ 2.16 /
N492/ 2.28 / N493/ 2.86 / N497/ 2.97 /
N499/ 12.41 / N500/ 4.76 / N501/ 5.95 /
N503/ 1.87 / N504/ 1.19 / N506/ 6.11 /
N509/ 5.46 / N511/ 12.20 / N513/ 6.48 /
N514/ 9.14 / N516/ 12.77 / N517/ 4.00 /
N518/ 1.80 / N524/ 2.66 / N525/ 4.52 /
N526/ 3.40 / N527/ 4.89 / N528/ 2.74 /
N529/ 10.91 / N530/ 4.32 / N689/ 3.77 /
N494/ 3.64 / N541/ 5.71 / EL329/ 3.07 /
N427/ 5.85 / N411/ 12.83 / N295/ 9.72 /
N311/ 5.96 / N462/ 3.29 / N554/ 2.43 /
N555/ 11.77 / N322/ 2.98 /

Junction/ Max Volume
N221/ 22.15 / N222/ 32.09 / N223/ 16.41 /
N224/ 41.73 / N227/ 33.07 / N228/ 38.70 /
N230/ 29.40 / N231/ 5.62 / N233/ 10.21 /
N234/ 56.80 / N235/ 3.32 / N236/ 3.52 /
N237/ 5.02 / N238/ 31.07 / N239/ 10.91 /

N240/ 19.85 /	N241/ 14.56 /	N242/ 21.86 /
N243/ 37.94 /	N244/ 40.40 /	N245/ 50.89 /
N246/ 49.32 /	N247/ 57.88 /	N248/ 13.17 /
N249/ 36.84 /	N250/ 41.27 /	N251/ 15.99 /
N252/ 27.91 /	N253/ 29.95 /	N254/ 6.58 /
N255/ 55.78 /	N256/ 8.34 /	N257/ 10.52 /
N259/ 42.56 /	N260/ 37.07 /	N261/ 22.73 /
N262/ 7.71 /	N263/ 4.93 /	N264/ 41.59 /
N265/ 6.86 /	N266/ 1.87 /	N267/ 21.06 /
N268/ 8.09 /	N269/ 8.35 /	N270/ 14.36 /
N271/ 17.43 /	N272/ 18.35 /	N273/ 5.55 /
N274/ 5.73 /	N275/ 56.80 /	N276/ 6.19 /
N277/ 3.46 /	N278/ 15.33 /	N279/ 6.88 /
N280/ 12.17 /	N281/ 28.50 /	N282/ 25.40 /
N283/ 18.34 /	N284/ 5.30 /	N285/ 20.69 /
N286/ 19.18 /	N287/ 23.28 /	N288/ 28.39 /
N289/ 25.63 /	N290/ 20.11 /	N291/ 6.64 /
N292/ 29.66 /	N293/ 7.77 /	N294/ 4.06 /
N296/ 7.85 /	N297/ 7.46 /	N298/ 7.27 /
N299/ 40.34 /	N300/ 7.49 /	N301/ 24.12 /
N302/ 4.96 /	N303/ 36.94 /	N304/ 7.69 /
N305/ 53.58 /	N306/ 54.55 /	N307/ 50.64 /
N308/ 40.34 /	N309/ 8.42 /	N310/ 4.92 /
N312/ 9.93 /	N313/ 2.31 /	N314/ 3.70 /
N315/ 4.46 /	N316/ 57.43 /	N317/ 44.81 /
N318/ 55.49 /	N319/ 35.82 /	N320/ 46.06 /
N321/ 38.14 /	N325/ 42.25 /	N326/ 30.71 /
N327/ 36.37 /	N328/ 71.10 /	N329/ 70.08 /
N330/ 84.32 /	N331/ 74.64 /	N332/ 71.12 /
N333/ 25.99 /	N334/ 28.48 /	N335/ 44.54 /
N336/ 41.30 /	N337/ 25.81 /	N338/ 14.81 /
N339/ 8.05 /	N340/ 9.40 /	N341/ 21.41 /
N342/ 18.16 /	N343/ 13.93 /	N344/ 9.91 /
N345/ 5.05 /	N347/ 52.43 /	N348/ 48.23 /
N349/ 48.03 /	N350/ 48.24 /	N351/ 53.83 /
N352/ 39.02 /	N353/ 40.68 /	N354/ 9.15 /
N355/ 39.96 /	N356/ 3.62 /	N357/ 5.25 /
N358/ 7.20 /	N359/ 3.50 /	N360/ 41.72 /
N361/ 27.21 /	N362/ 26.56 /	N363/ 29.72 /
N364/ 25.69 /	N365/ 58.05 /	N366/ 13.99 /
N367/ 11.14 /	N368/ 34.31 /	N369/ 41.01 /
N370/ 63.22 /	N371/ 56.74 /	N372/ 57.77 /
N373/ 52.66 /	N374/ 47.29 /	N375/ 52.00 /
N376/ 19.56 /	N377/ 19.73 /	N378/ 36.83 /
N379/ 46.49 /	N381/ 13.56 /	N382/ 21.10 /
N383/ 9.53 /	N384/ 9.29 /	N386/ 10.50 /
N387/ 7.89 /	N388/ 20.26 /	N389/ 23.65 /
N390/ 10.02 /	N391/ 18.36 /	N392/ 23.24 /
N394/ 39.08 /	N395/ 38.60 /	N396/ 20.92 /
N397/ 37.98 /	N398/ 33.99 /	N399/ 51.86 /
N403/ 52.41 /	N404/ 59.40 /	N405/ 22.50 /
N406/ 59.57 /	N407/ 14.95 /	N408/ 58.60 /
N409/ 55.87 /	N410/ 52.69 /	N412/ 39.44 /
N413/ 48.11 /	N414/ 42.75 /	N415/ 40.23 /
N416/ 33.71 /	N417/ 22.29 /	N418/ 11.57 /
N419/ 32.17 /	N420/ 31.71 /	N421/ 31.84 /
N422/ 42.08 /	N423/ 29.02 /	N424/ 47.85 /
N425/ 29.35 /	N426/ 52.58 /	N428/ 53.25 /
N429/ 59.99 /	N430/ 8.21 /	N431/ 32.62 /
N432/ 17.92 /	N434/ 11.76 /	N435/ 34.95 /

N436/	24.68 /	N437/	28.54 /	N438/	37.07 /
N439/	46.65 /	N440/	25.21 /	N441/	31.14 /
N442/	51.03 /	N443/	24.67 /	N444/	32.83 /
N445/	53.66 /	N446/	16.85 /	N447/	48.17 /
N448/	30.00 /	N449/	32.75 /	N450/	27.13 /
N451/	26.60 /	N453/	24.33 /	N454/	27.32 /
N455/	16.84 /	N456/	24.25 /	N457/	17.91 /
N458/	17.45 /	N459/	38.36 /	N460/	12.41 /
N461/	57.43 /	N464/	38.38 /	N465/	38.99 /
N466/	41.57 /	N467/	24.14 /	N468/	30.29 /
N469/	22.40 /	N470/	16.50 /	N471/	15.18 /
N472/	14.02 /	N473/	5.78 /	N487/	14.67 /
N489/	30.69 /	N490/	20.04 /	N491/	10.76 /
N492/	22.34 /	N493/	12.57 /	N497/	21.99 /
N499/	93.49 /	N500/	55.87 /	N501/	43.82 /
N503/	105.93 /	N504/	46.23 /	N506/	27.05 /
N509/	44.74 /	N511/	6.83 /	N513/	16.66 /
N514/	8.19 /	N516/	103.42 /	N517/	29.34 /
N518/	39.42 /	N524/	4.35 /	N525/	6.37 /
N526/	4.32 /	N527/	6.37 /	N528/	51.85 /
N529/	46.60 /	N530/	65.52 /	N689/	18.85 /
N494/	11.88 /	N541/	27.60 /	EL329/	30.24 /
N427/	37.84 /	N411/	51.77 /	N295/	30.79 /
N311/	53.28 /	N462/	24.28 /	N554/	17.58 /
N555/	105.93 /	N322/	77.16 /		

Junction/Total Fldng

N221/	0.00 /	N222/	0.00 /	N223/	0.00 /
N224/	0.00 /	N227/	0.00 /	N228/	0.00 /
N230/	0.00 /	N231/	0.00 /	N233/	0.00 /
N234/	0.00 /	N235/	0.00 /	N236/	0.00 /
N237/	0.00 /	N238/	0.00 /	N239/	0.00 /
N240/	0.00 /	N241/	0.00 /	N242/	0.00 /
N243/	0.00 /	N244/	0.00 /	N245/	0.00 /
N246/	0.00 /	N247/	0.00 /	N248/	0.00 /
N249/	0.00 /	N250/	0.00 /	N251/	0.00 /
N252/	0.00 /	N253/	0.00 /	N254/	0.00 /
N255/	0.00 /	N256/	0.00 /	N257/	0.00 /
N259/	0.00 /	N260/	0.00 /	N261/	0.00 /
N262/	0.00 /	N263/	0.00 /	N264/	0.00 /
N265/	0.00 /	N266/	0.00 /	N267/	0.00 /
N268/	0.00 /	N269/	0.00 /	N270/	0.00 /
N271/	0.00 /	N272/	0.00 /	N273/	0.00 /
N274/	0.00 /	N275/	0.00 /	N276/	0.00 /
N277/	0.00 /	N278/	0.00 /	N279/	0.00 /
N280/	0.00 /	N281/	0.00 /	N282/	0.00 /
N283/	0.00 /	N284/	0.00 /	N285/	0.00 /
N286/	0.00 /	N287/	0.00 /	N288/	0.00 /
N289/	0.00 /	N290/	0.00 /	N291/	0.00 /
N292/	0.00 /	N293/	0.00 /	N294/	0.00 /
N296/	0.00 /	N297/	0.00 /	N298/	0.00 /
N299/	0.00 /	N300/	0.00 /	N301/	0.00 /
N302/	0.00 /	N303/	0.00 /	N304/	0.00 /
N305/	0.00 /	N306/	0.00 /	N307/	0.00 /
N308/	0.00 /	N309/	0.00 /	N310/	0.00 /
N312/	0.00 /	N313/	0.00 /	N314/	0.00 /
N315/	0.00 /	N316/	0.00 /	N317/	0.00 /
N318/	0.00 /	N319/	0.00 /	N320/	0.00 /
N321/	0.00 /	N325/	0.00 /	N326/	0.00 /
N327/	0.00 /	N328/	0.00 /	N329/	0.00 /

N330/ 0.00 / N331/ 0.00 / N332/ 0.00 /
N333/ 0.00 / N334/ 0.00 / N335/ 0.00 /
N336/ 0.00 / N337/ 0.00 / N338/ 0.00 /
N339/ 0.00 / N340/ 0.00 / N341/ 0.00 /
N342/ 0.00 / N343/ 0.00 / N344/ 0.00 /
N345/ 0.00 / N347/ 0.00 / N348/ 0.00 /
N349/ 0.00 / N350/ 0.00 / N351/ 0.00 /
N352/ 0.00 / N353/ 0.00 / N354/ 0.00 /
N355/ 0.00 / N356/ 0.00 / N357/ 0.00 /
N358/ 0.00 / N359/ 0.00 / N360/ 0.00 /
N361/ 0.00 / N362/ 0.00 / N363/ 0.00 /
N364/ 0.00 / N365/ 0.00 / N366/ 0.00 /
N367/ 0.00 / N368/ 0.00 / N369/ 0.00 /
N370/ 0.00 / N371/ 0.00 / N372/ 0.00 /
N373/ 0.00 / N374/ 0.00 / N375/ 0.00 /
N376/ 0.00 / N377/ 0.00 / N378/ 0.00 /
N379/ 0.00 / N381/ 0.00 / N382/ 0.00 /
N383/ 0.00 / N384/ 0.00 / N386/ 0.00 /
N387/ 0.00 / N388/ 0.00 / N389/ 0.00 /
N390/ 0.00 / N391/ 0.00 / N392/ 0.00 /
N394/ 0.00 / N395/ 0.00 / N396/ 0.00 /
N397/ 0.00 / N398/ 0.00 / N399/ 0.00 /
N403/ 0.00 / N404/ 0.00 / N405/ 0.00 /
N406/ 0.00 / N407/ 0.00 / N408/ 0.00 /
N409/ 0.00 / N410/ 0.00 / N412/ 0.00 /
N413/ 0.00 / N414/ 0.00 / N415/ 0.00 /
N416/ 0.00 / N417/ 0.00 / N418/ 0.00 /
N419/ 0.00 / N420/ 0.00 / N421/ 0.00 /
N422/ 0.00 / N423/ 0.00 / N424/ 0.00 /
N425/ 0.00 / N426/ 0.00 / N428/ 0.00 /
N429/ 0.00 / N430/ 0.00 / N431/ 0.00 /
N432/ 0.00 / N434/ 0.00 / N435/ 0.00 /
N436/ 0.00 / N437/ 0.00 / N438/ 0.00 /
N439/ 0.00 / N440/ 0.00 / N441/ 0.00 /
N442/ 0.00 / N443/ 0.00 / N444/ 0.00 /
N445/ 0.00 / N446/ 0.00 / N447/ 0.00 /
N448/ 0.00 / N449/ 0.00 / N450/ 0.00 /
N451/ 0.00 / N453/ 0.00 / N454/ 0.00 /
N455/ 0.00 / N456/ 0.00 / N457/ 0.00 /
N458/ 0.00 / N459/ 0.00 / N460/ 0.00 /
N461/ 0.00 / N464/ 0.00 / N465/ 0.00 /
N466/ 0.00 / N467/ 0.00 / N468/ 0.00 /
N469/ 0.00 / N470/ 0.00 / N471/ 0.00 /
N472/ 0.00 / N473/ 0.00 / N487/ 0.00 /
N489/ 0.00 / N490/ 0.00 / N491/ 0.00 /
N492/ 0.00 / N493/ 0.00 / N497/ 0.00 /
N499/ 0.00 / N500/ 0.00 / N501/ 0.00 /
N503/ 0.00 / N504/ 0.00 / N506/ 0.00 /
N509/ 0.00 / N511/ 0.00 / N513/ 0.00 /
N514/ 0.00 / N516/ 0.00 / N517/ 0.00 /
N518/ 0.00 / N524/ 0.00 / N525/ 0.00 /
N526/ 0.00 / N527/ 0.00 / N528/ 0.00 /
N529/ 0.00 / N530/ 0.00 / N689/ 0.00 /
N494/ 0.00 / N541/ 0.00 / EL329/ 0.00 /
N427/ 0.00 / N411/ 0.00 / N295/ 0.00 /
N311/ 0.00 / N462/ 0.00 / N554/ 0.00 /
N555/ 0.00 / N322/ 0.00 /

Conduit/ Cross Sectional Area
L210/ 0.79 / L211/ 0.78 / L212/ 1.25 /

L213/	0.79 /	L214/	1.78 /	L217/	0.34 /
L220/	2.43 /	L221/	3.18 /	L222/	1.39 /
L223/	0.16 /	L224/	0.17 /	L225/	0.34 /
L226/	0.73 /	L227/	0.79 /	L228/	0.77 /
L229/	1.14 /	L230/	1.21 /	L231/	1.24 /
L232/	1.78 /	L233/	1.78 /	L234/	3.16 /
L235/	0.81 /	L236/	0.79 /	L237/	0.80 /
L238/	0.78 /	L239/	0.78 /	L240/	0.41 /
L241/	1.21 /	L242/	0.54 /	L243/	0.69 /
L246/	4.93 /	L247/	4.94 /	L248/	0.79 /
L249/	0.48 /	L250/	0.34 /	L251/	0.42 /
L252/	0.15 /	L253/	0.54 /	L254/	0.58 /
L255/	1.18 /	L256/	1.72 /	L257/	1.82 /
L258/	0.36 /	L259/	1.98 /	L260/	0.69 /
L261/	0.36 /	L262/	0.24 /	L263/	0.41 /
L264/	1.00 /	L265/	5.67 /	L266/	4.90 /
L267/	0.31 /	L268/	0.79 /	L269/	0.77 /
L270/	3.53 /	L271/	5.26 /	L272/	7.33 /
L273/	2.28 /	L274/	0.68 /	L275/	0.48 /
L277/	0.49 /	L278/	0.48 /	L279/	0.50 /
L280/	0.49 /	L281/	0.74 /	L282/	0.34 /
L283/	0.48 /	L284/	0.80 /	L285/	1.78 /
L286/	1.24 /	L287/	0.55 /	L289/	0.65 /
L290/	0.11 /	L291/	0.20 /	L292/	0.31 /
L294/	0.79 /	L300/	1.78 /	L301/	0.80 /
L302/	4.00 /	L303/	0.79 /	L304/	0.79 /
L305/	1.78 /	L306/	0.81 /	L307/	3.17 /
L308/	1.80 /	L309/	0.81 /	L310/	0.79 /
L311/	0.79 /	L312/	0.80 /	L313/	0.80 /
L314/	0.82 /	L315/	0.54 /	L316/	0.65 /
L317/	1.78 /	L318/	1.84 /	L319/	1.71 /
L320/	0.67 /	L321/	0.34 /	L324/	0.80 /
L325/	0.80 /	L326/	0.80 /	L327/	0.80 /
L328/	1.69 /	L329/	0.94 /	L334/	0.20 /
L335/	0.33 /	L336/	0.44 /	L337/	0.24 /
L338/	5.45 /	L339/	5.25 /	L340/	6.81 /
L341/	5.72 /	L342/	1.13 /	L343/	0.72 /
L344/	5.11 /	L346/	9.64 /	L347/	12.65 /
L348/	13.14 /	L349/	12.79 /	L350/	12.23 /
L351/	2.62 /	L352/	2.66 /	L354/	11.15 /
L361/	0.63 /	L362/	0.61 /	L363/	1.37 /
L364/	0.69 /	L365/	0.52 /	L366/	2.81 /
L367/	2.62 /	L368/	0.66 /	L369/	0.78 /
L370/	4.57 /	L373/	4.08 /	L374/	0.80 /
L375/	1.84 /	L376/	5.91 /	L386/	12.76 /
L387/	12.83 /	L388/	0.79 /	L389/	16.29 /
L390/	0.81 /	L391/	16.30 /	L392/	16.15 /
L393/	15.80 /	L395/	1.24 /	L396/	6.99 /
L397/	1.24 /	L398/	1.24 /	L399/	2.98 /
L402/	2.41 /	L403/	2.41 /	L404/	2.41 /
L405/	1.77 /	L406/	4.92 /	L407/	1.23 /
L408/	5.95 /	L410/	7.09 /	L411/	7.09 /
L413/	1.74 /	L415/	0.77 /	L417/	0.79 /
L418/	1.77 /	L419/	3.15 /	L420/	3.15 /
L421/	0.79 /	L422/	1.23 /	L423/	4.92 /
L424/	5.96 /	L425/	0.79 /	L426/	1.24 /
L427/	9.67 /	L428/	0.79 /	L429/	9.88 /
L430/	0.79 /	L431/	0.79 /	L432/	0.79 /
L435/	0.79 /	L436/	0.79 /	L437/	1.26 /
L438/	0.79 /	L439/	1.23 /	L440/	1.72 /

L441/	9.90 /	L442/	8.23 /	L443/	2.97 /
L446/	1.78 /	L448/	0.79 /	L449/	2.42 /
L450/	3.14 /	L451/	2.89 /	L452/	0.81 /
L453/	0.82 /	L454/	0.38 /	L466/	0.96 /
L468/	2.01 /	L470/	2.20 /	L471/	0.22 /
L472/	0.79 /	L475/	1.24 /	L478/	4.00 /
L479/	4.94 /	L487/	2.43 /	L490/	1.89 /
L493/	4.90 /	L496/	0.26 /	L497/	0.26 /
L498/	0.40 /	L499/	0.80 /	L500/	1.25 /
L501/	7.34 /	L502/	10.02 /	L503/	15.18 /
L504/	13.70 /	L505/	2.43 /	L506/	2.43 /
L507/	0.78 /	L509/	1.21 /	L510/	0.59 /
L511/	1.76 /	L512/	1.12 /	L513/	4.66 /
L514/	2.42 /	L515/	7.11 /	CH21/	145.24 /
L474/	1.77 /	L523/	7.81 /	L525/	7.37 /
L527/	1.78 /	L528/	1.24 /	L529/	1.77 /
L533/	1.77 /	L537/	1.78 /	L394/	15.41 /
L276/	0.28 /	L288/	0.42 /	L412/	0.56 /
L447/	1.77 /	L546/	1.64 /		

Conduit/	Final Volume				
L210/	55.24 /	L211/	317.33 /	L212/	677.02 /
L213/	84.91 /	L214/	165.45 /	L217/	28.91 /
L220/	776.67 /	L221/	1254.33 /	L222/	253.89 /
L223/	11.56 /	L224/	50.40 /	L225/	100.02 /
L226/	301.51 /	L227/	186.04 /	L228/	313.37 /
L229/	650.38 /	L230/	482.09 /	L231/	493.80 /
L232/	546.26 /	L233/	854.39 /	L234/	1359.12 /
L235/	40.27 /	L236/	83.47 /	L237/	79.66 /
L238/	42.73 /	L239/	97.17 /	L240/	35.32 /
L241/	358.05 /	L242/	33.77 /	L243/	65.39 /
L246/	2042.48 /	L247/	454.50 /	L248/	37.11 /
L249/	35.24 /	L250/	26.27 /	L251/	29.20 /
L252/	58.58 /	L253/	37.53 /	L254/	227.16 /
L255/	92.84 /	L256/	505.74 /	L257/	508.46 /
L258/	36.03 /	L259/	556.13 /	L260/	44.28 /
L261/	50.30 /	L262/	18.15 /	L263/	48.42 /
L264/	78.94 /	L265/	1966.06 /	L266/	989.83 /
L267/	19.61 /	L268/	62.30 /	L269/	191.18 /
L270/	1415.19 /	L271/	2094.24 /	L272/	249.36 /
L273/	266.37 /	L274/	83.42 /	L275/	51.40 /
L277/	56.93 /	L278/	23.25 /	L279/	83.04 /
L280/	24.31 /	L281/	79.16 /	L282/	16.29 /
L283/	54.95 /	L284/	41.36 /	L285/	249.72 /
L286/	61.98 /	L287/	59.93 /	L289/	78.28 /
L290/	39.93 /	L291/	74.08 /	L292/	32.03 /
L294/	65.17 /	L300/	415.53 /	L301/	44.56 /
L302/	2168.26 /	L303/	65.80 /	L304/	54.05 /
L305/	254.73 /	L306/	46.75 /	L307/	301.60 /
L308/	181.42 /	L309/	46.77 /	L310/	48.24 /
L311/	316.16 /	L312/	48.61 /	L313/	466.32 /
L314/	75.16 /	L315/	38.40 /	L316/	188.49 /
L317/	537.37 /	L318/	559.77 /	L319/	111.21 /
L320/	45.19 /	L321/	148.75 /	L324/	97.56 /
L325/	49.58 /	L326/	94.73 /	L327/	94.00 /
L328/	588.56 /	L329/	92.45 /	L334/	80.31 /
L335/	121.03 /	L336/	54.54 /	L337/	28.59 /
L338/	457.72 /	L339/	1365.17 /	L340/	1661.16 /
L341/	588.66 /	L342/	88.09 /	L343/	67.72 /
L344/	260.36 /	L346/	481.94 /	L347/	4995.00 /

L348/	5309.24 /	L349/	5117.57 /	L350/	1613.88 /
L351/	91.87 /	L352/	390.33 /	L354/	1048.27 /
L361/	29.58 /	L362/	40.39 /	L363/	564.82 /
L364/	33.07 /	L365/	33.03 /	L366/	1105.55 /
L367/	954.81 /	L368/	81.55 /	L369/	76.84 /
L370/	942.34 /	L373/	400.11 /	L374/	127.38 /
L375/	741.16 /	L376/	969.72 /	L386/	4349.50 /
L387/	4556.00 /	L388/	89.18 /	L389/	6271.88 /
L390/	86.33 /	L391/	8132.47 /	L392/	6137.53 /
L393/	7283.12 /	L395/	61.97 /	L396/	2810.71 /
L397/	70.67 /	L398/	59.36 /	L399/	899.24 /
L402/	207.44 /	L403/	960.04 /	L404/	895.00 /
L405/	125.90 /	L406/	1790.74 /	L407/	87.61 /
L408/	2185.23 /	L410/	2799.14 /	L411/	2133.25 /
L413/	696.91 /	L415/	37.56 /	L417/	53.73 /
L418/	127.65 /	L419/	815.74 /	L420/	1266.85 /
L421/	53.76 /	L422/	93.85 /	L423/	1954.83 /
L424/	1781.31 /	L425/	55.33 /	L426/	90.20 /
L427/	4697.69 /	L428/	69.28 /	L429/	3894.19 /
L430/	72.11 /	L431/	340.26 /	L432/	71.98 /
L435/	71.20 /	L436/	249.70 /	L437/	414.61 /
L438/	69.31 /	L439/	458.37 /	L440/	680.17 /
L441/	4010.22 /	L442/	3779.43 /	L443/	285.16 /
L446/	108.53 /	L448/	62.43 /	L449/	1093.49 /
L450/	1257.37 /	L451/	260.20 /	L452/	40.43 /
L453/	49.89 /	L454/	26.85 /	L466/	86.06 /
L468/	995.71 /	L470/	389.82 /	L471/	86.66 /
L472/	41.02 /	L475/	121.67 /	L478/	1919.72 /
L479/	2921.55 /	L487/	397.91 /	L490/	229.18 /
L493/	2289.08 /	L496/	100.86 /	L497/	100.64 /
L498/	39.19 /	L499/	312.46 /	L500/	495.79 /
L501/	2751.77 /	L502/	4237.47 /	L503/	6631.60 /
L504/	6369.27 /	L505/	958.96 /	L506/	966.46 /
L507/	114.89 /	L509/	161.99 /	L510/	65.26 /
L511/	313.97 /	L512/	124.38 /	L513/	1281.71 /
L514/	965.06 /	L515/	1030.30 /	CH21/	134349.35 /
L474/	225.24 /	L523/	1335.12 /	L525/	3930.54 /
L527/	770.63 /	L528/	560.78 /	L529/	503.76 /
L533/	1285.41 /	L537/	805.54 /	L394/	2418.68 /
L276/	14.13 /	L288/	25.64 /	L412/	29.76 /
L447/	697.87 /	L546/	946.88 /		

Conduit/ Hydraulic Radius

L210/	0.25 /	L211/	0.26 /	L212/	0.31 /
L213/	0.25 /	L214/	0.38 /	L217/	0.23 /
L220/	0.44 /	L221/	0.51 /	L222/	0.44 /
L223/	0.15 /	L224/	0.16 /	L225/	0.22 /
L226/	0.30 /	L227/	0.25 /	L228/	0.25 /
L229/	0.36 /	L230/	0.32 /	L231/	0.31 /
L232/	0.38 /	L233/	0.38 /	L234/	0.50 /
L235/	0.25 /	L236/	0.25 /	L237/	0.25 /
L238/	0.26 /	L239/	0.26 /	L240/	0.26 /
L241/	0.32 /	L242/	0.29 /	L243/	0.30 /
L246/	0.62 /	L247/	0.62 /	L248/	0.25 /
L249/	0.27 /	L250/	0.21 /	L251/	0.26 /
L252/	0.11 /	L253/	0.29 /	L254/	0.29 /
L255/	0.37 /	L256/	0.43 /	L257/	0.38 /
L258/	0.24 /	L259/	0.51 /	L260/	0.28 /
L261/	0.24 /	L262/	0.17 /	L263/	0.25 /
L264/	0.38 /	L265/	0.90 /	L266/	0.86 /

L267/	0.22 /	L268/	0.25 /	L269/	0.25 /
L270/	0.75 /	L271/	0.91 /	L272/	1.08 /
L273/	0.52 /	L274/	0.30 /	L275/	0.27 /
L277/	0.27 /	L278/	0.28 /	L279/	0.27 /
L280/	0.28 /	L281/	0.25 /	L282/	0.22 /
L283/	0.27 /	L284/	0.25 /	L285/	0.38 /
L286/	0.31 /	L287/	0.29 /	L289/	0.30 /
L290/	0.12 /	L291/	0.17 /	L292/	0.20 /
L294/	0.25 /	L300/	0.38 /	L301/	0.25 /
L302/	0.56 /	L303/	0.25 /	L304/	0.25 /
L305/	0.38 /	L306/	0.25 /	L307/	0.50 /
L308/	0.38 /	L309/	0.25 /	L310/	0.25 /
L311/	0.25 /	L312/	0.25 /	L313/	0.25 /
L314/	0.25 /	L315/	0.29 /	L316/	0.30 /
L317/	0.38 /	L318/	0.38 /	L319/	0.42 /
L320/	0.30 /	L321/	0.22 /	L324/	0.25 /
L325/	0.25 /	L326/	0.25 /	L327/	0.25 /
L328/	0.37 /	L329/	0.37 /	L334/	0.17 /
L335/	0.23 /	L336/	0.26 /	L337/	0.17 /
L338/	0.90 /	L339/	0.89 /	L340/	1.02 /
L341/	0.95 /	L342/	0.37 /	L343/	0.30 /
L344/	0.62 /	L346/	0.88 /	L347/	1.00 /
L348/	1.00 /	L349/	1.02 /	L350/	1.16 /
L351/	0.61 /	L352/	0.61 /	L354/	1.30 /
L361/	0.30 /	L362/	0.30 /	L363/	0.45 /
L364/	0.30 /	L365/	0.28 /	L366/	0.61 /
L367/	0.60 /	L368/	0.30 /	L369/	0.26 /
L370/	0.84 /	L373/	0.77 /	L374/	0.25 /
L375/	0.38 /	L376/	0.72 /	L386/	1.00 /
L387/	1.00 /	L388/	0.25 /	L389/	1.12 /
L390/	0.25 /	L391/	1.12 /	L392/	1.13 /
L393/	1.18 /	L395/	0.31 /	L396/	0.84 /
L397/	0.31 /	L398/	0.31 /	L399/	0.59 /
L402/	0.44 /	L403/	0.44 /	L404/	0.44 /
L405/	0.38 /	L406/	0.62 /	L407/	0.31 /
L408/	0.69 /	L410/	0.75 /	L411/	0.75 /
L413/	0.42 /	L415/	0.29 /	L417/	0.25 /
L418/	0.38 /	L419/	0.50 /	L420/	0.50 /
L421/	0.25 /	L422/	0.31 /	L423/	0.62 /
L424/	0.69 /	L425/	0.25 /	L426/	0.31 /
L427/	0.88 /	L428/	0.25 /	L429/	0.88 /
L430/	0.25 /	L431/	0.25 /	L432/	0.25 /
L435/	0.25 /	L436/	0.25 /	L437/	0.31 /
L438/	0.25 /	L439/	0.32 /	L440/	0.43 /
L441/	0.89 /	L442/	1.01 /	L443/	0.60 /
L446/	0.38 /	L448/	0.25 /	L449/	0.44 /
L450/	0.51 /	L451/	0.60 /	L452/	0.25 /
L453/	0.25 /	L454/	0.24 /	L466/	0.37 /
L468/	0.55 /	L470/	0.51 /	L471/	0.16 /
L472/	0.25 /	L475/	0.31 /	L478/	0.56 /
L479/	0.62 /	L487/	0.44 /	L490/	0.52 /
L493/	0.64 /	L496/	0.20 /	L497/	0.20 /
L498/	0.25 /	L499/	0.25 /	L500/	0.31 /
L501/	0.75 /	L502/	0.88 /	L503/	1.33 /
L504/	1.36 /	L505/	0.44 /	L506/	0.44 /
L507/	0.26 /	L509/	0.32 /	L510/	0.29 /
L511/	0.38 /	L512/	0.38 /	L513/	0.73 /
L514/	0.44 /	L515/	0.75 /	CH21/	1.29 /
L474/	0.38 /	L523/	0.66 /	L525/	0.75 /
L527/	0.38 /	L528/	0.31 /	L529/	0.38 /

L533/ 0.38 / L537/ 0.38 / L394/ 1.31 /
L276/ 0.19 / L288/ 0.23 / L412/ 0.29 /
L447/ 0.38 / L546/ 0.44 /

Conduit/ Upstream/ Downstream Elevation

L210/ 107.60/ 106.99 L211/ 106.99/ 102.82 L212/ 102.12/ 100.29/
L213/ 100.97/ 100.29 L214/ 100.61/ 100.29 L217/ 100.29/ 99.74/
L220/ 100.29/ 98.17 L221/ 98.17/ 96.23 L222/ 95.23/ 90.12/
L223/ 119.86/ 119.61 L224/ 118.89/ 118.06 L225/ 117.66/ 117.58/
L226/ 118.56/ 118.20 L227/ 118.20/ 117.58 L228/ 117.58/ 114.74/
L229/ 112.52/ 110.57 L230/ 110.37/ 108.88 L231/ 108.88/ 107.07/
L232/ 107.07/ 105.73 L233/ 105.73/ 103.45 L234/ 103.45/ 102.48/
L235/ 112.53/ 112.52 L236/ 107.55/ 107.07 L237/ 104.42/ 103.45/
L238/ 116.65/ 115.88 L239/ 115.28/ 113.18 L240/ 113.35/ 112.80/
L241/ 110.46/ 107.74 L242/ 108.07/ 107.63 L243/ 108.45/ 107.72/
L246/ 102.48/ 100.55 L247/ 100.55/ 99.95 L248/ 100.74/ 100.55/
L249/ 105.49/ 104.85 L250/ 104.85/ 99.95 L251/ 105.41/ 104.85/
L252/ 100.51/ 99.23 L253/ 101.38/ 100.99 L254/ 100.99/ 99.23/
L255/ 100.28/ 99.94 L256/ 99.94/ 99.23 L257/ 99.23/ 97.81/
L258/ 98.12/ 97.81 L259/ 97.81/ 96.04 L260/ 96.04/ 90.12/
L261/ 94.74/ 93.72 L262/ 93.72/ 79.22 L263/ 94.67/ 93.72/
L264/ 86.30/ 85.78 L265/ 85.51/ 84.79 L266/ 84.79/ 83.96/
L267/ 85.56/ 85.16 L268/ 96.56/ 95.98 L269/ 95.98/ 93.73/
L270/ 83.96/ 80.31 L271/ 80.31/ 79.15 L272/ 79.15/ 79.04/
L273/ 79.70/ 79.15 L274/ 92.45/ 78.96 L275/ 119.54/ 118.62/
L277/ 119.61/ 118.62 L278/ 113.83/ 113.54 L279/ 113.54/ 109.51/
L280/ 113.85/ 113.54 L281/ 124.82/ 122.68 L282/ 122.68/ 113.54/
L283/ 123.56/ 122.68 L284/ 108.52/ 108.39 L285/ 108.39/ 108.28/
L286/ 108.40/ 108.39 L287/ 113.82/ 113.08 L289/ 114.00/ 113.15/
L290/ 104.11/ 102.08 L291/ 102.08/ 99.96 L292/ 99.96/ 98.67/
L294/ 92.32/ 92.16 L300/ 92.95/ 92.16 L301/ 93.14/ 92.95/
L302/ 92.16/ 91.12 L303/ 93.19/ 93.13 L304/ 93.55/ 93.13/
L305/ 93.13/ 92.95 L306/ 99.12/ 98.66 L307/ 98.66/

98.64/
L308/ 98.76/ 98.64 L309/ 99.18/ 98.76 L310/ 110.94/
110.78/
L311/ 110.78/ 109.72 L312/ 109.83/ 109.72 L313/ 109.72/
104.33/
L314/ 104.49/ 104.33 L315/ 105.53/ 105.22 L316/ 105.22/
104.33/
L317/ 104.33/ 102.95 L318/ 102.95/ 101.67 L319/ 101.67/
101.11/
L320/ 101.90/ 101.67 L321/ 119.23/ 118.56 L324/ 122.98/
122.62/
L325/ 121.64/ 121.47 L326/ 120.48/ 120.01 L327/ 120.60/
120.01/
L328/ 120.01/ 116.38 L329/ 116.38/ 113.78 L334/ 125.61/
123.40/
L335/ 123.40/ 121.39 L336/ 121.39/ 120.37 L337/ 120.37/
116.12/
L338/ 128.41/ 128.24 L339/ 128.24/ 127.64 L340/ 127.64/
127.05/
L341/ 127.05/ 126.60 L342/ 128.98/ 128.40 L343/ 129.22/
128.48/
L344/ 126.99/ 126.93 L346/ 126.77/ 126.73 L347/ 126.73/
125.92/
L348/ 125.92/ 125.16 L349/ 125.16/ 124.36 L350/ 124.36/
124.12/
L351/ 124.46/ 124.39 L352/ 124.39/ 124.12 L354/ 122.17/
122.10/
L361/ 126.29/ 125.91 L362/ 126.38/ 125.89 L363/ 125.84/
124.54/
L364/ 124.98/ 124.56 L365/ 124.86/ 124.54 L366/ 124.54/
123.56/
L367/ 123.56/ 122.23 L368/ 123.63/ 122.76 L369/ 124.15/
122.91/
L370/ 121.99/ 121.40 L373/ 121.40/ 121.51 L374/ 121.18/
119.35/
L375/ 119.35/ 118.83 L376/ 119.02/ 118.83 L386/ 118.73/
118.47/
L387/ 118.47/ 118.21 L388/ 118.79/ 118.21 L389/ 118.21/
117.91/
L390/ 118.19/ 117.91 L391/ 117.91/ 117.44 L392/ 117.44/
116.93/
L393/ 116.93/ 116.31 L395/ 119.44/ 119.16 L396/ 119.23/
119.16/
L397/ 119.53/ 119.16 L398/ 119.51/ 119.23 L399/ 119.34/
119.23/
L402/ 114.76/ 114.53 L403/ 114.53/ 113.47 L404/ 113.47/
112.48/
L405/ 112.68/ 112.48 L406/ 112.48/ 112.07 L407/ 112.40/
112.07/
L408/ 112.07/ 111.63 L410/ 111.63/ 111.16 L411/ 111.16/
110.79/
L413/ 119.50/ 119.27 L415/ 119.74/ 119.50 L417/ 113.53/
112.96/
L418/ 113.19/ 112.96 L419/ 112.96/ 112.53 L420/ 112.53/
111.86/
L421/ 112.06/ 111.86 L422/ 112.21/ 111.86 L423/ 111.86/
111.28/
L424/ 111.28/ 110.79 L425/ 111.34/ 111.28 L426/ 111.64/
111.28/
L427/ 110.79/ 109.75 L428/ 109.83/ 109.75 L429/ 109.75/

108.88/

	L430/	121.16/	120.60	L431/	122.90/	120.60	L432/	123.39/
122.90/								
	L435/	116.46/	115.70	L436/	115.70/	113.02	L437/	113.02/
112.19/								
	L438/	112.45/	112.19	L439/	112.19/	109.78	L440/	109.78/
108.88/								
	L441/	108.88/	107.66	L442/	107.66/	105.10	L443/	105.10/
98.67/								
	L446/	129.75/	129.50	L448/	128.22/	128.14	L449/	128.14/
126.00/								
	L450/	126.00/	123.98	L451/	120.44/	119.84	L452/	126.09/
126.00/								
	L453/	126.06/	126.00	L454/	120.53/	120.44	L466/	120.82/
120.13/								
	L468/	119.74/	119.34	L470/	123.50/	122.36	L471/	125.03/
123.50/								
	L472/	128.12/	127.04	L475/	92.74/	92.16	L478/	91.12/
88.96/								
	L479/	88.96/	87.45	L487/	99.21/	98.23	L490/	111.34/
110.82/								
	L493/	87.45/	86.28	L496/	133.80/	131.68	L497/	133.80/
131.68/								
	L498/	131.68/	131.11	L499/	122.62/	121.47	L500/	121.47/
120.01/								
	L501/	126.93/	126.76	L502/	126.76/	126.73	L503/	124.12/
123.35/								
	L504/	123.35/	122.17	L505/	107.24/	104.92	L506/	104.92/
102.48/								
	L507/	94.29/	92.11	L509/	109.83/	108.46	L510/	102.75/
98.23/								
	L511/	112.44/	109.88	L512/	108.76/	98.23	L513/	86.28/
85.51/								
	L514/	129.50/	128.14	L515/	118.83/	118.73	CH21/	119.02/
119.02/								
	L474/	120.87/	119.50	L523/	122.36/	121.23	L525/	119.16/
118.73/								
	L527/	119.27/	118.21	L528/	120.60/	117.44	L529/	114.93/
114.29/								
	L533/	114.29/	112.65	L537/	112.65/	111.63	L394/	116.31/
116.12/								
	L276/	118.62/	110.38	L288/	112.65/	108.34	L412/	119.65/
119.27/								
	L447/	129.71/	129.50	L546/	92.08/	91.12		

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| Table E7 - Iteration Summary |
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Total number of time steps simulated.....	360
Total number of passes in the simulation.....	12068
Total number of time steps during simulation....	10854
Ratio of actual # of time steps / NTCYC.....	30.150
Average number of iterations per time step.....	1.112
Average time step size(seconds).....	1.990
Smallest time step size(seconds).....	1.000
Largest time step size(seconds).....	15.000
Average minimum Conduit Courant time step (sec).	2.200
Average minimum implicit time step (sec).....	2.007

```
Average minimum junction time step (sec)........      2.007
Average Courant Factor Tf......................      2.007
Number of times omega reduced..................          0


*=========================================================*
|     Table E8 - Junction Time Step Limitation Summary    |
*=========================================================*
|   Not Convr = Number of times this junction did not     |
|               converge during the simulation.           |
|   Avg Convr = Average junction iterations.              |
|   Conv err  = Mean convergence error.                   |
|   Omega Cng = Change of omega during iterations         |
|   Max Itern = Maximum number of iterations              |
*=========================================================*
```

Junction	Not Convr	Avg Convr	Total Itt	Omega Cng	Max Itern	Ittrn >10	Ittrn >25	Ittrn >40
N221	0	1.26	13624	0	10	1	0	0
N222	0	1.45	15757	0	6	0	0	0
N223	0	1.46	15804	0	5	0	0	0
N224	0	1.53	16657	0	377	2	1	1
N227	0	1.26	13637	0	10	1	0	0
N228	0	1.32	14313	0	11	1	0	0
N230	0	1.47	15913	0	11	1	0	0
N231	0	1.20	13029	0	7	0	0	0
N233	0	1.37	14831	0	6	0	0	0
N234	0	1.20	13072	0	5	0	0	0
N235	0	1.08	11671	0	3	0	0	0
N236	0	1.08	11737	0	3	0	0	0
N237	0	1.08	11723	0	3	0	0	0
N238	0	1.46	15852	0	7	0	0	0
N239	0	1.25	13522	0	4	0	0	0
N240	0	1.44	15644	0	5	0	0	0
N241	0	1.49	16139	0	5	0	0	0
N242	0	1.48	16101	0	5	0	0	0
N243	0	1.49	16162	0	5	0	0	0
N244	0	1.58	17190	0	7	0	0	0
N245	0	1.51	16397	0	8	0	0	0
N246	0	1.55	16830	0	23	12	0	0
N247	0	1.39	15082	0	37	4	1	0
N248	0	1.20	13062	0	4	0	0	0
N249	0	1.28	13862	0	10	1	0	0
N250	0	1.26	13719	0	11	1	0	0
N251	0	1.22	13229	0	10	1	0	0
N252	0	1.40	15249	0	5	0	0	0
N253	0	1.42	15365	0	9	0	0	0
N254	0	1.21	13115	0	5	0	0	0
N255	0	1.45	15786	0	14	1	0	0
N256	0	1.22	13201	0	11	1	0	0
N257	0	1.23	13381	0	10	1	0	0
N259	0	1.39	15035	0	28	9	1	0
N260	0	1.35	14682	0	21	2	0	0
N261	0	1.24	13440	0	18	5	0	0
N262	0	1.20	13012	0	9	0	0	0
N263	0	1.40	15167	0	10	1	0	0
N264	0	1.15	12517	0	5	0	0	0
N265	0	1.20	12986	0	4	0	0	0
N266	0	1.00	10897	0	3	0	0	0
N267	0	1.46	15869	0	7	0	0	0
N268	0	1.21	13177	0	9	0	0	0

N269	0	1.41	15320	0	5	0	0	0
N270	0	1.24	13490	0	9	0	0	0
N271	0	1.47	15997	0	5	0	0	0
N272	0	1.35	14703	0	9	0	0	0
N273	0	1.19	12922	0	4	0	0	0
N274	0	1.36	14773	0	6	0	0	0
N275	0	1.20	13021	0	4	0	0	0
N276	0	1.17	12730	0	8	0	0	0
N277	0	1.42	15415	0	9	0	0	0
N278	0	1.11	12090	0	3	0	0	0
N279	0	1.18	12845	0	6	0	0	0
N280	0	1.24	13410	0	9	0	0	0
N281	0	1.53	16565	0	6	0	0	0
N282	0	1.50	16286	0	8	0	0	0
N283	0	1.50	16282	0	6	0	0	0
N284	0	1.18	12805	0	5	0	0	0
N285	0	1.26	13705	0	11	1	0	0
N286	0	1.44	15666	0	5	0	0	0
N287	0	1.37	14906	0	22	3	0	0
N288	0	1.46	15813	0	30	21	4	0
N289	0	1.43	15495	0	28	5	2	0
N290	0	1.26	13639	0	14	1	0	0
N291	0	1.24	13442	0	10	1	0	0
N292	0	1.12	12160	0	5	0	0	0
N293	0	1.19	12961	0	8	0	0	0
N294	0	1.44	15635	0	11	1	0	0
N296	0	1.19	12963	0	10	1	0	0
N297	0	1.21	13121	0	9	0	0	0
N298	0	1.39	15137	0	10	1	0	0
N299	0	1.21	13146	0	5	0	0	0
N300	0	1.21	13109	0	11	1	0	0
N301	0	1.22	13235	0	9	0	0	0
N302	0	1.47	15978	0	11	1	0	0
N303	0	1.12	12163	0	4	0	0	0
N304	0	1.20	13015	0	10	1	0	0
N305	0	1.21	13150	0	43	6	2	1
N306	1	1.42	15391	0	501	21	3	3
N307	0	1.28	13928	0	21	5	0	0
N308	0	1.23	13330	0	111	17	2	2
N309	0	1.22	13240	0	7	0	0	0
N310	0	1.39	15067	0	9	0	0	0
N312	0	1.23	13357	0	10	1	0	0
N313	0	1.02	11040	0	3	0	0	0
N314	0	1.14	12371	0	5	0	0	0
N315	0	1.20	13020	0	8	0	0	0
N316	0	1.20	12984	0	5	0	0	0
N317	0	1.31	14265	0	10	1	0	0
N318	0	1.60	17377	0	9	0	0	0
N319	0	1.35	14636	0	7	0	0	0
N320	0	1.56	16958	0	10	1	0	0
N321	0	1.36	14741	0	11	1	0	0
N325	0	1.66	17982	0	409	2	1	1
N326	0	1.33	14477	0	7	0	0	0
N327	0	1.29	14041	0	11	1	0	0
N328	0	1.24	13495	0	97	13	3	3
N329	0	1.22	13291	0	100	7	3	3
N330	2	1.45	15718	0	501	19	3	3
N331	0	1.34	14512	0	34	8	1	0
N332	0	1.22	13287	0	55	6	2	2
N333	0	1.36	14781	0	9	0	0	0

N334	0	1.56	16881	0	6	0	0	0
N335	0	1.61	17428	0	9	0	0	0
N336	0	1.40	15221	0	7	0	0	0
N337	0	1.54	16698	0	10	1	0	0
N338	0	1.29	14021	0	5	0	0	0
N339	0	1.21	13137	0	9	0	0	0
N340	0	1.41	15336	0	5	0	0	0
N341	0	1.48	16075	0	5	0	0	0
N342	0	1.45	15713	0	10	1	0	0
N343	0	1.37	14904	0	5	0	0	0
N344	0	1.22	13253	0	11	1	0	0
N345	0	1.16	12546	0	4	0	0	0
N347	0	1.44	15614	0	9	0	0	0
N348	0	1.42	15362	0	10	1	0	0
N349	0	1.30	14127	0	9	0	0	0
N350	0	1.38	15020	0	8	0	0	0
N351	0	1.51	16389	0	8	0	0	0
N352	0	1.35	14610	0	10	1	0	0
N353	0	1.34	14521	0	10	1	0	0
N354	0	1.39	15139	0	5	0	0	0
N355	0	1.23	13382	0	31	1	1	0
N356	0	1.14	12401	0	6	0	0	0
N357	0	1.20	13068	0	6	0	0	0
N358	0	1.18	12854	0	5	0	0	0
N359	0	1.28	13895	0	4	0	0	0
N360	0	1.18	12853	0	30	1	1	0
N361	0	1.32	14372	0	13	2	0	0
N362	0	1.47	15999	0	17	1	0	0
N363	0	1.45	15759	0	15	1	0	0
N364	0	1.42	15440	0	6	0	0	0
N365	0	1.35	14650	0	5	0	0	0
N366	0	1.23	13393	0	12	1	0	0
N367	0	1.23	13400	0	11	1	0	0
N368	0	1.91	20709	0	10	1	0	0
N369	0	2.65	28808	0	459	2	1	1
N370	0	4.02	43605	0	19	1	0	0
N371	0	4.73	51294	0	53	2	1	1
N372	0	2.78	30128	0	23	4	0	0
N373	0	1.75	18980	0	21	1	0	0
N374	0	1.50	16276	0	24	2	0	0
N375	0	1.48	16098	0	18	4	0	0
N376	0	1.32	14337	0	11	2	0	0
N377	0	1.54	16737	0	431	3	1	1
N378	0	1.30	14067	0	30	5	1	0
N379	0	1.38	14989	0	19	3	0	0
N381	0	1.42	15393	0	13	1	0	0
N382	0	1.45	15784	0	14	1	0	0
N383	0	1.21	13179	0	11	1	0	0
N384	0	1.22	13233	0	11	1	0	0
N386	0	1.21	13167	0	10	1	0	0
N387	0	1.21	13135	0	11	1	0	0
N388	0	1.46	15810	0	12	1	0	0
N389	0	1.43	15573	0	22	8	0	0
N390	0	1.23	13361	0	10	1	0	0
N391	0	1.22	13258	0	11	1	0	0
N392	0	1.39	15121	0	37	14	3	0
N394	0	1.40	15144	0	37	7	2	0
N395	0	1.20	13072	0	5	0	0	0
N396	0	1.45	15764	0	5	0	0	0
N397	0	1.86	20195	0	16	2	0	0

N398	0	1.51	16426	0	8	0	0	0
N399	0	1.64	17808	0	30	5	1	0
N403	0	1.57	17055	0	109	8	2	1
N404	0	1.50	16236	0	26	6	1	0
N405	0	1.23	13304	0	10	1	0	0
N406	0	1.44	15584	0	23	4	0	0
N407	0	1.22	13194	0	5	0	0	0
N408	0	1.42	15461	0	32	8	1	0
N409	0	1.40	15166	0	22	4	0	0
N410	0	1.39	15101	0	49	5	1	1
N412	0	1.24	13414	0	12	1	0	0
N413	0	1.49	16178	0	17	5	0	0
N414	0	1.52	16476	0	11	1	0	0
N415	0	1.22	13253	0	10	1	0	0
N416	0	1.25	13581	0	11	1	0	0
N417	0	1.46	15810	0	5	0	0	0
N418	0	1.24	13414	0	10	1	0	0
N419	0	1.54	16757	0	6	0	0	0
N420	0	1.34	14550	0	8	0	0	0
N421	0	1.53	16650	0	11	1	0	0
N422	0	1.69	18313	0	12	2	0	0
N423	0	1.33	14412	0	11	1	0	0
N424	0	1.67	18168	0	36	2	1	0
N425	0	1.32	14352	0	11	1	0	0
N426	0	1.59	17217	0	8	0	0	0
N428	0	1.56	16937	0	69	8	4	4
N429	3	1.70	18498	0	501	4	3	3
N430	0	1.19	12907	0	9	0	0	0
N431	1	1.41	15348	0	501	1	1	1
N432	0	1.47	15992	0	11	1	0	0
N434	0	1.21	13178	0	11	1	0	0
N435	0	1.58	17171	0	14	1	0	0
N436	0	1.28	13908	0	11	1	0	0
N437	0	1.32	14280	0	11	1	0	0
N438	0	1.60	17378	0	6	0	0	0
N439	0	1.67	18092	0	19	4	0	0
N440	0	1.35	14682	0	9	0	0	0
N441	0	1.33	14420	0	11	1	0	0
N442	0	1.76	19097	0	458	2	1	1
N443	0	1.42	15447	0	5	0	0	0
N444	0	1.32	14322	0	11	1	0	0
N445	0	1.67	18114	0	8	0	0	0
N446	0	1.37	14916	0	5	0	0	0
N447	0	1.54	16716	0	6	0	0	0
N448	0	1.25	13596	0	11	1	0	0
N449	0	1.50	16237	0	6	0	0	0
N450	0	1.50	16287	0	9	0	0	0
N451	0	1.28	13859	0	11	1	0	0
N453	0	1.45	15716	0	11	1	0	0
N454	0	1.25	13540	0	12	1	0	0
N455	0	1.49	16207	0	5	0	0	0
N456	0	1.52	16479	0	9	0	0	0
N457	0	1.25	13620	0	10	1	0	0
N458	0	1.46	15823	0	5	0	0	0
N459	0	1.43	15513	0	6	0	0	0
N460	0	1.44	15601	0	5	0	0	0
N461	0	1.23	13355	0	41	1	1	1
N464	0	1.54	16765	0	10	1	0	0
N465	0	1.31	14263	0	9	0	0	0
N466	0	1.55	16860	0	9	0	0	0

N467	0	1.35	14623	0	9	0	0	0
N468	0	1.55	16783	0	13	1	0	0
N469	0	1.45	15699	0	10	1	0	0
N470	0	1.67	18114	0	22	1	0	0
N471	0	1.35	14622	0	5	0	0	0
N472	0	1.34	14554	0	5	0	0	0
N473	0	1.18	12758	0	4	0	0	0
N487	0	1.41	15270	0	7	0	0	0
N489	0	1.36	14756	0	5	0	0	0
N490	0	1.27	13825	0	15	2	0	0
N491	0	1.14	12327	0	4	0	0	0
N492	0	1.20	13005	0	9	0	0	0
N493	0	2.27	24647	0	500	24	23	23
N497	0	1.23	13330	0	11	1	0	0
N499	0	1.36	14786	0	6	0	0	0
N500	0	1.51	16441	0	11	1	0	0
N501	0	1.50	16324	0	34	6	3	0
N503	0	1.33	14447	0	21	5	0	0
N504	0	1.20	13039	0	93	6	2	1
N506	0	1.22	13230	0	10	1	0	0
N509	0	1.22	13253	0	13	1	0	0
N511	0	1.22	13295	0	22	1	0	0
N513	0	1.24	13499	0	6	0	0	0
N514	0	1.37	14913	0	11	2	0	0
N516	0	1.12	12150	0	5	0	0	0
N517	0	1.47	15991	0	6	0	0	0
N518	2	1.55	16812	0	501	3	2	2
N524	0	1.19	12862	0	7	0	0	0
N525	0	1.22	13193	0	6	0	0	0
N526	0	1.18	12857	0	4	0	0	0
N527	0	1.26	13639	0	5	0	0	0
N528	0	2.91	31620	0	6	0	0	0
N529	0	1.41	15355	0	33	4	2	0
N530	0	1.45	15697	0	375	3	1	1
N689	0	2.32	25172	0	498	24	24	24
N494	0	1.40	15248	0	10	1	0	0
N541	0	1.54	16707	0	10	1	0	0
EL329	0	1.30	14161	0	9	0	0	0
N427	0	1.53	16645	0	7	0	0	0
N411	0	1.42	15451	0	17	2	0	0
N295	0	1.11	12070	0	3	0	0	0
N311	0	1.12	12191	0	5	0	0	0
N462	0	1.31	14184	0	7	0	0	0
N554	0	1.45	15726	0	6	0	0	0
N555	0	1.22	13265	0	5	0	0	0
N322	0	1.34	14582	0	41	6	1	1

Total number of iterations for all junctions.. 4094620
Minimum number of possible iterations..... 2919726
Efficiency of the simulation..... 1.40
Good Efficiency

===
| Extran Efficiency is an indicator of the efficiency of |
| the simulation. Ideal efficiency is one iteration per |
| time step. Altering the underrelaxation parameter, |
| lowering the time step, increasing the flow and head |
| tolerance are good ways of improving the efficiency, |
| another is lowering the internal time step. The lower the|
| efficiency generally the faster your model will run. |
| If your efficiency is less than 1.5 then you may try |

| increasing your time step so that your overall simulation|
| is faster. Ideal efficiency would be around 2.0 |
| |
| Good Efficiency   < 1.5   mean iterations |
| Excellent Efficiency < 2.5 and > 1.5 mean iterations |
| Good   Efficiency < 4.0 and > 2.5 mean iterations |
| Fair   Efficiency < 7.5 and > 4.0 mean iterations |
| Poor Efficiency   > 7.5   mean iterations |

Table E9 - JUNCTION SUMMARY STATISTICS

The Maximum area is only the area of the node, it does not include the area of the surrounding conduits

Name	Ground Elevation feet	Uppermost PipeCrown Elevation feet	Maximum Junction Elevation feet	Time of Occurence Hr.	Min.	Feet of Surcharge at Max Elevation	Freeboard of node feet	Maximum Junction Area ft^2	Gutter Depth feet	Maximum Gutter Width feet	Maximum Gutter Junction Velocity ft/s
N221	114.0300	106.8400	107.6026	2	47	0.7626	6.4274	12.5660	0.0000	0.0000	0.0000
N222	112.0800	106.4400	106.9939	2	47	0.5539	5.0861	12.5660	0.0000	0.0000	0.0000
N223	106.2600	103.0600	102.1159	4	27	0.0000	4.1441	12.5660	0.0000	0.0000	0.0000
N224	106.3300	99.7200	100.2909	4	26	0.5709	6.0391	12.5660	0.0000	0.0000	0.0000
N227	109.4000	99.3400	100.9720	4	27	1.6320	8.4280	12.5660	0.0000	0.0000	0.0000
N228	102.4000	99.0300	100.6100	4	23	1.5800	1.7900	12.5660	0.0000	0.0000	0.0000
N230	104.3900	100.3300	98.1694	4	24	0.0000	6.2206	12.5660	0.0000	0.0000	0.0000
N231	104.4000	100.8400	100.2872	1	2	0.0000	4.1128	12.5660	0.0000	0.0000	0.0000
N233	100.3500	96.9200	95.2324	4	16	0.0000	5.1176	12.5660	0.0000	0.0000	0.0000
N234	100.0000	87.6000	90.1200	0	0	2.5200	9.8800	12.5660	0.0000	0.0000	0.0000
N235	138.1500	120.6000	119.8642	2	1	0.0000	18.2858	12.5660	0.0000	0.0000	0.0000
N236	126.2300	120.4100	118.8903	5	0	0.0000	7.3397	12.5660	0.0000	0.0000	0.0000
N237	124.2900	118.8600	117.6596	6	0	0.0000	6.6304	12.5660	0.0000	0.0000	0.0000
N238	122.3500	117.5100	117.5825	6	0	0.0725	4.7675	12.5660	0.0000	0.0000	0.0000
N239	125.0800	118.6900	118.5578	6	0	0.0000	6.5222	12.5660	0.0000	0.0000	0.0000
N240	122.0900	117.6200	118.1994	6	0	0.5794	3.8906	12.5660	0.0000	0.0000	0.0000
N241	119.6000	115.0600	112.5184	6	0	0.0000	7.0816	12.5660	0.0000		

0.0000	0.0000									
	N242	115.6700	111.1300	110.3694	6	0	0.0000	5.3006	12.5660	0.0000
0.0000	0.0000									
	N243	112.6900	109.1100	108.8794	6	0	0.0000	3.8106	12.5660	0.0000
0.0000	0.0000									
	N244	109.7000	106.3500	107.0654	6	0	0.7154	2.6346	12.5660	0.0000
0.0000	0.0000									
	N245	107.6800	104.8800	105.7300	6	0	0.8500	1.9500	12.5660	0.0000
0.0000	0.0000									
	N246	104.7000	101.8100	103.4547	6	0	1.6447	1.2453	12.5660	0.0000
0.0000	0.0000									
	N247	107.2000	100.3700	102.4757	6	0	2.1057	4.7243	12.5660	0.0000
0.0000	0.0000									
	N248	116.0000	112.4800	112.5280	6	0	0.0480	3.4720	12.5660	0.0000
0.0000	0.0000									
	N249	108.6300	105.6200	107.5518	6	0	1.9318	1.0782	12.5660	0.0000
0.0000	0.0000									
	N250	113.4000	102.1400	104.4244	6	0	2.2844	8.9756	12.5660	0.0000
0.0000	0.0000									
	N251	127.0200	116.3800	116.6527	1	0	0.2727	10.3673	12.5660	0.0000
0.0000	0.0000									
	N252	121.2500	116.0600	115.2810	1	0	0.0000	5.9690	12.5660	0.0000
0.0000	0.0000									
	N253	119.0300	113.3300	110.4633	1	1	0.0000	8.5667	12.5660	0.0000
0.0000	0.0000									
	N254	120.4000	113.8300	113.3534	1	1	0.0000	7.0466	12.5660	0.0000
0.0000	0.0000									
	N255	113.9100	108.0500	107.2387	6	0	0.0000	6.6713	12.5660	0.0000
0.0000	0.0000									
	N256	119.8800	108.4100	108.0734	1	0	0.0000	11.8066	12.5660	0.0000
0.0000	0.0000									
	N257	118.4000	108.6100	108.4472	1	2	0.0000	9.9528	12.5660	0.0000
0.0000	0.0000									
	N259	102.6900	99.6600	100.5470	6	0	0.8870	2.1430	12.5660	0.0000
0.0000	0.0000									
	N260	101.1000	99.5000	99.9500	0	0	0.4500	1.1500	12.5660	0.0000
0.0000	0.0000									
	N261	106.3800	99.9300	100.7386	6	0	0.8086	5.6414	12.5660	0.0000
0.0000	0.0000									
	N262	110.4000	105.8800	105.4932	1	0	0.0000	4.9068	12.5660	0.0000
0.0000	0.0000									
	N263	109.4000	105.4600	104.8520	1	0	0.0000	4.5480	12.5660	0.0000
0.0000	0.0000									
	N264	106.0000	97.6400	99.9500	0	0	2.3100	6.0500	12.5660	0.0000
0.0000	0.0000									
	N265	108.4000	105.8600	105.4059	1	0	0.0000	2.9941	12.5660	0.0000
0.0000	0.0000									
	N266	105.6100	101.3600	100.5085	3	43	0.0000	5.1015	12.5660	0.0000
0.0000	0.0000									
	N267	104.2600	99.0500	99.2256	5	28	0.1756	5.0344	12.5660	0.0000
0.0000	0.0000									
	N268	110.4200	101.7400	101.3835	5	3	0.0000	9.0365	12.5660	0.0000
0.0000	0.0000									
	N269	110.0300	101.3300	100.9948	5	15	0.0000	9.0352	12.5660	0.0000
0.0000	0.0000									
	N270	106.4000	100.3900	100.2825	5	31	0.0000	6.1175	12.5660	0.0000
0.0000	0.0000									
	N271	102.3800	100.0500	99.9370	5	27	0.0000	2.4430	12.5660	0.0000
0.0000	0.0000									
	N272	102.0600	98.1000	97.8101	5	22	0.0000	4.2499	12.5660	0.0000

0.0000	0.0000									
	N273	104.4000	98.6800	98.1213	5	6	0.0000	6.2787	12.5660	0.0000
0.0000	0.0000									
	N274	100.3100	97.3300	96.0359	5	25	0.0000	4.2741	12.5660	0.0000
0.0000	0.0000									
	N275	101.7000	87.3500	90.1200	0	0	2.7700	11.5800	12.5660	0.0000
0.0000	0.0000									
	N276	100.4000	95.2500	94.7428	1	2	0.0000	5.6572	12.5660	0.0000
0.0000	0.0000									
	N277	99.4000	94.4400	93.7152	1	1	0.0000	5.6848	12.5660	0.0000
0.0000	0.0000									
	N278	96.0000	79.0000	79.2200	0	0	0.2200	16.7800	12.5660	0.0000
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	N279	98.4000	95.1200	94.6677	1	0	0.0000	3.7323	12.5660	0.0000
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	N280	96.4000	86.5800	86.2988	1	0	0.0000	10.1012	12.5660	0.0000
0.0000	0.0000									
	N281	91.9100	86.2400	85.5082	5	51	0.0000	6.4018	12.5660	0.0000
0.0000	0.0000									
	N282	97.0800	85.7700	84.7914	5	52	0.0000	12.2886	12.5660	0.0000
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	N283	100.0400	94.0000	83.9594	5	53	0.0000	16.0806	12.5660	0.0000
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	N284	98.4000	86.1400	85.5616	1	0	0.0000	12.8384	12.5660	0.0000
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	N285	102.4000	95.9100	96.5563	3	59	0.6463	5.8437	12.5660	0.0000
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	N286	100.3900	95.4500	95.9765	2	58	0.5265	4.4135	12.5660	0.0000
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	N287	96.9000	81.9600	80.3124	5	55	0.0000	16.5876	12.5660	0.0000
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	N288	96.4000	81.5300	79.2896	0	0	0.0000	17.1104	12.5660	0.0000
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	N289	96.4000	81.5000	79.0400	0	0	0.0000	17.3600	12.5660	0.0000
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	N290	96.4000	79.8500	79.7003	5	20	0.0000	16.6997	12.5660	0.0000
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	N291	96.2900	93.4200	92.4485	1	0	0.0000	3.8415	12.5660	0.0000
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	N292	94.0000	78.1000	78.9600	0	0	0.8600	15.0400	12.5660	0.0000
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	N293	126.4000	119.9200	119.5381	1	0	0.0000	6.8619	12.5660	0.0000
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	N294	123.9600	119.3000	118.6232	1	0	0.0000	5.3368	12.5660	0.0000
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	N296	122.4000	119.9800	119.6051	1	0	0.0000	2.7949	12.5660	0.0000
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	N297	120.4000	114.2400	113.8340	1	0	0.0000	6.5660	12.5660	0.0000
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	N298	118.4300	113.9600	113.5385	1	0	0.0000	4.8915	12.5660	0.0000
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	N299	117.7600	107.3000	109.5100	0	0	2.2100	8.2500	12.5660	0.0000
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	N300	116.4000	114.2500	113.8460	1	0	0.0000	2.5540	12.5660	0.0000
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	N301	128.4000	123.9000	124.8193	1	29	0.9193	3.5807	12.5660	0.0000
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	N302	128.3900	123.2800	122.6751	1	27	0.0000	5.7149	12.5660	0.0000
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	N303	124.3000	111.6000	113.5400	0	0	1.9400	10.7600	12.5660	0.0000

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	N304	126.4000	123.9500	123.5620	1	0	0.0000	2.8380	12.5660	0.0000
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	N305	112.4000	106.5200	109.7843	0	1	3.2643	2.6157	12.5660	0.0000
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	N306	110.3300	106.2200	109.0611	0	1	2.8411	1.2689	12.5660	0.0000
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	N307	111.7000	105.7500	108.2800	0	0	2.5300	3.4200	12.5660	0.0000
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	N308	108.4000	106.4400	108.4000	0	1	1.9600	0.0000	12.5660	0.0000
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	N309	119.4000	114.1500	113.8197	1	3	0.0000	5.5803	12.5660	0.0000
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	N310	116.6600	113.5100	112.6514	1	37	0.0000	4.0086	12.5660	0.0000
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	N312	116.4000	114.2100	114.0002	1	37	0.0000	2.3998	12.5660	0.0000
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	N313	107.7900	104.9300	104.1135	3	4	0.0000	3.6765	12.5660	0.0000
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	N314	105.5100	102.7900	102.0841	3	16	0.0000	3.4259	12.5660	0.0000
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	N315	103.3100	100.6100	99.9648	3	17	0.0000	3.3452	12.5660	0.0000
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	N316	101.0000	95.1000	98.6700	0	0	3.5700	2.3300	12.5660	0.0000
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	N317	96.4000	90.4200	92.7363	6	59	2.3163	3.6637	12.5660	0.0000
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	N318	94.1000	89.9900	92.1556	6	0	2.1656	1.9444	12.5660	0.0000
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	N319	100.4000	90.4700	92.3207	6	59	1.8507	8.0793	12.5660	0.0000
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	N320	95.3200	90.7800	92.9456	6	59	2.1656	2.3744	12.5660	0.0000
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	N321	96.4000	91.1100	93.1449	6	0	2.0349	3.2551	12.5660	0.0000
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	N325	97.2700	91.2700	93.1319	6	59	1.8619	4.1381	12.5660	0.0000
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	N326	100.4000	91.7500	93.1937	6	59	1.4437	7.2063	12.5660	0.0000
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	N327	98.4000	91.6600	93.5541	6	0	1.8941	4.8459	12.5660	0.0000
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	N328	100.2600	94.9400	99.0983	0	1	4.1583	1.1617	12.5660	0.0000
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	N329	104.4000	95.0000	99.5812	0	1	4.5812	4.8188	12.5660	0.0000
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	N330	101.6200	95.4400	100.1728	0	0	4.7328	1.4472	12.5660	0.0000
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	N331	100.2600	94.2000	98.6400	0	0	4.4400	1.6200	12.5660	0.0000
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	N332	101.4000	95.0000	99.6635	0	1	4.6635	1.7365	12.5660	0.0000
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	N333	124.4600	109.8700	110.9382	6	0	1.0682	13.5218	12.5660	0.0000
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	N334	121.3900	109.5100	110.7767	6	0	1.2667	10.6133	12.5660	0.0000
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	N335	111.2600	107.1800	109.7243	6	0	2.5443	1.5357	12.5660	0.0000
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	N336	120.3000	107.5400	109.8263	6	0	2.2863	10.4737	12.5660	0.0000
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	N337	108.3300	103.7800	104.3342	6	0	0.5542	3.9958	12.5660	0.0000

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	N338	116.4000	104.3100	104.4885	6	0	0.1785	11.9115	12.5660	0.0000
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	N339	113.4000	105.8900	105.5303	6	0	0.0000	7.8697	12.5660	0.0000
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	N340	110.4800	105.4700	105.2177	6	0	0.0000	5.2623	12.5660	0.0000
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	N341	106.0600	102.7500	102.9537	6	0	0.2037	3.1063	12.5660	0.0000
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	N342	106.8400	101.7200	101.6653	6	0	0.0000	5.1747	12.5660	0.0000
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	N343	104.4000	101.5000	101.1083	6	0	0.0000	3.2917	12.5660	0.0000
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	N344	112.0700	102.1100	101.8986	6	0	0.0000	10.1714	12.5660	0.0000
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	N345	128.1400	119.8300	119.2319	6	0	0.0000	8.9081	12.5660	0.0000
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	N347	126.9900	119.4500	122.6221	3	58	3.1721	4.3679	12.5660	0.0000
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	N348	122.7000	117.6700	120.0079	4	59	2.3379	2.6921	12.5660	0.0000
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	N349	129.4000	120.1600	122.9823	4	59	2.8223	6.4177	12.5660	0.0000
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	N350	128.4000	118.8000	121.6390	4	0	2.8390	6.7610	12.5660	0.0000
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	N351	124.8500	118.4400	121.4735	4	1	3.0335	3.3765	12.5660	0.0000
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	N352	127.4000	118.3700	120.4752	4	1	2.1052	6.9248	12.5660	0.0000
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	N353	125.4000	118.3600	120.5972	4	0	2.2372	4.8028	12.5660	0.0000
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	N354	123.0000	117.1500	116.3779	3	54	0.0000	6.6221	12.5660	0.0000
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	N355	121.1000	112.1000	113.7800	0	0	1.6800	7.3200	12.5660	0.0000
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	N356	128.3900	126.3200	125.6081	2	35	0.0000	2.7819	12.5660	0.0000
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	N357	126.5200	123.9800	123.3977	2	43	0.0000	3.1223	12.5660	0.0000
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	N358	128.1900	121.8200	121.3926	2	48	0.0000	6.7974	12.5660	0.0000
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	N359	126.7800	121.0900	120.3681	2	50	0.0000	6.4119	12.5660	0.0000
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	N360	121.5000	113.8000	116.1200	0	0	2.3200	5.3800	12.5660	0.0000
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	N361	133.4000	129.2400	128.4056	2	24	0.0000	4.9944	12.5660	0.0000
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	N362	133.8500	129.1300	128.2437	2	21	0.0000	5.6063	12.5660	0.0000
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	N363	135.6800	128.7800	127.6447	2	22	0.0000	8.0353	12.5660	0.0000
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	N364	134.3100	128.5100	127.0548	2	22	0.0000	7.2552	12.5660	0.0000
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	N365	129.0000	128.4000	122.0600	0	0	0.0000	6.9400	12.5660	0.0000
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	N366	136.4000	129.1200	128.9836	1	0	0.0000	7.4164	12.5660	0.0000
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	N367	131.4000	129.3300	129.2163	1	32	0.0000	2.1837	12.5660	0.0000
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	N368	130.1000	126.7600	126.9900	1	32	0.2300	3.1100	12.5660	0.0000

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	N369	130.1500	126.6700	126.9334	1	29	0.2634	3.2166	12.5660	0.0000
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	N370	130.0300	125.7000	126.7311	1	21	1.0311	3.2989	12.5660	0.0000
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	N371	130.3200	125.7600	126.7751	1	24	1.0151	3.5449	12.5660	0.0000
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	N372	131.8100	125.3400	125.9377	1	22	0.5977	5.8723	12.5660	0.0000
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	N373	131.3300	124.9700	125.1608	1	27	0.1908	6.1692	12.5660	0.0000
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	N374	132.8200	124.6000	124.3629	1	28	0.0000	8.4571	12.5660	0.0000
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	N375	132.2300	124.4800	124.1182	1	29	0.0000	8.1118	12.5660	0.0000
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	N376	130.4700	124.9000	124.4568	1	29	0.0000	6.0132	12.5660	0.0000
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	N377	130.5100	124.8200	124.3901	1	29	0.0000	6.1199	12.5660	0.0000
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	N378	129.1900	123.7700	122.2006	0	1	0.0000	6.9894	12.5660	0.0000
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	N379	128.2000	122.9000	122.1000	0	0	0.0000	6.1000	12.5660	0.0000
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	N381	128.4700	126.2600	125.8395	3	57	0.0000	2.6305	12.5660	0.0000
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	N382	128.0000	124.8600	124.5395	4	4	0.0000	3.4605	12.5660	0.0000
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	N383	132.3000	126.5300	126.2887	1	0	0.0000	6.0113	12.5660	0.0000
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	N384	131.1800	126.6400	126.3795	1	0	0.0000	4.8005	12.5660	0.0000
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	N386	132.1700	125.1400	124.9753	1	0	0.0000	7.1947	12.5660	0.0000
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	N387	132.9300	125.2300	124.8582	4	1	0.0000	8.0718	12.5660	0.0000
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	N388	128.2100	123.9500	123.5625	4	5	0.0000	4.6475	12.5660	0.0000
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	N389	128.3800	123.1100	121.9924	4	6	0.0000	6.3876	12.5660	0.0000
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	N390	132.4000	123.8300	123.6271	1	37	0.0000	8.7729	12.5660	0.0000
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	N391	131.4000	123.6900	124.1512	1	24	0.4612	7.2488	12.5660	0.0000
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	N392	129.2100	122.8300	121.6798	0	2	0.0000	7.5302	12.5660	0.0000
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	N394	130.0700	121.4000	121.5100	0	0	0.1100	8.5600	12.5660	0.0000
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	N395	126.4000	119.6100	121.1817	6	0	1.5717	5.2183	12.5660	0.0000
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	N396	124.6000	119.1800	119.3452	6	0	0.1652	5.2548	12.5660	0.0000
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	N397	124.9400	118.8100	118.8323	6	0	0.0223	6.1077	12.5660	0.0000
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	N398	128.0400	119.0600	119.0154	6	0	0.0000	9.0246	12.5660	0.0000
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	N399	124.3000	118.6100	118.7270	6	0	0.1170	5.5730	12.5660	0.0000
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	N403	125.5000	118.3000	118.4705	6	0	0.1705	7.0295	12.5660	0.0000
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	N404	126.6900	117.9800	118.2069	6	0	0.2269	8.4831	12.5660	0.0000

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	N405	131.2500	118.0000	118.7910	6	0	0.7910	12.4590	12.5660	0.0000
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	N406	124.4900	117.6700	117.9109	6	0	0.2409	6.5791	12.5660	0.0000
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	N407	132.5800	118.0000	118.1897	6	0	0.1897	14.3903	12.5660	0.0000
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	N408	125.2200	117.2800	117.4431	6	0	0.1631	7.7769	12.5660	0.0000
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	N409	123.3200	116.9800	116.9260	6	0	0.0000	6.3940	12.5660	0.0000
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	N410	124.2200	116.6200	116.3132	6	0	0.0000	7.9068	12.5660	0.0000
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	N412	125.2400	117.5500	119.4386	6	0	1.8886	5.8014	12.5660	0.0000
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	N415	124.3800	117.5800	119.5312	6	0	1.9512	4.8488	12.5660	0.0000
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	N416	125.2100	118.0800	119.5129	6	0	1.4329	5.6971	12.5660	0.0000
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	N417	121.7600	119.5700	119.3435	6	0	0.0000	2.4165	12.5660	0.0000
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	N418	124.4000	121.1500	120.8207	1	0	0.0000	3.5793	12.5660	0.0000
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	N419	120.2000	112.6600	113.4701	6	0	0.8101	6.7299	12.5660	0.0000
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	N420	123.9000	113.9900	114.7633	6	0	0.7733	9.1367	12.5660	0.0000
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	N421	121.2100	113.7500	114.5335	6	0	0.7835	6.6765	12.5660	0.0000
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	N422	118.3600	111.6300	112.4791	6	0	0.8491	5.8809	12.5660	0.0000
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	N423	120.4000	111.8700	112.6795	6	0	0.8095	7.7205	12.5660	0.0000
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	N424	118.5600	111.0100	112.0680	6	0	1.0580	6.4920	12.5660	0.0000
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	N425	120.3900	111.3100	112.3959	6	0	1.0859	7.9941	12.5660	0.0000
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	N426	117.2400	110.4500	111.6343	6	0	1.1843	5.6057	12.5660	0.0000
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	N429	116.1800	109.5200	110.7941	6	0	1.2741	5.3859	12.5660	0.0000
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	N430	128.2200	120.0000	119.6536	6	0	0.0000	8.5664	12.5660	0.0000
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	N431	123.0700	119.4000	119.2660	6	0	0.0000	3.8040	12.5660	0.0000
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	N434	126.2700	119.8000	119.7362	6	0	0.0000	6.5338	12.5660	0.0000
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	N435	120.2500	112.1800	112.9610	6	0	0.7810	7.2890	12.5660	0.0000
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N448 125.6200 119.7700 121.1578 6 0 1.3878 4.4622 12.5660 0.0000
0.0000 0.0000
N449 125.6000 119.2400 120.5964 6 0 1.3564 5.0036 12.5660 0.0000
0.0000 0.0000
N450 125.2200 121.7400 122.8992 6 0 1.1592 2.3208 12.5660 0.0000
0.0000 0.0000
N451 126.4000 122.2700 123.3870 6 0 1.1170 3.0130 12.5660 0.0000
0.0000 0.0000
N453 119.8300 114.7600 115.6961 6 0 0.9361 4.1339 12.5660 0.0000
0.0000 0.0000
N454 125.4000 115.2900 116.4642 6 0 1.1742 8.9358 12.5660 0.0000
0.0000 0.0000
N455 118.2800 112.9300 113.0201 6 0 0.0901 5.2599 12.5660 0.0000
0.0000 0.0000
N456 116.2800 111.5100 112.1895 6 0 0.6795 4.0905 12.5660 0.0000
0.0000 0.0000
N457 122.4000 112.0200 112.4454 6 0 0.4254 9.9546 12.5660 0.0000
0.0000 0.0000
N458 114.0000 109.8900 109.7789 6 0 0.0000 4.2211 12.5660 0.0000
0.0000 0.0000
N459 110.2500 108.1100 107.6629 6 0 0.0000 2.5871 12.5660 0.0000
0.0000 0.0000
N460 110.1000 107.6100 105.0976 6 0 0.0000 5.0024 12.5660 0.0000
0.0000 0.0000
N461 110.1000 97.6000 98.6700 0 0 1.0700 11.4300 12.5660 0.0000
0.0000 0.0000
N464 132.5200 126.8400 128.1440 5 47 1.3040 4.3760 12.5660 0.0000
0.0000 0.0000
N465 135.1200 128.1500 129.7527 5 48 1.6027 5.3673 12.5660 0.0000
0.0000 0.0000
N466 131.9700 127.9400 129.4984 5 48 1.5584 2.4716 12.5660 0.0000
0.0000 0.0000
N467 130.9600 127.3000 128.2210 5 42 0.9210 2.7390 12.5660 0.0000
0.0000 0.0000
N468 129.9500 125.5900 126.0007 5 49 0.4107 3.9493 12.5660 0.0000
0.0000 0.0000
N469 128.6600 124.6600 120.4426 5 53 0.0000 8.2174 12.5660 0.0000
0.0000 0.0000
N470 127.0000 120.4600 119.0232 6 0 0.0000 7.9768 12.5660 0.0000

0.0000	0.0000									
	N471	133.3000	125.8800	126.0884	5	50	0.2084	7.2116	12.5660	0.0000
0.0000	0.0000									
	N472	129.4500	125.9400	126.0559	5	51	0.1159	3.3941	12.5660	0.0000
0.0000	0.0000									
	N473	126.2300	121.0700	120.5302	5	53	0.0000	5.6998	12.5660	0.0000
0.0000	0.0000									
	N487	122.2200	120.5700	119.7372	6	0	0.0000	2.4828	12.5660	0.0000
0.0000	0.0000									
	N489	124.6300	122.3300	120.8720	2	38	0.0000	3.7580	12.5660	0.0000
0.0000	0.0000									
	N490	125.9100	123.6500	123.4952	2	21	0.0000	2.4148	12.5660	0.0000
0.0000	0.0000									
	N491	127.1900	125.7700	125.0264	2	2	0.0000	2.1636	12.5660	0.0000
0.0000	0.0000									
	N492	130.4000	127.3400	128.1178	1	0	0.7778	2.2822	12.5660	0.0000
0.0000	0.0000									
	N493	129.9000	127.0400	127.0400	0	34	0.0000	2.8600	12.5660	0.0000
0.0000	0.0000									
	N497	112.8000	109.3300	109.8299	1	1	0.4999	2.9701	12.5660	0.0000
0.0000	0.0000									
	N499	111.0500	108.7500	98.6400	0	0	0.0000	12.4100	12.5660	0.0000
0.0000	0.0000									
	N500	95.8800	88.9200	91.1164	6	59	2.1964	4.7636	12.5660	0.0000
0.0000	0.0000									
	N501	94.9100	87.9700	88.9568	6	59	0.9868	5.9532	12.5660	0.0000
0.0000	0.0000									
	N503	100.1000	91.5500	98.2300	0	0	6.6800	1.8700	12.5660	0.0000
0.0000	0.0000									
	N504	100.4000	97.2900	99.2193	1	0	1.9293	1.1807	12.5660	0.0000
0.0000	0.0000									
	N506	100.4000	93.1400	94.2928	1	0	1.1528	6.1072	12.5660	0.0000
0.0000	0.0000									
	N509	117.9000	110.3800	112.4402	1	0	2.0602	5.4598	12.5660	0.0000
0.0000	0.0000									
	N511	114.9500	103.4600	102.7537	1	0	0.0000	12.1963	12.5660	0.0000
0.0000	0.0000									
	N513	117.8200	111.7600	111.3361	1	0	0.0000	6.4839	12.5660	0.0000
0.0000	0.0000									
	N514	117.9000	111.6100	108.7618	1	1	0.0000	9.1382	12.5660	0.0000
0.0000	0.0000									
	N516	111.0000	92.0000	98.2300	0	0	6.2300	12.7700	12.5660	0.0000
0.0000	0.0000									
	N517	90.2800	86.4500	86.2850	5	50	0.0000	3.9950	12.5660	0.0000
0.0000	0.0000									
	N518	89.2500	87.0600	87.4472	6	0	0.3872	1.8028	12.5660	0.0000
0.0000	0.0000									
	N524	136.4600	134.4500	133.7961	2	16	0.0000	2.6639	12.5660	0.0000
0.0000	0.0000									
	N525	136.2000	132.1700	131.6772	2	32	0.0000	4.5228	12.5660	0.0000
0.0000	0.0000									
	N526	137.2000	134.4600	133.8039	2	24	0.0000	3.3961	12.5660	0.0000
0.0000	0.0000									
	N527	136.0000	131.6000	131.1070	2	32	0.0000	4.8930	12.5660	0.0000
0.0000	0.0000									
	N528	129.5000	126.1600	126.7861	1	22	0.6261	2.7139	12.5660	0.0000
0.0000	0.0000									
	N529	134.2600	124.1400	123.3488	1	32	0.0000	10.9112	12.5660	0.0000
0.0000	0.0000									
	N530	109.2400	103.4600	104.9238	6	0	1.4638	4.3162	12.5660	0.0000

0.0000	0.0000										
	N689	123.2700	119.5000	119.5000	0	39	0.0000	3.7700	12.5660	0.0000	
0.0000	0.0000										
	N494	126.0000	123.1600	122.3558	2	37	0.0000	3.6442	12.5660	0.0000	
0.0000	0.0000										
	N541	120.0000	113.5900	114.2861	6	0	0.6961	5.7139	12.5660	0.0000	
0.0000	0.0000										
	EL329	118.0000	114.0200	114.9266	6	0	0.9066	3.0734	12.5660	0.0000	
0.0000	0.0000										
	N427	118.5000	111.1400	112.6510	6	0	1.5110	5.8490	12.5660	0.0000	
0.0000	0.0000										
	N411	128.9500	116.5000	116.1200	0	0	0.0000	12.8300	12.5660	0.0000	
0.0000	0.0000										
	N295	120.1000	108.9300	110.3800	0	0	1.4500	9.7200	12.5660	0.0000	
0.0000	0.0000										
	N311	114.3000	105.3500	108.3400	0	0	2.9900	5.9600	12.5660	0.0000	
0.0000	0.0000										
	N462	133.0000	129.2800	129.7121	5	43	0.4321	3.2879	12.5660	0.0000	
0.0000	0.0000										
	N554	94.5100	92.2800	92.0791	6	0	0.0000	2.4309	12.5660	0.0000	
0.0000	0.0000										
	N555	110.0000	91.0500	98.2300	0	0	7.1800	11.7700	12.5660	0.0000	
0.0000	0.0000										
	N322	101.6200	94.5000	98.6400	0	0	4.1400	2.9800	12.5660	0.0000	
0.0000	0.0000										

Table E10 - CONDUIT SUMMARY STATISTICS
Note: The peak flow may be less than the design flow and the conduit may still surcharge because of the downstream boundary conditions.
* denotes an open conduit that has been overtopped this is a potential source of severe errors

Conduit Name	Maximum Design Flow (cfs)	Maximum Design Velocity (ft/s)	Maximum Vertical Depth (in)	Maximum Computed Flow (cfs)	Time of Occurence Hr.	Time of Occurence Min.	Maximum Computed Velocity (ft/s)	Time of Occurence Hr.	Time of Occurence Min.	Ratio of Max. to Design Flow	Elev at US (ft)	Elev at DS (ft)	Maximum Water Pipe Ends d/D Conduit US	Maximum Water Pipe Ends d/D Conduit DS
L210	2.3341	2.9719	12.0000	2.8911	2	40	3.7445	0	56	1.2386	107.6026	106.9939	1.763	1.554
L211	2.3583	3.0027	12.0000	3.1354	2	46	4.0313	2	46	1.3295	106.9939	102.8186	2.554	0.759
L212	3.6820	3.0003	15.0000	3.2978	4	22	3.3046	0	56	0.8957	102.1159	100.2909	1.045	1.457
L213	2.3504	2.9927	12.0000	2.4916	1	18	3.2326	0	40	1.0601	100.9720	100.2909	2.632	2.571
L214	5.2561	2.9743	18.0000	5.3717	1	18	3.0198	1	18	1.0220	100.6100	100.2909	2.053	2.047
L217	2.3778	3.0275	12.0000	0.9501	1	2	2.8265	1	3	0.3996	100.2872	99.7386	0.447	0.409
L220	7.2421	3.0109	21.0000	11.2776	4	23	4.6465	4	27	1.5572	100.2909	98.1694	1.898	1.194

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           L221   9.4105   2.9955  24.0000  13.2165     4    25   4.1620     4   25   1.4044  98.1694
96.2277 1.170 0.654
           L222  43.1608  13.7385  24.0000  13.3950     4    16   9.6023     4   19   0.3104  95.2324
90.1200 0.406 2.260
           L223   1.5862   2.0196  12.0000   0.2305     2     1   1.4362     5    2   0.1453 119.8642
119.6069 0.264 0.197
           L224   1.5676   1.9959  12.0000   0.2305     5     1   1.3309     5    1   0.1470 118.8903
118.0569 0.280 0.197
           L225   1.5703   1.9993  12.0000   0.2305     6     0   1.3999     0   57   0.1468 117.6596
117.5825 0.400 1.072
           L226   1.5717   2.0011  12.0000   0.9294     6     0   1.8893     0   58   0.5913 118.5578
118.1994 0.868 1.579
           L227   1.5698   1.9988  12.0000   1.5845     6     0   2.2885     0   55   1.0093 118.1994
117.5825 1.579 1.572
           L228   1.5683   1.9969  12.0000   2.4888     6     0   3.2325     6    0   1.5869 117.5825
114.7356 2.472 0.676
           L229   2.8478   2.3206  15.0000   2.9466     6     0   2.5939     2    7   1.0347 112.5184
110.5696 0.927 0.552
           L230   2.4656   2.0091  15.0000   3.4595     6     0   2.8641     1   34   1.4031 110.3694
108.8794 1.392 0.816
           L231   2.4434   1.9910  15.0000   3.8015     6     0   3.0717     6    0   1.5558 108.8794
107.0654 2.416 1.572
           L232   3.5621   2.0157  18.0000   6.0390     6     0   3.3939     6    0   1.6954 107.0654
105.7300 2.144 1.567
           L233   5.3431   3.0236  18.0000   6.3287     6     0   3.5481     6    0   1.1845 105.7300
103.4547 2.513 2.096
           L234  10.3141   3.2831  24.0000   9.4131     6     0   2.9781     6    0   0.9126 103.4547
102.4757 1.947 2.053
           L235   1.5127   1.9260  12.0000   0.4478     6    59   1.0898     0   13   0.2960 112.5280
112.5184 1.048 1.158
           L236   1.5658   1.9936  12.0000   2.1260     6    59   2.6925     1    6   1.3578 107.5518
107.0654 2.932 2.715
           L237   2.3516   2.9941  12.0000   3.0812     6    59   3.8746     1    7   1.3103 104.4244
103.4547 3.284 2.895
           L238   2.3553   2.9988  12.0000   3.6943     1     0   4.7555     1    0   1.5685 116.6527
115.8783 1.273 0.818
           L239   2.3692   3.0165  12.0000   4.0636     1     0   5.1858     1    0   1.7152 115.2810
113.1820 2.221 0.852
           L240   2.3544   2.9977  12.0000   1.2377     1     1   3.0137     1    1   0.5257 113.3534
112.7991 0.523 0.469
           L241   3.6815   3.0000  15.0000   5.3649     1     1   4.4351     1    1   1.4572 110.4633
107.7384 1.907 0.751
           L242   2.3529   2.9958  12.0000   1.8517     1     0   3.3991     1    1   0.7870 108.0734
107.6293 0.663 0.579
           L243   2.3707   3.0185  12.0000   2.4831     1     2   3.6078     1    2   1.0474 108.4472
107.7248 0.837 0.675
           L246  14.7213   2.9990  30.0000  24.3602     6     0   4.9377     6    0   1.6548 102.4757
100.5470 1.842 1.355
           L247  14.8246   3.0200  30.0000 -34.7155     0     0   5.8299     6    0  -2.3417 100.5470
99.9500 1.355 1.180
           L248   2.3403   2.9798  12.0000   1.9823     1     0   2.5119     1    0   0.8470 100.7386
100.5470 1.809 1.887
           L249   2.3421   2.9821  12.0000   1.5796     1     0   3.2717     1    0   0.6744 105.4932
104.8520 0.613 0.392
           L250   9.7769  12.4483  12.0000   3.0003     1     0   8.9085     1    0   0.3069 104.8520
99.9500 0.392 3.310
           L251   2.3510   2.9934  12.0000   1.3050     1     0   3.0835     1    0   0.5551 105.4059
104.8520 0.546 0.392
           L252   2.3583   3.0027  12.0000   0.1128     3    43   0.9086     0   17   0.0478 100.5085
99.2256 0.149 1.176
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           L253   2.3631   3.0088  12.0000   1.7370     1     0   3.2864     1     0   0.7350 101.3835
100.9948 0.643 0.665
           L254   2.3579   3.0022  12.0000   1.7367     5    15   3.0989     0    58   0.7365 100.9948
99.2256 0.665 1.176
           L255   3.6728   2.9929  15.0000   3.9589     5    31   3.6647     0    57   1.0779 100.2825
99.9370 0.914 0.910
           L256   5.3094   3.0045  18.0000   4.7298     5    28   3.0373     0    53   0.8908  99.9370
99.2256 0.925 1.117
           L257   5.3028   3.0008  18.0000   6.6737     5    28   3.6751     5    28   1.2585  99.2256
97.8101 1.117 0.807
           L258   2.3516   2.9941  12.0000   0.8529     5     6   2.5005     0    48   0.3627  98.1213
97.8101 0.441 0.710
           L259   7.1885   2.9886  21.0000   7.8638     5    26   3.9734     5    26   1.0939  97.8101
96.0359 0.834 0.260
           L260  54.2277  22.5452  21.0000   8.0628     5    25  11.6526     5    25   0.1487  96.0359
90.1200 0.260 2.583
           L261   2.3656   3.0120  12.0000   0.9792     1     2   2.6864     1     2   0.4139  94.7428
93.7152 0.493 0.275
           L262  13.9175  17.7203  12.0000   2.3040     1     1   9.6489     1     1   0.1655  93.7152
79.2200 0.275 1.220
           L263   2.3540   2.9972  12.0000   1.1997     1     0   2.8987     1     1   0.5097  94.6677
93.7152 0.548 0.275
           L264   3.6728   2.9929  15.0000   3.7883     1     0   3.7909     1     1   1.0314  86.2988
85.7764 0.775 0.629
           L265  21.2741   3.0097  36.0000  22.4321     5    51   3.9592     5    51   1.0544  85.5082
84.7914 0.756 0.674
           L266  21.1336   2.9898  36.0000  23.3519     5    52   4.7655     5    52   1.1050  84.7914
83.9594 0.674 0.486
           L267   2.3663   3.0129  12.0000   0.8570     1     1   2.7535     1     1   0.3622  85.5616
85.1570 0.422 0.387
           L268   2.3562   3.0000  12.0000   2.6552     2    51   3.3671     2    51   1.1269  96.5563
95.9765 1.646 1.526
           L269   2.3610   3.0062  12.0000   2.9244     2    58   3.7936     2    58   1.2386  95.9765
93.7327 1.526 0.733
           L270  58.0211   8.2083  36.0000  27.4511     5    53   7.7784     5    53   0.4731  83.9594
80.3124 0.486 0.617
           L271  52.2659   5.4324  42.0000  27.4511     5    55   5.2169     5    55   0.5252  80.3124
79.2896 0.529 0.646
           L272  50.6250   3.1831  54.0000 -54.5779     0     0   5.1562     5    36  -1.0781  79.2896
79.0400 0.502 0.453
           L273   7.1817   2.9858  21.0000   9.4566     1     0   4.1829     1     0   1.3168  79.7003
79.2896 0.914 0.863
           L274  32.1290  18.1813  18.0000   8.5560     1     0  12.6154     1     0   0.2663  92.4485
78.9600 0.352 1.573
           L275   2.3504   2.9927  12.0000   1.5054     1     0   3.1332     1     0   0.6405 119.5381
118.6232 0.618 0.323
           L277   2.3540   2.9972  12.0000   1.5122     1     0   3.1076     1     1   0.6424 119.6051
118.6232 0.625 0.323
           L278   2.3583   3.0027  12.0000   1.5649     1     0   3.2306     1     0   0.6636 113.8339
113.5385 0.594 0.578
           L279   6.2035   7.8986  12.0000   3.2539     1     0   6.4649     1     0   0.5245 113.5385
109.5100 0.578 3.210
           L280   2.3516   2.9941  12.0000   1.5689     1     0   3.2265     1     0   0.6672 113.8460
113.5385 0.596 0.578
           L281   2.3504   2.9927  12.0000   3.4219     1    29   4.6251     1    29   1.4559 124.8193
122.6751 1.919 0.395
           L282  15.2316  19.3934  12.0000   5.0178     1    25  14.7894     1    25   0.3294 122.6751
113.5400 0.395 2.940
           L283   2.3672   3.0140  12.0000   1.4971     1     0   3.1057     1     1   0.6325 123.5620
122.6751 0.612 0.395
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L284	2.3453	2.9862	12.0000	-4.7711	0	1	-5.2429	0	1	-2.0343	109.7843	109.0611	4.264	3.841
L285	5.2748	2.9849	18.0000	-8.1954	0	0	-3.7322	0	1	-1.5537	109.0611	108.2800	2.894	2.687
L286	3.7136	3.0261	15.0000	-5.7330	0	0	-3.2225	0	1	-1.5438	108.4000	109.0611	2.568	3.273
L287	2.3660	3.0125	12.0000	1.8249	1	3	3.3193	1	3	0.7713	113.8197	113.0849	0.670	0.575
L289	2.3583	3.0027	12.0000	2.2642	1	37	3.4711	1	37	0.9601	114.0002	113.1535	0.790	0.644
L290	2.3547	2.9980	12.0000	0.1735	3	4	1.5990	3	4	0.0737	104.1135	102.0841	0.183	0.294
L291	2.3606	3.0056	12.0000	0.4448	3	16	2.2398	3	16	0.1884	102.0841	99.9648	0.294	0.355
L292	7.0734	9.0061	12.0000	1.1514	3	16	3.7743	3	11	0.1628	99.9648	98.6700	0.355	4.570
L294	2.3624	3.0079	12.0000	1.4189	1	2	3.0312	0	52	0.6006	92.3207	92.1556	2.851	3.166
L300	5.3010	2.9997	18.0000	5.3497	5	56	3.3970	0	52	1.0092	92.9456	92.1556	2.444	2.444
L301	2.3703	3.0180	12.0000	1.8664	2	35	3.2949	0	54	0.7874	93.1449	92.9456	3.035	3.166
L302	11.9259	2.9994	27.0000	11.8253	5	57	2.9560	5	57	0.9916	92.1556	91.1164	1.963	1.976
L303	2.3481	2.9898	12.0000	0.8511	5	57	2.6776	0	54	0.3625	93.1937	93.1319	2.444	2.862
L304	2.3384	2.9774	12.0000	2.4624	1	1	3.6541	1	1	1.0530	93.5541	93.1319	2.894	2.862
L305	5.3291	3.0156	18.0000	3.3133	6	59	2.6256	0	53	0.6217	93.1319	92.9456	2.241	2.444
L306	3.0341	3.8631	12.0000	2.8212	1	0	3.5000	1	0	0.9299	99.5812	100.1502	5.581	6.710
L307	19.5026	6.2079	24.0000	-4.8658	0	1	-1.5293	0	1	-0.2495	100.1728	98.6400	3.366	3.070
L308	7.7925	4.4096	18.0000	-8.4952	0	0	1.7817	1	0	-1.0902	99.0983	98.6400	3.772	3.960
L309	3.0341	3.8631	12.0000	-4.4156	0	0	3.3434	1	0	-1.4554	99.6635	99.0983	5.663	5.658
L310	2.3721	3.0202	12.0000	1.6006	6	59	3.1818	0	56	0.6748	110.9382	110.7767	2.068	2.267
L311	2.3596	3.0043	12.0000	1.6006	6	0	2.9157	0	53	0.6783	110.7767	109.7243	2.267	3.544
L312	2.3721	3.0202	12.0000	1.2821	6	59	2.2026	0	35	0.5405	109.8263	109.7243	3.286	3.544
L313	2.3540	2.9972	12.0000	2.9996	6	0	3.7630	6	0	1.2743	109.7243	104.3342	3.544	1.554
L314	2.3436	2.9840	12.0000	1.2826	6	59	2.7220	0	45	0.5473	104.4885	104.3342	1.179	1.554
L315	2.3749	3.0238	12.0000	1.6227	6	59	3.2505	1	0	0.6833	105.5303	105.2177	0.640	0.748
L316	2.3491	2.9909	12.0000	1.6227	6	59	3.0816	0	58	0.6908	105.2177	104.3342	0.748	1.554
L317	5.3166	3.0086	18.0000	6.1968	6	0	3.4826	6	0	1.1656	104.3342	102.9537	1.369	1.136
L318	5.2991	2.9987	18.0000	6.1968	6	0	3.3653	6	0	1.1694	102.9537	101.6653	1.136	0.964
L319	5.2963	2.9971	18.0000	8.1961	6	0	4.7905	6	59	1.5475	101.6653	101.1083	0.964	0.739
L320	2.3558	2.9995	12.0000	1.8864	1	7	3.0354	0	47	0.8008	101.8986	101.6653	0.789	0.945

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122.6221 3.822 4.172
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121.4735 3.839 4.034
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120.0079 3.105 3.338
            L327   2.3612   3.0063  12.0000   2.2136     4     0   2.7790     0   30   0.9375 120.5972
120.0079 3.237 3.338
            L328   3.5191   1.9914  18.0000   7.8187     4     0   4.6230     4    0   2.2218 120.0079
116.3779 2.559 0.485
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113.7800 0.485 2.120
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123.3977 0.288 0.418
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121.3926 0.418 0.573
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120.3681 0.573 0.278
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116.1200 0.278 3.320
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128.2437 0.722 0.705
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127.6447 0.705 0.622
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127.0548 0.676 0.584
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126.5963 0.584 0.485
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128.3977 0.891 0.694
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128.4750 0.886 0.695
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125.9377 1.258 1.149
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125.1607 1.149 1.048
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124.3629 1.048 0.941
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124.1182 0.941 0.910
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124.3901 0.778 0.785
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124.1182 0.785 0.819
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122.1000 0.651 0.822
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125.9103 0.759 0.650
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125.8878 0.739 0.628
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124.5395 0.720 0.786
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124.5573 0.835 0.697
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121.6798 0.627 0.617
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118.8323 0.984 1.008
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118.4705 1.029 1.043
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118.2069 1.043 1.057
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118.2069 1.791 1.507
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117.9109 1.050 1.054
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117.9109 1.190 1.311
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119.1584 2.561 3.063
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119.2321 2.146 2.690
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112.4791 1.540 1.566
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112.0680 1.340 1.423
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112.0680 1.869 1.846
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111.2807 1.485 1.524
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110.7941 1.477 1.463
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122.3558 0.912 0.540
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127.0400 1.778 1.000
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92.1556 2.853 2.733
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88.9568 1.976 1.439
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87.4472 1.395 1.155
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98.2300 2.102 4.817
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131.6772 0.346 0.507
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131.1070 0.507 0.507
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121.4735 4.172 4.034
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92.1084 2.153 0.828
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           L513   9.8234   2.0012  30.0000  18.2188     5    51   3.9090     5    51   1.8546  86.2850
85.5082 0.934 0.707
           L514   7.2103   2.9977  21.0000   8.0432     5    40   3.3254     5    40   1.1155 129.4984
128.1440 1.891 1.745
           L515  21.4683   3.0371  36.0000  15.8009     6     0   2.2237     6     0   0.7360 118.8323
118.7269 1.007 1.039
           CH21 321.7664   1.1701  33.0000  12.6097     6    59   0.3253     1     9   0.0392 119.0231
119.0154 0.478 0.984
           L474   5.2973   2.9976  18.0000   9.4830     2    39   5.3470     2    39   1.7902 120.8720
119.5000 1.628 1.000
           L523  22.9743   1.4587  18.0000   9.4830     2    38   1.2146     2    38   0.4128 122.3558
121.2270 0.631 0.265
           L525  21.2457   3.0056  36.0000  17.1496     5    47   3.0160     1     0   0.8072 119.1584
118.7270 1.109 1.206
           L527   5.2074   2.9468  18.0000   4.5196     5    48   2.6389     0    49   0.8679 119.2660
118.2069 1.731 1.971
           L528   3.6866   3.0041  15.0000   4.7391     1    26   3.9337     1    25   1.2855 120.5963
117.4431 2.085 1.130
           L529   3.5424   2.0046  18.0000   4.3384     6    59   2.7073     1     1   1.2247 114.9266
114.2861 1.604 1.464
           L533   5.2922   2.9948  18.0000   4.3384     6    59   3.1793     1     1   0.8198 114.2861
112.6510 1.464 2.007
           L537   3.5530   2.0106  18.0000   4.3384     6    59   2.5325     1    59   1.2210 112.6510
111.6343 2.007 1.790
           L394  47.1178   2.9626  54.0000 -110.683     0     0  -6.3518     0     1  -2.3491 116.3132
116.1200 0.932 0.916
           L276  13.9235  17.7279  12.0000   3.1463     1     0  11.3585     1     0   0.2260 118.6232
110.3800 0.323 2.450
           L288  20.4763  16.6856  15.0000   4.1590     1    38   9.8932     1    35   0.2031 112.6514
108.3400 0.313 3.392
           L412   3.2854   4.1830  12.0000   2.2439     1     0   4.5004     1     0   0.6830 119.6536
119.2660 0.654 0.866
           L447   5.3092   3.0044  18.0000   2.1264     5    16   2.3674     0    49   0.4005 129.7121
129.4984 1.288 2.039
           L546   6.9471   3.9312  18.0000   3.7980     6    59   3.5470     0    56   0.5467  92.0791
91.1164 0.866 2.464
        FREE # 1  Undefnd  Undefnd  Undefn   13.3950     4    19
        FREE # 2  Undefnd  Undefnd  Undefn  -38.2470     0     0
        FREE # 3  Undefnd  Undefnd  Undefn    3.0003     1     0
        FREE # 4  Undefnd  Undefnd  Undefn    8.2240     5    25
        FREE # 5  Undefnd  Undefnd  Undefn    2.3040     1     1
        FREE # 6  Undefnd  Undefnd  Undefn  -45.3333     0     0
        FREE # 7  Undefnd  Undefnd  Undefn    8.5560     1     0
        FREE # 8  Undefnd  Undefnd  Undefn    3.2539     1     0
        FREE # 9  Undefnd  Undefnd  Undefn    5.0178     1    25
        FREE #10  Undefnd  Undefnd  Undefn   -8.4217     0     0
        FREE #11  Undefnd  Undefnd  Undefn    1.1514     3    16
        FREE #12  Undefnd  Undefnd  Undefn   -3.3487     0     0
        FREE #13  Undefnd  Undefnd  Undefn    8.1961     6     0
        FREE #14  Undefnd  Undefnd  Undefn    7.8187     3    42
        FREE #15  Undefnd  Undefnd  Undefn    1.2917     2    47
        FREE #16  Undefnd  Undefnd  Undefn   30.1672     2    22
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FREE #17	Undefnd	Undefnd	Undefn	-80.3250	0	0
FREE #18	Undefnd	Undefnd	Undefn	19.1219	4	2
FREE #19	Undefnd	Undefnd	Undefn	48.9390	5	58
FREE #20	Undefnd	Undefnd	Undefn	4.4590	1	0
FREE #21	Undefnd	Undefnd	Undefn	5.6849	1	1
FREE #22	Undefnd	Undefnd	Undefn	10.7813	1	0
FREE #23	Undefnd	Undefnd	Undefn	17.9050	1	1
FREE #24	Undefnd	Undefnd	Undefn	1.5346	2	32
FREE #25	Undefnd	Undefnd	Undefn	9.4830	2	39
FREE #26	Undefnd	Undefnd	Undefn	-135.270	0	0
FREE #27	Undefnd	Undefnd	Undefn	3.1463	1	0
FREE #28	Undefnd	Undefnd	Undefn	4.1590	1	38
FREE #29	Undefnd	Undefnd	Undefn	5.1189	1	0
FREE #30	Undefnd	Undefnd	Undefn	-5.0659	0	1

Table E11. Area assumptions used in the analysis
Subcritical and Critical flow assumptions from Subroutine Head. See Figure 17-1 in the manual for further information.

Conduit Name	Duration of Dry Flow(min)	Duration of Sub-Critical Flow(min)	Durat. of Upstream Critical Flow(min)	Durat. of Downstream Critical Flow(min)	Maximum Hydraulic Radius-m	Maximum X-Sect Area(ft^2)	Maximum Vel*D (ft^2/s)
L210	0.2500	303.3871	0.0000	56.3629	0.3028	0.8145	6.0754
L211	0.2500	0.0000	0.0000	359.7500	0.3022	0.7148	6.6769
L212	0.2500	305.5000	0.0000	54.2500	0.3735	1.2422	4.1200
L213	0.0000	324.0000	0.0000	36.0000	0.3019	0.8117	8.1584
L214	0.0000	344.7619	0.0000	15.2381	0.4557	1.8485	9.2805
L217	0.0000	0.0000	0.0000	360.0000	0.2305	0.3207	1.2094
L220	0.0000	337.0833	0.0000	22.9167	0.5305	2.4695	12.5695
L221	0.0000	0.0000	0.0000	360.0000	0.6008	2.7121	7.5895
L222	1.0167	358.9833	0.0000	0.0000	0.4398	2.1043	25.6018
L223	0.2500	0.0000	0.0000	359.7500	0.1501	0.1368	0.3311
L224	0.2500	0.0000	0.0000	359.7500	0.1573	0.1434	0.3175
L225	0.2500	303.8387	0.0000	55.9113	0.2176	0.5307	0.5207
L226	0.0000	360.0000	0.0000	0.0000	0.2988	0.7557	1.5578
L227	0.0000	306.6667	0.0000	53.3333	0.3034	0.8150	3.1677
L228	0.0000	0.0000	0.0000	360.0000	0.2990	0.6754	5.0881
L229	0.0000	0.0000	0.0000	360.0000	0.3741	0.9293	2.3945
L230	0.2500	274.9677	0.0000	84.7823	0.3733	1.1497	3.9298
L231	0.2500	294.2581	0.0000	65.4919	0.3732	1.2598	7.6559
L232	0.0000	302.5806	0.0000	57.4194	0.4485	1.8129	9.4443
L233	4.9375	320.8214	0.0000	34.2411	0.4482	1.8124	12.2670
L234	1.2167	358.0467	0.7367	0.0000	0.5976	3.2223	11.9131
L235	0.0000	360.0000	0.0000	0.0000	0.3034	0.8132	0.6133
L236	0.0000	321.6429	0.0000	38.3571	0.3035	0.8052	7.5514
L237	0.0000	316.9643	0.0000	43.0357	0.3042	0.8233	11.9500
L238	0.2500	0.0000	0.0000	359.7500	0.3030	0.7475	4.9700
L239	0.2500	0.0000	0.0000	359.7500	0.3026	0.7517	7.9672
L240	0.0000	0.0000	0.0000	360.0000	0.2552	0.3887	1.4956
L241	0.0000	0.0000	0.0000	360.0000	0.3770	1.1088	7.3641
L242	0.0000	0.0000	0.0000	360.0000	0.2886	0.5117	2.1118
L243	0.0000	0.0000	0.0000	360.0000	0.3027	0.6317	2.7274
L246	0.0000	360.0000	0.0000	0.0000	0.7464	5.1260	19.7326
L247	0.0000	360.0000	0.0000	0.0000	0.6377	5.1350	18.4721

L248	0.0000	359.5000	0.0000	0.5000	0.2987	0.8053	4.6391
L249	0.2500	359.7500	0.0000	0.0000	0.2734	0.3900	1.6438
L250	0.0000	360.0000	0.0000	0.0000	0.2148	0.5199	16.4884
L251	0.0000	360.0000	0.0000	0.0000	0.2582	0.3594	1.4455
L252	0.2500	344.1429	0.0000	15.6071	0.1097	0.3805	0.5048
L253	0.2500	359.7500	0.0000	0.0000	0.2871	0.5442	2.1191
L254	0.5000	327.5385	0.0000	31.9615	0.2866	0.6832	2.7508
L255	0.2500	312.1034	0.0000	47.6466	0.3797	1.1736	3.8393
L256	0.0000	360.0000	0.0000	0.0000	0.4523	1.7765	4.2104
L257	0.0000	329.8077	0.0000	30.1923	0.4540	1.6851	5.3026
L258	0.0000	321.5714	0.0000	38.4286	0.2366	0.4589	1.3629
L259	0.0000	360.0000	0.0000	0.0000	0.5051	1.2255	3.8066
L260	1.0167	358.9833	0.0000	0.0000	0.2827	1.3431	28.9910
L261	0.2500	359.7500	0.0000	0.0000	0.2386	0.2739	1.0315
L262	0.0000	360.0000	0.0000	0.0000	0.1681	0.4526	7.2135
L263	0.0000	360.0000	0.0000	0.0000	0.2535	0.2981	1.1926
L264	0.2500	0.0000	0.0000	359.7500	0.3765	0.9145	3.3267
L265	0.2500	359.7500	0.0000	0.0000	0.9034	5.3956	8.4915
L266	0.0000	360.0000	0.0000	0.0000	0.8629	4.2118	8.2940
L267	0.0000	0.0000	0.0000	360.0000	0.2210	0.2976	1.1132
L268	0.2500	359.7500	0.0000	0.0000	0.3041	0.8230	5.3415
L269	0.0000	0.0000	0.0000	360.0000	0.3023	0.7035	4.2852
L270	0.2500	359.7500	0.0000	0.0000	0.7470	3.9820	12.8804
L271	0.2500	359.7500	0.0000	0.0000	0.9318	5.6267	10.3639
L272	0.0000	360.0000	0.0000	0.0000	1.0787	7.4963	10.7268
L273	0.0000	360.0000	0.0000	0.0000	0.5319	2.1612	6.1654
L274	0.7500	359.2500	0.0000	0.0000	0.2999	1.1079	18.2196
L275	0.2500	359.7500	0.0000	0.0000	0.2714	0.3546	1.4744
L277	0.0000	360.0000	0.0000	0.0000	0.2727	0.3576	1.4733
L278	0.2500	359.7500	0.0000	0.0000	0.2756	0.4783	1.8931
L279	0.0000	360.0000	0.0000	0.0000	0.2699	0.6265	12.2455
L280	0.0000	360.0000	0.0000	0.0000	0.2761	0.4793	1.8940
L281	0.2500	359.7500	0.0000	0.0000	0.2916	0.5187	5.3520
L282	0.0000	360.0000	0.0000	0.0000	0.2160	0.5209	24.6618
L283	0.0000	360.0000	0.0000	0.0000	0.2733	0.3911	1.5637
L284	0.0000	360.0000	0.0000	0.0000	0.2500	0.8006	14.6526
L285	0.0000	360.0000	0.0000	0.0000	0.3789	1.7873	13.3829
L286	0.0000	360.0000	0.0000	0.0000	0.3143	1.2422	2.9499
L287	0.2500	0.0000	0.0000	359.7500	0.2895	0.5124	2.0656
L289	0.0000	0.0000	0.0000	360.0000	0.3021	0.5986	2.4883
L290	0.2500	359.7500	0.0000	0.0000	0.1172	0.1434	0.3818
L291	0.2500	359.7500	0.0000	0.0000	0.1707	0.2207	0.7267
L292	0.7500	359.2500	0.0000	0.0000	0.2010	0.5003	9.2939
L294	0.0000	308.8667	0.0000	51.1333	0.2988	0.8055	5.3089
L300	0.0000	315.5862	0.0000	44.4138	0.4554	1.8223	10.9959
L301	0.0000	311.3448	0.0000	48.6552	0.3022	0.8086	7.2725
L302	0.0000	360.0000	0.0000	0.0000	0.6798	4.1173	13.0980
L303	0.0000	308.5667	0.0000	51.4333	0.2987	0.8057	2.8478
L304	0.0000	299.0000	0.0000	61.0000	0.3039	0.8232	8.9152
L305	0.0000	360.0000	0.0000	0.0000	0.4482	1.8119	6.5356
L306	0.0000	360.0000	0.0000	0.0000	0.2500	0.8081	18.0869
L307	0.0000	360.0000	0.0000	0.0000	0.5000	3.1860	5.4394
L308	0.0000	360.0000	0.0000	0.0000	0.3750	1.7994	10.0177
L309	0.0000	360.0000	0.0000	0.0000	0.2500	0.8086	17.5341
L310	0.2500	359.7500	0.0000	0.0000	0.2993	0.8052	4.3868
L311	0.2500	359.7500	0.0000	0.0000	0.2988	0.8083	5.8691
L312	0.0000	360.0000	0.0000	0.0000	0.2988	0.8054	5.4943
L313	0.0000	308.0667	0.0000	51.9333	0.3021	0.8084	9.5927
L314	0.0000	325.0370	0.0000	34.9630	0.2988	0.8056	2.1452
L315	0.2500	359.7500	0.0000	0.0000	0.2876	0.5797	2.0820

L316	0.5000	321.3929	0.0000	38.1071	0.2961	0.7074	2.8932
L317	0.0000	360.0000	0.0000	0.0000	0.4564	1.8305	6.5434
L318	0.2500	359.7500	0.0000	0.0000	0.4563	1.7985	5.2986
L319	0.0000	360.0000	0.0000	0.0000	0.4540	1.5692	6.1164
L320	0.0000	325.3333	0.0000	34.6667	0.3022	0.7154	2.4158
L321	0.0000	360.0000	0.0000	0.0000	0.2236	0.4937	0.9547
L324	0.0000	360.0000	0.0000	0.0000	0.2987	0.8059	8.5424
L325	0.2500	339.0870	0.0000	20.6630	0.2988	0.8053	7.9996
L326	0.0000	341.1818	0.0000	18.8182	0.2988	0.8058	7.9385
L327	0.0000	340.0870	0.0000	19.9130	0.2988	0.8056	9.1351
L328	0.0000	360.0000	0.0000	0.0000	0.4368	1.2890	10.5539
L329	0.2500	359.7500	0.0000	0.0000	0.3683	1.2868	16.1948
L334	0.2500	359.7500	0.0000	0.0000	0.1708	0.2465	0.7534
L335	0.2500	359.7500	0.0000	0.0000	0.2259	0.3853	1.3031
L336	0.2500	359.7500	0.0000	0.0000	0.2596	0.3105	1.2592
L337	0.2500	359.7500	0.0000	0.0000	0.1694	0.4508	9.6728
L338	0.2500	359.7500	0.0000	0.0000	0.8954	5.3920	8.3443
L339	0.2500	338.3478	0.0000	21.4022	0.8854	4.9645	8.0507
L340	0.0000	360.0000	0.0000	0.0000	1.0177	6.3687	9.7696
L341	0.2500	0.0000	0.0000	359.7500	0.9474	5.2176	9.8735
L342	0.0000	0.0000	0.0000	360.0000	0.3782	1.0290	4.0239
L343	0.0000	0.0000	0.0000	360.0000	0.3027	0.6576	2.8892
L344	0.2500	315.0690	0.0000	44.6810	0.7606	5.1128	6.6386
L346	0.0000	350.6316	0.0000	9.3684	1.0648	10.0858	12.0169
L347	0.0000	360.0000	0.0000	0.0000	1.2166	13.0953	21.4424
L348	0.2500	359.7500	0.0000	0.0000	1.2165	13.0138	18.8504
L349	0.2500	359.7500	0.0000	0.0000	1.2163	12.5523	17.5126
L350	0.2500	358.1167	0.0000	1.6333	1.2167	12.1240	17.0515
L351	0.2500	359.7500	0.0000	0.0000	0.6067	2.6337	4.9164
L352	0.2500	311.6552	0.0000	48.0948	0.6073	2.6986	4.9864
L354	0.0000	360.0000	0.0000	0.0000	1.3607	12.4440	21.9808
L361	0.0000	0.0000	0.0000	360.0000	0.3009	0.5892	2.5874
L362	0.0000	0.0000	0.0000	360.0000	0.2987	0.5699	2.4123
L363	0.0000	324.5556	0.0000	35.4444	0.4485	1.4252	3.7172
L364	0.0000	0.0000	0.0000	360.0000	0.3031	0.6418	2.9467
L365	0.0000	304.2333	0.0000	55.7667	0.2845	0.5436	2.0414
L366	0.0000	360.0000	0.0000	0.0000	0.6082	2.7647	5.7545
L367	0.2500	13.1629	0.0000	346.5871	0.6010	2.2468	5.1094
L368	0.0000	0.0000	0.0000	360.0000	0.3024	0.6023	2.4993
L369	0.0000	0.0000	0.0000	360.0000	0.3027	0.7294	5.0871
L370	0.0000	360.0000	0.0000	0.0000	0.8420	4.4937	7.2105
L373	0.0000	360.0000	0.0000	0.0000	0.8338	5.8346	10.9537
L374	2.0625	163.7419	0.0000	194.1956	0.3002	0.8082	7.8638
L375	2.0625	237.1935	0.0000	120.7440	0.4536	1.8128	2.9008
L376	0.0000	349.8421	0.0000	10.1579	0.8363	5.9354	5.7386
L386	0.2500	359.3480	0.4020	0.0000	1.2168	12.7866	11.2811
L387	0.2500	355.8750	0.0000	3.8750	1.2166	12.8650	11.3557
L388	0.0000	276.0323	0.0000	83.9677	0.3006	0.8054	4.6575
L389	0.0000	360.0000	0.0000	0.0000	1.3689	16.2992	14.0695
L390	0.0000	285.3226	0.0000	74.6774	0.3032	0.8121	2.4675
L391	0.0000	360.0000	0.0000	0.0000	1.3686	16.2479	15.3652
L392	0.2500	359.7500	0.0000	0.0000	1.3688	16.0128	17.8902
L393	0.0000	360.0000	0.0000	0.0000	1.3656	15.6308	17.3434
L395	0.2500	359.7500	0.0000	0.0000	0.3735	1.2598	11.9171
L396	2.5417	357.4583	0.0000	0.0000	0.9068	7.1639	3.6911
L397	0.0000	360.0000	0.0000	0.0000	0.3735	1.2597	12.9855
L398	0.0000	358.8500	0.0000	1.1500	0.3735	1.2595	10.5665
L399	0.5000	331.7600	0.0000	27.7400	0.5976	3.1098	2.8484
L402	0.2500	359.7500	0.0000	0.0000	0.5324	2.5208	7.4621
L403	0.2500	359.7500	0.0000	0.0000	0.5323	2.5026	7.5161

L404	0.7500	300.2903	0.0000	58.9597	0.5324	2.4848	7.6120
L405	0.0000	295.5161	0.0000	64.4839	0.4563	1.8504	6.3763
L406	0.0000	343.2727	0.0000	16.7273	0.7586	5.0904	8.4049
L407	0.0000	295.4516	0.0000	64.5484	0.3800	1.2865	7.1978
L408	0.0000	342.2273	0.0000	17.7727	0.8358	6.1951	10.2710
L410	0.2500	359.7500	0.0000	0.0000	0.9120	7.3935	11.9652
L411	0.2500	345.3333	0.0000	14.4167	0.9121	7.3987	12.0915
L413	0.0000	360.0000	0.0000	0.0000	0.4482	1.7545	2.6922
L415	0.0000	203.3871	0.0000	156.6129	0.3040	0.7777	2.8904
L417	0.0000	286.3548	0.0000	73.6452	0.3028	0.8122	6.7524
L418	0.0000	302.6774	0.0000	57.3226	0.4564	1.8519	6.6363
L419	0.0000	360.0000	0.0000	0.0000	0.6072	3.2606	7.2952
L420	0.2500	327.1923	0.0000	32.5577	0.6037	3.2205	7.8395
L421	0.0000	299.3871	0.0000	60.6129	0.2991	0.8052	4.4324
L422	0.0000	299.5806	0.0000	60.4194	0.3801	1.2864	7.6052
L423	0.0000	345.8571	0.0000	14.1429	0.7598	5.1196	10.4245
L424	0.0000	333.6800	0.0000	26.3200	0.8365	6.2248	12.5843
L425	0.0000	305.9333	0.0000	54.0667	0.2988	0.8056	2.5192
L426	0.0000	303.0323	0.0000	56.9677	0.3798	1.2862	8.3064
L427	0.2500	359.7500	0.0000	0.0000	1.0648	10.0331	18.9897
L428	0.0000	307.2333	0.0000	52.7667	0.2988	0.8058	1.8560
L429	0.0000	360.0000	0.0000	0.0000	1.0646	9.9813	17.4138
L430	0.2500	359.7500	0.0000	0.0000	0.2988	0.8054	7.7132
L431	0.0000	333.8000	0.0000	26.2000	0.2988	0.8061	6.4963
L432	0.0000	360.0000	0.0000	0.0000	0.3041	0.8175	6.1548
L435	0.0000	360.0000	0.0000	0.0000	0.3042	0.8154	7.4598
L436	0.0000	294.1290	0.0000	65.8710	0.3022	0.8031	5.4816
L437	0.2500	359.7500	0.0000	0.0000	0.3735	1.2495	3.7139
L438	0.0000	336.0833	0.0000	23.9167	0.2988	0.8053	3.2924
L439	0.0000	289.0323	0.0000	70.9677	0.3768	1.2021	5.6985
L440	0.5000	310.0345	0.0000	49.4655	0.4493	1.7585	4.2702
L441	0.2500	359.7500	0.0000	0.0000	1.0616	9.4516	17.0179
L442	0.2500	359.7500	0.0000	0.0000	1.0125	5.1951	12.0073
L443	0.2500	359.7500	0.0000	0.0000	0.5991	5.5017	45.7809
L446	0.2500	331.4000	0.0000	28.3500	0.4563	1.8523	10.2448
L448	0.0000	326.7692	0.0000	33.2308	0.2988	0.8057	2.5953
L449	0.0000	342.5455	0.0000	17.4545	0.5323	2.4678	10.2478
L450	0.0000	0.0000	0.0000	360.0000	0.6008	2.7108	7.9391
L451	0.0000	0.0000	0.0000	360.0000	0.6047	2.6286	8.0557
L452	0.0000	320.9286	0.0000	39.0714	0.2990	0.8052	2.0930
L453	0.0000	323.9630	0.0000	36.0370	0.2988	0.8043	1.4401
L454	0.0000	321.6429	0.0000	38.3571	0.2432	0.4981	1.1073
L466	0.2500	0.0000	0.0000	359.7500	0.3737	0.9067	3.6749
L468	0.2500	359.7500	0.0000	0.0000	0.5521	2.4049	2.9615
L470	0.2500	359.7500	0.0000	0.0000	0.5225	1.7909	5.4703
L471	6.7647	353.2353	0.0000	0.0000	0.1597	0.4340	1.5903
L472	0.2500	359.7500	0.0000	0.0000	0.3042	0.8043	7.8446
L475	0.2500	306.8333	0.0000	52.9167	0.3795	1.2800	12.2543
L478	0.2500	337.2500	0.0000	22.5000	0.6815	4.0798	17.3765
L479	0.2500	339.7391	0.0000	20.0109	0.7603	5.0349	11.6628
L487	0.0000	360.0000	0.0000	0.0000	0.4375	2.4429	26.8667
L490	0.2500	0.0000	0.0000	359.7500	0.5222	1.6410	4.0475
L493	0.5000	359.5000	0.0000	0.0000	0.7581	4.8914	10.0979
L496	0.2500	359.7500	0.0000	0.0000	0.1977	0.3174	1.0056
L497	0.0000	360.0000	0.0000	0.0000	0.1968	0.3162	0.9979
L498	0.0000	360.0000	0.0000	0.0000	0.2520	0.3998	1.5284
L499	0.0000	341.0000	0.0000	19.0000	0.2988	0.8062	8.7516
L500	0.0000	352.6667	0.0000	7.3333	0.3766	1.2580	10.8854
L501	0.2500	336.7917	0.0000	22.9583	0.9092	7.3337	5.8088
L502	0.5000	356.4800	0.0000	3.0200	1.0615	9.9869	5.4163

L503	0.2500	359.7500	0.0000	0.0000	1.3675	14.6552	18.9899
L504	0.0000	360.0000	0.0000	0.0000	1.3609	12.3921	17.9194
L505	0.0000	310.5517	0.0000	49.4483	0.5260	2.4679	16.7015
L506	0.0000	358.8500	0.0000	1.1500	0.5229	2.4909	20.3014
L507	0.2500	0.0000	0.0000	359.7500	0.3025	0.7428	7.2435
L509	0.2500	0.0000	0.0000	359.7500	0.3776	1.1222	6.3834
L510	0.2500	359.7500	0.0000	0.0000	0.2872	0.8638	39.0501
L511	0.2500	0.0000	0.0000	359.7500	0.4500	1.6884	15.0957
L512	0.5000	359.5000	0.0000	0.0000	0.3789	1.9269	70.9545
L513	0.0000	323.3704	0.0000	36.6296	0.7549	4.2275	8.0195
L514	0.0000	360.0000	0.0000	0.0000	0.5319	2.5196	10.5788
L515	0.0000	351.4444	0.0000	8.5556	0.9124	7.1487	6.8259
CH21	0.5000	359.5000	0.0000	0.0000	1.2946	196.7780	0.2398
L474	0.7500	359.2500	0.0000	0.0000	0.4564	1.8097	10.5391
L523	0.5000	0.0000	0.0000	359.5000	0.6614	5.3660	0.8155
L525	2.0625	352.2222	0.0000	5.7153	0.9112	7.3555	8.0733
L527	0.0000	354.1875	0.0000	5.8125	0.4482	1.8121	7.0667
L528	0.2500	276.5484	0.0000	83.2016	0.3767	1.2605	7.6557
L529	0.0000	360.0000	0.0000	0.0000	0.4534	1.8389	5.6288
L533	0.0000	360.0000	0.0000	0.0000	0.4482	1.8145	6.3708
L537	0.5000	304.1667	0.0000	55.3333	0.4509	1.8451	6.9475
L394	0.0000	360.0000	0.0000	0.0000	1.3434	15.3388	25.3035
L276	0.0000	360.0000	0.0000	0.0000	0.1884	0.4766	15.7494
L288	0.0000	360.0000	0.0000	0.0000	0.2302	0.7381	22.9095
L412	0.2500	156.9032	0.0000	202.8468	0.2899	0.6309	3.0349
L447	0.0000	353.0000	0.0000	7.0000	0.4482	1.8148	2.9956
L546	1.9833	334.4000	0.0000	23.6167	0.4482	1.7038	5.7927

Table E12. Mean Conduit Flow Information

Conduit Name	Mean Flow (cfs)	Total Flow (ft^3)	Mean Percent Change	Low Flow Weightng	Mean Froude Number	Mean Hydraulic Radius	Mean Cross Area	Mean Conduit Roughness
L210	2.6464	57161.763	0.0000	0.9999	0.5513	0.2490	0.7417	0.0150
L211	2.8494	61547.381	0.0000	0.9999	0.8046	0.2517	0.7348	0.0150
L212	2.9718	64189.890	0.0000	0.9999	0.4543	0.3066	1.1411	0.0150
L213	2.2762	49166.344	0.0000	0.9999	0.3909	0.2469	0.7434	0.0150
L214	4.9138	106138.10	0.0000	0.9999	0.3330	0.3706	1.6734	0.0150
L217	0.8692	18775.404	0.0000	0.9999	0.7752	0.2209	0.3168	0.0150
L220	10.2335	221042.56	0.0001	0.9999	0.5751	0.4330	2.2988	0.0150
L221	11.9297	257682.13	0.0001	0.9999	0.6443	0.4999	2.9712	0.0150
L222	12.0898	261138.93	0.0001	0.9996	1.8174	0.4182	1.3168	0.0150
L223	0.2105	4547.4791	0.0000	0.9999	0.5680	0.1435	0.1513	0.0150
L224	0.2077	4486.7758	0.0000	0.9998	0.5378	0.1487	0.1614	0.0150
L225	0.2041	4408.6121	0.0000	0.9875	0.2494	0.1944	0.2949	0.0150
L226	0.8375	18089.892	0.0000	0.9999	0.2816	0.2794	0.6458	0.0150
L227	1.4239	30757.299	0.0000	0.9999	0.3223	0.2456	0.7266	0.0150
L228	2.2175	47897.117	0.0000	0.9999	0.6771	0.2489	0.7263	0.0150
L229	2.6010	56182.616	0.0000	0.9999	0.5880	0.3465	1.0372	0.0150
L230	3.0417	65701.194	0.0000	0.9999	0.5104	0.3099	1.1188	0.0150
L231	3.3229	71774.576	0.0000	0.9999	0.4123	0.3034	1.1425	0.0150
L232	5.3336	115205.62	0.0000	0.9999	0.4302	0.3676	1.6553	0.0150
L233	5.5606	120108.57	0.0000	0.9859	0.3748	0.3623	1.6412	0.0150
L234	8.3410	180164.74	0.0001	0.9984	0.2602	0.4951	3.0031	0.0150
L235	0.4088	8830.4229	0.0000	0.9999	0.1522	0.2464	0.7381	0.0150
L236	1.9433	41974.297	0.0000	0.9999	0.3291	0.2486	0.7481	0.0150
L237	2.8188	60886.204	0.0000	0.9999	0.4418	0.2480	0.7533	0.0150
L238	3.3828	73068.243	0.0000	0.9999	0.9065	0.2542	0.7411	0.0150

L239	3.7147	80236.849	0.0000	0.9999	0.9613	0.2531	0.7504	0.0150
L240	1.1325	24462.226	0.0000	0.9999	0.7716	0.2450	0.3870	0.0150
L241	4.8820	105451.85	0.0000	0.9999	0.8158	0.3148	1.1480	0.0150
L242	1.6952	36615.870	0.0000	0.9999	0.7833	0.2779	0.5136	0.0150
L243	2.2724	49084.664	0.0000	0.9999	0.7718	0.2931	0.6480	0.0150
L246	21.8033	470951.95	0.0007	0.9999	0.4407	0.6302	4.9221	0.0150
L247	25.8037	557360.38	0.0013	1.0000	0.5525	0.6249	4.9597	0.0150
L248	1.8152	39208.193	0.0002	0.9999	0.3115	0.2501	0.7902	0.0150
L249	1.4463	31240.202	0.0000	0.9999	0.9150	0.2634	0.4561	0.0150
L250	2.7463	59320.954	0.0000	0.9999	2.4394	0.2065	0.3213	0.0150
L251	1.1948	25807.152	0.0000	0.9999	0.8629	0.2483	0.3996	0.0150
L252	0.1021	2206.4061	0.0000	0.9999	0.3781	0.1024	0.1364	0.0150
L253	1.5907	34360.089	0.0000	0.9999	0.7301	0.2761	0.5043	0.0150
L254	1.5816	34163.257	0.0000	0.9998	0.6610	0.2743	0.5413	0.0150
L255	3.6244	78286.250	0.0000	0.9999	0.5790	0.3589	1.0964	0.0150
L256	4.3181	93271.970	0.0000	0.9999	0.4466	0.4195	1.5935	0.0150
L257	6.0550	130788.10	0.0000	0.9999	0.6246	0.3778	1.6959	0.0150
L258	0.7802	16851.812	0.0000	0.9999	0.6418	0.2253	0.3359	0.0150
L259	7.1241	153880.64	0.0000	0.9999	1.0255	0.4862	1.8542	0.0150
L260	7.3047	157782.48	0.0001	0.9996	2.9053	0.2706	0.6628	0.0150
L261	0.8960	19354.609	0.0000	0.9999	0.8959	0.2290	0.3439	0.0150
L262	2.1082	45536.778	0.0000	0.9999	3.1167	0.1619	0.2297	0.0150
L263	1.0981	23719.257	0.0000	0.9999	0.9670	0.2437	0.3908	0.0150
L264	3.4676	74900.432	0.0000	0.9999	0.7477	0.3642	0.9432	0.0150
L265	19.8627	429033.33	0.0001	0.9999	0.4878	0.8541	5.2110	0.0150
L266	20.6405	445834.78	0.0001	0.9999	0.6889	0.8137	4.5113	0.0150
L267	0.7844	16942.357	0.0000	0.9999	0.7756	0.2119	0.2935	0.0150
L268	2.4314	52518.099	0.0000	0.9999	0.5150	0.2483	0.7410	0.0150
L269	2.6647	57556.506	0.0000	0.9999	0.7752	0.2520	0.7266	0.0150
L270	24.3316	525563.10	0.0002	0.9999	1.1160	0.7018	3.2441	0.0150
L271	24.2619	524057.12	0.0003	0.9998	0.6426	0.8776	4.9620	0.0150
L272	33.6809	727507.16	0.0028	1.0000	0.5830	1.0747	7.2829	0.0150
L273	8.6512	186865.57	0.0002	0.9999	0.5970	0.5168	2.2069	0.0150
L274	7.8416	169378.04	0.0001	0.9998	2.9662	0.2892	0.6501	0.0150
L275	1.3780	29765.679	0.0000	0.9999	0.9624	0.2613	0.4537	0.0150
L277	1.3842	29899.258	0.0000	0.9999	0.9552	0.2626	0.4594	0.0150
L278	1.4333	30958.242	0.0000	0.9999	0.7516	0.2651	0.4566	0.0150
L279	2.9784	64333.138	0.0000	0.9999	1.4770	0.2593	0.4767	0.0150
L280	1.4368	31034.895	0.0000	0.9999	0.7506	0.2655	0.4584	0.0150
L281	3.1328	67668.665	0.0000	0.9999	1.2674	0.2449	0.7063	0.0150
L282	4.5931	99211.344	0.0000	0.9999	4.0190	0.2080	0.3243	0.0150
L283	1.3704	29601.653	0.0000	0.9999	0.8644	0.2630	0.4548	0.0150
L284	1.4324	30939.741	0.0005	0.9999	0.1886	0.2500	0.7953	0.0150
L285	2.3561	50891.441	0.0001	1.0000	0.1255	0.3750	1.7835	0.0150
L286	0.8131	17562.235	0.0005	0.9999	0.0671	0.3124	1.2393	0.0150
L287	1.6694	36060.059	0.0000	0.9999	0.7688	0.2785	0.5175	0.0150
L289	2.0712	44736.885	0.0000	0.9999	0.7608	0.2917	0.6137	0.0150
L290	0.1579	3410.0779	0.0000	0.9999	0.6533	0.1115	0.1018	0.0150
L291	0.4044	8734.7327	0.0000	0.9999	0.7217	0.1625	0.1861	0.0150
L292	1.0514	22709.704	0.0000	0.9998	1.0952	0.1920	0.2900	0.0150
L294	1.2817	27685.525	0.0000	0.9999	0.2641	0.2423	0.7204	0.0150
L300	4.8567	104905.02	0.0000	0.9999	0.3338	0.3694	1.6519	0.0150
L301	1.7073	36877.653	0.0000	0.9999	0.3140	0.2452	0.7286	0.0150
L302	10.7171	231489.66	0.0001	0.9999	0.2740	0.5538	3.7258	0.0150
L303	0.7766	16775.636	0.0000	0.9999	0.2137	0.2368	0.7021	0.0150
L304	2.2527	48658.533	0.0000	0.9999	0.3904	0.2484	0.7380	0.0150
L305	3.0194	65218.132	0.0000	0.9999	0.2321	0.3655	1.6238	0.0150
L306	2.5801	55730.547	0.0000	0.9999	0.2551	0.2500	0.8058	0.0150
L307	2.7841	60136.547	0.0001	1.0000	0.0691	0.5000	3.1745	0.0150
L308	2.9220	63116.191	0.0000	1.0000	0.1271	0.3750	1.7961	0.0150

L309	2.4637	53215.128	0.0000	0.9999	0.2430	0.2500	0.8061	0.0150
L310	1.4648	31639.868	0.0000	0.9999	0.3362	0.2443	0.7166	0.0150
L311	1.4559	31448.517	0.0000	0.9998	0.3103	0.2434	0.7212	0.0150
L312	1.1721	25317.541	0.0000	0.9999	0.2392	0.2435	0.7313	0.0150
L313	2.7062	58453.859	0.0000	0.9999	0.5869	0.2464	0.7467	0.0150
L314	1.1726	25328.485	0.0000	0.9999	0.3261	0.2427	0.7312	0.0150
L315	1.4862	32102.433	0.0000	0.9999	0.6873	0.2754	0.5045	0.0150
L316	1.4783	31930.816	0.0000	0.9998	0.5519	0.2815	0.5909	0.0150
L317	5.6055	121078.95	0.0000	0.9999	0.5125	0.3708	1.6565	0.0150
L318	5.5815	120560.54	0.0000	0.9998	0.4983	0.3743	1.7038	0.0150
L319	7.3993	159823.95	0.0001	0.9999	0.7936	0.4140	1.6039	0.0150
L320	1.7208	37170.065	0.0000	0.9999	0.5787	0.2901	0.6257	0.0150
L321	0.4625	9988.9904	0.0000	0.9999	0.4295	0.2118	0.3109	0.0150
L324	1.5622	33742.773	0.0000	0.9999	0.2723	0.2438	0.7401	0.0150
L325	1.4860	32096.557	0.0000	0.9999	0.2340	0.2438	0.7447	0.0150
L326	1.7934	38738.191	0.0000	0.9999	0.2908	0.2449	0.7454	0.0150
L327	2.0242	43723.340	0.0000	0.9999	0.3144	0.2456	0.7486	0.0150
L328	7.0778	152879.85	0.0001	0.9999	0.9328	0.3691	1.6199	0.0150
L329	7.0718	152751.34	0.0000	0.9998	1.6666	0.3506	0.8886	0.0150
L334	0.3888	8398.3438	0.0000	0.9999	0.6962	0.1629	0.1876	0.0150
L335	0.7813	16876.893	0.0000	0.9999	0.7128	0.2155	0.3060	0.0150
L336	1.1759	25400.368	0.0000	0.9999	0.9869	0.2486	0.4102	0.0150
L337	1.1754	25389.101	0.0000	0.9998	1.7202	0.1625	0.2303	0.0150
L338	19.4679	420507.07	0.0002	0.9999	0.4801	0.8644	5.1380	0.0150
L339	19.4087	419228.65	0.0001	0.9998	0.5249	0.8512	4.9387	0.0150
L340	27.5146	594315.56	0.0002	0.9999	0.5479	0.9788	6.4183	0.0150
L341	27.4520	592963.84	0.0002	0.9998	0.7227	0.9078	5.3806	0.0150
L342	4.2000	90719.601	0.0000	0.9999	0.7622	0.3637	1.0667	0.0150
L343	2.4093	52041.255	0.0000	0.9999	0.7702	0.2908	0.6783	0.0150
L344	11.2929	243926.46	0.0002	0.9999	0.3125	0.6089	4.6263	0.0150
L346	23.4513	506547.84	0.0010	0.9999	0.2406	0.8649	9.0342	0.0150
L347	51.1201	1104195.0	0.0030	0.9999	0.3717	0.9944	11.9727	0.0150
L348	50.8641	1098663.5	0.0009	0.9998	0.3793	0.9944	12.3198	0.0150
L349	50.6165	1093317.0	0.0005	0.9998	0.4059	1.0130	12.0171	0.0150
L350	50.4663	1090072.1	0.0005	0.9998	0.4453	1.1378	11.5321	0.0150
L351	7.5633	163366.73	0.0001	0.9999	0.4654	0.5828	2.4428	0.0150
L352	7.5445	162960.63	0.0001	0.9998	0.4636	0.5811	2.4593	0.0150
L354	66.2358	1430692.3	0.0033	1.0000	0.6380	1.2979	11.1629	0.0150
L361	2.1169	45725.575	0.0000	0.9999	0.7981	0.2909	0.5938	0.0150
L362	1.9772	42708.196	0.0000	0.9999	0.7812	0.2884	0.5770	0.0150
L363	4.1193	88976.698	0.0000	0.9999	0.5845	0.4299	1.2867	0.0150
L364	2.4266	52415.369	0.0000	0.9999	0.8067	0.2940	0.6503	0.0150
L365	1.4984	32366.193	0.0000	0.9999	0.7037	0.2730	0.4917	0.0150
L366	8.9298	192884.14	0.0001	0.9999	0.5082	0.5852	2.6247	0.0150
L367	8.8685	191559.32	0.0001	0.9998	0.6108	0.5767	2.4518	0.0150
L368	2.0842	45018.282	0.0000	0.9999	0.7582	0.2920	0.6186	0.0150
L369	3.1979	69074.656	0.0000	0.9999	0.8704	0.2537	0.7393	0.0150
L370	17.3631	375043.21	0.0004	0.9999	0.5544	0.8325	4.4667	0.0150
L373	17.3392	374527.54	0.0011	1.0000	0.6117	0.7696	4.1296	0.0150
L374	3.0622	66142.671	0.0000	0.9938	0.7792	0.2515	0.7542	0.0150
L375	3.0279	65403.455	0.0000	0.9936	0.3760	0.4132	1.5110	0.0150
L376	7.0918	153183.34	0.0001	0.9999	0.1860	0.7062	4.2397	0.0150
L386	26.9458	582029.11	0.0003	0.9998	0.2435	1.0916	11.0734	0.0150
L387	26.7188	577125.83	0.0005	0.9998	0.2476	1.0816	11.4131	0.0150
L388	2.0377	44013.732	0.0000	0.9999	0.4881	0.2501	0.7432	0.0150
L389	38.9629	841598.49	0.0006	0.9999	0.2277	1.2054	14.9935	0.0150
L390	1.4694	31737.996	0.0000	0.9999	0.4532	0.2659	0.6795	0.0150
L391	43.0605	930107.58	0.0008	0.9999	0.2486	1.2015	15.2754	0.0150
L392	52.0159	1123542.6	0.0009	0.9999	0.3028	1.2124	15.4681	0.0150
L393	51.6836	1116366.2	0.0040	0.9999	0.3087	1.2767	15.4457	0.0150

L395	3.8839	83893.067	0.0000	0.9999	0.3939	0.3083	1.1809	0.0150
L396	7.4938	161867.00	0.0001	0.9916	0.1742	0.8287	5.5704	0.0150
L397	4.1957	90626.440	0.0000	0.9999	0.4194	0.3083	1.1812	0.0150
L398	3.9603	85541.438	0.0000	0.9999	0.4622	0.3068	1.1580	0.0150
L399	3.6276	78355.921	0.0000	0.9997	0.3270	0.5361	2.1778	0.0150
L402	6.5188	140805.24	0.0001	0.9999	0.3784	0.4394	2.2185	0.0150
L403	6.4883	140147.07	0.0001	0.9998	0.3905	0.4376	2.2158	0.0150
L404	6.4284	138853.42	0.0001	0.9997	0.3954	0.4337	2.2058	0.0150
L405	4.4429	95965.676	0.0000	0.9999	0.3863	0.3721	1.6133	0.0150
L406	10.8019	233320.35	0.0001	0.9999	0.2915	0.6123	4.4640	0.0150
L407	3.5009	75618.808	0.0000	0.9999	0.4236	0.3116	1.1397	0.0150
L408	14.1919	306545.32	0.0001	0.9999	0.2988	0.6721	5.4361	0.0150
L410	17.9290	387266.42	0.0001	0.9998	0.3081	0.7310	6.4986	0.0150
L411	17.7983	384443.03	0.0001	0.9998	0.3038	0.7274	6.5126	0.0150
L413	2.0625	44550.435	0.0000	0.9999	0.3229	0.4053	1.3252	0.0150
L415	2.0786	44897.260	0.0000	0.9999	0.7245	0.2890	0.6162	0.0150
L417	2.6080	56333.548	0.0000	0.9999	0.5338	0.2511	0.7396	0.0150
L418	4.7312	102193.57	0.0000	0.9999	0.4054	0.3734	1.6196	0.0150
L419	7.3154	158011.71	0.0001	0.9999	0.3359	0.4949	2.8720	0.0150
L420	7.2498	156596.72	0.0001	0.9998	0.3290	0.4909	2.8723	0.0150
L421	1.5194	32819.668	0.0000	0.9999	0.3446	0.2449	0.7154	0.0150
L422	3.4792	75151.501	0.0000	0.9999	0.4081	0.3106	1.1424	0.0150
L423	12.3133	265967.64	0.0001	0.9999	0.3037	0.6128	4.5281	0.0150
L424	16.6861	360419.73	0.0001	0.9999	0.3175	0.6736	5.5070	0.0150
L425	0.8510	18381.830	0.0000	0.9999	0.2391	0.2385	0.7014	0.0150
L426	3.6317	78444.232	0.0000	0.9999	0.4117	0.3105	1.1483	0.0150
L427	36.0212	778057.36	0.0002	0.9999	0.3611	0.8583	9.0000	0.0150
L428	0.8579	18530.622	0.0000	0.9999	0.2700	0.2391	0.6945	0.0150
L429	37.5331	810715.98	0.0002	0.9999	0.3832	0.8577	9.1556	0.0150
L430	2.2409	48402.446	0.0000	0.9999	0.4426	0.2465	0.7378	0.0150
L431	2.0705	44723.525	0.0000	0.9999	0.4179	0.2459	0.7312	0.0150
L432	2.0844	45022.316	0.0000	0.9999	0.4358	0.2477	0.7324	0.0150
L435	2.6293	56791.926	0.0000	0.9999	0.5107	0.2487	0.7452	0.0150
L436	2.6120	56418.891	0.0000	0.9999	0.6552	0.2479	0.7431	0.0150
L437	2.6012	56186.768	0.0000	0.9998	0.3977	0.3084	1.1426	0.0150
L438	1.5281	33007.674	0.0000	0.9999	0.3698	0.2451	0.7213	0.0150
L439	4.1042	88651.163	0.0000	0.9999	0.6586	0.3132	1.1444	0.0150
L440	4.0758	88037.530	0.0000	0.9998	0.4566	0.4138	1.5486	0.0150
L441	43.1591	932237.64	0.0003	0.9999	0.5008	0.8747	9.1173	0.0150
L442	42.9809	928388.25	0.0003	0.9998	1.0423	0.9545	7.5477	0.0150
L443	42.9525	927774.63	0.0003	0.9998	2.7273	0.5620	2.7921	0.0150
L446	5.4178	117024.83	0.0000	0.9999	0.3801	0.3717	1.6596	0.0150
L448	0.8869	19156.016	0.0000	0.9999	0.2290	0.2396	0.7116	0.0150
L449	8.5897	185537.25	0.0001	0.9999	0.5012	0.4319	2.2699	0.0150
L450	12.0563	260416.71	0.0001	0.9999	0.6504	0.5006	2.9433	0.0150
L451	13.2578	286367.76	0.0001	0.9999	0.7539	0.5768	2.7056	0.0150
L452	1.1827	25546.933	0.0000	0.9999	0.3193	0.2427	0.7320	0.0150
L453	0.8524	18412.822	0.0000	0.9999	0.2590	0.2401	0.7311	0.0150
L454	0.6210	13413.686	0.0000	0.9999	0.4971	0.2289	0.3513	0.0150
L466	3.7085	80103.961	0.0000	0.9999	0.8251	0.3605	0.9006	0.0150
L468	3.6852	79599.538	0.0000	0.9998	0.4373	0.4932	1.6087	0.0150
L470	8.6783	187450.62	0.0001	0.9999	0.7881	0.4992	2.0811	0.0150
L471	0.3474	7504.7528	0.0000	0.9831	0.5722	0.1531	0.2116	0.0150
L472	4.0841	88215.739	0.0000	0.9999	0.9595	0.2488	0.7609	0.0150
L475	3.9872	86123.497	0.0000	0.9999	0.3892	0.3106	1.1616	0.0150
L478	16.2979	352033.98	0.0001	0.9999	0.4586	0.5547	3.7620	0.0150
L479	16.1684	349237.05	0.0001	0.9998	0.4176	0.6120	4.5818	0.0150
L487	9.8722	213240.00	0.0001	1.0000	0.3830	0.4375	2.4255	0.0150
L490	6.1449	132729.92	0.0000	0.9999	0.6293	0.5056	1.7927	0.0150
L493	16.0478	346632.58	0.0001	0.9998	0.4345	0.6190	4.5679	0.0150

L496	0.5532	11949.519	0.0000	0.9999	0.7084	0.1888	0.2418	0.0150
L497	0.5464	11801.478	0.0000	0.9999	0.7095	0.1879	0.2400	0.0150
L498	1.0973	23701.427	0.0000	0.9999	0.7680	0.2405	0.3750	0.0150
L499	1.5481	33438.572	0.0000	0.9999	0.2469	0.2449	0.7497	0.0150
L500	3.1149	67281.553	0.0000	0.9999	0.2765	0.3072	1.1791	0.0150
L501	11.2077	242086.71	0.0005	0.9998	0.2021	0.7269	6.6576	0.0150
L502	11.0439	238548.74	0.0020	0.9998	0.1560	0.8527	9.2135	0.0150
L503	65.9264	1424011.3	0.0007	0.9999	0.4257	1.3177	14.5024	0.0150
L504	66.3694	1433579.9	0.0021	0.9999	0.5297	1.3487	13.2766	0.0150
L505	9.6223	207841.41	0.0001	0.9999	0.4595	0.4325	2.2923	0.0150
L506	9.8627	213035.30	0.0001	0.9999	0.3956	0.4350	2.3433	0.0150
L507	3.4732	75020.575	0.0000	0.9999	0.9164	0.2534	0.7472	0.0150
L509	5.2005	112331.34	0.0000	0.9999	0.8248	0.3171	1.1528	0.0150
L510	4.6901	101305.22	0.0000	0.9999	2.0497	0.2753	0.5587	0.0150
L511	10.0945	218041.62	0.0001	0.9999	0.9348	0.3806	1.7098	0.0150
L512	16.3770	353742.98	0.0001	0.9998	3.3673	0.3644	1.0735	0.0150
L513	16.0665	347037.29	0.0001	0.9999	0.5285	0.6921	4.2739	0.0150
L514	7.3087	157868.61	0.0001	0.9999	0.3703	0.4327	2.2603	0.0150
L515	10.1266	218734.93	0.0001	0.9999	0.2338	0.8039	5.6075	0.0150
CH21	10.0954	218059.71	0.0001	0.9998	0.0396	0.7981	83.4113	0.0600
L474	8.6019	185802.10	0.0001	0.9997	0.7507	0.3691	1.6917	0.0150
L523	8.6098	185971.13	0.0001	0.9998	0.3429	0.6292	7.3404	0.0600
L525	15.3957	332546.64	0.0001	0.9937	0.2755	0.7877	6.3160	0.0150
L527	4.0905	88355.811	0.0000	0.9999	0.3313	0.3691	1.6503	0.0150
L528	4.2752	92345.064	0.0000	0.9998	0.6335	0.3106	1.1547	0.0150
L529	3.9619	85576.597	0.0000	0.9999	0.3389	0.3769	1.6496	0.0150
L533	3.9202	84676.945	0.0000	0.9999	0.3827	0.3698	1.6035	0.0150
L537	3.8700	83591.901	0.0000	0.9998	0.3105	0.3677	1.6405	0.0150
L394	51.4628	1111597.0	0.0028	1.0000	0.3120	1.3207	15.3181	0.0150
L276	2.8796	62199.768	0.0000	0.9999	3.3983	0.1814	0.2656	0.0150
L288	3.8042	82171.530	0.0000	0.9999	2.6947	0.2213	0.4025	0.0150
L412	2.0546	44379.536	0.0000	0.9999	0.9815	0.2712	0.4849	0.0150
L447	1.9321	41732.613	0.0000	0.9999	0.2121	0.3575	1.5792	0.0150
L546	3.4476	74468.454	0.0000	0.9941	0.4194	0.4185	1.4707	0.0150
FREE # 1	12.0893	261129.60						
FREE # 2	25.8159	557623.88						
FREE # 3	2.7462	59318.142						
FREE # 4	7.4522	160966.46						
FREE # 5	2.1081	45534.341						
FREE # 6	33.7061	728051.46						
FREE # 7	7.8416	169378.03						
FREE # 8	2.9783	64331.104						
FREE # 9	4.5929	99206.147						
FREE #10	2.3609	50994.837						
FREE #11	1.0514	22709.508						
FREE #12	2.9277	63237.299						
FREE #13	7.3991	159819.69						
FREE #14	7.0716	152746.82						
FREE #15	1.1754	25387.762						
FREE #16	27.4513	592947.75						
FREE #17	66.2785	1431614.8						
FREE #18	17.3530	374824.52						
FREE #19	42.9504	927729.10						
FREE #20	4.0840	88214.581						
FREE #21	5.2005	112331.24						
FREE #22	9.8706	213205.71						
FREE #23	16.3762	353724.94						
FREE #24	1.3992	30221.728						
FREE #25	8.6017	185796.09						
FREE #26	51.5008	1112417.6						

FREE #27	2.8795	62196.444
FREE #28	3.8040	82167.219
FREE #29	4.6901	101305.36
FREE #30	2.7834	60120.391

Table E13. Channel losses(H), headwater depth (HW), tailwater depth (TW), critical and normal depth (Yc and Yn). Use this section for culvert comparisons

Conduit Name	Maximum Flow	Head Loss	Friction Loss	Critical Depth	Normal Depth	HW Elevat	TW Elevat	
L210	2.8911	0.0000	0.6079	0.7287	1.0000	107.6026	106.9939	Max Flow
L211	3.1354	0.0000	4.1728	0.7586	1.0000	106.9939	102.8186	Max Flow
L212	3.2978	0.0000	2.2920	0.7315	0.9241	102.1159	100.2909	Max Flow
L213	2.4910	0.0000	0.6824	0.6759	0.8915	100.9511	100.2682	Max Flow
L214	5.3710	0.0000	0.3195	0.8928	1.2615	100.5880	100.2682	Max Flow
L217	0.9501	0.0000	0.4954	0.4086	0.4397	100.2872	99.7386	Max Flow
L220	11.2776	0.0000	2.1196	1.2514	1.7500	100.2909	98.1694	Max Flow
L221	13.2165	0.0000	1.7213	1.3077	2.0000	98.1694	96.2277	Max Flow
L222	13.3950	0.0000	5.1124	1.3167	0.7643	95.2324	90.1200	Max Flow
L223	0.2305	0.0000	0.1897	0.1969	0.2569	119.8642	119.6069	Max Flow
L224	0.2305	0.0000	0.6187	0.1969	0.2585	118.8903	118.0569	Max Flow
L225	0.2305	0.0000	0.6966	0.1969	0.2582	117.6596	117.5825	Max Flow
L226	0.9294	0.0000	0.9534	0.4040	0.5533	118.5578	118.1994	Max Flow
L227	1.5845	0.0000	0.6336	0.5338	0.8293	118.1994	117.5825	Max Flow
L228	2.4888	0.0000	2.6900	0.6756	1.0000	117.5825	114.7356	Max Flow
L229	2.9466	0.0000	1.5156	0.6896	1.0706	112.5184	110.5696	Max Flow
L230	3.4595	0.0000	1.5362	0.7504	1.2500	110.3694	108.8794	Max Flow
L231	3.8015	0.0000	1.8089	0.7879	1.2500	108.8794	107.0654	Max Flow
L232	6.0390	0.0000	1.3324	0.9490	1.5000	107.0654	105.7300	Max Flow
L233	6.3287	0.0000	2.2721	0.9722	1.5000	105.7300	103.4547	Max Flow
L234	9.4131	0.0000	0.9792	1.0955	1.5018	103.4547	102.4757	Max Flow
L235	0.4478	0.0000	0.1316	0.2768	0.3725	112.5280	112.5184	Max Flow
L236	2.1260	0.0000	0.4902	0.6226	1.0000	107.5518	107.0654	Max Flow
L237	3.0812	0.0000	0.9713	0.7520	1.0000	104.4244	103.4547	Max Flow
L238	3.6937	0.0000	0.7819	0.8182	1.0000	116.6523	115.8782	Max Flow
L239	4.0636	0.0000	2.0981	0.8520	1.0000	115.2808	113.1820	Max Flow
L240	1.2377	0.0000	0.4915	0.4691	0.5152	113.3534	112.7991	Max Flow
L241	5.3641	0.0000	2.7217	0.9383	1.2500	110.4620	107.7383	Max Flow
L242	1.8517	0.0000	0.3828	0.5793	0.6687	108.0733	107.6293	Max Flow
L243	2.4831	0.0000	0.6200	0.6748	0.8718	108.4472	107.7248	Max Flow
L246	24.3602	0.0000	1.9246	1.6806	2.5000	102.4757	100.5470	Max Flow
L247	28.8013	0.0000	0.5962	1.8288	2.5000	100.5470	99.9500	Max Flow
L248	1.9821	0.0000	0.1917	0.6006	0.7067	100.7386	100.5470	Max Flow
L249	1.5791	0.0000	0.4487	0.5329	0.6016	105.4930	104.8519	Max Flow
L250	2.9998	0.0000	4.9021	0.7420	0.3798	104.8520	99.9500	Max Flow
L251	1.3045	0.0000	0.4066	0.4824	0.5322	105.4057	104.8520	Max Flow
L252	0.1128	0.0000	1.9692	0.1356	0.1476	100.5085	99.2256	Max Flow
L253	1.7367	0.0000	0.4099	0.5604	0.6375	101.3835	100.9948	Max Flow
L254	1.7367	0.0000	2.2645	0.5604	0.6384	100.9948	99.2256	Max Flow
L255	3.9589	0.0000	0.3958	0.8048	1.2500	100.2825	99.9370	Max Flow
L256	4.7298	0.0000	0.9765	0.8353	1.1040	99.9370	99.2256	Max Flow
L257	6.6737	0.0000	1.3848	0.9991	1.5000	99.2256	97.8101	Max Flow
L258	0.8529	0.0000	0.5774	0.3860	0.4163	98.1213	97.8101	Max Flow
L259	7.8638	0.0000	1.1238	1.0393	1.7500	97.8101	96.0359	Max Flow
L260	8.0628	0.0000	4.7713	1.0532	0.4549	96.0359	90.1200	Max Flow
L261	0.9792	0.0000	0.6857	0.4149	0.4484	94.7428	93.7152	Max Flow

L262	2.3040	0.0000	7.7700	0.6492	0.2750	93.7152	79.2200	Max Flow
L263	1.1997	0.0000	0.6244	0.4615	0.5057	94.6677	93.7152	Max Flow
L264	3.7882	0.0000	0.4255	0.7864	1.0657	86.2987	85.7764	Max Flow
L265	22.4321	0.0000	0.6346	1.5228	2.6414	85.5082	84.7914	Max Flow
L266	23.3519	0.0000	0.5690	1.5560	3.0000	84.7914	83.9594	Max Flow
L267	0.8570	0.0000	0.3641	0.3870	0.4160	85.5616	85.1570	Max Flow
L268	2.6552	0.0000	0.5795	0.6980	1.0000	96.5563	95.9765	Max Flow
L269	2.9244	0.0000	2.2492	0.7327	1.0000	95.9765	93.7327	Max Flow
L270	27.4511	0.0000	3.6503	1.6932	1.4524	83.9594	80.3124	Max Flow
L271	27.4511	0.0000	1.2473	1.6138	1.8021	80.3124	79.1507	Max Flow
L272	37.8161	0.0000	0.0833	1.7668	2.9010	79.1507	79.0400	Max Flow
L273	9.4488	0.0000	0.4979	1.1432	1.7500	79.7003	79.1507	Max Flow
L274	8.5560	0.0000	9.9343	1.1323	0.5281	92.4485	78.9600	Max Flow
L275	1.5053	0.0000	0.6093	0.5200	0.5819	119.5380	118.6232	Max Flow
L277	1.5122	0.0000	0.6511	0.5212	0.5830	119.6050	118.6232	Max Flow
L278	1.5645	0.0000	0.2846	0.5304	0.5953	113.8338	113.5384	Max Flow
L279	3.2536	0.0000	4.0286	0.7719	0.5145	113.5384	109.5100	Max Flow
L280	1.5684	0.0000	0.2950	0.5310	0.5973	113.8459	113.5384	Max Flow
L281	3.4219	0.0000	1.5113	0.7905	1.0000	124.8193	122.6751	Max Flow
L282	5.0178	0.0000	8.2564	0.9172	0.3949	122.6751	113.5400	Max Flow
L283	1.4971	0.0000	0.6319	0.5185	0.5772	123.5619	122.6750	Max Flow
L284	1.5699	0.0000	1.1991	0.5313	0.5987	108.5194	108.3885	Max Flow
L285	2.5601	0.0000	0.7649	0.6059	0.7370	108.3889	108.2800	Max Flow
L286	1.1045	0.0000	0.0191	0.4131	0.4668	108.4000	108.3812	Max Flow
L287	1.8249	0.0000	0.6389	0.5749	0.6593	113.8197	113.0849	Max Flow
L289	2.2642	0.0000	0.7268	0.6435	0.7865	114.0002	113.1535	Max Flow
L290	0.1735	0.0000	1.7058	0.1697	0.1827	104.1135	102.0841	Max Flow
L291	0.4448	0.0000	2.1674	0.2758	0.2936	102.0841	99.9648	Max Flow
L292	1.1514	0.0000	1.2948	0.4517	0.2725	99.9648	98.6700	Max Flow
L294	1.4027	0.0000	0.4750	0.5008	0.5547	92.3207	92.1556	Max Flow
L300	5.3497	0.0000	0.8098	0.8909	1.2437	92.9456	92.1556	Max Flow
L301	1.8664	0.0000	0.3401	0.5817	0.6689	93.1449	92.9456	Max Flow
L302	11.8253	0.0000	1.0392	1.1904	1.8290	92.1556	91.1164	Max Flow
L303	0.8511	0.0000	0.4764	0.3856	0.4161	93.1937	93.1319	Max Flow
L304	2.4623	0.0000	0.4549	0.6718	0.8785	91.4767	90.9418	Max Flow
L305	3.3133	0.0000	0.4741	0.6930	0.8565	93.1319	92.9456	Max Flow
L306	2.8190	0.0000	0.4590	0.7198	0.7625	99.1211	98.6623	Max Flow
L307	3.0397	0.0000	0.0224	0.6073	0.5327	98.6623	98.6400	Max Flow
L308	3.1961	0.0000	0.1205	0.6801	0.6691	98.7602	98.6400	Max Flow
L309	2.6934	0.0000	0.4187	0.7031	0.7338	99.1786	98.7602	Max Flow
L310	1.6006	0.0000	0.3592	0.5367	0.6019	110.9382	110.7767	Max Flow
L311	1.6006	0.0000	2.2948	0.5367	0.6040	110.7767	109.7243	Max Flow
L312	1.2821	0.0000	0.3488	0.4781	0.5238	109.8263	109.7243	Max Flow
L313	2.9996	0.0000	5.3594	0.7420	1.0000	109.7243	104.3342	Max Flow
L314	1.2826	0.0000	0.5269	0.4782	0.5278	104.4885	104.3342	Max Flow
L315	1.6227	0.0000	0.4189	0.5405	0.6069	105.5303	105.2177	Max Flow
L316	1.6227	0.0000	1.6834	0.5405	0.6114	105.2177	104.3342	Max Flow
L317	6.1968	0.0000	1.3801	0.9620	1.5000	104.3342	102.9537	Max Flow
L318	6.1968	0.0000	1.2767	0.9620	1.5000	102.9537	101.6653	Max Flow
L319	8.1961	0.0000	0.4784	1.1083	1.5000	101.6653	101.1083	Max Flow
L320	1.8839	0.0000	0.3882	0.5845	0.6763	101.8613	101.5980	Max Flow
L321	0.5084	0.0000	1.1070	0.2951	0.3909	119.2319	118.5578	Max Flow
L324	1.7090	0.0000	0.6974	0.5556	0.6319	122.9823	122.6221	Max Flow
L325	1.6252	0.0000	0.3550	0.5410	0.6113	121.6390	121.4735	Max Flow
L326	1.9616	0.0000	0.6866	0.5973	0.6946	120.4752	120.0079	Max Flow
L327	2.2136	0.0000	0.6821	0.6360	0.7690	120.5972	120.0079	Max Flow
L328	7.8187	0.0000	2.8098	1.0831	1.5000	120.0079	116.3779	Max Flow
L329	7.8187	0.0000	2.5979	1.0831	0.6393	116.3779	113.7800	Max Flow
L334	0.4265	0.0000	2.1319	0.2696	0.2878	125.6081	123.3977	Max Flow
L335	0.8586	0.0000	1.9033	0.3874	0.4174	123.3977	121.3926	Max Flow

L336	1.2917	0.0000	0.6739	0.4800	0.5278	121.3926	120.3681	Max Flow
L337	1.2917	0.0000	3.7385	0.4800	0.2780	120.3681	116.1200	Max Flow
L338	21.2501	0.0000	0.1889	1.4803	2.5058	128.4056	128.2437	Max Flow
L339	21.2501	0.0000	0.5107	1.4803	2.4674	128.2437	127.6447	Max Flow
L340	30.1672	0.0000	0.4769	1.6963	3.0203	127.6447	127.0548	Max Flow
L341	30.1672	0.0000	0.3143	1.6963	3.1122	127.0548	126.5963	Max Flow
L342	4.5877	0.0000	0.4878	0.8677	1.2500	128.9836	128.3977	Max Flow
L343	2.6326	0.0000	0.6387	0.6950	1.0000	129.2163	128.4750	Max Flow
L344	12.3448	0.0000	0.1778	1.1787	1.7338	126.9885	126.9314	Max Flow
L346	25.6939	0.0000	0.1231	1.5597	2.4817	126.7339	126.6880	Max Flow
L347	56.6716	0.0000	0.8042	2.2641	4.0000	126.6751	125.9315	Max Flow
L348	56.4043	0.0000	0.7584	2.2586	4.0000	125.9323	125.1602	Max Flow
L349	56.3438	0.0000	0.7745	2.2574	4.0000	125.1604	124.3627	Max Flow
L350	56.3403	0.0000	0.2351	2.2573	4.0000	124.3628	124.1181	Max Flow
L351	8.2541	0.0000	0.1140	1.0228	1.4579	124.4568	124.3900	Max Flow
L352	8.2546	0.0000	0.4384	1.0228	1.4508	124.3900	124.1181	Max Flow
L354	74.2712	0.0000	0.2999	2.5159	2.1242	122.1708	122.1000	Max Flow
L361	2.3115	0.0000	0.3204	0.6503	0.8093	126.2886	125.9103	Max Flow
L362	2.1598	0.0000	0.4193	0.6278	0.7572	126.3794	125.8878	Max Flow
L363	4.5228	0.0000	1.3924	0.8156	1.0642	125.8395	124.5395	Max Flow
L364	2.6496	0.0000	0.3554	0.6973	1.0000	124.9752	124.5573	Max Flow
L365	1.6367	0.0000	0.3775	0.5430	0.6119	124.8582	124.5395	Max Flow
L366	9.8099	0.0000	0.9577	1.1200	1.7285	124.5395	123.5625	Max Flow
L367	9.8099	0.0000	1.0227	1.1200	1.7295	123.5625	122.2300	Max Flow
L368	2.2786	0.0000	0.7472	0.6456	0.7929	123.6271	122.7556	Max Flow
L369	3.4945	0.0000	1.2617	0.7986	1.0000	124.1512	122.9086	Max Flow
L370	19.1219	0.0000	0.4613	1.4008	2.2211	121.9924	121.3975	Max Flow
L373	19.1219	0.0000	0.3114	1.4008	1.0725	121.3975	121.5100	Max Flow
L374	3.3514	0.0000	1.8661	0.7827	1.0000	120.8308	118.9627	Max Flow
L375	3.3514	0.0000	0.6264	0.6972	1.5000	118.9042	118.0079	Max Flow
L376	12.3893	0.0680	0.1781	1.1464	1.6838	119.0153	118.8323	Max Flow
L386	34.7255	0.0000	0.2575	1.7529	3.0379	118.7270	118.4705	Max Flow
L387	34.7101	0.0000	0.2831	1.7525	3.0486	118.4705	118.2069	Max Flow
L388	2.2295	0.0000	0.5983	0.6385	1.0000	118.0355	117.3387	Max Flow
L389	48.4170	0.0000	0.2962	2.0107	3.6977	118.2069	117.9109	Max Flow
L390	1.6081	0.0000	0.4428	0.5380	0.7072	117.6979	117.1560	Max Flow
L391	53.2573	0.0000	0.4920	2.1131	4.5000	117.9109	117.4431	Max Flow
L392	63.4431	0.0000	0.5079	2.3162	4.5000	117.4431	116.9259	Max Flow
L393	63.4322	0.0000	0.7314	2.3160	4.5000	116.9260	116.3132	Max Flow
L395	4.2402	0.0000	0.6734	0.8335	0.6572	119.4190	119.1388	Max Flow
L396	8.3420	0.0000	0.4918	0.9090	1.3079	119.2126	119.1388	Max Flow
L397	4.5805	0.0000	0.5730	0.8670	0.7108	119.5102	119.1373	Max Flow
L398	4.3231	0.0000	0.8171	0.8420	0.6588	118.5053	118.2214	Max Flow
L399	4.0411	0.0000	0.6930	0.7043	0.9140	118.5975	118.2241	Max Flow
L402	7.1188	0.0000	0.2434	0.9866	1.4060	113.6518	113.4140	Max Flow
L403	7.1191	0.0000	1.1036	0.9866	1.4210	113.4140	112.2979	Max Flow
L404	7.1280	0.0000	1.1163	0.9872	1.4122	112.2983	111.0825	Max Flow
L405	4.8549	0.0000	0.3254	0.8468	1.1311	111.3924	110.9768	Max Flow
L406	11.9729	0.0000	0.6417	1.1597	1.7166	112.4791	112.0680	Max Flow
L407	3.8256	0.0000	0.3887	0.7905	1.0955	111.0297	110.5505	Max Flow
L408	15.7980	0.0000	0.5961	1.3024	2.0080	112.0680	111.6343	Max Flow
L410	20.1364	0.0000	0.5381	1.4401	2.3383	111.6343	111.1574	Max Flow
L411	20.1364	0.0000	0.4096	1.4401	2.3489	111.1574	110.7941	Max Flow
L413	2.2672	0.0000	1.3421	0.5682	0.6794	119.4822	119.2520	Max Flow
L415	2.2700	0.0000	0.3536	0.6444	0.7489	119.5278	119.1244	Max Flow
L417	2.8494	0.0000	0.5217	0.7235	1.0000	112.5021	111.9035	Max Flow
L418	5.1688	0.0000	0.3289	0.8748	1.2081	113.1916	112.9610	Max Flow
L419	8.0182	0.0000	0.6050	1.0071	1.4169	112.9610	112.5301	Max Flow
L420	8.0182	0.0000	0.9397	1.0071	1.4176	112.5301	111.8621	Max Flow
L421	1.6631	0.0000	0.4105	0.5476	0.6182	110.6689	110.2152	Max Flow

L422	3.8019	0.0000	0.4123	0.7879	1.0644	112.2083	111.8621	Max Flow
L423	13.6466	0.0000	0.6966	1.2419	1.9032	111.8621	111.2807	Max Flow
L424	18.5464	0.0000	0.5379	1.4164	2.3829	111.2807	110.7941	Max Flow
L425	0.9317	0.0000	0.4054	0.4045	0.4363	111.3435	111.2807	Max Flow
L426	3.9681	0.0000	0.3930	0.8057	1.2500	111.6425	111.2807	Max Flow
L427	40.5902	0.0000	1.0434	1.9812	3.5000	110.7941	109.7503	Max Flow
L428	0.9393	0.0000	0.4988	0.4062	0.4397	109.8312	109.7503	Max Flow
L429	42.4776	0.0000	0.8860	2.0284	3.5000	109.7503	108.8835	Max Flow
L430	2.4510	0.0000	0.7702	0.6702	0.7134	120.8238	120.2589	Max Flow
L431	2.2829	0.0000	2.4872	0.6462	0.7939	122.5716	120.2468	Max Flow
L432	2.2800	0.0000	0.5308	0.6458	0.7922	123.0519	122.5604	Max Flow
L435	2.8727	0.0000	0.7704	0.7264	1.0000	116.1803	115.4093	Max Flow
L436	2.8741	0.0000	2.7382	0.7266	1.0000	115.4093	112.6913	Max Flow
L437	2.8724	0.0000	1.3705	0.6804	0.8304	112.8384	112.0501	Max Flow
L438	1.6722	0.0000	0.5063	0.5492	0.6236	112.3084	112.0515	Max Flow
L439	4.5570	0.0000	2.5013	0.8648	1.2500	112.0515	109.5681	Max Flow
L440	4.5523	0.0000	1.3289	0.8185	1.0723	109.7789	108.8835	Max Flow
L441	48.9390	0.0000	1.1723	2.1842	3.5000	108.8835	107.6629	Max Flow
L442	48.9390	0.0000	1.6389	2.1842	3.5000	107.6629	105.0976	Max Flow
L443	48.9390	0.0000	5.2572	2.1842	0.9872	105.0976	98.6700	Max Flow
L446	5.9168	0.0000	0.2542	0.9388	1.5000	129.7527	129.4984	Max Flow
L448	0.9708	0.0000	0.4571	0.4131	0.4472	128.2210	128.1440	Max Flow
L449	9.5085	0.0000	2.1422	1.1469	1.7500	128.1440	126.0007	Max Flow
L450	13.3913	0.0000	1.8254	1.3165	2.0000	126.0007	123.9765	Max Flow
L451	14.7194	0.0000	0.4727	1.3819	2.0000	120.4426	119.8419	Max Flow
L452	1.2925	0.0000	0.2889	0.4802	0.5291	126.0884	126.0007	Max Flow
L453	0.9323	0.0000	0.3450	0.4046	0.4391	126.0559	126.0007	Max Flow
L454	0.6805	0.0000	0.4067	0.3432	0.3671	120.4709	120.2912	Max Flow
L466	4.0513	0.0000	0.6115	0.8142	0.9291	120.8206	120.1342	Max Flow
L468	4.0501	0.0000	0.9920	0.7051	0.9527	119.5312	118.5980	Max Flow
L470	9.4830	0.0000	0.8187	1.1453	1.7500	123.4952	122.3558	Max Flow
L471	0.3817	0.0000	1.3528	0.2545	0.2559	125.0264	123.4952	Max Flow
L472	4.4576	0.0000	1.0741	0.8830	1.0000	128.1166	127.0400	Max Flow
L475	4.3583	0.0000	0.5802	0.8456	1.2500	92.7363	92.1556	Max Flow
L478	18.0903	0.0000	2.1550	1.4859	2.2500	91.1164	88.9568	Max Flow
L479	18.0903	0.0000	1.5091	1.4395	2.5000	88.9568	87.4472	Max Flow
L487	10.7713	0.0000	0.9916	1.2224	0.7903	99.2136	98.2300	Max Flow
L490	6.7173	0.0000	0.3686	0.9567	1.7500	111.3361	110.8167	Max Flow
L493	18.0903	0.0000	1.1872	1.4395	2.5000	87.4472	86.2850	Max Flow
L496	0.6064	0.0000	2.1620	0.3236	0.3457	133.7961	131.6772	Max Flow
L497	0.5989	0.0000	2.1833	0.3217	0.3435	133.8039	131.6772	Max Flow
L498	1.2053	0.0000	0.5699	0.4626	0.5070	131.6772	131.1070	Max Flow
L499	1.7090	0.0000	1.1481	0.5556	1.0000	122.6221	121.4735	Max Flow
L500	3.4454	0.0000	1.4629	0.7488	1.2500	121.4735	120.0079	Max Flow
L501	12.3990	0.0000	0.5526	1.1168	1.6430	126.9276	126.7686	Max Flow
L502	12.6211	0.0000	0.2344	1.0767	1.6224	126.7735	126.6801	Max Flow
L503	73.4514	0.0000	0.7134	2.5009	4.5000	124.1182	123.3487	Max Flow
L504	74.2709	0.0000	0.9244	2.5159	4.5000	123.3488	122.1708	Max Flow
L505	10.5969	0.0000	2.3107	1.2124	1.7500	107.2387	104.9238	Max Flow
L506	10.8984	0.0000	2.4421	1.2297	1.7500	104.9238	102.4757	Max Flow
L507	3.7981	0.0000	2.1829	0.8284	1.0000	94.2928	92.1084	Max Flow
L509	5.6849	0.0000	1.3845	0.9649	1.2500	109.8299	108.4649	Max Flow
L510	5.1173	0.0000	4.5235	0.9167	0.4464	102.7535	98.2300	Max Flow
L511	11.0354	0.0000	2.5525	1.2707	1.5000	112.4350	109.8807	Max Flow
L512	17.9041	0.0000	10.5314	1.5241	0.6463	108.7618	98.2300	Max Flow
L513	18.2188	0.0000	0.6540	1.4448	2.5000	86.2850	85.5082	Max Flow
L514	8.0432	0.0000	1.3537	1.0519	1.7500	129.4984	128.1440	Max Flow
L515	15.8009	0.0000	0.1400	1.2675	1.9143	118.8323	118.7269	Max Flow
CH21	12.6092	0.0000	0.7628	0.0670	0.2925	119.0231	119.0154	Max Flow
L474	9.4830	0.0000	1.3681	1.1890	1.5000	120.8720	119.5000	Max Flow

L523	9.4830	0.0000	0.7137	0.3970	0.9455	122.3558	121.2270	Max Flow
L525	17.1495	0.0000	0.6006	1.3242	2.0427	119.1388	118.7076	Max Flow
L527	4.5196	0.0000	1.1340	0.8153	1.0804	119.2521	118.1927	Max Flow
L528	4.7390	0.0000	3.2766	0.8821	1.2500	120.2464	116.9384	Max Flow
L529	4.3384	0.0000	0.6401	0.7981	1.5000	114.9266	114.2861	Max Flow
L533	4.3384	0.0000	2.4128	0.7981	1.0336	114.2861	112.6510	Max Flow
L537	4.3384	0.0000	1.0160	0.7981	1.5000	112.6510	111.6343	Max Flow
L394	63.4308	0.0000	0.4493	2.3159	4.5000	116.3132	116.1200	Max Flow
L276	3.1462	0.0000	6.2093	0.7600	0.3231	118.6232	110.3800	Max Flow
L288	4.1590	0.0000	4.3114	0.8252	0.3816	112.6514	108.3400	Max Flow
L412	2.2432	0.0000	0.6001	0.6405	0.6067	119.6067	119.0067	Max Flow
L447	2.1264	0.0000	1.3135	0.5499	0.6604	129.7121	129.4984	Max Flow
L546	3.7980	0.0000	3.3199	0.7444	0.7912	92.0791	91.1164	Max Flow

Table E13a. CULVERT ANALYSIS CLASSIFICATION, and the time the culvert was in a particular classification during the simulation. The time is in minutes. The Dynamic Wave Equation is used for all conduit analysis but the culvert flow classification condition is based on the HW and TW depths.

Conduit Name	Critical D Outlet Control	Mild Slope Slope TW Control Outlet	Steep Slope TW Insignf Entrance Control	Slug Flow Outlet/ Entrance Control	Mild Slope TW > D Outlet Control	Mild Slope TW <= D Outlet Control	Outlet Control	Inlet Control	Inlet Configuration
L210	0.0000	58.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L211	20.0000	35.0000	0.0000	0.0000	0.0000	0.0000	305.0000	0.0000	None
L212	19.0000	40.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L213	0.0000	49.0000	0.0000	0.0000	311.0000	0.0000	0.0000	0.0000	None
L214	0.0000	49.0000	0.0000	0.0000	311.0000	0.0000	0.0000	0.0000	None
L217	290.0000	70.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L220	11.0000	47.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L221	258.0000	102.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L222	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L223	246.0000	114.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L224	281.0000	79.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L225	38.0000	52.0000	3.0000	0.0000	267.0000	0.0000	0.0000	0.0000	None
L226	0.0000	65.0000	0.0000	0.0000	295.0000	0.0000	0.0000	0.0000	None
L227	37.0000	24.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L228	20.0000	35.0000	0.0000	0.0000	0.0000	0.0000	305.0000	0.0000	None
L229	318.0000	42.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L230	40.0000	320.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L231	28.0000	43.0000	0.0000	0.0000	288.0000	0.0000	1.0000	0.0000	None
L232	21.0000	46.0000	0.0000	0.0000	293.0000	0.0000	0.0000	0.0000	None
L233	13.0000	33.0000	4.0000	0.0000	310.0000	0.0000	0.0000	0.0000	None
L234	0.0000	30.0000	1.0000	0.0000	329.0000	0.0000	0.0000	0.0000	None
L235	11.0000	52.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L236	4.0000	54.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L237	0.0000	47.0000	0.0000	0.0000	313.0000	0.0000	0.0000	0.0000	None
L238	8.0000	352.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L239	18.0000	32.0000	0.0000	0.0000	0.0000	0.0000	310.0000	0.0000	None
L240	291.0000	69.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L241	20.0000	35.0000	0.0000	0.0000	0.0000	0.0000	305.0000	0.0000	None

L242	220.0000	140.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L243	88.0000	272.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L246	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L247	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L248	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L249	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L250	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L251	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L252	9.0000	51.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L253	15.0000	345.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L254	18.0000	42.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L255	1.0000	359.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L256	7.0000	53.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L257	12.0000	348.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L258	3.0000	357.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L259	357.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L260	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L261	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L262	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L263	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L264	290.0000	70.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L265	2.0000	358.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L266	337.0000	23.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L267	235.0000	125.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L268	7.0000	48.0000	0.0000	0.0000	305.0000	0.0000	0.0000	0.0000	None
L269	39.0000	23.0000	0.0000	0.0000	0.0000	0.0000	298.0000	0.0000	None
L270	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L271	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L272	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L273	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L274	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L275	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L277	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L278	34.0000	326.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L279	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L280	35.0000	325.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L281	53.0000	0.0000	0.0000	0.0000	0.0000	0.0000	307.0000	0.0000	None
L282	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L283	359.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L284	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L285	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L286	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L287	279.0000	81.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L289	233.0000	127.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L290	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L291	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L292	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L294	1.0000	57.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L300	31.0000	27.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L301	1.0000	59.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L302	4.0000	50.0000	0.0000	0.0000	306.0000	0.0000	0.0000	0.0000	None
L303	2.0000	60.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L304	0.0000	62.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L305	3.0000	57.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L306	0.0000	0.0000	0.0000	0.0000	314.0000	46.0000	0.0000	0.0000	None
L307	0.0000	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	None
L308	0.0000	0.0000	0.0000	0.0000	4.0000	356.0000	0.0000	0.0000	None
L309	0.0000	0.0000	0.0000	0.0000	313.0000	47.0000	0.0000	0.0000	None
L310	7.0000	57.0000	0.0000	0.0000	296.0000	0.0000	0.0000	0.0000	None
L311	6.0000	48.0000	0.0000	0.0000	306.0000	0.0000	0.0000	0.0000	None

L312	8.0000	46.0000	0.0000	0.0000	306.0000	0.0000	0.0000	0.0000	None
L313	20.0000	38.0000	0.0000	0.0000	297.0000	0.0000	5.0000	0.0000	None
L314	1.0000	62.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L315	12.0000	348.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L316	23.0000	40.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L317	10.0000	57.0000	0.0000	0.0000	293.0000	0.0000	0.0000	0.0000	None
L318	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L319	276.0000	84.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L320	1.0000	359.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L321	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L324	9.0000	39.0000	0.0000	0.0000	312.0000	0.0000	0.0000	0.0000	None
L325	1.0000	43.0000	0.0000	0.0000	316.0000	0.0000	0.0000	0.0000	None
L326	1.0000	39.0000	0.0000	0.0000	320.0000	0.0000	0.0000	0.0000	None
L327	1.0000	39.0000	0.0000	0.0000	320.0000	0.0000	0.0000	0.0000	None
L328	48.0000	0.0000	0.0000	0.0000	0.0000	0.0000	312.0000	0.0000	None
L329	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L334	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L335	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L336	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L337	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L338	4.0000	356.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L339	11.0000	349.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L340	6.0000	354.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L341	87.0000	273.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L342	291.0000	69.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L343	285.0000	75.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L344	4.0000	61.0000	0.0000	0.0000	295.0000	0.0000	0.0000	0.0000	None
L346	0.0000	57.0000	0.0000	0.0000	303.0000	0.0000	0.0000	0.0000	None
L347	6.0000	54.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L348	3.0000	61.0000	0.0000	0.0000	296.0000	0.0000	0.0000	0.0000	None
L349	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L350	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L351	3.0000	357.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L352	32.0000	328.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L354	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	None
L361	295.0000	65.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L362	80.0000	280.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L363	15.0000	345.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L364	291.0000	69.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L365	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L366	9.0000	351.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L367	143.0000	217.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L368	253.0000	107.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L369	289.0000	71.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L370	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L373	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	None
L374	3.0000	42.0000	2.0000	0.0000	80.0000	0.0000	233.0000	0.0000	None
L375	63.0000	282.0000	2.0000	0.0000	13.0000	0.0000	0.0000	0.0000	None
L376	6.0000	286.0000	0.0000	55.0000	13.0000	0.0000	0.0000	0.0000	None
L386	4.0000	254.0000	0.0000	0.0000	102.0000	0.0000	0.0000	0.0000	None
L387	3.0000	213.0000	0.0000	0.0000	144.0000	0.0000	0.0000	0.0000	None
L388	16.0000	121.0000	0.0000	0.0000	223.0000	0.0000	0.0000	0.0000	None
L389	0.0000	196.0000	0.0000	0.0000	164.0000	0.0000	0.0000	0.0000	None
L390	10.0000	159.0000	0.0000	0.0000	191.0000	0.0000	0.0000	0.0000	None
L391	0.0000	217.0000	0.0000	0.0000	143.0000	0.0000	0.0000	0.0000	None
L392	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L393	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L395	0.0000	0.0000	10.0000	34.0000	0.0000	313.0000	3.0000	0.0000	None
L396	0.0000	211.0000	2.0000	0.0000	147.0000	0.0000	0.0000	0.0000	None
L397	0.0000	0.0000	10.0000	35.0000	0.0000	312.0000	3.0000	0.0000	None

L398	0.0000	0.0000	12.0000	26.0000	0.0000	300.0000	22.0000	0.0000	None
L399	15.0000	192.0000	0.0000	0.0000	153.0000	0.0000	0.0000	0.0000	None
L402	4.0000	79.0000	0.0000	0.0000	277.0000	0.0000	0.0000	0.0000	None
L403	10.0000	71.0000	0.0000	0.0000	279.0000	0.0000	0.0000	0.0000	None
L404	21.0000	56.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L405	1.0000	76.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L406	10.0000	61.0000	0.0000	0.0000	289.0000	0.0000	0.0000	0.0000	None
L407	1.0000	70.0000	0.0000	0.0000	289.0000	0.0000	0.0000	0.0000	None
L408	9.0000	58.0000	0.0000	0.0000	293.0000	0.0000	0.0000	0.0000	None
L410	12.0000	52.0000	0.0000	0.0000	296.0000	0.0000	0.0000	0.0000	None
L411	7.0000	55.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L413	1.0000	65.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L415	89.0000	258.0000	0.0000	0.0000	13.0000	0.0000	0.0000	0.0000	None
L417	5.0000	72.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L418	0.0000	77.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L419	10.0000	64.0000	0.0000	0.0000	286.0000	0.0000	0.0000	0.0000	None
L420	16.0000	50.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L421	0.0000	66.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L422	1.0000	65.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L423	9.0000	54.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L424	16.0000	46.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L425	0.0000	63.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L426	1.0000	62.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L427	0.0000	66.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L428	3.0000	63.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L429	0.0000	73.0000	0.0000	0.0000	287.0000	0.0000	0.0000	0.0000	None
L430	2.0000	5.0000	31.0000	0.0000	315.0000	0.0000	7.0000	0.0000	None
L431	16.0000	38.0000	0.0000	0.0000	306.0000	0.0000	0.0000	0.0000	None
L432	15.0000	46.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L435	11.0000	45.0000	0.0000	0.0000	304.0000	0.0000	0.0000	0.0000	None
L436	20.0000	41.0000	0.0000	0.0000	267.0000	0.0000	32.0000	0.0000	None
L437	0.0000	59.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L438	2.0000	57.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L439	28.0000	68.0000	0.0000	0.0000	0.0000	0.0000	264.0000	0.0000	None
L440	33.0000	40.0000	0.0000	0.0000	287.0000	0.0000	0.0000	0.0000	None
L441	13.0000	347.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L442	358.0000	2.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L443	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L446	2.0000	56.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L448	0.0000	56.0000	0.0000	0.0000	304.0000	0.0000	0.0000	0.0000	None
L449	11.0000	50.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L450	210.0000	150.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L451	192.0000	168.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L452	2.0000	59.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L453	2.0000	59.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L454	2.0000	358.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L466	196.0000	164.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L468	10.0000	350.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L470	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L471	0.0000	23.0000	6.0000	0.0000	331.0000	0.0000	0.0000	0.0000	None
L472	0.0000	51.0000	0.0000	0.0000	309.0000	0.0000	0.0000	0.0000	None
L475	1.0000	57.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L478	12.0000	51.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L479	11.0000	55.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L487	0.0000	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	None
L490	288.0000	72.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L493	7.0000	353.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L496	4.0000	356.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L497	4.0000	356.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L498	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None

L499	11.0000	33.0000	0.0000	0.0000	316.0000	0.0000	0.0000	0.0000	None
L500	6.0000	34.0000	0.0000	0.0000	320.0000	0.0000	0.0000	0.0000	None
L501	12.0000	48.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L502	1.0000	56.0000	0.0000	0.0000	303.0000	0.0000	0.0000	0.0000	None
L503	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L504	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L505	20.0000	35.0000	0.0000	0.0000	305.0000	0.0000	0.0000	0.0000	None
L506	1.0000	30.0000	0.0000	0.0000	329.0000	0.0000	0.0000	0.0000	None
L507	4.0000	47.0000	0.0000	0.0000	0.0000	0.0000	309.0000	0.0000	None
L509	297.0000	63.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L510	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L511	7.0000	37.0000	0.0000	0.0000	0.0000	0.0000	316.0000	0.0000	None
L512	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L513	20.0000	340.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L514	8.0000	48.0000	0.0000	0.0000	304.0000	0.0000	0.0000	0.0000	None
L515	4.0000	289.0000	0.0000	0.0000	67.0000	0.0000	0.0000	0.0000	None
CH21	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L474	0.0000	57.0000	0.0000	0.0000	303.0000	0.0000	0.0000	0.0000	None
L523	300.0000	60.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L525	4.0000	144.0000	2.0000	0.0000	210.0000	0.0000	0.0000	0.0000	None
L527	3.0000	43.0000	0.0000	0.0000	314.0000	0.0000	0.0000	0.0000	None
L528	41.0000	20.0000	0.0000	0.0000	143.0000	0.0000	156.0000	0.0000	None
L529	9.0000	75.0000	0.0000	0.0000	276.0000	0.0000	0.0000	0.0000	None
L533	12.0000	54.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L537	36.0000	31.0000	0.0000	0.0000	293.0000	0.0000	0.0000	0.0000	None
L394	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L276	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L288	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L412	0.0000	1.0000	58.0000	0.0000	0.0000	0.0000	301.0000	0.0000	None
L447	2.0000	56.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L546	14.0000	39.0000	1.0000	0.0000	306.0000	0.0000	0.0000	0.0000	None

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| Kinematic Wave Approximations |
| Time in Minutes for Each Condition |
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Conduit Name	Duration of Normal Flow	Slope Criteria	Super-Critical	Roll Waves
L210	0.0000	0.0000	0.0000	0.0000
L211	0.0000	0.0000	0.9833	0.0000
L212	0.5161	303.9355	2.9000	0.0000
L213	0.0000	17.6164	0.0000	0.0000
L214	0.1613	37.9102	0.0000	0.0000
L217	0.0000	0.0000	0.7500	0.0000
L220	0.0000	0.2500	1.0500	0.0000
L221	0.0000	0.2500	1.3542	0.0000
L222	41.0357	359.7500	347.4357	0.0000
L223	0.0000	0.0000	3.7500	0.0000
L224	0.0000	0.0000	0.5000	0.0000
L225	6.8065	302.6774	5.1694	0.0000
L226	34.4367	360.0000	3.3900	0.0000
L227	0.0323	302.8387	3.6400	0.0000
L228	0.0000	2.2708	2.2708	0.0000
L229	0.0000	0.2500	1.8192	0.0000
L230	0.0000	0.0000	0.0000	0.0000
L231	0.0000	0.0000	0.2500	0.0000
L232	0.0000	0.5000	1.4500	0.0000
L233	0.0000	21.2270	0.7500	0.0000

L234	0.9917	355.6792	0.0000	0.0000
L235	0.0000	346.0952	6.3529	0.0000
L236	0.0000	0.0000	0.0000	0.0000
L237	0.0690	3.2759	0.0000	0.0000
L238	0.0000	0.0000	0.0000	0.0000
L239	0.0000	0.0000	0.5000	0.0000
L240	0.0000	0.0000	0.7500	0.0000
L241	0.0000	0.5000	1.9167	0.0000
L242	0.0000	0.0000	0.0000	0.0000
L243	0.0000	0.0000	0.0000	0.0000
L246	0.2500	37.5268	0.0000	0.0000
L247	0.0000	32.1597	0.0000	0.0000
L248	0.0000	358.0608	0.0000	0.0000
L249	0.0000	0.0000	0.2500	0.0000
L250	47.9310	360.0000	355.1250	0.0000
L251	0.0000	0.0000	0.5000	0.0000
L252	343.2727	343.4091	4.0000	0.0000
L253	0.0000	302.4762	3.9375	0.0000
L254	21.4158	323.7037	1.3667	0.0000
L255	0.0000	0.0000	0.0000	0.0000
L256	0.0000	349.6316	3.9200	0.0000
L257	0.0000	0.7500	2.5208	0.0000
L258	0.0000	319.0357	1.0000	0.0000
L259	0.0000	0.2500	321.6173	0.0000
L260	359.7500	359.7500	350.5009	0.0000
L261	0.0000	0.0000	0.5000	0.0000
L262	360.0000	360.0000	354.6250	0.0000
L263	0.0000	0.0000	1.6667	0.0000
L264	0.0000	0.0000	0.0000	0.0000
L265	0.0000	5.5727	0.9000	0.0000
L266	2.7300	4.4375	1.0000	0.0000
L267	0.0000	0.0000	1.0000	0.0000
L268	0.0333	44.0333	2.4583	0.0000
L269	0.0000	0.0000	0.7500	0.0000
L270	52.4667	359.5000	341.7727	0.0000
L271	0.0000	355.7631	0.0000	0.0000
L272	0.0000	36.0971	0.0000	0.0000
L273	0.2500	38.4223	0.0000	0.0000
L274	359.7500	359.7500	356.8200	0.0000
L275	0.0000	0.0000	0.5000	0.0000
L277	0.0000	0.0000	0.7500	0.0000
L278	0.0000	0.0000	0.7500	0.0000
L279	23.1667	360.0000	353.0588	0.0000
L280	0.0000	0.0000	1.0000	0.0000
L281	0.0000	0.0000	352.4167	0.0000
L282	360.0000	360.0000	357.2292	0.0000
L283	0.0000	0.0000	0.5000	0.0000
L284	0.0000	357.8583	0.0000	0.0000
L285	0.0000	357.7000	0.0000	0.0000
L286	0.0000	357.6683	0.0000	0.0000
L287	0.0000	0.0000	0.0000	0.0000
L289	0.0000	0.0000	0.0000	0.0000
L290	355.6250	355.6250	0.0000	0.0000
L291	350.0836	354.3142	0.5000	0.0000
L292	18.0227	359.7500	343.5909	0.0000
L294	0.0000	307.5000	0.2500	0.0000
L300	0.0000	305.6333	1.2667	0.0000
L301	0.0000	304.2667	0.0000	0.0000
L302	2.2083	349.1935	0.2500	0.0000
L303	0.0000	305.4333	0.5000	0.0000

L304	0.2258	1.5806	0.0000	0.0000
L305	0.0000	353.2941	0.0000	0.0000
L306	0.0000	358.0100	0.0000	0.0000
L307	0.0000	357.5917	0.0000	0.0000
L308	0.0000	357.9692	0.0000	0.0000
L309	0.2500	358.0325	0.0000	0.0000
L310	0.0000	304.5000	2.4100	0.0000
L311	43.4895	350.1053	0.9000	0.0000
L312	0.1579	350.6316	4.8125	0.0000
L313	0.0000	0.2500	1.8125	0.0000
L314	0.0000	322.2593	0.7500	0.0000
L315	0.0000	317.0779	3.3800	0.0000
L316	14.6682	317.2143	1.3000	0.0000
L317	0.0000	1.1667	5.1250	0.0000
L318	10.6263	60.5081	0.2500	0.0000
L319	0.0000	0.0000	0.9000	0.0000
L320	0.0000	320.7500	0.0000	0.0000
L321	71.4074	353.2353	4.0000	0.0000
L324	5.8313	348.8000	4.5000	0.0000
L325	0.0000	337.3333	0.0000	0.0000
L326	0.0000	339.6957	0.0000	0.0000
L327	0.0000	338.3913	0.0000	0.0000
L328	0.0000	0.0000	2.4167	0.0000
L329	24.0833	359.7500	349.2105	0.0000
L334	357.0000	359.7500	0.0000	0.0000
L335	357.1042	359.7500	0.0000	0.0000
L336	0.0000	0.0000	3.0300	0.0000
L337	359.7500	359.7500	344.6190	0.0000
L338	0.0000	0.0000	1.6667	0.0000
L339	0.0000	0.0000	0.5000	0.0000
L340	0.0000	0.0000	2.0625	0.0000
L341	0.0000	0.0000	2.0000	0.0000
L342	0.0000	0.0000	0.0000	0.0000
L343	0.0000	0.0000	0.0000	0.0000
L344	0.0645	303.0645	0.0000	0.0000
L346	0.0455	342.8182	0.0000	0.0000
L347	0.0000	7.0317	0.0000	0.0000
L348	0.0000	14.3791	2.9900	0.0000
L349	0.8733	19.3716	1.9167	0.0000
L350	0.1167	19.6314	1.6333	0.0000
L351	0.0645	297.3226	1.5667	0.0000
L352	0.0323	298.2581	0.5000	0.0000
L354	0.0000	351.3333	0.0000	0.0000
L361	0.0000	0.0000	0.0000	0.0000
L362	0.0000	0.0000	0.0000	0.0000
L363	0.0000	307.6667	1.4333	0.0000
L364	0.0000	0.0000	0.0000	0.0000
L365	0.0000	300.3871	0.0000	0.0000
L366	0.0000	0.0000	4.1875	0.0000
L367	5.9234	9.0982	0.5000	0.0000
L368	0.0000	0.0000	0.0000	0.0000
L369	0.0000	0.0000	0.0000	0.0000
L370	0.0000	34.7460	0.0000	0.0000
L373	0.0000	355.0169	0.0000	0.0000
L374	0.0000	0.0000	0.0000	0.0000
L375	0.0000	0.0000	0.6008	0.0000
L376	0.3684	295.0606	0.0000	0.0000
L386	0.0000	347.8211	2.9500	0.0000
L387	0.4375	346.9137	3.8750	0.0000
L388	0.0000	0.0000	0.0000	0.0000

L389	0.2083	347.8964	0.5000	0.0000
L390	0.0000	136.1290	0.0000	0.0000
L391	1.6500	212.3829	0.2500	0.0000
L392	0.0000	69.8168	0.0000	0.0000
L393	0.0000	70.1490	0.0000	0.0000
L395	10.4974	359.5000	0.5500	0.0000
L396	0.0417	355.7083	0.0000	0.0000
L397	10.4000	359.5000	0.7500	0.0000
L398	8.3842	358.8167	1.7500	0.0000
L399	0.0000	320.3571	3.7500	0.0000
L402	0.0323	298.3871	1.8750	0.0000
L403	0.0323	287.5161	3.7500	0.0000
L404	0.0645	289.5161	2.2000	0.0000
L405	0.0323	289.8387	0.0000	0.0000
L406	0.0000	308.1833	1.5667	0.0000
L407	0.1613	3.9032	0.0000	0.0000
L408	0.0000	314.0862	1.8750	0.0000
L410	0.0000	326.3077	6.3684	0.0000
L411	0.0000	332.8000	8.6389	0.0000
L413	38.5113	354.0176	0.5000	0.0000
L415	0.0000	0.0000	0.0000	0.0000
L417	0.0000	0.0000	0.0000	0.0000
L418	0.0323	286.8387	0.0000	0.0000
L419	0.0000	308.2779	3.8750	0.0000
L420	0.0000	304.9667	2.3700	0.0000
L421	0.0323	298.1290	0.0000	0.0000
L422	0.0645	6.9677	0.0000	0.0000
L423	0.0000	316.7143	1.6333	0.0000
L424	0.0000	34.0772	1.6500	0.0000
L425	0.0000	305.2000	0.5000	0.0000
L426	0.5484	0.7097	0.0000	0.0000
L427	0.0000	11.9973	0.2500	0.0000
L428	0.0333	306.4333	0.5000	0.0000
L429	4.9375	19.7989	0.2500	0.0000
L430	10.8810	351.1667	5.2500	0.0000
L431	17.8436	328.5192	1.8000	0.0000
L432	0.0000	306.6015	4.2500	0.0000
L435	0.0000	27.1733	3.5200	0.0000
L436	0.0000	0.5000	1.2333	0.0000
L437	30.7169	356.5964	0.9333	0.0000
L438	0.0000	332.9600	0.5000	0.0000
L439	0.0000	0.5000	1.9583	0.0000
L440	0.0000	303.5806	5.0625	0.0000
L441	0.0000	0.0000	2.5000	0.0000
L442	0.0000	0.0000	316.9975	0.0000
L443	359.7500	359.7500	338.4783	0.0000
L446	0.0645	2.1935	0.0000	0.0000
L448	0.0000	325.2222	0.7500	0.0000
L449	0.0000	0.5000	2.0208	0.0000
L450	0.0000	0.5000	1.5500	0.0000
L451	0.0000	0.0000	2.3375	0.0000
L452	0.0000	319.2500	0.5000	0.0000
L453	0.0000	322.6667	0.5000	0.0000
L454	0.0000	320.3214	1.0000	0.0000
L466	0.0000	0.0000	0.0000	0.0000
L468	0.0000	300.3871	4.8125	0.0000
L470	0.0000	0.0000	6.2647	0.0000
L471	353.2353	353.2353	0.0000	0.0000
L472	0.1111	0.1111	0.0000	0.0000
L475	0.0000	0.0000	0.0000	0.0000

L478	0.0000	0.0000	0.0000	0.0000
L479	0.0000	0.0000	5.5000	0.0000
L487	0.0000	359.0625	0.0000	0.0000
L490	0.0000	0.0000	0.0000	0.0000
L493	2.2105	2.4737	0.0000	0.0000
L496	354.1287	354.5000	2.7500	0.0000
L497	354.1250	354.5000	3.0000	0.0000
L498	0.0000	0.0000	0.5208	0.0000
L499	0.0000	27.6973	1.6000	0.0000
L500	0.0000	36.0608	1.2833	0.0000
L501	0.0000	326.0385	0.9667	0.0000
L502	2.7341	356.4800	3.0200	0.0000
L503	0.0000	24.2564	0.0000	0.0000
L504	0.0000	24.2564	0.0000	0.0000
L505	0.0000	0.5000	1.5167	0.0000
L506	1.4482	38.1536	1.1500	0.0000
L507	0.0000	0.0000	0.0000	0.0000
L509	0.0000	0.0000	0.0000	0.0000
L510	19.7935	359.7500	356.0000	0.0000
L511	0.0000	0.0000	0.0000	0.0000
L512	56.8145	359.7500	355.5000	0.0000
L513	0.0000	0.0000	3.8125	0.0000
L514	0.0000	47.0492	0.2500	0.0000
L515	0.0000	348.9623	4.2500	0.0000
CH21	68.4355	359.5000	0.0000	0.0000
L474	0.4286	0.4286	0.0000	0.0000
L523	0.0000	0.2500	0.5000	0.0000
L525	0.0000	350.2460	0.1667	0.0000
L527	6.2912	354.0625	1.8333	0.0000
L528	0.0000	0.2500	1.3833	0.0000
L529	0.0000	0.0000	2.8542	0.0000
L533	29.0596	342.6364	6.8333	0.0000
L537	0.0000	0.0000	1.4225	0.0000
L394	0.0000	59.2458	0.0000	0.0000
L276	360.0000	360.0000	356.0000	0.0000
L288	52.3667	360.0000	354.2500	0.0000
L412	0.0000	145.7742	207.3026	0.0000
L447	29.7548	349.3684	0.0000	0.0000
L546	28.5200	333.2800	0.7917	0.0000

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| Table E15 - SPREADSHEET INFO LIST |
| Conduit Flow and Junction Depth Information for use in |
| spreadsheets. The maximum values in this table are the |
| true maximum values because they sample every time step.|
| The values in the review results may only be the |
| maximum of a subset of all the time steps in the run. |
| Note: These flows are only the flows in a single barrel.|
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Conduit Name	Maximum Flow (cfs)	Total Flow (ft^3)	Maximum Velocity (ft/s)	Maximum Volume (ft^3)	##	Junction Name	Invert Elevation (ft)	Maximum Elevation (ft)
L210	2.8911	57161.7632	3.7445	56.6595	##	N221	105.8400	107.6026

L211	3.1354	61547.3811	4.0313	92.9610	##	N222	104.4400
106.9939							
L212	3.2978	64189.8900	3.3046	521.4422	##	N223	100.8100
102.1159							
L213	2.4916	49166.3441	3.2326	86.7334	##	N224	96.9700
100.2909							
L214	5.3717	106138.1047	3.0198	172.0425	##	N227	98.3400
100.9720							
L217	0.9501	18775.4035	2.8265	22.0944	##	N228	97.5300
100.6100							
L220	11.2776	221042.5623	4.6465	795.1439	##	N230	95.8300
98.1694							
L221	13.2165	257682.1336	4.1620	1071.2640	##	N231	99.8400
100.2872							
L222	13.3950	261138.9345	9.6023	251.5153	##	N233	94.4200
95.2324							
L223	0.2305	4547.4791	1.4362	9.8486	##	N234	85.6000
90.1200							
L224	0.2305	4486.7758	1.3309	10.9512	##	N235	119.6000
119.8642							
L225	0.2305	4408.6121	1.3999	161.7749	##	N236	118.6100
118.8903							
L226	0.9294	18089.8916	1.8893	319.3934	##	N237	117.2600
117.6596							
L227	1.5845	30757.2988	2.2885	192.5823	##	N238	115.1100
117.5825							
L228	2.4888	47897.1171	3.2325	176.8815	##	N239	117.6900
118.5578							
L229	2.9466	56182.6160	2.5939	247.7024	##	N240	116.6200
118.1994							
L230	3.4595	65701.1942	2.8641	456.4379	##	N241	111.3600
112.5184							
L231	3.8015	71774.5760	3.0717	505.0382	##	N242	108.6300
110.3694							
L232	6.0390	115205.6195	3.3939	562.4078	##	N243	105.8600
108.8794							
L233	6.3287	120108.5724	3.5481	858.0662	##	N244	103.8500
107.0654							
L234	9.4131	180164.7366	2.9781	1360.3081	##	N245	101.6800
105.7300							
L235	0.4478	8830.4229	1.0898	41.1676	##	N246	99.5300
103.4547							
L236	2.1260	41974.2970	2.6925	85.4426	##	N247	97.8700
102.4757							
L237	3.0812	60886.2040	3.8746	82.3201	##	N248	111.4800
112.5280							
L238	3.6943	73068.2433	4.7555	41.0993	##	N249	104.6200
107.5518							
L239	4.0636	80236.8485	5.1858	93.2085	##	N250	101.1400
104.4244							
L240	1.2377	24462.2264	3.0137	31.3633	##	N251	115.3800
116.6527							
L241	5.3649	105451.8475	4.4351	240.5992	##	N252	113.0600
115.2810							
L242	1.8517	36615.8697	3.3991	31.7246	##	N253	108.0800
110.4633							
L243	2.4831	49084.6636	3.6078	60.0089	##	N254	112.8300
113.3534							
L246	24.3602	470951.9472	4.9377	2119.6852	##	N255	102.8000
107.2387							

L247	-34.7155	557360.3848	5.8299	471.4067	##	N256	107.4100
108.0734							
L248	1.9823	39208.1931	2.5119	37.1222	##	N257	107.6100
108.4472							
L249	1.5796	31240.2015	3.2717	26.5655	##	N259	97.1600
100.5470							
L250	3.0003	59320.9541	8.9085	23.5480	##	N260	97.0000
99.9500							
L251	1.3050	25807.1515	3.0835	24.2924	##	N261	98.9300
100.7386							
L252	0.1128	2206.4061	0.9086	89.7870	##	N262	104.8800
105.4932							
L253	1.7370	34360.0885	3.2864	38.0926	##	N263	104.4600
104.8520							
L254	1.7367	34163.2569	3.0989	141.8718	##	N264	96.6400
99.9500							
L255	3.9589	78286.2497	3.6647	92.7131	##	N265	104.8600
105.4059							
L256	4.7298	93271.9697	3.0373	525.9915	##	N266	100.3600
100.5085							
L257	6.6737	130788.1011	3.6751	471.8159	##	N267	97.5500
99.2256							
L258	0.8529	16851.8117	2.5005	45.8911	##	N268	100.7400
101.3835							
L259	7.8638	153880.6403	3.9734	203.8777	##	N269	100.3300
100.9948							
L260	8.0628	157782.4836	11.6526	58.2297	##	N270	99.1400
100.2825							
L261	0.9792	19354.6093	2.6864	12.8399	##	N271	98.5500
99.9370							
L262	2.3040	45536.7783	9.6489	3.1004	##	N272	96.3500
97.8101							
L263	1.1997	23719.2571	2.8987	14.1154	##	N273	97.6800
98.1213							
L264	3.7883	74900.4315	3.7909	72.2439	##	N274	95.5800
96.0359							
L265	22.4321	429033.3287	3.9592	1872.2701	##	N275	85.6000
90.1200							
L266	23.3519	445834.7823	4.7655	850.7819	##	N276	94.2500
94.7428							
L267	0.8570	16942.3567	2.7535	18.7475	##	N277	93.4400
93.7152							
L268	2.6552	52518.0994	3.3671	64.9869	##	N278	78.0000
79.2200							
L269	2.9244	57556.5056	3.7936	87.7935	##	N279	94.1200
94.6677							
L270	27.4511	525563.1030	7.7784	732.1691	##	N280	85.3300
86.2988							
L271	27.4511	524057.1204	5.2169	2239.4294	##	N281	83.2400
85.5082							
L272	-54.5779	727507.1621	5.1562	247.0046	##	N282	82.7700
84.7914							
L273	9.4566	186865.5691	4.1829	252.8567	##	N283	82.5000
83.9594							
L274	8.5560	169378.0351	12.6154	25.5883	##	N284	85.1400
85.5616							
L275	1.5054	29765.6791	3.1332	19.7745	##	N285	94.9100
96.5563							
L277	1.5122	29899.2579	3.1076	19.8834	##	N286	94.4500
95.9765							

	L278	1.5649	30958.2421	3.2306	22.9563	##	N287	78.4600
80.3124								
	L279	3.2539	64333.1379	6.4649	59.1283	##	N288	77.0300
79.2896								
	L280	1.5689	31034.8953	3.2265	23.9637	##	N289	77.0000
79.0400								
	L281	3.4219	67668.6650	4.6251	35.3664	##	N290	78.1000
79.7003								
	L282	5.0178	99211.3442	14.7894	8.4798	##	N291	91.9200
92.4485								
	L283	1.4971	29601.6529	3.1057	26.2910	##	N292	76.6000
78.9600								
	L284	-4.7711	30939.7407	-5.2429	41.5951	##	N293	118.9200
119.5381								
	L285	-8.1954	50891.4412	-3.7322	250.0569	##	N294	118.3000
118.6232								
	L286	-5.7330	17562.2352	-3.2225	62.0571	##	N296	118.9800
119.6051								
	L287	1.8249	36060.0594	3.3193	50.1690	##	N297	113.2400
113.8340								
	L289	2.2642	44736.8850	3.4711	66.0334	##	N298	112.9600
113.5385								
	L290	0.1735	3410.0779	1.5990	7.2536	##	N299	106.3000
109.5100								
	L291	0.4448	8734.7327	2.2398	13.3986	##	N300	113.2500
113.8460								
	L292	1.1514	22709.7044	3.7743	64.1790	##	N301	122.9000
124.8193								
	L294	1.4189	27685.5254	3.0312	65.2906	##	N302	122.2800
122.6751								
	L300	5.3497	104905.0212	3.3970	425.6126	##	N303	110.6000
113.5400								
	L301	1.8664	36877.6527	3.2949	45.5562	##	N304	122.9500
123.5620								
	L302	11.8253	231489.6560	2.9560	2237.1827	##	N305	105.5200
109.7843								
	L303	0.8511	16775.6356	2.6776	65.9607	##	N306	104.7200
109.0611								
	L304	2.4624	48658.5333	3.6541	54.1180	##	N307	104.2500
108.2800								
	L305	3.3133	65218.1323	2.6256	255.0245	##	N308	105.1900
108.4000								
	L306	2.8212	55730.5468	3.5000	46.8016	##	N309	113.1500
113.8197								
	L307	-4.8658	60136.5472	-1.5293	302.3843	##	N310	112.2600
112.6514								
	L308	-8.4952	63116.1908	1.7817	181.8450	##	N312	113.2100
114.0002								
	L309	-4.4156	53215.1282	3.3434	46.8865	##	N313	103.9300
104.1135								
	L310	1.6006	31639.8684	3.1818	49.2602	##	N314	101.7900
102.0841								
	L311	1.6006	31448.5173	2.9157	318.4497	##	N315	99.6100
99.9648								
	L312	1.2821	25317.5407	2.2026	48.7150	##	N316	94.1000
98.6700								
	L313	2.9996	58453.8589	3.7630	211.6171	##	N317	89.1700
92.7363								
	L314	1.2826	25328.4845	2.7220	72.6327	##	N318	87.7400
92.1556								

L315	1.6227	32102.4331	3.2505	41.1562	##	N319	89.4700
92.3207							
L316	1.6227	31930.8163	3.0816	197.6990	##	N320	89.2800
92.9456							
L317	6.1968	121078.9542	3.4826	552.3051	##	N321	90.1100
93.1449							
L318	6.1968	120560.5367	3.3653	546.7480	##	N325	89.7700
93.1319							
L319	8.1961	159823.9477	4.7905	101.9994	##	N326	90.7500
93.1937							
L320	1.8864	37170.0652	3.0354	47.9324	##	N327	90.6600
93.5541							
L321	0.5084	9988.9904	1.6783	165.3585	##	N328	93.4400
99.0983							
L324	1.7090	33742.7728	2.8511	97.7536	##	N329	94.0000
99.5812							
L325	1.6252	32096.5570	2.5539	49.6351	##	N330	93.4400
100.1728							
L326	1.9616	38738.1912	2.6632	94.8534	##	N331	92.7000
98.6400							
L327	2.2136	43723.3398	2.7790	94.0563	##	N332	94.0000
99.6635							
L328	7.8187	152879.8456	4.6230	448.5793	##	N333	108.8700
110.9382							
L329	7.8187	152751.3377	8.2882	95.4808	##	N334	108.5100
110.7767							
L334	0.4265	8398.3438	2.1349	17.6904	##	N335	106.1800
109.7243							
L335	0.8586	16876.8933	2.6318	37.8961	##	N336	106.5400
109.8263							
L336	1.2917	25400.3677	2.9603	14.7868	##	N337	102.2800
104.3342							
L337	1.2917	25389.1011	5.3766	37.5421	##	N338	103.3100
104.4885							
L338	21.2501	420507.0722	3.9155	452.9297	##	N339	104.8900
105.5303							
L339	21.2501	419228.6519	4.0471	1290.7590	##	N340	104.4700
105.2177							
L340	30.1672	594315.5634	4.4311	1553.9508	##	N341	101.2500
102.9537							
L341	30.1672	592963.8424	5.2785	537.4167	##	N342	100.2200
101.6653							
L342	4.5877	90719.6008	4.0620	80.2602	##	N343	100.0000
101.1083							
L343	2.6326	52041.2551	3.6540	61.8189	##	N344	101.1100
101.8986							
L344	12.3476	243926.4572	4.1336	261.1990	##	N345	118.8300
119.2319							
L346	25.6990	506547.8424	2.7981	504.2680	##	N347	118.4500
122.6221							
L347	56.6992	1104194.986	4.4719	5203.5823	##	N348	116.1700
120.0079							
L348	56.4072	1098663.505	4.2924	5224.4209	##	N349	119.1600
122.9823							
L349	56.3445	1093317.041	4.4041	5020.8737	##	N350	117.8000
121.6390							
L350	56.3404	1090072.079	4.6079	1600.3680	##	N351	117.1900
121.4735							
L351	8.2541	163366.7348	3.4982	92.1785	##	N352	117.3700
120.4752							

L352	8.2546	162960.6286	3.5866	396.6899	##	N353	117.3600
120.5972							
L354	-79.6246	1430692.311	6.6600	1163.4959	##	N354	115.6500
116.3779							
L361	2.3119	45725.5751	3.6734	27.6898	##	N355	110.6000
113.7800							
L362	2.1598	42708.1963	3.5287	37.6122	##	N356	125.3200
125.6081							
L363	4.5228	88976.6982	3.3090	493.4919	##	N357	122.9800
123.3977							
L364	2.6500	52415.3691	3.8459	30.8006	##	N358	120.8200
121.3926							
L365	1.6367	32366.1926	3.2406	34.2459	##	N359	120.0900
120.3681							
L366	9.8099	192884.1364	3.5046	1089.2798	##	N360	112.8000
116.1200							
L367	9.8099	191559.3166	3.7398	817.8196	##	N361	126.2400
128.4056							
L368	2.2786	45018.2818	3.4648	66.9707	##	N362	126.1300
128.2437							
L369	3.4945	69074.6563	4.5022	72.2000	##	N363	125.2800
127.6447							
L370	19.1219	375043.2097	4.1802	920.6093	##	N364	125.0100
127.0548							
L373	-22.9231	374527.5415	4.6836	575.4390	##	N365	117.4400
122.0600							
L374	3.3515	66142.6707	4.3063	130.1607	##	N366	127.8700
128.9836							
L375	3.3514	65403.4548	2.2806	729.7685	##	N367	128.3300
129.2163							
L376	12.3893	153183.3387	2.0953	973.8117	##	N368	124.2600
126.9900							
L386	34.7255	582029.1126	2.7225	4367.5993	##	N369	123.6700
126.9334							
L387	34.7101	577125.8298	2.7046	4576.8792	##	N370	121.7000
126.7311							
L388	2.2297	44013.7321	2.8878	92.0401	##	N371	122.2600
126.7751							
L389	48.4170	841598.4878	2.9721	6278.3807	##	N372	121.3400
125.9377							
L390	1.6081	31737.9957	2.8204	86.4538	##	N373	120.9700
125.1608							
L391	53.2573	930107.5774	-3.5403	8094.7609	##	N374	120.6000
124.3629							
L392	63.4431	1123542.596	-4.5742	6084.8681	##	N375	119.9800
124.1182							
L393	-76.0532	1116366.157	-5.3400	7205.8208	##	N376	122.9000
124.4568							
L395	4.2402	83893.0669	3.4399	62.1650	##	N377	122.8200
124.3901							
L396	8.3421	161867.0031	1.8392	2933.1201	##	N378	119.2700
122.2006							
L397	4.5805	90626.4400	3.7152	70.8681	##	N379	118.4000
122.1000							
L398	4.3231	85541.4385	3.5864	59.5385	##	N381	124.7600
125.8395							
L399	4.0412	78355.9207	2.5558	965.5074	##	N382	122.8600
124.5395							
L402	7.1190	140805.2377	3.4623	216.2364	##	N383	125.5300
126.2887							

L403	7.1191	140147.0680	3.4260	997.1218	##	N384	125.6400
126.3795							
L404	7.1285	138853.4160	3.5493	924.1244	##	N386	124.1400
124.9753							
L405	4.8564	95965.6763	3.8609	131.3024	##	N387	124.2300
124.8582							
L406	11.9729	233320.3495	3.1921	1863.5545	##	N388	121.9500
123.5625							
L407	3.8258	75618.8079	3.8229	91.3398	##	N389	120.1100
121.9924							
L408	15.7980	306545.3241	3.1695	2280.8644	##	N390	122.8300
123.6271							
L410	20.1364	387266.4163	2.9548	2924.8517	##	N391	122.6900
124.1512							
L411	20.1364	384443.0323	2.8412	2230.4023	##	N392	119.8300
121.6798							
L413	2.2672	44550.4345	2.5035	710.1067	##	N394	118.4000
121.5100							
L415	2.2703	44897.2599	3.7552	38.1404	##	N395	118.1100
121.1817							
L417	2.8494	56333.5477	3.8175	55.1826	##	N396	117.6800
119.3452							
L418	5.1688	102193.5718	3.8864	132.9600	##	N397	115.8100
118.8323							
L419	8.0182	158011.7069	3.3526	847.4542	##	N398	116.3100
119.0154							
L420	8.0182	156596.7207	3.2859	1298.0895	##	N399	114.6000
118.7270							
L421	1.6633	32819.6680	3.2979	54.7051	##	N403	114.3000
118.4705							
L422	3.8019	75151.5007	3.8119	97.7420	##	N404	113.4800
118.2069							
L423	13.6466	265967.6382	3.1600	2035.8794	##	N405	117.0000
118.7910							
L424	18.5464	360419.7322	3.2142	1861.1108	##	N406	113.1700
117.9109							
L425	0.9317	18381.8301	2.7607	55.4366	##	N407	117.0000
118.1897							
L426	3.9681	78444.2320	3.7877	93.8612	##	N408	112.7800
117.4431							
L427	40.5902	778057.3570	4.1993	4899.2947	##	N409	112.4800
116.9260							
L428	0.9393	18530.6223	2.7410	69.4540	##	N410	112.1200
116.3132							
L429	42.4776	810715.9812	4.2977	3938.7453	##	N412	116.3000
119.4386							
L430	2.4512	48402.4462	3.2889	72.3268	##	N413	115.3300
119.1584							
L431	2.2830	44723.5253	3.2432	320.9823	##	N414	115.8300
119.2321							
L432	2.2800	45022.3160	3.3819	74.4859	##	N415	116.3300
119.5312							
L435	2.8738	56791.9260	3.6388	73.2132	##	N416	116.8300
119.5129							
L436	2.8765	56418.8910	3.7239	150.8933	##	N417	117.5700
119.3435							
L437	2.8725	56186.7684	2.9465	407.0035	##	N418	119.9000
120.8207							
L438	1.6723	33007.6740	2.7954	69.7582	##	N419	110.9100
113.4701							

L439	4.5571	88651.1631	3.7816	316.0481	##	N420	112.2400
114.7633							
L440	4.5523	88037.5301	3.2628	701.4473	##	N421	112.0000
114.5335							
L441	48.9390	932237.6377	4.9424	3827.9167	##	N422	109.1300
112.4791							
L442	48.9390	928388.2472	5.9435	2384.5663	##	N423	110.3700
112.6795							
L443	48.9390	927774.6269	16.4752	283.5946	##	N424	108.2600
112.0680							
L446	5.9168	117024.8269	3.5392	112.8564	##	N425	110.0600
112.3959							
L448	0.9708	19156.0158	2.4582	62.5615	##	N426	107.4500
111.6343							
L449	9.5085	185537.2491	3.9304	1120.3942	##	N428	106.9200
111.1574							
L450	13.3913	260416.7052	4.2601	1084.2373	##	N429	106.0200
110.7941							
L451	14.7194	286367.7567	5.0912	236.5739	##	N430	119.0000
119.6536							
L452	1.2925	25546.9331	2.7688	40.5604	##	N431	116.6700
119.2660							
L453	0.9323	18412.8221	2.4656	48.6501	##	N432	118.0700
119.4963							
L454	0.6806	13413.6862	2.3129	34.8690	##	N434	118.8000
119.7362							
L466	4.0513	80103.9606	4.2367	81.5992	##	N435	110.1800
112.9610							
L468	4.0501	79599.5380	2.7254	1192.8417	##	N436	111.5700
113.5338							
L470	9.4830	187450.6196	4.3099	316.9864	##	N437	110.9200
113.1916							
L471	0.3817	7504.7528	1.7178	122.7373	##	N438	109.5800
112.5301							
L472	4.4590	88215.7391	5.6521	41.8187	##	N439	108.1500
111.8621							
L475	4.3583	86123.4967	3.7519	125.3651	##	N440	110.0500
112.0562							
L478	18.0903	352033.9802	4.5232	1973.4295	##	N441	109.7300
112.2083							
L479	18.0903	349237.0471	3.6595	3002.2681	##	N442	107.2200
111.2807							
L487	10.7813	213239.9963	4.4435	404.0520	##	N443	109.3800
111.3435							
L490	6.7177	132729.9162	3.5464	198.5550	##	N444	109.0300
111.6425							
L493	18.0903	346632.5810	3.6906	2284.1980	##	N445	105.4800
109.7503							
L496	0.6064	11949.5192	2.3568	27.6784	##	N446	108.4900
109.8312							
L497	0.5989	11801.4784	2.3448	27.5982	##	N447	105.0500
108.8835							
L498	1.2053	23701.4267	3.0139	34.8508	##	N448	118.7700
121.1578							
L499	1.7090	33438.5715	2.1331	312.2206	##	N449	117.9900
120.5964							
L500	3.4454	67281.5526	2.7658	500.0689	##	N450	120.7400
122.8992							
L501	12.4043	242086.7123	2.6648	2774.4497	##	N451	121.2700
123.3870							

L502	12.6379	238548.7366	1.3186	4266.1071	##	N453	113.7600	115.6961
L503	73.4516	1424011.276	4.8401	6404.3018	##	N454	114.2900	116.4642
L504	74.2709	1433579.943	5.4223	5762.3444	##	N455	111.6800	113.0201
L505	10.5969	207841.4054	4.3673	967.8132	##	N456	110.2600	112.1895
L506	10.8984	213035.3032	4.4788	989.1676	##	N457	111.0200	112.4454
L507	3.7981	75020.5745	4.8594	105.1742	##	N458	108.3900	109.7789
L509	5.6849	112331.3423	4.7026	150.3473	##	N459	104.6100	107.6629
L510	5.1189	101305.2245	8.7052	91.3497	##	N460	104.1100	105.0976
L511	11.0413	218041.6170	6.2595	300.5165	##	N461	94.1000	98.6700
L512	17.9050	353742.9776	15.9778	145.9617	##	N464	125.0900	128.1440
L513	18.2188	347037.2900	3.9090	1162.5624	##	N465	126.6500	129.7527
L514	8.0432	157868.6124	3.3254	1004.0997	##	N466	126.1900	129.4984
L515	15.8009	218734.9347	2.2237	1041.1432	##	N467	126.3000	128.2210
CH21	12.6097	218059.7141	0.3253	182019.6676	##	N468	123.5900	126.0007
L474	9.4830	185802.0985	5.3470	229.7963	##	N469	118.6600	120.4426
L523	9.4830	185971.1319	1.2146	628.1273	##	N470	117.7100	119.0232
L525	17.1496	332546.6425	3.0160	3935.8490	##	N471	124.8800	126.0884
L527	4.5196	88355.8108	2.6389	778.5880	##	N472	124.9400	126.0559
L528	4.7391	92345.0643	3.9337	411.7227	##	N473	120.0700	120.5302
L529	4.3384	85576.5968	2.7073	522.0518	##	N487	118.5700	119.7372
L533	4.3384	84676.9449	3.1793	1301.3712	##	N489	118.4300	120.8720
L537	4.3384	83591.9014	2.5325	834.5850	##	N490	121.9000	123.4952
L394	-110.6832	1111597.024	-6.3518	2408.1901	##	N491	124.1700	125.0264
L276	3.1463	62199.7682	11.3585	7.9962	##	N492	126.3400	128.1178
L288	4.1590	82171.5305	9.8932	34.7449	##	N493	126.0400	127.0400
L412	2.2439	44379.5357	4.5004	33.4361	##	N497	108.0800	109.8299
L447	2.1264	41732.6126	2.3674	700.8605	##	N499	91.2000	98.6400
L546	3.7980	74468.4536	3.5470	1013.1984	##	N500	86.6700	91.1164
FREE # 1	13.3950	261129.6035	0.0000	0.0000	##	N501	85.4700	88.9568
FREE # 2	-38.2470	557623.8822	0.0000	0.0000	##	N503	89.8000	98.2300

FREE # 3	3.0003	59318.1425	0.0000	0.0000	##	N504	95.5400	99.2193
FREE # 4	8.2240	160966.4609	0.0000	0.0000	##	N506	92.1400	94.2928
FREE # 5	2.3040	45534.3415	0.0000	0.0000	##	N509	108.8800	112.4402
FREE # 6	-45.3333	728051.4609	0.0000	0.0000	##	N511	102.2100	102.7537
FREE # 7	8.5560	169378.0306	0.0000	0.0000	##	N513	110.0100	111.3361
FREE # 8	3.2539	64331.1039	0.0000	0.0000	##	N514	108.1100	108.7618
FREE # 9	5.0178	99206.1473	0.0000	0.0000	##	N516	90.0000	98.2300
FREE #10	-8.4217	50994.8372	0.0000	0.0000	##	N517	83.9500	86.2850
FREE #11	1.1514	22709.5083	0.0000	0.0000	##	N518	84.3100	87.4472
FREE #12	-3.3487	63237.2989	0.0000	0.0000	##	N524	133.4500	133.7961
FREE #13	8.1961	159819.6919	0.0000	0.0000	##	N525	131.1700	131.6772
FREE #14	7.8187	152746.8163	0.0000	0.0000	##	N526	133.4600	133.8039
FREE #15	1.2917	25387.7619	0.0000	0.0000	##	N527	130.6000	131.1070
FREE #16	30.1672	592947.7546	0.0000	0.0000	##	N528	122.6600	126.7861
FREE #17	-80.3250	1431614.829	0.0000	0.0000	##	N529	119.6400	123.3488
FREE #18	19.1219	374824.5248	0.0000	0.0000	##	N530	99.7100	104.9238
FREE #19	48.9390	927729.0965	0.0000	0.0000	##	N689	118.0000	119.5000
FREE #20	4.4590	88214.5805	0.0000	0.0000	##	N494	121.4100	122.3558
FREE #21	5.6849	112331.2413	0.0000	0.0000	##	N541	112.0900	114.2861
FREE #22	10.7813	213205.7136	0.0000	0.0000	##	EL329	112.5200	114.9266
FREE #23	17.9050	353724.9431	0.0000	0.0000	##	N427	109.6400	112.6510
FREE #24	1.5346	30221.7281	0.0000	0.0000	##	N411	112.0000	116.1200
FREE #25	9.4830	185796.0887	0.0000	0.0000	##	N295	107.9300	110.3800
FREE #26	-135.2702	1112417.575	0.0000	0.0000	##	N311	104.1000	108.3400
FREE #27	3.1463	62196.4441	0.0000	0.0000	##	N462	127.7800	129.7121
FREE #28	4.1590	82167.2187	0.0000	0.0000	##	N554	90.6800	92.0791
FREE #29	5.1189	101305.3592	0.0000	0.0000	##	N555	89.8000	98.2300
FREE #30	-5.0659	60120.3914	0.0000	0.0000	##	N322	92.5000	98.6400

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| Table E15a - SPREADSHEET REACH LIST |
| Peak flow and Total Flow listed by Reach or those |

| conduits or diversions having the same |
| upstream and downstream nodes. |
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Upstream Node	Downstream Node	Maximum Flow (cfs)	Total Flow (ft^3)
N221	N222	2.8911	57161.7632
N222	N223	3.1354	61547.3811
N223	N224	3.2978	64189.8900
N227	N224	2.4916	49166.3441
N228	N224	5.3717	106138.105
N231	N230	0.9501	18775.4035
N224	N230	11.2776	221042.562
N230	N233	13.2165	257682.134
N233	N234	13.3950	261138.935
N235	N236	0.2305	4547.4791
N236	N237	0.2305	4486.7758
N237	N238	0.2305	4408.6121
N239	N240	0.9294	18089.8916
N240	N238	1.5845	30757.2988
N238	N241	2.4888	47897.1171
N241	N242	2.9466	56182.6160
N242	N243	3.4595	65701.1942
N243	N244	3.8015	71774.5760
N244	N245	6.0390	115205.619
N245	N246	6.3287	120108.572
N246	N247	9.4131	180164.737
N248	N241	0.4478	8830.4229
N249	N244	2.1260	41974.2970
N250	N246	3.0812	60886.2040
N251	N252	3.6943	73068.2433
N252	N253	4.0636	80236.8485
N254	N253	1.2377	24462.2264
N253	N255	5.3649	105451.848
N256	N255	1.8517	36615.8697
N257	N255	2.4831	49084.6636
N247	N259	24.3602	470951.947
N259	N260	-34.7155	557360.385
N261	N259	1.9823	39208.1931
N262	N263	1.5796	31240.2015
N263	N264	3.0003	59320.9541
N265	N263	1.3050	25807.1515
N266	N267	0.1128	2206.4061
N268	N269	1.7370	34360.0885
N269	N267	1.7367	34163.2569
N270	N271	3.9589	78286.2497
N271	N267	4.7298	93271.9697
N267	N272	6.6737	130788.101
N273	N272	0.8529	16851.8117
N272	N274	7.8638	153880.640
N274	N275	8.0628	157782.484
N276	N277	0.9792	19354.6093
N277	N278	2.3040	45536.7783
N279	N277	1.1997	23719.2571
N280	N281	3.7883	74900.4315
N281	N282	22.4321	429033.329
N282	N283	23.3519	445834.782
N284	N282	0.8570	16942.3567

N285	N286	2.6552	52518.0994
N286	N283	2.9244	57556.5056
N283	N287	27.4511	525563.103
N287	N288	27.4511	524057.120
N288	N289	-54.5779	727507.162
N290	N288	9.4566	186865.569
N291	N292	8.5560	169378.035
N293	N294	1.5054	29765.6791
N296	N294	1.5122	29899.2579
N297	N298	1.5649	30958.2421
N298	N299	3.2539	64333.1379
N300	N298	1.5689	31034.8953
N301	N302	3.4219	67668.6650
N302	N303	5.0178	99211.3442
N304	N302	1.4971	29601.6529
N305	N306	-4.7711	30939.7407
N306	N307	-8.1954	50891.4412
N308	N306	-5.7330	17562.2352
N309	N310	1.8249	36060.0594
N312	N310	2.2642	44736.8850
N313	N314	0.1735	3410.0779
N314	N315	0.4448	8734.7327
N315	N316	1.1514	22709.7044
N319	N318	1.4189	27685.5254
N320	N318	5.3497	104905.021
N321	N320	1.8664	36877.6527
N318	N500	11.8253	231489.656
N326	N325	0.8511	16775.6356
N327	N325	2.4624	48658.5333
N325	N320	3.3133	65218.1323
N329	N330	2.8212	55730.5468
N330	N322	-4.8658	60136.5472
N328	N331	-8.4952	63116.1908
N332	N328	-4.4156	53215.1282
N333	N334	1.6006	31639.8684
N334	N335	1.6006	31448.5173
N336	N335	1.2821	25317.5407
N335	N337	2.9996	58453.8589
N338	N337	1.2826	25328.4845
N339	N340	1.6227	32102.4331
N340	N337	1.6227	31930.8163
N337	N341	6.1968	121078.954
N341	N342	6.1968	120560.537
N342	N343	8.1961	159823.948
N344	N342	1.8864	37170.0652
N345	N239	0.5084	9988.9904
N349	N347	1.7090	33742.7728
N350	N351	1.6252	32096.5570
N352	N348	1.9616	38738.1912
N353	N348	2.2136	43723.3398
N348	N354	7.8187	152879.846
N354	N355	7.8187	152751.338
N356	N357	0.4265	8398.3438
N357	N358	0.8586	16876.8933
N358	N359	1.2917	25400.3677
N359	N360	1.2917	25389.1011
N361	N362	21.2501	420507.072
N362	N363	21.2501	419228.652
N363	N364	30.1672	594315.563
N364	N365	30.1672	592963.842

N366	N363	4.5877	90719.6008
N367	N363	2.6326	52041.2551
N368	N369	12.3476	243926.457
N371	N370	25.6990	506547.842
N370	N372	56.6992	1104194.99
N372	N373	56.4072	1098663.50
N373	N374	56.3445	1093317.04
N374	N375	56.3404	1090072.08
N376	N377	8.2541	163366.735
N377	N375	8.2546	162960.629
N378	N379	-79.6246	1430692.31
N383	N381	2.3119	45725.5751
N384	N381	2.1598	42708.1963
N381	N382	4.5228	88976.6982
N386	N382	2.6500	52415.3691
N387	N382	1.6367	32366.1926
N382	N388	9.8099	192884.136
N388	N389	9.8099	191559.317
N390	N389	2.2786	45018.2818
N391	N389	3.4945	69074.6563
N389	N392	19.1219	375043.210
N392	N394	-22.9231	374527.541
N395	N396	3.3515	66142.6707
N396	N397	3.3514	65403.4548
N398	N397	12.3893	153183.339
N399	N403	34.7255	582029.113
N403	N404	34.7101	577125.830
N405	N404	2.2297	44013.7321
N404	N406	48.4170	841598.488
N407	N406	1.6081	31737.9957
N406	N408	53.2573	930107.577
N408	N409	63.4431	1123542.60
N409	N410	-76.0532	1116366.16
N412	N413	4.2402	83893.0669
N414	N413	8.3421	161867.003
N415	N413	4.5805	90626.4400
N416	N414	4.3231	85541.4385
N417	N414	4.0412	78355.9207
N420	N421	7.1190	140805.238
N421	N419	7.1191	140147.068
N419	N422	7.1285	138853.416
N423	N422	4.8564	95965.6763
N422	N424	11.9729	233320.349
N425	N424	3.8258	75618.8079
N424	N426	15.7980	306545.324
N426	N428	20.1364	387266.416
N428	N429	20.1364	384443.032
N432	N431	2.2672	44550.4345
N434	N432	2.2703	44897.2599
N436	N435	2.8494	56333.5477
N437	N435	5.1688	102193.572
N435	N438	8.0182	158011.707
N438	N439	8.0182	156596.721
N440	N439	1.6633	32819.6680
N441	N439	3.8019	75151.5007
N439	N442	13.6466	265967.638
N442	N429	18.5464	360419.732
N443	N442	0.9317	18381.8301
N444	N442	3.9681	78444.2320
N429	N445	40.5902	778057.357

N446	N445	0.9393	18530.6223
N445	N447	42.4776	810715.981
N448	N449	2.4512	48402.4462
N450	N449	2.2830	44723.5253
N451	N450	2.2800	45022.3160
N454	N453	2.8738	56791.9260
N453	N455	2.8765	56418.8910
N455	N456	2.8725	56186.7684
N457	N456	1.6723	33007.6740
N456	N458	4.5571	88651.1631
N458	N447	4.5523	88037.5301
N447	N459	48.9390	932237.638
N459	N460	48.9390	928388.247
N460	N461	48.9390	927774.627
N465	N466	5.9168	117024.827
N467	N464	0.9708	19156.0158
N464	N468	9.5085	185537.249
N468	N469	13.3913	260416.705
N469	N470	14.7194	286367.757
N471	N468	1.2925	25546.9331
N472	N468	0.9323	18412.8221
N473	N469	0.6806	13413.6862
N418	N487	4.0513	80103.9606
N487	N417	4.0501	79599.5380
N490	N494	9.4830	187450.620
N491	N490	0.3817	7504.7528
N492	N493	4.4590	88215.7391
N317	N318	4.3583	86123.4967
N500	N501	18.0903	352033.980
N501	N518	18.0903	349237.047
N504	N503	10.7813	213239.996
N513	N514	6.7177	132729.916
N518	N517	18.0903	346632.581
N524	N525	0.6064	11949.5192
N526	N525	0.5989	11801.4784
N525	N527	1.2053	23701.4267
N347	N351	1.7090	33438.5715
N351	N348	3.4454	67281.5526
N369	N528	12.4043	242086.712
N528	N370	12.6379	238548.737
N375	N529	73.4516	1424011.28
N529	N378	74.2709	1433579.94
N255	N530	10.5969	207841.405
N530	N247	10.8984	213035.303
N506	N554	3.7981	75020.5745
N497	N499	5.6849	112331.342
N511	N555	5.1189	101305.224
N509	N514	11.0413	218041.617
N514	N516	17.9050	353742.978
N517	N281	18.2188	347037.290
N466	N464	8.0432	157868.612
N397	N399	15.8009	218734.935
N470	N398	12.6097	218059.714
N489	N689	9.4830	185802.099
N494	N489	9.4830	185971.132
N413	N399	17.1496	332546.642
N431	N404	4.5196	88355.8108
N449	N408	4.7391	92345.0643
EL329	N541	4.3384	85576.5968
N541	N427	4.3384	84676.9449

N427	N426	4.3384	83591.9014
N410	N411	-110.6832	1111597.02
N294	N295	3.1463	62199.7682
N310	N311	4.1590	82171.5305
N430	N431	2.2439	44379.5357
N462	N466	2.1264	41732.6126
N554	N500	3.7980	74468.4536

Table E16. New Conduit Information Section
Conduit Invert (IE) Elevation and Conduit Maximum Water Surface (WS) Elevations

Conduit Name	Upstream Node	Downstream Node	IE Up	IE Dn	WS Up	WS Dn	Conduit Type
L210	N221	N222	105.8400	105.4400	107.6026	106.9939	Circular
L211	N222	N223	104.4400	102.0600	106.9939	102.8186	Circular
L212	N223	N224	100.8100	98.4700	102.1159	100.2909	Circular
L213	N227	N224	98.3400	97.7200	100.9720	100.2909	Circular
L214	N228	N224	97.5300	97.2200	100.6100	100.2909	Circular
L217	N231	N230	99.8400	99.3300	100.2872	99.7386	Circular
L220	N224	N230	96.9700	96.0800	100.2909	98.1694	Circular
L221	N230	N233	95.8300	94.9200	98.1694	96.2277	Circular
L222	N233	N234	94.4200	85.6000	95.2324	90.1200	Circular
L223	N235	N236	119.6000	119.4100	119.8642	119.6069	Circular
L224	N236	N237	118.6100	117.8600	118.8903	118.0569	Circular
L225	N237	N238	117.2600	116.5100	117.6596	117.5825	Circular
L226	N239	N240	117.6900	116.6200	118.5578	118.1994	Circular
L227	N240	N238	116.6200	116.0100	118.1994	117.5825	Circular
L228	N238	N241	115.1100	114.0600	117.5825	114.7356	Circular
L229	N241	N242	111.3600	109.8800	112.5184	110.5696	Circular
L230	N242	N243	108.6300	107.8600	110.3694	108.8794	Circular
L231	N243	N244	105.8600	105.1000	108.8794	107.0654	Circular
L232	N244	N245	103.8500	103.3800	107.0654	105.7300	Circular
L233	N245	N246	101.9600	100.3100	105.7300	103.4547	Circular
L234	N246	N247	99.5600	98.3700	103.4547	102.4757	Circular
L235	N248	N241	111.4800	111.3600	112.5280	112.5184	Circular
L236	N249	N244	104.6200	104.3500	107.5518	107.0654	Circular
L237	N250	N246	101.1400	100.5600	104.4244	103.4547	Circular
L238	N251	N252	115.3800	115.0600	116.6527	115.8783	Circular
L239	N252	N253	113.0600	112.3300	115.2810	113.1820	Circular
L240	N254	N253	112.8300	112.3300	113.3534	112.7991	Circular
L241	N253	N255	108.0800	106.8000	110.4633	107.7384	Circular
L242	N256	N255	107.4100	107.0500	108.0734	107.6293	Circular
L243	N257	N255	107.6100	107.0500	108.4472	107.7248	Circular
L246	N247	N259	97.8700	97.1600	102.4757	100.5470	Circular
L247	N259	N260	97.1600	97.0000	100.5470	99.9500	Circular
L248	N261	N259	98.9300	98.6600	100.7386	100.5470	Circular
L249	N262	N263	104.8800	104.4600	105.4932	104.8520	Circular
L250	N263	N264	104.4600	96.6400	104.8520	99.9500	Circular
L251	N265	N263	104.8600	104.4600	105.4059	104.8520	Circular
L252	N266	N267	100.3600	98.0500	100.5085	99.2256	Circular
L253	N268	N269	100.7400	100.3300	101.3835	100.9948	Circular
L254	N269	N267	100.3300	98.0500	100.9948	99.2256	Circular
L255	N270	N271	99.1400	98.8000	100.2825	99.9370	Circular
L256	N271	N267	98.5500	97.5500	99.9370	99.2256	Circular
L257	N267	N272	97.5500	96.6000	99.2256	97.8101	Circular

L258	N273	N272	97.6800	97.1000	98.1213	97.8101	Circular
L259	N272	N274	96.3500	95.5800	97.8101	96.0359	Circular
L260	N274	N275	95.5800	85.6000	96.0359	90.1200	Circular
L261	N276	N277	94.2500	93.4400	94.7428	93.7152	Circular
L262	N277	N278	93.4400	78.0000	93.7152	79.2200	Circular
L263	N279	N277	94.1200	93.4400	94.6677	93.7152	Circular
L264	N280	N281	85.3300	84.9900	86.2988	85.7764	Circular
L265	N281	N282	83.2400	82.7700	85.5082	84.7914	Circular
L266	N282	N283	82.7700	82.5000	84.7914	83.9594	Circular
L267	N284	N282	85.1400	84.7700	85.5616	85.1570	Circular
L268	N285	N286	94.9100	94.4500	96.5563	95.9765	Circular
L269	N286	N283	94.4500	93.0000	95.9765	93.7327	Circular
L270	N283	N287	82.5000	78.4600	83.9594	80.3124	Circular
L271	N287	N288	78.4600	77.0300	80.3124	79.2896	Circular
L272	N288	N289	77.0300	77.0000	79.2896	79.0400	Circular
L273	N290	N288	78.1000	77.7800	79.7003	79.2896	Circular
L274	N291	N292	91.9200	76.6000	92.4485	78.9600	Circular
L275	N293	N294	118.9200	118.3000	119.5381	118.6232	Circular
L277	N296	N294	118.9800	118.3000	119.6051	118.6232	Circular
L278	N297	N298	113.2400	112.9600	113.8339	113.5385	Circular
L279	N298	N299	112.9600	106.3000	113.5385	109.5100	Circular
L280	N300	N298	113.2500	112.9600	113.8460	113.5385	Circular
L281	N301	N302	122.9000	122.2800	124.8193	122.6751	Circular
L282	N302	N303	122.2800	110.6000	122.6751	113.5400	Circular
L283	N304	N302	122.9500	122.2800	123.5620	122.6751	Circular
L284	N305	N306	105.5200	105.2200	109.7843	109.0611	Circular
L285	N306	N307	104.7200	104.2500	109.0611	108.2800	Circular
L286	N308	N306	105.1900	104.9700	108.4000	109.0611	Circular
L287	N309	N310	113.1500	112.5100	113.8197	113.0849	Circular
L289	N312	N310	113.2100	112.5100	114.0002	113.1535	Circular
L290	N313	N314	103.9300	101.7900	104.1135	102.0841	Circular
L291	N314	N315	101.7900	99.6100	102.0841	99.9648	Circular
L292	N315	N316	99.6100	94.1000	99.9648	98.6700	Circular
L294	N319	N318	89.4700	88.9900	92.3207	92.1556	Circular
L300	N320	N318	89.2800	88.4900	92.9456	92.1556	Circular
L301	N321	N320	90.1100	89.7800	93.1449	92.9456	Circular
L302	N318	N500	87.7400	86.6700	92.1556	91.1164	Circular
L303	N326	N325	90.7500	90.2700	93.1937	93.1319	Circular
L304	N327	N325	90.6600	90.2700	93.5541	93.1319	Circular
L305	N325	N320	89.7700	89.2800	93.1319	92.9456	Circular
L306	N329	N330	94.0000	93.4400	99.5812	100.1502	Circular
L307	N330	N322	93.4400	92.5000	100.1728	98.6400	Circular
L308	N328	N331	93.4400	92.7000	99.0983	98.6400	Circular
L309	N332	N328	94.0000	93.4400	99.6635	99.0983	Circular
L310	N333	N334	108.8700	108.5100	110.9382	110.7767	Circular
L311	N334	N335	108.5100	106.1800	110.7767	109.7243	Circular
L312	N336	N335	106.5400	106.1800	109.8263	109.7243	Circular
L313	N335	N337	106.1800	102.7800	109.7243	104.3342	Circular
L314	N338	N337	103.3100	102.7800	104.4885	104.3342	Circular
L315	N339	N340	104.8900	104.4700	105.5303	105.2177	Circular
L316	N340	N337	104.4700	102.7800	105.2177	104.3342	Circular
L317	N337	N341	102.2800	101.2500	104.3342	102.9537	Circular
L318	N341	N342	101.2500	100.2200	102.9537	101.6653	Circular
L319	N342	N343	100.2200	100.0000	101.6653	101.1083	Circular
L320	N344	N342	101.1100	100.7200	101.8986	101.6653	Circular
L321	N345	N239	118.8300	117.6900	119.2319	118.5578	Circular
L324	N349	N347	119.1600	118.4500	122.9823	122.6221	Circular
L325	N350	N351	117.8000	117.4400	121.6390	121.4735	Circular
L326	N352	N348	117.3700	116.6700	120.4752	120.0079	Circular
L327	N353	N348	117.3600	116.6700	120.5972	120.0079	Circular

L328	N348	N354	116.1700	115.6500	120.0079	116.3779	Circular
L329	N354	N355	115.6500	110.6000	116.3779	113.7800	Circular
L334	N356	N357	125.3200	122.9800	125.6081	123.3977	Circular
L335	N357	N358	122.9800	120.8200	123.3977	121.3926	Circular
L336	N358	N359	120.8200	120.0900	121.3926	120.3681	Circular
L337	N359	N360	120.0900	112.8000	120.3681	116.1200	Circular
L338	N361	N362	126.2400	126.1300	128.4056	128.2437	Circular
L339	N362	N363	126.1300	125.7800	128.2437	127.6447	Circular
L340	N363	N364	125.2800	125.0100	127.6447	127.0548	Circular
L341	N364	N365	125.0100	124.9000	127.0548	126.5963	Circular
L342	N366	N363	127.8700	127.5300	128.9836	128.3977	Circular
L343	N367	N363	128.3300	127.7800	129.2163	128.4750	Circular
L344	N368	N369	124.2600	124.1700	126.9900	126.9334	Circular
L346	N371	N370	122.2600	122.2000	126.7751	126.7311	Circular
L347	N370	N372	121.7000	121.3400	126.7311	125.9377	Circular
L348	N372	N373	121.3400	120.9700	125.9377	125.1607	Circular
L349	N373	N374	120.9700	120.6000	125.1608	124.3629	Circular
L350	N374	N375	120.6000	120.4800	124.3629	124.1182	Circular
L351	N376	N377	122.9000	122.8200	124.4568	124.3901	Circular
L352	N377	N375	122.8200	122.4800	124.3901	124.1182	Circular
L354	N378	N379	119.2700	118.4000	122.2006	122.1000	Circular
L361	N383	N381	125.5300	125.2600	126.2887	125.9103	Circular
L362	N384	N381	125.6400	125.2600	126.3795	125.8878	Circular
L363	N381	N382	124.7600	123.3600	125.8395	124.5395	Circular
L364	N386	N382	124.1400	123.8600	124.9753	124.5573	Circular
L365	N387	N382	124.2300	123.8600	124.8582	124.5395	Circular
L366	N382	N388	122.8600	121.9500	124.5395	123.5625	Circular
L367	N388	N389	121.9500	121.1100	123.5625	122.2300	Circular
L368	N390	N389	122.8300	122.1100	123.6271	122.7556	Circular
L369	N391	N389	122.6900	122.1100	124.1512	122.9086	Circular
L370	N389	N392	120.1100	119.8300	121.9924	121.6798	Circular
L373	N392	N394	119.8300	118.4000	121.6798	121.5100	Circular
L374	N395	N396	118.6100	118.1800	121.1817	119.3451	Circular
L375	N396	N397	117.6800	117.3100	119.3452	118.8322	Circular
L376	N398	N397	116.3100	116.0600	119.0153	118.8323	Circular
L386	N399	N403	114.6100	114.3000	118.7270	118.4705	Circular
L387	N403	N404	114.3000	113.9800	118.4705	118.2069	Circular
L388	N405	N404	117.0000	116.7000	118.7909	118.2069	Circular
L389	N404	N406	113.4800	113.1700	118.2069	117.9109	Circular
L390	N407	N406	117.0000	116.6000	118.1897	117.9109	Circular
L391	N406	N408	113.1700	112.7800	117.9109	117.4431	Circular
L392	N408	N409	112.7800	112.4800	117.4431	116.9259	Circular
L393	N409	N410	112.4800	112.1200	116.9260	116.3132	Circular
L395	N412	N413	116.3000	115.3300	119.4386	119.1584	Circular
L396	N414	N413	116.3700	115.8300	119.2320	119.1584	Circular
L397	N415	N413	116.3300	115.3300	119.5311	119.1584	Circular
L398	N416	N414	116.8300	115.8700	119.5129	119.2321	Circular
L399	N417	N414	117.5700	116.8700	119.3434	119.2321	Circular
L402	N420	N421	112.2400	112.0000	114.7633	114.5335	Circular
L403	N421	N419	112.0000	110.9100	114.5335	113.4701	Circular
L404	N419	N422	110.9100	109.8800	113.4701	112.4791	Circular
L405	N423	N422	110.3700	110.1300	112.6795	112.4791	Circular
L406	N422	N424	109.1300	108.5100	112.4791	112.0680	Circular
L407	N425	N424	110.0600	109.7600	112.3959	112.0680	Circular
L408	N424	N426	108.2600	107.7000	112.0680	111.6343	Circular
L410	N426	N428	107.4500	106.9200	111.6343	111.1574	Circular
L411	N428	N429	106.9200	106.5200	111.1574	110.7941	Circular
L413	N432	N431	118.0700	116.6700	119.4963	119.2660	Circular
L415	N434	N432	118.8000	118.4800	119.7362	119.4963	Circular
L417	N436	N435	111.5700	111.1800	113.5338	112.9610	Circular

L418	N437	N435	110.9200	110.6800	113.1916	112.9610	Circular
L419	N435	N438	110.1800	109.5800	112.9610	112.5301	Circular
L420	N438	N439	109.5800	108.6500	112.5301	111.8621	Circular
L421	N440	N439	110.0500	109.6500	112.0562	111.8621	Circular
L422	N441	N439	109.7300	109.4000	112.2083	111.8621	Circular
L423	N439	N442	108.1500	107.4700	111.8621	111.2807	Circular
L424	N442	N429	107.2200	106.7700	111.2807	110.7941	Circular
L425	N443	N442	109.3800	108.9700	111.3435	111.2807	Circular
L426	N444	N442	109.0300	108.7200	111.6425	111.2807	Circular
L427	N429	N445	106.0200	105.4800	110.7941	109.7503	Circular
L428	N446	N445	108.4900	107.9800	109.8312	109.7503	Circular
L429	N445	N447	105.4800	105.0500	109.7503	108.8835	Circular
L430	N448	N449	118.7700	117.9900	121.1578	120.5963	Circular
L431	N450	N449	120.7400	118.2400	122.8992	120.5964	Circular
L432	N451	N450	121.2700	120.7400	123.3870	122.8992	Circular
L435	N454	N453	114.2900	113.7600	116.4642	115.6961	Circular
L436	N453	N455	113.7600	111.9300	115.6961	113.0201	Circular
L437	N455	N456	111.6800	110.2600	113.0201	112.1895	Circular
L438	N457	N456	111.0200	110.5100	112.4454	112.1895	Circular
L439	N456	N458	110.2600	108.6400	112.1895	109.7789	Circular
L440	N458	N447	108.3900	107.0500	109.7789	108.8835	Circular
L441	N447	N459	105.0500	104.6100	108.8835	107.6629	Circular
L442	N459	N460	104.6100	104.1100	107.6629	105.0976	Circular
L443	N460	N461	104.1100	94.1000	105.0976	98.6700	Circular
L446	N465	N466	126.6500	126.4400	129.7527	129.4984	Circular
L448	N467	N464	126.3000	125.8400	128.2210	128.1440	Circular
L449	N464	N468	125.0900	123.8400	128.1440	126.0007	Circular
L450	N468	N469	123.5900	122.6600	126.0007	123.9765	Circular
L451	N469	N470	118.6600	118.4600	120.4426	119.8419	Circular
L452	N471	N468	124.8800	124.5900	126.0884	126.0007	Circular
L453	N472	N468	124.9400	124.5900	126.0559	126.0007	Circular
L454	N473	N469	120.0700	119.6600	120.5302	120.4426	Circular
L466	N418	N487	119.9000	119.3200	120.8207	120.1342	Circular
L468	N487	N417	118.5700	117.5700	119.7372	119.3435	Circular
L470	N490	N494	121.9000	121.4100	123.4952	122.3558	Circular
L471	N491	N490	124.7700	121.9000	125.0264	123.4952	Circular
L472	N492	N493	126.3400	126.0400	128.1178	127.0400	Circular
L475	N317	N318	89.1700	88.7400	92.7363	92.1556	Circular
L478	N500	N501	86.6700	85.7200	91.1164	88.9568	Circular
L479	N501	N518	85.4700	84.5600	88.9568	87.4472	Circular
L487	N504	N503	95.5400	89.8000	99.2193	98.2300	Circular
L490	N513	N514	110.0100	109.8600	111.3361	110.8168	Circular
L493	N518	N517	84.3100	83.9500	87.4472	86.2850	Circular
L496	N524	N525	133.4500	131.1700	133.7961	131.6772	Circular
L497	N526	N525	133.4600	131.1700	133.8039	131.6772	Circular
L498	N525	N527	131.1700	130.6000	131.6772	131.1070	Circular
L499	N347	N351	118.4500	117.4400	122.6221	121.4735	Circular
L500	N351	N348	117.1900	116.4200	121.4735	120.0079	Circular
L501	N369	N528	123.6700	123.1600	126.9334	126.7860	Circular
L502	N528	N370	122.6600	122.2000	126.7860	126.7311	Circular
L503	N375	N529	119.9800	119.6400	124.1182	123.3488	Circular
L504	N529	N378	119.6400	119.2700	123.3488	122.2006	Circular
L505	N255	N530	102.8000	101.7100	107.2387	104.9238	Circular
L506	N530	N247	99.7100	98.6200	104.9238	102.4757	Circular
L507	N506	N554	92.1400	91.2800	94.2928	92.1084	Circular
L509	N497	N499	108.0800	107.5000	109.8299	108.4649	Circular
L510	N511	N555	102.2100	89.8000	102.7537	98.2300	Circular
L511	N509	N514	108.8800	108.6100	112.4402	109.8810	Circular
L512	N514	N516	108.1100	90.0000	108.7618	98.2300	Circular
L513	N517	N281	83.9500	83.7400	86.2850	85.5082	Circular

L514	N466	N464	126.1900	125.0900	129.4984	128.1440	Circular
L515	N397	N399	115.8100	115.6100	118.8323	118.7269	Circular
CH21	N470	N398	117.7100	116.3100	119.0231	119.0154	Rectangle
L474	N489	N689	118.4300	118.0000	120.8720	119.5000	Circular
L523	N494	N489	121.4100	120.8300	122.3558	121.2270	Trapezoid
L525	N413	N399	115.8300	115.1100	119.1584	118.7270	Circular
L527	N431	N404	116.6700	115.2500	119.2660	118.2069	Circular
L528	N449	N408	117.9900	116.0300	120.5963	117.4431	Circular
L529	EL329	N541	112.5200	112.0900	114.9266	114.2861	Circular
L533	N541	N427	112.0900	109.6400	114.2861	112.6510	Circular
L537	N427	N426	109.6400	108.9500	112.6510	111.6343	Circular
L394	N410	N411	112.1200	112.0000	116.3132	116.1200	Circular
L276	N294	N295	118.3000	107.9300	118.6232	110.3800	Circular
L288	N310	N311	112.2600	104.1000	112.6514	108.3400	Circular
L412	N430	N431	119.0000	118.4000	119.6536	119.2660	Circular
L447	N462	N466	127.7800	126.4400	129.7121	129.4984	Circular
L546	N554	N500	90.7800	87.4200	92.0791	91.1164	Circular

Table E18 - Junction Continuity Error. Division by Volume added 11/96

Continuity Error = Net Flow + Beginning Volume - Ending Volume
/ Total Flow + (Beginning Volume + Ending Volume)/2

Net Flow = Node Inflow - Node Outflow
Total Flow = absolute (Inflow + Outflow)
Intermediate column is a judgement on the node continuity error.

Excellent < 1 percent Great 1 to 2 percent Good 2 to 5 percent
Fair 5 to 10 percent Poor 10 to 25 percent Bad 25 to 50 percent
Terrible > 50 percent

Junction Name	<------Continuity Error -------> Volume	% of Node	% of Inflow	Remaining Volume	Beginning Volume	Net Flow Thru Node	Total Flow Thru Node	Failed to Converge
N221	33.6782	0.0294	0.0004	49.7524	0.0000	83.4306	114409.3199	0
N222	245.1540	0.1983	0.0028	205.5175	0.0000	450.6715	123546.6035	0
N223	71.8999	0.0556	0.0008	498.2510	0.0000	570.1509	128953.0033	0
N224	-18.3484	-0.0041	0.0002	896.4054	0.0000	878.0569	442970.4817	0
N227	33.3496	0.0339	0.0004	75.5204	0.0000	108.8700	98443.8759	0
N228	33.7704	0.0159	0.0004	121.4250	0.0000	155.1954	212437.4586	0
N230	731.8539	0.1414	0.0083	972.3050	0.0000	1704.1589	517079.6313	0
N231	17.7703	0.0473	0.0002	19.4099	0.0000	37.1803	37588.6248	0
N233	-669.3021	-0.1280	0.0076	737.3276	0.0000	68.0254	522355.6014	0
N234	-191.3154	-0.0366	0.0022	248.2852	56.7983	0.1714	522268.5380	0

N235	8.3823	0.0920	0.0001	8.2446	0.0000	16.6269	9111.6803
0							
N236	31.3933	0.3469	0.0004	29.3053	0.0000	60.6987	9034.2549
0							
N237	-24.6501	-0.2755	0.0003	102.8335	0.0000	78.1834	8895.3879
0							
N238	270.4968	0.2801	0.0031	338.4895	0.0000	608.9863	96405.1483
0							
N239	-40.4148	-0.1106	0.0005	275.5647	0.0000	235.1499	36415.2320
0							
N240	34.5971	0.0558	0.0004	268.9154	0.0000	303.5125	61819.0263
0							
N241	302.6663	0.2671	0.0034	438.1298	0.0000	740.7960	113108.1690
0							
N242	118.5430	0.0896	0.0014	515.8702	0.0000	634.4132	132039.9003
0							
N243	182.9352	0.1266	0.0021	512.5326	0.0000	695.4678	144247.8170
0							
N244	146.1878	0.0632	0.0017	601.2226	0.0000	747.4104	231162.3382
0							
N245	77.5971	0.0321	0.0009	750.3734	0.0000	827.9705	241050.6304
0							
N246	-309.3346	-0.0855	0.0035	1195.6007	0.0000	886.2661	361222.8772
0							
N247	168.5702	0.0178	0.0019	2239.8831	0.0000	2408.4533	944321.5365
0							
N248	2.3533	0.0133	0.0000	33.4991	0.0000	35.8524	17697.4480
0							
N249	42.7806	0.0509	0.0005	78.5533	0.0000	121.3339	84071.8747
0							
N250	41.9961	0.0344	0.0005	81.0646	0.0000	123.0607	121897.9904
0							
N251	33.1132	0.0226	0.0004	36.2440	0.0000	69.3572	146208.3290
0							
N252	54.1170	0.0337	0.0006	94.7626	0.0000	148.8796	160623.6547
0							
N253	235.6241	0.1114	0.0027	257.3503	0.0000	492.9744	211400.3849
0							
N254	21.7116	0.0443	0.0002	23.2899	0.0000	45.0015	48970.3033
0							
N255	345.4423	0.0828	0.0039	744.3749	0.0000	1089.8172	416779.3198
0							
N256	20.7638	0.0283	0.0002	24.1963	0.0000	44.9602	73277.9878
0							
N257	41.6652	0.0424	0.0005	40.5244	0.0000	82.1896	98253.2872
0							
N259	264.5778	0.0237	0.0030	1312.0892	0.0000	1576.6670	1116211.938
0							
N260	-229.6513	-0.0205	0.0026	268.0615	37.0697	1.3405	1118295.501
0							
N261	0.7037	0.0009	0.0000	41.2830	0.0000	41.9866	78456.3622
0							
N262	5.2153	0.0083	0.0001	21.9368	0.0000	27.1521	62508.4441
0							
N263	-29.9045	-0.0252	0.0003	51.8290	0.0000	21.9245	118663.2786
0							
N264	-20.2771	-0.0171	0.0002	61.8687	41.5935	-0.0019	118639.0966
0							
N265	3.6607	0.0071	0.0000	19.2533	0.0000	22.9140	51637.9568
0							

N266	-49.7575	-1.1110	0.0006	77.0371	0.0000	27.2796	4439.9935
N267	-10.6398	-0.0041	0.0001	726.8455	0.0000	716.2057	262298.9771
N268	0.6711	0.0010	0.0000	27.1324	0.0000	27.8035	68749.0174
N269	35.7213	0.0521	0.0004	160.9617	0.0000	196.6829	68523.3454
N270	41.4701	0.0265	0.0005	60.7133	0.0000	102.1834	156677.6425
N271	-47.9833	-0.0257	0.0005	324.9358	0.0000	276.9525	186823.0465
N272	-17.7510	-0.0058	0.0002	449.3857	0.0000	431.6348	308197.5536
N273	7.6739	0.0227	0.0001	28.4907	0.0000	36.1646	33740.3460
N274	-192.1599	-0.0609	0.0022	220.8916	0.0000	28.7317	315603.5838
N275	-42.7501	-0.0133	0.0005	99.7774	56.7983	0.2290	321940.9151
N276	9.2068	0.0238	0.0001	25.0887	0.0000	34.2955	38744.0486
N277	-40.3299	-0.0443	0.0005	56.9933	0.0000	16.6634	91089.7683
N278	-17.1803	-0.0189	0.0002	32.5298	15.3305	0.0190	91071.1198
N279	9.4384	0.0199	0.0001	24.3216	0.0000	33.7600	47472.9044
N280	49.8891	0.0333	0.0006	48.2906	0.0000	98.1797	149901.8400
N281	-267.8114	-0.0311	0.0031	1582.0368	0.0000	1314.2253	859398.4862
N282	-29.2593	-0.0033	0.0003	1396.3005	0.0000	1367.0412	893053.9898
N283	-245.4176	-0.0233	0.0028	1328.9968	0.0000	1083.5792	1052216.966
N284	12.1302	0.0358	0.0001	14.6706	0.0000	26.8008	33912.0764
N285	4.4458	0.0042	0.0001	51.8264	0.0000	56.2722	105094.5291
N286	153.5701	0.1330	0.0018	137.1868	0.0000	290.7569	115405.1167
N287	-422.8087	-0.0402	0.0048	1941.3929	0.0000	1518.5842	1049620.223
N288	283.5502	0.0195	0.0032	1394.9948	0.0000	1678.5450	1456571.809
N289	-121.3752	-0.0083	0.0014	147.8373	25.6346	0.8274	1457274.459
N290	15.1893	0.0041	0.0002	146.5379	0.0000	161.7272	373964.1533
N291	-42.2388	-0.0125	0.0005	74.7746	0.0000	32.5358	338798.0136
N292	-68.1269	-0.0201	0.0008	97.7896	29.6558	0.0069	338756.0657
N293	9.7307	0.0163	0.0001	26.7325	0.0000	36.4632	59568.6250
N294	-41.9277	-0.0337	0.0005	56.0968	0.0000	14.1691	124413.1333
N296	10.7325	0.0179	0.0001	28.7709	0.0000	39.5034	59838.8333

N297	0.9717	0.0016	0.0000	18.9395	0.0000	19.9112	61937.3871
N298	-35.9116	-0.0279	0.0004	82.4118	0.0000	46.5002	128712.3327
N299	-51.6855	-0.0402	0.0006	92.0210	40.3369	-0.0014	128664.2419
N300	1.0119	0.0016	0.0000	19.4693	0.0000	20.4812	62091.2640
N301	36.1919	0.0267	0.0004	51.8690	0.0000	88.0609	135426.7563
N302	-47.5818	-0.0240	0.0005	67.5118	0.0000	19.9300	198441.9914
N303	-12.4671	-0.0063	0.0001	49.4464	36.9440	0.0352	198417.4914
N304	8.0804	0.0136	0.0001	29.9827	0.0000	38.0631	59242.2291
N305	-25.0705	-0.0404	0.0003	58.3806	0.0000	33.3101	62015.9108
N306	-144.0559	-0.1411	0.0016	222.7250	0.0000	78.6692	101977.4877
N307	-124.8683	-0.1219	0.0014	175.5745	50.6410	0.0652	102336.6977
N308	27.3423	0.0601	0.0003	71.3390	0.0000	10332.4932	45493.9586
N309	37.7247	0.0522	0.0004	36.3423	0.0000	74.0670	72195.4642
N310	-81.2153	-0.0494	0.0009	91.2721	0.0000	10.0567	164352.5861
N312	49.7725	0.0556	0.0006	45.8436	0.0000	95.6161	89571.0039
N313	-3.1144	-0.0454	0.0000	28.6989	0.0000	25.5845	6845.6046
N314	-23.8036	-0.1356	0.0003	71.2492	0.0000	47.4456	17516.9051
N315	-55.6712	-0.1224	0.0006	71.8837	0.0000	16.2125	45436.0403
N316	-26.2547	-0.0577	0.0003	83.6909	57.4266	0.0096	45419.2128
N317	66.7863	0.0387	0.0008	105.6320	0.0000	172.4183	172423.5311
N318	-78.8627	-0.0170	0.0009	1440.8494	0.0000	1361.9866	464353.7129
N319	19.4518	0.0351	0.0002	68.4348	0.0000	87.8866	55460.8179
N320	145.5717	0.0691	0.0017	403.5429	0.0000	549.1146	210367.0283
N321	16.4715	0.0223	0.0002	60.4213	0.0000	76.8928	73834.8109
N325	-18.2676	-0.0140	0.0002	229.6363	0.0000	211.3687	130652.3012
N326	12.1379	0.0361	0.0001	63.6445	0.0000	75.7824	33628.5276
N327	30.1310	0.0309	0.0003	63.3906	0.0000	93.5216	97413.3109
N328	-108.3526	-0.0857	0.0012	181.0520	0.0000	72.6994	126285.4359
N329	-25.6981	-0.0230	0.0003	87.7312	0.0000	62.0331	111544.4893
N330	8.5197	0.0071	0.0001	239.9787	0.0000	248.4984	120235.2622

N331	-90.7872	-0.0718	0.0010	165.4472	74.6420	0.0180	126411.0674
N332	-31.0821	-0.0292	0.0004	88.4675	0.0000	57.3854	106547.9668
N333	2.2991	0.0036	0.0000	50.1222	0.0000	52.4213	63333.8400
N334	-20.7264	-0.0328	0.0002	211.2035	0.0000	190.4770	63088.3857
N335	163.4503	0.1388	0.0019	459.4405	0.0000	622.8908	117534.6896
N336	1.7936	0.0035	0.0000	65.6184	0.0000	67.4119	50704.7952
N337	-262.1897	-0.1079	0.0030	671.6183	0.0000	409.4286	242572.1154
N338	15.4943	0.0305	0.0002	51.7981	0.0000	67.2924	50725.6406
N339	-0.4329	-0.0007	0.0000	28.6240	0.0000	28.1910	64234.0130
N340	38.1540	0.0595	0.0004	133.2611	0.0000	171.4151	64033.2494
N341	-55.1818	-0.0228	0.0006	568.3193	0.0000	513.1375	241639.4909
N342	-95.4553	-0.0298	0.0011	366.5012	0.0000	271.0458	319924.7660
N343	-64.7083	-0.0202	0.0007	64.9264	0.0000	0.2181	319643.6396
N344	13.2044	0.0177	0.0002	33.8762	0.0000	47.0806	74388.6013
N345	-35.7953	-0.1780	0.0004	113.6572	0.0000	77.8619	20055.9746
N347	44.6632	0.0664	0.0005	257.4278	0.0000	302.0910	67181.3443
N348	165.7165	0.0540	0.0019	614.4719	0.0000	780.1884	306545.5680
N349	-1.2684	-0.0019	0.0000	96.8545	0.0000	95.5861	67583.2056
N350	8.4138	0.0131	0.0001	73.0439	0.0000	81.4578	64277.6410
N351	-31.8590	-0.0236	0.0004	482.3569	0.0000	450.4980	135018.5864
N352	15.7105	0.0202	0.0002	86.4114	0.0000	102.1220	77580.4344
N353	19.0115	0.0217	0.0002	87.6921	0.0000	106.7036	87555.5122
N354	-170.2399	-0.0557	0.0019	296.4904	0.0000	126.2505	305631.1833
N355	-63.0019	-0.0206	0.0007	103.0135	39.9599	0.0517	305498.1540
N356	-6.3172	-0.0374	0.0001	53.1746	0.0000	46.8574	16843.6010
N357	-48.6594	-0.1436	0.0006	126.2818	0.0000	77.6224	33831.3816
N358	-45.7837	-0.0899	0.0005	98.0782	0.0000	52.2945	50853.2068
N359	-37.6234	-0.0740	0.0004	49.7228	0.0000	12.0994	50789.4688
N360	-26.7910	-0.0527	0.0003	68.5426	41.7191	0.0324	50776.8630
N361	-2.0023	-0.0002	0.0000	253.6779	0.0000	251.6756	841286.8188

N362	364.7505	0.0434	0.0042	898.4054	0.0000	1263.1559	839735.7242
0							
N363	-265.7566	-0.0223	0.0030	1523.1074	0.0000	1257.3507	1189913.829
0							
N364	253.8355	0.0214	0.0029	1071.3786	0.0000	1325.2142	1187279.406
0							
N365	-268.5482	-0.0226	0.0031	326.7633	58.0549	0.1601	1185911.597
0							
N366	55.4970	0.0306	0.0006	54.1198	0.0000	109.6168	181552.1548
0							
N367	43.7331	0.0420	0.0005	42.0471	0.0000	85.7801	104170.1750
0							
N368	59.7097	0.0122	0.0007	164.6509	0.0000	224.3606	488094.3792
0							
N369	277.2948	0.0570	0.0032	1546.0435	0.0000	1823.3384	486013.1695
0							
N370	237.6684	0.0107	0.0027	4930.7590	0.0000	5168.4274	2213669.265
0							
N371	37.4486	0.0037	0.0004	297.6529	0.0000	335.1015	1013475.153
0							
N372	256.1550	0.0116	0.0029	5229.9556	0.0000	5486.1106	2202858.491
0							
N373	105.0754	0.0048	0.0012	5191.7651	0.0000	5296.8405	2191980.546
0							
N374	-171.2556	-0.0078	0.0020	3357.8049	0.0000	3186.5493	2183389.120
0							
N375	170.4472	0.0060	0.0019	4252.5904	0.0000	4423.0375	2852509.300
0							
N376	-1.5148	-0.0005	0.0000	65.6488	0.0000	64.1340	326806.7188
0							
N377	135.3370	0.0415	0.0015	264.1470	0.0000	399.4840	326327.3634
0							
N378	-147.9893	-0.0052	0.0017	3499.3535	0.0000	3351.3643	2864272.254
0							
N379	-580.4801	-0.0202	0.0066	628.2411	46.4942	1.2668	2873517.792
0							
N381	142.0976	0.0796	0.0016	339.0946	0.0000	481.1922	178436.1773
0							
N382	-204.1059	-0.0528	0.0023	891.1472	0.0000	687.0412	386461.5239
0							
N383	18.1903	0.0199	0.0002	23.3768	0.0000	41.5671	91494.3146
0							
N384	25.1052	0.0294	0.0003	28.0965	0.0000	53.2017	85471.0982
0							
N386	20.4753	0.0195	0.0002	25.8948	0.0000	46.3702	104878.9316
0							
N387	16.4795	0.0254	0.0002	25.0169	0.0000	41.4964	64774.9907
0							
N388	342.0889	0.0889	0.0039	973.8122	0.0000	1315.9011	384443.4529
0							
N389	-312.3086	-0.0416	0.0036	937.9497	0.0000	625.6411	750770.3085
0							
N390	51.9831	0.0577	0.0006	47.3614	0.0000	99.3445	90137.5391
0							
N391	64.1897	0.0464	0.0007	54.4614	0.0000	118.6511	138270.3228
0							
N392	-41.8237	-0.0056	0.0005	714.8885	0.0000	673.0649	749570.7512
0							
N394	-262.7943	-0.0350	0.0030	302.3313	39.0803	0.4568	750728.3110
0							

N395	111.9244	0.0844	0.0013	103.2146	0.0000	215.1390	132502.7894
N396	287.1075	0.2179	0.0033	450.8227	0.0000	737.9302	131546.1256
N397	-92.9942	-0.0212	0.0011	1408.2436	0.0000	1315.2493	438790.9852
N398	11315.0253	2.4869	0.1290	91532.4592	0.0000	102847.4845	409216.0181
N399	93.9219	0.0080	0.0011	4707.8174	0.0000	4801.7393	1168883.738
N403	354.0739	0.0305	0.0040	4516.0574	0.0000	4870.1313	1159154.942
N404	20.6033	0.0012	0.0002	5910.6318	0.0000	5931.2351	1689178.272
N405	64.6568	0.0733	0.0007	67.0637	0.0000	131.7205	88160.7459
N406	234.3777	0.0125	0.0027	7293.5326	0.0000	7527.9103	1867800.287
N407	40.0662	0.0630	0.0005	57.4648	0.0000	97.5310	63574.5356
N408	-160.4583	-0.0071	0.0018	7439.7679	0.0000	7279.3096	2254411.351
N409	275.8985	0.0123	0.0031	6701.2166	0.0000	6977.1151	2239908.753
N410	299.8625	0.0134	0.0034	4859.6985	0.0000	5159.5610	2227963.181
N412	0.1162	0.0001	0.0000	70.4677	0.0000	70.5840	167860.5081
N413	321.0089	0.0479	0.0037	3512.0317	0.0000	3833.0406	668933.1526
N414	43.5482	0.0133	0.0005	1982.0093	0.0000	2025.5575	325764.3623
N415	0.0732	0.0000	0.0000	75.6042	0.0000	75.6775	181332.2642
N416	0.9463	0.0006	0.0000	63.4318	0.0000	64.3781	171150.4067
N417	152.7717	0.0964	0.0017	1088.2973	0.0000	1241.0690	157955.4587
N418	52.1042	0.0325	0.0006	52.3634	0.0000	104.4676	160315.0923
N419	326.3228	0.1168	0.0037	959.7352	0.0000	1286.0580	279000.4840
N420	12.1884	0.0043	0.0001	135.4281	0.0000	147.6165	281764.7982
N421	37.7166	0.0134	0.0004	615.5949	0.0000	653.3115	280952.3057
N422	37.9983	0.0081	0.0004	1448.1246	0.0000	1486.1229	468139.4418
N423	57.3102	0.0298	0.0007	91.9756	0.0000	149.2857	192085.1791
N424	294.9565	0.0478	0.0034	2079.9550	0.0000	2374.9115	615484.4815
N425	46.4043	0.0307	0.0005	73.1559	0.0000	119.5602	151360.7849
N426	-101.2068	-0.0130	0.0012	2947.5001	0.0000	2846.2932	777403.6418
N428	279.3611	0.0361	0.0032	2519.5357	0.0000	2798.8968	771709.4486
N429	143.5063	0.0092	0.0016	4388.0226	0.0000	4531.5289	1560689.133

N430	13.0029	0.0146	0.0001	24.9317	0.0000	37.9345	88797.8272
N431	-13.8198	-0.0078	0.0002	786.6717	0.0000	772.8519	177487.7544
N432	-41.3014	-0.0461	0.0005	388.7593	0.0000	347.4578	89447.6944
N434	17.5629	0.0195	0.0002	30.8173	0.0000	48.3802	89844.2461
N435	-23.1731	-0.0073	0.0003	533.5823	0.0000	510.4092	316538.8264
N436	34.5030	0.0306	0.0004	51.5288	0.0000	86.0317	112755.3901
N437	58.7939	0.0287	0.0007	92.3718	0.0000	151.1657	204542.5642
N438	326.7629	0.1037	0.0037	1078.6616	0.0000	1405.4246	314608.4276
N439	125.4397	0.0235	0.0014	1731.6084	0.0000	1857.0482	533806.7035
N440	22.2779	0.0339	0.0003	52.1023	0.0000	74.3801	65715.5787
N441	49.4820	0.0329	0.0006	78.0646	0.0000	127.5466	150434.0885
N442	361.2520	0.0499	0.0041	1991.9490	0.0000	2353.2011	723213.4325
N443	13.2830	0.0360	0.0002	52.3617	0.0000	65.6447	36830.7074
N444	47.6278	0.0303	0.0005	77.9259	0.0000	125.5537	157017.7958
N445	187.9197	0.0115	0.0021	4417.4842	0.0000	4605.4040	1626077.579
N446	15.9645	0.0430	0.0002	51.5331	0.0000	67.4976	37129.9895
N447	8.1535	0.0004	0.0001	4268.7001	0.0000	4276.8536	1868793.823
N448	3.1936	0.0033	0.0000	66.0811	0.0000	69.2746	96876.0446
N449	289.4478	0.1558	0.0033	523.9240	0.0000	813.3717	185506.6782
N450	64.7353	0.0720	0.0007	233.3403	0.0000	298.0757	89745.8413
N451	4.8803	0.0054	0.0001	62.5974	0.0000	67.4776	90113.8519
N453	185.6009	0.1638	0.0021	186.3968	0.0000	371.9977	113210.8170
N454	6.7233	0.0059	0.0001	62.9015	0.0000	69.6248	113655.3377
N455	-118.1105	-0.1047	0.0013	348.2477	0.0000	230.1372	112605.6594
N456	250.9230	0.1407	0.0029	488.6306	0.0000	739.5535	178045.5986
N457	16.0984	0.0244	0.0002	52.5901	0.0000	68.6885	66085.7574
N458	19.1057	0.0108	0.0002	590.4156	0.0000	609.5212	176688.6932
N459	678.0333	0.0364	0.0077	3144.6047	0.0000	3822.6380	1860625.885
N460	-844.9568	-0.0455	0.0096	1468.7752	0.0000	623.8184	1856162.874
N461	-261.9044	-0.0141	0.0030	321.5090	57.4266	2.1780	1855503.723

N464	168.7059	0.0452	0.0019	1100.9924	0.0000	1269.6983	372353.6233
N465	35.5721	0.0152	0.0004	93.2476	0.0000	128.8197	234185.1966
N466	-44.5762	-0.0141	0.0005	927.7826	0.0000	883.2064	316626.0519
N467	10.3156	0.0269	0.0001	55.3824	0.0000	65.6979	38379.1242
N468	734.2285	0.1403	0.0084	1164.5122	0.0000	1898.7407	522744.2757
N469	-391.2352	-0.0682	0.0045	698.8100	0.0000	307.5748	573055.1363
N470	-22837.1075	-4.1522	0.2603	91146.5497	0.0000	68309.4422	504427.4708
N471	9.5112	0.0186	0.0001	35.1650	0.0000	44.6761	51140.1227
N472	8.1096	0.0220	0.0001	38.5521	0.0000	46.6617	36873.5802
N473	3.8073	0.0142	0.0000	23.2172	0.0000	27.0245	26854.8130
N487	-148.6711	-0.0929	0.0017	651.8909	0.0000	503.2198	159703.4986
N489	-444.8098	-0.1195	0.0051	601.9206	0.0000	157.1109	371773.2304
N490	2.7892	0.0007	0.0000	263.1712	0.0000	265.9604	375173.0035
N491	-42.0683	-0.2784	0.0005	95.3948	0.0000	53.3265	15062.9115
N492	3.4956	0.0020	0.0000	42.7957	0.0000	46.2913	176482.0433
N493	-33.0059	-0.0187	0.0004	33.0368	0.0000	0.0309	176430.3196
N497	135.9855	0.0605	0.0015	97.1302	0.0000	233.1156	224899.7903
N499	-75.1401	-0.0334	0.0009	168.6318	93.4910	0.0007	224662.5837
N500	166.5799	0.0235	0.0019	2590.1416	0.0000	2756.7215	706841.9129
N501	291.4717	0.0415	0.0033	2489.4166	0.0000	2780.8882	701271.0273
N503	-200.3069	-0.0469	0.0023	306.2486	105.9314	0.0103	426511.4703
N504	-195.6956	-0.0459	0.0022	246.4787	0.0000	50.7832	426525.8093
N506	100.6358	0.0670	0.0011	81.6435	0.0000	182.2793	150225.9366
N509	271.7853	0.0622	0.0031	194.9305	0.0000	466.7158	436556.9545
N511	-34.2348	-0.0169	0.0004	54.7630	0.0000	20.5283	202634.4504
N513	148.2358	0.0558	0.0017	115.9288	0.0000	264.1646	265729.3515
N514	-344.5056	-0.0487	0.0039	364.6591	0.0000	20.1535	707518.3690
N516	-107.3114	-0.0152	0.0012	210.3618	103.4182	-0.3678	707467.9207
N517	383.5931	0.0550	0.0044	1741.0733	0.0000	2124.6664	696214.3388
N518	-68.9129	-0.0099	0.0008	2656.9181	0.0000	2588.0052	695869.6281

N524	-8.7045	-0.0363	0.0001	66.5561	0.0000	57.8516	23957.0315
0							
N525	-101.0437	-0.2126	0.0012	150.4706	0.0000	49.4269	47452.4244
0							
N526	-9.2576	-0.0391	0.0001	66.6201	0.0000	57.3625	23660.4809
0							
N527	-25.9285	-0.0429	0.0003	25.9620	0.0000	0.0335	60443.7250
0							
N528	10.4261	0.0022	0.0001	3509.2596	0.0000	3519.6857	480635.4490
0							
N529	480.8057	0.0167	0.0055	6129.8652	0.0000	6610.6709	2873838.190
0							
N530	-260.0800	-0.0609	0.0030	1026.4328	0.0000	766.3528	426846.8026
0							
N689	-131.1714	-0.0353	0.0015	131.2870	0.0000	0.1156	371598.1872
0							
N494	845.9069	0.2263	0.0096	629.1738	0.0000	1475.0807	373421.7515
0							
N541	-24.1699	-0.0142	0.0003	922.9751	0.0000	898.8052	170253.5417
0							
EL329	43.9302	0.0256	0.0005	282.0300	0.0000	325.9602	171482.5846
0							
N427	-4.0460	-0.0024	0.0000	1083.9746	0.0000	1079.9286	168268.8463
0							
N411	-1192.2002	-0.0529	0.0136	1255.8670	51.7719	11.8949	2252406.428
0							
N295	-12.1282	-0.0097	0.0001	42.9384	30.7867	0.0235	124396.2123
0							
N311	-22.5588	-0.0137	0.0003	75.7934	53.2798	-0.0453	164338.7492
0							
N462	-3.1794	-0.0038	0.0000	373.8773	0.0000	370.6979	83838.1104
0							
N554	-12.6804	-0.0085	0.0001	563.7184	0.0000	551.0380	149489.0281
0							
N555	-47.9825	-0.0237	0.0005	153.8649	105.9314	-0.0489	202610.5836
0							
N322	-150.9675	-0.1253	0.0017	228.1294	77.1552	0.0066	120302.3094
0							

The total continuity error was -6579.5 cubic feet
The remaining total volume was 3.78341E+05 cubic feet
Your mean node continuity error was Excellent
Your worst node continuity error was Excellent

Table E19 - Junction Inflow & Outflow Listing Units are either ft^3 or m^3 depending on the units in your model.

Junction Name	Constant Inflow to Node	User Inflow to Node	Interface Inflow to Node	DWF Inlow to Node	Inflow through Outfall	RNF Layer Inflow to Node	Inflow from 2D Layer	Outflow from Node	Evaporation Basin Infil.
N221	0.0000	57330.5125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N222	0.0000	4844.4690	0.0000	0.0000	0.0000	0.0000			

0.0000	0.0000	0.0000	0.0000				
	N223	0.0000	3220.3920	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N224	0.0000	2437.1070	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N227	0.0000	49348.9384	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N228	0.0000	106453.3892	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N230	0.0000	19607.9040	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N231	0.0000	18840.4830	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N233	0.0000	3539.6550	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N234	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	261129.6035	0.0000	0.0000				
	N235	0.0000	4570.8150	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N238	0.0000	13361.4540	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N239	0.0000	8348.4300	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N240	0.0000	12990.6330	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N241	0.0000	198.3000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N242	0.0000	10170.8070	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N243	0.0000	6781.8600	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N244	0.0000	2211.0450	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N245	0.0000	5744.7510	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N246	0.0000	63.4560	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N247	0.0000	80285.7208	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N248	0.0000	8879.8740	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N249	0.0000	42158.5800	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N250	0.0000	61100.1967	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N251	0.0000	73246.0708	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N252	0.0000	7329.1680	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N253	0.0000	1251.2730	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N254	0.0000	24543.5908	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N255	0.0000	17811.3060	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N256	0.0000	36715.2441	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N257	0.0000	49239.8725	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N259	0.0000	48761.9700	0.0000	0.0000	0.0000	0.0000

0.0000	0.0000	0.0000	0.0000				
	N260	0.0000	0.0000	0.0000	0.0000	3311.2343	0.0000
0.0000	560935.1166	0.0000	0.0000				
	N261	0.0000	39305.0425	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N262	0.0000	31313.5525	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N263	0.0000	2298.2970	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N264	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	59318.1425	0.0000	0.0000				
	N265	0.0000	25868.2359	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N266	0.0000	2236.8240	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N267	0.0000	1871.9520	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N268	0.0000	34438.7608	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N270	0.0000	78504.9875	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N271	0.0000	15286.9470	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N272	0.0000	6686.6760	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N273	0.0000	16913.0070	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N274	0.0000	3946.1700	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N275	0.0000	3196.5960	0.0000	0.0000	-4.6254	0.0000
0.0000	160966.4609	0.0000	0.0000				
	N276	0.0000	19417.5360	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N277	0.0000	2482.7160	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N278	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	45534.3415	0.0000	0.0000				
	N279	0.0000	23788.0680	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N280	0.0000	75110.0908	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N281	0.0000	8439.6480	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N282	0.0000	1245.3240	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N283	0.0000	23296.2840	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N284	0.0000	16994.3100	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N285	0.0000	52652.6167	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N286	0.0000	5338.2360	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N288	0.0000	18168.2460	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N289	0.0000	0.0000	0.0000	0.0000	1715.8365	0.0000
0.0000	729767.2974	0.0000	0.0000				
	N290	0.0000	187369.7033	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N291	0.0000	169665.4800	0.0000	0.0000	0.0000	0.0000

0.0000	0.0000	0.0000	0.0000				
	N292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	169378.0306	0.0000	0.0000				
	N293	0.0000	29846.1325	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N294	0.0000	2552.1210	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N296	0.0000	29982.9600	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N297	0.0000	31024.0359	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N298	0.0000	2389.5150	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N299	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	64331.1039	0.0000	0.0000				
	N300	0.0000	31101.3716	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N301	0.0000	67856.2775	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N302	0.0000	1963.1700	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	99206.1473	0.0000	0.0000				
	N304	0.0000	29683.5275	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N305	0.0000	31121.2016	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N306	0.0000	2587.8150	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N307	0.0000	0.0000	0.0000	0.0000	450.4194	0.0000
0.0000	51445.2565	0.0000	0.0000				
	N308	0.0000	27972.1984	0.0000	0.0000	0.0000	0.0000
0.0000	10233.8119	0.0000	0.0000				
	N309	0.0000	36187.7675	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N310	0.0000	1386.1170	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N312	0.0000	44899.0867	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N313	0.0000	3440.5050	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N314	0.0000	5379.8790	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N315	0.0000	14011.8780	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N316	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	22709.5083	0.0000	0.0000				
	N317	0.0000	86425.0892	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N318	0.0000	14170.5180	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N319	0.0000	27815.5408	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N320	0.0000	3371.1000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N321	0.0000	37010.7116	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N326	0.0000	16877.3130	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N327	0.0000	48825.4267	0.0000	0.0000	0.0000	0.0000

0.0000	0.0000	0.0000	0.0000				
	N328	0.0000	9968.5410	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N329	0.0000	55894.8208	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N330	0.0000	4374.4980	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N331	0.0000	0.0000	0.0000	0.0000	57.5777	0.0000
0.0000	63294.8766	0.0000	0.0000				
	N332	0.0000	53410.1216	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N333	0.0000	31739.8984	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N335	0.0000	2318.1270	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N336	0.0000	25424.0425	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N337	0.0000	5788.3770	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N338	0.0000	25433.9584	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N339	0.0000	32178.1408	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N342	0.0000	2373.6510	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	159819.6919	0.0000	0.0000				
	N344	0.0000	37272.4684	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N345	0.0000	10081.5720	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N348	0.0000	3928.3230	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N349	0.0000	33889.4700	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N350	0.0000	32227.7167	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N351	0.0000	2205.0960	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N352	0.0000	38898.5284	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N353	0.0000	43895.6884	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N355	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	N356	0.0000	8457.4950	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N357	0.0000	8568.5430	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N358	0.0000	8588.3730	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	25387.7619	0.0000	0.0000				
	N361	0.0000	421389.4861	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N363	0.0000	33657.4592	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N365	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	592947.7546	0.0000	0.0000				
	N366	0.0000	90964.1767	0.0000	0.0000	0.0000	0.0000

0.0000	0.0000	0.0000	0.0000				
	N367	0.0000	52204.4584	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N368	0.0000	244521.7385	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N370	0.0000	364905.7090	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N371	0.0000	507661.8844	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N375	0.0000	175719.5792	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N376	0.0000	163676.8200	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N379	0.0000	0.0000	0.0000	0.0000	11210.6517	0.0000
0.0000	1.4428E+06	0.0000	0.0000				
	N381	0.0000	1027.1940	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N382	0.0000	19847.8470	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N383	0.0000	45835.0616	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N384	0.0000	42824.8684	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N386	0.0000	52539.5859	0.0000	0.0000	0.0000	0.0000
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	N387	0.0000	32455.7608	0.0000	0.0000	0.0000	0.0000
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	N389	0.0000	70176.3875	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N390	0.0000	45184.6384	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N391	0.0000	69295.9359	0.0000	0.0000	0.0000	0.0000
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	N394	0.0000	0.0000	0.0000	0.0000	1376.2448	0.0000
0.0000	376200.7695	0.0000	0.0000				
	N395	0.0000	66456.2792	0.0000	0.0000	0.0000	0.0000
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	N397	0.0000	1471.3860	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N398	0.0000	38027.9908	0.0000	0.0000	0.0000	0.0000
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	N399	0.0000	35624.5959	0.0000	0.0000	0.0000	0.0000
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	N404	0.0000	138284.5059	0.0000	0.0000	0.0000	0.0000
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	N405	0.0000	44210.9859	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N406	0.0000	64449.4825	0.0000	0.0000	0.0000	0.0000
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	N407	0.0000	31882.6733	0.0000	0.0000	0.0000	0.0000
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	N408	0.0000	108573.2167	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N412	0.0000	84089.1159	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N415	0.0000	90837.2633	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N416	0.0000	85733.0216	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N418	0.0000	80327.3633	0.0000	0.0000	0.0000	0.0000

0.0000	0.0000	0.0000	0.0000				
	N420	0.0000	141163.8208	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N423	0.0000	96258.7867	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N425	0.0000	75851.7325	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N429	0.0000	37823.7416	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N430	0.0000	44482.6567	0.0000	0.0000	0.0000	0.0000
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	N431	0.0000	202.2660	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N434	0.0000	45012.1175	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N436	0.0000	56503.6016	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N437	0.0000	102497.3033	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N439	0.0000	3275.9160	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N440	0.0000	32943.5792	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N441	0.0000	75391.6775	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N443	0.0000	18475.6110	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N444	0.0000	78687.4225	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N445	0.0000	18800.8230	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N446	0.0000	18626.3190	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N447	0.0000	37857.4525	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N448	0.0000	48543.8400	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N449	0.0000	35.6940	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N451	0.0000	45156.8767	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N454	0.0000	56945.8108	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N456	0.0000	200.2830	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N457	0.0000	33126.0159	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N461	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	927729.0965	0.0000	0.0000				
	N464	0.0000	9805.9350	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N465	0.0000	117330.1433	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N467	0.0000	19250.9640	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N468	0.0000	32878.1400	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N469	0.0000	12875.6190	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N471	0.0000	25630.2759	0.0000	0.0000	0.0000	0.0000

0.0000	0.0000	0.0000	0.0000				
	N472	0.0000	18487.5090	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N473	0.0000	13460.6040	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N490	0.0000	180478.7792	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N491	0.0000	7569.1110	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N492	0.0000	88394.2084	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N493	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	88214.5805	0.0000	0.0000				
	N497	0.0000	112731.5675	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N499	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	112331.2413	0.0000	0.0000				
	N500	0.0000	48920.6100	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N503	0.0000	0.0000	0.0000	0.0000	65.7605	0.0000
0.0000	213271.4741	0.0000	0.0000				
	N504	0.0000	213594.8792	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N506	0.0000	75314.3400	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N509	0.0000	218831.9816	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N511	0.0000	101476.0592	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N513	0.0000	133192.1608	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N514	0.0000	3008.2110	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N516	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	353724.9431	0.0000	0.0000				
	N517	0.0000	2548.1550	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N524	0.0000	12024.9120	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N526	0.0000	11876.1870	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N527	0.0000	6530.0190	0.0000	0.0000	-9.4488	0.0000
0.0000	30221.7281	0.0000	0.0000				
	N529	0.0000	16270.5150	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N530	0.0000	5978.7450	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N689	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	185796.0887	0.0000	0.0000				
	EL329	0.0000	86030.4716	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N411	0.0000	0.0000	0.0000	0.0000	28391.8290	0.0000
0.0000	1.1408E+06	0.0000	0.0000				
	N295	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	62196.4441	0.0000	0.0000				
	N311	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	82167.2187	0.0000	0.0000				
	N462	0.0000	42166.5116	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N555	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

0.0000 101305.3592   0.0000   0.0000
           N322   0.0000   0.0000   0.0000   0.0000   45.3707   0.0000
0.0000   60165.7622   0.0000   0.0000

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| Table E20 - Junction Flooding and Volume Listing. |
| The maximum volume is the total volume |
| in the node including the volume in the |
| flooded storage area. This is the max |
| volume at any time. The volume in the |
| flooded storage area is the total volume|
| above the ground elevation, where the |
| flooded pond storage area starts. |
| The fourth column is instantaneous, the fifth is the|
| sum of the flooded volume over the entire simulation|
| Units are either ft^3 or m^3 depending on the units.|
==

Junction Name	Surcharged Time (min)	Flooded Time(min)	Out of 1D-System (Flooded Volume)	Maximum Volume	Passed to 2D cell OR Volume Stored in allowed Flood Pond of 1D-System
N221	302.2581	0.0000	0.0000	22.1483	0.0000
N222	301.7097	0.0000	0.0000	32.0928	0.0000
N223	0.0000	0.0000	0.0000	16.4104	0.0000
N224	300.9032	0.0000	0.0000	41.7304	0.0000
N227	308.1667	0.0000	0.0000	33.0732	0.0000
N228	309.3000	0.0000	0.0000	38.7033	0.0000
N230	0.0000	0.0000	0.0000	29.3965	0.0000
N231	0.0000	0.0000	0.0000	5.6195	0.0000
N233	0.0000	0.0000	0.0000	10.2087	0.0000
N234	360.0000	0.0000	0.0000	56.7983	0.0000
N235	0.0000	0.0000	0.0000	3.3203	0.0000
N236	0.0000	0.0000	0.0000	3.5222	0.0000
N237	0.0000	0.0000	0.0000	5.0215	0.0000
N238	266.1290	0.0000	0.0000	31.0693	0.0000
N239	0.0000	0.0000	0.0000	10.9053	0.0000
N240	294.8710	0.0000	0.0000	19.8467	0.0000
N241	0.0000	0.0000	0.0000	14.5562	0.0000
N242	0.0000	0.0000	0.0000	21.8576	0.0000
N243	0.0000	0.0000	0.0000	37.9415	0.0000
N244	287.6129	0.0000	0.0000	40.4049	0.0000
N245	292.4839	0.0000	0.0000	50.8927	0.0000
N246	309.8667	0.0000	0.0000	49.3183	0.0000
N247	328.6154	0.0000	0.0000	57.8752	0.0000
N248	273.2258	0.0000	0.0000	13.1695	0.0000
N249	304.3000	0.0000	0.0000	36.8412	0.0000
N250	312.1379	0.0000	0.0000	41.2723	0.0000
N251	309.7000	0.0000	0.0000	15.9927	0.0000
N252	0.0000	0.0000	0.0000	27.9086	0.0000
N253	0.0000	0.0000	0.0000	29.9482	0.0000
N254	0.0000	0.0000	0.0000	6.5772	0.0000
N255	0.0000	0.0000	0.0000	55.7771	0.0000
N256	0.0000	0.0000	0.0000	8.3358	0.0000
N257	0.0000	0.0000	0.0000	10.5200	0.0000
N259	359.2500	0.0000	0.0000	42.5608	0.0000
N260	360.0000	0.0000	0.0000	37.0697	0.0000
N261	357.5758	0.0000	0.0000	22.7265	0.0000
N262	0.0000	0.0000	0.0000	7.7060	0.0000

N263	0.0000	0.0000	0.0000	4.9260	0.0000
N264	360.0000	0.0000	0.0000	41.5935	0.0000
N265	0.0000	0.0000	0.0000	6.8603	0.0000
N266	0.0000	0.0000	0.0000	1.8664	0.0000
N267	299.7419	0.0000	0.0000	21.0555	0.0000
N268	0.0000	0.0000	0.0000	8.0862	0.0000
N269	0.0000	0.0000	0.0000	8.3545	0.0000
N270	0.0000	0.0000	0.0000	14.3567	0.0000
N271	0.0000	0.0000	0.0000	17.4288	0.0000
N272	0.0000	0.0000	0.0000	18.3481	0.0000
N273	0.0000	0.0000	0.0000	5.5452	0.0000
N274	0.0000	0.0000	0.0000	5.7284	0.0000
N275	360.0000	0.0000	0.0000	56.7983	0.0000
N276	0.0000	0.0000	0.0000	6.1923	0.0000
N277	0.0000	0.0000	0.0000	3.4581	0.0000
N278	360.0000	0.0000	0.0000	15.3305	0.0000
N279	0.0000	0.0000	0.0000	6.8826	0.0000
N280	0.0000	0.0000	0.0000	12.1737	0.0000
N281	0.0000	0.0000	0.0000	28.5016	0.0000
N282	0.0000	0.0000	0.0000	25.4010	0.0000
N283	0.0000	0.0000	0.0000	18.3390	0.0000
N284	0.0000	0.0000	0.0000	5.2973	0.0000
N285	304.5000	0.0000	0.0000	20.6874	0.0000
N286	304.5667	0.0000	0.0000	19.1815	0.0000
N287	0.0000	0.0000	0.0000	23.2776	0.0000
N288	0.0000	0.0000	0.0000	28.3940	0.0000
N289	0.0000	0.0000	0.0000	25.6346	0.0000
N290	0.0000	0.0000	0.0000	20.1095	0.0000
N291	0.0000	0.0000	0.0000	6.6408	0.0000
N292	360.0000	0.0000	0.0000	29.6558	0.0000
N293	0.0000	0.0000	0.0000	7.7667	0.0000
N294	0.0000	0.0000	0.0000	4.0611	0.0000
N296	0.0000	0.0000	0.0000	7.8549	0.0000
N297	0.0000	0.0000	0.0000	7.4636	0.0000
N298	0.0000	0.0000	0.0000	7.2688	0.0000
N299	360.0000	0.0000	0.0000	40.3369	0.0000
N300	0.0000	0.0000	0.0000	7.4898	0.0000
N301	312.6897	0.0000	0.0000	24.1177	0.0000
N302	0.0000	0.0000	0.0000	4.9644	0.0000
N303	360.0000	0.0000	0.0000	36.9440	0.0000
N304	0.0000	0.0000	0.0000	7.6902	0.0000
N305	359.5000	0.0000	0.0000	53.5847	0.0000
N306	359.7500	0.0000	0.0000	54.5498	0.0000
N307	360.0000	0.0000	0.0000	50.6410	0.0000
N308	359.5000	314.0417	10233.8119	40.3369	0.0000
N309	0.0000	0.0000	0.0000	8.4156	0.0000
N310	0.0000	0.0000	0.0000	4.9177	0.0000
N312	0.0000	0.0000	0.0000	9.9295	0.0000
N313	0.0000	0.0000	0.0000	2.3058	0.0000
N314	0.0000	0.0000	0.0000	3.6953	0.0000
N315	0.0000	0.0000	0.0000	4.4586	0.0000
N316	360.0000	0.0000	0.0000	57.4266	0.0000
N317	301.6452	0.0000	0.0000	44.8137	0.0000
N318	301.0968	0.0000	0.0000	55.4868	0.0000
N319	298.3871	0.0000	0.0000	35.8218	0.0000
N320	299.1935	0.0000	0.0000	46.0622	0.0000
N321	298.0645	0.0000	0.0000	38.1362	0.0000
N325	297.1935	0.0000	0.0000	42.2457	0.0000
N326	295.9355	0.0000	0.0000	30.7076	0.0000
N327	297.0000	0.0000	0.0000	36.3678	0.0000

N328	360.0000	0.0000	0.0000	71.1021	0.0000
N329	360.0000	0.0000	0.0000	70.0752	0.0000
N330	360.0000	0.0000	0.0000	84.3209	0.0000
N331	360.0000	0.0000	0.0000	74.6420	0.0000
N332	359.7500	0.0000	0.0000	71.1229	0.0000
N333	292.6774	0.0000	0.0000	25.9895	0.0000
N334	295.2581	0.0000	0.0000	28.4835	0.0000
N335	306.0000	0.0000	0.0000	44.5372	0.0000
N336	302.5161	0.0000	0.0000	41.2954	0.0000
N337	296.5161	0.0000	0.0000	25.8126	0.0000
N338	287.6774	0.0000	0.0000	14.8095	0.0000
N339	0.0000	0.0000	0.0000	8.0459	0.0000
N340	0.0000	0.0000	0.0000	9.3962	0.0000
N341	292.7742	0.0000	0.0000	21.4082	0.0000
N342	0.0000	0.0000	0.0000	18.1613	0.0000
N343	0.0000	0.0000	0.0000	13.9267	0.0000
N344	0.0000	0.0000	0.0000	9.9100	0.0000
N345	0.0000	0.0000	0.0000	5.0497	0.0000
N347	311.5862	0.0000	0.0000	52.4265	0.0000
N348	319.5000	0.0000	0.0000	48.2269	0.0000
N349	309.7667	0.0000	0.0000	48.0311	0.0000
N350	313.3103	0.0000	0.0000	48.2415	0.0000
N351	315.5517	0.0000	0.0000	53.8267	0.0000
N352	313.4483	0.0000	0.0000	39.0194	0.0000
N353	313.9655	0.0000	0.0000	40.6788	0.0000
N354	0.0000	0.0000	0.0000	9.1472	0.0000
N355	360.0000	0.0000	0.0000	39.9599	0.0000
N356	0.0000	0.0000	0.0000	3.6202	0.0000
N357	0.0000	0.0000	0.0000	5.2486	0.0000
N358	0.0000	0.0000	0.0000	7.1951	0.0000
N359	0.0000	0.0000	0.0000	3.4952	0.0000
N360	360.0000	0.0000	0.0000	41.7191	0.0000
N361	0.0000	0.0000	0.0000	27.2130	0.0000
N362	0.0000	0.0000	0.0000	26.5610	0.0000
N363	0.0000	0.0000	0.0000	29.7151	0.0000
N364	0.0000	0.0000	0.0000	25.6949	0.0000
N365	0.0000	0.0000	0.0000	58.0549	0.0000
N366	0.0000	0.0000	0.0000	13.9941	0.0000
N367	0.0000	0.0000	0.0000	11.1376	0.0000
N368	294.6129	0.0000	0.0000	34.3062	0.0000
N369	295.0000	0.0000	0.0000	41.0080	0.0000
N370	302.7097	0.0000	0.0000	63.2212	0.0000
N371	302.5484	0.0000	0.0000	56.7366	0.0000
N372	299.9677	0.0000	0.0000	57.7748	0.0000
N373	295.5806	0.0000	0.0000	52.6609	0.0000
N374	0.0000	0.0000	0.0000	47.2851	0.0000
N375	0.0000	0.0000	0.0000	52.0005	0.0000
N376	0.0000	0.0000	0.0000	19.5633	0.0000
N377	0.0000	0.0000	0.0000	19.7299	0.0000
N378	0.0000	0.0000	0.0000	36.8265	0.0000
N379	0.0000	0.0000	0.0000	46.4942	0.0000
N381	0.0000	0.0000	0.0000	13.5646	0.0000
N382	0.0000	0.0000	0.0000	21.1043	0.0000
N383	0.0000	0.0000	0.0000	9.5340	0.0000
N384	0.0000	0.0000	0.0000	9.2920	0.0000
N386	0.0000	0.0000	0.0000	10.4968	0.0000
N387	0.0000	0.0000	0.0000	7.8940	0.0000
N388	0.0000	0.0000	0.0000	20.2625	0.0000
N389	0.0000	0.0000	0.0000	23.6541	0.0000
N390	0.0000	0.0000	0.0000	10.0162	0.0000

N391	310.7586	0.0000	0.0000	18.3614	0.0000
N392	0.0000	0.0000	0.0000	23.2450	0.0000
N394	360.0000	0.0000	0.0000	39.0803	0.0000
N395	322.2963	0.0000	0.0000	38.5978	0.0000
N396	79.9677	0.0000	0.0000	20.9237	0.0000
N397	12.4194	0.0000	0.0000	37.9771	0.0000
N398	0.0000	0.0000	0.0000	33.9950	0.0000
N399	66.9355	0.0000	0.0000	51.8590	0.0000
N403	101.8387	0.0000	0.0000	52.4060	0.0000
N404	143.6452	0.0000	0.0000	59.3981	0.0000
N405	300.3226	0.0000	0.0000	22.5048	0.0000
N406	163.7097	0.0000	0.0000	59.5738	0.0000
N407	136.1613	0.0000	0.0000	14.9493	0.0000
N408	142.7097	0.0000	0.0000	58.5960	0.0000
N409	0.0000	0.0000	0.0000	55.8676	0.0000
N410	0.0000	0.0000	0.0000	52.6918	0.0000
N412	318.3571	0.0000	0.0000	39.4385	0.0000
N413	146.2903	0.0000	0.0000	48.1073	0.0000
N414	0.0000	0.0000	0.0000	42.7497	0.0000
N415	318.7857	0.0000	0.0000	40.2254	0.0000
N416	307.6667	0.0000	0.0000	33.7128	0.0000
N417	0.0000	0.0000	0.0000	22.2851	0.0000
N418	0.0000	0.0000	0.0000	11.5693	0.0000
N419	278.9677	0.0000	0.0000	32.1704	0.0000
N420	276.1290	0.0000	0.0000	31.7081	0.0000
N421	276.2903	0.0000	0.0000	31.8363	0.0000
N422	283.0000	0.0000	0.0000	42.0842	0.0000
N423	282.1935	0.0000	0.0000	29.0211	0.0000
N424	288.4516	0.0000	0.0000	47.8518	0.0000
N425	288.6774	0.0000	0.0000	29.3530	0.0000
N426	292.1935	0.0000	0.0000	52.5794	0.0000
N428	295.2258	0.0000	0.0000	53.2469	0.0000
N429	297.7419	0.0000	0.0000	59.9908	0.0000
N430	0.0000	0.0000	0.0000	8.2131	0.0000
N431	0.0000	0.0000	0.0000	32.6212	0.0000
N432	0.0000	0.0000	0.0000	17.9224	0.0000
N434	0.0000	0.0000	0.0000	11.7639	0.0000
N435	282.9032	0.0000	0.0000	34.9464	0.0000
N436	284.3871	0.0000	0.0000	24.6769	0.0000
N437	282.7097	0.0000	0.0000	28.5450	0.0000
N438	285.7419	0.0000	0.0000	37.0714	0.0000
N439	293.0645	0.0000	0.0000	46.6460	0.0000
N440	289.0323	0.0000	0.0000	25.2102	0.0000
N441	293.0645	0.0000	0.0000	31.1418	0.0000
N442	296.6129	0.0000	0.0000	51.0267	0.0000
N443	290.4194	0.0000	0.0000	24.6738	0.0000
N444	296.9677	0.0000	0.0000	32.8288	0.0000
N445	293.9355	0.0000	0.0000	53.6601	0.0000
N446	282.8710	0.0000	0.0000	16.8533	0.0000
N447	286.1290	0.0000	0.0000	48.1715	0.0000
N448	303.9032	0.0000	0.0000	30.0045	0.0000
N449	305.3000	0.0000	0.0000	32.7513	0.0000
N450	298.5806	0.0000	0.0000	27.1327	0.0000
N451	297.6774	0.0000	0.0000	26.6025	0.0000
N453	303.9355	0.0000	0.0000	24.3294	0.0000
N454	305.1333	0.0000	0.0000	27.3212	0.0000
N455	267.0000	0.0000	0.0000	16.8395	0.0000
N456	300.4194	0.0000	0.0000	24.2455	0.0000
N457	294.7097	0.0000	0.0000	17.9111	0.0000
N458	0.0000	0.0000	0.0000	17.4524	0.0000

N459	0.0000	0.0000	0.0000	38.3632	0.0000
N460	0.0000	0.0000	0.0000	12.4097	0.0000
N461	360.0000	0.0000	0.0000	57.4266	0.0000
N464	303.0323	0.0000	0.0000	38.3762	0.0000
N465	301.4839	0.0000	0.0000	38.9881	0.0000
N466	301.2903	0.0000	0.0000	41.5731	0.0000
N467	298.3548	0.0000	0.0000	24.1394	0.0000
N468	298.9032	0.0000	0.0000	30.2926	0.0000
N469	0.0000	0.0000	0.0000	22.4006	0.0000
N470	0.0000	0.0000	0.0000	16.5010	0.0000
N471	294.2258	0.0000	0.0000	15.1844	0.0000
N472	291.7097	0.0000	0.0000	14.0223	0.0000
N473	0.0000	0.0000	0.0000	5.7827	0.0000
N487	0.0000	0.0000	0.0000	14.6670	0.0000
N489	0.0000	0.0000	0.0000	30.6866	0.0000
N490	0.0000	0.0000	0.0000	20.0447	0.0000
N491	0.0000	0.0000	0.0000	10.7615	0.0000
N492	324.8148	0.0000	0.0000	22.3397	0.0000
N493	0.0000	0.0000	0.0000	12.5660	0.0000
N497	310.9310	0.0000	0.0000	21.9897	0.0000
N499	0.0000	0.0000	0.0000	93.4910	0.0000
N500	305.3667	0.0000	0.0000	55.8736	0.0000
N501	296.8065	0.0000	0.0000	43.8156	0.0000
N503	360.0000	0.0000	0.0000	105.9314	0.0000
N504	360.0000	0.0000	0.0000	46.2344	0.0000
N506	316.2857	0.0000	0.0000	27.0525	0.0000
N509	328.1923	0.0000	0.0000	44.7382	0.0000
N511	0.0000	0.0000	0.0000	6.8324	0.0000
N513	0.0000	0.0000	0.0000	16.6640	0.0000
N514	0.0000	0.0000	0.0000	8.1905	0.0000
N516	360.0000	0.0000	0.0000	103.4182	0.0000
N517	0.0000	0.0000	0.0000	29.3412	0.0000
N518	293.7419	0.0000	0.0000	39.4220	0.0000
N524	0.0000	0.0000	0.0000	4.3492	0.0000
N525	0.0000	0.0000	0.0000	6.3739	0.0000
N526	0.0000	0.0000	0.0000	4.3215	0.0000
N527	0.0000	0.0000	0.0000	6.3708	0.0000
N528	299.2903	0.0000	0.0000	51.8480	0.0000
N529	0.0000	0.0000	0.0000	46.6043	0.0000
N530	304.3667	0.0000	0.0000	65.5172	0.0000
N689	0.0000	0.0000	0.0000	18.8490	0.0000
N494	0.0000	0.0000	0.0000	11.8845	0.0000
N541	275.8065	0.0000	0.0000	27.5966	0.0000
EL329	278.9032	0.0000	0.0000	30.2418	0.0000
N427	293.1613	0.0000	0.0000	37.8364	0.0000
N411	0.0000	0.0000	0.0000	51.7719	0.0000
N295	360.0000	0.0000	0.0000	30.7867	0.0000
N311	360.0000	0.0000	0.0000	53.2798	0.0000
N462	293.6129	0.0000	0.0000	24.2794	0.0000
N554	0.0000	0.0000	0.0000	17.5805	0.0000
N555	360.0000	0.0000	0.0000	105.9314	0.0000
N322	360.0000	0.0000	0.0000	77.1552	0.0000

==================================
| Simulation Specific Information |
==================================

Number of Input Conduits.....	239	Number of Simulated Conduits.....	269
Number of Natural Channels.....	0	Number of Junctions.....	269
Number of Storage Junctions.....	0	Number of Weirs.....	0
Number of Orifices.....	0	Number of Pumps.....	0

Number of Free Outfalls..... 30 Number of Tide Gate Outfalls..... 0

Average % Change in Junction or Conduit is defined as:
Conduit % Change ==> 100.0 (Q(n+1) - Q(n)) / Qfull
Junction % Change ==> 100.0 (Y(n+1) - Y(n)) / Yfull

The Conduit with the largest average change was..FREE #26 with 0.007 percent
The Junction with the largest average change was.N371 with 0.509 percent
The Conduit with the largest sinuosity was.....L347 with 15.841

Table E21. Continuity balance at the end of the simulation
Junction Inflow, Outflow or Street Flooding
Error = Inflow + Initial Volume - Outflow - Final Volume

Inflow Junction	Inflow Volume,ft^3	Average Inflow, cfs
N221	57247.5567	2.6503
N222	4837.4592	0.2240
N223	3215.7322	0.1489
N224	2433.5806	0.1127
N227	49277.5317	2.2814
N228	106299.3539	4.9213
N230	19579.5319	0.9065
N231	18813.2213	0.8710
N233	3534.5332	0.1636
N235	4564.2012	0.2113
N238	13342.1203	0.6177
N239	8336.3500	0.3859
N240	12971.8359	0.6005
N241	198.0131	0.0092
N242	10156.0901	0.4702
N243	6772.0468	0.3135
N244	2207.8457	0.1022
N245	5736.4385	0.2656
N246	63.3642	0.0029
N247	80169.5495	3.7116
N248	8867.0251	0.4105
N249	42097.5776	1.9490
N250	61011.7863	2.8246
N251	73140.0857	3.3861
N252	7318.5629	0.3388
N253	1249.4624	0.0578
N254	24508.0769	1.1346
N255	17785.5335	0.8234
N256	36662.1181	1.6973
N257	49168.6237	2.2763
N259	48691.4127	2.2542
N260	3311.2343	0.1533
N261	39248.1691	1.8170
N262	31268.2426	1.4476
N263	2294.9714	0.1062
N265	25830.8052	1.1959
N266	2233.5874	0.1034

N267	1869.2433	0.0865
N268	34388.9288	1.5921
N270	78391.3929	3.6292
N271	15264.8272	0.7067
N272	6677.0006	0.3091
N273	16888.5343	0.7819
N274	3940.4600	0.1824
N275	3191.9706	0.1478
N276	19389.4393	0.8977
N277	2479.1236	0.1148
N279	23753.6473	1.0997
N280	75001.4085	3.4723
N281	8427.4361	0.3902
N282	1243.5220	0.0576
N283	23262.5749	1.0770
N284	16969.7197	0.7856
N285	52576.4298	2.4341
N286	5330.5117	0.2468
N288	18141.9570	0.8399
N289	1715.8365	0.0794
N290	187098.5842	8.6620
N291	169419.9785	7.8435
N293	29802.9459	1.3798
N294	2548.4281	0.1180
N296	29939.5754	1.3861
N297	30979.1449	1.4342
N298	2386.0574	0.1105
N300	31056.3688	1.4378
N301	67758.0913	3.1369
N302	1960.3293	0.0908
N304	29640.5763	1.3722
N305	31076.1701	1.4387
N306	2584.0705	0.1196
N307	450.4194	0.0209
N308	27931.7233	1.2931
N309	36135.4048	1.6729
N310	1384.1113	0.0641
N312	44834.1189	2.0757
N313	3435.5267	0.1591
N314	5372.0945	0.2487
N315	13991.6032	0.6478
N317	86300.0344	3.9954
N318	14150.0136	0.6551
N319	27775.2925	1.2859
N320	3366.2221	0.1558
N321	36957.1581	1.7110
N326	16852.8920	0.7802
N327	48754.7776	2.2572
N328	9954.1168	0.4608
N329	55813.9425	2.5840
N330	4368.1682	0.2022
N331	57.5777	0.0027
N332	53332.8386	2.4691
N333	31693.9716	1.4673
N335	2314.7727	0.1072
N336	25387.2545	1.1753
N337	5780.0014	0.2676
N338	25397.1561	1.1758
N339	32131.5799	1.4876
N342	2370.2164	0.1097

N344	37218.5361	1.7231
N345	10066.9842	0.4661
N348	3922.6388	0.1816
N349	33840.4328	1.5667
N350	32181.0841	1.4899
N351	2201.9053	0.1019
N352	38842.2432	1.7983
N353	43832.1725	2.0293
N356	8445.2572	0.3910
N357	8556.1445	0.3961
N358	8575.9459	0.3970
N361	420779.7466	19.4805
N363	33608.7577	1.5560
N366	90832.5540	4.2052
N367	52128.9199	2.4134
N368	244167.9220	11.3041
N370	364377.7001	16.8693
N371	506927.3110	23.4689
N375	175465.3176	8.1234
N376	163439.9839	7.5667
N379	11210.6517	0.5190
N381	1025.7077	0.0475
N382	19819.1277	0.9176
N383	45768.7395	2.1189
N384	42762.9019	1.9798
N386	52463.5625	2.4289
N387	32408.7982	1.5004
N389	70074.8442	3.2442
N390	45119.2574	2.0889
N391	69195.6665	3.2035
N394	1376.2448	0.0637
N395	66360.1187	3.0722
N397	1469.2569	0.0680
N398	37972.9653	1.7580
N399	35573.0480	1.6469
N404	138084.4119	6.3928
N405	44147.0138	2.0438
N406	64356.2258	2.9795
N407	31836.5399	1.4739
N408	108416.1141	5.0193
N412	83967.4412	3.8874
N415	90705.8241	4.1993
N416	85608.9682	3.9634
N418	80211.1317	3.7135
N420	140959.5605	6.5259
N423	96119.5028	4.4500
N425	75741.9770	3.5066
N429	37769.0117	1.7486
N430	44418.2915	2.0564
N431	201.9733	0.0094
N434	44946.9862	2.0809
N436	56421.8424	2.6121
N437	102348.9924	4.7384
N439	3271.1758	0.1514
N440	32895.9107	1.5230
N441	75282.5878	3.4853
N443	18448.8773	0.8541
N444	78573.5638	3.6377
N445	18773.6187	0.8691
N446	18599.3672	0.8611

N447	37802.6737	1.7501
N448	48473.5983	2.2441
N449	35.6424	0.0017
N451	45091.5359	2.0876
N454	56863.4117	2.6326
N456	199.9932	0.0093
N457	33078.0834	1.5314
N464	9791.7461	0.4533
N465	117160.3696	5.4241
N467	19223.1084	0.8900
N468	32830.5662	1.5199
N469	12856.9883	0.5952
N471	25593.1896	1.1849
N472	18460.7581	0.8547
N473	13441.1269	0.6223
N490	180217.6311	8.3434
N491	7558.1587	0.3499
N492	88266.3043	4.0864
N497	112568.4479	5.2115
N500	48849.8232	2.2616
N503	65.7605	0.0030
N504	213285.8130	9.8743
N506	75205.3621	3.4817
N509	218515.3375	10.1165
N511	101329.2260	4.6912
N513	132999.4353	6.1574
N514	3003.8582	0.1391
N517	2544.4679	0.1178
N524	12007.5123	0.5559
N526	11859.0025	0.5490
N527	6520.5702	0.3019
N529	16246.9720	0.7522
N530	5970.0939	0.2764
EL329	85905.9878	3.9771
N411	28391.8290	1.3144
N462	42105.4978	1.9493
N322	45.3707	0.0021
N234	-261129.6035	-12.0893
N260	-560935.1166	-25.9692
N264	-59318.1425	-2.7462
N275	-160966.4609	-7.4522
N278	-45534.3415	-2.1081
N289	-729767.2974	-33.7855
N292	-169378.0306	-7.8416
N299	-64331.1039	-2.9783
N303	-99206.1473	-4.5929
N307	-51445.2565	-2.3817
N308	-10233.8119	-0.4738
N316	-22709.5083	-1.0514
N331	-63294.8766	-2.9303
N343	-159819.6919	-7.3991
N355	-152746.8163	-7.0716
N360	-25387.7619	-1.1754
N365	-592947.7546	-27.4513
N379	-1.443E+06	-66.7975
N394	-376200.7695	-17.4167
N461	-927729.0965	-42.9504
N493	-88214.5805	-4.0840
N499	-112331.2413	-5.2005
N503	-213271.4741	-9.8737

N516	-353724.9431	-16.3762
N527	-30221.7281	-1.3992
N689	-185796.0887	-8.6017
N411	-1.141E+06	-52.8153
N295	-62196.4441	-2.8795
N311	-82167.2187	-3.8040
N555	-101305.3592	-4.6901
N322	-60165.7622	-2.7855

Outflow Junction	Outflow Volume,ft^3	Average Outflow, cfs
N234	261129.6035	12.0893
N260	560935.1166	25.9692
N264	59318.1425	2.7462
N275	160966.4609	7.4522
N278	45534.3415	2.1081
N289	729767.2974	33.7855
N292	169378.0306	7.8416
N299	64331.1039	2.9783
N303	99206.1473	4.5929
N307	51445.2565	2.3817
N308	10233.8119	0.4738
N316	22709.5083	1.0514
N331	63294.8766	2.9303
N343	159819.6919	7.3991
N355	152746.8163	7.0716
N360	25387.7619	1.1754
N365	592947.7546	27.4513
N379	1.44283E+06	66.7975
N394	376200.7695	17.4167
N461	927729.0965	42.9504
N493	88214.5805	4.0840
N499	112331.2413	5.2005
N503	213271.4741	9.8737
N516	353724.9431	16.3762
N527	30221.7281	1.3992
N689	185796.0887	8.6017
N411	1.14081E+06	52.8153
N295	62196.4441	2.8795
N311	82167.2187	3.8040
N555	101305.3592	4.6901
N322	60165.7622	2.7855

Initial system volume	=	1427.3719 Cu Ft
Total system inflow volume	=	8.787023E+06 Cu Ft
Inflow + Initial volume	=	8.788450E+06 Cu Ft
Total system outflow	=	8.406111E+06 Cu Ft
Volume left (Final volume)	=	378341.4725 Cu Ft
Evaporation	=	0.0000 Cu Ft
Basin Infiltration	=	0.0000 Cu Ft
Outflow + Final Volume	=	8.784453E+06 Cu Ft

Total Model Continuity Error	
Error in Continuity, Percent =	0.0455

```
| Error in Continuity, ft^3    =       3997.229 |
| + Error means a continuity loss, - a gain     |
*===============================================*


#####################################################
# Table E22. Numerical Model judgement section      #
#####################################################

Overall error was (minimum of Table E18 & E21)              0.0455 percent
Worst nodal error was in node N470             with        -4.5273 percent
Of the total inflow this loss was                           0.2599 percent
Your overall continuity error was                  Excellent
                                                  Excellent Efficiency
Efficiency of the simulation                        1.40
Most Number Non Convergences at one Node            3.
Total Number Non Convergences at all Nodes          9.
Total Number of Nodes with Non Convergences         5.


#############################################################
# Table E23. New Basin Design Information                   #
#            Maximum Hydraulic Grade Line,                  #
#            Out Conduit Sizes and Maximum Flow             #
#############################################################

A) Resize d/s Pipes based on given HGL
B) Resize Basin based on given HGL
C) Resize d/s Pipes and Basin based on HGL and max discharge
D) Resize d/s pipes based on given max discharge

   Basin Name    Type    Max.HGL   Conduit         Depth   Width   Barrels   Max.Flow
                           (ft)                    (ft)    (ft)             (ft^3/s)
--------------- ------  --------- --------------- ------- ------- --------- ---------

===> Hydraulic model simulation ended normally.
===> XP-SWMM Simulation ended normally.
===> Your input file was named  : P:\projects\2012.21\drainage\swmm\xp\JacksonTrunkNolte20160705
_modf1.DAT
===> Your output file was named : P:\projects\2012.21\drainage\swmm\xp\JacksonTrunkNolte20160705
_modf1.out

*============================================================*
|             SWMM Simulation Date and Time Summary          |
*============================================================*
| Starting Date... July        6, 2017  Time...   14:12:56:81  |
|   Ending Date... July        6, 2017  Time...   14:13:15:74  |
|  Elapsed Time...    0.31550 minutes or     18.93000 seconds  |
*============================================================*
```

Jackson Township

Phased Development Scenario
Phase 1

XP Swmm Output File Listing

```
 Current Directory:   C:\PROGRA~2\XPSOLU~1\XPSWMM~1
 Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE
 Input File : projects\2012.21\drainage\swmm\xp\JacksonTrunkNolteA1Ph1_modf1.XP

          *================================================*
          |                    xpswmm                      |
          |     Storm and Wastewater Management Model      |
          |         Developed by XP Solutions Inc.         |
          |================================================|
          |                                                |
          | Last Update      : June, 2014                  |
          | Interface Version: 2012                        |
          | Engine Version   : 12.0                        |
          | Data File Version: 12.6                        |
          |                                                |
          |                                                |
          *================================================*

Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


*================================================*
|       Input and Output file names by Layer     |
*================================================*

 Input File  to Layer #     1 JOT.US
 Output File to Layer #     1 JOT.US

*============================================================*
|                Configuration Parameters                    |
|  Configuration Parameters, both those that are hardwired   |
|  and those added to the simulation are listed below.       |
|  Configuration Parameters that start with a $ are set in   |
|  the engine as defaults.  The remaining in UPPERCASE       |
|  have been added to the simulation in the Configuration->  |
|  Configuration Parameters dialog or as Engine Defaults in  |
|  the SWMXP.INI file.                                       |
|                                                            |
|  Consult the Help File for the specific meaning/purpose    |
|  of any particular parameter.                              |
|                                                            |
|  Note:                                                     |
|  The second column denotes the value of the parameter.     |
*============================================================*

 $powerstation                      0.0000        1         2
 $perv                              0.0000        0         4
 $oldegg                            0.0000        0         7
 $as                                0.0000        0        11
 $noflat                            0.0000        0        21
 $oldomega                          0.0000        0        24
 $oldvol                            0.0000        1        28
 $implicit                          0.0000        1        29
 $oldhot                            0.0000        1        31
 $oldscs                            0.0000        0        33
 $flood                             0.0000        1        40
 $nokeys                            0.0000        0        42
 $pzero                             0.0000        0        55
 $oldvol2                           0.0000        2        59
 $storage2                          0.0000        3        62
 $oldhot1                           0.0000        1        63
 $pumpwt                            0.0000        1        70
 $ecloss                            0.0000        1        77
 $exout                             0.0000        0        97
 $spatial = 0.90                    0.9000        5       124
 $djref = -1.0                     -0.1000        3       143
 $weirlen = 50                     50.0000        1       153
 $oldbnd                            0.0000        1       154
 $nogrelev                          0.0000        1       161
```

```
$ncmid                              0.0000         0       164
$new_nl_97                          0.0000         2       290
SCSIADEPTH=ON                       0.0000         1       293
$best97                             0.0000         1       294
$newbound                           0.0000         1       295
$q_tol = 0.01                       0.0001         1       316
$new_storage                        0.0000         1       322
$old_iteration                      0.0000         1       333
MINLEN=10                          10.0000         1       346
$review_elevation                   0.0000         1       383
$use_half_volume                    0.0000         1       385
VERT_WALLS=ON                       0.0000         1       389
$min_ts = 1.0                       1.0000         1       407
$design_restart = on                0.0000         1       412
$zero_value=1.e-05                  0.0000         1       415
SUBCATCHMENT_RES=ON                 0.0000         1       419
$relax_depth = on                   0.0000         1       427
$saveallpts = on                    0.0000         1       434
$channel_geometry=1                 0.0000         1       456

*=========================================================*
| Parameter Values on the Tapes Common Block.These are the |
| values read from the data file and dynamically allocated |
| by the model for this simulation.                        |
*=========================================================*

 Number of Subcatchments in the Runoff Block (NW)....     0
 Number of Channel/Pipes in the Runoff Block (NG)....     0
 Runoff Water quality constituents (NRQ).............     0
 Runoff Land Uses per Subcatchment (NLU).............     0
 Number of Elements in the Transport Block (NET).....     0
 Number of Storage Junctions in Transport (NTSE).....     0
 Number of Input Hydrographs in Transport (NTH)......     0
 Number of Elements in the Extran Block (NEE)........   207
 Number of Groundwater Subcatchments in Runoff (NGW).     0
 Number of Interface locations for all Blocks (NIE)..   207
 Number of Pumps in Extran (NEP).....................     0
 Number of Orifices in Extran (NEO)..................     0
 Number of Tide Gates/Free Outfalls in Extran (NTG)..    24
 Number of Extran Weirs (NEW)........................     0
 Number of scs hydrograph points.....................     1
 Number of Extran printout locations (NPO)...........     0
 Number of Tide elements in Extran (NTE).............    24
 Number of Natural channels (NNC)....................     0
 Number of Storage junctions in Extran (NVSE)........     0
 Number of Time history data points in Extran(NTVAL).     2
 Number of Variable storage elements in Extran (NVST)     0
 Number of Input Hydrographs in Extran (NEH).........   207
 Number of Particle sizes in Transport Block (NPS)...     0
 Number of User defined conduits (NHW)...............   207
 Number of Connecting conduits in Extran (NECC)......    20
 Number of Upstream elements in Transport (NTCC).....    10
 Number of Storage/treatment plants (NSTU)...........     1
 Number of Values for R1 lines in Transport (NR1)....     0
 Number of Nodes to be allowed for (NNOD)............   207
 Number of Plugs in a Storage Treatment Unit.........     1

XXX End of Header Section XXX

###########################################################
#    Entry made to the HYDRAULIC Layer of XP-SWMM     #
#    Last Updated in June, 2014 by XP Solutions       #




*=========================================================*
|        HYDRAULICS TABLES IN THE OUTPUT FILE              |
```

```
|  These are the more important tables in the output file.  |
|  You can use your editor to find the table numbers,       |
|  for example: search for Table E20 to check continuity.   |
|  This output file can be imported into a Word Processor   |
|  and printed on US letter or A4 paper using portrait      |
|  mode, courier font, a size of 8 pt. and margins of 0.75  |
|                                                           |
| Table E1   - Basic Conduit Data                           |
| Table E2   - Conduit Factor Data                          |
| Table E3a  - Junction Data                                |
| Table E3b  - Junction Data                                |
| Table E4   - Conduit Connectivity Data                    |
| Table E4a  - Dry Weather Flow Data                        |
| Table E4b  - Real Time Control Data                       |
| Table E5   - Junction Time Step Limitation Summary        |
| Table E5a  - Conduit Explicit Condition Summary           |
| Table E6   - Final Model Condition                        |
| Table E7   - Iteration Summary                            |
| Table E8   - Junction Time Step Limitation Summary        |
| Table E9   - Junction  Summary  Statistics                |
| Table E10  - Conduit   Summary  Statistics                |
| Table E11  - Area assumptions used in the analysis        |
| Table E12  - Mean conduit information                     |
| Table E13  - Channel losses(H) and culvert info           |
| Table E13a - Culvert Analysis Classification              |
| Table E14  - Natural Channel Overbank Flow Information    |
| Table E14a - Natural Channel Encroachment Information     |
| Table E14b - Floodplain Mapping                           |
| Table E15  - Spreadsheet Info List                        |
| Table E15a - Spreadsheet Reach List                       |
| Table E16  - New Conduit Output Section                   |
| Table E17  - Pump Operation                               |
| Table E18  - Junction Continuity Error                    |
| Table E19  - Junction Inflow & Outflow Listing            |
| Table E20  - Junction Flooding and Volume List            |
| Table E21  - Continuity balance at simulation end         |
| Table E22  - Model Judgement Section                      |
*===========================================================*

Time Control from Hydraulics Job Control
Year.........    1995 Month.......       1
Day..........       1 Hour........       0
Minute.......       0 Second......       0


Control information for simulation
----------------------------------

Integration cycles.................       360
Length of integration step is......     60.00 seconds
Simulation length..................      6.00 hours
Do not create equiv. pipes(NEQUAL).         0
Use U.S. customary units for I/O...         0
Printing starts in cycle...........         1
Intermediate printout intervals of.       500 cycles
Intermediate printout intervals of.    500.00 minutes
Summary printout intervals of......       500 cycles
Summary printout time interval of..    500.00 minutes
Hot start file parameter (REDO)....         0
Initial time.......................      0.00 hours

Iteration variables: Flow Tolerance.   0.00010
                     Head Tolerance.   0.00050
    Minimum depth (m or ft).........   0.00001
    Underrelaxation parameter.......   0.85000
    Time weighting parameter........   0.85000
    Conduit roughness factor........   1.00000
    Flow adjustment factor..........   1.00000
    Initial Condition Smoothing.....         0
```

```
    Courant Time Step Factor.........   1.00000
    Default Expansion/Contraction K.   0.00000
    Default Entrance/Exit K..........   0.00000
    Routing Method...................   Dynamic Wave
Default surface area of junctions...     12.57 square feet.
Minimum Junction/Conduit Depth......   0.00001 feet.
Ponding Area Coefficient............   5000.00
Ponding Area Exponent...............    1.0000
Minimum Orifice Length..............   1000.00 feet.
NJSW input hydrograph junctions.....   207
     or user defined hydrographs....

*============================================================*
|               Flap Gate Conduit Information                |
|               ------------------------------               |
| Positive Flap Gate - Flow only allowed from the upstream   |
|                      to the downstream junction            |
| Negative Flap Gate - Flow only allowed from the            |
|                      downstream to the upstream junction   |
*============================================================*

   Conduit   Type of Flap Gate
   -------   -----------------
L376        Positive Flap Gate

*==================================================*
|          Table E1 - Conduit Data                 |
*==================================================*
```

Inp Num	Conduit Name	Length (ft)	Conduit Class	Area (ft^2)	Manning Coef.	Max Width (ft)	Depth (ft)	Trapezoid Side Slopes	Hazen Williams c-factor
1	L210	70.0000	Circular	0.7854	0.0150	1.0000	1.0000		
2	L211	408.0000	Circular	0.7854	0.0150	1.0000	1.0000		
3	L212	541.0000	Circular	1.2272	0.0150	1.2500	1.2500		
4	L213	107.0000	Circular	0.7854	0.0150	1.0000	1.0000		
5	L214	93.0000	Circular	1.7671	0.0150	1.5000	1.5000		
6	L217	86.0000	Circular	0.7854	0.0150	1.0000	1.0000		
7	L220	320.0000	Circular	2.4053	0.0150	1.7500	1.7500		
8	L221	395.0000	Circular	3.1416	0.0150	2.0000	2.0000		
9	L222	182.0000	Circular	3.1416	0.0150	2.0000	2.0000		
10	L223	72.0000	Circular	0.7854	0.0150	1.0000	1.0000		
11	L224	291.0000	Circular	0.7854	0.0150	1.0000	1.0000		
12	L225	290.0000	Circular	0.7854	0.0150	1.0000	1.0000		
13	L226	413.0000	Circular	0.7854	0.0150	1.0000	1.0000		
14	L227	236.0000	Circular	0.7854	0.0150	1.0000	1.0000		
15	L228	407.0000	Circular	0.7854	0.0150	1.0000	1.0000		
16	L229	572.0000	Circular	1.2272	0.0150	1.2500	1.2500		
17	L230	397.0000	Circular	1.2272	0.0150	1.2500	1.2500		
18	L231	399.0000	Circular	1.2272	0.0150	1.2500	1.2500		
19	L232	307.0000	Circular	1.7671	0.0150	1.5000	1.5000		
20	L233	479.0000	Circular	1.7671	0.0150	1.5000	1.5000		
21	L234	430.0000	Circular	3.1416	0.0150	2.0000	2.0000		
22	L235	50.0000	Circular	0.7854	0.0150	1.0000	1.0000		
23	L236	105.0000	Circular	0.7854	0.0150	1.0000	1.0000		
24	L237	100.0000	Circular	0.7854	0.0150	1.0000	1.0000		
25	L238	55.0000	Circular	0.7854	0.0150	1.0000	1.0000		
26	L239	124.0000	Circular	0.7854	0.0150	1.0000	1.0000		
27	L240	86.0000	Circular	0.7854	0.0150	1.0000	1.0000		
28	L241	296.0000	Circular	1.2272	0.0150	1.2500	1.2500		
29	L242	62.0000	Circular	0.7854	0.0150	1.0000	1.0000		
30	L243	95.0000	Circular	0.7854	0.0150	1.0000	1.0000		
31	L246	414.0000	Circular	4.9087	0.0150	2.5000	2.5000		
32	L247	92.0000	Circular	4.9087	0.0150	2.5000	2.5000		
33	L248	47.0000	Circular	0.7854	0.0150	1.0000	1.0000		
34	L249	73.0000	Circular	0.7854	0.0150	1.0000	1.0000		
35	L250	78.0000	Circular	0.7854	0.0150	1.0000	1.0000		
36	L251	69.0000	Circular	0.7854	0.0150	1.0000	1.0000		

37	L254	709.3100	Circular	1.7671	0.0150	1.5000	1.5000
38	L255	451.0000	Circular	3.1416	0.0150	2.0000	2.0000
39	L258	100.0000	Circular	0.7854	0.0150	1.0000	1.0000
40	L259	281.0000	Circular	2.4053	0.0150	1.7500	1.7500
41	L260	64.0000	Circular	2.4053	0.0150	1.7500	1.7500
42	L261	138.0000	Circular	0.7854	0.0150	1.0000	1.0000
43	L262	76.0000	Circular	0.7854	0.0150	1.0000	1.0000
44	L263	117.0000	Circular	0.7854	0.0150	1.0000	1.0000
45	L272	34.0000	Circular	15.9043	0.0150	4.5000	4.5000
46	L273	117.0000	Circular	2.4053	0.0150	1.7500	1.7500
47	L274	123.0000	Circular	1.7671	0.0150	1.5000	1.5000
48	L275	107.0000	Circular	0.7854	0.0150	1.0000	1.0000
49	L277	117.0000	Circular	0.7854	0.0150	1.0000	1.0000
50	L281	107.0000	Circular	0.7854	0.0150	1.0000	1.0000
51	L282	48.0000	Circular	0.7854	0.0150	1.0000	1.0000
52	L283	114.0000	Circular	0.7854	0.0150	1.0000	1.0000
53	L287	109.0000	Circular	0.7854	0.0150	1.0000	1.0000
54	L289	120.0000	Circular	0.7854	0.0150	1.0000	1.0000
55	L308	101.0000	Circular	9.6211	0.0150	3.5000	3.5000
56	L317	1107.0000	Circular	1.2272	0.0150	1.2500	1.2500
57	L319	65.0000	Circular	1.7671	0.0150	1.5000	1.5000
58	L320	67.0000	Circular	0.7854	0.0150	1.0000	1.0000
59	L334	402.0000	Circular	0.7854	0.0150	1.0000	1.0000
60	L335	371.0000	Circular	0.7854	0.0150	1.0000	1.0000
61	L336	125.0000	Circular	0.7854	0.0150	1.0000	1.0000
62	L337	119.0000	Circular	0.7854	0.0150	1.0000	1.0000
63	L338	84.0000	Circular	7.0686	0.0150	3.0000	3.0000
64	L339	260.0000	Circular	7.0686	0.0150	3.0000	3.0000
65	L340	244.0000	Circular	9.6211	0.0150	3.5000	3.5000
66	L341	103.0000	Circular	9.6211	0.0150	3.5000	3.5000
67	L342	78.0000	Circular	1.2272	0.0150	1.2500	1.2500
68	L343	94.0000	Circular	0.7854	0.0150	1.0000	1.0000
69	L344	51.0000	Circular	4.9087	0.0150	2.5000	2.5000
70	L346	50.0000	Circular	9.6211	0.0150	3.5000	3.5000
71	L347	395.0000	Circular	12.5664	0.0150	4.0000	4.0000
72	L348	404.0000	Circular	12.5664	0.0150	4.0000	4.0000
73	L349	400.0000	Circular	12.5664	0.0150	4.0000	4.0000
74	L350	132.0000	Circular	12.5664	0.0150	4.0000	4.0000
75	L351	35.0000	Circular	3.1416	0.0150	2.0000	2.0000
76	L352	147.0000	Circular	3.1416	0.0150	2.0000	2.0000
77	L354	94.0000	Circular	15.9043	0.0150	4.5000	4.5000
78	L361	47.0000	Circular	0.7854	0.0150	1.0000	1.0000
79	L362	66.0000	Circular	0.7854	0.0150	1.0000	1.0000
80	L363	411.0000	Circular	1.7671	0.0150	1.5000	1.5000
81	L364	48.0000	Circular	0.7854	0.0150	1.0000	1.0000
82	L365	63.0000	Circular	0.7854	0.0150	1.0000	1.0000
83	L366	394.0000	Circular	3.1416	0.0150	2.0000	2.0000
84	L367	364.0000	Circular	3.1416	0.0150	2.0000	2.0000
85	L368	124.0000	Circular	0.7854	0.0150	1.0000	1.0000
86	L369	99.0000	Circular	0.7854	0.0150	1.0000	1.0000
87	L370	206.0000	Circular	7.0686	0.0150	3.0000	3.0000
88	L373	98.0000	Circular	7.0686	0.0150	3.0000	3.0000
89	L374	160.0000	Circular	0.7854	0.0150	1.0000	1.0000
90	L375	403.0000	Circular	1.7671	0.0150	1.5000	1.5000
91	L376	164.0000	Circular	5.9396	0.0150	2.7500	2.7500
92	L386	341.0000	Circular	12.5664	0.0150	4.0000	4.0000
93	L387	355.0000	Circular	12.5664	0.0150	4.0000	4.0000
94	L388	113.0000	Circular	0.7854	0.0150	1.0000	1.0000
95	L389	385.0000	Circular	15.9043	0.0150	4.5000	4.5000
96	L390	106.0000	Circular	0.7854	0.0150	1.0000	1.0000
97	L391	499.0000	Circular	15.9043	0.0150	4.5000	4.5000
98	L392	380.0000	Circular	15.9043	0.0150	4.5000	4.5000
99	L393	461.0000	Circular	15.9043	0.0150	4.5000	4.5000
100	L395	50.0000	Circular	1.2272	0.0150	1.2500	1.2500
101	L396	402.0000	Circular	7.0686	0.0150	3.0000	3.0000
102	L397	57.0000	Circular	1.2272	0.0150	1.2500	1.2500
103	L398	48.0000	Circular	1.2272	0.0150	1.2500	1.2500
104	L399	302.0000	Circular	3.1416	0.0150	2.0000	2.0000
105	L402	86.0000	Circular	2.4053	0.0150	1.7500	1.7500

106	L403	398.0000	Circular	2.4053	0.0150	1.7500	1.7500		
107	L404	371.0000	Circular	2.4053	0.0150	1.7500	1.7500		
108	L405	71.0000	Circular	1.7671	0.0150	1.5000	1.5000		
109	L406	364.0000	Circular	4.9087	0.0150	2.5000	2.5000		
110	L407	71.0000	Circular	1.2272	0.0150	1.2500	1.2500		
111	L408	367.0000	Circular	5.9396	0.0150	2.7500	2.7500		
112	L410	395.0000	Circular	7.0686	0.0150	3.0000	3.0000		
113	L411	301.0000	Circular	7.0686	0.0150	3.0000	3.0000		
114	L413	401.0000	Circular	1.7671	0.0150	1.5000	1.5000		
115	L415	49.0000	Circular	0.7854	0.0150	1.0000	1.0000		
116	L417	68.0000	Circular	0.7854	0.0150	1.0000	1.0000		
117	L418	72.0000	Circular	1.7671	0.0150	1.5000	1.5000		
118	L419	259.0000	Circular	3.1416	0.0150	2.0000	2.0000		
119	L420	402.0000	Circular	3.1416	0.0150	2.0000	2.0000		
120	L421	68.0000	Circular	0.7854	0.0150	1.0000	1.0000		
121	L422	76.0000	Circular	1.2272	0.0150	1.2500	1.2500		
122	L423	397.0000	Circular	4.9087	0.0150	2.5000	2.5000		
123	L424	299.0000	Circular	5.9396	0.0150	2.7500	2.7500		
124	L425	70.0000	Circular	0.7854	0.0150	1.0000	1.0000		
125	L426	73.0000	Circular	1.2272	0.0150	1.2500	1.2500		
126	L427	486.0000	Circular	9.6211	0.0150	3.5000	3.5000		
127	L428	88.0000	Circular	0.7854	0.0150	1.0000	1.0000		
128	L429	394.0000	Circular	9.6211	0.0150	3.5000	3.5000		
129	L430	91.0000	Circular	0.7854	0.0150	1.0000	1.0000		
130	L431	430.0000	Circular	0.7854	0.0150	1.0000	1.0000		
131	L432	91.0000	Circular	0.7854	0.0150	1.0000	1.0000		
132	L435	90.0000	Circular	0.7854	0.0150	1.0000	1.0000		
133	L436	315.0000	Circular	0.7854	0.0150	1.0000	1.0000		
134	L437	328.0000	Circular	1.2272	0.0150	1.2500	1.2500		
135	L438	88.0000	Circular	0.7854	0.0150	1.0000	1.0000		
136	L439	374.0000	Circular	1.2272	0.0150	1.2500	1.2500		
137	L440	396.0000	Circular	1.7671	0.0150	1.5000	1.5000		
138	L441	405.0000	Circular	9.6211	0.0150	3.5000	3.5000		
139	L442	459.0000	Circular	9.6211	0.0150	3.5000	3.5000		
140	L443	96.0000	Circular	9.6211	0.0150	3.5000	3.5000		
141	L446	61.0000	Circular	1.7671	0.0150	1.5000	1.5000		
142	L448	79.0000	Circular	0.7854	0.0150	1.0000	1.0000		
143	L449	452.0000	Circular	2.4053	0.0150	1.7500	1.7500		
144	L450	400.0000	Circular	3.1416	0.0150	2.0000	2.0000		
145	L451	90.0000	Circular	3.1416	0.0150	2.0000	2.0000		
146	L452	50.0000	Circular	0.7854	0.0150	1.0000	1.0000		
147	L453	61.0000	Circular	0.7854	0.0150	1.0000	1.0000		
148	L454	70.0000	Circular	0.7854	0.0150	1.0000	1.0000		
149	L466	90.0000	Circular	1.2272	0.0150	1.2500	1.2500		
150	L468	496.0000	Circular	3.1416	0.0150	2.0000	2.0000		
151	L470	177.0000	Circular	2.4053	0.0150	1.7500	1.7500		
152	L471	390.0000	Circular	0.7854	0.0150	1.0000	1.0000		
153	L472	52.0000	Circular	0.7854	0.0150	1.0000	1.0000		
154	L490	121.0000	Circular	2.4053	0.0150	1.7500	1.7500		
155	L496	392.0000	Circular	0.7854	0.0150	1.0000	1.0000		
156	L497	394.0000	Circular	0.7854	0.0150	1.0000	1.0000		
157	L498	98.0000	Circular	0.7854	0.0150	1.0000	1.0000		
158	L501	375.0000	Circular	7.0686	0.0150	3.0000	3.0000		
159	L502	423.0000	Circular	9.6211	0.0150	3.5000	3.5000		
160	L503	437.0000	Circular	15.9043	0.0150	4.5000	4.5000		
161	L504	465.0000	Circular	15.9043	0.0150	4.5000	4.5000		
162	L505	395.0000	Circular	2.4053	0.0150	1.7500	1.7500		
163	L506	397.0000	Circular	2.4053	0.0150	1.7500	1.7500		
164	L509	134.0000	Circular	0.7854	0.0150	1.0000	1.0000		
165	L511	178.0000	Circular	1.7671	0.0150	1.5000	1.5000		
166	L512	111.0000	Circular	3.1416	0.0150	2.0000	2.0000		
167	L514	399.0000	Circular	2.4053	0.0150	1.7500	1.7500		
168	L515	145.0000	Circular	7.0686	0.0150	3.0000	3.0000		
169	CH21	925.0000	Rectangle	275.0000	0.0600	100.0000	2.7500		
170	L474	127.0000	Circular	1.7671	0.0150	1.5000	1.5000		
171	L523	171.0000	Trapezoid	15.7500	0.0600	6.0000	1.5000	3.0000	3.0000
172	L525	533.0000	Circular	7.0686	0.0150	3.0000	3.0000		
173	L527	434.0000	Circular	1.7671	0.0150	1.5000	1.5000		
174	L528	452.0000	Circular	1.2272	0.0150	1.2500	1.2500		

175	L529	284.0000	Circular	1.7671	0.0150	1.5000	1.5000
176	L533	725.0000	Circular	1.7671	0.0150	1.5000	1.5000
177	L537	453.0000	Circular	1.7671	0.0150	1.5000	1.5000
178	L394	157.0000	Circular	15.9043	0.0150	4.5000	4.5000
179	L276	51.0000	Circular	0.7854	0.0150	1.0000	1.0000
180	L288	61.0000	Circular	1.2272	0.0150	1.2500	1.2500
181	L412	53.0000	Circular	0.7854	0.0150	1.0000	1.0000
182	L447	394.0000	Circular	1.7671	0.0150	1.5000	1.5000
183	L321	440.0000	Circular	0.7854	0.0150	1.0000	1.0000

Total length of all conduits .... 43228.3100 feet

==========
| Table E2 - Conduit Factor Data |
==========

Conduit Name	Number of Barrels	Entrance Loss Coef	Exit Loss Coef	Exp/Contc Coefficnt	Time Weighting Parameter	Low Flow Roughness Factor	Depth at Which n Changes	Sediment Depth	Flow Routing
L376	1.0000	0.0000	1.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave

==========
| If there are messages about (sqrt(g*d)*dt/dx), or |
| the sqrt(wave celerity)*time step/conduit length |
| in the output file all it means is that the |
| program will lower the internal time step to |
| satisfy this condition (explicit condition). |
| You control the actual internal time step by |
| using the minimum courant time step factor in the |
| HYDRAULICS job control. The message put in words |
| states that the smallest conduit with the fastest |
| velocity will control the time step selection. |
| You have further control by using the modify |
| conduit option in the HYDRAULICS Job Control. |
==========

Conduit Name	Courant Ratio	
L210	4.86	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L211	0.83	
L212	0.70	
L213	3.18	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L214	4.48	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L217	3.96	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L220	1.41	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L221	1.22	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L222	2.65	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L223	4.73	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L224	1.17	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L225	1.17	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L226	0.82	
L227	1.44	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L228	0.84	
L229	0.67	
L230	0.96	
L231	0.95	
L232	1.36	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L233	0.87	
L234	1.12	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L235	6.81	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L236	3.24	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L237	3.40	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L238	6.19	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L239	2.75	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L240	3.96	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L241	1.29	===> Warning ! (sqrt(wave celerity)*time step/conduit length)

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L242        5.49  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L243        3.58  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L246        1.30  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L247        5.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L248        7.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L249        4.66  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L250        4.37  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L251        4.93  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L254        0.59
L255        1.07  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L258        3.40  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L259        1.60  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L260        7.04  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L261        2.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L262        4.48  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L263        2.91  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L272       21.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L273        3.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L274        3.39  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L275        3.18  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L277        2.91  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L281        3.18  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L282        7.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L283        2.99  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L287        3.12  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L289        2.84  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L308        6.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L317        0.34
L319        6.42  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L320        5.08  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L334        0.85
L335        0.92
L336        2.72  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L337        2.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L338        7.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L339        2.27  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L340        2.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L341        6.18  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L342        4.88  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L343        3.62  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L344       10.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L346       12.74  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L347        1.72  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L348        1.69  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L349        1.70  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L350        5.16  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L351       13.76  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L352        3.28  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L354        7.68  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L361        7.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L362        5.16  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L363        1.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L364        7.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L365        5.40  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L366        1.22  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L367        1.32  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L368        2.75  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L369        3.44  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L370        2.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L373        6.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L374        2.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L375        1.03  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L376        3.44  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L386        2.00  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L387        1.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L388        3.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L389        1.88  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L390        3.21  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L391        1.45  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
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L392        1.90  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L393        1.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L395        7.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L396        1.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L397        6.68  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L398        7.93  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L399        1.59  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L402        5.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L403        1.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L404        1.21  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L405        5.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L406        1.48  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L407        5.36  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L408        1.54  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L410        1.49  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L411        1.96  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L413        1.04  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L415        6.95  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L417        5.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L418        5.79  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L419        1.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L420        1.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L421        5.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L422        5.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L423        1.36  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L424        1.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L425        4.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L426        5.21  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L427        1.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L428        3.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L429        1.62  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L430        3.74  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L431        0.79
L432        3.74  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L435        3.78  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L436        1.08  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L437        1.16  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L438        3.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L439        1.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L440        1.05  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L441        1.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L442        1.39  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L443        6.64  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L446        6.84  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L448        4.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L449        1.00
L450        1.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L451        5.35  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L452        6.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L453        5.58  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L454        4.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L466        4.23  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L468        0.97
L470        2.54  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L471        0.87
L472        6.55  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L490        3.72  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L496        0.87
L497        0.86
L498        3.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L501        1.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L502        1.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L503        1.65  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L504        1.55  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L505        1.14  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L506        1.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L509        2.54  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L511        2.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L512        4.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
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          L514        1.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L515        4.07  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          CH21        0.61
          L474        3.28  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L523        2.04  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L525        1.11  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L527        0.96
          L528        0.84
          L529        1.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L533        0.58
          L537        0.92
          L394        4.60  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L276        6.68  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L288        6.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L412        6.42  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L447        1.06  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L321        0.77

*==================*
|  Conduit Volume  |
*==================*

Full pipe or full open conduit volume
Input full depth volume.............    4.3437E+05 cubic feet


*=================================================*
|           Table E3a - Junction Data             |
*=================================================*
```

Inp Num	Junction Name	Ground Elevation	Crown Elevation	Invert Elevation	Qinst cfs	Initial Depth-ft	Interface Flow (%)
1	N221	114.0300	106.8400	105.8400	0.0000	0.0000	100.0000
2	N222	112.0800	106.4400	104.4400	0.0000	0.0000	100.0000
3	N223	106.2600	103.0600	100.8100	0.0000	0.0000	100.0000
4	N224	106.3300	99.7200	96.9700	0.0000	0.0000	100.0000
5	N227	109.4000	99.3400	98.3400	0.0000	0.0000	100.0000
6	N228	102.4000	99.0300	97.5300	0.0000	0.0000	100.0000
7	N230	104.3900	100.3300	95.8300	0.0000	0.0000	100.0000
8	N231	104.4000	100.8400	99.8400	0.0000	0.0000	100.0000
9	N233	100.3500	96.9200	94.4200	0.0000	0.0000	100.0000
10	N234	100.0000	89.6000	87.6000	0.0000	0.0000	100.0000
11	N235	138.1500	120.6000	119.6000	0.0000	0.0000	100.0000
12	N236	126.2300	120.4100	118.6100	0.0000	0.0000	100.0000
13	N237	124.2900	118.8600	117.2600	0.0000	0.0000	100.0000
14	N238	122.3500	117.5100	115.1100	0.0000	0.0000	100.0000
15	N239	125.0800	118.6900	117.6900	0.0000	0.0000	100.0000
16	N240	122.0900	117.6200	116.6200	0.0000	0.0000	100.0000
17	N241	119.6000	115.0600	111.3600	0.0000	0.0000	100.0000
18	N242	115.6700	111.1300	108.6300	0.0000	0.0000	100.0000
19	N243	112.6900	109.1100	105.8600	0.0000	0.0000	100.0000
20	N244	109.7000	106.3500	103.8500	0.0000	0.0000	100.0000
21	N245	107.6800	104.8800	101.6800	0.0000	0.0000	100.0000
22	N246	104.7000	101.8100	99.5600	0.0000	0.0000	100.0000
23	N247	107.2000	100.3700	97.8700	0.0000	0.0000	100.0000
24	N248	116.0000	112.4800	111.4800	0.0000	0.0000	100.0000
25	N249	108.6300	105.6200	104.6200	0.0000	0.0000	100.0000
26	N250	113.4000	102.1400	101.1400	0.0000	0.0000	100.0000
27	N251	127.0200	116.3800	115.3800	0.0000	0.0000	100.0000
28	N252	121.2500	116.0600	113.0600	0.0000	0.0000	100.0000
29	N253	119.0300	113.3300	108.0800	0.0000	0.0000	100.0000
30	N254	120.4000	113.8300	112.8300	0.0000	0.0000	100.0000
31	N255	113.9100	108.0500	102.8000	0.0000	0.0000	100.0000
32	N256	119.8800	108.4100	107.4100	0.0000	0.0000	100.0000
33	N257	118.4000	108.6100	107.6100	0.0000	0.0000	100.0000
34	N259	102.6900	99.6600	97.1600	0.0000	0.0000	100.0000
35	N260	101.1000	99.5000	97.0000	0.0000	0.0000	100.0000
36	N261	106.3800	99.9300	98.9300	0.0000	0.0000	100.0000

37	N262	110.4000	105.8800	104.8800	0.0000	0.0000	100.0000
38	N263	109.4000	105.4600	104.4600	0.0000	0.0000	100.0000
39	N264	106.0000	97.6400	96.6400	0.0000	0.0000	100.0000
40	N265	108.4000	105.8600	104.8600	0.0000	0.0000	100.0000
41	W800	110.0300	104.0100	102.5100	0.0000	0.0000	100.0000
42	W801	106.4000	103.4500	101.4500	0.0000	0.0000	100.0000
43	OUT802	103.0000	103.0000	101.0000	0.0000	0.0000	100.0000
44	N272	102.0600	98.1000	96.3500	0.0000	0.0000	100.0000
45	N273	104.4000	98.6800	97.6800	0.0000	0.0000	100.0000
46	N274	100.3100	97.3300	95.5800	0.0000	0.0000	100.0000
47	N275	101.7000	89.3500	87.6000	0.0000	0.0000	100.0000
48	N276	100.4000	95.2500	94.2500	0.0000	0.0000	100.0000
49	N277	99.4000	94.4400	93.4400	0.0000	0.0000	100.0000
50	N278	96.0000	79.0000	78.0000	0.0000	0.0000	100.0000
51	N279	98.4000	95.1200	94.1200	0.0000	0.0000	100.0000
52	N288	96.4000	81.5300	77.0300	0.0000	0.0000	100.0000
53	N289	96.4000	81.5000	77.0000	0.0000	0.0000	100.0000
54	N290	96.4000	79.8500	78.1000	0.0000	0.0000	100.0000
55	N291	96.2900	93.4200	91.9200	0.0000	0.0000	100.0000
56	N292	94.0000	78.1000	76.6000	0.0000	0.0000	100.0000
57	N293	126.4000	119.9200	118.9200	0.0000	0.0000	100.0000
58	N294	123.9600	119.3000	118.3000	0.0000	0.0000	100.0000
59	N296	122.4000	119.9800	118.9800	0.0000	0.0000	100.0000
60	N301	128.4000	123.9000	122.9000	0.0000	0.0000	100.0000
61	N302	128.3900	123.2800	122.2800	0.0000	0.0000	100.0000
62	N303	124.3000	111.6000	110.6000	0.0000	0.0000	100.0000
63	N304	126.4000	123.9500	122.9500	0.0000	0.0000	100.0000
64	N309	119.4000	114.1500	113.1500	0.0000	0.0000	100.0000
65	N310	116.6600	113.5100	112.2600	0.0000	0.0000	100.0000
66	N312	116.4000	114.2100	113.2100	0.0000	0.0000	100.0000
67	YEL327	101.0000	99.5000	96.0000	0.0000	0.0000	100.0000
68	N331	101.0000	96.2000	92.7000	0.0000	0.0000	100.0000
69	W104	108.3300	106.6400	105.3900	0.0000	0.0000	100.0000
70	N342	106.8400	101.7200	100.2200	0.0000	0.0000	100.0000
71	N343	104.4000	101.5000	100.0000	0.0000	0.0000	100.0000
72	N344	112.0700	102.1100	101.1100	0.0000	0.0000	100.0000
73	N345	128.1400	119.8300	118.8300	0.0000	0.0000	100.0000
74	N356	128.3900	126.3200	125.3200	0.0000	0.0000	100.0000
75	N357	126.5200	123.9800	122.9800	0.0000	0.0000	100.0000
76	N358	128.1900	121.8200	120.8200	0.0000	0.0000	100.0000
77	N359	126.7800	121.0900	120.0900	0.0000	0.0000	100.0000
78	N360	121.5000	113.8000	112.8000	0.0000	0.0000	100.0000
79	N361	133.4000	129.2400	126.2400	0.0000	0.0000	100.0000
80	N362	133.8500	129.1300	126.1300	0.0000	0.0000	100.0000
81	N363	135.6800	128.7800	125.2800	0.0000	0.0000	100.0000
82	N364	134.3100	128.5100	125.0100	0.0000	0.0000	100.0000
83	N365	129.0000	120.9000	117.4000	0.0000	0.0000	100.0000
84	N366	136.4000	129.1200	127.8700	0.0000	0.0000	100.0000
85	N367	131.4000	129.3300	128.3300	0.0000	0.0000	100.0000
86	N368	130.1000	126.7600	124.2600	0.0000	0.0000	100.0000
87	N369	130.1500	126.6700	123.6700	0.0000	0.0000	100.0000
88	N370	130.0300	125.7000	121.7000	0.0000	0.0000	100.0000
89	N371	130.3200	125.7600	122.2600	0.0000	0.0000	100.0000
90	N372	131.8100	125.3400	121.3400	0.0000	0.0000	100.0000
91	N373	131.3300	124.9700	120.9700	0.0000	0.0000	100.0000
92	N374	132.8200	124.6000	120.6000	0.0000	0.0000	100.0000
93	N375	132.2300	124.4800	119.9800	0.0000	0.0000	100.0000
94	N376	130.4700	124.9000	122.9000	0.0000	0.0000	100.0000
95	N377	130.5100	124.8200	122.8200	0.0000	0.0000	100.0000
96	N378	129.1900	123.7700	119.2700	0.0000	0.0000	100.0000
97	N379	128.2000	122.9000	118.4000	0.0000	0.0000	100.0000
98	N381	128.4700	126.2600	124.7600	0.0000	0.0000	100.0000
99	N382	128.0000	124.8600	122.8600	0.0000	0.0000	100.0000
100	N383	132.3000	126.5300	125.5300	0.0000	0.0000	100.0000
101	N384	131.1800	126.6400	125.6400	0.0000	0.0000	100.0000
102	N386	132.1700	125.1400	124.1400	0.0000	0.0000	100.0000
103	N387	132.9300	125.2300	124.2300	0.0000	0.0000	100.0000
104	N388	128.2100	123.9500	121.9500	0.0000	0.0000	100.0000
105	N389	128.3800	123.1100	120.1100	0.0000	0.0000	100.0000

106	N390	132.4000	123.8300	122.8300	0.0000	0.0000	100.0000
107	N391	131.4000	123.6900	122.6900	0.0000	0.0000	100.0000
108	N392	129.2100	122.8300	119.8300	0.0000	0.0000	100.0000
109	N394	130.0700	121.4000	118.4000	0.0000	0.0000	100.0000
110	N395	126.4000	119.6100	118.1100	0.0000	0.0000	100.0000
111	N396	124.6000	119.1800	117.6800	0.0000	0.0000	100.0000
112	N397	124.9400	118.8100	115.8100	0.0000	0.0000	100.0000
113	N398	128.0400	119.0600	116.3100	0.0000	0.0000	100.0000
114	N399	124.3000	118.6100	114.6000	0.0000	0.0000	100.0000
115	N403	125.5000	118.3000	114.3000	0.0000	0.0000	100.0000
116	N404	126.6900	117.9800	113.4800	0.0000	0.0000	100.0000
117	N405	131.2500	117.6300	116.6300	0.0000	0.0000	100.0000
118	N406	124.4900	117.6700	113.1700	0.0000	0.0000	100.0000
119	N407	132.5800	118.0000	117.0000	0.0000	0.0000	100.0000
120	N408	125.2200	117.2800	112.7800	0.0000	0.0000	100.0000
121	N409	123.3200	116.9800	112.4800	0.0000	0.0000	100.0000
122	N410	124.2200	116.6200	112.1200	0.0000	0.0000	100.0000
123	N412	125.2400	117.5500	116.3000	0.0000	0.0000	100.0000
124	N413	123.5000	118.8300	115.3300	0.0000	0.0000	100.0000
125	N414	122.0000	119.3700	113.6200	0.0000	0.0000	100.0000
126	N415	124.3800	117.5800	116.3300	0.0000	0.0000	100.0000
127	N416	125.2100	118.0800	116.8300	0.0000	0.0000	100.0000
128	N417	121.7600	119.5700	117.5700	0.0000	0.0000	100.0000
129	N418	124.4000	121.1500	119.9000	0.0000	0.0000	100.0000
130	N419	120.2000	112.6600	110.9100	0.0000	0.0000	100.0000
131	N420	123.9000	113.9900	112.2400	0.0000	0.0000	100.0000
132	N421	121.2100	113.7500	112.0000	0.0000	0.0000	100.0000
133	N422	118.3600	111.6300	109.1300	0.0000	0.0000	100.0000
134	N423	120.4000	111.8700	110.3700	0.0000	0.0000	100.0000
135	N424	118.5600	111.0100	108.2600	0.0000	0.0000	100.0000
136	N425	120.3900	111.3100	110.0600	0.0000	0.0000	100.0000
137	N426	117.2400	110.4500	107.4500	0.0000	0.0000	100.0000
138	N428	114.7900	109.9200	106.9200	0.0000	0.0000	100.0000
139	N429	116.1800	109.5200	106.0200	0.0000	0.0000	100.0000
140	N430	128.2200	120.0000	119.0000	0.0000	0.0000	100.0000
141	N431	123.0700	119.4000	116.6700	0.0000	0.0000	100.0000
142	N432	120.7300	119.5700	118.0700	0.0000	0.0000	100.0000
143	N434	126.2700	119.8000	118.8000	0.0000	0.0000	100.0000
144	N435	120.2500	112.1800	110.1800	0.0000	0.0000	100.0000
145	N436	125.4000	112.5700	111.5700	0.0000	0.0000	100.0000
146	N437	122.9000	112.4200	110.9200	0.0000	0.0000	100.0000
147	N438	119.8200	111.5800	109.5800	0.0000	0.0000	100.0000
148	N439	118.1400	110.6500	108.1500	0.0000	0.0000	100.0000
149	N440	122.4000	111.0500	110.0500	0.0000	0.0000	100.0000
150	N441	120.9000	110.9800	109.7300	0.0000	0.0000	100.0000
151	N442	116.2500	109.9700	107.2200	0.0000	0.0000	100.0000
152	N443	118.4000	110.3800	109.3800	0.0000	0.0000	100.0000
153	N444	118.4000	110.2800	109.0300	0.0000	0.0000	100.0000
154	N445	113.3000	108.9800	105.4800	0.0000	0.0000	100.0000
155	N446	118.4000	109.4900	108.4900	0.0000	0.0000	100.0000
156	N447	113.2000	108.5500	105.0500	0.0000	0.0000	100.0000
157	N448	125.6200	119.7700	118.7700	0.0000	0.0000	100.0000
158	N449	125.6000	119.2400	117.9900	0.0000	0.0000	100.0000
159	N450	125.2200	121.7400	120.7400	0.0000	0.0000	100.0000
160	N451	126.4000	122.2700	121.2700	0.0000	0.0000	100.0000
161	N453	119.8300	114.7600	113.7600	0.0000	0.0000	100.0000
162	N454	125.4000	115.2900	114.2900	0.0000	0.0000	100.0000
163	N455	118.2800	112.9300	111.6800	0.0000	0.0000	100.0000
164	N456	116.2800	111.5100	110.2600	0.0000	0.0000	100.0000
165	N457	122.4000	112.0200	111.0200	0.0000	0.0000	100.0000
166	N458	114.0000	109.8900	108.3900	0.0000	0.0000	100.0000
167	N459	110.2500	108.1100	104.6100	0.0000	0.0000	100.0000
168	N460	110.1000	107.6100	104.1100	0.0000	0.0000	100.0000
169	N461	110.1000	97.6000	94.1000	0.0000	0.0000	100.0000
170	N464	132.5200	126.8400	125.0900	0.0000	0.0000	100.0000
171	N465	135.1200	128.1500	126.6500	0.0000	0.0000	100.0000
172	N466	131.9700	127.9400	126.1900	0.0000	0.0000	100.0000
173	N467	130.9600	127.3000	126.3000	0.0000	0.0000	100.0000
174	N468	129.9500	125.5900	123.5900	0.0000	0.0000	100.0000

175	N469	128.6600	124.6600	118.6600	0.0000	0.0000	100.0000
176	N470	127.0000	120.4600	117.7100	0.0000	0.0000	100.0000
177	N471	133.3000	125.8800	124.8800	0.0000	0.0000	100.0000
178	N472	129.4500	125.9400	124.9400	0.0000	0.0000	100.0000
179	N473	126.2300	121.0700	120.0700	0.0000	0.0000	100.0000
180	N487	122.2200	120.5700	118.5700	0.0000	0.0000	100.0000
181	N489	124.6300	122.3300	118.4300	0.0000	0.0000	100.0000
182	N490	125.9100	123.6500	121.9000	0.0000	0.0000	100.0000
183	N491	127.1900	125.7700	124.1700	0.0000	0.0000	100.0000
184	N492	130.4000	127.3400	126.3400	0.0000	0.0000	100.0000
185	N493	129.9000	127.0400	126.0400	0.0000	0.0000	100.0000
186	N497	112.8000	108.8500	107.8500	0.0000	0.0000	100.0000
187	N499	111.0500	92.2000	91.2000	0.0000	0.0000	100.0000
188	N509	117.9000	110.3800	108.8800	0.0000	0.0000	100.0000
189	N513	117.8200	111.7600	110.0100	0.0000	0.0000	100.0000
190	N514	117.9000	111.6100	108.1100	0.0000	0.0000	100.0000
191	N516	111.0000	92.0000	90.0000	0.0000	0.0000	100.0000
192	N524	136.4600	134.4500	133.4500	0.0000	0.0000	100.0000
193	N525	136.2000	132.1700	131.1700	0.0000	0.0000	100.0000
194	N526	137.2000	134.4600	133.4600	0.0000	0.0000	100.0000
195	N527	136.0000	131.6000	130.6000	0.0000	0.0000	100.0000
196	N528	129.5000	126.1600	122.6600	0.0000	0.0000	100.0000
197	N529	134.2600	124.1400	119.6400	0.0000	0.0000	100.0000
198	N530	109.2400	103.4600	99.7100	0.0000	0.0000	100.0000
199	N689	123.2700	119.5000	118.0000	0.0000	0.0000	100.0000
200	N494	126.0000	123.1600	121.4100	0.0000	0.0000	100.0000
201	N541	120.0000	113.5900	112.0900	0.0000	0.0000	100.0000
202	EL329	118.0000	114.0200	112.5200	0.0000	0.0000	100.0000
203	N427	118.5000	111.1400	109.6400	0.0000	0.0000	100.0000
204	N411	128.9500	116.5000	112.0000	0.0000	0.0000	100.0000
205	N295	120.1000	107.9300	106.9300	0.0000	0.0000	100.0000
206	N311	114.3000	105.3500	104.1000	0.0000	0.0000	100.0000
207	N462	133.0000	129.2800	127.7800	0.0000	0.0000	100.0000

Table E3b - Junction Data

Inp Num	Junction Name	X Coord.	Y Coord.	Type of Manhole	Type of Inlet	Maximum Capacity	Pavement Shape	Pavement Slope
1	N221	0.0000	0.0000	No P	Normal		0	0.0000
2	N222	0.0000	0.0000	No P	Normal		0	0.0000
3	N223	0.0000	0.0000	No P	Normal		0	0.0000
4	N224	0.0000	0.0000	No P	Normal		0	0.0000
5	N227	0.0000	0.0000	No P	Normal		0	0.0000
6	N228	0.0000	0.0000	F	Normal		0	0.0000
7	N230	0.0000	0.0000	No P	Normal		0	0.0000
8	N231	0.0000	0.0000	No P	Normal		0	0.0000
9	N233	0.0000	0.0000	No P	Normal		0	0.0000
10	N234	0.0000	0.0000	No P	Normal		0	0.0000
11	N235	0.0000	0.0000	No P	Normal		0	0.0000
12	N236	0.0000	0.0000	No P	Normal		0	0.0000
13	N237	0.0000	0.0000	No P	Normal		0	0.0000
14	N238	0.0000	0.0000	No P	Normal		0	0.0000
15	N239	0.0000	0.0000	No P	Normal		0	0.0000
16	N240	0.0000	0.0000	No P	Normal		0	0.0000
17	N241	0.0000	0.0000	No P	Normal		0	0.0000
18	N242	0.0000	0.0000	No P	Normal		0	0.0000
19	N243	0.0000	0.0000	No P	Normal		0	0.0000
20	N244	0.0000	0.0000	No P	Normal		0	0.0000
21	N245	0.0000	0.0000	No P	Normal		0	0.0000
22	N246	0.0000	0.0000	No P	Normal		0	0.0000
23	N247	0.0000	0.0000	No P	Normal		0	0.0000
24	N248	0.0000	0.0000	F	Normal		0	0.0000
25	N249	0.0000	0.0000	F	Normal		0	0.0000
26	N250	0.0000	0.0000	No P	Normal		0	0.0000
27	N251	0.0000	0.0000	No P	Normal		0	0.0000

28	N252	0.0000	0.0000	No P	Normal	0	0.0000
29	N253	0.0000	0.0000	No P	Normal	0	0.0000
30	N254	0.0000	0.0000	No P	Normal	0	0.0000
31	N255	0.0000	0.0000	No P	Normal	0	0.0000
32	N256	0.0000	0.0000	No P	Normal	0	0.0000
33	N257	0.0000	0.0000	No P	Normal	0	0.0000
34	N259	0.0000	0.0000	No P	Normal	0	0.0000
35	N260	0.0000	0.0000	No P	Normal	0	0.0000
36	N261	0.0000	0.0000	No P	Normal	0	0.0000
37	N262	0.0000	0.0000	No P	Normal	0	0.0000
38	N263	0.0000	0.0000	No P	Normal	0	0.0000
39	N264	0.0000	0.0000	No P	Normal	0	0.0000
40	N265	0.0000	0.0000	No P	Normal	0	0.0000
41	W800	0.0000	0.0000	No P	Normal	0	0.0000
42	W801	0.0000	0.0000	No P	Normal	0	0.0000
43	OUT802	0.0000	0.0000	No P	Normal	0	0.0000
44	N272	0.0000	0.0000	No P	Normal	0	0.0000
45	N273	0.0000	0.0000	No P	Normal	0	0.0000
46	N274	0.0000	0.0000	No P	Normal	0	0.0000
47	N275	0.0000	0.0000	No P	Normal	0	0.0000
48	N276	0.0000	0.0000	No P	Normal	0	0.0000
49	N277	0.0000	0.0000	No P	Normal	0	0.0000
50	N278	0.0000	0.0000	No P	Normal	0	0.0000
51	N279	0.0000	0.0000	No P	Normal	0	0.0000
52	N288	0.0000	0.0000	No P	Normal	0	0.0000
53	N289	0.0000	0.0000	No P	Normal	0	0.0000
54	N290	0.0000	0.0000	No P	Normal	0	0.0000
55	N291	0.0000	0.0000	No P	Normal	0	0.0000
56	N292	0.0000	0.0000	No P	Normal	0	0.0000
57	N293	0.0000	0.0000	No P	Normal	0	0.0000
58	N294	0.0000	0.0000	No P	Normal	0	0.0000
59	N296	0.0000	0.0000	No P	Normal	0	0.0000
60	N301	0.0000	0.0000	No P	Normal	0	0.0000
61	N302	0.0000	0.0000	No P	Normal	0	0.0000
62	N303	0.0000	0.0000	No P	Normal	0	0.0000
63	N304	0.0000	0.0000	No P	Normal	0	0.0000
64	N309	0.0000	0.0000	No P	Normal	0	0.0000
65	N310	0.0000	0.0000	No P	Normal	0	0.0000
66	N312	0.0000	0.0000	No P	Normal	0	0.0000
67	YEL327	0.0000	0.0000	F	Normal	0	0.0000
68	N331	0.0000	0.0000	F	Normal	0	0.0000
69	W104	0.0000	0.0000	No P	Normal	0	0.0000
70	N342	0.0000	0.0000	No P	Normal	0	0.0000
71	N343	0.0000	0.0000	No P	Normal	0	0.0000
72	N344	0.0000	0.0000	No P	Normal	0	0.0000
73	N345	0.0000	0.0000	No P	Normal	0	0.0000
74	N356	0.0000	0.0000	No P	Normal	0	0.0000
75	N357	0.0000	0.0000	No P	Normal	0	0.0000
76	N358	0.0000	0.0000	No P	Normal	0	0.0000
77	N359	0.0000	0.0000	No P	Normal	0	0.0000
78	N360	0.0000	0.0000	No P	Normal	0	0.0000
79	N361	0.0000	0.0000	No P	Normal	0	0.0000
80	N362	0.0000	0.0000	No P	Normal	0	0.0000
81	N363	0.0000	0.0000	No P	Normal	0	0.0000
82	N364	0.0000	0.0000	No P	Normal	0	0.0000
83	N365	0.0000	0.0000	No P	Normal	0	0.0000
84	N366	0.0000	0.0000	No P	Normal	0	0.0000
85	N367	0.0000	0.0000	No P	Normal	0	0.0000
86	N368	0.0000	0.0000	No P	Normal	0	0.0000
87	N369	0.0000	0.0000	No P	Normal	0	0.0000
88	N370	0.0000	0.0000	No P	Normal	0	0.0000
89	N371	0.0000	0.0000	No P	Normal	0	0.0000
90	N372	0.0000	0.0000	No P	Normal	0	0.0000
91	N373	0.0000	0.0000	No P	Normal	0	0.0000
92	N374	0.0000	0.0000	No P	Normal	0	0.0000
93	N375	0.0000	0.0000	No P	Normal	0	0.0000
94	N376	0.0000	0.0000	No P	Normal	0	0.0000
95	N377	0.0000	0.0000	No P	Normal	0	0.0000
96	N378	0.0000	0.0000	No P	Normal	0	0.0000

97	N379	0.0000	0.0000	No P	Normal	0	0.0000
98	N381	0.0000	0.0000	No P	Normal	0	0.0000
99	N382	0.0000	0.0000	No P	Normal	0	0.0000
100	N383	0.0000	0.0000	No P	Normal	0	0.0000
101	N384	0.0000	0.0000	No P	Normal	0	0.0000
102	N386	0.0000	0.0000	No P	Normal	0	0.0000
103	N387	0.0000	0.0000	No P	Normal	0	0.0000
104	N388	0.0000	0.0000	No P	Normal	0	0.0000
105	N389	0.0000	0.0000	No P	Normal	0	0.0000
106	N390	0.0000	0.0000	No P	Normal	0	0.0000
107	N391	0.0000	0.0000	No P	Normal	0	0.0000
108	N392	0.0000	0.0000	No P	Normal	0	0.0000
109	N394	0.0000	0.0000	No P	Normal	0	0.0000
110	N395	0.0000	0.0000	No P	Normal	0	0.0000
111	N396	0.0000	0.0000	No P	Normal	0	0.0000
112	N397	0.0000	0.0000	No P	Normal	0	0.0000
113	N398	0.0000	0.0000	No P	Normal	0	0.0000
114	N399	0.0000	0.0000	No P	Normal	0	0.0000
115	N403	0.0000	0.0000	No P	Normal	0	0.0000
116	N404	0.0000	0.0000	No P	Normal	0	0.0000
117	N405	0.0000	0.0000	No P	Normal	0	0.0000
118	N406	0.0000	0.0000	No P	Normal	0	0.0000
119	N407	0.0000	0.0000	No P	Normal	0	0.0000
120	N408	0.0000	0.0000	No P	Normal	0	0.0000
121	N409	0.0000	0.0000	No P	Normal	0	0.0000
122	N410	0.0000	0.0000	No P	Normal	0	0.0000
123	N412	0.0000	0.0000	No P	Normal	0	0.0000
124	N413	0.0000	0.0000	No P	Normal	0	0.0000
125	N414	0.0000	0.0000	No P	Normal	0	0.0000
126	N415	0.0000	0.0000	No P	Normal	0	0.0000
127	N416	0.0000	0.0000	No P	Normal	0	0.0000
128	N417	0.0000	0.0000	No P	Normal	0	0.0000
129	N418	0.0000	0.0000	No P	Normal	0	0.0000
130	N419	0.0000	0.0000	No P	Normal	0	0.0000
131	N420	0.0000	0.0000	No P	Normal	0	0.0000
132	N421	0.0000	0.0000	No P	Normal	0	0.0000
133	N422	0.0000	0.0000	No P	Normal	0	0.0000
134	N423	0.0000	0.0000	No P	Normal	0	0.0000
135	N424	0.0000	0.0000	No P	Normal	0	0.0000
136	N425	0.0000	0.0000	No P	Normal	0	0.0000
137	N426	0.0000	0.0000	No P	Normal	0	0.0000
138	N428	0.0000	0.0000	No P	Normal	0	0.0000
139	N429	0.0000	0.0000	No P	Normal	0	0.0000
140	N430	0.0000	0.0000	No P	Normal	0	0.0000
141	N431	0.0000	0.0000	No P	Normal	0	0.0000
142	N432	0.0000	0.0000	No P	Normal	0	0.0000
143	N434	0.0000	0.0000	No P	Normal	0	0.0000
144	N435	0.0000	0.0000	No P	Normal	0	0.0000
145	N436	0.0000	0.0000	No P	Normal	0	0.0000
146	N437	0.0000	0.0000	No P	Normal	0	0.0000
147	N438	0.0000	0.0000	No P	Normal	0	0.0000
148	N439	0.0000	0.0000	No P	Normal	0	0.0000
149	N440	0.0000	0.0000	No P	Normal	0	0.0000
150	N441	0.0000	0.0000	No P	Normal	0	0.0000
151	N442	0.0000	0.0000	No P	Normal	0	0.0000
152	N443	0.0000	0.0000	No P	Normal	0	0.0000
153	N444	0.0000	0.0000	No P	Normal	0	0.0000
154	N445	0.0000	0.0000	No P	Normal	0	0.0000
155	N446	0.0000	0.0000	No P	Normal	0	0.0000
156	N447	0.0000	0.0000	No P	Normal	0	0.0000
157	N448	0.0000	0.0000	No P	Normal	0	0.0000
158	N449	0.0000	0.0000	No P	Normal	0	0.0000
159	N450	0.0000	0.0000	No P	Normal	0	0.0000
160	N451	0.0000	0.0000	No P	Normal	0	0.0000
161	N453	0.0000	0.0000	F	Normal	0	0.0000
162	N454	0.0000	0.0000	No P	Normal	0	0.0000
163	N455	0.0000	0.0000	No P	Normal	0	0.0000
164	N456	0.0000	0.0000	No P	Normal	0	0.0000
165	N457	0.0000	0.0000	No P	Normal	0	0.0000

166	N458	0.0000	0.0000	No	P	Normal	0 0.0000
167	N459	0.0000	0.0000	No	P	Normal	0 0.0000
168	N460	0.0000	0.0000	No	P	Normal	0 0.0000
169	N461	0.0000	0.0000	No	P	Normal	0 0.0000
170	N464	0.0000	0.0000	No	P	Normal	0 0.0000
171	N465	0.0000	0.0000	No	P	Normal	0 0.0000
172	N466	0.0000	0.0000	No	P	Normal	0 0.0000
173	N467	0.0000	0.0000	No	P	Normal	0 0.0000
174	N468	0.0000	0.0000	No	P	Normal	0 0.0000
175	N469	0.0000	0.0000	No	P	Normal	0 0.0000
176	N470	0.0000	0.0000	No	P	Normal	0 0.0000
177	N471	0.0000	0.0000	No	P	Normal	0 0.0000
178	N472	0.0000	0.0000	No	P	Normal	0 0.0000
179	N473	0.0000	0.0000	No	P	Normal	0 0.0000
180	N487	0.0000	0.0000	No	P	Normal	0 0.0000
181	N489	0.0000	0.0000	No	P	Normal	0 0.0000
182	N490	0.0000	0.0000	No	P	Normal	0 0.0000
183	N491	0.0000	0.0000	No	P	Normal	0 0.0000
184	N492	0.0000	0.0000	No	P	Normal	0 0.0000
185	N493	0.0000	0.0000	No	P	Normal	0 0.0000
186	N497	0.0000	0.0000	No	P	Normal	0 0.0000
187	N499	0.0000	0.0000	No	P	Normal	0 0.0000
188	N509	0.0000	0.0000	No	P	Normal	0 0.0000
189	N513	0.0000	0.0000	No	P	Normal	0 0.0000
190	N514	0.0000	0.0000	No	P	Normal	0 0.0000
191	N516	0.0000	0.0000	No	P	Normal	0 0.0000
192	N524	0.0000	0.0000	No	P	Normal	0 0.0000
193	N525	0.0000	0.0000	No	P	Normal	0 0.0000
194	N526	0.0000	0.0000	No	P	Normal	0 0.0000
195	N527	0.0000	0.0000	No	P	Normal	0 0.0000
196	N528	0.0000	0.0000	No	P	Normal	0 0.0000
197	N529	0.0000	0.0000	No	P	Normal	0 0.0000
198	N530	0.0000	0.0000	No	P	Normal	0 0.0000
199	N689	0.0000	0.0000	No	P	Normal	0 0.0000
200	N494	0.0000	0.0000	No	P	Normal	0 0.0000
201	N541	0.0000	0.0000	No	P	Normal	0 0.0000
202	EL329	0.0000	0.0000	No	P	Normal	0 0.0000
203	N427	0.0000	0.0000	No	P	Normal	0 0.0000
204	N411	0.0000	0.0000	No	P	Normal	0 0.0000
205	N295	0.0000	0.0000	No	P	Normal	0 0.0000
206	N311	0.0000	0.0000	No	P	Normal	0 0.0000
207	N462	0.0000	0.0000	No	P	Normal	0 0.0000

Table E4 - Conduit Connectivity

Input Number	Conduit Name	Upstream Node	Downstream Node	Upstream Elevation	Downstream Elevation	
1	L210	N221	N222	105.8400	105.4400	No Design
2	L211	N222	N223	104.4400	102.0600	No Design
3	L212	N223	N224	100.8100	98.4700	No Design
4	L213	N227	N224	98.3400	97.7200	No Design
5	L214	N228	N224	97.5300	97.2200	No Design
6	L217	N231	N230	99.8400	99.3300	No Design
7	L220	N224	N230	96.9700	96.0800	No Design
8	L221	N230	N233	95.8300	94.9200	No Design
9	L222	N233	N234	94.4200	87.6000	No Design
10	L223	N235	N236	119.6000	119.4100	No Design
11	L224	N236	N237	118.6100	117.8600	No Design
12	L225	N237	N238	117.2600	116.5100	No Design
13	L226	N239	N240	117.6900	116.6200	No Design
14	L227	N240	N238	116.6200	116.0100	No Design
15	L228	N238	N241	115.1100	114.0600	No Design
16	L229	N241	N242	111.3600	109.8800	No Design
17	L230	N242	N243	108.6300	107.8600	No Design
18	L231	N243	N244	105.8600	105.1000	No Design

19	L232	N244	N245	103.8500	103.3800	No Design
20	L233	N245	N246	101.9300	100.3100	No Design
21	L234	N246	N247	99.5600	98.3700	No Design
22	L235	N248	N241	111.4800	111.3600	No Design
23	L236	N249	N244	104.6200	104.3500	No Design
24	L237	N250	N246	101.1400	100.5600	No Design
25	L238	N251	N252	115.3800	115.0600	No Design
26	L239	N252	N253	113.0600	112.3300	No Design
27	L240	N254	N253	112.8300	112.3300	No Design
28	L241	N253	N255	108.0800	106.8000	No Design
29	L242	N256	N255	107.4100	107.0500	No Design
30	L243	N257	N255	107.6100	107.0500	No Design
31	L246	N247	N259	97.8700	97.1600	No Design
32	L247	N259	N260	97.1600	97.0000	No Design
33	L248	N261	N259	98.9300	98.6600	No Design
34	L249	N262	N263	104.8800	104.4600	No Design
35	L250	N263	N264	104.4600	96.6400	No Design
36	L251	N265	N263	104.8600	104.4600	No Design
37	L254	W800	W801	102.5100	101.4500	No Design
38	L255	W801	OUT802	101.4500	101.0000	No Design
39	L258	N273	N272	97.6800	97.1000	No Design
40	L259	N272	N274	96.3500	95.5800	No Design
41	L260	N274	N275	95.5800	87.6000	No Design
42	L261	N276	N277	94.2500	93.4400	No Design
43	L262	N277	N278	93.4400	78.0000	No Design
44	L263	N279	N277	94.1200	93.4400	No Design
45	L272	N288	N289	77.0300	77.0000	No Design
46	L273	N290	N288	78.1000	77.7800	No Design
47	L274	N291	N292	91.9200	76.6000	No Design
48	L275	N293	N294	118.9200	118.3000	No Design
49	L277	N296	N294	118.9800	118.3000	No Design
50	L281	N301	N302	122.9000	122.2800	No Design
51	L282	N302	N303	122.2800	110.6000	No Design
52	L283	N304	N302	122.9500	122.2800	No Design
53	L287	N309	N310	113.1500	112.5100	No Design
54	L289	N312	N310	113.2100	112.5100	No Design
55	L308	YEL327	N331	96.0000	92.7000	No Design
56	L317	W104	W800	105.3900	102.5100	No Design
57	L319	N342	N343	100.2200	100.0000	No Design
58	L320	N344	N342	101.1100	100.7200	No Design
59	L334	N356	N357	125.3200	122.9800	No Design
60	L335	N357	N358	122.9800	120.8200	No Design
61	L336	N358	N359	120.8200	120.0900	No Design
62	L337	N359	N360	120.0900	112.8000	No Design
63	L338	N361	N362	126.2400	126.1300	No Design
64	L339	N362	N363	126.1300	125.7800	No Design
65	L340	N363	N364	125.2800	125.0100	No Design
66	L341	N364	N365	125.0100	117.4000	No Design
67	L342	N366	N363	127.8700	127.5300	No Design
68	L343	N367	N363	128.3300	127.7800	No Design
69	L344	N368	N369	124.2600	124.1700	No Design
70	L346	N371	N370	122.2600	122.2000	No Design
71	L347	N370	N372	121.7000	121.3400	No Design
72	L348	N372	N373	121.3400	120.9700	No Design
73	L349	N373	N374	120.9700	120.6000	No Design
74	L350	N374	N375	120.6000	120.4800	No Design
75	L351	N376	N377	122.9000	122.8200	No Design
76	L352	N377	N375	122.8200	122.4800	No Design
77	L354	N378	N379	119.2700	118.4000	No Design
78	L361	N383	N381	125.5300	125.2600	No Design
79	L362	N384	N381	125.6400	125.2600	No Design
80	L363	N381	N382	124.7600	123.3600	No Design
81	L364	N386	N382	124.1400	123.8600	No Design
82	L365	N387	N382	124.2300	123.8600	No Design
83	L366	N382	N388	122.8600	121.9500	No Design
84	L367	N388	N389	121.9500	121.1100	No Design
85	L368	N390	N389	122.8300	122.1100	No Design
86	L369	N391	N389	122.6900	122.1100	No Design
87	L370	N389	N392	120.1100	119.8300	No Design

88	L373	N392	N394	119.8300	118.4000	No Design
89	L374	N395	N396	118.6100	118.1800	No Design
90	L375	N396	N397	117.6800	117.3100	No Design
91	L376	N398	N397	116.3100	116.0600	No Design
92	L386	N399	N403	114.6100	114.3000	No Design
93	L387	N403	N404	114.3000	113.9800	No Design
94	L388	N405	N404	116.6300	115.6000	No Design
95	L389	N404	N406	113.4800	113.1700	No Design
96	L390	N407	N406	117.0000	116.6000	No Design
97	L391	N406	N408	113.1700	112.7800	No Design
98	L392	N408	N409	112.7800	112.4800	No Design
99	L393	N409	N410	112.4800	112.1200	No Design
100	L395	N412	N413	116.3000	115.3300	No Design
101	L396	N414	N413	116.3700	115.8300	No Design
102	L397	N415	N413	116.3300	115.3300	No Design
103	L398	N416	N414	116.8300	113.6200	No Design
104	L399	N417	N414	117.5700	116.8700	No Design
105	L402	N420	N421	112.2400	112.0000	No Design
106	L403	N421	N419	112.0000	110.9100	No Design
107	L404	N419	N422	110.9100	109.8800	No Design
108	L405	N423	N422	110.3700	110.1300	No Design
109	L406	N422	N424	109.1300	108.5100	No Design
110	L407	N425	N424	110.0600	109.7600	No Design
111	L408	N424	N426	108.2600	107.7000	No Design
112	L410	N426	N428	107.4500	106.9200	No Design
113	L411	N428	N429	106.9200	106.5200	No Design
114	L413	N432	N431	118.0700	116.6700	No Design
115	L415	N434	N432	118.8000	118.4800	No Design
116	L417	N436	N435	111.5700	111.1800	No Design
117	L418	N437	N435	110.9200	110.6800	No Design
118	L419	N435	N438	110.1800	109.5800	No Design
119	L420	N438	N439	109.5800	108.6500	No Design
120	L421	N440	N439	110.0500	109.6500	No Design
121	L422	N441	N439	109.7300	109.4000	No Design
122	L423	N439	N442	108.1500	107.4700	No Design
123	L424	N442	N429	107.2200	106.7700	No Design
124	L425	N443	N442	109.3800	108.9700	No Design
125	L426	N444	N442	109.0300	108.7200	No Design
126	L427	N429	N445	106.0200	105.4800	No Design
127	L428	N446	N445	108.4900	107.9800	No Design
128	L429	N445	N447	105.4800	105.0500	No Design
129	L430	N448	N449	118.7700	117.9900	No Design
130	L431	N450	N449	120.7400	118.2400	No Design
131	L432	N451	N450	121.2700	120.7400	No Design
132	L435	N454	N453	114.2900	113.7600	No Design
133	L436	N453	N455	113.7600	111.9300	No Design
134	L437	N455	N456	111.6800	110.2600	No Design
135	L438	N457	N456	111.0200	110.5100	No Design
136	L439	N456	N458	110.2600	108.6400	No Design
137	L440	N458	N447	108.3900	107.0500	No Design
138	L441	N447	N459	105.0500	104.6100	No Design
139	L442	N459	N460	104.6100	104.1100	No Design
140	L443	N460	N461	104.1100	94.1000	No Design
141	L446	N465	N466	126.6500	126.4400	No Design
142	L448	N467	N464	126.3000	125.8400	No Design
143	L449	N464	N468	125.0900	123.8400	No Design
144	L450	N468	N469	123.5900	122.6600	No Design
145	L451	N469	N470	118.6600	118.4600	No Design
146	L452	N471	N468	124.8800	124.5900	No Design
147	L453	N472	N468	124.9400	124.5900	No Design
148	L454	N473	N469	120.0700	119.6600	No Design
149	L466	N418	N487	119.9000	119.3200	No Design
150	L468	N487	N417	118.5700	117.5700	No Design
151	L470	N490	N494	121.9000	121.4100	No Design
152	L471	N491	N490	124.7700	121.9000	No Design
153	L472	N492	N493	126.3400	126.0400	No Design
154	L490	N513	N514	110.0100	109.8600	No Design
155	L496	N524	N525	133.4500	131.1700	No Design
156	L497	N526	N525	133.4600	131.1700	No Design

157	L498	N525	N527	131.1700	130.6000	No Design
158	L501	N369	N528	123.6700	123.1600	No Design
159	L502	N528	N370	122.6600	122.2000	No Design
160	L503	N375	N529	119.9800	119.6400	No Design
161	L504	N529	N378	119.6400	119.2700	No Design
162	L505	N255	N530	102.8000	101.7100	No Design
163	L506	N530	N247	99.7100	98.6200	No Design
164	L509	N497	N499	107.8500	91.2000	No Design
165	L511	N509	N514	108.8800	108.6100	No Design
166	L512	N514	N516	108.1100	90.0000	No Design
167	L514	N466	N464	126.1900	125.0900	No Design
168	L515	N397	N399	115.8100	115.6100	No Design
169	CH21	N470	N398	117.7100	116.3100	No Design
170	L474	N489	N689	118.4300	118.0000	No Design
171	L523	N494	N489	121.4100	120.8300	No Design
172	L525	N413	N399	115.8300	115.1100	No Design
173	L527	N431	N404	116.6700	115.2500	No Design
174	L528	N449	N408	117.9900	116.0300	No Design
175	L529	EL329	N541	112.5200	112.0900	No Design
176	L533	N541	N427	112.0900	109.6400	No Design
177	L537	N427	N426	109.6400	108.9500	No Design
178	L394	N410	N411	112.1200	112.0000	No Design
179	L276	N294	N295	118.3000	106.9300	No Design
180	L288	N310	N311	112.2600	104.1000	No Design
181	L412	N430	N431	119.0000	118.4000	No Design
182	L447	N462	N466	127.7800	126.4400	No Design
183	L321	N345	N239	118.8300	117.6900	No Design

==
| FREE OUTFALL DATA (DATA GROUP I1) |
| BOUNDARY CONDITION ON DATA GROUP J1 |
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Outfall at Junction....N234	has boundary condition number...	1
Outfall at Junction....N260	has boundary condition number...	2
Outfall at Junction....N264	has boundary condition number...	3
Outfall at Junction....OUT802	has boundary condition number...	4
Outfall at Junction....N275	has boundary condition number...	5
Outfall at Junction....N278	has boundary condition number...	6
Outfall at Junction....N289	has boundary condition number...	7
Outfall at Junction....N292	has boundary condition number...	8
Outfall at Junction....N303	has boundary condition number...	9
Outfall at Junction....N331	has boundary condition number...	10
Outfall at Junction....N343	has boundary condition number...	11
Outfall at Junction....N360	has boundary condition number...	12
Outfall at Junction....N365	has boundary condition number...	13
Outfall at Junction....N379	has boundary condition number...	14
Outfall at Junction....N394	has boundary condition number...	15
Outfall at Junction....N461	has boundary condition number...	16
Outfall at Junction....N493	has boundary condition number...	17
Outfall at Junction....N499	has boundary condition number...	18
Outfall at Junction....N516	has boundary condition number...	19
Outfall at Junction....N527	has boundary condition number...	20
Outfall at Junction....N689	has boundary condition number...	21
Outfall at Junction....N411	has boundary condition number...	22
Outfall at Junction....N295	has boundary condition number...	23
Outfall at Junction....N311	has boundary condition number...	24

==
| INTERNAL CONNECTIVITY INFORMATION |
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CONDUIT	JUNCTION	JUNCTION
FREE # 1	N234	BOUNDARY
FREE # 2	N260	BOUNDARY
FREE # 3	N264	BOUNDARY

FREE # 4	OUT802	BOUNDARY
FREE # 5	N275	BOUNDARY
FREE # 6	N278	BOUNDARY
FREE # 7	N289	BOUNDARY
FREE # 8	N292	BOUNDARY
FREE # 9	N303	BOUNDARY
FREE #10	N331	BOUNDARY
FREE #11	N343	BOUNDARY
FREE #12	N360	BOUNDARY
FREE #13	N365	BOUNDARY
FREE #14	N379	BOUNDARY
FREE #15	N394	BOUNDARY
FREE #16	N461	BOUNDARY
FREE #17	N493	BOUNDARY
FREE #18	N499	BOUNDARY
FREE #19	N516	BOUNDARY
FREE #20	N527	BOUNDARY
FREE #21	N689	BOUNDARY
FREE #22	N411	BOUNDARY
FREE #23	N295	BOUNDARY
FREE #24	N311	BOUNDARY

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| Boundary Condition Information |
| Data Groups J1-J4 |
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BC NUMBER.. 4 has no control water surface.
BC NUMBER.. 17 has no control water surface.
BC NUMBER.. 20 has no control water surface.
BC NUMBER.. 21 has no control water surface.

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| XP Note Field Summary |
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| Conduit Convergence Criteria |
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Conduit Name	Full Flow	Conduit Slope
L210	2.3341	0.0057
L211	2.3583	0.0058
L212	3.6820	0.0043
L213	2.3504	0.0058
L214	5.2561	0.0033
L217	2.3778	0.0059
L220	7.2421	0.0028
L221	9.4105	0.0023
L222	37.9531	0.0375
L223	1.5862	0.0026
L224	1.5676	0.0026
L225	1.5703	0.0026
L226	1.5717	0.0026
L227	1.5698	0.0026
L228	1.5683	0.0026
L229	2.8478	0.0026
L230	2.4656	0.0019
L231	2.4434	0.0019
L232	3.5621	0.0015
L233	5.2943	0.0034
L234	10.3141	0.0028
L235	1.5127	0.0024

L236	1.5658	0.0026
L237	2.3516	0.0058
L238	2.3553	0.0058
L239	2.3692	0.0059
L240	2.3544	0.0058
L241	3.6815	0.0043
L242	2.3529	0.0058
L243	2.3707	0.0059
L246	14.7213	0.0017
L247	14.8246	0.0017
L248	2.3403	0.0057
L249	2.3421	0.0058
L250	9.7769	0.1003
L251	2.3510	0.0058
L254	3.5193	0.0015
L255	6.1931	0.0010
L258	2.3516	0.0058
L259	7.1885	0.0027
L260	48.4905	0.1247
L261	2.3656	0.0059
L262	13.9175	0.2032
L263	2.3540	0.0058
L272	50.6250	0.0009
L273	7.1817	0.0027
L274	32.1290	0.1246
L275	2.3504	0.0058
L277	2.3540	0.0058
L281	2.3504	0.0058
L282	15.2316	0.2433
L283	2.3672	0.0059
L287	2.3660	0.0059
L289	2.3583	0.0058
L308	157.6117	0.0327
L317	2.8556	0.0026
L319	5.2963	0.0034
L320	2.3558	0.0058
L334	2.3558	0.0058
L335	2.3560	0.0058
L336	2.3597	0.0058
L337	7.6425	0.0613
L338	20.9182	0.0013
L339	21.2087	0.0013
L340	29.0054	0.0011
L341	237.0096	0.0739
L342	3.6963	0.0044
L343	2.3619	0.0059
L344	14.9332	0.0018
L346	30.2053	0.0012
L347	37.5829	0.0009
L348	37.6745	0.0009
L349	37.8624	0.0009
L350	37.5354	0.0009
L351	9.3735	0.0023
L352	9.4291	0.0023
L354	163.9607	0.0093
L361	2.3403	0.0057
L362	2.3430	0.0058
L363	5.3133	0.0034
L364	2.3583	0.0058
L365	2.3663	0.0059
L366	9.4224	0.0023
L367	9.4185	0.0023
L368	2.3529	0.0058
L369	2.3634	0.0059
L370	21.3114	0.0014
L373	69.8268	0.0146
L374	1.6007	0.0027
L375	2.7585	0.0009
L376	17.8956	0.0015

L386	37.5354	0.0009
L387	37.3765	0.0009
L388	2.9480	0.0091
L389	48.3609	0.0008
L390	1.8968	0.0038
L391	47.6460	0.0008
L392	47.8865	0.0008
L393	47.6261	0.0008
L395	7.7978	0.0194
L396	21.1861	0.0013
L397	7.4154	0.0175
L398	14.4778	0.0669
L399	9.4392	0.0023
L402	7.2544	0.0028
L403	7.1865	0.0027
L404	7.2356	0.0028
L405	5.2929	0.0034
L406	14.6711	0.0017
L407	3.6392	0.0042
L408	17.9044	0.0015
L410	21.1742	0.0013
L411	21.0724	0.0013
L413	5.3791	0.0035
L415	2.4953	0.0065
L417	2.3384	0.0057
L418	5.2561	0.0033
L419	9.4366	0.0023
L420	9.4302	0.0023
L421	2.3682	0.0059
L422	3.6891	0.0043
L423	14.7122	0.0017
L424	17.7815	0.0015
L425	2.3631	0.0059
L426	3.6483	0.0042
L427	29.0650	0.0011
L428	2.3506	0.0058
L429	28.8057	0.0011
L430	2.8587	0.0086
L431	2.3544	0.0058
L432	2.3565	0.0058
L435	2.3695	0.0059
L436	2.3535	0.0058
L437	3.6836	0.0043
L438	2.3506	0.0058
L439	3.6846	0.0043
L440	5.2957	0.0034
L441	28.7403	0.0011
L442	28.7787	0.0011
L443	281.5617	0.1043
L446	5.3415	0.0034
L448	2.3562	0.0058
L449	7.2216	0.0028
L450	9.4537	0.0023
L451	9.2424	0.0022
L452	2.3516	0.0058
L453	2.3389	0.0057
L454	2.3631	0.0059
L466	4.4943	0.0064
L468	8.8034	0.0020
L470	7.2253	0.0028
L471	2.6488	0.0074
L472	2.3453	0.0058
L490	4.8350	0.0012
L496	2.3549	0.0058
L497	2.3540	0.0058
L498	2.3549	0.0058
L501	21.3175	0.0014
L502	28.7542	0.0011
L503	47.5382	0.0008

L504	48.0749	0.0008
L505	7.2137	0.0028
L506	7.1955	0.0027
L509	10.8843	0.1243
L511	3.5456	0.0015
L512	79.1933	0.1632
L514	7.2103	0.0028
L515	21.4683	0.0014
CH21	321.7664	0.0015
L474	5.2973	0.0034
L523	22.9743	0.0034
L525	21.2457	0.0014
L527	5.2074	0.0033
L528	3.6866	0.0043
L529	3.5424	0.0015
L533	5.2922	0.0034
L537	3.5530	0.0015
L394	47.1178	0.0008
L276	14.5794	0.2229
L288	20.4763	0.1338
L412	3.2854	0.0113
L447	5.3092	0.0034
L321	1.5717	0.0026

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| Initial Model Condition |
| Initial Time = 0.02 hours |
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Junction / Depth / Elevation ===> "*" Junction is Surcharged.

N221/	0.00 /	105.84	N222/	0.00 /	104.44	N223/	0.00 /	100.81
N224/	0.00 /	96.97	N227/	0.00 /	98.34	N228/	0.00 /	97.53
N230/	0.00 /	95.83	N231/	0.00 /	99.84	N233/	0.00 /	94.42
N234/	1.81 /	89.41	N235/	0.00 /	119.60	N236/	0.00 /	118.61
N237/	0.00 /	117.26	N238/	0.00 /	115.11	N239/	0.00 /	117.69
N240/	0.00 /	116.62	N241/	0.00 /	111.36	N242/	0.00 /	108.63
N243/	0.00 /	105.86	N244/	0.00 /	103.85	N245/	0.00 /	101.68
N246/	0.00 /	99.56	N247/	0.00 /	97.87	N248/	0.00 /	111.48
N249/	0.00 /	104.62	N250/	0.00 /	101.14	N251/	0.00 /	115.38
N252/	0.00 /	113.06	N253/	0.00 /	108.08	N254/	0.00 /	112.83
N255/	0.00 /	102.80	N256/	0.00 /	107.41	N257/	0.00 /	107.61
N259/	0.00 /	97.16	N260/	2.10 /	99.10	N261/	0.00 /	98.93
N262/	0.00 /	104.88	N263/	0.00 /	104.46	N264/	2.45 /	99.09
N265/	0.00 /	104.86	W800/	0.00 /	102.51	W801/	0.00 /	101.45
OUT802/	0.00 /	101.00	N272/	0.00 /	96.35	N273/	0.00 /	97.68
N274/	0.00 /	95.58	N275/	1.82 /	89.42	N276/	0.00 /	94.25
N277/	0.00 /	93.44	N278/	3.48 /	81.48	N279/	0.00 /	94.12
N288/	0.00 /	77.03	N289/	4.47 /	81.47	N290/	0.00 /	78.10
N291/	0.00 /	91.92	N292/	4.87 /	81.47	N293/	0.00 /	118.92
N294/	0.00 /	118.30	N296/	0.00 /	118.98	N301/	0.00 /	122.90
N302/	0.00 /	122.28	N303/	2.67 /	113.27	N304/	0.00 /	122.95
N309/	0.00 /	113.15	N310/	0.00 /	112.26	N312/	0.00 /	113.21
YEL327/	0.00 /	96.00	N331/	5.71 /	98.41	W104/	0.00 /	105.39
N342/	0.00 /	100.22	N343/	0.00 /	100.00	N344/	0.00 /	101.11
N345/	0.00 /	118.83	N356/	0.00 /	125.32	N357/	0.00 /	122.98
N358/	0.00 /	120.82	N359/	0.00 /	120.09	N360/	2.52 /	115.32
N361/	0.00 /	126.24	N362/	0.00 /	126.13	N363/	0.00 /	125.28
N364/	0.00 /	125.01	N365/	5.12 /	122.52	N366/	0.00 /	127.87
N367/	0.00 /	128.33	N368/	0.00 /	124.26	N369/	0.00 /	123.67
N370/	0.00 /	121.70	N371/	0.00 /	122.26	N372/	0.00 /	121.34
N373/	0.00 /	120.97	N374/	0.00 /	120.60	N375/	0.00 /	119.98
N376/	0.00 /	122.90	N377/	0.00 /	122.82	N378/	0.00 /	119.27
N379/	4.13 /	122.53	N381/	0.00 /	124.76	N382/	0.00 /	122.86
N383/	0.00 /	125.53	N384/	0.00 /	125.64	N386/	0.00 /	124.14
N387/	0.00 /	124.23	N388/	0.00 /	121.95	N389/	0.00 /	120.11
N390/	0.00 /	122.83	N391/	0.00 /	122.69	N392/	0.00 /	119.83
N394/	4.13 /	122.53	N395/	0.00 /	118.11	N396/	0.00 /	117.68
N397/	0.00 /	115.81	N398/	0.00 /	116.31	N399/	0.00 /	114.60
N403/	0.00 /	114.30	N404/	0.00 /	113.48	N405/	0.00 /	116.63

N406/	0.00 /	113.17	N407/	0.00 /	117.00	N408/	0.00 /	112.78
N409/	0.00 /	112.48	N410/	0.00 /	112.12	N412/	0.00 /	116.30
N413/	0.00 /	115.33	N414/	0.00 /	113.62	N415/	0.00 /	116.33
N416/	0.00 /	116.83	N417/	0.00 /	117.57	N418/	0.00 /	119.90
N419/	0.00 /	110.91	N420/	0.00 /	112.24	N421/	0.00 /	112.00
N422/	0.00 /	109.13	N423/	0.00 /	110.37	N424/	0.00 /	108.26
N425/	0.00 /	110.06	N426/	0.00 /	107.45	N428/	0.00 /	106.92
N429/	0.00 /	106.02	N430/	0.00 /	119.00	N431/	0.00 /	116.67
N432/	0.00 /	118.07	N434/	0.00 /	118.80	N435/	0.00 /	110.18
N436/	0.00 /	111.57	N437/	0.00 /	110.92	N438/	0.00 /	109.58
N439/	0.00 /	108.15	N440/	0.00 /	110.05	N441/	0.00 /	109.73
N442/	0.00 /	107.22	N443/	0.00 /	109.38	N444/	0.00 /	109.03
N445/	0.00 /	105.48	N446/	0.00 /	108.49	N447/	0.00 /	105.05
N448/	0.00 /	118.77	N449/	0.00 /	117.99	N450/	0.00 /	120.74
N451/	0.00 /	121.27	N453/	0.00 /	113.76	N454/	0.00 /	114.29
N455/	0.00 /	111.68	N456/	0.00 /	110.26	N457/	0.00 /	111.02
N458/	0.00 /	108.39	N459/	0.00 /	104.61	N460/	0.00 /	104.11
N461/	4.31 /	98.41	N464/	0.00 /	125.09	N465/	0.00 /	126.65
N466/	0.00 /	126.19	N467/	0.00 /	126.30	N468/	0.00 /	123.59
N469/	0.00 /	118.66	N470/	0.00 /	117.71	N471/	0.00 /	124.88
N472/	0.00 /	124.94	N473/	0.00 /	120.07	N487/	0.00 /	118.57
N489/	0.00 /	118.43	N490/	0.00 /	121.90	N491/	0.00 /	124.17
N492/	0.00 /	126.34	N493/	0.00 /	126.04	N497/	0.00 /	107.85
N499/	7.21 /	98.41	N509/	0.00 /	108.88	N513/	0.00 /	110.01
N514/	0.00 /	108.11	N516/	4.53 /	94.53	N524/	0.00 /	133.45
N525/	0.00 /	131.17	N526/	0.00 /	133.46	N527/	0.00 /	130.60
N528/	0.00 /	122.66	N529/	0.00 /	119.64	N530/	0.00 /	99.71
N689/	0.00 /	118.00	N494/	0.00 /	121.41	N541/	0.00 /	112.09
EL329/	0.00 /	112.52	N427/	0.00 /	109.64	N411/	3.62 /	115.62
N295/	3.62 /	110.55	N311/	4.42 /	108.52	N462/	0.00 /	127.78

Conduit/ FLOW ===> "*" Conduit uses the normal flow option.

L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.00
L223/	0.00	L224/	0.00	L225/	0.00
L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00
L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00
L246/	0.00	L247/	0.00	L248/	0.00
L249/	0.00	L250/	0.00	L251/	0.00
L254/	0.00	L255/	0.00	L258/	0.00
L259/	0.00	L260/	0.00	L261/	0.00
L262/	0.00	L263/	0.00	L272/	0.00
L273/	0.00	L274/	0.00	L275/	0.00
L277/	0.00	L281/	0.00	L282/	0.00
L283/	0.00	L287/	0.00	L289/	0.00
L308/	0.00	L317/	0.00	L319/	0.00
L320/	0.00	L334/	0.00	L335/	0.00
L336/	0.00	L337/	0.00	L338/	0.00
L339/	0.00	L340/	0.00	L341/	0.00
L342/	0.00	L343/	0.00	L344/	0.00
L346/	0.00	L347/	0.00	L348/	0.00
L349/	0.00	L350/	0.00	L351/	0.00
L352/	0.00	L354/	0.00	L361/	0.00
L362/	0.00	L363/	0.00	L364/	0.00
L365/	0.00	L366/	0.00	L367/	0.00
L368/	0.00	L369/	0.00	L370/	0.00
L373/	0.00	L374/	0.00	L375/	0.00
L376/	0.00	L386/	0.00	L387/	0.00
L388/	0.00	L389/	0.00	L390/	0.00
L391/	0.00	L392/	0.00	L393/	0.00
L395/	0.00	L396/	0.00	L397/	0.00
L398/	0.00	L399/	0.00	L402/	0.00
L403/	0.00	L404/	0.00	L405/	0.00
L406/	0.00	L407/	0.00	L408/	0.00

L410/	0.00	L411/	0.00	L413/	0.00
L415/	0.00	L417/	0.00	L418/	0.00
L419/	0.00	L420/	0.00	L421/	0.00
L422/	0.00	L423/	0.00	L424/	0.00
L425/	0.00	L426/	0.00	L427/	0.00
L428/	0.00	L429/	0.00	L430/	0.00
L431/	0.00	L432/	0.00	L435/	0.00
L436/	0.00	L437/	0.00	L438/	0.00
L439/	0.00	L440/	0.00	L441/	0.00
L442/	0.00	L443/	0.00	L446/	0.00
L448/	0.00	L449/	0.00	L450/	0.00
L451/	0.00	L452/	0.00	L453/	0.00
L454/	0.00	L466/	0.00	L468/	0.00
L470/	0.00	L471/	0.00	L472/	0.00
L490/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L501/	0.00	L502/	0.00
L503/	0.00	L504/	0.00	L505/	0.00
L506/	0.00	L509/	0.00	L511/	0.00
L512/	0.00	L514/	0.00	L515/	0.00
CH21/	0.00	L474/	0.00	L523/	0.00
L525/	0.00	L527/	0.00	L528/	0.00
L529/	0.00	L533/	0.00	L537/	0.00
L394/	0.00	L276/	0.00	L288/	0.00
L412/	0.00	L447/	0.00	L321/	0.00
FREE # 1/	0.00	FREE # 2/	0.00	FREE # 3/	0.00
FREE # 4/	0.00	FREE # 5/	0.00	FREE # 6/	0.00
FREE # 7/	0.00	FREE # 8/	0.00	FREE # 9/	0.00
FREE #10/	0.00	FREE #11/	0.00	FREE #12/	0.00
FREE #13/	0.00	FREE #14/	0.00	FREE #15/	0.00
FREE #16/	0.00	FREE #17/	0.00	FREE #18/	0.00
FREE #19/	0.00	FREE #20/	0.00	FREE #21/	0.00
FREE #22/	0.00	FREE #23/	0.00	FREE #24/	0.00

Conduit/	Velocity				
L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.00
L223/	0.00	L224/	0.00	L225/	0.00
L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00
L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00
L246/	0.00	L247/	0.00	L248/	0.00
L249/	0.00	L250/	0.00	L251/	0.00
L254/	0.00	L255/	0.00	L258/	0.00
L259/	0.00	L260/	0.00	L261/	0.00
L262/	0.00	L263/	0.00	L272/	0.00
L273/	0.00	L274/	0.00	L275/	0.00
L277/	0.00	L281/	0.00	L282/	0.00
L283/	0.00	L287/	0.00	L289/	0.00
L308/	0.00	L317/	0.00	L319/	0.00
L320/	0.00	L334/	0.00	L335/	0.00
L336/	0.00	L337/	0.00	L338/	0.00
L339/	0.00	L340/	0.00	L341/	0.00
L342/	0.00	L343/	0.00	L344/	0.00
L346/	0.00	L347/	0.00	L348/	0.00
L349/	0.00	L350/	0.00	L351/	0.00
L352/	0.00	L354/	0.00	L361/	0.00
L362/	0.00	L363/	0.00	L364/	0.00
L365/	0.00	L366/	0.00	L367/	0.00
L368/	0.00	L369/	0.00	L370/	0.00
L373/	0.00	L374/	0.00	L375/	0.00
L376/	0.00	L386/	0.00	L387/	0.00
L388/	0.00	L389/	0.00	L390/	0.00
L391/	0.00	L392/	0.00	L393/	0.00
L395/	0.00	L396/	0.00	L397/	0.00
L398/	0.00	L399/	0.00	L402/	0.00

L403/	0.00	L404/	0.00	L405/	0.00
L406/	0.00	L407/	0.00	L408/	0.00
L410/	0.00	L411/	0.00	L413/	0.00
L415/	0.00	L417/	0.00	L418/	0.00
L419/	0.00	L420/	0.00	L421/	0.00
L422/	0.00	L423/	0.00	L424/	0.00
L425/	0.00	L426/	0.00	L427/	0.00
L428/	0.00	L429/	0.00	L430/	0.00
L431/	0.00	L432/	0.00	L435/	0.00
L436/	0.00	L437/	0.00	L438/	0.00
L439/	0.00	L440/	0.00	L441/	0.00
L442/	0.00	L443/	0.00	L446/	0.00
L448/	0.00	L449/	0.00	L450/	0.00
L451/	0.00	L452/	0.00	L453/	0.00
L454/	0.00	L466/	0.00	L468/	0.00
L470/	0.00	L471/	0.00	L472/	0.00
L490/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L501/	0.00	L502/	0.00
L503/	0.00	L504/	0.00	L505/	0.00
L506/	0.00	L509/	0.00	L511/	0.00
L512/	0.00	L514/	0.00	L515/	0.00
CH21/	0.00	L474/	0.00	L523/	0.00
L525/	0.00	L527/	0.00	L528/	0.00
L529/	0.00	L533/	0.00	L537/	0.00
L394/	0.00	L276/	0.00	L288/	0.00
L412/	0.00	L447/	0.00	L321/	0.00

Conduit/ Cross Sectional Area

L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.30
L223/	0.00	L224/	0.00	L225/	0.00
L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00
L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00
L246/	0.00	L247/	0.44	L248/	0.00
L249/	0.00	L250/	0.08	L251/	0.00
L254/	0.00	L255/	0.00	L258/	0.00
L259/	0.00	L260/	0.25	L261/	0.00
L262/	0.08	L263/	0.00	L272/	1.59
L273/	0.00	L274/	0.18	L275/	0.00
L277/	0.00	L281/	0.00	L282/	0.08
L283/	0.00	L287/	0.00	L289/	0.00
L308/	0.97	L317/	0.00	L319/	0.00
L320/	0.00	L334/	0.00	L335/	0.00
L336/	0.00	L337/	0.08	L338/	0.00
L339/	0.00	L340/	0.00	L341/	0.96
L342/	0.00	L343/	0.00	L344/	0.00
L346/	0.00	L347/	0.00	L348/	0.00
L349/	0.00	L350/	0.00	L351/	0.00
L352/	0.00	L354/	1.53	L361/	0.00
L362/	0.00	L363/	0.00	L364/	0.00
L365/	0.00	L366/	0.00	L367/	0.00
L368/	0.00	L369/	0.00	L370/	0.00
L373/	0.71	L374/	0.00	L375/	0.00
L376/	0.00	L386/	0.00	L387/	0.00
L388/	0.00	L389/	0.00	L390/	0.00
L391/	0.00	L392/	0.00	L393/	0.00
L395/	0.00	L396/	0.00	L397/	0.00
L398/	0.00	L399/	0.00	L402/	0.00
L403/	0.00	L404/	0.00	L405/	0.00
L406/	0.00	L407/	0.00	L408/	0.00
L410/	0.00	L411/	0.00	L413/	0.00
L415/	0.00	L417/	0.00	L418/	0.00
L419/	0.00	L420/	0.00	L421/	0.00
L422/	0.00	L423/	0.00	L424/	0.00

L425/	0.00	L426/	0.00	L427/	0.00
L428/	0.00	L429/	0.00	L430/	0.00
L431/	0.00	L432/	0.00	L435/	0.00
L436/	0.00	L437/	0.00	L438/	0.00
L439/	0.00	L440/	0.00	L441/	0.00
L442/	0.00	L443/	0.98	L446/	0.00
L448/	0.00	L449/	0.00	L450/	0.00
L451/	0.00	L452/	0.00	L453/	0.00
L454/	0.00	L466/	0.00	L468/	0.00
L470/	0.00	L471/	0.00	L472/	0.00
L490/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L501/	0.00	L502/	0.00
L503/	0.00	L504/	0.00	L505/	0.00
L506/	0.00	L509/	0.08	L511/	0.00
L512/	0.32	L514/	0.00	L515/	0.00
CH21/	0.00	L474/	0.00	L523/	0.00
L525/	0.00	L527/	0.00	L528/	0.00
L529/	0.00	L533/	0.00	L537/	0.00
L394/	1.37	L276/	0.08	L288/	0.12
L412/	0.00	L447/	0.00	L321/	0.00

Conduit/ Hydraulic Radius

L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.06
L223/	0.00	L224/	0.00	L225/	0.00
L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00
L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00
L246/	0.00	L247/	0.08	L248/	0.00
L249/	0.00	L250/	0.03	L251/	0.00
L254/	0.00	L255/	0.00	L258/	0.00
L259/	0.00	L260/	0.05	L261/	0.00
L262/	0.03	L263/	0.00	L272/	0.13
L273/	0.00	L274/	0.04	L275/	0.00
L277/	0.00	L281/	0.00	L282/	0.03
L283/	0.00	L287/	0.00	L289/	0.00
L308/	0.10	L317/	0.00	L319/	0.00
L320/	0.00	L334/	0.00	L335/	0.00
L336/	0.00	L337/	0.03	L338/	0.00
L339/	0.00	L340/	0.00	L341/	0.10
L342/	0.00	L343/	0.00	L344/	0.00
L346/	0.00	L347/	0.00	L348/	0.00
L349/	0.00	L350/	0.00	L351/	0.00
L352/	0.00	L354/	0.14	L361/	0.00
L362/	0.00	L363/	0.00	L364/	0.00
L365/	0.00	L366/	0.00	L367/	0.00
L368/	0.00	L369/	0.00	L370/	0.00
L373/	0.08	L374/	0.00	L375/	0.00
L376/	0.00	L386/	0.00	L387/	0.00
L388/	0.00	L389/	0.00	L390/	0.00
L391/	0.00	L392/	0.00	L393/	0.00
L395/	0.00	L396/	0.00	L397/	0.00
L398/	0.00	L399/	0.00	L402/	0.00
L403/	0.00	L404/	0.00	L405/	0.00
L406/	0.00	L407/	0.00	L408/	0.00
L410/	0.00	L411/	0.00	L413/	0.00
L415/	0.00	L417/	0.00	L418/	0.00
L419/	0.00	L420/	0.00	L421/	0.00
L422/	0.00	L423/	0.00	L424/	0.00
L425/	0.00	L426/	0.00	L427/	0.00
L428/	0.00	L429/	0.00	L430/	0.00
L431/	0.00	L432/	0.00	L435/	0.00
L436/	0.00	L437/	0.00	L438/	0.00
L439/	0.00	L440/	0.00	L441/	0.00
L442/	0.00	L443/	0.10	L446/	0.00

L448/	0.00	L449/	0.00	L450/	0.00
L451/	0.00	L452/	0.00	L453/	0.00
L454/	0.00	L466/	0.00	L468/	0.00
L470/	0.00	L471/	0.00	L472/	0.00
L490/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L501/	0.00	L502/	0.00
L503/	0.00	L504/	0.00	L505/	0.00
L506/	0.00	L509/	0.03	L511/	0.00
L512/	0.05	L514/	0.00	L515/	0.00
CH21/	0.00	L474/	0.00	L523/	0.00
L525/	0.00	L527/	0.00	L528/	0.00
L529/	0.00	L533/	0.00	L537/	0.00
L394/	0.15	L276/	0.03	L288/	0.03
L412/	0.00	L447/	0.00	L321/	0.00

Conduit/ Upstream/ Downstream Elevation

L210/	104.44/	104.44	L211/	100.81/	100.81	L212/	96.97/	96.97
L213/	96.97/	96.97	L214/	96.97/	96.97	L217/	95.83/	95.83
L220/	95.83/	95.83	L221/	94.42/	94.42	L222/	94.42/	89.41
L223/	118.61/	118.61	L224/	117.26/	117.26	L225/	115.11/	115.11
L226/	116.62/	116.62	L227/	115.11/	115.11	L228/	111.36/	111.36
L229/	108.63/	108.63	L230/	105.86/	105.86	L231/	103.85/	103.85
L232/	101.68/	101.68	L233/	99.56/	99.56	L234/	97.87/	97.87
L235/	111.36/	111.36	L236/	103.85/	103.85	L237/	99.56/	99.56
L238/	113.06/	113.06	L239/	108.08/	108.08	L240/	108.08/	108.08
L241/	102.80/	102.80	L242/	102.80/	102.80	L243/	102.80/	102.80
L246/	97.16/	97.16	L247/	97.16/	99.10	L248/	97.16/	97.16
L249/	104.46/	104.46	L250/	104.46/	99.09	L251/	104.46/	104.46
L254/	101.45/	101.45	L255/	101.00/	101.00	L258/	96.35/	96.35
L259/	95.58/	95.58	L260/	95.58/	89.42	L261/	93.44/	93.44
L262/	93.44/	81.48	L263/	93.44/	93.44	L272/	77.03/	81.47
L273/	77.03/	77.03	L274/	91.92/	81.47	L275/	118.30/	118.30
L277/	118.30/	118.30	L281/	122.28/	122.28	L282/	122.28/	113.27
L283/	122.28/	122.28	L287/	112.26/	112.26	L289/	112.26/	112.26
L308/	96.00/	98.41	L317/	102.51/	102.51	L319/	100.00/	100.00
L320/	100.22/	100.22	L334/	122.98/	122.98	L335/	120.82/	120.82
L336/	120.09/	120.09	L337/	120.09/	115.32	L338/	126.13/	126.13
L339/	125.28/	125.28	L340/	125.01/	125.01	L341/	125.01/	122.52
L342/	125.28/	125.28	L343/	125.28/	125.28	L344/	123.67/	123.67
L346/	121.70/	121.70	L347/	121.34/	121.34	L348/	120.97/	120.97
L349/	120.60/	120.60	L350/	119.98/	119.98	L351/	122.82/	122.82
L352/	119.98/	119.98	L354/	119.27/	122.53	L361/	124.76/	124.76
L362/	124.76/	124.76	L363/	122.86/	122.86	L364/	122.86/	122.86
L365/	122.86/	122.86	L366/	121.95/	121.95	L367/	120.11/	120.11
L368/	120.11/	120.11	L369/	120.11/	120.11	L370/	119.83/	119.83
L373/	119.83/	122.53	L374/	117.68/	117.68	L375/	115.81/	115.81
L376/	115.81/	115.81	L386/	114.30/	114.30	L387/	113.48/	113.48
L388/	113.48/	113.48	L389/	113.17/	113.17	L390/	113.17/	113.17
L391/	112.78/	112.78	L392/	112.48/	112.48	L393/	112.12/	112.12
L395/	115.33/	115.33	L396/	115.33/	115.33	L397/	115.33/	115.33
L398/	113.62/	113.62	L399/	113.62/	113.62	L402/	112.00/	112.00
L403/	110.91/	110.91	L404/	109.13/	109.13	L405/	109.13/	109.13
L406/	108.26/	108.26	L407/	108.26/	108.26	L408/	107.45/	107.45
L410/	106.92/	106.92	L411/	106.02/	106.02	L413/	116.67/	116.67
L415/	118.07/	118.07	L417/	110.18/	110.18	L418/	110.18/	110.18
L419/	109.58/	109.58	L420/	108.15/	108.15	L421/	108.15/	108.15
L422/	108.15/	108.15	L423/	107.22/	107.22	L424/	106.02/	106.02
L425/	107.22/	107.22	L426/	107.22/	107.22	L427/	105.48/	105.48
L428/	105.48/	105.48	L429/	105.05/	105.05	L430/	117.99/	117.99
L431/	117.99/	117.99	L432/	120.74/	120.74	L435/	113.76/	113.76
L436/	111.68/	111.68	L437/	110.26/	110.26	L438/	110.26/	110.26
L439/	108.39/	108.39	L440/	105.05/	105.05	L441/	104.61/	104.61
L442/	104.11/	104.11	L443/	104.11/	98.41	L446/	126.19/	126.19
L448/	125.09/	125.09	L449/	123.59/	123.59	L450/	118.66/	118.66
L451/	117.71/	117.71	L452/	123.59/	123.59	L453/	123.59/	123.59
L454/	118.66/	118.66	L466/	118.57/	118.57	L468/	117.57/	117.57
L470/	121.41/	121.41	L471/	121.90/	121.90	L472/	126.04/	126.04
L490/	108.11/	108.11	L496/	131.17/	131.17	L497/	131.17/	131.17
L498/	130.60/	130.60	L501/	122.66/	122.66	L502/	121.70/	121.70

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          L503/   119.64/   119.64          L504/   119.27/   119.27          L505/    99.71/    99.71
          L506/    97.87/    97.87          L509/   107.85/    98.41          L511/   108.11/   108.11
          L512/   108.11/    94.53          L514/   125.09/   125.09          L515/   114.60/   114.60
          CH21/   116.31/   116.31          L474/   118.00/   118.00          L523/   118.43/   118.43
          L525/   114.60/   114.60          L527/   113.48/   113.48          L528/   112.78/   112.78
          L529/   112.09/   112.09          L533/   109.64/   109.64          L537/   107.45/   107.45
          L394/   112.12/   115.62          L276/   118.30/   110.55          L288/   112.26/   108.52
          L412/   116.67/   116.67          L447/   126.19/   126.19          L321/   117.69/   117.69

 ######## Important Information ########
 Start time of user hydrographs was...    0.000000000000000E+000
 Start time of the simulation was.....    0.000000000000000E+000
 Found a match between user hydrograph and simulation start time.

 ================================================================================
 ===> System inflows (data group K3) at     0.00 hours ( Junction / Inflow,cfs )

 N221      / 0.00E+00 N222      / 0.00E+00 N223      / 0.00E+00 N224      / 0.00E+00 N227      / 0.00E+00 N228
/ 0.00E+00
 N230      / 0.00E+00 N231      / 0.00E+00 N233      / 0.00E+00 N234      / 0.00E+00 N235      / 0.00E+00 N236
/ 0.00E+00
 N237      / 0.00E+00 N238      / 0.00E+00 N239      / 0.00E+00 N240      / 0.00E+00 N241      / 0.00E+00 N242
/ 0.00E+00
 N243      / 0.00E+00 N244      / 0.00E+00 N245      / 0.00E+00 N246      / 0.00E+00 N247      / 0.00E+00 N248
/ 0.00E+00
 N249      / 0.00E+00 N250      / 0.00E+00 N251      / 0.00E+00 N252      / 0.00E+00 N253      / 0.00E+00 N254
/ 0.00E+00
 N255      / 0.00E+00 N256      / 0.00E+00 N257      / 0.00E+00 N259      / 0.00E+00 N260      / 0.00E+00 N261
/ 0.00E+00
 N262      / 0.00E+00 N263      / 0.00E+00 N264      / 0.00E+00 N265      / 0.00E+00 W800      / 0.00E+00 W801
/ 0.00E+00
 OUT802    / 0.00E+00 N272      / 0.00E+00 N273      / 0.00E+00 N274      / 0.00E+00 N275      / 0.00E+00 N276
/ 0.00E+00
 N277      / 0.00E+00 N278      / 0.00E+00 N279      / 0.00E+00 N288      / 0.00E+00 N289      / 0.00E+00 N290
/ 0.00E+00
 N291      / 0.00E+00 N292      / 0.00E+00 N293      / 0.00E+00 N294      / 0.00E+00 N296      / 0.00E+00 N301
/ 0.00E+00
 N302      / 0.00E+00 N303      / 0.00E+00 N304      / 0.00E+00 N309      / 0.00E+00 N310      / 0.00E+00 N312
/ 0.00E+00
 YEL327    / 0.00E+00 N331      / 0.00E+00 W104      / 0.00E+00 N342      / 0.00E+00 N343      / 0.00E+00 N344
/ 0.00E+00
 N345      / 0.00E+00 N356      / 0.00E+00 N357      / 0.00E+00 N358      / 0.00E+00 N359      / 0.00E+00 N360
/ 0.00E+00
 N361      / 0.00E+00 N362      / 0.00E+00 N363      / 0.00E+00 N364      / 0.00E+00 N365      / 0.00E+00 N366
/ 0.00E+00
 N367      / 0.00E+00 N368      / 0.00E+00 N369      / 0.00E+00 N370      / 0.00E+00 N371      / 0.00E+00 N372
/ 0.00E+00
 N373      / 0.00E+00 N374      / 0.00E+00 N375      / 0.00E+00 N376      / 0.00E+00 N377      / 0.00E+00 N378
/ 0.00E+00
 N379      / 0.00E+00 N381      / 0.00E+00 N382      / 0.00E+00 N383      / 0.00E+00 N384      / 0.00E+00 N386
/ 0.00E+00
 N387      / 0.00E+00 N388      / 0.00E+00 N389      / 0.00E+00 N390      / 0.00E+00 N391      / 0.00E+00 N392
/ 0.00E+00
 N394      / 0.00E+00 N395      / 0.00E+00 N396      / 0.00E+00 N397      / 0.00E+00 N398      / 0.00E+00 N399
/ 0.00E+00
 N403      / 0.00E+00 N404      / 0.00E+00 N405      / 0.00E+00 N406      / 0.00E+00 N407      / 0.00E+00 N408
/ 0.00E+00
 N409      / 0.00E+00 N410      / 0.00E+00 N412      / 0.00E+00 N413      / 0.00E+00 N414      / 0.00E+00 N415
/ 0.00E+00
 N416      / 0.00E+00 N417      / 0.00E+00 N418      / 0.00E+00 N419      / 0.00E+00 N420      / 0.00E+00 N421
/ 0.00E+00
 N422      / 0.00E+00 N423      / 0.00E+00 N424      / 0.00E+00 N425      / 0.00E+00 N426      / 0.00E+00 N428
/ 0.00E+00
 N429      / 0.00E+00 N430      / 0.00E+00 N431      / 0.00E+00 N432      / 0.00E+00 N434      / 0.00E+00 N435
/ 0.00E+00
 N436      / 0.00E+00 N437      / 0.00E+00 N438      / 0.00E+00 N439      / 0.00E+00 N440      / 0.00E+00 N441
/ 0.00E+00
 N442      / 0.00E+00 N443      / 0.00E+00 N444      / 0.00E+00 N445      / 0.00E+00 N446      / 0.00E+00 N447
/ 0.00E+00
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 N448      / 0.00E+00 N449      / 0.00E+00 N450      / 0.00E+00 N451      / 0.00E+00 N453      / 0.00E+00 N454
/ 0.00E+00
 N455      / 0.00E+00 N456      / 0.00E+00 N457      / 0.00E+00 N458      / 0.00E+00 N459      / 0.00E+00 N460
/ 0.00E+00
 N461      / 0.00E+00 N464      / 0.00E+00 N465      / 0.00E+00 N466      / 0.00E+00 N467      / 0.00E+00 N468
/ 0.00E+00
 N469      / 0.00E+00 N470      / 0.00E+00 N471      / 0.00E+00 N472      / 0.00E+00 N473      / 0.00E+00 N487
/ 0.00E+00
 N489      / 0.00E+00 N490      / 0.00E+00 N491      / 0.00E+00 N492      / 0.00E+00 N493      / 0.00E+00 N497
/ 0.00E+00
 N499      / 0.00E+00 N509      / 0.00E+00 N513      / 0.00E+00 N514      / 0.00E+00 N516      / 0.00E+00 N524
/ 0.00E+00
 N525      / 0.00E+00 N526      / 0.00E+00 N527      / 0.00E+00 N528      / 0.00E+00 N529      / 0.00E+00 N530
/ 0.00E+00
 N689      / 0.00E+00 N494      / 0.00E+00 N541      / 0.00E+00 EL329     / 0.00E+00 N427      / 0.00E+00 N411
/ 0.00E+00
 N295      / 0.00E+00 N311      / 0.00E+00 N462      / 0.00E+00
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 ===> System inflows (data group K3) at     0.02 hours ( Junction / Inflow,cfs )

 N221      / 2.40E-01 N222      / 2.03E-02 N223      / 1.35E-02 N224      / 1.02E-02 N227      / 2.07E-01 N228
/ 4.46E-01
 N230      / 8.21E-02 N231      / 7.89E-02 N233      / 1.48E-02 N234      / 0.00E+00 N235      / 1.91E-02 N236
/ 0.00E+00
 N237      / 0.00E+00 N238      / 5.59E-02 N239      / 3.49E-02 N240      / 5.44E-02 N241      / 8.30E-04 N242
/ 4.26E-02
 N243      / 2.84E-02 N244      / 9.25E-03 N245      / 2.40E-02 N246      / 2.66E-04 N247      / 3.36E-01 N248
/ 3.72E-02
 N249      / 1.76E-01 N250      / 2.56E-01 N251      / 3.07E-01 N252      / 3.07E-02 N253      / 5.24E-03 N254
/ 1.03E-01
 N255      / 7.46E-02 N256      / 1.54E-01 N257      / 2.06E-01 N259      / 2.04E-01 N260      / 0.00E+00 N261
/ 1.65E-01
 N262      / 1.31E-01 N263      / 9.62E-03 N264      / 0.00E+00 N265      / 1.08E-01 W800      / 2.57E-01 W801
/ 3.81E-01
 OUT802    / 3.32E-02 N272      / 1.62E-02 N273      / 7.08E-02 N274      / 1.71E-02 N275      / 1.38E-02 N276
/ 8.13E-02
 N277      / 1.04E-02 N278      / 0.00E+00 N279      / 9.96E-02 N288      / 0.00E+00 N289      / 0.00E+00 N290
/ 7.84E-01
 N291      / 7.10E-01 N292      / 0.00E+00 N293      / 1.25E-01 N294      / 1.07E-02 N296      / 1.25E-01 N301
/ 2.84E-01
 N302      / 8.22E-03 N303      / 0.00E+00 N304      / 1.24E-01 N309      / 1.51E-01 N310      / 5.80E-03 N312
/ 1.88E-01
 YEL327    / 2.20E+00 N331      / 0.00E+00 W104      / 1.13E-01 N342      / 0.00E+00 N343      / 0.00E+00 N344
/ 1.56E-01
 N345      / 4.22E-02 N356      / 3.54E-02 N357      / 3.59E-02 N358      / 3.59E-02 N359      / 0.00E+00 N360
/ 0.00E+00
 N361      / 1.76E+00 N362      / 0.00E+00 N363      / 1.41E-01 N364      / 0.00E+00 N365      / 0.00E+00 N366
/ 3.81E-01
 N367      / 2.19E-01 N368      / 1.02E+00 N369      / 0.00E+00 N370      / 1.53E+00 N371      / 2.12E+00 N372
/ 0.00E+00
 N373      / 0.00E+00 N374      / 0.00E+00 N375      / 7.35E-01 N376      / 6.85E-01 N377      / 0.00E+00 N378
/ 0.00E+00
 N379      / 0.00E+00 N381      / 4.30E-03 N382      / 8.31E-02 N383      / 1.92E-01 N384      / 1.79E-01 N386
/ 2.20E-01
 N387      / 1.36E-01 N388      / 0.00E+00 N389      / 2.94E-01 N390      / 1.89E-01 N391      / 2.90E-01 N392
/ 0.00E+00
 N394      / 0.00E+00 N395      / 2.78E-01 N396      / 0.00E+00 N397      / 6.16E-03 N398      / 1.59E-01 N399
/ 1.49E-01
 N403      / 0.00E+00 N404      / 5.79E-01 N405      / 1.85E-01 N406      / 2.70E-01 N407      / 1.33E-01 N408
/ 4.54E-01
 N409      / 0.00E+00 N410      / 0.00E+00 N412      / 3.52E-01 N413      / 0.00E+00 N414      / 0.00E+00 N415
/ 3.80E-01
 N416      / 3.59E-01 N417      / 0.00E+00 N418      / 3.36E-01 N419      / 0.00E+00 N420      / 5.91E-01 N421
/ 0.00E+00
 N422      / 0.00E+00 N423      / 4.03E-01 N424      / 0.00E+00 N425      / 3.17E-01 N426      / 0.00E+00 N428
/ 0.00E+00
 N429      / 1.58E-01 N430      / 1.86E-01 N431      / 8.47E-04 N432      / 0.00E+00 N434      / 1.88E-01 N435
/ 0.00E+00
 N436      / 2.36E-01 N437      / 4.29E-01 N438      / 0.00E+00 N439      / 1.37E-02 N440      / 1.38E-01 N441
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/ 3.16E-01
 N442      / 0.00E+00 N443      / 7.73E-02 N444      / 3.29E-01 N445      / 7.87E-02 N446      / 7.80E-02 N447
/ 1.58E-01
 N448      / 2.03E-01 N449      / 1.49E-04 N450      / 0.00E+00 N451      / 1.89E-01 N453      / 0.00E+00 N454
/ 2.38E-01
 N455      / 0.00E+00 N456      / 8.38E-04 N457      / 1.39E-01 N458      / 0.00E+00 N459      / 0.00E+00 N460
/ 0.00E+00
 N461      / 0.00E+00 N464      / 4.10E-02 N465      / 4.91E-01 N466      / 0.00E+00 N467      / 8.06E-02 N468
/ 1.38E-01
 N469      / 5.39E-02 N470      / 0.00E+00 N471      / 1.07E-01 N472      / 7.74E-02 N473      / 5.63E-02 N487
/ 0.00E+00
 N489      / 0.00E+00 N490      / 7.55E-01 N491      / 3.17E-02 N492      / 3.70E-01 N493      / 0.00E+00 N497
/ 2.48E-01
 N499      / 0.00E+00 N509      / 9.16E-01 N513      / 5.57E-01 N514      / 1.26E-02 N516      / 0.00E+00 N524
/ 5.03E-02
 N525      / 0.00E+00 N526      / 4.97E-02 N527      / 2.73E-02 N528      / 0.00E+00 N529      / 0.00E+00 N530
/ 2.50E-02
 N689      / 0.00E+00 N494      / 0.00E+00 N541      / 0.00E+00 EL329     / 3.60E-01 N427      / 0.00E+00 N411
/ 0.00E+00
 N295      / 0.00E+00 N311      / 0.00E+00 N462      / 1.76E-01
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 ===> System inflows (data group K3) at     0.08 hours ( Junction / Inflow,cfs )

 N221      / 2.89E+00 N222      / 2.44E-01 N223      / 1.62E-01 N224      / 1.23E-01 N227      / 2.49E+00 N228
/ 5.37E+00
 N230      / 9.89E-01 N231      / 9.50E-01 N233      / 1.78E-01 N234      / 0.00E+00 N235      / 2.31E-01 N236
/ 0.00E+00
 N237      / 0.00E+00 N238      / 6.74E-01 N239      / 4.21E-01 N240      / 6.55E-01 N241      / 1.00E-02 N242
/ 5.13E-01
 N243      / 3.42E-01 N244      / 1.12E-01 N245      / 2.90E-01 N246      / 3.20E-03 N247      / 4.05E+00 N248
/ 4.48E-01
 N249      / 2.13E+00 N250      / 3.08E+00 N251      / 3.69E+00 N252      / 3.70E-01 N253      / 6.31E-02 N254
/ 1.24E+00
 N255      / 8.98E-01 N256      / 1.85E+00 N257      / 2.48E+00 N259      / 2.46E+00 N260      / 0.00E+00 N261
/ 1.98E+00
 N262      / 1.58E+00 N263      / 1.16E-01 N264      / 0.00E+00 N265      / 1.30E+00 W800      / 3.10E+00 W801
/ 4.59E+00
 OUT802    / 3.99E-01 N272      / 1.95E-01 N273      / 8.53E-01 N274      / 2.06E-01 N275      / 1.66E-01 N276
/ 9.79E-01
 N277      / 1.25E-01 N278      / 0.00E+00 N279      / 1.20E+00 N288      / 0.00E+00 N289      / 0.00E+00 N290
/ 9.45E+00
 N291      / 8.56E+00 N292      / 0.00E+00 N293      / 1.51E+00 N294      / 1.29E-01 N296      / 1.51E+00 N301
/ 3.42E+00
 N302      / 9.90E-02 N303      / 0.00E+00 N304      / 1.50E+00 N309      / 1.82E+00 N310      / 6.99E-02 N312
/ 2.26E+00
 YEL327    / 2.65E+01 N331      / 0.00E+00 W104      / 1.36E+00 N342      / 0.00E+00 N343      / 0.00E+00 N344
/ 1.88E+00
 N345      / 5.08E-01 N356      / 4.26E-01 N357      / 4.32E-01 N358      / 4.33E-01 N359      / 0.00E+00 N360
/ 0.00E+00
 N361      / 2.13E+01 N362      / 0.00E+00 N363      / 1.70E+00 N364      / 0.00E+00 N365      / 0.00E+00 N366
/ 4.59E+00
 N367      / 2.63E+00 N368      / 1.23E+01 N369      / 0.00E+00 N370      / 1.84E+01 N371      / 2.56E+01 N372
/ 0.00E+00
 N373      / 0.00E+00 N374      / 0.00E+00 N375      / 8.86E+00 N376      / 8.25E+00 N377      / 0.00E+00 N378
/ 0.00E+00
 N379      / 0.00E+00 N381      / 5.18E-02 N382      / 1.00E+00 N383      / 2.31E+00 N384      / 2.16E+00 N386
/ 2.65E+00
 N387      / 1.64E+00 N388      / 0.00E+00 N389      / 3.54E+00 N390      / 2.28E+00 N391      / 3.49E+00 N392
/ 0.00E+00
 N394      / 0.00E+00 N395      / 3.35E+00 N396      / 0.00E+00 N397      / 7.42E-02 N398      / 1.92E+00 N399
/ 1.80E+00
 N403      / 0.00E+00 N404      / 6.97E+00 N405      / 2.23E+00 N406      / 3.25E+00 N407      / 1.61E+00 N408
/ 5.48E+00
 N409      / 0.00E+00 N410      / 0.00E+00 N412      / 4.24E+00 N413      / 0.00E+00 N414      / 0.00E+00 N415
/ 4.58E+00
 N416      / 4.32E+00 N417      / 0.00E+00 N418      / 4.05E+00 N419      / 0.00E+00 N420      / 7.12E+00 N421
/ 0.00E+00
 N422      / 0.00E+00 N423      / 4.85E+00 N424      / 0.00E+00 N425      / 3.83E+00 N426      / 0.00E+00 N428
```

/ 0.00E+00
 N429   / 1.91E+00 N430   / 2.24E+00 N431   / 1.02E-02 N432   / 0.00E+00 N434   / 2.27E+00 N435
/ 0.00E+00
 N436   / 2.85E+00 N437   / 5.17E+00 N438   / 0.00E+00 N439   / 1.65E-01 N440   / 1.66E+00 N441
/ 3.80E+00
 N442   / 0.00E+00 N443   / 9.32E-01 N444   / 3.97E+00 N445   / 9.48E-01 N446   / 9.39E-01 N447
/ 1.91E+00
 N448   / 2.45E+00 N449   / 1.80E-03 N450   / 0.00E+00 N451   / 2.28E+00 N453   / 0.00E+00 N454
/ 2.87E+00
 N455   / 0.00E+00 N456   / 1.01E-02 N457   / 1.67E+00 N458   / 0.00E+00 N459   / 0.00E+00 N460
/ 0.00E+00
 N461   / 0.00E+00 N464   / 4.94E-01 N465   / 5.92E+00 N466   / 0.00E+00 N467   / 9.71E-01 N468
/ 1.66E+00
 N469   / 6.49E-01 N470   / 0.00E+00 N471   / 1.29E+00 N472   / 9.32E-01 N473   / 6.79E-01 N487
/ 0.00E+00
 N489   / 0.00E+00 N490   / 9.10E+00 N491   / 3.82E-01 N492   / 4.46E+00 N493   / 0.00E+00 N497
/ 2.99E+00
 N499   / 0.00E+00 N509   / 1.10E+01 N513   / 6.72E+00 N514   / 1.52E-01 N516   / 0.00E+00 N524
/ 6.06E-01
 N525   / 0.00E+00 N526   / 5.99E-01 N527   / 3.29E-01 N528   / 0.00E+00 N529   / 0.00E+00 N530
/ 3.01E-01
 N689   / 0.00E+00 N494   / 0.00E+00 N541   / 0.00E+00 EL329   / 4.34E+00 N427   / 0.00E+00 N411
/ 0.00E+00
 N295   / 0.00E+00 N311   / 0.00E+00 N462   / 2.13E+00
 #
 #
 ===> System inflows (data group K3) at   1.00 hours (Junction / Inflow,cfs)

 N221   / 2.89E+00 N222   / 2.44E-01 N223   / 1.62E-01 N224   / 1.23E-01 N227   / 2.49E+00 N228
/ 5.37E+00
 N230   / 9.89E-01 N231   / 9.50E-01 N233   / 1.78E-01 N234   / 0.00E+00 N235   / 2.31E-01 N236
/ 0.00E+00
 N237   / 0.00E+00 N238   / 6.74E-01 N239   / 4.21E-01 N240   / 6.55E-01 N241   / 1.00E-02 N242
/ 5.13E-01
 N243   / 3.42E-01 N244   / 1.12E-01 N245   / 2.90E-01 N246   / 3.20E-03 N247   / 4.05E+00 N248
/ 4.48E-01
 N249   / 2.13E+00 N250   / 3.08E+00 N251   / 3.69E+00 N252   / 3.70E-01 N253   / 6.31E-02 N254
/ 1.24E+00
 N255   / 8.98E-01 N256   / 1.85E+00 N257   / 2.48E+00 N259   / 2.46E+00 N260   / 0.00E+00 N261
/ 1.98E+00
 N262   / 1.58E+00 N263   / 1.16E-01 N264   / 0.00E+00 N265   / 1.30E+00 W800   / 3.10E+00 W801
/ 4.59E+00
 OUT802   / 3.99E-01 N272   / 1.95E-01 N273   / 8.53E-01 N274   / 2.06E-01 N275   / 1.66E-01 N276
/ 9.79E-01
 N277   / 1.25E-01 N278   / 0.00E+00 N279   / 1.20E+00 N288   / 0.00E+00 N289   / 0.00E+00 N290
/ 9.45E+00
 N291   / 8.56E+00 N292   / 0.00E+00 N293   / 1.51E+00 N294   / 1.29E-01 N296   / 1.51E+00 N301
/ 3.42E+00
 N302   / 9.90E-02 N303   / 0.00E+00 N304   / 1.50E+00 N309   / 1.82E+00 N310   / 6.99E-02 N312
/ 2.26E+00
 YEL327   / 2.65E+01 N331   / 0.00E+00 W104   / 1.36E+00 N342   / 0.00E+00 N343   / 0.00E+00 N344
/ 1.88E+00
 N345   / 5.08E-01 N356   / 4.26E-01 N357   / 4.32E-01 N358   / 4.33E-01 N359   / 0.00E+00 N360
/ 0.00E+00
 N361   / 2.13E+01 N362   / 0.00E+00 N363   / 1.70E+00 N364   / 0.00E+00 N365   / 0.00E+00 N366
/ 4.59E+00
 N367   / 2.63E+00 N368   / 1.23E+01 N369   / 0.00E+00 N370   / 1.84E+01 N371   / 2.56E+01 N372
/ 0.00E+00
 N373   / 0.00E+00 N374   / 0.00E+00 N375   / 8.86E+00 N376   / 8.25E+00 N377   / 0.00E+00 N378
/ 0.00E+00
 N379   / 0.00E+00 N381   / 5.18E-02 N382   / 1.00E+00 N383   / 2.31E+00 N384   / 2.16E+00 N386
/ 2.65E+00
 N387   / 1.64E+00 N388   / 0.00E+00 N389   / 3.54E+00 N390   / 2.28E+00 N391   / 3.49E+00 N392
/ 0.00E+00
 N394   / 0.00E+00 N395   / 3.35E+00 N396   / 0.00E+00 N397   / 7.42E-02 N398   / 1.92E+00 N399
/ 1.80E+00
 N403   / 0.00E+00 N404   / 6.97E+00 N405   / 2.23E+00 N406   / 3.25E+00 N407   / 1.61E+00 N408
/ 5.48E+00
 N409   / 0.00E+00 N410   / 0.00E+00 N412   / 4.24E+00 N413   / 0.00E+00 N414   / 0.00E+00 N415

/ 4.58E+00
 N416   / 4.32E+00 N417   / 0.00E+00 N418   / 4.05E+00 N419   / 0.00E+00 N420   / 7.12E+00 N421
/ 0.00E+00
 N422   / 0.00E+00 N423   / 4.85E+00 N424   / 0.00E+00 N425   / 3.83E+00 N426   / 0.00E+00 N428
/ 0.00E+00
 N429   / 1.91E+00 N430   / 2.24E+00 N431   / 1.02E-02 N432   / 0.00E+00 N434   / 2.27E+00 N435
/ 0.00E+00
 N436   / 2.85E+00 N437   / 5.17E+00 N438   / 0.00E+00 N439   / 1.65E-01 N440   / 1.66E+00 N441
/ 3.80E+00
 N442   / 0.00E+00 N443   / 9.32E-01 N444   / 3.97E+00 N445   / 9.48E-01 N446   / 9.39E-01 N447
/ 1.91E+00
 N448   / 2.45E+00 N449   / 1.80E-03 N450   / 0.00E+00 N451   / 2.28E+00 N453   / 0.00E+00 N454
/ 2.87E+00
 N455   / 0.00E+00 N456   / 1.01E-02 N457   / 1.67E+00 N458   / 0.00E+00 N459   / 0.00E+00 N460
/ 0.00E+00
 N461   / 0.00E+00 N464   / 4.94E-01 N465   / 5.92E+00 N466   / 0.00E+00 N467   / 9.71E-01 N468
/ 1.66E+00
 N469   / 6.49E-01 N470   / 0.00E+00 N471   / 1.29E+00 N472   / 9.32E-01 N473   / 6.79E-01 N487
/ 0.00E+00
 N489   / 0.00E+00 N490   / 9.10E+00 N491   / 3.82E-01 N492   / 4.46E+00 N493   / 0.00E+00 N497
/ 2.99E+00
 N499   / 0.00E+00 N509   / 1.10E+01 N513   / 6.72E+00 N514   / 1.52E-01 N516   / 0.00E+00 N524
/ 6.06E-01
 N525   / 0.00E+00 N526   / 5.99E-01 N527   / 3.29E-01 N528   / 0.00E+00 N529   / 0.00E+00 N530
/ 3.01E-01
 N689   / 0.00E+00 N494   / 0.00E+00 N541   / 0.00E+00 EL329   / 4.34E+00 N427   / 0.00E+00 N411
/ 0.00E+00
 N295   / 0.00E+00 N311   / 0.00E+00 N462   / 2.13E+00
 #
 #
 ===> System inflows (data group K3) at   2.00 hours (Junction / Inflow,cfs)

 N221   / 2.89E+00 N222   / 2.44E-01 N223   / 1.62E-01 N224   / 1.23E-01 N227   / 2.49E+00 N228
/ 5.37E+00
 N230   / 9.89E-01 N231   / 9.50E-01 N233   / 1.78E-01 N234   / 0.00E+00 N235   / 2.31E-01 N236
/ 0.00E+00
 N237   / 0.00E+00 N238   / 6.74E-01 N239   / 4.21E-01 N240   / 6.55E-01 N241   / 1.00E-02 N242
/ 5.13E-01
 N243   / 3.42E-01 N244   / 1.12E-01 N245   / 2.90E-01 N246   / 3.20E-03 N247   / 4.05E+00 N248
/ 4.48E-01
 N249   / 2.13E+00 N250   / 3.08E+00 N251   / 3.69E+00 N252   / 3.70E-01 N253   / 6.31E-02 N254
/ 1.24E+00
 N255   / 8.98E-01 N256   / 1.85E+00 N257   / 2.48E+00 N259   / 2.46E+00 N260   / 0.00E+00 N261
/ 1.98E+00
 N262   / 1.58E+00 N263   / 1.16E-01 N264   / 0.00E+00 N265   / 1.30E+00 W800   / 3.10E+00 W801
/ 4.59E+00
 OUT802   / 3.99E-01 N272   / 1.95E-01 N273   / 8.53E-01 N274   / 2.06E-01 N275   / 1.66E-01 N276
/ 9.79E-01
 N277   / 1.25E-01 N278   / 0.00E+00 N279   / 1.20E+00 N288   / 0.00E+00 N289   / 0.00E+00 N290
/ 9.45E+00
 N291   / 8.56E+00 N292   / 0.00E+00 N293   / 1.51E+00 N294   / 1.29E-01 N296   / 1.51E+00 N301
/ 3.42E+00
 N302   / 9.90E-02 N303   / 0.00E+00 N304   / 1.50E+00 N309   / 1.82E+00 N310   / 6.99E-02 N312
/ 2.26E+00
 YEL327   / 2.65E+01 N331   / 0.00E+00 W104   / 1.36E+00 N342   / 0.00E+00 N343   / 0.00E+00 N344
/ 1.88E+00
 N345   / 5.08E-01 N356   / 4.26E-01 N357   / 4.32E-01 N358   / 4.33E-01 N359   / 0.00E+00 N360
/ 0.00E+00
 N361   / 2.13E+01 N362   / 0.00E+00 N363   / 1.70E+00 N364   / 0.00E+00 N365   / 0.00E+00 N366
/ 4.59E+00
 N367   / 2.63E+00 N368   / 1.23E+01 N369   / 0.00E+00 N370   / 1.84E+01 N371   / 2.56E+01 N372
/ 0.00E+00
 N373   / 0.00E+00 N374   / 0.00E+00 N375   / 8.86E+00 N376   / 8.25E+00 N377   / 0.00E+00 N378
/ 0.00E+00
 N379   / 0.00E+00 N381   / 5.18E-02 N382   / 1.00E+00 N383   / 2.31E+00 N384   / 2.16E+00 N386
/ 2.65E+00
 N387   / 1.64E+00 N388   / 0.00E+00 N389   / 3.54E+00 N390   / 2.28E+00 N391   / 3.49E+00 N392
/ 0.00E+00
 N394   / 0.00E+00 N395   / 3.35E+00 N396   / 0.00E+00 N397   / 7.42E-02 N398   / 1.92E+00 N399

/ 1.80E+00
 N403   / 0.00E+00 N404   / 6.97E+00 N405   / 2.23E+00 N406   / 3.25E+00 N407   / 1.61E+00 N408
/ 5.48E+00
 N409   / 0.00E+00 N410   / 0.00E+00 N412   / 4.24E+00 N413   / 0.00E+00 N414   / 0.00E+00 N415
/ 4.58E+00
 N416   / 4.32E+00 N417   / 0.00E+00 N418   / 4.05E+00 N419   / 0.00E+00 N420   / 7.12E+00 N421
/ 0.00E+00
 N422   / 0.00E+00 N423   / 4.85E+00 N424   / 0.00E+00 N425   / 3.83E+00 N426   / 0.00E+00 N428
/ 0.00E+00
 N429   / 1.91E+00 N430   / 2.24E+00 N431   / 1.02E-02 N432   / 0.00E+00 N434   / 2.27E+00 N435
/ 0.00E+00
 N436   / 2.85E+00 N437   / 5.17E+00 N438   / 0.00E+00 N439   / 1.65E-01 N440   / 1.66E+00 N441
/ 3.80E+00
 N442   / 0.00E+00 N443   / 9.32E-01 N444   / 3.97E+00 N445   / 9.48E-01 N446   / 9.39E-01 N447
/ 1.91E+00
 N448   / 2.45E+00 N449   / 1.80E-03 N450   / 0.00E+00 N451   / 2.28E+00 N453   / 0.00E+00 N454
/ 2.87E+00
 N455   / 0.00E+00 N456   / 1.01E-02 N457   / 1.67E+00 N458   / 0.00E+00 N459   / 0.00E+00 N460
/ 0.00E+00
 N461   / 0.00E+00 N464   / 4.94E-01 N465   / 5.92E+00 N466   / 0.00E+00 N467   / 9.71E-01 N468
/ 1.66E+00
 N469   / 6.49E-01 N470   / 0.00E+00 N471   / 1.29E+00 N472   / 9.32E-01 N473   / 6.79E-01 N487
/ 0.00E+00
 N489   / 0.00E+00 N490   / 9.10E+00 N491   / 3.82E-01 N492   / 4.46E+00 N493   / 0.00E+00 N497
/ 2.99E+00
 N499   / 0.00E+00 N509   / 1.10E+01 N513   / 6.72E+00 N514   / 1.52E-01 N516   / 0.00E+00 N524
/ 6.06E-01
 N525   / 0.00E+00 N526   / 5.99E-01 N527   / 3.29E-01 N528   / 0.00E+00 N529   / 0.00E+00 N530
/ 3.01E-01
 N689   / 0.00E+00 N494   / 0.00E+00 N541   / 0.00E+00 EL329   / 4.34E+00 N427   / 0.00E+00 N411
/ 0.00E+00
 N295   / 0.00E+00 N311   / 0.00E+00 N462   / 2.13E+00
 #

 ===
 | Table E5 - Junction Time Limitation Summary |
 | (0.10 or 0.25)* Depth * Area |
 | Time step = ------------------------------ |
 | Sum of Flow |
 ===
 | The time this junction was the limiting junction |
 | is listed in the third column. |
 ===

         Junction   Time(.10) Time(.25) Time(sec)
-----------------   --------- --------- ---------
             N221   29.8871   74.7178   60.0000
             N222   27.3807   68.4518   60.0000
             N223   117.2156   293.0390   0.0000
             N224   33.2832   83.2080   0.0000
             N227   23.6233   59.0582   120.0000
             N228   24.6707   61.6767   60.0000
             N230   136.6497   341.6242   0.0000
             N231   184.0000   459.9999   0.0000
             N233   440.6243   600.0000   0.0000
             N234   600.0000   600.0000   0.0000
             N235   558.3591   600.0000   0.0000
             N236   600.0000   600.0000   0.0000
             N237   576.5857   600.0000   0.0000
             N238   72.4761   181.1902   0.0000
             N239   483.7708   600.0000   0.0000
             N240   130.5823   326.4558   0.0000
             N241   250.4628   600.0000   0.0000
             N242   127.4052   318.5131   0.0000
             N243   65.1671   162.9177   0.0000
             N244   128.8464   322.1159   0.0000
             N245   3.1803   7.9508   60.0000
             N246   85.7199   214.2997   0.0000

N247	52.7596	131.8990	0.0000
N248	182.5610	456.4026	0.0000
N249	63.8854	159.7135	0.0000
N250	25.3020	63.2550	60.0000
N251	112.4045	281.0113	0.0000
N252	61.6362	154.0905	0.0000
N253	69.6497	174.1242	0.0000
N254	165.1372	412.8430	0.0000
N255	21.1318	52.8295	60.0000
N256	127.9753	319.9383	0.0000
N257	125.3537	313.3843	0.0000
N259	11.7790	29.4476	0.0000
N260	600.0000	600.0000	0.0000
N261	19.7290	49.3226	0.0000
N262	495.3023	600.0000	0.0000
N263	295.7554	600.0000	0.0000
N264	600.0000	600.0000	0.0000
N265	129.4687	323.6717	0.0000
W800	44.5723	111.4308	60.0000
W801	22.5308	56.3270	60.0000
OUT802	600.0000	600.0000	0.0000
N272	380.6251	600.0000	0.0000
N273	214.9180	537.2950	0.0000
N274	95.2440	238.1099	0.0000
N275	600.0000	600.0000	0.0000
N276	600.0000	600.0000	0.0000
N277	533.8937	600.0000	0.0000
N278	600.0000	600.0000	0.0000
N279	139.0689	347.6723	0.0000
N288	13.8738	34.6844	0.0000
N289	600.0000	600.0000	0.0000
N290	8.6185	21.5464	0.0000
N291	600.0000	600.0000	0.0000
N292	600.0000	600.0000	0.0000
N293	457.8170	600.0000	0.0000
N294	349.5038	600.0000	0.0000
N296	126.9892	317.4731	0.0000
N301	62.1115	155.2788	0.0000
N302	356.7393	600.0000	0.0000
N303	600.0000	600.0000	0.0000
N304	135.0623	337.6558	0.0000
N309	591.9949	600.0000	0.0000
N310	415.7383	600.0000	0.0000
N312	138.0054	345.0134	0.0000
YEL327	6.2757	15.6892	300.0000
N331	600.0000	600.0000	0.0000
W104	175.1554	437.8884	0.0000
N342	306.9060	600.0000	0.0000
N343	600.0000	600.0000	0.0000
N344	128.8088	322.0219	0.0000
N345	325.3963	600.0000	0.0000
N356	600.0000	600.0000	0.0000
N357	600.0000	600.0000	0.0000
N358	361.4035	600.0000	0.0000
N359	600.0000	600.0000	0.0000
N360	600.0000	600.0000	0.0000
N361	203.5271	508.8177	0.0000
N362	246.9250	600.0000	0.0000
N363	191.6071	479.0176	0.0000
N364	279.7003	600.0000	0.0000
N365	600.0000	600.0000	0.0000
N366	97.9577	244.8943	0.0000
N367	122.5979	306.4949	0.0000
N368	43.0280	107.5700	0.0000
N369	66.5286	166.3216	0.0000
N370	45.2534	113.1335	0.0000
N371	28.4043	71.0109	60.0000
N372	46.7304	116.8260	0.0000
N373	34.6941	86.7354	60.0000

N374	15.5375	38.8438	0.0000
N375	28.6683	71.6708	0.0000
N376	158.2631	395.6578	0.0000
N377	65.7530	164.3825	0.0000
N378	185.1715	462.9288	0.0000
N379	600.0000	600.0000	0.0000
N381	300.6269	600.0000	0.0000
N382	248.2971	600.0000	0.0000
N383	96.8947	242.2367	0.0000
N384	123.2481	308.1201	0.0000
N386	108.2062	270.5156	0.0000
N387	134.7707	336.9268	0.0000
N388	46.1642	115.4104	0.0000
N389	18.4058	46.0145	0.0000
N390	15.6076	39.0189	0.0000
N391	8.4846	21.2114	60.0000
N392	22.3383	55.8456	0.0000
N394	600.0000	600.0000	0.0000
N395	11.3056	28.2640	0.0000
N396	285.8146	600.0000	0.0000
N397	219.6439	549.1098	0.0000
N398	267.2543	600.0000	0.0000
N399	70.8767	177.1917	0.0000
N403	58.0577	145.1443	0.0000
N404	46.7351	116.8378	0.0000
N405	153.2891	383.2227	0.0000
N406	35.6450	89.1125	0.0000
N407	144.3234	360.8084	0.0000
N408	20.9332	52.3330	0.0000
N409	24.9226	62.3066	0.0000
N410	7.3619	18.4047	0.0000
N412	124.1282	310.3204	0.0000
N413	23.7281	59.3203	0.0000
N414	4.5818	11.4545	120.0000
N415	68.5804	171.4510	0.0000
N416	85.7274	214.3186	0.0000
N417	175.7252	439.3131	0.0000
N418	268.2522	600.0000	0.0000
N419	62.8111	157.0278	0.0000
N420	19.0900	47.7250	60.0000
N421	53.5350	133.8375	180.0000
N422	127.1122	317.7805	0.0000
N423	69.4340	173.5849	0.0000
N424	92.1615	230.4037	0.0000
N425	37.4104	93.5260	60.0000
N426	90.6635	226.6587	0.0000
N428	98.9203	247.3007	0.0000
N429	107.5349	268.8373	0.0000
N430	276.0515	600.0000	0.0000
N431	169.7947	424.4867	0.0000
N432	136.4164	341.0409	0.0000
N434	101.9121	254.7802	0.0000
N435	42.8005	107.0012	240.0000
N436	44.7475	111.8688	120.0000
N437	40.2826	100.7066	60.0000
N438	73.6897	184.2242	0.0000
N439	98.1023	245.2558	0.0000
N440	68.4417	171.1042	0.0000
N441	71.5661	178.9153	0.0000
N442	86.7597	216.8992	0.0000
N443	95.4333	238.5833	0.0000
N444	49.2398	123.0994	0.0000
N445	205.3849	513.4623	0.0000
N446	91.9563	229.8908	0.0000
N447	225.9862	564.9655	0.0000
N448	31.4348	78.5871	0.0000
N449	33.7892	84.4730	0.0000
N450	17.0193	42.5482	60.0000
N451	29.2756	73.1891	0.0000

N453	52.5768	131.4420	0.0000
N454	30.4388	76.0970	0.0000
N455	210.0896	525.2240	0.0000
N456	133.6514	334.1286	0.0000
N457	72.3683	180.9208	0.0000
N458	137.1451	342.8627	0.0000
N459	209.7563	524.3907	0.0000
N460	353.7412	600.0000	0.0000
N461	600.0000	600.0000	0.0000
N464	35.5232	88.8081	60.0000
N465	22.6623	56.6557	660.0000
N466	27.9805	69.9513	0.0000
N467	29.5565	73.8913	0.0000
N468	132.0822	330.2054	0.0000
N469	187.6101	469.0252	0.0000
N470	600.0000	600.0000	0.0000
N471	122.0769	305.1924	0.0000
N472	135.2155	338.0388	0.0000
N473	214.7793	536.9483	0.0000
N487	103.8356	259.5889	0.0000
N489	18.2818	45.7044	480.0000
N490	125.9231	314.8078	0.0000
N491	32.9652	82.4130	0.0000
N492	44.4904	111.2261	180.0000
N493	600.0000	600.0000	0.0000
N497	302.7076	600.0000	0.0000
N499	600.0000	600.0000	0.0000
N509	54.9671	137.4177	180.0000
N513	303.2352	600.0000	0.0000
N514	550.9135	600.0000	0.0000
N516	600.0000	600.0000	0.0000
N524	600.0000	600.0000	0.0000
N525	357.1253	600.0000	0.0000
N526	288.9184	600.0000	0.0000
N527	600.0000	600.0000	0.0000
N528	36.5825	91.4562	1380.0000
N529	3.4871	8.7179	60.0000
N530	17.3062	43.2655	300.0000
N689	600.0000	600.0000	0.0000
N494	162.7519	406.8797	0.0000
N541	33.4345	83.5862	60.0000
EL329	30.6798	76.6994	16200.0000
N427	54.2565	135.6412	0.0000
N411	600.0000	600.0000	0.0000
N295	600.0000	600.0000	0.0000
N311	600.0000	600.0000	0.0000
N462	29.1659	72.9147	60.0000

The junction requiring the smallest time step was...EL329

Table E5a - Conduit Explicit Condition Summary

Courant = Conduit Length / (Velocity + sqrt(g*depth))

Conduit Implicit Condition Summary

Courant = Conduit Length / Velocity

The 3rd column is the Explicit time step times the minimum courant time step factor

Minimum Conduit Time Step in seconds in the 4th column in the list. Maximum possible is 10 * maximum time step

The 5th column is the maximum change at any time step during the simulation. The 6th column is the wobble

| value which is an indicator of the flow stability. |
| |
| You should use this section to find those conduits that are slowing your model down. Use modify conduits to alter the length of the slow conduits to make your simulation faster, or change the conduit name to "CHME?????" where ????? are any characters, this will lengthen the conduit based on the model time step, not the value listed in modify conduits. |

Conduit	Time(exp)	Expl*Cmin	Time(imp)	Time(min)	Max Qchange	Wobble	Type of Soln
L210	6.2515	6.2515	18.7592	1.0000	0.0108	1.3579	Normal Soln
L211	31.1457	31.1457	101.2091	0.0000	-0.0037	1.4137	Normal Soln
L212	52.2637	52.2637	164.6460	0.0000	0.0061	0.9312	Normal Soln
L213	8.6695	8.6695	33.1191	0.0000	0.0098	1.1826	Normal Soln
L214	7.1669	7.1669	30.8016	0.0000	0.0107	1.2183	Normal Soln
L217	12.9886	12.9886	30.4267	0.0000	0.0013	0.3996	Normal Soln
L220	21.3513	21.3513	68.8686	0.0000	0.0122	1.6020	Normal Soln
L221	30.7605	30.7605	94.9061	0.0000	0.0154	1.4231	Normal Soln
L222	10.5451	10.5451	18.9093	0.0000	0.0184	0.3570	Normal Soln
L223	16.5400	16.5400	50.1321	0.0000	0.0003	0.1454	Normal Soln
L224	67.1259	67.1259	218.6507	0.0000	0.0003	0.1471	Normal Soln
L225	44.3093	44.3093	212.4416	0.0000	0.0009	0.1802	Normal Soln
L226	49.1405	49.1405	218.6733	0.0000	0.0017	0.6783	Normal Soln
L227	25.8165	25.8165	103.1912	0.0000	0.0018	1.1178	Normal Soln
L228	33.4838	33.4838	125.9101	0.0000	0.0030	1.6571	Normal Soln
L229	65.7559	65.7559	220.5148	0.0000	0.0027	1.0348	Normal Soln
L230	37.6846	37.6846	135.9271	0.0000	0.0031	1.4589	Normal Soln
L231	34.6097	34.6097	128.9433	0.0000	0.0037	1.6096	Normal Soln
L232	25.0955	25.0955	90.3160	0.0000	0.0050	1.7338	Normal Soln
L233	35.7512	35.7512	134.5668	0.0000	-0.0695	1.3305	Normal Soln
L234	32.3766	32.3766	144.0166	0.0000	0.0078	0.9321	Normal Soln
L235	7.5038	7.5038	45.8571	0.0000	0.0007	0.4495	Normal Soln
L236	9.5470	9.5470	38.9802	0.0000	0.0043	1.5667	Normal Soln
L237	7.7923	7.7923	25.7007	0.0000	0.0074	1.5218	Normal Soln
L238	4.9304	4.9304	11.5673	0.0000	0.0122	1.5708	Normal Soln
L239	9.0896	9.0896	23.9116	0.0000	0.0057	1.7386	Normal Soln
L240	12.0804	12.0804	28.5367	0.0000	0.0017	0.5257	Normal Soln
L241	22.4339	22.4339	66.7490	0.0000	0.0077	1.5018	Normal Soln
L242	7.7301	7.7301	18.2402	0.0000	0.0018	0.7871	Normal Soln
L243	10.7957	10.7957	26.3322	0.0000	0.0024	1.0474	Normal Soln
L246	25.8903	25.8903	83.7907	0.0000	-2.2947	3.3498	Normal Soln
L247	6.1520	6.1520	15.7210	0.0000	3.0158	5.4799	Normal Soln
L248	5.5901	5.5901	15.9561	0.0000	0.0717	1.6335	Normal Soln
L249	9.4527	9.4527	22.2510	0.0000	0.0030	0.6747	Normal Soln
L250	4.3132	4.3132	8.4764	0.0000	0.0049	0.3070	Normal Soln
L251	9.4761	9.4761	22.3540	0.0000	0.0012	0.5553	Normal Soln
L254	56.7417	56.7417	283.1354	0.0000	0.0067	1.3551	Normal Soln
L255	38.2259	38.2259	157.9013	0.0000	-0.0271	1.6032	Normal Soln
L258	15.5933	15.5933	36.8643	0.0000	0.0009	0.3628	Normal Soln
L259	46.7710	46.7710	140.8812	0.0000	0.0015	0.1459	Normal Soln
L260	5.8258	5.8258	19.2175	0.0000	0.0018	0.0259	Normal Soln
L261	20.6903	20.6903	51.3702	0.0000	0.0013	0.4139	Normal Soln
L262	3.7500	3.7500	7.8505	0.0000	0.0026	0.1655	Normal Soln
L263	16.4832	16.4832	40.3636	0.0000	0.0019	0.5097	Normal Soln
L272	2.6997	2.6997	56.9898	17.0000	-0.0604	2.6814	Normal Soln
L273	7.7321	7.7321	30.0158	0.0000	0.0175	5.5073	Normal Soln
L274	4.8998	4.8998	9.7771	0.0000	0.1573	0.2688	Normal Soln
L275	14.0770	14.0770	34.0301	0.0000	0.0021	0.6408	Normal Soln
L277	15.3960	15.3960	37.5630	0.0000	0.0014	0.6426	Normal Soln
L281	8.5693	8.5693	23.1348	0.0000	0.0095	1.5471	Normal Soln
L282	1.9944	1.9944	3.2443	341.0000	0.0063	0.3393	Normal Soln
L283	15.1101	15.1101	36.7067	0.0000	0.0014	0.6326	Normal Soln
L287	13.6881	13.6881	32.8380	0.0000	0.0024	0.7713	Normal Soln
L289	14.0922	14.0922	34.5708	0.0000	0.0022	0.9601	Normal Soln
L308	4.6790	4.6790	12.5836	0.0000	-24.9873	7.2722	Normal Soln
L317	97.8285	97.8285	600.0000	0.0000	0.0022	0.5505	Normal Soln

L319	8.9283	8.9283	22.7492	0.0000	0.0023	0.3552	Normal Soln
L320	8.3189	8.3189	19.6848	0.0000	0.0018	0.7980	Normal Soln
L334	69.2836	69.2836	188.2975	0.0000	0.0008	0.1810	Normal Soln
L335	53.5685	53.5685	140.9656	0.0000	0.0016	0.3644	Normal Soln
L336	17.2315	17.2315	42.2257	0.0000	0.0016	0.5475	Normal Soln
L337	8.2676	8.2676	22.0963	0.0000	0.0014	0.1691	Normal Soln
L338	6.8487	6.8487	20.5776	0.0000	0.0781	1.0182	Normal Soln
L339	20.9702	20.9702	59.5605	0.0000	0.0199	1.0022	Normal Soln
L340	17.7788	17.7788	42.8265	0.0000	0.0297	1.0405	Normal Soln
L341	4.1917	4.1917	8.7792	0.0000	0.0367	0.1273	Normal Soln
L342	7.7612	7.7612	19.2025	0.0000	0.0093	1.2413	Normal Soln
L343	10.4487	10.4487	25.7250	0.0000	0.0025	1.1146	Normal Soln
L344	4.2125	4.2125	12.4528	0.0000	0.0338	0.9077	Normal Soln
L346	3.3565	3.3565	18.8233	0.0000	0.0771	2.3641	Normal Soln
L347	22.7833	22.7833	88.6386	0.0000	0.1654	1.7162	Normal Soln
L348	24.2859	24.2859	93.9787	0.0000	-0.2263	1.9206	Normal Soln
L349	24.7559	24.7559	92.1754	0.0000	-0.5184	2.2571	Normal Soln
L350	8.3743	8.3743	29.2229	0.0000	-0.7342	2.5483	Normal Soln
L351	3.3911	3.3911	10.3593	0.0000	0.0396	0.9443	Normal Soln
L352	14.0012	14.0012	43.0134	0.0000	0.0078	0.8901	Normal Soln
L354	5.4442	5.4442	16.3928	0.0000	17.9757	1.7352	Normal Soln
L361	5.4554	5.4554	12.7955	0.0000	0.0022	0.9881	Normal Soln
L362	7.8495	7.8495	18.7038	0.0000	0.0021	0.9219	Normal Soln
L363	43.1617	43.1617	125.0654	0.0000	0.0048	0.8513	Normal Soln
L364	5.3147	5.3147	12.4812	0.0000	0.0066	1.1271	Normal Soln
L365	8.0234	8.0234	19.5479	0.0000	0.0016	0.6988	Normal Soln
L366	36.2881	36.2881	115.0275	0.0000	0.0091	1.0412	Normal Soln
L367	33.5379	33.5379	105.6670	0.0000	0.2244	2.5380	Normal Soln
L368	14.5533	14.5533	35.8072	0.0000	-0.0288	1.3519	Normal Soln
L369	8.7136	8.7136	21.9892	0.0000	-0.0329	2.2949	Normal Soln
L370	16.2662	16.2662	57.3359	0.0000	-1.7814	4.3849	Normal Soln
L373	6.4801	6.4801	27.2880	0.0000	4.2704	1.7090	Normal Soln
L374	12.5321	12.5321	37.1557	0.0000	0.0046	2.1155	Normal Soln
L375	47.0845	47.0845	176.7072	0.0000	0.0033	1.2287	Normal Soln
L376	14.4638	14.4638	61.9445	0.0000	0.0076	0.8557	Normal Soln
L386	24.3939	24.3939	112.4202	0.0000	-0.1153	1.2100	Normal Soln
L387	25.3027	25.3027	118.1428	0.0000	-0.2042	1.4831	Normal Soln
L388	10.1299	10.1299	31.4233	0.0000	0.0020	0.9028	Normal Soln
L389	25.6948	25.6948	119.3507	0.0000	-0.3451	1.6601	Normal Soln
L390	13.7152	13.7152	37.5836	0.0000	0.0016	0.8809	Normal Soln
L391	32.6366	32.6366	141.2866	0.0000	-0.7478	2.2807	Normal Soln
L392	23.9038	23.9038	89.7753	0.0000	-1.8585	3.0348	Normal Soln
L393	29.2369	29.2369	100.8886	0.0000	-16.1844	4.0436	Normal Soln
L395	3.6100	3.6100	14.5292	0.0000	0.0376	0.6680	Normal Soln
L396	36.6436	36.6436	207.4784	0.0000	0.0079	0.4521	Normal Soln
L397	4.0355	4.0355	15.3369	0.0000	0.0055	0.7318	Normal Soln
L398	2.9287	2.9287	12.6763	0.0000	0.0105	0.3571	Normal Soln
L399	31.6156	31.6156	115.7619	0.0000	0.0042	0.4838	Normal Soln
L402	7.1766	7.1766	24.8523	0.0000	0.0198	1.1665	Normal Soln
L403	33.0824	33.0824	116.1692	0.0000	0.0069	1.1822	Normal Soln
L404	30.6635	30.6635	104.5349	0.0000	-0.0090	1.2297	Normal Soln
L405	6.2092	6.2092	18.3899	0.0000	0.0106	1.1294	Normal Soln
L406	27.7072	27.7072	114.0724	0.0000	0.0156	0.9384	Normal Soln
L407	6.0310	6.0310	18.5725	0.0000	0.0081	1.3127	Normal Soln
L408	26.3866	26.3866	115.7941	0.0000	0.0191	0.9632	Normal Soln
L410	27.1993	27.1993	133.6818	0.0000	0.0220	0.9839	Normal Soln
L411	20.6552	20.6552	105.9398	0.0000	0.0243	0.9672	Normal Soln
L413	40.1269	40.1269	155.4724	0.0000	0.0026	0.4892	Normal Soln
L415	5.7002	5.7002	13.0492	0.0000	0.0021	0.9101	Normal Soln
L417	5.8832	5.8832	17.8127	0.0000	0.0036	1.4369	Normal Soln
L418	6.2687	6.2687	18.5319	0.0000	0.0113	1.1468	Normal Soln
L419	21.0701	21.0701	77.2644	0.0000	0.0079	0.9820	Normal Soln
L420	31.6178	31.6178	122.3516	0.0000	0.0076	1.0005	Normal Soln
L421	6.4509	6.4509	20.6494	0.0000	-0.0022	0.9387	Normal Soln
L422	6.3270	6.3270	19.9830	0.0000	0.0078	1.2738	Normal Soln
L423	28.6671	28.6671	125.6460	0.0000	0.0186	1.0524	Normal Soln
L424	20.5528	20.5528	93.0241	0.0000	0.0192	1.1043	Normal Soln
L425	7.1395	7.1395	25.4213	0.0000	-0.0021	0.5720	Normal Soln
L426	5.8951	5.8951	19.2716	0.0000	-0.0376	1.3553	Normal Soln

L427	29.2809	29.2809	115.7345	0.0000	0.0430	1.3980	Normal Soln
L428	10.0652	10.0652	32.3319	0.0000	0.0014	0.5830	Normal Soln
L429	24.5883	24.5883	91.6764	0.0000	0.0434	1.4769	Normal Soln
L430	7.7857	7.7857	27.6811	0.0000	0.0066	0.9635	Normal Soln
L431	39.1114	39.1114	132.6150	0.0000	0.0044	1.0567	Normal Soln
L432	8.5732	8.5732	26.9138	0.0000	0.0024	1.1798	Normal Soln
L435	7.5019	7.5019	24.7419	0.0000	0.0065	1.3857	Normal Soln
L436	27.3473	27.3473	84.8190	0.0000	0.0037	1.3185	Normal Soln
L437	32.3027	32.3027	111.3216	0.0000	0.0032	0.8676	Normal Soln
L438	9.2879	9.2879	31.4810	0.0000	-0.0019	0.8634	Normal Soln
L439	32.2509	32.2509	98.9095	0.0000	0.0045	1.3236	Normal Soln
L440	38.3201	38.3201	121.5965	0.0000	0.0048	0.9307	Normal Soln
L441	25.2294	25.2294	81.9432	0.0000	0.0502	1.7028	Normal Soln
L442	28.9437	28.9437	77.2274	0.0000	0.0551	1.7005	Normal Soln
L443	3.4077	3.4077	5.8568	0.0000	0.0632	0.1738	Normal Soln
L446	4.5793	4.5793	17.2379	0.0000	0.0135	1.2594	Normal Soln
L448	8.0270	8.0270	32.1501	0.0000	0.0100	0.5677	Normal Soln
L449	32.6426	32.6426	115.0008	0.0000	0.0114	1.4022	Normal Soln
L450	30.6032	30.6032	93.8944	0.0000	0.0134	1.4346	Normal Soln
L451	7.1048	7.1048	17.6776	0.0000	0.0149	1.6067	Normal Soln
L452	5.9967	5.9967	18.0835	0.0000	0.0012	0.6430	Normal Soln
L453	7.7414	7.7414	24.8889	0.0000	0.0010	0.4833	Normal Soln
L454	10.3094	10.3094	30.3090	0.0000	0.0007	0.3101	Normal Soln
L466	9.2963	9.2963	21.2435	0.0000	0.0081	0.9016	Normal Soln
L468	54.8987	54.8987	181.0641	0.0000	0.0042	0.4681	Normal Soln
L470	15.4248	15.4248	41.0688	0.0000	0.0134	1.3127	Normal Soln
L471	43.8959	43.8959	227.0363	0.0000	0.0006	0.1441	Normal Soln
L472	3.9352	3.9352	9.2028	0.0000	0.0295	2.1984	Normal Soln
L490	12.0034	12.0034	34.1207	0.0000	0.0082	1.3896	Normal Soln
L496	61.2675	61.2675	166.3291	0.0000	0.0011	0.2575	Normal Soln
L497	61.6959	61.6959	168.0343	0.0000	0.0009	0.2545	Normal Soln
L498	13.8903	13.8903	32.5163	0.0000	0.0016	0.5120	Normal Soln
L501	29.5308	29.5308	142.8781	0.0000	0.0181	0.6445	Normal Soln
L502	31.3479	31.3479	337.3975	0.0000	0.0604	0.5862	Normal Soln
L503	26.5096	26.5096	92.3769	0.0000	-1.0459	2.7496	Normal Soln
L504	28.5394	28.5394	91.1454	0.0000	-9.9946	3.7386	Normal Soln
L505	25.9499	25.9499	90.1831	0.0000	0.0206	1.5316	Normal Soln
L506	24.1900	24.1900	88.3661	0.0000	0.0196	1.5990	Normal Soln
L509	5.4463	5.4463	14.3057	0.0000	0.0267	0.2749	Normal Soln
L511	10.4981	10.4981	28.4512	0.0000	0.0132	3.1173	Normal Soln
L512	3.9309	3.9309	6.8687	0.0000	0.0323	0.2261	Normal Soln
L514	29.2377	29.2377	119.9845	0.0000	-0.0256	1.2521	Normal Soln
L515	12.0939	12.0939	53.2221	0.0000	0.0178	0.8411	Normal Soln
CH21	104.9473	104.9473	600.0000	0.0000	0.0150	0.0615	Normal Soln
L474	8.9345	8.9345	23.7515	0.0000	-0.0307	1.9620	Normal Soln
L523	28.8755	28.8755	140.7912	0.0000	0.0091	0.4128	Normal Soln
L525	42.4704	42.4704	165.4289	0.0000	0.0237	0.8848	Normal Soln
L527	37.6353	37.6353	149.2903	0.0000	0.0045	0.9595	Normal Soln
L528	36.0936	36.0936	114.9956	0.0000	0.0046	1.3585	Normal Soln
L529	25.2469	25.2469	104.9071	0.0000	0.0042	1.4789	Normal Soln
L533	58.9742	58.9742	228.0876	0.0000	0.0045	1.0066	Normal Soln
L537	36.8704	36.8704	178.8803	0.0000	0.0066	1.5119	Normal Soln
L394	9.2847	9.2847	25.6828	0.0000	8.3343	5.4578	Normal Soln
L276	2.2768	2.2768	4.3954	1.0000	0.0033	0.2159	Normal Soln
L288	2.8128	2.8128	6.2520	0.0000	0.0042	0.2031	Normal Soln
L412	5.9417	5.9417	11.7777	0.0000	0.0073	0.6832	Normal Soln
L447	35.4182	35.4182	166.4260	0.0000	-0.0110	0.5843	Normal Soln
L321	64.8006	64.8006	262.1747	0.0000	0.0008	0.3257	Normal Soln

The conduit with the smallest time step limitation was..L282
The conduit with the largest wobble was.....L308
The conduit with the largest flow change in any
consecutive time step.....L308

Table E6. Final Model Condition
This table is used for steady state flow comparison and is the information saved to the hot-restart file.
Final Time = 6.017 hours

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Junction / Depth / Elevation ===> "*" Junction is Surcharged.

N221/	1.76*/	107.60/	N222/	2.55*/	106.99/	N223/	1.31 /	102.12/
N224/	3.32*/	100.29/	N227/	2.63*/	100.97/	N228/	3.08 /	100.61/
N230/	2.34 /	98.17/	N231/	0.45 /	100.29/	N233/	0.82 /	95.24/
N234/	1.81 /	89.41/	N235/	0.26 /	119.86/	N236/	0.28 /	118.89/
N237/	0.40 /	117.66/	N238/	2.47*/	117.58/	N239/	0.87 /	118.56/
N240/	1.58*/	118.20/	N241/	1.16 /	112.52/	N242/	1.80 /	110.43/
N243/	2.21 /	108.07/	N244/	2.42*/	106.27/	N245/	3.26*/	104.94/
N246/	3.09*/	102.65/	N247/	3.79*/	101.66/	N248/	1.05 /	112.53/
N249/	2.14 /	106.76/	N250/	2.49*/	103.63/	N251/	1.27*/	116.65/
N252/	2.22 /	115.28/	N253/	2.38 /	110.46/	N254/	0.52 /	113.35/
N255/	3.65 /	106.45/	N256/	0.66 /	108.07/	N257/	0.84 /	108.45/
N259/	2.57*/	99.73/	N260/	2.10 /	99.10/	N261/	0.98*/	99.91/
N262/	0.61 /	105.49/	N263/	0.38 /	104.84/	N264/	2.45 /	99.09/
N265/	0.55 /	105.41/	W800/	3.10*/	105.61/	W801/	2.48*/	103.93/
OUT802/	2.00 /	103.00/	N272/	0.50 /	96.85/	N273/	0.43 /	98.11/
N274/	0.19 /	95.77/	N275/	1.82 /	89.42/	N276/	0.49 /	94.74/
N277/	0.28 /	93.72/	N278/	3.48 /	81.48/	N279/	0.55 /	94.67/
N288/	4.44*/	81.47/	N289/	4.47 /	81.47/	N290/	3.92*/	82.02/
N291/	0.53 /	92.45/	N292/	4.87 /	81.47/	N293/	0.62 /	119.54/
N294/	0.32 /	118.62/	N296/	0.62 /	119.60/	N301/	1.92*/	124.82/
N302/	0.40 /	122.68/	N303/	2.67 /	113.27/	N304/	0.61 /	123.56/
N309/	0.67 /	113.82/	N310/	0.40 /	112.66/	N312/	0.79 /	114.00/
YEL327/	2.16 /	98.16/	N331/	5.71 /	98.41/	W104/	0.95 /	106.34/
N342/	0.61 /	100.83/	N343/	0.52 /	100.52/	N344/	0.67 /	101.78/
N345/	0.40 /	119.23/	N356/	0.29 /	125.61/	N357/	0.42 /	123.40/
N358/	0.57 /	121.39/	N359/	0.28 /	120.37/	N360/	2.52 /	115.32/
N361/	2.08 /	128.32/	N362/	2.00 /	128.13/	N363/	2.00 /	127.28/
N364/	0.84 /	125.85/	N365/	5.12 /	122.52/	N366/	1.11 /	128.98/
N367/	0.89 /	129.22/	N368/	2.89*/	127.15/	N369/	3.43*/	127.10/
N370/	5.15*/	126.85/	N371/	4.64*/	126.90/	N372/	4.73*/	126.07/
N373/	4.34*/	125.31/	N374/	3.93*/	124.53/	N375/	4.29 /	124.27/
N376/	1.66 /	124.56/	N377/	1.69 /	124.51/	N378/	3.31 /	122.58/
N379/	4.13 /	122.53/	N381/	1.09 /	125.85/	N382/	1.72 /	124.58/
N383/	0.76 /	126.29/	N384/	0.74 /	126.38/	N386/	0.84 /	124.98/
N387/	0.64 /	124.87/	N388/	1.70 /	123.65/	N389/	2.68 /	122.79/
N390/	0.79 /	123.62/	N391/	1.46*/	124.15/	N392/	2.77 /	122.60/
N394/	4.13 /	122.53/	N395/	2.73*/	120.84/	N396/	1.29 /	118.97/
N397/	2.59 /	118.40/	N398/	2.35 /	118.66/	N399/	3.68 /	118.28/
N403/	3.72 /	118.02/	N404/	4.28 /	117.76/	N405/	1.71*/	118.34/
N406/	4.29 /	117.46/	N407/	0.77 /	117.77/	N408/	4.23 /	117.01/
N409/	4.03 /	116.51/	N410/	3.74 /	115.86/	N412/	2.69*/	118.99/
N413/	3.37*/	118.70/	N414/	5.16 /	118.78/	N415/	2.75*/	119.08/
N416/	2.23*/	119.06/	N417/	1.36 /	118.93/	N418/	0.92 /	120.82/
N419/	2.56*/	113.47/	N420/	2.52*/	114.76/	N421/	2.53*/	114.53/
N422/	3.35*/	112.48/	N423/	2.31*/	112.68/	N424/	3.81*/	112.07/
N425/	2.34*/	112.40/	N426/	4.18*/	111.63/	N428/	4.24*/	111.16/
N429/	4.77*/	110.79/	N430/	0.61 /	119.61/	N431/	2.15 /	118.82/
N432/	1.04 /	119.11/	N434/	0.73 /	119.53/	N435/	2.78*/	112.96/
N436/	1.96*/	113.53/	N437/	2.27*/	113.19/	N438/	2.95*/	112.53/
N439/	3.71*/	111.86/	N440/	2.01*/	112.06/	N441/	2.48*/	112.21/
N442/	4.06*/	111.28/	N443/	1.96*/	111.34/	N444/	2.61*/	111.64/
N445/	4.27*/	109.75/	N446/	1.34*/	109.83/	N447/	3.83*/	108.88/
N448/	2.01*/	120.78/	N449/	2.23*/	120.22/	N450/	1.79*/	122.53/
N451/	1.75*/	123.02/	N453/	1.94 /	115.70/	N454/	2.17*/	116.46/
N455/	1.34*/	113.02/	N456/	1.93*/	112.19/	N457/	1.43*/	112.45/
N458/	1.39 /	109.78/	N459/	3.05 /	107.66/	N460/	0.99 /	105.10/
N461/	4.31 /	98.41/	N464/	3.05*/	128.14/	N465/	3.10*/	129.75/
N466/	3.31*/	129.50/	N467/	1.92*/	128.22/	N468/	2.41*/	126.00/
N469/	1.78 /	120.44/	N470/	0.97 /	118.68/	N471/	1.21*/	126.09/
N472/	1.12*/	126.06/	N473/	0.46 /	120.53/	N487/	1.02 /	119.59/
N489/	2.44 /	120.87/	N490/	1.60 /	123.50/	N491/	0.86 /	125.03/
N492/	1.78*/	128.12/	N493/	1.00 /	127.04/	N497/	0.37 /	108.22/
N499/	7.21 /	98.41/	N509/	3.56*/	112.44/	N513/	1.33 /	111.34/
N514/	0.65 /	108.76/	N516/	4.53 /	94.53/	N524/	0.35 /	133.80/
N525/	0.51 /	131.68/	N526/	0.34 /	133.80/	N527/	0.51 /	131.11/
N528/	4.28*/	126.94/	N529/	3.89 /	123.53/	N530/	4.41*/	104.12/

N689/	1.50 /	119.50/	N494/	0.95 /	122.36/	N541/	2.20*/	114.29/
EL329/	2.41*/	114.93/	N427/	3.01*/	112.65/	N411/	3.62 /	115.62/
N295/	3.62 /	110.55/	N311/	4.42 /	108.52/	N462/	1.93*/	129.71/

Conduit/ Flow ===> "*" Conduit uses the normal flow option.

L210/	2.89 /	L211/	3.14 /	L212/	3.30 /
L213/	2.49 /	L214/	5.37 /	L217/	0.95 /
L220/	11.28 /	L221/	13.22 /	L222/	13.39*/
L223/	0.23 /	L224/	0.23 /	L225/	0.23 /
L226/	0.93 /	L227/	1.58 /	L228/	2.49 /
L229/	2.95 /	L230/	3.46 /	L231/	3.80 /
L232/	6.04 /	L233/	6.33 /	L234/	9.41 /
L235/	0.45 /	L236/	2.13 /	L237/	3.08 /
L238/	3.69 /	L239/	4.06 /	L240/	1.24 /
L241/	5.36 /	L242/	1.85 /	L243/	2.48 /
L246/	24.36 /	L247/	28.80 /	L248/	1.98 /
L249/	1.58 /	L250/	3.00*/	L251/	1.30 /
L254/	4.46 /	L255/	9.05 /	L258/	0.85 /
L259/	1.05 /	L260/	1.25*/	L261/	0.98 /
L262/	2.30*/	L263/	1.20 /	L272/	9.45 /
L273/	9.45 /	L274/	8.56*/	L275/	1.51 /
L277/	1.51 /	L281/	3.42 /	L282/	5.02*/
L283/	1.50 /	L287/	1.82 /	L289/	2.26 /
L308/	26.49 /	L317/	1.36 /	L319/	1.88 /
L320/	1.88 /	L334/	0.43*/	L335/	0.86*/
L336/	1.29 /	L337/	1.29*/	L338/	21.25 /
L339/	21.25 /	L340/	30.17 /	L341/	30.17*/
L342/	4.59 /	L343/	2.63 /	L344/	12.33 /
L346/	25.60 /	L347/	56.33 /	L348/	56.33 /
L349/	56.33 /	L350/	56.33 /	L351/	8.25 /
L352/	8.25 /	L354/	73.45 /	L361/	2.31 /
L362/	2.16 /	L363/	4.52 /	L364/	2.65 /
L365/	1.64 /	L366/	9.81 /	L367/	9.81 /
L368/	2.28 /	L369/	3.49 /	L370/	19.12 /
L373/	19.12 /	L374/	3.35 /	L375/	3.35 /
L376/	14.29 /	L386/	36.63 /	L387/	36.62 /
L388/	2.23 /	L389/	50.33 /	L390/	1.61 /
L391/	55.18 /	L392/	65.37 /	L393/	65.37 /
L395/	4.24 /	L396/	8.35 /	L397/	4.58 /
L398/	4.32 /	L399/	4.04 /	L402/	7.12 /
L403/	7.12 /	L404/	7.12 /	L405/	4.85 /
L406/	11.97 /	L407/	3.83 /	L408/	15.80 /
L410/	20.14 /	L411/	20.14 /	L413/	2.27 /
L415/	2.27 /	L417/	2.85 /	L418/	5.17 /
L419/	8.02 /	L420/	8.02 /	L421/	1.66 /
L422/	3.80 /	L423/	13.65 /	L424/	18.55 /
L425/	0.93 /	L426/	3.97 /	L427/	40.59 /
L428/	0.94 /	L429/	42.48 /	L430/	2.45 /
L431/	2.28 /	L432/	2.28 /	L435/	2.87 /
L436/	2.87 /	L437/	2.87 /	L438/	1.67 /
L439/	4.55 /	L440/	4.55 /	L441/	48.94 /
L442/	48.94 /	L443/	48.94*/	L446/	5.92 /
L448/	0.97 /	L449/	9.51 /	L450/	13.39 /
L451/	14.72 /	L452/	1.29 /	L453/	0.93 /
L454/	0.68 /	L466/	4.05 /	L468/	4.05 /
L470/	9.48 /	L471/	0.38*/	L472/	4.46 /
L490/	6.72 /	L496/	0.61*/	L497/	0.60*/
L498/	1.21 /	L501/	12.33 /	L502/	12.33 /
L503/	73.45 /	L504/	73.45 /	L505/	10.60 /
L506/	10.90 /	L509/	2.99 /	L511/	11.04 /
L512/	17.90*/	L514/	8.04 /	L515/	17.70 /
CH21/	13.57 /	L474/	9.48 /	L523/	9.48 /
L525/	17.16 /	L527/	4.52 /	L528/	4.73 /
L529/	4.34 /	L533/	4.34 /	L537/	4.34 /
L394/	65.36 /	L276/	3.15*/	L288/	4.16 /
L412/	2.24 /	L447/	2.13 /	L321/	0.51 /
FREE # 1/	13.39 /	FREE # 2/	28.80 /	FREE # 3/	3.00 /
FREE # 4/	9.45 /	FREE # 5/	1.42 /	FREE # 6/	2.30 /
FREE # 7/	9.45 /	FREE # 8/	8.56 /	FREE # 9/	5.02 /

FREE #10/	26.49 /	FREE #11/	1.88 /	FREE #12/	1.29 /
FREE #13/	30.17 /	FREE #14/	73.45 /	FREE #15/	19.12 /
FREE #16/	48.94 /	FREE #17/	4.46 /	FREE #18/	2.99 /
FREE #19/	17.90 /	FREE #20/	1.53 /	FREE #21/	9.48 /
FREE #22/	65.36 /	FREE #23/	3.15 /	FREE #24/	4.16 /

Conduit/	Velocity				
L210/	3.66 /	L211/	4.03 /	L212/	2.64 /
L213/	3.14 /	L214/	3.02 /	L217/	2.83 /
L220/	4.65 /	L221/	4.16 /	L222/	9.62 /
L223/	1.44 /	L224/	1.33 /	L225/	0.67 /
L226/	1.27 /	L227/	2.01 /	L228/	3.23 /
L229/	2.59 /	L230/	2.92 /	L231/	3.09 /
L232/	3.40 /	L233/	3.56 /	L234/	2.99 /
L235/	0.56 /	L236/	2.69 /	L237/	3.89 /
L238/	4.75 /	L239/	5.19 /	L240/	3.01 /
L241/	4.43 /	L242/	3.40 /	L243/	3.61 /
L246/	4.94 /	L247/	5.85 /	L248/	2.53 /
L249/	3.28 /	L250/	9.20 /	L251/	3.09 /
L254/	2.51 /	L255/	2.86 /	L258/	2.71 /
L259/	1.99 /	L260/	3.33 /	L261/	2.69 /
L262/	9.68 /	L263/	2.90 /	L272/	0.60 /
L273/	3.90 /	L274/	12.58 /	L275/	3.14 /
L277/	3.11 /	L281/	4.63 /	L282/	14.80 /
L283/	3.11 /	L287/	3.32 /	L289/	3.47 /
L308/	4.03 /	L317/	1.32 /	L319/	2.86 /
L320/	3.40 /	L334/	2.13 /	L335/	2.63 /
L336/	2.96 /	L337/	5.39 /	L338/	4.08 /
L339/	4.37 /	L340/	5.70 /	L341/	11.73 /
L342/	4.06 /	L343/	3.65 /	L344/	2.40 /
L346/	2.66 /	L347/	4.46 /	L348/	4.30 /
L349/	4.34 /	L350/	4.52 /	L351/	2.95 /
L352/	2.91 /	L354/	5.73 /	L361/	3.67 /
L362/	3.53 /	L363/	3.26 /	L364/	3.82 /
L365/	3.05 /	L366/	3.42 /	L367/	3.44 /
L368/	3.46 /	L369/	4.50 /	L370/	2.86 /
L373/	2.80 /	L374/	4.30 /	L375/	2.10 /
L376/	2.65 /	L386/	3.03 /	L387/	3.01 /
L388/	2.82 /	L389/	3.23 /	L390/	2.46 /
L391/	3.53 /	L392/	4.23 /	L393/	4.38 /
L395/	3.43 /	L396/	1.35 /	L397/	3.70 /
L398/	3.50 /	L399/	1.71 /	L402/	2.95 /
L403/	2.95 /	L404/	2.95 /	L405/	2.74 /
L406/	2.43 /	L407/	3.10 /	L408/	2.65 /
L410/	2.84 /	L411/	2.84 /	L413/	1.67 /
L415/	3.75 /	L417/	3.61 /	L418/	2.92 /
L419/	2.55 /	L420/	2.54 /	L421/	2.10 /
L422/	3.08 /	L423/	2.77 /	L424/	3.11 /
L425/	1.18 /	L426/	3.21 /	L427/	4.20 /
L428/	1.19 /	L429/	4.30 /	L430/	3.10 /
L431/	2.88 /	L432/	2.89 /	L435/	3.63 /
L436/	3.62 /	L437/	2.27 /	L438/	2.12 /
L439/	3.71 /	L440/	2.65 /	L441/	4.94 /
L442/	5.94 /	L443/	16.39 /	L446/	3.33 /
L448/	1.23 /	L449/	3.93 /	L450/	4.26 /
L451/	5.09 /	L452/	1.60 /	L453/	1.14 /
L454/	1.77 /	L466/	4.24 /	L468/	2.41 /
L470/	4.31 /	L471/	1.72 /	L472/	5.65 /
L490/	3.55 /	L496/	2.36 /	L497/	2.34 /
L498/	3.01 /	L501/	1.67 /	L502/	1.25 /
L503/	4.73 /	L504/	5.10 /	L505/	4.38 /
L506/	4.49 /	L509/	9.37 /	L511/	6.26 /
L512/	16.16 /	L514/	3.33 /	L515/	2.73 /
CH21/	0.12 /	L474/	5.35 /	L523/	1.21 /
L525/	2.45 /	L527/	2.55 /	L528/	3.90 /
L529/	2.45 /	L533/	2.45 /	L537/	2.44 /
L394/	4.64 /	L276/	11.60 /	L288/	9.76 /
L412/	4.50 /	L447/	1.20 /	L321/	1.50 /

Conduit/	Width				
L210/	0.01 /	L211/	0.09 /	L212/	0.43 /
L213/	0.01 /	L214/	0.01 /	L217/	0.99 /
L220/	0.04 /	L221/	0.57 /	L222/	1.89 /
L223/	0.87 /	L224/	0.89 /	L225/	0.92 /
L226/	0.61 /	L227/	0.01 /	L228/	0.10 /
L229/	0.71 /	L230/	0.13 /	L231/	0.06 /
L232/	0.06 /	L233/	0.01 /	L234/	0.01 /
L235/	0.36 /	L236/	0.01 /	L237/	0.01 /
L238/	0.08 /	L239/	0.08 /	L240/	1.00 /
L241/	0.11 /	L242/	0.95 /	L243/	0.76 /
L246/	0.11 /	L247/	1.05 /	L248/	0.39 /
L249/	0.97 /	L250/	0.87 /	L251/	0.99 /
L254/	0.01 /	L255/	0.13 /	L258/	0.99 /
L259/	1.53 /	L260/	1.05 /	L261/	0.99 /
L262/	0.80 /	L263/	0.98 /	L272/	1.76 /
L273/	0.01 /	L274/	1.29 /	L275/	0.97 /
L277/	0.96 /	L281/	0.10 /	L282/	0.88 /
L283/	0.97 /	L287/	0.94 /	L289/	0.83 /
L308/	3.06 /	L317/	0.96 /	L319/	1.47 /
L320/	0.94 /	L334/	0.91 /	L335/	0.99 /
L336/	0.98 /	L337/	0.81 /	L338/	2.77 /
L339/	2.84 /	L340/	3.41 /	L341/	2.70 /
L342/	0.81 /	L343/	0.66 /	L344/	0.59 /
L346/	0.02 /	L347/	0.09 /	L348/	0.82 /
L349/	1.41 /	L350/	1.59 /	L351/	1.49 /
L352/	1.43 /	L354/	3.81 /	L361/	0.87 /
L362/	0.89 /	L363/	1.32 /	L364/	0.75 /
L365/	0.95 /	L366/	1.39 /	L367/	1.42 /
L368/	0.82 /	L369/	0.08 /	L370/	1.82 /
L373/	1.45 /	L374/	0.09 /	L375/	1.06 /
L376/	1.94 /	L386/	2.19 /	L387/	1.99 /
L388/	0.01 /	L389/	1.92 /	L390/	0.83 /
L391/	1.89 /	L392/	2.18 /	L393/	2.81 /
L395/	0.01 /	L396/	2.26 /	L397/	0.01 /
L398/	0.01 /	L399/	1.76 /	L402/	0.01 /
L403/	0.01 /	L404/	0.01 /	L405/	0.01 /
L406/	0.01 /	L407/	0.01 /	L408/	0.01 /
L410/	0.01 /	L411/	0.01 /	L413/	1.24 /
L415/	0.90 /	L417/	0.01 /	L418/	0.01 /
L419/	0.01 /	L420/	0.01 /	L421/	0.01 /
L422/	0.01 /	L423/	0.01 /	L424/	0.01 /
L425/	0.01 /	L426/	0.01 /	L427/	0.05 /
L428/	0.01 /	L429/	0.41 /	L430/	0.01 /
L431/	0.01 /	L432/	0.01 /	L435/	0.01 /
L436/	0.04 /	L437/	0.41 /	L438/	0.01 /
L439/	0.08 /	L440/	0.72 /	L441/	1.29 /
L442/	2.41 /	L443/	2.86 /	L446/	0.01 /
L448/	0.01 /	L449/	0.02 /	L450/	0.43 /
L451/	1.30 /	L452/	0.11 /	L453/	0.28 /
L454/	0.98 /	L466/	1.11 /	L468/	1.98 /
L470/	1.06 /	L471/	0.79 /	L472/	0.04 /
L490/	1.52 /	L496/	0.96 /	L497/	0.95 /
L498/	1.00 /	L501/	0.72 /	L502/	0.28 /
L503/	1.99 /	L504/	3.16 /	L505/	0.01 /
L506/	0.01 /	L509/	0.87 /	L511/	0.11 /
L512/	1.68 /	L514/	0.01 /	L515/	2.04 /
CH21/	100.00 /	L474/	0.07 /	L523/	11.35 /
L525/	1.19 /	L527/	0.01 /	L528/	0.11 /
L529/	0.01 /	L533/	0.01 /	L537/	0.01 /
L394/	3.38 /	L276/	0.84 /	L288/	1.05 /
L412/	0.98 /	L447/	0.01 /	L321/	0.95 /

Junction/	EGL				
N221/	1.76 /	N222/	2.76 /	N223/	2.26 /
N224/	3.47 /	N227/	2.63 /	N228/	3.08 /
N230/	4.03 /	N231/	0.45 /	N233/	2.08 /
N234/	3.25 /	N235/	0.26 /	N236/	1.03 /
N237/	0.82 /	N238/	2.54 /	N239/	0.90 /

N240/	1.60 /	N241/	3.54 /	N242/	2.04 /
N243/	2.88 /	N244/	2.57 /	N245/	3.44 /
N246/	3.32 /	N247/	4.10 /	N248/	1.05 /
N249/	2.14 /	N250/	2.49 /	N251/	1.27 /
N252/	3.17 /	N253/	5.52 /	N254/	0.52 /
N255/	5.24 /	N256/	0.66 /	N257/	0.84 /
N259/	2.95 /	N260/	2.63 /	N261/	0.98 /
N262/	0.61 /	N263/	0.55 /	N264/	3.76 /
N265/	0.55 /	W800/	3.13 /	W801/	2.58 /
OUT802/	2.13 /	N272/	1.25 /	N273/	0.43 /
N274/	0.25 /	N275/	1.99 /	N276/	0.49 /
N277/	0.41 /	N278/	4.94 /	N279/	0.55 /
N288/	4.68 /	N289/	4.48 /	N290/	3.92 /
N291/	0.53 /	N292/	7.33 /	N293/	0.62 /
N294/	0.47 /	N296/	0.62 /	N301/	1.92 /
N302/	0.73 /	N303/	6.07 /	N304/	0.61 /
N309/	0.67 /	N310/	1.08 /	N312/	0.79 /
YEL327/	2.16 /	N331/	5.96 /	W104/	0.95 /
N342/	1.26 /	N343/	0.64 /	N344/	0.67 /
N345/	0.40 /	N356/	0.29 /	N357/	0.49 /
N358/	0.68 /	N359/	0.41 /	N360/	2.97 /
N361/	2.08 /	N362/	2.26 /	N363/	3.40 /
N364/	1.35 /	N365/	7.26 /	N366/	1.11 /
N367/	0.89 /	N368/	2.89 /	N369/	3.52 /
N370/	5.26 /	N371/	4.64 /	N372/	5.03 /
N373/	4.62 /	N374/	4.22 /	N375/	4.61 /
N376/	1.66 /	N377/	1.82 /	N378/	3.71 /
N379/	4.64 /	N381/	1.36 /	N382/	1.94 /
N383/	0.76 /	N384/	0.74 /	N386/	0.84 /
N387/	0.64 /	N388/	1.89 /	N389/	3.11 /
N390/	0.79 /	N391/	1.46 /	N392/	2.89 /
N394/	4.25 /	N395/	2.73 /	N396/	1.58 /
N397/	2.70 /	N398/	2.35 /	N399/	3.79 /
N403/	3.86 /	N404/	4.42 /	N405/	1.71 /
N406/	4.46 /	N407/	0.77 /	N408/	4.46 /
N409/	4.30 /	N410/	4.04 /	N412/	2.69 /
N413/	3.59 /	N414/	5.35 /	N415/	2.75 /
N416/	2.23 /	N417/	1.45 /	N418/	0.92 /
N419/	2.70 /	N420/	2.52 /	N421/	2.67 /
N422/	3.48 /	N423/	2.31 /	N424/	3.96 /
N425/	2.34 /	N426/	4.29 /	N428/	4.36 /
N429/	4.92 /	N430/	0.61 /	N431/	2.65 /
N432/	1.27 /	N434/	0.73 /	N435/	2.98 /
N436/	1.96 /	N437/	2.27 /	N438/	3.05 /
N439/	3.86 /	N440/	2.01 /	N441/	2.48 /
N442/	4.22 /	N443/	1.96 /	N444/	2.61 /
N445/	4.54 /	N446/	1.34 /	N447/	4.12 /
N448/	2.01 /	N449/	2.37 /	N450/	1.92 /
N451/	1.75 /	N453/	2.14 /	N454/	2.17 /
N455/	1.54 /	N456/	2.01 /	N457/	1.43 /
N458/	1.60 /	N459/	3.43 /	N460/	1.54 /
N461/	8.48 /	N464/	3.23 /	N465/	3.10 /
N466/	3.48 /	N467/	1.92 /	N468/	2.65 /
N469/	5.60 /	N470/	2.53 /	N471/	1.21 /
N472/	1.12 /	N473/	0.46 /	N487/	1.84 /
N489/	2.82 /	N490/	1.64 /	N491/	0.86 /
N492/	1.78 /	N493/	1.50 /	N497/	0.37 /
N499/	8.57 /	N509/	3.56 /	N513/	1.33 /
N514/	2.90 /	N516/	8.59 /	N524/	0.35 /
N525/	0.59 /	N526/	0.34 /	N527/	0.65 /
N528/	4.32 /	N529/	4.24 /	N530/	4.71 /
N689/	1.94 /	N494/	1.23 /	N541/	2.29 /
EL329/	2.41 /	N427/	3.10 /	N411/	3.95 /
N295/	5.71 /	N311/	5.90 /	N462/	1.93 /

Junction/	Freeboard				
N221/	6.43 /	N222/	5.09 /	N223/	4.14 /
N224/	6.04 /	N227/	8.43 /	N228/	1.79 /
N230/	6.22 /	N231/	4.11 /	N233/	5.11 /

N234/	10.59 /	N235/	18.29 /	N236/	7.34 /
N237/	6.63 /	N238/	4.77 /	N239/	6.52 /
N240/	3.89 /	N241/	7.08 /	N242/	5.24 /
N243/	4.62 /	N244/	3.43 /	N245/	2.74 /
N246/	2.05 /	N247/	5.54 /	N248/	3.47 /
N249/	1.87 /	N250/	9.77 /	N251/	10.37 /
N252/	5.97 /	N253/	8.57 /	N254/	7.05 /
N255/	7.46 /	N256/	11.81 /	N257/	9.95 /
N259/	2.96 /	N260/	2.00 /	N261/	6.47 /
N262/	4.91 /	N263/	4.56 /	N264/	6.91 /
N265/	2.99 /	W800/	4.42 /	W801/	2.47 /
OUT802/	0.00 /	N272/	5.21 /	N273/	6.29 /
N274/	4.54 /	N275/	12.28 /	N276/	5.66 /
N277/	5.68 /	N278/	14.52 /	N279/	3.73 /
N288/	14.93 /	N289/	14.93 /	N290/	14.38 /
N291/	3.84 /	N292/	12.53 /	N293/	6.86 /
N294/	5.34 /	N296/	2.80 /	N301/	3.58 /
N302/	5.71 /	N303/	11.03 /	N304/	2.84 /
N309/	5.58 /	N310/	4.00 /	N312/	2.40 /
YEL327/	2.84 /	N331/	2.59 /	W104/	1.99 /
N342/	6.01 /	N343/	3.88 /	N344/	10.29 /
N345/	8.91 /	N356/	2.78 /	N357/	3.12 /
N358/	6.80 /	N359/	6.41 /	N360/	6.18 /
N361/	5.08 /	N362/	5.72 /	N363/	8.40 /
N364/	8.46 /	N365/	6.48 /	N366/	7.42 /
N367/	2.18 /	N368/	2.95 /	N369/	3.05 /
N370/	3.18 /	N371/	3.42 /	N372/	5.74 /
N373/	6.02 /	N374/	8.29 /	N375/	7.96 /
N376/	5.91 /	N377/	6.00 /	N378/	6.61 /
N379/	5.67 /	N381/	2.62 /	N382/	3.42 /
N383/	6.01 /	N384/	4.80 /	N386/	7.19 /
N387/	8.06 /	N388/	4.56 /	N389/	5.59 /
N390/	8.78 /	N391/	7.25 /	N392/	6.61 /
N394/	7.54 /	N395/	5.56 /	N396/	5.63 /
N397/	6.54 /	N398/	9.38 /	N399/	6.02 /
N403/	7.48 /	N404/	8.93 /	N405/	12.91 /
N406/	7.03 /	N407/	14.81 /	N408/	8.21 /
N409/	6.81 /	N410/	8.36 /	N412/	6.25 /
N413/	4.80 /	N414/	3.22 /	N415/	5.30 /
N416/	6.15 /	N417/	2.83 /	N418/	3.58 /
N419/	6.73 /	N420/	9.14 /	N421/	6.68 /
N422/	5.88 /	N423/	7.72 /	N424/	6.49 /
N425/	7.99 /	N426/	5.61 /	N428/	3.63 /
N429/	5.39 /	N430/	8.61 /	N431/	4.25 /
N432/	1.62 /	N434/	6.74 /	N435/	7.29 /
N436/	11.87 /	N437/	9.71 /	N438/	7.29 /
N439/	6.28 /	N440/	10.34 /	N441/	8.69 /
N442/	4.97 /	N443/	7.06 /	N444/	6.76 /
N445/	3.55 /	N446/	8.57 /	N447/	4.32 /
N448/	4.84 /	N449/	5.38 /	N450/	2.69 /
N451/	3.38 /	N453/	4.13 /	N454/	8.94 /
N455/	5.26 /	N456/	4.09 /	N457/	9.95 /
N458/	4.22 /	N459/	2.59 /	N460/	5.00 /
N461/	11.69 /	N464/	4.38 /	N465/	5.37 /
N466/	2.47 /	N467/	2.74 /	N468/	3.95 /
N469/	8.22 /	N470/	8.32 /	N471/	7.21 /
N472/	3.39 /	N473/	5.70 /	N487/	2.63 /
N489/	3.76 /	N490/	2.41 /	N491/	2.16 /
N492/	2.28 /	N493/	2.86 /	N497/	4.58 /
N499/	12.64 /	N509/	5.46 /	N513/	6.48 /
N514/	9.14 /	N516/	16.47 /	N524/	2.66 /
N525/	4.52 /	N526/	3.40 /	N527/	4.89 /
N528/	2.56 /	N529/	10.73 /	N530/	5.12 /
N689/	3.77 /	N494/	3.64 /	N541/	5.71 /
EL329/	3.07 /	N427/	5.85 /	N411/	13.33 /
N295/	9.55 /	N311/	5.78 /	N462/	3.29 /

Junction/	Max Volume				
N221/	22.15 /	N222/	32.09 /	N223/	16.41 /

N224/	41.73 /	N227/	33.07 /	N228/	38.70 /
N230/	29.40 /	N231/	5.62 /	N233/	10.31 /
N234/	22.74 /	N235/	3.32 /	N236/	3.52 /
N237/	5.02 /	N238/	31.07 /	N239/	10.91 /
N240/	19.85 /	N241/	14.56 /	N242/	22.62 /
N243/	27.77 /	N244/	30.46 /	N245/	40.92 /
N246/	38.78 /	N247/	47.65 /	N248/	13.17 /
N249/	26.95 /	N250/	31.23 /	N251/	15.99 /
N252/	27.91 /	N253/	29.95 /	N254/	6.58 /
N255/	45.89 /	N256/	8.34 /	N257/	10.52 /
N259/	32.33 /	N260/	26.39 /	N261/	12.33 /
N262/	7.70 /	N263/	4.78 /	N264/	30.79 /
N265/	6.87 /	W800/	38.99 /	W801/	31.20 /
OUT802/	25.13 /	N272/	6.29 /	N273/	5.34 /
N274/	2.43 /	N275/	22.87 /	N276/	6.19 /
N277/	3.46 /	N278/	43.73 /	N279/	6.88 /
N288/	115.38 /	N289/	56.17 /	N290/	49.27 /
N291/	6.64 /	N292/	61.20 /	N293/	7.75 /
N294/	3.96 /	N296/	7.85 /	N301/	24.12 /
N302/	4.96 /	N303/	33.55 /	N304/	7.69 /
N309/	8.42 /	N310/	4.99 /	N312/	9.93 /
YEL327/	1159.95 /	N331/	71.75 /	W104/	11.99 /
N342/	7.63 /	N343/	6.48 /	N344/	8.44 /
N345/	5.05 /	N356/	3.62 /	N357/	5.25 /
N358/	7.20 /	N359/	3.50 /	N360/	31.67 /
N361/	26.15 /	N362/	25.19 /	N363/	25.15 /
N364/	10.60 /	N365/	64.34 /	N366/	13.99 /
N367/	11.14 /	N368/	36.36 /	N369/	43.07 /
N370/	64.75 /	N371/	58.26 /	N372/	59.39 /
N373/	54.51 /	N374/	49.35 /	N375/	53.92 /
N376/	20.92 /	N377/	21.20 /	N378/	41.90 /
N379/	51.90 /	N381/	13.64 /	N382/	21.57 /
N383/	9.53 /	N384/	9.29 /	N386/	10.56 /
N387/	8.03 /	N388/	21.42 /	N389/	36.94 /
N390/	9.98 /	N391/	18.36 /	N392/	36.82 /
N394/	51.90 /	N395/	34.25 /	N396/	16.24 /
N397/	32.51 /	N398/	29.49 /	N399/	46.20 /
N403/	46.77 /	N404/	53.73 /	N405/	21.47 /
N406/	53.96 /	N407/	9.66 /	N408/	53.10 /
N409/	50.60 /	N410/	47.06 /	N412/	33.74 /
N413/	42.40 /	N414/	64.85 /	N415/	34.54 /
N416/	28.01 /	N417/	17.13 /	N418/	11.57 /
N419/	32.17 /	N420/	31.71 /	N421/	31.84 /
N422/	42.08 /	N423/	29.02 /	N424/	47.85 /
N425/	29.35 /	N426/	52.58 /	N428/	53.25 /
N429/	59.99 /	N430/	7.63 /	N431/	27.01 /
N432/	13.07 /	N434/	9.15 /	N435/	34.95 /
N436/	24.68 /	N437/	28.54 /	N438/	37.07 /
N439/	46.65 /	N440/	25.21 /	N441/	31.14 /
N442/	51.03 /	N443/	24.67 /	N444/	32.83 /
N445/	53.66 /	N446/	16.85 /	N447/	48.17 /
N448/	26.10 /	N449/	28.81 /	N450/	23.32 /
N451/	22.81 /	N453/	24.33 /	N454/	27.32 /
N455/	16.84 /	N456/	24.25 /	N457/	17.91 /
N458/	17.45 /	N459/	38.36 /	N460/	12.41 /
N461/	54.16 /	N464/	38.38 /	N465/	38.99 /
N466/	41.57 /	N467/	24.14 /	N468/	30.29 /
N469/	22.40 /	N470/	12.15 /	N471/	15.18 /
N472/	14.02 /	N473/	5.78 /	N487/	12.83 /
N489/	30.69 /	N490/	20.04 /	N491/	10.76 /
N492/	22.34 /	N493/	12.57 /	N497/	4.65 /
N499/	90.60 /	N509/	44.74 /	N513/	16.66 /
N514/	8.12 /	N516/	56.92 /	N524/	4.35 /
N525/	6.37 /	N526/	4.32 /	N527/	6.37 /
N528/	53.74 /	N529/	48.88 /	N530/	55.47 /
N689/	18.85 /	N494/	11.88 /	N541/	27.60 /
EL329/	30.24 /	N427/	37.84 /	N411/	45.49 /
N295/	45.49 /	N311/	55.54 /	N462/	24.28 /

Junction/Total Fldng					
N221/	0.00 /	N222/	0.00 /	N223/	0.00 /
N224/	0.00 /	N227/	0.00 /	N228/	0.00 /
N230/	0.00 /	N231/	0.00 /	N233/	0.00 /
N234/	0.00 /	N235/	0.00 /	N236/	0.00 /
N237/	0.00 /	N238/	0.00 /	N239/	0.00 /
N240/	0.00 /	N241/	0.00 /	N242/	0.00 /
N243/	0.00 /	N244/	0.00 /	N245/	0.00 /
N246/	0.00 /	N247/	0.00 /	N248/	0.00 /
N249/	0.00 /	N250/	0.00 /	N251/	0.00 /
N252/	0.00 /	N253/	0.00 /	N254/	0.00 /
N255/	0.00 /	N256/	0.00 /	N257/	0.00 /
N259/	0.00 /	N260/	0.00 /	N261/	0.00 /
N262/	0.00 /	N263/	0.00 /	N264/	0.00 /
N265/	0.00 /	W800/	0.00 /	W801/	0.00 /
OUT802/	0.00 /	N272/	0.00 /	N273/	0.00 /
N274/	0.00 /	N275/	0.00 /	N276/	0.00 /
N277/	0.00 /	N278/	0.00 /	N279/	0.00 /
N288/	0.00 /	N289/	0.00 /	N290/	0.00 /
N291/	0.00 /	N292/	0.00 /	N293/	0.00 /
N294/	0.00 /	N296/	0.00 /	N301/	0.00 /
N302/	0.00 /	N303/	0.00 /	N304/	0.00 /
N309/	0.00 /	N310/	0.00 /	N312/	0.00 /
YEL327/	125.62 /	N331/	0.00 /	W104/	0.00 /
N342/	0.00 /	N343/	0.00 /	N344/	0.00 /
N345/	0.00 /	N356/	0.00 /	N357/	0.00 /
N358/	0.00 /	N359/	0.00 /	N360/	0.00 /
N361/	0.00 /	N362/	0.00 /	N363/	0.00 /
N364/	0.00 /	N365/	0.00 /	N366/	0.00 /
N367/	0.00 /	N368/	0.00 /	N369/	0.00 /
N370/	0.00 /	N371/	0.00 /	N372/	0.00 /
N373/	0.00 /	N374/	0.00 /	N375/	0.00 /
N376/	0.00 /	N377/	0.00 /	N378/	0.00 /
N379/	0.00 /	N381/	0.00 /	N382/	0.00 /
N383/	0.00 /	N384/	0.00 /	N386/	0.00 /
N387/	0.00 /	N388/	0.00 /	N389/	0.00 /
N390/	0.00 /	N391/	0.00 /	N392/	0.00 /
N394/	0.00 /	N395/	0.00 /	N396/	0.00 /
N397/	0.00 /	N398/	0.00 /	N399/	0.00 /
N403/	0.00 /	N404/	0.00 /	N405/	0.00 /
N406/	0.00 /	N407/	0.00 /	N408/	0.00 /
N409/	0.00 /	N410/	0.00 /	N412/	0.00 /
N413/	0.00 /	N414/	0.00 /	N415/	0.00 /
N416/	0.00 /	N417/	0.00 /	N418/	0.00 /
N419/	0.00 /	N420/	0.00 /	N421/	0.00 /
N422/	0.00 /	N423/	0.00 /	N424/	0.00 /
N425/	0.00 /	N426/	0.00 /	N428/	0.00 /
N429/	0.00 /	N430/	0.00 /	N431/	0.00 /
N432/	0.00 /	N434/	0.00 /	N435/	0.00 /
N436/	0.00 /	N437/	0.00 /	N438/	0.00 /
N439/	0.00 /	N440/	0.00 /	N441/	0.00 /
N442/	0.00 /	N443/	0.00 /	N444/	0.00 /
N445/	0.00 /	N446/	0.00 /	N447/	0.00 /
N448/	0.00 /	N449/	0.00 /	N450/	0.00 /
N451/	0.00 /	N453/	0.00 /	N454/	0.00 /
N455/	0.00 /	N456/	0.00 /	N457/	0.00 /
N458/	0.00 /	N459/	0.00 /	N460/	0.00 /
N461/	0.00 /	N464/	0.00 /	N465/	0.00 /
N466/	0.00 /	N467/	0.00 /	N468/	0.00 /
N469/	0.00 /	N470/	0.00 /	N471/	0.00 /
N472/	0.00 /	N473/	0.00 /	N487/	0.00 /
N489/	0.00 /	N490/	0.00 /	N491/	0.00 /
N492/	0.00 /	N493/	0.00 /	N497/	0.00 /
N499/	0.00 /	N509/	0.00 /	N513/	0.00 /
N514/	0.00 /	N516/	0.00 /	N524/	0.00 /
N525/	0.00 /	N526/	0.00 /	N527/	0.00 /
N528/	0.00 /	N529/	0.00 /	N530/	0.00 /
N689/	0.00 /	N494/	0.00 /	N541/	0.00 /
EL329/	0.00 /	N427/	0.00 /	N411/	0.00 /

N295/	0.00 /	N311/	0.00 /	N462/	0.00 /

Conduit/ Cross Sectional Area

L210/	0.79 /	L211/	0.78 /	L212/	1.25 /
L213/	0.79 /	L214/	1.78 /	L217/	0.34 /
L220/	2.43 /	L221/	3.18 /	L222/	1.39 /
L223/	0.16 /	L224/	0.17 /	L225/	0.34 /
L226/	0.73 /	L227/	0.79 /	L228/	0.77 /
L229/	1.14 /	L230/	1.18 /	L231/	1.23 /
L232/	1.78 /	L233/	1.78 /	L234/	3.15 /
L235/	0.81 /	L236/	0.79 /	L237/	0.79 /
L238/	0.78 /	L239/	0.78 /	L240/	0.41 /
L241/	1.21 /	L242/	0.54 /	L243/	0.69 /
L246/	4.93 /	L247/	4.92 /	L248/	0.78 /
L249/	0.48 /	L250/	0.33 /	L251/	0.42 /
L254/	1.78 /	L255/	3.17 /	L258/	0.31 /
L259/	0.53 /	L260/	0.38 /	L261/	0.36 /
L262/	0.24 /	L263/	0.41 /	L272/	15.84 /
L273/	2.42 /	L274/	0.68 /	L275/	0.48 /
L277/	0.49 /	L281/	0.74 /	L282/	0.34 /
L283/	0.48 /	L287/	0.55 /	L289/	0.65 /
L308/	6.57 /	L317/	1.03 /	L319/	0.66 /
L320/	0.55 /	L334/	0.20 /	L335/	0.33 /
L336/	0.44 /	L337/	0.24 /	L338/	5.21 /
L339/	4.87 /	L340/	5.30 /	L341/	2.57 /
L342/	1.13 /	L343/	0.72 /	L344/	5.14 /
L346/	9.64 /	L347/	12.64 /	L348/	13.10 /
L349/	12.98 /	L350/	12.47 /	L351/	2.80 /
L352/	2.84 /	L354/	12.81 /	L361/	0.63 /
L362/	0.61 /	L363/	1.39 /	L364/	0.69 /
L365/	0.54 /	L366/	2.87 /	L367/	2.85 /
L368/	0.66 /	L369/	0.78 /	L370/	6.68 /
L373/	6.84 /	L374/	0.78 /	L375/	1.59 /
L376/	5.39 /	L386/	12.08 /	L387/	12.19 /
L388/	0.79 /	L389/	15.60 /	L390/	0.65 /
L391/	15.62 /	L392/	15.44 /	L393/	14.92 /
L395/	1.24 /	L396/	6.17 /	L397/	1.24 /
L398/	1.24 /	L399/	2.36 /	L402/	2.41 /
L403/	2.41 /	L404/	2.41 /	L405/	1.77 /
L406/	4.92 /	L407/	1.23 /	L408/	5.95 /
L410/	7.09 /	L411/	7.09 /	L413/	1.35 /
L415/	0.60 /	L417/	0.79 /	L418/	1.77 /
L419/	3.15 /	L420/	3.15 /	L421/	0.79 /
L422/	1.23 /	L423/	4.92 /	L424/	5.96 /
L425/	0.79 /	L426/	1.24 /	L427/	9.67 /
L428/	0.79 /	L429/	9.88 /	L430/	0.79 /
L431/	0.79 /	L432/	0.79 /	L435/	0.79 /
L436/	0.79 /	L437/	1.26 /	L438/	0.79 /
L439/	1.23 /	L440/	1.72 /	L441/	9.90 /
L442/	8.23 /	L443/	2.99 /	L446/	1.78 /
L448/	0.79 /	L449/	2.42 /	L450/	3.14 /
L451/	2.89 /	L452/	0.81 /	L453/	0.82 /
L454/	0.38 /	L466/	0.96 /	L468/	1.68 /
L470/	2.20 /	L471/	0.22 /	L472/	0.79 /
L490/	1.89 /	L496/	0.26 /	L497/	0.26 /
L498/	0.40 /	L501/	7.38 /	L502/	9.84 /
L503/	15.53 /	L504/	14.40 /	L505/	2.42 /
L506/	2.43 /	L509/	0.32 /	L511/	1.76 /
L512/	1.11 /	L514/	2.42 /	L515/	6.49 /
CH21/	110.51 /	L474/	1.77 /	L523/	7.81 /
L525/	6.99 /	L527/	1.77 /	L528/	1.21 /
L529/	1.77 /	L533/	1.77 /	L537/	1.78 /
L394/	14.10 /	L276/	0.27 /	L288/	0.43 /
L412/	0.50 /	L447/	1.77 /	L321/	0.34 /

Conduit/ Final Volume

L210/	55.24 /	L211/	317.33 /	L212/	677.02 /
L213/	84.91 /	L214/	165.45 /	L217/	28.91 /
L220/	776.67 /	L221/	1254.33 /	L222/	253.29 /

L223/	11.56 /	L224/	50.40 /	L225/	100.02 /
L226/	301.51 /	L227/	186.04 /	L228/	313.37 /
L229/	650.38 /	L230/	470.24 /	L231/	490.53 /
L232/	545.42 /	L233/	851.63 /	L234/	1355.64 /
L235/	40.27 /	L236/	83.06 /	L237/	79.26 /
L238/	42.73 /	L239/	97.17 /	L240/	35.32 /
L241/	358.05 /	L242/	33.77 /	L243/	65.39 /
L246/	2041.16 /	L247/	452.79 /	L248/	36.83 /
L249/	35.14 /	L250/	25.43 /	L251/	29.16 /
L254/	1261.65 /	L255/	1428.82 /	L258/	31.44 /
L259/	147.67 /	L260/	24.09 /	L261/	50.30 /
L262/	18.09 /	L263/	48.42 /	L272/	538.49 /
L273/	283.61 /	L274/	83.65 /	L275/	51.22 /
L277/	56.80 /	L281/	79.16 /	L282/	16.28 /
L283/	54.95 /	L287/	59.93 /	L289/	78.28 /
L308/	663.24 /	L317/	1138.07 /	L319/	42.76 /
L320/	37.00 /	L334/	80.31 /	L335/	121.03 /
L336/	54.54 /	L337/	28.54 /	L338/	437.51 /
L339/	1265.70 /	L340/	1292.03 /	L341/	264.86 /
L342/	88.09 /	L343/	67.72 /	L344/	262.26 /
L346/	482.05 /	L347/	4993.46 /	L348/	5294.20 /
L349/	5192.57 /	L350/	1646.23 /	L351/	97.89 /
L352/	417.54 /	L354/	1204.03 /	L361/	29.58 /
L362/	40.39 /	L363/	569.74 /	L364/	33.33 /
L365/	33.83 /	L366/	1129.39 /	L367/	1036.58 /
L368/	81.61 /	L369/	76.84 /	L370/	1375.12 /
L373/	670.22 /	L374/	124.65 /	L375/	642.15 /
L376/	884.77 /	L386/	4117.92 /	L387/	4325.72 /
L388/	89.18 /	L389/	6006.52 /	L390/	69.40 /
L391/	7795.16 /	L392/	5868.14 /	L393/	6876.37 /
L395/	61.83 /	L396/	2482.13 /	L397/	70.51 /
L398/	59.29 /	L399/	713.15 /	L402/	207.44 /
L403/	960.04 /	L404/	895.00 /	L405/	125.90 /
L406/	1790.74 /	L407/	87.61 /	L408/	2185.23 /
L410/	2799.14 /	L411/	2133.25 /	L413/	542.98 /
L415/	29.62 /	L417/	53.73 /	L418/	127.65 /
L419/	815.74 /	L420/	1266.85 /	L421/	53.76 /
L422/	93.85 /	L423/	1954.83 /	L424/	1781.31 /
L425/	55.33 /	L426/	90.20 /	L427/	4697.69 /
L428/	69.28 /	L429/	3894.19 /	L430/	71.94 /
L431/	339.46 /	L432/	71.81 /	L435/	71.20 /
L436/	249.70 /	L437/	414.61 /	L438/	69.31 /
L439/	458.37 /	L440/	680.17 /	L441/	4010.22 /
L442/	3779.43 /	L443/	286.63 /	L446/	108.53 /
L448/	62.43 /	L449/	1093.49 /	L450/	1257.37 /
L451/	260.20 /	L452/	40.43 /	L453/	49.89 /
L454/	26.85 /	L466/	86.06 /	L468/	832.89 /
L470/	389.82 /	L471/	86.66 /	L472/	41.02 /
L490/	229.18 /	L496/	100.86 /	L497/	100.64 /
L498/	39.19 /	L501/	2766.38 /	L502/	4161.05 /
L503/	6784.97 /	L504/	6694.52 /	L505/	956.23 /
L506/	963.67 /	L509/	42.78 /	L511/	313.97 /
L512/	122.98 /	L514/	965.06 /	L515/	941.68 /
CH21/	102224.18 /	L474/	225.24 /	L523/	1335.12 /
L525/	3727.94 /	L527/	769.17 /	L528/	548.13 /
L529/	503.76 /	L533/	1285.41 /	L537/	805.54 /
L394/	2213.17 /	L276/	13.83 /	L288/	26.00 /
L412/	26.42 /	L447/	697.87 /	L321/	148.75 /

Conduit/ Hydraulic Radius

L210/	0.25 /	L211/	0.26 /	L212/	0.31 /
L213/	0.25 /	L214/	0.38 /	L217/	0.23 /
L220/	0.44 /	L221/	0.51 /	L222/	0.45 /
L223/	0.15 /	L224/	0.16 /	L225/	0.22 /
L226/	0.30 /	L227/	0.25 /	L228/	0.25 /
L229/	0.36 /	L230/	0.32 /	L231/	0.32 /
L232/	0.38 /	L233/	0.38 /	L234/	0.50 /
L235/	0.25 /	L236/	0.25 /	L237/	0.25 /
L238/	0.26 /	L239/	0.26 /	L240/	0.26 /

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   L241/       0.32 /           L242/       0.29 /           L243/       0.30 /
   L246/       0.62 /           L247/       0.64 /           L248/       0.26 /
   L249/       0.27 /           L250/       0.21 /           L251/       0.26 /
   L254/       0.38 /           L255/       0.50 /           L258/       0.22 /
   L259/       0.27 /           L260/       0.15 /           L261/       0.24 /
   L262/       0.17 /           L263/       0.25 /           L272/       1.17 /
   L273/       0.44 /           L274/       0.30 /           L275/       0.27 /
   L277/       0.27 /           L281/       0.25 /           L282/       0.22 /
   L283/       0.27 /           L287/       0.29 /           L289/       0.30 /
   L308/       0.97 /           L317/       0.37 /           L319/       0.32 /
   L320/       0.29 /           L334/       0.17 /           L335/       0.23 /
   L336/       0.26 /           L337/       0.17 /           L338/       0.88 /
   L339/       0.86 /           L340/       0.90 /           L341/       0.53 /
   L342/       0.37 /           L343/       0.30 /           L344/       0.62 /
   L346/       0.88 /           L347/       1.00 /           L348/       1.00 /
   L349/       1.01 /           L350/       1.07 /           L351/       0.61 /
   L352/       0.61 /           L354/       1.35 /           L361/       0.30 /
   L362/       0.30 /           L363/       0.45 /           L364/       0.30 /
   L365/       0.29 /           L366/       0.60 /           L367/       0.61 /
   L368/       0.30 /           L369/       0.26 /           L370/       0.89 /
   L373/       0.87 /           L374/       0.26 /           L375/       0.45 /
   L376/       0.83 /           L386/       1.18 /           L387/       1.16 /
   L388/       0.25 /           L389/       1.29 /           L390/       0.30 /
   L391/       1.28 /           L392/       1.30 /           L393/       1.35 /
   L395/       0.31 /           L396/       0.91 /           L397/       0.31 /
   L398/       0.31 /           L399/       0.59 /           L402/       0.44 /
   L403/       0.44 /           L404/       0.44 /           L405/       0.38 /
   L406/       0.62 /           L407/       0.31 /           L408/       0.69 /
   L410/       0.75 /           L411/       0.75 /           L413/       0.44 /
   L415/       0.30 /           L417/       0.25 /           L418/       0.38 /
   L419/       0.50 /           L420/       0.50 /           L421/       0.25 /
   L422/       0.31 /           L423/       0.62 /           L424/       0.69 /
   L425/       0.25 /           L426/       0.31 /           L427/       0.88 /
   L428/       0.25 /           L429/       0.88 /           L430/       0.25 /
   L431/       0.25 /           L432/       0.25 /           L435/       0.25 /
   L436/       0.25 /           L437/       0.31 /           L438/       0.25 /
   L439/       0.32 /           L440/       0.43 /           L441/       0.89 /
   L442/       1.01 /           L443/       0.60 /           L446/       0.38 /
   L448/       0.25 /           L449/       0.44 /           L450/       0.51 /
   L451/       0.60 /           L452/       0.25 /           L453/       0.25 /
   L454/       0.24 /           L466/       0.37 /           L468/       0.51 /
   L470/       0.51 /           L471/       0.16 /           L472/       0.25 /
   L490/       0.52 /           L496/       0.20 /           L497/       0.20 /
   L498/       0.25 /           L501/       0.75 /           L502/       0.88 /
   L503/       1.29 /           L504/       1.36 /           L505/       0.44 /
   L506/       0.44 /           L509/       0.21 /           L511/       0.38 /
   L512/       0.38 /           L514/       0.44 /           L515/       0.91 /
   CH21/       1.08 /           L474/       0.38 /           L523/       0.66 /
   L525/       0.84 /           L527/       0.38 /           L528/       0.32 /
   L529/       0.38 /           L533/       0.38 /           L537/       0.38 /
   L394/       1.37 /           L276/       0.19 /           L288/       0.23 /
   L412/       0.28 /           L447/       0.38 /           L321/       0.22 /

Conduit/ Upstream/ Downstream Elevation
   L210/   107.60/   106.99          L211/   106.99/   102.82          L212/   102.12/   100.29/
   L213/   100.97/   100.29          L214/   100.61/   100.29          L217/   100.29/    99.74/
   L220/   100.29/    98.17          L221/    98.17/    96.23          L222/    95.24/    89.41/
   L223/   119.86/   119.61          L224/   118.89/   118.06          L225/   117.66/   117.58/
   L226/   118.56/   118.20          L227/   118.20/   117.58          L228/   117.58/   114.74/
   L229/   112.52/   110.57          L230/   110.43/   108.61          L231/   108.07/   106.27/
   L232/   106.27/   104.94          L233/   104.94/   102.65          L234/   102.65/   101.66/
   L235/   112.53/   112.52          L236/   106.76/   106.27          L237/   103.63/   102.65/
   L238/   116.65/   115.88          L239/   115.28/   113.18          L240/   113.35/   112.80/
   L241/   110.46/   107.74          L242/   108.07/   107.63          L243/   108.45/   107.72/
   L246/   101.66/    99.73          L247/    99.73/    99.10          L248/    99.91/    99.73/
   L249/   105.49/   104.84          L250/   104.84/    99.09          L251/   105.41/   104.84/
   L254/   105.61/   103.93          L255/   103.93/   103.00          L258/    98.11/    97.49/
   L259/    96.85/    95.77          L260/    95.77/    89.42          L261/    94.74/    93.72/
   L262/    93.72/    81.48          L263/    94.67/    93.72          L272/    81.47/    81.47/
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L273/	82.02/	81.47	L274/	92.45/	81.47	L275/	119.54/	118.62/
L277/	119.60/	118.62	L281/	124.82/	122.68	L282/	122.68/	113.27/
L283/	123.56/	122.68	L287/	113.82/	113.08	L289/	114.00/	113.15/
L308/	98.16/	98.41	L317/	106.34/	105.61	L319/	100.83/	100.52/
L320/	101.78/	101.30	L334/	125.61/	123.40	L335/	123.40/	121.39/
L336/	121.39/	120.37	L337/	120.37/	115.32	L338/	128.32/	128.13/
L339/	128.13/	127.28	L340/	127.28/	125.85	L341/	125.85/	122.52/
L342/	128.98/	128.40	L343/	129.22/	128.48	L344/	127.15/	127.10/
L346/	126.90/	126.85	L347/	126.85/	126.07	L348/	126.07/	125.31/
L349/	125.31/	124.53	L350/	124.53/	124.27	L351/	124.56/	124.51/
L352/	124.51/	124.27	L354/	122.58/	122.53	L361/	126.29/	125.91/
L362/	126.38/	125.89	L363/	125.85/	124.58	L364/	124.98/	124.58/
L365/	124.87/	124.58	L366/	124.58/	123.65	L367/	123.65/	122.79/
L368/	123.62/	122.79	L369/	124.15/	122.91	L370/	122.79/	122.60/
L373/	122.60/	122.53	L374/	120.84/	118.97	L375/	118.97/	118.40/
L376/	118.66/	118.40	L386/	118.28/	118.02	L387/	118.02/	117.76/
L388/	118.34/	117.76	L389/	117.76/	117.46	L390/	117.77/	117.46/
L391/	117.46/	117.01	L392/	117.01/	116.51	L393/	116.51/	115.86/
L395/	118.99/	118.70	L396/	118.78/	118.70	L397/	119.08/	118.70/
L398/	119.06/	118.78	L399/	118.93/	118.78	L402/	114.76/	114.53/
L403/	114.53/	113.47	L404/	113.47/	112.48	L405/	112.68/	112.48/
L406/	112.48/	112.07	L407/	112.40/	112.07	L408/	112.07/	111.63/
L410/	111.63/	111.16	L411/	111.16/	110.79	L413/	119.11/	118.82/
L415/	119.53/	119.12	L417/	113.53/	112.96	L418/	113.19/	112.96/
L419/	112.96/	112.53	L420/	112.53/	111.86	L421/	112.06/	111.86/
L422/	112.21/	111.86	L423/	111.86/	111.28	L424/	111.28/	110.79/
L425/	111.34/	111.28	L426/	111.64/	111.28	L427/	110.79/	109.75/
L428/	109.83/	109.75	L429/	109.75/	108.88	L430/	120.78/	120.22/
L431/	122.53/	120.22	L432/	123.02/	122.53	L435/	116.46/	115.70/
L436/	115.70/	113.02	L437/	113.02/	112.19	L438/	112.45/	112.19/
L439/	112.19/	109.78	L440/	109.78/	108.88	L441/	108.88/	107.66/
L442/	107.66/	105.10	L443/	105.10/	98.41	L446/	129.75/	129.50/
L448/	128.22/	128.14	L449/	128.14/	126.00	L450/	126.00/	123.98/
L451/	120.44/	119.84	L452/	126.09/	126.00	L453/	126.06/	126.00/
L454/	120.53/	120.44	L466/	120.82/	120.13	L468/	119.59/	118.93/
L470/	123.50/	122.36	L471/	125.03/	123.50	L472/	128.12/	127.04/
L490/	111.34/	110.82	L496/	133.80/	131.68	L497/	133.80/	131.68/
L498/	131.68/	131.11	L501/	127.10/	126.94	L502/	126.94/	126.85/
L503/	124.27/	123.53	L504/	123.53/	122.58	L505/	106.45/	104.12/
L506/	104.12/	101.66	L509/	108.22/	98.41	L511/	112.44/	109.88/
L512/	108.76/	94.53	L514/	129.50/	128.14	L515/	118.40/	118.28/
CH21/	118.68/	118.66	L474/	120.87/	119.50	L523/	122.36/	121.23/
L525/	118.70/	118.28	L527/	118.82/	117.76	L528/	120.22/	117.01/
L529/	114.93/	114.29	L533/	114.29/	112.65	L537/	112.65/	111.63/
L394/	115.86/	115.62	L276/	118.62/	110.55	L288/	112.66/	108.52/
L412/	119.61/	119.01	L447/	129.71/	129.50	L321/	119.23/	118.56/

===
| Table E7 - Iteration Summary |
===

Total number of time steps simulated.....	360
Total number of passes in the simulation.....	11352
Total number of time steps during simulation....	10798
Ratio of actual # of time steps / NTCYC.....	29.994
Average number of iterations per time step.....	1.051
Average time step size(seconds).....	2.000
Smallest time step size(seconds).....	1.935
Largest time step size(seconds).....	15.000
Average minimum Conduit Courant time step (sec).	2.233
Average minimum implicit time step (sec).....	2.054
Average minimum junction time step (sec).....	2.054
Average Courant Factor Tf.....	2.054
Number of times omega reduced.....	0

===
| Table E8 - Junction Time Step Limitation Summary |

===
| Not Convr = Number of times this junction did not |
| converge during the simulation. |
| Avg Convr = Average junction iterations. |
| Conv err = Mean convergence error. |
| Omega Cng = Change of omega during iterations |
| Max Itern = Maximum number of iterations |
===

Junction	Not Convr	Avg Convr	Total Itt	Omega Cng	Max Itern	Ittrn >10	Ittrn >25	Ittrn >40
N221	0	1.25	13505	0	10	1	0	0
N222	0	1.46	15736	0	6	0	0	0
N223	0	1.46	15793	0	5	0	0	0
N224	0	1.50	16233	0	14	1	0	0
N227	0	1.26	13567	0	10	1	0	0
N228	0	1.31	14160	0	11	1	0	0
N230	0	1.47	15926	0	11	1	0	0
N231	0	1.21	13044	0	7	0	0	0
N233	0	1.44	15550	0	5	0	0	0
N234	0	1.15	12374	0	4	0	0	0
N235	0	1.08	11687	0	3	0	0	0
N236	0	1.08	11683	0	3	0	0	0
N237	0	1.08	11684	0	3	0	0	0
N238	0	1.46	15786	0	7	0	0	0
N239	0	1.24	13406	0	4	0	0	0
N240	0	1.44	15587	0	5	0	0	0
N241	0	1.49	16052	0	5	0	0	0
N242	0	1.48	15992	0	5	0	0	0
N243	0	1.49	16055	0	5	0	0	0
N244	0	1.53	16489	0	7	0	0	0
N245	0	1.50	16214	0	10	1	0	0
N246	0	1.56	16796	0	11	1	0	0
N247	0	1.45	15687	0	21	6	0	0
N248	0	1.20	13011	0	4	0	0	0
N249	0	1.23	13320	0	10	1	0	0
N250	0	1.26	13633	0	11	1	0	0
N251	0	1.21	13097	0	10	1	0	0
N252	0	1.41	15204	0	5	0	0	0
N253	0	1.42	15366	0	9	0	0	0
N254	0	1.21	13046	0	5	0	0	0
N255	0	1.46	15782	0	14	1	0	0
N256	0	1.21	13071	0	11	1	0	0
N257	0	1.23	13289	0	10	1	0	0
N259	0	1.40	15112	0	23	10	0	0
N260	0	1.35	14534	0	20	6	0	0
N261	0	1.25	13455	0	11	2	0	0
N262	0	1.19	12895	0	9	0	0	0
N263	0	1.42	15346	0	10	1	0	0
N264	0	1.12	12041	0	3	0	0	0
N265	0	1.20	12924	0	4	0	0	0
W800	0	1.46	15808	0	9	0	0	0
W801	0	1.42	15365	0	13	1	0	0
OUT802	0	2.51	27050	0	498	28	28	28
N272	0	1.22	13185	0	8	0	0	0
N273	0	1.19	12842	0	6	0	0	0
N274	0	1.33	14364	0	4	0	0	0
N275	0	1.20	12990	0	4	0	0	0
N276	0	1.18	12713	0	8	0	0	0
N277	0	1.42	15313	0	9	0	0	0
N278	0	1.11	12020	0	3	0	0	0
N279	0	1.19	12798	0	6	0	0	0
N288	2	1.37	14803	0	501	14	5	2
N289	0	1.36	14682	0	31	4	2	0
N290	0	1.18	12712	0	87	7	2	1
N291	0	1.19	12823	0	10	1	0	0
N292	0	1.10	11839	0	5	0	0	0
N293	0	1.19	12865	0	8	0	0	0
N294	0	1.42	15326	0	11	1	0	0
N296	0	1.19	12863	0	10	1	0	0

N301	0	1.21	13035	0	9	0	0	0
N302	0	1.46	15774	0	11	1	0	0
N303	0	1.11	12034	0	4	0	0	0
N304	0	1.20	12918	0	10	1	0	0
N309	0	1.22	13123	0	7	0	0	0
N310	0	1.37	14818	0	9	0	0	0
N312	0	1.23	13265	0	10	1	0	0
YEL327	0	1.31	14100	0	294	55	16	5
N331	0	1.38	14853	0	47	23	8	1
W104	0	1.25	13470	0	5	0	0	0
N342	0	1.38	14944	0	9	0	0	0
N343	0	1.31	14194	0	5	0	0	0
N344	0	1.21	13092	0	11	1	0	0
N345	0	1.16	12531	0	4	0	0	0
N356	0	1.15	12370	0	6	0	0	0
N357	0	1.21	13036	0	6	0	0	0
N358	0	1.19	12856	0	5	0	0	0
N359	0	1.30	13998	0	4	0	0	0
N360	0	1.18	12777	0	31	1	1	0
N361	0	1.31	14159	0	13	2	0	0
N362	0	1.46	15795	0	17	1	0	0
N363	0	1.36	14683	0	15	1	0	0
N364	0	1.39	15013	0	6	0	0	0
N365	0	1.17	12677	0	38	1	1	0
N366	0	1.23	13233	0	12	1	0	0
N367	0	1.23	13309	0	11	1	0	0
N368	0	1.34	14486	0	10	1	0	0
N369	0	1.59	17153	0	14	1	0	0
N370	0	2.29	24767	0	19	2	0	0
N371	0	1.63	17565	0	12	1	0	0
N372	0	1.48	15967	0	10	1	0	0
N373	0	1.47	15885	0	24	6	0	0
N374	0	1.48	16019	0	23	3	0	0
N375	0	1.45	15651	0	20	9	0	0
N376	0	1.33	14363	0	11	2	0	0
N377	0	1.51	16310	0	13	1	0	0
N378	0	1.24	13373	0	46	5	2	1
N379	0	1.35	14627	0	19	3	0	0
N381	0	1.43	15424	0	13	1	0	0
N382	0	1.48	15983	0	14	1	0	0
N383	0	1.21	13025	0	11	1	0	0
N384	0	1.21	13107	0	11	1	0	0
N386	0	1.21	13047	0	10	1	0	0
N387	0	1.21	13030	0	11	1	0	0
N388	0	1.47	15844	0	26	1	1	0
N389	0	1.37	14835	0	31	15	3	0
N390	0	1.22	13227	0	10	1	0	0
N391	0	1.24	13420	0	13	3	0	0
N392	0	1.38	14924	0	44	12	2	1
N394	0	1.35	14615	0	24	5	0	0
N395	0	1.20	13006	0	5	0	0	0
N396	0	1.45	15686	0	6	0	0	0
N397	0	1.89	20418	0	8	0	0	0
N398	0	1.74	18781	0	8	0	0	0
N399	0	1.66	17947	0	23	3	0	0
N403	0	1.57	16926	0	21	4	0	0
N404	0	1.56	16793	0	26	6	2	0
N405	0	1.23	13264	0	10	1	0	0
N406	0	1.47	15905	0	13	2	0	0
N407	0	1.21	13055	0	5	0	0	0
N408	0	1.44	15518	0	25	7	1	0
N409	0	1.40	15118	0	29	9	1	0
N410	0	1.39	15004	0	45	6	1	1
N412	0	1.23	13288	0	12	1	0	0
N413	1	1.54	16642	0	501	2	1	1
N414	0	2.90	31367	0	387	133	111	99
N415	0	1.22	13188	0	10	1	0	0
N416	0	2.71	29262	0	344	143	120	108
N417	0	1.46	15795	0	5	0	0	0

N418	0	1.23	13281	0	10	1	0	0
N419	0	1.55	16743	0	6	0	0	0
N420	0	1.35	14557	0	8	0	0	0
N421	0	1.54	16634	0	11	1	0	0
N422	0	1.69	18230	0	12	1	0	0
N423	0	1.32	14278	0	11	1	0	0
N424	0	1.68	18134	0	37	2	1	0
N425	0	1.32	14249	0	11	1	0	0
N426	0	1.59	17187	0	8	0	0	0
N428	1	1.59	17182	0	501	6	2	2
N429	1	1.63	17554	0	501	2	1	1
N430	0	1.18	12754	0	9	0	0	0
N431	0	1.35	14568	0	6	0	0	0
N432	0	1.46	15762	0	11	1	0	0
N434	0	1.21	13035	0	11	1	0	0
N435	0	1.58	17098	0	14	1	0	0
N436	0	1.28	13817	0	11	1	0	0
N437	0	1.31	14129	0	11	1	0	0
N438	0	1.61	17409	0	6	0	0	0
N439	1	1.72	18529	0	501	3	1	1
N440	0	1.35	14562	0	9	0	0	0
N441	0	1.33	14321	0	11	1	0	0
N442	0	1.77	19076	0	434	3	1	1
N443	0	1.43	15402	0	5	0	0	0
N444	0	1.31	14171	0	11	1	0	0
N445	0	1.68	18133	0	8	0	0	0
N446	0	1.38	14873	0	5	0	0	0
N447	0	1.55	16732	0	6	0	0	0
N448	0	1.25	13491	0	11	1	0	0
N449	0	1.50	16199	0	6	0	0	0
N450	0	1.50	16231	0	9	0	0	0
N451	0	1.27	13711	0	11	1	0	0
N453	0	1.45	15695	0	11	1	0	0
N454	0	1.24	13374	0	12	1	0	0
N455	0	1.50	16196	0	5	0	0	0
N456	0	1.53	16482	0	9	0	0	0
N457	0	1.25	13476	0	10	1	0	0
N458	0	1.46	15791	0	5	0	0	0
N459	0	1.43	15488	0	6	0	0	0
N460	0	1.44	15518	0	5	0	0	0
N461	0	1.23	13284	0	41	1	1	1
N464	0	1.55	16783	0	10	1	0	0
N465	0	1.30	14062	0	9	0	0	0
N466	0	1.55	16775	0	9	0	0	0
N467	0	1.35	14601	0	9	0	0	0
N468	0	1.56	16813	0	13	1	0	0
N469	0	1.46	15758	0	10	1	0	0
N470	0	1.52	16409	0	22	1	0	0
N471	0	1.34	14522	0	5	0	0	0
N472	0	1.35	14562	0	5	0	0	0
N473	0	1.18	12762	0	4	0	0	0
N487	0	1.41	15261	0	7	0	0	0
N489	0	1.37	14788	0	5	0	0	0
N490	0	1.29	13876	0	11	1	0	0
N491	0	1.14	12281	0	14	1	0	0
N492	0	1.19	12805	0	9	0	0	0
N493	0	2.27	24560	0	500	24	24	24
N497	0	1.21	13066	0	11	1	0	0
N499	0	1.14	12340	0	5	0	0	0
N509	0	1.21	13050	0	13	1	0	0
N513	0	1.23	13325	0	6	0	0	0
N514	0	1.37	14786	0	8	0	0	0
N516	0	1.10	11907	0	4	0	0	0
N524	0	1.19	12873	0	7	0	0	0
N525	0	1.21	13079	0	6	0	0	0
N526	0	1.19	12867	0	4	0	0	0
N527	0	1.26	13580	0	5	0	0	0
N528	0	1.58	17105	0	15	3	0	0
N529	0	1.34	14515	0	41	6	1	1

N530	0	1.43	15413	0	6	0	0	0
N689	0	2.23	24095	0	498	22	22	22
N494	0	1.41	15219	0	11	1	0	0
N541	0	1.54	16665	0	14	1	0	0
EL329	0	1.32	14218	0	9	0	0	0
N427	0	1.54	16599	0	7	0	0	0
N411	0	1.43	15424	0	16	3	0	0
N295	0	1.11	12002	0	3	0	0	0
N311	0	1.13	12183	0	5	0	0	0
N462	0	1.32	14211	0	7	0	0	0

Total number of iterations for all junctions.. 3098636
Minimum number of possible iterations..... 2235186
Efficiency of the simulation..... 1.39
Good Efficiency

==========
| Extran Efficiency is an indicator of the efficiency of |
| the simulation. Ideal efficiency is one iteration per |
| time step. Altering the underrelaxation parameter, |
| lowering the time step, increasing the flow and head |
| tolerance are good ways of improving the efficiency, |
| another is lowering the internal time step. The lower the |
| efficiency generally the faster your model will run. |
| If your efficiency is less than 1.5 then you may try |
| increasing your time step so that your overall simulation |
| is faster. Ideal efficiency would be around 2.0 |
| |
| Good Efficiency < 1.5 mean iterations |
| Excellent Efficiency < 2.5 and > 1.5 mean iterations |
| Good Efficiency < 4.0 and > 2.5 mean iterations |
| Fair Efficiency < 7.5 and > 4.0 mean iterations |
| Poor Efficiency > 7.5 mean iterations |
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| Table E9 - JUNCTION SUMMARY STATISTICS |
| The Maximum area is only the area of the node, it |
| does not include the area of the surrounding conduits |
==========

Junction Name	Ground Elevation feet	Uppermost PipeCrown Elevation feet	Maximum Junction Elevation feet	Time of Occurence Hr. Min.	Feet of Surcharge at Max Elevation	Freeboard of node feet	Maximum Junction Area ft^2	Maximum Gutter Depth feet	Maximum Gutter Width feet	Maximum Gutter Velocity ft/s
N221	114.0300	106.8400	107.6026	2 47	0.7626	6.4274	12.5660	0.0000	0.0000	0.0000
N222	112.0800	106.4400	106.9939	2 47	0.5539	5.0861	12.5660	0.0000	0.0000	0.0000
N223	106.2600	103.0600	102.1159	4 27	0.0000	4.1441	12.5660	0.0000	0.0000	0.0000
N224	106.3300	99.7200	100.2909	4 26	0.5709	6.0391	12.5660	0.0000	0.0000	0.0000
N227	109.4000	99.3400	100.9720	4 27	1.6320	8.4280	12.5660	0.0000	0.0000	0.0000
N228	102.4000	99.0300	100.6100	4 23	1.5800	1.7900	12.5660	0.0000	0.0000	0.0000
N230	104.3900	100.3300	98.1694	4 24	0.0000	6.2206	12.5660	0.0000	0.0000	0.0000
N231	104.4000	100.8400	100.2872	1 2	0.0000	4.1128	12.5660	0.0000	0.0000	0.0000
N233	100.3500	96.9200	95.2407	4 25	0.0000	5.1093	12.5660	0.0000	0.0000	0.0000

N234	100.0000	89.6000	89.4100	0	0	0.0000	10.5900	12.5660	0.0000	0.0000
0.0000										
N235	138.1500	120.6000	119.8642	2	1	0.0000	18.2858	12.5660	0.0000	0.0000
0.0000										
N236	126.2300	120.4100	118.8903	5	0	0.0000	7.3397	12.5660	0.0000	0.0000
0.0000										
N237	124.2900	118.8600	117.6596	6	0	0.0000	6.6304	12.5660	0.0000	0.0000
0.0000										
N238	122.3500	117.5100	117.5825	6	0	0.0725	4.7675	12.5660	0.0000	0.0000
0.0000										
N239	125.0800	118.6900	118.5578	6	0	0.0000	6.5222	12.5660	0.0000	0.0000
0.0000										
N240	122.0900	117.6200	118.1994	6	0	0.5794	3.8906	12.5660	0.0000	0.0000
0.0000										
N241	119.6000	115.0600	112.5184	6	0	0.0000	7.0816	12.5660	0.0000	0.0000
0.0000										
N242	115.6700	111.1300	110.4305	6	0	0.0000	5.2395	12.5660	0.0000	0.0000
0.0000										
N243	112.6900	109.1100	108.0703	6	0	0.0000	4.6197	12.5660	0.0000	0.0000
0.0000										
N244	109.7000	106.3500	106.2736	6	0	0.0000	3.4264	12.5660	0.0000	0.0000
0.0000										
N245	107.6800	104.8800	104.9361	6	0	0.0561	2.7439	12.5660	0.0000	0.0000
0.0000										
N246	104.7000	101.8100	102.6459	6	0	0.8359	2.0541	12.5660	0.0000	0.0000
0.0000										
N247	107.2000	100.3700	101.6618	6	0	1.2918	5.5382	12.5660	0.0000	0.0000
0.0000										
N248	116.0000	112.4800	112.5280	6	0	0.0480	3.4720	12.5660	0.0000	0.0000
0.0000										
N249	108.6300	105.6200	106.7649	6	0	1.1449	1.8651	12.5660	0.0000	0.0000
0.0000										
N250	113.4000	102.1400	103.6254	6	0	1.4854	9.7746	12.5660	0.0000	0.0000
0.0000										
N251	127.0200	116.3800	116.6527	1	0	0.2727	10.3673	12.5660	0.0000	0.0000
0.0000										
N252	121.2500	116.0600	115.2810	1	0	0.0000	5.9690	12.5660	0.0000	0.0000
0.0000										
N253	119.0300	113.3300	110.4633	1	1	0.0000	8.5667	12.5660	0.0000	0.0000
0.0000										
N254	120.4000	113.8300	113.3534	1	1	0.0000	7.0466	12.5660	0.0000	0.0000
0.0000										
N255	113.9100	108.0500	106.4521	6	0	0.0000	7.4579	12.5660	0.0000	0.0000
0.0000										
N256	119.8800	108.4100	108.0734	1	0	0.0000	11.8066	12.5660	0.0000	0.0000
0.0000										
N257	118.4000	108.6100	108.4472	1	2	0.0000	9.9528	12.5660	0.0000	0.0000
0.0000										
N259	102.6900	99.6600	99.7331	6	0	0.0731	2.9569	12.5660	0.0000	0.0000
0.0000										
N260	101.1000	99.5000	99.1000	0	0	0.0000	2.0000	12.5660	0.0000	0.0000
0.0000										
N261	106.3800	99.9300	99.9112	6	0	0.0000	6.4688	12.5660	0.0000	0.0000
0.0000										
N262	110.4000	105.8800	105.4930	1	0	0.0000	4.9070	12.5660	0.0000	0.0000
0.0000										
N263	109.4000	105.4600	104.8401	1	0	0.0000	4.5599	12.5660	0.0000	0.0000
0.0000										
N264	106.0000	97.6400	99.0900	0	0	1.4500	6.9100	12.5660	0.0000	0.0000
0.0000										
N265	108.4000	105.8600	105.4066	1	0	0.0000	2.9934	12.5660	0.0000	0.0000
0.0000										
W800	110.0300	104.0100	105.6128	6	0	1.6028	4.4172	12.5660	0.0000	0.0000
0.0000										
W801	106.4000	103.4500	103.9333	6	0	0.4833	2.4667	12.5660	0.0000	0.0000
0.0000										
OUT802	103.0000	103.0000	103.0000	0	50	0.0000	0.0000	12.5660	0.0000	0.0000
0.0000										
N272	102.0600	98.1000	96.8502	2	19	0.0000	5.2098	12.5660	0.0000	0.0000

N273	104.4000	98.6800	98.1052	1	37	0.0000	6.2948	12.5660	0.0000	0.0000
N274	100.3100	97.3300	95.7732	2	19	0.0000	4.5368	12.5660	0.0000	0.0000
N275	101.7000	89.3500	89.4200	0	0	0.0700	12.2800	12.5660	0.0000	0.0000
N276	100.4000	95.2500	94.7428	1	2	0.0000	5.6572	12.5660	0.0000	0.0000
N277	99.4000	94.4400	93.7152	1	1	0.0000	5.6848	12.5660	0.0000	0.0000
N278	96.0000	79.0000	81.4800	0	0	2.4800	14.5200	12.5660	0.0000	0.0000
N279	98.4000	95.1200	94.6677	1	0	0.0000	3.7323	12.5660	0.0000	0.0000
N288	96.4000	81.5300	86.2668	0	0	4.7368	10.1332	12.5660	0.0000	0.0000
N289	96.4000	81.5000	81.4700	0	0	0.0000	14.9300	12.5660	0.0000	0.0000
N290	96.4000	79.8500	82.0645	0	1	2.2145	14.3355	12.5660	0.0000	0.0000
N291	96.2900	93.4200	92.4485	1	0	0.0000	3.8415	12.5660	0.0000	0.0000
N292	94.0000	78.1000	81.4700	0	0	3.3700	12.5300	12.5660	0.0000	0.0000
N293	126.4000	119.9200	119.5370	1	0	0.0000	6.8630	12.5660	0.0000	0.0000
N294	123.9600	119.3000	118.6155	1	0	0.0000	5.3445	12.5660	0.0000	0.0000
N296	122.4000	119.9800	119.6047	1	0	0.0000	2.7953	12.5660	0.0000	0.0000
N301	128.4000	123.9000	124.8193	1	29	0.9193	3.5807	12.5660	0.0000	0.0000
N302	128.3900	123.2800	122.6751	1	27	0.0000	5.7149	12.5660	0.0000	0.0000
N303	124.3000	111.6000	113.2700	0	0	1.6700	11.0300	12.5660	0.0000	0.0000
N304	126.4000	123.9500	123.5620	1	0	0.0000	2.8380	12.5660	0.0000	0.0000
N309	119.4000	114.1500	113.8197	1	3	0.0000	5.5803	12.5660	0.0000	0.0000
N310	116.6600	113.5100	112.6569	1	38	0.0000	4.0031	12.5660	0.0000	0.0000
N312	116.4000	114.2100	114.0002	1	37	0.0000	2.3998	12.5660	0.0000	0.0000
YEL327	101.0000	99.5000	101.1992	0	5	1.6992	0.0000	6097.1203	0.0000	0.0000
N331	101.0000	96.2000	98.4100	0	0	2.2100	2.5900	12.5660	0.0000	0.0000
W104	108.3300	106.6400	106.3439	6	0	0.0000	1.9861	12.5660	0.0000	0.0000
N342	106.8400	101.7200	100.8276	1	0	0.0000	6.0124	12.5660	0.0000	0.0000
N343	104.4000	101.5000	100.5155	1	1	0.0000	3.8845	12.5660	0.0000	0.0000
N344	112.0700	102.1100	101.7816	1	0	0.0000	10.2884	12.5660	0.0000	0.0000
N345	128.1400	119.8300	119.2319	6	0	0.0000	8.9081	12.5660	0.0000	0.0000
N356	128.3900	126.3200	125.6081	2	35	0.0000	2.7819	12.5660	0.0000	0.0000
N357	126.5200	123.9800	123.3977	2	43	0.0000	3.1223	12.5660	0.0000	0.0000
N358	128.1900	121.8200	121.3926	2	48	0.0000	6.7974	12.5660	0.0000	0.0000
N359	126.7800	121.0900	120.3681	2	50	0.0000	6.4119	12.5660	0.0000	0.0000
N360	121.5000	113.8000	115.3200	0	0	1.5200	6.1800	12.5660	0.0000	0.0000

N361	133.4000	129.2400	128.3208	1	1	0.0000	5.0792	12.5660	0.0000	0.0000
0.0000										
N362	133.8500	129.1300	128.1343	1	1	0.0000	5.7157	12.5660	0.0000	0.0000
0.0000										
N363	135.6800	128.7800	127.2811	1	1	0.0000	8.3989	12.5660	0.0000	0.0000
0.0000										
N364	134.3100	128.5100	125.8533	1	2	0.0000	8.4567	12.5660	0.0000	0.0000
0.0000										
N365	129.0000	120.9000	122.5200	0	0	1.6200	6.4800	12.5660	0.0000	0.0000
0.0000										
N366	136.4000	129.1200	128.9836	1	0	0.0000	7.4164	12.5660	0.0000	0.0000
0.0000										
N367	131.4000	129.3300	129.2163	1	32	0.0000	2.1837	12.5660	0.0000	0.0000
0.0000										
N368	130.1000	126.7600	127.1537	2	32	0.3937	2.9463	12.5660	0.0000	0.0000
0.0000										
N369	130.1500	126.6700	127.0975	2	32	0.4275	3.0525	12.5660	0.0000	0.0000
0.0000										
N370	130.0300	125.7000	126.8529	3	39	1.1529	3.1771	12.5660	0.0000	0.0000
0.0000										
N371	130.3200	125.7600	126.8961	2	53	1.1361	3.4239	12.5660	0.0000	0.0000
0.0000										
N372	131.8100	125.3400	126.0663	2	36	0.7263	5.7437	12.5660	0.0000	0.0000
0.0000										
N373	131.3300	124.9700	125.3076	2	31	0.3376	6.0224	12.5660	0.0000	0.0000
0.0000										
N374	132.8200	124.6000	124.5274	2	32	0.0000	8.2926	12.5660	0.0000	0.0000
0.0000										
N375	132.2300	124.4800	124.2706	2	32	0.0000	7.9594	12.5660	0.0000	0.0000
0.0000										
N376	130.4700	124.9000	124.5647	2	32	0.0000	5.9053	12.5660	0.0000	0.0000
0.0000										
N377	130.5100	124.8200	124.5069	2	32	0.0000	6.0031	12.5660	0.0000	0.0000
0.0000										
N378	129.1900	123.7700	122.6047	0	1	0.0000	6.5853	12.5660	0.0000	0.0000
0.0000										
N379	128.2000	122.9000	122.5300	0	0	0.0000	5.6700	12.5660	0.0000	0.0000
0.0000										
N381	128.4700	126.2600	125.8458	4	1	0.0000	2.6242	12.5660	0.0000	0.0000
0.0000										
N382	128.0000	124.8600	124.5769	4	10	0.0000	3.4231	12.5660	0.0000	0.0000
0.0000										
N383	132.3000	126.5300	126.2887	1	0	0.0000	6.0113	12.5660	0.0000	0.0000
0.0000										
N384	131.1800	126.6400	126.3795	1	0	0.0000	4.8005	12.5660	0.0000	0.0000
0.0000										
N386	132.1700	125.1400	124.9805	4	12	0.0000	7.1895	12.5660	0.0000	0.0000
0.0000										
N387	132.9300	125.2300	124.8690	4	6	0.0000	8.0610	12.5660	0.0000	0.0000
0.0000										
N388	128.2100	123.9500	123.6546	4	4	0.0000	4.5554	12.5660	0.0000	0.0000
0.0000										
N389	128.3800	123.1100	123.0494	0	1	0.0000	5.3306	12.5660	0.0000	0.0000
0.0000										
N390	132.4000	123.8300	123.6245	1	0	0.0000	8.7755	12.5660	0.0000	0.0000
0.0000										
N391	131.4000	123.6900	124.1512	1	25	0.4612	7.2488	12.5660	0.0000	0.0000
0.0000										
N392	129.2100	122.8300	122.7598	0	1	0.0000	6.4502	12.5660	0.0000	0.0000
0.0000										
N394	130.0700	121.4000	122.5300	0	0	1.1300	7.5400	12.5660	0.0000	0.0000
0.0000										
N395	126.4000	119.6100	120.8359	6	0	1.2259	5.5641	12.5660	0.0000	0.0000
0.0000										
N396	124.6000	119.1800	118.9722	6	0	0.0000	5.6278	12.5660	0.0000	0.0000
0.0000										
N397	124.9400	118.8100	118.3974	6	0	0.0000	6.5426	12.5660	0.0000	0.0000
0.0000										
N398	128.0400	119.0600	118.6571	6	0	0.0000	9.3829	12.5660	0.0000	0.0000

N399	124.3000	118.6100	118.2769	6	0	0.0000	6.0231	12.5660	0.0000	0.0000
N403	125.5000	118.3000	118.0217	6	0	0.0000	7.4783	12.5660	0.0000	0.0000
N404	126.6900	117.9800	117.7558	6	0	0.0000	8.9342	12.5660	0.0000	0.0000
N405	131.2500	117.6300	118.3387	6	0	0.7087	12.9113	12.5660	0.0000	0.0000
N406	124.4900	117.6700	117.4640	6	0	0.0000	7.0260	12.5660	0.0000	0.0000
N407	132.5800	118.0000	117.7684	6	0	0.0000	14.8116	12.5660	0.0000	0.0000
N408	125.2200	117.2800	117.0058	6	0	0.0000	8.2142	12.5660	0.0000	0.0000
N409	123.3200	116.9800	116.5065	6	0	0.0000	6.8135	12.5660	0.0000	0.0000
N410	124.2200	116.6200	115.8648	6	0	0.0000	8.3552	12.5660	0.0000	0.0000
N412	125.2400	117.5500	118.9854	6	0	1.4354	6.2546	12.5660	0.0000	0.0000
N413	123.5000	118.8300	118.7039	6	0	0.0000	4.7961	12.5660	0.0000	0.0000
N414	122.0000	119.3700	118.7807	6	0	0.0000	3.2193	12.5660	0.0000	0.0000
N415	124.3800	117.5800	119.0784	6	0	1.4984	5.3016	12.5660	0.0000	0.0000
N416	125.2100	118.0800	119.0589	6	0	0.9789	6.1511	12.5660	0.0000	0.0000
N417	121.7600	119.5700	118.9330	6	0	0.0000	2.8270	12.5660	0.0000	0.0000
N418	124.4000	121.1500	120.8207	1	0	0.0000	3.5793	12.5660	0.0000	0.0000
N419	120.2000	112.6600	113.4701	6	0	0.8101	6.7299	12.5660	0.0000	0.0000
N420	123.9000	113.9900	114.7633	6	0	0.7733	9.1367	12.5660	0.0000	0.0000
N421	121.2100	113.7500	114.5335	6	0	0.7835	6.6765	12.5660	0.0000	0.0000
N422	118.3600	111.6300	112.4791	6	0	0.8491	5.8809	12.5660	0.0000	0.0000
N423	120.4000	111.8700	112.6795	6	0	0.8095	7.7205	12.5660	0.0000	0.0000
N424	118.5600	111.0100	112.0680	6	0	1.0580	6.4920	12.5660	0.0000	0.0000
N425	120.3900	111.3100	112.3959	6	0	1.0859	7.9941	12.5660	0.0000	0.0000
N426	117.2400	110.4500	111.6343	6	0	1.1843	5.6057	12.5660	0.0000	0.0000
N428	114.7900	109.9200	111.1574	6	0	1.2374	3.6326	12.5660	0.0000	0.0000
N429	116.1800	109.5200	110.7941	6	0	1.2741	5.3859	12.5660	0.0000	0.0000
N430	128.2200	120.0000	119.6069	1	0	0.0000	8.6131	12.5660	0.0000	0.0000
N431	123.0700	119.4000	118.8193	6	0	0.0000	4.2507	12.5660	0.0000	0.0000
N432	120.7300	119.5700	119.1104	6	0	0.0000	1.6196	12.5660	0.0000	0.0000
N434	126.2700	119.8000	119.5280	1	0	0.0000	6.7420	12.5660	0.0000	0.0000
N435	120.2500	112.1800	112.9610	6	0	0.7810	7.2890	12.5660	0.0000	0.0000
N436	125.4000	112.5700	113.5338	6	0	0.9638	11.8662	12.5660	0.0000	0.0000
N437	122.9000	112.4200	113.1916	6	0	0.7716	9.7084	12.5660	0.0000	0.0000
N438	119.8200	111.5800	112.5301	6	0	0.9501	7.2899	12.5660	0.0000	0.0000

N439	118.1400	110.6500	111.8621	6	0	1.2121	6.2779	12.5660	0.0000	0.0000
0.0000										
N440	122.4000	111.0500	112.0562	6	0	1.0062	10.3438	12.5660	0.0000	0.0000
0.0000										
N441	120.9000	110.9800	112.2083	6	0	1.2283	8.6917	12.5660	0.0000	0.0000
0.0000										
N442	116.2500	109.9700	111.2807	6	0	1.3107	4.9693	12.5660	0.0000	0.0000
0.0000										
N443	118.4000	110.3800	111.3435	6	0	0.9635	7.0565	12.5660	0.0000	0.0000
0.0000										
N444	118.4000	110.2800	111.6425	6	0	1.3625	6.7575	12.5660	0.0000	0.0000
0.0000										
N445	113.3000	108.9800	109.7503	6	0	0.7703	3.5497	12.5660	0.0000	0.0000
0.0000										
N446	118.4000	109.4900	109.8312	6	0	0.3412	8.5688	12.5660	0.0000	0.0000
0.0000										
N447	113.2000	108.5500	108.8835	6	0	0.3335	4.3165	12.5660	0.0000	0.0000
0.0000										
N448	125.6200	119.7700	120.8468	3	38	1.0768	4.7732	12.5660	0.0000	0.0000
0.0000										
N449	125.6000	119.2400	120.2831	3	39	1.0431	5.3169	12.5660	0.0000	0.0000
0.0000										
N450	125.2200	121.7400	122.5957	3	39	0.8557	2.6243	12.5660	0.0000	0.0000
0.0000										
N451	126.4000	122.2700	123.0855	3	39	0.8155	3.3145	12.5660	0.0000	0.0000
0.0000										
N453	119.8300	114.7600	115.6961	6	0	0.9361	4.1339	12.5660	0.0000	0.0000
0.0000										
N454	125.4000	115.2900	116.4642	6	0	1.1742	8.9358	12.5660	0.0000	0.0000
0.0000										
N455	118.2800	112.9300	113.0201	6	0	0.0901	5.2599	12.5660	0.0000	0.0000
0.0000										
N456	116.2800	111.5100	112.1895	6	0	0.6795	4.0905	12.5660	0.0000	0.0000
0.0000										
N457	122.4000	112.0200	112.4454	6	0	0.4254	9.9546	12.5660	0.0000	0.0000
0.0000										
N458	114.0000	109.8900	109.7789	6	0	0.0000	4.2211	12.5660	0.0000	0.0000
0.0000										
N459	110.2500	108.1100	107.6629	6	0	0.0000	2.5871	12.5660	0.0000	0.0000
0.0000										
N460	110.1000	107.6100	105.0976	6	0	0.0000	5.0024	12.5660	0.0000	0.0000
0.0000										
N461	110.1000	97.6000	98.4100	0	0	0.8100	11.6900	12.5660	0.0000	0.0000
0.0000										
N464	132.5200	126.8400	128.1440	5	52	1.3040	4.3760	12.5660	0.0000	0.0000
0.0000										
N465	135.1200	128.1500	129.7527	6	59	1.6027	5.3673	12.5660	0.0000	0.0000
0.0000										
N466	131.9700	127.9400	129.4984	6	59	1.5584	2.4716	12.5660	0.0000	0.0000
0.0000										
N467	130.9600	127.3000	128.2210	5	47	0.9210	2.7390	12.5660	0.0000	0.0000
0.0000										
N468	129.9500	125.5900	126.0007	5	57	0.4107	3.9493	12.5660	0.0000	0.0000
0.0000										
N469	128.6600	124.6600	120.4426	5	29	0.0000	8.2174	12.5660	0.0000	0.0000
0.0000										
N470	127.0000	120.4600	118.6771	6	0	0.0000	8.3229	12.5660	0.0000	0.0000
0.0000										
N471	133.3000	125.8800	126.0884	5	42	0.2084	7.2116	12.5660	0.0000	0.0000
0.0000										
N472	129.4500	125.9400	126.0559	5	42	0.1159	3.3941	12.5660	0.0000	0.0000
0.0000										
N473	126.2300	121.0700	120.5302	5	34	0.0000	5.6998	12.5660	0.0000	0.0000
0.0000										
N487	122.2200	120.5700	119.5908	6	0	0.0000	2.6292	12.5660	0.0000	0.0000
0.0000										
N489	124.6300	122.3300	120.8720	2	38	0.0000	3.7580	12.5660	0.0000	0.0000
0.0000										
N490	125.9100	123.6500	123.4952	2	21	0.0000	2.4148	12.5660	0.0000	0.0000

	N491	127.1900	125.7700	125.0264	2	2	0.0000	2.1636	12.5660	0.0000	0.0000
0.0000											
	N492	130.4000	127.3400	128.1178	1	0	0.7778	2.2822	12.5660	0.0000	0.0000
0.0000											
	N493	129.9000	127.0400	127.0400	0	35	0.0000	2.8600	12.5660	0.0000	0.0000
0.0000											
	N497	112.8000	108.8500	108.2197	1	0	0.0000	4.5803	12.5660	0.0000	0.0000
0.0000											
	N499	111.0500	92.2000	98.4100	0	0	6.2100	12.6400	12.5660	0.0000	0.0000
0.0000											
	N509	117.9000	110.3800	112.4401	1	0	2.0601	5.4599	12.5660	0.0000	0.0000
0.0000											
	N513	117.8200	111.7600	111.3361	1	0	0.0000	6.4839	12.5660	0.0000	0.0000
0.0000											
	N514	117.9000	111.6100	108.7565	1	1	0.0000	9.1435	12.5660	0.0000	0.0000
0.0000											
	N516	111.0000	92.0000	94.5300	0	0	2.5300	16.4700	12.5660	0.0000	0.0000
0.0000											
	N524	136.4600	134.4500	133.7961	2	16	0.0000	2.6639	12.5660	0.0000	0.0000
0.0000											
	N525	136.2000	132.1700	131.6772	2	32	0.0000	4.5228	12.5660	0.0000	0.0000
0.0000											
	N526	137.2000	134.4600	133.8039	2	24	0.0000	3.3961	12.5660	0.0000	0.0000
0.0000											
	N527	136.0000	131.6000	131.1070	2	32	0.0000	4.8930	12.5660	0.0000	0.0000
0.0000											
	N528	129.5000	126.1600	126.9363	4	15	0.7763	2.5637	12.5660	0.0000	0.0000
0.0000											
	N529	134.2600	124.1400	123.5298	2	33	0.0000	10.7302	12.5660	0.0000	0.0000
0.0000											
	N530	109.2400	103.4600	104.1241	6	0	0.6641	5.1159	12.5660	0.0000	0.0000
0.0000											
	N689	123.2700	119.5000	119.5000	0	39	0.0000	3.7700	12.5660	0.0000	0.0000
0.0000											
	N494	126.0000	123.1600	122.3558	2	37	0.0000	3.6442	12.5660	0.0000	0.0000
0.0000											
	N541	120.0000	113.5900	114.2861	6	0	0.6961	5.7139	12.5660	0.0000	0.0000
0.0000											
	EL329	118.0000	114.0200	114.9266	6	0	0.9066	3.0734	12.5660	0.0000	0.0000
0.0000											
	N427	118.5000	111.1400	112.6510	6	0	1.5110	5.8490	12.5660	0.0000	0.0000
0.0000											
	N411	128.9500	116.5000	115.6200	0	0	0.0000	13.3300	12.5660	0.0000	0.0000
0.0000											
	N295	120.1000	107.9300	110.5500	0	0	2.6200	9.5500	12.5660	0.0000	0.0000
0.0000											
	N311	114.3000	105.3500	108.5200	0	0	3.1700	5.7800	12.5660	0.0000	0.0000
0.0000											
	N462	133.0000	129.2800	129.7121	5	58	0.4321	3.2879	12.5660	0.0000	0.0000
0.0000											

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| Table E10 - CONDUIT SUMMARY STATISTICS |
| Note: The peak flow may be less than the design flow |
| and the conduit may still surcharge because of the |
| downstream boundary conditions. |
| |
| * denotes an open conduit that has been overtopped |
| this is a potential source of severe errors |
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		Conduit	Maximum	Maximum	Time		Maximum	Time	Ratio of	Maximum Water	Ratio
	Design	Design	Vertical	Computed	of		Computed	of	Max. to	Elev at Pipe Ends	d/D
Conduit	Flow	Velocity	Depth	Flow	Occurence		Velocity	Occurence	Design	Upstream	Dwnstrm	US DS
Name	(cfs)	(ft/s)	(in)	(cfs)	Hr.	Min.	(ft/s)	Hr. Min.	Flow	(ft)	(ft)	

	L210	2.3341	2.9719	12.0000	2.8911	2	40	3.7435	0	56	1.2386	107.6026	106.9939
1.763	1.554												
	L211	2.3583	3.0027	12.0000	3.1354	2	46	4.0313	2	46	1.3295	106.9939	102.8186
2.554	0.759												
	L212	3.6820	3.0003	15.0000	3.2978	4	22	3.3046	0	56	0.8957	102.1159	100.2909
1.045	1.457												
	L213	2.3504	2.9927	12.0000	2.4916	1	18	3.2327	0	40	1.0601	100.9720	100.2909
2.632	2.571												
	L214	5.2561	2.9743	18.0000	5.3717	1	18	3.0198	1	18	1.0220	100.6100	100.2909
2.053	2.047												
	L217	2.3778	3.0275	12.0000	0.9501	1	2	2.8265	1	3	0.3996	100.2872	99.7386
0.447	0.409												
	L220	7.2421	3.0109	21.0000	11.2776	4	23	4.6465	4	27	1.5572	100.2909	98.1694
1.898	1.194												
	L221	9.4105	2.9955	24.0000	13.2165	4	25	4.1620	4	25	1.4044	98.1694	96.2277
1.170	0.654												
	L222	37.9531	12.0808	24.0000	13.3950	4	24	9.6249	4	16	0.3529	95.2407	89.4100
0.410	0.905												
	L223	1.5862	2.0196	12.0000	0.2305	2	1	1.4362	5	2	0.1453	119.8642	119.6069
0.264	0.197												
	L224	1.5676	1.9959	12.0000	0.2305	5	1	1.3309	5	1	0.1470	118.8903	118.0569
0.280	0.197												
	L225	1.5703	1.9993	12.0000	0.2305	6	0	1.3999	0	57	0.1468	117.6596	117.5825
0.400	1.072												
	L226	1.5717	2.0011	12.0000	0.9294	6	0	1.8892	0	58	0.5913	118.5578	118.1994
0.868	1.579												
	L227	1.5698	1.9988	12.0000	1.5845	6	0	2.2884	0	55	1.0093	118.1994	117.5825
1.579	1.572												
	L228	1.5683	1.9969	12.0000	2.4888	6	0	3.2325	6	0	1.5869	117.5825	114.7356
2.472	0.676												
	L229	2.8478	2.3206	15.0000	2.9466	6	0	2.5939	2	7	1.0347	112.5184	110.5696
0.927	0.552												
	L230	2.4656	2.0091	15.0000	3.4595	6	0	2.9207	6	0	1.4031	110.4305	108.6104
1.440	0.600												
	L231	2.4434	1.9910	15.0000	3.8015	6	0	3.0945	1	25	1.5558	108.0703	106.2736
1.768	0.939												
	L232	3.5621	2.0157	18.0000	6.0390	6	0	3.3992	6	0	1.6954	106.2736	104.9361
1.616	1.037												
	L233	5.2943	2.9960	18.0000	6.3287	6	0	3.5596	6	0	1.1954	104.9361	102.6459
2.004	1.557												
	L234	10.3141	3.2831	24.0000	9.4131	6	0	2.9858	6	0	0.9126	102.6459	101.6618
1.543	1.646												
	L235	1.5127	1.9260	12.0000	0.4478	6	59	1.0903	0	14	0.2960	112.5280	112.5184
1.048	1.158												
	L236	1.5658	1.9936	12.0000	2.1260	6	59	2.6939	1	12	1.3578	106.7649	106.2736
2.145	1.924												
	L237	2.3516	2.9941	12.0000	3.0846	1	6	3.8984	1	6	1.3117	103.6254	102.6459
2.485	2.086												
	L238	2.3553	2.9988	12.0000	3.6943	1	0	4.7555	1	0	1.5685	116.6527	115.8783
1.273	0.818												
	L239	2.3692	3.0165	12.0000	4.0636	1	0	5.1858	1	0	1.7152	115.2810	113.1820
2.221	0.852												
	L240	2.3544	2.9977	12.0000	1.2377	1	1	3.0137	1	1	0.5257	113.3534	112.7991
0.523	0.469												
	L241	3.6815	3.0000	15.0000	5.3649	1	1	4.4351	1	1	1.4572	110.4633	107.7384
1.907	0.751												
	L242	2.3529	2.9958	12.0000	1.8517	1	0	3.3991	1	1	0.7870	108.0734	107.6293
0.663	0.579												
	L243	2.3707	3.0185	12.0000	2.4831	1	2	3.6078	1	3	1.0474	108.4472	107.7248
0.837	0.675												
	L246	14.7213	2.9990	30.0000	24.3602	6	0	4.9409	6	0	1.6548	101.6618	99.7331
1.517	1.029												
	L247	14.8246	3.0200	30.0000	28.8013	6	0	5.8520	6	0	1.9428	99.7331	99.1000
1.029	0.840												
	L248	2.3403	2.9798	12.0000	1.9845	1	6	2.9473	0	51	0.8480	99.9112	99.7331
0.981	1.073												
	L249	2.3421	2.9821	12.0000	1.5797	1	0	3.2812	1	0	0.6745	105.4930	104.8401

0.613	0.380													
		L250	9.7769	12.4483	12.0000	3.0002	1	0	9.2028	1	0	0.3069	104.8401	99.0900
0.380	2.450													
		L251	2.3510	2.9934	12.0000	1.3049	1	0	3.0871	1	0	0.5551	105.4066	104.8401
0.547	0.380													
		L254	3.5193	1.9915	18.0000	4.4560	6	0	2.5052	6	0	1.2662	105.6128	103.9333
2.069	1.656													
		L255	6.1931	1.9713	24.0000	9.0488	6	0	2.8562	6	0	1.4611	103.9333	103.0000
1.242	1.000													
		L258	2.3516	2.9941	12.0000	0.8529	1	37	2.7127	2	21	0.3627	98.1052	97.4860
0.425	0.386													
		L259	7.1885	2.9886	21.0000	1.0482	2	19	1.9946	2	21	0.1458	96.8502	95.7732
0.286	0.110													
		L260	48.4905	20.1600	21.0000	1.2538	2	2	3.3303	2	2	0.0259	95.7732	89.4200
0.110	1.040													
		L261	2.3656	3.0120	12.0000	0.9792	1	2	2.6864	1	3	0.4139	94.7428	93.7152
0.493	0.275													
		L262	13.9175	17.7203	12.0000	2.3040	1	1	9.6809	1	1	0.1655	93.7152	81.4800
0.275	3.480													
		L263	2.3540	2.9972	12.0000	1.1997	1	0	2.8987	1	1	0.5097	94.6677	93.7152
0.548	0.275													
		L272	50.6250	3.1831	54.0000	-38.0431	0	0	-1.0698	0	1	-0.7515	86.2117	81.4700
2.040	0.993													
		L273	7.1817	2.9858	21.0000	-12.9886	0	0	3.9016	1	0	-1.8086	82.0645	86.2117
2.265	4.818													
		L274	32.1290	18.1813	18.0000	8.5560	1	0	12.5805	1	0	0.2663	92.4485	81.4700
0.352	3.247													
		L275	2.3504	2.9927	12.0000	1.5056	1	0	3.1444	1	0	0.6406	119.5370	118.6155
0.617	0.316													
		L277	2.3540	2.9972	12.0000	1.5123	1	0	3.1148	1	0	0.6424	119.6047	118.6155
0.625	0.316													
		L281	2.3504	2.9927	12.0000	3.4219	1	29	4.6251	1	29	1.4559	124.8193	122.6751
1.919	0.395													
		L282	15.2316	19.3934	12.0000	5.0178	1	25	14.7953	1	26	0.3294	122.6751	113.2700
0.395	2.670													
		L283	2.3672	3.0140	12.0000	1.4971	1	0	3.1057	1	1	0.6325	123.5620	122.6751
0.612	0.395													
		L287	2.3660	3.0125	12.0000	1.8249	1	3	3.3193	1	3	0.7713	113.8197	113.0849
0.670	0.575													
		L289	2.3583	3.0027	12.0000	2.2642	1	37	3.4711	1	37	0.9601	114.0002	113.1535
0.790	0.644													
		L308	157.6117	16.3818	42.0000	101.7922	0	5	15.8894	0	4	0.6458	101.1992	98.4100
1.485	1.631													
		L317	2.8556	2.3269	15.0000	1.3573	6	0	1.8303	0	48	0.4753	106.3439	105.6128
0.763	2.482													
		L319	5.2963	2.9971	18.0000	1.8801	1	1	2.8574	1	1	0.3550	100.8276	100.5155
0.405	0.344													
		L320	2.3558	2.9995	12.0000	1.8798	1	0	3.4037	1	1	0.7979	101.7816	101.3039
0.672	0.584													
		L334	2.3558	2.9995	12.0000	0.4265	2	35	2.1349	1	11	0.1810	125.6081	123.3977
0.288	0.418													
		L335	2.3560	2.9998	12.0000	0.8586	2	43	2.6318	2	43	0.3644	123.3977	121.3926
0.418	0.573													
		L336	2.3597	3.0044	12.0000	1.2917	2	49	2.9603	2	50	0.5474	121.3926	120.3681
0.573	0.278													
		L337	7.6425	9.7307	12.0000	1.2917	2	49	5.3855	2	47	0.1690	120.3681	115.3200
0.278	2.520													
		L338	20.9182	2.9593	36.0000	21.2523	1	1	4.0864	1	0	1.0160	128.3208	128.1343
0.694	0.668													
		L339	21.2087	3.0004	36.0000	21.2525	1	2	4.3654	1	2	1.0021	128.1343	127.2811
0.668	0.500													
		L340	29.0054	3.0148	42.0000	30.1728	1	2	5.6976	1	2	1.0402	127.2811	125.8533
0.572	0.241													
		L341	237.0096	24.6343	42.0000	30.1726	1	2	11.7326	1	2	0.1273	125.8533	122.5200
0.241	1.463													
		L342	3.6963	3.0120	15.0000	4.5877	1	0	4.0620	1	1	1.2412	128.9836	128.3977
0.891	0.694													
		L343	2.3619	3.0073	12.0000	2.6326	1	33	3.6540	1	33	1.1146	129.2163	128.4750
0.886	0.695													

	L344	14.9332	3.0422	30.0000	12.3311	3	34	4.0977	0	43	0.8257	127.1537	127.0975
1.157	1.171												
	L346	30.2053	3.1395	42.0000	25.6125	1	5	2.6688	0	8	0.8479	126.8961	126.8529
1.325	1.329												
	L347	37.5829	2.9908	48.0000	56.3355	3	33	4.4563	3	33	1.4990	126.8529	126.0663
1.288	1.182												
	L348	37.6745	2.9980	48.0000	56.3340	1	42	4.2989	1	42	1.4953	126.0663	125.3076
1.182	1.084												
	L349	37.8624	3.0130	48.0000	56.3337	2	54	4.3396	2	54	1.4879	125.3076	124.5274
1.084	0.982												
	L350	37.5354	2.9870	48.0000	56.3336	2	32	4.5170	1	43	1.5008	124.5274	124.2706
0.982	0.948												
	L351	9.3735	2.9837	24.0000	8.2540	2	55	3.3794	0	50	0.8806	124.5647	124.5069
0.832	0.843												
	L352	9.4291	3.0014	24.0000	8.2541	2	55	3.4177	0	46	0.8754	124.5069	124.2706
0.843	0.895												
	L354	163.9607	10.3092	54.0000	-97.0481	0	0	5.7342	2	34	-0.5919	122.6047	122.5300
0.741	0.918												
	L361	2.3403	2.9798	12.0000	2.3119	1	0	3.6734	1	0	0.9878	126.2887	125.9103
0.759	0.650												
	L362	2.3430	2.9831	12.0000	2.1598	1	0	3.5287	1	1	0.9218	126.3795	125.8878
0.739	0.628												
	L363	5.3133	3.0067	18.0000	4.5228	4	1	3.2872	1	59	0.8512	125.8458	124.5769
0.724	0.811												
	L364	2.3583	3.0027	12.0000	2.6500	1	0	3.8459	1	0	1.1237	124.9805	124.5769
0.841	0.717												
	L365	2.3663	3.0129	12.0000	1.6367	4	6	3.2231	0	58	0.6917	124.8690	124.5769
0.639	0.717												
	L366	9.4224	2.9993	24.0000	9.8099	4	10	3.4253	1	3	1.0411	124.5769	123.6546
0.858	0.852												
	L367	9.4185	2.9980	24.0000	9.8099	4	4	3.4448	4	2	1.0416	123.6546	123.0494
0.852	0.970												
	L368	2.3529	2.9958	12.0000	2.2792	1	0	3.4630	1	1	0.9687	123.6245	123.0494
0.794	0.939												
	L369	2.3634	3.0092	12.0000	3.4945	1	25	4.5022	1	25	1.4786	124.1512	123.0494
1.461	0.939												
	L370	21.3114	3.0150	36.0000	-22.3121	0	1	-3.5620	0	1	-1.0470	123.0494	122.7598
0.980	0.977												
	L373	69.8268	9.8785	36.0000	-32.2544	0	0	-3.4582	0	1	-0.4619	122.7598	122.5300
0.977	1.377												
	L374	1.6007	2.0381	12.0000	3.3515	1	0	4.3063	1	0	2.0937	120.8359	118.9722
2.226	0.792												
	L375	2.7585	1.5610	18.0000	3.3513	2	42	2.2806	2	42	1.2149	118.9722	118.3973
0.861	0.725												
	L376	17.8956	3.0129	33.0000	14.2870	6	0	2.6483	6	0	0.7984	118.6571	118.3974
0.853	0.850												
	L386	37.5354	2.9870	48.0000	36.6327	6	0	3.0335	6	59	0.9760	118.2769	118.0216
0.917	0.930												
	L387	37.3765	2.9743	48.0000	36.6198	6	0	3.0053	6	0	0.9798	118.0217	117.7558
0.930	0.944												
	L388	2.9480	3.7535	12.0000	2.2293	6	59	3.5961	0	42	0.7562	118.3387	117.7558
1.709	2.156												
	L389	48.3609	3.0407	54.0000	50.3323	6	0	3.2261	6	0	1.0408	117.7558	117.4640
0.950	0.954												
	L390	1.8968	2.4151	12.0000	1.6079	2	10	2.8204	1	36	0.8477	117.7684	117.4640
0.768	0.864												
	L391	47.6460	2.9958	54.0000	55.1790	6	0	3.5322	6	0	1.1581	117.4640	117.0057
0.954	0.939												
	L392	47.8865	3.0109	54.0000	65.3719	6	0	4.2332	6	0	1.3651	117.0058	116.5064
0.939	0.895												
	L393	47.6261	2.9945	54.0000	65.3657	6	0	-4.8430	0	1	1.3725	116.5065	115.8648
0.895	0.832												
	L395	7.7978	6.3542	15.0000	4.2403	6	59	3.4421	1	0	0.5438	118.9854	118.7039
2.148	2.699												
	L396	21.1861	2.9972	36.0000	8.3482	6	59	1.9376	0	50	0.3940	118.7806	118.7039
0.804	0.958												
	L397	7.4154	6.0426	15.0000	4.5806	6	59	3.7177	1	0	0.6177	119.0784	118.7039
2.199	2.699												
	L398	14.4778	11.7976	15.0000	4.3232	6	59	3.7891	0	32	0.2986	119.0589	118.7807

1.783 4.129	L399	9.4392	3.0046	24.0000	4.0372	5	56	2.6089	0	51	0.4277	118.9330	118.7807
0.682 0.955	L402	7.2544	3.0160	21.0000	7.1191	1	29	3.4623	1	0	0.9813	114.7633	114.5335
1.442 1.448	L403	7.1865	2.9878	21.0000	7.1191	1	8	3.4260	1	8	0.9906	114.5335	113.4701
1.448 1.463	L404	7.2356	3.0082	21.0000	7.1286	1	6	3.5493	1	4	0.9852	113.4701	112.4791
1.463 1.485	L405	5.2929	2.9952	18.0000	4.8565	1	28	3.8609	1	0	0.9175	112.6795	112.4791
1.540 1.566	L406	14.6711	2.9888	30.0000	11.9729	6	0	3.1921	0	52	0.8161	112.4791	112.0680
1.340 1.423	L407	3.6392	2.9655	15.0000	3.8258	1	0	3.8229	1	0	1.0513	112.3959	112.0680
1.869 1.846	L408	17.9044	3.0144	33.0000	15.7980	6	59	3.1695	0	46	0.8824	112.0680	111.6343
1.385 1.431	L410	21.1742	2.9955	36.0000	20.1364	6	59	2.9548	0	45	0.9510	111.6343	111.1574
1.395 1.412	L411	21.0724	2.9811	36.0000	20.1364	6	59	2.8412	6	59	0.9556	111.1574	110.7941
1.412 1.425	L413	5.3791	3.0440	18.0000	2.2679	6	59	2.5793	0	56	0.4216	119.1104	118.8193
0.694 1.433	L415	2.4953	3.1771	12.0000	2.2703	1	0	3.7552	1	0	0.9098	119.5280	119.1244
0.728 0.644	L417	2.3384	2.9774	12.0000	2.8494	1	2	3.8175	1	2	1.2185	113.5338	112.9610
1.964 1.781	L418	5.2561	2.9743	18.0000	5.1688	3	17	3.8864	1	0	0.9834	113.1916	112.9610
1.514 1.521	L419	9.4366	3.0038	24.0000	8.0182	6	0	3.3526	1	59	0.8497	112.9610	112.5301
1.391 1.475	L420	9.4302	3.0017	24.0000	8.0182	6	59	3.2859	0	55	0.8503	112.5301	111.8621
1.475 1.606	L421	2.3682	3.0153	12.0000	1.6633	1	1	3.2979	1	0	0.7024	112.0562	111.8621
2.006 2.212	L422	3.6891	3.0062	15.0000	3.8019	3	18	3.8119	1	0	1.0306	112.2083	111.8621
1.983 1.970	L423	14.7122	2.9971	30.0000	13.6466	6	0	3.1600	0	44	0.9276	111.8621	111.2807
1.485 1.524	L424	17.7815	2.9937	33.0000	18.5464	6	59	3.2142	0	40	1.0430	111.2807	110.7941
1.477 1.463	L425	2.3631	3.0088	12.0000	0.9317	3	17	2.7607	0	54	0.3943	111.3435	111.2807
1.964 2.311	L426	3.6483	2.9729	15.0000	3.9681	3	17	3.7880	0	57	1.0877	111.6425	111.2807
2.090 2.049	L427	29.0650	3.0210	42.0000	40.5902	6	0	4.1993	6	0	1.3965	110.7941	109.7503
1.364 1.220	L428	2.3506	2.9929	12.0000	0.9393	5	58	2.7410	0	53	0.3996	109.8312	109.7503
1.341 1.770	L429	28.8057	2.9940	42.0000	42.4776	6	59	4.2977	6	59	1.4746	109.7503	108.8835
1.220 1.095	L430	2.8587	3.6398	12.0000	2.4485	3	46	3.2889	0	42	0.8565	120.8468	120.2831
2.077 2.293	L431	2.3544	2.9977	12.0000	2.2781	3	48	3.2432	0	51	0.9676	122.5957	120.2831
1.856 2.043	L432	2.3565	3.0003	12.0000	2.2777	3	48	3.3819	0	55	0.9666	123.0855	122.5957
1.815 1.856	L435	2.3695	3.0170	12.0000	2.8738	1	6	3.6388	1	6	1.2128	116.4642	115.6961
2.174 1.936	L436	2.3535	2.9966	12.0000	2.8765	1	6	3.7239	1	6	1.2222	115.6961	113.0201
1.936 1.090	L437	3.6836	3.0017	15.0000	2.8725	1	15	2.9465	0	52	0.7798	113.0201	112.1895
1.072 1.544	L438	2.3506	2.9929	12.0000	1.6723	1	14	2.7954	0	44	0.7114	112.4454	112.1895
1.425 1.679	L439	3.6846	3.0025	15.0000	4.5571	1	15	3.7816	1	14	1.2368	112.1895	109.7789
1.544 0.911	L440	5.2957	2.9968	18.0000	4.5523	6	0	3.2628	0	56	0.8596	109.7789	108.8835
0.926 1.222													

L441	28.7403	2.9872	42.0000	48.9390	6	0	4.9424	6	59	1.7028	108.8835	107.6629	1.095 0.872
L442	28.7787	2.9912	42.0000	48.9390	6	0	5.9435	6	59	1.7005	107.6629	105.0976	0.872 0.282
L443	281.5617	29.2649	42.0000	48.9390	6	59	16.3911	6	59	0.1738	105.0976	98.4100	0.282 1.231
L446	5.3415	3.0227	18.0000	5.9168	2	23	3.5392	0	47	1.1077	129.7527	129.4984	2.068 2.039
L448	2.3562	3.0000	12.0000	0.9708	5	57	2.4582	0	34	0.4120	128.2210	128.1440	1.921 2.304
L449	7.2216	3.0024	21.0000	9.5085	5	34	3.9304	5	52	1.3167	128.1440	126.0007	1.745 1.235
L450	9.4537	3.0092	24.0000	13.3913	5	41	4.2601	5	41	1.4165	126.0007	123.9765	1.205 0.658
L451	9.2424	2.9419	24.0000	14.7194	5	30	5.0912	5	30	1.5926	120.4426	119.8419	0.891 0.691
L452	2.3516	2.9941	12.0000	1.2925	2	22	2.7687	0	40	0.5496	126.0884	126.0007	1.208 1.411
L453	2.3389	2.9780	12.0000	0.9323	5	21	2.4656	0	37	0.3986	126.0559	126.0007	1.116 1.411
L454	2.3631	3.0088	12.0000	0.6806	1	1	2.3129	0	39	0.2880	120.5302	120.4426	0.460 0.783
L466	4.4943	3.6623	15.0000	4.0513	1	1	4.2367	1	1	0.9014	120.8207	120.1342	0.737 0.651
L468	8.8034	2.8022	24.0000	4.0500	1	2	2.7411	1	2	0.4601	119.5908	118.9330	0.510 0.682
L470	7.2253	3.0039	21.0000	9.4830	2	21	4.3099	1	0	1.3125	123.4952	122.3558	0.912 0.540
L471	2.6488	3.3726	12.0000	0.3817	2	2	1.7178	1	17	0.1441	125.0264	123.4952	0.256 1.595
L472	2.3453	2.9862	12.0000	4.4590	1	0	5.6522	1	0	1.9012	128.1178	127.0400	1.778 1.000
L490	4.8350	2.0102	21.0000	6.7176	1	1	3.5464	1	1	1.3894	111.3361	110.8167	0.758 0.547
L496	2.3549	2.9983	12.0000	0.6064	2	16	2.3568	2	16	0.2575	133.7961	131.6772	0.346 0.507
L497	2.3540	2.9973	12.0000	0.5989	2	24	2.3448	2	24	0.2544	133.8039	131.6772	0.344 0.507
L498	2.3549	2.9983	12.0000	1.2053	2	32	3.0139	2	32	0.5118	131.6772	131.1070	0.507 0.507
L501	21.3175	3.0158	36.0000	12.3318	2	53	2.6258	0	32	0.5785	127.0975	126.9363	1.143 1.259
L502	28.7542	2.9886	42.0000	12.3332	3	39	1.2538	3	39	0.4289	126.9363	126.8529	1.222 1.329
L503	47.5382	2.9890	54.0000	73.4488	2	32	4.7306	2	32	1.5450	124.2706	123.5298	0.953 0.864
L504	48.0749	3.0228	54.0000	73.4488	2	33	5.1017	2	34	1.5278	123.5298	122.6047	0.864 0.741
L505	7.2137	2.9991	21.0000	10.5983	1	7	4.3800	1	6	1.4692	106.4521	104.1241	2.087 1.379
L506	7.1955	2.9916	21.0000	10.9003	1	7	4.4927	1	7	1.5149	104.1241	101.6618	2.522 1.738
L509	10.8843	13.8583	12.0000	2.9905	1	0	9.3675	1	0	0.2748	108.2197	98.4100	0.370 7.210
L511	3.5456	2.0064	18.0000	11.0412	1	0	6.2595	1	0	3.1140	112.4401	109.8810	2.373 0.847
L512	79.1933	25.2080	24.0000	17.9049	1	1	16.1606	1	1	0.2261	108.7565	94.5300	0.323 2.265
L514	7.2103	2.9977	21.0000	8.0432	6	0	3.3254	6	0	1.1155	129.4984	128.1440	1.891 1.745
L515	21.4683	3.0371	36.0000	17.6973	6	0	2.7250	6	0	0.8243	118.3974	118.2769	0.862 0.889
CH21	321.7664	1.1701	33.0000	13.5744	6	59	0.3276	1	9	0.0422	118.6771	118.6571	0.352 0.854
L474	5.2973	2.9976	18.0000	9.4830	2	39	5.3470	2	39	1.7902	120.8720	119.5000	1.628 1.000
L523	22.9743	1.4587	18.0000	9.4830	2	38	1.2146	2	38	0.4128	122.3558	121.2270	0.631 0.265
L525	21.2457	3.0056	36.0000	17.1561	6	59	3.2221	1	2	0.8075	118.7039	118.2769	

0.958 1.056													
	L527	5.2074	2.9468	18.0000	4.5202	6	59	2.9072	0	48	0.8680	118.8193	117.7558
1.433 1.671													
	L528	3.6866	3.0041	15.0000	4.7289	3	47	3.9306	3	41	1.2827	120.2831	117.0058
1.834 0.781													
	L529	3.5424	2.0046	18.0000	4.3384	5	58	2.7073	1	1	1.2247	114.9266	114.2861
1.604 1.464													
	L533	5.2922	2.9948	18.0000	4.3384	6	59	3.1793	1	1	0.8198	114.2861	112.6510
1.464 2.007													
	L537	3.5530	2.0106	18.0000	4.3384	6	59	2.5325	1	59	1.2210	112.6510	111.6343
2.007 1.790													
	L394	47.1178	2.9626	54.0000	-91.1787	0	0	-5.9313	0	1	-1.9351	115.8648	115.6200
0.832 0.804													
	L276	14.5794	18.5631	12.0000	3.1466	1	0	11.6035	1	0	0.2158	118.6155	110.5500
0.316 3.620													
	L288	20.4763	16.6856	15.0000	4.1590	1	38	9.7569	1	37	0.2031	112.6569	108.5200
0.318 3.536													
	L412	3.2854	4.1830	12.0000	2.2439	1	0	4.5004	1	0	0.6830	119.6069	119.0068
0.607 0.607													
	L447	5.3092	3.0044	18.0000	2.1264	6	59	2.3674	0	49	0.4005	129.7121	129.4984
1.288 2.039													
	L321	1.5717	2.0012	12.0000	0.5084	1	20	1.6783	1	1	0.3235	119.2319	118.5578
0.402 0.868													
	FREE # 1	Undefnd	Undefnd	Undefn	13.3950	4	16						
	FREE # 2	Undefnd	Undefnd	Undefn	28.8013	6	0						
	FREE # 3	Undefnd	Undefnd	Undefn	3.0002	1	0						
	FREE # 4	Undefnd	Undefnd	Undefn	9.4482	6	0						
	FREE # 5	Undefnd	Undefnd	Undefn	1.4198	2	0						
	FREE # 6	Undefnd	Undefnd	Undefn	2.3040	1	1						
	FREE # 7	Undefnd	Undefnd	Undefn	-66.8328	0	1						
	FREE # 8	Undefnd	Undefnd	Undefn	8.5560	1	0						
	FREE # 9	Undefnd	Undefnd	Undefn	5.0178	1	26						
	FREE #10	Undefnd	Undefnd	Undefn	110.4395	0	5						
	FREE #11	Undefnd	Undefnd	Undefn	1.8801	1	1						
	FREE #12	Undefnd	Undefnd	Undefn	1.2917	2	47						
	FREE #13	Undefnd	Undefnd	Undefn	30.1726	1	2						
	FREE #14	Undefnd	Undefnd	Undefn	-91.6054	0	0						
	FREE #15	Undefnd	Undefnd	Undefn	-32.2765	0	0						
	FREE #16	Undefnd	Undefnd	Undefn	48.9390	6	59						
	FREE #17	Undefnd	Undefnd	Undefn	4.4590	1	0						
	FREE #18	Undefnd	Undefnd	Undefn	2.9905	1	0						
	FREE #19	Undefnd	Undefnd	Undefn	17.9049	1	1						
	FREE #20	Undefnd	Undefnd	Undefn	1.5346	2	32						
	FREE #21	Undefnd	Undefnd	Undefn	9.4830	2	39						
	FREE #22	Undefnd	Undefnd	Undefn	-111.966	0	0						
	FREE #23	Undefnd	Undefnd	Undefn	3.1465	1	0						
	FREE #24	Undefnd	Undefnd	Undefn	4.1590	1	38						

Table E11. Area assumptions used in the analysis Subcritical and Critical flow assumptions from Subroutine Head. See Figure 17-1 in the manual for further information.

Conduit Name	Duration of Dry Flow(min)	Duration of Sub-Critical Flow(min)	Durat. of Upstream Critical Flow(min)	Durat. of Downstream Critical Flow(min)	Maximum Hydraulic Radius-m	Maximum X-Sect Area(ft^2)	Maximum Vel*D (ft^2/s)
L210	0.2500	303.4000	0.0000	56.3500	0.3028	0.8145	6.0754
L211	0.2500	0.0000	0.0000	359.7500	0.3022	0.7148	6.6769
L212	0.2500	305.5000	0.0000	54.2500	0.3735	1.2422	4.1200
L213	0.0000	324.0000	0.0000	36.0000	0.3019	0.8117	8.1584
L214	0.0000	344.7727	0.0000	15.2273	0.4557	1.8485	9.2805
L217	0.0000	0.0000	0.0000	360.0000	0.2305	0.3207	1.2094
L220	0.0000	337.1304	0.0000	22.8696	0.5305	2.4695	12.5695
L221	0.0000	0.0000	0.0000	360.0000	0.6008	2.7121	7.5895

L222	1.0556	358.9444	0.0000	0.0000	0.4520	2.0357	12.6599
L223	0.2500	0.0000	0.0000	359.7500	0.1501	0.1368	0.3311
L224	0.2500	0.0000	0.0000	359.7500	0.1573	0.1434	0.3175
L225	0.2500	303.8667	0.0000	55.8833	0.2176	0.5307	0.5207
L226	0.0000	360.0000	0.0000	0.0000	0.2988	0.7557	1.5578
L227	0.0000	306.6667	0.0000	53.3333	0.3034	0.8150	3.1677
L228	0.0000	0.0000	0.0000	360.0000	0.2990	0.6754	5.0881
L229	0.0000	0.0000	0.0000	360.0000	0.3741	0.9293	2.3945
L230	0.2500	0.0000	0.0000	359.7500	0.3733	0.9914	3.7251
L231	0.2500	279.6774	0.0000	80.0726	0.3732	1.2142	5.2319
L232	0.0000	291.5161	0.0000	68.4839	0.4485	1.7867	6.7640
L233	4.7727	306.2000	0.0000	49.0273	0.4556	1.8332	9.5076
L234	0.0000	358.7778	0.0000	1.2222	0.5976	3.2215	9.5211
L235	0.0000	360.0000	0.0000	0.0000	0.3034	0.8132	0.6133
L236	0.0000	321.6296	0.0000	38.3704	0.3035	0.8052	5.4675
L237	0.0000	303.8333	0.0000	56.1667	0.3026	0.8056	8.8850
L238	0.2500	0.0000	0.0000	359.7500	0.3030	0.7475	4.9700
L239	0.2500	0.0000	0.0000	359.7500	0.3026	0.7517	7.9671
L240	0.0000	0.0000	0.0000	360.0000	0.2552	0.3887	1.4956
L241	0.0000	0.0000	0.0000	360.0000	0.3770	1.1088	7.3642
L242	0.0000	0.0000	0.0000	360.0000	0.2886	0.5117	2.1118
L243	0.0000	0.0000	0.0000	360.0000	0.3027	0.6317	2.7274
L246	0.0000	360.0000	0.0000	0.0000	0.7603	4.9690	15.7240
L247	0.0000	360.0000	0.0000	0.0000	0.7605	4.6875	13.6735
L248	0.0000	359.5000	0.0000	0.5000	0.3036	0.7960	2.5982
L249	0.2500	359.7500	0.0000	0.0000	0.2728	0.3835	1.6287
L250	0.0000	360.0000	0.0000	0.0000	0.2105	0.5110	13.0214
L251	0.0000	360.0000	0.0000	0.0000	0.2579	0.3535	1.4300
L254	0.0000	360.0000	0.0000	0.0000	0.4482	1.8244	6.9971
L255	0.2500	359.7500	0.0000	0.0000	0.6085	3.2172	6.4026
L258	0.0000	0.0000	0.0000	360.0000	0.2223	0.2989	1.1004
L259	0.0000	360.0000	0.0000	0.0000	0.2707	0.3338	0.6915
L260	1.0556	358.9444	0.0000	0.0000	0.1534	1.0653	3.3522
L261	0.2500	359.7500	0.0000	0.0000	0.2386	0.2739	1.0315
L262	0.0000	360.0000	0.0000	0.0000	0.1681	0.4494	18.1768
L263	0.0000	360.0000	0.0000	0.0000	0.2535	0.2981	1.1926
L272	0.0000	360.0000	0.0000	0.0000	1.3278	16.1898	2.6581
L273	0.0000	360.0000	0.0000	0.0000	0.4375	2.4251	14.8285
L274	0.7500	359.2500	0.0000	0.0000	0.2999	1.1159	33.9576
L275	0.2500	359.7500	0.0000	0.0000	0.2708	0.3499	1.4658
L277	0.0000	360.0000	0.0000	0.0000	0.2723	0.3532	1.4641
L281	0.2500	359.7500	0.0000	0.0000	0.2916	0.5187	5.3520
L282	0.0000	360.0000	0.0000	0.0000	0.2160	0.5203	22.6742
L283	0.0000	360.0000	0.0000	0.0000	0.2733	0.3911	1.5637
L287	0.2500	0.0000	0.0000	359.7500	0.2895	0.5124	2.0656
L289	0.0000	0.0000	0.0000	360.0000	0.3021	0.5986	2.4883
L308	0.0000	360.0000	0.0000	0.0000	1.0457	9.8694	43.2730
L317	0.0000	360.0000	0.0000	0.0000	0.3717	1.1197	2.6779
L319	0.0000	360.0000	0.0000	0.0000	0.3203	0.6035	1.6044
L320	0.0000	0.0000	0.0000	360.0000	0.2901	0.5178	2.1366
L334	0.2500	359.7500	0.0000	0.0000	0.1708	0.2465	0.7534
L335	0.2500	359.7500	0.0000	0.0000	0.2259	0.3853	1.3031
L336	0.2500	359.7500	0.0000	0.0000	0.2596	0.3105	1.2592
L337	0.2500	359.7500	0.0000	0.0000	0.1694	0.4492	7.5347
L338	0.2500	359.7500	0.0000	0.0000	0.8844	5.1232	8.3328
L339	0.2500	305.3000	0.0000	54.4500	0.8614	4.2556	7.6506
L340	0.0000	360.0000	0.0000	0.0000	0.9016	3.5524	8.1022
L341	0.2500	359.7500	0.0000	0.0000	0.5350	5.1951	34.9813
L342	0.0000	0.0000	0.0000	360.0000	0.3782	1.0290	4.0239
L343	0.0000	0.0000	0.0000	360.0000	0.3027	0.6576	2.8892
L344	0.2500	316.1429	0.0000	43.6071	0.7606	5.1452	6.9792
L346	0.0000	351.7273	0.0000	8.2727	1.0648	10.0858	12.3364
L347	0.0000	360.0000	0.0000	0.0000	1.2167	13.1020	22.0118
L348	0.2500	359.7500	0.0000	0.0000	1.2167	13.0741	19.4820
L349	0.2500	359.7500	0.0000	0.0000	1.2166	12.7620	17.9332
L350	0.2500	358.3333	0.0000	1.4167	1.2168	12.3973	17.4310
L351	0.2500	359.7500	0.0000	0.0000	0.6085	2.8101	4.9455
L352	0.2500	319.2222	0.0000	40.5278	0.6083	2.8954	5.0526
L354	0.0000	360.0000	0.0000	0.0000	1.3479	13.9362	21.3307

L361	0.0000	0.0000	0.0000	360.0000	0.3009	0.5892	2.5874
L362	0.0000	0.0000	0.0000	360.0000	0.2987	0.5699	2.4123
L363	0.0000	325.8077	0.0000	34.1923	0.4491	1.4515	3.7564
L364	0.0000	296.7419	0.0000	63.2581	0.3032	0.6529	2.9711
L365	0.0000	305.4667	0.0000	54.5333	0.2870	0.5658	2.0660
L366	0.0000	360.0000	0.0000	0.0000	0.6085	2.8597	5.8546
L367	0.2500	359.5000	0.0000	0.2500	0.6084	2.8342	5.8298
L368	0.0000	358.8889	0.0000	1.1111	0.3029	0.6178	2.5507
L369	0.0000	18.2980	0.0000	341.7020	0.3027	0.7294	5.0871
L370	0.0000	360.0000	0.0000	0.0000	0.9109	7.0170	7.7991
L373	0.0000	360.0000	0.0000	0.0000	0.8870	7.0493	12.0050
L374	2.0455	22.0000	0.0000	335.9545	0.3002	0.7284	6.4911
L375	2.0455	197.1613	0.0000	160.7933	0.4535	1.4932	2.5005
L376	0.0000	347.7727	0.0000	12.2273	0.8367	5.3875	6.2028
L386	0.2500	359.5227	0.2273	0.0000	1.2169	12.1199	11.2067
L387	0.2500	355.4545	0.0000	4.2955	1.2168	12.2259	11.2660
L388	0.0000	336.6400	0.0000	23.3600	0.2988	0.8058	5.4584
L389	0.0000	360.0000	0.0000	0.0000	1.3690	15.6167	13.8237
L390	0.0000	230.6129	0.0000	129.3871	0.3028	0.6838	2.0039
L391	0.0000	360.0000	0.0000	0.0000	1.3690	15.5636	15.0468
L392	0.2500	359.7500	0.0000	0.0000	1.3691	15.2463	17.4668
L393	0.0000	360.0000	0.0000	0.0000	1.3691	14.5690	17.0275
L395	0.2500	359.7500	0.0000	0.0000	0.3735	1.2597	10.3886
L396	4.7273	355.2727	0.0000	0.0000	0.9069	6.5210	3.6440
L397	0.0000	360.0000	0.0000	0.0000	0.3735	1.2597	11.3359
L398	0.0000	360.0000	0.0000	0.0000	0.3735	1.2665	12.9323
L399	0.5000	330.4000	0.0000	29.1000	0.5855	2.6753	2.8495
L402	0.2500	359.7500	0.0000	0.0000	0.5324	2.5208	7.4621
L403	0.2500	359.7500	0.0000	0.0000	0.5323	2.5027	7.5161
L404	0.7500	300.2667	0.0000	58.9833	0.5324	2.4848	7.6120
L405	0.0000	295.5161	0.0000	64.4839	0.4563	1.8504	6.3763
L406	0.0000	343.2727	0.0000	16.7273	0.7586	5.0904	8.4049
L407	0.0000	295.4516	0.0000	64.5484	0.3800	1.2865	7.1978
L408	0.0000	342.2727	0.0000	17.7273	0.8358	6.1951	10.2710
L410	0.2500	359.7500	0.0000	0.0000	0.9121	7.3935	11.9652
L411	0.2500	345.3636	0.0000	14.3864	0.9121	7.3987	12.0915
L413	0.0000	360.0000	0.0000	0.0000	0.4360	1.5339	2.7024
L415	0.0000	0.0000	0.0000	360.0000	0.2981	0.5732	2.5763
L417	0.0000	286.3548	0.0000	73.6452	0.3028	0.8122	6.7524
L418	0.0000	302.6333	0.0000	57.3667	0.4564	1.8519	6.6363
L419	0.0000	360.0000	0.0000	0.0000	0.6072	3.2606	7.2952
L420	0.2500	327.1923	0.0000	32.5577	0.6037	3.2205	7.8395
L421	0.0000	299.3871	0.0000	60.6129	0.2991	0.8052	4.4324
L422	0.0000	299.5484	0.0000	60.4516	0.3801	1.2864	7.6052
L423	0.0000	345.7727	0.0000	14.2273	0.7598	5.1196	10.4245
L424	0.0000	333.6667	0.0000	26.3333	0.8366	6.2248	12.5843
L425	0.0000	305.9333	0.0000	54.0667	0.2988	0.8056	2.5192
L426	0.0000	303.0333	0.0000	56.9667	0.3798	1.2862	8.3064
L427	0.2500	359.7500	0.0000	0.0000	1.0648	10.0331	18.9897
L428	0.0000	307.2414	0.0000	52.7586	0.2988	0.8058	1.8560
L429	0.0000	360.0000	0.0000	0.0000	1.0646	9.9813	17.4138
L430	0.2500	359.7500	0.0000	0.0000	0.2988	0.8054	6.7629
L431	0.0000	333.7500	0.0000	26.2500	0.2988	0.8061	5.6208
L432	0.0000	360.0000	0.0000	0.0000	0.3042	0.8175	5.2946
L435	0.0000	360.0000	0.0000	0.0000	0.3042	0.8154	7.4598
L436	0.0000	294.1290	0.0000	65.8710	0.3022	0.8031	5.4816
L437	0.2500	359.7500	0.0000	0.0000	0.3735	1.2495	3.7139
L438	0.0000	336.0870	0.0000	23.9130	0.2988	0.8053	3.2924
L439	0.0000	289.0323	0.0000	70.9677	0.3768	1.2021	5.6985
L440	0.5000	310.0345	0.0000	49.4655	0.4493	1.7585	4.2702
L441	0.2500	359.7500	0.0000	0.0000	1.0616	9.4516	17.0179
L442	0.2500	359.7500	0.0000	0.0000	1.0125	5.1951	12.0073
L443	0.2500	359.7500	0.0000	0.0000	0.5991	5.5647	43.4165
L446	0.2500	331.4000	0.0000	28.3500	0.4563	1.8523	10.2448
L448	0.0000	326.7692	0.0000	33.2308	0.2988	0.8057	2.5953
L449	0.0000	342.5455	0.0000	17.4545	0.5323	2.4678	10.2478
L450	0.0000	0.0000	0.0000	360.0000	0.6008	2.7108	7.9391
L451	0.0000	0.0000	0.0000	360.0000	0.6047	2.6286	8.0557
L452	0.0000	320.9630	0.0000	39.0370	0.2990	0.8052	2.0930

L453	0.0000	323.9259	0.0000	36.0741	0.2988	0.8043	1.4401
L454	0.0000	321.6296	0.0000	38.3704	0.2432	0.4981	1.1073
L466	0.2500	0.0000	0.0000	359.7500	0.3737	0.9067	3.6749
L468	0.2500	359.7500	0.0000	0.0000	0.5141	1.9368	2.8739
L470	0.2500	359.7500	0.0000	0.0000	0.5225	1.7909	5.4703
L471	6.8182	353.1818	0.0000	0.0000	0.1597	0.4340	1.5903
L472	0.2500	359.7500	0.0000	0.0000	0.3042	0.8043	7.8446
L490	0.2500	0.0000	0.0000	359.7500	0.5222	1.6409	4.0474
L496	0.2500	359.7500	0.0000	0.0000	0.1977	0.3174	1.0056
L497	0.0000	360.0000	0.0000	0.0000	0.1968	0.3162	0.9979
L498	0.0000	360.0000	0.0000	0.0000	0.2520	0.3998	1.5284
L501	0.2500	338.6522	0.0000	21.0978	0.9091	7.3285	6.0209
L502	0.5000	356.5000	0.0000	3.0000	1.0614	9.9867	5.5969
L503	0.2500	359.7500	0.0000	0.0000	1.3685	15.1134	19.3490
L504	0.0000	360.0000	0.0000	0.0000	1.3669	13.5557	18.3651
L505	0.0000	302.4667	0.0000	57.5333	0.5260	2.4696	13.2770
L506	0.0000	358.5556	0.0000	1.4444	0.5323	2.4709	16.7375
L509	0.7500	359.2500	0.0000	0.0000	0.2066	0.5149	35.4989
L511	0.2500	0.0000	0.0000	359.7500	0.4500	1.6884	15.0957
L512	0.7500	359.2500	0.0000	0.0000	0.3768	1.9049	41.8268
L514	0.0000	360.0000	0.0000	0.0000	0.5319	2.5196	10.5788
L515	0.0000	350.0455	0.0000	9.9545	0.9126	6.5573	7.1591
CH21	0.5000	359.5000	0.0000	0.0000	1.0781	160.6945	0.2438
L474	0.7500	359.2500	0.0000	0.0000	0.4564	1.8097	10.5391
L523	0.5000	0.0000	0.0000	359.5000	0.6614	5.3660	0.8155
L525	2.0455	351.0455	0.0000	6.9091	0.9113	7.1097	7.4087
L527	0.0000	352.9091	0.0000	7.0909	0.4482	1.8121	5.9365
L528	0.2500	140.0968	0.0000	219.6532	0.3767	1.1287	6.2386
L529	0.0000	360.0000	0.0000	0.0000	0.4534	1.8389	5.6288
L533	0.0000	360.0000	0.0000	0.0000	0.4482	1.8145	6.3708
L537	0.5000	304.1667	0.0000	55.3333	0.4510	1.8451	6.9475
L394	0.0000	360.0000	0.0000	0.0000	1.3691	13.9236	20.8824
L276	0.0000	360.0000	0.0000	0.0000	0.1852	0.4744	22.8322
L288	0.0000	360.0000	0.0000	0.0000	0.2326	0.7428	23.4991
L412	0.2500	0.0000	0.0000	359.7500	0.2790	0.4986	2.7301
L447	0.0000	352.9545	0.0000	7.0455	0.4482	1.8148	2.9956
L321	0.0000	360.0000	0.0000	0.0000	0.2236	0.4937	0.9547

Table E12. Mean Conduit Flow Information

Conduit Name	Mean Flow (cfs)	Total Flow (ft^3)	Mean Percent Change	Low Flow Weightng	Mean Froude Number	Mean Hydraulic Radius	Mean Cross Area	Mean Conduit Roughness
L210	2.6464	57161.701	0.0000	0.9999	0.5509	0.2499	0.7447	0.0150
L211	2.8494	61547.711	0.0000	0.9999	0.8043	0.2528	0.7377	0.0150
L212	2.9718	64190.154	0.0000	0.9999	0.4487	0.3077	1.1458	0.0150
L213	2.2762	49166.343	0.0000	0.9999	0.3900	0.2478	0.7464	0.0150
L214	4.9138	106137.72	0.0000	0.9999	0.3324	0.3719	1.6799	0.0150
L217	0.8692	18775.485	0.0000	0.9999	0.7757	0.2218	0.3181	0.0150
L220	10.2335	221043.08	0.0001	0.9999	0.5736	0.4348	2.3078	0.0150
L221	11.9298	257683.04	0.0001	0.9999	0.6406	0.5019	2.9828	0.0150
L222	12.0867	261073.50	0.0001	0.9996	1.8075	0.4328	1.3207	0.0150
L223	0.2105	4547.4950	0.0000	0.9999	0.5668	0.1441	0.1519	0.0150
L224	0.2077	4486.4903	0.0000	0.9998	0.5356	0.1492	0.1620	0.0150
L225	0.2041	4408.5282	0.0000	0.9940	0.2542	0.1951	0.2962	0.0150
L226	0.8375	18089.291	0.0000	0.9999	0.2810	0.2805	0.6487	0.0150
L227	1.4239	30756.618	0.0000	0.9999	0.3204	0.2465	0.7296	0.0150
L228	2.2174	47896.248	0.0000	0.9999	0.6757	0.2499	0.7290	0.0150
L229	2.6010	56181.792	0.0000	0.9999	0.5823	0.3478	1.0413	0.0150
L230	3.0412	65690.133	0.0000	0.9999	0.5789	0.3084	1.1016	0.0150
L231	3.3238	71794.942	0.0000	0.9999	0.5133	0.3085	1.1371	0.0150
L232	5.3344	115223.40	0.0000	0.9999	0.5062	0.3697	1.6573	0.0150
L233	5.5572	120036.03	0.0000	0.9923	0.4347	0.3652	1.6344	0.0150
L234	8.3356	180049.66	0.0001	0.9999	0.3336	0.4881	2.9171	0.0150
L235	0.4088	8830.4486	0.0000	0.9999	0.1360	0.2473	0.7411	0.0150
L236	1.9438	41985.202	0.0000	0.9999	0.3776	0.2495	0.7480	0.0150
L237	2.8187	60882.846	0.0000	0.9999	0.5163	0.2499	0.7510	0.0150

L238	3.3828	73068.206	0.0000	0.9999	0.9077	0.2551	0.7439	0.0150
L239	3.7147	80236.890	0.0000	0.9999	0.9628	0.2541	0.7535	0.0150
L240	1.1325	24462.285	0.0000	0.9999	0.7723	0.2459	0.3885	0.0150
L241	4.8820	105452.18	0.0000	0.9999	0.8115	0.3162	1.1526	0.0150
L242	1.6952	36615.862	0.0000	0.9999	0.7841	0.2790	0.5156	0.0150
L243	2.2724	49084.641	0.0000	0.9999	0.7725	0.2942	0.6506	0.0150
L246	21.7994	470866.46	0.0006	0.9999	0.5107	0.6355	4.7931	0.0150
L247	25.8082	557457.15	0.0008	1.0000	0.6612	0.6544	4.8466	0.0150
L248	1.8154	39213.635	0.0000	0.9999	0.4737	0.2625	0.7301	0.0150
L249	1.4463	31240.225	0.0000	0.9999	0.9304	0.2639	0.4567	0.0150
L250	2.7464	59322.128	0.0000	0.9999	2.5579	0.2034	0.3128	0.0150
L251	1.1948	25807.113	0.0000	0.9999	0.8762	0.2490	0.4008	0.0150
L254	4.0212	86858.142	0.0000	0.9999	0.2852	0.3702	1.6826	0.0150
L255	8.1691	176453.17	0.0001	0.9999	0.3510	0.4949	2.9942	0.0150
L258	0.7800	16848.326	0.0000	0.9999	0.7657	0.2138	0.2974	0.0150
L259	0.9550	20626.941	0.0000	0.9999	0.8007	0.2594	0.4964	0.0150
L260	1.1428	24684.588	0.0000	0.9996	1.2721	0.1486	0.3691	0.0150
L261	0.8960	19354.664	0.0000	0.9999	0.8956	0.2299	0.3453	0.0150
L262	2.1084	45541.685	0.0000	0.9999	3.1415	0.1625	0.2295	0.0150
L263	1.0981	23719.279	0.0000	0.9999	0.9659	0.2447	0.3924	0.0150
L272	8.6327	186465.77	0.0001	1.0000	0.0467	1.1713	15.8342	0.0150
L273	8.6521	186885.30	0.0001	0.9999	0.3355	0.4375	2.4234	0.0150
L274	7.8422	169392.06	0.0001	0.9998	2.9684	0.2901	0.6538	0.0150
L275	1.3780	29765.822	0.0000	0.9999	0.9780	0.2618	0.4541	0.0150
L277	1.3842	29899.349	0.0000	0.9999	0.9695	0.2632	0.4603	0.0150
L281	3.1328	67668.659	0.0000	0.9999	1.2692	0.2457	0.7090	0.0150
L282	4.5931	99211.413	0.0000	0.9999	4.0371	0.2087	0.3252	0.0150
L283	1.3704	29601.640	0.0000	0.9999	0.8655	0.2640	0.4567	0.0150
L287	1.6694	36060.113	0.0000	0.9999	0.7696	0.2796	0.5197	0.0150
L289	2.0712	44736.852	0.0000	0.9999	0.7615	0.2928	0.6162	0.0150
L308	24.4375	527849.23	0.0107	1.0000	0.4540	0.9732	6.6342	0.0150
L317	1.2217	26387.658	0.0000	0.9999	0.2624	0.3503	0.9375	0.0150
L319	1.7194	37138.652	0.0000	0.9999	0.7091	0.3083	0.6233	0.0150
L320	1.7208	37168.646	0.0000	0.9999	0.7822	0.2804	0.5226	0.0150
L334	0.3888	8398.3567	0.0000	0.9999	0.6968	0.1635	0.1884	0.0150
L335	0.7813	16876.910	0.0000	0.9999	0.7133	0.2164	0.3073	0.0150
L336	1.1759	25400.447	0.0000	0.9999	0.9829	0.2497	0.4119	0.0150
L337	1.1754	25389.171	0.0000	0.9998	1.7305	0.1631	0.2305	0.0150
L338	19.4685	420519.55	0.0001	0.9999	0.5086	0.8571	4.9406	0.0150
L339	19.3989	419015.55	0.0001	0.9998	0.6217	0.8325	4.6115	0.0150
L340	27.5296	594638.38	0.0002	0.9999	1.0753	0.8714	5.0310	0.0150
L341	27.5137	594296.14	0.0002	0.9998	2.1629	0.5158	2.4813	0.0150
L342	4.2000	90719.401	0.0000	0.9999	0.7631	0.3649	1.0709	0.0150
L343	2.4093	52041.235	0.0000	0.9999	0.7710	0.2919	0.6811	0.0150
L344	11.2927	243923.34	0.0001	0.9999	0.3019	0.6105	4.6891	0.0150
L346	23.4510	506541.28	0.0004	0.9999	0.2324	0.8695	9.0964	0.0150
L347	51.1159	1104102.6	0.0004	0.9999	0.3612	1.0006	12.0199	0.0150
L348	50.8583	1098539.6	0.0004	0.9998	0.3623	1.0039	12.4191	0.0150
L349	50.6072	1093116.3	0.0005	0.9998	0.3817	1.0166	12.3433	0.0150
L350	50.4536	1089797.1	0.0006	0.9998	0.4038	1.0765	11.9340	0.0150
L351	7.5630	163361.48	0.0001	0.9999	0.4253	0.5862	2.6040	0.0150
L352	7.5442	162953.68	0.0001	0.9998	0.4226	0.5832	2.6347	0.0150
L354	65.4419	1413546.1	0.0036	1.0000	0.5157	1.3469	12.8289	0.0150
L361	2.1169	45725.585	0.0000	0.9999	0.7989	0.2919	0.5962	0.0150
L362	1.9772	42708.186	0.0000	0.9999	0.7821	0.2894	0.5793	0.0150
L363	4.1195	88980.182	0.0000	0.9999	0.5757	0.4323	1.3022	0.0150
L364	2.4266	52415.164	0.0000	0.9999	0.7928	0.2951	0.6575	0.0150
L365	1.4984	32365.917	0.0000	0.9999	0.6847	0.2762	0.5048	0.0150
L366	8.9277	192838.38	0.0001	0.9999	0.4653	0.5860	2.6931	0.0150
L367	8.8797	191801.90	0.0001	0.9998	0.4559	0.5951	2.7193	0.0150
L368	2.0862	45061.204	0.0000	0.9999	0.7372	0.2943	0.6232	0.0150
L369	3.1988	69093.396	0.0000	0.9999	0.8691	0.2553	0.7437	0.0150
L370	17.3416	374577.74	0.0008	0.9999	0.2894	0.8961	6.6331	0.0150
L373	17.2990	373657.98	0.0013	1.0000	0.2771	0.8689	6.8310	0.0150
L374	3.0624	66147.808	0.0000	0.9979	0.8266	0.2541	0.7522	0.0150
L375	3.0318	65485.881	0.0000	0.9978	0.4326	0.4332	1.4173	0.0150
L376	8.8000	190080.72	0.0001	0.9999	0.2874	0.7144	3.9095	0.0150
L386	28.7206	620365.60	0.0003	0.9998	0.2817	1.1526	10.3724	0.0150
L387	28.5109	615836.29	0.0003	0.9998	0.2759	1.1592	10.6878	0.0150

L388	2.0399	44061.109	0.0000	0.9999	0.4801	0.2479	0.7269	0.0150
L389	40.7753	880745.99	0.0005	0.9999	0.2604	1.3110	14.2267	0.0150
L390	1.4702	31755.306	0.0000	0.9999	0.5928	0.2870	0.5672	0.0150
L391	44.8896	969614.66	0.0007	0.9999	0.2822	1.3160	14.5098	0.0150
L392	53.8619	1163416.0	0.0010	0.9999	0.3414	1.3311	14.6355	0.0150
L393	53.5470	1156614.6	0.0034	0.9999	0.3571	1.3549	14.3923	0.0150
L395	3.8842	83899.023	0.0000	0.9999	0.4205	0.3083	1.1780	0.0150
L396	7.5235	162508.50	0.0001	0.9924	0.2010	0.8367	5.0222	0.0150
L397	4.1960	90632.662	0.0000	0.9999	0.4455	0.3086	1.1792	0.0150
L398	3.9610	85557.586	0.0000	0.9999	0.4905	0.3070	1.1601	0.0150
L399	3.6457	78746.618	0.0000	0.9997	0.3731	0.5206	1.8498	0.0150
L402	6.5188	140805.82	0.0001	0.9999	0.3738	0.4408	2.2276	0.0150
L403	6.4883	140147.71	0.0000	0.9998	0.3793	0.4395	2.2254	0.0150
L404	6.4284	138854.33	0.0001	0.9997	0.3841	0.4354	2.2150	0.0150
L405	4.4428	95965.462	0.0000	0.9999	0.3855	0.3734	1.6202	0.0150
L406	10.8019	233321.63	0.0001	0.9999	0.2865	0.6147	4.4830	0.0150
L407	3.5009	75618.659	0.0000	0.9999	0.4228	0.3126	1.1444	0.0150
L408	14.1920	306547.75	0.0001	0.9999	0.2925	0.6747	5.4587	0.0150
L410	17.9292	387269.78	0.0001	0.9998	0.2970	0.7334	6.5247	0.0150
L411	17.7984	384445.62	0.0001	0.9998	0.2938	0.7297	6.5380	0.0150
L413	2.0662	44628.958	0.0000	0.9999	0.4039	0.3905	1.0881	0.0150
L415	2.0789	44904.348	0.0000	0.9999	0.8217	0.2887	0.5723	0.0150
L417	2.6080	56333.543	0.0000	0.9999	0.5333	0.2519	0.7425	0.0150
L418	4.7312	102193.34	0.0000	0.9999	0.4047	0.3746	1.6264	0.0150
L419	7.3154	158011.63	0.0001	0.9999	0.3245	0.4970	2.8848	0.0150
L420	7.2499	156596.96	0.0001	0.9998	0.3164	0.4928	2.8846	0.0150
L421	1.5194	32819.655	0.0000	0.9999	0.3431	0.2458	0.7186	0.0150
L422	3.4792	75151.368	0.0000	0.9999	0.4072	0.3116	1.1472	0.0150
L423	12.3133	265967.81	0.0001	0.9999	0.2986	0.6151	4.5469	0.0150
L424	16.6861	360419.39	0.0001	0.9999	0.3123	0.6762	5.5293	0.0150
L425	0.8510	18381.889	0.0000	0.9999	0.2369	0.2395	0.7046	0.0150
L426	3.6317	78444.100	0.0000	0.9999	0.4108	0.3115	1.1530	0.0150
L427	36.0213	778060.00	0.0002	0.9999	0.3605	0.8611	9.0342	0.0150
L428	0.8579	18530.703	0.0000	0.9999	0.2680	0.2401	0.6977	0.0150
L429	37.5333	810718.82	0.0002	0.9999	0.3836	0.8605	9.1905	0.0150
L430	2.2411	48408.163	0.0000	0.9999	0.4426	0.2473	0.7400	0.0150
L431	2.0711	44734.869	0.0000	0.9999	0.4272	0.2469	0.7336	0.0150
L432	2.0846	45027.728	0.0000	0.9999	0.4395	0.2486	0.7347	0.0150
L435	2.6293	56791.944	0.0000	0.9999	0.5028	0.2495	0.7481	0.0150
L436	2.6120	56418.959	0.0000	0.9999	0.6536	0.2490	0.7461	0.0150
L437	2.6012	56186.947	0.0000	0.9998	0.3942	0.3097	1.1475	0.0150
L438	1.5281	33007.660	0.0000	0.9999	0.3687	0.2460	0.7245	0.0150
L439	4.1042	88651.595	0.0000	0.9999	0.6520	0.3144	1.1489	0.0150
L440	4.0758	88037.918	0.0000	0.9998	0.4511	0.4154	1.5549	0.0150
L441	43.1593	932240.77	0.0003	0.9999	0.4983	0.8775	9.1522	0.0150
L442	42.9811	928391.26	0.0003	0.9998	1.0371	0.9578	7.5765	0.0150
L443	42.9525	927774.78	0.0003	0.9998	2.7225	0.5637	2.8144	0.0150
L446	5.4178	117024.51	0.0000	0.9999	0.3794	0.3730	1.6664	0.0150
L448	0.8869	19156.122	0.0000	0.9999	0.2270	0.2405	0.7148	0.0150
L449	8.5897	185538.47	0.0001	0.9999	0.4952	0.4337	2.2787	0.0150
L450	12.0564	260419.29	0.0001	0.9999	0.6483	0.5025	2.9547	0.0150
L451	13.2579	286370.69	0.0001	0.9999	0.7527	0.5791	2.7162	0.0150
L452	1.1827	25546.947	0.0000	0.9999	0.3179	0.2436	0.7353	0.0150
L453	0.8525	18412.934	0.0000	0.9999	0.2572	0.2410	0.7345	0.0150
L454	0.6210	13413.757	0.0000	0.9999	0.4962	0.2298	0.3529	0.0150
L466	3.7085	80103.711	0.0000	0.9999	0.8259	0.3618	0.9042	0.0150
L468	3.6891	79684.337	0.0000	0.9998	0.4711	0.4788	1.4856	0.0150
L470	8.6783	187451.87	0.0001	0.9999	0.7849	0.5010	2.0894	0.0150
L471	0.3474	7504.5435	0.0000	0.9881	0.5745	0.1537	0.2125	0.0150
L472	4.0841	88215.552	0.0000	0.9999	0.9610	0.2496	0.7636	0.0150
L490	6.1449	132728.92	0.0000	0.9999	0.6305	0.5076	1.8000	0.0150
L496	0.5532	11949.543	0.0000	0.9999	0.7059	0.1895	0.2428	0.0150
L497	0.5464	11801.494	0.0000	0.9999	0.7062	0.1887	0.2410	0.0150
L498	1.0973	23701.064	0.0000	0.9999	0.7638	0.2415	0.3765	0.0150
L501	11.2069	242069.38	0.0001	0.9998	0.1932	0.7298	6.7367	0.0150
L502	11.0420	238507.91	0.0001	0.9998	0.1283	0.8581	9.1343	0.0150
L503	65.9066	1423581.8	0.0008	0.9999	0.4031	1.2932	15.0210	0.0150
L504	65.5862	1416661.2	0.0024	0.9999	0.4653	1.3551	14.0986	0.0150
L505	9.6167	207721.45	0.0001	0.9999	0.5189	0.4345	2.2942	0.0150

L506	9.8586	212946.83	0.0001	0.9999	0.4601	0.4330	2.3024	0.0150
L509	2.7405	59194.417	0.0000	0.9998	2.6552	0.1994	0.3060	0.0150
L511	10.0944	218038.63	0.0001	0.9999	0.9372	0.3821	1.7166	0.0150
L512	16.3767	353736.10	0.0001	0.9998	3.4334	0.3639	1.0651	0.0150
L514	7.3087	157868.80	0.0001	0.9999	0.3676	0.4346	2.2698	0.0150
L515	11.8479	255915.46	0.0001	0.9999	0.3083	0.8195	5.0576	0.0150
CH21	10.9226	235927.90	0.0001	0.9998	0.0476	0.6838	69.7760	0.0600
L474	8.6020	185803.59	0.0001	0.9997	0.7471	0.3706	1.6980	0.0150
L523	8.6098	185972.41	0.0001	0.9998	0.3421	0.6317	7.3696	0.0600
L525	15.4367	333432.88	0.0001	0.9978	0.3115	0.8457	5.9485	0.0150
L527	4.0944	88438.421	0.0000	0.9999	0.3617	0.3742	1.6410	0.0150
L528	4.2763	92368.855	0.0000	0.9998	0.7199	0.3148	1.1384	0.0150
L529	3.9619	85577.171	0.0000	0.9999	0.3325	0.3783	1.6566	0.0150
L533	3.9203	84677.458	0.0000	0.9999	0.3752	0.3713	1.6104	0.0150
L537	3.8700	83592.582	0.0000	0.9998	0.3071	0.3689	1.6469	0.0150
L394	53.3420	1152188.1	0.0021	1.0000	0.3744	1.3676	13.9342	0.0150
L276	2.8797	62200.605	0.0000	0.9999	3.5263	0.1790	0.2609	0.0150
L288	3.8042	82171.338	0.0000	0.9999	2.6547	0.2241	0.4089	0.0150
L412	2.0547	44381.508	0.0000	0.9999	1.0194	0.2692	0.4714	0.0150
L447	1.9321	41732.936	0.0000	0.9999	0.2098	0.3590	1.5864	0.0150
L321	0.4625	9988.9972	0.0000	0.9999	0.4295	0.2127	0.3121	0.0150
FREE # 1	12.0861	261060.66						
FREE # 2	25.8163	557633.16						
FREE # 3	2.7463	59319.002						
FREE # 4	8.5350	184355.63						
FREE # 5	1.2949	27970.292						
FREE # 6	2.1083	45539.264						
FREE # 7	8.6422	186671.05						
FREE # 8	7.8422	169392.28						
FREE # 9	4.5929	99206.173						
FREE #10	24.4630	528400.77						
FREE #11	1.7193	37137.614						
FREE #12	1.1754	25387.863						
FREE #13	27.5123	594265.65						
FREE #14	65.4955	1414702.6						
FREE #15	17.3182	374072.51						
FREE #16	42.9504	927728.56						
FREE #17	4.0840	88214.537						
FREE #18	2.7405	59194.459						
FREE #19	16.3758	353717.74						
FREE #20	1.3991	30221.469						
FREE #21	8.6018	185797.83						
FREE #22	53.3728	1152852.0						
FREE #23	2.8795	62197.283						
FREE #24	3.8040	82167.219						

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| Table E13. Channel losses(H), headwater depth (HW), tailwater |
| depth (TW), critical and normal depth (Yc and Yn). |
| Use this section for culvert comparisons |
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Conduit Name	Maximum Flow	Head Loss	Friction Loss	Critical Depth	Normal Depth	HW Elevat	TW Elevat	
L210	2.8911	0.0000	0.6079	0.7287	1.0000	107.6026	106.9939	Max Flow
L211	3.1354	0.0000	4.1728	0.7586	1.0000	106.9939	102.8186	Max Flow
L212	3.2978	0.0000	2.2919	0.7315	0.9241	102.1159	100.2909	Max Flow
L213	2.4910	0.0000	0.6824	0.6759	0.8915	100.9511	100.2682	Max Flow
L214	5.3710	0.0000	0.3195	0.8928	1.2615	100.5880	100.2682	Max Flow
L217	0.9501	0.0000	0.4954	0.4086	0.4397	100.2872	99.7386	Max Flow
L220	11.2776	0.0000	2.1196	1.2514	1.7500	100.2909	98.1694	Max Flow
L221	13.2165	0.0000	1.7213	1.3077	2.0000	98.1694	96.2277	Max Flow
L222	13.3950	0.0000	4.9526	1.3167	0.8202	95.2407	89.4100	Max Flow
L223	0.2305	0.0000	0.1897	0.1969	0.2569	119.8642	119.6069	Max Flow
L224	0.2305	0.0000	0.6187	0.1969	0.2585	118.8903	118.0569	Max Flow
L225	0.2305	0.0000	0.6965	0.1969	0.2582	117.6596	117.5825	Max Flow
L226	0.9294	0.0000	0.9489	0.4040	0.5533	118.5578	118.1994	Max Flow
L227	1.5845	0.0000	0.6335	0.5338	0.8293	118.1994	117.5825	Max Flow

L228	2.4888	0.0000	2.6900	0.6756	1.0000	117.5825	114.7356	Max Flow
L229	2.9466	0.0000	1.5156	0.6896	1.0706	112.5184	110.5696	Max Flow
L230	3.4595	0.0000	1.6036	0.7504	1.2500	110.4305	108.6104	Max Flow
L231	3.8015	0.0000	1.7963	0.7879	1.2500	108.0703	106.2736	Max Flow
L232	6.0390	0.0000	1.3366	0.9490	1.5000	106.2736	104.9361	Max Flow
L233	6.3287	0.0000	2.2868	0.9722	1.5000	104.9361	102.6459	Max Flow
L234	9.4131	0.0000	0.9842	1.0955	1.5018	102.6459	101.6618	Max Flow
L235	0.4478	0.0000	0.1332	0.2768	0.3725	112.5280	112.5184	Max Flow
L236	2.1260	0.0000	0.4908	0.6226	1.0000	106.7649	106.2736	Max Flow
L237	3.0812	0.0000	0.9795	0.7520	1.0000	103.6254	102.6459	Max Flow
L238	3.6937	0.0000	0.7819	0.8182	1.0000	116.6523	115.8782	Max Flow
L239	4.0636	0.0000	2.0981	0.8520	1.0000	115.2807	113.1820	Max Flow
L240	1.2377	0.0000	0.4915	0.4691	0.5152	113.3534	112.7991	Max Flow
L241	5.3641	0.0000	2.7217	0.9383	1.2500	110.4620	107.7383	Max Flow
L242	1.8517	0.0000	0.3828	0.5793	0.6687	108.0733	107.6293	Max Flow
L243	2.4831	0.0000	0.6200	0.6748	0.8718	108.4472	107.7248	Max Flow
L246	24.3602	0.0000	1.9271	1.6806	2.5000	101.6618	99.7331	Max Flow
L247	28.8013	0.0000	0.5840	1.8288	2.5000	99.7331	99.1000	Max Flow
L248	1.9821	0.0000	0.2263	0.6006	0.7067	99.9112	99.7331	Max Flow
L249	1.5791	0.0000	0.4525	0.5329	0.6016	105.4928	104.8401	Max Flow
L250	2.9997	0.0000	5.3766	0.7420	0.3798	104.8401	99.0900	Max Flow
L251	1.3045	0.0000	0.4082	0.4824	0.5322	105.4065	104.8401	Max Flow
L254	4.4560	0.0000	1.6773	0.8093	1.5000	105.6128	103.9333	Max Flow
L255	9.0488	0.0000	0.9447	1.0730	2.0000	103.9333	103.0000	Max Flow
L258	0.8529	0.0000	0.5569	0.3860	0.4163	98.1052	97.4860	Max Flow
L259	1.0482	0.0000	0.6505	0.3649	0.4504	96.8502	95.7732	Max Flow
L260	1.2538	0.0000	0.8809	0.3999	0.1912	95.7732	89.4200	Max Flow
L261	0.9792	0.0000	0.6857	0.4149	0.4484	94.7428	93.7152	Max Flow
L262	2.3040	0.0000	7.8217	0.6492	0.2750	93.7152	81.4800	Max Flow
L263	1.1997	0.0000	0.6244	0.4615	0.5057	94.6677	93.7152	Max Flow
L272	9.4488	0.0000	0.0010	0.8634	1.3150	81.4710	81.4700	Max Flow
L273	9.4488	0.0000	0.5454	1.1432	1.7500	82.0168	81.4710	Max Flow
L274	8.5560	0.0000	9.8793	1.1323	0.5281	92.4485	81.4700	Max Flow
L275	1.5053	0.0000	0.6153	0.5200	0.5819	119.5369	118.6155	Max Flow
L277	1.5122	0.0000	0.6555	0.5212	0.5830	119.6046	118.6155	Max Flow
L281	3.4219	0.0000	1.5113	0.7905	1.0000	124.8193	122.6751	Max Flow
L282	5.0178	0.0000	8.2629	0.9172	0.3949	122.6751	113.2700	Max Flow
L283	1.4971	0.0000	0.6319	0.5185	0.5772	123.5619	122.6750	Max Flow
L287	1.8249	0.0000	0.6389	0.5749	0.6593	113.8197	113.0849	Max Flow
L289	2.2642	0.0000	0.7268	0.6435	0.7865	114.0002	113.1535	Max Flow
L308	77.4521	0.0000	0.7922	2.7505	1.7323	101.0728	98.4100	Max Flow
L317	1.3573	0.0000	2.0739	0.4598	0.6068	106.3439	105.6128	Max Flow
L319	1.8801	0.0000	0.2467	0.5155	0.6171	100.8275	100.5155	Max Flow
L320	1.8798	0.0000	0.4119	0.5839	0.6753	101.7816	101.3039	Max Flow
L334	0.4265	0.0000	2.1313	0.2696	0.2878	125.6081	123.3977	Max Flow
L335	0.8586	0.0000	1.9033	0.3874	0.4174	123.3977	121.3926	Max Flow
L336	1.2917	0.0000	0.6739	0.4800	0.5278	121.3926	120.3681	Max Flow
L337	1.2917	0.0000	3.7510	0.4800	0.2780	120.3681	115.3200	Max Flow
L338	21.2514	0.0000	0.1869	1.4803	2.5060	128.3207	128.1342	Max Flow
L339	21.2523	0.0000	0.6160	1.4803	2.4676	128.1342	127.2811	Max Flow
L340	30.1715	0.0000	0.9265	1.6964	3.0209	127.2811	125.8532	Max Flow
L341	30.1708	0.0000	3.3261	1.6964	0.8431	125.8533	122.5200	Max Flow
L342	4.5877	0.0000	0.4878	0.8677	1.2500	128.9836	128.3977	Max Flow
L343	2.6326	0.0000	0.6387	0.6950	1.0000	129.2163	128.4750	Max Flow
L344	12.3311	0.0000	0.1761	1.1780	1.7323	127.1536	127.0974	Max Flow
L346	25.6088	0.0000	0.1209	1.5571	2.4753	126.8959	126.8526	Max Flow
L347	56.3351	0.0000	0.7993	2.2572	4.0000	126.8524	126.0662	Max Flow
L348	56.3340	0.0000	0.7607	2.2572	4.0000	126.0662	125.3076	Max Flow
L349	56.3336	0.0000	0.7614	2.2572	4.0000	125.3076	124.5274	Max Flow
L350	56.3336	0.0000	0.2512	2.2572	4.0000	124.5274	124.2706	Max Flow
L351	8.2540	0.0000	0.1151	1.0227	1.4579	124.5647	124.5069	Max Flow
L352	8.2540	0.0000	0.4199	1.0228	1.4508	124.5069	124.2705	Max Flow
L354	73.4488	0.0000	0.2115	2.5008	2.1105	122.5798	122.5300	Max Flow
L361	2.3115	0.0000	0.3204	0.6503	0.8093	126.2886	125.9103	Max Flow
L362	2.1598	0.0000	0.4193	0.6278	0.7572	126.3794	125.8878	Max Flow
L363	4.5228	0.0000	1.3918	0.8156	1.0642	125.8458	124.5769	Max Flow
L364	2.6496	0.0000	0.3554	0.6973	1.0000	124.9752	124.5573	Max Flow
L365	1.6367	0.0000	0.3765	0.5430	0.6119	124.8690	124.5769	Max Flow
L366	9.8099	0.0000	0.9193	1.1200	1.7285	124.5769	123.6546	Max Flow

L367	9.8099	0.0000	0.8585	1.1200	1.7295	123.6546	122.7901	Max Flow
L368	2.2791	0.0000	0.7451	0.6457	0.7931	123.6243	122.7826	Max Flow
L369	3.4945	0.0000	1.2617	0.7986	1.0000	124.1512	122.9086	Max Flow
L370	19.1219	0.0000	0.3121	1.4008	2.2211	122.7901	122.5952	Max Flow
L373	19.1219	0.0000	0.1838	1.4008	1.0725	122.5952	122.5300	Max Flow
L374	3.3514	0.0000	1.8661	0.7827	1.0000	120.8308	118.9627	Max Flow
L375	3.3513	0.0000	0.6264	0.6972	1.5000	118.9042	118.0076	Max Flow
L376	14.2870	0.1090	0.2270	1.2355	1.8577	118.6571	118.3974	Max Flow
L386	36.6327	0.0000	0.2568	1.8016	3.1950	118.2769	118.0216	Max Flow
L387	36.6198	0.0000	0.2667	1.8013	3.2081	118.0217	117.7558	Max Flow
L388	2.2293	0.0000	1.0232	0.6384	0.6502	118.3379	117.7550	Max Flow
L389	50.3323	0.0000	0.2921	2.0512	3.8871	117.7558	117.4640	Max Flow
L390	1.6079	0.0000	0.4428	0.5379	0.7071	117.6983	117.1430	Max Flow
L391	55.1790	0.0000	0.4551	2.1537	4.5000	117.4640	117.0057	Max Flow
L392	65.3719	0.0000	0.4866	2.3530	4.5000	117.0058	116.5064	Max Flow
L393	65.3657	0.0000	0.6674	2.3529	4.5000	116.5065	115.8648	Max Flow
L395	4.2403	0.0000	0.6734	0.8335	0.6572	118.9854	118.7039	Max Flow
L396	8.3482	0.0000	0.4743	0.9094	1.3085	118.7806	118.7039	Max Flow
L397	4.5806	0.0000	0.5730	0.8670	0.7108	119.0774	118.7029	Max Flow
L398	4.3232	0.0000	0.4977	0.8420	0.4678	119.0579	118.7796	Max Flow
L399	4.0372	0.0000	0.6932	0.7039	0.9135	118.9306	118.7777	Max Flow
L402	7.1188	0.0000	0.2434	0.9866	1.4060	113.6518	113.4140	Max Flow
L403	7.1191	0.0000	1.1036	0.9866	1.4210	113.4140	112.2979	Max Flow
L404	7.1280	0.0000	1.1163	0.9872	1.4122	112.2983	111.0825	Max Flow
L405	4.8549	0.0000	0.3254	0.8468	1.1311	111.3924	110.9768	Max Flow
L406	11.9729	0.0000	0.6417	1.1597	1.7166	112.4791	112.0680	Max Flow
L407	3.8256	0.0000	0.3887	0.7905	1.0955	111.0297	110.5505	Max Flow
L408	15.7980	0.0000	0.5961	1.3024	2.0080	112.0680	111.6343	Max Flow
L410	20.1364	0.0000	0.5381	1.4401	2.3383	111.6343	111.1574	Max Flow
L411	20.1364	0.0000	0.4098	1.4401	2.3489	111.1574	110.7941	Max Flow
L413	2.2679	0.0000	1.3402	0.5683	0.6796	119.1099	118.8186	Max Flow
L415	2.2700	0.0000	0.3536	0.6444	0.7489	119.5278	119.1244	Max Flow
L417	2.8494	0.0000	0.5217	0.7235	1.0000	112.5021	111.9035	Max Flow
L418	5.1688	0.0000	0.3289	0.8748	1.2081	113.1916	112.9610	Max Flow
L419	8.0182	0.0000	0.6050	1.0071	1.4169	112.9610	112.5301	Max Flow
L420	8.0182	0.0000	0.9397	1.0071	1.4176	112.5301	111.8621	Max Flow
L421	1.6631	0.0000	0.4105	0.5476	0.6182	110.6689	110.2151	Max Flow
L422	3.8019	0.0000	0.4123	0.7879	1.0644	112.2083	111.8621	Max Flow
L423	13.6466	0.0000	0.6966	1.2419	1.9032	111.8621	111.2807	Max Flow
L424	18.5464	0.0000	0.5378	1.4164	2.3829	111.2807	110.7941	Max Flow
L425	0.9317	0.0000	0.4054	0.4045	0.4363	111.3435	111.2807	Max Flow
L426	3.9681	0.0000	0.3932	0.8057	1.2500	111.6425	111.2807	Max Flow
L427	40.5902	0.0000	1.0434	1.9812	3.5000	110.7941	109.7503	Max Flow
L428	0.9393	0.0000	0.4988	0.4062	0.4397	109.8312	109.7503	Max Flow
L429	42.4776	0.0000	0.8860	2.0284	3.5000	109.7503	108.8835	Max Flow
L430	2.4485	0.0000	0.7700	0.6698	0.7129	120.8359	120.2718	Max Flow
L431	2.2781	0.0000	2.4871	0.6455	0.7923	122.5849	120.2699	Max Flow
L432	2.2777	0.0000	0.5306	0.6454	0.7915	123.0749	122.5848	Max Flow
L435	2.8727	0.0000	0.7704	0.7264	1.0000	116.1803	115.4093	Max Flow
L436	2.8741	0.0000	2.7381	0.7266	1.0000	115.4093	112.6913	Max Flow
L437	2.8724	0.0000	1.3707	0.6804	0.8304	112.8384	112.0501	Max Flow
L438	1.6722	0.0000	0.5063	0.5492	0.6236	112.3084	112.0515	Max Flow
L439	4.5570	0.0000	2.5013	0.8648	1.2500	112.0515	109.5681	Max Flow
L440	4.5523	0.0000	1.3289	0.8185	1.0723	109.7789	108.8835	Max Flow
L441	48.9390	0.0000	1.1723	2.1842	3.5000	108.8835	107.6629	Max Flow
L442	48.9390	0.0000	1.6389	2.1842	3.5000	107.6629	105.0976	Max Flow
L443	48.9390	0.0000	5.2037	2.1842	0.9872	105.0976	98.4100	Max Flow
L446	5.9168	0.0000	0.2542	0.9388	1.5000	129.7527	129.4984	Max Flow
L448	0.9708	0.0000	0.4570	0.4131	0.4472	128.2210	128.1440	Max Flow
L449	9.5085	0.0000	2.1422	1.1469	1.7500	128.1440	126.0007	Max Flow
L450	13.3913	0.0000	1.8254	1.3165	2.0000	126.0007	123.9765	Max Flow
L451	14.7194	0.0000	0.4727	1.3819	2.0000	120.4426	119.8419	Max Flow
L452	1.2925	0.0000	0.2887	0.4802	0.5291	126.0884	126.0007	Max Flow
L453	0.9323	0.0000	0.3450	0.4046	0.4391	126.0559	126.0007	Max Flow
L454	0.6805	0.0000	0.4065	0.3432	0.3671	120.4709	120.2912	Max Flow
L466	4.0513	0.0000	0.6115	0.8142	0.9291	120.8206	120.1342	Max Flow
L468	4.0491	0.0000	0.9972	0.7050	0.9525	119.5232	118.5300	Max Flow
L470	9.4830	0.0000	0.8187	1.1453	1.7500	123.4952	122.3558	Max Flow
L471	0.3817	0.0000	1.3528	0.2545	0.2559	125.0264	123.4952	Max Flow

L472	4.4576	0.0000	1.0741	0.8830	1.0000	128.1166	127.0400	Max Flow
L490	6.7172	0.0000	0.3686	0.9567	1.7500	111.3361	110.8167	Max Flow
L496	0.6064	0.0000	2.1679	0.3236	0.3457	133.7961	131.6772	Max Flow
L497	0.5989	0.0000	2.1741	0.3217	0.3435	133.8039	131.6772	Max Flow
L498	1.2053	0.0000	0.5699	0.4626	0.5070	131.6772	131.1070	Max Flow
L501	12.3318	0.0000	0.5470	1.1137	1.6376	127.0975	126.9361	Max Flow
L502	12.3328	0.0000	0.2258	1.0636	1.6011	126.9362	126.8521	Max Flow
L503	73.4488	0.0000	0.7099	2.5008	4.5000	124.2706	123.5298	Max Flow
L504	73.4488	0.0000	0.8202	2.5008	4.5000	123.5298	122.5798	Max Flow
L505	10.5983	0.0000	2.3248	1.2124	1.7500	106.3229	103.9920	Max Flow
L506	10.9003	0.0000	2.4583	1.2298	1.7500	103.9920	101.5264	Max Flow
L509	2.9902	0.0000	9.8096	0.7408	0.3581	108.2196	98.4100	Max Flow
L511	11.0354	0.0000	2.5525	1.2707	1.5000	112.4350	109.8807	Max Flow
L512	17.9040	0.0000	10.8538	1.5241	0.6463	108.7565	94.5300	Max Flow
L514	8.0432	0.0000	1.3537	1.0519	1.7500	129.4984	128.1440	Max Flow
L515	17.6973	0.0000	0.2070	1.3454	2.0760	118.3974	118.2769	Max Flow
CH21	13.5742	0.0000	0.7772	0.0721	0.3068	118.6771	118.6571	Max Flow
L474	9.4830	0.0000	1.3681	1.1890	1.5000	120.8720	119.5000	Max Flow
L523	9.4830	0.0000	0.7137	0.3970	0.9455	122.3558	121.2270	Max Flow
L525	17.1560	0.0000	0.7331	1.3244	2.0433	118.7039	118.2769	Max Flow
L527	4.5202	0.0000	1.3812	0.8154	1.0805	118.8193	117.7558	Max Flow
L528	4.7289	0.0000	3.2734	0.8811	1.2500	120.2700	116.9188	Max Flow
L529	4.3384	0.0000	0.6401	0.7981	1.5000	114.9266	114.2861	Max Flow
L533	4.3384	0.0000	2.4126	0.7981	1.0336	114.2861	112.6510	Max Flow
L537	4.3384	0.0000	1.0160	0.7981	1.5000	112.6510	111.6343	Max Flow
L394	65.3640	0.0000	0.3944	2.3529	4.5000	115.8648	115.6200	Max Flow
L276	3.1464	0.0000	6.6274	0.7600	0.3153	118.6155	110.5500	Max Flow
L288	4.1590	0.0000	4.1369	0.8252	0.3816	112.6569	108.5200	Max Flow
L412	2.2432	0.0000	0.6001	0.6405	0.6067	119.6067	119.0067	Max Flow
L447	2.1264	0.0000	1.3136	0.5499	0.6604	129.7121	129.4984	Max Flow
L321	0.5084	0.0000	1.1075	0.2951	0.3909	119.2319	118.5578	Max Flow

Table E13a. CULVERT ANALYSIS CLASSIFICATION, and the time the culvert was in a particular classification during the simulation. The time is in minutes. The Dynamic Wave Equation is used for all conduit analysis but the culvert flow classification condition is based on the HW and TW depths.

Conduit Name	Mild Slope Critical D Outlet Control	Mild Slope TW Control Outlet Control	Steep Slope TW Insignf Entrance Control	Slug Flow Outlet/ Entrance Control	Mild Slope TW > D Outlet Control	Mild Slope TW <= D Outlet Control	Outlet Control	Inlet Control	Inlet Configuration
L210	0.0000	58.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L211	17.0000	38.0000	0.0000	0.0000	0.0000	0.0000	305.0000	0.0000	None
L212	18.0000	41.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L213	0.0000	49.0000	0.0000	0.0000	311.0000	0.0000	0.0000	0.0000	None
L214	0.0000	49.0000	0.0000	0.0000	311.0000	0.0000	0.0000	0.0000	None
L217	294.0000	66.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L220	2.0000	56.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L221	255.0000	105.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L222	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L223	241.0000	119.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L224	280.0000	80.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L225	32.0000	58.0000	3.0000	0.0000	267.0000	0.0000	0.0000	0.0000	None
L226	0.0000	65.0000	0.0000	0.0000	295.0000	0.0000	0.0000	0.0000	None
L227	33.0000	28.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L228	17.0000	38.0000	0.0000	0.0000	0.0000	0.0000	305.0000	0.0000	None
L229	316.0000	44.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L230	314.0000	46.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L231	39.0000	37.0000	0.0000	0.0000	0.0000	0.0000	284.0000	0.0000	None
L232	20.0000	76.0000	0.0000	0.0000	253.0000	0.0000	11.0000	0.0000	None
L233	19.0000	38.0000	4.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L234	1.0000	49.0000	0.0000	0.0000	310.0000	0.0000	0.0000	0.0000	None
L235	11.0000	52.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None

L236	0.0000	59.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L237	0.0000	59.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L238	8.0000	352.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L239	15.0000	35.0000	0.0000	0.0000	0.0000	0.0000	310.0000	0.0000	None
L240	290.0000	70.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L241	17.0000	38.0000	0.0000	0.0000	0.0000	0.0000	305.0000	0.0000	None
L242	223.0000	137.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L243	82.0000	278.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L246	0.0000	62.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L247	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L248	0.0000	62.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L249	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L250	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L251	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L254	0.0000	42.0000	0.0000	0.0000	318.0000	0.0000	0.0000	0.0000	None
L255	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L258	163.0000	197.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L259	356.0000	4.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L260	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L261	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L262	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L263	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L272	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L273	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L274	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L275	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L277	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L281	53.0000	0.0000	0.0000	0.0000	0.0000	0.0000	307.0000	0.0000	None
L282	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L283	359.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L287	281.0000	79.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L289	285.0000	75.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L308	0.0000	0.0000	0.0000	359.0000	0.0000	0.0000	1.0000	0.0000	None
L317	0.0000	44.0000	0.0000	0.0000	316.0000	0.0000	0.0000	0.0000	None
L319	330.0000	30.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L320	9.0000	351.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L334	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L335	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L336	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L337	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L338	4.0000	356.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L339	18.0000	342.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L340	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L341	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L342	293.0000	67.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L343	287.0000	73.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L344	1.0000	61.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L346	3.0000	53.0000	0.0000	0.0000	304.0000	0.0000	0.0000	0.0000	None
L347	5.0000	53.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L348	3.0000	58.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L349	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L350	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L351	3.0000	357.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L352	28.0000	332.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L354	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	None
L361	295.0000	65.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L362	74.0000	286.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L363	13.0000	347.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L364	1.0000	359.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L365	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L366	1.0000	359.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L367	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L368	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L369	291.0000	69.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L370	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L373	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	None
L374	4.0000	41.0000	2.0000	0.0000	0.0000	0.0000	313.0000	0.0000	None
L375	70.0000	288.0000	2.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L376	1.0000	359.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None

L386	5.0000	355.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L387	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L388	0.0000	2.0000	51.0000	0.0000	307.0000	0.0000	0.0000	0.0000	None
L389	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L390	22.0000	338.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L391	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L392	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L393	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L395	0.0000	0.0000	10.0000	31.0000	0.0000	310.0000	9.0000	0.0000	None
L396	0.0000	356.0000	4.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L397	0.0000	0.0000	11.0000	29.0000	0.0000	309.0000	11.0000	0.0000	None
L398	0.0000	0.0000	12.0000	29.0000	0.0000	294.0000	25.0000	0.0000	None
L399	24.0000	336.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L402	4.0000	79.0000	0.0000	0.0000	277.0000	0.0000	0.0000	0.0000	None
L403	10.0000	71.0000	0.0000	0.0000	279.0000	0.0000	0.0000	0.0000	None
L404	20.0000	57.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L405	1.0000	76.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L406	8.0000	63.0000	0.0000	0.0000	289.0000	0.0000	0.0000	0.0000	None
L407	1.0000	70.0000	0.0000	0.0000	289.0000	0.0000	0.0000	0.0000	None
L408	2.0000	65.0000	0.0000	0.0000	293.0000	0.0000	0.0000	0.0000	None
L410	12.0000	52.0000	0.0000	0.0000	296.0000	0.0000	0.0000	0.0000	None
L411	6.0000	56.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L413	1.0000	91.0000	0.0000	0.0000	268.0000	0.0000	0.0000	0.0000	None
L415	293.0000	67.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L417	8.0000	69.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L418	1.0000	76.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L419	10.0000	64.0000	0.0000	0.0000	286.0000	0.0000	0.0000	0.0000	None
L420	9.0000	57.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L421	0.0000	66.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L422	1.0000	65.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L423	8.0000	55.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L424	22.0000	40.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L425	0.0000	63.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L426	1.0000	62.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L427	0.0000	66.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L428	1.0000	65.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L429	0.0000	73.0000	0.0000	0.0000	287.0000	0.0000	0.0000	0.0000	None
L430	2.0000	5.0000	31.0000	0.0000	315.0000	0.0000	7.0000	0.0000	None
L431	24.0000	30.0000	0.0000	0.0000	306.0000	0.0000	0.0000	0.0000	None
L432	15.0000	46.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L435	11.0000	45.0000	0.0000	0.0000	304.0000	0.0000	0.0000	0.0000	None
L436	16.0000	45.0000	0.0000	0.0000	267.0000	0.0000	32.0000	0.0000	None
L437	0.0000	59.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L438	0.0000	59.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L439	22.0000	74.0000	0.0000	0.0000	0.0000	0.0000	264.0000	0.0000	None
L440	33.0000	40.0000	0.0000	0.0000	287.0000	0.0000	0.0000	0.0000	None
L441	13.0000	347.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L442	358.0000	2.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L443	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L446	2.0000	56.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L448	0.0000	56.0000	0.0000	0.0000	304.0000	0.0000	0.0000	0.0000	None
L449	5.0000	56.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L450	194.0000	166.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L451	197.0000	163.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L452	1.0000	60.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L453	1.0000	60.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L454	1.0000	359.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L466	194.0000	166.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L468	10.0000	350.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L470	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L471	0.0000	23.0000	6.0000	0.0000	331.0000	0.0000	0.0000	0.0000	None
L472	0.0000	51.0000	0.0000	0.0000	309.0000	0.0000	0.0000	0.0000	None
L490	288.0000	72.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L496	4.0000	356.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L497	4.0000	356.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L498	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L501	2.0000	57.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L502	1.0000	55.0000	0.0000	0.0000	304.0000	0.0000	0.0000	0.0000	None
L503	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None

L504	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L505	18.0000	42.0000	0.0000	0.0000	299.0000	0.0000	1.0000	0.0000	None
L506	1.0000	49.0000	0.0000	0.0000	310.0000	0.0000	0.0000	0.0000	None
L509	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L511	7.0000	37.0000	0.0000	0.0000	0.0000	0.0000	316.0000	0.0000	None
L512	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L514	8.0000	48.0000	0.0000	0.0000	304.0000	0.0000	0.0000	0.0000	None
L515	6.0000	354.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
CH21	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L474	0.0000	57.0000	0.0000	0.0000	303.0000	0.0000	0.0000	0.0000	None
L523	307.0000	53.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L525	6.0000	236.0000	2.0000	0.0000	116.0000	0.0000	0.0000	0.0000	None
L527	7.0000	50.0000	0.0000	0.0000	303.0000	0.0000	0.0000	0.0000	None
L528	43.0000	18.0000	0.0000	0.0000	0.0000	0.0000	299.0000	0.0000	None
L529	9.0000	75.0000	0.0000	0.0000	276.0000	0.0000	0.0000	0.0000	None
L533	12.0000	54.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L537	33.0000	34.0000	0.0000	0.0000	293.0000	0.0000	0.0000	0.0000	None
L394	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L276	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L288	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L412	0.0000	1.0000	58.0000	0.0000	0.0000	0.0000	301.0000	0.0000	None
L447	0.0000	58.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L321	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None

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| Kinematic Wave Approximations |
| Time in Minutes for Each Condition |
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Conduit Name	Duration of Normal Flow	Slope Criteria	Super-Critical	Roll Waves
L210	0.0000	0.0000	0.0000	0.0000
L211	0.0000	0.0000	0.9167	0.0000
L212	0.5000	303.9333	2.9091	0.0000
L213	0.0000	17.6000	0.0000	0.0000
L214	0.1968	37.9156	0.0000	0.0000
L217	0.0000	0.0000	0.7500	0.0000
L220	0.0000	0.2500	1.0278	0.0000
L221	0.0000	0.2500	1.2399	0.0000
L222	359.7500	359.7500	346.9621	0.0000
L223	0.0000	0.0000	3.9773	0.0000
L224	0.0000	0.0000	0.0000	0.0000
L225	6.8237	302.7000	5.2727	0.0000
L226	34.4655	360.0000	3.3864	0.0000
L227	0.0333	302.8333	3.6364	0.0000
L228	0.0000	1.8333	1.8333	0.0000
L229	0.0000	0.2500	1.9773	0.0000
L230	0.0000	0.0000	0.0000	0.0000
L231	0.0000	0.0000	0.2500	0.0000
L232	0.0000	0.5000	1.3889	0.0000
L233	0.0667	6.3011	0.0000	0.0000
L234	16.6869	359.2778	1.2222	0.0000
L235	0.0000	346.0909	6.4091	0.0000
L236	0.0000	0.0000	0.0000	0.0000
L237	0.0000	0.0000	0.0000	0.0000
L238	0.0000	0.0000	0.0000	0.0000
L239	0.0000	0.0000	0.5000	0.0000
L240	0.0000	0.0000	0.7500	0.0000
L241	0.0000	0.5000	1.8864	0.0000
L242	0.0000	0.0000	0.0000	0.0000
L243	0.0000	0.0000	0.0000	0.0000
L246	0.2500	39.3701	0.0000	0.0000
L247	0.0000	32.9007	0.0000	0.0000
L248	0.0909	358.2652	0.0000	0.0000
L249	0.0000	0.0000	0.2500	0.0000
L250	360.0000	360.0000	355.1364	0.0000
L251	0.0000	0.0000	0.5000	0.0000
L254	10.0455	51.4138	0.2500	0.0000

L255	0.9655	1.0690	0.0000	0.0000
L258	0.0000	0.0000	1.0000	0.0000
L259	0.0000	0.7753	0.8056	0.0000
L260	359.7500	359.7500	324.0463	0.0000
L261	0.0000	0.0000	0.5000	0.0000
L262	360.0000	360.0000	354.7273	0.0000
L263	0.0000	0.0000	0.7500	0.0000
L272	0.0000	358.3889	0.0000	0.0000
L273	0.0000	44.3651	0.0000	0.0000
L274	359.7500	359.7500	356.9091	0.0000
L275	0.0000	0.0000	0.5000	0.0000
L277	0.0000	0.0000	0.7500	0.0000
L281	0.0000	0.0000	352.2955	0.0000
L282	360.0000	360.0000	357.2273	0.0000
L283	0.0000	0.0000	0.5000	0.0000
L287	0.0000	0.0000	0.0000	0.0000
L289	0.0000	0.0000	0.0000	0.0000
L308	0.5202	356.4621	0.7222	0.0000
L317	46.7107	358.2778	0.5000	0.0000
L319	0.0000	0.0000	0.7778	0.0000
L320	0.0000	0.0000	0.5000	0.0000
L334	356.5909	359.7500	0.0000	0.0000
L335	358.1667	359.7500	0.0000	0.0000
L336	0.0000	0.0000	2.9773	0.0000
L337	359.7500	359.7500	344.6818	0.0000
L338	0.0000	0.0000	1.6389	0.0000
L339	0.0000	0.0000	0.5000	0.0000
L340	0.0000	0.0000	326.9406	0.0000
L341	359.7500	359.7500	348.5909	0.0000
L342	0.0000	0.0000	0.0000	0.0000
L343	0.0000	0.0000	0.0000	0.0000
L344	0.0667	304.4333	0.0000	0.0000
L346	0.0455	350.5000	0.0000	0.0000
L347	0.0000	19.4242	0.0000	0.0000
L348	0.0000	25.5175	2.5227	0.0000
L349	0.8485	28.5758	1.6389	0.0000
L350	0.1111	28.1027	1.4167	0.0000
L351	0.0000	302.4667	1.5278	0.0000
L352	0.0000	304.7333	0.5000	0.0000
L354	0.0000	350.0909	0.0000	0.0000
L361	0.0000	0.0000	0.0000	0.0000
L362	0.0000	0.0000	0.0000	0.0000
L363	0.0000	309.7759	1.3611	0.0000
L364	0.0000	0.0000	0.0000	0.0000
L365	0.0000	301.8333	0.0000	0.0000
L366	5.4141	57.6444	1.1111	0.0000
L367	0.5000	59.2977	0.2500	0.0000
L368	13.6263	27.2230	0.0000	0.0000
L369	2.6414	14.0101	0.0000	0.0000
L370	0.0000	356.0909	0.0000	0.0000
L373	0.0000	355.9091	0.0000	0.0000
L374	0.0000	0.0000	0.0000	0.0000
L375	0.0000	0.0000	0.5455	0.0000
L376	0.5909	347.1364	0.0000	0.0000
L386	0.0000	348.6364	2.8409	0.0000
L387	0.5000	347.3182	4.2955	0.0000
L388	7.0909	336.5600	0.0000	0.0000
L389	0.0000	348.1818	0.5000	0.0000
L390	0.0000	0.0000	0.0000	0.0000
L391	1.7778	348.9798	0.2500	0.0000
L392	0.0000	48.2449	0.0000	0.0000
L393	0.0000	47.9707	0.0000	0.0000
L395	10.6364	359.5000	0.5000	0.0000
L396	0.2727	355.2727	0.0000	0.0000
L397	10.5581	359.5000	0.7500	0.0000
L398	5.7045	359.2500	3.5000	0.0000
L399	0.0000	317.3929	3.5000	0.0000
L402	0.0323	298.3871	1.8409	0.0000
L403	0.0323	287.5161	3.7045	0.0000

L404	0.0645	289.5161	2.1818	0.0000
L405	0.0323	289.8387	0.0000	0.0000
L406	0.0000	308.1810	1.5278	0.0000
L407	0.1613	3.9032	0.0000	0.0000
L408	0.0000	314.0714	1.8409	0.0000
L410	0.0000	326.3077	5.7727	0.0000
L411	0.0000	332.8000	8.6136	0.0000
L413	39.9104	353.4242	0.5000	0.0000
L415	0.0000	0.0000	0.0000	0.0000
L417	0.0000	0.0000	0.0000	0.0000
L418	0.0323	286.8387	0.0000	0.0000
L419	0.0000	308.2183	3.8081	0.0000
L420	0.0000	304.9667	2.3409	0.0000
L421	0.0323	298.1290	0.0000	0.0000
L422	0.0645	6.9677	0.0000	0.0000
L423	0.0000	316.7143	1.5833	0.0000
L424	0.0000	34.0772	1.6389	0.0000
L425	0.0000	305.2000	0.5000	0.0000
L426	0.5484	0.7097	0.0000	0.0000
L427	0.0000	11.9863	0.2500	0.0000
L428	0.0333	306.4333	0.5000	0.0000
L429	4.8636	19.7726	0.2500	0.0000
L430	10.8775	351.1818	5.2500	0.0000
L431	17.8740	328.5300	1.7778	0.0000
L432	0.0000	306.6200	4.1818	0.0000
L435	0.0000	27.1250	3.4545	0.0000
L436	0.0000	0.5000	1.2500	0.0000
L437	30.7189	356.5682	0.9167	0.0000
L438	0.0000	332.9600	0.5000	0.0000
L439	0.0000	0.5000	1.9091	0.0000
L440	0.0000	303.5667	5.0682	0.0000
L441	0.0000	0.0000	1.4444	0.0000
L442	0.0000	0.0000	316.9945	0.0000
L443	359.7500	359.7500	338.3913	0.0000
L446	0.1000	2.2000	0.0000	0.0000
L448	0.0000	325.2308	0.7500	0.0000
L449	0.0000	0.5000	1.9545	0.0000
L450	0.0000	0.5000	1.5000	0.0000
L451	0.0000	0.0000	1.9444	0.0000
L452	0.0000	319.2593	0.5000	0.0000
L453	0.0000	322.6667	0.5000	0.0000
L454	0.0000	320.3333	1.0000	0.0000
L466	0.0000	0.0000	0.0000	0.0000
L468	0.0000	297.8710	4.7727	0.0000
L470	0.0000	0.0000	6.2273	0.0000
L471	353.1818	353.1818	0.0000	0.0000
L472	0.0000	0.0000	0.0000	0.0000
L490	0.0000	0.0000	0.0000	0.0000
L496	354.1364	354.5000	2.7955	0.0000
L497	354.1818	354.5000	3.0909	0.0000
L498	0.0000	0.0000	1.5682	0.0000
L501	0.0000	327.7308	0.9167	0.0000
L502	2.7727	355.7273	3.0000	0.0000
L503	0.0000	28.6254	0.0000	0.0000
L504	0.0000	29.2475	0.0000	0.0000
L505	0.0000	0.5000	1.4444	0.0000
L506	8.6818	12.7273	1.4444	0.0000
L509	48.5776	359.7500	356.3636	0.0000
L511	0.0000	0.0000	0.0000	0.0000
L512	359.7500	359.7500	355.7273	0.0000
L514	0.0000	47.0513	0.2500	0.0000
L515	0.0000	343.7957	4.2500	0.0000
CH21	68.9516	359.5000	0.0000	0.0000
L474	0.4074	0.4074	1.4798	0.0000
L523	0.0000	0.2500	0.5000	0.0000
L525	0.0000	323.3655	0.2727	0.0000
L527	11.6660	352.6364	1.7778	0.0000
L528	0.0000	0.2500	1.3889	0.0000
L529	0.0000	0.0000	2.8182	0.0000

L533	29.0522	342.6364	6.7727	0.0000
L537	0.0000	0.0000	1.3636	0.0000
L394	0.0000	47.2424	0.0000	0.0000
L276	360.0000	360.0000	356.0455	0.0000
L288	48.2414	360.0000	354.2273	0.0000
L412	0.0000	0.0000	352.9091	0.0000
L447	29.6104	349.3182	0.0000	0.0000
L321	71.0499	353.0000	4.0909	0.0000

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| Table E15 - SPREADSHEET INFO LIST |
| Conduit Flow and Junction Depth Information for use in |
| spreadsheets. The maximum values in this table are the |
| true maximum values because they sample every time step.|
| The values in the review results may only be the |
| maximum of a subset of all the time steps in the run. |
| Note: These flows are only the flows in a single barrel.|
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Conduit Name	Maximum Flow (cfs)	Total Flow (ft^3)	Maximum Velocity (ft/s)	Maximum Volume (ft^3)	##	Junction Name	Invert Elevation (ft)	Maximum Elevation (ft)
L210	2.8911	57161.7010	3.7435	56.6616	##	N221	105.8400	107.6026
L211	3.1354	61547.7106	4.0313	92.9610	##	N222	104.4400	106.9939
L212	3.2978	64190.1540	3.3046	521.4422	##	N223	100.8100	102.1159
L213	2.4916	49166.3432	3.2327	86.7972	##	N224	96.9700	100.2909
L214	5.3717	106137.7153	3.0198	172.0434	##	N227	98.3400	100.9720
L217	0.9501	18775.4847	2.8265	22.0944	##	N228	97.5300	100.6100
L220	11.2776	221043.0844	4.6465	795.1444	##	N230	95.8300	98.1694
L221	13.2165	257683.0352	4.1620	1071.2640	##	N231	99.8400	100.2872
L222	13.3950	261073.4994	9.6249	98.3306	##	N233	94.4200	95.2407
L223	0.2305	4547.4950	1.4362	9.8486	##	N234	87.6000	89.4100
L224	0.2305	4486.4903	1.3309	10.9512	##	N235	119.6000	119.8642
L225	0.2305	4408.5282	1.3999	161.7749	##	N236	118.6100	118.8903
L226	0.9294	18089.2908	1.8892	319.3934	##	N237	117.2600	117.6596
L227	1.5845	30756.6183	2.2884	192.5795	##	N238	115.1100	117.5825
L228	2.4888	47896.2477	3.2325	176.8815	##	N239	117.6900	118.5578
L229	2.9466	56181.7920	2.5939	247.7024	##	N240	116.6200	118.1994
L230	3.4595	65690.1332	2.9207	383.3851	##	N241	111.3600	112.5184
L231	3.8015	71794.9423	3.0945	484.4460	##	N242	108.6300	110.4305
L232	6.0390	115223.4020	3.3992	548.9910	##	N243	105.8600	108.0703
L233	6.3287	120036.0313	3.5596	876.1916	##	N244	103.8500	106.2736
L234	9.4131	180049.6598	2.9858	1363.1989	##	N245	101.6800	104.9361
L235	0.4478	8830.4486	1.0903	41.1676	##	N246	99.5600	

102.6459

L236	2.1260	41985.2025	2.6939	85.6236	##	N247	97.8700

101.6618

L237	3.0846	60882.8456	3.8984	80.9086	##	N248	111.4800

112.5280

L238	3.6943	73068.2058	4.7555	41.0992	##	N249	104.6200

106.7649

L239	4.0636	80236.8897	5.1858	93.2085	##	N250	101.1400

103.6254

L240	1.2377	24462.2854	3.0137	31.3633	##	N251	115.3800

116.6527

L241	5.3649	105452.1811	4.4351	240.5992	##	N252	113.0600

115.2810

L242	1.8517	36615.8616	3.3991	31.7246	##	N253	108.0800

110.4633

L243	2.4831	49084.6406	3.6078	60.0089	##	N254	112.8300

113.3534

L246	24.3602	470866.4565	4.9409	2056.3572	##	N255	102.8000

106.4521

L247	28.8013	557457.1532	5.8520	431.2539	##	N256	107.4100

108.0734

L248	1.9845	39213.6354	2.9473	37.6102	##	N257	107.6100

108.4472

L249	1.5797	31240.2251	3.2812	25.3314	##	N259	97.1600

99.7331

L250	3.0002	59322.1285	9.2028	16.5607	##	N260	97.0000

99.1000

L251	1.3049	25807.1130	3.0871	23.1717	##	N261	98.9300

99.9112

L254	4.4560	86858.1419	2.5052	1293.3252	##	N262	104.8800

105.4930

L255	9.0488	176453.1698	2.8562	1450.9372	##	N263	104.4600

104.8401

L258	0.8529	16848.3256	2.7127	19.8923	##	N264	96.6400

99.0900

L259	1.0482	20626.9406	1.9946	23.5291	##	N265	104.8600

105.4066

L260	1.2538	24684.5880	3.3303	16.3286	##	W800	102.5100

105.6128

L261	0.9792	19354.6637	2.6864	12.8399	##	W801	101.4500

103.9333

L262	2.3040	45541.6852	9.6809	11.9508	##	OUT802	101.0000

103.0000

L263	1.1997	23719.2786	2.8987	14.1154	##	N272	96.3500

96.8502

L272	-38.0431	186465.7687	-1.0698	538.9656	##	N273	97.6800

98.1052

L273	-12.9886	186885.3002	3.9016	283.4056	##	N274	95.5800

95.7732

L274	8.5560	169392.0554	12.5805	61.9360	##	N275	87.6000

89.4200

L275	1.5056	29765.8220	3.1444	19.0507	##	N276	94.2500

94.7428

L277	1.5123	29899.3491	3.1148	19.1726	##	N277	93.4400

93.7152

L281	3.4219	67668.6591	4.6251	35.3664	##	N278	78.0000

81.4800

L282	5.0178	99211.4133	14.7953	7.5859	##	N279	94.1200

94.6677

L283	1.4971	29601.6403	3.1057	26.2910	##	N288	77.0300

86.2668

L287	1.8249	36060.1131	3.3193	50.1690	##	N289	77.0000

81.4700

L289	2.2642	44736.8519	3.4711	66.0334	##	N290	78.1000

82.0645

L308	101.7922	527849.2297	15.8894	975.4904	##	N291	91.9200

92.4485

L317	1.3573	26387.6576	1.8303	1324.2890	##	N292	76.6000

81.4700

L319	1.8801	37138.6521	2.8574	39.2257	##	N293	118.9200
119.5370							
L320	1.8798	37168.6464	3.4037	34.6954	##	N294	118.3000
118.6155							
L334	0.4265	8398.3567	2.1349	17.6904	##	N296	118.9800
119.6047							
L335	0.8586	16876.9096	2.6318	37.8961	##	N301	122.9000
124.8193							
L336	1.2917	25400.4475	2.9603	14.7868	##	N302	122.2800
122.6751							
L337	1.2917	25389.1714	5.3855	27.0080	##	N303	110.6000
113.2700							
L338	21.2523	420519.5452	4.0864	430.3357	##	N304	122.9500
123.5620							
L339	21.2525	419015.5464	4.3654	1106.4396	##	N309	113.1500
113.8197							
L340	30.1728	594638.3770	5.6976	866.7708	##	N310	112.2600
112.6569							
L341	30.1726	594296.1446	11.7326	457.6768	##	N312	113.2100
114.0002							
L342	4.5877	90719.4011	4.0620	80.2602	##	YEL327	96.0000
101.1992							
L343	2.6326	52041.2349	3.6540	61.8189	##	N331	92.7000
98.4100							
L344	12.3311	243923.3427	4.0977	262.4414	##	W104	105.3900
106.3439							
L346	25.6125	506541.2768	2.6688	504.1000	##	N342	100.2200
100.8276							
L347	56.3355	1104102.584	4.4563	5203.5002	##	N343	100.0000
100.5155							
L348	56.3340	1098539.600	4.2989	5267.9079	##	N344	101.1100
101.7816							
L349	56.3337	1093116.335	4.3396	5104.8101	##	N345	118.8300
119.2319							
L350	56.3336	1089797.080	4.5170	1636.4369	##	N356	125.3200
125.6081							
L351	8.2540	163361.4838	3.3794	98.3522	##	N357	122.9800
123.3977							
L352	8.2541	162953.6843	3.4177	425.6190	##	N358	120.8200
121.3926							
L354	-97.0481	1413546.086	5.7342	1308.4132	##	N359	120.0900
120.3681							
L361	2.3119	45725.5850	3.6734	27.6898	##	N360	112.8000
115.3200							
L362	2.1598	42708.1865	3.5287	37.6122	##	N361	126.2400
128.3208							
L363	4.5228	88980.1822	3.2872	518.5394	##	N362	126.1300
128.1343							
L364	2.6500	52415.1640	3.8459	31.3393	##	N363	125.2800
127.2811							
L365	1.6367	32365.9173	3.2231	35.6429	##	N364	125.0100
125.8533							
L366	9.8099	192838.3818	3.4253	1126.7036	##	N365	117.4000
122.5200							
L367	9.8099	191801.8991	3.4448	1031.6377	##	N366	127.8700
128.9836							
L368	2.2792	45061.2044	3.4630	72.3603	##	N367	128.3300
129.2163							
L369	3.4945	69093.3964	4.5022	72.2000	##	N368	124.2600
127.1537							
L370	-22.3121	374577.7437	-3.5620	1444.5633	##	N369	123.6700
127.0975							
L373	-32.2544	373657.9827	-3.4582	693.5950	##	N370	121.7000
126.8529							
L374	3.3515	66147.8083	4.3063	116.5452	##	N371	122.2600
126.8961							
L375	3.3513	65485.8807	2.2806	601.7656	##	N372	121.3400
126.0663							
L376	14.2870	190080.7207	2.6483	883.5434	##	N373	120.9700

125.3076							
	L386	36.6327	620365.5993	3.0335	4132.8818	##	N374	120.6000
124.5274							
	L387	36.6198	615836.2859	3.0053	4340.1925	##	N375	119.9800
124.2706							
	L388	2.2293	44061.1091	3.5961	89.9029	##	N376	122.9000
124.5647							
	L389	50.3323	880745.9898	3.2261	6012.4440	##	N377	122.8200
124.5069							
	L390	1.6079	31755.3057	2.8204	72.4839	##	N378	119.2700
122.6047							
	L391	55.1790	969614.6586	3.5322	7766.2442	##	N379	118.4000
122.5300							
	L392	65.3719	1163416.019	4.2332	5793.5770	##	N381	124.7600
125.8458							
	L393	65.3657	1156614.605	-4.8430	6716.2907	##	N382	122.8600
124.5769							
	L395	4.2403	83899.0228	3.4421	62.0229	##	N383	125.5300
126.2887							
	L396	8.3482	162508.4977	1.9376	2621.4228	##	N384	125.6400
126.3795							
	L397	4.5806	90632.6616	3.7177	70.7062	##	N386	124.1400
124.9805							
	L398	4.3232	85557.5862	3.7891	60.0781	##	N387	124.2300
124.8690							
	L399	4.0372	78746.6176	2.6089	807.9356	##	N388	121.9500
123.6546							
	L402	7.1191	140805.8171	3.4623	216.2323	##	N389	120.1100
123.0494							
	L403	7.1191	140147.7104	3.4260	997.1184	##	N390	122.8300
123.6245							
	L404	7.1286	138854.3350	3.5493	924.1205	##	N391	122.6900
124.1512							
	L405	4.8565	95965.4618	3.8609	131.3016	##	N392	119.8300
122.7598							
	L406	11.9729	233321.6341	3.1921	1863.5497	##	N394	118.4000
122.5300							
	L407	3.8258	75618.6594	3.8229	91.3398	##	N395	118.1100
120.8359							
	L408	15.7980	306547.7484	3.1695	2280.8648	##	N396	117.6800
118.9722							
	L410	20.1364	387269.7830	2.9548	2924.8507	##	N397	115.8100
118.3974							
	L411	20.1364	384445.6186	2.8412	2230.4020	##	N398	116.3100
118.6571							
	L413	2.2679	44628.9577	2.5793	659.3914	##	N399	114.6000
118.2769							
	L415	2.2703	44904.3480	3.7552	28.0841	##	N403	114.3000
118.0217							
	L417	2.8494	56333.5426	3.8175	55.1832	##	N404	113.4800
117.7558							
	L418	5.1688	102193.3449	3.8864	132.9580	##	N405	116.6300
118.3387							
	L419	8.0182	158011.6334	3.3526	847.4525	##	N406	113.1700
117.4640							
	L420	8.0182	156596.9610	3.2859	1298.0906	##	N407	117.0000
117.7684							
	L421	1.6633	32819.6552	3.2979	54.7050	##	N408	112.7800
117.0058							
	L422	3.8019	75151.3679	3.8119	97.7419	##	N409	112.4800
116.5065							
	L423	13.6466	265967.8111	3.1600	2035.8807	##	N410	112.1200
115.8648							
	L424	18.5464	360419.3889	3.2142	1861.1116	##	N412	116.3000
118.9854							
	L425	0.9317	18381.8886	2.7607	55.4366	##	N413	115.3300
118.7039							
	L426	3.9681	78444.0999	3.7880	93.8611	##	N414	113.6200
118.7807							

L427	40.5902	778059.9975	4.1993	4899.2917	##	N415	116.3300
119.0784							
L428	0.9393	18530.7027	2.7410	69.4540	##	N416	116.8300
119.0589							
L429	42.4776	810718.8170	4.2977	3938.7453	##	N417	117.5700
118.9330							
L430	2.4485	48408.1633	3.2889	72.3416	##	N418	119.9000
120.8207							
L431	2.2781	44734.8686	3.2432	277.7449	##	N419	110.9100
113.4701							
L432	2.2777	45027.7284	3.3819	74.4859	##	N420	112.2400
114.7633							
L435	2.8738	56791.9436	3.6388	73.2253	##	N421	112.0000
114.5335							
L436	2.8765	56418.9592	3.7239	150.8933	##	N422	109.1300
112.4791							
L437	2.8725	56186.9467	2.9465	407.0035	##	N423	110.3700
112.6795							
L438	1.6723	33007.6602	2.7954	69.7582	##	N424	108.2600
112.0680							
L439	4.5571	88651.5955	3.7816	316.0481	##	N425	110.0600
112.3959							
L440	4.5523	88037.9181	3.2628	701.4473	##	N426	107.4500
111.6343							
L441	48.9390	932240.7706	4.9424	3827.9167	##	N428	106.9200
111.1574							
L442	48.9390	928391.2638	5.9435	2384.5663	##	N429	106.0200
110.7941							
L443	48.9390	927774.7751	16.3911	262.8542	##	N430	119.0000
119.6069							
L446	5.9168	117024.5139	3.5392	112.8531	##	N431	116.6700
118.8193							
L448	0.9708	19156.1218	2.4582	62.5615	##	N432	118.0700
119.1104							
L449	9.5085	185538.4665	3.9304	1120.3944	##	N434	118.8000
119.5280							
L450	13.3913	260419.2938	4.2601	1084.2372	##	N435	110.1800
112.9610							
L451	14.7194	286370.6869	5.0912	236.5739	##	N436	111.5700
113.5338							
L452	1.2925	25546.9470	2.7687	40.5604	##	N437	110.9200
113.1916							
L453	0.9323	18412.9338	2.4656	48.6502	##	N438	109.5800
112.5301							
L454	0.6806	13413.7574	2.3129	34.8690	##	N439	108.1500
111.8621							
L466	4.0513	80103.7108	4.2367	81.5992	##	N440	110.0500
112.0562							
L468	4.0500	79684.3373	2.7411	960.6425	##	N441	109.7300
112.2083							
L470	9.4830	187451.8740	4.3099	316.9864	##	N442	107.2200
111.2807							
L471	0.3817	7504.5435	1.7178	122.7373	##	N443	109.3800
111.3435							
L472	4.4590	88215.5523	5.6522	41.8187	##	N444	109.0300
111.6425							
L490	6.7176	132728.9241	3.5464	198.5521	##	N445	105.4800
109.7503							
L496	0.6064	11949.5434	2.3568	27.6784	##	N446	108.4900
109.8312							
L497	0.5989	11801.4944	2.3448	27.5982	##	N447	105.0500
108.8835							
L498	1.2053	23701.0639	3.0139	34.8508	##	N448	118.7700
120.8468							
L501	12.3318	242069.3821	2.6258	2770.6186	##	N449	117.9900
120.2831							
L502	12.3332	238507.9110	1.2538	4264.6857	##	N450	120.7400
122.5957							
L503	73.4488	1423581.799	4.7306	6604.5471	##	N451	121.2700

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123.0855
          L504     73.4488 1416661.176        5.1017     6303.4200   ##             N453   113.7600
115.6961
          L505     10.5983 207721.4512        4.3800      980.4062   ##             N454   114.2900
116.4642
          L506     10.9003 212946.8293        4.4927      984.3007   ##             N455   111.6800
113.0201
          L509      2.9905  59194.4169        9.3675       44.9487   ##             N456   110.2600
112.1895
          L511     11.0412 218038.6296        6.2595      300.5165   ##             N457   111.0200
112.4454
          L512     17.9049 353736.0963       16.1606       72.4593   ##             N458   108.3900
109.7789
          L514      8.0432 157868.8008        3.3254     1004.0972   ##             N459   104.6100
107.6629
          L515     17.6973 255915.4575        2.7250      950.8100   ##             N460   104.1100
105.0976
          CH21     13.5744 235927.8997        0.3276   148642.4534   ##             N461    94.1000
98.4100
          L474      9.4830 185803.5923        5.3470      229.7963   ##             N464   125.0900
128.1440
          L523      9.4830 185972.4147        1.2146      628.1273   ##             N465   126.6500
129.7527
          L525     17.1561 333432.8835        3.2221     3807.4770   ##             N466   126.1900
129.4984
          L527      4.5202  88438.4210        2.9072      778.7432   ##             N467   126.3000
128.2210
          L528      4.7289  92368.8548        3.9306      253.9918   ##             N468   123.5900
126.0007
          L529      4.3384  85577.1710        2.7073      522.0566   ##             N469   118.6600
120.4426
          L533      4.3384  84677.4578        3.1793     1301.3717   ##             N470   117.7100
118.6771
          L537      4.3384  83592.5821        2.5325      834.5867   ##             N471   124.8800
126.0884
          L394    -91.1787 1152188.071       -5.9313     2186.0072   ##             N472   124.9400
126.0559
          L276      3.1466  62200.6048       11.6035       11.5116   ##             N473   120.0700
120.5302
          L288      4.1590  82171.3381        9.7569       36.4917   ##             N487   118.5700
119.5908
          L412      2.2439  44381.5075        4.5004       26.4187   ##             N489   118.4300
120.8720
          L447      2.1264  41732.9358        2.3674      700.8605   ##             N490   121.9000
123.4952
          L321      0.5084   9988.9972        1.6783      165.3585   ##             N491   124.1700
125.0264
        FREE # 1     13.3950 261060.6576        0.0000        0.0000   ##             N492   126.3400
128.1178
        FREE # 2     28.8013 557633.1583        0.0000        0.0000   ##             N493   126.0400
127.0400
        FREE # 3      3.0002  59319.0024        0.0000        0.0000   ##             N497   107.8500
108.2197
        FREE # 4      9.4482 184355.6319        0.0000        0.0000   ##             N499    91.2000
98.4100
        FREE # 5      1.4198  27970.2924        0.0000        0.0000   ##             N509   108.8800
112.4401
        FREE # 6      2.3040  45539.2643        0.0000        0.0000   ##             N513   110.0100
111.3361
        FREE # 7    -66.8328 186671.0456        0.0000        0.0000   ##             N514   108.1100
108.7565
        FREE # 8      8.5560 169392.2847        0.0000        0.0000   ##             N516    90.0000
94.5300
        FREE # 9      5.0178  99206.1730        0.0000        0.0000   ##             N524   133.4500
133.7961
        FREE #10    110.4395 528400.7696        0.0000        0.0000   ##             N525   131.1700
131.6772
        FREE #11      1.8801  37137.6140        0.0000        0.0000   ##             N526   133.4600
133.8039
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FREE #12	1.2917	25387.8631	0.0000	0.0000	##	N527	130.6000	131.1070
FREE #13	30.1726	594265.6471	0.0000	0.0000	##	N528	122.6600	126.9363
FREE #14	-91.6054	1414702.555	0.0000	0.0000	##	N529	119.6400	123.5298
FREE #15	-32.2765	374072.5077	0.0000	0.0000	##	N530	99.7100	104.1241
FREE #16	48.9390	927728.5573	0.0000	0.0000	##	N689	118.0000	119.5000
FREE #17	4.4590	88214.5370	0.0000	0.0000	##	N494	121.4100	122.3558
FREE #18	2.9905	59194.4593	0.0000	0.0000	##	N541	112.0900	114.2861
FREE #19	17.9049	353717.7357	0.0000	0.0000	##	EL329	112.5200	114.9266
FREE #20	1.5346	30221.4690	0.0000	0.0000	##	N427	109.6400	112.6510
FREE #21	9.4830	185797.8286	0.0000	0.0000	##	N411	112.0000	115.6200
FREE #22	-111.9662	1152851.994	0.0000	0.0000	##	N295	106.9300	110.5500
FREE #23	3.1465	62197.2830	0.0000	0.0000	##	N311	104.1000	108.5200
FREE #24	4.1590	82167.2186	0.0000	0.0000	##	N462	127.7800	129.7121

Table E15a - SPREADSHEET REACH LIST

Peak flow and Total Flow listed by Reach or those conduits or diversions having the same upstream and downstream nodes.

Upstream Node	Downstream Node	Maximum Flow (cfs)	Total Flow (ft^3)
N221	N222	2.8911	57161.7010
N222	N223	3.1354	61547.7106
N223	N224	3.2978	64190.1540
N227	N224	2.4916	49166.3432
N228	N224	5.3717	106137.715
N231	N230	0.9501	18775.4847
N224	N230	11.2776	221043.084
N230	N233	13.2165	257683.035
N233	N234	13.3950	261073.499
N235	N236	0.2305	4547.4950
N236	N237	0.2305	4486.4903
N237	N238	0.2305	4408.5282
N239	N240	0.9294	18089.2908
N240	N238	1.5845	30756.6183
N238	N241	2.4888	47896.2477
N241	N242	2.9466	56181.7920
N242	N243	3.4595	65690.1332
N243	N244	3.8015	71794.9423
N244	N245	6.0390	115223.402
N245	N246	6.3287	120036.031
N246	N247	9.4131	180049.660
N248	N241	0.4478	8830.4486
N249	N244	2.1260	41985.2025
N250	N246	3.0846	60882.8456
N251	N252	3.6943	73068.2058
N252	N253	4.0636	80236.8897
N254	N253	1.2377	24462.2854
N253	N255	5.3649	105452.181
N256	N255	1.8517	36615.8616
N257	N255	2.4831	49084.6406
N247	N259	24.3602	470866.457

N259	N260	28.8013	557457.153
N261	N259	1.9845	39213.6354
N262	N263	1.5797	31240.2251
N263	N264	3.0002	59322.1285
N265	N263	1.3049	25807.1130
W800	W801	4.4560	86858.1419
W801	OUT802	9.0488	176453.170
N273	N272	0.8529	16848.3256
N272	N274	1.0482	20626.9406
N274	N275	1.2538	24684.5880
N276	N277	0.9792	19354.6637
N277	N278	2.3040	45541.6852
N279	N277	1.1997	23719.2786
N288	N289	-38.0431	186465.769
N290	N288	-12.9886	186885.300
N291	N292	8.5560	169392.055
N293	N294	1.5056	29765.8220
N296	N294	1.5123	29899.3491
N301	N302	3.4219	67668.6591
N302	N303	5.0178	99211.4133
N304	N302	1.4971	29601.6403
N309	N310	1.8249	36060.1131
N312	N310	2.2642	44736.8519
YEL327	N331	101.7922	527849.230
W104	W800	1.3573	26387.6576
N342	N343	1.8801	37138.6521
N344	N342	1.8798	37168.6464
N356	N357	0.4265	8398.3567
N357	N358	0.8586	16876.9096
N358	N359	1.2917	25400.4475
N359	N360	1.2917	25389.1714
N361	N362	21.2523	420519.545
N362	N363	21.2525	419015.546
N363	N364	30.1728	594638.377
N364	N365	30.1726	594296.145
N366	N363	4.5877	90719.4011
N367	N363	2.6326	52041.2349
N368	N369	12.3311	243923.343
N371	N370	25.6125	506541.277
N370	N372	56.3355	1104102.58
N372	N373	56.3340	1098539.60
N373	N374	56.3337	1093116.33
N374	N375	56.3336	1089797.08
N376	N377	8.2540	163361.484
N377	N375	8.2541	162953.684
N378	N379	-97.0481	1413546.09
N383	N381	2.3119	45725.5850
N384	N381	2.1598	42708.1865
N381	N382	4.5228	88980.1822
N386	N382	2.6500	52415.1640
N387	N382	1.6367	32365.9173
N382	N388	9.8099	192838.382
N388	N389	9.8099	191801.899
N390	N389	2.2792	45061.2044
N391	N389	3.4945	69093.3964
N389	N392	-22.3121	374577.744
N392	N394	-32.2544	373657.983
N395	N396	3.3515	66147.8083
N396	N397	3.3513	65485.8807
N398	N397	14.2870	190080.721
N399	N403	36.6327	620365.599
N403	N404	36.6198	615836.286
N405	N404	2.2293	44061.1091
N404	N406	50.3323	880745.990
N407	N406	1.6079	31755.3057
N406	N408	55.1790	969614.659
N408	N409	65.3719	1163416.02
N409	N410	65.3657	1156614.60
N412	N413	4.2403	83899.0228

N414	N413	8.3482	162508.498
N415	N413	4.5806	90632.6616
N416	N414	4.3232	85557.5862
N417	N414	4.0372	78746.6176
N420	N421	7.1191	140805.817
N421	N419	7.1191	140147.710
N419	N422	7.1286	138854.335
N423	N422	4.8565	95965.4618
N422	N424	11.9729	233321.634
N425	N424	3.8258	75618.6594
N424	N426	15.7980	306547.748
N426	N428	20.1364	387269.783
N428	N429	20.1364	384445.619
N432	N431	2.2679	44628.9577
N434	N432	2.2703	44904.3480
N436	N435	2.8494	56333.5426
N437	N435	5.1688	102193.345
N435	N438	8.0182	158011.633
N438	N439	8.0182	156596.961
N440	N439	1.6633	32819.6552
N441	N439	3.8019	75151.3679
N439	N442	13.6466	265967.811
N442	N429	18.5464	360419.389
N443	N442	0.9317	18381.8886
N444	N442	3.9681	78444.0999
N429	N445	40.5902	778059.998
N446	N445	0.9393	18530.7027
N445	N447	42.4776	810718.817
N448	N449	2.4485	48408.1633
N450	N449	2.2781	44734.8686
N451	N450	2.2777	45027.7284
N454	N453	2.8738	56791.9436
N453	N455	2.8765	56418.9592
N455	N456	2.8725	56186.9467
N457	N456	1.6723	33007.6602
N456	N458	4.5571	88651.5955
N458	N447	4.5523	88037.9181
N447	N459	48.9390	932240.771
N459	N460	48.9390	928391.264
N460	N461	48.9390	927774.775
N465	N466	5.9168	117024.514
N467	N464	0.9708	19156.1218
N464	N468	9.5085	185538.466
N468	N469	13.3913	260419.294
N469	N470	14.7194	286370.687
N471	N468	1.2925	25546.9470
N472	N468	0.9323	18412.9338
N473	N469	0.6806	13413.7574
N418	N487	4.0513	80103.7108
N487	N417	4.0500	79684.3373
N490	N494	9.4830	187451.874
N491	N490	0.3817	7504.5435
N492	N493	4.4590	88215.5523
N513	N514	6.7176	132728.924
N524	N525	0.6064	11949.5434
N526	N525	0.5989	11801.4944
N525	N527	1.2053	23701.0639
N369	N528	12.3318	242069.382
N528	N370	12.3332	238507.911
N375	N529	73.4488	1423581.80
N529	N378	73.4488	1416661.18
N255	N530	10.5983	207721.451
N530	N247	10.9003	212946.829
N497	N499	2.9905	59194.4169
N509	N514	11.0412	218038.630
N514	N516	17.9049	353736.096
N466	N464	8.0432	157868.801
N397	N399	17.6973	255915.458
N470	N398	13.5744	235927.900

N489	N689	9.4830	185803.592
N494	N489	9.4830	185972.415
N413	N399	17.1561	333432.883
N431	N404	4.5202	88438.4210
N449	N408	4.7289	92368.8548
EL329	N541	4.3384	85577.1710
N541	N427	4.3384	84677.4578
N427	N426	4.3384	83592.5821
N410	N411	-91.1787	1152188.07
N294	N295	3.1466	62200.6048
N310	N311	4.1590	82171.3381
N430	N431	2.2439	44381.5075
N462	N466	2.1264	41732.9358
N345	N239	0.5084	9988.9972

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############################################################
# Table E16. New Conduit Information Section               #
#            Conduit Invert (IE) Elevation and Conduit     #
#            Maximum Water Surface (WS) Elevations         #
############################################################
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Conduit Name	Upstream Node	Downstream Node	IE Up	IE Dn	WS Up	WS Dn	Conduit Type
L210	N221	N222	105.8400	105.4400	107.6026	106.9939	Circular
L211	N222	N223	104.4400	102.0600	106.9939	102.8186	Circular
L212	N223	N224	100.8100	98.4700	102.1159	100.2909	Circular
L213	N227	N224	98.3400	97.7200	100.9720	100.2909	Circular
L214	N228	N224	97.5300	97.2200	100.6100	100.2909	Circular
L217	N231	N230	99.8400	99.3300	100.2872	99.7386	Circular
L220	N224	N230	96.9700	96.0800	100.2909	98.1694	Circular
L221	N230	N233	95.8300	94.9200	98.1694	96.2277	Circular
L222	N233	N234	94.4200	87.6000	95.2407	89.4100	Circular
L223	N235	N236	119.6000	119.4100	119.8642	119.6069	Circular
L224	N236	N237	118.6100	117.8600	118.8903	118.0569	Circular
L225	N237	N238	117.2600	116.5100	117.6596	117.5825	Circular
L226	N239	N240	117.6900	116.6200	118.5578	118.1994	Circular
L227	N240	N238	116.6200	116.0100	118.1994	117.5825	Circular
L228	N238	N241	115.1100	114.0600	117.5825	114.7356	Circular
L229	N241	N242	111.3600	109.8800	112.5184	110.5696	Circular
L230	N242	N243	108.6300	107.8600	110.4305	108.6104	Circular
L231	N243	N244	105.8600	105.1000	108.0703	106.2736	Circular
L232	N244	N245	103.8500	103.3800	106.2736	104.9361	Circular
L233	N245	N246	101.9300	100.3100	104.9361	102.6459	Circular
L234	N246	N247	99.5600	98.3700	102.6459	101.6618	Circular
L235	N248	N241	111.4800	111.3600	112.5280	112.5184	Circular
L236	N249	N244	104.6200	104.3500	106.7649	106.2736	Circular
L237	N250	N246	101.1400	100.5600	103.6254	102.6459	Circular
L238	N251	N252	115.3800	115.0600	116.6527	115.8783	Circular
L239	N252	N253	113.0600	112.3300	115.2810	113.1820	Circular
L240	N254	N253	112.8300	112.3300	113.3534	112.7991	Circular
L241	N253	N255	108.0800	106.8000	110.4633	107.7384	Circular
L242	N256	N255	107.4100	107.0500	108.0734	107.6293	Circular
L243	N257	N255	107.6100	107.0500	108.4472	107.7248	Circular
L246	N247	N259	97.8700	97.1600	101.6618	99.7331	Circular
L247	N259	N260	97.1600	97.0000	99.7331	99.1000	Circular
L248	N261	N259	98.9300	98.6600	99.9112	99.7331	Circular
L249	N262	N263	104.8800	104.4600	105.4930	104.8401	Circular
L250	N263	N264	104.4600	96.6400	104.8401	99.0900	Circular
L251	N265	N263	104.8600	104.4600	105.4066	104.8401	Circular
L254	W800	W801	102.5100	101.4500	105.6128	103.9333	Circular
L255	W801	OUT802	101.4500	101.0000	103.9333	103.0000	Circular
L258	N273	N272	97.6800	97.1000	98.1052	97.4860	Circular
L259	N272	N274	96.3500	95.5800	96.8502	95.7732	Circular
L260	N274	N275	95.5800	87.6000	95.7732	89.4200	Circular
L261	N276	N277	94.2500	93.4400	94.7428	93.7152	Circular
L262	N277	N278	93.4400	78.0000	93.7152	81.4800	Circular
L263	N279	N277	94.1200	93.4400	94.6677	93.7152	Circular
L272	N288	N289	77.0300	77.0000	86.2117	81.4700	Circular
L273	N290	N288	78.1000	77.7800	82.0645	86.2117	Circular

L274	N291	N292	91.9200	76.6000	92.4485	81.4700	Circular
L275	N293	N294	118.9200	118.3000	119.5370	118.6155	Circular
L277	N296	N294	118.9800	118.3000	119.6047	118.6155	Circular
L281	N301	N302	122.9000	122.2800	124.8193	122.6751	Circular
L282	N302	N303	122.2800	110.6000	122.6751	113.2700	Circular
L283	N304	N302	122.9500	122.2800	123.5620	122.6751	Circular
L287	N309	N310	113.1500	112.5100	113.8197	113.0849	Circular
L289	N312	N310	113.2100	112.5100	114.0002	113.1535	Circular
L308	YEL327	N331	96.0000	92.7000	101.1992	98.4100	Circular
L317	W104	W800	105.3900	102.5100	106.3439	105.6128	Circular
L319	N342	N343	100.2200	100.0000	100.8276	100.5155	Circular
L320	N344	N342	101.1100	100.7200	101.7816	101.3039	Circular
L334	N356	N357	125.3200	122.9800	125.6081	123.3977	Circular
L335	N357	N358	122.9800	120.8200	123.3977	121.3926	Circular
L336	N358	N359	120.8200	120.0900	121.3926	120.3681	Circular
L337	N359	N360	120.0900	112.8000	120.3681	115.3200	Circular
L338	N361	N362	126.2400	126.1300	128.3208	128.1343	Circular
L339	N362	N363	126.1300	125.7800	128.1343	127.2811	Circular
L340	N363	N364	125.2800	125.0100	127.2811	125.8533	Circular
L341	N364	N365	125.0100	117.4000	125.8533	122.5200	Circular
L342	N366	N363	127.8700	127.5300	128.9836	128.3977	Circular
L343	N367	N363	128.3300	127.7800	129.2163	128.4750	Circular
L344	N368	N369	124.2600	124.1700	127.1537	127.0975	Circular
L346	N371	N370	122.2600	122.2000	126.8961	126.8529	Circular
L347	N370	N372	121.7000	121.3400	126.8529	126.0663	Circular
L348	N372	N373	121.3400	120.9700	126.0663	125.3076	Circular
L349	N373	N374	120.9700	120.6000	125.3076	124.5274	Circular
L350	N374	N375	120.6000	120.4800	124.5274	124.2706	Circular
L351	N376	N377	122.9000	122.8200	124.5647	124.5069	Circular
L352	N377	N375	122.8200	122.4800	124.5069	124.2706	Circular
L354	N378	N379	119.2700	118.4000	122.6047	122.5300	Circular
L361	N383	N381	125.5300	125.2600	126.2887	125.9103	Circular
L362	N384	N381	125.6400	125.2600	126.3795	125.8878	Circular
L363	N381	N382	124.7600	123.3600	125.8458	124.5769	Circular
L364	N386	N382	124.1400	123.8600	124.9805	124.5769	Circular
L365	N387	N382	124.2300	123.8600	124.8690	124.5769	Circular
L366	N382	N388	122.8600	121.9500	124.5769	123.6546	Circular
L367	N388	N389	121.9500	121.1100	123.6546	123.0494	Circular
L368	N390	N389	122.8300	122.1100	123.6245	123.0494	Circular
L369	N391	N389	122.6900	122.1100	124.1512	123.0494	Circular
L370	N389	N392	120.1100	119.8300	123.0494	122.7598	Circular
L373	N392	N394	119.8300	118.4000	122.7598	122.5300	Circular
L374	N395	N396	118.6100	118.1800	120.8359	118.9722	Circular
L375	N396	N397	117.6800	117.3100	118.9722	118.3973	Circular
L376	N398	N397	116.3100	116.0600	118.6571	118.3974	Circular
L386	N399	N403	114.6100	114.3000	118.2769	118.0216	Circular
L387	N403	N404	114.3000	113.9800	118.0217	117.7558	Circular
L388	N405	N404	116.6300	115.6000	118.3387	117.7558	Circular
L389	N404	N406	113.4800	113.1700	117.7558	117.4640	Circular
L390	N407	N406	117.0000	116.6000	117.7684	117.4640	Circular
L391	N406	N408	113.1700	112.7800	117.4640	117.0057	Circular
L392	N408	N409	112.7800	112.4800	117.0058	116.5064	Circular
L393	N409	N410	112.4800	112.1200	116.5065	115.8648	Circular
L395	N412	N413	116.3000	115.3300	118.9854	118.7039	Circular
L396	N414	N413	116.3700	115.8300	118.7806	118.7039	Circular
L397	N415	N413	116.3300	115.3300	119.0784	118.7039	Circular
L398	N416	N414	116.8300	113.6200	119.0589	118.7807	Circular
L399	N417	N414	117.5700	116.8700	118.9330	118.7807	Circular
L402	N420	N421	112.2400	112.0000	114.7633	114.5335	Circular
L403	N421	N419	112.0000	110.9100	114.5335	113.4701	Circular
L404	N419	N422	110.9100	109.8800	113.4701	112.4791	Circular
L405	N423	N422	110.3700	110.1300	112.6795	112.4791	Circular
L406	N422	N424	109.1300	108.5100	112.4791	112.0680	Circular
L407	N425	N424	110.0600	109.7600	112.3959	112.0680	Circular
L408	N424	N426	108.2600	107.7000	112.0680	111.6343	Circular
L410	N426	N428	107.4500	106.9200	111.6343	111.1574	Circular
L411	N428	N429	106.9200	106.5200	111.1574	110.7941	Circular
L413	N432	N431	118.0700	116.6700	119.1104	118.8193	Circular
L415	N434	N432	118.8000	118.4800	119.5280	119.1244	Circular

L417	N436	N435	111.5700	111.1800	113.5338	112.9610	Circular
L418	N437	N435	110.9200	110.6800	113.1916	112.9610	Circular
L419	N435	N438	110.1800	109.5800	112.9610	112.5301	Circular
L420	N438	N439	109.5800	108.6500	112.5301	111.8621	Circular
L421	N440	N439	110.0500	109.6500	112.0562	111.8621	Circular
L422	N441	N439	109.7300	109.4000	112.2083	111.8621	Circular
L423	N439	N442	108.1500	107.4700	111.8621	111.2807	Circular
L424	N442	N429	107.2200	106.7700	111.2807	110.7941	Circular
L425	N443	N442	109.3800	108.9700	111.3435	111.2807	Circular
L426	N444	N442	109.0300	108.7200	111.6425	111.2807	Circular
L427	N429	N445	106.0200	105.4800	110.7941	109.7503	Circular
L428	N446	N445	108.4900	107.9800	109.8312	109.7503	Circular
L429	N445	N447	105.4800	105.0500	109.7503	108.8835	Circular
L430	N448	N449	118.7700	117.9900	120.8468	120.2831	Circular
L431	N450	N449	120.7400	118.2400	122.5957	120.2831	Circular
L432	N451	N450	121.2700	120.7400	123.0855	122.5957	Circular
L435	N454	N453	114.2900	113.7600	116.4642	115.6961	Circular
L436	N453	N455	113.7600	111.9300	115.6961	113.0201	Circular
L437	N455	N456	111.6800	110.2600	113.0201	112.1895	Circular
L438	N457	N456	111.0200	110.5100	112.4454	112.1895	Circular
L439	N456	N458	110.2600	108.6400	112.1895	109.7789	Circular
L440	N458	N447	108.3900	107.0500	109.7789	108.8835	Circular
L441	N447	N459	105.0500	104.6100	108.8835	107.6629	Circular
L442	N459	N460	104.6100	104.1100	107.6629	105.0976	Circular
L443	N460	N461	104.1100	94.1000	105.0976	98.4100	Circular
L446	N465	N466	126.6500	126.4400	129.7527	129.4984	Circular
L448	N467	N464	126.3000	125.8400	128.2210	128.1440	Circular
L449	N464	N468	125.0900	123.8400	128.1440	126.0007	Circular
L450	N468	N469	123.5900	122.6600	126.0007	123.9765	Circular
L451	N469	N470	118.6600	118.4600	120.4426	119.8419	Circular
L452	N471	N468	124.8800	124.5900	126.0884	126.0007	Circular
L453	N472	N468	124.9400	124.5900	126.0559	126.0007	Circular
L454	N473	N469	120.0700	119.6600	120.5302	120.4426	Circular
L466	N418	N487	119.9000	119.3200	120.8207	120.1342	Circular
L468	N487	N417	118.5700	117.5700	119.5908	118.9330	Circular
L470	N490	N494	121.9000	121.4100	123.4952	122.3558	Circular
L471	N491	N490	124.7700	121.9000	125.0264	123.4952	Circular
L472	N492	N493	126.3400	126.0400	128.1178	127.0400	Circular
L490	N513	N514	110.0100	109.8600	111.3361	110.8167	Circular
L496	N524	N525	133.4500	131.1700	133.7961	131.6772	Circular
L497	N526	N525	133.4600	131.1700	133.8039	131.6772	Circular
L498	N525	N527	131.1700	130.6000	131.6772	131.1070	Circular
L501	N369	N528	123.6700	123.1600	127.0975	126.9363	Circular
L502	N528	N370	122.6600	122.2000	126.9363	126.8529	Circular
L503	N375	N529	119.9800	119.6400	124.2706	123.5298	Circular
L504	N529	N378	119.6400	119.2700	123.5298	122.6047	Circular
L505	N255	N530	102.8000	101.7100	106.4521	104.1241	Circular
L506	N530	N247	99.7100	98.6200	104.1241	101.6618	Circular
L509	N497	N499	107.8500	91.2000	108.2197	98.4100	Circular
L511	N509	N514	108.8800	108.6100	112.4401	109.8810	Circular
L512	N514	N516	108.1100	90.0000	108.7565	94.5300	Circular
L514	N466	N464	126.1900	125.0900	129.4984	128.1440	Circular
L515	N397	N399	115.8100	115.6100	118.3974	118.2769	Circular
CH21	N470	N398	117.7100	116.3100	118.6771	118.6571	Rectangle
L474	N489	N689	118.4300	118.0000	120.8720	119.5000	Circular
L523	N494	N489	121.4100	120.8300	122.3558	121.2270	Trapezoid
L525	N413	N399	115.8300	115.1100	118.7039	118.2769	Circular
L527	N431	N404	116.6700	115.2500	118.8193	117.7558	Circular
L528	N449	N408	117.9900	116.0300	120.2831	117.0058	Circular
L529	EL329	N541	112.5200	112.0900	114.9266	114.2861	Circular
L533	N541	N427	112.0900	109.6400	114.2861	112.6510	Circular
L537	N427	N426	109.6400	108.9500	112.6510	111.6343	Circular
L394	N410	N411	112.1200	112.0000	115.8648	115.6200	Circular
L276	N294	N295	118.3000	106.9300	118.6155	110.5500	Circular
L288	N310	N311	112.2600	104.1000	112.6569	108.5200	Circular
L412	N430	N431	119.0000	118.4000	119.6069	119.0068	Circular
L447	N462	N466	127.7800	126.4400	129.7121	129.4984	Circular
L321	N345	N239	118.8300	117.6900	119.2319	118.5578	Circular

Table E18 - Junction Continuity Error. Division by Volume added 11/96

Continuity Error = Net Flow + Beginning Volume - Ending Volume
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Total Flow + (Beginning Volume + Ending Volume)/2

Net Flow = Node Inflow - Node Outflow
Total Flow = absolute (Inflow + Outflow)
Intermediate column is a judgement on the node continuity error.

Excellent < 1 percent Great 1 to 2 percent Good 2 to 5 percent
Fair 5 to 10 percent Poor 10 to 25 percent Bad 25 to 50 percent
Terrible > 50 percent

Junction Name	<------Continuity Error -------> Volume	% of Node	% of Inflow	Remaining Volume	Beginning Volume	Net Flow Thru Node	Total Flow Thru Node	Failed to Converge
N221	33.7358	0.0295	0.0004	49.7524	0.0000	83.4882	114409.2623	0
N222	244.7589	0.1979	0.0031	205.5175	0.0000	450.2764	123546.8711	0
N223	72.0093	0.0557	0.0009	498.2510	0.0000	570.2603	128953.5970	0
N224	-18.8035	-0.0042	0.0002	896.4054	0.0000	877.6019	442970.8776	0
N227	33.3464	0.0339	0.0004	75.5204	0.0000	108.8668	98443.8789	0
N228	34.0981	0.0160	0.0004	121.4250	0.0000	155.5231	212437.0777	0
N230	731.7439	0.1414	0.0093	972.3050	0.0000	1704.0488	517081.1377	0
N231	17.6891	0.0470	0.0002	19.4099	0.0000	37.0991	37588.7076	0
N233	-595.6982	-0.1140	0.0076	731.1970	0.0000	135.4988	522291.0680	0
N234	-184.9890	-0.0354	0.0024	207.9972	22.7445	0.2637	522134.1570	0
N235	8.3659	0.0918	0.0001	8.2446	0.0000	16.6106	9111.6965	0
N236	31.6865	0.3502	0.0004	29.3053	0.0000	60.9918	9033.9852	0
N237	-24.8470	-0.2777	0.0003	102.8335	0.0000	77.9864	8895.0185	0
N238	270.6034	0.2802	0.0034	338.4895	0.0000	609.0929	96403.5155	0
N239	-39.8190	-0.1089	0.0005	275.5647	0.0000	235.7457	36414.6388	0
N240	34.7244	0.0561	0.0004	268.9154	0.0000	303.6398	61817.7460	0
N241	302.6340	0.2670	0.0039	438.1298	0.0000	740.7638	113106.5013	0
N242	159.5095	0.1206	0.0020	485.1159	0.0000	644.6254	132028.0161	0
N243	197.2421	0.1365	0.0025	466.6955	0.0000	663.9376	144257.1229	0
N244	172.5172	0.0745	0.0022	588.4463	0.0000	760.9635	231211.3927	0
N245	178.0314	0.0738	0.0023	740.5142	0.0000	918.5457	240995.8723	0
N246	-256.2722	-0.0709	0.0033	1181.7014	0.0000	925.4292	361031.9009	0
N247	40.1569	0.0042	0.0005	2231.6129	0.0000	2271.7698	944032.5015	0
N248	2.3120	0.0131	0.0000	33.4991	0.0000	35.8112	17697.4743	0
N249	42.2978	0.0503	0.0005	68.4577	0.0000	110.7555	84082.7835	0
N250	55.7996	0.0458	0.0007	70.8227	0.0000	126.6222	121894.6368	0
N251	33.1517	0.0227	0.0004	36.2440	0.0000	69.3957	146208.2974	0
N252	54.1288	0.0337	0.0007	94.7626	0.0000	148.8914	160623.6590	0
N253	235.5070	0.1113	0.0030	257.3503	0.0000	492.8573	211400.8188	0
N254	21.6607	0.0442	0.0003	23.2899	0.0000	44.9506	48970.3643	0
N255	477.1449	0.1144	0.0061	733.1198	0.0000	1210.2647	416659.6694	0
N256	20.7788	0.0284	0.0003	24.1963	0.0000	44.9751	73277.9827	0
N257	41.6993	0.0424	0.0005	40.5244	0.0000	82.2237	98253.2682	0
N259	110.9686	0.0099	0.0014	1291.7493	0.0000	1402.7179	1116228.662	0
N260	-215.0532	-0.0193	0.0027	242.0155	26.3886	0.5738	1116944.414	0
N261	1.8859	0.0024	0.0000	31.0361	0.0000	32.9220	78461.8076	0
N262	5.4439	0.0087	0.0001	21.6953	0.0000	27.1391	62508.4702	0
N263	-30.0775	-0.0253	0.0004	50.8914	0.0000	20.8139	118664.4382	0
N264	-19.9063	-0.0168	0.0003	50.7143	30.7867	0.0213	118641.1309	0
N265	3.8842	0.0075	0.0000	19.0592	0.0000	22.9434	51637.9203	0
W800	-404.0145	-0.2305	0.0051	1288.8926	0.0000	884.8781	174604.1127	0
W801	-35.1982	-0.0099	0.0004	1373.1194	0.0000	1337.9211	354254.7588	0
OUT802	-736.6732	-0.1996	0.0094	736.8806	0.0000	0.2074	368717.4441	0
N272	20.0608	0.0485	0.0003	68.1246	0.0000	88.1855	41342.4616	0
N273	19.4007	0.0575	0.0002	20.2868	0.0000	39.6875	33736.8613	0
N274	-82.4118	-0.1667	0.0011	83.4133	0.0000	1.0015	49382.6775	0
N275	-34.0673	-0.0609	0.0004	56.9606	22.8701	0.0233	55941.8975	0
N276	9.1580	0.0236	0.0001	25.0887	0.0000	34.2467	38744.1046	0
N277	-45.0736	-0.0495	0.0006	56.8698	0.0000	11.7962	91094.7513	0
N278	-17.0592	-0.0187	0.0002	60.8055	43.7297	0.0166	91080.9496	0

N279	9.4158	0.0198	0.0001	24.3216	0.0000	33.7374	47472.9278	0
N288	375.6464	0.1006	0.0048	467.0432	0.0000	842.6896	373351.0689	2
N289	-269.4368	-0.0721	0.0034	325.6474	56.1700	0.0406	373535.6576	0
N290	-169.6397	-0.0453	0.0022	190.9795	0.0000	21.3397	373983.8994	0
N291	-56.5823	-0.0167	0.0007	75.2684	0.0000	18.6861	338812.0475	0
N292	-68.8425	-0.0203	0.0009	129.8240	61.1964	-0.2149	338784.3401	0
N293	9.8761	0.0166	0.0001	26.4682	0.0000	36.3443	59568.7703	0
N294	-41.8881	-0.0337	0.0005	55.4359	0.0000	13.5478	124414.2042	0
N296	10.9205	0.0182	0.0001	28.5072	0.0000	39.4277	59838.9269	0
N301	36.2036	0.0267	0.0005	51.8690	0.0000	88.0727	135426.7558	0
N302	-47.5600	-0.0240	0.0006	67.4978	0.0000	19.9378	198442.0422	0
N303	-12.4529	-0.0063	0.0002	46.0395	33.5512	0.0354	198417.5863	0
N304	8.0970	0.0137	0.0001	29.9827	0.0000	38.0797	59242.2190	0
N309	37.6904	0.0522	0.0005	36.3423	0.0000	74.0327	72195.5208	0
N310	-81.2916	-0.0494	0.0010	91.4848	0.0000	10.1932	164352.4146	0
N312	49.8252	0.0556	0.0006	45.8436	0.0000	95.6688	89570.9745	0
YEL327	-3914.3473	-0.3719	0.0499	424.9898	0.0000	-3489.3574	1052304.696	0
N331	-397.4177	-0.0376	0.0051	469.6263	71.7519	0.4567	1056288.515	0
W104	-143.9337	-0.2686	0.0018	631.7232	0.0000	487.7895	53263.9732	0
N342	-15.0755	-0.0203	0.0002	44.5889	0.0000	29.5134	74307.2985	0
N343	-26.0633	-0.0351	0.0003	26.0859	0.0000	0.0226	74276.2660	0
N344	22.8156	0.0307	0.0003	25.7857	0.0000	48.6013	74387.1855	0
N345	-35.8028	-0.1780	0.0005	113.6572	0.0000	77.8543	20055.9823	0
N356	-6.3290	-0.0375	0.0001	53.1746	0.0000	46.8455	16843.6146	0
N357	-48.6658	-0.1436	0.0006	126.2818	0.0000	77.6160	33831.4115	0
N358	-45.8404	-0.0901	0.0006	98.0782	0.0000	52.2378	50853.3036	0
N359	-37.5539	-0.0739	0.0005	49.6247	0.0000	12.0708	50789.6189	0
N360	-26.6932	-0.0525	0.0003	58.3916	31.6663	0.0321	50777.0345	0
N361	-1.1933	-0.0001	0.0000	241.2897	0.0000	240.0964	841299.3255	0
N362	696.5590	0.0829	0.0089	793.4663	0.0000	1490.0253	839535.0917	0
N363	-351.7804	-0.0295	0.0045	1082.6576	0.0000	730.8772	1190023.320	0
N364	-364.7916	-0.0307	0.0046	711.4746	0.0000	346.6831	1188934.522	0
N365	-267.2042	-0.0225	0.0034	331.8764	64.3379	0.3343	1188561.792	0
N366	55.7294	0.0307	0.0007	54.1198	0.0000	109.8492	181551.9623	0
N367	43.7695	0.0420	0.0006	42.0471	0.0000	85.8166	104170.1590	0
N368	60.0428	0.0123	0.0008	167.3997	0.0000	227.4425	488091.2843	0
N369	299.9730	0.0616	0.0038	1532.4470	0.0000	1832.4200	485992.7248	0
N370	327.1120	0.0148	0.0042	4905.7055	0.0000	5232.8174	2213529.501	0
N371	33.8188	0.0033	0.0004	299.2746	0.0000	333.0934	1013468.628	0
N372	275.2642	0.0125	0.0035	5238.1890	0.0000	5513.4532	2202642.183	0
N373	127.9696	0.0058	0.0016	5247.8625	0.0000	5375.8321	2191655.935	0
N374	-156.8424	-0.0072	0.0020	3419.9722	0.0000	3263.1298	2182913.415	0
N375	180.7028	0.0063	0.0023	4387.2123	0.0000	4567.9151	2851797.896	0
N376	-1.6870	-0.0005	0.0000	70.0942	0.0000	68.4072	326801.4809	0
N377	117.8118	0.0361	0.0015	283.1819	0.0000	400.9937	326315.1681	0
N378	23.7930	0.0008	0.0003	3845.9202	0.0000	3869.7132	2830207.262	0
N379	-651.1891	-0.0229	0.0083	704.5186	51.8976	1.4319	2842886.168	0
N381	133.1998	0.0746	0.0017	344.5829	0.0000	477.7828	178439.6614	0
N382	-181.1019	-0.0468	0.0023	916.7061	0.0000	735.6042	386418.7746	0
N383	18.1864	0.0199	0.0002	23.3768	0.0000	41.5632	91494.3282	0
N384	25.1229	0.0294	0.0003	28.0965	0.0000	53.2194	85471.0918	0
N386	20.3523	0.0194	0.0003	26.2315	0.0000	46.5839	104878.7307	0
N387	15.9257	0.0246	0.0002	25.8510	0.0000	41.7767	64774.7181	0
N388	-72.0301	-0.0187	0.0009	1100.5905	0.0000	1028.5604	384640.2809	0
N389	-5.6294	-0.0007	0.0001	1317.6799	0.0000	1312.0506	750609.0935	0
N390	8.5131	0.0094	0.0001	48.2714	0.0000	56.7845	90180.4654	0
N391	45.7799	0.0331	0.0006	54.4614	0.0000	100.2413	138289.0685	0
N392	17.7623	0.0024	0.0002	1068.9839	0.0000	1086.7462	748235.7265	0
N394	-340.1851	-0.0453	0.0043	392.3535	51.8976	0.2709	750147.0659	0
N395	117.4650	0.0886	0.0015	92.5264	0.0000	209.9913	132507.9323	0
N396	285.0980	0.2163	0.0036	375.3978	0.0000	660.4958	131633.6890	0
N397	-136.4001	-0.0266	0.0017	1250.5827	0.0000	1114.1826	512951.3160	0
N398	9024.3613	1.7999	0.1150	74793.5765	0.0000	83817.9378	463981.5888	0
N399	49.4875	0.0040	0.0006	4482.8104	0.0000	4532.2979	1245286.991	0
N403	219.7671	0.0177	0.0028	4283.3128	0.0000	4503.0799	1236201.885	0
N404	-20.4177	-0.0012	0.0003	5659.5126	0.0000	5639.0949	1767166.229	0
N405	18.5568	0.0210	0.0002	66.1096	0.0000	84.6664	88208.1264	0
N406	222.0106	0.0114	0.0028	6979.5527	0.0000	7201.5633	1946472.185	0
N407	34.1788	0.0537	0.0004	45.8984	0.0000	80.0772	63591.8482	0

N408	-154.4283	-0.0066	0.0020	7088.1127	0.0000	6933.6844	2333815.656	0
N409	316.4400	0.0136	0.0040	6305.5340	0.0000	6621.9739	2320030.624	0
N410	240.0781	0.0104	0.0031	4498.2072	0.0000	4738.2853	2308802.676	0
N412	-0.2418	-0.0001	0.0000	64.7022	0.0000	64.4604	167866.4707	0
N413	283.6005	0.0422	0.0036	3314.1227	0.0000	3597.7232	670473.0656	1
N414	-19.4549	-0.0059	0.0002	1809.3578	0.0000	1789.9029	326812.7015	0
N415	-0.5180	-0.0003	0.0000	69.8342	0.0000	69.3162	181338.4930	0
N416	-10.0232	-0.0059	0.0001	57.8271	0.0000	47.8039	171166.5612	0
N417	33.4416	0.0210	0.0004	901.4229	0.0000	934.8645	158430.9549	0
N418	52.3549	0.0327	0.0007	52.3634	0.0000	104.7182	160314.8489	0
N419	326.1656	0.1167	0.0042	959.7352	0.0000	1285.9008	279002.0454	0
N420	11.6122	0.0041	0.0001	135.4281	0.0000	147.0403	281765.3888	0
N421	37.6883	0.0134	0.0005	615.5949	0.0000	653.2832	280953.5274	0
N422	37.7000	0.0080	0.0005	1448.1246	0.0000	1485.8247	468141.4308	0
N423	57.5127	0.0299	0.0007	91.9756	0.0000	149.4883	192084.9723	0
N424	293.8698	0.0477	0.0037	2079.9550	0.0000	2373.8248	615488.0418	0
N425	46.5550	0.0308	0.0006	73.1559	0.0000	119.7109	151360.6425	0
N426	-101.5866	-0.0130	0.0013	2947.5001	0.0000	2845.9135	777410.1135	0
N428	279.8516	0.0362	0.0036	2519.5357	0.0000	2799.3873	771715.4016	1
N429	142.7695	0.0091	0.0018	4388.0226	0.0000	4530.7921	1560694.020	1
N430	15.0688	0.0170	0.0002	20.8336	0.0000	35.9024	88799.8026	0
N431	38.8139	0.0218	0.0005	732.5939	0.0000	771.4077	177650.8595	0
N432	-58.8559	-0.0656	0.0007	334.6737	0.0000	275.8178	89533.3056	0
N434	17.9267	0.0199	0.0002	23.1879	0.0000	41.1146	89851.3378	0
N435	-23.1167	-0.0073	0.0003	533.5823	0.0000	510.4656	316538.5208	0
N436	34.5126	0.0306	0.0004	51.5288	0.0000	86.0414	112755.3895	0
N437	59.0317	0.0289	0.0008	92.3718	0.0000	151.4035	204542.3455	0
N438	326.5939	0.1036	0.0042	1078.6616	0.0000	1405.2556	314608.5944	0
N439	125.5922	0.0235	0.0016	1731.6084	0.0000	1857.2007	533806.9713	1
N440	22.2975	0.0339	0.0003	52.1023	0.0000	74.3998	65715.5685	0
N441	49.6105	0.0330	0.0006	78.0646	0.0000	127.6751	150433.9617	0
N442	361.9098	0.0500	0.0046	1991.9490	0.0000	2353.8588	723213.1885	0
N443	13.2062	0.0358	0.0002	52.3617	0.0000	65.5679	36830.7673	0
N444	47.7899	0.0304	0.0006	77.9259	0.0000	125.7158	157017.6700	0
N445	187.3006	0.0115	0.0024	4417.4842	0.0000	4604.7849	1626083.137	0
N446	15.8875	0.0428	0.0002	51.5331	0.0000	67.4206	37130.0714	0
N447	7.6395	0.0004	0.0001	4268.7001	0.0000	4276.3396	1868800.182	0
N448	2.1435	0.0022	0.0000	61.2415	0.0000	63.3850	96881.7655	0
N449	317.6132	0.1710	0.0040	488.8575	0.0000	806.4707	185547.5291	0
N450	63.8565	0.0710	0.0008	228.2103	0.0000	292.0668	89762.5971	0
N451	4.0176	0.0045	0.0001	57.9003	0.0000	61.9178	90119.2680	0
N453	185.6900	0.1639	0.0024	186.3968	0.0000	372.0868	113210.9028	0
N454	6.6925	0.0059	0.0001	62.9015	0.0000	69.5940	113655.3599	0
N455	-118.1555	-0.1048	0.0015	348.2477	0.0000	230.0922	112605.9059	0
N456	250.7300	0.1406	0.0032	488.6306	0.0000	739.3606	178046.1956	0
N457	16.1176	0.0244	0.0002	52.5901	0.0000	68.7077	66085.7463	0
N458	19.1768	0.0108	0.0002	590.4156	0.0000	609.5924	176689.5136	0
N459	677.6968	0.0364	0.0086	3144.6047	0.0000	3822.3016	1860632.034	0
N460	-845.2162	-0.0455	0.0108	1471.7968	0.0000	626.5807	1856166.039	0
N461	-264.9249	-0.0143	0.0034	321.2635	54.1595	2.1791	1855503.332	0
N464	167.8856	0.0450	0.0021	1100.9924	0.0000	1268.8780	372355.1359	0
N465	35.7906	0.0153	0.0005	93.2476	0.0000	129.0382	234184.8929	0
N466	-44.5562	-0.0141	0.0006	927.7826	0.0000	883.2264	316626.2505	0
N467	10.2049	0.0266	0.0001	55.3824	0.0000	65.5873	38379.2317	0
N468	733.1175	0.1401	0.0093	1164.5122	0.0000	1897.6297	522748.2100	0
N469	-391.3347	-0.0682	0.0050	698.8100	0.0000	307.4753	573060.7274	0
N470	-24007.5538	-4.2907	0.3059	74452.7472	0.0000	50445.1935	522298.5866	0
N471	9.4883	0.0185	0.0001	35.1650	0.0000	44.6532	51140.1386	0
N472	7.9931	0.0217	0.0001	38.5521	0.0000	46.5453	36873.6934	0
N473	3.7364	0.0139	0.0000	23.2172	0.0000	26.9536	26854.8853	0
N487	-115.7708	-0.0723	0.0015	533.9464	0.0000	418.1757	159788.0481	0
N489	-444.8226	-0.1196	0.0057	601.9206	0.0000	157.0981	371776.0070	0
N490	1.3687	0.0004	0.0000	263.1712	0.0000	264.5400	375174.0630	0
N491	-41.8599	-0.2770	0.0005	95.3948	0.0000	53.5349	15062.7028	0
N492	3.6318	0.0021	0.0000	42.7957	0.0000	46.4275	176481.8636	0
N493	-33.0100	-0.0187	0.0004	33.0368	0.0000	0.0268	176430.0893	0
N497	-27.2501	-0.0230	0.0003	39.1429	0.0000	11.8929	118404.2891	0
N499	-34.5079	-0.0291	0.0004	125.0988	90.6009	-0.0100	118388.8761	0
N509	274.9677	0.0630	0.0035	194.9305	0.0000	469.8982	436553.9847	0

N513	149.3180	0.0562	0.0019	115.9288	0.0000	265.2468	265728.3700	0
N514	-344.9163	-0.0487	0.0044	363.3691	0.0000	18.4528	707507.5085	0
N516	-106.1944	-0.0150	0.0014	162.6436	56.9240	-0.4748	707453.8321	0
N524	-8.7340	-0.0364	0.0001	66.5561	0.0000	57.8221	23957.0567	0
N525	-100.6669	-0.2118	0.0013	150.4706	0.0000	49.8036	47452.1018	0
N526	-9.2803	-0.0392	0.0001	66.6201	0.0000	57.3398	23660.4978	0
N527	-25.9321	-0.0429	0.0003	25.9620	0.0000	0.0299	60443.1037	0
N528	65.4820	0.0136	0.0008	3474.1603	0.0000	3539.6423	480577.2931	0
N529	452.1946	0.0159	0.0058	6502.8582	0.0000	6955.0528	2840242.976	0
N530	-277.6199	-0.0650	0.0035	1013.6109	0.0000	735.9910	426638.3749	0
N689	-131.1753	-0.0353	0.0017	131.2870	0.0000	0.1117	371601.4209	0
N494	845.9375	0.2263	0.0108	629.1738	0.0000	1475.1113	373424.2887	0
N541	-23.9799	-0.0140	0.0003	922.9751	0.0000	898.9953	170254.6288	0
EL329	43.4040	0.0253	0.0006	282.0300	0.0000	325.4341	171483.1657	0
N427	-4.2054	-0.0025	0.0001	1083.9746	0.0000	1079.7692	168270.0399	0
N411	-1080.4393	-0.0464	0.0138	1138.4926	45.4889	12.5644	2327625.312	0
N295	-12.0753	-0.0097	0.0002	57.5845	45.4889	0.0203	124397.8878	0
N311	-22.7150	-0.0138	0.0003	78.1978	55.5417	-0.0589	164338.5567	0
N462	-3.4662	-0.0041	0.0000	373.8773	0.0000	370.4111	83838.4370	0

The total continuity error was -15016. cubic feet
The remaining total volume was 3.18015E+05 cubic feet
Your mean node continuity error was Excellent
Your worst node continuity error was Excellent

Table E19 - Junction Inflow & Outflow Listing Units are either ft^3 or m^3 depending on the units in your model.

Junction Name	Constant Inflow to Node	User Inflow to Node	Interface Inflow to Node	DWF Inlow to Node	Inflow through Outfall	RNF Layer Inflow to Node	Inflow from 2D Layer	Outflow from Node	Evaporation from Node	Basin Infil.
N221	0.0000	57330.5125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N222	0.0000	4844.4690	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N223	0.0000	3220.3920	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N224	0.0000	2437.1070	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N227	0.0000	49348.9384	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N228	0.0000	106453.3892	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N230	0.0000	19607.9040	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N231	0.0000	18840.4830	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N233	0.0000	3539.6550	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N234	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	261060.6576	0.0000	0.0000
N235	0.0000	4570.8150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N238	0.0000	13361.4540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N239	0.0000	8348.4300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N240	0.0000	12990.6330	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N241	0.0000	198.3000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N242	0.0000	10170.8070	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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           N243      0.0000    6781.8600       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N244      0.0000    2211.0450       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N245      0.0000    5744.7510       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N246      0.0000      63.4560       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N247      0.0000   80285.7208       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N248      0.0000    8879.8740       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N249      0.0000   42158.5800       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N250      0.0000   61100.1967       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N251      0.0000   73246.0708       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N252      0.0000    7329.1680       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N253      0.0000    1251.2730       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N254      0.0000   24543.5908       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N255      0.0000   17811.3060       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N256      0.0000   36715.2441       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N257      0.0000   49239.8725       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N259      0.0000   48761.9700       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N260      0.0000       0.0000       0.0000       0.0000    1854.1023       0.0000       0.0000
559487.2606       0.0000       0.0000
           N261      0.0000   39305.0425       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N262      0.0000   31313.5525       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N263      0.0000    2298.2970       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N264      0.0000       0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
59319.0024       0.0000       0.0000
           N265      0.0000   25868.2359       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           W800      0.0000   61447.2208       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           W801      0.0000   91075.2233       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
         OUT802      0.0000    7920.1020       0.0000       0.0000     -11.4595       0.0000       0.0000
184356.2052       0.0000       0.0000
           N272      0.0000    3872.7990       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N273      0.0000   16913.0070       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N274      0.0000    4077.0480       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N275      0.0000    3291.7800       0.0000       0.0000      -4.7629       0.0000       0.0000
27970.2924       0.0000       0.0000
           N276      0.0000   19417.5360       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N277      0.0000    2482.7160       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N278      0.0000       0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
45539.2643       0.0000       0.0000
           N279      0.0000   23788.0680       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
           N289      0.0000       0.0000       0.0000       0.0000     398.8433       0.0000       0.0000
187069.8890       0.0000       0.0000
           N290      0.0000  187369.7033       0.0000       0.0000       0.0000       0.0000       0.0000
```

```
0.0000       0.0000       0.0000
          N291      0.0000  169665.4800       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N292      0.0000       0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
169392.2847       0.0000       0.0000
          N293      0.0000   29846.1325       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N294      0.0000    2552.1210       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N296      0.0000   29982.9600       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N301      0.0000   67856.2775       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N302      0.0000    1963.1700       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N303      0.0000       0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
99206.1730       0.0000       0.0000
          N304      0.0000   29683.5275       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N309      0.0000   36187.7675       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N310      0.0000    1386.1170       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N312      0.0000   44899.0867       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
         YEL327      0.0000  525215.3975       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N331      0.0000       0.0000       0.0000       0.0000      38.5160       0.0000       0.0000
528439.2855       0.0000       0.0000
          W104      0.0000   26915.2592       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N343      0.0000       0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
37137.6140       0.0000       0.0000
          N344      0.0000   37272.4684       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N345      0.0000   10081.5720       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N356      0.0000    8457.4950       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N357      0.0000    8568.5430       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N358      0.0000    8588.3730       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N360      0.0000       0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
25387.8631       0.0000       0.0000
          N361      0.0000  421389.4861       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N363      0.0000   33657.4592       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N365      0.0000       0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
594265.6471       0.0000       0.0000
          N366      0.0000   90964.1767       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N367      0.0000   52204.4584       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N368      0.0000  244521.7385       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N370      0.0000  364905.7090       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N371      0.0000  507661.8844       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N375      0.0000  175719.5792       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N376      0.0000  163676.8200       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
          N379      0.0000       0.0000       0.0000       0.0000   14637.5268       0.0000       0.0000
1.4293E+06       0.0000       0.0000
          N381      0.0000    1027.1940       0.0000       0.0000       0.0000       0.0000       0.0000
0.0000       0.0000       0.0000
```

N382	0.0000	19847.8470	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N383	0.0000	45835.0616	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N384	0.0000	42824.8684	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N386	0.0000	52539.5859	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N387	0.0000	32455.7608	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N389	0.0000	70176.3875	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N390	0.0000	45184.6384	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N391	0.0000	69295.9359	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N394	0.0000	0.0000	0.0000	0.0000	2416.5755	0.0000	0.0000
376489.0832	0.0000	0.0000					
N395	0.0000	66456.2792	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N397	0.0000	1471.3860	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N398	0.0000	38027.9908	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N399	0.0000	35624.5959	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N404	0.0000	138284.5059	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N405	0.0000	44210.9859	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N406	0.0000	64449.4825	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N407	0.0000	31882.6733	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N408	0.0000	108573.2167	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N412	0.0000	84089.1159	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N415	0.0000	90837.2633	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N416	0.0000	85733.0216	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N418	0.0000	80327.3633	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N420	0.0000	141163.8208	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N423	0.0000	96258.7867	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N425	0.0000	75851.7325	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N429	0.0000	37823.7416	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N430	0.0000	44482.6567	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N431	0.0000	202.2660	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N434	0.0000	45012.1175	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N436	0.0000	56503.6016	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N437	0.0000	102497.3033	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N439	0.0000	3275.9160	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N440	0.0000	32943.5792	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N441	0.0000	75391.6775	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000					
N443	0.0000	18475.6110	0.0000	0.0000	0.0000	0.0000	0.0000

```
0.0000        0.0000        0.0000
            N444      0.0000    78687.4225        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N445      0.0000    18800.8230        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N446      0.0000    18626.3190        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N447      0.0000    37857.4525        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N448      0.0000    48543.8400        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N449      0.0000       35.6940        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N451      0.0000    45156.8767        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N454      0.0000    56945.8108        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N456      0.0000      200.2830        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N457      0.0000    33126.0159        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N461      0.0000        0.0000        0.0000        0.0000        0.0000        0.0000        0.0000
927728.5573       0.0000        0.0000
            N464      0.0000     9805.9350        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N465      0.0000   117330.1433        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N467      0.0000    19250.9640        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N468      0.0000    32878.1400        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N469      0.0000    12875.6190        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N471      0.0000    25630.2759        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N472      0.0000    18487.5090        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N473      0.0000    13460.6040        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N490      0.0000   180478.7792        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N491      0.0000     7569.1110        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N492      0.0000    88394.2084        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N493      0.0000        0.0000        0.0000        0.0000        0.0000        0.0000        0.0000
88214.5370        0.0000        0.0000
            N497      0.0000    59295.6667        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N499      0.0000        0.0000        0.0000        0.0000        0.0000        0.0000        0.0000
59194.4593        0.0000        0.0000
            N509      0.0000   218831.9816        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N513      0.0000   133192.1608        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N514      0.0000     3008.2110        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N516      0.0000        0.0000        0.0000        0.0000        0.0000        0.0000        0.0000
353717.7357       0.0000        0.0000
            N524      0.0000    12024.9120        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N526      0.0000    11876.1870        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N527      0.0000     6530.0190        0.0000        0.0000       -9.4482        0.0000        0.0000
30221.4690        0.0000        0.0000
            N530      0.0000     5978.7450        0.0000        0.0000        0.0000        0.0000        0.0000
0.0000        0.0000        0.0000
            N689      0.0000        0.0000        0.0000        0.0000        0.0000        0.0000        0.0000
185797.8286       0.0000        0.0000
```

EL329	0.0000	86030.4716	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000						
N411	0.0000	0.0000	0.0000	0.0000	22585.2472	0.0000	0.0000	
1.1754E+06	0.0000	0.0000						
N295	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
62197.2830	0.0000	0.0000						
N311	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
82167.2186	0.0000	0.0000						
N462	0.0000	42166.5116	0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	0.0000						

===
| Table E20 - Junction Flooding and Volume Listing. |
| The maximum volume is the total volume |
| in the node including the volume in the |
| flooded storage area. This is the max |
| volume at any time. The volume in the |
| flooded storage area is the total volume |
| above the ground elevation, where the |
| flooded pond storage area starts. |
| The fourth column is instantaneous, the fifth is the |
| sum of the flooded volume over the entire simulation |
| Units are either ft^3 or m^3 depending on the units. |
===

Junction Name	Surcharged Time (min)	Flooded Time(min)	Out of 1D-System (Flooded Volume)	Maximum Volume	Passed to 2D cell OR Volume Stored in allowed Flood Pond of 1D-System
N221	302.3000	0.0000	0.0000	22.1483	0.0000
N222	301.7333	0.0000	0.0000	32.0928	0.0000
N223	0.0000	0.0000	0.0000	16.4104	0.0000
N224	300.9000	0.0000	0.0000	41.7304	0.0000
N227	308.1724	0.0000	0.0000	33.0732	0.0000
N228	309.2759	0.0000	0.0000	38.7033	0.0000
N230	0.0000	0.0000	0.0000	29.3965	0.0000
N231	0.0000	0.0000	0.0000	5.6195	0.0000
N233	0.0000	0.0000	0.0000	10.3123	0.0000
N234	0.0000	0.0000	0.0000	22.7445	0.0000
N235	0.0000	0.0000	0.0000	3.3203	0.0000
N236	0.0000	0.0000	0.0000	3.5222	0.0000
N237	0.0000	0.0000	0.0000	5.0215	0.0000
N238	266.1290	0.0000	0.0000	31.0693	0.0000
N239	0.0000	0.0000	0.0000	10.9053	0.0000
N240	294.8710	0.0000	0.0000	19.8467	0.0000
N241	0.0000	0.0000	0.0000	14.5562	0.0000
N242	0.0000	0.0000	0.0000	22.6247	0.0000
N243	0.0000	0.0000	0.0000	27.7748	0.0000
N244	0.0000	0.0000	0.0000	30.4555	0.0000
N245	252.7419	0.0000	0.0000	40.9166	0.0000
N246	298.4194	0.0000	0.0000	38.7770	0.0000
N247	309.1724	0.0000	0.0000	47.6476	0.0000
N248	273.2581	0.0000	0.0000	13.1695	0.0000
N249	304.3000	0.0000	0.0000	26.9528	0.0000
N250	304.5333	0.0000	0.0000	31.2314	0.0000
N251	309.6897	0.0000	0.0000	15.9924	0.0000
N252	0.0000	0.0000	0.0000	27.9085	0.0000
N253	0.0000	0.0000	0.0000	29.9483	0.0000
N254	0.0000	0.0000	0.0000	6.5772	0.0000
N255	0.0000	0.0000	0.0000	45.8927	0.0000
N256	0.0000	0.0000	0.0000	8.3358	0.0000
N257	0.0000	0.0000	0.0000	10.5200	0.0000
N259	297.3871	0.0000	0.0000	32.3331	0.0000
N260	0.0000	0.0000	0.0000	26.3886	0.0000
N261	0.0000	0.0000	0.0000	12.3303	0.0000
N262	0.0000	0.0000	0.0000	7.7026	0.0000
N263	0.0000	0.0000	0.0000	4.7769	0.0000
N264	360.0000	0.0000	0.0000	30.7867	0.0000

N265	0.0000	0.0000	0.0000	6.8691	0.0000
W800	310.7586	0.0000	0.0000	38.9896	0.0000
W801	308.3793	0.0000	0.0000	31.2045	0.0000
OUT802	0.0000	0.0000	0.0000	25.1320	0.0000
N272	0.0000	0.0000	0.0000	6.2859	0.0000
N273	0.0000	0.0000	0.0000	5.3435	0.0000
N274	0.0000	0.0000	0.0000	2.4273	0.0000
N275	360.0000	0.0000	0.0000	22.8701	0.0000
N276	0.0000	0.0000	0.0000	6.1923	0.0000
N277	0.0000	0.0000	0.0000	3.4581	0.0000
N278	360.0000	0.0000	0.0000	43.7297	0.0000
N279	0.0000	0.0000	0.0000	6.8826	0.0000
N288	0.4167	0.0000	0.0000	115.3777	0.0000
N289	0.0000	0.0000	0.0000	56.1700	0.0000
N290	359.7500	0.0000	0.0000	49.2736	0.0000
N291	0.0000	0.0000	0.0000	6.6409	0.0000
N292	360.0000	0.0000	0.0000	61.1964	0.0000
N293	0.0000	0.0000	0.0000	7.7535	0.0000
N294	0.0000	0.0000	0.0000	3.9648	0.0000
N296	0.0000	0.0000	0.0000	7.8495	0.0000
N301	312.6897	0.0000	0.0000	24.1177	0.0000
N302	0.0000	0.0000	0.0000	4.9644	0.0000
N303	360.0000	0.0000	0.0000	33.5512	0.0000
N304	0.0000	0.0000	0.0000	7.6903	0.0000
N309	0.0000	0.0000	0.0000	8.4156	0.0000
N310	0.0000	0.0000	0.0000	4.9879	0.0000
N312	0.0000	0.0000	0.0000	9.9295	0.0000
YEL327	3.2298	2.5480	0.0000	1159.9503	125.6173
N331	360.0000	0.0000	0.0000	71.7519	0.0000
W104	0.0000	0.0000	0.0000	11.9864	0.0000
N342	0.0000	0.0000	0.0000	7.6348	0.0000
N343	0.0000	0.0000	0.0000	6.4778	0.0000
N344	0.0000	0.0000	0.0000	8.4396	0.0000
N345	0.0000	0.0000	0.0000	5.0497	0.0000
N356	0.0000	0.0000	0.0000	3.6202	0.0000
N357	0.0000	0.0000	0.0000	5.2486	0.0000
N358	0.0000	0.0000	0.0000	7.1951	0.0000
N359	0.0000	0.0000	0.0000	3.4952	0.0000
N360	360.0000	0.0000	0.0000	31.6663	0.0000
N361	0.0000	0.0000	0.0000	26.1470	0.0000
N362	0.0000	0.0000	0.0000	25.1859	0.0000
N363	0.0000	0.0000	0.0000	25.1455	0.0000
N364	0.0000	0.0000	0.0000	10.5970	0.0000
N365	360.0000	0.0000	0.0000	64.3379	0.0000
N366	0.0000	0.0000	0.0000	13.9940	0.0000
N367	0.0000	0.0000	0.0000	11.1376	0.0000
N368	297.2581	0.0000	0.0000	36.3621	0.0000
N369	297.4839	0.0000	0.0000	43.0700	0.0000
N370	303.8333	0.0000	0.0000	64.7513	0.0000
N371	303.6667	0.0000	0.0000	58.2573	0.0000
N372	301.4000	0.0000	0.0000	59.3902	0.0000
N373	298.3871	0.0000	0.0000	54.5063	0.0000
N374	0.0000	0.0000	0.0000	49.3516	0.0000
N375	0.0000	0.0000	0.0000	53.9151	0.0000
N376	0.0000	0.0000	0.0000	20.9184	0.0000
N377	0.0000	0.0000	0.0000	21.1974	0.0000
N378	0.0000	0.0000	0.0000	41.9037	0.0000
N379	0.0000	0.0000	0.0000	51.8976	0.0000
N381	0.0000	0.0000	0.0000	13.6438	0.0000
N382	0.0000	0.0000	0.0000	21.5741	0.0000
N383	0.0000	0.0000	0.0000	9.5341	0.0000
N384	0.0000	0.0000	0.0000	9.2920	0.0000
N386	0.0000	0.0000	0.0000	10.5619	0.0000
N387	0.0000	0.0000	0.0000	8.0295	0.0000
N388	0.0000	0.0000	0.0000	21.4198	0.0000
N389	0.0000	0.0000	0.0000	36.9369	0.0000
N390	0.0000	0.0000	0.0000	9.9831	0.0000
N391	310.7586	0.0000	0.0000	18.3614	0.0000
N392	0.0000	0.0000	0.0000	36.8159	0.0000

N394	360.0000	0.0000	0.0000	51.8976	0.0000
N395	322.2963	0.0000	0.0000	34.2532	0.0000
N396	0.0000	0.0000	0.0000	16.2373	0.0000
N397	0.0000	0.0000	0.0000	32.5126	0.0000
N398	0.0000	0.0000	0.0000	29.4936	0.0000
N399	0.0000	0.0000	0.0000	46.2041	0.0000
N403	0.0000	0.0000	0.0000	46.7659	0.0000
N404	0.0000	0.0000	0.0000	53.7297	0.0000
N405	282.4839	0.0000	0.0000	21.4710	0.0000
N406	0.0000	0.0000	0.0000	53.9579	0.0000
N407	0.0000	0.0000	0.0000	9.6560	0.0000
N408	0.0000	0.0000	0.0000	53.1008	0.0000
N409	0.0000	0.0000	0.0000	50.5963	0.0000
N410	0.0000	0.0000	0.0000	47.0568	0.0000
N412	316.2143	0.0000	0.0000	33.7441	0.0000
N413	0.0000	0.0000	0.0000	42.3962	0.0000
N414	0.0000	0.0000	0.0000	64.8486	0.0000
N415	316.7857	0.0000	0.0000	34.5364	0.0000
N416	305.8333	0.0000	0.0000	28.0079	0.0000
N417	0.0000	0.0000	0.0000	17.1277	0.0000
N418	0.0000	0.0000	0.0000	11.5693	0.0000
N419	278.9677	0.0000	0.0000	32.1704	0.0000
N420	276.1290	0.0000	0.0000	31.7081	0.0000
N421	276.2903	0.0000	0.0000	31.8363	0.0000
N422	283.0000	0.0000	0.0000	42.0842	0.0000
N423	282.1935	0.0000	0.0000	29.0211	0.0000
N424	288.4516	0.0000	0.0000	47.8518	0.0000
N425	288.6774	0.0000	0.0000	29.3530	0.0000
N426	292.1935	0.0000	0.0000	52.5794	0.0000
N428	295.2258	0.0000	0.0000	53.2469	0.0000
N429	297.7419	0.0000	0.0000	59.9908	0.0000
N430	0.0000	0.0000	0.0000	7.6266	0.0000
N431	0.0000	0.0000	0.0000	27.0084	0.0000
N432	0.0000	0.0000	0.0000	13.0734	0.0000
N434	0.0000	0.0000	0.0000	9.1481	0.0000
N435	282.9032	0.0000	0.0000	34.9464	0.0000
N436	284.3871	0.0000	0.0000	24.6769	0.0000
N437	282.7097	0.0000	0.0000	28.5450	0.0000
N438	285.7419	0.0000	0.0000	37.0714	0.0000
N439	293.0645	0.0000	0.0000	46.6460	0.0000
N440	289.0323	0.0000	0.0000	25.2102	0.0000
N441	293.0645	0.0000	0.0000	31.1418	0.0000
N442	296.6129	0.0000	0.0000	51.0267	0.0000
N443	290.4194	0.0000	0.0000	24.6738	0.0000
N444	296.9677	0.0000	0.0000	32.8288	0.0000
N445	293.9355	0.0000	0.0000	53.6601	0.0000
N446	282.8710	0.0000	0.0000	16.8533	0.0000
N447	286.1290	0.0000	0.0000	48.1715	0.0000
N448	303.9000	0.0000	0.0000	26.0969	0.0000
N449	305.3000	0.0000	0.0000	28.8145	0.0000
N450	298.5806	0.0000	0.0000	23.3190	0.0000
N451	297.6774	0.0000	0.0000	22.8134	0.0000
N453	303.9333	0.0000	0.0000	24.3294	0.0000
N454	305.1333	0.0000	0.0000	27.3212	0.0000
N455	267.0000	0.0000	0.0000	16.8395	0.0000
N456	300.4333	0.0000	0.0000	24.2455	0.0000
N457	294.7097	0.0000	0.0000	17.9111	0.0000
N458	0.0000	0.0000	0.0000	17.4524	0.0000
N459	0.0000	0.0000	0.0000	38.3632	0.0000
N460	0.0000	0.0000	0.0000	12.4097	0.0000
N461	360.0000	0.0000	0.0000	54.1595	0.0000
N464	303.0333	0.0000	0.0000	38.3762	0.0000
N465	301.4667	0.0000	0.0000	38.9881	0.0000
N466	301.2667	0.0000	0.0000	41.5731	0.0000
N467	298.3548	0.0000	0.0000	24.1394	0.0000
N468	298.9032	0.0000	0.0000	30.2926	0.0000
N469	0.0000	0.0000	0.0000	22.4006	0.0000
N470	0.0000	0.0000	0.0000	12.1525	0.0000
N471	294.2258	0.0000	0.0000	15.1844	0.0000

N472	291.7097	0.0000	0.0000	14.0223	0.0000
N473	0.0000	0.0000	0.0000	5.7827	0.0000
N487	0.0000	0.0000	0.0000	12.8271	0.0000
N489	0.0000	0.0000	0.0000	30.6866	0.0000
N490	0.0000	0.0000	0.0000	20.0447	0.0000
N491	0.0000	0.0000	0.0000	10.7615	0.0000
N492	324.8077	0.0000	0.0000	22.3400	0.0000
N493	0.0000	0.0000	0.0000	12.5660	0.0000
N497	0.0000	0.0000	0.0000	4.6455	0.0000
N499	360.0000	0.0000	0.0000	90.6009	0.0000
N509	328.2000	0.0000	0.0000	44.7373	0.0000
N513	0.0000	0.0000	0.0000	16.6638	0.0000
N514	0.0000	0.0000	0.0000	8.1244	0.0000
N516	360.0000	0.0000	0.0000	56.9240	0.0000
N524	0.0000	0.0000	0.0000	4.3492	0.0000
N525	0.0000	0.0000	0.0000	6.3739	0.0000
N526	0.0000	0.0000	0.0000	4.3215	0.0000
N527	0.0000	0.0000	0.0000	6.3708	0.0000
N528	300.5000	0.0000	0.0000	53.7360	0.0000
N529	0.0000	0.0000	0.0000	48.8790	0.0000
N530	298.7419	0.0000	0.0000	55.4674	0.0000
N689	0.0000	0.0000	0.0000	18.8490	0.0000
N494	0.0000	0.0000	0.0000	11.8845	0.0000
N541	275.8065	0.0000	0.0000	27.5966	0.0000
EL329	278.9032	0.0000	0.0000	30.2418	0.0000
N427	293.1613	0.0000	0.0000	37.8364	0.0000
N411	0.0000	0.0000	0.0000	45.4889	0.0000
N295	360.0000	0.0000	0.0000	45.4889	0.0000
N311	360.0000	0.0000	0.0000	55.5417	0.0000
N462	293.6129	0.0000	0.0000	24.2794	0.0000

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| Simulation Specific Information |
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Number of Input Conduits.....	183	Number of Simulated Conduits.....	207
Number of Natural Channels.....	0	Number of Junctions.....	207
Number of Storage Junctions.....	0	Number of Weirs.....	0
Number of Orifices.....	0	Number of Pumps.....	0
Number of Free Outfalls.....	24	Number of Tide Gate Outfalls.....	0

==
| Average % Change in Junction or Conduit is defined as: |
| Conduit % Change ==> 100.0 (Q(n+1) - Q(n)) / Qfull |
| Junction % Change ==> 100.0 (Y(n+1) - Y(n)) / Yfull |
==

The Conduit with the largest average change was..FREE #10 with 0.011 percent
The Junction with the largest average change was.YEL327 with 0.256 percent
The Conduit with the largest sinuosity was.......L308 with 7.272

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| Table E21. Continuity balance at the end of the simulation |
| Junction Inflow, Outflow or Street Flooding |
| Error = Inflow + Initial Volume - Outflow - Final   Volume |
==

Inflow Junction	Inflow Volume,ft^3	Average Inflow, cfs
N221	57247.5613	2.6504
N222	4837.4596	0.2240
N223	3215.7324	0.1489
N224	2433.5808	0.1127
N227	49277.5357	2.2814
N228	106299.3624	4.9213
N230	19579.5334	0.9065
N231	18813.2228	0.8710

N233	3534.5335	0.1636
N235	4564.2015	0.2113
N238	13342.1214	0.6177
N239	8336.3507	0.3859
N240	12971.8369	0.6005
N241	198.0131	0.0092
N242	10156.0909	0.4702
N243	6772.0474	0.3135
N244	2207.8459	0.1022
N245	5736.4390	0.2656
N246	63.3642	0.0029
N247	80169.5559	3.7116
N248	8867.0258	0.4105
N249	42097.5810	1.9490
N250	61011.7912	2.8246
N251	73140.0915	3.3861
N252	7318.5635	0.3388
N253	1249.4625	0.0578
N254	24508.0789	1.1346
N255	17785.5349	0.8234
N256	36662.1210	1.6973
N257	49168.6276	2.2763
N259	48691.4166	2.2542
N260	1854.1023	0.0858
N261	39248.1722	1.8170
N262	31268.2451	1.4476
N263	2294.9716	0.1062
N265	25830.8073	1.1959
W800	61358.3132	2.8407
W801	90943.4471	4.2103
OUT802	7908.6425	0.3661
N272	3867.1955	0.1790
N273	16888.5357	0.7819
N274	4071.1489	0.1885
N275	3287.0171	0.1522
N276	19389.4409	0.8977
N277	2479.1238	0.1148
N279	23753.6492	1.0997
N289	398.8433	0.0185
N290	187098.5992	8.6620
N291	169419.9921	7.8435
N293	29802.9483	1.3798
N294	2548.4284	0.1180
N296	29939.5778	1.3861
N301	67758.0967	3.1369
N302	1960.3295	0.0908
N304	29640.5786	1.3722
N309	36135.4077	1.6729
N310	1384.1114	0.0641
N312	44834.1225	2.0757
YEL327	524455.4667	24.2803
N331	38.5160	0.0018
W104	26876.3157	1.2443
N344	37218.5391	1.7231
N345	10066.9850	0.4661
N356	8445.2579	0.3910
N357	8556.1452	0.3961
N358	8575.9465	0.3970
N361	420779.7803	19.4805
N363	33608.7604	1.5560
N366	90832.5612	4.2052
N367	52128.9241	2.4134
N368	244167.9416	11.3041
N370	364377.7293	16.8693
N371	506927.3517	23.4689
N375	175465.3316	8.1234
N376	163439.9970	7.5667
N379	14637.5268	0.6777
N381	1025.7078	0.0475

N382	19819.1293	0.9176
N383	45768.7432	2.1189
N384	42762.9053	1.9798
N386	52463.5667	2.4289
N387	32408.8008	1.5004
N389	70074.8498	3.2442
N390	45119.2610	2.0889
N391	69195.6721	3.2035
N394	2416.5755	0.1119
N395	66360.1240	3.0722
N397	1469.2571	0.0680
N398	37972.9684	1.7580
N399	35573.0509	1.6469
N404	138084.4229	6.3928
N405	44147.0173	2.0438
N406	64356.2309	2.9795
N407	31836.5424	1.4739
N408	108416.1228	5.0193
N412	83967.4479	3.8874
N415	90705.8314	4.1993
N416	85608.9751	3.9634
N418	80211.1381	3.7135
N420	140959.5718	6.5259
N423	96119.5105	4.4500
N425	75741.9831	3.5066
N429	37769.0147	1.7486
N430	44418.2950	2.0564
N431	201.9733	0.0094
N434	44946.9898	2.0809
N436	56421.8469	2.6121
N437	102349.0006	4.7384
N439	3271.1761	0.1514
N440	32895.9133	1.5230
N441	75282.5938	3.4853
N443	18448.8788	0.8541
N444	78573.5701	3.6377
N445	18773.6202	0.8691
N446	18599.3687	0.8611
N447	37802.6768	1.7501
N448	48473.6022	2.2441
N449	35.6424	0.0017
N451	45091.5395	2.0876
N454	56863.4163	2.6326
N456	199.9932	0.0093
N457	33078.0861	1.5314
N464	9791.7469	0.4533
N465	117160.3790	5.4241
N467	19223.1099	0.8900
N468	32830.5688	1.5199
N469	12856.9893	0.5952
N471	25593.1916	1.1849
N472	18460.7595	0.8547
N473	13441.1279	0.6223
N490	180217.6456	8.3434
N491	7558.1593	0.3499
N492	88266.3113	4.0864
N497	59209.8722	2.7412
N509	218515.3550	10.1165
N513	132999.4459	6.1574
N514	3003.8584	0.1391
N524	12007.5132	0.5559
N526	11859.0034	0.5490
N527	6520.5708	0.3019
N530	5970.0944	0.2764
EL329	85905.9947	3.9771
N411	22585.2472	1.0456
N462	42105.5012	1.9493
N234	-261060.6576	-12.0861
N260	-559487.2606	-25.9022

N264	-59319.0024	-2.7463
OUT802	-184356.2052	-8.5350
N275	-27970.2924	-1.2949
N278	-45539.2643	-2.1083
N289	-187069.8890	-8.6606
N292	-169392.2847	-7.8422
N303	-99206.1730	-4.5929
N331	-528439.2855	-24.4648
N343	-37137.6140	-1.7193
N360	-25387.8631	-1.1754
N365	-594265.6471	-27.5123
N379	-1.429E+06	-66.1732
N394	-376489.0832	-17.4301
N461	-927728.5573	-42.9504
N493	-88214.5370	-4.0840
N499	-59194.4593	-2.7405
N516	-353717.7357	-16.3758
N527	-30221.4690	-1.3991
N689	-185797.8286	-8.6018
N411	-1.175E+06	-54.4184
N295	-62197.2830	-2.8795
N311	-82167.2186	-3.8040

Outflow Junction	Outflow Volume,ft^3	Average Outflow, cfs
N234	261060.6576	12.0861
N260	559487.2606	25.9022
N264	59319.0024	2.7463
OUT802	184356.2052	8.5350
N275	27970.2924	1.2949
N278	45539.2643	2.1083
N289	187069.8890	8.6606
N292	169392.2847	7.8422
N303	99206.1730	4.5929
N331	528439.2855	24.4648
N343	37137.6140	1.7193
N360	25387.8631	1.1754
N365	594265.6471	27.5123
N379	1.42934E+06	66.1732
N394	376489.0832	17.4301
N461	927728.5573	42.9504
N493	88214.5370	4.0840
N499	59194.4593	2.7405
N516	353717.7357	16.3758
N527	30221.4690	1.3991
N689	185797.8286	8.6018
N411	1.17544E+06	54.4184
N295	62197.2830	2.8795
N311	82167.2186	3.8040

Initial system volume	=	917.1923 Cu Ft
Total system inflow volume	=	7.859696E+06 Cu Ft
Inflow + Initial volume	=	7.860613E+06 Cu Ft
Total system outflow	=	7.549137E+06 Cu Ft
Volume left (Final volume)	=	318015.3077 Cu Ft
Evaporation	=	0.0000 Cu Ft
Basin Infiltration	=	0.0000 Cu Ft
Outflow + Final Volume	=	7.867152E+06 Cu Ft

Total Model Continuity Error		
Error in Continuity, Percent	=	-0.0832
Error in Continuity, ft^3	=	-6538.917
+ Error means a continuity loss, - a gain		

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##
Table E22. Numerical Model judgement section
##

Overall error was (minimum of Table E18 & E21)   -0.0832 percent
Worst nodal error was in node N470   with   -4.5965 percent
Of the total inflow this loss was   0.3055 percent
Your overall continuity error was   Excellent
                                                 Excellent Efficiency
Efficiency of the simulation   1.39
Most Number of Non Convergences at one Node   2.
Total Number Non Convergences at all Nodes   6.
Total Number of Nodes with Non Convergences   5.

##
Table E23. New Basin Design Information
Maximum Hydraulic Grade Line,
Out Conduit Sizes and Maximum Flow
##

A) Resize d/s Pipes based on given HGL
B) Resize Basin based on given HGL
C) Resize d/s Pipes and Basin based on HGL and max discharge
D) Resize d/s pipes based on given max discharge

Basin Name	Type	Max.HGL (ft)	Conduit	Depth (ft)	Width (ft)	Barrels	Max.Flow (ft^3/s)

===> Hydraulic model simulation ended normally.
===> XP-SWMM Simulation ended normally.
===> Your input file was named : P:\projects\2012.21\drainage\swmm\xp\JacksonTrunkNolteA1Ph1_modf1.DAT
===> Your output file was named : P:\projects\2012.21\drainage\swmm\xp\JacksonTrunkNolteA1Ph1_modf1.out

==
| SWMM Simulation Date and Time Summary |
==
| Starting Date... July   6, 2017 Time...   10: 7:40:29 |
| Ending Date... July   6, 2017 Time...   10: 7:54:95 |
| Elapsed Time...   0.24433 minutes or   14.66000 seconds |
==

Jackson Township

Phased Development Scenario
Phase 2

XP Swmm Output File Listing

```
 Current Directory:   C:\PROGRA~2\XPSOLU~1\XPSWMM~1
 Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE
 Input File : projects\2012.21\drainage\swmm\xp\JacksonTrunkNolteA1Ph2_modf1.XP

          *=============================================*
          |                   xpswmm                    |
          |     Storm and Wastewater Management Model   |
          |         Developed by XP Solutions Inc.      |
          |=============================================|
          |                                             |
          | Last Update      : June, 2014               |
          | Interface Version: 2012                     |
          | Engine Version   : 12.0                     |
          | Data File Version: 12.6                     |
          |                                             |
          |                                             |
          *=============================================*

Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


*=================================================*
|       Input and Output file names by Layer      |
*=================================================*

 Input File  to Layer #     1 JOT.US
 Output File to Layer #     1 JOT.US

*=========================================================*
|                Configuration Parameters                 |
|  Configuration Parameters, both those that are hardwired  |
|  and those added to the simulation are listed below.      |
|  Configuration Parameters that start with a $ are set in  |
|  the engine as defaults.  The remaining in UPPERCASE      |
|  have been added to the simulation in the Configuration-> |
|  Configuration Parameters dialog or as Engine Defaults in |
|  the SWMXP.INI file.                                      |
|                                                           |
|  Consult the Help File for the specific meaning/purpose   |
|  of any particular parameter.                             |
|                                                           |
|  Note:                                                    |
|  The second column denotes the value of the parameter.    |
*=========================================================*

 $powerstation                      0.0000         1         2
 $perv                              0.0000         0         4
 $oldegg                            0.0000         0         7
 $as                                0.0000         0        11
 $noflat                            0.0000         0        21
 $oldomega                          0.0000         0        24
 $oldvol                            0.0000         1        28
 $implicit                          0.0000         1        29
 $oldhot                            0.0000         1        31
 $oldscs                            0.0000         0        33
 $flood                             0.0000         1        40
 $nokeys                            0.0000         0        42
 $pzero                             0.0000         0        55
 $oldvol2                           0.0000         2        59
 $storage2                          0.0000         3        62
```

$oldhot1	0.0000	1	63
$pumpwt	0.0000	1	70
$ecloss	0.0000	1	77
$exout	0.0000	0	97
$spatial = 0.90	0.9000	5	124
$djref = -1.0	-0.1000	3	143
$weirlen = 50	50.0000	1	153
$oldbnd	0.0000	1	154
$nogrelev	0.0000	1	161
$ncmid	0.0000	0	164
$new_nl_97	0.0000	2	290
SCSIADEPTH=ON	0.0000	1	293
$best97	0.0000	1	294
$newbound	0.0000	1	295
$q_tol = 0.01	0.0001	1	316
$new_storage	0.0000	1	322
$old_iteration	0.0000	1	333
MINLEN=10	10.0000	1	346
$review_elevation	0.0000	1	383
$use_half_volume	0.0000	1	385
VERT_WALLS=ON	0.0000	1	389
$min_ts = 1.0	1.0000	1	407
$design_restart = on	0.0000	1	412
$zero_value=1.e-05	0.0000	1	415
SUBCATCHMENT_RES=ON	0.0000	1	419
$relax_depth = on	0.0000	1	427
$saveallpts = on	0.0000	1	434
$channel_geometry=1	0.0000	1	456

==
| Parameter Values on the Tapes Common Block.These are the |
| values read from the data file and dynamically allocated |
| by the model for this simulation. |
==

Number of Subcatchments in the Runoff Block (NW)....	0
Number of Channel/Pipes in the Runoff Block (NG)....	0
Runoff Water quality constituents (NRQ).....	0
Runoff Land Uses per Subcatchment (NLU).....	0
Number of Elements in the Transport Block (NET).....	0
Number of Storage Junctions in Transport (NTSE).....	0
Number of Input Hydrographs in Transport (NTH).....	0
Number of Elements in the Extran Block (NEE).....	268
Number of Groundwater Subcatchments in Runoff (NGW).	0
Number of Interface locations for all Blocks (NIE)..	268
Number of Pumps in Extran (NEP).....	0
Number of Orifices in Extran (NEO).....	0
Number of Tide Gates/Free Outfalls in Extran (NTG)..	30
Number of Extran Weirs (NEW).....	0
Number of scs hydrograph points.....	1
Number of Extran printout locations (NPO).....	0
Number of Tide elements in Extran (NTE).....	30
Number of Natural channels (NNC).....	0
Number of Storage junctions in Extran (NVSE).....	0
Number of Time history data points in Extran(NTVAL).	2
Number of Variable storage elements in Extran (NVST)	0
Number of Input Hydrographs in Extran (NEH).....	268
Number of Particle sizes in Transport Block (NPS)...	0
Number of User defined conduits (NHW).....	269
Number of Connecting conduits in Extran (NECC).....	20

```
 Number of Upstream elements in Transport (NTCC).....    10
 Number of Storage/treatment plants (NSTU)...........     1
 Number of Values for R1 lines in Transport (NR1)....     0
 Number of Nodes to be allowed for (NNOD)............   268
 Number of Plugs in a Storage Treatment Unit.........     1

XXX End of Header Section XXX

############################################################
#    Entry made to the HYDRAULIC Layer of XP-SWMM     #
#    Last Updated in June, 2014 by XP Solutions       #




*============================================================*
|        HYDRAULICS TABLES IN THE OUTPUT FILE                |
|  These are the more important tables in the output file.   |
|  You can use your editor to find the table numbers,        |
|  for example: search for Table E20 to check continuity.    |
|  This output file can be imported into a Word Processor    |
|  and printed on US letter or A4 paper using portrait       |
|  mode, courier font, a size of 8 pt. and margins of 0.75   |
|                                                            |
| Table E1   - Basic Conduit Data                            |
| Table E2   - Conduit Factor Data                           |
| Table E3a  - Junction Data                                 |
| Table E3b  - Junction Data                                 |
| Table E4   - Conduit Connectivity Data                     |
| Table E4a  - Dry Weather Flow Data                         |
| Table E4b  - Real Time Control Data                        |
| Table E5   - Junction Time Step Limitation Summary         |
| Table E5a  - Conduit Explicit Condition Summary            |
| Table E6   - Final Model Condition                         |
| Table E7   - Iteration Summary                             |
| Table E8   - Junction Time Step Limitation Summary         |
| Table E9   - Junction  Summary  Statistics                 |
| Table E10  - Conduit   Summary  Statistics                 |
| Table E11  - Area assumptions used in the analysis         |
| Table E12  - Mean conduit information                      |
| Table E13  - Channel losses(H) and culvert info            |
| Table E13a - Culvert Analysis Classification               |
| Table E14  - Natural Channel Overbank Flow Information     |
| Table E14a - Natural Channel Encroachment Information      |
| Table E14b - Floodplain Mapping                            |
| Table E15  - Spreadsheet Info List                         |
| Table E15a - Spreadsheet Reach List                        |
| Table E16  - New Conduit Output Section                    |
| Table E17  - Pump Operation                                |
| Table E18  - Junction Continuity Error                     |
| Table E19  - Junction Inflow & Outflow Listing             |
| Table E20  - Junction Flooding and Volume List             |
| Table E21  - Continuity balance at simulation end          |
| Table E22  - Model Judgement Section                       |
*============================================================*

Time Control from Hydraulics Job Control
Year.........    1995 Month.......       1
Day..........       1 Hour........       0
```

```
 Minute.......       0 Second......       0


 Control information for simulation
 ----------------------------------

 Integration cycles.................       360
 Length of integration step is......     60.00 seconds
 Simulation length..................      6.00 hours
 Do not create equiv. pipes(NEQUAL).         0
 Use U.S. customary units for I/O...         0
 Printing starts in cycle...........         1
 Intermediate printout intervals of.       500 cycles
 Intermediate printout intervals of.    500.00 minutes
 Summary printout intervals of......       500 cycles
 Summary printout time interval of..    500.00 minutes
 Hot start file parameter (REDO)....         0
 Initial time.......................      0.00 hours

 Iteration variables: Flow Tolerance.   0.00010
                      Head Tolerance.   0.00050
     Minimum depth (m or ft).........   0.00001
     Underrelaxation parameter.......   0.85000
     Time weighting parameter........   0.85000
     Conduit roughness factor........   1.00000
     Flow adjustment factor..........   1.00000
     Initial Condition Smoothing.....         0
     Courant Time Step Factor........   1.00000
     Default Expansion/Contraction K.   0.00000
     Default Entrance/Exit K.........   0.00000
     Routing Method..................   Dynamic Wave
 Default surface area of junctions...     12.57 square feet.
 Minimum Junction/Conduit Depth......   0.00001 feet.
 Ponding Area Coefficient............   5000.00
 Ponding Area Exponent...............    1.0000
 Minimum Orifice Length..............   1000.00 feet.
 NJSW input hydrograph junctions.....   268
      or user defined hydrographs....

 *==========================================================*
 |               Flap Gate Conduit Information              |
 |               ----------------------------               |
 | Positive Flap Gate - Flow only allowed from the upstream |
 |                      to the downstream junction          |
 | Negative Flap Gate - Flow only allowed from the          |
 |                      downstream to the upstream junction |
 *==========================================================*

    Conduit   Type of Flap Gate
    -------   -----------------
 L376        Positive Flap Gate

 *==================================================*
 |          Table E1 - Conduit Data                 |
 *==================================================*

                                                                                                  Trapezoid
Hazen
  Inp          Conduit     Length    Conduit      Area    Manning  Max Width      Depth       Side
Williams
```

Num	Name	(ft)	Class	(ft^2)	Coef.	(ft)	(ft)	Slopes	c-factor
1	L210	70.0000	Circular	0.7854	0.0150	1.0000	1.0000		
2	L211	408.0000	Circular	0.7854	0.0150	1.0000	1.0000		
3	L212	541.0000	Circular	1.2272	0.0150	1.2500	1.2500		
4	L213	107.0000	Circular	0.7854	0.0150	1.0000	1.0000		
5	L214	93.0000	Circular	1.7671	0.0150	1.5000	1.5000		
6	L217	86.0000	Circular	0.7854	0.0150	1.0000	1.0000		
7	L220	320.0000	Circular	2.4053	0.0150	1.7500	1.7500		
8	L221	395.0000	Circular	3.1416	0.0150	2.0000	2.0000		
9	L222	182.0000	Circular	3.1416	0.0150	2.0000	2.0000		
10	L223	72.0000	Circular	0.7854	0.0150	1.0000	1.0000		
11	L224	291.0000	Circular	0.7854	0.0150	1.0000	1.0000		
12	L225	290.0000	Circular	0.7854	0.0150	1.0000	1.0000		
13	L226	413.0000	Circular	0.7854	0.0150	1.0000	1.0000		
14	L227	236.0000	Circular	0.7854	0.0150	1.0000	1.0000		
15	L228	407.0000	Circular	0.7854	0.0150	1.0000	1.0000		
16	L229	572.0000	Circular	1.2272	0.0150	1.2500	1.2500		
17	L230	397.0000	Circular	1.2272	0.0150	1.2500	1.2500		
18	L231	399.0000	Circular	1.2272	0.0150	1.2500	1.2500		
19	L232	307.0000	Circular	1.7671	0.0150	1.5000	1.5000		
20	L233	479.0000	Circular	1.7671	0.0150	1.5000	1.5000		
21	L234	430.0000	Circular	3.1416	0.0150	2.0000	2.0000		
22	L235	50.0000	Circular	0.7854	0.0150	1.0000	1.0000		
23	L236	105.0000	Circular	0.7854	0.0150	1.0000	1.0000		
24	L237	100.0000	Circular	0.7854	0.0150	1.0000	1.0000		
25	L238	55.0000	Circular	0.7854	0.0150	1.0000	1.0000		
26	L239	124.0000	Circular	0.7854	0.0150	1.0000	1.0000		
27	L240	86.0000	Circular	0.7854	0.0150	1.0000	1.0000		
28	L241	296.0000	Circular	1.2272	0.0150	1.2500	1.2500		
29	L242	62.0000	Circular	0.7854	0.0150	1.0000	1.0000		
30	L243	95.0000	Circular	0.7854	0.0150	1.0000	1.0000		
31	L246	414.0000	Circular	4.9087	0.0150	2.5000	2.5000		
32	L247	92.0000	Circular	4.9087	0.0150	2.5000	2.5000		
33	L248	47.0000	Circular	0.7854	0.0150	1.0000	1.0000		
34	L249	73.0000	Circular	0.7854	0.0150	1.0000	1.0000		
35	L250	78.0000	Circular	0.7854	0.0150	1.0000	1.0000		
36	L251	69.0000	Circular	0.7854	0.0150	1.0000	1.0000		
37	L259	281.0000	Circular	2.4053	0.0150	1.7500	1.7500		
38	L260	64.0000	Circular	2.4053	0.0150	1.7500	1.7500		
39	L261	138.0000	Circular	0.7854	0.0150	1.0000	1.0000		
40	L262	76.0000	Circular	0.7854	0.0150	1.0000	1.0000		
41	L263	117.0000	Circular	0.7854	0.0150	1.0000	1.0000		
42	L272	34.0000	Circular	15.9043	0.0150	4.5000	4.5000		
43	L273	117.0000	Circular	2.4053	0.0150	1.7500	1.7500		
44	L274	123.0000	Circular	1.7671	0.0150	1.5000	1.5000		
45	L275	107.0000	Circular	0.7854	0.0150	1.0000	1.0000		
46	L277	117.0000	Circular	0.7854	0.0150	1.0000	1.0000		
47	L281	107.0000	Circular	0.7854	0.0150	1.0000	1.0000		
48	L282	48.0000	Circular	0.7854	0.0150	1.0000	1.0000		
49	L283	114.0000	Circular	0.7854	0.0150	1.0000	1.0000		
50	L287	109.0000	Circular	0.7854	0.0150	1.0000	1.0000		
51	L289	120.0000	Circular	0.7854	0.0150	1.0000	1.0000		
52	L319	65.0000	Circular	1.7671	0.0150	1.5000	1.5000		
53	L320	67.0000	Circular	0.7854	0.0150	1.0000	1.0000		
54	L338	84.0000	Circular	7.0686	0.0150	3.0000	3.0000		
55	L339	260.0000	Circular	7.0686	0.0150	3.0000	3.0000		
56	L340	244.0000	Circular	9.6211	0.0150	3.5000	3.5000		

57	L341	103.0000	Circular	9.6211	0.0150	3.5000	3.5000
58	L342	78.0000	Circular	1.2272	0.0150	1.2500	1.2500
59	L343	94.0000	Circular	0.7854	0.0150	1.0000	1.0000
60	L344	51.0000	Circular	4.9087	0.0150	2.5000	2.5000
61	L346	50.0000	Circular	9.6211	0.0150	3.5000	3.5000
62	L347	395.0000	Circular	12.5664	0.0150	4.0000	4.0000
63	L348	404.0000	Circular	12.5664	0.0150	4.0000	4.0000
64	L349	400.0000	Circular	12.5664	0.0150	4.0000	4.0000
65	L350	132.0000	Circular	12.5664	0.0150	4.0000	4.0000
66	L351	35.0000	Circular	3.1416	0.0150	2.0000	2.0000
67	L352	147.0000	Circular	3.1416	0.0150	2.0000	2.0000
68	L354	94.0000	Circular	15.9043	0.0150	4.5000	4.5000
69	L361	47.0000	Circular	0.7854	0.0150	1.0000	1.0000
70	L362	66.0000	Circular	0.7854	0.0150	1.0000	1.0000
71	L363	411.0000	Circular	1.7671	0.0150	1.5000	1.5000
72	L364	48.0000	Circular	0.7854	0.0150	1.0000	1.0000
73	L365	63.0000	Circular	0.7854	0.0150	1.0000	1.0000
74	L366	394.0000	Circular	3.1416	0.0150	2.0000	2.0000
75	L367	364.0000	Circular	3.1416	0.0150	2.0000	2.0000
76	L368	124.0000	Circular	0.7854	0.0150	1.0000	1.0000
77	L369	99.0000	Circular	0.7854	0.0150	1.0000	1.0000
78	L370	206.0000	Circular	7.0686	0.0150	3.0000	3.0000
79	L373	98.0000	Circular	7.0686	0.0150	3.0000	3.0000
80	L374	160.0000	Circular	0.7854	0.0150	1.0000	1.0000
81	L375	403.0000	Circular	1.7671	0.0150	1.5000	1.5000
82	L376	164.0000	Circular	5.9396	0.0150	2.7500	2.7500
83	L386	341.0000	Circular	12.5664	0.0150	4.0000	4.0000
84	L387	355.0000	Circular	12.5664	0.0150	4.0000	4.0000
85	L388	113.0000	Circular	0.7854	0.0150	1.0000	1.0000
86	L389	385.0000	Circular	15.9043	0.0150	4.5000	4.5000
87	L390	106.0000	Circular	0.7854	0.0150	1.0000	1.0000
88	L391	499.0000	Circular	15.9043	0.0150	4.5000	4.5000
89	L392	380.0000	Circular	15.9043	0.0150	4.5000	4.5000
90	L393	461.0000	Circular	15.9043	0.0150	4.5000	4.5000
91	L395	50.0000	Circular	1.2272	0.0150	1.2500	1.2500
92	L396	402.0000	Circular	7.0686	0.0150	3.0000	3.0000
93	L397	57.0000	Circular	1.2272	0.0150	1.2500	1.2500
94	L398	48.0000	Circular	1.2272	0.0150	1.2500	1.2500
95	L399	302.0000	Circular	3.1416	0.0150	2.0000	2.0000
96	L402	86.0000	Circular	2.4053	0.0150	1.7500	1.7500
97	L403	398.0000	Circular	2.4053	0.0150	1.7500	1.7500
98	L404	371.0000	Circular	2.4053	0.0150	1.7500	1.7500
99	L405	71.0000	Circular	1.7671	0.0150	1.5000	1.5000
100	L406	364.0000	Circular	4.9087	0.0150	2.5000	2.5000
101	L407	71.0000	Circular	1.2272	0.0150	1.2500	1.2500
102	L408	367.0000	Circular	5.9396	0.0150	2.7500	2.7500
103	L410	395.0000	Circular	7.0686	0.0150	3.0000	3.0000
104	L411	301.0000	Circular	7.0686	0.0150	3.0000	3.0000
105	L413	401.0000	Circular	1.7671	0.0150	1.5000	1.5000
106	L415	49.0000	Circular	0.7854	0.0150	1.0000	1.0000
107	L417	68.0000	Circular	0.7854	0.0150	1.0000	1.0000
108	L418	72.0000	Circular	1.7671	0.0150	1.5000	1.5000
109	L419	259.0000	Circular	3.1416	0.0150	2.0000	2.0000
110	L420	402.0000	Circular	3.1416	0.0150	2.0000	2.0000
111	L421	68.0000	Circular	0.7854	0.0150	1.0000	1.0000
112	L422	76.0000	Circular	1.2272	0.0150	1.2500	1.2500
113	L423	397.0000	Circular	4.9087	0.0150	2.5000	2.5000
114	L424	299.0000	Circular	5.9396	0.0150	2.7500	2.7500
115	L425	70.0000	Circular	0.7854	0.0150	1.0000	1.0000
116	L426	73.0000	Circular	1.2272	0.0150	1.2500	1.2500

117	L427	486.0000	Circular	9.6211	0.0150	3.5000	3.5000	
118	L428	88.0000	Circular	0.7854	0.0150	1.0000	1.0000	
119	L429	394.0000	Circular	9.6211	0.0150	3.5000	3.5000	
120	L430	91.0000	Circular	0.7854	0.0150	1.0000	1.0000	
121	L431	430.0000	Circular	0.7854	0.0150	1.0000	1.0000	
122	L432	91.0000	Circular	0.7854	0.0150	1.0000	1.0000	
123	L435	90.0000	Circular	0.7854	0.0150	1.0000	1.0000	
124	L436	315.0000	Circular	0.7854	0.0150	1.0000	1.0000	
125	L437	328.0000	Circular	1.2272	0.0150	1.2500	1.2500	
126	L438	88.0000	Circular	0.7854	0.0150	1.0000	1.0000	
127	L439	374.0000	Circular	1.2272	0.0150	1.2500	1.2500	
128	L440	396.0000	Circular	1.7671	0.0150	1.5000	1.5000	
129	L441	405.0000	Circular	9.6211	0.0150	3.5000	3.5000	
130	L442	459.0000	Circular	9.6211	0.0150	3.5000	3.5000	
131	L443	96.0000	Circular	9.6211	0.0150	3.5000	3.5000	
132	L446	61.0000	Circular	1.7671	0.0150	1.5000	1.5000	
133	L448	79.0000	Circular	0.7854	0.0150	1.0000	1.0000	
134	L449	452.0000	Circular	2.4053	0.0150	1.7500	1.7500	
135	L450	400.0000	Circular	3.1416	0.0150	2.0000	2.0000	
136	L451	90.0000	Circular	3.1416	0.0150	2.0000	2.0000	
137	L452	50.0000	Circular	0.7854	0.0150	1.0000	1.0000	
138	L453	61.0000	Circular	0.7854	0.0150	1.0000	1.0000	
139	L454	70.0000	Circular	0.7854	0.0150	1.0000	1.0000	
140	L466	90.0000	Circular	1.2272	0.0150	1.2500	1.2500	
141	L468	496.0000	Circular	3.1416	0.0150	2.0000	2.0000	
142	L470	177.0000	Circular	2.4053	0.0150	1.7500	1.7500	
143	L471	390.0000	Circular	0.7854	0.0150	1.0000	1.0000	
144	L472	52.0000	Circular	0.7854	0.0150	1.0000	1.0000	
145	L490	121.0000	Circular	2.4053	0.0150	1.7500	1.7500	
146	L496	392.0000	Circular	0.7854	0.0150	1.0000	1.0000	
147	L497	394.0000	Circular	0.7854	0.0150	1.0000	1.0000	
148	L498	98.0000	Circular	0.7854	0.0150	1.0000	1.0000	
149	L501	375.0000	Circular	7.0686	0.0150	3.0000	3.0000	
150	L502	423.0000	Circular	9.6211	0.0150	3.5000	3.5000	
151	L503	437.0000	Circular	15.9043	0.0150	4.5000	4.5000	
152	L504	465.0000	Circular	15.9043	0.0150	4.5000	4.5000	
153	L505	395.0000	Circular	2.4053	0.0150	1.7500	1.7500	
154	L506	397.0000	Circular	2.4053	0.0150	1.7500	1.7500	
155	L509	134.0000	Circular	0.7854	0.0150	1.0000	1.0000	
156	L511	178.0000	Circular	1.7671	0.0150	1.5000	1.5000	
157	L512	111.0000	Circular	3.1416	0.0150	2.0000	2.0000	
158	L514	399.0000	Circular	2.4053	0.0150	1.7500	1.7500	
159	L515	145.0000	Circular	7.0686	0.0150	3.0000	3.0000	
160	CH21	925.0000	Rectangle	275.0000	0.0600	100.0000	2.7500	
161	L474	127.0000	Circular	1.7671	0.0150	1.5000	1.5000	
162	L523	171.0000	Trapezoid	15.7500	0.0600	6.0000	1.5000	3.0000
3.0000								
163	L525	533.0000	Circular	7.0686	0.0150	3.0000	3.0000	
164	L527	434.0000	Circular	1.7671	0.0150	1.5000	1.5000	
165	L528	452.0000	Circular	1.2272	0.0150	1.2500	1.2500	
166	L529	284.0000	Circular	1.7671	0.0150	1.5000	1.5000	
167	L533	725.0000	Circular	1.7671	0.0150	1.5000	1.5000	
168	L537	453.0000	Circular	1.7671	0.0150	1.5000	1.5000	
169	L394	157.0000	Circular	15.9043	0.0150	4.5000	4.5000	
170	L276	51.0000	Circular	0.7854	0.0150	1.0000	1.0000	
171	L288	61.0000	Circular	1.2272	0.0150	1.2500	1.2500	
172	L412	53.0000	Circular	0.7854	0.0150	1.0000	1.0000	
173	L447	394.0000	Circular	1.7671	0.0150	1.5000	1.5000	
174	L252	396.0000	Circular	0.7854	0.0150	1.0000	1.0000	
175	L253	70.0000	Circular	0.7854	0.0150	1.0000	1.0000	

176	L254	391.0000	Circular	0.7854	0.0150	1.0000	1.0000
177	L255	79.0000	Circular	1.2272	0.0150	1.2500	1.2500
178	L256	294.0000	Circular	1.7671	0.0150	1.5000	1.5000
179	L257	280.0000	Circular	1.7671	0.0150	1.5000	1.5000
180	L264	79.0000	Circular	1.2272	0.0150	1.2500	1.2500
181	L265	347.0000	Circular	7.0686	0.0150	3.0000	3.0000
182	L266	202.0000	Circular	7.0686	0.0150	3.0000	3.0000
183	L267	63.0000	Circular	0.7854	0.0150	1.0000	1.0000
184	L268	79.0000	Circular	0.7854	0.0150	1.0000	1.0000
185	L269	248.0000	Circular	0.7854	0.0150	1.0000	1.0000
186	L270	401.0000	Circular	7.0686	0.0150	3.0000	3.0000
187	L271	398.0000	Circular	9.6211	0.0150	3.5000	3.5000
188	L278	48.0000	Circular	0.7854	0.0150	1.0000	1.0000
189	L279	165.0000	Circular	0.7854	0.0150	1.0000	1.0000
190	L280	50.0000	Circular	0.7854	0.0150	1.0000	1.0000
191	L284	52.0000	Circular	0.7854	0.0150	1.0000	1.0000
192	L285	140.0000	Circular	1.7671	0.0150	1.5000	1.5000
193	L286	50.0000	Circular	1.2272	0.0150	1.2500	1.2500
194	L290	368.0000	Circular	0.7854	0.0150	1.0000	1.0000
195	L291	373.0000	Circular	0.7854	0.0150	1.0000	1.0000
196	L292	105.0000	Circular	0.7854	0.0150	1.0000	1.0000
197	L294	82.0000	Circular	0.7854	0.0150	1.0000	1.0000
198	L300	233.0000	Circular	1.7671	0.0150	1.5000	1.5000
199	L301	56.0000	Circular	0.7854	0.0150	1.0000	1.0000
200	L302	542.0000	Circular	3.9761	0.0150	2.2500	2.2500
201	L303	83.0000	Circular	0.7854	0.0150	1.0000	1.0000
202	L304	68.0000	Circular	0.7854	0.0150	1.0000	1.0000
203	L305	143.0000	Circular	1.7671	0.0150	1.5000	1.5000
204	L306	58.0000	Circular	0.7854	0.0150	1.0000	1.0000
205	L307	95.0000	Circular	3.1416	0.0150	2.0000	2.0000
206	L308	101.0000	Circular	1.7671	0.0150	1.5000	1.5000
207	L309	58.0000	Circular	0.7854	0.0150	1.0000	1.0000
208	L310	61.0000	Circular	0.7854	0.0150	1.0000	1.0000
209	L311	399.0000	Circular	0.7854	0.0150	1.0000	1.0000
210	L312	61.0000	Circular	0.7854	0.0150	1.0000	1.0000
211	L313	585.0000	Circular	0.7854	0.0150	1.0000	1.0000
212	L314	92.0000	Circular	0.7854	0.0150	1.0000	1.0000
213	L315	71.0000	Circular	0.7854	0.0150	1.0000	1.0000
214	L316	292.0000	Circular	0.7854	0.0150	1.0000	1.0000
215	L317	302.0000	Circular	1.7671	0.0150	1.5000	1.5000
216	L318	304.0000	Circular	1.7671	0.0150	1.5000	1.5000
217	L321	440.0000	Circular	0.7854	0.0150	1.0000	1.0000
218	L324	122.0000	Circular	0.7854	0.0150	1.0000	1.0000
219	L325	62.0000	Circular	0.7854	0.0150	1.0000	1.0000
220	L326	119.0000	Circular	0.7854	0.0150	1.0000	1.0000
221	L327	118.0000	Circular	0.7854	0.0150	1.0000	1.0000
222	L328	348.0000	Circular	1.7671	0.0150	1.5000	1.5000
223	L329	98.0000	Circular	1.7671	0.0150	1.5000	1.5000
224	L334	402.0000	Circular	0.7854	0.0150	1.0000	1.0000
225	L335	371.0000	Circular	0.7854	0.0150	1.0000	1.0000
226	L336	125.0000	Circular	0.7854	0.0150	1.0000	1.0000
227	L337	119.0000	Circular	0.7854	0.0150	1.0000	1.0000
228	L475	98.0000	Circular	1.2272	0.0150	1.2500	1.2500
229	L478	480.0000	Circular	3.9761	0.0150	2.2500	2.2500
230	L479	591.0000	Circular	4.9087	0.0150	2.5000	2.5000
231	L487	164.0000	Circular	2.4053	0.0150	1.7500	1.7500
232	L493	467.0000	Circular	4.9087	0.0150	2.5000	2.5000
233	L499	390.0000	Circular	0.7854	0.0150	1.0000	1.0000
234	L500	398.0000	Circular	1.2272	0.0150	1.2500	1.2500
235	L507	147.0000	Circular	0.7854	0.0150	1.0000	1.0000

236	L513	275.0000	Circular	4.9087	0.0150	2.5000	2.5000	
237	L546	577.0000	Circular	1.7671	0.0150	1.5000	1.5000	
238	L510	111.0000	Circular	1.2272	0.0150	1.2500	1.2500	

Total length of all conduits .... 53689.0000 feet

==========
| Table E2 - Conduit Factor Data |
==========

Conduit Name	Number of Barrels	Entrance Loss Coef	Exit Loss Coef	Exp/Contc Coefficnt	Time Weighting Parameter	Low Flow Roughness Factor	Depth at Which n Changes	Sediment Depth	Flow Routing
L376	1.0000	0.0000	1.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave

==========
| If there are messages about (sqrt(g*d)*dt/dx), or |
| the sqrt(wave celerity)*time step/conduit length |
| in the output file all it means is that the |
| program will lower the internal time step to |
| satisfy this condition (explicit condition). |
| You control the actual internal time step by |
| using the minimum courant time step factor in the |
| HYDRAULICS job control. The message put in words |
| states that the smallest conduit with the fastest |
| velocity will control the time step selection. |
| You have further control by using the modify |
| conduit option in the HYDRAULICS Job Control. |
==========

Conduit Name	Courant Ratio	
L210	4.86	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L211	0.83	
L212	0.70	
L213	3.18	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L214	4.48	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L217	3.96	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L220	1.41	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L221	1.22	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L222	2.65	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L223	4.73	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L224	1.17	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L225	1.17	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L226	0.82	
L227	1.44	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L228	0.84	
L229	0.67	
L230	0.96	
L231	0.95	
L232	1.36	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L233	0.87	
L234	1.12	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L235	6.81	===> Warning ! (sqrt(wave celerity)*time step/conduit length)

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L236        3.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L237        3.40  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L238        6.19  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L239        2.75  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L240        3.96  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L241        1.29  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L242        5.49  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L243        3.58  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L246        1.30  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L247        5.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L248        7.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L249        4.66  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L250        4.37  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L251        4.93  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L259        1.60  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L260        7.04  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L261        2.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L262        4.48  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L263        2.91  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L272       21.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L273        3.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L274        3.39  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L275        3.18  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L277        2.91  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L281        3.18  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L282        7.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L283        2.99  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L287        3.12  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L289        2.84  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L319        6.42  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L320        5.08  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L338        7.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L339        2.27  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L340        2.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L341        6.18  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L342        4.88  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L343        3.62  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L344       10.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L346       12.74  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L347        1.72  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L348        1.69  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L349        1.70  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L350        5.16  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L351       13.76  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L352        3.28  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L354        7.68  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L361        7.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L362        5.16  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L363        1.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L364        7.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L365        5.40  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L366        1.22  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L367        1.32  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L368        2.75  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L369        3.44  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L370        2.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L373        6.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L374        2.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L375        1.03  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L376        3.44  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
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L386        2.00  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L387        1.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L388        3.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L389        1.88  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L390        3.21  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L391        1.45  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L392        1.90  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L393        1.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L395        7.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L396        1.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L397        6.68  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L398        7.93  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L399        1.59  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L402        5.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L403        1.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L404        1.21  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L405        5.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L406        1.48  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L407        5.36  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L408        1.54  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L410        1.49  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L411        1.96  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L413        1.04  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L415        6.95  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L417        5.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L418        5.79  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L419        1.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L420        1.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L421        5.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L422        5.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L423        1.36  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L424        1.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L425        4.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L426        5.21  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L427        1.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L428        3.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L429        1.62  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L430        3.74  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L431        0.79
L432        3.74  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L435        3.78  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L436        1.08  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L437        1.16  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L438        3.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L439        1.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L440        1.05  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L441        1.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L442        1.39  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L443        6.64  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L446        6.84  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L448        4.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L449        1.00
L450        1.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L451        5.35  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L452        6.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L453        5.58  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L454        4.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L466        4.23  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L468        0.97
L470        2.54  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
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L471        0.87
L472        6.55  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L490        3.72  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L496        0.87
L497        0.86
L498        3.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L501        1.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L502        1.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L503        1.65  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L504        1.55  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L505        1.14  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L506        1.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L509        2.54  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L511        2.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L512        4.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L514        1.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L515        4.07  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
CH21        0.61
L474        3.28  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L523        2.04  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L525        1.11  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L527        0.96
L528        0.84
L529        1.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L533        0.58
L537        0.92
L394        4.60  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L276        6.68  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L288        6.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L412        6.42  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L447        1.06  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L252        0.86
L253        4.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L254        0.87
L255        4.82  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L256        1.42  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L257        1.49  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L264        4.82  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L265        1.70  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L266        2.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L267        5.40  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L268        4.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L269        1.37  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L270        1.47  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L271        1.60  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L278        7.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L279        2.06  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L280        6.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L284        6.55  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L285        2.98  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L286        7.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L290        0.93
L291        0.91
L292        3.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L294        4.15  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L300        1.79  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L301        6.08  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L302        0.94
L303        4.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
L304        5.01  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
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          L305        2.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L306        5.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L307        5.07  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L308        4.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L309        5.87  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L310        5.58  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L311        0.85
          L312        5.58  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L313        0.58
          L314        3.70  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L315        4.80  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L316        1.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L317        1.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L318        1.37  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L321        0.77
          L324        2.79  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L325        5.49  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L326        2.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L327        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L328        1.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L329        4.25  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L334        0.85
          L335        0.92
          L336        2.72  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L337        2.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L475        3.88  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L478        1.06  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L479        0.91
          L487        2.75  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L493        1.15  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L499        0.87
          L500        0.96
          L507        2.32  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L513        1.96  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          L546        0.72
          L510        3.43  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)

*==================*
|  Conduit Volume  |
*==================*

Full pipe or full open conduit volume
Input full depth volume.............    4.6131E+05 cubic feet


*================================================*
|           Table E3a - Junction Data            |
*================================================*
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Inp Num	Junction Name	Ground Elevation	Crown Elevation	Invert Elevation	Qinst cfs	Initial Depth-ft	Interface Flow (%)
1	N221	114.0300	106.8400	105.8400	0.0000	0.0000	100.0000
2	N222	112.0800	106.4400	104.4400	0.0000	0.0000	100.0000
3	N223	106.2600	103.0600	100.8100	0.0000	0.0000	100.0000
4	N224	106.3300	99.7200	96.9700	0.0000	0.0000	100.0000
5	N227	109.4000	99.3400	98.3400	0.0000	0.0000	100.0000
6	N228	102.4000	99.0300	97.5300	0.0000	0.0000	100.0000
7	N230	104.3900	100.3300	95.8300	0.0000	0.0000	100.0000
8	N231	104.4000	100.8400	99.8400	0.0000	0.0000	100.0000

9	N233	100.3500	96.9200	94.4200	0.0000	0.0000	100.0000
10	N234	100.0000	89.6000	85.6000	0.0000	0.0000	100.0000
11	N235	138.1500	120.6000	119.6000	0.0000	0.0000	100.0000
12	N236	126.2300	120.4100	118.6100	0.0000	0.0000	100.0000
13	N237	124.2900	118.8600	117.2600	0.0000	0.0000	100.0000
14	N238	122.3500	117.5100	115.1100	0.0000	0.0000	100.0000
15	N239	125.0800	118.6900	117.6900	0.0000	0.0000	100.0000
16	N240	122.0900	117.6200	116.6200	0.0000	0.0000	100.0000
17	N241	119.6000	115.0600	111.3600	0.0000	0.0000	100.0000
18	N242	115.6700	111.1300	108.6300	0.0000	0.0000	100.0000
19	N243	112.6900	109.1100	105.8600	0.0000	0.0000	100.0000
20	N244	109.7000	106.3500	103.8500	0.0000	0.0000	100.0000
21	N245	107.6800	104.8800	101.6800	0.0000	0.0000	100.0000
22	N246	104.7000	101.8100	99.5300	0.0000	0.0000	100.0000
23	N247	107.2000	100.3700	97.8700	0.0000	0.0000	100.0000
24	N248	116.0000	112.4800	111.4800	0.0000	0.0000	100.0000
25	N249	108.6300	105.6200	104.6200	0.0000	0.0000	100.0000
26	N250	113.4000	102.1400	101.1400	0.0000	0.0000	100.0000
27	N251	127.0200	116.3800	115.3800	0.0000	0.0000	100.0000
28	N252	121.2500	116.0600	113.0600	0.0000	0.0000	100.0000
29	N253	119.0300	113.3300	108.0800	0.0000	0.0000	100.0000
30	N254	120.4000	113.8300	112.8300	0.0000	0.0000	100.0000
31	N255	113.9100	108.0500	102.8000	0.0000	0.0000	100.0000
32	N256	119.8800	108.4100	107.4100	0.0000	0.0000	100.0000
33	N257	118.4000	108.6100	107.6100	0.0000	0.0000	100.0000
34	N259	102.6900	99.6600	97.1600	0.0000	0.0000	100.0000
35	N260	101.1000	99.5000	97.0000	0.0000	0.0000	100.0000
36	N261	106.3800	99.9300	98.9300	0.0000	0.0000	100.0000
37	N262	110.4000	105.8800	104.8800	0.0000	0.0000	100.0000
38	N263	109.4000	105.4600	104.4600	0.0000	0.0000	100.0000
39	N264	106.0000	97.6400	96.6400	0.0000	0.0000	100.0000
40	N265	108.4000	105.8600	104.8600	0.0000	0.0000	100.0000
41	N272	102.0600	98.1000	96.3500	0.0000	0.0000	100.0000
42	N273	104.4000	97.6800	97.6800	0.0000	0.0000	100.0000
43	N274	100.3100	97.3300	95.5800	0.0000	0.0000	100.0000
44	N275	101.7000	89.3500	87.6000	0.0000	0.0000	100.0000
45	N276	100.4000	95.2500	94.2500	0.0000	0.0000	100.0000
46	N277	99.4000	94.4400	93.4400	0.0000	0.0000	100.0000
47	N278	96.0000	79.0000	78.0000	0.0000	0.0000	100.0000
48	N279	98.4000	95.1200	94.1200	0.0000	0.0000	100.0000
49	N288	96.4000	81.5300	77.0300	0.0000	0.0000	100.0000
50	N289	96.4000	81.5000	77.0000	0.0000	0.0000	100.0000
51	N290	96.4000	79.8500	78.1000	0.0000	0.0000	100.0000
52	N291	96.2900	93.4200	91.9200	0.0000	0.0000	100.0000
53	N292	94.0000	78.1000	76.6000	0.0000	0.0000	100.0000
54	N293	126.4000	119.9200	118.9200	0.0000	0.0000	100.0000
55	N294	123.9600	119.3000	118.3000	0.0000	0.0000	100.0000
56	N296	122.4000	119.9800	118.9800	0.0000	0.0000	100.0000
57	N301	128.4000	123.9000	122.9000	0.0000	0.0000	100.0000
58	N302	128.3900	123.2800	122.2800	0.0000	0.0000	100.0000
59	N303	124.3000	111.6000	110.6000	0.0000	0.0000	100.0000
60	N304	126.4000	123.9500	122.9500	0.0000	0.0000	100.0000
61	N309	119.4000	114.1500	113.1500	0.0000	0.0000	100.0000
62	N310	116.6600	113.5100	112.2600	0.0000	0.0000	100.0000
63	N312	116.4000	114.2100	113.2100	0.0000	0.0000	100.0000
64	N342	106.8400	101.7200	100.2200	0.0000	0.0000	100.0000
65	N343	104.4000	101.5000	100.0000	0.0000	0.0000	100.0000
66	N344	112.0700	102.1100	101.1100	0.0000	0.0000	100.0000
67	N345	128.1400	119.8300	118.8300	0.0000	0.0000	100.0000
68	N361	133.4000	129.2400	126.2400	0.0000	0.0000	100.0000

69	N362	133.8500	129.1300	126.1300	0.0000	0.0000	100.0000
70	N363	135.6800	128.7800	125.2800	0.0000	0.0000	100.0000
71	N364	134.3100	128.5100	125.0100	0.0000	0.0000	100.0000
72	N365	129.0000	128.4000	117.4000	0.0000	0.0000	100.0000
73	N366	136.4000	129.1200	127.8700	0.0000	0.0000	100.0000
74	N367	131.4000	129.3300	128.3300	0.0000	0.0000	100.0000
75	N368	130.1000	126.7600	124.2600	0.0000	0.0000	100.0000
76	N369	130.1500	126.6700	123.6700	0.0000	0.0000	100.0000
77	N370	130.0300	125.7000	121.7000	0.0000	0.0000	100.0000
78	N371	130.3200	125.7600	122.2600	0.0000	0.0000	100.0000
79	N372	131.8100	125.3400	121.3400	0.0000	0.0000	100.0000
80	N373	131.3300	124.9700	120.9700	0.0000	0.0000	100.0000
81	N374	132.8200	124.6000	120.6000	0.0000	0.0000	100.0000
82	N375	132.2300	124.4800	119.9800	0.0000	0.0000	100.0000
83	N376	130.4700	124.9000	122.9000	0.0000	0.0000	100.0000
84	N377	130.5100	124.8200	122.8200	0.0000	0.0000	100.0000
85	N378	129.1900	123.7700	119.2700	0.0000	0.0000	100.0000
86	N379	128.2000	122.9000	118.4000	0.0000	0.0000	100.0000
87	N381	128.4700	126.2600	124.7600	0.0000	0.0000	100.0000
88	N382	128.0000	124.8600	122.8600	0.0000	0.0000	100.0000
89	N383	132.3000	126.5300	125.5300	0.0000	0.0000	100.0000
90	N384	131.1800	126.6400	125.6400	0.0000	0.0000	100.0000
91	N386	132.1700	125.1400	124.1400	0.0000	0.0000	100.0000
92	N387	132.9300	125.2300	124.2300	0.0000	0.0000	100.0000
93	N388	128.2100	123.9500	121.9500	0.0000	0.0000	100.0000
94	N389	128.3800	123.1100	120.1100	0.0000	0.0000	100.0000
95	N390	132.4000	123.8300	122.8300	0.0000	0.0000	100.0000
96	N391	131.4000	123.6900	122.6900	0.0000	0.0000	100.0000
97	N392	129.2100	122.8300	119.8300	0.0000	0.0000	100.0000
98	N394	130.0700	121.4000	118.4000	0.0000	0.0000	100.0000
99	N395	126.4000	119.6100	118.1100	0.0000	0.0000	100.0000
100	N396	124.6000	119.1800	117.6800	0.0000	0.0000	100.0000
101	N397	124.9400	118.8100	115.8100	0.0000	0.0000	100.0000
102	N398	128.0400	119.0600	116.3100	0.0000	0.0000	100.0000
103	N399	124.3000	118.6100	114.6000	0.0000	0.0000	100.0000
104	N403	125.5000	118.3000	114.3000	0.0000	0.0000	100.0000
105	N404	126.6900	117.9800	113.4800	0.0000	0.0000	100.0000
106	N405	131.2500	118.0000	117.0000	0.0000	0.0000	100.0000
107	N406	124.4900	117.6700	113.1700	0.0000	0.0000	100.0000
108	N407	132.5800	118.0000	117.0000	0.0000	0.0000	100.0000
109	N408	125.2200	117.2800	112.7800	0.0000	0.0000	100.0000
110	N409	123.3200	116.9800	112.4800	0.0000	0.0000	100.0000
111	N410	124.2200	116.6200	112.1200	0.0000	0.0000	100.0000
112	N412	125.2400	117.5500	116.3000	0.0000	0.0000	100.0000
113	N413	123.5000	118.8300	115.3300	0.0000	0.0000	100.0000
114	N414	122.0000	119.3700	115.8300	0.0000	0.0000	100.0000
115	N415	124.3800	117.5800	116.3300	0.0000	0.0000	100.0000
116	N416	125.2100	118.0800	116.8300	0.0000	0.0000	100.0000
117	N417	121.7600	119.5700	117.5700	0.0000	0.0000	100.0000
118	N418	124.4000	121.1500	119.9000	0.0000	0.0000	100.0000
119	N419	120.2000	112.6600	110.9100	0.0000	0.0000	100.0000
120	N420	123.9000	113.9900	112.2400	0.0000	0.0000	100.0000
121	N421	121.2100	113.7500	112.0000	0.0000	0.0000	100.0000
122	N422	118.3600	111.6300	109.1300	0.0000	0.0000	100.0000
123	N423	120.4000	111.8700	110.3700	0.0000	0.0000	100.0000
124	N424	118.5600	111.0100	108.2600	0.0000	0.0000	100.0000
125	N425	120.3900	111.3100	110.0600	0.0000	0.0000	100.0000
126	N426	117.2400	110.4500	107.4500	0.0000	0.0000	100.0000
127	N428	114.7900	109.9200	106.9200	0.0000	0.0000	100.0000
128	N429	116.1800	109.5200	106.0200	0.0000	0.0000	100.0000

129	N430	128.2200	120.0000	119.0000	0.0000	0.0000	100.0000
130	N431	123.0700	119.4000	116.6700	0.0000	0.0000	100.0000
131	N432	120.7300	119.5700	118.0700	0.0000	0.0000	100.0000
132	N434	126.2700	119.8000	118.8000	0.0000	0.0000	100.0000
133	N435	120.2500	112.1800	110.1800	0.0000	0.0000	100.0000
134	N436	125.4000	112.5700	111.5700	0.0000	0.0000	100.0000
135	N437	122.9000	112.4200	110.9200	0.0000	0.0000	100.0000
136	N438	119.8200	111.5800	109.5800	0.0000	0.0000	100.0000
137	N439	118.1400	110.6500	108.1500	0.0000	0.0000	100.0000
138	N440	122.4000	111.0500	110.0500	0.0000	0.0000	100.0000
139	N441	120.9000	110.9800	109.7300	0.0000	0.0000	100.0000
140	N442	116.2500	109.9700	107.2200	0.0000	0.0000	100.0000
141	N443	118.4000	110.3800	109.3800	0.0000	0.0000	100.0000
142	N444	118.4000	110.2800	109.0300	0.0000	0.0000	100.0000
143	N445	113.3000	108.9800	105.4800	0.0000	0.0000	100.0000
144	N446	118.4000	109.4900	108.4900	0.0000	0.0000	100.0000
145	N447	113.2000	108.5500	105.0500	0.0000	0.0000	100.0000
146	N448	125.6200	119.7700	118.7700	0.0000	0.0000	100.0000
147	N449	125.6000	119.2400	117.9900	0.0000	0.0000	100.0000
148	N450	125.2200	121.7400	120.7400	0.0000	0.0000	100.0000
149	N451	126.4000	122.2700	121.2700	0.0000	0.0000	100.0000
150	N453	119.8300	114.7600	113.7600	0.0000	0.0000	100.0000
151	N454	125.4000	115.2900	114.2900	0.0000	0.0000	100.0000
152	N455	118.2800	112.9300	111.6800	0.0000	0.0000	100.0000
153	N456	116.2800	111.5100	110.2600	0.0000	0.0000	100.0000
154	N457	122.4000	112.0200	111.0200	0.0000	0.0000	100.0000
155	N458	114.0000	109.8900	108.3900	0.0000	0.0000	100.0000
156	N459	110.2500	108.1100	104.6100	0.0000	0.0000	100.0000
157	N460	110.1000	107.6100	104.1100	0.0000	0.0000	100.0000
158	N461	110.1000	97.6000	94.1000	0.0000	0.0000	100.0000
159	N464	132.5200	126.8400	125.0900	0.0000	0.0000	100.0000
160	N465	135.1200	128.1500	126.6500	0.0000	0.0000	100.0000
161	N466	131.9700	127.9400	126.1900	0.0000	0.0000	100.0000
162	N467	130.9600	127.3000	126.3000	0.0000	0.0000	100.0000
163	N468	129.9500	125.5900	123.5900	0.0000	0.0000	100.0000
164	N469	128.6600	124.6600	118.6600	0.0000	0.0000	100.0000
165	N470	127.0000	120.4600	117.7100	0.0000	0.0000	100.0000
166	N471	133.3000	125.8800	124.8800	0.0000	0.0000	100.0000
167	N472	129.4500	125.9400	124.9400	0.0000	0.0000	100.0000
168	N473	126.2300	121.0700	120.0700	0.0000	0.0000	100.0000
169	N487	122.2200	120.5700	118.5700	0.0000	0.0000	100.0000
170	N489	124.6300	122.3300	118.4300	0.0000	0.0000	100.0000
171	N490	125.9100	123.6500	121.9000	0.0000	0.0000	100.0000
172	N491	127.1900	125.7700	124.1700	0.0000	0.0000	100.0000
173	N492	130.4000	127.3400	126.3400	0.0000	0.0000	100.0000
174	N493	129.9000	127.0400	126.0400	0.0000	0.0000	100.0000
175	N497	112.8000	108.8500	107.8500	0.0000	0.0000	100.0000
176	N499	111.0500	92.2000	91.2000	0.0000	0.0000	100.0000
177	N509	117.9000	110.3800	108.8800	0.0000	0.0000	100.0000
178	N513	117.8200	111.7600	110.0100	0.0000	0.0000	100.0000
179	N514	117.9000	111.6100	108.1100	0.0000	0.0000	100.0000
180	N516	111.0000	92.0000	90.0000	0.0000	0.0000	100.0000
181	N524	136.4600	134.4500	133.4500	0.0000	0.0000	100.0000
182	N525	136.2000	132.1700	131.1700	0.0000	0.0000	100.0000
183	N526	137.2000	134.4600	133.4600	0.0000	0.0000	100.0000
184	N527	136.0000	131.6000	130.6000	0.0000	0.0000	100.0000
185	N528	129.5000	126.1600	122.6600	0.0000	0.0000	100.0000
186	N529	134.2600	124.1400	119.6400	0.0000	0.0000	100.0000
187	N530	109.2400	103.4600	99.7100	0.0000	0.0000	100.0000
188	N689	123.2700	119.5000	118.0000	0.0000	0.0000	100.0000

189	N494	126.0000	123.1600	121.4100	0.0000	0.0000	100.0000
190	N541	120.0000	113.5900	112.0900	0.0000	0.0000	100.0000
191	EL329	118.0000	114.0200	112.5200	0.0000	0.0000	100.0000
192	N427	118.5000	111.1400	109.6400	0.0000	0.0000	100.0000
193	N411	128.9500	116.5000	112.0000	0.0000	0.0000	100.0000
194	N295	120.1000	119.0000	106.9300	0.0000	0.0000	100.0000
195	N311	114.3000	105.3500	104.1000	0.0000	0.0000	100.0000
196	N462	133.0000	129.2800	127.7800	0.0000	0.0000	100.0000
197	N266	105.6100	101.3600	100.3600	0.0000	0.0000	100.0000
198	N267	104.2600	99.0500	97.5500	0.0000	0.0000	100.0000
199	N268	110.4200	101.7400	100.7400	0.0000	0.0000	100.0000
200	N269	110.0300	101.3300	100.3300	0.0000	0.0000	100.0000
201	N270	106.4000	100.3900	99.1400	0.0000	0.0000	100.0000
202	N271	102.3800	100.0500	98.5500	0.0000	0.0000	100.0000
203	N280	96.4000	86.5800	85.3300	0.0000	0.0000	100.0000
204	N281	91.9100	86.2400	83.2400	0.0000	0.0000	100.0000
205	N282	97.0800	85.7700	82.7700	0.0000	0.0000	100.0000
206	N283	100.0400	94.0000	82.5000	0.0000	0.0000	100.0000
207	N284	98.4000	86.1400	85.1400	0.0000	0.0000	100.0000
208	N285	102.4000	95.9100	94.9100	0.0000	0.0000	100.0000
209	N286	100.3900	95.4500	94.4500	0.0000	0.0000	100.0000
210	N287	96.9000	84.9600	78.4600	0.0000	0.0000	100.0000
211	N297	120.4000	114.2400	113.2400	0.0000	0.0000	100.0000
212	N298	118.4300	113.9600	112.9600	0.0000	0.0000	100.0000
213	N299	117.7600	113.0000	107.3200	0.0000	0.0000	100.0000
214	N300	116.4000	114.2500	113.2500	0.0000	0.0000	100.0000
215	N305	112.4000	106.5200	105.5200	0.0000	0.0000	100.0000
216	N306	110.3300	106.2200	104.7200	0.0000	0.0000	100.0000
217	N307	111.7000	105.7500	104.2500	0.0000	0.0000	100.0000
218	N308	108.4000	106.4400	105.1900	0.0000	0.0000	100.0000
219	N313	107.7900	104.9300	103.9300	0.0000	0.0000	100.0000
220	N314	105.5100	102.7900	101.7900	0.0000	0.0000	100.0000
221	N315	103.3100	100.6100	99.6100	0.0000	0.0000	100.0000
222	N316	101.0000	95.1000	94.1000	0.0000	0.0000	100.0000
223	N317	96.4000	90.4200	89.1700	0.0000	0.0000	100.0000
224	N318	94.1000	89.9900	87.7400	0.0000	0.0000	100.0000
225	N319	100.4000	90.4700	89.4700	0.0000	0.0000	100.0000
226	N320	95.3200	90.7800	89.2800	0.0000	0.0000	100.0000
227	N321	96.4000	91.1100	90.1100	0.0000	0.0000	100.0000
228	N325	97.2700	91.2700	89.7700	0.0000	0.0000	100.0000
229	N326	100.4000	91.7500	90.7500	0.0000	0.0000	100.0000
230	N327	98.4000	91.6600	90.6600	0.0000	0.0000	100.0000
231	N328	100.2600	94.9400	93.4400	0.0000	0.0000	100.0000
232	N329	104.4000	95.0000	94.0000	0.0000	0.0000	100.0000
233	N330	101.6200	95.4400	93.4400	0.0000	0.0000	100.0000
234	N331	100.2600	94.2000	92.7000	0.0000	0.0000	100.0000
235	N332	101.4000	95.0000	94.0000	0.0000	0.0000	100.0000
236	N333	124.4600	109.8700	108.8700	0.0000	0.0000	100.0000
237	N334	121.3900	109.5100	108.5100	0.0000	0.0000	100.0000
238	N335	111.2600	107.1800	106.1800	0.0000	0.0000	100.0000
239	N336	120.3000	107.5400	106.5400	0.0000	0.0000	100.0000
240	N337	108.3300	103.7800	102.2800	0.0000	0.0000	100.0000
241	N338	116.4000	104.3100	103.3100	0.0000	0.0000	100.0000
242	N339	113.4000	105.8900	104.8900	0.0000	0.0000	100.0000
243	N340	110.4800	105.4700	104.4700	0.0000	0.0000	100.0000
244	N341	106.0600	102.7500	101.2500	0.0000	0.0000	100.0000
245	N347	126.9900	119.4500	118.4500	0.0000	0.0000	100.0000
246	N348	122.7000	117.6700	116.1700	0.0000	0.0000	100.0000
247	N349	129.4000	120.1600	119.1600	0.0000	0.0000	100.0000
248	N350	128.4000	118.8000	117.8000	0.0000	0.0000	100.0000

249	N351	124.8500	118.4400	117.1900	0.0000	0.0000	100.0000
250	N352	127.4000	118.3700	117.3700	0.0000	0.0000	100.0000
251	N353	125.4000	118.3600	117.3600	0.0000	0.0000	100.0000
252	N354	123.0000	117.1500	115.6500	0.0000	0.0000	100.0000
253	N355	121.1000	112.1000	110.6000	0.0000	0.0000	100.0000
254	N356	128.3900	126.3200	125.3200	0.0000	0.0000	100.0000
255	N357	126.5200	123.9800	122.9800	0.0000	0.0000	100.0000
256	N358	128.1900	121.8200	120.8200	0.0000	0.0000	100.0000
257	N359	126.7800	121.0900	120.0900	0.0000	0.0000	100.0000
258	N360	121.5000	113.8000	112.6000	0.0000	0.0000	100.0000
259	N500	95.8800	88.9200	86.6700	0.0000	0.0000	100.0000
260	N501	94.9100	87.9700	85.4700	0.0000	0.0000	100.0000
261	N503	100.1000	91.5500	89.8000	0.0000	0.0000	100.0000
262	N504	100.4000	97.2900	95.5400	0.0000	0.0000	100.0000
263	N506	100.4000	93.1400	92.1400	0.0000	0.0000	100.0000
264	N517	90.2800	86.4500	83.9500	0.0000	0.0000	100.0000
265	N518	89.2500	87.0600	84.3100	0.0000	0.0000	100.0000
266	N554	94.5100	92.2800	90.6800	0.0000	0.0000	100.0000
267	N322	101.6200	94.5000	92.5000	0.0000	0.0000	100.0000
268	N511	114.9500	103.4600	102.2100	0.0000	0.0000	100.0000
269	N555	110.0000	91.0500	89.8000	0.0000	0.0000	100.0000

Table E3b - Junction Data

Inp Num	Junction Name	X Coord.	Y Coord.	Type of Manhole	Type of Inlet	Maximum Capacity	Pavement Shape	Pavement Slope
1	N221	0.0000	0.0000	No P	Normal		0	0.0000
2	N222	0.0000	0.0000	No P	Normal		0	0.0000
3	N223	0.0000	0.0000	No P	Normal		0	0.0000
4	N224	0.0000	0.0000	No P	Normal		0	0.0000
5	N227	0.0000	0.0000	No P	Normal		0	0.0000
6	N228	0.0000	0.0000	F	Normal		0	0.0000
7	N230	0.0000	0.0000	No P	Normal		0	0.0000
8	N231	0.0000	0.0000	No P	Normal		0	0.0000
9	N233	0.0000	0.0000	No P	Normal		0	0.0000
10	N234	0.0000	0.0000	No P	Normal		0	0.0000
11	N235	0.0000	0.0000	No P	Normal		0	0.0000
12	N236	0.0000	0.0000	No P	Normal		0	0.0000
13	N237	0.0000	0.0000	No P	Normal		0	0.0000
14	N238	0.0000	0.0000	No P	Normal		0	0.0000
15	N239	0.0000	0.0000	No P	Normal		0	0.0000
16	N240	0.0000	0.0000	No P	Normal		0	0.0000
17	N241	0.0000	0.0000	No P	Normal		0	0.0000
18	N242	0.0000	0.0000	No P	Normal		0	0.0000
19	N243	0.0000	0.0000	No P	Normal		0	0.0000
20	N244	0.0000	0.0000	No P	Normal		0	0.0000
21	N245	0.0000	0.0000	No P	Normal		0	0.0000
22	N246	0.0000	0.0000	No P	Normal		0	0.0000
23	N247	0.0000	0.0000	No P	Normal		0	0.0000
24	N248	0.0000	0.0000	F	Normal		0	0.0000
25	N249	0.0000	0.0000	F	Normal		0	0.0000
26	N250	0.0000	0.0000	No P	Normal		0	0.0000
27	N251	0.0000	0.0000	No P	Normal		0	0.0000
28	N252	0.0000	0.0000	No P	Normal		0	0.0000
29	N253	0.0000	0.0000	No P	Normal		0	0.0000
30	N254	0.0000	0.0000	No P	Normal		0	0.0000

31	N255	0.0000	0.0000	No P	Normal	0	0.0000
32	N256	0.0000	0.0000	No P	Normal	0	0.0000
33	N257	0.0000	0.0000	No P	Normal	0	0.0000
34	N259	0.0000	0.0000	No P	Normal	0	0.0000
35	N260	0.0000	0.0000	No P	Normal	0	0.0000
36	N261	0.0000	0.0000	No P	Normal	0	0.0000
37	N262	0.0000	0.0000	No P	Normal	0	0.0000
38	N263	0.0000	0.0000	No P	Normal	0	0.0000
39	N264	0.0000	0.0000	No P	Normal	0	0.0000
40	N265	0.0000	0.0000	No P	Normal	0	0.0000
41	N272	0.0000	0.0000	No P	Normal	0	0.0000
42	N273	0.0000	0.0000	No P	Normal	0	0.0000
43	N274	0.0000	0.0000	No P	Normal	0	0.0000
44	N275	0.0000	0.0000	No P	Normal	0	0.0000
45	N276	0.0000	0.0000	No P	Normal	0	0.0000
46	N277	0.0000	0.0000	No P	Normal	0	0.0000
47	N278	0.0000	0.0000	No P	Normal	0	0.0000
48	N279	0.0000	0.0000	No P	Normal	0	0.0000
49	N288	0.0000	0.0000	No P	Normal	0	0.0000
50	N289	0.0000	0.0000	No P	Normal	0	0.0000
51	N290	0.0000	0.0000	No P	Normal	0	0.0000
52	N291	0.0000	0.0000	No P	Normal	0	0.0000
53	N292	0.0000	0.0000	No P	Normal	0	0.0000
54	N293	0.0000	0.0000	No P	Normal	0	0.0000
55	N294	0.0000	0.0000	No P	Normal	0	0.0000
56	N296	0.0000	0.0000	No P	Normal	0	0.0000
57	N301	0.0000	0.0000	No P	Normal	0	0.0000
58	N302	0.0000	0.0000	No P	Normal	0	0.0000
59	N303	0.0000	0.0000	No P	Normal	0	0.0000
60	N304	0.0000	0.0000	No P	Normal	0	0.0000
61	N309	0.0000	0.0000	No P	Normal	0	0.0000
62	N310	0.0000	0.0000	No P	Normal	0	0.0000
63	N312	0.0000	0.0000	No P	Normal	0	0.0000
64	N342	0.0000	0.0000	No P	Normal	0	0.0000
65	N343	0.0000	0.0000	No P	Normal	0	0.0000
66	N344	0.0000	0.0000	No P	Normal	0	0.0000
67	N345	0.0000	0.0000	No P	Normal	0	0.0000
68	N361	0.0000	0.0000	No P	Normal	0	0.0000
69	N362	0.0000	0.0000	No P	Normal	0	0.0000
70	N363	0.0000	0.0000	No P	Normal	0	0.0000
71	N364	0.0000	0.0000	No P	Normal	0	0.0000
72	N365	0.0000	0.0000	No P	Normal	0	0.0000
73	N366	0.0000	0.0000	No P	Normal	0	0.0000
74	N367	0.0000	0.0000	No P	Normal	0	0.0000
75	N368	0.0000	0.0000	No P	Normal	0	0.0000
76	N369	0.0000	0.0000	No P	Normal	0	0.0000
77	N370	0.0000	0.0000	No P	Normal	0	0.0000
78	N371	0.0000	0.0000	No P	Normal	0	0.0000
79	N372	0.0000	0.0000	No P	Normal	0	0.0000
80	N373	0.0000	0.0000	No P	Normal	0	0.0000
81	N374	0.0000	0.0000	No P	Normal	0	0.0000
82	N375	0.0000	0.0000	No P	Normal	0	0.0000
83	N376	0.0000	0.0000	No P	Normal	0	0.0000
84	N377	0.0000	0.0000	No P	Normal	0	0.0000
85	N378	0.0000	0.0000	No P	Normal	0	0.0000
86	N379	0.0000	0.0000	No P	Normal	0	0.0000
87	N381	0.0000	0.0000	No P	Normal	0	0.0000
88	N382	0.0000	0.0000	No P	Normal	0	0.0000
89	N383	0.0000	0.0000	No P	Normal	0	0.0000
90	N384	0.0000	0.0000	No P	Normal	0	0.0000

91	N386	0.0000	0.0000	No P	Normal	0	0.0000
92	N387	0.0000	0.0000	No P	Normal	0	0.0000
93	N388	0.0000	0.0000	No P	Normal	0	0.0000
94	N389	0.0000	0.0000	No P	Normal	0	0.0000
95	N390	0.0000	0.0000	No P	Normal	0	0.0000
96	N391	0.0000	0.0000	No P	Normal	0	0.0000
97	N392	0.0000	0.0000	No P	Normal	0	0.0000
98	N394	0.0000	0.0000	No P	Normal	0	0.0000
99	N395	0.0000	0.0000	No P	Normal	0	0.0000
100	N396	0.0000	0.0000	No P	Normal	0	0.0000
101	N397	0.0000	0.0000	No P	Normal	0	0.0000
102	N398	0.0000	0.0000	No P	Normal	0	0.0000
103	N399	0.0000	0.0000	No P	Normal	0	0.0000
104	N403	0.0000	0.0000	No P	Normal	0	0.0000
105	N404	0.0000	0.0000	No P	Normal	0	0.0000
106	N405	0.0000	0.0000	No P	Normal	0	0.0000
107	N406	0.0000	0.0000	No P	Normal	0	0.0000
108	N407	0.0000	0.0000	No P	Normal	0	0.0000
109	N408	0.0000	0.0000	No P	Normal	0	0.0000
110	N409	0.0000	0.0000	No P	Normal	0	0.0000
111	N410	0.0000	0.0000	No P	Normal	0	0.0000
112	N412	0.0000	0.0000	No P	Normal	0	0.0000
113	N413	0.0000	0.0000	No P	Normal	0	0.0000
114	N414	0.0000	0.0000	No P	Normal	0	0.0000
115	N415	0.0000	0.0000	No P	Normal	0	0.0000
116	N416	0.0000	0.0000	No P	Normal	0	0.0000
117	N417	0.0000	0.0000	No P	Normal	0	0.0000
118	N418	0.0000	0.0000	No P	Normal	0	0.0000
119	N419	0.0000	0.0000	No P	Normal	0	0.0000
120	N420	0.0000	0.0000	No P	Normal	0	0.0000
121	N421	0.0000	0.0000	No P	Normal	0	0.0000
122	N422	0.0000	0.0000	No P	Normal	0	0.0000
123	N423	0.0000	0.0000	No P	Normal	0	0.0000
124	N424	0.0000	0.0000	No P	Normal	0	0.0000
125	N425	0.0000	0.0000	No P	Normal	0	0.0000
126	N426	0.0000	0.0000	No P	Normal	0	0.0000
127	N428	0.0000	0.0000	No P	Normal	0	0.0000
128	N429	0.0000	0.0000	No P	Normal	0	0.0000
129	N430	0.0000	0.0000	No P	Normal	0	0.0000
130	N431	0.0000	0.0000	No P	Normal	0	0.0000
131	N432	0.0000	0.0000	No P	Normal	0	0.0000
132	N434	0.0000	0.0000	No P	Normal	0	0.0000
133	N435	0.0000	0.0000	No P	Normal	0	0.0000
134	N436	0.0000	0.0000	No P	Normal	0	0.0000
135	N437	0.0000	0.0000	No P	Normal	0	0.0000
136	N438	0.0000	0.0000	No P	Normal	0	0.0000
137	N439	0.0000	0.0000	No P	Normal	0	0.0000
138	N440	0.0000	0.0000	No P	Normal	0	0.0000
139	N441	0.0000	0.0000	No P	Normal	0	0.0000
140	N442	0.0000	0.0000	No P	Normal	0	0.0000
141	N443	0.0000	0.0000	No P	Normal	0	0.0000
142	N444	0.0000	0.0000	No P	Normal	0	0.0000
143	N445	0.0000	0.0000	No P	Normal	0	0.0000
144	N446	0.0000	0.0000	No P	Normal	0	0.0000
145	N447	0.0000	0.0000	No P	Normal	0	0.0000
146	N448	0.0000	0.0000	No P	Normal	0	0.0000
147	N449	0.0000	0.0000	No P	Normal	0	0.0000
148	N450	0.0000	0.0000	No P	Normal	0	0.0000
149	N451	0.0000	0.0000	No P	Normal	0	0.0000
150	N453	0.0000	0.0000	F	Normal	0	0.0000

151	N454	0.0000	0.0000	No P	Normal	0	0.0000
152	N455	0.0000	0.0000	No P	Normal	0	0.0000
153	N456	0.0000	0.0000	No P	Normal	0	0.0000
154	N457	0.0000	0.0000	No P	Normal	0	0.0000
155	N458	0.0000	0.0000	No P	Normal	0	0.0000
156	N459	0.0000	0.0000	No P	Normal	0	0.0000
157	N460	0.0000	0.0000	No P	Normal	0	0.0000
158	N461	0.0000	0.0000	No P	Normal	0	0.0000
159	N464	0.0000	0.0000	No P	Normal	0	0.0000
160	N465	0.0000	0.0000	No P	Normal	0	0.0000
161	N466	0.0000	0.0000	No P	Normal	0	0.0000
162	N467	0.0000	0.0000	No P	Normal	0	0.0000
163	N468	0.0000	0.0000	No P	Normal	0	0.0000
164	N469	0.0000	0.0000	No P	Normal	0	0.0000
165	N470	0.0000	0.0000	No P	Normal	0	0.0000
166	N471	0.0000	0.0000	No P	Normal	0	0.0000
167	N472	0.0000	0.0000	No P	Normal	0	0.0000
168	N473	0.0000	0.0000	No P	Normal	0	0.0000
169	N487	0.0000	0.0000	No P	Normal	0	0.0000
170	N489	0.0000	0.0000	No P	Normal	0	0.0000
171	N490	0.0000	0.0000	No P	Normal	0	0.0000
172	N491	0.0000	0.0000	No P	Normal	0	0.0000
173	N492	0.0000	0.0000	No P	Normal	0	0.0000
174	N493	0.0000	0.0000	No P	Normal	0	0.0000
175	N497	0.0000	0.0000	No P	Normal	0	0.0000
176	N499	0.0000	0.0000	No P	Normal	0	0.0000
177	N509	0.0000	0.0000	No P	Normal	0	0.0000
178	N513	0.0000	0.0000	No P	Normal	0	0.0000
179	N514	0.0000	0.0000	No P	Normal	0	0.0000
180	N516	0.0000	0.0000	No P	Normal	0	0.0000
181	N524	0.0000	0.0000	No P	Normal	0	0.0000
182	N525	0.0000	0.0000	No P	Normal	0	0.0000
183	N526	0.0000	0.0000	No P	Normal	0	0.0000
184	N527	0.0000	0.0000	No P	Normal	0	0.0000
185	N528	0.0000	0.0000	No P	Normal	0	0.0000
186	N529	0.0000	0.0000	No P	Normal	0	0.0000
187	N530	0.0000	0.0000	No P	Normal	0	0.0000
188	N689	0.0000	0.0000	No P	Normal	0	0.0000
189	N494	0.0000	0.0000	No P	Normal	0	0.0000
190	N541	0.0000	0.0000	No P	Normal	0	0.0000
191	EL329	0.0000	0.0000	No P	Normal	0	0.0000
192	N427	0.0000	0.0000	No P	Normal	0	0.0000
193	N411	0.0000	0.0000	No P	Normal	0	0.0000
194	N295	0.0000	0.0000	No P	Normal	0	0.0000
195	N311	0.0000	0.0000	No P	Normal	0	0.0000
196	N462	0.0000	0.0000	No P	Normal	0	0.0000
197	N266	0.0000	0.0000	No P	Normal	0	0.0000
198	N267	0.0000	0.0000	No P	Normal	0	0.0000
199	N268	0.0000	0.0000	No P	Normal	0	0.0000
200	N269	0.0000	0.0000	No P	Normal	0	0.0000
201	N270	0.0000	0.0000	No P	Normal	0	0.0000
202	N271	0.0000	0.0000	No P	Normal	0	0.0000
203	N280	0.0000	0.0000	No P	Normal	0	0.0000
204	N281	0.0000	0.0000	No P	Normal	0	0.0000
205	N282	0.0000	0.0000	No P	Normal	0	0.0000
206	N283	0.0000	0.0000	No P	Normal	0	0.0000
207	N284	0.0000	0.0000	No P	Normal	0	0.0000
208	N285	0.0000	0.0000	No P	Normal	0	0.0000
209	N286	0.0000	0.0000	No P	Normal	0	0.0000
210	N287	0.0000	0.0000	No P	Normal	0	0.0000

211	N297	0.0000	0.0000	No	P	Normal	0 0.0000
212	N298	0.0000	0.0000	No	P	Normal	0 0.0000
213	N299	0.0000	0.0000	No	P	Normal	0 0.0000
214	N300	0.0000	0.0000	No	P	Normal	0 0.0000
215	N305	0.0000	0.0000	No	P	Normal	0 0.0000
216	N306	0.0000	0.0000	No	P	Normal	0 0.0000
217	N307	0.0000	0.0000	No	P	Normal	0 0.0000
218	N308	0.0000	0.0000		F	Normal	0 0.0000
219	N313	0.0000	0.0000	No	P	Normal	0 0.0000
220	N314	0.0000	0.0000	No	P	Normal	0 0.0000
221	N315	0.0000	0.0000	No	P	Normal	0 0.0000
222	N316	0.0000	0.0000	No	P	Normal	0 0.0000
223	N317	0.0000	0.0000		F	Normal	0 0.0000
224	N318	0.0000	0.0000		F	Normal	0 0.0000
225	N319	0.0000	0.0000		F	Normal	0 0.0000
226	N320	0.0000	0.0000		F	Normal	0 0.0000
227	N321	0.0000	0.0000		F	Normal	0 0.0000
228	N325	0.0000	0.0000		F	Normal	0 0.0000
229	N326	0.0000	0.0000		F	Normal	0 0.0000
230	N327	0.0000	0.0000		F	Normal	0 0.0000
231	N328	0.0000	0.0000		F	Normal	0 0.0000
232	N329	0.0000	0.0000		F	Normal	0 0.0000
233	N330	0.0000	0.0000		F	Normal	0 0.0000
234	N331	0.0000	0.0000		F	Normal	0 0.0000
235	N332	0.0000	0.0000		F	Normal	0 0.0000
236	N333	0.0000	0.0000	No	P	Normal	0 0.0000
237	N334	0.0000	0.0000	No	P	Normal	0 0.0000
238	N335	0.0000	0.0000	No	P	Normal	0 0.0000
239	N336	0.0000	0.0000	No	P	Normal	0 0.0000
240	N337	0.0000	0.0000	No	P	Normal	0 0.0000
241	N338	0.0000	0.0000	No	P	Normal	0 0.0000
242	N339	0.0000	0.0000	No	P	Normal	0 0.0000
243	N340	0.0000	0.0000	No	P	Normal	0 0.0000
244	N341	0.0000	0.0000	No	P	Normal	0 0.0000
245	N347	0.0000	0.0000	No	P	Normal	0 0.0000
246	N348	0.0000	0.0000	No	P	Normal	0 0.0000
247	N349	0.0000	0.0000	No	P	Normal	0 0.0000
248	N350	0.0000	0.0000	No	P	Normal	0 0.0000
249	N351	0.0000	0.0000	No	P	Normal	0 0.0000
250	N352	0.0000	0.0000	No	P	Normal	0 0.0000
251	N353	0.0000	0.0000	No	P	Normal	0 0.0000
252	N354	0.0000	0.0000	No	P	Normal	0 0.0000
253	N355	0.0000	0.0000	No	P	Normal	0 0.0000
254	N356	0.0000	0.0000	No	P	Normal	0 0.0000
255	N357	0.0000	0.0000	No	P	Normal	0 0.0000
256	N358	0.0000	0.0000	No	P	Normal	0 0.0000
257	N359	0.0000	0.0000	No	P	Normal	0 0.0000
258	N360	0.0000	0.0000	No	P	Normal	0 0.0000
259	N500	0.0000	0.0000	No	P	Normal	0 0.0000
260	N501	0.0000	0.0000	No	P	Normal	0 0.0000
261	N503	0.0000	0.0000	No	P	Normal	0 0.0000
262	N504	0.0000	0.0000	No	P	Normal	0 0.0000
263	N506	0.0000	0.0000	No	P	Normal	0 0.0000
264	N517	0.0000	0.0000	No	P	Normal	0 0.0000
265	N518	0.0000	0.0000	No	P	Normal	0 0.0000
266	N554	0.0000	0.0000	No	P	Normal	0 0.0000
267	N322	0.0000	0.0000	No	P	Normal	0 0.0000
268	N511	0.0000	0.0000	No	P	Normal	0 0.0000
269	N555	0.0000	0.0000	No	P	Normal	0 0.0000

Table E4 - Conduit Connectivity

Input Number	Conduit Name	Upstream Node	Downstream Node	Upstream Elevation	Downstream Elevation	
1	L210	N221	N222	105.8400	105.4400	No Design
2	L211	N222	N223	104.4400	102.0600	No Design
3	L212	N223	N224	100.8100	98.4700	No Design
4	L213	N227	N224	98.3400	97.7200	No Design
5	L214	N228	N224	97.5300	97.2200	No Design
6	L217	N231	N230	99.8400	99.3300	No Design
7	L220	N224	N230	96.9700	96.0800	No Design
8	L221	N230	N233	95.8300	94.9200	No Design
9	L222	N233	N234	94.4200	87.6000	No Design
10	L223	N235	N236	119.6000	119.4100	No Design
11	L224	N236	N237	118.6100	117.8600	No Design
12	L225	N237	N238	117.2600	116.5100	No Design
13	L226	N239	N240	117.6900	116.6200	No Design
14	L227	N240	N238	116.6200	116.0100	No Design
15	L228	N238	N241	115.1100	114.0600	No Design
16	L229	N241	N242	111.3600	109.8800	No Design
17	L230	N242	N243	108.6300	107.8600	No Design
18	L231	N243	N244	105.8600	105.1000	No Design
19	L232	N244	N245	103.8500	103.3800	No Design
20	L233	N245	N246	101.9300	100.3100	No Design
21	L234	N246	N247	99.5600	98.3700	No Design
22	L235	N248	N241	111.4800	111.3600	No Design
23	L236	N249	N244	104.6200	104.3500	No Design
24	L237	N250	N246	101.1400	100.5600	No Design
25	L238	N251	N252	115.3800	115.0600	No Design
26	L239	N252	N253	113.0600	112.3300	No Design
27	L240	N254	N253	112.8300	112.3300	No Design
28	L241	N253	N255	108.0800	106.8000	No Design
29	L242	N256	N255	107.4100	107.0500	No Design
30	L243	N257	N255	107.6100	107.0500	No Design
31	L246	N247	N259	97.8700	97.1600	No Design
32	L247	N259	N260	97.1600	97.0000	No Design
33	L248	N261	N259	98.9300	98.6600	No Design
34	L249	N262	N263	104.8800	104.4600	No Design
35	L250	N263	N264	104.4600	96.6400	No Design
36	L251	N265	N263	104.8600	104.4600	No Design
37	L259	N272	N274	96.3500	95.5800	No Design
38	L260	N274	N275	95.5800	87.6000	No Design
39	L261	N276	N277	94.2500	93.4400	No Design
40	L262	N277	N278	93.4400	78.0000	No Design
41	L263	N279	N277	94.1200	93.4400	No Design
42	L272	N288	N289	77.0300	77.0000	No Design
43	L273	N290	N288	78.1000	77.7800	No Design
44	L274	N291	N292	91.9200	76.6000	No Design
45	L275	N293	N294	118.9200	118.3000	No Design
46	L277	N296	N294	118.9800	118.3000	No Design
47	L281	N301	N302	122.9000	122.2800	No Design
48	L282	N302	N303	122.2800	110.6000	No Design
49	L283	N304	N302	122.9500	122.2800	No Design
50	L287	N309	N310	113.1500	112.5100	No Design
51	L289	N312	N310	113.2100	112.5100	No Design
52	L319	N342	N343	100.2200	100.0000	No Design

53	L320	N344	N342	101.1100	100.7200	No Design
54	L338	N361	N362	126.2400	126.1300	No Design
55	L339	N362	N363	126.1300	125.7800	No Design
56	L340	N363	N364	125.2800	125.0100	No Design
57	L341	N364	N365	125.0100	124.9000	No Design
58	L342	N366	N363	127.8700	127.5300	No Design
59	L343	N367	N363	128.3300	127.7800	No Design
60	L344	N368	N369	124.2600	124.1700	No Design
61	L346	N371	N370	122.2600	122.2000	No Design
62	L347	N370	N372	121.7000	121.3400	No Design
63	L348	N372	N373	121.3400	120.9700	No Design
64	L349	N373	N374	120.9700	120.6000	No Design
65	L350	N374	N375	120.6000	120.4800	No Design
66	L351	N376	N377	122.9000	122.8200	No Design
67	L352	N377	N375	122.8200	122.4800	No Design
68	L354	N378	N379	119.2700	118.4000	No Design
69	L361	N383	N381	125.5300	125.2600	No Design
70	L362	N384	N381	125.6400	125.2600	No Design
71	L363	N381	N382	124.7600	123.3600	No Design
72	L364	N386	N382	124.1400	123.8600	No Design
73	L365	N387	N382	124.2300	123.8600	No Design
74	L366	N382	N388	122.8600	121.9500	No Design
75	L367	N388	N389	121.9500	121.1100	No Design
76	L368	N390	N389	122.8300	122.1100	No Design
77	L369	N391	N389	122.6900	122.1100	No Design
78	L370	N389	N392	120.1100	119.8300	No Design
79	L373	N392	N394	119.8300	118.4000	No Design
80	L374	N395	N396	118.6100	118.1800	No Design
81	L375	N396	N397	117.6800	117.3100	No Design
82	L376	N398	N397	116.3100	116.0600	No Design
83	L386	N399	N403	114.6100	114.3000	No Design
84	L387	N403	N404	114.3000	113.9800	No Design
85	L388	N405	N404	117.0000	116.7000	No Design
86	L389	N404	N406	113.4800	113.1700	No Design
87	L390	N407	N406	117.0000	116.6000	No Design
88	L391	N406	N408	113.1700	112.7800	No Design
89	L392	N408	N409	112.7800	112.4800	No Design
90	L393	N409	N410	112.4800	112.1200	No Design
91	L395	N412	N413	116.3000	115.3300	No Design
92	L396	N414	N413	116.3700	115.8300	No Design
93	L397	N415	N413	116.3300	115.3300	No Design
94	L398	N416	N414	116.8300	115.8700	No Design
95	L399	N417	N414	117.5700	116.8700	No Design
96	L402	N420	N421	112.2400	112.0000	No Design
97	L403	N421	N419	112.0000	110.9100	No Design
98	L404	N419	N422	110.9100	109.8800	No Design
99	L405	N423	N422	110.3700	110.1300	No Design
100	L406	N422	N424	109.1300	108.5100	No Design
101	L407	N425	N424	110.0600	109.7600	No Design
102	L408	N424	N426	108.2600	107.7000	No Design
103	L410	N426	N428	107.4500	106.9200	No Design
104	L411	N428	N429	106.9200	106.5200	No Design
105	L413	N432	N431	118.0700	116.6700	No Design
106	L415	N434	N432	118.8000	118.4800	No Design
107	L417	N436	N435	111.5700	111.1800	No Design
108	L418	N437	N435	110.9200	110.6800	No Design
109	L419	N435	N438	110.1800	109.5800	No Design
110	L420	N438	N439	109.5800	108.6500	No Design
111	L421	N440	N439	110.0500	109.6500	No Design
112	L422	N441	N439	109.7300	109.4000	No Design

113	L423	N439	N442	108.1500	107.4700	No Design
114	L424	N442	N429	107.2200	106.7700	No Design
115	L425	N443	N442	109.3800	108.9700	No Design
116	L426	N444	N442	109.0300	108.7200	No Design
117	L427	N429	N445	106.0200	105.4800	No Design
118	L428	N446	N445	108.4900	107.9800	No Design
119	L429	N445	N447	105.4800	105.0500	No Design
120	L430	N448	N449	118.7700	117.9900	No Design
121	L431	N450	N449	120.7400	118.2400	No Design
122	L432	N451	N450	121.2700	120.7400	No Design
123	L435	N454	N453	114.2900	113.7600	No Design
124	L436	N453	N455	113.7600	111.9300	No Design
125	L437	N455	N456	111.6800	110.2600	No Design
126	L438	N457	N456	111.0200	110.5100	No Design
127	L439	N456	N458	110.2600	108.6400	No Design
128	L440	N458	N447	108.3900	107.0500	No Design
129	L441	N447	N459	105.0500	104.6100	No Design
130	L442	N459	N460	104.6100	104.1100	No Design
131	L443	N460	N461	104.1100	94.1000	No Design
132	L446	N465	N466	126.6500	126.4400	No Design
133	L448	N467	N464	126.3000	125.8400	No Design
134	L449	N464	N468	125.0900	123.8400	No Design
135	L450	N468	N469	123.5900	122.6600	No Design
136	L451	N469	N470	118.6600	118.4600	No Design
137	L452	N471	N468	124.8800	124.5900	No Design
138	L453	N472	N468	124.9400	124.5900	No Design
139	L454	N473	N469	120.0700	119.6600	No Design
140	L466	N418	N487	119.9000	119.3200	No Design
141	L468	N487	N417	118.5700	117.5700	No Design
142	L470	N490	N494	121.9000	121.4100	No Design
143	L471	N491	N490	124.7700	121.9000	No Design
144	L472	N492	N493	126.3400	126.0400	No Design
145	L490	N513	N514	110.0100	109.8600	No Design
146	L496	N524	N525	133.4500	131.1700	No Design
147	L497	N526	N525	133.4600	131.1700	No Design
148	L498	N525	N527	131.1700	130.6000	No Design
149	L501	N369	N528	123.6700	123.1600	No Design
150	L502	N528	N370	122.6600	122.2000	No Design
151	L503	N375	N529	119.9800	119.6400	No Design
152	L504	N529	N378	119.6400	119.2700	No Design
153	L505	N255	N530	102.8000	101.7100	No Design
154	L506	N530	N247	99.7100	98.6200	No Design
155	L509	N497	N499	107.8500	91.2000	No Design
156	L511	N509	N514	108.8800	108.6100	No Design
157	L512	N514	N516	108.1100	90.0000	No Design
158	L514	N466	N464	126.1900	125.0900	No Design
159	L515	N397	N399	115.8100	115.6100	No Design
160	CH21	N470	N398	117.7100	116.3100	No Design
161	L474	N489	N689	118.4300	118.0000	No Design
162	L523	N494	N489	121.4100	120.8300	No Design
163	L525	N413	N399	115.8300	115.1100	No Design
164	L527	N431	N404	116.6700	115.2500	No Design
165	L528	N449	N408	117.9900	116.0300	No Design
166	L529	EL329	N541	112.5200	112.0900	No Design
167	L533	N541	N427	112.0900	109.6400	No Design
168	L537	N427	N426	109.6400	108.9500	No Design
169	L394	N410	N411	112.1200	112.0000	No Design
170	L276	N294	N295	118.3000	118.0000	No Design
171	L288	N310	N311	112.2600	104.1000	No Design
172	L412	N430	N431	119.0000	118.4000	No Design

173	L447	N462	N466	127.7800	126.4400	No Design
174	L252	N266	N267	100.3600	98.0500	No Design
175	L253	N268	N269	100.7400	100.3300	No Design
176	L254	N269	N267	100.3300	98.0500	No Design
177	L255	N270	N271	99.1400	98.8000	No Design
178	L256	N271	N267	98.5500	97.5500	No Design
179	L257	N267	N272	97.5500	96.6000	No Design
180	L264	N280	N281	85.3300	84.9900	No Design
181	L265	N281	N282	83.2400	82.7700	No Design
182	L266	N282	N283	82.7700	82.5000	No Design
183	L267	N284	N282	85.1400	84.7700	No Design
184	L268	N285	N286	94.9100	94.4500	No Design
185	L269	N286	N283	94.4500	93.0000	No Design
186	L270	N283	N287	82.5000	81.9600	No Design
187	L271	N287	N288	78.4600	77.0300	No Design
188	L278	N297	N298	113.2400	112.9600	No Design
189	L279	N298	N299	112.9600	112.0000	No Design
190	L280	N300	N298	113.2500	112.9600	No Design
191	L284	N305	N306	105.5200	105.2200	No Design
192	L285	N306	N307	104.7200	104.2500	No Design
193	L286	N308	N306	105.1900	104.9700	No Design
194	L290	N313	N314	103.9300	101.7900	No Design
195	L291	N314	N315	101.7900	99.6100	No Design
196	L292	N315	N316	99.6100	94.1000	No Design
197	L294	N319	N318	89.4700	88.9900	No Design
198	L300	N320	N318	89.2800	88.4900	No Design
199	L301	N321	N320	90.1100	89.7800	No Design
200	L302	N318	N500	87.7400	86.6700	No Design
201	L303	N326	N325	90.7500	90.2700	No Design
202	L304	N327	N325	90.6600	90.2700	No Design
203	L305	N325	N320	89.7700	89.2800	No Design
204	L306	N329	N330	94.0000	93.4400	No Design
205	L307	N330	N322	93.4400	92.5000	No Design
206	L308	N328	N331	93.4400	92.7000	No Design
207	L309	N332	N328	94.0000	93.4400	No Design
208	L310	N333	N334	108.8700	108.5100	No Design
209	L311	N334	N335	108.5100	106.1800	No Design
210	L312	N336	N335	106.5400	106.1800	No Design
211	L313	N335	N337	106.1800	102.7800	No Design
212	L314	N338	N337	103.3100	102.7800	No Design
213	L315	N339	N340	104.8900	104.4700	No Design
214	L316	N340	N337	104.4700	102.7800	No Design
215	L317	N337	N341	102.2800	101.2500	No Design
216	L318	N341	N342	101.2500	100.2200	No Design
217	L321	N345	N239	118.8300	117.6900	No Design
218	L324	N349	N347	119.1600	118.4500	No Design
219	L325	N350	N351	117.8000	117.4400	No Design
220	L326	N352	N348	117.3700	116.6700	No Design
221	L327	N353	N348	117.3600	116.6700	No Design
222	L328	N348	N354	116.1700	115.6500	No Design
223	L329	N354	N355	115.6500	110.6000	No Design
224	L334	N356	N357	125.3200	122.9800	No Design
225	L335	N357	N358	122.9800	120.8200	No Design
226	L336	N358	N359	120.8200	120.0900	No Design
227	L337	N359	N360	120.0900	112.8000	No Design
228	L475	N317	N318	89.1700	88.7400	No Design
229	L478	N500	N501	86.6700	85.7200	No Design
230	L479	N501	N518	85.4700	84.5600	No Design
231	L487	N504	N503	95.5400	89.8000	No Design
232	L493	N518	N517	84.3100	83.9500	No Design

233	L499	N347	N351	118.4500	117.4400	No Design
234	L500	N351	N348	117.1900	116.4200	No Design
235	L507	N506	N554	92.1400	91.2800	No Design
236	L513	N517	N281	83.9500	83.7400	No Design
237	L546	N554	N500	90.7800	87.4200	No Design
238	L510	N511	N555	102.2100	89.8000	No Design

==
| FREE OUTFALL DATA (DATA GROUP I1) |
| BOUNDARY CONDITION ON DATA GROUP J1 |
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Outfall at Junction....N234 has boundary condition number... 1
Outfall at Junction....N260 has boundary condition number... 2
Outfall at Junction....N264 has boundary condition number... 3
Outfall at Junction....N275 has boundary condition number... 4
Outfall at Junction....N278 has boundary condition number... 5
Outfall at Junction....N289 has boundary condition number... 6
Outfall at Junction....N292 has boundary condition number... 7
Outfall at Junction....N303 has boundary condition number... 8
Outfall at Junction....N343 has boundary condition number... 9
Outfall at Junction....N365 has boundary condition number... 10
Outfall at Junction....N379 has boundary condition number... 11
Outfall at Junction....N394 has boundary condition number... 12
Outfall at Junction....N461 has boundary condition number... 13
Outfall at Junction....N493 has boundary condition number... 14
Outfall at Junction....N499 has boundary condition number... 15
Outfall at Junction....N516 has boundary condition number... 16
Outfall at Junction....N527 has boundary condition number... 17
Outfall at Junction....N689 has boundary condition number... 18
Outfall at Junction....N411 has boundary condition number... 19
Outfall at Junction....N295 has boundary condition number... 20
Outfall at Junction....N311 has boundary condition number... 21
Outfall at Junction....N299 has boundary condition number... 22
Outfall at Junction....N307 has boundary condition number... 23
Outfall at Junction....N316 has boundary condition number... 24
Outfall at Junction....N331 has boundary condition number... 25
Outfall at Junction....N355 has boundary condition number... 26
Outfall at Junction....N360 has boundary condition number... 27
Outfall at Junction....N503 has boundary condition number... 28
Outfall at Junction....N322 has boundary condition number... 29
Outfall at Junction....N555 has boundary condition number... 30

==
| INTERNAL CONNECTIVITY INFORMATION |
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CONDUIT	JUNCTION	JUNCTION
FREE # 1	N234	BOUNDARY
FREE # 2	N260	BOUNDARY
FREE # 3	N264	BOUNDARY
FREE # 4	N275	BOUNDARY
FREE # 5	N278	BOUNDARY
FREE # 6	N289	BOUNDARY
FREE # 7	N292	BOUNDARY
FREE # 8	N303	BOUNDARY
FREE # 9	N343	BOUNDARY

FREE #10	N365	BOUNDARY
FREE #11	N379	BOUNDARY
FREE #12	N394	BOUNDARY
FREE #13	N461	BOUNDARY
FREE #14	N493	BOUNDARY
FREE #15	N499	BOUNDARY
FREE #16	N516	BOUNDARY
FREE #17	N527	BOUNDARY
FREE #18	N689	BOUNDARY
FREE #19	N411	BOUNDARY
FREE #20	N295	BOUNDARY
FREE #21	N311	BOUNDARY
FREE #22	N299	BOUNDARY
FREE #23	N307	BOUNDARY
FREE #24	N316	BOUNDARY
FREE #25	N331	BOUNDARY
FREE #26	N355	BOUNDARY
FREE #27	N360	BOUNDARY
FREE #28	N503	BOUNDARY
FREE #29	N322	BOUNDARY
FREE #30	N555	BOUNDARY

==
| Boundary Condition Information |
| Data Groups J1-J4 |
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BC NUMBER.. 14 has no control water surface.
BC NUMBER.. 17 has no control water surface.
BC NUMBER.. 18 has no control water surface.

===> WARNING ! Junction N273 is not associated with any conduit.

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| XP Note Field Summary |
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| Conduit Convergence Criteria |
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Conduit Name	Full Flow	Conduit Slope
L210	2.3341	0.0057
L211	2.3583	0.0058
L212	3.6820	0.0043
L213	2.3504	0.0058
L214	5.2561	0.0033
L217	2.3778	0.0059
L220	7.2421	0.0028
L221	9.4105	0.0023
L222	37.9531	0.0375
L223	1.5862	0.0026
L224	1.5676	0.0026
L225	1.5703	0.0026

L226	1.5717	0.0026
L227	1.5698	0.0026
L228	1.5683	0.0026
L229	2.8478	0.0026
L230	2.4656	0.0019
L231	2.4434	0.0019
L232	3.5621	0.0015
L233	5.2943	0.0034
L234	10.3141	0.0028
L235	1.5127	0.0024
L236	1.5658	0.0026
L237	2.3516	0.0058
L238	2.3553	0.0058
L239	2.3692	0.0059
L240	2.3544	0.0058
L241	3.6815	0.0043
L242	2.3529	0.0058
L243	2.3707	0.0059
L246	14.7213	0.0017
L247	14.8246	0.0017
L248	2.3403	0.0057
L249	2.3421	0.0058
L250	9.7769	0.1003
L251	2.3510	0.0058
L259	7.1885	0.0027
L260	48.4905	0.1247
L261	2.3656	0.0059
L262	13.9175	0.2032
L263	2.3540	0.0058
L272	50.6250	0.0009
L273	7.1817	0.0027
L274	32.1290	0.1246
L275	2.3504	0.0058
L277	2.3540	0.0058
L281	2.3504	0.0058
L282	15.2316	0.2433
L283	2.3672	0.0059
L287	2.3660	0.0059
L289	2.3583	0.0058
L319	5.2963	0.0034
L320	2.3558	0.0058
L338	20.9182	0.0013
L339	21.2087	0.0013
L340	29.0054	0.0011
L341	28.4951	0.0011
L342	3.6963	0.0044
L343	2.3619	0.0059
L344	14.9332	0.0018
L346	30.2053	0.0012
L347	37.5829	0.0009
L348	37.6745	0.0009
L349	37.8624	0.0009
L350	37.5354	0.0009
L351	9.3735	0.0023
L352	9.4291	0.0023
L354	163.9607	0.0093
L361	2.3403	0.0057
L362	2.3430	0.0058
L363	5.3133	0.0034
L364	2.3583	0.0058

L365	2.3663	0.0059
L366	9.4224	0.0023
L367	9.4185	0.0023
L368	2.3529	0.0058
L369	2.3634	0.0059
L370	21.3114	0.0014
L373	69.8268	0.0146
L374	1.6007	0.0027
L375	2.7585	0.0009
L376	17.8956	0.0015
L386	37.5354	0.0009
L387	37.3765	0.0009
L388	1.5910	0.0027
L389	48.3609	0.0008
L390	1.8968	0.0038
L391	47.6460	0.0008
L392	47.8865	0.0008
L393	47.6261	0.0008
L395	7.7978	0.0194
L396	21.1861	0.0013
L397	7.4154	0.0175
L398	7.9175	0.0200
L399	9.4392	0.0023
L402	7.2544	0.0028
L403	7.1865	0.0027
L404	7.2356	0.0028
L405	5.2929	0.0034
L406	14.6711	0.0017
L407	3.6392	0.0042
L408	17.9044	0.0015
L410	21.1742	0.0013
L411	21.0724	0.0013
L413	5.3791	0.0035
L415	2.4953	0.0065
L417	2.3384	0.0057
L418	5.2561	0.0033
L419	9.4366	0.0023
L420	9.4302	0.0023
L421	2.3682	0.0059
L422	3.6891	0.0043
L423	14.7122	0.0017
L424	17.7815	0.0015
L425	2.3631	0.0059
L426	3.6483	0.0042
L427	29.0650	0.0011
L428	2.3506	0.0058
L429	28.8057	0.0011
L430	2.8587	0.0086
L431	2.3544	0.0058
L432	2.3565	0.0058
L435	2.3695	0.0059
L436	2.3535	0.0058
L437	3.6836	0.0043
L438	2.3506	0.0058
L439	3.6846	0.0043
L440	5.2957	0.0034
L441	28.7403	0.0011
L442	28.7787	0.0011
L443	281.5617	0.1043
L446	5.3415	0.0034

L448	2.3562	0.0058
L449	7.2216	0.0028
L450	9.4537	0.0023
L451	9.2424	0.0022
L452	2.3516	0.0058
L453	2.3389	0.0057
L454	2.3631	0.0059
L466	4.4943	0.0064
L468	8.8034	0.0020
L470	7.2253	0.0028
L471	2.6488	0.0074
L472	2.3453	0.0058
L490	4.8350	0.0012
L496	2.3549	0.0058
L497	2.3540	0.0058
L498	2.3549	0.0058
L501	21.3175	0.0014
L502	28.7542	0.0011
L503	47.5382	0.0008
L504	48.0749	0.0008
L505	7.2137	0.0028
L506	7.1955	0.0027
L509	10.8843	0.1243
L511	3.5456	0.0015
L512	79.1933	0.1632
L514	7.2103	0.0028
L515	21.4683	0.0014
CH21	321.7664	0.0015
L474	5.2973	0.0034
L523	22.9743	0.0034
L525	21.2457	0.0014
L527	5.2074	0.0033
L528	3.6866	0.0043
L529	3.5424	0.0015
L533	5.2922	0.0034
L537	3.5530	0.0015
L394	47.1178	0.0008
L276	2.3682	0.0059
L288	20.4763	0.1338
L412	3.2854	0.0113
L447	5.3092	0.0034
L252	2.3583	0.0058
L253	2.3631	0.0059
L254	2.3579	0.0058
L255	3.6728	0.0043
L256	5.3094	0.0034
L257	5.3028	0.0034
L264	3.6728	0.0043
L265	21.2741	0.0014
L266	21.1336	0.0013
L267	2.3663	0.0059
L268	2.3562	0.0058
L269	2.3610	0.0058
L270	21.2125	0.0013
L271	52.2659	0.0036
L278	2.3583	0.0058
L279	2.3553	0.0058
L280	2.3516	0.0058
L284	2.3453	0.0058
L285	5.2748	0.0034

L286	3.7136	0.0044
L290	2.3547	0.0058
L291	2.3606	0.0058
L292	7.0734	0.0525
L294	2.3624	0.0059
L300	5.3010	0.0034
L301	2.3703	0.0059
L302	11.9259	0.0020
L303	2.3481	0.0058
L304	2.3384	0.0057
L305	5.3291	0.0034
L306	3.0341	0.0097
L307	19.5026	0.0099
L308	7.7925	0.0073
L309	3.0341	0.0097
L310	2.3721	0.0059
L311	2.3596	0.0058
L312	2.3721	0.0059
L313	2.3540	0.0058
L314	2.3436	0.0058
L315	2.3749	0.0059
L316	2.3491	0.0058
L317	5.3166	0.0034
L318	5.2991	0.0034
L321	1.5717	0.0026
L324	2.3556	0.0058
L325	2.3529	0.0058
L326	2.3682	0.0059
L327	2.3612	0.0058
L328	3.5191	0.0015
L329	20.6659	0.0515
L334	2.3558	0.0058
L335	2.3560	0.0058
L336	2.3597	0.0058
L337	7.6425	0.0613
L475	3.7084	0.0044
L478	11.9409	0.0020
L479	13.9490	0.0015
L487	25.6909	0.0350
L493	9.8698	0.0008
L499	1.5713	0.0026
L500	2.4625	0.0019
L507	2.3618	0.0059
L513	9.8234	0.0008
L546	6.9471	0.0058
L510	18.7195	0.1118

```
 *================================*
 |    Initial Model Condition     |
 | Initial Time =      0.02 hours |
 *================================*
```

Junction / Depth / Elevation ===> "*" Junction is Surcharged.

N221/ 0.00 / 105.84	N222/ 0.00 / 104.44	N223/ 0.00 / 100.81
N224/ 0.00 / 96.97	N227/ 0.00 / 98.34	N228/ 0.00 / 97.53
N230/ 0.00 / 95.83	N231/ 0.00 / 99.84	N233/ 0.00 / 94.42
N234/ 4.87 / 90.47	N235/ 0.00 / 119.60	N236/ 0.00 /

118.61
N237/ 0.00 / 117.26 N238/ 0.00 / 115.11 N239/ 0.00 /
117.69
N240/ 0.00 / 116.62 N241/ 0.00 / 111.36 N242/ 0.00 /
108.63
N243/ 0.00 / 105.86 N244/ 0.00 / 103.85 N245/ 0.00 /
101.68
N246/ 0.00 / 99.53 N247/ 0.00 / 97.87 N248/ 0.00 /
111.48
N249/ 0.00 / 104.62 N250/ 0.00 / 101.14 N251/ 0.00 /
115.38
N252/ 0.00 / 113.06 N253/ 0.00 / 108.08 N254/ 0.00 /
112.83
N255/ 0.00 / 102.80 N256/ 0.00 / 107.41 N257/ 0.00 /
107.61
N259/ 0.00 / 97.16 N260/ 2.55 / 99.55 N261/ 0.00 /
98.93
N262/ 0.00 / 104.88 N263/ 0.00 / 104.46 N264/ 2.90 /
99.54
N265/ 0.00 / 104.86 N272/ 0.00 / 96.35 N273/ 0.00 /
97.68
N274/ 0.00 / 95.58 N275/ 2.88 / 90.48 N276/ 0.00 /
94.25
N277/ 0.00 / 93.44 N278/ 5.91 / 83.91 N279/ 0.00 /
94.12
N288/ 0.00 / 77.03 N289/ 6.90 / 83.90 N290/ 0.00 /
78.10
N291/ 0.00 / 91.92 N292/ 7.30 / 83.90 N293/ 0.00 /
118.92
N294/ 0.00 / 118.30 N296/ 0.00 / 118.98 N301/ 0.00 /
122.90
N302/ 0.00 / 122.28 N303/ 2.82 / 113.42 N304/ 0.00 /
122.95
N309/ 0.00 / 113.15 N310/ 0.00 / 112.26 N312/ 0.00 /
113.21
N342/ 0.00 / 100.22 N343/ 0.00 / 100.00 N344/ 0.00 /
101.11
N345/ 0.00 / 118.83 N361/ 0.00 / 126.24 N362/ 0.00 /
126.13
N363/ 0.00 / 125.28 N364/ 0.00 / 125.01 N365/ 5.17 /
122.57
N366/ 0.00 / 127.87 N367/ 0.00 / 128.33 N368/ 0.00 /
124.26
N369/ 0.00 / 123.67 N370/ 0.00 / 121.70 N371/ 0.00 /
122.26
N372/ 0.00 / 121.34 N373/ 0.00 / 120.97 N374/ 0.00 /
120.60
N375/ 0.00 / 119.98 N376/ 0.00 / 122.90 N377/ 0.00 /
122.82
N378/ 0.00 / 119.27 N379/ 4.18 / 122.58 N381/ 0.00 /
124.76
N382/ 0.00 / 122.86 N383/ 0.00 / 125.53 N384/ 0.00 /
125.64
N386/ 0.00 / 124.14 N387/ 0.00 / 124.23 N388/ 0.00 /
121.95
N389/ 0.00 / 120.11 N390/ 0.00 / 122.83 N391/ 0.00 /
122.69
N392/ 0.00 / 119.83 N394/ 4.18 / 122.58 N395/ 0.00 /
118.11
N396/ 0.00 / 117.68 N397/ 0.00 / 115.81 N398/ 0.00 /

116.31
N399/ 0.00 / 114.60 N403/ 0.00 / 114.30 N404/ 0.00 /
113.48
N405/ 0.00 / 117.00 N406/ 0.00 / 113.17 N407/ 0.00 /
117.00
N408/ 0.00 / 112.78 N409/ 0.00 / 112.48 N410/ 0.00 /
112.12
N412/ 0.00 / 116.30 N413/ 0.00 / 115.33 N414/ 0.00 /
115.83
N415/ 0.00 / 116.33 N416/ 0.00 / 116.83 N417/ 0.00 /
117.57
N418/ 0.00 / 119.90 N419/ 0.00 / 110.91 N420/ 0.00 /
112.24
N421/ 0.00 / 112.00 N422/ 0.00 / 109.13 N423/ 0.00 /
110.37
N424/ 0.00 / 108.26 N425/ 0.00 / 110.06 N426/ 0.00 /
107.45
N428/ 0.00 / 106.92 N429/ 0.00 / 106.02 N430/ 0.00 /
119.00
N431/ 0.00 / 116.67 N432/ 0.00 / 118.07 N434/ 0.00 /
118.80
N435/ 0.00 / 110.18 N436/ 0.00 / 111.57 N437/ 0.00 /
110.92
N438/ 0.00 / 109.58 N439/ 0.00 / 108.15 N440/ 0.00 /
110.05
N441/ 0.00 / 109.73 N442/ 0.00 / 107.22 N443/ 0.00 /
109.38
N444/ 0.00 / 109.03 N445/ 0.00 / 105.48 N446/ 0.00 /
108.49
N447/ 0.00 / 105.05 N448/ 0.00 / 118.77 N449/ 0.00 /
117.99
N450/ 0.00 / 120.74 N451/ 0.00 / 121.27 N453/ 0.00 /
113.76
N454/ 0.00 / 114.29 N455/ 0.00 / 111.68 N456/ 0.00 /
110.26
N457/ 0.00 / 111.02 N458/ 0.00 / 108.39 N459/ 0.00 /
104.61
N460/ 0.00 / 104.11 N461/ 5.47 / 99.57 N464/ 0.00 /
125.09
N465/ 0.00 / 126.65 N466/ 0.00 / 126.19 N467/ 0.00 /
126.30
N468/ 0.00 / 123.59 N469/ 0.00 / 118.66 N470/ 0.00 /
117.71
N471/ 0.00 / 124.88 N472/ 0.00 / 124.94 N473/ 0.00 /
120.07
N487/ 0.00 / 118.57 N489/ 0.00 / 118.43 N490/ 0.00 /
121.90
N491/ 0.00 / 124.17 N492/ 0.00 / 126.34 N493/ 0.00 /
126.04
N497/ 0.00 / 107.85 N499/ 6.44 / 97.64 N509/ 0.00 /
108.88
N513/ 0.00 / 110.01 N514/ 0.00 / 108.11 N516/ 7.42 /
97.42
N524/ 0.00 / 133.45 N525/ 0.00 / 131.17 N526/ 0.00 /
133.46
N527/ 0.00 / 130.60 N528/ 0.00 / 122.66 N529/ 0.00 /
119.64
N530/ 0.00 / 99.71 N689/ 0.00 / 118.00 N494/ 0.00 /
121.41
N541/ 0.00 / 112.09 EL329/ 0.00 / 112.52 N427/ 0.00 /

109.64

	N411/	3.63 /	115.63	N295/	3.79 /	110.72	N311/	4.73 /
108.83								
	N462/	0.00 /	127.78	N266/	0.00 /	100.36	N267/	0.00 /
97.55								
	N268/	0.00 /	100.74	N269/	0.00 /	100.33	N270/	0.00 /
99.14								
	N271/	0.00 /	98.55	N280/	0.00 /	85.33	N281/	0.00 /
83.24								
	N282/	0.00 /	82.77	N283/	0.00 /	82.50	N284/	0.00 /
85.14								
	N285/	0.00 /	94.91	N286/	0.00 /	94.45	N287/	0.00 /
78.46								
	N297/	0.00 /	113.24	N298/	0.00 /	112.96	N299/	2.78 /
110.10								
	N300/	0.00 /	113.25	N305/	0.00 /	105.52	N306/	0.00 /
104.72								
	N307/	4.39 /	108.64	N308/	0.00 /	105.19	N313/	0.00 /
103.93								
	N314/	0.00 /	101.79	N315/	0.00 /	99.61	N316/	5.47 /
99.57								
	N317/	0.00 /	89.17	N318/	0.00 /	87.74	N319/	0.00 /
89.47								
	N320/	0.00 /	89.28	N321/	0.00 /	90.11	N325/	0.00 /
89.77								
	N326/	0.00 /	90.75	N327/	0.00 /	90.66	N328/	0.00 /
93.44								
	N329/	0.00 /	94.00	N330/	0.00 /	93.44	N331/	4.94 /
97.64								
	N332/	0.00 /	94.00	N333/	0.00 /	108.87	N334/	0.00 /
108.51								
	N335/	0.00 /	106.18	N336/	0.00 /	106.54	N337/	0.00 /
102.28								
	N338/	0.00 /	103.31	N339/	0.00 /	104.89	N340/	0.00 /
104.47								
	N341/	0.00 /	101.25	N347/	0.00 /	118.45	N348/	0.00 /
116.17								
	N349/	0.00 /	119.16	N350/	0.00 /	117.80	N351/	0.00 /
117.19								
	N352/	0.00 /	117.37	N353/	0.00 /	117.36	N354/	0.00 /
115.65								
	N355/	2.82 /	113.42	N356/	0.00 /	125.32	N357/	0.00 /
122.98								
	N358/	0.00 /	120.82	N359/	0.00 /	120.09	N360/	2.74 /
115.34								
	N500/	0.00 /	86.67	N501/	0.00 /	85.47	N503/	7.62 /
97.42								
	N504/	0.00 /	95.54	N506/	0.00 /	92.14	N517/	0.00 /
83.95								
	N518/	0.00 /	84.31	N554/	0.00 /	90.68	N322/	5.14 /
97.64								
	N511/	0.00 /	102.21	N555/	7.62 /	97.42		

Conduit/ FLOW ===> "*" Conduit uses the normal flow option.

L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.00
L223/	0.00	L224/	0.00	L225/	0.00
L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00

L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00
L246/	0.00	L247/	0.00	L248/	0.00
L249/	0.00	L250/	0.00	L251/	0.00
L259/	0.00	L260/	0.00	L261/	0.00
L262/	0.00	L263/	0.00	L272/	0.00
L273/	0.00	L274/	0.00	L275/	0.00
L277/	0.00	L281/	0.00	L282/	0.00
L283/	0.00	L287/	0.00	L289/	0.00
L319/	0.00	L320/	0.00	L338/	0.00
L339/	0.00	L340/	0.00	L341/	0.00
L342/	0.00	L343/	0.00	L344/	0.00
L346/	0.00	L347/	0.00	L348/	0.00
L349/	0.00	L350/	0.00	L351/	0.00
L352/	0.00	L354/	0.00	L361/	0.00
L362/	0.00	L363/	0.00	L364/	0.00
L365/	0.00	L366/	0.00	L367/	0.00
L368/	0.00	L369/	0.00	L370/	0.00
L373/	0.00	L374/	0.00	L375/	0.00
L376/	0.00	L386/	0.00	L387/	0.00
L388/	0.00	L389/	0.00	L390/	0.00
L391/	0.00	L392/	0.00	L393/	0.00
L395/	0.00	L396/	0.00	L397/	0.00
L398/	0.00	L399/	0.00	L402/	0.00
L403/	0.00	L404/	0.00	L405/	0.00
L406/	0.00	L407/	0.00	L408/	0.00
L410/	0.00	L411/	0.00	L413/	0.00
L415/	0.00	L417/	0.00	L418/	0.00
L419/	0.00	L420/	0.00	L421/	0.00
L422/	0.00	L423/	0.00	L424/	0.00
L425/	0.00	L426/	0.00	L427/	0.00
L428/	0.00	L429/	0.00	L430/	0.00
L431/	0.00	L432/	0.00	L435/	0.00
L436/	0.00	L437/	0.00	L438/	0.00
L439/	0.00	L440/	0.00	L441/	0.00
L442/	0.00	L443/	0.00	L446/	0.00
L448/	0.00	L449/	0.00	L450/	0.00
L451/	0.00	L452/	0.00	L453/	0.00
L454/	0.00	L466/	0.00	L468/	0.00
L470/	0.00	L471/	0.00	L472/	0.00
L490/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L501/	0.00	L502/	0.00
L503/	0.00	L504/	0.00	L505/	0.00
L506/	0.00	L509/	0.00	L511/	0.00
L512/	0.00	L514/	0.00	L515/	0.00
CH21/	0.00	L474/	0.00	L523/	0.00
L525/	0.00	L527/	0.00	L528/	0.00
L529/	0.00	L533/	0.00	L537/	0.00
L394/	0.00	L276/	0.00	L288/	0.00
L412/	0.00	L447/	0.00	L252/	0.00
L253/	0.00	L254/	0.00	L255/	0.00
L256/	0.00	L257/	0.00	L264/	0.00
L265/	0.00	L266/	0.00	L267/	0.00
L268/	0.00	L269/	0.00	L270/	0.00
L271/	0.00	L278/	0.00	L279/	0.00
L280/	0.00	L284/	0.00	L285/	0.00
L286/	0.00	L290/	0.00	L291/	0.00
L292/	0.00	L294/	0.00	L300/	0.00

L301/	0.00	L302/	0.00	L303/	0.00
L304/	0.00	L305/	0.00	L306/	0.00
L307/	0.00	L308/	0.00	L309/	0.00
L310/	0.00	L311/	0.00	L312/	0.00
L313/	0.00	L314/	0.00	L315/	0.00
L316/	0.00	L317/	0.00	L318/	0.00
L321/	0.00	L324/	0.00	L325/	0.00
L326/	0.00	L327/	0.00	L328/	0.00
L329/	0.00	L334/	0.00	L335/	0.00
L336/	0.00	L337/	0.00	L475/	0.00
L478/	0.00	L479/	0.00	L487/	0.00
L493/	0.00	L499/	0.00	L500/	0.00
L507/	0.00	L513/	0.00	L546/	0.00
L510/	0.00	FREE # 1/	0.00	FREE # 2/	0.00
FREE # 3/	0.00	FREE # 4/	0.00	FREE # 5/	0.00
FREE # 6/	0.00	FREE # 7/	0.00	FREE # 8/	0.00
FREE # 9/	0.00	FREE #10/	0.00	FREE #11/	0.00
FREE #12/	0.00	FREE #13/	0.00	FREE #14/	0.00
FREE #15/	0.00	FREE #16/	0.00	FREE #17/	0.00
FREE #18/	0.00	FREE #19/	0.00	FREE #20/	0.00
FREE #21/	0.00	FREE #22/	0.00	FREE #23/	0.00
FREE #24/	0.00	FREE #25/	0.00	FREE #26/	0.00
FREE #27/	0.00	FREE #28/	0.00	FREE #29/	0.00
FREE #30/	0.00				

Conduit/	Velocity				
L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.00
L223/	0.00	L224/	0.00	L225/	0.00
L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00
L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00
L246/	0.00	L247/	0.00	L248/	0.00
L249/	0.00	L250/	0.00	L251/	0.00
L259/	0.00	L260/	0.00	L261/	0.00
L262/	0.00	L263/	0.00	L272/	0.00
L273/	0.00	L274/	0.00	L275/	0.00
L277/	0.00	L281/	0.00	L282/	0.00
L283/	0.00	L287/	0.00	L289/	0.00
L319/	0.00	L320/	0.00	L338/	0.00
L339/	0.00	L340/	0.00	L341/	0.00
L342/	0.00	L343/	0.00	L344/	0.00
L346/	0.00	L347/	0.00	L348/	0.00
L349/	0.00	L350/	0.00	L351/	0.00
L352/	0.00	L354/	0.00	L361/	0.00
L362/	0.00	L363/	0.00	L364/	0.00
L365/	0.00	L366/	0.00	L367/	0.00
L368/	0.00	L369/	0.00	L370/	0.00
L373/	0.00	L374/	0.00	L375/	0.00
L376/	0.00	L386/	0.00	L387/	0.00
L388/	0.00	L389/	0.00	L390/	0.00
L391/	0.00	L392/	0.00	L393/	0.00
L395/	0.00	L396/	0.00	L397/	0.00
L398/	0.00	L399/	0.00	L402/	0.00
L403/	0.00	L404/	0.00	L405/	0.00
L406/	0.00	L407/	0.00	L408/	0.00

L410/	0.00	L411/	0.00	L413/	0.00
L415/	0.00	L417/	0.00	L418/	0.00
L419/	0.00	L420/	0.00	L421/	0.00
L422/	0.00	L423/	0.00	L424/	0.00
L425/	0.00	L426/	0.00	L427/	0.00
L428/	0.00	L429/	0.00	L430/	0.00
L431/	0.00	L432/	0.00	L435/	0.00
L436/	0.00	L437/	0.00	L438/	0.00
L439/	0.00	L440/	0.00	L441/	0.00
L442/	0.00	L443/	0.00	L446/	0.00
L448/	0.00	L449/	0.00	L450/	0.00
L451/	0.00	L452/	0.00	L453/	0.00
L454/	0.00	L466/	0.00	L468/	0.00
L470/	0.00	L471/	0.00	L472/	0.00
L490/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L501/	0.00	L502/	0.00
L503/	0.00	L504/	0.00	L505/	0.00
L506/	0.00	L509/	0.00	L511/	0.00
L512/	0.00	L514/	0.00	L515/	0.00
CH21/	0.00	L474/	0.00	L523/	0.00
L525/	0.00	L527/	0.00	L528/	0.00
L529/	0.00	L533/	0.00	L537/	0.00
L394/	0.00	L276/	0.00	L288/	0.00
L412/	0.00	L447/	0.00	L252/	0.00
L253/	0.00	L254/	0.00	L255/	0.00
L256/	0.00	L257/	0.00	L264/	0.00
L265/	0.00	L266/	0.00	L267/	0.00
L268/	0.00	L269/	0.00	L270/	0.00
L271/	0.00	L278/	0.00	L279/	0.00
L280/	0.00	L284/	0.00	L285/	0.00
L286/	0.00	L290/	0.00	L291/	0.00
L292/	0.00	L294/	0.00	L300/	0.00
L301/	0.00	L302/	0.00	L303/	0.00
L304/	0.00	L305/	0.00	L306/	0.00
L307/	0.00	L308/	0.00	L309/	0.00
L310/	0.00	L311/	0.00	L312/	0.00
L313/	0.00	L314/	0.00	L315/	0.00
L316/	0.00	L317/	0.00	L318/	0.00
L321/	0.00	L324/	0.00	L325/	0.00
L326/	0.00	L327/	0.00	L328/	0.00
L329/	0.00	L334/	0.00	L335/	0.00
L336/	0.00	L337/	0.00	L475/	0.00
L478/	0.00	L479/	0.00	L487/	0.00
L493/	0.00	L499/	0.00	L500/	0.00
L507/	0.00	L513/	0.00	L546/	0.00
L510/	0.00				

Conduit/ Cross Sectional Area

L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.32
L223/	0.00	L224/	0.00	L225/	0.00
L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00
L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00
L246/	0.00	L247/	0.50	L248/	0.00
L249/	0.00	L250/	0.08	L251/	0.00

L259/	0.00	L260/	0.24	L261/	0.00
L262/	0.08	L263/	0.00	L272/	1.60
L273/	0.00	L274/	0.18	L275/	0.00
L277/	0.00	L281/	0.00	L282/	0.08
L283/	0.00	L287/	0.00	L289/	0.00
L319/	0.00	L320/	0.00	L338/	0.00
L339/	0.00	L340/	0.00	L341/	0.00
L342/	0.00	L343/	0.00	L344/	0.00
L346/	0.00	L347/	0.00	L348/	0.00
L349/	0.00	L350/	0.00	L351/	0.00
L352/	0.00	L354/	1.54	L361/	0.00
L362/	0.00	L363/	0.00	L364/	0.00
L365/	0.00	L366/	0.00	L367/	0.00
L368/	0.00	L369/	0.00	L370/	0.00
L373/	0.71	L374/	0.00	L375/	0.00
L376/	0.00	L386/	0.00	L387/	0.00
L388/	0.00	L389/	0.00	L390/	0.00
L391/	0.00	L392/	0.00	L393/	0.00
L395/	0.00	L396/	0.00	L397/	0.00
L398/	0.00	L399/	0.00	L402/	0.00
L403/	0.00	L404/	0.00	L405/	0.00
L406/	0.00	L407/	0.00	L408/	0.00
L410/	0.00	L411/	0.00	L413/	0.00
L415/	0.00	L417/	0.00	L418/	0.00
L419/	0.00	L420/	0.00	L421/	0.00
L422/	0.00	L423/	0.00	L424/	0.00
L425/	0.00	L426/	0.00	L427/	0.00
L428/	0.00	L429/	0.00	L430/	0.00
L431/	0.00	L432/	0.00	L435/	0.00
L436/	0.00	L437/	0.00	L438/	0.00
L439/	0.00	L440/	0.00	L441/	0.00
L442/	0.00	L443/	0.97	L446/	0.00
L448/	0.00	L449/	0.00	L450/	0.00
L451/	0.00	L452/	0.00	L453/	0.00
L454/	0.00	L466/	0.00	L468/	0.00
L470/	0.00	L471/	0.00	L472/	0.00
L490/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L501/	0.00	L502/	0.00
L503/	0.00	L504/	0.00	L505/	0.00
L506/	0.00	L509/	0.08	L511/	0.00
L512/	0.32	L514/	0.00	L515/	0.00
CH21/	0.00	L474/	0.00	L523/	0.00
L525/	0.00	L527/	0.00	L528/	0.00
L529/	0.00	L533/	0.00	L537/	0.00
L394/	1.37	L276/	0.00	L288/	0.12
L412/	0.00	L447/	0.00	L252/	0.00
L253/	0.00	L254/	0.00	L255/	0.00
L256/	0.00	L257/	0.00	L264/	0.00
L265/	0.00	L266/	0.00	L267/	0.00
L268/	0.00	L269/	0.00	L270/	0.00
L271/	0.00	L278/	0.00	L279/	0.00
L280/	0.00	L284/	0.00	L285/	0.18
L286/	0.00	L290/	0.00	L291/	0.00
L292/	0.08	L294/	0.00	L300/	0.00
L301/	0.00	L302/	0.00	L303/	0.00
L304/	0.00	L305/	0.00	L306/	0.00
L307/	0.32	L308/	0.18	L309/	0.00
L310/	0.00	L311/	0.00	L312/	0.00
L313/	0.00	L314/	0.00	L315/	0.00
L316/	0.00	L317/	0.00	L318/	0.00

L321/	0.00	L324/	0.00	L325/	0.00
L326/	0.00	L327/	0.00	L328/	0.00
L329/	0.18	L334/	0.00	L335/	0.00
L336/	0.00	L337/	0.08	L475/	0.00
L478/	0.00	L479/	0.00	L487/	0.25
L493/	0.00	L499/	0.00	L500/	0.00
L507/	0.00	L513/	0.00	L546/	0.00
L510/	0.13				

Conduit/ Hydraulic Radius

L210/	0.00	L211/	0.00	L212/	0.00
L213/	0.00	L214/	0.00	L217/	0.00
L220/	0.00	L221/	0.00	L222/	0.05
L223/	0.00	L224/	0.00	L225/	0.00
L226/	0.00	L227/	0.00	L228/	0.00
L229/	0.00	L230/	0.00	L231/	0.00
L232/	0.00	L233/	0.00	L234/	0.00
L235/	0.00	L236/	0.00	L237/	0.00
L238/	0.00	L239/	0.00	L240/	0.00
L241/	0.00	L242/	0.00	L243/	0.00
L246/	0.00	L247/	0.07	L248/	0.00
L249/	0.00	L250/	0.03	L251/	0.00
L259/	0.00	L260/	0.05	L261/	0.00
L262/	0.03	L263/	0.00	L272/	0.12
L273/	0.00	L274/	0.04	L275/	0.00
L277/	0.00	L281/	0.00	L282/	0.03
L283/	0.00	L287/	0.00	L289/	0.00
L319/	0.00	L320/	0.00	L338/	0.00
L339/	0.00	L340/	0.00	L341/	0.00
L342/	0.00	L343/	0.00	L344/	0.00
L346/	0.00	L347/	0.00	L348/	0.00
L349/	0.00	L350/	0.00	L351/	0.00
L352/	0.00	L354/	0.14	L361/	0.00
L362/	0.00	L363/	0.00	L364/	0.00
L365/	0.00	L366/	0.00	L367/	0.00
L368/	0.00	L369/	0.00	L370/	0.00
L373/	0.08	L374/	0.00	L375/	0.00
L376/	0.00	L386/	0.00	L387/	0.00
L388/	0.00	L389/	0.00	L390/	0.00
L391/	0.00	L392/	0.00	L393/	0.00
L395/	0.00	L396/	0.00	L397/	0.00
L398/	0.00	L399/	0.00	L402/	0.00
L403/	0.00	L404/	0.00	L405/	0.00
L406/	0.00	L407/	0.00	L408/	0.00
L410/	0.00	L411/	0.00	L413/	0.00
L415/	0.00	L417/	0.00	L418/	0.00
L419/	0.00	L420/	0.00	L421/	0.00
L422/	0.00	L423/	0.00	L424/	0.00
L425/	0.00	L426/	0.00	L427/	0.00
L428/	0.00	L429/	0.00	L430/	0.00
L431/	0.00	L432/	0.00	L435/	0.00
L436/	0.00	L437/	0.00	L438/	0.00
L439/	0.00	L440/	0.00	L441/	0.00
L442/	0.00	L443/	0.10	L446/	0.00
L448/	0.00	L449/	0.00	L450/	0.00
L451/	0.00	L452/	0.00	L453/	0.00
L454/	0.00	L466/	0.00	L468/	0.00
L470/	0.00	L471/	0.00	L472/	0.00
L490/	0.00	L496/	0.00	L497/	0.00
L498/	0.00	L501/	0.00	L502/	0.00

L503/	0.00	L504/	0.00	L505/	0.00
L506/	0.00	L509/	0.03	L511/	0.00
L512/	0.05	L514/	0.00	L515/	0.00
CH21/	0.00	L474/	0.00	L523/	0.00
L525/	0.00	L527/	0.00	L528/	0.00
L529/	0.00	L533/	0.00	L537/	0.00
L394/	0.15	L276/	0.00	L288/	0.03
L412/	0.00	L447/	0.00	L252/	0.00
L253/	0.00	L254/	0.00	L255/	0.00
L256/	0.00	L257/	0.00	L264/	0.00
L265/	0.00	L266/	0.00	L267/	0.00
L268/	0.00	L269/	0.00	L270/	0.00
L271/	0.00	L278/	0.00	L279/	0.00
L280/	0.00	L284/	0.00	L285/	0.04
L286/	0.00	L290/	0.00	L291/	0.00
L292/	0.03	L294/	0.00	L300/	0.00
L301/	0.00	L302/	0.00	L303/	0.00
L304/	0.00	L305/	0.00	L306/	0.00
L307/	0.05	L308/	0.04	L309/	0.00
L310/	0.00	L311/	0.00	L312/	0.00
L313/	0.00	L314/	0.00	L315/	0.00
L316/	0.00	L317/	0.00	L318/	0.00
L321/	0.00	L324/	0.00	L325/	0.00
L326/	0.00	L327/	0.00	L328/	0.00
L329/	0.04	L334/	0.00	L335/	0.00
L336/	0.00	L337/	0.03	L475/	0.00
L478/	0.00	L479/	0.00	L487/	0.05
L493/	0.00	L499/	0.00	L500/	0.00
L507/	0.00	L513/	0.00	L546/	0.00
L510/	0.03				

Conduit/ Upstream/ Downstream Elevation

L210/	104.44/	104.44	L211/	100.81/	100.81	L212/	96.97/	96.97
L213/	96.97/	96.97	L214/	96.97/	96.97	L217/	95.83/	95.83
L220/	95.83/	95.83	L221/	94.42/	94.42	L222/	94.42/	90.47
L223/	118.61/	118.61	L224/	117.26/	117.26	L225/	115.11/	115.11
L226/	116.62/	116.62	L227/	115.11/	115.11	L228/	111.36/	111.36
L229/	108.63/	108.63	L230/	105.86/	105.86	L231/	103.85/	103.85
L232/	101.68/	101.68	L233/	99.53/	99.53	L234/	97.87/	97.87
L235/	111.36/	111.36	L236/	103.85/	103.85	L237/	99.53/	99.53
L238/	113.06/	113.06	L239/	108.08/	108.08	L240/	108.08/	108.08
L241/	102.80/	102.80	L242/	102.80/	102.80	L243/	102.80/	102.80
L246/	97.16/	97.16	L247/	97.16/	99.55	L248/	97.16/	97.16
L249/	104.46/	104.46	L250/	104.46/	99.54	L251/	104.46/	104.46
L259/	95.58/	95.58	L260/	95.58/	90.48	L261/	93.44/	93.44
L262/	93.44/	83.91	L263/	93.44/	93.44	L272/	77.03/	83.90

L273/ 77.03/ 77.03 L274/ 91.92/ 83.90 L275/ 118.30/ 118.30
L277/ 118.30/ 118.30 L281/ 122.28/ 122.28 L282/ 122.28/ 113.42
L283/ 122.28/ 122.28 L287/ 112.26/ 112.26 L289/ 112.26/ 112.26
L319/ 100.00/ 100.00 L320/ 100.22/ 100.22 L338/ 126.13/ 126.13
L339/ 125.28/ 125.28 L340/ 125.01/ 125.01 L341/ 122.57/ 122.57
L342/ 125.28/ 125.28 L343/ 125.28/ 125.28 L344/ 123.67/ 123.67
L346/ 121.70/ 121.70 L347/ 121.34/ 121.34 L348/ 120.97/ 120.97
L349/ 120.60/ 120.60 L350/ 119.98/ 119.98 L351/ 122.82/ 122.82
L352/ 119.98/ 119.98 L354/ 119.27/ 122.58 L361/ 124.76/ 124.76
L362/ 124.76/ 124.76 L363/ 122.86/ 122.86 L364/ 122.86/ 122.86
L365/ 122.86/ 122.86 L366/ 121.95/ 121.95 L367/ 120.11/ 120.11
L368/ 120.11/ 120.11 L369/ 120.11/ 120.11 L370/ 119.83/ 119.83
L373/ 119.83/ 122.58 L374/ 117.68/ 117.68 L375/ 115.81/ 115.81
L376/ 115.81/ 115.81 L386/ 114.30/ 114.30 L387/ 113.48/ 113.48
L388/ 113.48/ 113.48 L389/ 113.17/ 113.17 L390/ 113.17/ 113.17
L391/ 112.78/ 112.78 L392/ 112.48/ 112.48 L393/ 112.12/ 112.12
L395/ 115.33/ 115.33 L396/ 115.33/ 115.33 L397/ 115.33/ 115.33
L398/ 115.83/ 115.83 L399/ 115.83/ 115.83 L402/ 112.00/ 112.00
L403/ 110.91/ 110.91 L404/ 109.13/ 109.13 L405/ 109.13/ 109.13
L406/ 108.26/ 108.26 L407/ 108.26/ 108.26 L408/ 107.45/ 107.45
L410/ 106.92/ 106.92 L411/ 106.02/ 106.02 L413/ 116.67/ 116.67
L415/ 118.07/ 118.07 L417/ 110.18/ 110.18 L418/ 110.18/ 110.18
L419/ 109.58/ 109.58 L420/ 108.15/ 108.15 L421/ 108.15/ 108.15
L422/ 108.15/ 108.15 L423/ 107.22/ 107.22 L424/ 106.02/ 106.02
L425/ 107.22/ 107.22 L426/ 107.22/ 107.22 L427/ 105.48/ 105.48
L428/ 105.48/ 105.48 L429/ 105.05/ 105.05 L430/ 117.99/ 117.99
L431/ 117.99/ 117.99 L432/ 120.74/ 120.74 L435/ 113.76/ 113.76
L436/ 111.68/ 111.68 L437/ 110.26/ 110.26 L438/ 110.26/ 110.26
L439/ 108.39/ 108.39 L440/ 105.05/ 105.05 L441/ 104.61/ 104.61
L442/ 104.11/ 104.11 L443/ 104.11/ 99.57 L446/ 126.19/ 126.19

L448/ 125.09/ 125.09 L449/ 123.59/ 123.59 L450/ 118.66/ 118.66
L451/ 117.71/ 117.71 L452/ 123.59/ 123.59 L453/ 123.59/ 123.59
L454/ 118.66/ 118.66 L466/ 118.57/ 118.57 L468/ 117.57/ 117.57
L470/ 121.41/ 121.41 L471/ 121.90/ 121.90 L472/ 126.04/ 126.04
L490/ 108.11/ 108.11 L496/ 131.17/ 131.17 L497/ 131.17/ 131.17
L498/ 130.60/ 130.60 L501/ 122.66/ 122.66 L502/ 121.70/ 121.70
L503/ 119.64/ 119.64 L504/ 119.27/ 119.27 L505/ 99.71/ 99.71
L506/ 97.87/ 97.87 L509/ 107.85/ 97.64 L511/ 108.11/ 108.11
L512/ 108.11/ 97.42 L514/ 125.09/ 125.09 L515/ 114.60/ 114.60
CH21/ 116.31/ 116.31 L474/ 118.00/ 118.00 L523/ 118.43/ 118.43
L525/ 114.60/ 114.60 L527/ 113.48/ 113.48 L528/ 112.78/ 112.78
L529/ 112.09/ 112.09 L533/ 109.64/ 109.64 L537/ 107.45/ 107.45
L394/ 112.12/ 115.63 L276/ 110.72/ 110.72 L288/ 112.26/ 108.83
L412/ 116.67/ 116.67 L447/ 126.19/ 126.19 L252/ 97.55/ 97.55
L253/ 100.33/ 100.33 L254/ 97.55/ 97.55 L255/ 98.55/ 98.55
L256/ 97.55/ 97.55 L257/ 96.35/ 96.35 L264/ 83.24/ 83.24
L265/ 82.77/ 82.77 L266/ 82.50/ 82.50 L267/ 82.77/ 82.77
L268/ 94.45/ 94.45 L269/ 82.50/ 82.50 L270/ 78.46/ 78.46
L271/ 77.03/ 77.03 L278/ 112.96/ 112.96 L279/ 110.10/ 110.10
L280/ 112.96/ 112.96 L284/ 104.72/ 104.72 L285/ 104.72/ 108.64
L286/ 104.72/ 104.72 L290/ 101.79/ 101.79 L291/ 99.61/ 99.61
L292/ 99.61/ 99.57 L294/ 87.74/ 87.74 L300/ 87.74/ 87.74
L301/ 89.28/ 89.28 L302/ 86.67/ 86.67 L303/ 89.77/ 89.77
L304/ 89.77/ 89.77 L305/ 89.28/ 89.28 L306/ 93.44/ 93.44
L307/ 93.44/ 97.64 L308/ 93.44/ 97.64 L309/ 93.44/ 93.44
L310/ 108.51/ 108.51 L311/ 106.18/ 106.18 L312/ 106.18/ 106.18
L313/ 102.28/ 102.28 L314/ 102.28/ 102.28 L315/ 104.47/ 104.47
L316/ 102.28/ 102.28 L317/ 101.25/ 101.25 L318/ 100.22/ 100.22
L321/ 117.69/ 117.69 L324/ 118.45/ 118.45 L325/ 117.19/ 117.19
L326/ 116.17/ 116.17 L327/ 116.17/ 116.17 L328/ 115.65/ 115.65

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            L329/   115.65/   113.42            L334/   122.98/   122.98            L335/   120.82/
120.82
            L336/   120.09/   120.09            L337/   120.09/   115.34            L475/    87.74/
87.74
            L478/    85.47/    85.47            L479/    84.31/    84.31            L487/    95.54/
97.42
            L493/    83.95/    83.95            L499/   117.19/   117.19            L500/   116.17/
116.17
            L507/    90.68/    90.68            L513/    83.24/    83.24            L546/    86.67/
86.67
            L510/   102.21/    97.42

 ######## Important Information ########
 Start time of user hydrographs was...    0.000000000000000E+000
 Start time of the simulation was.....    0.000000000000000E+000
 Found a match between user hydrograph and simulation start time.

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 ===> System inflows (data group K3) at     0.00 hours ( Junction / Inflow,cfs )

 N221      / 0.00E+00 N222      / 0.00E+00 N223      / 0.00E+00 N224      / 0.00E+00 N227      /
0.00E+00 N228      / 0.00E+00
 N230      / 0.00E+00 N231      / 0.00E+00 N233      / 0.00E+00 N234      / 0.00E+00 N235      /
0.00E+00 N236      / 0.00E+00
 N237      / 0.00E+00 N238      / 0.00E+00 N239      / 0.00E+00 N240      / 0.00E+00 N241      /
0.00E+00 N242      / 0.00E+00
 N243      / 0.00E+00 N244      / 0.00E+00 N245      / 0.00E+00 N246      / 0.00E+00 N247      /
0.00E+00 N248      / 0.00E+00
 N249      / 0.00E+00 N250      / 0.00E+00 N251      / 0.00E+00 N252      / 0.00E+00 N253      /
0.00E+00 N254      / 0.00E+00
 N255      / 0.00E+00 N256      / 0.00E+00 N257      / 0.00E+00 N259      / 0.00E+00 N260      /
0.00E+00 N261      / 0.00E+00
 N262      / 0.00E+00 N263      / 0.00E+00 N264      / 0.00E+00 N265      / 0.00E+00 N272      /
0.00E+00 N273      / 0.00E+00
 N274      / 0.00E+00 N275      / 0.00E+00 N276      / 0.00E+00 N277      / 0.00E+00 N278      /
0.00E+00 N279      / 0.00E+00
 N288      / 0.00E+00 N289      / 0.00E+00 N290      / 0.00E+00 N291      / 0.00E+00 N292      /
0.00E+00 N293      / 0.00E+00
 N294      / 0.00E+00 N296      / 0.00E+00 N301      / 0.00E+00 N302      / 0.00E+00 N303      /
0.00E+00 N304      / 0.00E+00
 N309      / 0.00E+00 N310      / 0.00E+00 N312      / 0.00E+00 N342      / 0.00E+00 N343      /
0.00E+00 N344      / 0.00E+00
 N345      / 0.00E+00 N361      / 0.00E+00 N362      / 0.00E+00 N363      / 0.00E+00 N364      /
0.00E+00 N365      / 0.00E+00
 N366      / 0.00E+00 N367      / 0.00E+00 N368      / 0.00E+00 N369      / 0.00E+00 N370      /
0.00E+00 N371      / 0.00E+00
 N372      / 0.00E+00 N373      / 0.00E+00 N374      / 0.00E+00 N375      / 0.00E+00 N376      /
0.00E+00 N377      / 0.00E+00
 N378      / 0.00E+00 N379      / 0.00E+00 N381      / 0.00E+00 N382      / 0.00E+00 N383      /
0.00E+00 N384      / 0.00E+00
 N386      / 0.00E+00 N387      / 0.00E+00 N388      / 0.00E+00 N389      / 0.00E+00 N390      /
0.00E+00 N391      / 0.00E+00
 N392      / 0.00E+00 N394      / 0.00E+00 N395      / 0.00E+00 N396      / 0.00E+00 N397      /
0.00E+00 N398      / 0.00E+00
 N399      / 0.00E+00 N403      / 0.00E+00 N404      / 0.00E+00 N405      / 0.00E+00 N406      /
0.00E+00 N407      / 0.00E+00
 N408      / 0.00E+00 N409      / 0.00E+00 N410      / 0.00E+00 N412      / 0.00E+00 N413      /
0.00E+00 N414      / 0.00E+00
 N415      / 0.00E+00 N416      / 0.00E+00 N417      / 0.00E+00 N418      / 0.00E+00 N419      /
0.00E+00 N420      / 0.00E+00
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 N421      / 0.00E+00 N422      / 0.00E+00 N423      / 0.00E+00 N424      / 0.00E+00 N425      /
0.00E+00 N426      / 0.00E+00
 N428      / 0.00E+00 N429      / 0.00E+00 N430      / 0.00E+00 N431      / 0.00E+00 N432      /
0.00E+00 N434      / 0.00E+00
 N435      / 0.00E+00 N436      / 0.00E+00 N437      / 0.00E+00 N438      / 0.00E+00 N439      /
0.00E+00 N440      / 0.00E+00
 N441      / 0.00E+00 N442      / 0.00E+00 N443      / 0.00E+00 N444      / 0.00E+00 N445      /
0.00E+00 N446      / 0.00E+00
 N447      / 0.00E+00 N448      / 0.00E+00 N449      / 0.00E+00 N450      / 0.00E+00 N451      /
0.00E+00 N453      / 0.00E+00
 N454      / 0.00E+00 N455      / 0.00E+00 N456      / 0.00E+00 N457      / 0.00E+00 N458      /
0.00E+00 N459      / 0.00E+00
 N460      / 0.00E+00 N461      / 0.00E+00 N464      / 0.00E+00 N465      / 0.00E+00 N466      /
0.00E+00 N467      / 0.00E+00
 N468      / 0.00E+00 N469      / 0.00E+00 N470      / 0.00E+00 N471      / 0.00E+00 N472      /
0.00E+00 N473      / 0.00E+00
 N487      / 0.00E+00 N489      / 0.00E+00 N490      / 0.00E+00 N491      / 0.00E+00 N492      /
0.00E+00 N493      / 0.00E+00
 N497      / 0.00E+00 N499      / 0.00E+00 N509      / 0.00E+00 N513      / 0.00E+00 N514      /
0.00E+00 N516      / 0.00E+00
 N524      / 0.00E+00 N525      / 0.00E+00 N526      / 0.00E+00 N527      / 0.00E+00 N528      /
0.00E+00 N529      / 0.00E+00
 N530      / 0.00E+00 N689      / 0.00E+00 N494      / 0.00E+00 N541      / 0.00E+00 EL329     /
0.00E+00 N427      / 0.00E+00
 N411      / 0.00E+00 N295      / 0.00E+00 N311      / 0.00E+00 N462      / 0.00E+00 N266      /
0.00E+00 N267      / 0.00E+00
 N268      / 0.00E+00 N269      / 0.00E+00 N270      / 0.00E+00 N271      / 0.00E+00 N280      /
0.00E+00 N281      / 0.00E+00
 N282      / 0.00E+00 N283      / 0.00E+00 N284      / 0.00E+00 N285      / 0.00E+00 N286      /
0.00E+00 N287      / 0.00E+00
 N297      / 0.00E+00 N298      / 0.00E+00 N299      / 0.00E+00 N300      / 0.00E+00 N305      /
0.00E+00 N306      / 0.00E+00
 N307      / 0.00E+00 N308      / 0.00E+00 N313      / 0.00E+00 N314      / 0.00E+00 N315      /
0.00E+00 N316      / 0.00E+00
 N317      / 0.00E+00 N318      / 0.00E+00 N319      / 0.00E+00 N320      / 0.00E+00 N321      /
0.00E+00 N325      / 0.00E+00
 N326      / 0.00E+00 N327      / 0.00E+00 N328      / 0.00E+00 N329      / 0.00E+00 N330      /
0.00E+00 N331      / 0.00E+00
 N332      / 0.00E+00 N333      / 0.00E+00 N334      / 0.00E+00 N335      / 0.00E+00 N336      /
0.00E+00 N337      / 0.00E+00
 N338      / 0.00E+00 N339      / 0.00E+00 N340      / 0.00E+00 N341      / 0.00E+00 N347      /
0.00E+00 N348      / 0.00E+00
 N349      / 0.00E+00 N350      / 0.00E+00 N351      / 0.00E+00 N352      / 0.00E+00 N353      /
0.00E+00 N354      / 0.00E+00
 N355      / 0.00E+00 N356      / 0.00E+00 N357      / 0.00E+00 N358      / 0.00E+00 N359      /
0.00E+00 N360      / 0.00E+00
 N500      / 0.00E+00 N501      / 0.00E+00 N503      / 0.00E+00 N504      / 0.00E+00 N506      /
0.00E+00 N517      / 0.00E+00
 N518      / 0.00E+00 N554      / 0.00E+00 N511      / 0.00E+00 N555      / 0.00E+00
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 ===> System inflows (data group K3) at     0.02 hours ( Junction / Inflow,cfs )

 N221      / 2.40E-01 N222      / 2.03E-02 N223      / 1.35E-02 N224      / 1.02E-02 N227      /
2.07E-01 N228      / 4.46E-01
 N230      / 8.21E-02 N231      / 7.89E-02 N233      / 1.48E-02 N234      / 0.00E+00 N235      /
1.91E-02 N236      / 0.00E+00
 N237      / 0.00E+00 N238      / 5.59E-02 N239      / 3.49E-02 N240      / 5.44E-02 N241      /
8.30E-04 N242      / 4.26E-02
 N243      / 2.84E-02 N244      / 9.25E-03 N245      / 2.40E-02 N246      / 2.66E-04 N247      /
3.36E-01 N248      / 3.72E-02
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 N249      / 1.76E-01 N250      / 2.56E-01 N251      / 3.07E-01 N252      / 3.07E-02 N253      /
5.24E-03 N254      / 1.03E-01
 N255      / 7.46E-02 N256      / 1.54E-01 N257      / 2.06E-01 N259      / 2.04E-01 N260      /
0.00E+00 N261      / 1.65E-01
 N262      / 1.31E-01 N263      / 9.62E-03 N264      / 0.00E+00 N265      / 1.08E-01 N272      /
1.53E-02 N273      / 7.08E-02
 N274      / 1.62E-02 N275      / 1.31E-02 N276      / 8.13E-02 N277      / 1.04E-02 N278      /
0.00E+00 N279      / 9.96E-02
 N288      / 7.60E-02 N289      / 0.00E+00 N290      / 7.84E-01 N291      / 7.10E-01 N292      /
0.00E+00 N293      / 1.25E-01
 N294      / 1.07E-02 N296      / 1.25E-01 N301      / 2.84E-01 N302      / 8.22E-03 N303      /
0.00E+00 N304      / 1.24E-01
 N309      / 1.51E-01 N310      / 5.80E-03 N312      / 1.88E-01 N342      / 9.94E-03 N343      /
0.00E+00 N344      / 1.56E-01
 N345      / 4.22E-02 N361      / 1.76E+00 N362      / 0.00E+00 N363      / 1.41E-01 N364      /
0.00E+00 N365      / 0.00E+00
 N366      / 3.81E-01 N367      / 2.19E-01 N368      / 1.02E+00 N369      / 0.00E+00 N370      /
1.53E+00 N371      / 2.12E+00
 N372      / 0.00E+00 N373      / 0.00E+00 N374      / 0.00E+00 N375      / 7.35E-01 N376      /
6.85E-01 N377      / 0.00E+00
 N378      / 0.00E+00 N379      / 0.00E+00 N381      / 4.30E-03 N382      / 8.31E-02 N383      /
1.92E-01 N384      / 1.79E-01
 N386      / 2.20E-01 N387      / 1.36E-01 N388      / 0.00E+00 N389      / 2.94E-01 N390      /
1.89E-01 N391      / 2.90E-01
 N392      / 0.00E+00 N394      / 0.00E+00 N395      / 2.78E-01 N396      / 0.00E+00 N397      /
6.16E-03 N398      / 1.59E-01
 N399      / 1.49E-01 N403      / 0.00E+00 N404      / 5.79E-01 N405      / 1.85E-01 N406      /
2.70E-01 N407      / 1.33E-01
 N408      / 4.54E-01 N409      / 0.00E+00 N410      / 0.00E+00 N412      / 3.52E-01 N413      /
0.00E+00 N414      / 0.00E+00
 N415      / 3.80E-01 N416      / 3.59E-01 N417      / 0.00E+00 N418      / 3.36E-01 N419      /
0.00E+00 N420      / 5.91E-01
 N421      / 0.00E+00 N422      / 0.00E+00 N423      / 4.03E-01 N424      / 0.00E+00 N425      /
3.17E-01 N426      / 0.00E+00
 N428      / 0.00E+00 N429      / 1.58E-01 N430      / 1.86E-01 N431      / 8.47E-04 N432      /
0.00E+00 N434      / 1.88E-01
 N435      / 0.00E+00 N436      / 2.36E-01 N437      / 4.29E-01 N438      / 0.00E+00 N439      /
1.37E-02 N440      / 1.38E-01
 N441      / 3.16E-01 N442      / 0.00E+00 N443      / 7.73E-02 N444      / 3.29E-01 N445      /
7.87E-02 N446      / 7.80E-02
 N447      / 1.58E-01 N448      / 2.03E-01 N449      / 1.49E-04 N450      / 0.00E+00 N451      /
1.89E-01 N453      / 0.00E+00
 N454      / 2.38E-01 N455      / 0.00E+00 N456      / 8.38E-04 N457      / 1.39E-01 N458      /
0.00E+00 N459      / 0.00E+00
 N460      / 0.00E+00 N461      / 0.00E+00 N464      / 4.10E-02 N465      / 4.91E-01 N466      /
0.00E+00 N467      / 8.06E-02
 N468      / 1.38E-01 N469      / 5.39E-02 N470      / 0.00E+00 N471      / 1.07E-01 N472      /
7.74E-02 N473      / 5.63E-02
 N487      / 0.00E+00 N489      / 0.00E+00 N490      / 7.55E-01 N491      / 3.17E-02 N492      /
3.70E-01 N493      / 0.00E+00
 N497      / 2.48E-01 N499      / 0.00E+00 N509      / 9.16E-01 N513      / 5.57E-01 N514      /
1.26E-02 N516      / 0.00E+00
 N524      / 5.03E-02 N525      / 0.00E+00 N526      / 4.97E-02 N527      / 2.73E-02 N528      /
0.00E+00 N529      / 0.00E+00
 N530      / 2.50E-02 N689      / 0.00E+00 N494      / 0.00E+00 N541      / 0.00E+00 EL329     /
3.60E-01 N427      / 0.00E+00
 N411      / 0.00E+00 N295      / 0.00E+00 N311      / 0.00E+00 N462      / 1.76E-01 N266      /
9.36E-03 N267      / 7.84E-03
 N268      / 1.44E-01 N269      / 0.00E+00 N270      / 3.29E-01 N271      / 6.40E-02 N280      /
3.14E-01 N281      / 3.53E-02
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 N282      / 5.21E-03 N283      / 9.75E-02 N284      / 7.11E-02 N285      / 2.20E-01 N286      /
2.23E-02 N287      / 0.00E+00
 N297      / 1.30E-01 N298      / 1.00E-02 N299      / 0.00E+00 N300      / 1.30E-01 N305      /
1.30E-01 N306      / 1.08E-02
 N307      / 0.00E+00 N308      / 1.17E-01 N313      / 1.44E-02 N314      / 2.25E-02 N315      /
5.86E-02 N316      / 0.00E+00
 N317      / 3.62E-01 N318      / 5.93E-02 N319      / 1.16E-01 N320      / 1.41E-02 N321      /
1.55E-01 N325      / 0.00E+00
 N326      / 7.06E-02 N327      / 2.04E-01 N328      / 4.17E-02 N329      / 2.34E-01 N330      /
1.83E-02 N331      / 0.00E+00
 N332      / 2.24E-01 N333      / 1.33E-01 N334      / 0.00E+00 N335      / 9.70E-03 N336      /
1.06E-01 N337      / 2.42E-02
 N338      / 1.06E-01 N339      / 1.35E-01 N340      / 0.00E+00 N341      / 0.00E+00 N347      /
0.00E+00 N348      / 1.64E-02
 N349      / 1.42E-01 N350      / 1.35E-01 N351      / 9.23E-03 N352      / 1.63E-01 N353      /
1.84E-01 N354      / 0.00E+00
 N355      / 0.00E+00 N356      / 3.54E-02 N357      / 3.59E-02 N358      / 3.59E-02 N359      /
0.00E+00 N360      / 0.00E+00
 N500      / 2.05E-01 N501      / 0.00E+00 N503      / 0.00E+00 N504      / 8.94E-01 N506      /
3.15E-01 N517      / 1.07E-02
 N518      / 0.00E+00 N554      / 0.00E+00 N511      / 4.25E-01 N555      / 0.00E+00
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 ===> System inflows (data group K3) at     0.08 hours ( Junction / Inflow,cfs )

 N221      / 2.89E+00 N222      / 2.44E-01 N223      / 1.62E-01 N224      / 1.23E-01 N227      /
2.49E+00 N228      / 5.37E+00
 N230      / 9.89E-01 N231      / 9.50E-01 N233      / 1.78E-01 N234      / 0.00E+00 N235      /
2.31E-01 N236      / 0.00E+00
 N237      / 0.00E+00 N238      / 6.74E-01 N239      / 4.21E-01 N240      / 6.55E-01 N241      /
1.00E-02 N242      / 5.13E-01
 N243      / 3.42E-01 N244      / 1.12E-01 N245      / 2.90E-01 N246      / 3.20E-03 N247      /
4.05E+00 N248      / 4.48E-01
 N249      / 2.13E+00 N250      / 3.08E+00 N251      / 3.69E+00 N252      / 3.70E-01 N253      /
6.31E-02 N254      / 1.24E+00
 N255      / 8.98E-01 N256      / 1.85E+00 N257      / 2.48E+00 N259      / 2.46E+00 N260      /
0.00E+00 N261      / 1.98E+00
 N262      / 1.58E+00 N263      / 1.16E-01 N264      / 0.00E+00 N265      / 1.30E+00 N272      /
1.84E-01 N273      / 8.53E-01
 N274      / 1.95E-01 N275      / 1.58E-01 N276      / 9.79E-01 N277      / 1.25E-01 N278      /
0.00E+00 N279      / 1.20E+00
 N288      / 9.16E-01 N289      / 0.00E+00 N290      / 9.45E+00 N291      / 8.56E+00 N292      /
0.00E+00 N293      / 1.51E+00
 N294      / 1.29E-01 N296      / 1.51E+00 N301      / 3.42E+00 N302      / 9.90E-02 N303      /
0.00E+00 N304      / 1.50E+00
 N309      / 1.82E+00 N310      / 6.99E-02 N312      / 2.26E+00 N342      / 1.20E-01 N343      /
0.00E+00 N344      / 1.88E+00
 N345      / 5.08E-01 N361      / 2.13E+01 N362      / 0.00E+00 N363      / 1.70E+00 N364      /
0.00E+00 N365      / 0.00E+00
 N366      / 4.59E+00 N367      / 2.63E+00 N368      / 1.23E+01 N369      / 0.00E+00 N370      /
1.84E+01 N371      / 2.56E+01
 N372      / 0.00E+00 N373      / 0.00E+00 N374      / 0.00E+00 N375      / 8.86E+00 N376      /
8.25E+00 N377      / 0.00E+00
 N378      / 0.00E+00 N379      / 0.00E+00 N381      / 5.18E-02 N382      / 1.00E+00 N383      /
2.31E+00 N384      / 2.16E+00
 N386      / 2.65E+00 N387      / 1.64E+00 N388      / 0.00E+00 N389      / 3.54E+00 N390      /
2.28E+00 N391      / 3.49E+00
 N392      / 0.00E+00 N394      / 0.00E+00 N395      / 3.35E+00 N396      / 0.00E+00 N397      /
7.42E-02 N398      / 1.92E+00
 N399      / 1.80E+00 N403      / 0.00E+00 N404      / 6.97E+00 N405      / 2.23E+00 N406      /
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3.25E+00 N407 / 1.61E+00
N408 / 5.48E+00 N409 / 0.00E+00 N410 / 0.00E+00 N412 / 4.24E+00 N413 /
0.00E+00 N414 / 0.00E+00
N415 / 4.58E+00 N416 / 4.32E+00 N417 / 0.00E+00 N418 / 4.05E+00 N419 /
0.00E+00 N420 / 7.12E+00
N421 / 0.00E+00 N422 / 0.00E+00 N423 / 4.85E+00 N424 / 0.00E+00 N425 /
3.83E+00 N426 / 0.00E+00
N428 / 0.00E+00 N429 / 1.91E+00 N430 / 2.24E+00 N431 / 1.02E-02 N432 /
0.00E+00 N434 / 2.27E+00
N435 / 0.00E+00 N436 / 2.85E+00 N437 / 5.17E+00 N438 / 0.00E+00 N439 /
1.65E-01 N440 / 1.66E+00
N441 / 3.80E+00 N442 / 0.00E+00 N443 / 9.32E-01 N444 / 3.97E+00 N445 /
9.48E-01 N446 / 9.39E-01
N447 / 1.91E+00 N448 / 2.45E+00 N449 / 1.80E-03 N450 / 0.00E+00 N451 /
2.28E+00 N453 / 0.00E+00
N454 / 2.87E+00 N455 / 0.00E+00 N456 / 1.01E-02 N457 / 1.67E+00 N458 /
0.00E+00 N459 / 0.00E+00
N460 / 0.00E+00 N461 / 0.00E+00 N464 / 4.94E-01 N465 / 5.92E+00 N466 /
0.00E+00 N467 / 9.71E-01
N468 / 1.66E+00 N469 / 6.49E-01 N470 / 0.00E+00 N471 / 1.29E+00 N472 /
9.32E-01 N473 / 6.79E-01
N487 / 0.00E+00 N489 / 0.00E+00 N490 / 9.10E+00 N491 / 3.82E-01 N492 /
4.46E+00 N493 / 0.00E+00
N497 / 2.99E+00 N499 / 0.00E+00 N509 / 1.10E+01 N513 / 6.72E+00 N514 /
1.52E-01 N516 / 0.00E+00
N524 / 6.06E-01 N525 / 0.00E+00 N526 / 5.99E-01 N527 / 3.29E-01 N528 /
0.00E+00 N529 / 0.00E+00
N530 / 3.01E-01 N689 / 0.00E+00 N494 / 0.00E+00 N541 / 0.00E+00 EL329 /
4.34E+00 N427 / 0.00E+00
N411 / 0.00E+00 N295 / 0.00E+00 N311 / 0.00E+00 N462 / 2.13E+00 N266 /
1.13E-01 N267 / 9.44E-02
N268 / 1.74E+00 N269 / 0.00E+00 N270 / 3.96E+00 N271 / 7.71E-01 N280 /
3.79E+00 N281 / 4.26E-01
N282 / 6.28E-02 N283 / 1.17E+00 N284 / 8.57E-01 N285 / 2.66E+00 N286 /
2.69E-01 N287 / 0.00E+00
N297 / 1.56E+00 N298 / 1.20E-01 N299 / 0.00E+00 N300 / 1.57E+00 N305 /
1.57E+00 N306 / 1.31E-01
N307 / 0.00E+00 N308 / 1.41E+00 N313 / 1.73E-01 N314 / 2.71E-01 N315 /
7.07E-01 N316 / 0.00E+00
N317 / 4.36E+00 N318 / 7.15E-01 N319 / 1.40E+00 N320 / 1.70E-01 N321 /
1.87E+00 N325 / 0.00E+00
N326 / 8.51E-01 N327 / 2.46E+00 N328 / 5.03E-01 N329 / 2.82E+00 N330 /
2.21E-01 N331 / 0.00E+00
N332 / 2.69E+00 N333 / 1.60E+00 N334 / 0.00E+00 N335 / 1.17E-01 N336 /
1.28E+00 N337 / 2.92E-01
N338 / 1.28E+00 N339 / 1.62E+00 N340 / 0.00E+00 N341 / 0.00E+00 N347 /
0.00E+00 N348 / 1.98E-01
N349 / 1.71E+00 N350 / 1.63E+00 N351 / 1.11E-01 N352 / 1.96E+00 N353 /
2.21E+00 N354 / 0.00E+00
N355 / 0.00E+00 N356 / 4.26E-01 N357 / 4.32E-01 N358 / 4.33E-01 N359 /
0.00E+00 N360 / 0.00E+00
N500 / 2.47E+00 N501 / 0.00E+00 N503 / 0.00E+00 N504 / 1.08E+01 N506 /
3.80E+00 N517 / 1.29E-01
N518 / 0.00E+00 N554 / 0.00E+00 N511 / 5.12E+00 N555 / 0.00E+00
# #
# #
===> System inflows (data group K3) at 1.02 hours (Junction / Inflow,cfs)

N221 / 2.89E+00 N222 / 2.44E-01 N223 / 1.62E-01 N224 / 1.23E-01 N227 /
2.49E+00 N228 / 5.37E+00

N230 / 9.89E-01 N231 / 9.50E-01 N233 / 1.78E-01 N234 / 0.00E+00 N235 / 2.31E-01 N236 / 0.00E+00
N237 / 0.00E+00 N238 / 6.74E-01 N239 / 4.21E-01 N240 / 6.55E-01 N241 / 1.00E-02 N242 / 5.13E-01
N243 / 3.42E-01 N244 / 1.12E-01 N245 / 2.90E-01 N246 / 3.20E-03 N247 / 4.05E+00 N248 / 4.48E-01
N249 / 2.13E+00 N250 / 3.08E+00 N251 / 3.69E+00 N252 / 3.70E-01 N253 / 6.31E-02 N254 / 1.24E+00
N255 / 8.98E-01 N256 / 1.85E+00 N257 / 2.48E+00 N259 / 2.46E+00 N260 / 0.00E+00 N261 / 1.98E+00
N262 / 1.58E+00 N263 / 1.16E-01 N264 / 0.00E+00 N265 / 1.30E+00 N272 / 1.84E-01 N273 / 8.53E-01
N274 / 1.95E-01 N275 / 1.58E-01 N276 / 9.79E-01 N277 / 1.25E-01 N278 / 0.00E+00 N279 / 1.20E+00
N288 / 9.16E-01 N289 / 0.00E+00 N290 / 9.45E+00 N291 / 8.56E+00 N292 / 0.00E+00 N293 / 1.51E+00
N294 / 1.29E-01 N296 / 1.51E+00 N301 / 3.42E+00 N302 / 9.90E-02 N303 / 0.00E+00 N304 / 1.50E+00
N309 / 1.82E+00 N310 / 6.99E-02 N312 / 2.26E+00 N342 / 1.20E-01 N343 / 0.00E+00 N344 / 1.88E+00
N345 / 5.08E-01 N361 / 2.13E+01 N362 / 0.00E+00 N363 / 1.70E+00 N364 / 0.00E+00 N365 / 0.00E+00
N366 / 4.59E+00 N367 / 2.63E+00 N368 / 1.23E+01 N369 / 0.00E+00 N370 / 1.84E+01 N371 / 2.56E+01
N372 / 0.00E+00 N373 / 0.00E+00 N374 / 0.00E+00 N375 / 8.86E+00 N376 / 8.25E+00 N377 / 0.00E+00
N378 / 0.00E+00 N379 / 0.00E+00 N381 / 5.18E-02 N382 / 1.00E+00 N383 / 2.31E+00 N384 / 2.16E+00
N386 / 2.65E+00 N387 / 1.64E+00 N388 / 0.00E+00 N389 / 3.54E+00 N390 / 2.28E+00 N391 / 3.49E+00
N392 / 0.00E+00 N394 / 0.00E+00 N395 / 3.35E+00 N396 / 0.00E+00 N397 / 7.42E-02 N398 / 1.92E+00
N399 / 1.80E+00 N403 / 0.00E+00 N404 / 6.97E+00 N405 / 2.23E+00 N406 / 3.25E+00 N407 / 1.61E+00
N408 / 5.48E+00 N409 / 0.00E+00 N410 / 0.00E+00 N412 / 4.24E+00 N413 / 0.00E+00 N414 / 0.00E+00
N415 / 4.58E+00 N416 / 4.32E+00 N417 / 0.00E+00 N418 / 4.05E+00 N419 / 0.00E+00 N420 / 7.12E+00
N421 / 0.00E+00 N422 / 0.00E+00 N423 / 4.85E+00 N424 / 0.00E+00 N425 / 3.83E+00 N426 / 0.00E+00
N428 / 0.00E+00 N429 / 1.91E+00 N430 / 2.24E+00 N431 / 1.02E-02 N432 / 0.00E+00 N434 / 2.27E+00
N435 / 0.00E+00 N436 / 2.85E+00 N437 / 5.17E+00 N438 / 0.00E+00 N439 / 1.65E-01 N440 / 1.66E+00
N441 / 3.80E+00 N442 / 0.00E+00 N443 / 9.32E-01 N444 / 3.97E+00 N445 / 9.48E-01 N446 / 9.39E-01
N447 / 1.91E+00 N448 / 2.45E+00 N449 / 1.80E-03 N450 / 0.00E+00 N451 / 2.28E+00 N453 / 0.00E+00
N454 / 2.87E+00 N455 / 0.00E+00 N456 / 1.01E-02 N457 / 1.67E+00 N458 / 0.00E+00 N459 / 0.00E+00
N460 / 0.00E+00 N461 / 0.00E+00 N464 / 4.94E-01 N465 / 5.92E+00 N466 / 0.00E+00 N467 / 9.71E-01
N468 / 1.66E+00 N469 / 6.49E-01 N470 / 0.00E+00 N471 / 1.29E+00 N472 / 9.32E-01 N473 / 6.79E-01
N487 / 0.00E+00 N489 / 0.00E+00 N490 / 9.10E+00 N491 / 3.82E-01 N492 / 4.46E+00 N493 / 0.00E+00
N497 / 2.99E+00 N499 / 0.00E+00 N509 / 1.10E+01 N513 / 6.72E+00 N514 / 1.52E-01 N516 / 0.00E+00
N524 / 6.06E-01 N525 / 0.00E+00 N526 / 5.99E-01 N527 / 3.29E-01 N528 / 0.00E+00 N529 / 0.00E+00

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 N530      / 3.01E-01 N689      / 0.00E+00 N494      / 0.00E+00 N541      / 0.00E+00 EL329     /
4.34E+00 N427      / 0.00E+00
 N411      / 0.00E+00 N295      / 0.00E+00 N311      / 0.00E+00 N462      / 2.13E+00 N266      /
1.13E-01 N267      / 9.44E-02
 N268      / 1.74E+00 N269      / 0.00E+00 N270      / 3.96E+00 N271      / 7.71E-01 N280      /
3.79E+00 N281      / 4.26E-01
 N282      / 6.28E-02 N283      / 1.17E+00 N284      / 8.57E-01 N285      / 2.66E+00 N286      /
2.69E-01 N287      / 0.00E+00
 N297      / 1.56E+00 N298      / 1.20E-01 N299      / 0.00E+00 N300      / 1.57E+00 N305      /
1.57E+00 N306      / 1.31E-01
 N307      / 0.00E+00 N308      / 1.41E+00 N313      / 1.73E-01 N314      / 2.71E-01 N315      /
7.07E-01 N316      / 0.00E+00
 N317      / 4.36E+00 N318      / 7.15E-01 N319      / 1.40E+00 N320      / 1.70E-01 N321      /
1.87E+00 N325      / 0.00E+00
 N326      / 8.51E-01 N327      / 2.46E+00 N328      / 5.03E-01 N329      / 2.82E+00 N330      /
2.21E-01 N331      / 0.00E+00
 N332      / 2.69E+00 N333      / 1.60E+00 N334      / 0.00E+00 N335      / 1.17E-01 N336      /
1.28E+00 N337      / 2.92E-01
 N338      / 1.28E+00 N339      / 1.62E+00 N340      / 0.00E+00 N341      / 0.00E+00 N347      /
0.00E+00 N348      / 1.98E-01
 N349      / 1.71E+00 N350      / 1.63E+00 N351      / 1.11E-01 N352      / 1.96E+00 N353      /
2.21E+00 N354      / 0.00E+00
 N355      / 0.00E+00 N356      / 4.26E-01 N357      / 4.32E-01 N358      / 4.33E-01 N359      /
0.00E+00 N360      / 0.00E+00
 N500      / 2.47E+00 N501      / 0.00E+00 N503      / 0.00E+00 N504      / 1.08E+01 N506      /
3.80E+00 N517      / 1.29E-01
 N518      / 0.00E+00 N554      / 0.00E+00 N511      / 5.12E+00 N555      / 0.00E+00
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
 ===> System inflows (data group K3) at     2.00 hours ( Junction / Inflow,cfs )

 N221      / 2.89E+00 N222      / 2.44E-01 N223      / 1.62E-01 N224      / 1.23E-01 N227      /
2.49E+00 N228      / 5.37E+00
 N230      / 9.89E-01 N231      / 9.50E-01 N233      / 1.78E-01 N234      / 0.00E+00 N235      /
2.31E-01 N236      / 0.00E+00
 N237      / 0.00E+00 N238      / 6.74E-01 N239      / 4.21E-01 N240      / 6.55E-01 N241      /
1.00E-02 N242      / 5.13E-01
 N243      / 3.42E-01 N244      / 1.12E-01 N245      / 2.90E-01 N246      / 3.20E-03 N247      /
4.05E+00 N248      / 4.48E-01
 N249      / 2.13E+00 N250      / 3.08E+00 N251      / 3.69E+00 N252      / 3.70E-01 N253      /
6.31E-02 N254      / 1.24E+00
 N255      / 8.98E-01 N256      / 1.85E+00 N257      / 2.48E+00 N259      / 2.46E+00 N260      /
0.00E+00 N261      / 1.98E+00
 N262      / 1.58E+00 N263      / 1.16E-01 N264      / 0.00E+00 N265      / 1.30E+00 N272      /
1.84E-01 N273      / 8.53E-01
 N274      / 1.95E-01 N275      / 1.58E-01 N276      / 9.79E-01 N277      / 1.25E-01 N278      /
0.00E+00 N279      / 1.20E+00
 N288      / 9.16E-01 N289      / 0.00E+00 N290      / 9.45E+00 N291      / 8.56E+00 N292      /
0.00E+00 N293      / 1.51E+00
 N294      / 1.29E-01 N296      / 1.51E+00 N301      / 3.42E+00 N302      / 9.90E-02 N303      /
0.00E+00 N304      / 1.50E+00
 N309      / 1.82E+00 N310      / 6.99E-02 N312      / 2.26E+00 N342      / 1.20E-01 N343      /
0.00E+00 N344      / 1.88E+00
 N345      / 5.08E-01 N361      / 2.13E+01 N362      / 0.00E+00 N363      / 1.70E+00 N364      /
0.00E+00 N365      / 0.00E+00
 N366      / 4.59E+00 N367      / 2.63E+00 N368      / 1.23E+01 N369      / 0.00E+00 N370      /
1.84E+01 N371      / 2.56E+01
 N372      / 0.00E+00 N373      / 0.00E+00 N374      / 0.00E+00 N375      / 8.86E+00 N376      /
8.25E+00 N377      / 0.00E+00
 N378      / 0.00E+00 N379      / 0.00E+00 N381      / 5.18E-02 N382      / 1.00E+00 N383      /
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2.31E+00 N384 / 2.16E+00
N386 / 2.65E+00 N387 / 1.64E+00 N388 / 0.00E+00 N389 / 3.54E+00 N390 /
2.28E+00 N391 / 3.49E+00
N392 / 0.00E+00 N394 / 0.00E+00 N395 / 3.35E+00 N396 / 0.00E+00 N397 /
7.42E-02 N398 / 1.92E+00
N399 / 1.80E+00 N403 / 0.00E+00 N404 / 6.97E+00 N405 / 2.23E+00 N406 /
3.25E+00 N407 / 1.61E+00
N408 / 5.48E+00 N409 / 0.00E+00 N410 / 0.00E+00 N412 / 4.24E+00 N413 /
0.00E+00 N414 / 0.00E+00
N415 / 4.58E+00 N416 / 4.32E+00 N417 / 0.00E+00 N418 / 4.05E+00 N419 /
0.00E+00 N420 / 7.12E+00
N421 / 0.00E+00 N422 / 0.00E+00 N423 / 4.85E+00 N424 / 0.00E+00 N425 /
3.83E+00 N426 / 0.00E+00
N428 / 0.00E+00 N429 / 1.91E+00 N430 / 2.24E+00 N431 / 1.02E-02 N432 /
0.00E+00 N434 / 2.27E+00
N435 / 0.00E+00 N436 / 2.85E+00 N437 / 5.17E+00 N438 / 0.00E+00 N439 /
1.65E-01 N440 / 1.66E+00
N441 / 3.80E+00 N442 / 0.00E+00 N443 / 9.32E-01 N444 / 3.97E+00 N445 /
9.48E-01 N446 / 9.39E-01
N447 / 1.91E+00 N448 / 2.45E+00 N449 / 1.80E-03 N450 / 0.00E+00 N451 /
2.28E+00 N453 / 0.00E+00
N454 / 2.87E+00 N455 / 0.00E+00 N456 / 1.01E-02 N457 / 1.67E+00 N458 /
0.00E+00 N459 / 0.00E+00
N460 / 0.00E+00 N461 / 0.00E+00 N464 / 4.94E-01 N465 / 5.92E+00 N466 /
0.00E+00 N467 / 9.71E-01
N468 / 1.66E+00 N469 / 6.49E-01 N470 / 0.00E+00 N471 / 1.29E+00 N472 /
9.32E-01 N473 / 6.79E-01
N487 / 0.00E+00 N489 / 0.00E+00 N490 / 9.10E+00 N491 / 3.82E-01 N492 /
4.46E+00 N493 / 0.00E+00
N497 / 2.99E+00 N499 / 0.00E+00 N509 / 1.10E+01 N513 / 6.72E+00 N514 /
1.52E-01 N516 / 0.00E+00
N524 / 6.06E-01 N525 / 0.00E+00 N526 / 5.99E-01 N527 / 3.29E-01 N528 /
0.00E+00 N529 / 0.00E+00
N530 / 3.01E-01 N689 / 0.00E+00 N494 / 0.00E+00 N541 / 0.00E+00 EL329 /
4.34E+00 N427 / 0.00E+00
N411 / 0.00E+00 N295 / 0.00E+00 N311 / 0.00E+00 N462 / 2.13E+00 N266 /
1.13E-01 N267 / 9.44E-02
N268 / 1.74E+00 N269 / 0.00E+00 N270 / 3.96E+00 N271 / 7.71E-01 N280 /
3.79E+00 N281 / 4.26E-01
N282 / 6.28E-02 N283 / 1.17E+00 N284 / 8.57E-01 N285 / 2.66E+00 N286 /
2.69E-01 N287 / 0.00E+00
N297 / 1.56E+00 N298 / 1.20E-01 N299 / 0.00E+00 N300 / 1.57E+00 N305 /
1.57E+00 N306 / 1.31E-01
N307 / 0.00E+00 N308 / 1.41E+00 N313 / 1.73E-01 N314 / 2.71E-01 N315 /
7.07E-01 N316 / 0.00E+00
N317 / 4.36E+00 N318 / 7.15E-01 N319 / 1.40E+00 N320 / 1.70E-01 N321 /
1.87E+00 N325 / 0.00E+00
N326 / 8.51E-01 N327 / 2.46E+00 N328 / 5.03E-01 N329 / 2.82E+00 N330 /
2.21E-01 N331 / 0.00E+00
N332 / 2.69E+00 N333 / 1.60E+00 N334 / 0.00E+00 N335 / 1.17E-01 N336 /
1.28E+00 N337 / 2.92E-01
N338 / 1.28E+00 N339 / 1.62E+00 N340 / 0.00E+00 N341 / 0.00E+00 N347 /
0.00E+00 N348 / 1.98E-01
N349 / 1.71E+00 N350 / 1.63E+00 N351 / 1.11E-01 N352 / 1.96E+00 N353 /
2.21E+00 N354 / 0.00E+00
N355 / 0.00E+00 N356 / 4.26E-01 N357 / 4.32E-01 N358 / 4.33E-01 N359 /
0.00E+00 N360 / 0.00E+00
N500 / 2.47E+00 N501 / 0.00E+00 N503 / 0.00E+00 N504 / 1.08E+01 N506 /
3.80E+00 N517 / 1.29E-01
N518 / 0.00E+00 N554 / 0.00E+00 N511 / 5.12E+00 N555 / 0.00E+00

# # # #

N277	429.7207	600.0000	0.0000
N278	600.0000	600.0000	0.0000
N279	138.5119	346.2798	0.0000
N288	0.5182	1.2955	19740.0000
N289	600.0000	600.0000	0.0000
N290	0.9854	2.4636	60.0000
N291	333.8759	600.0000	0.0000
N292	600.0000	600.0000	0.0000
N293	245.6933	600.0000	0.0000
N294	206.9186	517.2965	0.0000
N296	129.5241	323.8103	0.0000
N301	30.5239	76.3099	0.0000
N302	382.7287	600.0000	0.0000
N303	600.0000	600.0000	0.0000
N304	136.6436	341.6091	0.0000
N309	240.4023	600.0000	0.0000
N310	368.8572	600.0000	0.0000
N312	139.7987	349.4968	0.0000
N342	127.5391	318.8476	0.0000
N343	600.0000	600.0000	0.0000
N344	130.8658	327.1644	0.0000
N345	328.5364	600.0000	0.0000
N361	105.0130	262.5325	0.0000
N362	108.3460	270.8649	0.0000
N363	47.7017	119.2542	0.0000
N364	156.9940	392.4851	0.0000
N365	600.0000	600.0000	0.0000
N366	95.0359	237.5897	0.0000
N367	124.2998	310.7495	0.0000
N368	30.5985	76.4964	0.0000
N369	55.6298	139.0746	0.0000
N370	21.7816	54.4539	0.0000
N371	25.3790	63.4475	60.0000
N372	50.2192	125.5480	0.0000
N373	32.2122	80.5306	0.0000
N374	14.1251	35.3128	0.0000
N375	26.7681	66.9201	0.0000
N376	139.0138	347.5344	0.0000
N377	65.4583	163.6457	0.0000
N378	122.1617	305.4042	0.0000
N379	600.0000	600.0000	0.0000
N381	129.2236	323.0590	0.0000
N382	93.2697	233.1743	0.0000
N383	96.8947	242.2367	0.0000
N384	125.3402	313.3505	0.0000
N386	108.2062	270.5156	0.0000
N387	137.1532	342.8831	0.0000
N388	43.9045	109.7613	0.0000
N389	17.7859	44.4646	0.0000
N390	11.1184	27.7961	0.0000
N391	6.8556	17.1391	0.0000
N392	21.4372	53.5930	0.0000
N394	600.0000	600.0000	0.0000
N395	11.2668	28.1669	0.0000
N396	126.3525	315.8814	0.0000
N397	49.6293	124.0732	120.0000
N398	266.9984	600.0000	0.0000
N399	15.3248	38.3120	60.0000
N403	40.8930	102.2325	60.0000
N404	15.6074	39.0184	0.0000

N405	121.9031	304.7577	0.0000
N406	33.4879	83.7198	0.0000
N407	144.5817	361.4544	0.0000
N408	18.0534	45.1335	0.0000
N409	22.3909	55.9773	0.0000
N410	7.3367	18.3418	0.0000
N412	124.6831	311.7078	0.0000
N413	23.8132	59.5330	0.0000
N414	23.7947	59.4866	0.0000
N415	68.5804	171.4510	0.0000
N416	140.5200	351.3000	0.0000
N417	181.8020	454.5051	0.0000
N418	215.0549	537.6374	0.0000
N419	48.1406	120.3516	0.0000
N420	50.9239	127.3098	0.0000
N421	26.0168	65.0421	0.0000
N422	81.3152	203.2880	0.0000
N423	55.9739	139.9347	0.0000
N424	80.4519	201.1298	0.0000
N425	45.6630	114.1575	0.0000
N426	69.2307	173.0766	0.0000
N428	100.5313	251.3282	0.0000
N429	73.4376	183.5941	0.0000
N430	255.4107	600.0000	0.0000
N431	168.5800	421.4500	0.0000
N432	134.8947	337.2368	0.0000
N434	101.9121	254.7802	0.0000
N435	47.3042	118.2605	0.0000
N436	40.4914	101.2284	0.0000
N437	35.1823	87.9557	0.0000
N438	112.4909	281.2274	0.0000
N439	81.0546	202.6365	0.0000
N440	58.8296	147.0740	60.0000
N441	30.2179	75.5447	60.0000
N442	86.4279	216.0697	0.0000
N443	77.4058	193.5145	0.0000
N444	29.4000	73.5001	0.0000
N445	208.7145	521.7863	0.0000
N446	127.5553	318.8881	0.0000
N447	211.5289	528.8222	0.0000
N448	32.0010	80.0025	0.0000
N449	33.7173	84.2932	0.0000
N450	19.5761	48.9402	0.0000
N451	35.5015	88.7537	0.0000
N453	35.9306	89.8266	0.0000
N454	31.3203	78.3008	0.0000
N455	141.2374	353.0935	0.0000
N456	166.9355	417.3388	0.0000
N457	75.7028	189.2569	0.0000
N458	137.4326	343.5814	0.0000
N459	208.0939	520.2347	0.0000
N460	337.4662	600.0000	0.0000
N461	600.0000	600.0000	0.0000
N464	44.1593	110.3982	0.0000
N465	16.9288	42.3220	0.0000
N466	18.1655	45.4139	0.0000
N467	48.7529	121.8822	0.0000
N468	100.9100	252.2750	0.0000
N469	109.1813	272.9534	0.0000
N470	600.0000	600.0000	0.0000

N471	96.6750	241.6874	0.0000
N472	106.7128	266.7821	0.0000
N473	212.6372	531.5929	0.0000
N487	107.3037	268.2593	0.0000
N489	18.7580	46.8950	120.0000
N490	119.0580	297.6450	0.0000
N491	32.9570	82.3926	0.0000
N492	95.2900	238.2251	0.0000
N493	600.0000	600.0000	0.0000
N497	291.2100	600.0000	0.0000
N499	600.0000	600.0000	0.0000
N509	54.9392	137.3479	0.0000
N513	110.6970	276.7426	0.0000
N514	227.4168	568.5419	0.0000
N516	600.0000	600.0000	0.0000
N524	319.4248	600.0000	0.0000
N525	172.6453	431.6133	0.0000
N526	286.4537	600.0000	0.0000
N527	600.0000	600.0000	0.0000
N528	36.4016	91.0039	60.0000
N529	3.4135	8.5337	0.0000
N530	15.0305	37.5762	0.0000
N689	600.0000	600.0000	0.0000
N494	161.5825	403.9562	0.0000
N541	55.7135	139.2836	0.0000
EL329	34.8791	87.1977	0.0000
N427	50.4609	126.1523	60.0000
N411	600.0000	600.0000	0.0000
N295	600.0000	600.0000	0.0000
N311	600.0000	600.0000	0.0000
N462	32.9981	82.4953	0.0000
N266	600.0000	600.0000	0.0000
N267	131.0369	327.5923	0.0000
N268	180.1517	450.3793	0.0000
N269	192.1696	480.4241	0.0000
N270	188.6430	471.6076	0.0000
N271	82.8950	207.2375	0.0000
N280	193.2661	483.1653	0.0000
N281	28.5307	71.3268	0.0000
N282	31.2674	78.1684	0.0000
N283	29.4729	73.6823	0.0000
N284	169.8667	424.6667	0.0000
N285	36.3629	90.9073	0.0000
N286	63.0081	157.5202	0.0000
N287	1.4873	3.7182	0.0000
N297	56.9814	142.4534	0.0000
N298	71.8525	179.6312	0.0000
N299	600.0000	600.0000	0.0000
N300	79.5586	198.8966	0.0000
N305	16.8611	42.1527	0.0000
N306	1.3664	3.4161	0.0000
N307	600.0000	600.0000	0.0000
N308	0.9890	2.4726	0.0000
N313	600.0000	600.0000	0.0000
N314	460.1847	600.0000	0.0000
N315	362.9104	600.0000	0.0000
N316	600.0000	600.0000	0.0000
N317	10.1010	25.2525	0.0000
N318	17.3889	43.4724	0.0000
N319	9.7070	24.2674	60.0000

N320	15.8986	39.7464	0.0000
N321	13.1801	32.9503	0.0000
N325	15.6311	39.0779	0.0000
N326	13.9549	34.8873	60.0000
N327	12.2897	30.7241	120.0000
N328	4.8802	12.2004	0.0000
N329	3.0333	7.5833	0.0000
N330	1.0195	2.5488	0.0000
N331	600.0000	600.0000	0.0000
N332	2.2842	5.7104	60.0000
N333	35.7276	89.3189	0.0000
N334	45.3880	113.4701	0.0000
N335	30.7135	76.7838	0.0000
N336	20.7398	51.8496	0.0000
N337	101.0207	252.5518	0.0000
N338	128.6905	321.7261	0.0000
N339	182.7556	456.8889	0.0000
N340	176.8827	442.2068	0.0000
N341	99.0862	247.7154	0.0000
N347	13.5709	33.9273	180.0000
N348	32.9413	82.3532	0.0000
N349	16.9856	42.4641	0.0000
N350	17.9158	44.7894	120.0000
N351	37.1629	92.9072	0.0000
N352	36.0399	90.0998	0.0000
N353	31.6040	79.0100	0.0000
N354	304.5638	600.0000	0.0000
N355	600.0000	600.0000	0.0000
N356	371.7999	600.0000	0.0000
N357	325.7538	600.0000	0.0000
N358	278.3413	600.0000	0.0000
N359	341.7095	600.0000	0.0000
N360	600.0000	600.0000	0.0000
N500	43.5866	108.9665	0.0000
N501	44.5350	111.3376	0.0000
N503	600.0000	600.0000	0.0000
N504	1.3261	3.3153	240.0000
N506	54.4225	136.0562	0.0000
N517	90.7322	226.8306	0.0000
N518	56.7823	141.9556	60.0000
N554	52.4017	131.0042	0.0000
N322	600.0000	600.0000	0.0000
N511	398.6346	600.0000	0.0000
N555	600.0000	600.0000	0.0000

The junction requiring the smallest time step was...N288

Table E5a - Conduit Explicit Condition Summary

Courant = Conduit Length / Time step = Velocity + sqrt(g*depth)

Conduit Implicit Condition Summary

Courant = Conduit Length / Time step = Velocity

The 3rd column is the Explicit time step times the minimum courant time step factor

Minimum Conduit Time Step in seconds in the 4th column in the list. Maximum possible is 10 * maximum time step
The 5th column is the maximum change at any time step during the simulation. The 6th column is the wobble value which is an indicator of the flow stability.
You should use this section to find those conduits that are slowing your model down. Use modify conduits to alter the length of the slow conduits to make your simulation faster, or change the conduit name to "CHME?????" where ????? are any characters, this will lengthen the conduit based on the model time step, not the value listed in modify conduits.

Conduit	Time(exp)	Expl*Cmin	Time(imp)	Time(min)	Max Qchange	Wobble	Type of Soln
L210	6.2515	6.2515	18.7553	1.0000	0.0108	1.3509	Normal Soln
L211	31.1457	31.1457	101.2091	0.0000	-0.0033	1.4135	Normal Soln
L212	52.2625	52.2625	164.6491	0.0000	0.0062	0.9308	Normal Soln
L213	8.6695	8.6695	33.1187	0.0000	0.0102	1.1818	Normal Soln
L214	7.1669	7.1669	30.8026	0.0000	0.0131	1.2167	Normal Soln
L217	12.9886	12.9886	30.4267	0.0000	0.0013	0.3996	Normal Soln
L220	21.3513	21.3513	68.8686	0.0000	0.0116	1.6019	Normal Soln
L221	30.7605	30.7605	94.9061	0.0000	0.0146	1.4233	Normal Soln
L222	9.5820	9.5820	19.4016	0.0000	0.0147	0.3574	Normal Soln
L223	16.5400	16.5400	50.1321	0.0000	0.0003	0.1454	Normal Soln
L224	67.1259	67.1259	218.6507	0.0000	0.0003	0.1471	Normal Soln
L225	44.3093	44.3093	212.3033	0.0000	0.0010	0.1799	Normal Soln
L226	49.1405	49.1405	218.6131	0.0000	0.0014	0.6783	Normal Soln
L227	25.8165	25.8165	103.1838	0.0000	0.0017	1.1183	Normal Soln
L228	33.4838	33.4838	125.9101	0.0000	0.0028	1.6570	Normal Soln
L229	65.7559	65.7559	220.5156	0.0000	0.0022	1.0348	Normal Soln
L230	37.6846	37.6846	135.9271	0.0000	0.0029	1.4589	Normal Soln
L231	32.7004	32.7004	129.8439	0.0000	0.0035	1.6231	Normal Soln
L232	23.8493	23.8493	90.2924	0.0000	0.0082	1.7444	Normal Soln
L233	34.2989	34.2989	134.7716	0.0000	0.0095	1.2812	Normal Soln
L234	31.0691	31.0691	144.1844	0.0000	0.0338	1.0186	Normal Soln
L235	7.5038	7.5038	45.8062	0.0000	0.0007	0.4409	Normal Soln
L236	9.0023	9.0023	39.0021	0.0000	0.0077	1.6059	Normal Soln
L237	7.4322	7.4322	25.6997	0.0000	0.0108	1.5498	Normal Soln
L238	4.9304	4.9304	11.5673	0.0000	0.0122	1.5702	Normal Soln
L239	9.0896	9.0896	23.9116	0.0000	0.0053	1.7384	Normal Soln
L240	12.0804	12.0804	28.5367	0.0000	0.0017	0.5257	Normal Soln
L241	22.4338	22.4338	66.7490	0.0000	0.0072	1.5011	Normal Soln
L242	7.7300	7.7300	18.2402	0.0000	0.0017	0.7871	Normal Soln
L243	10.7957	10.7957	26.3322	0.0000	0.0022	1.0474	Normal Soln
L246	25.0937	25.0937	84.1009	0.0000	-3.1824	3.7190	Normal Soln
L247	5.9740	5.9740	16.3038	0.0000	3.9594	6.4349	Normal Soln
L248	5.0180	5.0180	18.6691	0.0000	-0.7055	2.9804	Normal Soln
L249	9.4542	9.4542	22.2610	0.0000	0.0030	0.6747	Normal Soln
L250	4.1448	4.1448	8.5193	0.0000	0.0022	0.3070	Normal Soln
L251	9.4773	9.4773	22.3581	0.0000	0.0011	0.5553	Normal Soln
L259	27.2141	27.2141	74.1703	0.0000	0.0061	0.9545	Normal Soln
L260	3.2083	3.2083	6.2024	0.0000	0.0074	0.1455	Normal Soln
L261	20.6903	20.6903	51.3702	0.0000	0.0009	0.4139	Normal Soln
L262	3.2442	3.2442	7.8906	0.0000	0.0018	0.1655	Normal Soln
L263	16.4832	16.4832	40.3638	0.0000	0.0019	0.5097	Normal Soln

L272	1.9631	1.9631	14.1155	339.0000	182.0895	63.3927	Normal Soln
L273	6.4373	6.4373	30.2092	0.0000	-18.5520	31.9359	Normal Soln
L274	4.5051	4.5051	10.2752	0.0000	0.1696	0.2679	Normal Soln
L275	13.0078	13.0078	40.7738	0.0000	0.0020	0.6480	Normal Soln
L277	14.1276	14.1276	43.8767	0.0000	0.0020	0.6486	Normal Soln
L281	8.5693	8.5693	23.1348	0.0000	0.0095	1.5513	Normal Soln
L282	1.9736	1.9736	3.2450	19.0000	0.0057	0.3395	Normal Soln
L283	15.1101	15.1101	36.7070	0.0000	0.0014	0.6326	Normal Soln
L287	13.6881	13.6881	32.8380	0.0000	0.0017	0.7713	Normal Soln
L289	14.0922	14.0922	34.5708	0.0000	0.0022	0.9601	Normal Soln
L319	5.5975	5.5975	13.5686	0.0000	0.0063	1.5855	Normal Soln
L320	8.0688	8.0688	22.0820	0.0000	0.0017	0.8380	Normal Soln
L338	6.8569	6.8569	21.4648	0.0000	0.0781	1.0182	Normal Soln
L339	21.1432	21.1432	64.2430	0.0000	0.0162	1.0020	Normal Soln
L340	18.5450	18.5450	55.0650	0.0000	0.0236	1.0401	Normal Soln
L341	7.6907	7.6907	19.5133	0.0000	0.0273	1.0587	Normal Soln
L342	7.7612	7.7612	19.2026	0.0000	0.0093	1.2413	Normal Soln
L343	10.4487	10.4487	25.7250	0.0000	0.0023	1.1146	Normal Soln
L344	4.1865	4.1865	12.4796	0.0000	0.0338	0.9011	Normal Soln
L346	3.3448	3.3448	18.8270	0.0000	0.0771	1.5440	Normal Soln
L347	22.7161	22.7161	88.6212	0.0000	0.1659	1.7800	Normal Soln
L348	24.2125	24.2125	93.7966	0.0000	-0.1681	1.9456	Normal Soln
L349	24.7033	24.7033	92.4129	0.0000	-0.3964	2.2962	Normal Soln
L350	8.3550	8.3550	29.3133	0.0000	-0.2794	2.5995	Normal Soln
L351	3.3857	3.3857	10.4210	0.0000	0.0396	0.9482	Normal Soln
L352	13.9667	13.9667	43.3775	0.0000	0.0063	0.8894	Normal Soln
L354	5.4488	5.4488	16.6375	0.0000	18.1237	1.7883	Normal Soln
L361	5.4554	5.4554	12.7955	0.0000	0.0020	0.9880	Normal Soln
L362	7.8495	7.8495	18.7039	0.0000	0.0019	0.9219	Normal Soln
L363	43.0525	43.0525	125.3009	0.0000	0.0040	0.8513	Normal Soln
L364	5.3147	5.3147	12.4812	0.0000	0.0066	1.1294	Normal Soln
L365	8.0058	8.0058	19.5999	0.0000	0.0015	0.6995	Normal Soln
L366	36.2590	36.2590	115.8670	0.0000	0.0075	1.0412	Normal Soln
L367	33.4920	33.4920	107.2280	0.0000	0.0853	2.6692	Normal Soln
L368	14.5949	14.5949	35.9571	0.0000	-0.0046	1.6103	Normal Soln
L369	8.7136	8.7136	21.9892	0.0000	-0.0115	2.5883	Normal Soln
L370	16.0916	16.0916	56.4323	0.0000	-1.8653	4.7348	Normal Soln
L373	6.4122	6.4122	26.6176	0.0000	4.3210	1.8239	Normal Soln
L374	12.5311	12.5311	37.1557	0.0000	0.0037	2.1148	Normal Soln
L375	47.0845	47.0845	176.7072	0.0000	0.0027	1.2291	Normal Soln
L376	14.4642	14.4642	62.0882	0.0000	0.0077	0.8570	Normal Soln
L386	24.3880	24.3880	112.5830	0.0000	-0.1187	1.2132	Normal Soln
L387	25.2952	25.2952	118.2948	0.0000	-0.1751	1.4818	Normal Soln
L388	12.0576	12.0576	39.1305	0.0000	0.0042	1.4663	Normal Soln
L389	25.6875	25.6875	119.4813	0.0000	-0.2832	1.6683	Normal Soln
L390	13.7012	13.7012	37.5836	0.0000	0.0016	0.8822	Normal Soln
L391	32.6281	32.6281	141.4397	0.0000	-0.2916	2.2976	Normal Soln
L392	23.8985	23.8985	89.8743	0.0000	-0.5859	3.0672	Normal Soln
L393	29.2323	29.2323	100.3153	0.0000	-16.2711	4.0982	Normal Soln
L395	3.6081	3.6081	14.5294	0.0000	0.0376	0.6686	Normal Soln
L396	36.6243	36.6243	207.7287	0.0000	0.0066	0.4523	Normal Soln
L397	4.0334	4.0334	15.3371	0.0000	0.0057	0.7321	Normal Soln
L398	3.6388	3.6388	13.1820	0.0000	0.0153	0.6500	Normal Soln
L399	31.6001	31.6001	115.8057	0.0000	0.0034	0.4843	Normal Soln
L402	7.1766	7.1766	24.8473	0.0000	0.0198	1.1671	Normal Soln
L403	33.0824	33.0824	116.1692	0.0000	-0.0101	1.1798	Normal Soln
L404	30.6635	30.6635	104.5308	0.0000	-0.0090	1.2283	Normal Soln
L405	6.2092	6.2092	18.3900	0.0000	0.0106	1.1024	Normal Soln
L406	27.7072	27.7072	114.0732	0.0000	0.0141	0.9375	Normal Soln
L407	6.0310	6.0310	18.5727	0.0000	0.0081	1.3108	Normal Soln

L408	26.3866	26.3866	115.8019	0.0000	0.0166	0.9626	Normal Soln
L410	27.1993	27.1993	133.6868	0.0000	0.0180	0.9834	Normal Soln
L411	20.6552	20.6552	105.9398	0.0000	0.0197	0.9667	Normal Soln
L413	40.1062	40.1062	155.5415	0.0000	0.0021	0.4898	Normal Soln
L415	5.7002	5.7002	13.0492	0.0000	0.0019	0.9100	Normal Soln
L417	5.8832	5.8832	17.8127	0.0000	0.0035	1.4330	Normal Soln
L418	6.2687	6.2687	18.5368	0.0000	0.0113	1.1437	Normal Soln
L419	21.0701	21.0701	77.2660	0.0000	0.0064	0.9814	Normal Soln
L420	31.6178	31.6178	122.3553	0.0000	0.0065	0.9989	Normal Soln
L421	6.4509	6.4509	20.6556	0.0000	-0.0040	0.9346	Normal Soln
L422	6.3270	6.3270	19.9862	0.0000	0.0089	1.2815	Normal Soln
L423	28.6671	28.6671	125.6540	0.0000	0.0151	1.0523	Normal Soln
L424	20.5528	20.5528	93.0295	0.0000	0.0157	1.1044	Normal Soln
L425	7.1395	7.1395	25.4237	0.0000	0.0014	0.5654	Normal Soln
L426	5.8951	5.8951	19.2755	0.0000	0.0099	1.3554	Normal Soln
L427	29.2809	29.2809	115.7345	0.0000	0.0350	1.3980	Normal Soln
L428	10.0652	10.0652	32.3331	0.0000	0.0014	0.5811	Normal Soln
L429	24.5883	24.5883	91.6764	0.0000	0.0356	1.4768	Normal Soln
L430	7.7857	7.7857	27.6689	0.0000	0.0066	0.9636	Normal Soln
L431	39.1114	39.1114	132.6127	0.0000	0.0047	1.0571	Normal Soln
L432	8.5732	8.5732	26.9221	0.0000	0.0020	1.1822	Normal Soln
L435	7.5019	7.5019	24.7417	0.0000	0.0105	1.3867	Normal Soln
L436	27.3473	27.3473	84.8219	0.0000	0.0037	1.3164	Normal Soln
L437	32.3027	32.3027	111.3242	0.0000	0.0026	0.8680	Normal Soln
L438	9.2879	9.2879	31.4850	0.0000	0.0026	0.8603	Normal Soln
L439	32.2509	32.2509	98.9040	0.0000	0.0037	1.3237	Normal Soln
L440	38.3201	38.3201	121.6160	0.0000	0.0039	0.9307	Normal Soln
L441	25.2294	25.2294	81.9432	0.0000	0.0416	1.7028	Normal Soln
L442	28.9437	28.9437	77.2274	0.0000	0.0455	1.7005	Normal Soln
L443	3.2282	3.2282	5.8300	0.0000	0.0524	0.1738	Normal Soln
L446	4.5793	4.5793	17.2379	0.0000	0.0135	1.2557	Normal Soln
L448	8.0270	8.0270	32.1444	0.0000	0.0074	0.5699	Normal Soln
L449	32.6426	32.6426	115.0008	0.0000	0.0109	1.4022	Normal Soln
L450	30.6032	30.6032	93.8944	0.0000	0.0108	1.4346	Normal Soln
L451	7.1048	7.1048	17.6776	0.0000	0.0120	1.6067	Normal Soln
L452	5.9967	5.9967	18.0859	0.0000	0.0019	0.6437	Normal Soln
L453	7.7414	7.7414	24.8896	0.0000	0.0016	0.4807	Normal Soln
L454	10.3094	10.3094	30.3107	0.0000	0.0007	0.3101	Normal Soln
L466	9.2963	9.2963	21.2434	0.0000	0.0081	0.9016	Normal Soln
L468	54.8638	54.8638	181.0675	0.0000	0.0034	0.4682	Normal Soln
L470	15.4247	15.4247	41.0683	0.0000	0.0134	1.3127	Normal Soln
L471	43.8959	43.8959	227.0363	0.0000	0.0008	0.1441	Normal Soln
L472	3.9352	3.9352	9.2028	0.0000	-0.0269	2.1770	Normal Soln
L490	12.0034	12.0034	34.1207	0.0000	0.0065	1.3896	Normal Soln
L496	61.2675	61.2675	166.3291	0.0000	0.0009	0.2575	Normal Soln
L497	61.6959	61.6959	168.0343	0.0000	0.0008	0.2545	Normal Soln
L498	13.8903	13.8903	32.5163	0.0000	0.0012	0.5120	Normal Soln
L501	29.3932	29.3932	143.2066	0.0000	0.0196	0.6409	Normal Soln
L502	31.2040	31.2040	334.9124	0.0000	0.0563	0.6714	Normal Soln
L503	26.4789	26.4789	92.7478	0.0000	-0.3281	2.8088	Normal Soln
L504	28.5285	28.5285	91.7979	0.0000	-10.1301	3.8173	Normal Soln
L505	25.1053	25.1053	90.3015	0.0000	0.0164	1.5473	Normal Soln
L506	23.5100	23.5100	88.4759	0.0000	0.0211	1.6573	Normal Soln
L509	5.5791	5.5791	13.9326	0.0000	0.0256	0.2750	Normal Soln
L511	10.4981	10.4981	28.4512	0.0000	0.0122	3.1171	Normal Soln
L512	3.5154	3.5154	6.8866	0.0000	0.0172	0.2261	Normal Soln
L514	29.2377	29.2377	119.9845	0.0000	-0.0249	1.2524	Normal Soln
L515	12.0917	12.0917	53.3484	0.0000	0.0179	0.8453	Normal Soln
CH21	104.8804	104.8804	600.0000	0.0000	0.0185	0.0616	Normal Soln
L474	8.9345	8.9345	23.7515	0.0000	-0.0279	1.9683	Normal Soln

L523	28.8755	28.8755	140.7912	0.0000	0.0079	0.4128	Normal Soln
L525	42.4511	42.4511	165.4916	0.0000	0.0193	0.8851	Normal Soln
L527	37.6031	37.6031	149.5067	0.0000	0.0078	0.9593	Normal Soln
L528	36.0936	36.0936	114.9947	0.0000	0.0046	1.3586	Normal Soln
L529	25.2469	25.2469	104.9026	0.0000	-0.0049	1.4697	Normal Soln
L533	58.9742	58.9742	228.0493	0.0000	-0.0043	1.0001	Normal Soln
L537	36.8704	36.8704	178.8752	0.0000	0.0069	1.5079	Normal Soln
L394	9.2722	9.2722	25.6498	0.0000	8.3982	5.5420	Normal Soln
L276	5.2191	5.2191	12.5943	0.0000	0.0023	1.3347	Normal Soln
L288	2.7917	2.7917	6.4149	0.0000	0.0032	0.2031	Normal Soln
L412	5.9417	5.9417	11.7777	0.0000	0.0073	0.6832	Normal Soln
L447	35.4182	35.4182	166.4817	0.0000	0.0090	0.5853	Normal Soln
L252	57.9257	57.9257	438.1697	0.0000	0.0003	0.0479	Normal Soln
L253	8.9055	8.9055	21.3251	0.0000	0.0035	0.7377	Normal Soln
L254	43.0686	43.0686	126.2921	0.0000	0.0017	0.7372	Normal Soln
L255	8.3804	8.3804	21.5764	0.0000	0.0073	1.1013	Normal Soln
L256	29.2278	29.2278	97.0603	0.0000	0.0040	0.9024	Normal Soln
L257	25.4433	25.4433	75.1841	0.0000	0.0056	1.2750	Normal Soln
L264	8.4259	8.4259	20.8395	0.0000	0.0066	1.0516	Normal Soln
L265	27.3302	27.3302	103.7915	0.0000	-0.0505	1.3823	Normal Soln
L266	15.7479	15.7479	58.1507	0.0000	-0.1796	2.0394	Normal Soln
L267	9.0421	9.0421	22.7894	0.0000	0.0008	0.3924	Normal Soln
L268	7.4193	7.4193	23.4623	0.0000	0.0076	1.2084	Normal Soln
L269	22.9535	22.9535	65.3736	0.0000	0.0039	1.2997	Normal Soln
L270	29.7742	29.7742	96.5790	0.0000	-2.1268	3.4297	Normal Soln
L271	20.2934	20.2934	95.8543	0.0000	-4.2888	4.9993	Normal Soln
L278	5.2025	5.2025	22.0215	0.0000	0.0038	0.7092	Normal Soln
L279	14.4231	14.4231	39.2902	0.0000	0.0037	1.4175	Normal Soln
L280	5.4164	5.4164	22.7685	0.0000	0.0023	0.7187	Normal Soln
L284	2.7604	2.7604	7.8645	0.0000	8.4196	12.0048	Normal Soln
L285	10.2712	10.2712	80.4185	0.0000	8.5176	5.5213	Normal Soln
L286	2.6029	2.6029	7.5207	1.0000	-8.1417	7.5344	Normal Soln
L290	78.6962	78.6962	230.1393	0.0000	0.0003	0.0738	Normal Soln
L291	63.6696	63.6696	172.1096	0.0000	0.0007	0.1884	Normal Soln
L292	6.3934	6.3934	33.3155	0.0000	0.0116	0.3513	Normal Soln
L294	6.5797	6.5797	27.1870	0.0000	-0.0136	0.8753	Normal Soln
L300	16.1533	16.1533	68.6063	0.0000	-0.0290	1.2875	Normal Soln
L301	4.2951	4.2951	17.0056	0.0000	-0.0054	1.0566	Normal Soln
L302	35.1114	35.1114	183.5592	0.0000	0.0480	1.0787	Normal Soln
L303	7.3447	7.3447	31.0267	0.0000	0.0104	0.7168	Normal Soln
L304	5.0870	5.0870	18.6300	0.0000	0.0103	1.4790	Normal Soln
L305	10.7658	10.7658	54.4645	0.0000	-0.0165	0.9203	Normal Soln
L306	3.5790	3.5790	16.4822	0.0000	-0.4032	17.2236	Normal Soln
L307	5.3332	5.3332	19.2003	0.0000	6.4484	3.4049	Normal Soln
L308	7.0144	7.0144	56.5269	0.0000	1.5682	4.1380	Normal Soln
L309	3.8266	3.8266	17.2572	0.0000	0.5900	6.3074	Normal Soln
L310	5.7726	5.7726	19.1733	0.0000	0.0034	0.8114	Normal Soln
L311	31.4100	31.4100	137.1995	0.0000	0.0018	0.7639	Normal Soln
L312	4.9627	4.9627	27.6973	0.0000	-0.0039	0.6854	Normal Soln
L313	40.4957	40.4957	155.4600	0.0000	-0.0030	1.3623	Normal Soln
L314	10.6430	10.6430	33.8023	0.0000	-0.0020	0.6956	Normal Soln
L315	8.9796	8.9796	21.8649	0.0000	0.0031	0.6980	Normal Soln
L316	30.4550	30.4550	94.7922	0.0000	0.0017	0.7485	Normal Soln
L317	25.9998	25.9998	86.7174	0.0000	0.0073	1.2537	Normal Soln
L318	28.2215	28.2215	90.3327	0.0000	0.0058	1.2283	Normal Soln
L321	64.8006	64.8006	262.1698	0.0000	0.0007	0.3257	Normal Soln
L324	8.8190	8.8190	42.8042	0.0000	0.0074	0.9326	Normal Soln
L325	4.5796	4.5796	24.3002	0.0000	0.0036	0.7749	Normal Soln
L326	9.1869	9.1869	44.6803	0.0000	0.0040	0.9538	Normal Soln
L327	8.8938	8.8938	42.4548	0.0000	0.0036	1.0655	Normal Soln

L328	21.9349	21.9349	75.1030	0.0000	0.0089	2.3035	Normal Soln
L329	5.3893	5.3893	11.3227	0.0000	0.0086	0.3873	Normal Soln
L334	69.2836	69.2836	188.2975	0.0000	0.0007	0.1811	Normal Soln
L335	53.5685	53.5685	140.9656	0.0000	0.0013	0.3648	Normal Soln
L336	17.2315	17.2315	42.2257	0.0000	0.0013	0.5475	Normal Soln
L337	8.2473	8.2473	22.0972	0.0000	0.0011	0.1691	Normal Soln
L475	6.6266	6.6266	26.1492	0.0000	-0.0205	1.4815	Normal Soln
L478	28.2318	28.2318	106.2365	0.0000	0.0212	1.5681	Normal Soln
L479	39.7769	39.7769	160.9062	0.0000	0.0293	1.3348	Normal Soln
L487	8.1525	8.1525	36.8343	0.0000	0.3152	2.0951	Normal Soln
L493	32.6219	32.6219	127.4553	0.0000	0.0168	1.8467	Normal Soln
L499	28.2002	28.2002	182.9228	0.0000	0.0072	1.3444	Normal Soln
L500	27.2300	27.2300	143.9566	0.0000	0.0072	1.4636	Normal Soln
L507	10.7144	10.7144	30.2504	0.0000	0.0047	1.6782	Normal Soln
L513	21.2652	21.2652	75.9175	0.0000	0.0169	1.9281	Normal Soln
L546	42.6208	42.6208	162.8089	0.0000	0.0054	0.6683	Normal Soln
L510	4.4627	4.4627	12.0534	0.0000	0.0839	0.2736	Normal Soln

The conduit with the smallest time step limitation was..L272
The conduit with the largest wobble was.....L272
The conduit with the largest flow change in any
consecutive time step.....L272

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| Table E6. Final Model Condition |
| This table is used for steady state |
| flow comparison and is the information|
| saved to the hot-restart file. |
| Final Time = 6.017 hours |
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Junction / Depth / Elevation ===> "*" Junction is Surcharged.

N221/	1.76*/	107.60/	N222/	2.55*/	106.99/	N223/	1.31 /	102.12/
N224/	3.32*/	100.29/	N227/	2.63*/	100.97/	N228/	3.08 /	100.61/
N230/	2.34 /	98.17/	N231/	0.45 /	100.29/	N233/	0.83 /	95.25/
N234/	4.87 /	90.47/	N235/	0.26 /	119.86/	N236/	0.28 /	118.89/
N237/	0.40 /	117.66/	N238/	2.47*/	117.58/	N239/	0.87 /	118.56/
N240/	1.58*/	118.20/	N241/	1.16 /	112.52/	N242/	1.80 /	110.43/
N243/	2.59 /	108.45/	N244/	2.79*/	106.64/	N245/	3.62*/	105.30/
N246/	3.48*/	103.01/	N247/	4.16*/	102.03/	N248/	1.05 /	112.53/
N249/	2.51 /	107.13/	N250/	2.85*/	103.99/	N251/	1.27*/	116.65/
N252/	2.22 /	115.28/	N253/	2.38 /	110.46/	N254/	0.52 /	113.35/
N255/	4.01 /	106.81/	N256/	0.66 /	108.07/	N257/	0.84 /	108.45/
N259/	2.96*/	100.12/	N260/	2.55 /	99.55/	N261/	1.38*/	100.31/
N262/	0.61 /	105.49/	N263/	0.38 /	104.84/	N264/	2.90 /	99.54/
N265/	0.55 /	105.41/	N272/	1.33 /	97.68/	N273/	0.00 /	97.68/
N274/	0.45 /	96.03/	N275/	2.88 /	90.48/	N276/	0.49 /	

94.74/
N277/ 0.28 / 93.72/ N278/ 5.91 / 83.91/ N279/ 0.55 /
94.67/
N288/ 6.87*/ 83.90/ N289/ 6.90 / 83.90/ N290/ 6.36*/
84.46/
N291/ 0.55 / 92.47/ N292/ 7.30 / 83.90/ N293/ 0.69 /
119.61/
N294/ 1.02*/ 119.32/ N296/ 0.68 / 119.66/ N301/ 1.92*/
124.82/
N302/ 0.40 / 122.68/ N303/ 2.82 / 113.42/ N304/ 0.61 /
123.56/
N309/ 0.67 / 113.82/ N310/ 0.41 / 112.67/ N312/ 0.79 /
114.00/
N342/ 1.45*/ 101.67/ N343/ 1.11 / 101.11/ N344/ 0.79 /
101.90/
N345/ 0.40 / 119.23/ N361/ 2.17 / 128.41/ N362/ 2.11 /
128.24/
N363/ 2.36 / 127.64/ N364/ 2.04 / 127.05/ N365/ 5.17 /
122.57/
N366/ 1.11 / 128.98/ N367/ 0.89 / 129.22/ N368/ 2.94*/
127.20/
N369/ 3.47*/ 127.14/ N370/ 5.19*/ 126.89/ N371/ 4.68*/
126.94/
N372/ 4.76*/ 126.10/ N373/ 4.37*/ 125.34/ N374/ 3.96*/
124.56/
N375/ 4.32 / 124.30/ N376/ 1.69 / 124.59/ N377/ 1.71 /
124.53/
N378/ 3.36 / 122.63/ N379/ 4.18 / 122.58/ N381/ 1.09 /
125.85/
N382/ 1.73 / 124.59/ N383/ 0.76 / 126.29/ N384/ 0.74 /
126.38/
N386/ 0.84 / 124.98/ N387/ 0.64 / 124.87/ N388/ 1.73 /
123.68/
N389/ 2.73 / 122.84/ N390/ 0.79 / 123.62/ N391/ 1.46*/
124.15/
N392/ 2.82 / 122.65/ N394/ 4.18 / 122.58/ N395/ 2.73*/
120.84/
N396/ 1.29 / 118.97/ N397/ 2.59 / 118.40/ N398/ 2.35 /
118.66/
N399/ 3.68 / 118.28/ N403/ 3.73 / 118.03/ N404/ 4.28 /
117.76/
N405/ 1.33*/ 118.33/ N406/ 4.30 / 117.47/ N407/ 0.77 /
117.77/
N408/ 4.23 / 117.01/ N409/ 4.03 / 116.51/ N410/ 3.75 /
115.87/
N412/ 2.69*/ 118.99/ N413/ 3.38*/ 118.71/ N414/ 2.96 /
118.79/
N415/ 2.75*/ 119.08/ N416/ 2.24*/ 119.07/ N417/ 1.37 /
118.94/
N418/ 0.92 / 120.82/ N419/ 2.56*/ 113.47/ N420/ 2.52*/
114.76/
N421/ 2.53*/ 114.53/ N422/ 3.35*/ 112.48/ N423/ 2.31*/
112.68/
N424/ 3.81*/ 112.07/ N425/ 2.34*/ 112.40/ N426/ 4.18*/
111.63/
N428/ 4.24*/ 111.16/ N429/ 4.77*/ 110.79/ N430/ 0.61 /
119.61/
N431/ 2.15 / 118.82/ N432/ 1.04 / 119.11/ N434/ 0.73 /
119.53/
N435/ 2.78*/ 112.96/ N436/ 1.96*/ 113.53/ N437/ 2.27*/

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113.19/
        N438/   2.95*/   112.53/          N439/   3.71*/   111.86/          N440/   2.01*/
112.06/
        N441/   2.48*/   112.21/          N442/   4.06*/   111.28/          N443/   1.96*/
111.34/
        N444/   2.61*/   111.64/          N445/   4.27*/   109.75/          N446/   1.34*/
109.83/
        N447/   3.83*/   108.88/          N448/   2.01*/   120.78/          N449/   2.23*/
120.22/
        N450/   1.79*/   122.53/          N451/   1.75*/   123.02/          N453/   1.94 /
115.70/
        N454/   2.17*/   116.46/          N455/   1.34*/   113.02/          N456/   1.93*/
112.19/
        N457/   1.43*/   112.45/          N458/   1.39 /   109.78/          N459/   3.05 /
107.66/
        N460/   0.99 /   105.10/          N461/   5.47 /    99.57/          N464/   3.05*/
128.14/
        N465/   3.10*/   129.75/          N466/   3.31*/   129.50/          N467/   1.92*/
128.22/
        N468/   2.41*/   126.00/          N469/   1.78 /   120.44/          N470/   0.97 /
118.68/
        N471/   1.21*/   126.09/          N472/   1.12*/   126.06/          N473/   0.46 /
120.53/
        N487/   1.02 /   119.59/          N489/   2.44 /   120.87/          N490/   1.60 /
123.50/
        N491/   0.86 /   125.03/          N492/   1.78*/   128.12/          N493/   1.00 /
127.04/
        N497/   0.36 /   108.21/          N499/   6.44 /    97.64/          N509/   3.56*/
112.44/
        N513/   1.33 /   111.34/          N514/   0.65 /   108.76/          N516/   7.42 /
97.42/
        N524/   0.35 /   133.80/          N525/   0.51 /   131.68/          N526/   0.34 /
133.80/
        N527/   0.51 /   131.11/          N528/   4.32*/   126.98/          N529/   3.92 /
123.56/
        N530/   4.78*/   104.49/          N689/   1.50 /   119.50/          N494/   0.95 /
122.36/
        N541/   2.20*/   114.29/         EL329/   2.41*/   114.93/          N427/   3.01*/
112.65/
        N411/   3.63 /   115.63/          N295/   3.79 /   110.72/          N311/   4.73 /
108.83/
        N462/   1.93*/   129.71/          N266/   0.15 /   100.51/          N267/   1.65*/
99.20/
        N268/   0.64 /   101.38/          N269/   0.66 /   100.99/          N270/   1.13 /
100.27/
        N271/   1.36 /    99.91/          N280/   1.01 /    86.34/          N281/   2.71 /
85.95/
        N282/   2.72 /    85.49/          N283/   2.70 /    85.20/          N284/   0.48 /
85.62/
        N285/   1.65*/    96.56/          N286/   1.53*/    95.98/          N287/   5.85 /
84.31/
        N297/   1.47*/   114.71/          N298/   1.63*/   114.59/          N299/   2.78 /
110.10/
        N300/   1.47*/   114.72/          N305/   3.41*/   108.93/          N306/   4.08*/
108.80/
        N307/   4.39 /   108.64/          N308/   3.64*/   108.83/          N313/   0.18 /
104.11/
        N314/   0.29 /   102.08/          N315/   0.42 /   100.03/          N316/   5.47 /
99.57/
        N317/   3.96 /    93.13/          N318/   4.81 /    92.55/          N319/   3.24 /
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92.71/
N320/ 4.05 / 93.33/ N321/ 3.42 / 93.53/ N325/ 3.75 /
93.52/
N326/ 2.83 / 93.58/ N327/ 3.28 / 93.94/ N328/ 4.32 /
97.76/
N329/ 4.13 / 98.13/ N330/ 4.22 / 97.66/ N331/ 4.94 /
97.64/
N332/ 4.18 / 98.18/ N333/ 2.07*/ 110.94/ N334/ 2.27*/
110.78/
N335/ 3.54*/ 109.72/ N336/ 3.29*/ 109.83/ N337/ 2.05*/
104.33/
N338/ 1.18*/ 104.49/ N339/ 0.64 / 105.53/ N340/ 0.75 /
105.22/
N341/ 1.70*/ 102.95/ N347/ 4.25*/ 122.70/ N348/ 3.92*/
120.09/
N349/ 3.90*/ 123.06/ N350/ 3.92*/ 121.72/ N351/ 4.36*/
121.55/
N352/ 3.18*/ 120.55/ N353/ 3.32*/ 120.68/ N354/ 0.70 /
116.35/
N355/ 2.82 / 113.42/ N356/ 0.29 / 125.61/ N357/ 0.42 /
123.40/
N358/ 0.57 / 121.39/ N359/ 0.28 / 120.37/ N360/ 2.74 /
115.34/
N500/ 4.84*/ 91.51/ N501/ 3.89*/ 89.36/ N503/ 7.62 /
97.42/
N504/ 2.87*/ 98.41/ N506/ 2.49*/ 94.63/ N517/ 2.69*/
86.64/
N518/ 3.52*/ 87.83/ N554/ 1.78*/ 92.46/ N322/ 5.14 /
97.64/
N511/ 0.51 / 102.72/ N555/ 7.62 / 97.42/

Conduit/ Flow ===> "*" Conduit uses the normal flow option.

L210/	2.89 /	L211/	3.14 /	L212/	3.30 /
L213/	2.49 /	L214/	5.37 /	L217/	0.95 /
L220/	11.28 /	L221/	13.22 /	L222/	13.39 /
L223/	0.23 /	L224/	0.23 /	L225/	0.23 /
L226/	0.93 /	L227/	1.58 /	L228/	2.49 /
L229/	2.95 /	L230/	3.46 /	L231/	3.80 /
L232/	6.04 /	L233/	6.33 /	L234/	9.41 /
L235/	0.45 /	L236/	2.13 /	L237/	3.08 /
L238/	3.69 /	L239/	4.06 /	L240/	1.24 /
L241/	5.36 /	L242/	1.85 /	L243/	2.48 /
L246/	24.36 /	L247/	28.80 /	L248/	1.98 /
L249/	1.58 /	L250/	3.00 /	L251/	1.30 /
L259/	6.86 /	L260/	7.05*/	L261/	0.98 /
L262/	2.30*/	L263/	1.20 /	L272/	38.20 /
L273/	9.43 /	L274/	8.56 /	L275/	1.51 /
L277/	1.51 /	L281/	3.42 /	L282/	5.02*/
L283/	1.50 /	L287/	1.82 /	L289/	2.26 /
L319/	8.20 /	L320/	1.88 /	L338/	21.25 /
L339/	21.25 /	L340/	30.17 /	L341/	30.17 /
L342/	4.59 /	L343/	2.63 /	L344/	12.33 /
L346/	25.60 /	L347/	56.33 /	L348/	56.33 /
L349/	56.33 /	L350/	56.33 /	L351/	8.25 /
L352/	8.25 /	L354/	73.45 /	L361/	2.31 /
L362/	2.16 /	L363/	4.52 /	L364/	2.65 /
L365/	1.64 /	L366/	9.81 /	L367/	9.81 /
L368/	2.28 /	L369/	3.49 /	L370/	19.12 /
L373/	19.12 /	L374/	3.35 /	L375/	3.35 /
L376/	14.27 /	L386/	36.62 /	L387/	36.60 /

L388/	2.23 /	L389/	50.32 /	L390/	1.61 /
L391/	55.16 /	L392/	65.35 /	L393/	65.35 /
L395/	4.24 /	L396/	8.35 /	L397/	4.58 /
L398/	4.32 /	L399/	4.04 /	L402/	7.12 /
L403/	7.12 /	L404/	7.12 /	L405/	4.85 /
L406/	11.97 /	L407/	3.83 /	L408/	15.80 /
L410/	20.14 /	L411/	20.14 /	L413/	2.27 /
L415/	2.27 /	L417/	2.85 /	L418/	5.17 /
L419/	8.02 /	L420/	8.02 /	L421/	1.66 /
L422/	3.80 /	L423/	13.65 /	L424/	18.55 /
L425/	0.93 /	L426/	3.97 /	L427/	40.59 /
L428/	0.94 /	L429/	42.48 /	L430/	2.45 /
L431/	2.28 /	L432/	2.28 /	L435/	2.87 /
L436/	2.87 /	L437/	2.87 /	L438/	1.67 /
L439/	4.55 /	L440/	4.55 /	L441/	48.94 /
L442/	48.94 /	L443/	48.94*/	L446/	5.92 /
L448/	0.97 /	L449/	9.51 /	L450/	13.39 /
L451/	14.72 /	L452/	1.29 /	L453/	0.93 /
L454/	0.68 /	L466/	4.05 /	L468/	4.05 /
L470/	9.48 /	L471/	0.38*/	L472/	4.46 /
L490/	6.72 /	L496/	0.61*/	L497/	0.60*/
L498/	1.21 /	L501/	12.33 /	L502/	12.33 /
L503/	73.45 /	L504/	73.45 /	L505/	10.60 /
L506/	10.90 /	L509/	2.99 /	L511/	11.04 /
L512/	17.90*/	L514/	8.04 /	L515/	17.68 /
CH21/	13.57 /	L474/	9.48 /	L523/	9.48 /
L525/	17.16 /	L527/	4.52 /	L528/	4.73 /
L529/	4.34 /	L533/	4.34 /	L537/	4.34 /
L394/	65.35 /	L276/	3.15 /	L288/	4.16 /
L412/	2.24 /	L447/	2.13 /	L252/	0.11*/
L253/	1.74 /	L254/	1.74 /	L255/	3.96 /
L256/	4.73 /	L257/	6.67 /	L264/	3.79 /
L265/	22.43 /	L266/	23.35 /	L267/	0.86 /
L268/	2.66 /	L269/	2.92 /	L270/	27.45 /
L271/	27.43 /	L278/	1.56 /	L279/	3.25 /
L280/	1.57 /	L284/	1.57 /	L285/	3.11 /
L286/	1.41 /	L290/	0.17*/	L291/	0.44*/
L292/	1.15 /	L294/	1.40 /	L300/	5.35 /
L301/	1.87 /	L302/	11.83 /	L303/	0.85 /
L304/	2.46 /	L305/	3.31 /	L306/	2.82 /
L307/	3.04 /	L308/	3.20 /	L309/	2.69 /
L310/	1.60 /	L311/	1.60 /	L312/	1.28 /
L313/	3.00 /	L314/	1.28 /	L315/	1.62 /
L316/	1.62 /	L317/	6.20 /	L318/	6.20 /
L321/	0.51 /	L324/	1.71 /	L325/	1.63 /
L326/	1.96 /	L327/	2.21 /	L328/	7.82 /
L329/	7.82 /	L334/	0.43*/	L335/	0.86*/
L336/	1.29 /	L337/	1.29*/	L475/	4.36 /
L478/	18.09 /	L479/	18.09 /	L487/	10.77 /
L493/	18.09 /	L499/	1.71 /	L500/	3.45 /
L507/	3.80 /	L513/	18.22 /	L546/	3.80 /
L510/	5.12 /	FREE # 1/	13.39 /	FREE # 2/	28.80 /
FREE # 3/	3.00 /	FREE # 4/	7.21 /	FREE # 5/	2.30 /
FREE # 6/	38.20 /	FREE # 7/	8.56 /	FREE # 8/	5.02 /
FREE # 9/	8.20 /	FREE #10/	30.17 /	FREE #11/	73.45 /
FREE #12/	19.12 /	FREE #13/	48.94 /	FREE #14/	4.46 /
FREE #15/	2.99 /	FREE #16/	17.90 /	FREE #17/	1.53 /
FREE #18/	9.48 /	FREE #19/	65.35 /	FREE #20/	3.15 /
FREE #21/	4.16 /	FREE #22/	3.25 /	FREE #23/	3.11 /
FREE #24/	1.15 /	FREE #25/	3.20 /	FREE #26/	7.82 /

FREE #27/	1.29 /	FREE #28/	10.77 /	FREE #29/	3.04 /
FREE #30/	5.12 /				

Conduit/	Velocity				
L210/	3.66 /	L211/	4.03 /	L212/	2.64 /
L213/	3.14 /	L214/	3.02 /	L217/	2.83 /
L220/	4.65 /	L221/	4.16 /	L222/	9.38 /
L223/	1.44 /	L224/	1.33 /	L225/	0.67 /
L226/	1.27 /	L227/	2.01 /	L228/	3.23 /
L229/	2.59 /	L230/	2.92 /	L231/	3.07 /
L232/	3.40 /	L233/	3.55 /	L234/	2.98 /
L235/	0.56 /	L236/	2.68 /	L237/	3.88 /
L238/	4.75 /	L239/	5.19 /	L240/	3.01 /
L241/	4.43 /	L242/	3.40 /	L243/	3.61 /
L246/	4.92 /	L247/	5.64 /	L248/	2.52 /
L249/	3.28 /	L250/	9.16 /	L251/	3.09 /
L259/	3.79 /	L260/	10.32 /	L261/	2.69 /
L262/	9.63 /	L263/	2.90 /	L272/	2.39 /
L273/	3.86 /	L274/	11.97 /	L275/	2.50 /
L277/	2.56 /	L281/	4.63 /	L282/	14.79 /
L283/	3.11 /	L287/	3.32 /	L289/	3.47 /
L319/	4.79 /	L320/	2.79 /	L338/	3.90 /
L339/	4.05 /	L340/	4.43 /	L341/	5.28 /
L342/	4.06 /	L343/	3.65 /	L344/	2.40 /
L346/	2.66 /	L347/	4.46 /	L348/	4.31 /
L349/	4.33 /	L350/	4.50 /	L351/	2.92 /
L352/	2.87 /	L354/	5.65 /	L361/	3.67 /
L362/	3.53 /	L363/	3.25 /	L364/	3.79 /
L365/	3.02 /	L366/	3.40 /	L367/	3.39 /
L368/	3.45 /	L369/	4.50 /	L370/	2.82 /
L373/	2.77 /	L374/	4.30 /	L375/	2.10 /
L376/	2.64 /	L386/	3.03 /	L387/	3.00 /
L388/	2.82 /	L389/	3.22 /	L390/	2.45 /
L391/	3.53 /	L392/	4.23 /	L393/	4.38 /
L395/	3.43 /	L396/	1.35 /	L397/	3.70 /
L398/	3.50 /	L399/	1.70 /	L402/	2.95 /
L403/	2.95 /	L404/	2.95 /	L405/	2.74 /
L406/	2.43 /	L407/	3.10 /	L408/	2.65 /
L410/	2.84 /	L411/	2.84 /	L413/	1.67 /
L415/	3.75 /	L417/	3.61 /	L418/	2.92 /
L419/	2.55 /	L420/	2.54 /	L421/	2.10 /
L422/	3.08 /	L423/	2.77 /	L424/	3.11 /
L425/	1.18 /	L426/	3.21 /	L427/	4.20 /
L428/	1.19 /	L429/	4.30 /	L430/	3.10 /
L431/	2.88 /	L432/	2.89 /	L435/	3.63 /
L436/	3.62 /	L437/	2.27 /	L438/	2.12 /
L439/	3.71 /	L440/	2.65 /	L441/	4.94 /
L442/	5.94 /	L443/	16.47 /	L446/	3.33 /
L448/	1.23 /	L449/	3.93 /	L450/	4.26 /
L451/	5.09 /	L452/	1.60 /	L453/	1.14 /
L454/	1.77 /	L466/	4.24 /	L468/	2.41 /
L470/	4.31 /	L471/	1.72 /	L472/	5.65 /
L490/	3.55 /	L496/	2.36 /	L497/	2.34 /
L498/	3.01 /	L501/	1.67 /	L502/	1.26 /
L503/	4.71 /	L504/	5.07 /	L505/	4.37 /
L506/	4.48 /	L509/	9.62 /	L511/	6.26 /
L512/	16.12 /	L514/	3.33 /	L515/	2.72 /
CH21/	0.12 /	L474/	5.35 /	L523/	1.21 /
L525/	2.45 /	L527/	2.55 /	L528/	3.90 /
L529/	2.45 /	L533/	2.45 /	L537/	2.44 /

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   L394/       4.63 /          L276/       4.05 /          L288/       9.51 /
   L412/       4.50 /          L447/       1.20 /          L252/       0.76 /
   L253/       3.25 /          L254/       3.00 /          L255/       3.41 /
   L256/       2.78 /          L257/       3.72 /          L264/       3.58 /
   L265/       3.34 /          L266/       3.47 /          L267/       2.16 /
   L268/       3.37 /          L269/       3.79 /          L270/       4.15 /
   L271/       2.84 /          L278/       1.99 /          L279/       4.20 /
   L280/       1.99 /          L284/       1.97 /          L285/       1.74 /
   L286/       1.14 /          L290/       1.60 /          L291/       2.17 /
   L292/       3.15 /          L294/       1.76 /          L300/       2.99 /
   L301/       2.34 /          L302/       2.95 /          L303/       1.07 /
   L304/       3.09 /          L305/       1.86 /          L306/       3.52 /
   L307/       0.96 /          L308/       1.79 /          L309/       3.36 /
   L310/       2.02 /          L311/       2.02 /          L312/       1.61 /
   L313/       3.76 /          L314/       1.57 /          L315/       3.00 /
   L316/       2.51 /          L317/       3.48 /          L318/       3.37 /
   L321/       1.50 /          L324/       2.14 /          L325/       2.03 /
   L326/       2.46 /          L327/       2.78 /          L328/       4.63 /
   L329/       8.66 /          L334/       2.13 /          L335/       2.63 /
   L336/       2.96 /          L337/       5.39 /          L475/       3.50 /
   L478/       4.52 /          L479/       3.67 /          L487/       4.45 /
   L493/       3.66 /          L499/       2.13 /          L500/       2.76 /
   L507/       4.77 /          L513/       3.62 /          L546/       2.06 /
   L510/       9.21 /

Conduit/     Width
   L210/       0.01 /          L211/       0.09 /          L212/       0.43 /
   L213/       0.01 /          L214/       0.01 /          L217/       0.99 /
   L220/       0.04 /          L221/       0.57 /          L222/       1.77 /
   L223/       0.87 /          L224/       0.89 /          L225/       0.92 /
   L226/       0.61 /          L227/       0.01 /          L228/       0.10 /
   L229/       0.71 /          L230/       0.13 /          L231/       0.01 /
   L232/       0.01 /          L233/       0.01 /          L234/       0.01 /
   L235/       0.36 /          L236/       0.01 /          L237/       0.01 /
   L238/       0.08 /          L239/       0.08 /          L240/       1.00 /
   L241/       0.11 /          L242/       0.95 /          L243/       0.76 /
   L246/       0.06 /          L247/       0.51 /          L248/       0.01 /
   L249/       0.97 /          L250/       0.87 /          L251/       0.99 /
   L259/       1.50 /          L260/       1.38 /          L261/       0.99 /
   L262/       0.80 /          L263/       0.98 /          L272/       0.02 /
   L273/       0.01 /          L274/       1.30 /          L275/       0.87 /
   L277/       0.88 /          L281/       0.10 /          L282/       0.88 /
   L283/       0.97 /          L287/       0.94 /          L289/       0.83 /
   L319/       0.66 /          L320/       0.78 /          L338/       2.69 /
   L339/       2.75 /          L340/       3.29 /          L341/       3.45 /
   L342/       0.81 /          L343/       0.66 /          L344/       0.50 /
   L346/       0.02 /          L347/       0.09 /          L348/       0.74 /
   L349/       1.38 /          L350/       1.58 /          L351/       1.45 /
   L352/       1.38 /          L354/       3.75 /          L361/       0.87 /
   L362/       0.89 /          L363/       1.32 /          L364/       0.74 /
   L365/       0.95 /          L366/       1.36 /          L367/       1.36 /
   L368/       0.82 /          L369/       0.08 /          L370/       1.67 /
   L373/       1.26 /          L374/       0.09 /          L375/       1.06 /
   L376/       1.93 /          L386/       2.17 /          L387/       1.97 /
   L388/       0.04 /          L389/       1.90 /          L390/       0.82 /
   L391/       1.87 /          L392/       2.16 /          L393/       2.79 /
   L395/       0.01 /          L396/       2.26 /          L397/       0.01 /
   L398/       0.01 /          L399/       1.75 /          L402/       0.01 /
   L403/       0.01 /          L404/       0.01 /          L405/       0.01 /
   L406/       0.01 /          L407/       0.01 /          L408/       0.01 /
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    L410/       0.01 /          L411/       0.01 /          L413/       1.24 /
    L415/       0.90 /          L417/       0.01 /          L418/       0.01 /
    L419/       0.01 /          L420/       0.01 /          L421/       0.01 /
    L422/       0.01 /          L423/       0.01 /          L424/       0.01 /
    L425/       0.01 /          L426/       0.01 /          L427/       0.05 /
    L428/       0.01 /          L429/       0.41 /          L430/       0.01 /
    L431/       0.01 /          L432/       0.01 /          L435/       0.01 /
    L436/       0.04 /          L437/       0.41 /          L438/       0.01 /
    L439/       0.08 /          L440/       0.72 /          L441/       1.29 /
    L442/       2.41 /          L443/       2.84 /          L446/       0.01 /
    L448/       0.01 /          L449/       0.02 /          L450/       0.43 /
    L451/       1.30 /          L452/       0.11 /          L453/       0.28 /
    L454/       0.98 /          L466/       1.11 /          L468/       1.98 /
    L470/       1.06 /          L471/       0.79 /          L472/       0.04 /
    L490/       1.52 /          L496/       0.96 /          L497/       0.95 /
    L498/       1.00 /          L501/       0.65 /          L502/       0.17 /
    L503/       1.89 /          L504/       3.10 /          L505/       0.01 /
    L506/       0.01 /          L509/       0.86 /          L511/       0.11 /
    L512/       1.68 /          L514/       0.01 /          L515/       2.03 /
    CH21/     100.00 /          L474/       0.07 /          L523/      11.35 /
    L525/       1.17 /          L527/       0.01 /          L528/       0.11 /
    L529/       0.01 /          L533/       0.01 /          L537/       0.01 /
    L394/       3.36 /          L276/       0.44 /          L288/       1.05 /
    L412/       0.98 /          L447/       0.01 /          L252/       0.66 /
    L253/       0.96 /          L254/       0.88 /          L255/       0.75 /
    L256/       0.82 /          L257/       0.58 /          L264/       0.99 /
    L265/       1.77 /          L266/       1.75 /          L267/       0.99 /
    L268/       0.01 /          L269/       0.09 /          L270/       1.87 /
    L271/       0.02 /          L278/       0.01 /          L279/       0.09 /
    L280/       0.01 /          L284/       0.01 /          L285/       0.01 /
    L286/       0.01 /          L290/       0.79 /          L291/       0.92 /
    L292/       0.89 /          L294/       0.01 /          L300/       0.01 /
    L301/       0.01 /          L302/       0.01 /          L303/       0.01 /
    L304/       0.01 /          L305/       0.01 /          L306/       0.01 /
    L307/       0.01 /          L308/       0.01 /          L309/       0.01 /
    L310/       0.01 /          L311/       0.01 /          L312/       0.01 /
    L313/       0.01 /          L314/       0.18 /          L315/       0.95 /
    L316/       0.78 /          L317/       0.05 /          L318/       0.43 /
    L321/       0.95 /          L324/       0.01 /          L325/       0.01 /
    L326/       0.01 /          L327/       0.01 /          L328/       0.16 /
    L329/       1.35 /          L334/       0.91 /          L335/       0.99 /
    L336/       0.98 /          L337/       0.81 /          L475/       0.01 /
    L478/       0.01 /          L479/       0.01 /          L487/       0.01 /
    L493/       0.10 /          L499/       0.01 /          L500/       0.01 /
    L507/       0.02 /          L513/       0.96 /          L546/       0.42 /
    L510/       1.11 /

Junction/        EGL
    N221/       1.76 /          N222/       2.76 /          N223/       2.26 /
    N224/       3.47 /          N227/       2.63 /          N228/       3.08 /
    N230/       4.03 /          N231/       0.45 /          N233/       2.08 /
    N234/       6.24 /          N235/       0.26 /          N236/       1.03 /
    N237/       0.82 /          N238/       2.54 /          N239/       0.90 /
    N240/       1.60 /          N241/       3.54 /          N242/       2.04 /
    N243/       2.88 /          N244/       2.93 /          N245/       3.80 /
    N246/       3.72 /          N247/       4.47 /          N248/       1.05 /
    N249/       2.51 /          N250/       2.85 /          N251/       1.27 /
    N252/       3.17 /          N253/       5.52 /          N254/       0.52 /
    N255/       5.24 /          N256/       0.66 /          N257/       0.84 /
    N259/       3.33 /          N260/       3.04 /          N261/       1.38 /
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N262/ 0.61 / N263/ 0.55 / N264/ 4.20 /
N265/ 0.55 / N272/ 1.54 / N273/ 0.00 /
N274/ 0.67 / N275/ 4.53 / N276/ 0.49 /
N277/ 0.41 / N278/ 7.35 / N279/ 0.55 /
N288/ 7.13 / N289/ 6.99 / N290/ 6.36 /
N291/ 0.55 / N292/ 9.53 / N293/ 0.69 /
N294/ 1.12 / N296/ 0.68 / N301/ 1.92 /
N302/ 0.73 / N303/ 6.22 / N304/ 0.61 /
N309/ 0.67 / N310/ 1.08 / N312/ 0.79 /
N342/ 1.62 / N343/ 1.46 / N344/ 0.79 /
N345/ 0.40 / N361/ 2.17 / N362/ 2.35 /
N363/ 3.40 / N364/ 2.35 / N365/ 9.63 /
N366/ 1.11 / N367/ 0.89 / N368/ 2.94 /
N369/ 3.56 / N370/ 5.30 / N371/ 4.68 /
N372/ 5.07 / N373/ 4.66 / N374/ 4.25 /
N375/ 4.63 / N376/ 1.69 / N377/ 1.84 /
N378/ 3.76 / N379/ 4.68 / N381/ 1.36 /
N382/ 1.95 / N383/ 0.76 / N384/ 0.74 /
N386/ 0.84 / N387/ 0.64 / N388/ 1.91 /
N389/ 3.11 / N390/ 0.79 / N391/ 1.46 /
N392/ 2.94 / N394/ 4.30 / N395/ 2.73 /
N396/ 1.58 / N397/ 2.70 / N398/ 2.35 /
N399/ 3.80 / N403/ 3.87 / N404/ 4.42 /
N405/ 1.33 / N406/ 4.46 / N407/ 0.77 /
N408/ 4.47 / N409/ 4.31 / N410/ 4.05 /
N412/ 2.69 / N413/ 3.59 / N414/ 3.15 /
N415/ 2.75 / N416/ 2.24 / N417/ 1.46 /
N418/ 0.92 / N419/ 2.70 / N420/ 2.52 /
N421/ 2.67 / N422/ 3.48 / N423/ 2.31 /
N424/ 3.96 / N425/ 2.34 / N426/ 4.29 /
N428/ 4.36 / N429/ 4.92 / N430/ 0.61 /
N431/ 2.65 / N432/ 1.27 / N434/ 0.73 /
N435/ 2.98 / N436/ 1.96 / N437/ 2.27 /
N438/ 3.05 / N439/ 3.86 / N440/ 2.01 /
N441/ 2.48 / N442/ 4.22 / N443/ 1.96 /
N444/ 2.61 / N445/ 4.54 / N446/ 1.34 /
N447/ 4.12 / N448/ 2.01 / N449/ 2.38 /
N450/ 1.92 / N451/ 1.75 / N453/ 2.14 /
N454/ 2.17 / N455/ 1.54 / N456/ 2.01 /
N457/ 1.43 / N458/ 1.60 / N459/ 3.43 /
N460/ 1.54 / N461/ 9.68 / N464/ 3.23 /
N465/ 3.10 / N466/ 3.48 / N467/ 1.92 /
N468/ 2.65 / N469/ 5.60 / N470/ 2.53 /
N471/ 1.21 / N472/ 1.12 / N473/ 0.46 /
N487/ 1.84 / N489/ 2.82 / N490/ 1.64 /
N491/ 0.86 / N492/ 1.78 / N493/ 1.50 /
N497/ 0.36 / N499/ 7.88 / N509/ 3.56 /
N513/ 1.33 / N514/ 2.90 / N516/ 11.45 /
N524/ 0.35 / N525/ 0.59 / N526/ 0.34 /
N527/ 0.65 / N528/ 4.36 / N529/ 4.26 /
N530/ 5.07 / N689/ 1.94 / N494/ 1.23 /
N541/ 2.29 / EL329/ 2.41 / N427/ 3.10 /
N411/ 3.96 / N295/ 12.08 / N311/ 6.13 /
N462/ 1.93 / N266/ 0.15 / N267/ 1.79 /
N268/ 0.64 / N269/ 0.82 / N270/ 1.13 /
N271/ 1.54 / N280/ 1.01 / N281/ 2.91 /
N282/ 2.89 / N283/ 11.46 / N284/ 0.48 /
N285/ 1.65 / N286/ 1.70 / N287/ 6.11 /
N297/ 1.47 / N298/ 1.69 / N299/ 5.73 /
N300/ 1.47 / N305/ 3.41 / N306/ 4.14 /

N307/	4.44 /	N308/	3.64 /	N313/	0.18 /
N314/	0.33 /	N315/	0.50 /	N316/	5.62 /
N317/	3.96 /	N318/	5.00 /	N319/	3.24 /
N320/	4.14 /	N321/	3.42 /	N325/	3.90 /
N326/	2.83 /	N327/	3.28 /	N328/	4.50 /
N329/	4.13 /	N330/	4.41 /	N331/	4.99 /
N332/	4.18 /	N333/	2.07 /	N334/	2.33 /
N335/	3.61 /	N336/	3.29 /	N337/	2.27 /
N338/	1.18 /	N339/	0.64 /	N340/	0.89 /
N341/	1.89 /	N347/	4.32 /	N348/	4.04 /
N349/	3.90 /	N350/	3.92 /	N351/	4.43 /
N352/	3.18 /	N353/	3.32 /	N354/	1.03 /
N355/	3.98 /	N356/	0.29 /	N357/	0.49 /
N358/	0.68 /	N359/	0.41 /	N360/	3.19 /
N500/	4.98 /	N501/	4.20 /	N503/	7.93 /
N504/	2.87 /	N506/	2.49 /	N517/	2.90 /
N518/	3.73 /	N554/	2.13 /	N322/	5.15 /
N511/	0.51 /	N555/	8.94 /		

Junction/	Freeboard				
N221/	6.43 /	N222/	5.09 /	N223/	4.14 /
N224/	6.04 /	N227/	8.43 /	N228/	1.79 /
N230/	6.22 /	N231/	4.11 /	N233/	5.10 /
N234/	9.53 /	N235/	18.29 /	N236/	7.34 /
N237/	6.63 /	N238/	4.77 /	N239/	6.52 /
N240/	3.89 /	N241/	7.08 /	N242/	5.24 /
N243/	4.24 /	N244/	3.06 /	N245/	2.38 /
N246/	1.69 /	N247/	5.17 /	N248/	3.47 /
N249/	1.50 /	N250/	9.41 /	N251/	10.37 /
N252/	5.97 /	N253/	8.57 /	N254/	7.05 /
N255/	7.10 /	N256/	11.81 /	N257/	9.95 /
N259/	2.57 /	N260/	1.55 /	N261/	6.07 /
N262/	4.91 /	N263/	4.56 /	N264/	6.46 /
N265/	2.99 /	N272/	4.38 /	N273/	6.72 /
N274/	4.28 /	N275/	11.22 /	N276/	5.66 /
N277/	5.68 /	N278/	12.09 /	N279/	3.73 /
N288/	12.50 /	N289/	12.50 /	N290/	11.94 /
N291/	3.82 /	N292/	10.10 /	N293/	6.79 /
N294/	4.64 /	N296/	2.74 /	N301/	3.58 /
N302/	5.71 /	N303/	10.88 /	N304/	2.84 /
N309/	5.58 /	N310/	3.99 /	N312/	2.40 /
N342/	5.17 /	N343/	3.29 /	N344/	10.17 /
N345/	8.91 /	N361/	4.99 /	N362/	5.61 /
N363/	8.04 /	N364/	7.26 /	N365/	6.43 /
N366/	7.42 /	N367/	2.18 /	N368/	2.90 /
N369/	3.01 /	N370/	3.14 /	N371/	3.38 /
N372/	5.71 /	N373/	5.99 /	N374/	8.26 /
N375/	7.93 /	N376/	5.88 /	N377/	5.98 /
N378/	6.56 /	N379/	5.62 /	N381/	2.62 /
N382/	3.41 /	N383/	6.01 /	N384/	4.80 /
N386/	7.19 /	N387/	8.06 /	N388/	4.53 /
N389/	5.54 /	N390/	8.78 /	N391/	7.25 /
N392/	6.56 /	N394/	7.49 /	N395/	5.56 /
N396/	5.63 /	N397/	6.54 /	N398/	9.38 /
N399/	6.02 /	N403/	7.47 /	N404/	8.93 /
N405/	12.92 /	N406/	7.02 /	N407/	14.81 /
N408/	8.21 /	N409/	6.81 /	N410/	8.35 /
N412/	6.25 /	N413/	4.79 /	N414/	3.21 /
N415/	5.30 /	N416/	6.14 /	N417/	2.82 /
N418/	3.58 /	N419/	6.73 /	N420/	9.14 /

N421/ 6.68 / N422/ 5.88 / N423/ 7.72 /
N424/ 6.49 / N425/ 7.99 / N426/ 5.61 /
N428/ 3.63 / N429/ 5.39 / N430/ 8.61 /
N431/ 4.25 / N432/ 1.62 / N434/ 6.74 /
N435/ 7.29 / N436/ 11.87 / N437/ 9.71 /
N438/ 7.29 / N439/ 6.28 / N440/ 10.34 /
N441/ 8.69 / N442/ 4.97 / N443/ 7.06 /
N444/ 6.76 / N445/ 3.55 / N446/ 8.57 /
N447/ 4.32 / N448/ 4.84 / N449/ 5.38 /
N450/ 2.69 / N451/ 3.38 / N453/ 4.13 /
N454/ 8.94 / N455/ 5.26 / N456/ 4.09 /
N457/ 9.95 / N458/ 4.22 / N459/ 2.59 /
N460/ 5.00 / N461/ 10.53 / N464/ 4.38 /
N465/ 5.37 / N466/ 2.47 / N467/ 2.74 /
N468/ 3.95 / N469/ 8.22 / N470/ 8.32 /
N471/ 7.21 / N472/ 3.39 / N473/ 5.70 /
N487/ 2.63 / N489/ 3.76 / N490/ 2.41 /
N491/ 2.16 / N492/ 2.28 / N493/ 2.86 /
N497/ 4.59 / N499/ 13.41 / N509/ 5.46 /
N513/ 6.48 / N514/ 9.14 / N516/ 13.58 /
N524/ 2.66 / N525/ 4.52 / N526/ 3.40 /
N527/ 4.89 / N528/ 2.52 / N529/ 10.70 /
N530/ 4.75 / N689/ 3.77 / N494/ 3.64 /
N541/ 5.71 / EL329/ 3.07 / N427/ 5.85 /
N411/ 13.32 / N295/ 9.38 / N311/ 5.47 /
N462/ 3.29 / N266/ 5.10 / N267/ 5.06 /
N268/ 9.04 / N269/ 9.04 / N270/ 6.13 /
N271/ 2.47 / N280/ 10.06 / N281/ 5.96 /
N282/ 11.59 / N283/ 14.84 / N284/ 12.78 /
N285/ 5.84 / N286/ 4.41 / N287/ 12.59 /
N297/ 5.69 / N298/ 3.84 / N299/ 7.66 /
N300/ 1.68 / N305/ 3.47 / N306/ 1.53 /
N307/ 3.06 / N308/ -0.43 / N313/ 3.68 /
N314/ 3.43 / N315/ 3.28 / N316/ 1.43 /
N317/ 3.27 / N318/ 1.55 / N319/ 7.69 /
N320/ 1.99 / N321/ 2.87 / N325/ 3.75 /
N326/ 6.82 / N327/ 4.46 / N328/ 2.50 /
N329/ 6.27 / N330/ 3.96 / N331/ 2.62 /
N332/ 3.22 / N333/ 13.52 / N334/ 10.61 /
N335/ 1.54 / N336/ 10.47 / N337/ 4.00 /
N338/ 11.91 / N339/ 7.87 / N340/ 5.26 /
N341/ 3.11 / N347/ 4.29 / N348/ 2.61 /
N349/ 6.34 / N350/ 6.68 / N351/ 3.30 /
N352/ 6.85 / N353/ 4.72 / N354/ 6.65 /
N355/ 7.68 / N356/ 2.78 / N357/ 3.12 /
N358/ 6.80 / N359/ 6.41 / N360/ 6.16 /
N500/ 4.37 / N501/ 5.55 / N503/ 2.68 /
N504/ 1.99 / N506/ 5.77 / N517/ 3.64 /
N518/ 1.42 / N554/ 2.05 / N322/ 3.98 /
N511/ 12.23 / N555/ 12.58 /

Junction/ Max Volume
N221/ 22.15 / N222/ 32.09 / N223/ 16.41 /
N224/ 41.73 / N227/ 33.07 / N228/ 38.70 /
N230/ 29.40 / N231/ 5.62 / N233/ 10.45 /
N234/ 61.20 / N235/ 3.32 / N236/ 3.52 /
N237/ 5.02 / N238/ 31.07 / N239/ 10.91 /
N240/ 19.85 / N241/ 14.56 / N242/ 22.62 /
N243/ 32.52 / N244/ 35.02 / N245/ 45.44 /
N246/ 43.77 / N247/ 52.29 / N248/ 13.17 /

N249/ 31.48 / N250/ 35.79 / N251/ 15.99 /
N252/ 27.91 / N253/ 29.95 / N254/ 6.58 /
N255/ 50.38 / N256/ 8.34 / N257/ 10.52 /
N259/ 37.15 / N260/ 32.04 / N261/ 17.33 /
N262/ 7.70 / N263/ 4.80 / N264/ 36.44 /
N265/ 6.87 / N272/ 16.68 / N273/ 0.00 /
N274/ 5.66 / N275/ 36.19 / N276/ 6.19 /
N277/ 3.46 / N278/ 74.27 / N279/ 6.88 /
N288/ 117.74 / N289/ 86.71 / N290/ 109.15 /
N291/ 6.96 / N292/ 91.73 / N293/ 8.70 /
N294/ 12.78 / N296/ 8.54 / N301/ 24.12 /
N302/ 4.96 / N303/ 35.44 / N304/ 7.69 /
N309/ 8.42 / N310/ 5.12 / N312/ 9.93 /
N342/ 18.16 / N343/ 13.93 / N344/ 9.91 /
N345/ 5.05 / N361/ 27.21 / N362/ 26.56 /
N363/ 29.72 / N364/ 25.69 / N365/ 64.97 /
N366/ 13.99 / N367/ 11.14 / N368/ 36.89 /
N369/ 43.59 / N370/ 65.26 / N371/ 58.76 /
N372/ 59.80 / N373/ 54.93 / N374/ 49.79 /
N375/ 54.26 / N376/ 21.20 / N377/ 21.49 /
N378/ 42.53 / N379/ 52.53 / N381/ 13.67 /
N382/ 21.74 / N383/ 9.53 / N384/ 9.29 /
N386/ 10.61 / N387/ 8.08 / N388/ 21.77 /
N389/ 38.13 / N390/ 9.94 / N391/ 18.36 /
N392/ 38.04 / N394/ 52.53 / N395/ 34.27 /
N396/ 16.26 / N397/ 32.57 / N398/ 29.53 /
N399/ 46.27 / N403/ 46.83 / N404/ 53.80 /
N405/ 16.74 / N406/ 54.03 / N407/ 9.69 /
N408/ 53.17 / N409/ 50.68 / N410/ 47.17 /
N412/ 33.80 / N413/ 42.46 / N414/ 37.14 /
N415/ 34.60 / N416/ 28.12 / N417/ 17.17 /
N418/ 11.57 / N419/ 32.17 / N420/ 31.71 /
N421/ 31.84 / N422/ 42.08 / N423/ 29.02 /
N424/ 47.85 / N425/ 29.35 / N426/ 52.58 /
N428/ 53.25 / N429/ 59.99 / N430/ 7.63 /
N431/ 27.08 / N432/ 13.12 / N434/ 9.15 /
N435/ 34.95 / N436/ 24.68 / N437/ 28.54 /
N438/ 37.07 / N439/ 46.65 / N440/ 25.21 /
N441/ 31.14 / N442/ 51.03 / N443/ 24.67 /
N444/ 32.83 / N445/ 53.66 / N446/ 16.85 /
N447/ 48.17 / N448/ 26.10 / N449/ 28.81 /
N450/ 23.32 / N451/ 22.81 / N453/ 24.33 /
N454/ 27.32 / N455/ 16.84 / N456/ 24.25 /
N457/ 17.91 / N458/ 17.45 / N459/ 38.36 /
N460/ 12.41 / N461/ 68.74 / N464/ 38.38 /
N465/ 38.99 / N466/ 41.57 / N467/ 24.14 /
N468/ 30.29 / N469/ 22.40 / N470/ 12.19 /
N471/ 15.18 / N472/ 14.02 / N473/ 5.78 /
N487/ 12.84 / N489/ 30.69 / N490/ 20.04 /
N491/ 10.76 / N492/ 22.34 / N493/ 12.57 /
N497/ 4.53 / N499/ 80.93 / N509/ 44.74 /
N513/ 16.66 / N514/ 8.12 / N516/ 93.24 /
N524/ 4.35 / N525/ 6.37 / N526/ 4.32 /
N527/ 6.37 / N528/ 54.24 / N529/ 49.25 /
N530/ 60.03 / N689/ 18.85 / N494/ 11.88 /
N541/ 27.60 / EL329/ 30.24 / N427/ 37.84 /
N411/ 45.61 / N295/ 47.63 / N311/ 59.44 /
N462/ 24.28 / N266/ 1.87 / N267/ 20.69 /
N268/ 8.08 / N269/ 8.31 / N270/ 14.14 /
N271/ 17.15 / N280/ 12.72 / N281/ 34.01 /

N282/	34.14 /	N283/	33.87 /	N284/	6.04 /
N285/	20.69 /	N286/	19.18 /	N287/	76.57 /
N297/	18.48 /	N298/	20.46 /	N299/	34.93 /
N300/	18.42 /	N305/	54.12 /	N306/	64.62 /
N307/	55.16 /	N308/	2732.01 /	N313/	2.31 /
N314/	3.70 /	N315/	5.32 /	N316/	68.74 /
N317/	49.70 /	N318/	60.40 /	N319/	40.73 /
N320/	50.95 /	N321/	43.01 /	N325/	47.12 /
N326/	35.58 /	N327/	41.22 /	N328/	60.13 /
N329/	102.99 /	N330/	100.45 /	N331/	62.08 /
N332/	56.31 /	N333/	25.99 /	N334/	28.48 /
N335/	44.54 /	N336/	41.30 /	N337/	25.81 /
N338/	14.81 /	N339/	8.05 /	N340/	9.40 /
N341/	21.41 /	N347/	53.40 /	N348/	49.23 /
N349/	49.00 /	N350/	49.23 /	N351/	54.81 /
N352/	40.02 /	N353/	41.67 /	N354/	8.78 /
N355/	35.44 /	N356/	3.62 /	N357/	5.25 /
N358/	7.20 /	N359/	3.50 /	N360/	34.43 /
N500/	60.82 /	N501/	48.82 /	N503/	95.75 /
N504/	40.38 /	N506/	31.23 /	N517/	33.82 /
N518/	44.28 /	N554/	22.31 /	N322/	64.59 /
N511/	6.47 /	N555/	95.75 /		

Junction/Total Fldng

N221/	0.00 /	N222/	0.00 /	N223/	0.00 /
N224/	0.00 /	N227/	0.00 /	N228/	0.00 /
N230/	0.00 /	N231/	0.00 /	N233/	0.00 /
N234/	0.00 /	N235/	0.00 /	N236/	0.00 /
N237/	0.00 /	N238/	0.00 /	N239/	0.00 /
N240/	0.00 /	N241/	0.00 /	N242/	0.00 /
N243/	0.00 /	N244/	0.00 /	N245/	0.00 /
N246/	0.00 /	N247/	0.00 /	N248/	0.00 /
N249/	0.00 /	N250/	0.00 /	N251/	0.00 /
N252/	0.00 /	N253/	0.00 /	N254/	0.00 /
N255/	0.00 /	N256/	0.00 /	N257/	0.00 /
N259/	0.00 /	N260/	0.00 /	N261/	0.00 /
N262/	0.00 /	N263/	0.00 /	N264/	0.00 /
N265/	0.00 /	N272/	0.00 /	N273/	0.00 /
N274/	0.00 /	N275/	0.00 /	N276/	0.00 /
N277/	0.00 /	N278/	0.00 /	N279/	0.00 /
N288/	0.00 /	N289/	0.00 /	N290/	0.00 /
N291/	0.00 /	N292/	0.00 /	N293/	0.00 /
N294/	0.00 /	N296/	0.00 /	N301/	0.00 /
N302/	0.00 /	N303/	0.00 /	N304/	0.00 /
N309/	0.00 /	N310/	0.00 /	N312/	0.00 /
N342/	0.00 /	N343/	0.00 /	N344/	0.00 /
N345/	0.00 /	N361/	0.00 /	N362/	0.00 /
N363/	0.00 /	N364/	0.00 /	N365/	0.00 /
N366/	0.00 /	N367/	0.00 /	N368/	0.00 /
N369/	0.00 /	N370/	0.00 /	N371/	0.00 /
N372/	0.00 /	N373/	0.00 /	N374/	0.00 /
N375/	0.00 /	N376/	0.00 /	N377/	0.00 /
N378/	0.00 /	N379/	0.00 /	N381/	0.00 /
N382/	0.00 /	N383/	0.00 /	N384/	0.00 /
N386/	0.00 /	N387/	0.00 /	N388/	0.00 /
N389/	0.00 /	N390/	0.00 /	N391/	0.00 /
N392/	0.00 /	N394/	0.00 /	N395/	0.00 /
N396/	0.00 /	N397/	0.00 /	N398/	0.00 /
N399/	0.00 /	N403/	0.00 /	N404/	0.00 /
N405/	0.00 /	N406/	0.00 /	N407/	0.00 /

N408/ 0.00 / N409/ 0.00 / N410/ 0.00 /
N412/ 0.00 / N413/ 0.00 / N414/ 0.00 /
N415/ 0.00 / N416/ 0.00 / N417/ 0.00 /
N418/ 0.00 / N419/ 0.00 / N420/ 0.00 /
N421/ 0.00 / N422/ 0.00 / N423/ 0.00 /
N424/ 0.00 / N425/ 0.00 / N426/ 0.00 /
N428/ 0.00 / N429/ 0.00 / N430/ 0.00 /
N431/ 0.00 / N432/ 0.00 / N434/ 0.00 /
N435/ 0.00 / N436/ 0.00 / N437/ 0.00 /
N438/ 0.00 / N439/ 0.00 / N440/ 0.00 /
N441/ 0.00 / N442/ 0.00 / N443/ 0.00 /
N444/ 0.00 / N445/ 0.00 / N446/ 0.00 /
N447/ 0.00 / N448/ 0.00 / N449/ 0.00 /
N450/ 0.00 / N451/ 0.00 / N453/ 0.00 /
N454/ 0.00 / N455/ 0.00 / N456/ 0.00 /
N457/ 0.00 / N458/ 0.00 / N459/ 0.00 /
N460/ 0.00 / N461/ 0.00 / N464/ 0.00 /
N465/ 0.00 / N466/ 0.00 / N467/ 0.00 /
N468/ 0.00 / N469/ 0.00 / N470/ 0.00 /
N471/ 0.00 / N472/ 0.00 / N473/ 0.00 /
N487/ 0.00 / N489/ 0.00 / N490/ 0.00 /
N491/ 0.00 / N492/ 0.00 / N493/ 0.00 /
N497/ 0.00 / N499/ 0.00 / N509/ 0.00 /
N513/ 0.00 / N514/ 0.00 / N516/ 0.00 /
N524/ 0.00 / N525/ 0.00 / N526/ 0.00 /
N527/ 0.00 / N528/ 0.00 / N529/ 0.00 /
N530/ 0.00 / N689/ 0.00 / N494/ 0.00 /
N541/ 0.00 / EL329/ 0.00 / N427/ 0.00 /
N411/ 0.00 / N295/ 0.00 / N311/ 0.00 /
N462/ 0.00 / N266/ 0.00 / N267/ 0.00 /
N268/ 0.00 / N269/ 0.00 / N270/ 0.00 /
N271/ 0.00 / N280/ 0.00 / N281/ 0.00 /
N282/ 0.00 / N283/ 0.00 / N284/ 0.00 /
N285/ 0.00 / N286/ 0.00 / N287/ 0.00 /
N297/ 0.00 / N298/ 0.00 / N299/ 0.00 /
N300/ 0.00 / N305/ 0.00 / N306/ 0.00 /
N307/ 0.00 / N308/ 2578.85 / N313/ 0.00 /
N314/ 0.00 / N315/ 0.00 / N316/ 0.00 /
N317/ 0.00 / N318/ 0.00 / N319/ 0.00 /
N320/ 0.00 / N321/ 0.00 / N325/ 0.00 /
N326/ 0.00 / N327/ 0.00 / N328/ 0.00 /
N329/ 0.00 / N330/ 0.00 / N331/ 0.00 /
N332/ 0.00 / N333/ 0.00 / N334/ 0.00 /
N335/ 0.00 / N336/ 0.00 / N337/ 0.00 /
N338/ 0.00 / N339/ 0.00 / N340/ 0.00 /
N341/ 0.00 / N347/ 0.00 / N348/ 0.00 /
N349/ 0.00 / N350/ 0.00 / N351/ 0.00 /
N352/ 0.00 / N353/ 0.00 / N354/ 0.00 /
N355/ 0.00 / N356/ 0.00 / N357/ 0.00 /
N358/ 0.00 / N359/ 0.00 / N360/ 0.00 /
N500/ 0.00 / N501/ 0.00 / N503/ 0.00 /
N504/ 0.00 / N506/ 0.00 / N517/ 0.00 /
N518/ 0.00 / N554/ 0.00 / N322/ 0.00 /
N511/ 0.00 / N555/ 0.00 /

Conduit/ Cross Sectional Area
L210/ 0.79 / L211/ 0.78 / L212/ 1.25 /
L213/ 0.79 / L214/ 1.78 / L217/ 0.34 /
L220/ 2.43 / L221/ 3.18 / L222/ 1.43 /
L223/ 0.16 / L224/ 0.17 / L225/ 0.34 /

L226/	0.73 /	L227/	0.79 /	L228/	0.77 /
L229/	1.14 /	L230/	1.18 /	L231/	1.24 /
L232/	1.78 /	L233/	1.78 /	L234/	3.16 /
L235/	0.81 /	L236/	0.79 /	L237/	0.79 /
L238/	0.78 /	L239/	0.78 /	L240/	0.41 /
L241/	1.21 /	L242/	0.54 /	L243/	0.69 /
L246/	4.95 /	L247/	5.10 /	L248/	0.79 /
L249/	0.48 /	L250/	0.33 /	L251/	0.42 /
L259/	1.81 /	L260/	0.68 /	L261/	0.36 /
L262/	0.24 /	L263/	0.41 /	L272/	15.96 /
L273/	2.45 /	L274/	0.71 /	L275/	0.60 /
L277/	0.59 /	L281/	0.74 /	L282/	0.34 /
L283/	0.48 /	L287/	0.55 /	L289/	0.65 /
L319/	1.71 /	L320/	0.67 /	L338/	5.45 /
L339/	5.25 /	L340/	6.81 /	L341/	5.72 /
L342/	1.13 /	L343/	0.72 /	L344/	5.13 /
L346/	9.64 /	L347/	12.64 /	L348/	13.08 /
L349/	13.01 /	L350/	12.51 /	L351/	2.83 /
L352/	2.87 /	L354/	13.00 /	L361/	0.63 /
L362/	0.61 /	L363/	1.39 /	L364/	0.70 /
L365/	0.54 /	L366/	2.89 /	L367/	2.89 /
L368/	0.66 /	L369/	0.78 /	L370/	6.77 /
L373/	6.91 /	L374/	0.78 /	L375/	1.60 /
L376/	5.40 /	L386/	12.09 /	L387/	12.20 /
L388/	0.79 /	L389/	15.61 /	L390/	0.66 /
L391/	15.63 /	L392/	15.46 /	L393/	14.93 /
L395/	1.24 /	L396/	6.18 /	L397/	1.24 /
L398/	1.23 /	L399/	2.37 /	L402/	2.41 /
L403/	2.41 /	L404/	2.41 /	L405/	1.77 /
L406/	4.92 /	L407/	1.23 /	L408/	5.95 /
L410/	7.09 /	L411/	7.09 /	L413/	1.36 /
L415/	0.60 /	L417/	0.79 /	L418/	1.77 /
L419/	3.15 /	L420/	3.15 /	L421/	0.79 /
L422/	1.23 /	L423/	4.92 /	L424/	5.96 /
L425/	0.79 /	L426/	1.24 /	L427/	9.67 /
L428/	0.79 /	L429/	9.88 /	L430/	0.79 /
L431/	0.79 /	L432/	0.79 /	L435/	0.79 /
L436/	0.79 /	L437/	1.26 /	L438/	0.79 /
L439/	1.23 /	L440/	1.72 /	L441/	9.90 /
L442/	8.23 /	L443/	2.97 /	L446/	1.78 /
L448/	0.79 /	L449/	2.42 /	L450/	3.14 /
L451/	2.89 /	L452/	0.81 /	L453/	0.82 /
L454/	0.38 /	L466/	0.96 /	L468/	1.68 /
L470/	2.20 /	L471/	0.22 /	L472/	0.79 /
L490/	1.89 /	L496/	0.26 /	L497/	0.26 /
L498/	0.40 /	L501/	7.37 /	L502/	9.76 /
L503/	15.59 /	L504/	14.50 /	L505/	2.42 /
L506/	2.43 /	L509/	0.31 /	L511/	1.76 /
L512/	1.11 /	L514/	2.42 /	L515/	6.50 /
CH21/	110.82 /	L474/	1.77 /	L523/	7.81 /
L525/	7.00 /	L527/	1.77 /	L528/	1.21 /
L529/	1.77 /	L533/	1.77 /	L537/	1.78 /
L394/	14.13 /	L276/	0.78 /	L288/	0.44 /
L412/	0.50 /	L447/	1.77 /	L252/	0.15 /
L253/	0.54 /	L254/	0.58 /	L255/	1.16 /
L256/	1.70 /	L257/	1.79 /	L264/	1.06 /
L265/	6.71 /	L266/	6.72 /	L267/	0.40 /
L268/	0.79 /	L269/	0.77 /	L270/	6.61 /
L271/	9.66 /	L278/	0.79 /	L279/	0.77 /
L280/	0.79 /	L284/	0.80 /	L285/	1.79 /

L286/	1.24 /	L290/	0.11 /	L291/	0.21 /
L292/	0.37 /	L294/	0.80 /	L300/	1.79 /
L301/	0.80 /	L302/	4.00 /	L303/	0.79 /
L304/	0.80 /	L305/	1.78 /	L306/	0.80 /
L307/	3.16 /	L308/	1.79 /	L309/	0.80 /
L310/	0.79 /	L311/	0.79 /	L312/	0.80 /
L313/	0.80 /	L314/	0.82 /	L315/	0.54 /
L316/	0.65 /	L317/	1.78 /	L318/	1.84 /
L321/	0.34 /	L324/	0.80 /	L325/	0.80 /
L326/	0.80 /	L327/	0.80 /	L328/	1.69 /
L329/	0.90 /	L334/	0.20 /	L335/	0.33 /
L336/	0.44 /	L337/	0.24 /	L475/	1.24 /
L478/	4.00 /	L479/	4.93 /	L487/	2.42 /
L493/	4.94 /	L499/	0.80 /	L500/	1.25 /
L507/	0.80 /	L513/	5.03 /	L546/	1.84 /
L510/	0.56 /				

Conduit/	Final Volume				
L210/	55.24 /	L211/	317.33 /	L212/	677.02 /
L213/	84.91 /	L214/	165.45 /	L217/	28.91 /
L220/	776.67 /	L221/	1254.33 /	L222/	259.88 /
L223/	11.56 /	L224/	50.40 /	L225/	100.02 /
L226/	301.51 /	L227/	186.04 /	L228/	313.37 /
L229/	650.38 /	L230/	470.24 /	L231/	493.60 /
L232/	545.28 /	L233/	852.93 /	L234/	1357.22 /
L235/	40.27 /	L236/	83.25 /	L237/	79.44 /
L238/	42.73 /	L239/	97.17 /	L240/	35.32 /
L241/	358.05 /	L242/	33.77 /	L243/	65.39 /
L246/	2048.72 /	L247/	469.57 /	L248/	37.00 /
L249/	35.15 /	L250/	25.55 /	L251/	29.17 /
L259/	508.67 /	L260/	43.74 /	L261/	50.30 /
L262/	18.18 /	L263/	48.42 /	L272/	542.56 /
L273/	286.11 /	L274/	87.91 /	L275/	64.33 /
L277/	69.12 /	L281/	79.16 /	L282/	16.28 /
L283/	54.95 /	L287/	59.93 /	L289/	78.28 /
L319/	111.21 /	L320/	45.19 /	L338/	457.72 /
L339/	1365.17 /	L340/	1661.16 /	L341/	588.66 /
L342/	88.09 /	L343/	67.72 /	L344/	261.58 /
L346/	482.09 /	L347/	4992.49 /	L348/	5283.89 /
L349/	5205.92 /	L350/	1651.32 /	L351/	99.04 /
L352/	422.31 /	L354/	1222.00 /	L361/	29.58 /
L362/	40.39 /	L363/	571.58 /	L364/	33.51 /
L365/	34.15 /	L366/	1137.54 /	L367/	1051.90 /
L368/	82.01 /	L369/	76.84 /	L370/	1394.97 /
L373/	677.19 /	L374/	124.68 /	L375/	643.04 /
L376/	885.82 /	L386/	4121.98 /	L387/	4329.29 /
L388/	89.17 /	L389/	6011.05 /	L390/	69.67 /
L391/	7801.19 /	L392/	5873.08 /	L393/	6884.96 /
L395/	61.83 /	L396/	2486.26 /	L397/	70.51 /
L398/	59.22 /	L399/	715.15 /	L402/	207.44 /
L403/	960.04 /	L404/	895.00 /	L405/	125.90 /
L406/	1790.74 /	L407/	87.61 /	L408/	2185.23 /
L410/	2799.14 /	L411/	2133.25 /	L413/	544.76 /
L415/	29.62 /	L417/	53.73 /	L418/	127.65 /
L419/	815.74 /	L420/	1266.85 /	L421/	53.76 /
L422/	93.85 /	L423/	1954.83 /	L424/	1781.31 /
L425/	55.33 /	L426/	90.20 /	L427/	4697.69 /
L428/	69.28 /	L429/	3894.19 /	L430/	71.94 /
L431/	339.46 /	L432/	71.82 /	L435/	71.20 /
L436/	249.70 /	L437/	414.61 /	L438/	69.31 /

L439/	458.37 /	L440/	680.17 /	L441/	4010.22 /
L442/	3779.43 /	L443/	285.32 /	L446/	108.53 /
L448/	62.43 /	L449/	1093.49 /	L450/	1257.37 /
L451/	260.20 /	L452/	40.43 /	L453/	49.89 /
L454/	26.85 /	L466/	86.06 /	L468/	834.05 /
L470/	389.82 /	L471/	86.66 /	L472/	41.02 /
L490/	229.18 /	L496/	100.86 /	L497/	100.64 /
L498/	39.19 /	L501/	2765.43 /	L502/	4130.38 /
L503/	6812.20 /	L504/	6742.43 /	L505/	957.47 /
L506/	964.94 /	L509/	41.66 /	L511/	313.97 /
L512/	123.30 /	L514/	965.06 /	L515/	943.03 /
CH21/	102505.78 /	L474/	225.24 /	L523/	1335.12 /
L525/	3731.47 /	L527/	769.19 /	L528/	548.42 /
L529/	503.76 /	L533/	1285.41 /	L537/	805.54 /
L394/	2217.92 /	L276/	39.62 /	L288/	26.68 /
L412/	26.42 /	L447/	697.87 /	L252/	58.69 /
L253/	37.46 /	L254/	226.10 /	L255/	91.80 /
L256/	500.52 /	L257/	501.76 /	L264/	83.65 /
L265/	2328.32 /	L266/	1357.98 /	L267/	24.97 /
L268/	62.30 /	L269/	191.18 /	L270/	2651.38 /
L271/	3846.27 /	L278/	37.82 /	L279/	127.83 /
L280/	39.39 /	L284/	41.47 /	L285/	250.14 /
L286/	62.11 /	L290/	39.93 /	L291/	76.55 /
L292/	38.36 /	L294/	65.33 /	L300/	416.21 /
L301/	44.66 /	L302/	2170.65 /	L303/	65.97 /
L304/	54.18 /	L305/	255.15 /	L306/	46.46 /
L307/	300.65 /	L308/	180.67 /	L309/	46.48 /
L310/	48.24 /	L311/	316.16 /	L312/	48.61 /
L313/	466.32 /	L314/	75.16 /	L315/	38.40 /
L316/	188.49 /	L317/	537.37 /	L318/	559.77 /
L321/	148.75 /	L324/	97.61 /	L325/	49.61 /
L326/	94.78 /	L327/	94.05 /	L328/	587.21 /
L329/	88.53 /	L334/	80.31 /	L335/	121.03 /
L336/	54.54 /	L337/	28.54 /	L475/	121.91 /
L478/	1921.85 /	L479/	2910.85 /	L487/	396.75 /
L493/	2305.71 /	L499/	312.62 /	L500/	495.99 /
L507/	116.96 /	L513/	1383.14 /	L546/	1062.75 /
L510/	61.68 /				

Conduit/ Hydraulic Radius

L210/	0.25 /	L211/	0.26 /	L212/	0.31 /
L213/	0.25 /	L214/	0.38 /	L217/	0.23 /
L220/	0.44 /	L221/	0.51 /	L222/	0.45 /
L223/	0.15 /	L224/	0.16 /	L225/	0.22 /
L226/	0.30 /	L227/	0.25 /	L228/	0.25 /
L229/	0.36 /	L230/	0.32 /	L231/	0.31 /
L232/	0.38 /	L233/	0.38 /	L234/	0.50 /
L235/	0.25 /	L236/	0.25 /	L237/	0.25 /
L238/	0.26 /	L239/	0.26 /	L240/	0.26 /
L241/	0.32 /	L242/	0.29 /	L243/	0.30 /
L246/	0.62 /	L247/	0.62 /	L248/	0.25 /
L249/	0.27 /	L250/	0.21 /	L251/	0.26 /
L259/	0.50 /	L260/	0.28 /	L261/	0.24 /
L262/	0.17 /	L263/	0.25 /	L272/	1.12 /
L273/	0.44 /	L274/	0.31 /	L275/	0.29 /
L277/	0.29 /	L281/	0.25 /	L282/	0.22 /
L283/	0.27 /	L287/	0.29 /	L289/	0.30 /
L319/	0.42 /	L320/	0.30 /	L338/	0.90 /
L339/	0.89 /	L340/	1.02 /	L341/	0.95 /
L342/	0.37 /	L343/	0.30 /	L344/	0.62 /

L346/ 0.88 / L347/ 1.00 / L348/ 1.00 /
L349/ 1.00 / L350/ 1.04 / L351/ 0.61 /
L352/ 0.60 / L354/ 1.35 / L361/ 0.30 /
L362/ 0.30 / L363/ 0.45 / L364/ 0.30 /
L365/ 0.29 / L366/ 0.60 / L367/ 0.60 /
L368/ 0.30 / L369/ 0.26 / L370/ 0.89 /
L373/ 0.85 / L374/ 0.26 / L375/ 0.45 /
L376/ 0.83 / L386/ 1.18 / L387/ 1.16 /
L388/ 0.25 / L389/ 1.28 / L390/ 0.30 /
L391/ 1.28 / L392/ 1.30 / L393/ 1.34 /
L395/ 0.31 / L396/ 0.91 / L397/ 0.31 /
L398/ 0.31 / L399/ 0.59 / L402/ 0.44 /
L403/ 0.44 / L404/ 0.44 / L405/ 0.38 /
L406/ 0.62 / L407/ 0.31 / L408/ 0.69 /
L410/ 0.75 / L411/ 0.75 / L413/ 0.44 /
L415/ 0.30 / L417/ 0.25 / L418/ 0.38 /
L419/ 0.50 / L420/ 0.50 / L421/ 0.25 /
L422/ 0.31 / L423/ 0.62 / L424/ 0.69 /
L425/ 0.25 / L426/ 0.31 / L427/ 0.88 /
L428/ 0.25 / L429/ 0.88 / L430/ 0.25 /
L431/ 0.25 / L432/ 0.25 / L435/ 0.25 /
L436/ 0.25 / L437/ 0.31 / L438/ 0.25 /
L439/ 0.32 / L440/ 0.43 / L441/ 0.89 /
L442/ 1.01 / L443/ 0.60 / L446/ 0.38 /
L448/ 0.25 / L449/ 0.44 / L450/ 0.51 /
L451/ 0.60 / L452/ 0.25 / L453/ 0.25 /
L454/ 0.24 / L466/ 0.37 / L468/ 0.51 /
L470/ 0.51 / L471/ 0.16 / L472/ 0.25 /
L490/ 0.52 / L496/ 0.20 / L497/ 0.20 /
L498/ 0.25 / L501/ 0.75 / L502/ 0.88 /
L503/ 1.28 / L504/ 1.36 / L505/ 0.44 /
L506/ 0.44 / L509/ 0.20 / L511/ 0.38 /
L512/ 0.38 / L514/ 0.44 / L515/ 0.90 /
CH21/ 1.08 / L474/ 0.38 / L523/ 0.66 /
L525/ 0.84 / L527/ 0.38 / L528/ 0.32 /
L529/ 0.38 / L533/ 0.38 / L537/ 0.38 /
L394/ 1.37 / L276/ 0.26 / L288/ 0.24 /
L412/ 0.28 / L447/ 0.38 / L252/ 0.11 /
L253/ 0.29 / L254/ 0.29 / L255/ 0.37 /
L256/ 0.44 / L257/ 0.38 / L264/ 0.38 /
L265/ 0.89 / L266/ 0.89 / L267/ 0.25 /
L268/ 0.25 / L269/ 0.25 / L270/ 0.90 /
L271/ 0.88 / L278/ 0.25 / L279/ 0.26 /
L280/ 0.25 / L284/ 0.25 / L285/ 0.38 /
L286/ 0.31 / L290/ 0.12 / L291/ 0.17 /
L292/ 0.23 / L294/ 0.25 / L300/ 0.38 /
L301/ 0.25 / L302/ 0.56 / L303/ 0.25 /
L304/ 0.25 / L305/ 0.38 / L306/ 0.25 /
L307/ 0.50 / L308/ 0.38 / L309/ 0.25 /
L310/ 0.25 / L311/ 0.25 / L312/ 0.25 /
L313/ 0.25 / L314/ 0.25 / L315/ 0.29 /
L316/ 0.30 / L317/ 0.38 / L318/ 0.38 /
L321/ 0.22 / L324/ 0.25 / L325/ 0.25 /
L326/ 0.25 / L327/ 0.25 / L328/ 0.37 /
L329/ 0.36 / L334/ 0.17 / L335/ 0.23 /
L336/ 0.26 / L337/ 0.17 / L475/ 0.31 /
L478/ 0.56 / L479/ 0.62 / L487/ 0.44 /
L493/ 0.62 / L499/ 0.25 / L500/ 0.31 /
L507/ 0.25 / L513/ 0.64 / L546/ 0.38 /
L510/ 0.28 /

Conduit/ Upstream/ Downstream Elevation

L210/ 107.60/ 106.99 L211/ 106.99/ 102.82 L212/ 102.12/ 100.29/

L213/ 100.97/ 100.29 L214/ 100.61/ 100.29 L217/ 100.29/ 99.74/

L220/ 100.29/ 98.17 L221/ 98.17/ 96.23 L222/ 95.25/ 90.47/

L223/ 119.86/ 119.61 L224/ 118.89/ 118.06 L225/ 117.66/ 117.58/

L226/ 118.56/ 118.20 L227/ 118.20/ 117.58 L228/ 117.58/ 114.74/

L229/ 112.52/ 110.57 L230/ 110.43/ 108.61 L231/ 108.45/ 106.64/

L232/ 106.64/ 105.30 L233/ 105.30/ 103.01 L234/ 103.01/ 102.03/

L235/ 112.53/ 112.52 L236/ 107.13/ 106.64 L237/ 103.99/ 103.01/

L238/ 116.65/ 115.88 L239/ 115.28/ 113.18 L240/ 113.35/ 112.80/

L241/ 110.46/ 107.74 L242/ 108.07/ 107.63 L243/ 108.45/ 107.72/

L246/ 102.03/ 100.12 L247/ 100.12/ 99.55 L248/ 100.31/ 100.12/

L249/ 105.49/ 104.84 L250/ 104.84/ 99.54 L251/ 105.41/ 104.84/

L259/ 97.68/ 96.03 L260/ 96.03/ 90.48 L261/ 94.74/ 93.72/

L262/ 93.72/ 83.91 L263/ 94.67/ 93.72 L272/ 83.90/ 83.90/

L273/ 84.46/ 83.90 L274/ 92.47/ 83.90 L275/ 119.61/ 119.32/

L277/ 119.66/ 119.32 L281/ 124.82/ 122.68 L282/ 122.68/ 113.42/

L283/ 123.56/ 122.68 L287/ 113.82/ 113.08 L289/ 114.00/ 113.15/

L319/ 101.67/ 101.11 L320/ 101.90/ 101.67 L338/ 128.41/ 128.24/

L339/ 128.24/ 127.64 L340/ 127.64/ 127.05 L341/ 127.05/ 126.60/

L342/ 128.98/ 128.40 L343/ 129.22/ 128.48 L344/ 127.20/ 127.14/

L346/ 126.94/ 126.89 L347/ 126.89/ 126.10 L348/ 126.10/ 125.34/

L349/ 125.34/ 124.56 L350/ 124.56/ 124.30 L351/ 124.59/ 124.53/

L352/ 124.53/ 124.30 L354/ 122.63/ 122.58 L361/ 126.29/ 125.91/

L362/ 126.38/ 125.89 L363/ 125.85/ 124.59 L364/ 124.98/ 124.59/

L365/ 124.87/ 124.59 L366/ 124.59/ 123.68 L367/ 123.68/ 122.84/

L368/ 123.62/ 122.84 L369/ 124.15/ 122.91 L370/ 122.84/ 122.65/

L373/ 122.65/ 122.58 L374/ 120.84/ 118.97 L375/ 118.97/ 118.40/

L376/ 118.66/ 118.40 L386/ 118.28/ 118.03 L387/ 118.03/ 117.76/

L388/ 118.33/ 117.76 L389/ 117.76/ 117.47 L390/ 117.77/ 117.47/

L391/ 117.47/ 117.01 L392/ 117.01/ 116.51 L393/ 116.51/ 115.87/
L395/ 118.99/ 118.71 L396/ 118.79/ 118.71 L397/ 119.08/ 118.71/
L398/ 119.07/ 118.79 L399/ 118.94/ 118.79 L402/ 114.76/ 114.53/
L403/ 114.53/ 113.47 L404/ 113.47/ 112.48 L405/ 112.68/ 112.48/
L406/ 112.48/ 112.07 L407/ 112.40/ 112.07 L408/ 112.07/ 111.63/
L410/ 111.63/ 111.16 L411/ 111.16/ 110.79 L413/ 119.11/ 118.82/
L415/ 119.53/ 119.12 L417/ 113.53/ 112.96 L418/ 113.19/ 112.96/
L419/ 112.96/ 112.53 L420/ 112.53/ 111.86 L421/ 112.06/ 111.86/
L422/ 112.21/ 111.86 L423/ 111.86/ 111.28 L424/ 111.28/ 110.79/
L425/ 111.34/ 111.28 L426/ 111.64/ 111.28 L427/ 110.79/ 109.75/
L428/ 109.83/ 109.75 L429/ 109.75/ 108.88 L430/ 120.78/ 120.22/
L431/ 122.53/ 120.22 L432/ 123.02/ 122.53 L435/ 116.46/ 115.70/
L436/ 115.70/ 113.02 L437/ 113.02/ 112.19 L438/ 112.45/ 112.19/
L439/ 112.19/ 109.78 L440/ 109.78/ 108.88 L441/ 108.88/ 107.66/
L442/ 107.66/ 105.10 L443/ 105.10/ 99.57 L446/ 129.75/ 129.50/
L448/ 128.22/ 128.14 L449/ 128.14/ 126.00 L450/ 126.00/ 123.98/
L451/ 120.44/ 119.84 L452/ 126.09/ 126.00 L453/ 126.06/ 126.00/
L454/ 120.53/ 120.44 L466/ 120.82/ 120.13 L468/ 119.59/ 118.94/
L470/ 123.50/ 122.36 L471/ 125.03/ 123.50 L472/ 128.12/ 127.04/
L490/ 111.34/ 110.82 L496/ 133.80/ 131.68 L497/ 133.80/ 131.68/
L498/ 131.68/ 131.11 L501/ 127.14/ 126.98 L502/ 126.98/ 126.89/
L503/ 124.30/ 123.56 L504/ 123.56/ 122.63 L505/ 106.81/ 104.49/
L506/ 104.49/ 102.03 L509/ 108.21/ 97.64 L511/ 112.44/ 109.88/
L512/ 108.76/ 97.42 L514/ 129.50/ 128.14 L515/ 118.40/ 118.28/
CH21/ 118.68/ 118.66 L474/ 120.87/ 119.50 L523/ 122.36/ 121.23/
L525/ 118.71/ 118.28 L527/ 118.82/ 117.76 L528/ 120.22/ 117.01/
L529/ 114.93/ 114.29 L533/ 114.29/ 112.65 L537/ 112.65/ 111.63/
L394/ 115.87/ 115.63 L276/ 119.32/ 118.76 L288/ 112.67/ 108.83/
L412/ 119.61/ 119.01 L447/ 129.71/ 129.50 L252/ 100.51/ 99.20/
L253/ 101.38/ 100.99 L254/ 100.99/ 99.20 L255/ 100.27/ 99.91/

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           L256/    99.91/    99.20           L257/    99.20/    97.68           L264/    86.34/
85.95/
           L265/    85.95/    85.49           L266/    85.49/    85.20           L267/    85.62/
85.49/
           L268/    96.56/    95.98           L269/    95.98/    93.73           L270/    85.20/
84.31/
           L271/    84.31/    83.90           L278/   114.71/   114.59           L279/   114.59/
112.77/
           L280/   114.72/   114.59           L284/   108.93/   108.80           L285/   108.80/
108.64/
           L286/   108.83/   108.80           L290/   104.11/   102.08           L291/   102.08/
100.03/
           L292/   100.03/    99.57           L294/    92.71/    92.55           L300/    93.33/
92.55/
           L301/    93.53/    93.33           L302/    92.55/    91.51           L303/    93.58/
93.52/
           L304/    93.94/    93.52           L305/    93.52/    93.33           L306/    98.13/
97.66/
           L307/    97.66/    97.64           L308/    97.76/    97.64           L309/    98.18/
97.76/
           L310/   110.94/   110.78           L311/   110.78/   109.72           L312/   109.83/
109.72/
           L313/   109.72/   104.33           L314/   104.49/   104.33           L315/   105.53/
105.22/
           L316/   105.22/   104.33           L317/   104.33/   102.95           L318/   102.95/
101.67/
           L321/   119.23/   118.56           L324/   123.06/   122.70           L325/   121.72/
121.55/
           L326/   120.55/   120.09           L327/   120.68/   120.09           L328/   120.09/
116.35/
           L329/   116.35/   113.42           L334/   125.61/   123.40           L335/   123.40/
121.39/
           L336/   121.39/   120.37           L337/   120.37/   115.34           L475/    93.13/
92.55/
           L478/    91.51/    89.36           L479/    89.36/    87.83           L487/    98.41/
97.42/
           L493/    87.83/    86.64           L499/   122.70/   121.55           L500/   121.55/
120.09/
           L507/    94.63/    92.46           L513/    86.64/    85.95           L546/    92.46/
91.51/
           L510/   102.72/    97.42


 *=========================================================*
 |         Table E7 -  Iteration Summary                   |
 *=========================================================*

 Total number of time steps simulated.............       360
 Total number of passes in the simulation........     12469
 Total number of time steps during simulation....     11049
 Ratio of actual # of time steps / NTCYC.........    30.692
 Average number of iterations per time step......     1.129
 Average  time step size(seconds)................     1.955
 Smallest time step size(seconds)................     1.000
 Largest  time step size(seconds)................    15.000
 Average minimum Conduit Courant time step (sec).     2.152
 Average minimum implicit time step (sec)........     1.980
 Average minimum junction time step (sec)........     1.980
 Average Courant Factor Tf.......................     1.980
 Number of times omega reduced...................         0
```

===
| Table E8 - Junction Time Step Limitation Summary |
===
| Not Convr = Number of times this junction did not |
| converge during the simulation. |
| Avg Convr = Average junction iterations. |
| Conv err = Mean convergence error. |
| Omega Cng = Change of omega during iterations |
| Max Itern = Maximum number of iterations |
===

Junction	Not Convr	Avg Convr	Total Itt	Omega Cng	Max Itern	Ittrn >10	Ittrn >25	Ittrn >40
N221	0	1.27	14052	0	10	1	0	0
N222	0	1.50	16539	0	6	0	0	0
N223	0	1.49	16515	0	5	0	0	0
N224	0	1.55	17159	0	22	2	0	0
N227	0	1.27	14022	0	10	1	0	0
N228	0	1.33	14747	0	11	1	0	0
N230	0	1.51	16719	0	11	1	0	0
N231	0	1.23	13551	0	7	0	0	0
N233	0	1.47	16251	0	5	0	0	0
N234	0	1.17	12906	0	4	0	0	0
N235	0	1.07	11834	0	3	0	0	0
N236	0	1.07	11852	0	3	0	0	0
N237	0	1.07	11787	0	3	0	0	0
N238	0	1.48	16377	0	7	0	0	0
N239	0	1.26	13879	0	4	0	0	0
N240	0	1.43	15818	0	5	0	0	0
N241	0	1.51	16697	0	5	0	0	0
N242	0	1.51	16639	0	5	0	0	0
N243	0	1.51	16640	0	5	0	0	0
N244	0	1.60	17662	0	7	0	0	0
N245	0	1.54	16988	0	19	1	0	0
N246	0	1.62	17889	0	24	16	0	0
N247	0	1.46	16112	0	18	7	0	0
N248	0	1.22	13443	0	4	0	0	0
N249	0	1.28	14091	0	10	1	0	0
N250	0	1.28	14195	0	11	1	0	0
N251	0	1.24	13701	0	10	1	0	0
N252	0	1.46	16112	0	5	0	0	0
N253	0	1.46	16156	0	9	0	0	0
N254	0	1.23	13591	0	5	0	0	0
N255	0	1.50	16622	0	14	1	0	0
N256	0	1.23	13643	0	11	1	0	0
N257	0	1.25	13757	0	10	1	0	0
N259	0	1.43	15768	0	25	10	1	0
N260	0	1.38	15226	0	18	3	0	0
N261	0	1.28	14144	0	14	5	0	0
N262	0	1.22	13457	0	9	0	0	0
N263	0	1.47	16235	0	10	1	0	0
N264	0	1.14	12576	0	4	0	0	0
N265	0	1.22	13462	0	4	0	0	0
N272	0	1.39	15383	0	5	0	0	0
N273	0	1.00	11049	0	1	0	0	0
N274	0	1.38	15285	0	5	0	0	0
N275	0	1.20	13275	0	4	0	0	0
N276	0	1.18	13005	0	8	0	0	0
N277	0	1.47	16200	0	9	0	0	0

N278	0	1.13	12440	0	3	0	0	0
N279	0	1.20	13226	0	6	0	0	0
N288	3	6.27	69326	0	501	1751	8	6
N289	0	4.23	46757	0	50	3	1	1
N290	0	2.08	22975	0	109	10	4	3
N291	0	1.24	13713	0	9	0	0	0
N292	0	1.17	12882	0	5	0	0	0
N293	0	1.24	13674	0	8	0	0	0
N294	0	1.45	16018	0	10	1	0	0
N296	0	1.23	13640	0	4	0	0	0
N301	0	1.21	13348	0	9	0	0	0
N302	0	1.47	16289	0	11	1	0	0
N303	0	1.13	12499	0	4	0	0	0
N304	0	1.22	13482	0	10	1	0	0
N309	0	1.23	13632	0	7	0	0	0
N310	0	1.45	16073	0	9	0	0	0
N312	0	1.24	13719	0	10	1	0	0
N342	0	1.49	16439	0	10	1	0	0
N343	0	1.41	15601	0	5	0	0	0
N344	0	1.24	13695	0	11	1	0	0
N345	0	1.16	12791	0	4	0	0	0
N361	0	1.36	15016	0	13	2	0	0
N362	0	1.53	16910	0	17	1	0	0
N363	0	1.50	16599	0	15	1	0	0
N364	0	1.48	16307	0	6	0	0	0
N365	0	1.39	15375	0	5	0	0	0
N366	0	1.26	13885	0	12	1	0	0
N367	0	1.25	13820	0	11	1	0	0
N368	0	1.36	15041	0	10	1	0	0
N369	0	1.62	17917	0	14	1	0	0
N370	0	1.83	20272	0	20	5	0	0
N371	0	1.54	17020	0	12	1	0	0
N372	0	1.52	16757	0	23	3	0	0
N373	0	1.50	16567	0	13	2	0	0
N374	0	1.53	16921	0	25	5	1	0
N375	0	1.49	16435	0	21	4	0	0
N376	0	1.37	15151	0	11	2	0	0
N377	0	1.56	17218	0	13	1	0	0
N378	0	1.25	13843	0	60	4	2	1
N379	0	1.40	15432	0	22	3	0	0
N381	0	1.47	16215	0	13	1	0	0
N382	0	1.52	16803	0	14	1	0	0
N383	0	1.23	13610	0	11	1	0	0
N384	0	1.24	13655	0	11	1	0	0
N386	0	1.23	13609	0	10	1	0	0
N387	0	1.23	13621	0	11	1	0	0
N388	0	1.51	16638	0	21	1	0	0
N389	0	1.43	15855	0	27	11	2	0
N390	0	1.25	13841	0	17	2	0	0
N391	0	1.28	14194	0	19	2	0	0
N392	0	1.44	15878	0	45	10	1	1
N394	0	1.41	15547	0	26	6	2	0
N395	0	1.23	13555	0	5	0	0	0
N396	0	1.49	16466	0	5	0	0	0
N397	0	1.91	21137	0	8	0	0	0
N398	0	1.73	19100	0	8	0	0	0
N399	0	1.68	18606	0	24	4	0	0
N403	0	1.60	17698	0	76	4	3	2
N404	0	1.58	17476	0	28	5	1	0
N405	0	1.24	13685	0	10	1	0	0

N406	0	1.52	16752	0	29	6	1	0
N407	0	1.23	13615	0	4	0	0	0
N408	0	1.49	16488	0	33	4	1	0
N409	0	1.45	16019	0	30	5	1	0
N410	0	1.44	15926	0	45	5	1	1
N412	0	1.26	13904	0	12	1	0	0
N413	0	1.55	17081	0	11	1	0	0
N414	0	1.54	16995	0	11	1	0	0
N415	0	1.25	13844	0	10	1	0	0
N416	0	1.27	13988	0	11	1	0	0
N417	0	1.50	16520	0	5	0	0	0
N418	0	1.26	13897	0	10	1	0	0
N419	0	1.58	17450	0	6	0	0	0
N420	0	1.37	15093	0	9	0	0	0
N421	0	1.58	17423	0	11	1	0	0
N422	0	1.72	19044	0	12	1	0	0
N423	0	1.35	14938	0	11	1	0	0
N424	1	1.76	19473	0	501	5	1	1
N425	0	1.35	14884	0	11	1	0	0
N426	0	1.62	17888	0	8	0	0	0
N428	2	1.66	18308	0	501	3	2	2
N429	1	1.65	18280	0	501	2	1	1
N430	0	1.20	13314	0	9	0	0	0
N431	0	1.35	14961	0	6	0	0	0
N432	0	1.47	16206	0	11	1	0	0
N434	0	1.23	13610	0	11	1	0	0
N435	0	1.63	17966	0	14	1	0	0
N436	0	1.30	14342	0	11	1	0	0
N437	0	1.34	14786	0	11	1	0	0
N438	0	1.64	18122	0	6	0	0	0
N439	6	1.97	21812	0	501	7	6	6
N440	0	1.37	15158	0	9	0	0	0
N441	0	1.35	14950	0	11	1	0	0
N442	0	1.77	19515	0	12	1	0	0
N443	0	1.44	15922	0	5	0	0	0
N444	0	1.34	14841	0	11	1	0	0
N445	0	1.71	18941	0	8	0	0	0
N446	0	1.39	15402	0	5	0	0	0
N447	0	1.58	17473	0	6	0	0	0
N448	0	1.26	13909	0	11	1	0	0
N449	0	1.54	17020	0	6	0	0	0
N450	0	1.52	16762	0	9	0	0	0
N451	0	1.29	14209	0	11	1	0	0
N453	0	1.48	16374	0	11	1	0	0
N454	0	1.25	13765	0	12	1	0	0
N455	0	1.53	16915	0	5	0	0	0
N456	0	1.56	17230	0	9	0	0	0
N457	0	1.27	14039	0	10	1	0	0
N458	0	1.49	16498	0	5	0	0	0
N459	0	1.46	16154	0	6	0	0	0
N460	0	1.47	16217	0	6	0	0	0
N461	0	1.24	13691	0	40	1	1	1
N464	0	1.59	17559	0	10	1	0	0
N465	0	1.34	14795	0	78	1	1	1
N466	0	1.60	17665	0	9	0	0	0
N467	0	1.36	15064	0	9	0	0	0
N468	0	1.59	17620	0	13	1	0	0
N469	0	1.50	16528	0	10	1	0	0
N470	0	1.55	17109	0	22	1	0	0
N471	0	1.36	15068	0	5	0	0	0

N472	0	1.35	14966	0	5	0	0	0
N473	0	1.18	12985	0	4	0	0	0
N487	0	1.45	16013	0	7	0	0	0
N489	0	1.41	15525	0	5	0	0	0
N490	0	1.30	14403	0	11	1	0	0
N491	0	1.14	12642	0	14	1	0	0
N492	0	1.21	13389	0	9	0	0	0
N493	0	2.44	26914	0	499	27	27	27
N497	0	1.23	13590	0	11	1	0	0
N499	0	1.14	12559	0	4	0	0	0
N509	0	1.24	13701	0	13	1	0	0
N513	0	1.27	13986	0	6	0	0	0
N514	0	1.43	15846	0	13	2	0	0
N516	0	1.12	12340	0	4	0	0	0
N524	0	1.20	13251	0	7	0	0	0
N525	0	1.23	13544	0	6	0	0	0
N526	0	1.20	13246	0	4	0	0	0
N527	0	1.28	14093	0	5	0	0	0
N528	0	1.62	17852	0	7	0	0	0
N529	0	1.35	14952	0	41	4	1	1
N530	0	1.46	16082	0	34	4	1	0
N689	0	2.34	25900	0	499	25	25	25
N494	0	1.45	16020	0	10	1	0	0
N541	0	1.58	17412	0	9	0	0	0
EL329	0	1.33	14710	0	9	0	0	0
N427	0	1.57	17293	0	7	0	0	0
N411	0	1.47	16279	0	31	4	1	0
N295	0	1.36	14978	0	5	0	0	0
N311	0	1.17	12912	0	4	0	0	0
N462	0	1.32	14571	0	7	0	0	0
N266	0	1.00	11060	0	2	0	0	0
N267	0	1.49	16452	0	7	0	0	0
N268	0	1.23	13630	0	9	0	0	0
N269	0	1.44	15886	0	5	0	0	0
N270	0	1.27	13977	0	9	0	0	0
N271	0	1.52	16741	0	5	0	0	0
N280	0	1.26	13904	0	9	0	0	0
N281	0	1.61	17787	0	33	3	1	0
N282	0	1.61	17805	0	14	1	0	0
N283	0	1.56	17278	0	22	3	0	0
N284	0	1.20	13266	0	5	0	0	0
N285	0	1.24	13753	0	11	1	0	0
N286	0	1.48	16315	0	5	0	0	0
N287	0	2.02	22313	0	135	5	3	1
N297	0	1.29	14223	0	10	1	0	0
N298	0	1.52	16771	0	10	1	0	0
N299	0	1.38	15249	0	5	0	0	0
N300	0	1.28	14169	0	10	1	0	0
N305	0	1.22	13500	0	51	7	2	1
N306	3	1.55	17104	0	501	10	5	5
N307	0	1.43	15789	0	14	2	0	0
N308	0	1.29	14233	0	245	4	3	2
N313	0	1.00	11057	0	3	0	0	0
N314	0	1.15	12667	0	5	0	0	0
N315	0	2.11	23271	0	386	45	43	42
N316	0	1.28	14152	0	9	0	0	0
N317	0	1.35	14864	0	10	1	0	0
N318	0	1.66	18335	0	9	0	0	0
N319	0	1.38	15198	0	7	0	0	0
N320	0	1.62	17909	0	10	1	0	0

N321	0	1.39	15303	0	11	1	0	0
N325	0	1.66	18340	0	11	1	0	0
N326	0	1.36	14997	0	7	0	0	0
N327	0	1.32	14604	0	11	1	0	0
N328	1	1.31	14433	0	501	12	4	4
N329	0	1.25	13768	0	70	9	4	3
N330	3	1.54	17046	0	501	23	6	4
N331	0	1.37	15129	0	33	8	1	0
N332	0	1.24	13706	0	53	8	3	3
N333	0	1.38	15225	0	9	0	0	0
N334	0	1.60	17642	0	7	0	0	0
N335	0	1.64	18096	0	9	0	0	0
N336	0	1.42	15643	0	7	0	0	0
N337	0	1.58	17468	0	10	1	0	0
N338	0	1.31	14487	0	5	0	0	0
N339	0	1.23	13597	0	9	0	0	0
N340	0	1.44	15953	0	5	0	0	0
N341	0	1.53	16858	0	5	0	0	0
N347	0	1.45	16048	0	9	0	0	0
N348	0	1.46	16131	0	10	1	0	0
N349	0	1.32	14590	0	9	0	0	0
N350	0	1.39	15332	0	8	0	0	0
N351	0	1.55	17152	0	8	0	0	0
N352	0	1.36	14972	0	10	1	0	0
N353	0	1.33	14741	0	10	1	0	0
N354	0	1.44	15919	0	5	0	0	0
N355	0	1.23	13537	0	32	1	1	0
N356	0	1.15	12662	0	6	0	0	0
N357	0	1.22	13507	0	6	0	0	0
N358	0	1.20	13301	0	5	0	0	0
N359	0	1.28	14118	0	4	0	0	0
N360	0	1.21	13390	0	31	1	1	0
N500	0	1.58	17421	0	11	1	0	0
N501	0	1.53	16954	0	13	3	0	0
N503	0	1.38	15251	0	31	4	3	0
N504	0	1.24	13677	0	55	7	2	1
N506	0	1.24	13743	0	10	1	0	0
N517	0	1.53	16878	0	6	0	0	0
N518	0	1.49	16488	0	8	0	0	0
N554	0	1.52	16748	0	5	0	0	0
N322	0	1.37	15168	0	35	6	1	0
N511	0	1.24	13731	0	11	1	0	0
N555	0	1.21	13421	0	5	0	0	0

Total number of iterations for all junctions.. 4256014
Minimum number of possible iterations..... 2972181
Efficiency of the simulation..... 1.43
Good Efficiency

===
| Extran Efficiency is an indicator of the efficiency of |
| the simulation. Ideal efficiency is one iteration per |
| time step. Altering the underrelaxation parameter, |
| lowering the time step, increasing the flow and head |
| tolerance are good ways of improving the efficiency, |
| another is lowering the internal time step. The lower the|
| efficiency generally the faster your model will run. |
| If your efficiency is less than 1.5 then you may try |
| increasing your time step so that your overall simulation|
| is faster. Ideal efficiency would be around 2.0 |
| |

Good Efficiency	< 1.5	mean iterations
Excellent Efficiency	< 2.5 and > 1.5	mean iterations
Good Efficiency	< 4.0 and > 2.5	mean iterations
Fair Efficiency	< 7.5 and > 4.0	mean iterations
Poor Efficiency	> 7.5	mean iterations

Table E9 - JUNCTION SUMMARY STATISTICS

The Maximum area is only the area of the node, it does not include the area of the surrounding conduits

Name	Ground Elevation feet	Uppermost PipeCrown Elevation feet	Maximum Junction Elevation feet	Time of Occurence Hr.	Time of Occurence Min.	Feet of Surcharge at Max Elevation	Freeboard of node feet	Maximum Junction Area ft^2	Maximum Gutter Depth feet	Maximum Gutter Width feet	Gutter Junction Velocity ft/s
N221	114.0300	106.8400	107.6026	2	47	0.7626	6.4274	12.5660	0.0000	0.0000	0.0000
N222	112.0800	106.4400	106.9939	2	47	0.5539	5.0861	12.5660	0.0000	0.0000	0.0000
N223	106.2600	103.0600	102.1159	4	21	0.0000	4.1441	12.5660	0.0000	0.0000	0.0000
N224	106.3300	99.7200	100.2909	4	23	0.5709	6.0391	12.5660	0.0000	0.0000	0.0000
N227	109.4000	99.3400	100.9720	4	22	1.6320	8.4280	12.5660	0.0000	0.0000	0.0000
N228	102.4000	99.0300	100.6100	4	22	1.5800	1.7900	12.5660	0.0000	0.0000	0.0000
N230	104.3900	100.3300	98.1694	4	22	0.0000	6.2206	12.5660	0.0000	0.0000	0.0000
N231	104.4000	100.8400	100.2872	1	2	0.0000	4.1128	12.5660	0.0000	0.0000	0.0000
N233	100.3500	96.9200	95.2520	4	18	0.0000	5.0980	12.5660	0.0000	0.0000	0.0000
N234	100.0000	89.6000	90.4700	0	0	0.8700	9.5300	12.5660	0.0000	0.0000	0.0000
N235	138.1500	120.6000	119.8642	2	1	0.0000	18.2858	12.5660	0.0000	0.0000	0.0000
N236	126.2300	120.4100	118.8903	5	0	0.0000	7.3397	12.5660	0.0000	0.0000	0.0000
N237	124.2900	118.8600	117.6596	6	0	0.0000	6.6304	12.5660	0.0000	0.0000	0.0000
N238	122.3500	117.5100	117.5825	6	0	0.0725	4.7675	12.5660	0.0000	0.0000	0.0000
N239	125.0800	118.6900	118.5578	6	0	0.0000	6.5222	12.5660	0.0000	0.0000	0.0000
N240	122.0900	117.6200	118.1994	6	0	0.5794	3.8906	12.5660	0.0000	0.0000	0.0000
N241	119.6000	115.0600	112.5184	6	0	0.0000	7.0816	12.5660	0.0000	0.0000	0.0000
N242	115.6700	111.1300	110.4305	6	0	0.0000	5.2395	12.5660	0.0000	0.0000	0.0000

N243	112.6900	109.1100	108.4480	6	0	0.0000	4.2420	12.5660	0.0000	0.0000	0.0000
N244	109.7000	106.3500	106.6365	6	0	0.2865	3.0635	12.5660	0.0000	0.0000	0.0000
N245	107.6800	104.8800	105.2963	6	0	0.4163	2.3837	12.5660	0.0000	0.0000	0.0000
N246	104.7000	101.8100	103.0130	6	0	1.2030	1.6870	12.5660	0.0000	0.0000	0.0000
N247	107.2000	100.3700	102.0312	6	0	1.6612	5.1688	12.5660	0.0000	0.0000	0.0000
N248	116.0000	112.4800	112.5280	6	0	0.0480	3.4720	12.5660	0.0000	0.0000	0.0000
N249	108.6300	105.6200	107.1256	6	0	1.5056	1.5044	12.5660	0.0000	0.0000	0.0000
N250	113.4000	102.1400	103.9881	6	0	1.8481	9.4119	12.5660	0.0000	0.0000	0.0000
N251	127.0200	116.3800	116.6527	1	0	0.2727	10.3673	12.5660	0.0000	0.0000	0.0000
N252	121.2500	116.0600	115.2810	1	0	0.0000	5.9690	12.5660	0.0000	0.0000	0.0000
N253	119.0300	113.3300	110.4633	1	1	0.0000	8.5667	12.5660	0.0000	0.0000	0.0000
N254	120.4000	113.8300	113.3534	1	1	0.0000	7.0466	12.5660	0.0000	0.0000	0.0000
N255	113.9100	108.0500	106.8092	6	0	0.0000	7.1008	12.5660	0.0000	0.0000	0.0000
N256	119.8800	108.4100	108.0734	1	0	0.0000	11.8066	12.5660	0.0000	0.0000	0.0000
N257	118.4000	108.6100	108.4472	1	2	0.0000	9.9528	12.5660	0.0000	0.0000	0.0000
N259	102.6900	99.6600	100.1167	6	0	0.4567	2.5733	12.5660	0.0000	0.0000	0.0000
N260	101.1000	99.5000	99.5500	0	0	0.0500	1.5500	12.5660	0.0000	0.0000	0.0000
N261	106.3800	99.9300	100.3093	6	0	0.3793	6.0707	12.5660	0.0000	0.0000	0.0000
N262	110.4000	105.8800	105.4930	1	0	0.0000	4.9070	12.5660	0.0000	0.0000	0.0000
N263	109.4000	105.4600	104.8418	1	0	0.0000	4.5582	12.5660	0.0000	0.0000	0.0000
N264	106.0000	97.6400	99.5400	0	0	1.9000	6.4600	12.5660	0.0000	0.0000	0.0000
N265	108.4000	105.8600	105.4066	1	0	0.0000	2.9934	12.5660	0.0000	0.0000	0.0000
N272	102.0600	98.1000	97.6771	4	59	0.0000	4.3829	12.5660	0.0000	0.0000	0.0000
N273	104.4000	97.6800	97.6800	0	0	0.0000	6.7200	12.5660	0.0000	0.0000	0.0000
N274	100.3100	97.3300	96.0308	3	56	0.0000	4.2792	12.5660	0.0000	0.0000	0.0000
N275	101.7000	89.3500	90.4800	0	0	1.1300	11.2200	12.5660	0.0000	0.0000	0.0000
N276	100.4000	95.2500	94.7428	1	2	0.0000	5.6572	12.5660	0.0000	0.0000	0.0000
N277	99.4000	94.4400	93.7152	1	1	0.0000	5.6848	12.5660	0.0000	0.0000	0.0000
N278	96.0000	79.0000	83.9100	0	0	4.9100	12.0900	12.5660	0.0000	0.0000	0.0000
N279	98.4000	95.1200	94.6677	1	0	0.0000	3.7323	12.5660	0.0000	0.0000	0.0000

N288	96.4000	81.5300	86.4925	0	0	4.9625	9.9075	12.5660	0.0000	0.0000	0.0000
N289	96.4000	81.5000	83.9000	0	0	2.4000	12.5000	12.5660	0.0000	0.0000	0.0000
N290	96.4000	79.8500	86.7858	0	0	6.9358	9.6142	12.5660	0.0000	0.0000	0.0000
N291	96.2900	93.4200	92.4740	1	0	0.0000	3.8160	12.5660	0.0000	0.0000	0.0000
N292	94.0000	78.1000	83.9000	0	0	5.8000	10.1000	12.5660	0.0000	0.0000	0.0000
N293	126.4000	119.9200	119.6123	2	16	0.0000	6.7877	12.5660	0.0000	0.0000	0.0000
N294	123.9600	119.3000	119.3170	2	16	0.0170	4.6430	12.5660	0.0000	0.0000	0.0000
N296	122.4000	119.9800	119.6597	2	14	0.0000	2.7403	12.5660	0.0000	0.0000	0.0000
N301	128.4000	123.9000	124.8193	1	29	0.9193	3.5807	12.5660	0.0000	0.0000	0.0000
N302	128.3900	123.2800	122.6751	1	27	0.0000	5.7149	12.5660	0.0000	0.0000	0.0000
N303	124.3000	111.6000	113.4200	0	0	1.8200	10.8800	12.5660	0.0000	0.0000	0.0000
N304	126.4000	123.9500	123.5620	1	0	0.0000	2.8380	12.5660	0.0000	0.0000	0.0000
N309	119.4000	114.1500	113.8197	1	3	0.0000	5.5803	12.5660	0.0000	0.0000	0.0000
N310	116.6600	113.5100	112.6673	1	38	0.0000	3.9927	12.5660	0.0000	0.0000	0.0000
N312	116.4000	114.2100	114.0002	1	37	0.0000	2.3998	12.5660	0.0000	0.0000	0.0000
N342	106.8400	101.7200	101.6653	6	0	0.0000	5.1747	12.5660	0.0000	0.0000	0.0000
N343	104.4000	101.5000	101.1083	6	59	0.0000	3.2917	12.5660	0.0000	0.0000	0.0000
N344	112.0700	102.1100	101.8986	6	0	0.0000	10.1714	12.5660	0.0000	0.0000	0.0000
N345	128.1400	119.8300	119.2319	6	0	0.0000	8.9081	12.5660	0.0000	0.0000	0.0000
N361	133.4000	129.2400	128.4056	2	24	0.0000	4.9944	12.5660	0.0000	0.0000	0.0000
N362	133.8500	129.1300	128.2437	2	21	0.0000	5.6063	12.5660	0.0000	0.0000	0.0000
N363	135.6800	128.7800	127.6447	2	22	0.0000	8.0353	12.5660	0.0000	0.0000	0.0000
N364	134.3100	128.5100	127.0548	2	24	0.0000	7.2552	12.5660	0.0000	0.0000	0.0000
N365	129.0000	128.4000	122.5700	0	0	0.0000	6.4300	12.5660	0.0000	0.0000	0.0000
N366	136.4000	129.1200	128.9836	1	0	0.0000	7.4164	12.5660	0.0000	0.0000	0.0000
N367	131.4000	129.3300	129.2163	1	32	0.0000	2.1837	12.5660	0.0000	0.0000	0.0000
N368	130.1000	126.7600	127.1958	2	17	0.4358	2.9042	12.5660	0.0000	0.0000	0.0000
N369	130.1500	126.6700	127.1391	2	17	0.4691	3.0109	12.5660	0.0000	0.0000	0.0000
N370	130.0300	125.7000	126.8932	5	14	1.1932	3.1368	12.5660	0.0000	0.0000	0.0000
N371	130.3200	125.7600	126.9363	2	47	1.1763	3.3837	12.5660	0.0000	0.0000	0.0000

N372	131.8100	125.3400	126.0985	3	42	0.7585	5.7115	12.5660	0.0000	0.0000	0.0000
N373	131.3300	124.9700	125.3411	2	18	0.3711	5.9889	12.5660	0.0000	0.0000	0.0000
N374	132.8200	124.6000	124.5626	2	18	0.0000	8.2574	12.5660	0.0000	0.0000	0.0000
N375	132.2300	124.4800	124.2984	2	19	0.0000	7.9316	12.5660	0.0000	0.0000	0.0000
N376	130.4700	124.9000	124.5869	2	19	0.0000	5.8831	12.5660	0.0000	0.0000	0.0000
N377	130.5100	124.8200	124.5302	2	19	0.0000	5.9798	12.5660	0.0000	0.0000	0.0000
N378	129.1900	123.7700	122.6545	0	1	0.0000	6.5355	12.5660	0.0000	0.0000	0.0000
N379	128.2000	122.9000	122.5800	0	0	0.0000	5.6200	12.5660	0.0000	0.0000	0.0000
N381	128.4700	126.2600	125.8482	3	53	0.0000	2.6218	12.5660	0.0000	0.0000	0.0000
N382	128.0000	124.8600	124.5904	3	56	0.0000	3.4096	12.5660	0.0000	0.0000	0.0000
N383	132.3000	126.5300	126.2887	1	0	0.0000	6.0113	12.5660	0.0000	0.0000	0.0000
N384	131.1800	126.6400	126.3795	1	0	0.0000	4.8005	12.5660	0.0000	0.0000	0.0000
N386	132.1700	125.1400	124.9847	3	54	0.0000	7.1853	12.5660	0.0000	0.0000	0.0000
N387	132.9300	125.2300	124.8733	3	56	0.0000	8.0567	12.5660	0.0000	0.0000	0.0000
N388	128.2100	123.9500	123.6822	3	57	0.0000	4.5278	12.5660	0.0000	0.0000	0.0000
N389	128.3800	123.1100	123.1444	0	1	0.0344	5.2356	12.5660	0.0000	0.0000	0.0000
N390	132.4000	123.8300	123.6213	1	0	0.0000	8.7787	12.5660	0.0000	0.0000	0.0000
N391	131.4000	123.6900	124.1512	1	25	0.4612	7.2488	12.5660	0.0000	0.0000	0.0000
N392	129.2100	122.8300	122.8575	0	1	0.0275	6.3525	12.5660	0.0000	0.0000	0.0000
N394	130.0700	121.4000	122.5800	0	0	1.1800	7.4900	12.5660	0.0000	0.0000	0.0000
N395	126.4000	119.6100	120.8368	6	0	1.2268	5.5632	12.5660	0.0000	0.0000	0.0000
N396	124.6000	119.1800	118.9739	6	0	0.0000	5.6261	12.5660	0.0000	0.0000	0.0000
N397	124.9400	118.8100	118.4019	6	0	0.0000	6.5381	12.5660	0.0000	0.0000	0.0000
N398	128.0400	119.0600	118.6604	6	0	0.0000	9.3796	12.5660	0.0000	0.0000	0.0000
N399	124.3000	118.6100	118.2820	6	0	0.0000	6.0180	12.5660	0.0000	0.0000	0.0000
N403	125.5000	118.3000	118.0270	6	0	0.0000	7.4730	12.5660	0.0000	0.0000	0.0000
N404	126.6900	117.9800	117.7614	6	0	0.0000	8.9286	12.5660	0.0000	0.0000	0.0000
N405	131.2500	118.0000	118.3319	6	0	0.3319	12.9181	12.5660	0.0000	0.0000	0.0000
N406	124.4900	117.6700	117.4697	6	0	0.0000	7.0203	12.5660	0.0000	0.0000	0.0000
N407	132.5800	118.0000	117.7713	6	0	0.0000	14.8087	12.5660	0.0000	0.0000	0.0000

N408	125.2200	117.2800	117.0117	6	0	0.0000	8.2083	12.5660	0.0000	0.0000	0.0000
N409	123.3200	116.9800	116.5129	6	0	0.0000	6.8071	12.5660	0.0000	0.0000	0.0000
N410	124.2200	116.6200	115.8734	6	0	0.0000	8.3466	12.5660	0.0000	0.0000	0.0000
N412	125.2400	117.5500	118.9902	6	0	1.4402	6.2498	12.5660	0.0000	0.0000	0.0000
N413	123.5000	118.8300	118.7087	6	0	0.0000	4.7913	12.5660	0.0000	0.0000	0.0000
N414	122.0000	119.3700	118.7853	6	0	0.0000	3.2147	12.5660	0.0000	0.0000	0.0000
N415	124.3800	117.5800	119.0832	6	0	1.5032	5.2968	12.5660	0.0000	0.0000	0.0000
N416	125.2100	118.0800	119.0675	6	0	0.9875	6.1425	12.5660	0.0000	0.0000	0.0000
N417	121.7600	119.5700	118.9368	6	0	0.0000	2.8232	12.5660	0.0000	0.0000	0.0000
N418	124.4000	121.1500	120.8207	1	0	0.0000	3.5793	12.5660	0.0000	0.0000	0.0000
N419	120.2000	112.6600	113.4701	6	0	0.8101	6.7299	12.5660	0.0000	0.0000	0.0000
N420	123.9000	113.9900	114.7633	6	0	0.7733	9.1367	12.5660	0.0000	0.0000	0.0000
N421	121.2100	113.7500	114.5335	6	0	0.7835	6.6765	12.5660	0.0000	0.0000	0.0000
N422	118.3600	111.6300	112.4791	6	0	0.8491	5.8809	12.5660	0.0000	0.0000	0.0000
N423	120.4000	111.8700	112.6795	6	0	0.8095	7.7205	12.5660	0.0000	0.0000	0.0000
N424	118.5600	111.0100	112.0680	6	0	1.0580	6.4920	12.5660	0.0000	0.0000	0.0000
N425	120.3900	111.3100	112.3959	6	0	1.0859	7.9941	12.5660	0.0000	0.0000	0.0000
N426	117.2400	110.4500	111.6343	6	0	1.1843	5.6057	12.5660	0.0000	0.0000	0.0000
N428	114.7900	109.9200	111.1574	6	0	1.2374	3.6326	12.5660	0.0000	0.0000	0.0000
N429	116.1800	109.5200	110.7941	6	0	1.2741	5.3859	12.5660	0.0000	0.0000	0.0000
N430	128.2200	120.0000	119.6069	1	0	0.0000	8.6131	12.5660	0.0000	0.0000	0.0000
N431	123.0700	119.4000	118.8248	6	0	0.0000	4.2452	12.5660	0.0000	0.0000	0.0000
N432	120.7300	119.5700	119.1140	6	0	0.0000	1.6160	12.5660	0.0000	0.0000	0.0000
N434	126.2700	119.8000	119.5280	1	0	0.0000	6.7420	12.5660	0.0000	0.0000	0.0000
N435	120.2500	112.1800	112.9610	6	0	0.7810	7.2890	12.5660	0.0000	0.0000	0.0000
N436	125.4000	112.5700	113.5338	6	0	0.9638	11.8662	12.5660	0.0000	0.0000	0.0000
N437	122.9000	112.4200	113.1916	6	0	0.7716	9.7084	12.5660	0.0000	0.0000	0.0000
N438	119.8200	111.5800	112.5301	6	0	0.9501	7.2899	12.5660	0.0000	0.0000	0.0000
N439	118.1400	110.6500	111.8621	6	0	1.2121	6.2779	12.5660	0.0000	0.0000	0.0000
N440	122.4000	111.0500	112.0562	6	0	1.0062	10.3438	12.5660	0.0000	0.0000	0.0000

N441	120.9000	110.9800	112.2083	6	0	1.2283	8.6917	12.5660	0.0000	0.0000	0.0000
N442	116.2500	109.9700	111.2807	6	0	1.3107	4.9693	12.5660	0.0000	0.0000	0.0000
N443	118.4000	110.3800	111.3435	6	0	0.9635	7.0565	12.5660	0.0000	0.0000	0.0000
N444	118.4000	110.2800	111.6425	6	0	1.3625	6.7575	12.5660	0.0000	0.0000	0.0000
N445	113.3000	108.9800	109.7503	6	0	0.7703	3.5497	12.5660	0.0000	0.0000	0.0000
N446	118.4000	109.4900	109.8312	6	0	0.3412	8.5688	12.5660	0.0000	0.0000	0.0000
N447	113.2000	108.5500	108.8835	6	0	0.3335	4.3165	12.5660	0.0000	0.0000	0.0000
N448	125.6200	119.7700	120.8468	3	33	1.0768	4.7732	12.5660	0.0000	0.0000	0.0000
N449	125.6000	119.2400	120.2831	3	34	1.0431	5.3169	12.5660	0.0000	0.0000	0.0000
N450	125.2200	121.7400	122.5957	3	34	0.8557	2.6243	12.5660	0.0000	0.0000	0.0000
N451	126.4000	122.2700	123.0855	3	34	0.8155	3.3145	12.5660	0.0000	0.0000	0.0000
N453	119.8300	114.7600	115.6961	6	0	0.9361	4.1339	12.5660	0.0000	0.0000	0.0000
N454	125.4000	115.2900	116.4642	6	0	1.1742	8.9358	12.5660	0.0000	0.0000	0.0000
N455	118.2800	112.9300	113.0201	6	0	0.0901	5.2599	12.5660	0.0000	0.0000	0.0000
N456	116.2800	111.5100	112.1895	6	0	0.6795	4.0905	12.5660	0.0000	0.0000	0.0000
N457	122.4000	112.0200	112.4454	6	0	0.4254	9.9546	12.5660	0.0000	0.0000	0.0000
N458	114.0000	109.8900	109.7789	6	0	0.0000	4.2211	12.5660	0.0000	0.0000	0.0000
N459	110.2500	108.1100	107.6629	6	0	0.0000	2.5871	12.5660	0.0000	0.0000	0.0000
N460	110.1000	107.6100	105.0976	6	59	0.0000	5.0024	12.5660	0.0000	0.0000	0.0000
N461	110.1000	97.6000	99.5700	0	0	1.9700	10.5300	12.5660	0.0000	0.0000	0.0000
N464	132.5200	126.8400	128.1440	5	53	1.3040	4.3760	12.5660	0.0000	0.0000	0.0000
N465	135.1200	128.1500	129.7527	5	55	1.6027	5.3673	12.5660	0.0000	0.0000	0.0000
N466	131.9700	127.9400	129.4984	5	54	1.5584	2.4716	12.5660	0.0000	0.0000	0.0000
N467	130.9600	127.3000	128.2210	5	48	0.9210	2.7390	12.5660	0.0000	0.0000	0.0000
N468	129.9500	125.5900	126.0007	5	55	0.4107	3.9493	12.5660	0.0000	0.0000	0.0000
N469	128.6600	124.6600	120.4426	5	58	0.0000	8.2174	12.5660	0.0000	0.0000	0.0000
N470	127.0000	120.4600	118.6802	6	0	0.0000	8.3198	12.5660	0.0000	0.0000	0.0000
N471	133.3000	125.8800	126.0884	5	55	0.2084	7.2116	12.5660	0.0000	0.0000	0.0000
N472	129.4500	125.9400	126.0559	5	56	0.1159	3.3941	12.5660	0.0000	0.0000	0.0000
N473	126.2300	121.0700	120.5302	6	59	0.0000	5.6998	12.5660	0.0000	0.0000	0.0000

N487	122.2200	120.5700	119.5917	6	0	0.0000	2.6283	12.5660	0.0000	0.0000	0.0000
N489	124.6300	122.3300	120.8720	2	39	0.0000	3.7580	12.5660	0.0000	0.0000	0.0000
N490	125.9100	123.6500	123.4952	2	21	0.0000	2.4148	12.5660	0.0000	0.0000	0.0000
N491	127.1900	125.7700	125.0264	2	2	0.0000	2.1636	12.5660	0.0000	0.0000	0.0000
N492	130.4000	127.3400	128.1178	1	0	0.7778	2.2822	12.5660	0.0000	0.0000	0.0000
N493	129.9000	127.0400	127.0400	0	34	0.0000	2.8600	12.5660	0.0000	0.0000	0.0000
N497	112.8000	108.8500	108.2106	1	0	0.0000	4.5894	12.5660	0.0000	0.0000	0.0000
N499	111.0500	92.2000	97.6400	0	0	5.4400	13.4100	12.5660	0.0000	0.0000	0.0000
N509	117.9000	110.3800	112.4401	1	0	2.0601	5.4599	12.5660	0.0000	0.0000	0.0000
N513	117.8200	111.7600	111.3361	1	0	0.0000	6.4839	12.5660	0.0000	0.0000	0.0000
N514	117.9000	111.6100	108.7565	1	1	0.0000	9.1435	12.5660	0.0000	0.0000	0.0000
N516	111.0000	92.0000	97.4200	0	0	5.4200	13.5800	12.5660	0.0000	0.0000	0.0000
N524	136.4600	134.4500	133.7961	2	16	0.0000	2.6639	12.5660	0.0000	0.0000	0.0000
N525	136.2000	132.1700	131.6772	2	32	0.0000	4.5228	12.5660	0.0000	0.0000	0.0000
N526	137.2000	134.4600	133.8039	2	24	0.0000	3.3961	12.5660	0.0000	0.0000	0.0000
N527	136.0000	131.6000	131.1070	2	32	0.0000	4.8930	12.5660	0.0000	0.0000	0.0000
N528	129.5000	126.1600	126.9767	2	16	0.8167	2.5233	12.5660	0.0000	0.0000	0.0000
N529	134.2600	124.1400	123.5594	2	19	0.0000	10.7006	12.5660	0.0000	0.0000	0.0000
N530	109.2400	103.4600	104.4871	6	0	1.0271	4.7529	12.5660	0.0000	0.0000	0.0000
N689	123.2700	119.5000	119.5000	0	39	0.0000	3.7700	12.5660	0.0000	0.0000	0.0000
N494	126.0000	123.1600	122.3558	2	38	0.0000	3.6442	12.5660	0.0000	0.0000	0.0000
N541	120.0000	113.5900	114.2861	6	0	0.6961	5.7139	12.5660	0.0000	0.0000	0.0000
EL329	118.0000	114.0200	114.9266	6	0	0.9066	3.0734	12.5660	0.0000	0.0000	0.0000
N427	118.5000	111.1400	112.6510	6	0	1.5110	5.8490	12.5660	0.0000	0.0000	0.0000
N411	128.9500	116.5000	115.6300	0	0	0.0000	13.3200	12.5660	0.0000	0.0000	0.0000
N295	120.1000	119.0000	110.7200	0	0	0.0000	9.3800	12.5660	0.0000	0.0000	0.0000
N311	114.3000	105.3500	108.8300	0	0	3.4800	5.4700	12.5660	0.0000	0.0000	0.0000
N462	133.0000	129.2800	129.7121	5	54	0.4321	3.2879	12.5660	0.0000	0.0000	0.0000
N266	105.6100	101.3600	100.5085	3	44	0.0000	5.1015	12.5660	0.0000	0.0000	0.0000
N267	104.2600	99.0500	99.1962	4	59	0.1462	5.0638	12.5660	0.0000	0.0000	0.0000

N268	110.4200	101.7400	101.3827	3	40	0.0000	9.0373	12.5660	0.0000	0.0000
N269	110.0300	101.3300	100.9914	3	55	0.0000	9.0386	12.5660	0.0000	0.0000
N270	106.4000	100.3900	100.2654	3	58	0.0000	6.1346	12.5660	0.0000	0.0000
N271	102.3800	100.0500	99.9146	3	58	0.0000	2.4654	12.5660	0.0000	0.0000
N280	96.4000	86.5800	86.3426	5	58	0.0000	10.0574	12.5660	0.0000	0.0000
N281	91.9100	86.2400	85.9466	5	58	0.0000	5.9634	12.5660	0.0000	0.0000
N282	97.0800	85.7700	85.4870	5	57	0.0000	11.5930	12.5660	0.0000	0.0000
N283	100.0400	94.0000	85.1953	5	57	0.0000	14.8447	12.5660	0.0000	0.0000
N284	98.4000	86.1400	85.6207	5	57	0.0000	12.7793	12.5660	0.0000	0.0000
N285	102.4000	95.9100	96.5563	3	59	0.6463	5.8437	12.5660	0.0000	0.0000
N286	100.3900	95.4500	95.9765	2	58	0.5265	4.4135	12.5660	0.0000	0.0000
N287	96.9000	84.9600	84.5536	0	1	0.0000	12.3464	12.5660	0.0000	0.0000
N297	120.4000	114.2400	114.7104	3	1	0.4704	5.6896	12.5660	0.0000	0.0000
N298	118.4300	113.9600	114.5881	3	8	0.6281	3.8419	12.5660	0.0000	0.0000
N299	117.7600	113.0000	110.1000	0	0	0.0000	7.6600	12.5660	0.0000	0.0000
N300	116.4000	114.2500	114.7162	3	8	0.4662	1.6838	12.5660	0.0000	0.0000
N305	112.4000	106.5200	109.8271	0	1	3.3071	2.5729	12.5660	0.0000	0.0000
N306	110.3300	106.2200	109.8701	0	1	3.6501	0.4599	12.5660	0.0000	0.0000
N307	111.7000	105.7500	108.6400	0	0	2.8900	3.0600	12.5660	0.0000	0.0000
N308	108.4000	106.4400	108.8307	6	0	2.3907	0.0000	7691.6743	0.0000	0.0000
N313	107.7900	104.9300	104.1135	3	4	0.0000	3.6765	12.5660	0.0000	0.0000
N314	105.5100	102.7900	102.0841	3	16	0.0000	3.4259	12.5660	0.0000	0.0000
N315	103.3100	100.6100	100.0331	3	11	0.0000	3.2769	12.5660	0.0000	0.0000
N316	101.0000	95.1000	99.5700	0	0	4.4700	1.4300	12.5660	0.0000	0.0000
N317	96.4000	90.4200	93.1253	4	29	2.7053	3.2747	12.5660	0.0000	0.0000
N318	94.1000	89.9900	92.5469	4	29	2.5569	1.5531	12.5660	0.0000	0.0000
N319	100.4000	90.4700	92.7112	4	29	2.2412	7.6888	12.5660	0.0000	0.0000
N320	95.3200	90.7800	93.3343	4	30	2.5543	1.9857	12.5660	0.0000	0.0000
N321	96.4000	91.1100	93.5326	4	30	2.4226	2.8674	12.5660	0.0000	0.0000
N325	97.2700	91.2700	93.5200	4	30	2.2500	3.7500	12.5660	0.0000	0.0000

N326	100.4000	91.7500	93.5815	4	30	1.8315	6.8185	12.5660	0.0000	0.0000	0.0000
N327	98.4000	91.6600	93.9402	4	30	2.2802	4.4598	12.5660	0.0000	0.0000	0.0000
N328	100.2600	94.9400	98.2247	0	0	3.2847	2.0353	12.5660	0.0000	0.0000	0.0000
N329	104.4000	95.0000	102.1974	0	0	7.1974	2.2026	12.5660	0.0000	0.0000	0.0000
N330	101.6200	95.4400	101.4295	0	0	5.9895	0.1905	12.5660	0.0000	0.0000	0.0000
N331	100.2600	94.2000	97.6400	0	0	3.4400	2.6200	12.5660	0.0000	0.0000	0.0000
N332	101.4000	95.0000	98.4808	0	0	3.4808	2.9192	12.5660	0.0000	0.0000	0.0000
N333	124.4600	109.8700	110.9382	6	0	1.0682	13.5218	12.5660	0.0000	0.0000	0.0000
N334	121.3900	109.5100	110.7767	6	0	1.2667	10.6133	12.5660	0.0000	0.0000	0.0000
N335	111.2600	107.1800	109.7243	6	0	2.5443	1.5357	12.5660	0.0000	0.0000	0.0000
N336	120.3000	107.5400	109.8263	6	0	2.2863	10.4737	12.5660	0.0000	0.0000	0.0000
N337	108.3300	103.7800	104.3342	6	0	0.5542	3.9958	12.5660	0.0000	0.0000	0.0000
N338	116.4000	104.3100	104.4885	6	0	0.1785	11.9115	12.5660	0.0000	0.0000	0.0000
N339	113.4000	105.8900	105.5303	6	0	0.0000	7.8697	12.5660	0.0000	0.0000	0.0000
N340	110.4800	105.4700	105.2177	6	0	0.0000	5.2623	12.5660	0.0000	0.0000	0.0000
N341	106.0600	102.7500	102.9537	6	0	0.2037	3.1063	12.5660	0.0000	0.0000	0.0000
N347	126.9900	119.4500	122.6995	3	55	3.2495	4.2905	12.5660	0.0000	0.0000	0.0000
N348	122.7000	117.6700	120.0876	3	54	2.4176	2.6124	12.5660	0.0000	0.0000	0.0000
N349	129.4000	120.1600	123.0594	3	54	2.8994	6.3406	12.5660	0.0000	0.0000	0.0000
N350	128.4000	118.8000	121.7174	3	54	2.9174	6.6826	12.5660	0.0000	0.0000	0.0000
N351	124.8500	118.4400	121.5521	3	53	3.1121	3.2979	12.5660	0.0000	0.0000	0.0000
N352	127.4000	118.3700	120.5544	3	55	2.1844	6.8456	12.5660	0.0000	0.0000	0.0000
N353	125.4000	118.3600	120.6763	3	55	2.3163	4.7237	12.5660	0.0000	0.0000	0.0000
N354	123.0000	117.1500	116.3485	3	47	0.0000	6.6515	12.5660	0.0000	0.0000	0.0000
N355	121.1000	112.1000	113.4200	0	0	1.3200	7.6800	12.5660	0.0000	0.0000	0.0000
N356	128.3900	126.3200	125.6081	2	35	0.0000	2.7819	12.5660	0.0000	0.0000	0.0000
N357	126.5200	123.9800	123.3977	2	43	0.0000	3.1223	12.5660	0.0000	0.0000	0.0000
N358	128.1900	121.8200	121.3926	2	48	0.0000	6.7974	12.5660	0.0000	0.0000	0.0000
N359	126.7800	121.0900	120.3681	2	49	0.0000	6.4119	12.5660	0.0000	0.0000	0.0000
N360	121.5000	113.8000	115.3400	0	0	1.5400	6.1600	12.5660	0.0000	0.0000	0.0000

	N500	95.8800	88.9200	91.5100	4	29	2.5900	4.3700	12.5660	0.0000	0.0000	0.0000
	N501	94.9100	87.9700	89.3552	6	59	1.3852	5.5548	12.5660	0.0000	0.0000	0.0000
	N503	100.1000	91.5500	97.4200	0	0	5.8700	2.6800	12.5660	0.0000	0.0000	0.0000
	N504	100.4000	97.2900	98.7659	0	1	1.4759	1.6341	12.5660	0.0000	0.0000	0.0000
	N506	100.4000	93.1400	94.6255	4	30	1.4855	5.7745	12.5660	0.0000	0.0000	0.0000
	N517	90.2800	86.4500	86.6416	5	59	0.1916	3.6384	12.5660	0.0000	0.0000	0.0000
	N518	89.2500	87.0600	87.8334	6	59	0.7734	1.4166	12.5660	0.0000	0.0000	0.0000
	N554	94.5100	92.2800	92.4555	4	30	0.1755	2.0545	12.5660	0.0000	0.0000	0.0000
	N322	101.6200	94.5000	97.6400	0	0	3.1400	3.9800	12.5660	0.0000	0.0000	0.0000
	N511	114.9500	103.4600	102.7250	1	0	0.0000	12.2250	12.5660	0.0000	0.0000	0.0000
	N555	110.0000	91.0500	97.4200	0	0	6.3700	12.5800	12.5660	0.0000	0.0000	0.0000

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| Table E10 - CONDUIT SUMMARY STATISTICS |
| Note: The peak flow may be less than the design flow |
| and the conduit may still surcharge because of the |
| downstream boundary conditions. |
| |
| * denotes an open conduit that has been overtopped |
| this is a potential source of severe errors |
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Conduit Name	Maximum Design Flow (cfs)	Maximum Design Velocity (ft/s)	Maximum Vertical Depth (in)	Maximum Computed Flow (cfs)	Time of Occurence Hr.	Time of Occurence Min.	Maximum Computed Velocity (ft/s)	Time of Occurence Hr.	Time of Occurence Min.	Ratio of Max. to Design Flow	Elev at Upstream (ft)	Maximum Water Elev at Dwnstrm (ft)	Ratio Design d/D Pipe Ends US	Ratio Design d/D Pipe Ends DS
L210	2.3341	2.9719	12.0000	2.8911	2	40	3.7442	0	56	1.2386	107.6026	106.9939	1.763	1.554
L211	2.3583	3.0027	12.0000	3.1354	2	46	4.0313	2	46	1.3295	106.9939	102.8186	2.554	0.759
L212	3.6820	3.0003	15.0000	3.2978	4	18	3.3045	0	56	0.8957	102.1159	100.2909	1.045	1.457
L213	2.3504	2.9927	12.0000	2.4916	1	18	3.2326	0	40	1.0601	100.9720	100.2909	2.632	2.571
L214	5.2561	2.9743	18.0000	5.3716	1	18	3.0197	1	18	1.0220	100.6100	100.2909	2.053	2.047
L217	2.3778	3.0275	12.0000	0.9501	1	2	2.8265	1	3	0.3996	100.2872	99.7386	0.447	0.409
L220	7.2421	3.0109	21.0000	11.2776	4	21	4.6465	4	21	1.5572	100.2909	98.1694	1.898	1.194
L221	9.4105	2.9955	24.0000	13.2165	4	23	4.1620	4	23	1.4044	98.1694	96.2277	1.170	0.654
L222	37.9531	12.0808	24.0000	13.3950	4	23	9.3807	4	23	0.3529	95.2520			

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90.4700 0.416 1.435
           L223   1.5862   2.0196  12.0000   0.2305     2     1   1.4362     5    2   0.1453 119.8642
119.6069 0.264 0.197
           L224   1.5676   1.9959  12.0000   0.2305     5     1   1.3309     5    1   0.1470 118.8903
118.0569 0.280 0.197
           L225   1.5703   1.9993  12.0000   0.2305     6    59   1.3999     0   57   0.1468 117.6596
117.5825 0.400 1.072
           L226   1.5717   2.0011  12.0000   0.9294     6    59   1.8893     0   58   0.5913 118.5578
118.1994 0.868 1.579
           L227   1.5698   1.9988  12.0000   1.5845     6     0   2.2885     0   55   1.0093 118.1994
117.5825 1.579 1.572
           L228   1.5683   1.9969  12.0000   2.4888     6     0   3.2325     6    0   1.5869 117.5825
114.7356 2.472 0.676
           L229   2.8478   2.3206  15.0000   2.9466     6     0   2.5939     2    7   1.0347 112.5184
110.5696 0.927 0.552
           L230   2.4656   2.0091  15.0000   3.4595     6     0   2.9207     6    0   1.4031 110.4305
108.6104 1.440 0.600
           L231   2.4434   1.9910  15.0000   3.8015     6     0   3.0729     6    0   1.5558 108.4480
106.6365 2.070 1.229
           L232   3.5621   2.0157  18.0000   6.0390     6     0   3.4001     6    0   1.6954 106.6365
105.2963 1.858 1.278
           L233   5.2943   2.9960  18.0000   6.3287     6     0   3.5542     6    0   1.1954 105.2963
103.0130 2.244 1.802
           L234  10.3141   3.2831  24.0000   9.4131     6     0   2.9823     6    0   0.9126 103.0130
102.0312 1.727 1.831
           L235   1.5127   1.9260  12.0000   0.4478     6     0   1.0916     0   14   0.2960 112.5280
112.5184 1.048 1.158
           L236   1.5658   1.9936  12.0000   2.1260     6     0   2.6924     1   11   1.3578 107.1256
106.6365 2.506 2.287
           L237   2.3516   2.9941  12.0000   3.0865     1     1   3.8943     1    1   1.3125 103.9881
103.0130 2.848 2.453
           L238   2.3553   2.9988  12.0000   3.6943     1     0   4.7555     1    0   1.5685 116.6527
115.8783 1.273 0.818
           L239   2.3692   3.0165  12.0000   4.0636     1     0   5.1858     1    0   1.7152 115.2810
113.1820 2.221 0.852
           L240   2.3544   2.9977  12.0000   1.2377     1     1   3.0137     1    2   0.5257 113.3534
112.7991 0.523 0.469
           L241   3.6815   3.0000  15.0000   5.3649     1     1   4.4351     1    1   1.4572 110.4632
107.7384 1.907 0.751
           L242   2.3529   2.9958  12.0000   1.8517     1     0   3.3991     1    1   0.7870 108.0734
107.6293 0.663 0.579
           L243   2.3707   3.0185  12.0000   2.4831     1     2   3.6078     1    2   1.0474 108.4472
107.7248 0.837 0.675
           L246  14.7213   2.9990  30.0000  24.3602     6     0   4.9227     6    0   1.6548 102.0312
100.1167 1.664 1.183
           L247  14.8246   3.0200  30.0000  28.8013     6     0   5.6428     6    0   1.9428 100.1167
99.5500 1.183 1.020
           L248   2.3403   2.9798  12.0000   1.9855     1     1   2.5223     1    1   0.8484 100.3093
100.1167 1.379 1.457
           L249   2.3421   2.9821  12.0000   1.5796     1     0   3.2797     1    0   0.6744 105.4930
104.8418 0.613 0.382
           L250   9.7769  12.4483  12.0000   3.0003     1     0   9.1561     1    0   0.3069 104.8418
99.5400 0.382 2.900
           L251   2.3510   2.9934  12.0000   1.3050     1     0   3.0865     1    0   0.5551 105.4066
104.8418 0.547 0.382
           L259   7.1885   2.9886  21.0000   6.8581     4    59   3.7886     4   59   0.9540  97.6771
96.0308 0.758 0.258
           L260  48.4905  20.1600  21.0000   7.0527     3    55  10.3186     3   56   0.1454  96.0308
90.4800 0.258 1.646
           L261   2.3656   3.0120  12.0000   0.9792     1     2   2.6864     1    3   0.4139  94.7428
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93.7152 0.493 0.275
L262 13.9175 17.7203 12.0000 2.3040 1 1 9.6318 1 1 0.1655 93.7152
83.9100 0.275 5.910
L263 2.3540 2.9972 12.0000 1.1997 1 0 2.8987 1 0 0.5097 94.6677
93.7152 0.548 0.275
L272 50.6250 3.1831 54.0000 -182.090 0 0 -3.0701 0 1 -3.5968 86.3999
83.9000 2.082 1.533
L273 7.1817 2.9858 21.0000 -20.2978 0 0 3.8734 1 37 -2.8263 86.7858
86.3999 4.963 4.926
L274 32.1290 18.1813 18.0000 8.5583 1 0 11.9728 1 0 0.2664 92.4740
83.9000 0.369 4.867
L275 2.3504 2.9927 12.0000 1.5051 2 14 2.6242 0 52 0.6403 119.6123
119.3170 0.692 1.017
L277 2.3540 2.9972 12.0000 1.5120 2 15 2.6674 0 54 0.6423 119.6597
119.3170 0.680 1.017
L281 2.3504 2.9927 12.0000 3.4219 1 29 4.6251 1 29 1.4559 124.8193
122.6751 1.919 0.395
L282 15.2316 19.3934 12.0000 5.0178 1 25 14.7920 1 25 0.3294 122.6751
113.4200 0.395 2.820
L283 2.3672 3.0140 12.0000 1.4971 1 0 3.1057 1 1 0.6325 123.5620
122.6751 0.612 0.395
L287 2.3660 3.0125 12.0000 1.8249 1 3 3.3193 1 3 0.7713 113.8197
113.0849 0.670 0.575
L289 2.3583 3.0027 12.0000 2.2642 1 37 3.4711 1 37 0.9601 114.0002
113.1535 0.790 0.644
L319 5.2963 2.9971 18.0000 8.1961 6 0 4.7905 6 0 1.5475 101.6653
101.1083 0.964 0.739
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101.6653 0.789 0.945
L338 20.9182 2.9593 36.0000 21.2501 1 50 3.9155 1 0 1.0159 128.4056
128.2437 0.722 0.705
L339 21.2087 3.0004 36.0000 21.2501 2 22 4.0471 1 21 1.0020 128.2437
127.6447 0.705 0.622
L340 29.0054 3.0148 42.0000 30.1672 2 22 4.4311 2 22 1.0401 127.6447
127.0548 0.676 0.584
L341 28.4951 2.9617 42.0000 30.1672 2 24 5.2785 2 23 1.0587 127.0548
126.5963 0.584 0.485
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128.4750 0.886 0.695
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124.2984 0.991 0.955
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124.5302 0.843 0.855
L352 9.4291 3.0014 24.0000 8.2540 5 51 3.3889 0 46 0.8754 124.5302
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120.3681 0.573 0.278
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115.3400 0.278 2.540
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92.5469 3.164 3.046
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89.3552 2.151 1.616
           L479  13.9490   2.8417  30.0000  18.0903     4    37   3.6729     4   37   1.2969  89.3552
87.8334 1.554 1.309
           L487  25.6909  10.6810  21.0000  10.7816     1     0   4.4566     1    0   0.4197  98.7537
97.4200 1.836 4.354
           L493   9.8698   2.0107  30.0000  18.0903     4    37   3.6640     4   37   1.8329  87.8334
86.6416 1.409 1.077
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121.5521 4.250 4.112
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120.0876 3.490 2.934
           L507   2.3618   3.0071  12.0000   3.7981     1     0   4.8594     1    0   1.6081  94.6255
92.4555 2.486 1.175
           L513   9.8234   2.0012  30.0000  18.2190     5    18   3.6224     5   18   1.8547  86.6416
85.9466 1.077 0.883
           L546   6.9471   3.9312  18.0000   3.7980     4    38   3.5451     0   56   0.5467  92.4555
91.5100 1.117 2.727
           L510  18.7195  15.2541  15.0000   5.1187     1     0   9.2106     1    0   0.2734 102.7249
97.4200 0.412 6.096
         FREE # 1  Undefnd  Undefnd  Undefn   13.3950     4    23
         FREE # 2  Undefnd  Undefnd  Undefn  -31.4761     0     0
         FREE # 3  Undefnd  Undefnd  Undefn    3.0003     1     0
         FREE # 4  Undefnd  Undefnd  Undefn    7.2103     3    56
         FREE # 5  Undefnd  Undefnd  Undefn    2.3040     1     1
         FREE # 6  Undefnd  Undefnd  Undefn  -55.6042     0     1
         FREE # 7  Undefnd  Undefnd  Undefn    8.5581     1     0
         FREE # 8  Undefnd  Undefnd  Undefn    5.0178     1    25
         FREE # 9  Undefnd  Undefnd  Undefn    8.1961     6    59
         FREE #10  Undefnd  Undefnd  Undefn   30.1672     2    24
         FREE #11  Undefnd  Undefnd  Undefn  -93.2665     0     0
         FREE #12  Undefnd  Undefnd  Undefn  -33.0708     0     0
         FREE #13  Undefnd  Undefnd  Undefn   48.9390     6    59
         FREE #14  Undefnd  Undefnd  Undefn    4.4590     1     0
         FREE #15  Undefnd  Undefnd  Undefn    2.9906     1     0
         FREE #16  Undefnd  Undefnd  Undefn   17.9049     1     1
         FREE #17  Undefnd  Undefnd  Undefn    1.5346     2    32
         FREE #18  Undefnd  Undefnd  Undefn    9.4830     2    39
         FREE #19  Undefnd  Undefnd  Undefn  -112.455     0     0
         FREE #20  Undefnd  Undefnd  Undefn    3.1458     2    16
         FREE #21  Undefnd  Undefnd  Undefn    4.1590     1    37
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FREE #22	Undefnd	Undefnd	Undefn	3.2534	2	54
FREE #23	Undefnd	Undefnd	Undefn	-9.3661	0	0
FREE #24	Undefnd	Undefnd	Undefn	1.1514	3	12
FREE #25	Undefnd	Undefnd	Undefn	3.2003	1	0
FREE #26	Undefnd	Undefnd	Undefn	7.8187	3	40
FREE #27	Undefnd	Undefnd	Undefn	1.2917	2	49
FREE #28	Undefnd	Undefnd	Undefn	10.7819	1	0
FREE #29	Undefnd	Undefnd	Undefn	15.8189	0	1
FREE #30	Undefnd	Undefnd	Undefn	5.1189	1	0

Table E11. Area assumptions used in the analysis
Subcritical and Critical flow assumptions from Subroutine Head. See Figure 17-1 in the manual for further information.

Conduit Name	Duration of Dry Flow(min)	Duration of Sub-Critical Flow(min)	Durat. of Upstream Critical Flow(min)	Durat. of Downstream Critical Flow(min)	Maximum Hydraulic Radius-m	Maximum X-Sect Area(ft^2)	Maximum Vel*D (ft^2/s)
L210	0.2500	303.4000	0.0000	56.3500	0.3028	0.8145	6.0754
L211	0.2500	0.0000	0.0000	359.7500	0.3021	0.7148	6.6769
L212	0.2500	305.4667	0.0000	54.2833	0.3735	1.2422	4.1200
L213	0.0000	324.0000	0.0000	36.0000	0.3019	0.8117	8.1584
L214	0.0000	344.7778	0.0000	15.2222	0.4557	1.8485	9.2805
L217	0.0000	0.0000	0.0000	360.0000	0.2305	0.3207	1.2094
L220	0.0000	337.1071	0.0000	22.8929	0.5305	2.4695	12.5695
L221	0.0000	0.0000	0.0000	360.0000	0.6008	2.7121	7.5895
L222	1.0167	358.9833	0.0000	0.0000	0.4465	2.1202	17.3634
L223	0.2500	0.0000	0.0000	359.7500	0.1501	0.1368	0.3311
L224	0.2500	0.0000	0.0000	359.7500	0.1573	0.1434	0.3175
L225	0.2500	303.8333	0.0000	55.9167	0.2176	0.5307	0.5209
L226	0.0000	360.0000	0.0000	0.0000	0.2988	0.7557	1.5578
L227	0.0000	306.6333	0.0000	53.3667	0.3034	0.8150	3.1677
L228	0.0000	0.0000	0.0000	360.0000	0.2990	0.6754	5.0881
L229	0.0000	0.0000	0.0000	360.0000	0.3741	0.9293	2.3945
L230	0.2500	0.0000	0.0000	359.7500	0.3733	0.9914	3.7251
L231	0.2500	288.4839	0.0000	71.2661	0.3732	1.2604	6.3372
L232	0.0000	298.6129	0.0000	61.3871	0.4485	1.8135	7.9950
L233	4.7778	313.5667	0.0000	41.6556	0.4518	1.8120	10.7857
L234	1.2167	358.0500	0.7333	0.0000	0.5976	3.2219	10.6084
L235	0.0000	360.0000	0.0000	0.0000	0.3034	0.8132	0.6133
L236	0.0000	321.5862	0.0000	38.4138	0.3035	0.8052	6.4252
L237	0.0000	310.5000	0.0000	49.5000	0.3026	0.8105	10.2800
L238	0.2500	0.0000	0.0000	359.7500	0.3030	0.7475	4.9700
L239	0.2500	0.0000	0.0000	359.7500	0.3026	0.7517	7.9671
L240	0.0000	0.0000	0.0000	360.0000	0.2552	0.3887	1.4956
L241	0.0000	0.0000	0.0000	360.0000	0.3770	1.1088	7.3642
L242	0.0000	0.0000	0.0000	360.0000	0.2886	0.5117	2.1118
L243	0.0000	0.0000	0.0000	360.0000	0.3027	0.6317	2.7274
L246	0.0000	360.0000	0.0000	0.0000	0.7496	5.1136	17.5195
L247	0.0000	360.0000	0.0000	0.0000	0.7061	5.0514	15.5366
L248	0.0000	359.5000	0.0000	0.5000	0.3024	0.8090	3.5698
L249	0.2500	359.7500	0.0000	0.0000	0.2729	0.3844	1.6307
L250	0.0000	360.0000	0.0000	0.0000	0.2111	0.5130	15.0232
L251	0.0000	360.0000	0.0000	0.0000	0.2579	0.3543	1.4321
L259	0.2500	359.7500	0.0000	0.0000	0.5025	1.1427	3.3678

L260	1.0167	358.9833	0.0000	0.0000	0.2805	1.3318	17.1846
L261	0.2500	359.7500	0.0000	0.0000	0.2386	0.2739	1.0315
L262	0.0000	360.0000	0.0000	0.0000	0.1681	0.4544	29.7871
L263	0.0000	360.0000	0.0000	0.0000	0.2535	0.2981	1.1926
L272	0.0000	360.0000	0.0000	0.0000	1.1252	16.1820	16.6263
L273	0.0000	360.0000	0.0000	0.0000	0.4375	2.4642	24.1640
L274	0.7500	359.2500	0.0000	0.0000	0.3097	1.1468	47.0074
L275	0.2500	359.7500	0.0000	0.0000	0.2905	0.6833	2.1395
L277	0.0000	360.0000	0.0000	0.0000	0.2891	0.6771	2.1711
L281	0.2500	359.7500	0.0000	0.0000	0.2916	0.5187	5.3520
L282	0.0000	360.0000	0.0000	0.0000	0.2160	0.5207	23.7786
L283	0.0000	360.0000	0.0000	0.0000	0.2733	0.3911	1.5637
L287	0.2500	0.0000	0.0000	359.7500	0.2895	0.5124	2.0656
L289	0.0000	0.0000	0.0000	360.0000	0.3021	0.5986	2.4883
L319	0.0000	360.0000	0.0000	0.0000	0.4540	1.5692	6.1164
L320	0.0000	325.3448	0.0000	34.6552	0.3022	0.7154	2.4158
L338	0.2500	359.7500	0.0000	0.0000	0.8954	5.3920	8.3443
L339	0.2500	338.3571	0.0000	21.3929	0.8854	4.9645	8.0507
L340	0.0000	360.0000	0.0000	0.0000	1.0177	6.3687	9.7696
L341	0.2500	0.0000	0.0000	359.7500	0.9474	5.2176	9.8735
L342	0.0000	0.0000	0.0000	360.0000	0.3782	1.0290	4.0239
L343	0.0000	0.0000	0.0000	360.0000	0.3027	0.6576	2.8892
L344	0.2500	316.3448	0.0000	43.4052	0.7606	5.1452	7.0982
L346	0.0000	351.8889	0.0000	8.1111	1.0648	10.0858	12.4404
L347	0.0000	360.0000	0.0000	0.0000	1.2167	13.1029	22.1779
L348	0.2500	359.7500	0.0000	0.0000	1.2167	13.0760	19.6615
L349	0.2500	359.7500	0.0000	0.0000	1.2167	12.7970	18.0357
L350	0.2500	358.3000	0.0000	1.4500	1.2168	12.4420	17.5190
L351	0.2500	359.7500	0.0000	0.0000	0.6085	2.8428	4.9542
L352	0.2500	320.7931	0.0000	38.9569	0.6083	2.9282	5.0690
L354	0.0000	360.0000	0.0000	0.0000	1.3511	14.0920	21.3015
L361	0.0000	0.0000	0.0000	360.0000	0.3009	0.5892	2.5874
L362	0.0000	0.0000	0.0000	360.0000	0.2987	0.5699	2.4123
L363	0.0000	326.1379	0.0000	33.8621	0.4493	1.4608	3.7703
L364	0.0000	297.9355	0.0000	62.0645	0.3032	0.6604	2.9884
L365	0.0000	305.8667	0.0000	54.1333	0.2879	0.5737	2.0741
L366	0.0000	360.0000	0.0000	0.0000	0.6085	2.8882	5.8826
L367	0.2500	359.5000	0.0000	0.2500	0.6083	2.8911	5.8844
L368	0.0000	358.8833	0.0000	1.1167	0.3035	0.6420	2.6283
L369	0.0000	24.8119	0.0000	335.1881	0.3027	0.7294	5.0871
L370	0.0000	360.0000	0.0000	0.0000	0.9104	7.1049	7.9678
L373	0.0000	360.0000	0.0000	0.0000	0.8847	7.0936	12.4827
L374	2.0500	25.3226	0.0000	332.6274	0.3002	0.7292	6.4956
L375	2.0833	197.9032	0.0000	160.0134	0.4535	1.4972	2.5036
L376	0.0000	347.8519	0.0000	12.1481	0.8367	5.3948	6.1986
L386	0.2500	359.6019	0.1481	0.0000	1.2169	12.1309	11.2062
L387	0.2500	355.4444	0.0000	4.3056	1.2168	12.2361	11.2679
L388	0.0000	239.4194	0.0000	120.5806	0.3006	0.7975	3.3803
L389	0.0000	360.0000	0.0000	0.0000	1.3690	15.6286	13.8267
L390	0.0000	232.0000	0.0000	128.0000	0.3028	0.6870	2.0065
L391	0.0000	360.0000	0.0000	0.0000	1.3690	15.5759	15.0510
L392	0.2500	359.7500	0.0000	0.0000	1.3691	15.2612	17.4737
L393	0.0000	360.0000	0.0000	0.0000	1.3691	14.5926	17.0348
L395	0.2500	359.7500	0.0000	0.0000	0.3735	1.2597	10.4048
L396	2.5333	357.4667	0.0000	0.0000	0.9069	6.5297	3.6432
L397	0.0000	360.0000	0.0000	0.0000	0.3735	1.2597	11.3534
L398	0.0000	358.8500	0.0000	1.1500	0.3735	1.2594	9.0276
L399	0.5000	330.2857	0.0000	29.2143	0.5858	2.6810	2.8493
L402	0.2500	359.7500	0.0000	0.0000	0.5324	2.5208	7.4621
L403	0.2500	359.7500	0.0000	0.0000	0.5323	2.5026	7.5161

L404	0.7500	300.2903	0.0000	58.9597	0.5324	2.4848	7.6120
L405	0.0000	295.5484	0.0000	64.4516	0.4563	1.8504	6.3763
L406	0.0000	343.2963	0.0000	16.7037	0.7586	5.0904	8.4049
L407	0.0000	295.4516	0.0000	64.5484	0.3800	1.2865	7.1978
L408	0.0000	342.1852	0.0000	17.8148	0.8358	6.1950	10.2710
L410	0.2500	359.7500	0.0000	0.0000	0.9120	7.3935	11.9652
L411	0.2500	345.4074	0.0000	14.3426	0.9121	7.3987	12.0915
L413	0.0000	360.0000	0.0000	0.0000	0.4364	1.5366	2.7023
L415	0.0000	0.0000	0.0000	360.0000	0.2981	0.5732	2.5763
L417	0.0000	286.3548	0.0000	73.6452	0.3028	0.8121	6.7524
L418	0.0000	302.6667	0.0000	57.3333	0.4564	1.8519	6.6363
L419	0.0000	360.0000	0.0000	0.0000	0.6072	3.2606	7.2952
L420	0.2500	327.2500	0.0000	32.5000	0.6037	3.2205	7.8395
L421	0.0000	299.3548	0.0000	60.6452	0.2991	0.8052	4.4324
L422	0.0000	299.5484	0.0000	60.4516	0.3801	1.2864	7.6052
L423	0.0000	345.8889	0.0000	14.1111	0.7598	5.1196	10.4245
L424	0.0000	333.6786	0.0000	26.3214	0.8366	6.2248	12.5843
L425	0.0000	305.9333	0.0000	54.0667	0.2988	0.8055	2.5192
L426	0.0000	303.0333	0.0000	56.9667	0.3798	1.2863	8.3064
L427	0.2500	359.7500	0.0000	0.0000	1.0648	10.0331	18.9897
L428	0.0000	307.2333	0.0000	52.7667	0.2988	0.8058	1.8560
L429	0.0000	360.0000	0.0000	0.0000	1.0646	9.9813	17.4138
L430	0.2500	359.7500	0.0000	0.0000	0.2988	0.8054	6.7629
L431	0.0000	333.7857	0.0000	26.2143	0.2988	0.8061	5.6208
L432	0.0000	360.0000	0.0000	0.0000	0.3042	0.8175	5.2946
L435	0.0000	360.0000	0.0000	0.0000	0.3042	0.8154	7.4598
L436	0.0000	294.1613	0.0000	65.8387	0.3022	0.8031	5.4816
L437	0.2500	359.7500	0.0000	0.0000	0.3735	1.2495	3.7139
L438	0.0000	336.1071	0.0000	23.8929	0.2988	0.8053	3.2924
L439	0.0000	289.0323	0.0000	70.9677	0.3768	1.2021	5.6985
L440	0.5000	310.0333	0.0000	49.4667	0.4493	1.7585	4.2702
L441	0.2500	359.7500	0.0000	0.0000	1.0616	9.4516	17.0179
L442	0.2500	359.7500	0.0000	0.0000	1.0125	5.1951	12.0073
L443	0.2500	359.7500	0.0000	0.0000	0.5991	5.5082	53.1666
L446	0.2500	331.3571	0.0000	28.3929	0.4563	1.8523	10.2448
L448	0.0000	326.7586	0.0000	33.2414	0.2988	0.8057	2.5953
L449	0.0000	342.5556	0.0000	17.4444	0.5323	2.4678	10.2478
L450	0.0000	0.0000	0.0000	360.0000	0.6008	2.7108	7.9391
L451	0.0000	0.0000	0.0000	360.0000	0.6047	2.6286	8.0557
L452	0.0000	320.9310	0.0000	39.0690	0.2990	0.8052	2.0930
L453	0.0000	323.9310	0.0000	36.0690	0.2988	0.8043	1.4401
L454	0.0000	321.6552	0.0000	38.3448	0.2432	0.4981	1.1073
L466	0.2500	0.0000	0.0000	359.7500	0.3737	0.9067	3.6749
L468	0.2500	359.7500	0.0000	0.0000	0.5144	1.9410	2.8754
L470	0.2500	359.7500	0.0000	0.0000	0.5225	1.7909	5.4703
L471	6.8148	353.1852	0.0000	0.0000	0.1597	0.4340	1.5903
L472	0.2500	359.7500	0.0000	0.0000	0.3042	0.8043	7.8446
L490	0.2500	0.0000	0.0000	359.7500	0.5222	1.6409	4.0474
L496	0.2500	359.7500	0.0000	0.0000	0.1977	0.3174	1.0056
L497	0.0000	360.0000	0.0000	0.0000	0.1968	0.3162	0.9979
L498	0.0000	360.0000	0.0000	0.0000	0.2520	0.3998	1.5284
L501	0.2500	339.1429	0.0000	20.6071	0.9091	7.3282	6.0914
L502	0.5000	356.5000	0.0000	3.0000	1.0615	9.9872	5.6895
L503	0.2500	359.7500	0.0000	0.0000	1.3686	15.1892	19.4068
L504	0.0000	360.0000	0.0000	0.0000	1.3674	13.7033	18.4380
L505	0.0000	306.2667	0.0000	53.7333	0.5260	2.4690	14.8338
L506	0.0000	358.7167	0.0000	1.2833	0.5299	2.5212	18.3578
L509	0.7500	359.2500	0.0000	0.0000	0.2032	0.5077	32.7030
L511	0.2500	0.0000	0.0000	359.7500	0.4500	1.6884	15.0957
L512	0.5000	359.5000	0.0000	0.0000	0.3768	1.9170	65.0088

L514	0.0000	360.0000	0.0000	0.0000	0.5319	2.5196	10.5788
L515	0.0000	350.1852	0.0000	9.8148	0.9126	6.5665	7.1552
CH21	0.5000	359.5000	0.0000	0.0000	1.0810	161.0160	0.2438
L474	0.7500	359.2500	0.0000	0.0000	0.4564	1.8097	10.5391
L523	0.5000	0.0000	0.0000	359.5000	0.6614	5.3660	0.8155
L525	2.0667	351.0741	0.0000	6.8593	0.9113	7.1157	7.4136
L527	0.0000	353.0000	0.0000	7.0000	0.4482	1.8121	5.9504
L528	0.2500	145.6129	0.0000	214.1371	0.3767	1.1319	6.2513
L529	0.0000	360.0000	0.0000	0.0000	0.4534	1.8389	5.6288
L533	0.0000	360.0000	0.0000	0.0000	0.4482	1.8145	6.3708
L537	0.5000	304.1667	0.0000	55.3333	0.4510	1.8451	6.9475
L394	0.0000	360.0000	0.0000	0.0000	1.3691	13.9558	20.9732
L276	0.0000	0.0000	0.0000	360.0000	0.3031	0.7148	3.5977
L288	0.0000	360.0000	0.0000	0.0000	0.2368	0.7515	24.4255
L412	0.2500	0.0000	0.0000	359.7500	0.2790	0.4986	2.7301
L447	0.0000	353.0000	0.0000	7.0000	0.4482	1.8148	2.9956
L252	0.2500	344.1481	0.0000	15.6019	0.1096	0.3807	0.4927
L253	0.2500	359.7500	0.0000	0.0000	0.2869	0.5421	2.1162
L254	0.5000	326.8276	0.0000	32.6724	0.2860	0.6826	2.7144
L255	0.2500	312.0667	0.0000	47.6833	0.3797	1.1587	3.8157
L256	0.0000	360.0000	0.0000	0.0000	0.4522	1.7631	4.1823
L257	0.0000	312.7000	0.0000	47.3000	0.4521	1.5930	5.0710
L264	0.2500	290.9032	0.0000	68.8468	0.3800	1.0359	3.5222
L265	0.2500	359.7500	0.0000	0.0000	0.9127	6.7173	9.0661
L266	0.0000	360.0000	0.0000	0.0000	0.9127	6.7071	9.4002
L267	0.0000	298.6774	0.0000	61.3226	0.2491	0.4834	1.2950
L268	0.2500	359.7500	0.0000	0.0000	0.3041	0.8230	5.3415
L269	0.0000	0.0000	0.0000	360.0000	0.3023	0.7035	4.2852
L270	0.0000	359.5000	0.0000	0.5000	0.9117	6.3057	10.4680
L271	0.0000	360.0000	0.0000	0.0000	0.8750	9.8747	25.4903
L278	0.2500	359.7500	0.0000	0.0000	0.3000	0.8051	3.0766
L279	0.0000	0.0000	0.0000	360.0000	0.3024	0.7183	5.0393
L280	0.0000	360.0000	0.0000	0.0000	0.2996	0.8051	3.0801
L284	0.0000	360.0000	0.0000	0.0000	0.2500	0.8021	29.5863
L285	0.0000	360.0000	0.0000	0.0000	0.3776	1.7917	7.3725
L286	0.0000	360.0000	0.0000	0.0000	0.3125	1.2450	26.8826
L290	0.2500	359.7500	0.0000	0.0000	0.1172	0.1434	0.3818
L291	0.2500	359.7500	0.0000	0.0000	0.1735	0.2520	0.7772
L292	0.2500	359.7500	0.0000	0.0000	0.2257	0.5431	9.2866
L294	0.0000	308.8667	0.0000	51.1333	0.2988	0.8055	5.9840
L300	0.0000	315.5862	0.0000	44.4138	0.4553	1.8191	12.1459
L301	0.0000	311.3333	0.0000	48.6667	0.3022	0.8078	8.1633
L302	0.0000	360.0000	0.0000	0.0000	0.6798	4.1144	14.2423
L303	0.0000	308.5667	0.0000	51.4333	0.2988	0.8057	3.2563
L304	0.0000	299.0968	0.0000	60.9032	0.3039	0.8231	10.0897
L305	0.0000	360.0000	0.0000	0.0000	0.4482	1.8120	7.2462
L306	0.0000	360.0000	0.0000	0.0000	0.2500	0.8209	14.6906
L307	0.0000	360.0000	0.0000	0.0000	0.5001	3.2303	25.3464
L308	0.0000	360.0000	0.0000	0.0000	0.3750	1.7924	8.2738
L309	0.0000	360.0000	0.0000	0.0000	0.2500	0.8036	14.2942
L310	0.2500	359.7500	0.0000	0.0000	0.2993	0.8052	4.3868
L311	0.2500	359.7500	0.0000	0.0000	0.2988	0.8083	5.8691
L312	0.0000	360.0000	0.0000	0.0000	0.2988	0.8053	5.4943
L313	0.0000	308.0667	0.0000	51.9333	0.3021	0.8084	9.5927
L314	0.0000	325.0345	0.0000	34.9655	0.2988	0.8056	2.1452
L315	0.2500	359.7500	0.0000	0.0000	0.2876	0.5797	2.0820
L316	0.5000	321.4138	0.0000	38.0862	0.2961	0.7074	2.8932
L317	0.0000	360.0000	0.0000	0.0000	0.4564	1.8303	6.5434
L318	0.5000	359.5000	0.0000	0.0000	0.4563	1.7985	5.2986
L321	0.0000	360.0000	0.0000	0.0000	0.2236	0.4937	0.9547

L324	0.0000	360.0000	0.0000	0.0000	0.2988	0.8060	8.7033
L325	0.2500	339.0357	0.0000	20.7143	0.2988	0.8053	8.1551
L326	0.0000	341.1481	0.0000	18.8519	0.2988	0.8058	8.1303
L327	0.0000	340.0741	0.0000	19.9259	0.2988	0.8056	9.3511
L328	0.0000	360.0000	0.0000	0.0000	0.4358	1.2638	10.6946
L329	0.2500	359.7500	0.0000	0.0000	0.3593	1.2601	15.2264
L334	0.2500	359.7500	0.0000	0.0000	0.1708	0.2465	0.7534
L335	0.2500	359.7500	0.0000	0.0000	0.2259	0.3853	1.3031
L336	0.2500	359.7500	0.0000	0.0000	0.2596	0.3105	1.2592
L337	0.2500	359.7500	0.0000	0.0000	0.1694	0.4492	7.5883
L475	0.2500	306.8667	0.0000	52.8833	0.3795	1.2803	13.5972
L478	0.2500	337.2857	0.0000	22.4643	0.6816	4.0796	19.1463
L479	0.2500	339.7143	0.0000	20.0357	0.7604	5.0560	13.1466
L487	0.0000	360.0000	0.0000	0.0000	0.5229	2.4890	23.3520
L493	0.5000	359.5000	0.0000	0.0000	0.7586	5.0001	11.3860
L499	0.0000	341.1111	0.0000	18.8889	0.2988	0.8062	8.9137
L500	0.0000	352.6667	0.0000	7.3333	0.3766	1.2580	11.0999
L507	0.2500	287.5161	0.0000	72.2339	0.3025	0.8080	8.7382
L513	0.0000	355.9259	0.0000	4.0741	0.7580	4.8299	8.8714
L546	1.9833	334.4286	0.0000	23.5881	0.4482	1.8172	5.9443
L510	0.7500	359.2500	0.0000	0.0000	0.2773	0.8404	37.4566

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| Table E12. Mean Conduit Flow Information |
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Conduit Name	Mean Flow (cfs)	Total Flow (ft^3)	Mean Percent Change	Low Flow Weightng	Mean Froude Number	Mean Hydraulic Radius	Mean Cross Area	Mean Conduit Roughness
L210	2.6464	57161.452	0.0000	0.9999	0.5548	0.2480	0.7334	0.0150
L211	2.8494	61547.433	0.0000	0.9999	0.8032	0.2504	0.7262	0.0150
L212	2.9718	64190.177	0.0000	0.9999	0.4586	0.3039	1.1251	0.0150
L213	2.2762	49166.008	0.0000	0.9999	0.3971	0.2457	0.7346	0.0150
L214	4.9137	106136.70	0.0000	0.9999	0.3378	0.3689	1.6535	0.0150
L217	0.8692	18775.272	0.0000	0.9999	0.7743	0.2191	0.3133	0.0150
L220	10.2335	221042.57	0.0001	0.9999	0.5753	0.4308	2.2723	0.0150
L221	11.9298	257683.26	0.0001	0.9999	0.6432	0.4964	2.9336	0.0150
L222	12.0875	261089.75	0.0001	0.9996	1.7307	0.4213	1.3366	0.0150
L223	0.2105	4547.3993	0.0000	0.9999	0.5672	0.1423	0.1496	0.0150
L224	0.2077	4485.8552	0.0000	0.9998	0.5394	0.1470	0.1592	0.0150
L225	0.2040	4406.4720	0.0000	0.9862	0.2597	0.1915	0.2900	0.0150
L226	0.8375	18089.120	0.0000	0.9999	0.2845	0.2765	0.6366	0.0150
L227	1.4237	30752.956	0.0000	0.9999	0.3258	0.2437	0.7168	0.0150
L228	2.2171	47890.298	0.0000	0.9999	0.6744	0.2471	0.7171	0.0150
L229	2.6007	56175.990	0.0000	0.9999	0.5894	0.3425	1.0220	0.0150
L230	3.0410	65684.538	0.0000	0.9999	0.5786	0.3043	1.0816	0.0150
L231	3.3238	71794.319	0.0000	0.9999	0.4586	0.3003	1.1244	0.0150
L232	5.3342	115218.32	0.0000	0.9999	0.4689	0.3649	1.6301	0.0150
L233	5.5588	120070.06	0.0000	0.9842	0.4049	0.3592	1.6100	0.0150
L234	8.3378	180097.18	0.0001	0.9985	0.2867	0.4871	2.9150	0.0150
L235	0.4088	8830.3848	0.0000	0.9999	0.1623	0.2443	0.7276	0.0150
L236	1.9435	41980.000	0.0000	0.9999	0.3567	0.2476	0.7380	0.0150
L237	2.8188	60885.719	0.0000	0.9999	0.4836	0.2478	0.7418	0.0150
L238	3.3828	73067.706	0.0000	0.9999	0.9040	0.2535	0.7337	0.0150
L239	3.7147	80236.485	0.0000	0.9999	0.9576	0.2523	0.7431	0.0150
L240	1.1325	24462.061	0.0000	0.9999	0.7708	0.2430	0.3827	0.0150
L241	4.8820	105452.02	0.0000	0.9999	0.8133	0.3132	1.1352	0.0150
L242	1.6952	36615.634	0.0000	0.9999	0.7826	0.2759	0.5079	0.0150
L243	2.2724	49084.361	0.0000	0.9999	0.7714	0.2911	0.6408	0.0150
L246	21.8010	470902.41	0.0007	0.9999	0.4650	0.6359	4.8747	0.0150

L247	25.8048	557382.77	0.0008	1.0000	0.5678	0.6286	5.0812	0.0150
L248	1.8152	39208.077	0.0001	0.9999	0.3603	0.2548	0.7694	0.0150
L249	1.4463	31239.991	0.0000	0.9999	0.9261	0.2611	0.4502	0.0150
L250	2.7464	59321.491	0.0000	0.9999	2.5146	0.2017	0.3107	0.0150
L251	1.1948	25806.929	0.0000	0.9999	0.8723	0.2463	0.3950	0.0150
L259	6.2060	134049.16	0.0000	0.9999	0.9745	0.4771	1.6747	0.0150
L260	6.3823	137856.63	0.0000	0.9996	2.5581	0.2659	0.6492	0.0150
L261	0.8960	19354.446	0.0000	0.9999	0.8931	0.2272	0.3401	0.0150
L262	2.1084	45541.171	0.0000	0.9999	3.0875	0.1608	0.2285	0.0150
L263	1.0981	23719.068	0.0000	0.9999	0.9636	0.2419	0.3866	0.0150
L272	33.5867	725472.40	0.0408	1.0000	0.1441	1.1249	15.9567	0.0150
L273	8.6579	187010.01	0.0035	0.9999	0.2543	0.4375	2.4447	0.0150
L274	7.8421	169389.91	0.0001	0.9998	2.7516	0.2956	0.6771	0.0150
L275	1.3778	29759.506	0.0000	0.9999	0.5513	0.2764	0.5537	0.0150
L277	1.3840	29894.039	0.0000	0.9999	0.5668	0.2751	0.5445	0.0150
L281	3.1327	67666.929	0.0000	0.9999	1.2632	0.2442	0.6993	0.0150
L282	4.5930	99209.583	0.0000	0.9999	3.9945	0.2065	0.3216	0.0150
L283	1.3704	29601.436	0.0000	0.9999	0.8631	0.2610	0.4499	0.0150
L287	1.6694	36059.826	0.0000	0.9999	0.7683	0.2764	0.5118	0.0150
L289	2.0711	44736.606	0.0000	0.9999	0.7604	0.2896	0.6068	0.0150
L319	7.3993	159824.54	0.0000	0.9999	0.7913	0.4111	1.5847	0.0150
L320	1.7208	37169.830	0.0000	0.9999	0.5816	0.2878	0.6181	0.0150
L338	19.4678	420503.84	0.0001	0.9999	0.4807	0.8582	5.0819	0.0150
L339	19.4088	419229.80	0.0001	0.9998	0.5249	0.8445	4.8823	0.0150
L340	27.5148	594318.87	0.0002	0.9999	0.5475	0.9711	6.3465	0.0150
L341	27.4524	592971.32	0.0002	0.9998	0.7211	0.8999	5.3184	0.0150
L342	4.1999	90718.780	0.0000	0.9999	0.7612	0.3615	1.0552	0.0150
L343	2.4093	52040.930	0.0000	0.9999	0.7699	0.2889	0.6708	0.0150
L344	11.2926	243919.27	0.0001	0.9999	0.3076	0.6043	4.5955	0.0150
L346	23.4508	506537.97	0.0002	0.9999	0.2352	0.8627	8.9586	0.0150
L347	51.1154	1104093.6	0.0004	0.9999	0.3626	0.9932	11.8468	0.0150
L348	50.8577	1098525.8	0.0004	0.9998	0.3681	0.9966	12.2270	0.0150
L349	50.6061	1093090.9	0.0004	0.9998	0.3831	1.0083	12.2181	0.0150
L350	50.4526	1089775.7	0.0005	0.9998	0.4152	1.0494	11.8417	0.0150
L351	7.5629	163359.20	0.0000	0.9999	0.4248	0.5791	2.5908	0.0150
L352	7.5441	162952.89	0.0000	0.9998	0.4197	0.5745	2.6190	0.0150
L354	65.4377	1413454.1	0.0034	1.0000	0.4978	1.3496	13.0395	0.0150
L361	2.1169	45725.289	0.0000	0.9999	0.7973	0.2889	0.5874	0.0150
L362	1.9772	42707.927	0.0000	0.9999	0.7806	0.2863	0.5706	0.0150
L363	4.1195	88980.352	0.0000	0.9999	0.5772	0.4269	1.2849	0.0150
L364	2.4266	52414.697	0.0000	0.9999	0.7818	0.2921	0.6509	0.0150
L365	1.4984	32365.604	0.0000	0.9999	0.6783	0.2738	0.5012	0.0150
L366	8.9273	192829.24	0.0001	0.9999	0.4573	0.5783	2.6690	0.0150
L367	8.8789	191783.30	0.0001	0.9998	0.4398	0.5918	2.7423	0.0150
L368	2.0862	45061.131	0.0000	0.9999	0.7042	0.2926	0.6191	0.0150
L369	3.1990	69098.597	0.0000	0.9999	0.8625	0.2545	0.7360	0.0150
L370	17.3389	374519.91	0.0006	0.9999	0.2790	0.8876	6.7253	0.0150
L373	17.2960	373593.65	0.0010	1.0000	0.2681	0.8549	6.9024	0.0150
L374	3.0623	66146.699	0.0000	0.9939	0.8184	0.2522	0.7423	0.0150
L375	3.0317	65484.538	0.0000	0.9931	0.4318	0.4275	1.3946	0.0150
L376	8.7838	189729.36	0.0001	0.9999	0.2908	0.7004	3.8286	0.0150
L386	28.7043	620012.76	0.0002	0.9998	0.2877	1.1381	10.2117	0.0150
L387	28.4956	615504.03	0.0003	0.9998	0.2913	1.1458	10.5354	0.0150
L388	2.0380	44020.416	0.0000	0.9999	0.5526	0.2509	0.7369	0.0150
L389	40.7582	880377.75	0.0004	0.9999	0.2588	1.2987	14.0539	0.0150
L390	1.4701	31754.886	0.0000	0.9999	0.5912	0.2838	0.5596	0.0150
L391	44.8729	969253.77	0.0005	0.9999	0.2804	1.3072	14.3661	0.0150
L392	53.8466	1163087.3	0.0007	0.9999	0.3402	1.3277	14.5494	0.0150
L393	53.5324	1156300.3	0.0031	0.9999	0.3543	1.3542	14.3737	0.0150
L395	3.8842	83898.567	0.0000	0.9999	0.4276	0.3057	1.1604	0.0150

L396	7.5231	162498.56	0.0001	0.9912	0.2032	0.8244	4.9364	0.0150
L397	4.1959	90632.111	0.0000	0.9999	0.4521	0.3061	1.1619	0.0150
L398	3.9605	85546.946	0.0000	0.9999	0.4963	0.3051	1.1405	0.0150
L399	3.6455	78741.879	0.0000	0.9997	0.3915	0.5128	1.8192	0.0150
L402	6.5187	140803.39	0.0000	0.9999	0.3822	0.4371	2.1917	0.0150
L403	6.4882	140146.02	0.0000	0.9998	0.3966	0.4350	2.1883	0.0150
L404	6.4284	138853.73	0.0000	0.9997	0.4002	0.4303	2.1764	0.0150
L405	4.4428	95965.035	0.0000	0.9999	0.3912	0.3700	1.5932	0.0150
L406	10.8019	233321.97	0.0001	0.9999	0.2954	0.6070	4.4015	0.0150
L407	3.5008	75618.231	0.0000	0.9999	0.4284	0.3100	1.1261	0.0150
L408	14.1920	306548.17	0.0001	0.9999	0.3027	0.6661	5.3592	0.0150
L410	17.9292	387269.85	0.0001	0.9998	0.3204	0.7237	6.4044	0.0150
L411	17.7986	384450.25	0.0001	0.9998	0.3180	0.7193	6.4153	0.0150
L413	2.0661	44627.747	0.0000	0.9999	0.4062	0.3853	1.0715	0.0150
L415	2.0789	44904.048	0.0000	0.9999	0.8204	0.2856	0.5638	0.0150
L417	2.6080	56333.191	0.0000	0.9999	0.5376	0.2501	0.7312	0.0150
L418	4.7311	102192.59	0.0000	0.9999	0.4100	0.3714	1.5997	0.0150
L419	7.3153	158010.87	0.0000	0.9999	0.3424	0.4918	2.8351	0.0150
L420	7.2499	156597.91	0.0000	0.9998	0.3344	0.4869	2.8330	0.0150
L421	1.5194	32819.501	0.0000	0.9999	0.3516	0.2433	0.7060	0.0150
L422	3.4792	75150.953	0.0000	0.9999	0.4132	0.3091	1.1287	0.0150
L423	12.3134	265968.97	0.0001	0.9999	0.3074	0.6078	4.4661	0.0150
L424	16.6862	360422.06	0.0001	0.9999	0.3211	0.6681	5.4314	0.0150
L425	0.8510	18381.720	0.0000	0.9999	0.2476	0.2364	0.6911	0.0150
L426	3.6316	78443.611	0.0000	0.9999	0.4167	0.3091	1.1347	0.0150
L427	36.0218	778070.98	0.0002	0.9999	0.3615	0.8506	8.8757	0.0150
L428	0.8579	18530.475	0.0000	0.9999	0.2779	0.2370	0.6843	0.0150
L429	37.5339	810732.80	0.0002	0.9999	0.3826	0.8495	9.0256	0.0150
L430	2.2411	48407.308	0.0000	0.9999	0.4641	0.2452	0.7280	0.0150
L431	2.0710	44734.382	0.0000	0.9999	0.4363	0.2442	0.7210	0.0150
L432	2.0846	45027.076	0.0000	0.9999	0.4563	0.2465	0.7228	0.0150
L435	2.6292	56790.875	0.0000	0.9999	0.5159	0.2478	0.7368	0.0150
L436	2.6120	56418.135	0.0000	0.9999	0.6565	0.2466	0.7342	0.0150
L437	2.6012	56186.278	0.0000	0.9998	0.4015	0.3059	1.1268	0.0150
L438	1.5281	33007.456	0.0000	0.9999	0.3761	0.2435	0.7118	0.0150
L439	4.1042	88650.943	0.0000	0.9999	0.6589	0.3110	1.1299	0.0150
L440	4.0758	88037.733	0.0000	0.9998	0.4638	0.4093	1.5264	0.0150
L441	43.1601	932257.67	0.0003	0.9999	0.5017	0.8660	8.9868	0.0150
L442	42.9820	928410.63	0.0003	0.9998	1.0401	0.9428	7.4370	0.0150
L443	42.9543	927813.95	0.0003	0.9998	2.6886	0.5555	2.7660	0.0150
L446	5.4178	117023.62	0.0000	0.9999	0.3853	0.3700	1.6399	0.0150
L448	0.8868	19155.830	0.0000	0.9999	0.2376	0.2375	0.7011	0.0150
L449	8.5897	185537.49	0.0001	0.9999	0.5029	0.4291	2.2415	0.0150
L450	12.0564	260417.84	0.0001	0.9999	0.6489	0.4971	2.9062	0.0150
L451	13.2579	286370.04	0.0001	0.9999	0.7514	0.5719	2.6721	0.0150
L452	1.1827	25546.743	0.0000	0.9999	0.3267	0.2409	0.7218	0.0150
L453	0.8524	18412.660	0.0000	0.9999	0.2670	0.2380	0.7203	0.0150
L454	0.6210	13413.601	0.0000	0.9999	0.5009	0.2266	0.3468	0.0150
L466	3.7085	80103.227	0.0000	0.9999	0.8247	0.3579	0.8906	0.0150
L468	3.6890	79682.754	0.0000	0.9998	0.4818	0.4725	1.4625	0.0150
L470	8.6781	187447.71	0.0001	0.9999	0.7901	0.4963	2.0589	0.0150
L471	0.3474	7504.1747	0.0000	0.9792	0.5667	0.1517	0.2095	0.0150
L472	4.0840	88215.086	0.0000	0.9999	0.9552	0.2483	0.7542	0.0150
L490	6.1448	132728.24	0.0000	0.9999	0.6276	0.5023	1.7740	0.0150
L496	0.5532	11949.372	0.0000	0.9999	0.7080	0.1871	0.2389	0.0150
L497	0.5464	11801.337	0.0000	0.9999	0.7090	0.1862	0.2372	0.0150
L498	1.0973	23700.727	0.0000	0.9999	0.7672	0.2383	0.3705	0.0150
L501	11.2067	242064.51	0.0001	0.9998	0.2002	0.7205	6.6110	0.0150
L502	11.0415	238496.61	0.0001	0.9998	0.1570	0.8485	8.9199	0.0150
L503	65.9058	1423564.6	0.0006	0.9999	0.3975	1.2858	14.9780	0.0150

L504	65.5839	1416613.1	0.0021	0.9999	0.4540	1.3539	14.1600	0.0150
L505	9.6192	207774.81	0.0001	0.9999	0.4918	0.4303	2.2615	0.0150
L506	9.8604	212983.69	0.0001	0.9999	0.4259	0.4305	2.2900	0.0150
L509	2.7405	59194.338	0.0000	0.9998	2.7231	0.1945	0.2955	0.0150
L511	10.0943	218037.21	0.0001	0.9999	0.9280	0.3801	1.6968	0.0150
L512	16.3767	353737.63	0.0001	0.9998	3.3811	0.3600	1.0566	0.0150
L514	7.3087	157867.52	0.0000	0.9999	0.3747	0.4304	2.2328	0.0150
L515	11.8315	255560.90	0.0001	0.9999	0.3199	0.8054	4.9620	0.0150
CH21	10.9151	235765.70	0.0001	0.9998	0.0473	0.6706	68.4222	0.0600
L474	8.6018	185798.94	0.0001	0.9997	0.7477	0.3670	1.6725	0.0150
L523	8.6096	185966.41	0.0001	0.9998	0.3427	0.6228	7.2536	0.0600
L525	15.4368	333435.12	0.0001	0.9938	0.3126	0.8338	5.8480	0.0150
L527	4.0942	88433.973	0.0000	0.9999	0.3688	0.3698	1.6125	0.0150
L528	4.2763	92367.875	0.0000	0.9998	0.7205	0.3115	1.1203	0.0150
L529	3.9618	85574.787	0.0000	0.9999	0.3426	0.3751	1.6305	0.0150
L533	3.9202	84675.486	0.0000	0.9999	0.3925	0.3668	1.5816	0.0150
L537	3.8699	83590.720	0.0000	0.9998	0.3154	0.3643	1.6177	0.0150
L394	53.3273	1151869.2	0.0019	1.0000	0.3695	1.3676	13.9565	0.0150
L276	2.8741	62079.651	0.0000	0.9999	0.8167	0.2525	0.7235	0.0150
L288	3.8042	82170.392	0.0000	0.9999	2.5339	0.2254	0.4143	0.0150
L412	2.0547	44381.170	0.0000	0.9999	1.0185	0.2662	0.4644	0.0150
L447	1.9320	41732.100	0.0000	0.9999	0.2183	0.3542	1.5557	0.0150
L252	0.1021	2206.3141	0.0000	0.9999	0.3832	0.1012	0.1346	0.0150
L253	1.5907	34359.810	0.0000	0.9999	0.7337	0.2738	0.4979	0.0150
L254	1.5816	34162.532	0.0000	0.9998	0.6660	0.2714	0.5323	0.0150
L255	3.6244	78286.445	0.0000	0.9999	0.5908	0.3588	1.0729	0.0150
L256	4.3183	93275.988	0.0000	0.9999	0.4569	0.4196	1.5591	0.0150
L257	6.0524	130731.29	0.0000	0.9999	0.6621	0.3744	1.6538	0.0150
L264	3.4675	74897.125	0.0000	0.9999	0.6596	0.3645	0.9806	0.0150
L265	19.8411	428567.00	0.0001	0.9999	0.3498	0.8555	6.1314	0.0150
L266	20.5963	444880.07	0.0002	0.9999	0.3692	0.8695	6.2509	0.0150
L267	0.7842	16939.277	0.0000	0.9999	0.5873	0.2329	0.3590	0.0150
L268	2.4313	52516.867	0.0000	0.9999	0.5194	0.2473	0.7324	0.0150
L269	2.6646	57555.770	0.0000	0.9999	0.7742	0.2508	0.7182	0.0150
L270	24.2379	523538.14	0.0006	0.9999	0.4521	0.8851	6.2733	0.0150
L271	24.1335	521283.99	0.0016	0.9999	0.1911	0.8748	9.6619	0.0150
L278	1.4323	30937.544	0.0000	0.9999	0.3327	0.2442	0.7239	0.0150
L279	2.9682	64113.660	0.0000	0.9999	0.8372	0.2516	0.7265	0.0150
L280	1.4358	31013.976	0.0000	0.9999	0.3343	0.2442	0.7237	0.0150
L284	1.4381	31061.973	0.0013	0.9999	0.1747	0.2500	0.7972	0.0150
L285	2.7201	58755.210	0.0013	1.0000	0.1390	0.3750	1.7865	0.0150
L286	1.1731	25337.913	0.0013	0.9999	0.0965	0.3125	1.2419	0.0150
L290	0.1579	3409.5749	0.0000	0.9999	0.6523	0.1104	0.1006	0.0150
L291	0.4043	8733.1282	0.0000	0.9999	0.6959	0.1635	0.1899	0.0150
L292	1.0510	22702.342	0.0000	0.9999	0.8325	0.2141	0.3433	0.0150
L294	1.2815	27680.111	0.0000	0.9999	0.2624	0.2405	0.7121	0.0150
L300	4.8555	104878.90	0.0000	0.9999	0.3274	0.3670	1.6333	0.0150
L301	1.7071	36872.301	0.0000	0.9999	0.3097	0.2437	0.7208	0.0150
L302	10.7151	231446.78	0.0001	0.9999	0.2686	0.5501	3.6816	0.0150
L303	0.7764	16770.624	0.0000	0.9999	0.2148	0.2346	0.6937	0.0150
L304	2.2525	48653.404	0.0000	0.9999	0.3794	0.2472	0.7309	0.0150
L305	3.0186	65202.606	0.0000	0.9999	0.2299	0.3629	1.6044	0.0150
L306	2.5891	55924.725	0.0001	0.9999	0.2835	0.2500	0.8008	0.0150
L307	2.8090	60673.758	0.0010	1.0000	0.0765	0.5000	3.1645	0.0150
L308	2.9243	63165.612	0.0003	1.0000	0.1399	0.3750	1.7886	0.0150
L309	2.4644	53231.035	0.0001	0.9999	0.2685	0.2500	0.8011	0.0150
L310	1.4648	31639.551	0.0000	0.9999	0.3443	0.2427	0.7071	0.0150
L311	1.4559	31448.272	0.0000	0.9998	0.3175	0.2416	0.7114	0.0150
L312	1.1721	25317.384	0.0000	0.9999	0.2495	0.2417	0.7213	0.0150
L313	2.7062	58453.691	0.0000	0.9999	0.5895	0.2448	0.7373	0.0150

L314	1.1726	25328.298	0.0000	0.9999	0.3331	0.2408	0.7209	0.0150
L315	1.4862	32102.148	0.0000	0.9999	0.6896	0.2732	0.4988	0.0150
L316	1.4783	31930.493	0.0000	0.9998	0.5550	0.2789	0.5833	0.0150
L317	5.6055	121078.79	0.0000	0.9999	0.5174	0.3683	1.6355	0.0150
L318	5.5815	120561.10	0.0000	0.9998	0.4976	0.3714	1.6812	0.0150
L321	0.4624	9988.8997	0.0000	0.9999	0.4298	0.2098	0.3069	0.0150
L324	1.5621	33741.398	0.0000	0.9999	0.2805	0.2423	0.7307	0.0150
L325	1.4859	32095.195	0.0000	0.9999	0.2408	0.2422	0.7352	0.0150
L326	1.7934	38736.700	0.0000	0.9999	0.2954	0.2434	0.7364	0.0150
L327	2.0241	43721.569	0.0000	0.9999	0.3185	0.2443	0.7398	0.0150
L328	7.0772	152867.18	0.0000	0.9999	0.9486	0.3666	1.5999	0.0150
L329	7.0715	152743.40	0.0000	0.9998	1.7607	0.3390	0.8428	0.0150
L334	0.3888	8398.2248	0.0000	0.9999	0.6952	0.1613	0.1854	0.0150
L335	0.7813	16876.611	0.0000	0.9999	0.7117	0.2135	0.3024	0.0150
L336	1.1759	25399.996	0.0000	0.9999	0.9853	0.2465	0.4054	0.0150
L337	1.1754	25388.621	0.0000	0.9998	1.7075	0.1612	0.2281	0.0150
L475	3.9869	86117.335	0.0000	0.9999	0.3794	0.3093	1.1502	0.0150
L478	16.2932	351932.52	0.0001	0.9999	0.4387	0.5509	3.7184	0.0150
L479	16.1638	349137.67	0.0001	0.9998	0.4047	0.6057	4.5042	0.0150
L487	9.8692	213175.73	0.0001	1.0000	0.4304	0.4379	2.4237	0.0150
L493	16.0411	346487.21	0.0001	0.9998	0.4001	0.6040	4.5341	0.0150
L499	1.5479	33435.389	0.0000	0.9999	0.2500	0.2433	0.7404	0.0150
L500	3.1146	67276.270	0.0000	0.9999	0.2769	0.3053	1.1653	0.0150
L507	3.4729	75014.848	0.0000	0.9999	0.7822	0.2483	0.7510	0.0150
L513	16.0709	347131.11	0.0001	0.9999	0.4395	0.6147	4.5408	0.0150
L546	3.4450	74412.956	0.0000	0.9942	0.3621	0.3583	1.6141	0.0150
L510	4.6901	101306.24	0.0000	0.9998	2.2172	0.2640	0.5239	0.0150
FREE # 1	12.0870	261079.30						
FREE # 2	25.8154	557613.50						
FREE # 3	2.7462	59318.845						
FREE # 4	6.5264	140971.04						
FREE # 5	2.1083	45539.071						
FREE # 6	33.7054	728037.55						
FREE # 7	7.8421	169390.17						
FREE # 8	4.5928	99204.988						
FREE # 9	7.3991	159820.89						
FREE #10	27.4518	592957.99						
FREE #11	65.4921	1414629.1						
FREE #12	17.3155	374014.35						
FREE #13	42.9524	927771.22						
FREE #14	4.0840	88214.325						
FREE #15	2.7405	59194.342						
FREE #16	16.3760	353721.75						
FREE #17	1.3991	30221.102						
FREE #18	8.6016	185793.97						
FREE #19	53.3582	1152536.7						
FREE #20	2.8740	62078.262						
FREE #21	3.8040	82167.186						
FREE #22	2.9682	64112.236						
FREE #23	2.7259	58879.124						
FREE #24	1.0510	22701.805						
FREE #25	2.9287	63260.410						
FREE #26	7.0713	152739.14						
FREE #27	1.1753	25387.441						
FREE #28	9.8647	213076.75						
FREE #29	2.8130	60759.769						
FREE #30	4.6901	101306.45						

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| Table E13. Channel losses(H), headwater depth (HW), tailwater |

| depth (TW), critical and normal depth (Yc and Yn). |
| Use this section for culvert comparisons |
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Conduit Name	Maximum Flow	Head Loss	Friction Loss	Critical Depth	Normal Depth	HW Elevat	TW Elevat	
L210	2.8911	0.0000	0.6079	0.7287	1.0000	107.6026	106.9939	Max Flow
L211	3.1354	0.0000	4.1728	0.7586	1.0000	106.9939	102.8186	Max Flow
L212	3.2978	0.0000	2.2915	0.7315	0.9241	102.1159	100.2909	Max Flow
L213	2.4909	0.0000	0.6823	0.6759	0.8914	100.9508	100.2682	Max Flow
L214	5.3707	0.0000	0.3194	0.8928	1.2615	100.5876	100.2682	Max Flow
L217	0.9501	0.0000	0.4954	0.4086	0.4397	100.2872	99.7386	Max Flow
L220	11.2776	0.0000	2.1196	1.2514	1.7500	100.2909	98.1694	Max Flow
L221	13.2165	0.0000	1.7213	1.3077	2.0000	98.1694	96.2277	Max Flow
L222	13.3950	0.0000	4.7820	1.3167	0.8202	95.2520	90.4700	Max Flow
L223	0.2305	0.0000	0.1897	0.1969	0.2569	119.8642	119.6069	Max Flow
L224	0.2305	0.0000	0.6187	0.1969	0.2585	118.8903	118.0569	Max Flow
L225	0.2305	0.0000	0.6971	0.1969	0.2582	117.6596	117.5825	Max Flow
L226	0.9294	0.0000	0.9538	0.4040	0.5533	118.5578	118.1994	Max Flow
L227	1.5845	0.0000	0.6336	0.5338	0.8293	118.1994	117.5825	Max Flow
L228	2.4888	0.0000	2.6900	0.6756	1.0000	117.5825	114.7356	Max Flow
L229	2.9466	0.0000	1.5156	0.6896	1.0706	112.5184	110.5696	Max Flow
L230	3.4595	0.0000	1.6036	0.7504	1.2500	110.4305	108.6104	Max Flow
L231	3.8015	0.0000	1.8103	0.7879	1.2500	108.4480	106.6365	Max Flow
L232	6.0390	0.0000	1.3373	0.9490	1.5000	106.6365	105.2963	Max Flow
L233	6.3287	0.0000	2.2799	0.9722	1.5000	105.2963	103.0130	Max Flow
L234	9.4131	0.0000	0.9819	1.0955	1.5018	103.0130	102.0312	Max Flow
L235	0.4478	0.0000	0.1334	0.2768	0.3725	112.5280	112.5184	Max Flow
L236	2.1260	0.0000	0.4907	0.6226	1.0000	107.1256	106.6365	Max Flow
L237	3.0838	0.0000	0.9796	0.7523	1.0000	103.6073	102.6273	Max Flow
L238	3.6937	0.0000	0.7819	0.8182	1.0000	116.6523	115.8782	Max Flow
L239	4.0636	0.0000	2.0981	0.8520	1.0000	115.2807	113.1820	Max Flow
L240	1.2377	0.0000	0.4915	0.4691	0.5152	113.3534	112.7991	Max Flow
L241	5.3641	0.0000	2.7217	0.9383	1.2500	110.4620	107.7383	Max Flow
L242	1.8517	0.0000	0.3828	0.5793	0.6687	108.0733	107.6293	Max Flow
L243	2.4831	0.0000	0.6200	0.6748	0.8718	108.4472	107.7248	Max Flow
L246	24.3602	0.0000	1.9130	1.6806	2.5000	102.0312	100.1167	Max Flow
L247	28.8013	0.0000	0.5586	1.8288	2.5000	100.1167	99.5500	Max Flow
L248	1.9821	0.0000	0.1927	0.6006	0.7067	100.3093	100.1167	Max Flow
L249	1.5791	0.0000	0.4519	0.5329	0.6016	105.4928	104.8417	Max Flow
L250	2.9997	0.0000	5.3020	0.7420	0.3798	104.8417	99.5400	Max Flow
L251	1.3045	0.0000	0.4079	0.4824	0.5322	105.4064	104.8417	Max Flow
L259	6.8581	0.0000	1.0288	0.9673	1.3681	97.6771	96.0308	Max Flow
L260	7.0527	0.0000	3.7815	0.9819	0.4498	96.0308	90.4800	Max Flow
L261	0.9792	0.0000	0.6857	0.4149	0.4484	94.7428	93.7152	Max Flow
L262	2.3040	0.0000	7.7425	0.6492	0.2750	93.7152	83.9100	Max Flow
L263	1.1997	0.0000	0.6244	0.4615	0.5057	94.6677	93.7152	Max Flow
L272	38.4384	0.0000	0.0172	1.7824	2.9342	83.9351	83.9000	Max Flow
L273	9.4703	0.0000	0.5384	1.1445	1.7500	84.4498	83.8983	Max Flow
L274	8.5560	0.0000	8.5738	1.1323	0.5281	92.4738	83.9000	Max Flow
L275	1.5051	0.0000	0.5846	0.5200	0.5818	119.6123	119.3170	Max Flow
L277	1.5120	0.0000	0.6483	0.5212	0.5830	119.6597	119.3170	Max Flow
L281	3.4219	0.0000	1.5113	0.7905	1.0000	124.8193	122.6751	Max Flow
L282	5.0178	0.0000	8.2593	0.9172	0.3949	122.6751	113.4200	Max Flow
L283	1.4971	0.0000	0.6318	0.5185	0.5772	123.5619	122.6750	Max Flow
L287	1.8249	0.0000	0.6389	0.5749	0.6593	113.8197	113.0849	Max Flow
L289	2.2642	0.0000	0.7268	0.6435	0.7865	114.0002	113.1535	Max Flow
L319	8.1961	0.0000	0.4784	1.1083	1.5000	101.6653	101.1083	Max Flow
L320	1.8842	0.0000	0.3882	0.5846	0.6764	101.8614	101.5978	Max Flow

L338	21.2501	0.0000	0.1889	1.4803	2.5058	128.4056	128.2437	Max Flow
L339	21.2501	0.0000	0.5106	1.4803	2.4674	128.2437	127.6447	Max Flow
L340	30.1672	0.0000	0.4769	1.6963	3.0203	127.6447	127.0548	Max Flow
L341	30.1672	0.0000	0.3143	1.6963	3.1122	127.0548	126.5963	Max Flow
L342	4.5877	0.0000	0.4878	0.8677	1.2500	128.9836	128.3977	Max Flow
L343	2.6326	0.0000	0.6387	0.6950	1.0000	129.2163	128.4750	Max Flow
L344	12.3310	0.0000	0.1758	1.1780	1.7323	127.1958	127.1390	Max Flow
L346	25.6047	0.0000	0.1209	1.5569	2.4750	126.9360	126.8928	Max Flow
L347	56.3351	0.0000	0.7996	2.2572	4.0000	126.8928	126.0985	Max Flow
L348	56.3334	0.0000	0.7637	2.2572	4.0000	126.0985	125.3411	Max Flow
L349	56.3333	0.0000	0.7605	2.2572	4.0000	125.3411	124.5626	Max Flow
L350	56.3333	0.0000	0.2583	2.2572	4.0000	124.5626	124.2984	Max Flow
L351	8.2540	0.0000	0.1140	1.0227	1.4579	124.5869	124.5302	Max Flow
L352	8.2540	0.0000	0.4160	1.0227	1.4508	124.5302	124.2984	Max Flow
L354	73.4486	0.0000	0.2047	2.5008	2.1105	122.6305	122.5800	Max Flow
L361	2.3115	0.0000	0.3204	0.6503	0.8093	126.2886	125.9103	Max Flow
L362	2.1598	0.0000	0.4193	0.6278	0.7572	126.3794	125.8878	Max Flow
L363	4.5228	0.0000	1.3920	0.8156	1.0642	125.8482	124.5904	Max Flow
L364	2.6496	0.0000	0.3554	0.6973	1.0000	124.9752	124.5573	Max Flow
L365	1.6367	0.0000	0.3762	0.5430	0.6119	124.8733	124.5904	Max Flow
L366	9.8099	0.0000	0.9084	1.1200	1.7285	124.5904	123.6822	Max Flow
L367	9.8099	0.0000	0.8379	1.1200	1.7295	123.6822	122.8446	Max Flow
L368	2.2788	0.0000	0.7370	0.6456	0.7930	123.6212	122.8367	Max Flow
L369	3.4945	0.0000	1.2617	0.7986	1.0000	124.1512	122.9086	Max Flow
L370	19.1219	0.0000	0.3233	1.4008	2.2211	122.8446	122.6510	Max Flow
L373	19.1219	0.0000	0.1933	1.4008	1.0725	122.6510	122.5800	Max Flow
L374	3.3514	0.0000	1.8661	0.7827	1.0000	120.8308	118.9627	Max Flow
L375	3.3513	0.0000	0.6264	0.6972	1.5000	118.9042	118.0072	Max Flow
L376	14.2708	0.1085	0.2167	1.2348	1.8562	118.6604	118.4019	Max Flow
L386	36.6159	0.0000	0.2563	1.8012	3.1936	118.2820	118.0270	Max Flow
L387	36.6031	0.0000	0.2665	1.8008	3.2064	118.0269	117.7614	Max Flow
L388	2.2296	0.0000	0.5983	0.6385	1.0000	118.0355	117.3402	Max Flow
L389	50.3153	0.0000	0.2919	2.0509	3.8852	117.7613	117.4697	Max Flow
L390	1.6079	0.0000	0.4428	0.5379	0.7072	117.6983	117.1414	Max Flow
L391	55.1620	0.0000	0.4549	2.1533	4.5000	117.4696	117.0117	Max Flow
L392	65.3549	0.0000	0.4864	2.3527	4.5000	117.0117	116.5129	Max Flow
L393	65.3488	0.0000	0.6749	2.3526	4.5000	116.5129	115.8734	Max Flow
L395	4.2403	0.0000	0.6734	0.8335	0.6572	118.9891	118.7077	Max Flow
L396	8.3479	0.0000	0.4893	0.9094	1.3085	118.7853	118.7087	Max Flow
L397	4.5806	0.0000	0.5730	0.8670	0.7108	119.0832	118.7087	Max Flow
L398	4.3232	0.0000	0.8171	0.8420	0.6588	119.0675	118.7853	Max Flow
L399	4.0369	0.0000	0.6933	0.7039	0.9134	118.9368	118.7853	Max Flow
L402	7.1188	0.0000	0.2435	0.9866	1.4060	113.6518	113.4140	Max Flow
L403	7.1191	0.0000	1.1036	0.9866	1.4210	113.4140	112.2979	Max Flow
L404	7.1280	0.0000	1.1163	0.9872	1.4122	112.2983	111.0824	Max Flow
L405	4.8549	0.0000	0.3254	0.8468	1.1311	111.3924	110.9768	Max Flow
L406	11.9729	0.0000	0.6417	1.1597	1.7166	112.4791	112.0680	Max Flow
L407	3.8256	0.0000	0.3887	0.7905	1.0955	111.0297	110.5505	Max Flow
L408	15.7980	0.0000	0.5961	1.3024	2.0080	112.0680	111.6343	Max Flow
L410	20.1364	0.0000	0.5380	1.4401	2.3383	111.6343	111.1574	Max Flow
L411	20.1364	0.0000	0.4097	1.4401	2.3489	111.1574	110.7941	Max Flow
L413	2.2679	0.0000	1.3383	0.5683	0.6796	119.1140	118.8248	Max Flow
L415	2.2700	0.0000	0.3536	0.6444	0.7489	119.5279	119.1244	Max Flow
L417	2.8494	0.0000	0.5217	0.7235	1.0000	112.5021	111.9035	Max Flow
L418	5.1688	0.0000	0.3287	0.8748	1.2081	113.1916	112.9610	Max Flow
L419	8.0182	0.0000	0.6051	1.0071	1.4169	112.9610	112.5301	Max Flow
L420	8.0182	0.0000	0.9396	1.0071	1.4176	112.5301	111.8621	Max Flow
L421	1.6633	0.0000	0.4103	0.5476	0.6182	110.6689	110.2170	Max Flow
L422	3.8019	0.0000	0.4121	0.7879	1.0644	112.2083	111.8621	Max Flow
L423	13.6466	0.0000	0.6966	1.2419	1.9032	111.8621	111.2807	Max Flow

L424	18.5464	0.0000	0.5378	1.4164	2.3829	111.2807	110.7941	Max Flow
L425	0.9317	0.0000	0.4053	0.4045	0.4363	111.3435	111.2807	Max Flow
L426	3.9681	0.0000	0.3930	0.8057	1.2500	111.6425	111.2807	Max Flow
L427	40.5902	0.0000	1.0434	1.9812	3.5000	110.7941	109.7503	Max Flow
L428	0.9393	0.0000	0.4987	0.4062	0.4397	109.8312	109.7503	Max Flow
L429	42.4776	0.0000	0.8860	2.0284	3.5000	109.7503	108.8835	Max Flow
L430	2.4485	0.0000	0.7713	0.6699	0.7129	120.8344	120.2703	Max Flow
L431	2.2782	0.0000	2.4871	0.6455	0.7923	122.5834	120.2684	Max Flow
L432	2.2777	0.0000	0.5304	0.6455	0.7915	123.0735	122.5834	Max Flow
L435	2.8727	0.0000	0.7705	0.7264	1.0000	116.1805	115.4092	Max Flow
L436	2.8741	0.0000	2.7379	0.7266	1.0000	115.4092	112.6914	Max Flow
L437	2.8724	0.0000	1.3708	0.6804	0.8304	112.8384	112.0502	Max Flow
L438	1.6723	0.0000	0.5063	0.5492	0.6236	112.3086	112.0515	Max Flow
L439	4.5570	0.0000	2.5017	0.8648	1.2500	112.0515	109.5673	Max Flow
L440	4.5523	0.0000	1.3288	0.8185	1.0723	109.7789	108.8835	Max Flow
L441	48.9390	0.0000	1.1723	2.1842	3.5000	108.8835	107.6629	Max Flow
L442	48.9390	0.0000	1.6389	2.1842	3.5000	107.6629	105.0976	Max Flow
L443	48.9390	0.0000	5.2516	2.1842	0.9872	105.0976	99.5700	Max Flow
L446	5.9168	0.0000	0.2542	0.9388	1.5000	129.7527	129.4984	Max Flow
L448	0.9708	0.0000	0.4572	0.4131	0.4472	128.2210	128.1440	Max Flow
L449	9.5085	0.0000	2.1422	1.1469	1.7500	128.1440	126.0007	Max Flow
L450	13.3913	0.0000	1.8254	1.3165	2.0000	126.0007	123.9765	Max Flow
L451	14.7194	0.0000	0.4727	1.3819	2.0000	120.4426	119.8419	Max Flow
L452	1.2925	0.0000	0.2887	0.4802	0.5291	126.0884	126.0007	Max Flow
L453	0.9323	0.0000	0.3450	0.4046	0.4391	126.0559	126.0007	Max Flow
L454	0.6805	0.0000	0.4065	0.3432	0.3671	120.4710	120.2912	Max Flow
L466	4.0513	0.0000	0.6115	0.8142	0.9291	120.8206	120.1342	Max Flow
L468	4.0489	0.0000	0.9972	0.7050	0.9525	119.5315	118.6021	Max Flow
L470	9.4830	0.0000	0.8188	1.1453	1.7500	123.4952	122.3558	Max Flow
L471	0.3817	0.0000	1.3528	0.2545	0.2559	125.0264	123.4952	Max Flow
L472	4.4576	0.0000	1.0741	0.8830	1.0000	128.1166	127.0400	Max Flow
L490	6.7172	0.0000	0.3686	0.9567	1.7500	111.3361	110.8167	Max Flow
L496	0.6064	0.0000	2.1723	0.3236	0.3457	133.7961	131.6772	Max Flow
L497	0.5989	0.0000	2.1823	0.3217	0.3435	133.8039	131.6772	Max Flow
L498	1.2053	0.0000	0.5699	0.4626	0.5070	131.6772	131.1070	Max Flow
L501	12.3313	0.0000	0.5457	1.1137	1.6375	127.1390	126.9766	Max Flow
L502	12.3326	0.0000	0.2228	1.0636	1.6011	126.9766	126.8925	Max Flow
L503	73.4486	0.0000	0.7096	2.5008	4.5000	124.2984	123.5594	Max Flow
L504	73.4486	0.0000	0.8098	2.5008	4.5000	123.5594	122.6305	Max Flow
L505	10.5969	0.0000	2.3187	1.2124	1.7500	106.8092	104.4871	Max Flow
L506	10.8991	0.0000	2.4522	1.2297	1.7500	104.3059	101.8428	Max Flow
L509	2.9902	0.0000	10.5706	0.7408	0.3581	108.2106	97.6400	Max Flow
L511	11.0354	0.0000	2.5525	1.2707	1.5000	112.4350	109.8807	Max Flow
L512	17.9041	0.0000	10.7974	1.5241	0.6463	108.7565	97.4200	Max Flow
L514	8.0432	0.0000	1.3537	1.0519	1.7500	129.4984	128.1440	Max Flow
L515	17.6809	0.0000	0.2062	1.3448	2.0745	118.4019	118.2820	Max Flow
CH21	13.5663	0.0000	0.7786	0.0721	0.3067	118.6802	118.6603	Max Flow
L474	9.4830	0.0000	1.3681	1.1890	1.5000	120.8720	119.5000	Max Flow
L523	9.4830	0.0000	0.7137	0.3970	0.9455	122.3558	121.2270	Max Flow
L525	17.1558	0.0000	0.7320	1.3244	2.0432	118.7087	118.2820	Max Flow
L527	4.5202	0.0000	1.3764	0.8154	1.0805	118.8248	117.7613	Max Flow
L528	4.7290	0.0000	3.2735	0.8811	1.2500	120.2684	116.9196	Max Flow
L529	4.3384	0.0000	0.6401	0.7981	1.5000	114.9266	114.2861	Max Flow
L533	4.3384	0.0000	2.4125	0.7981	1.0336	114.2861	112.6510	Max Flow
L537	4.3384	0.0000	1.0160	0.7981	1.5000	112.6510	111.6343	Max Flow
L394	65.3471	0.0000	0.3954	2.3526	4.5000	115.8734	115.6300	Max Flow
L276	3.1458	0.0000	0.5263	0.7599	1.0000	119.3170	118.7599	Max Flow
L288	4.1590	0.0000	3.8373	0.8252	0.3816	112.6673	108.8300	Max Flow
L412	2.2432	0.0000	0.6001	0.6405	0.6067	119.6067	119.0067	Max Flow
L447	2.1264	0.0000	1.3136	0.5499	0.6604	129.7121	129.4984	Max Flow

L252	0.1128	0.0000	1.9646	0.1356	0.1476	100.5085	99.1962	Max Flow
L253	1.7367	0.0000	0.4100	0.5604	0.6375	101.3827	100.9914	Max Flow
L254	1.7367	0.0000	2.2633	0.5604	0.6384	100.9914	99.1962	Max Flow
L255	3.9589	0.0000	0.3955	0.8048	1.2500	100.2654	99.9146	Max Flow
L256	4.7298	0.0000	0.9765	0.8353	1.1040	99.9146	99.1962	Max Flow
L257	6.6737	0.0000	1.4264	0.9991	1.5000	99.1962	97.6771	Max Flow
L264	3.7882	0.0000	0.4255	0.7864	1.0657	86.2987	85.7764	Max Flow
L265	22.4326	0.0000	0.4605	1.5229	2.6415	85.9466	85.4869	Max Flow
L266	23.3527	0.0000	0.2899	1.5560	3.0000	85.4869	85.1952	Max Flow
L267	0.8600	0.0000	0.3665	0.3877	0.4168	85.5601	85.1703	Max Flow
L268	2.6552	0.0000	0.5795	0.6980	1.0000	96.5563	95.9765	Max Flow
L269	2.9244	0.0000	2.2492	0.7327	1.0000	95.9765	93.7327	Max Flow
L270	27.4525	0.0000	0.8163	1.6932	3.0000	85.1953	84.3071	Max Flow
L271	27.4816	0.0000	0.8354	1.6148	1.8033	84.3072	83.8988	Max Flow
L278	1.5645	0.0000	0.2712	0.5304	0.5953	114.7104	114.5881	Max Flow
L279	3.2534	0.0000	1.8307	0.7719	1.0000	114.5881	112.7719	Max Flow
L280	1.5684	0.0000	0.2818	0.5310	0.5973	114.7162	114.5881	Max Flow
L284	5.2952	0.0000	1.4695	0.9283	1.0000	109.8271	109.8622	Max Flow
L285	3.1105	0.0000	0.1599	0.6707	0.8285	108.7998	108.6400	Max Flow
L286	1.4106	0.0000	1.0619	0.4690	0.5339	108.8307	108.7998	Max Flow
L290	0.1735	0.0000	1.7034	0.1697	0.1827	104.1135	102.0841	Max Flow
L291	0.4448	0.0000	2.0154	0.2758	0.2936	102.0841	100.0331	Max Flow
L292	1.1514	0.0000	0.7734	0.4517	0.2725	100.0331	99.5700	Max Flow
L294	1.4027	0.0000	0.4751	0.5008	0.5547	92.7112	92.5469	Max Flow
L300	5.3497	0.0000	0.8098	0.8909	1.2437	93.3343	92.5469	Max Flow
L301	1.8664	0.0000	0.3398	0.5817	0.6689	93.5326	93.3343	Max Flow
L302	11.8253	0.0000	1.0370	1.1905	1.8290	92.5469	91.5100	Max Flow
L303	0.8511	0.0000	0.4760	0.3856	0.4161	93.5815	93.5200	Max Flow
L304	2.4622	0.0000	0.4536	0.6718	0.8785	91.4767	90.9497	Max Flow
L305	3.3133	0.0000	0.4742	0.6930	0.8565	93.5200	93.3343	Max Flow
L306	2.8190	0.0000	0.4647	0.7198	0.7625	98.1270	97.6624	Max Flow
L307	15.6979	0.0000	0.5971	1.4279	1.3589	98.5454	97.6400	Max Flow
L308	3.1961	0.0000	0.1215	0.6801	0.6691	97.7613	97.6400	Max Flow
L309	2.6934	0.0000	0.4239	0.7031	0.7338	98.1849	97.7613	Max Flow
L310	1.6006	0.0000	0.3595	0.5367	0.6019	110.9382	110.7767	Max Flow
L311	1.6006	0.0000	2.2956	0.5367	0.6040	110.7767	109.7243	Max Flow
L312	1.2821	0.0000	0.3494	0.4781	0.5238	109.8263	109.7243	Max Flow
L313	2.9996	0.0000	5.3594	0.7420	1.0000	109.7243	104.3342	Max Flow
L314	1.2826	0.0000	0.5265	0.4782	0.5278	104.4885	104.3342	Max Flow
L315	1.6227	0.0000	0.4188	0.5405	0.6069	105.5303	105.2177	Max Flow
L316	1.6227	0.0000	1.6834	0.5405	0.6114	105.2177	104.3342	Max Flow
L317	6.1968	0.0000	1.3801	0.9620	1.5000	104.3342	102.9537	Max Flow
L318	6.1968	0.0000	1.2767	0.9620	1.5000	102.9537	101.6653	Max Flow
L321	0.5084	0.0000	1.1070	0.2951	0.3909	119.2319	118.5578	Max Flow
L324	1.7090	0.0000	0.6972	0.5556	0.6319	123.0594	122.6995	Max Flow
L325	1.6252	0.0000	0.3553	0.5410	0.6113	121.7174	121.5521	Max Flow
L326	1.9616	0.0000	0.6864	0.5973	0.6946	120.5544	120.0876	Max Flow
L327	2.2136	0.0000	0.6824	0.6360	0.7690	120.6763	120.0876	Max Flow
L328	7.8187	0.0000	2.8329	1.0831	1.5000	120.0876	116.3485	Max Flow
L329	7.8187	0.0000	2.9285	1.0831	0.6393	116.3485	113.4200	Max Flow
L334	0.4265	0.0000	2.1293	0.2696	0.2878	125.6081	123.3977	Max Flow
L335	0.8586	0.0000	1.9033	0.3874	0.4174	123.3977	121.3926	Max Flow
L336	1.2917	0.0000	0.6739	0.4800	0.5278	121.3926	120.3681	Max Flow
L337	1.2917	0.0000	3.7507	0.4800	0.2780	120.3681	115.3400	Max Flow
L475	4.3583	0.0000	0.5780	0.8456	1.2500	93.1253	92.5469	Max Flow
L478	18.0903	0.0000	2.1503	1.4859	2.2500	91.5100	89.3552	Max Flow
L479	18.0903	0.0000	1.5203	1.4395	2.5000	89.3552	87.8334	Max Flow
L487	10.7713	0.0000	0.9974	1.2224	0.7903	98.4097	97.4200	Max Flow
L493	18.0903	0.0000	1.1955	1.4395	2.5000	87.8334	86.6415	Max Flow
L499	1.7090	0.0000	1.1470	0.5556	1.0000	122.6995	121.5521	Max Flow

L500	3.4454	0.0000	1.4617	0.7488	1.2500	121.5521	120.0876	Max Flow
L507	3.7981	0.0000	2.1829	0.8284	1.0000	94.2928	92.1084	Max Flow
L513	18.2190	0.0000	0.6700	1.4448	2.5000	86.6415	85.9466	Max Flow
L546	3.7980	0.0000	3.3204	0.7444	0.7912	92.4555	91.5100	Max Flow
L510	5.1173	0.0000	5.3048	0.9167	0.4464	102.7248	97.4200	Max Flow

Table E13a. CULVERT ANALYSIS CLASSIFICATION, and the time the culvert was in a particular classification during the simulation. The time is in minutes. The Dynamic Wave Equation is used for all conduit analysis but the culvert flow classification condition is based on the HW and TW depths.

Conduit Name	Critical D Outlet Control	Mild Slope Outlet Control	Steep Slope TW Insignf Entrance Control	Slug Flow Outlet/ Entrance Control	Mild Slope TW > D Outlet Control	Mild Slope TW <= D Outlet Control	Outlet Control	Inlet Control	Inlet Configuration
L210	1.0000	57.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L211	25.0000	30.0000	0.0000	0.0000	0.0000	0.0000	305.0000	0.0000	None
L212	24.0000	35.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L213	0.0000	49.0000	0.0000	0.0000	311.0000	0.0000	0.0000	0.0000	None
L214	1.0000	48.0000	0.0000	0.0000	311.0000	0.0000	0.0000	0.0000	None
L217	293.0000	67.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L220	9.0000	49.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L221	260.0000	100.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L222	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L223	251.0000	109.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L224	291.0000	69.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L225	19.0000	71.0000	3.0000	0.0000	267.0000	0.0000	0.0000	0.0000	None
L226	0.0000	65.0000	0.0000	0.0000	295.0000	0.0000	0.0000	0.0000	None
L227	20.0000	41.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L228	26.0000	29.0000	0.0000	0.0000	0.0000	0.0000	305.0000	0.0000	None
L229	324.0000	36.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L230	326.0000	34.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L231	42.0000	36.0000	0.0000	0.0000	276.0000	0.0000	6.0000	0.0000	None
L232	29.0000	48.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L233	19.0000	32.0000	4.0000	0.0000	305.0000	0.0000	0.0000	0.0000	None
L234	0.0000	40.0000	1.0000	0.0000	319.0000	0.0000	0.0000	0.0000	None
L235	11.0000	52.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L236	2.0000	57.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L237	0.0000	53.0000	0.0000	0.0000	307.0000	0.0000	0.0000	0.0000	None
L238	5.0000	355.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L239	19.0000	31.0000	0.0000	0.0000	0.0000	0.0000	310.0000	0.0000	None
L240	291.0000	69.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L241	26.0000	29.0000	0.0000	0.0000	0.0000	0.0000	305.0000	0.0000	None
L242	225.0000	135.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L243	88.0000	272.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L246	0.0000	31.0000	0.0000	0.0000	329.0000	0.0000	0.0000	0.0000	None
L247	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L248	0.0000	31.0000	0.0000	0.0000	329.0000	0.0000	0.0000	0.0000	None
L249	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L250	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L251	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None

L259	355.0000	5.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L260	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L261	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L262	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L263	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L272	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L273	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L274	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L275	2.0000	59.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L277	2.0000	59.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L281	53.0000	0.0000	0.0000	0.0000	0.0000	0.0000	307.0000	0.0000	None
L282	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L283	359.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L287	280.0000	80.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L289	273.0000	87.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L319	288.0000	72.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L320	1.0000	359.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L338	4.0000	356.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L339	9.0000	351.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L340	6.0000	354.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L341	81.0000	279.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L342	292.0000	68.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L343	287.0000	73.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L344	1.0000	61.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L346	0.0000	55.0000	0.0000	0.0000	305.0000	0.0000	0.0000	0.0000	None
L347	5.0000	53.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L348	3.0000	58.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L349	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L350	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L351	3.0000	357.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L352	27.0000	333.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L354	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	None
L361	295.0000	65.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L362	82.0000	278.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L363	10.0000	350.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L364	2.0000	358.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L365	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L366	1.0000	359.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L367	0.0000	359.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	None
L368	0.0000	359.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	None
L369	291.0000	68.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	None
L370	0.0000	359.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	None
L373	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	None
L374	3.0000	42.0000	2.0000	0.0000	0.0000	0.0000	313.0000	0.0000	None
L375	84.0000	274.0000	2.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L376	6.0000	354.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L386	5.0000	355.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L387	2.0000	358.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L388	40.0000	254.0000	0.0000	0.0000	66.0000	0.0000	0.0000	0.0000	None
L389	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L390	25.0000	335.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L391	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L392	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L393	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L395	0.0000	0.0000	10.0000	31.0000	0.0000	310.0000	9.0000	0.0000	None
L396	0.0000	358.0000	2.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L397	0.0000	0.0000	10.0000	29.0000	0.0000	309.0000	12.0000	0.0000	None
L398	0.0000	0.0000	12.0000	29.0000	0.0000	294.0000	25.0000	0.0000	None
L399	21.0000	339.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L402	4.0000	79.0000	0.0000	0.0000	277.0000	0.0000	0.0000	0.0000	None

L403	10.0000	71.0000	0.0000	0.0000	279.0000	0.0000	0.0000	0.0000	None
L404	29.0000	48.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L405	4.0000	73.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L406	9.0000	62.0000	0.0000	0.0000	289.0000	0.0000	0.0000	0.0000	None
L407	4.0000	67.0000	0.0000	0.0000	289.0000	0.0000	0.0000	0.0000	None
L408	9.0000	58.0000	0.0000	0.0000	293.0000	0.0000	0.0000	0.0000	None
L410	12.0000	52.0000	0.0000	0.0000	296.0000	0.0000	0.0000	0.0000	None
L411	7.0000	55.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L413	1.0000	91.0000	0.0000	0.0000	268.0000	0.0000	0.0000	0.0000	None
L415	292.0000	68.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L417	6.0000	71.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L418	0.0000	77.0000	0.0000	0.0000	283.0000	0.0000	0.0000	0.0000	None
L419	10.0000	64.0000	0.0000	0.0000	286.0000	0.0000	0.0000	0.0000	None
L420	12.0000	54.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L421	0.0000	66.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L422	1.0000	65.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L423	9.0000	54.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L424	18.0000	44.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L425	0.0000	63.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L426	1.0000	62.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L427	0.0000	66.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L428	3.0000	63.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L429	0.0000	73.0000	0.0000	0.0000	287.0000	0.0000	0.0000	0.0000	None
L430	2.0000	5.0000	31.0000	0.0000	315.0000	0.0000	7.0000	0.0000	None
L431	18.0000	36.0000	0.0000	0.0000	306.0000	0.0000	0.0000	0.0000	None
L432	15.0000	46.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L435	11.0000	45.0000	0.0000	0.0000	304.0000	0.0000	0.0000	0.0000	None
L436	27.0000	34.0000	0.0000	0.0000	267.0000	0.0000	32.0000	0.0000	None
L437	0.0000	59.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L438	2.0000	57.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L439	36.0000	60.0000	0.0000	0.0000	0.0000	0.0000	264.0000	0.0000	None
L440	28.0000	45.0000	0.0000	0.0000	287.0000	0.0000	0.0000	0.0000	None
L441	13.0000	347.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L442	358.0000	2.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L443	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L446	1.0000	57.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L448	0.0000	56.0000	0.0000	0.0000	304.0000	0.0000	0.0000	0.0000	None
L449	11.0000	50.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L450	222.0000	138.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L451	202.0000	158.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L452	2.0000	59.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L453	3.0000	58.0000	0.0000	0.0000	299.0000	0.0000	0.0000	0.0000	None
L454	3.0000	357.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L466	195.0000	165.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L468	10.0000	350.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L470	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L471	0.0000	23.0000	6.0000	0.0000	331.0000	0.0000	0.0000	0.0000	None
L472	0.0000	51.0000	0.0000	0.0000	309.0000	0.0000	0.0000	0.0000	None
L490	287.0000	73.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L496	4.0000	356.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L497	4.0000	356.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L498	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L501	9.0000	50.0000	0.0000	0.0000	301.0000	0.0000	0.0000	0.0000	None
L502	1.0000	54.0000	0.0000	0.0000	305.0000	0.0000	0.0000	0.0000	None
L503	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L504	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L505	24.0000	34.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L506	1.0000	40.0000	0.0000	0.0000	319.0000	0.0000	0.0000	0.0000	None
L509	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L511	4.0000	40.0000	0.0000	0.0000	0.0000	0.0000	316.0000	0.0000	None

L512	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L514	8.0000	48.0000	0.0000	0.0000	304.0000	0.0000	0.0000	0.0000	None
L515	8.0000	352.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
CH21	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L474	0.0000	57.0000	0.0000	0.0000	303.0000	0.0000	0.0000	0.0000	None
L523	306.0000	54.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L525	6.0000	234.0000	2.0000	0.0000	118.0000	0.0000	0.0000	0.0000	None
L527	5.0000	52.0000	0.0000	0.0000	303.0000	0.0000	0.0000	0.0000	None
L528	33.0000	28.0000	0.0000	0.0000	0.0000	0.0000	299.0000	0.0000	None
L529	9.0000	75.0000	0.0000	0.0000	276.0000	0.0000	0.0000	0.0000	None
L533	12.0000	54.0000	0.0000	0.0000	294.0000	0.0000	0.0000	0.0000	None
L537	28.0000	39.0000	0.0000	0.0000	293.0000	0.0000	0.0000	0.0000	None
L394	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L276	156.0000	204.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L288	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L412	0.0000	1.0000	58.0000	0.0000	0.0000	0.0000	301.0000	0.0000	None
L447	1.0000	57.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L252	6.0000	54.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L253	15.0000	345.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L254	22.0000	38.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L255	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L256	7.0000	53.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L257	30.0000	330.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L264	5.0000	355.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L265	1.0000	359.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L266	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L267	1.0000	359.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L268	7.0000	48.0000	0.0000	0.0000	305.0000	0.0000	0.0000	0.0000	None
L269	30.0000	32.0000	0.0000	0.0000	0.0000	0.0000	298.0000	0.0000	None
L270	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L271	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L278	3.0000	48.0000	0.0000	0.0000	309.0000	0.0000	0.0000	0.0000	None
L279	26.0000	33.0000	0.0000	0.0000	0.0000	0.0000	301.0000	0.0000	None
L280	3.0000	48.0000	0.0000	0.0000	309.0000	0.0000	0.0000	0.0000	None
L284	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L285	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L286	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
L290	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L291	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L292	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L294	1.0000	57.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L300	30.0000	28.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L301	2.0000	58.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L302	4.0000	50.0000	0.0000	0.0000	306.0000	0.0000	0.0000	0.0000	None
L303	1.0000	61.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L304	0.0000	62.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L305	3.0000	57.0000	0.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
L306	0.0000	0.0000	0.0000	0.0000	315.0000	45.0000	0.0000	0.0000	None
L307	0.0000	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	None
L308	0.0000	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	None
L309	0.0000	0.0000	0.0000	0.0000	310.0000	50.0000	0.0000	0.0000	None
L310	7.0000	57.0000	0.0000	0.0000	296.0000	0.0000	0.0000	0.0000	None
L311	6.0000	48.0000	0.0000	0.0000	306.0000	0.0000	0.0000	0.0000	None
L312	8.0000	46.0000	0.0000	0.0000	306.0000	0.0000	0.0000	0.0000	None
L313	24.0000	34.0000	0.0000	0.0000	297.0000	0.0000	5.0000	0.0000	None
L314	1.0000	62.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L315	12.0000	348.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L316	24.0000	39.0000	0.0000	0.0000	297.0000	0.0000	0.0000	0.0000	None
L317	10.0000	57.0000	0.0000	0.0000	293.0000	0.0000	0.0000	0.0000	None
L318	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None

L321	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L324	9.0000	39.0000	0.0000	0.0000	312.0000	0.0000	0.0000	0.0000	None
L325	1.0000	43.0000	0.0000	0.0000	316.0000	0.0000	0.0000	0.0000	None
L326	2.0000	38.0000	0.0000	0.0000	320.0000	0.0000	0.0000	0.0000	None
L327	2.0000	38.0000	0.0000	0.0000	320.0000	0.0000	0.0000	0.0000	None
L328	48.0000	0.0000	0.0000	0.0000	0.0000	0.0000	312.0000	0.0000	None
L329	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L334	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L335	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L336	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L337	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L475	0.0000	58.0000	0.0000	0.0000	302.0000	0.0000	0.0000	0.0000	None
L478	10.0000	52.0000	0.0000	0.0000	298.0000	0.0000	0.0000	0.0000	None
L479	11.0000	53.0000	0.0000	0.0000	296.0000	0.0000	0.0000	0.0000	None
L487	0.0000	0.0000	0.0000	0.0000	0.0000	360.0000	0.0000	0.0000	None
L493	0.0000	70.0000	0.0000	0.0000	290.0000	0.0000	0.0000	0.0000	None
L499	8.0000	36.0000	0.0000	0.0000	316.0000	0.0000	0.0000	0.0000	None
L500	5.0000	35.0000	0.0000	0.0000	320.0000	0.0000	0.0000	0.0000	None
L507	1.0000	50.0000	0.0000	0.0000	284.0000	0.0000	25.0000	0.0000	None
L513	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
L546	15.0000	38.0000	1.0000	0.0000	306.0000	0.0000	0.0000	0.0000	None
L510	0.0000	0.0000	360.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None

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| Kinematic Wave Approximations |
| Time in Minutes for Each Condition |
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Conduit Name	Duration of Normal Flow	Slope Criteria	Super-Critical	Roll Waves
L210	0.0000	0.0000	0.0000	0.0000
L211	0.0000	0.0000	0.9833	0.0000
L212	0.5000	303.9333	2.9333	0.0000
L213	0.0000	17.6000	0.0000	0.0000
L214	0.1935	37.9009	0.0000	0.0000
L217	0.0000	0.0000	0.7500	0.0000
L220	0.0000	0.2500	1.0500	0.0000
L221	0.0000	0.2500	1.3667	0.0000
L222	57.0694	359.7500	346.4833	0.0000
L223	0.0000	0.0000	4.0093	0.0000
L224	0.0000	0.0000	0.0000	0.0000
L225	6.8237	302.6667	5.0741	0.0000
L226	34.4109	360.0000	3.4167	0.0000
L227	0.0333	302.8333	3.6667	0.0000
L228	0.0000	2.5167	2.5167	0.0000
L229	0.0000	0.2500	1.6333	0.0000
L230	0.0000	0.0000	0.0000	0.0000
L231	0.0000	0.0000	0.2500	0.0000
L232	0.0000	0.5000	1.4500	0.0000
L233	0.0000	10.4129	0.2963	0.0000
L234	4.6444	356.6296	0.0000	0.0000
L235	0.0000	346.0370	6.4444	0.0000
L236	0.0000	0.0000	0.0000	0.0000
L237	0.0000	0.0000	0.0000	0.0000
L238	0.0000	0.0000	0.0000	0.0000
L239	0.0000	0.0000	0.5000	0.0000
L240	0.0000	0.0000	0.7500	0.0000
L241	0.0000	0.5000	1.9167	0.0000
L242	0.0000	0.0000	0.0000	0.0000

L243	0.0000	0.0000	0.0000	0.0000
L246	0.2500	38.8043	0.0000	0.0000
L247	0.0000	32.3218	0.0000	0.0000
L248	0.0000	357.7481	0.0000	0.0000
L249	0.0000	0.0000	0.2500	0.0000
L250	58.1290	360.0000	355.1481	0.0000
L251	0.0000	0.0000	0.5000	0.0000
L259	0.6000	1.0778	0.0000	0.0000
L260	359.7500	359.7500	349.1870	0.0000
L261	0.0000	0.0000	0.5000	0.0000
L262	360.0000	360.0000	354.6296	0.0000
L263	0.0000	0.0000	0.7500	0.0000
L272	0.2500	322.3781	0.0000	0.0000
L273	0.0667	44.1287	0.0000	0.0000
L274	43.7845	359.7500	356.8000	0.0000
L275	16.2585	357.0667	0.5000	0.0000
L277	19.2381	357.0833	1.0000	0.0000
L281	0.0000	0.0000	352.3241	0.0000
L282	360.0000	360.0000	357.2167	0.0000
L283	0.0000	0.0000	0.5000	0.0000
L287	0.0000	0.0000	0.0000	0.0000
L289	0.0000	0.0000	0.0000	0.0000
L319	0.0000	0.0000	0.8833	0.0000
L320	0.0000	320.7586	0.0000	0.0000
L338	0.0000	0.0000	1.6667	0.0000
L339	0.0000	0.0000	0.5000	0.0000
L340	0.0000	0.0000	2.0500	0.0000
L341	0.0000	0.0000	2.0167	0.0000
L342	0.0000	0.0000	0.0000	0.0000
L343	0.0000	0.0000	0.0000	0.0000
L344	0.0667	304.6667	0.0000	0.0000
L346	0.0370	350.7037	0.0000	0.0000
L347	0.0000	21.2407	0.0000	0.0000
L348	0.0000	26.6520	2.6000	0.0000
L349	0.7500	29.4705	1.6833	0.0000
L350	0.0833	28.9914	1.4500	0.0000
L351	0.0000	304.1667	1.5667	0.0000
L352	0.0000	305.9333	0.5000	0.0000
L354	0.0000	350.0000	0.0000	0.0000
L361	0.0000	0.0000	0.0000	0.0000
L362	0.0000	0.0000	0.0000	0.0000
L363	0.0000	310.4667	1.4333	0.0000
L364	0.0000	0.0000	0.0000	0.0000
L365	0.0000	302.3667	0.0000	0.0000
L366	5.2519	358.7667	1.1167	0.0000
L367	0.5333	357.1667	0.2500	0.0000
L368	13.1796	37.7862	0.0000	0.0000
L369	2.7593	19.0405	0.0000	0.0000
L370	0.0000	355.7481	0.0000	0.0000
L373	0.0000	355.7333	0.0000	0.0000
L374	0.0000	0.0000	0.0000	0.0000
L375	0.0000	0.0000	0.4167	0.0000
L376	0.5926	347.2963	0.0000	0.0000
L386	0.0000	348.7407	2.9167	0.0000
L387	0.4815	347.3333	4.3056	0.0000
L388	0.0000	0.0000	0.0000	0.0000
L389	0.0167	348.1907	0.5000	0.0000
L390	0.0000	0.0000	0.0000	0.0000
L391	1.7833	349.0481	0.2500	0.0000
L392	0.0000	48.4976	0.0000	0.0000

L393	0.0000	48.1589	0.0000	0.0000
L395	10.6111	359.5000	0.5500	0.0000
L396	0.2000	357.4667	0.0000	0.0000
L397	10.5333	359.5000	0.7500	0.0000
L398	8.4037	358.8167	1.7500	0.0000
L399	0.0000	317.3793	3.7685	0.0000
L402	0.0323	298.2581	1.8500	0.0000
L403	0.0323	287.4839	3.7315	0.0000
L404	0.0323	289.5161	2.2333	0.0000
L405	0.0323	289.9032	0.0000	0.0000
L406	0.0000	308.1833	1.5667	0.0000
L407	0.0968	3.8710	0.0000	0.0000
L408	0.0000	314.1000	1.8667	0.0000
L410	0.0000	326.3103	6.3704	0.0000
L411	0.0000	332.8214	8.6389	0.0000
L413	39.9019	353.5296	0.5000	0.0000
L415	0.0000	0.0000	0.0000	0.0000
L417	0.0000	0.0000	0.0000	0.0000
L418	0.0323	286.8387	0.0000	0.0000
L419	0.0000	308.2859	3.8704	0.0000
L420	0.0000	304.9667	2.3833	0.0000
L421	0.0323	298.1290	0.0000	0.0000
L422	0.0968	7.0968	0.0000	0.0000
L423	0.0000	316.7069	1.6333	0.0000
L424	0.0000	34.0398	1.6500	0.0000
L425	0.0000	305.2000	0.5000	0.0000
L426	0.5161	0.6774	0.0000	0.0000
L427	0.0000	12.0000	0.2500	0.0000
L428	0.0000	306.4333	0.5000	0.0000
L429	4.8889	19.8190	0.2500	0.0000
L430	10.8267	351.1852	5.2685	0.0000
L431	17.8429	328.5357	1.8000	0.0000
L432	0.0000	306.5929	4.2593	0.0000
L435	0.0000	27.1548	3.5000	0.0000
L436	0.0000	0.5000	1.2333	0.0000
L437	30.6500	356.5833	0.9333	0.0000
L438	0.0000	332.9643	0.5000	0.0000
L439	0.0000	0.5000	1.9833	0.0000
L440	0.0000	303.5667	5.1019	0.0000
L441	0.0000	0.0000	2.5000	0.0000
L442	0.0000	0.0000	316.8426	0.0000
L443	359.7500	359.7500	338.4643	0.0000
L446	0.0656	2.1559	0.0000	0.0000
L448	0.0000	325.2069	0.7500	0.0000
L449	0.0000	0.5000	2.0167	0.0000
L450	0.0000	0.5000	1.5500	0.0000
L451	0.0000	0.0000	2.4667	0.0000
L452	0.0000	319.2759	0.5000	0.0000
L453	0.0000	322.6552	0.5000	0.0000
L454	0.0000	320.3103	1.0000	0.0000
L466	0.0000	0.0000	0.0000	0.0000
L468	0.0000	297.9032	4.7963	0.0000
L470	0.0000	0.0000	6.3519	0.0000
L471	353.1852	353.1852	0.0000	0.0000
L472	0.1034	0.1034	0.0000	0.0000
L490	0.0000	0.0000	0.0000	0.0000
L496	354.0741	354.4444	2.7500	0.0000
L497	354.1111	354.4074	3.0000	0.0000
L498	0.0000	0.0000	0.2500	0.0000
L501	0.0000	328.0357	0.9667	0.0000

L502	2.7667	354.8370	3.0000	0.0000
L503	0.0000	29.1568	0.0000	0.0000
L504	0.0000	29.7957	0.0000	0.0000
L505	0.0000	0.5000	1.5167	0.0000
L506	5.6796	42.1016	1.2833	0.0000
L509	56.9833	359.7500	356.3889	0.0000
L511	0.0000	0.0000	0.0000	0.0000
L512	359.7500	359.7500	355.4722	0.0000
L514	0.0000	47.0227	0.2500	0.0000
L515	0.0000	343.9444	4.2315	0.0000
CH21	68.9194	359.5000	0.0000	0.0000
L474	0.3448	0.3448	0.0000	0.0000
L523	0.0000	0.2500	0.5000	0.0000
L525	0.0000	323.9735	0.1833	0.0000
L527	11.8743	352.7407	1.8333	0.0000
L528	0.0000	0.2500	1.3833	0.0000
L529	0.0000	0.0000	2.8500	0.0000
L533	29.0444	342.6296	6.8333	0.0000
L537	0.0000	0.0000	1.3037	0.0000
L394	0.0000	47.4767	0.0000	0.0000
L276	0.0000	0.2500	0.7500	0.0000
L288	41.8621	360.0000	354.1852	0.0000
L412	0.0000	0.0000	352.8889	0.0000
L447	29.6335	349.3333	0.0000	0.0000
L252	343.2963	343.4444	3.9352	0.0000
L253	0.0000	302.7442	3.9444	0.0000
L254	20.6162	322.9655	1.3667	0.0000
L255	0.0000	0.0000	0.0000	0.0000
L256	0.0000	349.6296	3.9000	0.0000
L257	0.0000	0.2500	2.2833	0.0000
L264	0.0000	0.0000	0.0000	0.0000
L265	0.7833	354.3704	0.8833	0.0000
L266	0.3500	65.3643	1.0000	0.0000
L267	0.1290	297.2581	1.0000	0.0000
L268	0.0000	44.0148	2.4500	0.0000
L269	0.0000	0.0000	0.5000	0.0000
L270	0.2500	41.6630	0.2500	0.0000
L271	0.0000	353.2593	0.0000	0.0000
L278	0.0000	356.0333	1.6167	0.0000
L279	0.0000	0.2500	0.7167	0.0000
L280	0.0000	356.0333	1.8667	0.0000
L284	0.2833	357.9667	0.0000	0.0000
L285	0.0000	347.4815	0.0000	0.0000
L286	0.0000	346.1111	0.0000	0.0000
L290	354.4074	354.4074	0.0000	0.0000
L291	359.2500	359.7500	0.0000	0.0000
L292	3.1833	359.7500	0.0000	0.0000
L294	0.0000	307.5000	0.2500	0.0000
L300	0.0000	305.6667	1.2667	0.0000
L301	0.0000	304.3000	0.0000	0.0000
L302	2.1833	349.1870	0.2500	0.0000
L303	0.0000	305.4333	0.5000	0.0000
L304	0.1613	1.4839	0.0000	0.0000
L305	0.0000	353.2963	0.0000	0.0000
L306	0.2500	358.1833	0.0000	0.0000
L307	0.0000	358.2963	0.0000	0.0000
L308	0.0000	358.0074	0.0000	0.0000
L309	0.0000	357.9019	0.0000	0.0000
L310	0.0000	304.5000	2.4167	0.0000
L311	43.4444	350.1111	0.9000	0.0000

L312	0.0000	350.6296	4.8148	0.0000
L313	0.0000	0.2500	1.8167	0.0000
L314	0.0000	322.2759	0.7500	0.0000
L315	0.0000	317.0862	3.3667	0.0000
L316	14.6830	317.2069	1.3000	0.0000
L317	0.0000	1.1667	5.1111	0.0000
L318	10.5093	60.4435	0.2667	0.0000
L321	70.9570	352.9630	4.1481	0.0000
L324	5.7474	348.7778	4.4815	0.0000
L325	0.0000	337.2857	0.0000	0.0000
L326	0.0000	339.6786	0.0000	0.0000
L327	0.0000	338.3571	0.0000	0.0000
L328	0.0000	0.0000	2.5000	0.0000
L329	31.1429	359.7500	349.2222	0.0000
L334	355.9630	359.7500	0.0000	0.0000
L335	357.0000	359.7500	0.0000	0.0000
L336	0.0000	0.0000	3.0167	0.0000
L337	359.7500	359.7500	344.7037	0.0000
L475	0.0000	0.0000	0.0000	0.0000
L478	0.0000	0.0000	0.0000	0.0000
L479	0.0000	0.0000	5.4907	0.0000
L487	0.0000	358.2056	0.0000	0.0000
L493	7.0000	8.3333	0.0370	0.0000
L499	0.0000	27.7673	1.6000	0.0000
L500	0.0000	36.0407	1.2833	0.0000
L507	0.0000	0.0000	0.0000	0.0000
L513	0.6296	5.9630	3.7500	0.0000
L546	28.4833	333.2857	0.8000	0.0000
L510	25.7143	359.7500	356.3148	0.0000

Table E15 - SPREADSHEET INFO LIST

Conduit Flow and Junction Depth Information for use in spreadsheets. The maximum values in this table are the true maximum values because they sample every time step. The values in the review results may only be the maximum of a subset of all the time steps in the run.

Note: These flows are only the flows in a single barrel.

Conduit Name	Maximum Flow (cfs)	Total Flow (ft^3)	Maximum Velocity (ft/s)	Maximum Volume (ft^3)	##	Junction Name	Invert Elevation (ft)	Maximum Elevation (ft)
L210	2.8911	57161.4515	3.7442	56.6758	##	N221	105.8400	107.6026
L211	3.1354	61547.4330	4.0313	92.9610	##	N222	104.4400	106.9939
L212	3.2978	64190.1773	3.3045	521.4422	##	N223	100.8100	102.1159
L213	2.4916	49166.0079	3.2326	86.7910	##	N224	96.9700	100.2909
L214	5.3716	106136.6995	3.0197	172.0499	##	N227	98.3400	100.9720
L217	0.9501	18775.2717	2.8265	22.0944	##	N228	97.5300	100.6100

L220	11.2776	221042.5723	4.6465	795.1415	##	N230	95.8300
98.1694							
L221	13.2165	257683.2569	4.1620	1071.2640	##	N231	99.8400
100.2872							
L222	13.3950	261089.7470	9.3807	186.3000	##	N233	94.4200
95.2520							
L223	0.2305	4547.3993	1.4362	9.8486	##	N234	85.6000
90.4700							
L224	0.2305	4485.8552	1.3309	10.9512	##	N235	119.6000
119.8642							
L225	0.2305	4406.4720	1.3999	161.7749	##	N236	118.6100
118.8903							
L226	0.9294	18089.1195	1.8893	319.3934	##	N237	117.2600
117.6596							
L227	1.5845	30752.9556	2.2885	192.5825	##	N238	115.1100
117.5825							
L228	2.4888	47890.2984	3.2325	176.8815	##	N239	117.6900
118.5578							
L229	2.9466	56175.9895	2.5939	247.7024	##	N240	116.6200
118.1994							
L230	3.4595	65684.5379	2.9207	383.3851	##	N241	111.3600
112.5184							
L231	3.8015	71794.3187	3.0729	505.4724	##	N242	108.6300
110.4305							
L232	6.0390	115218.3207	3.4001	562.5537	##	N243	105.8600
108.4480							
L233	6.3287	120070.0643	3.5542	859.2245	##	N244	103.8500
106.6365							
L234	9.4131	180097.1792	2.9823	1361.9430	##	N245	101.6800
105.2963							
L235	0.4478	8830.3848	1.0916	41.1676	##	N246	99.5300
103.0130							
L236	2.1260	41980.0003	2.6924	85.6260	##	N247	97.8700
102.0312							
L237	3.0865	60885.7191	3.8943	80.9914	##	N248	111.4800
112.5280							
L238	3.6943	73067.7059	4.7555	41.1048	##	N249	104.6200
107.1256							
L239	4.0636	80236.4855	5.1858	93.2085	##	N250	101.1400
103.9881							
L240	1.2377	24462.0607	3.0137	31.3633	##	N251	115.3800
116.6527							
L241	5.3649	105452.0217	4.4351	240.5992	##	N252	113.0600
115.2810							
L242	1.8517	36615.6339	3.3991	31.7247	##	N253	108.0800
110.4633							
L243	2.4831	49084.3607	3.6078	60.0089	##	N254	112.8300
113.3534							
L246	24.3602	470902.4073	4.9227	2113.5340	##	N255	102.8000
106.8092							
L247	28.8013	557382.7692	5.6428	462.0253	##	N256	107.4100
108.0734							
L248	1.9855	39208.0774	2.5223	38.3297	##	N257	107.6100
108.4472							
L249	1.5796	31239.9913	3.2797	25.5028	##	N259	97.1600
100.1167							
L250	3.0003	59321.4914	9.1561	20.1806	##	N260	97.0000
99.5500							
L251	1.3050	25806.9292	3.0865	23.3263	##	N261	98.9300
100.3093							

L259	6.8581	134049.1647	3.7886	187.9927	##	N262	104.8800
105.4930							
L260	7.0527	137856.6330	10.3186	40.5794	##	N263	104.4600
104.8418							
L261	0.9792	19354.4456	2.6864	12.8399	##	N264	96.6400
99.5400							
L262	2.3040	45541.1712	9.6318	21.8116	##	N265	104.8600
105.4066							
L263	1.1997	23719.0677	2.8987	14.1156	##	N272	96.3500
97.6771							
L272	-182.0896	725472.3970	-3.0701	542.5826	##	N273	97.6800
97.6800							
L273	-20.2978	187010.0053	3.8734	286.4577	##	N274	95.5800
96.0308							
L274	8.5583	169389.9117	11.9728	98.1242	##	N275	87.6000
90.4800							
L275	1.5051	29759.5057	2.6242	73.4280	##	N276	94.2500
94.7428							
L277	1.5120	29894.0388	2.6674	79.5612	##	N277	93.4400
93.7152							
L281	3.4219	67666.9294	4.6251	35.3664	##	N278	78.0000
83.9100							
L282	5.0178	99209.5831	14.7920	8.0822	##	N279	94.1200
94.6677							
L283	1.4971	29601.4364	3.1057	26.2910	##	N288	77.0300
86.4925							
L287	1.8249	36059.8257	3.3193	50.1690	##	N289	77.0000
83.9000							
L289	2.2642	44736.6059	3.4711	66.0334	##	N290	78.1000
86.7858							
L319	8.1961	159824.5371	4.7905	101.9994	##	N291	91.9200
92.4740							
L320	1.8863	37169.8300	3.0353	47.9324	##	N292	76.6000
83.9000							
L338	21.2501	420503.8412	3.9155	452.9297	##	N293	118.9200
119.6123							
L339	21.2501	419229.8037	4.0471	1290.7590	##	N294	118.3000
119.3170							
L340	30.1672	594318.8740	4.4311	1553.9508	##	N296	118.9800
119.6597							
L341	30.1672	592971.3158	5.2785	537.4167	##	N301	122.9000
124.8193							
L342	4.5877	90718.7801	4.0620	80.2604	##	N302	122.2800
122.6751							
L343	2.6326	52040.9298	3.6540	61.8189	##	N303	110.6000
113.4200							
L344	12.3310	243919.2739	4.0916	262.4070	##	N304	122.9500
123.5620							
L346	25.6091	506537.9697	2.6568	504.2764	##	N309	113.1500
113.8197							
L347	56.3352	1104093.602	4.4572	5203.3213	##	N310	112.2600
112.6673							
L348	56.3335	1098525.791	4.3072	5279.8845	##	N312	113.2100
114.0002							
L349	56.3333	1093090.891	4.3284	5118.8131	##	N342	100.2200
101.6653							
L350	56.3333	1089775.684	4.5031	1642.3414	##	N343	100.0000
101.1083							
L351	8.2540	163359.1993	3.3587	99.4964	##	N344	101.1100
101.8986							

L352	8.2540	162952.8856	3.3889	430.4495	##	N345	118.8300
119.2319							
L354	-98.8503	1413454.090	5.6499	1322.5082	##	N361	126.2400
128.4056							
L361	2.3118	45725.2893	3.6734	27.6898	##	N362	126.1300
128.2437							
L362	2.1598	42707.9272	3.5287	37.6123	##	N363	125.2800
127.6447							
L363	4.5228	88980.3517	3.2801	527.6489	##	N364	125.0100
127.0548							
L364	2.6499	52414.6975	3.8459	31.7015	##	N365	117.4000
122.5700							
L365	1.6367	32365.6039	3.2166	36.1454	##	N366	127.8700
128.9836							
L366	9.8099	192829.2431	3.4015	1137.9485	##	N367	128.3300
129.2163							
L367	9.8099	191783.3002	3.3946	1052.3772	##	N368	124.2600
127.1958							
L368	2.2788	45061.1313	3.4486	79.6120	##	N369	123.6700
127.1391							
L369	3.4945	69098.5972	4.5022	72.2000	##	N370	121.7000
126.8932							
L370	-23.1711	374519.9089	-3.6437	1458.8795	##	N371	122.2600
126.9363							
L373	-32.7200	373593.6519	-3.6394	694.3127	##	N372	121.3400
126.0985							
L374	3.3515	66146.6994	4.3063	116.6647	##	N373	120.9700
125.3411							
L375	3.3513	65484.5384	2.2806	603.3538	##	N374	120.6000
124.5626							
L376	14.2708	189729.3596	2.6421	884.7539	##	N375	119.9800
124.2984							
L386	36.6159	620012.7574	3.0292	4136.6531	##	N376	122.9000
124.5869							
L387	36.6031	615504.0251	3.0015	4343.8201	##	N377	122.8200
124.5302							
L388	2.2296	44020.4163	2.8878	90.3608	##	N378	119.2700
122.6545							
L389	50.3153	880377.7452	3.2226	6017.0175	##	N379	118.4000
122.5800							
L390	1.6079	31754.8863	2.8204	72.8176	##	N381	124.7600
125.8482							
L391	55.1620	969253.7669	3.5284	7772.3705	##	N382	122.8600
124.5904							
L392	65.3549	1163087.258	4.2286	5799.2640	##	N383	125.5300
126.2887							
L393	65.3488	1156300.260	-4.9060	6727.2029	##	N384	125.6400
126.3795							
L395	4.2403	83898.5673	3.4419	62.0245	##	N386	124.1400
124.9847							
L396	8.3479	162498.5611	1.9353	2624.9569	##	N387	124.2300
124.8733							
L397	4.5806	90632.1107	3.7176	70.7079	##	N388	121.9500
123.6822							
L398	4.3232	85546.9461	3.6417	59.4044	##	N389	120.1100
123.1444							
L399	4.0369	78741.8793	2.6079	809.6569	##	N390	122.8300
123.6213							
L402	7.1190	140803.3903	3.4621	216.2409	##	N391	122.6900
124.1512							

L403	7.1192	140146.0218	3.4260	997.1274	##	N392	119.8300
122.8575							
L404	7.1286	138853.7340	3.5493	924.1414	##	N394	118.4000
122.5800							
L405	4.8562	95965.0352	3.8609	131.3126	##	N395	118.1100
120.8368							
L406	11.9729	233321.9749	3.1921	1863.5359	##	N396	117.6800
118.9739							
L407	3.8258	75618.2309	3.8229	91.3394	##	N397	115.8100
118.4019							
L408	15.7980	306548.1739	3.1695	2280.7554	##	N398	116.3100
118.6604							
L410	20.1364	387269.8478	2.9547	2924.8980	##	N399	114.6000
118.2820							
L411	20.1364	384450.2544	2.8412	2230.4028	##	N403	114.3000
118.0270							
L413	2.2679	44627.7467	2.5782	660.3298	##	N404	113.4800
117.7614							
L415	2.2703	44904.0477	3.7552	28.0842	##	N405	117.0000
118.3319							
L417	2.8494	56333.1911	3.8175	55.1808	##	N406	113.1700
117.4697							
L418	5.1688	102192.5943	3.8865	132.9652	##	N407	117.0000
117.7713							
L419	8.0182	158010.8739	3.3526	847.4604	##	N408	112.7800
117.0117							
L420	8.0182	156597.9066	3.2859	1298.1061	##	N409	112.4800
116.5129							
L421	1.6633	32819.5013	3.2980	54.7215	##	N410	112.1200
115.8734							
L422	3.8019	75150.9533	3.8116	97.7455	##	N412	116.3000
118.9902							
L423	13.6466	265968.9694	3.1599	2035.8874	##	N413	115.3300
118.7087							
L424	18.5464	360422.0566	3.2140	1861.1306	##	N414	115.8300
118.7853							
L425	0.9317	18381.7203	2.7609	55.4366	##	N415	116.3300
119.0832							
L426	3.9681	78443.6115	3.7880	93.8612	##	N416	116.8300
119.0675							
L427	40.5902	778070.9819	4.1993	4899.3234	##	N417	117.5700
118.9368							
L428	0.9393	18530.4753	2.7409	69.4540	##	N418	119.9000
120.8207							
L429	42.4776	810732.7963	4.2977	3938.7453	##	N419	110.9100
113.4701							
L430	2.4485	48407.3076	3.2889	72.3267	##	N420	112.2400
114.7633							
L431	2.2782	44734.3820	3.2432	277.7449	##	N421	112.0000
114.5335							
L432	2.2777	45027.0759	3.3819	74.4880	##	N422	109.1300
112.4791							
L435	2.8738	56790.8750	3.6388	73.2165	##	N423	110.3700
112.6795							
L436	2.8765	56418.1346	3.7239	150.8933	##	N424	108.2600
112.0680							
L437	2.8725	56186.2781	2.9465	407.0035	##	N425	110.0600
112.3959							
L438	1.6723	33007.4557	2.7953	69.7827	##	N426	107.4500
111.6343							

L439	4.5571	88650.9431	3.7816	316.0481	##	N428	106.9200
111.1574							
L440	4.5523	88037.7328	3.2628	701.4473	##	N429	106.0200
110.7941							
L441	48.9390	932257.6671	4.9424	3827.9167	##	N430	119.0000
119.6069							
L442	48.9390	928410.6340	5.9435	2384.5663	##	N431	116.6700
118.8248							
L443	48.9390	927813.9547	16.4665	367.3159	##	N432	118.0700
119.1140							
L446	5.9168	117023.6196	3.5391	112.8537	##	N434	118.8000
119.5280							
L448	0.9708	19155.8303	2.4582	62.5615	##	N435	110.1800
112.9610							
L449	9.5085	185537.4852	3.9304	1120.3934	##	N436	111.5700
113.5338							
L450	13.3913	260417.8449	4.2601	1084.2233	##	N437	110.9200
113.1916							
L451	14.7194	286370.0435	5.0912	236.5739	##	N438	109.5800
112.5301							
L452	1.2925	25546.7435	2.7686	40.5570	##	N439	108.1500
111.8621							
L453	0.9323	18412.6595	2.4657	48.6381	##	N440	110.0500
112.0562							
L454	0.6806	13413.6014	2.3129	34.8690	##	N441	109.7300
112.2083							
L466	4.0513	80103.2270	4.2367	81.5989	##	N442	107.2200
111.2807							
L468	4.0497	79682.7540	2.7409	962.7297	##	N443	109.3800
111.3435							
L470	9.4830	187447.7132	4.3099	316.9864	##	N444	109.0300
111.6425							
L471	0.3817	7504.1747	1.7178	122.7373	##	N445	105.4800
109.7503							
L472	4.4591	88215.0856	5.6523	41.8186	##	N446	108.4900
109.8312							
L490	6.7177	132728.2443	3.5464	198.5522	##	N447	105.0500
108.8835							
L496	0.6064	11949.3720	2.3568	27.6784	##	N448	118.7700
120.8468							
L497	0.5989	11801.3371	2.3448	27.5982	##	N449	117.9900
120.2831							
L498	1.2053	23700.7269	3.0139	34.8508	##	N450	120.7400
122.5957							
L501	12.3313	242064.5055	2.6186	2774.4659	##	N451	121.2700
123.0855							
L502	12.3327	238496.6080	1.2630	4266.1785	##	N453	113.7600
115.6961							
L503	73.4486	1423564.560	4.7117	6637.6776	##	N454	114.2900
116.4642							
L504	73.4486	1416613.125	5.0655	6372.0477	##	N455	111.6800
113.0201							
L505	10.6006	207774.8091	4.3761	979.2098	##	N456	110.2600
112.1895							
L506	10.9036	212983.6938	4.4890	999.7635	##	N457	111.0200
112.4454							
L509	2.9906	59194.3379	9.6184	39.6627	##	N458	108.3900
109.7789							
L511	11.0411	218037.2092	6.2594	300.5165	##	N459	104.6100
107.6629							

L512	17.9049	353737.6307	16.1185	129.6650	##	N460	104.1100
105.0976							
L514	8.0432	157867.5233	3.3254	1004.0820	##	N461	94.1000
99.5700							
L515	17.6809	255560.9016	2.7186	952.1482	##	N464	125.0900
128.1440							
CH21	13.5663	235765.6966	0.3274	148939.8416	##	N465	126.6500
129.7527							
L474	9.4830	185798.9430	5.3470	229.7956	##	N466	126.1900
129.4984							
L523	9.4830	185966.4079	1.2146	628.1273	##	N467	126.3000
128.2210							
L525	17.1558	333435.1195	3.2208	3811.0579	##	N468	123.5900
126.0007							
L527	4.5202	88433.9731	2.9029	778.7412	##	N469	118.6600
120.4426							
L528	4.7290	92367.8752	3.9306	256.2389	##	N470	117.7100
118.6802							
L529	4.3384	85574.7870	2.7073	522.1977	##	N471	124.8800
126.0884							
L533	4.3384	84675.4858	3.1793	1301.3440	##	N472	124.9400
126.0559							
L537	4.3384	83590.7200	2.5325	834.8186	##	N473	120.0700
120.5302							
L394	-91.5670	1151869.231	-6.0689	2191.0627	##	N487	118.5700
119.5917							
L276	3.1458	62079.6509	4.0495	36.4563	##	N489	118.4300
120.8720							
L288	4.1590	82170.3924	9.5092	39.5134	##	N490	121.9000
123.4952							
L412	2.2439	44381.1703	4.5004	26.4187	##	N491	124.1700
125.0264							
L447	2.1264	41732.1001	2.3674	700.8605	##	N492	126.3400
128.1178							
L252	0.1128	2206.3141	0.9049	85.8941	##	N493	126.0400
127.0400							
L253	1.7368	34359.8104	3.2857	37.9505	##	N497	107.8500
108.2106							
L254	1.7367	34162.5323	3.0967	137.7121	##	N499	91.2000
97.6400							
L255	3.9589	78286.4446	3.6617	91.5407	##	N509	108.8800
112.4401							
L256	4.7298	93275.9875	3.0290	521.6686	##	N513	110.0100
111.3361							
L257	6.6737	130731.2899	3.7242	446.0535	##	N514	108.1100
108.7565							
L264	3.7883	74897.1253	3.7909	81.8354	##	N516	90.0000
97.4200							
L265	22.4326	428566.9995	3.3432	2330.9127	##	N524	133.4500
133.7961							
L266	23.3527	444880.0657	3.4737	1354.8427	##	N525	131.1700
131.6772							
L267	0.8605	16939.2774	2.7722	30.4568	##	N526	133.4600
133.8039							
L268	2.6552	52516.8672	3.3671	64.9970	##	N527	130.6000
131.1070							
L269	2.9244	57555.7698	3.7936	87.7935	##	N528	122.6600
126.9767							
L270	27.4526	523538.1401	4.1521	2528.5760	##	N529	119.6400
123.5594							

L271	-41.2525	521283.9916	-4.0704	3856.5312	##	N530	99.7100	104.4871
L278	1.5645	30937.5440	2.1797	39.0396	##	N689	118.0000	119.5000
L279	3.2534	64113.6597	4.1995	95.2880	##	N494	121.4100	122.3558
L280	1.5684	31013.9763	2.1961	40.6264	##	N541	112.0900	114.2861
L284	5.2952	31061.9727	3.5155	41.5114	##	EL329	112.5200	114.9266
L285	-9.4447	58755.2098	1.7409	250.4349	##	N427	109.6400	112.6510
L286	-8.3238	25337.9129	-6.6747	62.4999	##	N411	112.0000	115.6300
L290	0.1735	3409.5749	1.5990	7.2536	##	N295	106.9300	110.7200
L291	0.4448	8733.1282	2.1672	18.2453	##	N311	104.1000	108.8300
L292	1.1514	22702.3420	3.1517	79.1545	##	N462	127.7800	129.7121
L294	1.4167	27680.1106	3.0311	65.4510	##	N266	100.3600	100.5085
L300	5.3497	104878.9008	3.3967	425.5414	##	N267	97.5500	99.1962
L301	1.8664	36872.3005	3.2948	44.7013	##	N268	100.7400	101.3827
L302	11.8253	231446.7827	2.9527	2233.8672	##	N269	100.3300	100.9914
L303	0.8511	16770.6244	2.6776	66.1218	##	N270	99.1400	100.2654
L304	2.4625	48653.4038	3.6540	55.9491	##	N271	98.5500	99.9146
L305	3.3133	65202.6056	2.6256	257.3444	##	N280	85.3300	86.3426
L306	8.4173	55924.7250	-5.4367	46.4972	##	N281	83.2400	85.9466
L307	15.6979	60673.7582	4.7927	301.4343	##	N282	82.7700	85.4870
L308	-7.2173	63165.6118	1.7891	181.0875	##	N283	82.5000	85.1953
L309	-3.8522	53231.0351	3.3642	46.5497	##	N284	85.1400	85.6207
L310	1.6006	31639.5510	3.1818	49.2560	##	N285	94.9100	96.5563
L311	1.6006	31448.2722	2.9157	318.4497	##	N286	94.4500	95.9765
L312	1.2821	25317.3836	2.2026	48.7149	##	N287	78.4600	84.5536
L313	2.9996	58453.6915	3.7630	211.6171	##	N297	113.2400	114.7104
L314	1.2826	25328.2983	2.7220	72.6318	##	N298	112.9600	114.5881
L315	1.6227	32102.1482	3.2505	41.1562	##	N299	107.3200	110.1000
L316	1.6227	31930.4931	3.0816	197.6990	##	N300	113.2500	114.7162
L317	6.1968	121078.7928	3.4826	552.2805	##	N305	105.5200	109.8271
L318	6.1968	120561.1026	3.3653	546.7480	##	N306	104.7200	109.8701

L321	0.5084	9988.8997	1.6784	165.3585	##	N307	104.2500	108.6400
L324	1.7090	33741.3979	2.8510	97.8008	##	N308	105.1900	108.8307
L325	1.6252	32095.1948	2.5529	49.6594	##	N313	103.9300	104.1135
L326	1.9616	38736.7000	2.6637	94.9009	##	N314	101.7900	102.0841
L327	2.2136	43721.5692	2.7795	94.1034	##	N315	99.6100	100.0331
L328	7.8187	152867.1773	4.6336	439.7930	##	N316	94.1000	99.5700
L329	7.8187	152743.3977	8.6552	82.2008	##	N317	89.1700	93.1253
L334	0.4265	8398.2248	2.1349	17.6904	##	N318	87.7400	92.5469
L335	0.8586	16876.6106	2.6318	37.8961	##	N319	89.4700	92.7112
L336	1.2917	25399.9961	2.9603	14.7868	##	N320	89.2800	93.3343
L337	1.2917	25388.6210	5.3853	27.2701	##	N321	90.1100	93.5326
L475	4.3583	86117.3353	3.7516	125.4573	##	N325	89.7700	93.5200
L478	18.0903	351932.5168	4.5182	1972.8698	##	N326	90.7500	93.5815
L479	18.0903	349137.6726	3.6729	3002.1404	##	N327	90.6600	93.9402
L487	10.7816	213175.7266	4.4566	402.8897	##	N328	93.4400	98.2247
L493	18.0903	346487.2061	3.6640	2354.6528	##	N329	94.0000	102.1974
L499	1.7090	33435.3888	2.1320	312.3738	##	N330	93.4400	101.4295
L500	3.4454	67276.2695	2.7647	499.9224	##	N331	92.7000	97.6400
L507	3.7981	75014.8480	4.8594	119.1612	##	N332	94.0000	98.4808
L513	18.2190	347131.1065	3.6224	1328.2095	##	N333	108.8700	110.9382
L546	3.7980	74412.9564	3.5451	1034.9015	##	N334	108.5100	110.7767
L510	5.1187	101306.2371	9.2106	81.5827	##	N335	106.1800	109.7243
FREE # 1	13.3950	261079.2979	0.0000	0.0000	##	N336	106.5400	109.8263
FREE # 2	-31.4761	557613.5027	0.0000	0.0000	##	N337	102.2800	104.3342
FREE # 3	3.0003	59318.8454	0.0000	0.0000	##	N338	103.3100	104.4885
FREE # 4	7.2103	140971.0357	0.0000	0.0000	##	N339	104.8900	105.5303
FREE # 5	2.3040	45539.0706	0.0000	0.0000	##	N340	104.4700	105.2177
FREE # 6	-55.6042	728037.5537	0.0000	0.0000	##	N341	101.2500	102.9537
FREE # 7	8.5581	169390.1734	0.0000	0.0000	##	N347	118.4500	122.6995
FREE # 8	5.0178	99204.9877	0.0000	0.0000	##	N348	116.1700	120.0876

FREE # 9	8.1961	159820.8905	0.0000	0.0000	##	N349	119.1600	123.0594
FREE #10	30.1672	592957.9895	0.0000	0.0000	##	N350	117.8000	121.7174
FREE #11	-93.2665	1414629.102	0.0000	0.0000	##	N351	117.1900	121.5521
FREE #12	-33.0708	374014.3473	0.0000	0.0000	##	N352	117.3700	120.5544
FREE #13	48.9390	927771.2238	0.0000	0.0000	##	N353	117.3600	120.6763
FREE #14	4.4590	88214.3252	0.0000	0.0000	##	N354	115.6500	116.3485
FREE #15	2.9906	59194.3416	0.0000	0.0000	##	N355	110.6000	113.4200
FREE #16	17.9049	353721.7540	0.0000	0.0000	##	N356	125.3200	125.6081
FREE #17	1.5346	30221.1019	0.0000	0.0000	##	N357	122.9800	123.3977
FREE #18	9.4830	185793.9682	0.0000	0.0000	##	N358	120.8200	121.3926
FREE #19	-112.4551	1152536.733	0.0000	0.0000	##	N359	120.0900	120.3681
FREE #20	3.1458	62078.2622	0.0000	0.0000	##	N360	112.6000	115.3400
FREE #21	4.1590	82167.1857	0.0000	0.0000	##	N500	86.6700	91.5100
FREE #22	3.2534	64112.2358	0.0000	0.0000	##	N501	85.4700	89.3552
FREE #23	-9.3661	58879.1237	0.0000	0.0000	##	N503	89.8000	97.4200
FREE #24	1.1514	22701.8049	0.0000	0.0000	##	N504	95.5400	98.7659
FREE #25	3.2003	63260.4104	0.0000	0.0000	##	N506	92.1400	94.6255
FREE #26	7.8187	152739.1425	0.0000	0.0000	##	N517	83.9500	86.6416
FREE #27	1.2917	25387.4410	0.0000	0.0000	##	N518	84.3100	87.8334
FREE #28	10.7819	213076.7524	0.0000	0.0000	##	N554	90.6800	92.4555
FREE #29	15.8189	60759.7691	0.0000	0.0000	##	N322	92.5000	97.6400
FREE #30	5.1189	101306.4503	0.0000	0.0000	##	N511	102.2100	102.7250
					##	N555	89.8000	97.4200

Table E15a - SPREADSHEET REACH LIST

Peak flow and Total Flow listed by Reach or those conduits or diversions having the same upstream and downstream nodes.

Upstream Node	Downstream Node	Maximum Flow (cfs)	Total Flow (ft^3)
N221	N222	2.8911	57161.4515
N222	N223	3.1354	61547.4330

N223	N224	3.2978	64190.1773
N227	N224	2.4916	49166.0079
N228	N224	5.3716	106136.699
N231	N230	0.9501	18775.2717
N224	N230	11.2776	221042.572
N230	N233	13.2165	257683.257
N233	N234	13.3950	261089.747
N235	N236	0.2305	4547.3993
N236	N237	0.2305	4485.8552
N237	N238	0.2305	4406.4720
N239	N240	0.9294	18089.1195
N240	N238	1.5845	30752.9556
N238	N241	2.4888	47890.2984
N241	N242	2.9466	56175.9895
N242	N243	3.4595	65684.5379
N243	N244	3.8015	71794.3187
N244	N245	6.0390	115218.321
N245	N246	6.3287	120070.064
N246	N247	9.4131	180097.179
N248	N241	0.4478	8830.3848
N249	N244	2.1260	41980.0003
N250	N246	3.0865	60885.7191
N251	N252	3.6943	73067.7059
N252	N253	4.0636	80236.4855
N254	N253	1.2377	24462.0607
N253	N255	5.3649	105452.022
N256	N255	1.8517	36615.6339
N257	N255	2.4831	49084.3607
N247	N259	24.3602	470902.407
N259	N260	28.8013	557382.769
N261	N259	1.9855	39208.0774
N262	N263	1.5796	31239.9913
N263	N264	3.0003	59321.4914
N265	N263	1.3050	25806.9292
N272	N274	6.8581	134049.165
N274	N275	7.0527	137856.633
N276	N277	0.9792	19354.4456
N277	N278	2.3040	45541.1712
N279	N277	1.1997	23719.0677
N288	N289	-182.0896	725472.397
N290	N288	-20.2978	187010.005
N291	N292	8.5583	169389.912
N293	N294	1.5051	29759.5057
N296	N294	1.5120	29894.0388
N301	N302	3.4219	67666.9294
N302	N303	5.0178	99209.5831
N304	N302	1.4971	29601.4364
N309	N310	1.8249	36059.8257
N312	N310	2.2642	44736.6059
N342	N343	8.1961	159824.537
N344	N342	1.8863	37169.8300
N361	N362	21.2501	420503.841
N362	N363	21.2501	419229.804
N363	N364	30.1672	594318.874
N364	N365	30.1672	592971.316
N366	N363	4.5877	90718.7801
N367	N363	2.6326	52040.9298
N368	N369	12.3310	243919.274
N371	N370	25.6091	506537.970
N370	N372	56.3352	1104093.60

N372	N373	56.3335	1098525.79
N373	N374	56.3333	1093090.89
N374	N375	56.3333	1089775.68
N376	N377	8.2540	163359.199
N377	N375	8.2540	162952.886
N378	N379	-98.8503	1413454.09
N383	N381	2.3118	45725.2893
N384	N381	2.1598	42707.9272
N381	N382	4.5228	88980.3517
N386	N382	2.6499	52414.6975
N387	N382	1.6367	32365.6039
N382	N388	9.8099	192829.243
N388	N389	9.8099	191783.300
N390	N389	2.2788	45061.1313
N391	N389	3.4945	69098.5972
N389	N392	-23.1711	374519.909
N392	N394	-32.7200	373593.652
N395	N396	3.3515	66146.6994
N396	N397	3.3513	65484.5384
N398	N397	14.2708	189729.360
N399	N403	36.6159	620012.757
N403	N404	36.6031	615504.025
N405	N404	2.2296	44020.4163
N404	N406	50.3153	880377.745
N407	N406	1.6079	31754.8863
N406	N408	55.1620	969253.767
N408	N409	65.3549	1163087.26
N409	N410	65.3488	1156300.26
N412	N413	4.2403	83898.5673
N414	N413	8.3479	162498.561
N415	N413	4.5806	90632.1107
N416	N414	4.3232	85546.9461
N417	N414	4.0369	78741.8793
N420	N421	7.1190	140803.390
N421	N419	7.1192	140146.022
N419	N422	7.1286	138853.734
N423	N422	4.8562	95965.0352
N422	N424	11.9729	233321.975
N425	N424	3.8258	75618.2309
N424	N426	15.7980	306548.174
N426	N428	20.1364	387269.848
N428	N429	20.1364	384450.254
N432	N431	2.2679	44627.7467
N434	N432	2.2703	44904.0477
N436	N435	2.8494	56333.1911
N437	N435	5.1688	102192.594
N435	N438	8.0182	158010.874
N438	N439	8.0182	156597.907
N440	N439	1.6633	32819.5013
N441	N439	3.8019	75150.9533
N439	N442	13.6466	265968.969
N442	N429	18.5464	360422.057
N443	N442	0.9317	18381.7203
N444	N442	3.9681	78443.6115
N429	N445	40.5902	778070.982
N446	N445	0.9393	18530.4753
N445	N447	42.4776	810732.796
N448	N449	2.4485	48407.3076
N450	N449	2.2782	44734.3820
N451	N450	2.2777	45027.0759

N454	N453	2.8738	56790.8750
N453	N455	2.8765	56418.1346
N455	N456	2.8725	56186.2781
N457	N456	1.6723	33007.4557
N456	N458	4.5571	88650.9431
N458	N447	4.5523	88037.7328
N447	N459	48.9390	932257.667
N459	N460	48.9390	928410.634
N460	N461	48.9390	927813.955
N465	N466	5.9168	117023.620
N467	N464	0.9708	19155.8303
N464	N468	9.5085	185537.485
N468	N469	13.3913	260417.845
N469	N470	14.7194	286370.043
N471	N468	1.2925	25546.7435
N472	N468	0.9323	18412.6595
N473	N469	0.6806	13413.6014
N418	N487	4.0513	80103.2270
N487	N417	4.0497	79682.7540
N490	N494	9.4830	187447.713
N491	N490	0.3817	7504.1747
N492	N493	4.4591	88215.0856
N513	N514	6.7177	132728.244
N524	N525	0.6064	11949.3720
N526	N525	0.5989	11801.3371
N525	N527	1.2053	23700.7269
N369	N528	12.3313	242064.505
N528	N370	12.3327	238496.608
N375	N529	73.4486	1423564.56
N529	N378	73.4486	1416613.13
N255	N530	10.6006	207774.809
N530	N247	10.9036	212983.694
N497	N499	2.9906	59194.3379
N509	N514	11.0411	218037.209
N514	N516	17.9049	353737.631
N466	N464	8.0432	157867.523
N397	N399	17.6809	255560.902
N470	N398	13.5663	235765.697
N489	N689	9.4830	185798.943
N494	N489	9.4830	185966.408
N413	N399	17.1558	333435.119
N431	N404	4.5202	88433.9731
N449	N408	4.7290	92367.8752
EL329	N541	4.3384	85574.7870
N541	N427	4.3384	84675.4858
N427	N426	4.3384	83590.7200
N410	N411	-91.5670	1151869.23
N294	N295	3.1458	62079.6509
N310	N311	4.1590	82170.3924
N430	N431	2.2439	44381.1703
N462	N466	2.1264	41732.1001
N266	N267	0.1128	2206.3141
N268	N269	1.7368	34359.8104
N269	N267	1.7367	34162.5323
N270	N271	3.9589	78286.4446
N271	N267	4.7298	93275.9875
N267	N272	6.6737	130731.290
N280	N281	3.7883	74897.1253
N281	N282	22.4326	428567.000
N282	N283	23.3527	444880.066

N284	N282	0.8605	16939.2774
N285	N286	2.6552	52516.8672
N286	N283	2.9244	57555.7698
N283	N287	27.4526	523538.140
N287	N288	-41.2525	521283.992
N297	N298	1.5645	30937.5440
N298	N299	3.2534	64113.6597
N300	N298	1.5684	31013.9763
N305	N306	5.2952	31061.9727
N306	N307	-9.4447	58755.2098
N308	N306	-8.3238	25337.9129
N313	N314	0.1735	3409.5749
N314	N315	0.4448	8733.1282
N315	N316	1.1514	22702.3420
N319	N318	1.4167	27680.1106
N320	N318	5.3497	104878.901
N321	N320	1.8664	36872.3005
N318	N500	11.8253	231446.783
N326	N325	0.8511	16770.6244
N327	N325	2.4625	48653.4038
N325	N320	3.3133	65202.6056
N329	N330	8.4173	55924.7250
N330	N322	15.6979	60673.7582
N328	N331	-7.2173	63165.6118
N332	N328	-3.8522	53231.0351
N333	N334	1.6006	31639.5510
N334	N335	1.6006	31448.2722
N336	N335	1.2821	25317.3836
N335	N337	2.9996	58453.6915
N338	N337	1.2826	25328.2983
N339	N340	1.6227	32102.1482
N340	N337	1.6227	31930.4931
N337	N341	6.1968	121078.793
N341	N342	6.1968	120561.103
N345	N239	0.5084	9988.8997
N349	N347	1.7090	33741.3979
N350	N351	1.6252	32095.1948
N352	N348	1.9616	38736.7000
N353	N348	2.2136	43721.5692
N348	N354	7.8187	152867.177
N354	N355	7.8187	152743.398
N356	N357	0.4265	8398.2248
N357	N358	0.8586	16876.6106
N358	N359	1.2917	25399.9961
N359	N360	1.2917	25388.6210
N317	N318	4.3583	86117.3353
N500	N501	18.0903	351932.517
N501	N518	18.0903	349137.673
N504	N503	10.7816	213175.727
N518	N517	18.0903	346487.206
N347	N351	1.7090	33435.3888
N351	N348	3.4454	67276.2695
N506	N554	3.7981	75014.8480
N517	N281	18.2190	347131.106
N554	N500	3.7980	74412.9564
N511	N555	5.1187	101306.237

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# Table E16. New Conduit Information Section                 #
#            Conduit Invert (IE) Elevation and Conduit       #
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Maximum Water Surface (WS) Elevations

Conduit Name	Upstream Node	Downstream Node	IE Up	IE Dn	WS Up	WS Dn	Conduit Type
L210	N221	N222	105.8400	105.4400	107.6026	106.9939	Circular
L211	N222	N223	104.4400	102.0600	106.9939	102.8186	Circular
L212	N223	N224	100.8100	98.4700	102.1159	100.2909	Circular
L213	N227	N224	98.3400	97.7200	100.9720	100.2909	Circular
L214	N228	N224	97.5300	97.2200	100.6100	100.2909	Circular
L217	N231	N230	99.8400	99.3300	100.2872	99.7386	Circular
L220	N224	N230	96.9700	96.0800	100.2909	98.1694	Circular
L221	N230	N233	95.8300	94.9200	98.1694	96.2277	Circular
L222	N233	N234	94.4200	87.6000	95.2520	90.4700	Circular
L223	N235	N236	119.6000	119.4100	119.8642	119.6069	Circular
L224	N236	N237	118.6100	117.8600	118.8903	118.0569	Circular
L225	N237	N238	117.2600	116.5100	117.6596	117.5825	Circular
L226	N239	N240	117.6900	116.6200	118.5578	118.1994	Circular
L227	N240	N238	116.6200	116.0100	118.1994	117.5825	Circular
L228	N238	N241	115.1100	114.0600	117.5825	114.7356	Circular
L229	N241	N242	111.3600	109.8800	112.5184	110.5696	Circular
L230	N242	N243	108.6300	107.8600	110.4305	108.6104	Circular
L231	N243	N244	105.8600	105.1000	108.4480	106.6365	Circular
L232	N244	N245	103.8500	103.3800	106.6365	105.2963	Circular
L233	N245	N246	101.9300	100.3100	105.2963	103.0130	Circular
L234	N246	N247	99.5600	98.3700	103.0130	102.0312	Circular
L235	N248	N241	111.4800	111.3600	112.5280	112.5184	Circular
L236	N249	N244	104.6200	104.3500	107.1256	106.6365	Circular
L237	N250	N246	101.1400	100.5600	103.9881	103.0130	Circular
L238	N251	N252	115.3800	115.0600	116.6527	115.8783	Circular
L239	N252	N253	113.0600	112.3300	115.2810	113.1820	Circular
L240	N254	N253	112.8300	112.3300	113.3534	112.7991	Circular
L241	N253	N255	108.0800	106.8000	110.4632	107.7384	Circular
L242	N256	N255	107.4100	107.0500	108.0734	107.6293	Circular
L243	N257	N255	107.6100	107.0500	108.4472	107.7248	Circular
L246	N247	N259	97.8700	97.1600	102.0312	100.1167	Circular
L247	N259	N260	97.1600	97.0000	100.1167	99.5500	Circular
L248	N261	N259	98.9300	98.6600	100.3093	100.1167	Circular
L249	N262	N263	104.8800	104.4600	105.4930	104.8418	Circular
L250	N263	N264	104.4600	96.6400	104.8418	99.5400	Circular
L251	N265	N263	104.8600	104.4600	105.4066	104.8418	Circular
L259	N272	N274	96.3500	95.5800	97.6771	96.0308	Circular
L260	N274	N275	95.5800	87.6000	96.0308	90.4800	Circular
L261	N276	N277	94.2500	93.4400	94.7428	93.7152	Circular
L262	N277	N278	93.4400	78.0000	93.7152	83.9100	Circular
L263	N279	N277	94.1200	93.4400	94.6677	93.7152	Circular
L272	N288	N289	77.0300	77.0000	86.3999	83.9000	Circular
L273	N290	N288	78.1000	77.7800	86.7858	86.3999	Circular
L274	N291	N292	91.9200	76.6000	92.4740	83.9000	Circular
L275	N293	N294	118.9200	118.3000	119.6123	119.3170	Circular
L277	N296	N294	118.9800	118.3000	119.6597	119.3170	Circular
L281	N301	N302	122.9000	122.2800	124.8193	122.6751	Circular
L282	N302	N303	122.2800	110.6000	122.6751	113.4200	Circular
L283	N304	N302	122.9500	122.2800	123.5620	122.6751	Circular
L287	N309	N310	113.1500	112.5100	113.8197	113.0849	Circular
L289	N312	N310	113.2100	112.5100	114.0002	113.1535	Circular
L319	N342	N343	100.2200	100.0000	101.6653	101.1083	Circular
L320	N344	N342	101.1100	100.7200	101.8986	101.6653	Circular

L338	N361	N362	126.2400	126.1300	128.4056	128.2437	Circular
L339	N362	N363	126.1300	125.7800	128.2437	127.6447	Circular
L340	N363	N364	125.2800	125.0100	127.6447	127.0548	Circular
L341	N364	N365	125.0100	124.9000	127.0548	126.5963	Circular
L342	N366	N363	127.8700	127.5300	128.9836	128.3977	Circular
L343	N367	N363	128.3300	127.7800	129.2163	128.4750	Circular
L344	N368	N369	124.2600	124.1700	127.1958	127.1391	Circular
L346	N371	N370	122.2600	122.2000	126.9363	126.8932	Circular
L347	N370	N372	121.7000	121.3400	126.8932	126.0985	Circular
L348	N372	N373	121.3400	120.9700	126.0985	125.3411	Circular
L349	N373	N374	120.9700	120.6000	125.3411	124.5626	Circular
L350	N374	N375	120.6000	120.4800	124.5626	124.2984	Circular
L351	N376	N377	122.9000	122.8200	124.5869	124.5302	Circular
L352	N377	N375	122.8200	122.4800	124.5302	124.2984	Circular
L354	N378	N379	119.2700	118.4000	122.6545	122.5800	Circular
L361	N383	N381	125.5300	125.2600	126.2887	125.9103	Circular
L362	N384	N381	125.6400	125.2600	126.3795	125.8878	Circular
L363	N381	N382	124.7600	123.3600	125.8482	124.5904	Circular
L364	N386	N382	124.1400	123.8600	124.9847	124.5904	Circular
L365	N387	N382	124.2300	123.8600	124.8733	124.5904	Circular
L366	N382	N388	122.8600	121.9500	124.5904	123.6822	Circular
L367	N388	N389	121.9500	121.1100	123.6822	123.1444	Circular
L368	N390	N389	122.8300	122.1100	123.6213	123.1444	Circular
L369	N391	N389	122.6900	122.1100	124.1512	123.1444	Circular
L370	N389	N392	120.1100	119.8300	123.1444	122.8575	Circular
L373	N392	N394	119.8300	118.4000	122.8575	122.5800	Circular
L374	N395	N396	118.6100	118.1800	120.8368	118.9739	Circular
L375	N396	N397	117.6800	117.3100	118.9739	118.4019	Circular
L376	N398	N397	116.3100	116.0600	118.6604	118.4019	Circular
L386	N399	N403	114.6100	114.3000	118.2820	118.0270	Circular
L387	N403	N404	114.3000	113.9800	118.0269	117.7614	Circular
L388	N405	N404	117.0000	116.7000	118.3319	117.7613	Circular
L389	N404	N406	113.4800	113.1700	117.7613	117.4697	Circular
L390	N407	N406	117.0000	116.6000	117.7713	117.4696	Circular
L391	N406	N408	113.1700	112.7800	117.4696	117.0117	Circular
L392	N408	N409	112.7800	112.4800	117.0117	116.5129	Circular
L393	N409	N410	112.4800	112.1200	116.5129	115.8734	Circular
L395	N412	N413	116.3000	115.3300	118.9901	118.7087	Circular
L396	N414	N413	116.3700	115.8300	118.7853	118.7087	Circular
L397	N415	N413	116.3300	115.3300	119.0832	118.7087	Circular
L398	N416	N414	116.8300	115.8700	119.0675	118.7853	Circular
L399	N417	N414	117.5700	116.8700	118.9368	118.7853	Circular
L402	N420	N421	112.2400	112.0000	114.7633	114.5335	Circular
L403	N421	N419	112.0000	110.9100	114.5335	113.4701	Circular
L404	N419	N422	110.9100	109.8800	113.4701	112.4791	Circular
L405	N423	N422	110.3700	110.1300	112.6795	112.4791	Circular
L406	N422	N424	109.1300	108.5100	112.4791	112.0680	Circular
L407	N425	N424	110.0600	109.7600	112.3959	112.0680	Circular
L408	N424	N426	108.2600	107.7000	112.0680	111.6343	Circular
L410	N426	N428	107.4500	106.9200	111.6343	111.1574	Circular
L411	N428	N429	106.9200	106.5200	111.1574	110.7941	Circular
L413	N432	N431	118.0700	116.6700	119.1140	118.8248	Circular
L415	N434	N432	118.8000	118.4800	119.5280	119.1244	Circular
L417	N436	N435	111.5700	111.1800	113.5338	112.9610	Circular
L418	N437	N435	110.9200	110.6800	113.1916	112.9610	Circular
L419	N435	N438	110.1800	109.5800	112.9610	112.5301	Circular
L420	N438	N439	109.5800	108.6500	112.5301	111.8621	Circular
L421	N440	N439	110.0500	109.6500	112.0562	111.8621	Circular
L422	N441	N439	109.7300	109.4000	112.2083	111.8621	Circular
L423	N439	N442	108.1500	107.4700	111.8621	111.2807	Circular

L424	N442	N429	107.2200	106.7700	111.2807	110.7941	Circular
L425	N443	N442	109.3800	108.9700	111.3435	111.2807	Circular
L426	N444	N442	109.0300	108.7200	111.6425	111.2807	Circular
L427	N429	N445	106.0200	105.4800	110.7941	109.7503	Circular
L428	N446	N445	108.4900	107.9800	109.8312	109.7503	Circular
L429	N445	N447	105.4800	105.0500	109.7503	108.8835	Circular
L430	N448	N449	118.7700	117.9900	120.8468	120.2831	Circular
L431	N450	N449	120.7400	118.2400	122.5957	120.2831	Circular
L432	N451	N450	121.2700	120.7400	123.0855	122.5957	Circular
L435	N454	N453	114.2900	113.7600	116.4642	115.6961	Circular
L436	N453	N455	113.7600	111.9300	115.6961	113.0201	Circular
L437	N455	N456	111.6800	110.2600	113.0201	112.1895	Circular
L438	N457	N456	111.0200	110.5100	112.4454	112.1895	Circular
L439	N456	N458	110.2600	108.6400	112.1895	109.7789	Circular
L440	N458	N447	108.3900	107.0500	109.7789	108.8835	Circular
L441	N447	N459	105.0500	104.6100	108.8835	107.6629	Circular
L442	N459	N460	104.6100	104.1100	107.6629	105.0976	Circular
L443	N460	N461	104.1100	94.1000	105.0976	99.5700	Circular
L446	N465	N466	126.6500	126.4400	129.7527	129.4984	Circular
L448	N467	N464	126.3000	125.8400	128.2210	128.1440	Circular
L449	N464	N468	125.0900	123.8400	128.1440	126.0007	Circular
L450	N468	N469	123.5900	122.6600	126.0007	123.9765	Circular
L451	N469	N470	118.6600	118.4600	120.4426	119.8419	Circular
L452	N471	N468	124.8800	124.5900	126.0884	126.0007	Circular
L453	N472	N468	124.9400	124.5900	126.0559	126.0007	Circular
L454	N473	N469	120.0700	119.6600	120.5302	120.4426	Circular
L466	N418	N487	119.9000	119.3200	120.8207	120.1342	Circular
L468	N487	N417	118.5700	117.5700	119.5917	118.9368	Circular
L470	N490	N494	121.9000	121.4100	123.4952	122.3558	Circular
L471	N491	N490	124.7700	121.9000	125.0264	123.4952	Circular
L472	N492	N493	126.3400	126.0400	128.1177	127.0400	Circular
L490	N513	N514	110.0100	109.8600	111.3361	110.8167	Circular
L496	N524	N525	133.4500	131.1700	133.7961	131.6772	Circular
L497	N526	N525	133.4600	131.1700	133.8039	131.6772	Circular
L498	N525	N527	131.1700	130.6000	131.6772	131.1070	Circular
L501	N369	N528	123.6700	123.1600	127.1391	126.9767	Circular
L502	N528	N370	122.6600	122.2000	126.9767	126.8932	Circular
L503	N375	N529	119.9800	119.6400	124.2984	123.5594	Circular
L504	N529	N378	119.6400	119.2700	123.5594	122.6545	Circular
L505	N255	N530	102.8000	101.7100	106.8092	104.4871	Circular
L506	N530	N247	99.7100	98.6200	104.4871	102.0312	Circular
L509	N497	N499	107.8500	91.2000	108.2106	97.6400	Circular
L511	N509	N514	108.8800	108.6100	112.4401	109.8810	Circular
L512	N514	N516	108.1100	90.0000	108.7565	97.4200	Circular
L514	N466	N464	126.1900	125.0900	129.4984	128.1440	Circular
L515	N397	N399	115.8100	115.6100	118.4019	118.2820	Circular
CH21	N470	N398	117.7100	116.3100	118.6802	118.6603	Rectangle
L474	N489	N689	118.4300	118.0000	120.8720	119.5000	Circular
L523	N494	N489	121.4100	120.8300	122.3558	121.2270	Trapezoid
L525	N413	N399	115.8300	115.1100	118.7087	118.2820	Circular
L527	N431	N404	116.6700	115.2500	118.8248	117.7613	Circular
L528	N449	N408	117.9900	116.0300	120.2831	117.0117	Circular
L529	EL329	N541	112.5200	112.0900	114.9266	114.2861	Circular
L533	N541	N427	112.0900	109.6400	114.2861	112.6510	Circular
L537	N427	N426	109.6400	108.9500	112.6510	111.6343	Circular
L394	N410	N411	112.1200	112.0000	115.8734	115.6300	Circular
L276	N294	N295	118.3000	118.0000	119.3170	118.7599	Circular
L288	N310	N311	112.2600	104.1000	112.6673	108.8300	Circular
L412	N430	N431	119.0000	118.4000	119.6069	119.0068	Circular
L447	N462	N466	127.7800	126.4400	129.7121	129.4984	Circular

L252	N266	N267	100.3600	98.0500	100.5085	99.1962	Circular
L253	N268	N269	100.7400	100.3300	101.3827	100.9914	Circular
L254	N269	N267	100.3300	98.0500	100.9914	99.1962	Circular
L255	N270	N271	99.1400	98.8000	100.2654	99.9146	Circular
L256	N271	N267	98.5500	97.5500	99.9146	99.1962	Circular
L257	N267	N272	97.5500	96.6000	99.1962	97.6771	Circular
L264	N280	N281	85.3300	84.9900	86.3426	85.9466	Circular
L265	N281	N282	83.2400	82.7700	85.9466	85.4870	Circular
L266	N282	N283	82.7700	82.5000	85.4870	85.1953	Circular
L267	N284	N282	85.1400	84.7700	85.6207	85.4870	Circular
L268	N285	N286	94.9100	94.4500	96.5563	95.9765	Circular
L269	N286	N283	94.4500	93.0000	95.9765	93.7327	Circular
L270	N283	N287	82.5000	81.9600	85.1953	84.5536	Circular
L271	N287	N288	78.4600	77.0300	84.5536	86.3999	Circular
L278	N297	N298	113.2400	112.9600	114.7104	114.5881	Circular
L279	N298	N299	112.9600	112.0000	114.5881	112.7719	Circular
L280	N300	N298	113.2500	112.9600	114.7162	114.5881	Circular
L284	N305	N306	105.5200	105.2200	109.8271	109.8622	Circular
L285	N306	N307	104.7200	104.2500	109.8701	108.6400	Circular
L286	N308	N306	105.1900	104.9700	108.8307	109.8701	Circular
L290	N313	N314	103.9300	101.7900	104.1135	102.0841	Circular
L291	N314	N315	101.7900	99.6100	102.0841	100.0331	Circular
L292	N315	N316	99.6100	94.1000	100.0331	99.5700	Circular
L294	N319	N318	89.4700	88.9900	92.7112	92.5469	Circular
L300	N320	N318	89.2800	88.4900	93.3343	92.5469	Circular
L301	N321	N320	90.1100	89.7800	93.5326	93.3343	Circular
L302	N318	N500	87.7400	86.6700	92.5469	91.5100	Circular
L303	N326	N325	90.7500	90.2700	93.5815	93.5200	Circular
L304	N327	N325	90.6600	90.2700	93.9402	93.5200	Circular
L305	N325	N320	89.7700	89.2800	93.5200	93.3343	Circular
L306	N329	N330	94.0000	93.4400	102.1974	101.4295	Circular
L307	N330	N322	93.4400	92.5000	101.4339	97.6400	Circular
L308	N328	N331	93.4400	92.7000	98.2250	97.6400	Circular
L309	N332	N328	94.0000	93.4400	98.4808	98.2250	Circular
L310	N333	N334	108.8700	108.5100	110.9382	110.7767	Circular
L311	N334	N335	108.5100	106.1800	110.7767	109.7243	Circular
L312	N336	N335	106.5400	106.1800	109.8263	109.7243	Circular
L313	N335	N337	106.1800	102.7800	109.7243	104.3342	Circular
L314	N338	N337	103.3100	102.7800	104.4885	104.3342	Circular
L315	N339	N340	104.8900	104.4700	105.5303	105.2177	Circular
L316	N340	N337	104.4700	102.7800	105.2177	104.3342	Circular
L317	N337	N341	102.2800	101.2500	104.3342	102.9537	Circular
L318	N341	N342	101.2500	100.2200	102.9537	101.6653	Circular
L321	N345	N239	118.8300	117.6900	119.2319	118.5578	Circular
L324	N349	N347	119.1600	118.4500	123.0594	122.6995	Circular
L325	N350	N351	117.8000	117.4400	121.7174	121.5521	Circular
L326	N352	N348	117.3700	116.6700	120.5544	120.0876	Circular
L327	N353	N348	117.3600	116.6700	120.6763	120.0876	Circular
L328	N348	N354	116.1700	115.6500	120.0876	116.3485	Circular
L329	N354	N355	115.6500	110.6000	116.3485	113.4200	Circular
L334	N356	N357	125.3200	122.9800	125.6081	123.3977	Circular
L335	N357	N358	122.9800	120.8200	123.3977	121.3926	Circular
L336	N358	N359	120.8200	120.0900	121.3926	120.3681	Circular
L337	N359	N360	120.0900	112.8000	120.3681	115.3400	Circular
L475	N317	N318	89.1700	88.7400	93.1253	92.5469	Circular
L478	N500	N501	86.6700	85.7200	91.5100	89.3552	Circular
L479	N501	N518	85.4700	84.5600	89.3552	87.8334	Circular
L487	N504	N503	95.5400	89.8000	98.7537	97.4200	Circular
L493	N518	N517	84.3100	83.9500	87.8334	86.6416	Circular
L499	N347	N351	118.4500	117.4400	122.6995	121.5521	Circular

L500	N351	N348	117.1900	116.4200	121.5521	120.0876	Circular
L507	N506	N554	92.1400	91.2800	94.6255	92.4555	Circular
L513	N517	N281	83.9500	83.7400	86.6416	85.9466	Circular
L546	N554	N500	90.7800	87.4200	92.4555	91.5100	Circular
L510	N511	N555	102.2100	89.8000	102.7249	97.4200	Circular

Table E18 - Junction Continuity Error. Division by Volume added 11/96

Continuity Error = Net Flow + Beginning Volume - Ending Volume / Total Flow + (Beginning Volume + Ending Volume)/2

Net Flow = Node Inflow - Node Outflow
Total Flow = absolute (Inflow + Outflow)
Intermediate column is a judgement on the node continuity error.

Excellent < 1 percent Great 1 to 2 percent Good 2 to 5 percent
Fair 5 to 10 percent Poor 10 to 25 percent Bad 25 to 50 percent
Terrible > 50 percent

Junction Name	<------Continuity Error -------> Volume	% of Node	% of Inflow	Remaining Volume	Beginning Volume	Net Flow Thru Node	Total Flow Thru Node	Failed to Converge
N221	33.8003	0.0295	0.0004	49.7524	0.0000	83.5527	114408.5360	0
N222	244.8740	0.1980	0.0028	205.5175	0.0000	450.3915	123546.3038	0
N223	72.0619	0.0558	0.0008	498.2510	0.0000	570.3129	128953.3159	0
N224	-18.5559	-0.0042	0.0002	896.4054	0.0000	877.8495	442969.0175	0
N227	33.5535	0.0341	0.0004	75.5204	0.0000	109.0739	98443.1331	0
N228	34.9300	0.0164	0.0004	121.4250	0.0000	156.3550	212435.1765	0
N230	732.0425	0.1414	0.0084	972.3050	0.0000	1704.3475	517080.4713	0
N231	17.8225	0.0474	0.0002	19.4099	0.0000	37.2325	37588.3378	0
N233	-618.9120	-0.1184	0.0071	739.0234	0.0000	120.1114	522307.5080	0
N234	-192.7029	-0.0369	0.0022	254.1335	61.1964	0.2341	522169.0450	0
N235	8.4611	0.0928	0.0001	8.2446	0.0000	16.7057	9111.5628	0
N236	32.2393	0.3563	0.0004	29.3053	0.0000	61.5446	9033.2545	0
N237	-23.4136	-0.2618	0.0003	102.8335	0.0000	79.4199	8892.3272	0
N238	271.1457	0.2808	0.0031	338.4895	0.0000	609.6352	96391.7363	0
N239	-39.7973	-0.1089	0.0005	275.5647	0.0000	235.7674	36414.3006	0
N240	38.1669	0.0616	0.0004	268.9154	0.0000	307.0823	61813.8040	0

N241	302.6783	0.2671	0.0035	438.1298	0.0000	740.8081	113094.6842
N242	159.5306	0.1206	0.0018	485.1159	0.0000	644.6465	132016.5338
N243	182.0200	0.1260	0.0021	477.2545	0.0000	659.2745	144250.8476
N244	163.7909	0.0708	0.0019	596.8884	0.0000	760.6793	231200.4671
N245	136.2227	0.0564	0.0016	743.6675	0.0000	879.8902	241024.7761
N246	-273.3713	-0.0756	0.0031	1188.2285	0.0000	914.8571	361116.3262
N247	70.7066	0.0075	0.0008	2252.6956	0.0000	2323.4022	944152.1686
N248	2.4146	0.0136	0.0000	33.4991	0.0000	35.9138	17697.3367
N249	42.6524	0.0507	0.0005	73.0847	0.0000	115.7372	84077.2307
N250	47.9126	0.0393	0.0006	75.4715	0.0000	123.3841	121897.0021
N251	33.4123	0.0228	0.0004	36.2440	0.0000	69.6563	146207.1883
N252	54.1233	0.0337	0.0006	94.7626	0.0000	148.8859	160622.6939
N253	235.5643	0.1114	0.0027	257.3503	0.0000	492.9147	211400.0199
N254	21.7808	0.0445	0.0003	23.2899	0.0000	45.0707	48969.9354
N255	418.6725	0.1004	0.0048	738.2285	0.0000	1156.9010	416712.2122
N256	20.8683	0.0285	0.0002	24.1963	0.0000	45.0647	73277.4496
N257	41.8056	0.0425	0.0005	40.5244	0.0000	82.3300	98252.5788
N259	202.2159	0.0181	0.0023	1327.5335	0.0000	1529.7494	1116184.265
N260	-230.7420	-0.0206	0.0027	263.8215	32.0433	1.0362	1117570.602
N261	4.3610	0.0056	0.0001	35.8385	0.0000	40.1995	78455.9228
N262	5.5048	0.0088	0.0001	21.7296	0.0000	27.2345	62507.9759
N263	-30.1207	-0.0254	0.0003	51.0502	0.0000	20.9296	118663.3643
N264	-19.9854	-0.0168	0.0002	56.4452	36.4414	0.0184	118640.3368
N265	3.9260	0.0076	0.0000	19.0866	0.0000	23.0125	51637.5213
N272	-70.7778	-0.0263	0.0008	400.2539	0.0000	329.4762	268431.7854
N273	16888.3950	100.0000	0.1941	0.0000	0.0000	16888.3950	16888.3950
N274	-172.3388	-0.0625	0.0020	208.8328	0.0000	36.4940	275759.1002
N275	-42.4429	-0.0151	0.0005	78.8069	36.1901	0.1738	281948.3289
N276	9.3020	0.0240	0.0001	25.0887	0.0000	34.3907	38743.7250
N277	-45.2436	-0.0497	0.0005	57.0597	0.0000	11.8161	91093.7876

N278	-17.2471	-0.0189	0.0002	91.5307	74.2651	0.0186	91080.2418
N279	9.5237	0.0201	0.0001	24.3216	0.0000	33.8452	47472.5190
N288	1051.4197	0.0724	0.0121	2425.1437	0.0000	3476.5633	1451908.201
N289	-271.3447	-0.0186	0.0031	357.9913	86.7054	-0.0589	1456135.121
N290	-146.2586	-0.0391	0.0017	222.8675	0.0000	76.6090	374107.0462
N291	-55.9619	-0.0165	0.0006	77.4753	0.0000	21.5134	338808.4926
N292	-70.6401	-0.0208	0.0008	162.2481	91.7318	-0.1239	338780.0850
N293	-2.9427	-0.0049	0.0000	45.2547	0.0000	42.3120	59562.2057
N294	14.5051	0.0117	0.0002	107.1751	0.0000	121.6802	124281.6024
N296	-3.6894	-0.0062	0.0000	48.1544	0.0000	44.4650	59833.3672
N301	37.5632	0.0277	0.0004	51.8690	0.0000	89.4322	135424.4618
N302	-47.5685	-0.0240	0.0005	67.5056	0.0000	19.9371	198438.2621
N303	-12.4629	-0.0063	0.0001	47.9322	35.4361	0.0332	198414.5708
N304	8.1564	0.0138	0.0001	29.9827	0.0000	38.1391	59241.7682
N309	37.8477	0.0524	0.0004	36.3423	0.0000	74.1900	72194.9324
N310	-81.3276	-0.0495	0.0009	91.8805	0.0000	10.5530	164350.9238
N312	49.9057	0.0557	0.0006	45.8436	0.0000	95.7493	89570.3549
N342	-95.0754	-0.0297	0.0011	366.5012	0.0000	271.4257	319925.6665
N343	-64.7098	-0.0202	0.0007	64.9264	0.0000	0.2166	319645.4276
N344	13.3100	0.0179	0.0002	33.8762	0.0000	47.1862	74388.0591
N345	-35.7501	-0.1777	0.0004	113.6572	0.0000	77.9070	20055.8009
N361	0.6849	0.0001	0.0000	253.6779	0.0000	254.3628	841280.1167
N362	364.5966	0.0434	0.0042	898.4054	0.0000	1263.0020	839733.6450
N363	-265.2458	-0.0223	0.0030	1523.1074	0.0000	1257.8615	1189916.868
N364	253.8728	0.0214	0.0029	1071.3786	0.0000	1325.2514	1187290.190
N365	-268.5519	-0.0226	0.0031	333.6746	64.9662	0.1564	1185929.305
N366	56.0219	0.0309	0.0006	54.1198	0.0000	110.1417	181550.5848
N367	43.8815	0.0421	0.0005	42.0471	0.0000	85.9286	104169.4196
N368	63.3350	0.0130	0.0007	167.4964	0.0000	230.8314	488085.1817
N369	302.5310	0.0622	0.0035	1532.3265	0.0000	1834.8575	485983.7794

N370	341.0854	0.0154	0.0039	4894.7418	0.0000	5235.8273	2213502.874
N371	37.5474	0.0037	0.0004	299.7977	0.0000	337.3451	1013461.099
N372	289.1567	0.0131	0.0033	5235.6361	0.0000	5524.7928	2202619.393
N373	138.1082	0.0063	0.0016	5255.3888	0.0000	5393.4970	2191616.683
N374	-160.5867	-0.0074	0.0018	3430.3701	0.0000	3269.7834	2182866.575
N375	169.2814	0.0059	0.0019	4409.4979	0.0000	4578.7793	2851756.999
N376	-0.7059	-0.0002	0.0000	70.9457	0.0000	70.2398	326797.8350
N377	114.6072	0.0351	0.0013	286.4630	0.0000	401.0702	326312.0850
N378	43.3157	0.0015	0.0005	3888.2802	0.0000	3931.5959	2830067.215
N379	-658.5842	-0.0232	0.0076	712.5540	52.5259	1.4439	2843133.348
N381	130.6513	0.0731	0.0015	346.5217	0.0000	477.1730	178439.2675
N382	-180.1739	-0.0466	0.0021	924.8383	0.0000	744.6645	386408.8603
N383	18.3159	0.0200	0.0002	23.3768	0.0000	41.6927	91493.6513
N384	25.2257	0.0295	0.0003	28.0965	0.0000	53.3222	85470.4764
N386	20.4002	0.0194	0.0002	26.4651	0.0000	46.8653	104877.8272
N387	15.7987	0.0244	0.0002	26.1569	0.0000	41.9557	64774.1347
N388	-78.1272	-0.0203	0.0009	1116.9303	0.0000	1038.8031	384612.5433
N389	24.1542	0.0032	0.0003	1339.3696	0.0000	1363.5239	750537.2037
N390	6.7954	0.0075	0.0001	49.7467	0.0000	56.5421	90180.0165
N391	40.1677	0.0290	0.0005	54.4614	0.0000	94.6291	138293.6929
N392	19.7913	0.0026	0.0002	1080.7804	0.0000	1100.5717	748113.5607
N394	-342.1515	-0.0456	0.0039	394.9456	52.5259	0.2682	750097.8065
N395	118.2842	0.0892	0.0014	92.5978	0.0000	210.8820	132506.2707
N396	284.6053	0.2159	0.0033	376.2705	0.0000	660.8759	131631.2378
N397	-136.0573	-0.0265	0.0016	1252.7055	0.0000	1116.6482	512244.0444
N398	9064.5625	1.8095	0.1042	74942.7477	0.0000	84007.3102	463467.7083
N399	48.3141	0.0039	0.0006	4487.0093	0.0000	4535.3234	1244581.533
N403	199.1130	0.0161	0.0023	4287.0814	0.0000	4486.1944	1235516.782
N404	-29.1372	-0.0016	0.0003	5664.1139	0.0000	5634.9767	1766419.432
N405	62.9963	0.0714	0.0007	61.7963	0.0000	124.7927	88167.0658

N406	215.6060	0.0111	0.0025	6985.1428	0.0000	7200.7487	1945742.093
0							
N407	34.2762	0.0539	0.0004	46.1015	0.0000	80.3777	63591.1635
0							
N408	-178.7989	-0.0077	0.0021	7094.8091	0.0000	6916.0102	2333124.119
0							
N409	314.5569	0.0135	0.0036	6313.9158	0.0000	6628.4728	2319387.517
0							
N410	258.3552	0.0112	0.0030	4506.3009	0.0000	4764.6561	2308169.491
0							
N412	0.0926	0.0001	0.0000	64.7632	0.0000	64.8558	167865.3158
0							
N413	268.6487	0.0400	0.0031	3317.5285	0.0000	3586.1772	670464.3586
0							
N414	1.5187	0.0005	0.0000	1784.1021	0.0000	1785.6208	326787.3865
0							
N415	-0.1509	-0.0001	0.0000	69.8953	0.0000	69.7444	181337.1866
0							
N416	0.4268	0.0002	0.0000	57.7673	0.0000	58.1941	171155.2081
0							
N417	35.0967	0.0221	0.0004	903.3758	0.0000	938.4725	158424.6332
0							
N418	52.5529	0.0328	0.0006	52.3634	0.0000	104.9163	160313.6971
0							
N419	325.9073	0.1166	0.0037	959.7352	0.0000	1285.6425	278999.7557
0							
N420	13.3936	0.0048	0.0002	135.4281	0.0000	148.8217	281761.7880
0							
N421	37.8686	0.0135	0.0004	615.5949	0.0000	653.4634	280949.4120
0							
N422	37.1355	0.0079	0.0004	1448.1246	0.0000	1485.2601	468140.7441
0							
N423	57.8804	0.0301	0.0007	91.9756	0.0000	149.8559	192083.7451
0							
N424	294.7966	0.0478	0.0034	2079.9550	0.0000	2374.7516	615488.3797
1							
N425	46.7727	0.0309	0.0005	73.1559	0.0000	119.9285	151359.5831
0							
N426	-100.9044	-0.0130	0.0012	2947.5001	0.0000	2846.5957	777408.7417
0							
N428	277.4366	0.0359	0.0032	2519.5357	0.0000	2796.9723	771720.1022
2							
N429	143.2774	0.0092	0.0016	4388.0226	0.0000	4531.3000	1560711.993
1							
N430	15.1770	0.0171	0.0002	20.8336	0.0000	36.0106	88799.0954
0							
N431	41.4015	0.0233	0.0005	733.1954	0.0000	774.5969	177644.8618
0							
N432	-58.5523	-0.0653	0.0007	335.2424	0.0000	276.6901	89531.7944
0							
N434	18.0574	0.0201	0.0002	23.1879	0.0000	41.2453	89850.6631
0							
N435	-23.2541	-0.0073	0.0003	533.5823	0.0000	510.3282	316536.6594
0							
N436	34.6688	0.0307	0.0004	51.5288	0.0000	86.1976	112754.5681
0							
N437	59.4702	0.0291	0.0007	92.3718	0.0000	151.8420	204540.7424
0							
N438	325.7800	0.1034	0.0037	1078.6616	0.0000	1404.4417	314608.7805
0							

N439	125.8125	0.0235	0.0014	1731.6084	0.0000	1857.4210	533808.4794
N440	22.3384	0.0340	0.0003	52.1023	0.0000	74.4406	65715.1406
N441	49.7573	0.0331	0.0006	78.0646	0.0000	127.8219	150432.9201
N442	361.6285	0.0499	0.0042	1991.9490	0.0000	2353.5775	723216.3577
N443	13.3279	0.0362	0.0002	52.3617	0.0000	65.6897	36830.4454
N444	47.9370	0.0305	0.0006	77.9259	0.0000	125.8630	157016.5271
N445	188.0672	0.0115	0.0022	4417.4842	0.0000	4605.5515	1626107.717
N446	16.0399	0.0432	0.0002	51.5331	0.0000	67.5730	37129.6891
N447	8.6065	0.0005	0.0001	4268.7001	0.0000	4277.3066	1868830.558
N448	2.7350	0.0028	0.0000	61.2702	0.0000	64.0051	96880.5061
N449	316.9805	0.1706	0.0036	489.6027	0.0000	806.5832	185545.2068
N450	63.8060	0.0710	0.0007	228.2407	0.0000	292.0466	89761.4578
N451	4.4427	0.0049	0.0001	57.9281	0.0000	62.3708	90118.2398
N453	185.7080	0.1639	0.0021	186.3968	0.0000	372.1048	113209.0096
N454	7.4854	0.0066	0.0001	62.9015	0.0000	70.3870	113653.8176
N455	-118.1106	-0.1047	0.0014	348.2477	0.0000	230.1371	112604.4127
N456	250.9121	0.1407	0.0029	488.6306	0.0000	739.5427	178044.6685
N457	16.2117	0.0245	0.0002	52.5901	0.0000	68.8018	66085.2663
N458	19.1875	0.0108	0.0002	590.4156	0.0000	609.6031	176688.6759
N459	678.2838	0.0364	0.0078	3144.6047	0.0000	3822.8886	1860668.301
N460	-861.3548	-0.0464	0.0099	1469.0878	0.0000	607.7330	1856224.589
N461	-262.2315	-0.0141	0.0030	333.1310	68.7360	2.1634	1855585.178
N464	168.1588	0.0451	0.0019	1100.9924	0.0000	1269.1512	372352.5040
N465	36.4249	0.0156	0.0004	93.2476	0.0000	129.6725	234183.0227
N466	-44.5857	-0.0141	0.0005	927.7826	0.0000	883.1968	316623.2429
N467	10.4209	0.0271	0.0001	55.3824	0.0000	65.8033	38378.7801
N468	734.1447	0.1403	0.0084	1164.5122	0.0000	1898.6569	522745.0284
N469	-390.9552	-0.0682	0.0045	698.8100	0.0000	307.8548	573058.3720
N470	-23994.0076	-4.2890	0.2757	74601.3109	0.0000	50607.3033	522135.7400
N471	9.5976	0.0188	0.0001	35.1650	0.0000	44.7625	51139.7219

N472	8.2089	0.0223	0.0001	38.5521	0.0000	46.7610	36873.2653
N473	3.8565	0.0144	0.0000	23.2172	0.0000	27.0737	26854.6174
N487	-115.6635	-0.0723	0.0013	535.0044	0.0000	419.3409	159785.9810
N489	-444.5283	-0.1195	0.0051	601.9206	0.0000	157.3923	371765.3510
N490	4.3724	0.0012	0.0001	263.1712	0.0000	267.5436	375168.0324
N491	-41.5364	-0.2749	0.0005	95.3948	0.0000	53.8584	15062.2710
N492	4.0612	0.0023	0.0000	42.7957	0.0000	46.8569	176480.6617
N493	-33.0236	-0.0187	0.0004	33.0368	0.0000	0.0132	176429.4108
N497	-27.1061	-0.0229	0.0003	38.5467	0.0000	11.4407	118403.7169
N499	-34.0106	-0.0287	0.0004	114.9411	80.9250	0.0055	118388.6795
N509	275.6469	0.0631	0.0032	194.9305	0.0000	470.5774	436550.7442
N513	149.6010	0.0563	0.0017	115.9288	0.0000	265.5298	265726.5824
N514	-345.0800	-0.0488	0.0040	364.0443	0.0000	18.9643	707506.9176
N516	-106.8134	-0.0151	0.0012	199.6345	93.2397	-0.4186	707459.3846
N524	-8.6321	-0.0360	0.0001	66.5561	0.0000	57.9240	23956.7853
N525	-100.6525	-0.2118	0.0012	150.4706	0.0000	49.8180	47451.4360
N526	-9.1905	-0.0388	0.0001	66.6201	0.0000	57.4296	23660.2417
N527	-25.9383	-0.0429	0.0003	25.9620	0.0000	0.0236	60442.3453
N528	81.9688	0.0170	0.0009	3466.0302	0.0000	3547.9990	480561.1134
N529	456.0664	0.0160	0.0052	6554.1125	0.0000	7010.1789	2840177.685
N530	-266.1738	-0.0623	0.0031	1019.4309	0.0000	753.2571	426728.5476
N689	-131.1866	-0.0353	0.0015	131.2870	0.0000	0.1004	371592.9113
N494	848.5307	0.2270	0.0098	629.1738	0.0000	1477.7045	373414.1211
N541	-24.1849	-0.0142	0.0003	922.9751	0.0000	898.7903	170250.2728
EL329	45.4946	0.0265	0.0005	282.0300	0.0000	327.5246	171480.0662
N427	-3.7686	-0.0022	0.0000	1083.9746	0.0000	1080.2060	168266.2057
N411	-1082.9351	-0.0465	0.0124	1141.1462	45.6146	12.5966	2327024.133
N295	-18.2239	-0.0147	0.0002	65.8533	47.6251	0.0043	124157.9131
N311	-22.9604	-0.0140	0.0003	82.3592	59.4372	-0.0384	164337.5781
N462	-2.8569	-0.0034	0.0000	373.8773	0.0000	371.0204	83837.2505

N266	-49.8886	-1.1140	0.0006	77.2382	0.0000	27.3496	4439.8830
N267	65.3821	0.0249	0.0008	711.7192	0.0000	777.1013	262245.3517
N268	0.8609	0.0013	0.0000	27.0513	0.0000	27.9122	68748.4555
N269	36.4446	0.0531	0.0004	160.7426	0.0000	197.1872	68522.3427
N270	41.8102	0.0267	0.0005	59.9123	0.0000	101.7226	156677.1908
N271	-48.8910	-0.0261	0.0006	322.0949	0.0000	273.2039	186827.1333
N280	47.6701	0.0318	0.0005	53.6417	0.0000	101.3118	149897.9151
N281	-32.8520	-0.0038	0.0004	1904.4819	0.0000	1871.6300	859022.5979
N282	-40.2603	-0.0045	0.0005	1892.2343	0.0000	1851.9740	891629.8544
N283	57.1178	0.0054	0.0007	2062.4007	0.0000	2119.5185	1049236.359
N284	8.6079	0.0254	0.0001	21.2679	0.0000	29.8758	33908.8571
N285	5.4749	0.0052	0.0001	51.8264	0.0000	57.3013	105092.8633
N286	153.6028	0.1330	0.0018	137.1868	0.0000	290.7896	115403.1048
N287	-433.4947	-0.0414	0.0050	3262.2886	0.0000	2828.7940	1044822.132
N297	2.0210	0.0033	0.0000	37.3930	0.0000	39.4140	61916.4333
N298	103.9080	0.0809	0.0012	118.3350	0.0000	222.2430	128451.2176
N299	-59.2444	-0.0462	0.0007	94.1913	34.9335	0.0133	128225.8955
N300	2.1136	0.0034	0.0000	38.1274	0.0000	40.2410	62070.0889
N305	-25.5451	-0.0411	0.0003	63.5937	0.0000	38.0486	62137.8864
N306	51.8619	0.0440	0.0006	228.2149	0.0000	280.0768	117739.1446
N307	-124.9279	-0.1051	0.0014	180.3008	55.1647	0.2081	118734.1370
N308	-168.6960	-0.3087	0.0019	2763.0791	0.0000	2594.3831	53269.4059
N313	-2.6148	-0.0381	0.0000	28.6989	0.0000	26.0841	6845.0732
N314	-28.5449	-0.1626	0.0003	77.0897	0.0000	48.5448	17514.7531
N315	-59.1100	-0.1300	0.0007	80.8306	0.0000	21.7206	45426.9580
N316	-28.5467	-0.0628	0.0003	97.2484	68.7360	-0.0344	45404.1469
N317	67.3615	0.0391	0.0008	110.6398	0.0000	178.0013	172416.6577
N318	-79.6514	-0.0171	0.0009	1447.5029	0.0000	1367.8515	464273.0262
N319	19.7366	0.0356	0.0002	73.4216	0.0000	93.1581	55455.1739
N320	145.2428	0.0690	0.0017	409.0307	0.0000	554.2735	210320.0012

N321	16.6420	0.0225	0.0002	65.3479	0.0000	81.9899	73829.1538
N325	-18.4958	-0.0141	0.0002	234.8676	0.0000	216.3718	130626.6338
N326	12.0366	0.0358	0.0001	68.5980	0.0000	80.6345	33623.3773
N327	30.1288	0.0309	0.0003	68.3074	0.0000	98.4362	97407.7793
N328	-110.3315	-0.0873	0.0013	167.9757	0.0000	57.6442	126350.6816
N329	-0.8179	-0.0007	0.0000	75.0943	0.0000	74.2765	111738.2071
N330	-38.7192	-0.0320	0.0004	226.7949	0.0000	188.0757	120966.6153
N331	-90.4060	-0.0714	0.0010	152.5026	62.0760	0.0206	126446.9034
N332	-31.5124	-0.0296	0.0004	75.8354	0.0000	44.3230	106563.4337
N333	2.4802	0.0039	0.0000	50.1222	0.0000	52.6023	63333.2612
N334	-20.8247	-0.0330	0.0002	211.2035	0.0000	190.3787	63087.8233
N335	163.4561	0.1388	0.0019	459.4405	0.0000	622.8967	117534.1010
N336	1.8552	0.0037	0.0000	65.6184	0.0000	67.4736	50704.4288
N337	-262.1079	-0.1079	0.0030	671.6183	0.0000	409.5104	242571.2294
N338	15.5911	0.0307	0.0002	51.7981	0.0000	67.3892	50725.2449
N339	-0.3067	-0.0005	0.0000	28.6240	0.0000	28.3173	64233.4631
N340	38.2611	0.0597	0.0004	133.2611	0.0000	171.5222	64032.6413
N341	-55.4338	-0.0229	0.0006	568.3193	0.0000	512.8855	241639.8954
N347	45.4857	0.0676	0.0005	258.5005	0.0000	303.9862	67176.7866
N348	173.8956	0.0567	0.0020	611.2259	0.0000	785.1216	306524.3225
N349	-1.0794	-0.0016	0.0000	97.8468	0.0000	96.7674	67581.5515
N350	8.6611	0.0135	0.0001	74.0411	0.0000	82.7022	64276.0134
N351	-31.9072	-0.0236	0.0004	483.5307	0.0000	451.6235	135008.7402
N352	16.0619	0.0207	0.0002	87.4309	0.0000	103.4928	77578.6228
N353	19.6286	0.0224	0.0002	88.7099	0.0000	108.3384	87553.3801
N354	-168.1918	-0.0550	0.0019	290.4185	0.0000	122.2268	305610.5750
N355	-61.6814	-0.0202	0.0007	97.1813	35.4361	0.0638	305482.5402
N356	-6.2455	-0.0370	0.0001	53.1746	0.0000	46.9291	16843.4123
N357	-48.5690	-0.1433	0.0006	126.2818	0.0000	77.7128	33830.9094
N358	-45.7328	-0.0898	0.0005	98.0782	0.0000	52.3454	50852.4818

N359	-37.3001	-0.0734	0.0004	49.6271	0.0000	12.3270	50788.6171
N360	-26.6888	-0.0525	0.0003	61.1586	34.4308	0.0390	50776.0620
N500	131.0708	0.0185	0.0015	2630.0690	0.0000	2761.1398	706641.6761
N501	317.6768	0.0452	0.0037	2462.9646	0.0000	2780.6414	701070.1894
N503	-199.6993	-0.0468	0.0023	295.4911	95.7529	0.0389	426459.5359
N504	-130.2729	-0.0305	0.0015	235.7980	0.0000	105.5250	426459.7802
N506	97.2853	0.0647	0.0011	90.5276	0.0000	187.8130	150219.5897
N517	21.0919	0.0030	0.0002	1865.4406	0.0000	1886.5324	696162.7595
N518	-30.5027	-0.0044	0.0004	2666.3097	0.0000	2635.8069	695624.8787
N554	-5.2863	-0.0035	0.0001	605.8677	0.0000	600.5814	149427.8043
N322	-150.4833	-0.1238	0.0017	215.0884	64.5892	0.0158	121440.9911
N511	-34.5119	-0.0170	0.0004	53.1029	0.0000	18.5910	202634.6272
N555	-46.6851	-0.0230	0.0005	142.3871	95.7529	-0.0509	202612.6874

The total continuity error was 7616.8 cubic feet
The remaining total volume was 3.51094E+05 cubic feet
Your mean node continuity error was Excellent
Your worst node continuity error was Excellent

Table E19 - Junction Inflow & Outflow Listing Units are either ft^3 or m^3 depending on the units in your model.

Junction Name	Constant Inflow to Node	User Inflow from Node	Interface Inflow to Node	DWF Inlow to Node	Inflow through Outfall	RNF Layer Inflow to Node	Inflow from 2D Layer	Outflow Evaporation from Node	Basin Infil.
N221	0.0000	57330.5125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N222	0.0000	4844.4690	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N223	0.0000	3220.3920	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N224	0.0000	2437.1070	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N227	0.0000	49348.9384	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N228	0.0000	106453.3892	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N230	0.0000	19607.9040	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N231	0.0000	18840.4830	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

0.0000	0.0000	0.0000	0.0000				
	N233	0.0000	3539.6550	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N234	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	261079.2979	0.0000	0.0000				
	N235	0.0000	4570.8150	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N238	0.0000	13361.4540	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N239	0.0000	8348.4300	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N240	0.0000	12990.6330	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N241	0.0000	198.3000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N242	0.0000	10170.8070	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N243	0.0000	6781.8600	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N244	0.0000	2211.0450	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N245	0.0000	5744.7510	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N246	0.0000	63.4560	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N247	0.0000	80285.7208	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N248	0.0000	8879.8740	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N249	0.0000	42158.5800	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N250	0.0000	61100.1967	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N251	0.0000	73246.0708	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N252	0.0000	7329.1680	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N253	0.0000	1251.2730	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N254	0.0000	24543.5908	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N255	0.0000	17811.3060	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N256	0.0000	36715.2441	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N257	0.0000	49239.8725	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N259	0.0000	48761.9700	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N260	0.0000	0.0000	0.0000	0.0000	2574.3296	0.0000
0.0000	560187.8323	0.0000	0.0000				
	N261	0.0000	39305.0425	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N262	0.0000	31313.5525	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N263	0.0000	2298.2970	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N264	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	59318.8454	0.0000	0.0000				
	N265	0.0000	25868.2359	0.0000	0.0000	0.0000	0.0000

0.0000	0.0000	0.0000	0.0000				
	N272	0.0000	3656.6520	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N273	0.0000	16913.0070	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N274	0.0000	3858.9180	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N275	0.0000	3125.2080	0.0000	0.0000	-4.5478	0.0000
0.0000	140971.0357	0.0000	0.0000				
	N276	0.0000	19417.5360	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N277	0.0000	2482.7160	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N278	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	45539.0706	0.0000	0.0000				
	N279	0.0000	23788.0680	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N288	0.0000	18168.2460	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N289	0.0000	0.0000	0.0000	0.0000	2625.1707	0.0000
0.0000	730662.7244	0.0000	0.0000				
	N290	0.0000	187369.7033	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N291	0.0000	169665.4800	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	169390.1734	0.0000	0.0000				
	N293	0.0000	29846.1325	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N294	0.0000	2552.1210	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N296	0.0000	29982.9600	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N301	0.0000	67856.2775	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N302	0.0000	1963.1700	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	99204.9877	0.0000	0.0000				
	N304	0.0000	29683.5275	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N309	0.0000	36187.7675	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N310	0.0000	1386.1170	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N312	0.0000	44899.0867	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N342	0.0000	2373.6510	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	159820.8905	0.0000	0.0000				
	N344	0.0000	37272.4684	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N345	0.0000	10081.5720	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N361	0.0000	421389.4861	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N363	0.0000	33657.4592	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N365	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

0.0000 592957.9895 0.0000 0.0000
N366 0.0000 90964.1767 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N367 0.0000 52204.4584 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N368 0.0000 244521.7385 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N370 0.0000 364905.7090 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N371 0.0000 507661.8844 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N375 0.0000 175719.5792 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N376 0.0000 163676.8200 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N379 0.0000 0.0000 0.0000 0.0000 15050.1557 0.0000
0.0000 1.4297E+06 0.0000 0.0000
N381 0.0000 1027.1940 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N382 0.0000 19847.8470 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N383 0.0000 45835.0616 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N384 0.0000 42824.8684 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N386 0.0000 52539.5859 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N387 0.0000 32455.7608 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N389 0.0000 70176.3875 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N390 0.0000 45184.6384 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N391 0.0000 69295.9359 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N394 0.0000 0.0000 0.0000 0.0000 2489.8074 0.0000
0.0000 376504.1547 0.0000 0.0000
N395 0.0000 66456.2792 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N397 0.0000 1471.3860 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N398 0.0000 38027.9908 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N399 0.0000 35624.5959 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N404 0.0000 138284.5059 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N405 0.0000 44210.9859 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N406 0.0000 64449.4825 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N407 0.0000 31882.6733 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N408 0.0000 108573.2167 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N412 0.0000 84089.1159 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N415 0.0000 90837.2633 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000
N416 0.0000 85733.0216 0.0000 0.0000 0.0000 0.0000

0.0000	0.0000	0.0000	0.0000				
	N418	0.0000	80327.3633	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N420	0.0000	141163.8208	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N423	0.0000	96258.7867	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N425	0.0000	75851.7325	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N429	0.0000	37823.7416	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N430	0.0000	44482.6567	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N431	0.0000	202.2660	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N434	0.0000	45012.1175	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N436	0.0000	56503.6016	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N437	0.0000	102497.3033	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N439	0.0000	3275.9160	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N440	0.0000	32943.5792	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N441	0.0000	75391.6775	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N443	0.0000	18475.6110	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N444	0.0000	78687.4225	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N445	0.0000	18800.8230	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N446	0.0000	18626.3190	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N447	0.0000	37857.4525	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N448	0.0000	48543.8400	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N449	0.0000	35.6940	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N451	0.0000	45156.8767	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N454	0.0000	56945.8108	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N456	0.0000	200.2830	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N457	0.0000	33126.0159	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N461	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	927771.2238	0.0000	0.0000				
	N464	0.0000	9805.9350	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N465	0.0000	117330.1433	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N467	0.0000	19250.9640	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N468	0.0000	32878.1400	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N469	0.0000	12875.6190	0.0000	0.0000	0.0000	0.0000

0.0000	0.0000	0.0000	0.0000				
	N471	0.0000	25630.2759	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N472	0.0000	18487.5090	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N473	0.0000	13460.6040	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N490	0.0000	180478.7792	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N491	0.0000	7569.1110	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N492	0.0000	88394.2084	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N493	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	88214.3252	0.0000	0.0000				
	N497	0.0000	59295.6667	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N499	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	59194.3416	0.0000	0.0000				
	N509	0.0000	218831.9816	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N513	0.0000	133192.1608	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N514	0.0000	3008.2110	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N516	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	353721.7540	0.0000	0.0000				
	N524	0.0000	12024.9120	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N526	0.0000	11876.1870	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N527	0.0000	6530.0190	0.0000	0.0000	-9.5026	0.0000
0.0000	30221.1019	0.0000	0.0000				
	N530	0.0000	5978.7450	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N689	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	185793.9682	0.0000	0.0000				
	EL329	0.0000	86030.4716	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N411	0.0000	0.0000	0.0000	0.0000	22618.1692	0.0000
0.0000	1.1752E+06	0.0000	0.0000				
	N295	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	62078.2622	0.0000	0.0000				
	N311	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	82167.1857	0.0000	0.0000				
	N462	0.0000	42166.5116	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N266	0.0000	2236.8240	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N267	0.0000	1871.9520	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N268	0.0000	34438.7608	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N270	0.0000	78504.9875	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N271	0.0000	15286.9470	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N280	0.0000	75110.0908	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N281	0.0000	8439.6480	0.0000	0.0000	0.0000	0.0000

0.0000	0.0000	0.0000	0.0000				
	N282	0.0000	1245.3240	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N283	0.0000	23296.2840	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N284	0.0000	16994.3100	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N285	0.0000	52652.6167	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N286	0.0000	5338.2360	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N297	0.0000	31024.0359	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N298	0.0000	2389.5150	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N299	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	64112.2358	0.0000	0.0000				
	N300	0.0000	31101.3716	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N305	0.0000	31121.2016	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N306	0.0000	2587.8150	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N307	0.0000	0.0000	0.0000	0.0000	1099.8035	0.0000
0.0000	59978.9272	0.0000	0.0000				
	N308	0.0000	27972.1984	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N313	0.0000	3440.5050	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N314	0.0000	5379.8790	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N315	0.0000	14011.8780	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N316	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	22701.8049	0.0000	0.0000				
	N317	0.0000	86425.0892	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N318	0.0000	14170.5180	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N319	0.0000	27815.5408	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N320	0.0000	3371.1000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N321	0.0000	37010.7116	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N326	0.0000	16877.3130	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N327	0.0000	48825.4267	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N328	0.0000	9968.5410	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N329	0.0000	55894.8208	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N330	0.0000	4374.4980	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N331	0.0000	0.0000	0.0000	0.0000	20.8812	0.0000
0.0000	63281.2916	0.0000	0.0000				
	N332	0.0000	53410.1216	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N333	0.0000	31739.8984	0.0000	0.0000	0.0000	0.0000

0.0000	0.0000	0.0000	0.0000				
	N335	0.0000	2318.1270	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N336	0.0000	25424.0425	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N337	0.0000	5788.3770	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N338	0.0000	25433.9584	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N339	0.0000	32178.1408	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N348	0.0000	3928.3230	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N349	0.0000	33889.4700	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N350	0.0000	32227.7167	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N351	0.0000	2205.0960	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N352	0.0000	38898.5284	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N353	0.0000	43895.6884	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N355	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	152739.1425	0.0000	0.0000				
	N356	0.0000	8457.4950	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N357	0.0000	8568.5430	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N358	0.0000	8588.3730	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	25387.4410	0.0000	0.0000				
	N500	0.0000	48920.6100	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N503	0.0000	0.0000	0.0000	0.0000	207.0568	0.0000
0.0000	213283.8093	0.0000	0.0000				
	N504	0.0000	213594.8792	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N506	0.0000	75314.3400	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N517	0.0000	2548.1550	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N322	0.0000	0.0000	0.0000	0.0000	7.4639	0.0000
0.0000	60767.2329	0.0000	0.0000				
	N511	0.0000	101476.0592	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000				
	N555	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	101306.4503	0.0000	0.0000				

Table E20 - Junction Flooding and Volume Listing. The maximum volume is the total volume in the node including the volume in the flooded storage area. This is the max volume at any time. The volume in the flooded storage area is the total volume above the ground elevation, where the flooded pond storage area starts.
The fourth column is instantaneous, the fifth is the

| sum of the flooded volume over the entire simulation|
| Units are either ft^3 or m^3 depending on the units.|
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Junction Name	Surcharged Time (min)	Flooded Time(min)	Out of 1D-System (Flooded Volume)	Maximum Volume	Passed to 2D cell OR Volume Stored in allowed Flood Pond of 1D-System
N221	302.2667	0.0000	0.0000	22.1483	0.0000
N222	301.7419	0.0000	0.0000	32.0928	0.0000
N223	0.0000	0.0000	0.0000	16.4104	0.0000
N224	300.9032	0.0000	0.0000	41.7304	0.0000
N227	308.1667	0.0000	0.0000	33.0732	0.0000
N228	309.2667	0.0000	0.0000	38.7033	0.0000
N230	0.0000	0.0000	0.0000	29.3965	0.0000
N231	0.0000	0.0000	0.0000	5.6195	0.0000
N233	0.0000	0.0000	0.0000	10.4543	0.0000
N234	360.0000	0.0000	0.0000	61.1964	0.0000
N235	0.0000	0.0000	0.0000	3.3203	0.0000
N236	0.0000	0.0000	0.0000	3.5222	0.0000
N237	0.0000	0.0000	0.0000	5.0215	0.0000
N238	266.0968	0.0000	0.0000	31.0693	0.0000
N239	0.0000	0.0000	0.0000	10.9053	0.0000
N240	294.8710	0.0000	0.0000	19.8467	0.0000
N241	0.0000	0.0000	0.0000	14.5562	0.0000
N242	0.0000	0.0000	0.0000	22.6247	0.0000
N243	0.0000	0.0000	0.0000	32.5210	0.0000
N244	275.9677	0.0000	0.0000	35.0156	0.0000
N245	282.9355	0.0000	0.0000	45.4427	0.0000
N246	304.2333	0.0000	0.0000	43.7677	0.0000
N247	318.9310	0.0000	0.0000	52.2902	0.0000
N248	273.2258	0.0000	0.0000	13.1695	0.0000
N249	304.3000	0.0000	0.0000	31.4849	0.0000
N250	307.3333	0.0000	0.0000	35.7890	0.0000
N251	309.7000	0.0000	0.0000	15.9928	0.0000
N252	0.0000	0.0000	0.0000	27.9085	0.0000
N253	0.0000	0.0000	0.0000	29.9480	0.0000
N254	0.0000	0.0000	0.0000	6.5772	0.0000
N255	0.0000	0.0000	0.0000	50.3793	0.0000
N256	0.0000	0.0000	0.0000	8.3358	0.0000
N257	0.0000	0.0000	0.0000	10.5200	0.0000
N259	328.4643	0.0000	0.0000	37.1536	0.0000
N260	360.0000	0.0000	0.0000	32.0433	0.0000
N261	313.9333	0.0000	0.0000	17.3325	0.0000
N262	0.0000	0.0000	0.0000	7.7033	0.0000
N263	0.0000	0.0000	0.0000	4.7978	0.0000
N264	360.0000	0.0000	0.0000	36.4414	0.0000
N265	0.0000	0.0000	0.0000	6.8681	0.0000
N272	0.0000	0.0000	0.0000	16.6759	0.0000
N273	0.0000	0.0000	0.0000	0.0000	0.0000
N274	0.0000	0.0000	0.0000	5.6648	0.0000
N275	360.0000	0.0000	0.0000	36.1901	0.0000
N276	0.0000	0.0000	0.0000	6.1923	0.0000
N277	0.0000	0.0000	0.0000	3.4581	0.0000
N278	360.0000	0.0000	0.0000	74.2651	0.0000
N279	0.0000	0.0000	0.0000	6.8826	0.0000
N288	360.0000	0.0000	0.0000	117.7426	0.0000
N289	360.0000	0.0000	0.0000	86.7054	0.0000
N290	359.7500	0.0000	0.0000	109.1467	0.0000

N291	0.0000	0.0000	0.0000	6.9617	0.0000
N292	360.0000	0.0000	0.0000	91.7318	0.0000
N293	0.0000	0.0000	0.0000	8.6998	0.0000
N294	298.1935	0.0000	0.0000	12.7791	0.0000
N296	0.0000	0.0000	0.0000	8.5414	0.0000
N301	312.6667	0.0000	0.0000	24.1177	0.0000
N302	0.0000	0.0000	0.0000	4.9644	0.0000
N303	360.0000	0.0000	0.0000	35.4361	0.0000
N304	0.0000	0.0000	0.0000	7.6903	0.0000
N309	0.0000	0.0000	0.0000	8.4156	0.0000
N310	0.0000	0.0000	0.0000	5.1177	0.0000
N312	0.0000	0.0000	0.0000	9.9295	0.0000
N342	0.0000	0.0000	0.0000	18.1613	0.0000
N343	0.0000	0.0000	0.0000	13.9267	0.0000
N344	0.0000	0.0000	0.0000	9.9100	0.0000
N345	0.0000	0.0000	0.0000	5.0497	0.0000
N361	0.0000	0.0000	0.0000	27.2130	0.0000
N362	0.0000	0.0000	0.0000	26.5610	0.0000
N363	0.0000	0.0000	0.0000	29.7151	0.0000
N364	0.0000	0.0000	0.0000	25.6949	0.0000
N365	0.0000	0.0000	0.0000	64.9662	0.0000
N366	0.0000	0.0000	0.0000	13.9941	0.0000
N367	0.0000	0.0000	0.0000	11.1376	0.0000
N368	297.5806	0.0000	0.0000	36.8918	0.0000
N369	297.8065	0.0000	0.0000	43.5922	0.0000
N370	304.0333	0.0000	0.0000	65.2583	0.0000
N371	303.8667	0.0000	0.0000	58.7620	0.0000
N372	301.6129	0.0000	0.0000	59.7958	0.0000
N373	298.7419	0.0000	0.0000	54.9273	0.0000
N374	0.0000	0.0000	0.0000	49.7934	0.0000
N375	0.0000	0.0000	0.0000	54.2645	0.0000
N376	0.0000	0.0000	0.0000	21.1976	0.0000
N377	0.0000	0.0000	0.0000	21.4902	0.0000
N378	0.0000	0.0000	0.0000	42.5300	0.0000
N379	0.0000	0.0000	0.0000	52.5259	0.0000
N381	0.0000	0.0000	0.0000	13.6748	0.0000
N382	0.0000	0.0000	0.0000	21.7439	0.0000
N383	0.0000	0.0000	0.0000	9.5340	0.0000
N384	0.0000	0.0000	0.0000	9.2920	0.0000
N386	0.0000	0.0000	0.0000	10.6144	0.0000
N387	0.0000	0.0000	0.0000	8.0843	0.0000
N388	0.0000	0.0000	0.0000	21.7674	0.0000
N389	0.2833	0.0000	0.0000	38.1306	0.0000
N390	0.0000	0.0000	0.0000	9.9429	0.0000
N391	310.7667	0.0000	0.0000	18.3614	0.0000
N392	0.1833	0.0000	0.0000	38.0438	0.0000
N394	360.0000	0.0000	0.0000	52.5259	0.0000
N395	322.2759	0.0000	0.0000	34.2653	0.0000
N396	0.0000	0.0000	0.0000	16.2591	0.0000
N397	0.0000	0.0000	0.0000	32.5693	0.0000
N398	0.0000	0.0000	0.0000	29.5341	0.0000
N399	0.0000	0.0000	0.0000	46.2674	0.0000
N403	0.0000	0.0000	0.0000	46.8328	0.0000
N404	0.0000	0.0000	0.0000	53.7991	0.0000
N405	300.3226	0.0000	0.0000	16.7366	0.0000
N406	0.0000	0.0000	0.0000	54.0293	0.0000
N407	0.0000	0.0000	0.0000	9.6922	0.0000
N408	0.0000	0.0000	0.0000	53.1750	0.0000
N409	0.0000	0.0000	0.0000	50.6771	0.0000
N410	0.0000	0.0000	0.0000	47.1653	0.0000

N412	316.2069	0.0000	0.0000	33.8044	0.0000
N413	0.0000	0.0000	0.0000	42.4567	0.0000
N414	0.0000	0.0000	0.0000	37.1359	0.0000
N415	316.7931	0.0000	0.0000	34.5967	0.0000
N416	305.9667	0.0000	0.0000	28.1156	0.0000
N417	0.0000	0.0000	0.0000	17.1746	0.0000
N418	0.0000	0.0000	0.0000	11.5693	0.0000
N419	278.9677	0.0000	0.0000	32.1704	0.0000
N420	276.1290	0.0000	0.0000	31.7081	0.0000
N421	276.3226	0.0000	0.0000	31.8363	0.0000
N422	283.0000	0.0000	0.0000	42.0842	0.0000
N423	282.1935	0.0000	0.0000	29.0211	0.0000
N424	288.4516	0.0000	0.0000	47.8518	0.0000
N425	288.6774	0.0000	0.0000	29.3530	0.0000
N426	292.1935	0.0000	0.0000	52.5794	0.0000
N428	295.1935	0.0000	0.0000	53.2469	0.0000
N429	297.7419	0.0000	0.0000	59.9908	0.0000
N430	0.0000	0.0000	0.0000	7.6265	0.0000
N431	0.0000	0.0000	0.0000	27.0771	0.0000
N432	0.0000	0.0000	0.0000	13.1183	0.0000
N434	0.0000	0.0000	0.0000	9.1480	0.0000
N435	282.9032	0.0000	0.0000	34.9464	0.0000
N436	284.3871	0.0000	0.0000	24.6769	0.0000
N437	282.7097	0.0000	0.0000	28.5450	0.0000
N438	285.7419	0.0000	0.0000	37.0714	0.0000
N439	293.0645	0.0000	0.0000	46.6460	0.0000
N440	289.0323	0.0000	0.0000	25.2102	0.0000
N441	293.0645	0.0000	0.0000	31.1418	0.0000
N442	296.6129	0.0000	0.0000	51.0267	0.0000
N443	290.4194	0.0000	0.0000	24.6738	0.0000
N444	296.9355	0.0000	0.0000	32.8288	0.0000
N445	293.9355	0.0000	0.0000	53.6601	0.0000
N446	282.8710	0.0000	0.0000	16.8533	0.0000
N447	286.1290	0.0000	0.0000	48.1715	0.0000
N448	303.9000	0.0000	0.0000	26.0969	0.0000
N449	305.3000	0.0000	0.0000	28.8145	0.0000
N450	298.5806	0.0000	0.0000	23.3190	0.0000
N451	297.6774	0.0000	0.0000	22.8134	0.0000
N453	303.9333	0.0000	0.0000	24.3294	0.0000
N454	305.1333	0.0000	0.0000	27.3212	0.0000
N455	267.0000	0.0000	0.0000	16.8395	0.0000
N456	300.4194	0.0000	0.0000	24.2455	0.0000
N457	294.7097	0.0000	0.0000	17.9111	0.0000
N458	0.0000	0.0000	0.0000	17.4524	0.0000
N459	0.0000	0.0000	0.0000	38.3632	0.0000
N460	0.0000	0.0000	0.0000	12.4097	0.0000
N461	360.0000	0.0000	0.0000	68.7360	0.0000
N464	303.0333	0.0000	0.0000	38.3762	0.0000
N465	301.4839	0.0000	0.0000	38.9881	0.0000
N466	301.2903	0.0000	0.0000	41.5731	0.0000
N467	298.3548	0.0000	0.0000	24.1394	0.0000
N468	298.9032	0.0000	0.0000	30.2926	0.0000
N469	0.0000	0.0000	0.0000	22.4006	0.0000
N470	0.0000	0.0000	0.0000	12.1904	0.0000
N471	294.2258	0.0000	0.0000	15.1844	0.0000
N472	291.7097	0.0000	0.0000	14.0223	0.0000
N473	0.0000	0.0000	0.0000	5.7827	0.0000
N487	0.0000	0.0000	0.0000	12.8386	0.0000
N489	0.0000	0.0000	0.0000	30.6866	0.0000
N490	0.0000	0.0000	0.0000	20.0447	0.0000

N491	0.0000	0.0000	0.0000	10.7615	0.0000
N492	324.8621	0.0000	0.0000	22.3394	0.0000
N493	0.0000	0.0000	0.0000	12.5660	0.0000
N497	0.0000	0.0000	0.0000	4.5314	0.0000
N499	360.0000	0.0000	0.0000	80.9250	0.0000
N509	328.1786	0.0000	0.0000	44.7373	0.0000
N513	0.0000	0.0000	0.0000	16.6638	0.0000
N514	0.0000	0.0000	0.0000	8.1244	0.0000
N516	360.0000	0.0000	0.0000	93.2397	0.0000
N524	0.0000	0.0000	0.0000	4.3492	0.0000
N525	0.0000	0.0000	0.0000	6.3739	0.0000
N526	0.0000	0.0000	0.0000	4.3215	0.0000
N527	0.0000	0.0000	0.0000	6.3708	0.0000
N528	300.7097	0.0000	0.0000	54.2440	0.0000
N529	0.0000	0.0000	0.0000	49.2507	0.0000
N530	301.8387	0.0000	0.0000	60.0291	0.0000
N689	0.0000	0.0000	0.0000	18.8490	0.0000
N494	0.0000	0.0000	0.0000	11.8845	0.0000
N541	275.8065	0.0000	0.0000	27.5966	0.0000
EL329	278.9032	0.0000	0.0000	30.2418	0.0000
N427	293.1613	0.0000	0.0000	37.8364	0.0000
N411	0.0000	0.0000	0.0000	45.6146	0.0000
N295	0.0000	0.0000	0.0000	47.6251	0.0000
N311	360.0000	0.0000	0.0000	59.4372	0.0000
N462	293.6129	0.0000	0.0000	24.2794	0.0000
N266	0.0000	0.0000	0.0000	1.8664	0.0000
N267	299.8387	0.0000	0.0000	20.6863	0.0000
N268	0.0000	0.0000	0.0000	8.0761	0.0000
N269	0.0000	0.0000	0.0000	8.3105	0.0000
N270	0.0000	0.0000	0.0000	14.1420	0.0000
N271	0.0000	0.0000	0.0000	17.1470	0.0000
N280	0.0000	0.0000	0.0000	12.7244	0.0000
N281	0.0000	0.0000	0.0000	34.0115	0.0000
N282	0.0000	0.0000	0.0000	34.1415	0.0000
N283	0.0000	0.0000	0.0000	33.8695	0.0000
N284	0.0000	0.0000	0.0000	6.0405	0.0000
N285	304.5000	0.0000	0.0000	20.6874	0.0000
N286	304.5667	0.0000	0.0000	19.1815	0.0000
N287	0.0000	0.0000	0.0000	76.5722	0.0000
N297	304.8000	0.0000	0.0000	18.4775	0.0000
N298	308.8000	0.0000	0.0000	20.4584	0.0000
N299	0.0000	0.0000	0.0000	34.9335	0.0000
N300	304.7000	0.0000	0.0000	18.4240	0.0000
N305	359.5000	0.0000	0.0000	54.1243	0.0000
N306	359.7500	0.0000	0.0000	64.6165	0.0000
N307	360.0000	0.0000	0.0000	55.1647	0.0000
N308	359.7500	359.2500	0.0000	2732.0112	2578.8548
N313	0.0000	0.0000	0.0000	2.3058	0.0000
N314	0.0000	0.0000	0.0000	3.6953	0.0000
N315	0.0000	0.0000	0.0000	5.3170	0.0000
N316	360.0000	0.0000	0.0000	68.7360	0.0000
N317	301.7097	0.0000	0.0000	49.7020	0.0000
N318	301.1935	0.0000	0.0000	60.4036	0.0000
N319	298.6129	0.0000	0.0000	40.7284	0.0000
N320	299.2903	0.0000	0.0000	50.9466	0.0000
N321	298.2581	0.0000	0.0000	43.0084	0.0000
N325	297.4839	0.0000	0.0000	47.1225	0.0000
N326	296.4194	0.0000	0.0000	35.5805	0.0000
N327	297.2903	0.0000	0.0000	41.2189	0.0000
N328	360.0000	0.0000	0.0000	60.1287	0.0000

N329	360.0000	0.0000	0.0000	102.9922	0.0000
N330	360.0000	0.0000	0.0000	100.4509	0.0000
N331	360.0000	0.0000	0.0000	62.0760	0.0000
N332	359.7500	0.0000	0.0000	56.3055	0.0000
N333	292.6774	0.0000	0.0000	25.9895	0.0000
N334	295.2581	0.0000	0.0000	28.4835	0.0000
N335	306.0000	0.0000	0.0000	44.5372	0.0000
N336	302.5333	0.0000	0.0000	41.2954	0.0000
N337	296.5161	0.0000	0.0000	25.8126	0.0000
N338	287.6452	0.0000	0.0000	14.8095	0.0000
N339	0.0000	0.0000	0.0000	8.0459	0.0000
N340	0.0000	0.0000	0.0000	9.3962	0.0000
N341	292.7419	0.0000	0.0000	21.4082	0.0000
N347	311.6333	0.0000	0.0000	53.3996	0.0000
N348	319.4828	0.0000	0.0000	49.2286	0.0000
N349	309.8333	0.0000	0.0000	48.9998	0.0000
N350	313.3667	0.0000	0.0000	49.2265	0.0000
N351	315.5862	0.0000	0.0000	54.8137	0.0000
N352	313.5333	0.0000	0.0000	40.0152	0.0000
N353	314.0345	0.0000	0.0000	41.6731	0.0000
N354	0.0000	0.0000	0.0000	8.7768	0.0000
N355	360.0000	0.0000	0.0000	35.4361	0.0000
N356	0.0000	0.0000	0.0000	3.6202	0.0000
N357	0.0000	0.0000	0.0000	5.2486	0.0000
N358	0.0000	0.0000	0.0000	7.1951	0.0000
N359	0.0000	0.0000	0.0000	3.4952	0.0000
N360	360.0000	0.0000	0.0000	34.4308	0.0000
N500	305.4000	0.0000	0.0000	60.8192	0.0000
N501	297.7419	0.0000	0.0000	48.8212	0.0000
N503	360.0000	0.0000	0.0000	95.7529	0.0000
N504	358.0204	0.0000	0.0000	40.3834	0.0000
N506	316.2759	0.0000	0.0000	31.2329	0.0000
N517	289.9355	0.0000	0.0000	33.8223	0.0000
N518	295.5806	0.0000	0.0000	44.2757	0.0000
N554	283.7419	0.0000	0.0000	22.3108	0.0000
N322	360.0000	0.0000	0.0000	64.5892	0.0000
N511	0.0000	0.0000	0.0000	6.4709	0.0000
N555	360.0000	0.0000	0.0000	95.7529	0.0000

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| Simulation Specific Information |
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Number of Input Conduits.....	238	Number of Simulated Conduits.....	268
Number of Natural Channels.....	0	Number of Junctions.....	269
Number of Storage Junctions.....	0	Number of Weirs.....	0
Number of Orifices.....	0	Number of Pumps.....	0
Number of Free Outfalls.....	30	Number of Tide Gate Outfalls.....	0

===
| Average % Change in Junction or Conduit is defined as: |
| Conduit % Change ==> 100.0 (Q(n+1) - Q(n)) / Qfull |
| Junction % Change ==> 100.0 (Y(n+1) - Y(n)) / Yfull |
===

The Conduit with the largest average change was..	L272	with	0.041 percent
The Junction with the largest average change was.	N288	with	1.755 percent
The Conduit with the largest sinuosity was.....	L272	with	63.393

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| Table E21. Continuity balance at the end of the simulation |
| Junction Inflow, Outflow or Street Flooding |
| Error = Inflow + Initial Volume - Outflow - Final   Volume |
==

Inflow Junction	Inflow Volume,ft^3	Average Inflow, cfs
N221	57247.0845	2.6503
N222	4837.4193	0.2240
N223	3215.7057	0.1489
N224	2433.5605	0.1127
N227	49277.1252	2.2813
N228	106298.4771	4.9212
N230	19579.3704	0.9065
N231	18813.0661	0.8710
N233	3534.5041	0.1636
N235	4564.1635	0.2113
N238	13342.0103	0.6177
N239	8336.2813	0.3859
N240	12971.7289	0.6005
N241	198.0114	0.0092
N242	10156.0063	0.4702
N243	6771.9910	0.3135
N244	2207.8275	0.1022
N245	5736.3912	0.2656
N246	63.3637	0.0029
N247	80168.8882	3.7115
N248	8866.9519	0.4105
N249	42097.2304	1.9489
N250	61011.2831	2.8246
N251	73139.4823	3.3861
N252	7318.5025	0.3388
N253	1249.4521	0.0578
N254	24507.8747	1.1346
N255	17785.3868	0.8234
N256	36661.8157	1.6973
N257	49168.2181	2.2763
N259	48691.0111	2.2542
N260	2574.3296	0.1192
N261	39247.8453	1.8170
N262	31267.9846	1.4476
N263	2294.9525	0.1062
N265	25830.5922	1.1959
N272	3651.3308	0.1690
N273	16888.3950	0.7819
N274	3853.3025	0.1784
N275	3120.6602	0.1445
N276	19389.2794	0.8977
N277	2479.1031	0.1148
N279	23753.4513	1.0997
N288	18141.8074	0.8399
N289	2625.1707	0.1215
N290	187097.0408	8.6619
N291	169418.5809	7.8435
N293	29802.7000	1.3798
N294	2548.4071	0.1180
N296	29939.3285	1.3861
N301	67757.5323	3.1369

N302	1960.3132	0.0908
N304	29640.3317	1.3722
N309	36135.1067	1.6729
N310	1384.0999	0.0641
N312	44833.7491	2.0756
N342	2370.1968	0.1097
N344	37218.2291	1.7231
N345	10066.9012	0.4661
N361	420776.2755	19.4804
N363	33608.4805	1.5559
N366	90831.8047	4.2052
N367	52128.4899	2.4134
N368	244165.9078	11.3040
N370	364374.6943	16.8692
N371	506923.1293	23.4687
N375	175463.8701	8.1233
N376	163438.6357	7.5666
N379	15050.1557	0.6968
N381	1025.6992	0.0475
N382	19818.9642	0.9175
N383	45768.3620	2.1189
N384	42762.5491	1.9797
N386	52463.1297	2.4288
N387	32408.5308	1.5004
N389	70074.2661	3.2442
N390	45118.8852	2.0888
N391	69195.0957	3.2035
N394	2489.8074	0.1153
N395	66359.5713	3.0722
N397	1469.2448	0.0680
N398	37972.6521	1.7580
N399	35572.7546	1.6469
N404	138083.2728	6.3927
N405	44146.6496	2.0438
N406	64355.6949	2.9794
N407	31836.2773	1.4739
N408	108415.2198	5.0192
N412	83966.7485	3.8873
N415	90705.0759	4.1993
N416	85608.2620	3.9633
N418	80210.4700	3.7134
N420	140958.3977	6.5259
N423	96118.7099	4.4499
N425	75741.3522	3.5065
N429	37768.7001	1.7486
N430	44417.9251	2.0564
N431	201.9717	0.0094
N434	44946.6154	2.0809
N436	56421.3770	2.6121
N437	102348.1481	4.7383
N439	3271.1489	0.1514
N440	32895.6393	1.5229
N441	75281.9668	3.4853
N443	18448.7251	0.8541
N444	78572.9157	3.6376
N445	18773.4638	0.8691
N446	18599.2138	0.8611
N447	37802.3619	1.7501
N448	48473.1985	2.2441
N449	35.6421	0.0017

N451	45091.1639	2.0876
N454	56862.9427	2.6325
N456	199.9915	0.0093
N457	33077.8106	1.5314
N464	9791.6653	0.4533
N465	117159.4032	5.4240
N467	19222.9498	0.8900
N468	32830.2954	1.5199
N469	12856.8823	0.5952
N471	25592.9784	1.1849
N472	18460.6058	0.8547
N473	13441.0160	0.6223
N490	180216.1445	8.3433
N491	7558.0963	0.3499
N492	88265.5761	4.0864
N497	59209.3790	2.7412
N509	218513.5350	10.1164
N513	132998.3381	6.1573
N514	3003.8334	0.1391
N524	12007.4132	0.5559
N526	11858.9046	0.5490
N527	6520.5164	0.3019
N530	5970.0447	0.2764
EL329	85905.2792	3.9771
N411	22618.1692	1.0471
N462	42105.1505	1.9493
N266	2233.5689	0.1034
N267	1869.2279	0.0865
N268	34388.6452	1.5921
N270	78390.7462	3.6292
N271	15264.7013	0.7067
N280	75000.7898	3.4723
N281	8427.3665	0.3902
N282	1243.5118	0.0576
N283	23262.3830	1.0770
N284	16969.5797	0.7856
N285	52575.9961	2.4341
N286	5330.4677	0.2468
N297	30978.8894	1.4342
N298	2386.0378	0.1105
N300	31056.1126	1.4378
N305	31075.9137	1.4387
N306	2584.0492	0.1196
N307	1099.8035	0.0509
N308	27931.4929	1.2931
N313	3435.4983	0.1591
N314	5372.0501	0.2487
N315	13991.4878	0.6478
N317	86299.3225	3.9953
N318	14149.8969	0.6551
N319	27775.0633	1.2859
N320	3366.1943	0.1558
N321	36956.8532	1.7110
N326	16852.7530	0.7802
N327	48754.3754	2.2571
N328	9954.0347	0.4608
N329	55813.4821	2.5840
N330	4368.1322	0.2022
N331	20.8812	0.0010
N332	53332.3986	2.4691

N333	31693.7101	1.4673
N335	2314.7536	0.1072
N336	25387.0451	1.1753
N337	5779.9537	0.2676
N338	25396.9466	1.1758
N339	32131.3148	1.4876
N348	3922.6065	0.1816
N349	33840.1537	1.5667
N350	32180.8186	1.4899
N351	2201.8871	0.1019
N352	38841.9228	1.7982
N353	43831.8109	2.0293
N356	8445.1876	0.3910
N357	8556.0740	0.3961
N358	8575.8751	0.3970
N500	48849.4202	2.2615
N503	207.0568	0.0096
N504	213284.0536	9.8743
N506	75204.7418	3.4817
N517	2544.4469	0.1178
N322	7.4639	0.0003
N511	101328.3901	4.6911
N234	-261079.2979	-12.0870
N260	-560187.8323	-25.9346
N264	-59318.8454	-2.7462
N275	-140971.0357	-6.5264
N278	-45539.0706	-2.1083
N289	-730662.7244	-33.8270
N292	-169390.1734	-7.8421
N303	-99204.9877	-4.5928
N343	-159820.8905	-7.3991
N365	-592957.9895	-27.4518
N379	-1.430E+06	-66.1889
N394	-376504.1547	-17.4307
N461	-927771.2238	-42.9524
N493	-88214.3252	-4.0840
N499	-59194.3416	-2.7405
N516	-353721.7540	-16.3760
N527	-30221.1019	-1.3991
N689	-185793.9682	-8.6016
N411	-1.175E+06	-54.4053
N295	-62078.2622	-2.8740
N311	-82167.1857	-3.8040
N299	-64112.2358	-2.9682
N307	-59978.9272	-2.7768
N316	-22701.8049	-1.0510
N331	-63281.2916	-2.9297
N355	-152739.1425	-7.0713
N360	-25387.4410	-1.1753
N503	-213283.8093	-9.8743
N322	-60767.2329	-2.8133
N555	-101306.4503	-4.6901

Outflow Junction	Outflow Volume,ft^3	Average Outflow, cfs
N234	261079.2979	12.0870
N260	560187.8323	25.9346
N264	59318.8454	2.7462
N275	140971.0357	6.5264

N278	45539.0706	2.1083
N289	730662.7244	33.8270
N292	169390.1734	7.8421
N303	99204.9877	4.5928
N343	159820.8905	7.3991
N365	592957.9895	27.4518
N379	1.42968E+06	66.1889
N394	376504.1547	17.4307
N461	927771.2238	42.9524
N493	88214.3252	4.0840
N499	59194.3416	2.7405
N516	353721.7540	16.3760
N527	30221.1019	1.3991
N689	185793.9682	8.6016
N411	1.17515E+06	54.4053
N295	62078.2622	2.8740
N311	82167.1857	3.8040
N299	64112.2358	2.9682
N307	59978.9272	2.7768
N316	22701.8049	1.0510
N331	63281.2916	2.9297
N355	152739.1425	7.0713
N360	25387.4410	1.1753
N503	213283.8093	9.8743
N322	60767.2329	2.8133
N555	101306.4503	4.6901

Initial system volume	=	1566.4776 Cu Ft
Total system inflow volume	=	8.714195E+06 Cu Ft
Inflow + Initial volume	=	8.715762E+06 Cu Ft
Total system outflow	=	8.353192E+06 Cu Ft
Volume left (Final volume)	=	351093.6961 Cu Ft
Evaporation	=	0.0000 Cu Ft
Basin Infiltration	=	0.0000 Cu Ft
Outflow + Final Volume	=	8.704285E+06 Cu Ft

Total Model Continuity Error		
Error in Continuity, Percent	=	0.1317
Error in Continuity, ft^3	=	11476.597
+ Error means a continuity loss, - a gain		

```
##################################################
# Table E22. Numerical Model judgement section   #
##################################################
```

Overall error was (minimum of Table E18 & E21)			0.0874 percent
Worst nodal error was in node N470	with		-4.5953 percent
Of the total inflow this loss was			0.2753 percent
Your overall continuity error was		Excellent	
		Excellent Efficiency	
Efficiency of the simulation		1.43	
Most Number of Non Convergences at one Node		6.	
Total Number Non Convergences at all Nodes		20.	

Total Number of Nodes with Non Convergences   8.

```
############################################################
# Table E23. New Basin Design Information                  #
#            Maximum Hydraulic Grade Line,                 #
#            Out Conduit Sizes and Maximum Flow            #
############################################################

A) Resize d/s Pipes based on given HGL
B) Resize Basin based on given HGL
C) Resize d/s Pipes and Basin based on HGL and max discharge
D) Resize d/s pipes based on given max discharge

   Basin Name    Type    Max.HGL   Conduit         Depth   Width   Barrels   Max.Flow
                           (ft)                     (ft)    (ft)             (ft^3/s)
--------------- ------  --------- --------------- ------- ------- --------- ---------

===> Hydraulic model simulation ended normally.
===> XP-SWMM Simulation ended normally.
===> Your input file was named  : P:\projects\2012.21\drainage\swmm\xp\JacksonTrunkNolteA1Ph2
_modf1.DAT
===> Your output file was named : P:\projects\2012.21\drainage\swmm\xp\JacksonTrunkNolteA1Ph2
_modf1.out

*============================================================*
|             SWMM Simulation Date and Time Summary          |
*============================================================*
| Starting Date... July        6, 2017  Time...   11:41:17:76  |
|   Ending Date... July        6, 2017  Time...   11:41:37:30  |
|  Elapsed Time...    0.32567 minutes or     19.54000 seconds  |
*============================================================*
```

APPENDIX D

MORRISON CREEK OUTFALL ALTERNATIVES

APPENDIX E

LOW IMPACT DEVELOPMENT CALCULATIONS

Jackson Township

LID CREDITS WORKSHEET

SAMPLE FOR
LOW DENSITY RESIDENTIAL
(LDR)

Appendix D-1: Residential Sites: Low Impact Development (LID) Credits and Treatment BMP Sizing Calculations

Name of Drainage Shed: Jackson Township - Sample LDR Area
Location of project: Sacramento

Fill in Blue Highlighted boxes

Step 1 - Open Space and Pervious Area Credits

Is your project within the drainage area of a common drainage plan that includes open space? If not, skip to 1 b.

1 a. Common Drainage Plan Area		1407	acres	A_{CDP}
Common Drainage Plan Open Space (Off-project)		335	acres	A_{OS}
a. Natural storage reservoirs and drainage corridors		73	acres	
b. Buffer zones for natural water bodies		207	acres	
c. Natural areas including existing trees, other vegetation, and soil		0	acres	
d. Common landscape area/park		59	acres	
e. Regional Flood Control/Drainage basins		0	acres	
1 b. Project Drainage Shed Area (Total)		100.00	acres	A
Project-Specific Open Space (In-project, communal)**		5.00	acres	A_{PSOS}
a. Natural storage reservoirs and drainage corridors		0.00	acres	
b. Buffer zones for natural water bodies		0.00	acres	
c. Natural areas including existing trees, other vegetation, and soil		0.00	acres	
d. Landscape area/park		5.00	acres	
e. Flood Control/Drainage basins		0.00	acres	
Area with Runoff Reduction Potential	$A - A_{PSOS} =$	95.00	acres	A_T
Number of Units in A_T		600		
Number of units per acre in A_T	$DU/A_T =$	7	DUA	
Assumed Initial Impervious Fraction of A_T (determined using Table D-1a)		0.5	I	

see area example below

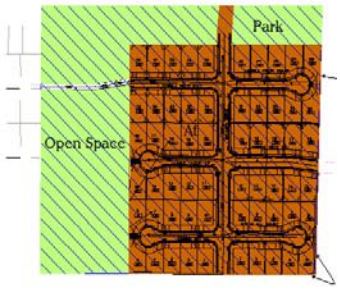
see area example below

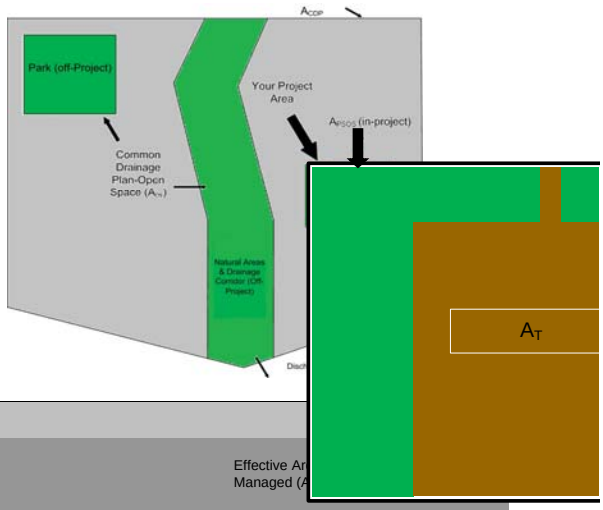
** Doesn't include impervious areas within individual lots and surrounding individual units. That is accounted for below using Form D-1a in Step 2.

Open Space & Pervious Area LID Credit (Step 1)
$(A_{OS}/A_{CDP}+A_{PSOS}/A)x100 =$ 29 pts

Table D-1a	
Dwelling units per acre	Imperviousness
1	0.17
2	0.25
3,4	0.35
5,6	0.40
7	0.50
8,9	0.55
10-14	0.60
15-20	0.70







Step 2 - Runoff Reduction Credits

Runoff Reduction Measures		Effective Ar… Managed (A…		
Disconnected Roof Drains (see Fact Sheet)	use Form D-1a for credits →	9.35	acres	
Disconnected Pavement (see Fact Sheet)	use Form D-1b for credits →	0.68	acres	
Interceptor Trees (see Fact Sheet)	use Form D-1c for credits →	0.83	acres	
Alternative Driveway Design (see Fact Sheet)	use Form D-1d for credits →	1.43	acres	
Total Effective Area Managed (Credit Area)	A_C	12.29	acres	EAM

Runoff Reduction Credit (Step 2) $(A_C / A_T)*100 =$ 13 pts

Form D-1a: Disconnected Roof Drains Worksheet

See Fact Sheet for more information regarding Disconnected Roof Drain credit guidelines

Effective Area Managed (A_C)

1. Determine efficiency Multiplier

Runoff is directed to a dispersal trench or dry well (Type A and B soils only)		1.00
Runoff is directed across landscaping, determine setback		
25 ft +	Use multiplier of	1.00
≥ 20 and < 25 ft	Use multiplier of	0.90
≥ 15 and < 20 ft	Use multiplier of	0.70
≥ 10 and < 15 ft	Use multiplier of	0.45
≥ 5 and < 10 ft	Use multiplier of	0.25

Efficiency Multiplier → 0.70 Box J1

2. Determine percentage of roof drains disconnected → 80.0% Box J2

3. Select project density in dwelling units per acre:

1	Use reduction factor of	0.08
2	Use reduction factor of	0.13
3,4	Use reduction factor of	0.19
5,6	Use reduction factor of	0.23
7	Use reduction factor of	0.29
8,9	Use reduction factor of	0.33
10-14	Use reduction factor of	0.37
15-20	Use reduction factor of	0.44

Reduction Factor → 0.29 Box J3

4. Determine Area Managed

Multiply Box J3 by A_T, and enter the result in Box J4: 27.8 acres Box J4

5. Multiply Boxes J1, J2 and J4, and enter 60% of the Result in Box J: 9.4 acres Box J

This is the amount of area credit to enter into the "Disconnected Roof Drains" Box of Form D-1

Form D-1b: Disconnected Pavement Worksheet

See Fact Sheet for more information regarding NDC Pavement credit guidelines

Effective Area Managed (A_C)

Divided Sidewalks

1. Determine percentage of units with divided Sidewalks: 30.0% Box K1

Multiply Box K1, A_T, and 0.04 and enter 60% of the result in Box K: 0.68 acres Box K

This is the amount of area credit to enter into the "Disconnected Pavement" Box of Form D-1

Form D-1c: Interceptor Tree Worksheet

See Fact Sheet for more information regarding Interceptor Tree credit guidelines

Effective Area Managed (A_C)

New Evergreen Trees

1. Enter number of new evergreen trees that qualify as Interceptor Trees in Box L1.	600	trees	Box L1
2. Multiply Box L1 by 200 and enter result in Box L2	120000	sq. ft.	Box L2

New Deciduous Trees

3. Enter number of new deciduous trees that qualify as Interceptor Trees in Box L3.	600	trees	Box L3
4. Multiply Box L3 by 100 and enter result in Box L4	60000	sq. ft.	Box L4

Existing Tree Canopy

5. Enter square footage of existing tree canopy that qualifies as Existing Tree canopy in Box L5.	0	sq. ft.	Box L5
6. Multiply Box L5 by 0.5 and enter the result in Box L6	0	sq. ft.	Box L6

Total Interceptor Tree Credits

Add Boxes L2, L4, and L6 and enter it into Box L7	180000	sq. ft.	Box L7
Divide Box L7 by 43,560 and multiply by 20% to get effective area managed and enter the result in Box L8	0.83	acres	Box L8

This is the amount of area credit to enter into the "Interceptor Trees" Box of Form D-1

Form D-1d: Alternative Driveway Design

See Fact Sheet for more information regarding Alternative Driveway Design credit guidelines

1. Select type of driveway

Pervious Driveway:	Multiplier:
Cobblestone Block I	0.40
Pervious Concrete/A	0.60
Modular Block Porous Pavement	0.75
Porous Gravel	
Not Directly-connected	1.00

0.75 Box M1

2. Determine percentage of units with Alternative Driveways: 50% Box M2

4. Multiply Boxes M1, M2, A_T and 0.04, and enter the result in Box M
This is the amount of area credit to enter into the "Alternative Driveway Design" Box of Form D-1 1.43 acres

Step 3 - Runoff Management Credits

Capture and Use Credits

Impervious Area Managed by Rain barrels, Cisterns, and automatically-emptied systems
(see Fact Sheet) ____ enter gallons, for simple rain barrels 0.00 acres

Automated-Control Capture and Use System
(see Fact Sheet, then enter impervious area managed by the system) 0.00 acres

Bioretention/Infiltration Credits

Impervious Area Managed by Bioretention BMPs
(see Fact Sheet)
Bioretention Area - sq ft
Subdrain Elevation 6 inches
Ponding Depth, inches 6.6 inches 0.00 acres

Impervious Area Managed by Infiltration BMPs
(see Fact Sheet)
Drawdown Time, hrs 12 drawdown_hrs_inf
Soil Infiltration Rate, in/hr 0.50 soil_inf_rate
Sizing Option 1: Capture Volume, acre-ft 0.00 capture_vol_inf 0.00 acres
Sizing Option 2: Infiltration BMP surface area, sq ft 0 soil_surface_area 0.00 acres
Basin or trench? Basin approximate BMP depth 0.50 ft

Impervious Area Managed by Amended Soil or Mulch Beds
(see Fact Sheet) Mulched Infiltration Area, sq ft 300,000 mulch_area 27.55 acres

Total Effective Area Managed by Capture-and-Use/Bioretention/Infiltration BMPs 27.55 A_{LIDc}

Runoff Management Credit (Step 3) A_{LIDC}/A_T*200 = 58.0 pts

Total LID Credits (Step 1+2+3) LID compliant, check for treatment sizing in Step 4 100.0

Does project require hydromodification management? If yes, proceed to using SacHM.

Adjusted Area for Flow-Based, Non-LID Treatment $A_T - A_C - A_{LIDC}$ = 55.17 A_{AT}

Adjusted Impervious Fraction of A for Volume-Based, Non-LID Treatment $(A_T*I-A_C-A_{LIDC}) / A$ = 0.077 I_A

Further treatment is required, see choose flow-based or volume-based sizing in Step 4

Step 4a Treatment - Flow-Based (Rational Method)

Form D-1e

Calculate treatment flow (cfs): Flow = Runoff Coefficient x Rainfall Intensity x Adjusted Treatment Area

Determine C Factor using Table D-1b: 0.50 C

Determine i using Table D-1c (Rainfall Intensity): 0.18 i

A_{AT} from Step 2: 55.17 A_{AT}

Flow = C * i * A_{AT}: 4.96 cfs

TABLE D-1b

Development Type	Runoff Coefficient (Rational), C
Single-family areas	0.50
Multi-units, detached	0.60
Apartment dwelling areas	0.70
Multi-units, attached	0.75
User Specified	0.00

Table D-1c

	Rainfall Intensity
Roseville	i = 0.20 in/hr
Sacramento	i = 0.18 in/hr
Folsom	i = 0.20 in/hr

Step 4b Treatment - Volume-Based (ASCE-WEF)

Calculate water quality volume (Acre-Feet):	WQV = Area x Maximized Detention Volume (P_0)			
Obtain A from Step 1	100.00	A	48 hrs	Specified Draw Down time
Obtain P_0: Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_A from Step 2.	0.10	P_0		
Calculate treatment volume (acre-ft): **Treatment volume = A x (P_0 / 12)**	0.82	Acre-Feet		

v06232012

Jackson Township

LID CREDITS WORKSHEET

SAMPLE FOR
MEDIUM DENSITY RESIDENTIAL
(MDR)

Appendix D-1: Residential Sites: Low Impact Development (LID) Credits and Treatment BMP Sizing Calculations

Name of Drainage Shed: Jackson Township - Sample MDR Area
Location of project: Sacramento

Fill in Blue Highlighted boxes

Step 1 - Open Space and Pervious Area Credits

Is your project within the drainage area of a common drainage plan that includes open space? If not, skip to 1 b.

1 a. Common Drainage Plan Area	1407	acres	A_{CDP}	
Common Drainage Plan Open Space (Off-project)	335	acres	A_{OS}	**see area example below**
a. Natural storage reservoirs and drainage corridors	73	acres		
b. Buffer zones for natural water bodies	207	acres		
c. Natural areas including existing trees, other vegetation, and soil	0	acres		
d. Common landscape area/park	59	acres		
e. Regional Flood Control/Drainage basins	0	acres		
1 b. Project Drainage Shed Area (Total)	100.00	acres	A	
Project-Specific Open Space (In-project, communal)**	5.00	acres	A_{PSOS}	**see area example below**
a. Natural storage reservoirs and drainage corridors	0.00	acres		
b. Buffer zones for natural water bodies	0.00	acres		
c. Natural areas including existing trees, other vegetation, and soil	0.00	acres		
d. Landscape area/park	5.00	acres		
e. Flood Control/Drainage basins	0.00	acres		

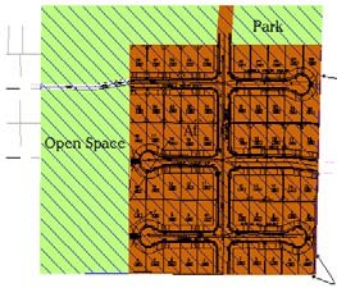
** Doesn't include impervious areas within individual lots and surrounding individual units. That is accounted for below using Form D-1a in Step 2.

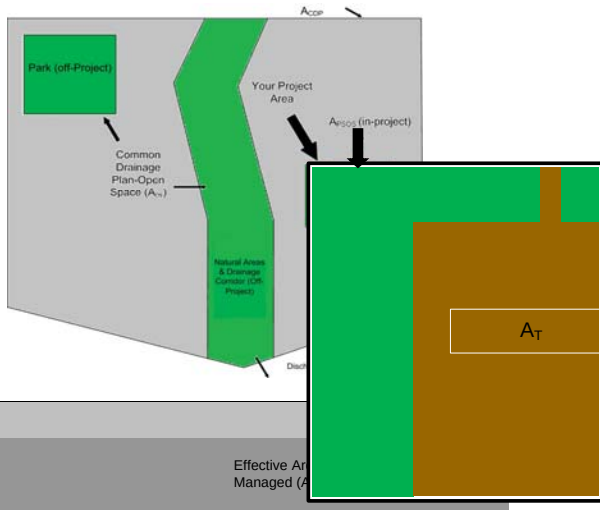
Area with Runoff Reduction Potential	$A - A_{PSOS} =$	95.00	acres	A_T
Number of Units in A_T		1000		
Number of units per acre in A_T	$DU/A_T =$	11	DUA	
Assumed Initial Impervious Fraction of A_T (determined using Table D-1a)		0.6	I	

Open Space & Pervious Area LID Credit (Step 1)
$(A_{OS}/A_{CDP}+A_{PSOS}/A)x100 =$ 29 pts

Table D-1a	
Dwelling units per acre	Imperviousness
1	0.17
2	0.25
3,4	0.35
5,6	0.40
7	0.50
8,9	0.55
10-14	0.60
15-20	0.70







Step 2 - Runoff Reduction Credits

Runoff Reduction Measures		Effective Ar… Managed (A…		
Disconnected Roof Drains (see Fact Sheet)	use Form D-1a for credits →	11.75	acres	
Disconnected Pavement (see Fact Sheet)	use Form D-1b for credits →	0.57	acres	
Interceptor Trees (see Fact Sheet)	use Form D-1c for credits →	1.38	acres	
Alternative Driveway Design (see Fact Sheet)	use Form D-1d for credits →	1.43	acres	
Total Effective Area Managed (Credit Area)	A_C	15.13	acres	EAM

Runoff Reduction Credit (Step 2) $(A_C / A_T)*100 =$ 16 pts

Form D-1a: Disconnected Roof Drains Worksheet

See Fact Sheet for more information regarding Disconnected Roof Drain credit guidelines

Effective Area Managed (A_C)

1. Determine efficiency Multiplier

Runoff is directed to a dispersal trench or dry well (Type A and B soils only)		1.00
Runoff is directed across landscaping, determine setback		
25 ft +	Use multiplier of	1.00
≥ 20 and < 25 ft	Use multiplier of	0.90
≥ 15 and < 20 ft	Use multiplier of	0.70
≥ 10 and < 15 ft	Use multiplier of	0.45
≥ 5 and < 10 ft	Use multiplier of	0.25

Efficiency Multiplier → 0.70 Box J1

2. Determine percentage of roof drains disconnected → 80.0% Box J2

3. Select project density in dwelling units per acre:

1	Use reduction factor of	0.08
2	Use reduction factor of	0.13
3,4	Use reduction factor of	0.19
5,6	Use reduction factor of	0.23
7	Use reduction factor of	0.29
8,9	Use reduction factor of	0.33
10-14	Use reduction factor of	0.37
15-20	Use reduction factor of	0.44

Reduction Factor → 0.37 Box J3

4. Determine Area Managed

Multiply Box J3 by A_T, and enter the result in Box J4: 35.0 acres Box J4

5. Multiply Boxes J1, J2 and J4, and enter 60% of the Result in Box J: 11.8 acres Box J

This is the amount of area credit to enter into the "Disconnected Roof Drains" Box of Form D-1

Form D-1b: Disconnected Pavement Worksheet

See Fact Sheet for more information regarding NDC Pavement credit guidelines

Effective Area Managed (A_C)

Divided Sidewalks

1. Determine percentage of units with divided Sidewalks: 25.0% Box K1

Multiply Box K1, A_T, and 0.04 and enter 60% of the result in Box K: 0.57 acres Box K

This is the amount of area credit to enter into the "Disconnected Pavement" Box of Form D-1

Form D-1c: Interceptor Tree Worksheet

See Fact Sheet for more information regarding Interceptor Tree credit guidelines

Effective Area Managed (A_C)

New Evergreen Trees

1. Enter number of new evergreen trees that qualify as Interceptor Trees in Box L1.: 1000 trees Box L1

2. Multiply Box L1 by 200 and enter result in Box L2: 200000 sq. ft. Box L2

New Deciduous Trees

3. Enter number of new deciduous trees that qualify as Interceptor Trees in Box L3.: 1000 trees Box L3

4. Multiply Box L3 by 100 and enter result in Box L4: 100000 sq. ft. Box L4

Existing Tree Canopy

5. Enter square footage of existing tree canopy that qualifies as Existing Tree canopy in Box L5.: 0 sq. ft. Box L5

6. Multiply Box L5 by 0.5 and enter the result in Box L6: 0 sq. ft. Box L6

Total Interceptor Tree Credits

Add Boxes L2, L4, and L6 and enter it into Box L7: 300000 sq. ft. Box L7

Divide Box L7 by 43,560 and multiply by 20% to get effective area managed and enter the result in Box L8: 1.38 acres Box L8

This is the amount of area credit to enter into the "Interceptor Trees" Box of Form D-1

Form D-1d: Alternative Driveway Design

See Fact Sheet for more information regarding Alternative Driveway Design credit guidelines

1. Select type of driveway

Pervious Driveway:	Multiplier:
Cobblestone Block F	0.40
Pervious Concrete/A	0.60
Modular Block Porous Pavement	0.75
Porous Gravel	
Not Directly-connected	1.00

0.75 Box M1

2. Determine percentage of units with Alternative Driveways: 50% Box M2

4. Multiply Boxes M1, M2, A_T and 0.04, and enter the result in Box M
This is the amount of area credit to enter into the "Alternative Driveway Design" Box of Form D-1 1.43 acres

Step 3 - Runoff Management Credits

Capture and Use Credits

Impervious Area Managed by Rain barrels, Cisterns, and automatically-emptied systems
(see Fact Sheet) enter gallons, for simple rain barrels 0.00 acres

Automated-Control Capture and Use System
(see Fact Sheet, then enter impervious area managed by the system) 0.00 acres

Bioretention/Infiltration Credits

Impervious Area Managed by Bioretention BMPs
(see Fact Sheet)
Bioretention Area - sq ft
Subdrain Elevation 6 inches
Ponding Depth, inches 6.6 inches 0.00 acres

Impervious Area Managed by Infiltration BMPs
(see Fact Sheet)
Drawdown Time, hrs 12 drawdown_hrs_inf
Soil Infiltration Rate, in/hr 0.50 soil_inf_rate
Sizing Option 1: Capture Volume, acre-ft 0.00 capture_vol_inf 0.00 acres
Sizing Option 2: Infiltration BMP surface area, sq ft 0 soil_surface_area 0.00 acres
Basin or trench? Basin approximate BMP depth 0.50 ft

Impervious Area Managed by Amended Soil or Mulch Beds
(see Fact Sheet) Mulched Infiltration Area, sq ft 285,000 mulch_area 26.17 acres

Total Effective Area Managed by Capture-and-Use/Bioretention/Infiltration BMPs 26.17 A_{LIDc}

Runoff Management Credit (Step 3) A_{LIDC}/A_T*200 = 55.1 pts

Total LID Credits (Step 1+2+3) LID compliant, check for treatment sizing in Step 4 100.1

Does project require hydromodification management? If yes, proceed to using SacHM.

Adjusted Area for Flow-Based, Non-LID Treatment $A_T - A_C - A_{LIDC}$ = 53.70 A_{AT}

Adjusted Impervious Fraction of A for Volume-Based, Non-LID Treatment $(A_T*I-A_C-A_{LIDC}) / A$ = 0.157 I_A

Further treatment is required, see choose flow-based or volume-based sizing in Step 4

Step 4a Treatment - Flow-Based (Rational Method)

Form D-1e

Calculate treatment flow (cfs): Flow = Runoff Coefficient x Rainfall Intensity x Adjusted Treatment Area

Determine C Factor using Table D-1b: 0.50 C

Determine i using Table D-1c (Rainfall Intensity): 0.18 i

A_{AT} from Step 2: 53.70 A_{AT}

Flow = C * i * A_{AT}: 4.83 cfs

TABLE D-1b

Development Type	Runoff Coefficient (Rational), C
Single-family areas	0.50
Multi-units, detached	0.60
Apartment dwelling areas	0.70
Multi-units, attached	0.75
User Specified	0.00

Table D-1c

Rainfall Intensity		
Roseville	i = 0.20	in/hr
Sacramento	i = 0.18	in/hr
Folsom	i = 0.20	in/hr

Step 4b Treatment - Volume-Based (ASCE-WEF)

Calculate water quality volume (Acre-Feet):	WQV = Area x Maximized Detention Volume (P_0)				
Obtain A from Step 1	100.00	A	48	hrs	Specified Draw Down time
Obtain P_0: Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_A from Step 2.	0.15	P_0			
Calculate treatment volume (acre-ft): **Treatment volume = A x (P_0 / 12)**	1.27	Acre-Feet			

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Jackson Township

LID CREDITS WORKSHEET

SAMPLE FOR
HIGH DENSITY RESIDENTIAL
(HDR)

Appendix D-1: Residential Sites: Low Impact Development (LID) Credits and Treatment BMP Sizing Calculations

Name of Drainage Shed: Jackson Township - Sample HDR Area
Location of project: Sacramento

Fill in Blue Highlighted boxes

Step 1 - Open Space and Pervious Area Credits

Is your project within the drainage area of a common drainage plan that includes open space? If not, skip to 1 b.

1 a. Common Drainage Plan Area	1407	acres	A_{CDP}	
Common Drainage Plan Open Space (Off-project)	335	acres	A_{OS}	**see area example below**
a. Natural storage reservoirs and drainage corridors	73	acres		
b. Buffer zones for natural water bodies	207	acres		
c. Natural areas including existing trees, other vegetation, and soil	0	acres		
d. Common landscape area/park	59	acres		
e. Regional Flood Control/Drainage basins	0	acres		
1 b. Project Drainage Shed Area (Total)	100.00	acres	A	
Project-Specific Open Space (In-project, communal)**	5.00	acres	A_{PSOS}	**see area example below**
a. Natural storage reservoirs and drainage corridors	0.00	acres		
b. Buffer zones for natural water bodies	0.00	acres		
c. Natural areas including existing trees, other vegetation, and soil	0.00	acres		
d. Landscape area/park	5.00	acres		
e. Flood Control/Drainage basins	0.00	acres		

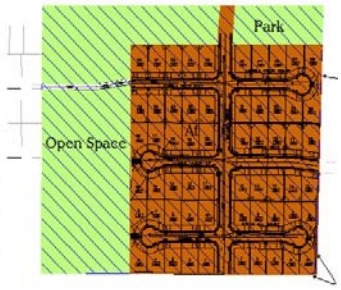
** Doesn't include impervious areas within individual lots and surrounding individual units. That is accounted for below using Form D-1a in Step 2.

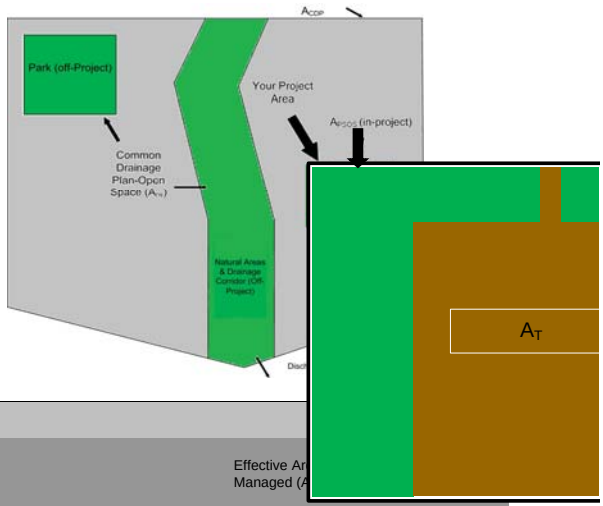
Area with Runoff Reduction Potential	$A - A_{PSOS}$ =	95.00	acres	A_T
Number of Units in A_T		1900		
Number of units per acre in A_T	DU/A_T =	20	DUA	
Assumed Initial Impervious Fraction of A_T (determined using Table D-1a)		0.7	I	

Open Space & Pervious Area LID Credit (Step 1)
$(A_{OS}/A_{CDP}+A_{PSOS}/A)x100$ = 29 pts

Table D-1a	
Dwelling units per acre	Imperviousness
1	0.17
2	0.25
3,4	0.35
5,6	0.40
7	0.50
8,9	0.55
10-14	0.60
15-20	0.70







Step 2 - Runoff Reduction Credits

Runoff Reduction Measures			Effective Ar… Managed (A…	
Disconnected Roof Drains (see Fact Sheet)	use Form D-1a for credits	→	14.13	acres
Disconnected Pavement (see Fact Sheet)	use Form D-1b for credits	→	1.14	acres
Interceptor Trees (see Fact Sheet)	use Form D-1c for credits	→	1.38	acres
Alternative Driveway Design (see Fact Sheet)	use Form D-1d for credits	→	0.71	acres
Total Effective Area Managed (Credit Area)		A_C	17.36	acres EAM

Runoff Reduction Credit (Step 2) $(A_C / A_T)*100$ = 18 pts

Form D-1a: Disconnected Roof Drains Worksheet

See Fact Sheet for more information regarding Disconnected Roof Drain credit guidelines

Effective Area Managed (A_C)

1. Determine efficiency Multiplier

Runoff is directed to a dispersal trench or dry well (Type A and B soils only)		1.00
Runoff is directed across landscaping, determine setback		
25 ft +	Use multiplier of	1.00
≥ 20 and < 25 ft	Use multiplier of	0.90
≥ 15 and < 20 ft	Use multiplier of	0.70
≥ 10 and < 15 ft	Use multiplier of	0.45
≥ 5 and < 10 ft	Use multiplier of	0.25

Efficiency Multiplier → 0.70 Box J1

2. Determine percentage of roof drains disconnected → 80.0% Box J2

3. Select project density in dwelling units per acre:

1	Use reduction factor of	0.08
2	Use reduction factor of	0.13
3,4	Use reduction factor of	0.19
5,6	Use reduction factor of	0.23
7	Use reduction factor of	0.29
8,9	Use reduction factor of	0.33
10-14	Use reduction factor of	0.37
15-20	Use reduction factor of	0.44

Reduction Factor → 0.44 Box J3

4. Determine Area Managed

Multiply Box J3 by A_T, and enter the result in Box J4: 42.0 acres Box J4

5. Multiply Boxes J1, J2 and J4, and enter 60% of the Result in Box J: 14.1 acres Box J

This is the amount of area credit to enter into the "Disconnected Roof Drains" Box of Form D-1

Form D-1b: Disconnected Pavement Worksheet

See Fact Sheet for more information regarding NDC Pavement credit guidelines

Effective Area Managed (A_C)

Divided Sidewalks

1. Determine percentage of units with divided Sidewalks: 50.0% Box K1

Multiply Box K1, A_T, and 0.04 and enter 60% of the result in Box K: 1.14 acres Box K

This is the amount of area credit to enter into the "Disconnected Pavement" Box of Form D-1

Form D-1c: Interceptor Tree Worksheet

See Fact Sheet for more information regarding Interceptor Tree credit guidelines

Effective Area Managed (A_C)

New Evergreen Trees

1. Enter number of new evergreen trees that qualify as Interceptor Trees in Box L1.: 1000 trees Box L1

2. Multiply Box L1 by 200 and enter result in Box L2: 200000 sq. ft. Box L2

New Deciduous Trees

3. Enter number of new deciduous trees that qualify as Interceptor Trees in Box L3.: 1000 trees Box L3

4. Multiply Box L3 by 100 and enter result in Box L4: 100000 sq. ft. Box L4

Existing Tree Canopy

5. Enter square footage of existing tree canopy that qualifies as Existing Tree canopy in Box L5.: 0 sq. ft. Box L5

6. Multiply Box L5 by 0.5 and enter the result in Box L6: 0 sq. ft. Box L6

Total Interceptor Tree Credits

Add Boxes L2, L4, and L6 and enter it into Box L7: 300000 sq. ft. Box L7

Divide Box L7 by 43,560 and multiply by 20% to get effective area managed and enter the result in Box L8: 1.38 acres Box L8

This is the amount of area credit to enter into the "Interceptor Trees" Box of Form D-1

Form D-1d: Alternative Driveway Design

See Fact Sheet for more information regarding Alternative Driveway Design credit guidelines

1. Select type of driveway

Pervious Driveway:	Multiplier:
Cobblestone Block I	0.40
Pervious Concrete/A	0.60
Modular Block Porous Pavement Porous Gravel	0.75
Not Directly-connected	1.00

0.75 Box M1

2. Determine percentage of units with Alternative Driveways: 25% Box M2

4. Multiply Boxes M1, M2, A_T and 0.04, and enter the result in Box M
This is the amount of area credit to enter into the "Alternative Driveway Design" Box of Form D-1 0.71 acres

Step 3 - Runoff Management Credits

Capture and Use Credits

Impervious Area Managed by Rain barrels, Cisterns, and automatically-emptied systems
(see Fact Sheet) enter gallons, for simple rain barrels 0.00 acres

Automated-Control Capture and Use System
(see Fact Sheet, then enter impervious area managed by the system) 0.00 acres

Bioretention/Infiltration Credits

Impervious Area Managed by Bioretention BMPs
(see Fact Sheet)
Bioretention Area - sq ft
Subdrain Elevation 6 inches
Ponding Depth, inches 6.6 inches 0.00 acres

Impervious Area Managed by Infiltration BMPs
(see Fact Sheet)
Drawdown Time, hrs 12 drawdown_hrs_inf
Soil Infiltration Rate, in/hr 0.50 soil_inf_rate
Sizing Option 1: Capture Volume, acre-ft 0.00 capture_vol_inf 0.00 acres
Sizing Option 2: Infiltration BMP surface area, sq ft 0 soil_surface_area 0.00 acres
Basin or trench? Basin approximate BMP depth 0.50 ft

Impervious Area Managed by Amended Soil or Mulch Beds
(see Fact Sheet) Mulched Infiltration Area, sq ft 273,600 mulch_area 25.12 acres

Total Effective Area Managed by Capture-and-Use/Bioretention/Infiltration BMPs 25.12 A_{LIDc}

Runoff Management Credit (Step 3) A_{LIDC}/A_T*200 = 52.9 pts

Total LID Credits (Step 1+2+3) LID compliant, check for treatment sizing in Step 4 100.3

Does project require hydromodification management? If yes, proceed to using SacHM.

Adjusted Area for Flow-Based, Non-LID Treatment $A_T - A_C - A_{LIDC}$ = 52.52 A_{AT}

Adjusted Impervious Fraction of A for Volume-Based, Non-LID Treatment $(A_T*I-A_C-A_{LIDC}) / A$ = 0.240 I_A

Further treatment is required, see choose flow-based or volume-based sizing in Step 4

Step 4a Treatment - Flow-Based (Rational Method)

Form D-1e

Calculate treatment flow (cfs): Flow = Runoff Coefficient x Rainfall Intensity x Adjusted Treatment Area

Determine C Factor using Table D-1b: 0.50 C

Determine i using Table D-1c (Rainfall Intensity): 0.18 i

A_{AT} from Step 2: 52.52 A_{AT}

Flow = C * i * A_{AT}: 4.73 cfs

TABLE D-1b

Development Type	Runoff Coefficient (Rational), C
Single-family areas	0.50
Multi-units, detached	0.60
Apartment dwelling areas	0.70
Multi-units, attached	0.75
User Specified	0.00

Table D-1c

Rainfall Intensity		
Roseville	i = 0.20	in/hr
Sacramento	i = 0.18	in/hr
Folsom	i = 0.20	in/hr

Step 4b Treatment - Volume-Based (ASCE-WEF)

Calculate water quality volume (Acre-Feet):	WQV = Area x Maximized Detention Volume (P_0)			
Obtain A from Step 1	100.00	A	48 hrs	Specified Draw Down time
Obtain P_0: Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_A from Step 2.	0.21	P_0		
Calculate treatment volume (acre-ft): **Treatment volume = A x (P_0 / 12)**	1.73	Acre-Feet		

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Jackson Township

LID CREDITS WORKSHEET

SAMPLE FOR PQP/SCHOOL (PQP)

Appendix D-2: Commercial Sites: Low Impact Development (LID) Credits and Treatment BMP Sizing Calculations

Name of Drainage Shed: Jackson Township - Sample PQP_SCHOOL
Location of project: Sacramento

Fill in Blue Highlighted boxes

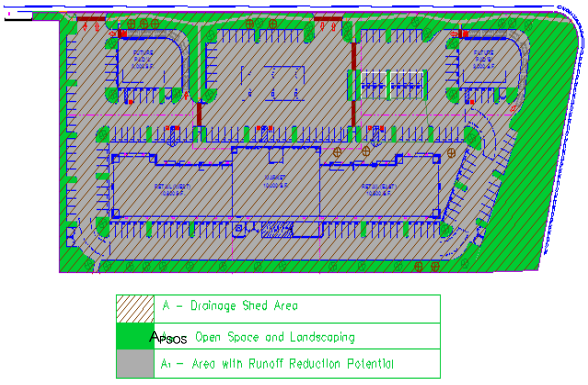
Step 1 - Open Space and Pervious Area Credits

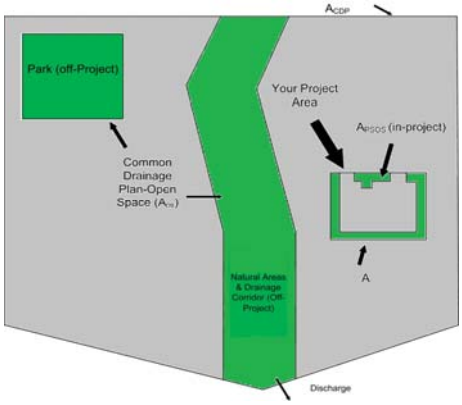
Is your project within the drainage area of a common drainage plan that includes open space? If not, skip to 1 b.

1 a. Common Drainage Plan Area	1407	acres	A_{CDP}	
Common Drainage Plan Open Space (Off-project)	339	acres	A_{OS}	**see area example below**
a. Natural storage reservoirs and drainage corridors	73	acres		
b. Buffer zones for natural water bodies	207	acres		
c. Natural areas including existing trees, other vegetation, and soil	0	acres		
d. Common landscape area/park	59	acres		
e. Regional Flood Control/Drainage basins	0	acres		
1 b. Project Drainage Shed Area (Total)	10.00	acres	A	
Project-Specific Open Space (In-project, communal)**	3.00	acres	A_{PSOS}	
a. Natural storage reservoirs and drainage corridors	0.00	acres		
b. Buffer zones for natural water bodies	0.00	acres		
c. Natural areas including existing trees, other vegetation, and soil	0.00	acres		**see area example below**
d. Landscape area/park	3.00	acres		
e. Flood Control/Drainage basins	0.00	acres		
Area with Runoff Reduction Potential	$A - A_{PSOS}$ = 7.00	acres	A_T	
Assumed Initial Impervious Fraction	A_T / A = 0.70		I	

** Doesn't include impervious areas within individual lots and surrounding individual units. That is accounted for below using Form D-1a in Step 2.

Open Space & Pervious Area LID Credit (Step 1)
$(A_{OS}/A_{CDP}+A_{PSOS}/A)x100$ = 54 pts





Step 2 - Runoff Reduction Credits

Runoff Reduction Treatments	Impervious Area Managed			Efficiency Factor		Effective Area Managed (A_C)	
Porous Pavement:							
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0	acres	x	1	=	0.000	acres
Option 2: Disconnected Pavement (see Fact Sheet, excludes porous pavement used in Option 1)	use Form D-2a for credits →					0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	2.0000	acres			=	2.00	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	1.7	acres			=	1.70	acres
Ecoroof (see Fact Sheet)	0	acres			=	0.00	acres
Interceptor Trees (see Fact Sheet)	use Form D-2b for credits →					0.14	acres
Total Effective Area Managed by Runoff Reduction Measures				A_C		3.84	acres
Runoff Reduction Credit (Step 2)				$(A_C / A_T)*100$ =		55	pts

Table D-2a

Porous Pavement Type	Efficiency Multiplier
Cobblestone Block Pavement	0.40
Pervious Concrete/Asphalt	0.60
Modular Block Pavement &	0.75
Reinforced Grass Pavement	1.00

Table D-2b

Maximum roof size	Minimum travel distance
≤ 3,500 sq ft	21 ft
≤ 5,000 sq ft	24 ft
≤ 7,500 sq ft	28 ft
≤ 10,000 sq ft	32 ft

Form D-2a: Disconnected Pavement Worksheet

See Fact Sheet for more information regarding Disconnected Pavement credit guidelines

Effective Area Managed (A_C)

Pavement Draining to Porous Pavement

2. Enter area draining onto Porous Pavement — 0.00 acres — Box K1

3. Enter area of Receiving Porous Pavement — 0.00 acres — Box K2
(excludes area entered in Step 2 under Porous Pavement)

4. Ratio of Areas (Box K1 / Box K2) — 0.00 — Box K3

5. Select multiplier using ratio from Box K3 and enter into Box K4

Ratio (Box D)	Multiplier
Ratio is ≤ 0.5	1.00
Ratio is > 0.5 and < 1.0	0.83
Ratio is > 1.0 and < 1.5	0.71
Ratio is > 1.5 and < 2.0	0.55

Box K4: 1

6. Enter Efficiency of Porous Pavement (see table below) — 1.00 — Box K5

Porous Pavement Type	Efficiency Multiplier
Cobblestone Block Pavement	0.40
Pervious Concrete Asphalt Pavement	0.60
Modular Block Pavement Porous Gravel Pavement	0.75
Reinforced Grass Pavement	1.00

7. Multiply Box K2 by Box K5 and enter into Box K6 — 0.00 acres — Box K6

8. Multiply Boxes K1,K4, and K5 and enter the result in Box K7 — 0.00 acres — Box K7

9. Add Box K6 to Box K7 and multiply by 60%, and enter the Result in Box K8 — 0.00 acres — Box K8
This is the amount of area credit to enter into the "Disconnected Pavement" Box of Form D-2

Form D-2b: Interceptor Tree Worksheet

See Fact Sheet for more information regarding Interceptor Tree credit guidelines

New Evergreen Trees

1. Enter number of new evergreen trees that qualify as Interceptor Trees in Box L1.	100	trees	Box L1
2. Multiply Box L1 by 200 and enter result in Box L2	20000	sq. ft.	Box L2

New Deciduous Trees

3. Enter number of new deciduous trees that qualify as Interceptor Trees in Box L3.	100	trees	Box L3
4. Multiply Box L3 by 100 and enter result in Box L4	10000	sq. ft.	Box L4

Existing Tree Canopy

5. Enter square footage of existing tree canopy that qualifies as Existing Tree canopy in Box L5.	0	sq. ft.	Box L5
6. Multiply Box L5 by 0.5 and enter the result in Box L6	0	sq. ft.	Box L6

Total Interceptor Tree EAM Credits

Add Boxes L2, L4, and L6 and enter it into Box L7	30000	sq. ft.	Box L7
Divide Box L7 by 43,560 and multiply by 20% to get effective area managed and enter result in Box L8 This is the amount of area credit to enter into the "Interceptor Trees" Box of Form D-2	0.14	acres	Box L8

Step 3 - Runoff Management Credits

Capture and Use Credits

Impervious Area Managed by Rain barrels, Cisterns, and automatically-emptied systems

(see Fact Sheet) - enter gallons, for simple rain barrels → 0.00 acres

Automated-Control Capture and Use System

(see Fact Sheet, then enter impervious area managed by the system) → 0.00 acres

Bioretention/Infiltration Credits

Impervious Area Managed by Bioretention BMPs

(see Fact Sheet)

Bioretention Area	-	sq ft
Subdrain Elevation	6	inches
Ponding Depth, inches	12	inches

→ 0.00 acres

Impervious Area Managed by Infiltration BMPs

(see Fact Sheet)

Drawdown Time, hrs	12	drawdown_hrs_inf
Soil Infiltration Rate, in/hr	0.50	soil_inf_rate

Sizing Option 1: Capture Volume, acre-ft 0.00 capture_vol_inf → 0.00 acres

Sizing Option 2: Infiltration BMP surface area, sq ft 0 soil_surface_area → 0.00 acres

Basin or trench? ____ approximate BMP depth 0.50 ft

Impervious Area Managed by Amended Soil or Mulch Beds

(see Fact Sheet) Mulched Infiltration Area, sq ft - mulch_area → 0.00 acres

Total Effective Area Managed by Capture-and-Use/Bioretention/Infiltration BMPs → 0.00 A_{LIDc}

Runoff Management Credit (Step 3) A_{LIDC}/A_T*200 = 0.0 pts

Total LID Credits (Step 1+2+3) LID compliant, check for treatment sizing in Step 4 108.9

Does project require hydromodification management? If yes, proceed to using SacHM.

Adjusted Area for Flow-Based, Non-LID Treatment	$A_T - A_C - A_{LIDC}$ = 3.16	A_{AT}
Adjusted Impervious Fraction of A for Volume-Based, Non-LID Treatment	A_{AT} / A = 0.32	I_A

Further treatment is required, see choose flow-based or volume-based sizing in Step 4

Step 4a Treatment - Flow-Based (Rational Method)

Calculate treatment flow (cfs):	Flow = Runoff Coefficient x Rainfall Intensity x Area	
Look up value for i in Table D-2c (Rainfall Intensity)	0.18	i
Obtain A_{AT} from Step 3	3.16	A_{AT}
Use C = 0.95	0.95	C
Flow = 0.95 * i * A_{AT}	0.54	cfs

Table D-2c

Rainfall Intensity			
Roseville	i =	0.20	in/hr
Sacramento	i =	0.18	in/hr
Folsom	i =	0.20	in/hr

Step 4b Treatment - Volume-Based (ASCE-WEF)

Calculate water quality volume (Acre-Feet):	WQV = Area x Maximized Detention Volume (P_0)			
Obtain A from Step 1	10.00	A	48 hrs	Specified Draw Down time
Obtain P_0: Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_x from Step 2.	0.25	P_0		
Calculate treatment volume (acre-ft): **Treatment volume = A x (P_0 / 12)**	0.21	Acre-Feet		

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Jackson Township

LID CREDITS WORKSHEET

SAMPLE FOR
ROAD
(ROAD)

Appendix D-2: Commercial Sites: Low Impact Development (LID) Credits and Treatment BMP Sizing Calculations

Name of Drainage Shed: Jackson Township - Sample ROAD
Location of project: Sacramento

Fill in Blue Highlighted boxes

Step 1 - Open Space and Pervious Area Credits

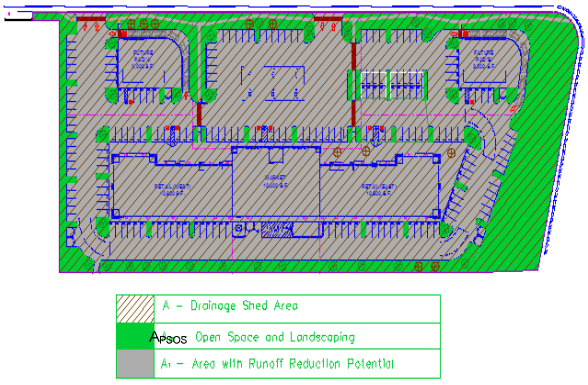
Is your project within the drainage area of a common drainage plan that includes open space? If not, skip to 1 b.

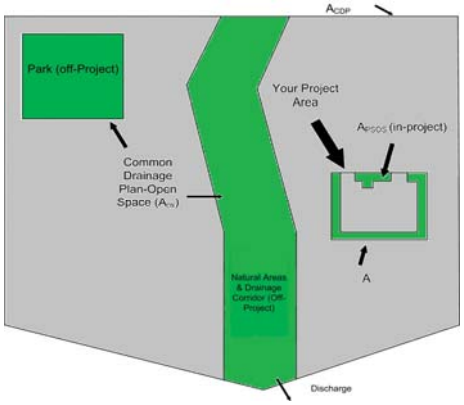
1 a. Common Drainage Plan Area	1407	acres	A_{CDP}	
Common Drainage Plan Open Space (Off-project)	335	acres	A_{OS}	**see area example below**
a. Natural storage reservoirs and drainage corridors	73	acres		
b. Buffer zones for natural water bodies	207	acres		
c. Natural areas including existing trees, other vegetation, and soil	0	acres		
d. Common landscape area/park	59	acres		
e. Regional Flood Control/Drainage basins	0	acres		
1 b. Project Drainage Shed Area (Total)	10.00	acres	A	
Project-Specific Open Space (In-project, communal)**	2.00	acres	A_{PSOS}	
a. Natural storage reservoirs and drainage corridors	0.00	acres		
b. Buffer zones for natural water bodies	0.00	acres		
c. Natural areas including existing trees, other vegetation, and soil	0.00	acres		**see area example below**
d. Landscape area/park	2.00	acres		
e. Flood Control/Drainage basins	0.00	acres		

** Doesn't include impervious areas within individual lots and surrounding individual units. That is accounted for below using Form D-1a in Step 2.

Area with Runoff Reduction Potential	$A - A_{PSOS}$ =	8.00	acres	A_T
Assumed Initial Impervious Fraction	A_T / A =	0.80		I

Open Space & Pervious Area LID Credit (Step 1)
$(A_{OS}/A_{CDP}+A_{PSOS}/A)x100$ = 44 pts





Step 2 - Runoff Reduction Credits

Runoff Reduction Treatments	Impervious Area Managed			Efficiency Factor		Effective Area Managed (A_C)	
Porous Pavement:							
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0	acres	x	1	=	0.000	acres
Option 2: Disconnected Pavement (see Fact Sheet, excludes porous pavement used in Option 1)	use Form D-2a for credits →					0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	0.0000	acres			=	0.00	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	1.7	acres			=	1.70	acres
Ecoroof (see Fact Sheet)	0	acres			=	0.00	acres
Interceptor Trees (see Fact Sheet)	use Form D-2b for credits →					0.14	acres
Total Effective Area Managed by Runoff Reduction Measures				A_C		1.84	acres

Runoff Reduction Credit (Step 2) $(A_C / A_T)*100$ = 23 pts

Table D-2a

Porous Pavement Type	Efficiency Multiplier
Cobblestone Block Pavement	0.40
Pervious Concrete/Asphalt	0.60
Modular Block Pavement &	0.75
Reinforced Grass Pavement	1.00

Table D-2b

Maximum roof size	Minimum travel distance
≤ 3,500 sq ft	21 ft
≤ 5,000 sq ft	24 ft
≤ 7,500 sq ft	28 ft
≤ 10,000 sq ft	32 ft

Form D-2a: Disconnected Pavement Worksheet

See Fact Sheet for more information regarding Disconnected Pavement credit guidelines

Effective Area Managed (A_C)

Pavement Draining to Porous Pavement

2. Enter area draining onto Porous Pavement — 0.00 acres — Box K1

3. Enter area of Receiving Porous Pavement — 0.00 acres — Box K2
(excludes area entered in Step 2 under Porous Pavement)

4. Ratio of Areas (Box K1 / Box K2) — 0.00 — Box K3

5. Select multiplier using ratio from Box K3 and enter into Box K4

Ratio (Box D)	Multiplier
Ratio is ≤ 0.5	1.00
Ratio is > 0.5 and < 1.0	0.83
Ratio is > 1.0 and < 1.5	0.71
Ratio is > 1.5 and < 2.0	0.55

Box K4: 1

6. Enter Efficiency of Porous Pavement (see table below) — 1.00 — Box K5

Porous Pavement Type	Efficiency Multiplier
Cobblestone Block Pavement	0.40
Pervious Concrete Asphalt Pavement	0.60
Modular Block Pavement Porous Gravel Pavement	0.75
Reinforced Grass Pavement	1.00

7. Multiply Box K2 by Box K5 and enter into Box K6 — 0.00 acres — Box K6

8. Multiply Boxes K1,K4, and K5 and enter the result in Box K7 — 0.00 acres — Box K7

9. Add Box K6 to Box K7 and multiply by 60%, and enter the Result in Box K8 — 0.00 acres — Box K8
This is the amount of area credit to enter into the "Disconnected Pavement" Box of Form D-2

Form D-2b: Interceptor Tree Worksheet

See Fact Sheet for more information regarding Interceptor Tree credit guidelines

New Evergreen Trees

1. Enter number of new evergreen trees that qualify as Interceptor Trees in Box L1.	100	trees	Box L1
2. Multiply Box L1 by 200 and enter result in Box L2	20000	sq. ft.	Box L2

New Deciduous Trees

3. Enter number of new deciduous trees that qualify as Interceptor Trees in Box L3.	100	trees	Box L3
4. Multiply Box L3 by 100 and enter result in Box L4	10000	sq. ft.	Box L4

Existing Tree Canopy

5. Enter square footage of existing tree canopy that qualifies as Existing Tree canopy in Box L5.	0	sq. ft.	Box L5
6. Multiply Box L5 by 0.5 and enter the result in Box L6	0	sq. ft.	Box L6

Total Interceptor Tree EAM Credits

Add Boxes L2, L4, and L6 and enter it into Box L7	30000	sq. ft.	Box L7
Divide Box L7 by 43,560 and multiply by 20% to get effective area managed and enter result in Box L8 This is the amount of area credit to enter into the "Interceptor Trees" Box of Form D-2	0.14	acres	Box L8

Step 3 - Runoff Management Credits

Capture and Use Credits

Impervious Area Managed by Rain barrels, Cisterns, and automatically-emptied systems

(see Fact Sheet) - enter gallons, for simple rain barrels: 0.00 acres

Automated-Control Capture and Use System

(see Fact Sheet, then enter impervious area managed by the system): 0.00 acres

Bioretention/Infiltration Credits

Impervious Area Managed by Bioretention BMPs

(see Fact Sheet)

Bioretention Area	3,850	sq ft
Subdrain Elevation	6	inches
Ponding Depth, inches	12	inches

1.32 acres

Impervious Area Managed by Infiltration BMPs

(see Fact Sheet)

Drawdown Time, hrs	12	drawdown_hrs_inf
Soil Infiltration Rate, in/hr	0.50	soil_inf_rate

Sizing Option 1: Capture Volume, acre-ft 0.00 capture_vol_inf — 0.00 acres

Sizing Option 2: Infiltration BMP surface area, sq ft 0 soil_surface_area — 0.00 acres

Basin or trench? _____ approximate BMP depth 0.50 ft

Impervious Area Managed by Amended Soil or Mulch Beds

(see Fact Sheet) Mulched Infiltration Area, sq ft - mulch_area — 0.00 acres

Total Effective Area Managed by Capture-and-Use/Bioretention/Infiltration BMPs: 1.32 A_{LIDc}

Runoff Management Credit (Step 3): A_{LIDC}/A_T*200 = 33.0 pts

Total LID Credits (Step 1+2+3) LID compliant, check for treatment sizing in Step 4: 100.0

Does project require hydromodification management? If yes, proceed to using SacHM.

Adjusted Area for Flow-Based, Non-LID Treatment: $A_T - A_C - A_{LIDC}$ = 4.84 A_{AT}

Adjusted Impervious Fraction of A for Volume-Based, Non-LID Treatment: A_{AT} / A = 0.48 I_A

Further treatment is required, see choose flow-based or volume-based sizing in Step 4

Step 4a Treatment - Flow-Based (Rational Method)

Calculate treatment flow (cfs):	Flow = Runoff Coefficient x Rainfall Intensity x Area	
Look up value for i in Table D-2c (Rainfall Intensity)	0.18	i
Obtain A_{AT} from Step 3	4.84	A_{AT}
Use C = 0.95	0.95	C
Flow = 0.95 * i * A_{AT}	0.83	cfs

Table D-2c

Rainfall Intensity			
Roseville	i =	0.20	in/hr
Sacramento	i =	0.18	in/hr
Folsom	i =	0.20	in/hr

Step 4b Treatment - Volume-Based (ASCE-WEF)

Calculate water quality volume (Acre-Feet):	WQV = Area x Maximized Detention Volume (P_0)			
Obtain A from Step 1	10.00	A	48 hrs	Specified Draw Down time
Obtain P_0: Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_x from Step 2.	0.35	P_0		
Calculate treatment volume (acre-ft): **Treatment volume = A x (P_0 / 12)**	0.29	Acre-Feet		

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Jackson Township

LID CREDITS WORKSHEET

SAMPLE FOR COMMERCIAL (C)

Appendix D-2: Commercial Sites: Low Impact Development (LID) Credits and Treatment BMP Sizing Calculations

Name of Drainage Shed: Jackson Township - Sample Commercial
Location of project: Sacramento

Fill in Blue Highlighted boxes

Step 1 - Open Space and Pervious Area Credits

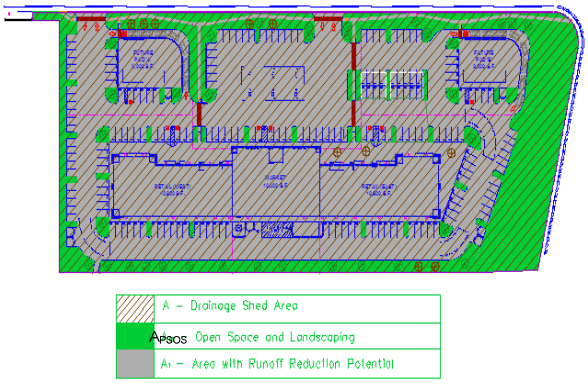
Is your project within the drainage area of a common drainage plan that includes open space? If not, skip to 1 b.

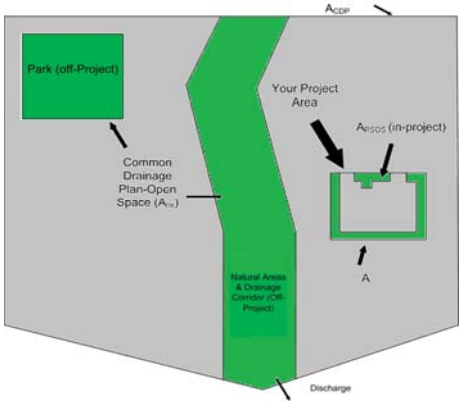
1 a. Common Drainage Plan Area	1407	acres	A_{CDP}	
Common Drainage Plan Open Space (Off-project)	339	acres	A_{OS}	**see area example below**
a. Natural storage reservoirs and drainage corridors	73	acres		
b. Buffer zones for natural water bodies	207	acres		
c. Natural areas including existing trees, other vegetation, and soil	0	acres		
d. Common landscape area/park	59	acres		
e. Regional Flood Control/Drainage basins	0	acres		
1 b. Project Drainage Shed Area (Total)	10.00	acres	A	
Project-Specific Open Space (In-project, communal)**	0.00	acres	A_{PSOS}	
a. Natural storage reservoirs and drainage corridors	0.00	acres		
b. Buffer zones for natural water bodies	0.00	acres		
c. Natural areas including existing trees, other vegetation, and soil	0.00	acres		**see area example below**
d. Landscape area/park	0.00	acres		
e. Flood Control/Drainage basins	0.00	acres		

** Doesn't include impervious areas within individual lots and surrounding individual units. That is accounted for below using Form D-1a in Step 2.

Area with Runoff Reduction Potential	$A - A_{PSOS}$ =	10.00	acres	A_T
Assumed Initial Impervious Fraction	A_T / A =	1.00		I

Open Space & Pervious Area LID Credit (Step 1)
$(A_{OS}/A_{CDP}+A_{PSOS}/A)x100$ = 24 pts





Step 2 - Runoff Reduction Credits

Runoff Reduction Treatments	Impervious Area Managed			Efficiency Factor		Effective Area Managed (A_C)	
Porous Pavement:							
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0	acres	x	1	=	0.000	acres
Option 2: Disconnected Pavement (see Fact Sheet, excludes porous pavement used in Option 1)	use Form D-2a for credits →					0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	2.0000	acres			=	2.00	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	1.7	acres			=	1.70	acres
Ecoroof (see Fact Sheet)	0	acres			=	0.00	acres
Interceptor Trees (see Fact Sheet)	use Form D-2b for credits →					0.14	acres
Total Effective Area Managed by Runoff Reduction Measures				A_C		3.84	acres

Runoff Reduction Credit (Step 2) $(A_C / A_T)*100$ = 38 pts

Table D-2a

Porous Pavement Type	Efficiency Multiplier
Cobblestone Block Pavement	0.40
Pervious Concrete/Asphalt	0.60
Modular Block Pavement &	0.75
Reinforced Grass Pavement	1.00

Table D-2b

Maximum roof size	Minimum travel distance
≤ 3,500 sq ft	21 ft
≤ 5,000 sq ft	24 ft
≤ 7,500 sq ft	28 ft
≤ 10,000 sq ft	32 ft

Form D-2a: Disconnected Pavement Worksheet

See Fact Sheet for more information regarding Disconnected Pavement credit guidelines

Effective Area Managed (A_C)

Pavement Draining to Porous Pavement

2. Enter area draining onto Porous Pavement — 0.00 acres — Box K1

3. Enter area of Receiving Porous Pavement — 0.00 acres — Box K2
(excludes area entered in Step 2 under Porous Pavement)

4. Ratio of Areas (Box K1 / Box K2) — 0.00 — Box K3

5. Select multiplier using ratio from Box K3 and enter into Box K4

Ratio (Box D)	Multiplier
Ratio is ≤ 0.5	1.00
Ratio is > 0.5 and < 1.0	0.83
Ratio is > 1.0 and < 1.5	0.71
Ratio is > 1.5 and < 2.0	0.55

Box K4: 1

6. Enter Efficiency of Porous Pavement (see table below) — 1.00 — Box K5

Porous Pavement Type	Efficiency Multiplier
Cobblestone Block Pavement	0.40
Pervious Concrete Asphalt Pavement	0.60
Modular Block Pavement Porous Gravel Pavement	0.75
Reinforced Grass Pavement	1.00

7. Multiply Box K2 by Box K5 and enter into Box K6 — 0.00 acres — Box K6

8. Multiply Boxes K1,K4, and K5 and enter the result in Box K7 — 0.00 acres — Box K7

9. Add Box K6 to Box K7 and multiply by 60%, and enter the Result in Box K8 — 0.00 acres — Box K8
This is the amount of area credit to enter into the "Disconnected Pavement" Box of Form D-2

Form D-2b: Interceptor Tree Worksheet

See Fact Sheet for more information regarding Interceptor Tree credit guidelines

New Evergreen Trees

1. Enter number of new evergreen trees that qualify as Interceptor Trees in Box L1.	100	trees	Box L1
2. Multiply Box L1 by 200 and enter result in Box L2	20000	sq. ft.	Box L2

New Deciduous Trees

3. Enter number of new deciduous trees that qualify as Interceptor Trees in Box L3.	100	trees	Box L3
4. Multiply Box L3 by 100 and enter result in Box L4	10000	sq. ft.	Box L4

Existing Tree Canopy

5. Enter square footage of existing tree canopy that qualifies as Existing Tree canopy in Box L5.	0	sq. ft.	Box L5
6. Multiply Box L5 by 0.5 and enter the result in Box L6	0	sq. ft.	Box L6

Total Interceptor Tree EAM Credits

Add Boxes L2, L4, and L6 and enter it into Box L7	30000	sq. ft.	Box L7
Divide Box L7 by 43,560 and multiply by 20% to get effective area managed and enter result in Box L8 This is the amount of area credit to enter into the "Interceptor Trees" Box of Form D-2	0.14	acres	Box L8

Step 3 - Runoff Management Credits

Capture and Use Credits

Impervious Area Managed by Rain barrels, Cisterns, and automatically-emptied systems

(see Fact Sheet) - enter gallons, for simple rain barrels: 0.00 acres

Automated-Control Capture and Use System

(see Fact Sheet, then enter impervious area managed by the system): 0.00 acres

Bioretention/Infiltration Credits

Impervious Area Managed by Bioretention BMPs

(see Fact Sheet)

Bioretention Area	3,350	sq ft
Subdrain Elevation	6	inches
Ponding Depth, inches	12	inches

1.15 acres

Impervious Area Managed by Infiltration BMPs

(see Fact Sheet)

Drawdown Time, hrs	12	drawdown_hrs_inf
Soil Infiltration Rate, in/hr	0.50	soil_inf_rate

Sizing Option 1: Capture Volume, acre-ft 0.00 capture_vol_inf — 0.00 acres

Sizing Option 2: Infiltration BMP surface area, sq ft 0 soil_surface_area — 0.00 acres

Basin or trench? _____ approximate BMP depth 0.50 ft

Impervious Area Managed by Amended Soil or Mulch Beds

(see Fact Sheet) Mulched Infiltration Area, sq ft 8,000 mulch_area — 0.73 acres

Total Effective Area Managed by Capture-and-Use/Bioretention/Infiltration BMPs: 1.88 A_{LIDc}

Runoff Management Credit (Step 3): A_{LIDC}/A_T*200 = 37.6 pts

Total LID Credits (Step 1+2+3) LID compliant, check for treatment sizing in Step 4: 100.1

Does project require hydromodification management? If yes, proceed to using SacHM.

Adjusted Area for Flow-Based, Non-LID Treatment	$A_T - A_C - A_{LIDC}$ = 4.28	A_{AT}
Adjusted Impervious Fraction of A for Volume-Based, Non-LID Treatment	A_{AT} / A = 0.43	I_A

Further treatment is required, see choose flow-based or volume-based sizing in Step 4

Step 4a Treatment - Flow-Based (Rational Method)

Calculate treatment flow (cfs):	Flow = Runoff Coefficient x Rainfall Intensity x Area	
Look up value for i in Table D-2c (Rainfall Intensity)	0.18	i
Obtain A_{AT} from Step 3	4.28	A_{AT}
Use C = 0.95	0.95	C
Flow = 0.95 * i * A_{AT}	0.73	cfs

Table D-2c

Rainfall Intensity			
Roseville	i =	0.20	in/hr
Sacramento	i =	0.18	in/hr
Folsom	i =	0.20	in/hr

Step 4b Treatment - Volume-Based (ASCE-WEF)

Calculate water quality volume (Acre-Feet):	WQV = Area x Maximized Detention Volume (P_0)			
Obtain A from Step 1	10.00	A	48 hrs	Specified Draw Down time
Obtain P_0: Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_x from Step 2.	0.31	P_0		
Calculate treatment volume (acre-ft): **Treatment volume = A x (P_0 / 12)**	0.26	Acre-Feet		

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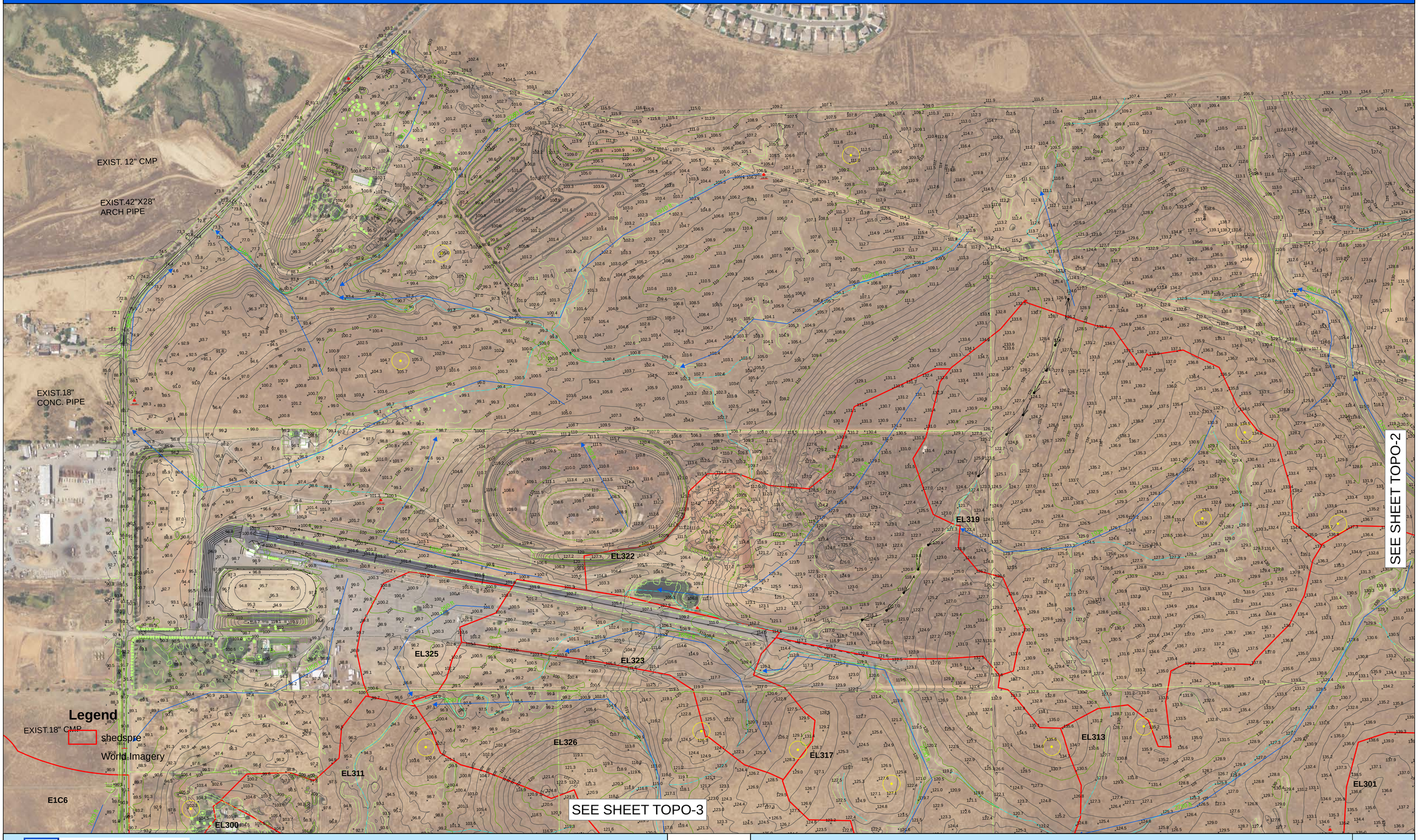
APPENDIX F

OVERSIZED EXHIBITS

JACKSON TOWNSHIP



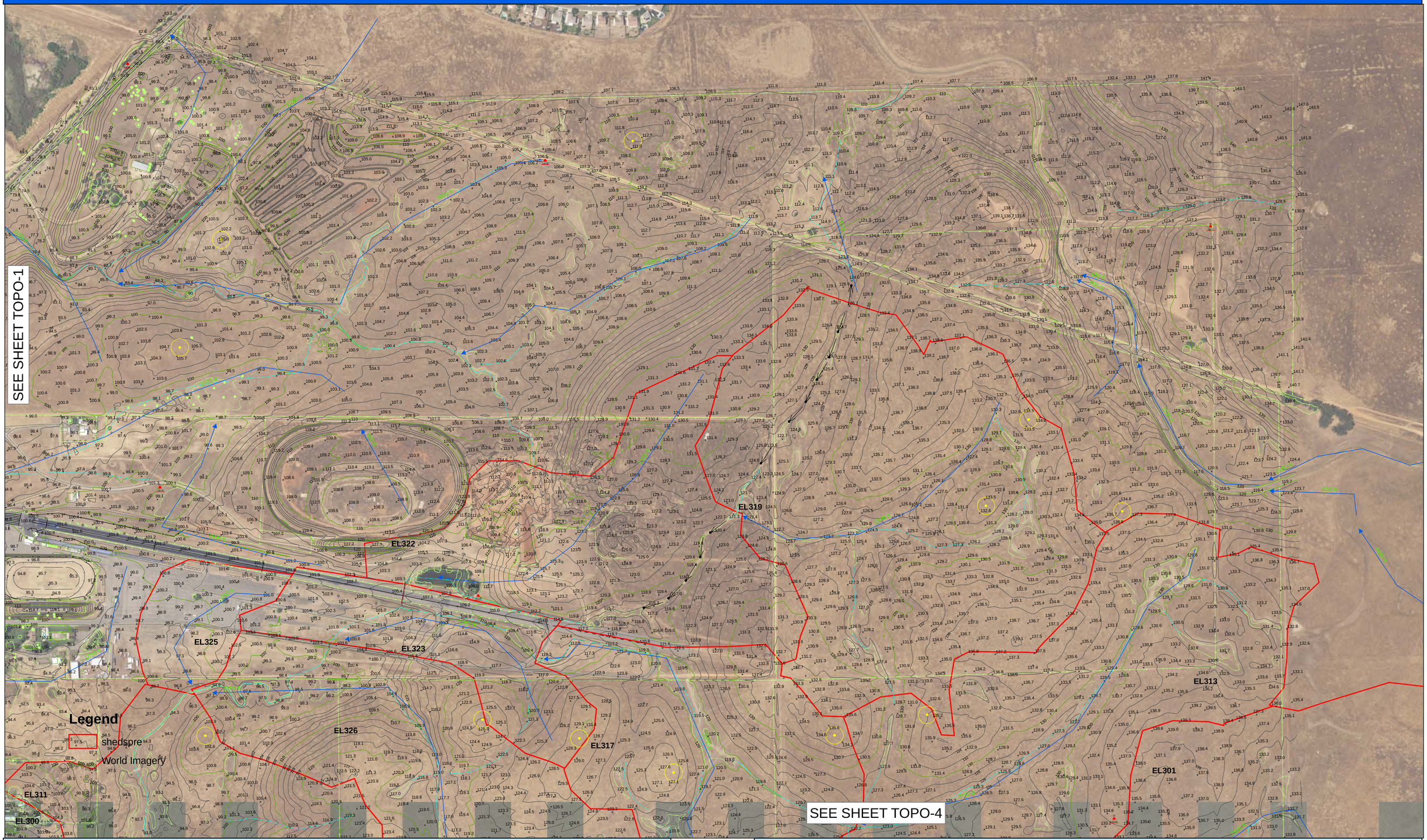
CIVIL ENGINEERING SOLUTIONS, INC.

EXISTING WATERSHEDS WITH EXISTING TOPOGRAPHY BY AUCLAIR CONSULTING - JULY 2016

JACKSON TOWNSHIP

SHEET TOPO-1

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

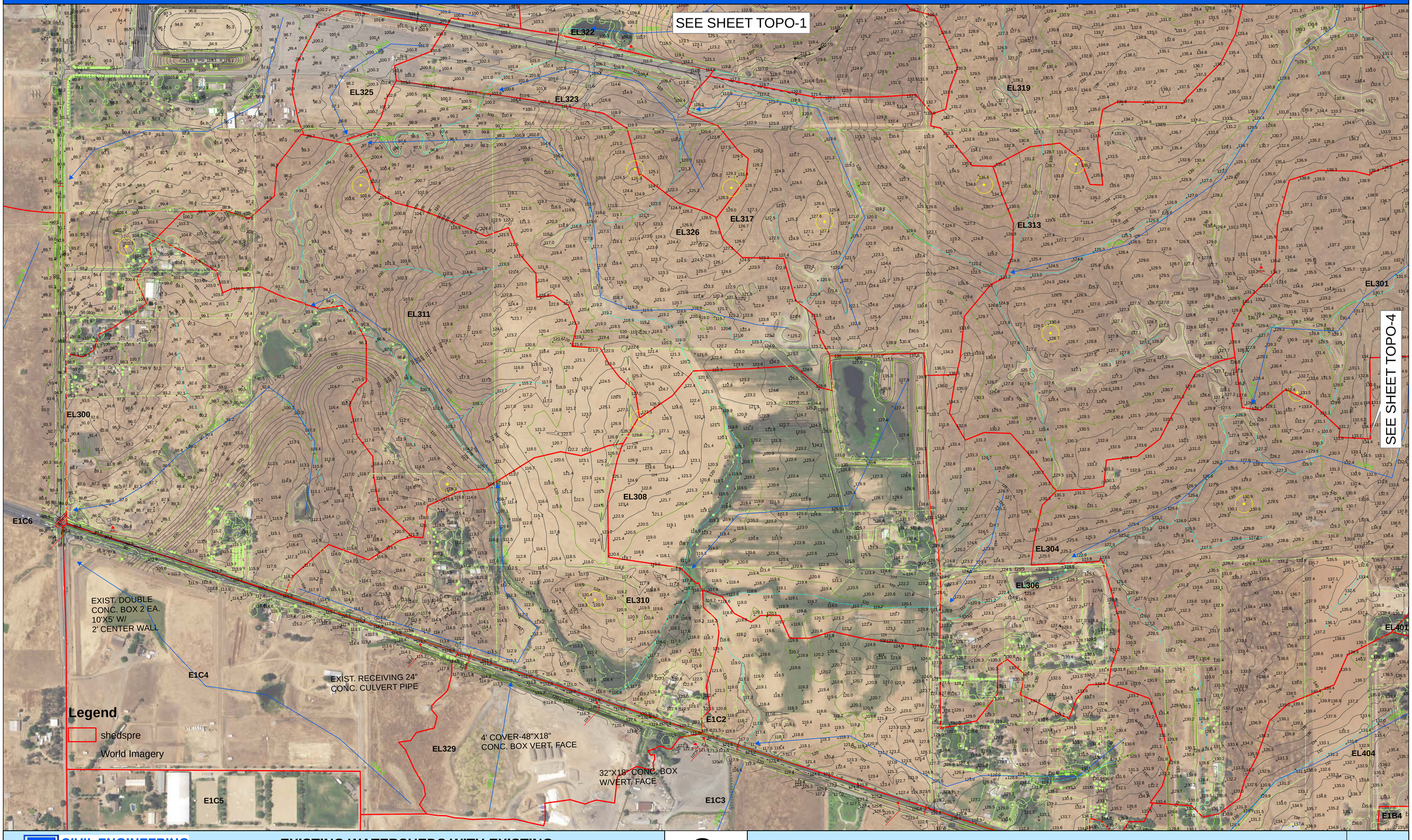
EXISTING WATERSHEDS WITH EXISTING TOPOGRAPHY BY AUCLAIR CONSULTING - JULY 2016

0 125 250 500
Feet

JACKSON TOWNSHIP

SHEET
TOPO-2

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

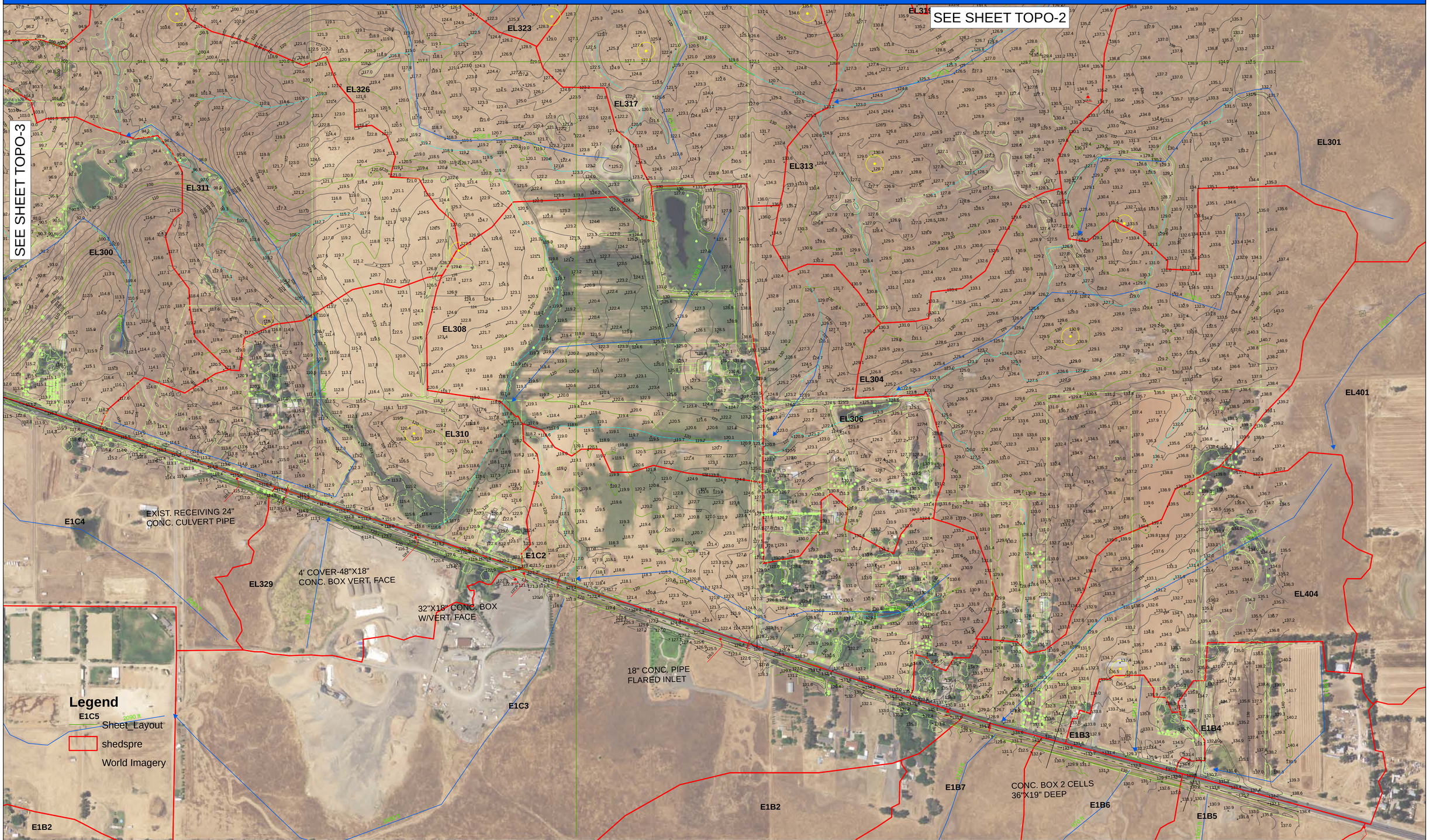
EXISTING WATERSHEDS WITH EXISTING TOPOGRAPHY BY AUCLAIR CONSULTING - JULY 2016

0 125 250 500
Feet

JACKSON TOWNSHIP

SHEET
TOPO-3

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

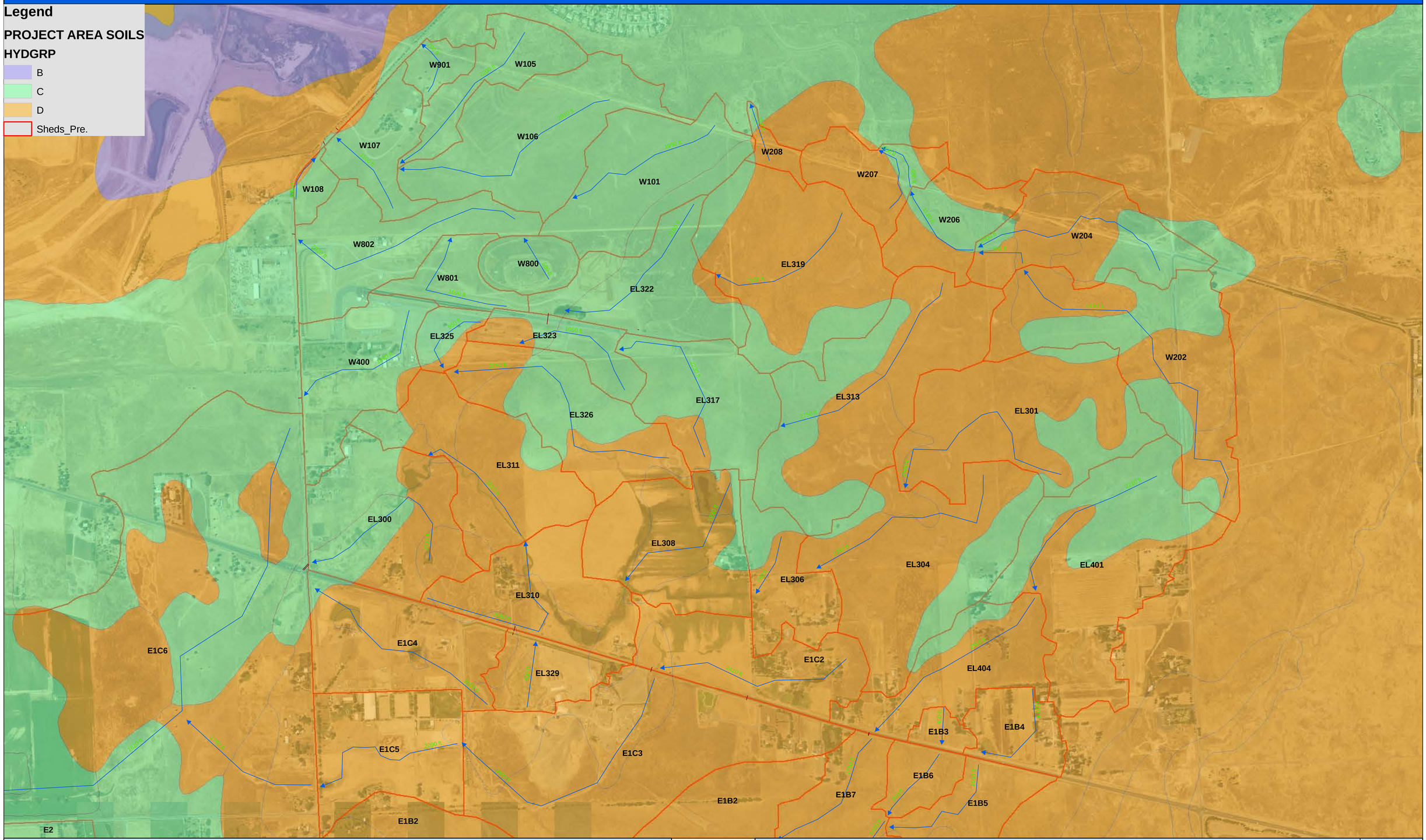
EXISTING WATERSHEDS WITH EXISTING TOPOGRAPHY BY AUCLAIR CONSULTING - JULY 2016

0 125 250 500
Feet

JACKSON TOWNSHIP

SHEET
TOPO-4

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

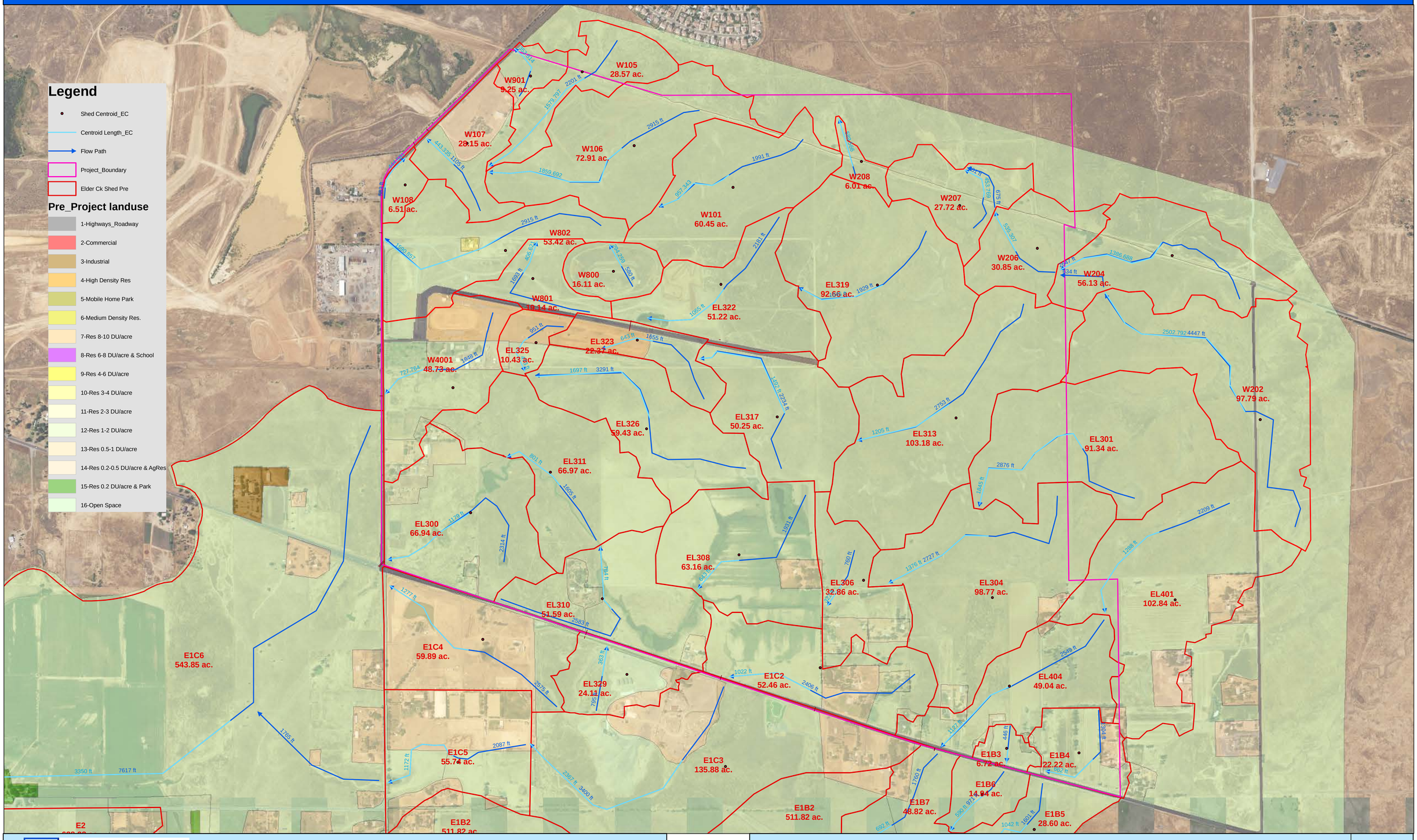
EXISTING WATERSHEDS AND HYDROLOGIC SOILS GROUP
JULY 2017

0 250 500 1,000
Feet

JACKSON TOWNSHIP

SHEET
SOIL-1

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

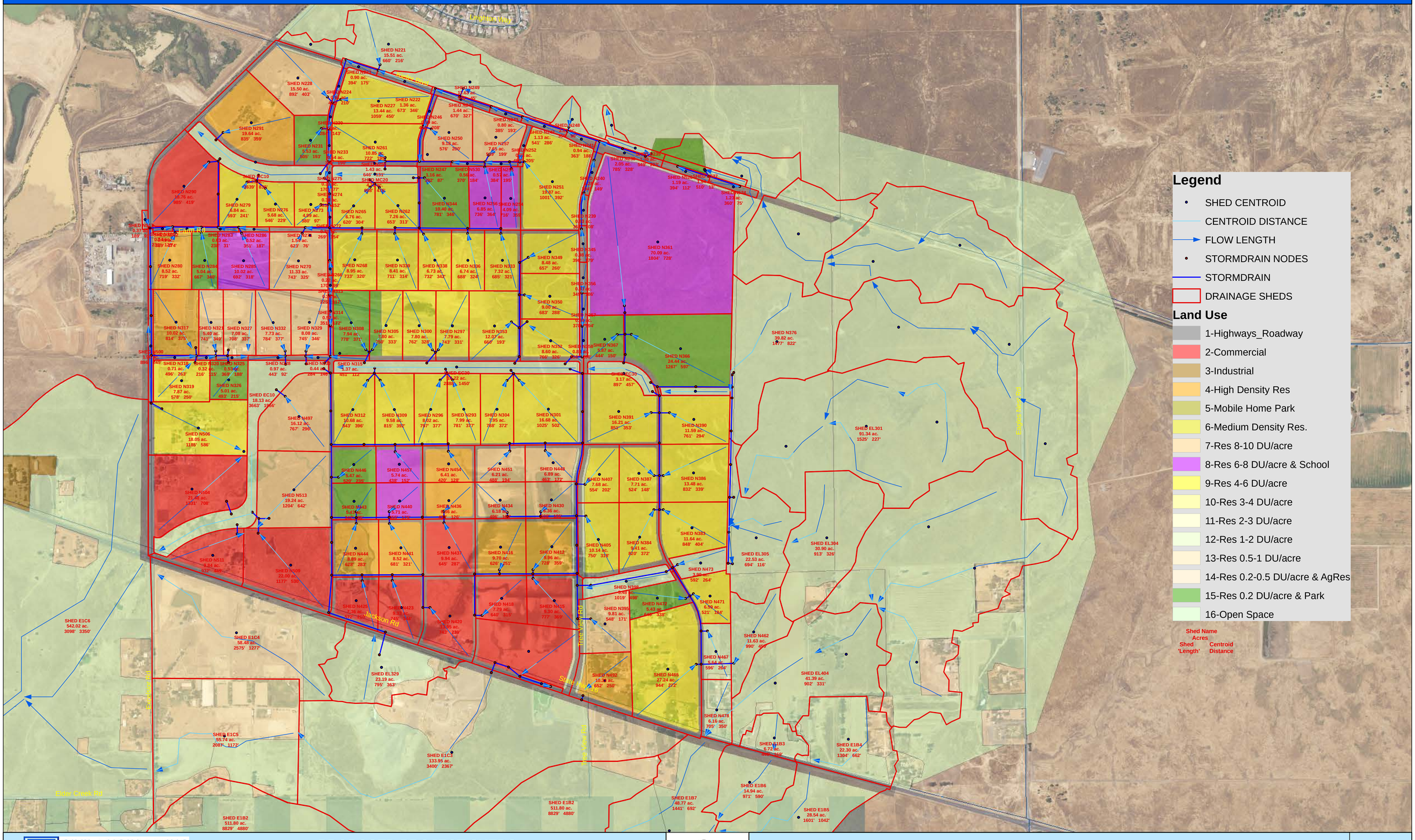
EXISTING SHEDS
JULY 2017

0 250 500 1,000
Feet

JACKSON TOWNSHIP

SHEET
SH-1.1

JACKSON TOWNSHIP



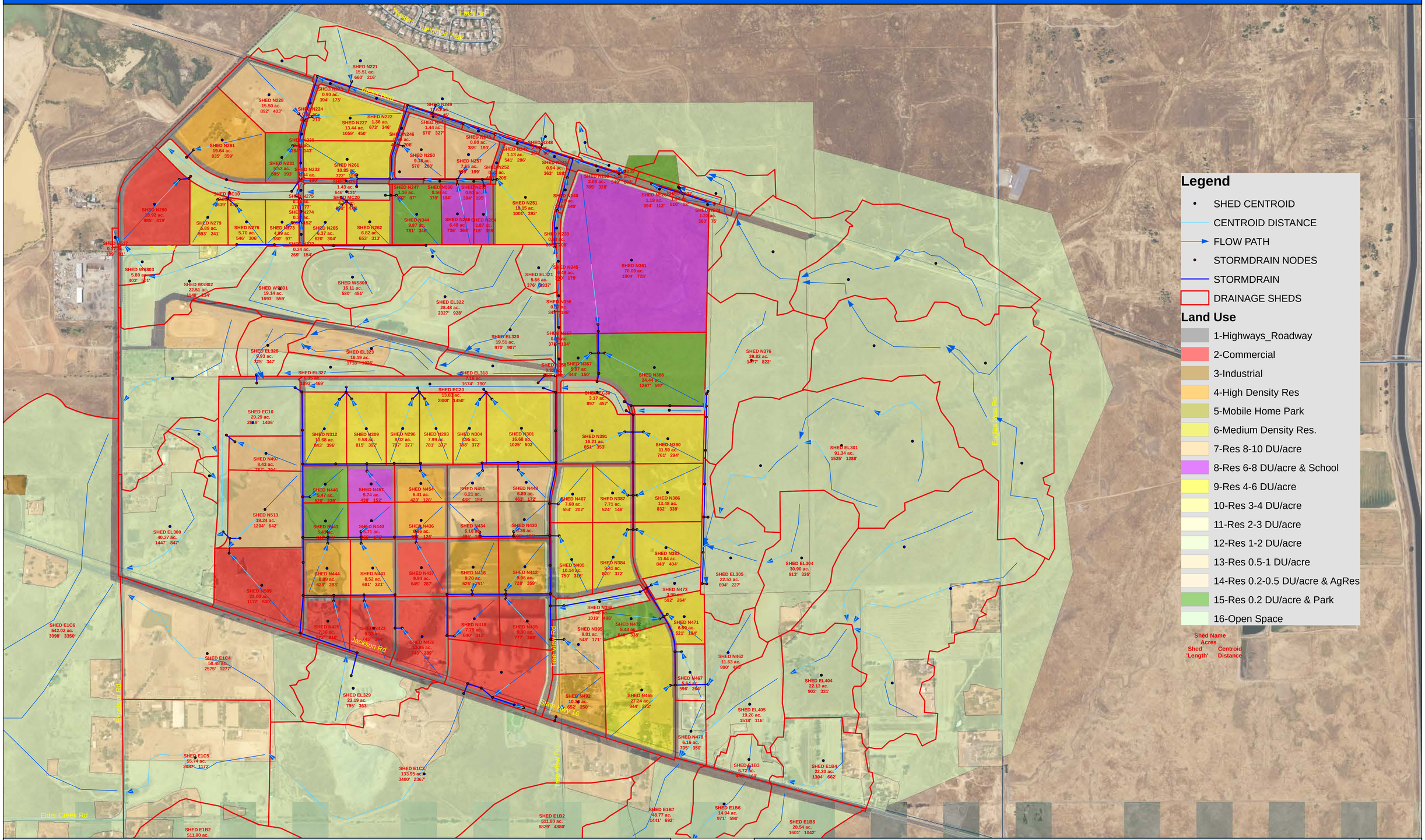
CIVIL ENGINEERING SOLUTIONS, INC.

PROPOSED PROJECT SHEDS
JULY 2017

JACKSON TOWNSHIP

SHEET
SH-2

JACKSON TOWNSHIP



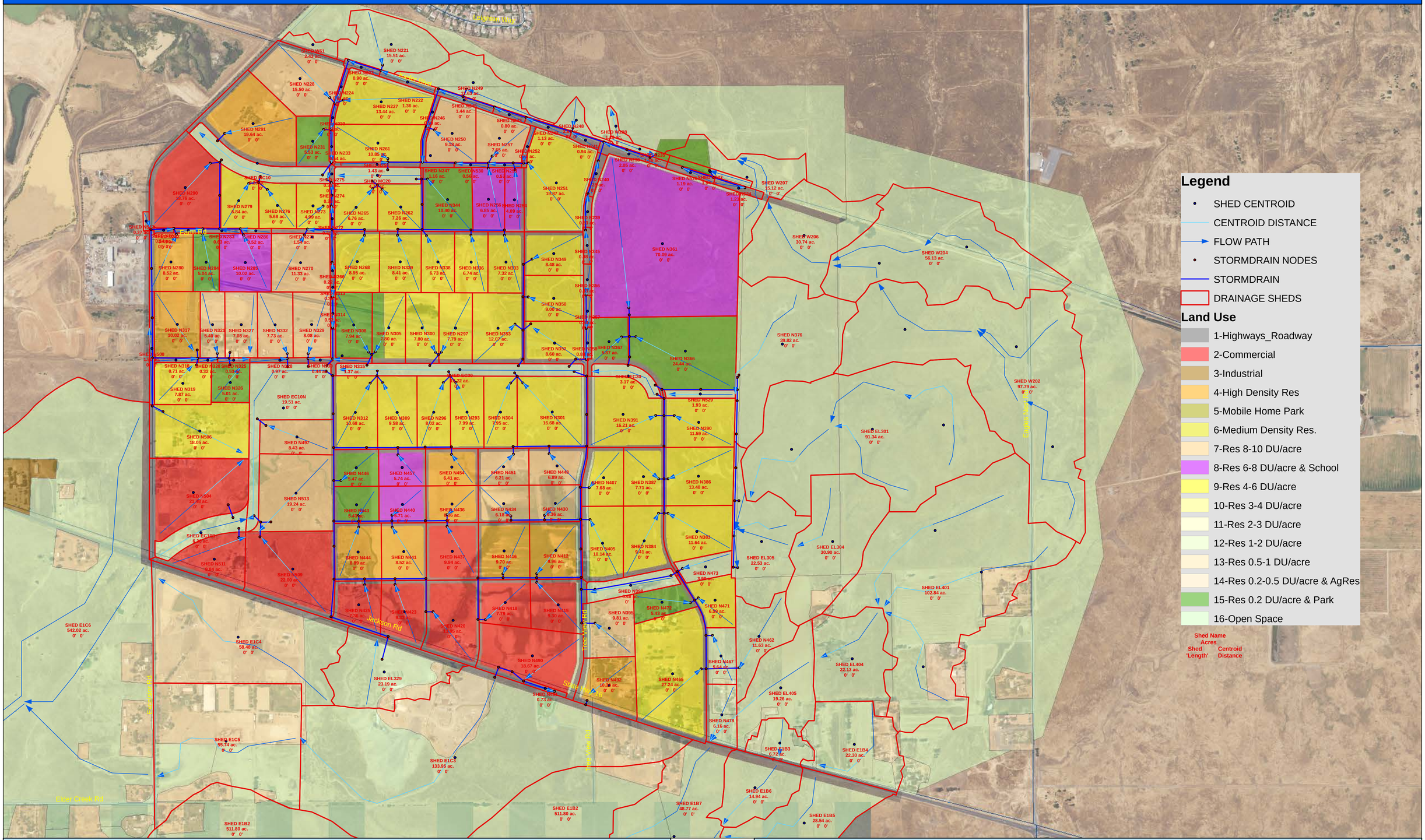
CIVIL ENGINEERING SOLUTIONS, INC.

PROPOSED PROJECT SHEDS ALT1 PH1
JULY 2017

JACKSON TOWNSHIP

SHEET
SH-2 A1Ph1

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

PROPOSED PROJECT SHEDS ALT1 PH2
JULY 2017

0 250 500 1,000
Feet

JACKSON TOWNSHIP

SHEET
SH-2 A1Ph2

JACKSON TOWNSHIP

BASIN NAME: MC10-E
WQ POOL ELEVATION: 0.00'
100 YR WSE: 93.42'
BOTTOM ELEVATION: 82.93'
BASIN AREA: 8.3 Ac.

BASIN NAME: MC10-W
WQ POOL ELEVATION: 0.00'
100 YR WSE: 79.68'
BOTTOM ELEVATION: 74.00'
BASIN AREA: 8.3 Ac.

BASIN NAME: EC10-N
WQ POOL ELEVATION: 94.79'
100 YR WSE: 100.14'
BOTTOM ELEVATION: 90.10'
BASIN AREA: 8.8 Ac.

BASIN NAME: EC10
100 YR WSE: 100.10'
BOTTOM ELEVATION: 87.72
BASIN AREA: 9.2 Ac.

BASIN NAME: L523
WQ POOL ELEVATION: 0.00'
100 YR WSE: 0.00'
BOTTOM ELEVATION: 0.00'
BASIN AREA: 0.0 Ac.

SWQ BASIN = N292
SWQ BASIN = N521
SWQ BASIN = N331
SWQ BASIN = N516
SWQ BASIN = N689
SWQ BASIN = N527
SWQ BASIN = N531
Channel

Legend

- Stormdrain Nodes
- Stormdrain Pipes
- SWQ_Areas
- Sheds
- Channels And Basins

landuse

Landuse

- 1-Roadway
- 2-Commercial
- 3-Industrial
- 4-High Density Res
- 5-Mobile Home Park
- 6-Medium Density Res.
- 7-Res 8-10 DU/acre
- 8-Res 6-8 DU/acre & School
- 9-Res 4-6 DU/acre
- 10-Res 3-4 DU/acre
- 11-Res 2-3 DU/acre
- 12-Res 1-2 DU/acre
- 13-Res 0.5-1 DU/acre
- 14-Res 0.2-0.5 DU/acre & AgRes
- 15-Res 0.2 DU/acre & Park
- 16-Open Space

NOTE:
All pipes not otherwise indicated are 12" roadway

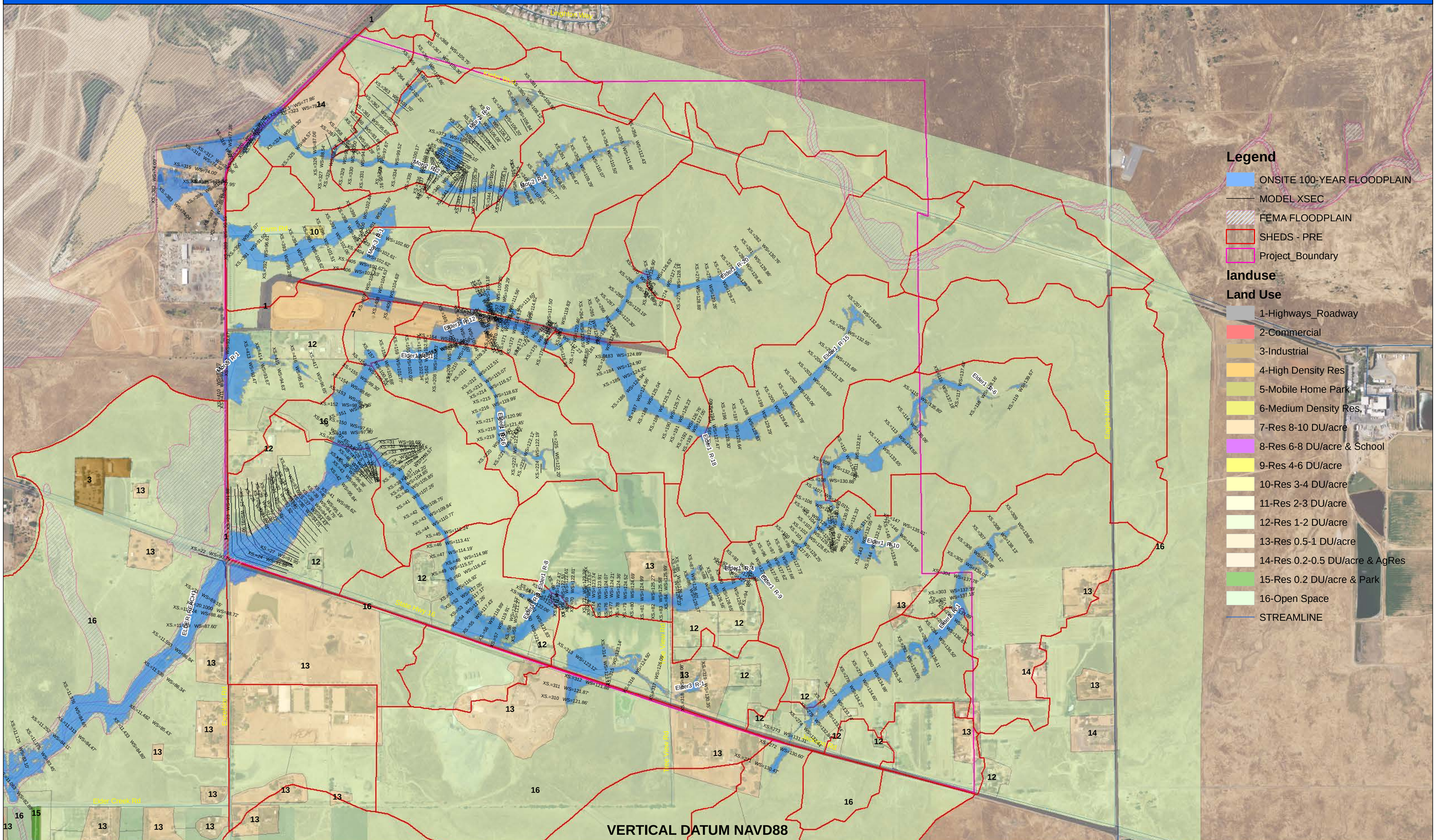
CIVIL ENGINEERING SOLUTIONS, INC.

PROJECT MITIGATION IMPROVEMENTS
DECEMBER 2017

JACKSON TOWNSHIP

SHEET
DR-1

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

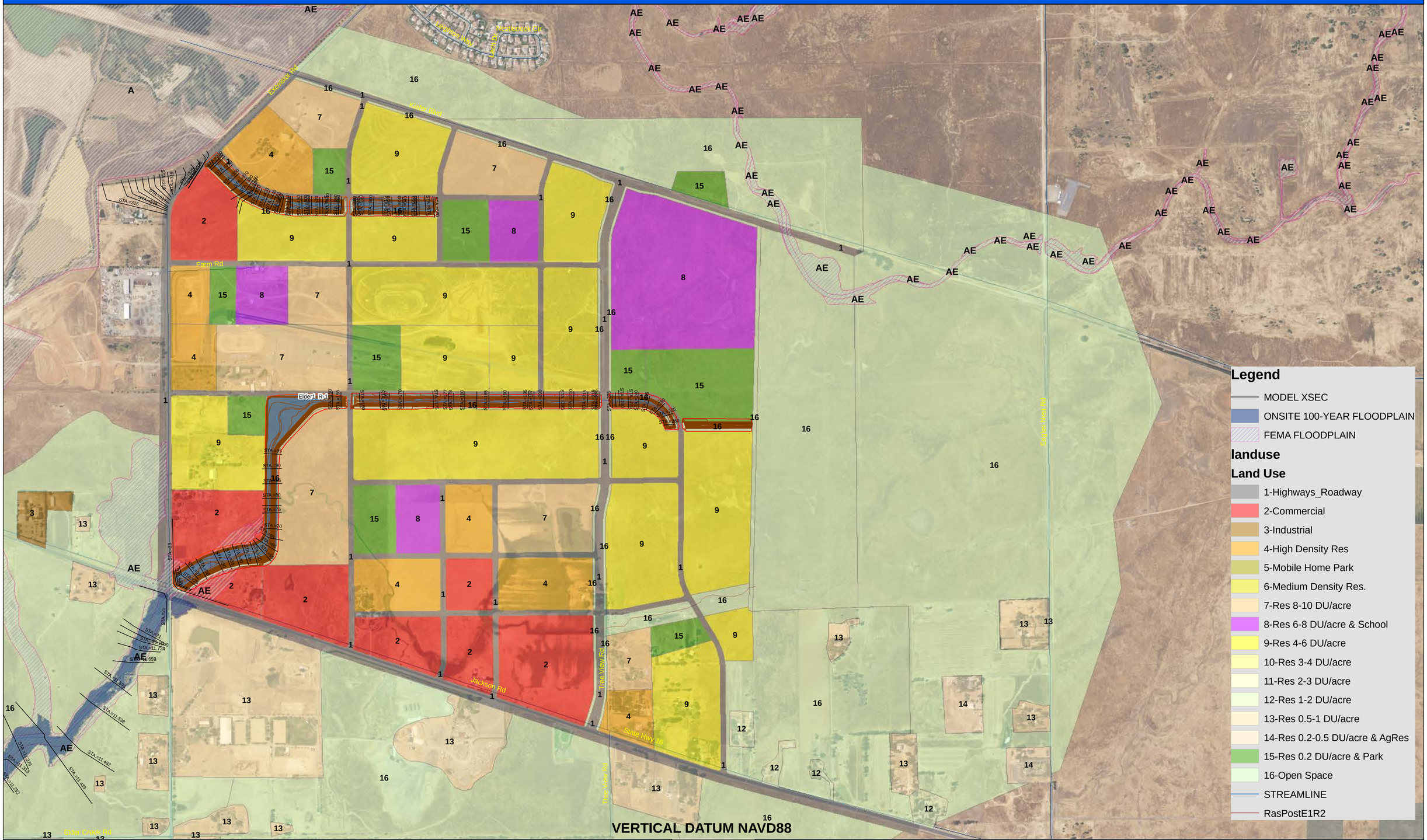
EXISTING 100-YR FLOODPLAIN
DECEMBER 2017

0 245 490 980
Feet

JACKSON TOWNSHIP

SHEET
FP-1

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

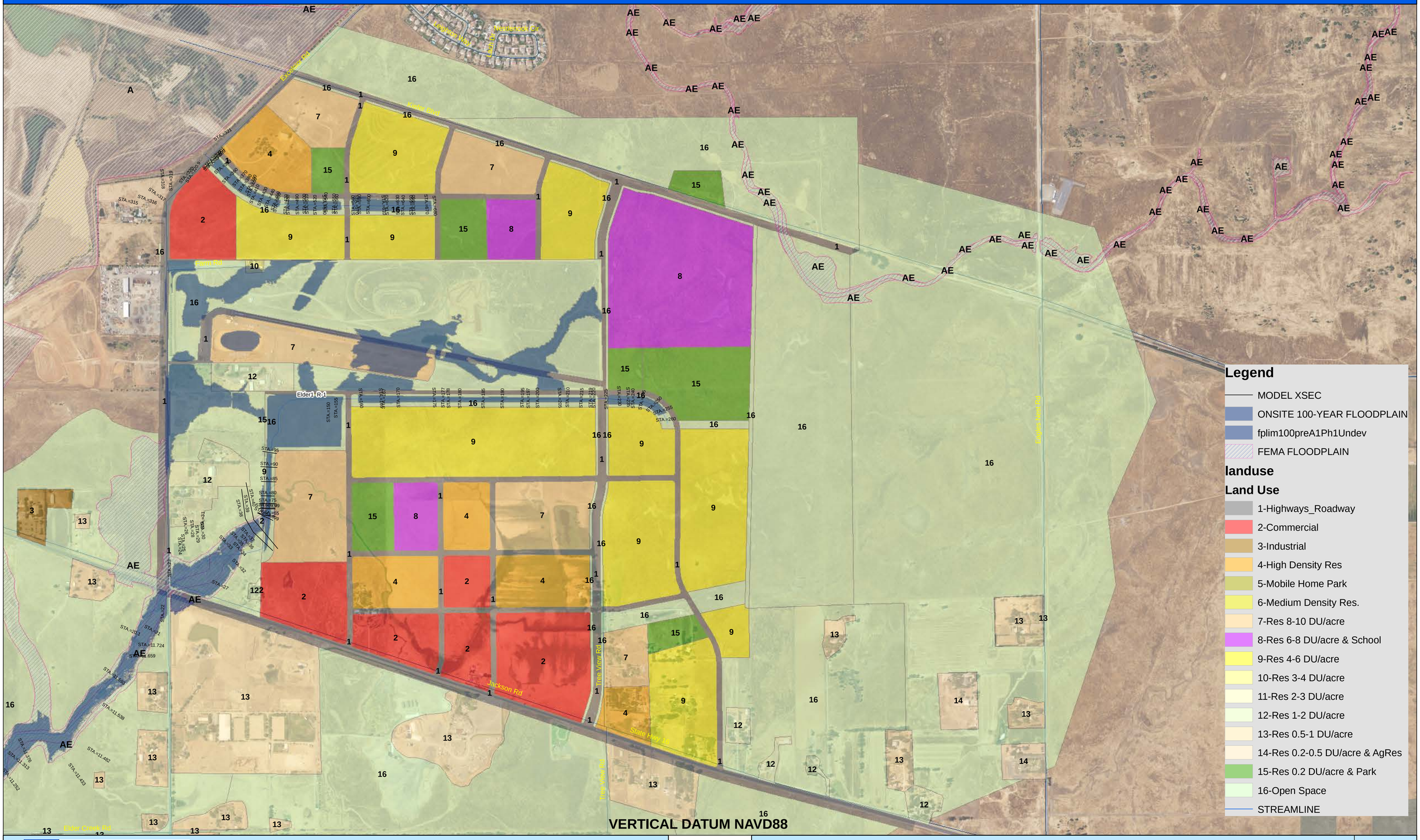
PROPOSED 100-YR FLOODPLAIN
DECEMBER 2017

0 250 500 1,000
Feet

JACKSON TOWNSHIP

SHEET
FP-2

JACKSON TOWNSHIP



VERTICAL DATUM NAVD88

CIVIL ENGINEERING SOLUTIONS, INC.

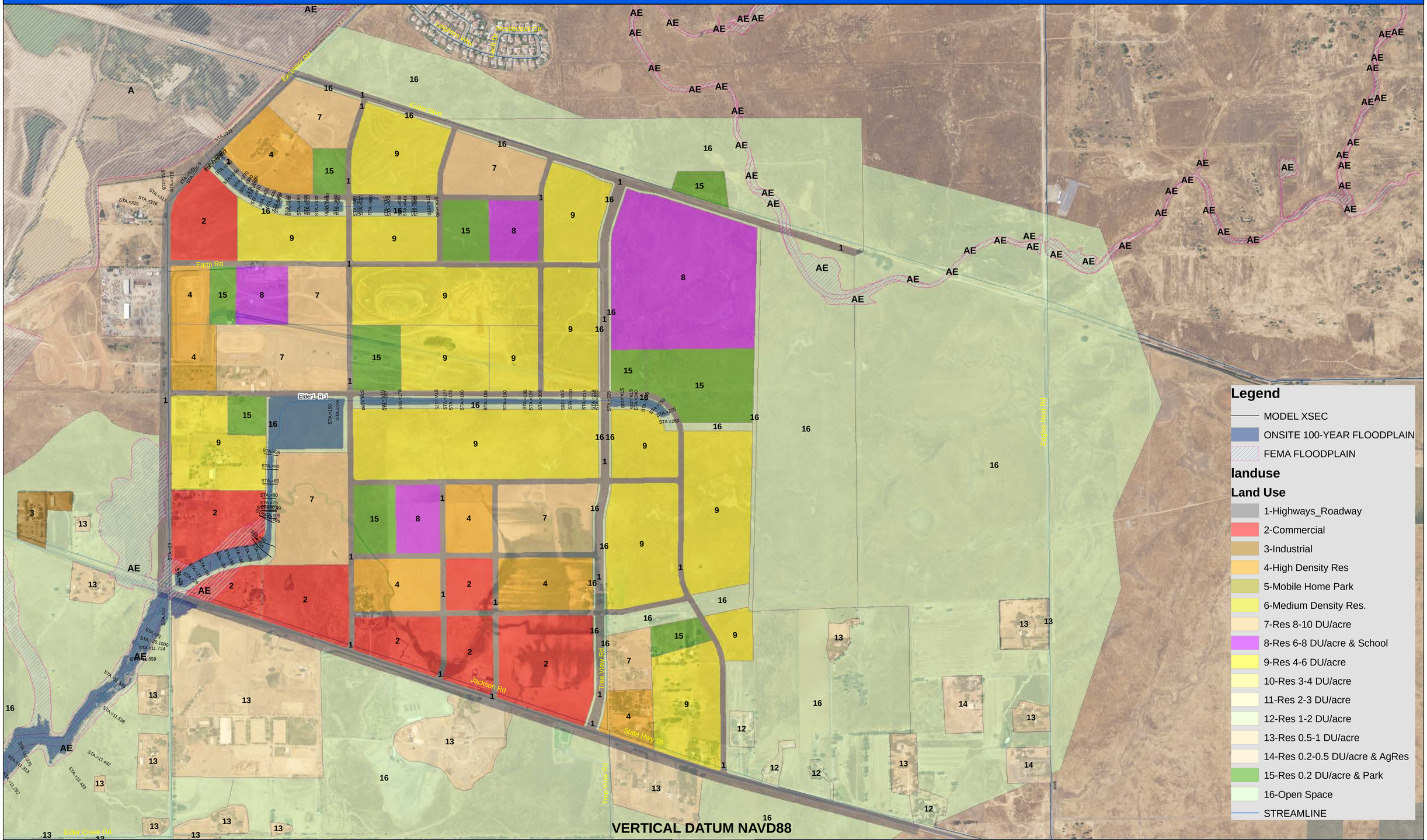
PROPOSED 100-YR FLOODPLAIN - ALT 1 PH 1
JULY 2017

0 250 500 1,000 Feet

JACKSON TOWNSHIP

SHEET FP-3

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

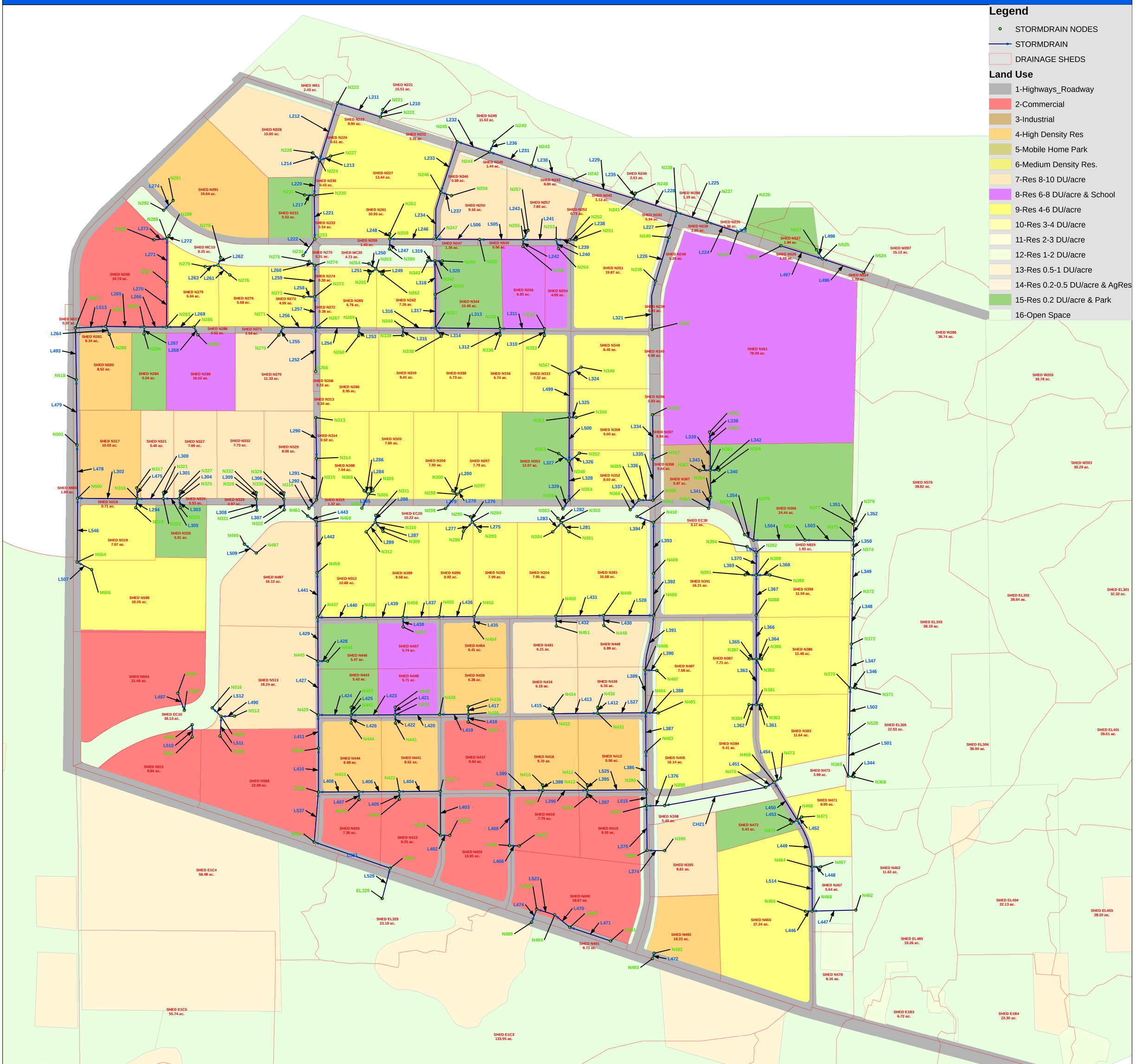
PROPOSED 100-YR FLOODPLAIN - ALT 1 PH 2
JULY 2017

0 250 500 1,000
Feet

JACKSON TOWNSHIP

SHEET
FP-4

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

PROPOSED PROJECT SHEDS
JUNE 2016

0 200 400 800
Feet

JACKSON TOWNSHIP

SHEET
SD-1

JACKSON TOWNSHIP

STORM DRAIN SYSTEM NODE DATA

NAME	X	Y	INVERT	GROUND/RIM	SEL/AGL	MOLTE Q
N221	6765302	1957481	105.84	114.03	107.603	2.891
N222	6765281	1957414	104.44	112.08	106.994	3.130
N223	6764892	1957540	100.81	106.26	102.116	3.298
N224	6764731	1957023	96.97	106.33	100.291	10.341
N225	6764830	1957060	98.34	109.43	100.972	2.489
N228	6764668	1957091	97.53	102.4	100.61	5.398
N230	6764681	1956708	95.63	104.39	98.169	12.38
N231	6764595	1957009	99.84	104.4	100.287	0.95
N233	6764687	1956313	94.42	100.35	95.232	12.459
N234	6764582	1956163	85.6	100	90.12	12.459
N235	6768573	1956404	119.6	138.15	119.864	0.231
N236	6768508	1956375	118.61	126.23	118.89	0.231
N237	6768231	1956466	117.26	124.29	117.66	0.231
N238	6767954	1956552	115.11	122.35	117.582	2.480
N239	6767765	1956931	117.69	125.08	118.558	0.929
N240	6767885	1956326	116.62	122.09	118.199	1.584
N241	6767567	1956678	111.38	119.6	112.518	2.757
N242	6767021	1958847	108.63	115.67	110.369	3.27
N243	6766644	1956872	105.86	112.69	108.879	3.612
N244	6766265	1957097	103.85	109.7	107.065	4.425
N245	6765973	1957190	101.68	107.68	105.73	4.714
N246	6765826	1956734	99.53	104.7	103.453	7.373
N247	6765778	1956310	97.87	107.2	102.476	22.318
N248	6767562	1956726	111.48	118	112.528	0.446
N249	6766307	1957193	104.62	108.63	107.552	2.126
N250	6765921	1956704	101.14	113.4	104.424	3.081
N251	6767545	1956035	115.38	127.02	116.652	3.694
N252	6766990	1956304	113.06	121.25	115.281	4.063
N253	6766868	1955307	108.08	119.03	110.463	5.394
N254	6766889	1955224	112.83	125.6	113.353	2.238
N255	6766570	1956306	102.8	113.91	107.239	10.597
N256	6766568	1956244	107.41	119.88	108.073	1.652
N257	6766615	1956390	107.61	118.4	108.447	2.483
N259	6765364	1956313	97.16	102.68	100.547	26.759
N260	6765362	1956220	97	101.1	99.95	26.799
N261	6765363	1956359	98.93	106.38	100.739	1.982
N262	6765296	1955996	104.68	110.4	105.493	5.579
N263	6765238	1955842	104.46	109.4	104.852	3
N264	6765177	1956089	96.64	106	99.56	3
N265	6765184	1956001	104.86	108.4	105.466	1.356
N266	6764695	1955115	100.36	105.61	100.509	0.113
N267	6764694	1955511	97.55	104.29	99.226	6.569
N268	6765084	1955440	100.74	110.42	101.383	1.737
N269	6765085	1955509	100.33	110.03	100.995	1.737
N270	6764383	1954444	99.14	106.4	100.283	3.959
N271	6764400	1955514	98.55	102.38	99.937	4.73
N272	6764688	1955791	96.35	102.06	97.81	7.799
N273	6764588	1955790	97.68	104.4	98.121	0.853
N274	6764688	1956072	95.58	100.31	96.036	7.958
N275	6764636	1956110	85.6	101.7	90.12	8.119
N276	6763920	1955987	94.25	100.4	94.743	0.979
N277	6763813	1956075	95.44	99.4	93.715	2.304
N278	6763837	1956146	78	96	79.22	2.304
N279	6763697	1956063	94.12	98.4	94.668	1.2
N280	6763231	1955450	85.33	96.4	86.299	3.788
N281	6762799	1955522	83.24	91.91	85.508	21.547
N282	6763146	1955517	82.77	97.08	84.791	22.497
N283	6763348	1955517	82.5	100.04	83.959	26.596
N284	6763145	1955454	85.14	98.4	85.562	0.857
N285	6763632	1955446	94.91	102.4	96.556	2.656
N286	6763596	1955517	94.45	100.39	95.976	2.924
N287	6763349	1955918	76.46	96.9	80.312	26.596
N288	6763351	1956316	77.03	96.4	79.185	36.931
N289	6763370	1956343	77	96.4	79.04	36.931
N290	6763235	1956304	78.1	96.4	79.7	9.449
N291	6763408	1956660	91.92	96.29	92.448	8.556
N292	6763322	1956673	76.6	94	78.96	8.556
N293	6763178	1956374	118.92	126.4	119.538	1.505
N294	6766110	1953756	118.3	123.96	118.623	3.146
N295	6766029	1953637	118.98	122.4	119.605	1.512
N297	6766007	1954039	113.24	120.4	113.834	1.564
N298	6765972	1954007	112.96	118.43	113.538	3.253
N299	6765868	1953878	106.3	117.76	109.51	3.253
N300	6765933	1954038	113.25	116.4	113.846	1.568
N301	6765982	1953699	122.9	128.4	124.819	3.422
N302	6766913	1953751	122.28	128.39	122.675	5.018
N303	6766884	1953789	110.6	124.3	113.54	5.018
N304	6766836	1953607	122.95	128.4	123.562	1.497
N305	6765211	1954041	105.52	112.4	108.643	1.569
N306	6765172	1954008	104.72	110.33	108.453	3.11
N307	6765114	1953883	104.25	111.7	108.28	3.11
N308	6765133	1954039	105.19	108.4	108.4	1.411
N309	6765303	1953671	113.15	119.4	113.82	1.825
N310	6765234	1953755	112.26	116.66	112.651	4.159
N312	6765152	1953666	113.21	116.4	114	2.264
N313	6764697	1954098	103.93	107.79	104.113	0.174
N314	6764702	1954331	101.79	105.51	102.084	0.445
N315	6764704	1953958	99.61	103.31	99.965	1.151
N316	6764634	1953879	94.1	101	98.67	1.151
N317	6763079	1954063	89.17	96.4	92.736	4.358
N318	6763086	1953965	87.74	94.1	92.156	0.94
N319	6763070	1953884	89.47	100.4	92.321	1.403
N320	6763319	1953967	89.28	96.32	92.946	4.465
N321	6763321	1954023	90.11	96.4	93.145	1.866
N325	6763462	1953968	89.77	97.27	93.132	2.428
N326	6763472	1953885	90.75	100.4	93.194	0.851
N327	6763473	1954034	90.66	98.4	93.554	2.462
N328	6764159	1953963	93.44	100.26	99.038	3.196
N329	6764408	1954020	94	104.4	99.123	2.819
N330	6764407	1953962	93.44	101.62	98.745	3.039
N331	6764164	1953862	92.7	100.26	98.64	3.196
N332	6764159	1954021	94	101.4	99.66	2.693
N333	6765792	1955440	108.87	124.46	110.938	1.601
N334	6766750	1955501	108.51	121.38	110.777	1.601
N335	6766361	1955504	106.18	111.26	109.724	3
N336	6765731	1955442	106.54	120.3	109.826	1.282
N337	6765775	1955508	102.28	108.33	104.334	6.197
N338	6765629	1955433	103.31	118.4	104.489	1.283
N339	6765480	1955441	104.89	113.4	105.53	1.623
N340	6765484	1955512	104.47	110.48	105.218	1.623
N341	6765776	1955811	101.25	106.06	102.954	6.197
N342	6765771	1956114	100.22	106.84	101.665	8.196
N343	6765706	1956115	100	104.4	101.108	8.196
N344	6765838	1956114	101.11	112.07	101.899	1.88
N345	6767734	1955495	118.83	128.14	119.232	0.508
N347	6766987	1955092	118.45	126.99	122.622	1.709
N348	6766983	1954303	116.17	122.7	120.008	7.819
N349	6767092	1955155	119.16	129.4	122.982	1.709
N350	6767046	1954701	117.8	128.4	121.639	1.625
N351	6766984	1954702	117.19	124.85	121.474	3.445
N352	6767077	1954378	117.37	127.4	120.475	1.962
N353	6766889	1954374	117.36	125.4	120.597	2.214
N354	6766982	1953955	115.65	123	116.378	7.819
N355	6766928	1953875	110.6	121.1	113.78	7.819
N356	6767738	1954724	125.32	128.39	125.608	0.427
N357	6767742	1954323	122.98	126.52	123.398	0.859
N358	6767742	1953952	120.82	128.19	121.393	1.292
N359	6767616	1953956	120.09	126.78	120.368	1.292
N360	6767537	1953807	112.8	121.5	116.12	1.292
N361	6768252	1954568	126.24	133.4	128.406	21.25
N362	6768257	1954485	126.13	133.85	128.244	21.25
N363	6768259	1954225	125.28	135.68	127.645	30.167
N364	6768263	1953980	125.01	134.31	127.055	30.167
N365	6768244	1953879	117.44	126	122.06	30.167
N366	6768337	1954224	127.87	136.4	128.984	4.587
N367	6768165	1954221	128.33	131.4	129.216	2.633
N368	6769356	1951455	124.26	130.1	126.99	12.331
N369	6769004	1951460	123.67	130.15	126.933	12.331
N370	6769522	1952258	121.7	130.03	126.729	56.333
N371	6769522	1952257	122.26	130.32	126.773	25.601
N372	6769533	1952652	121.34	131.81	125.937	56.333
N373	6769541	1953356	120.97	131.33	125.161	56.333
N374	6769550	1953466	120.6	132.82	124.363	56.333
N375	6769551	1953588	119.98	132.23	124.118	73.449
N376	6769719	1953764	122.9	130.47	124.457	8.254
N377	6769553	1953735	122.82	130.51	124.39	8.254
N378	6768643	1953563	119.27	129.19	122.171	74.269
N379	6768368	1953642	118.4	128.2	122.1	74.269
N381	6768675	1952107	124.76	128.47	125.839	4.523
N382	6768674	1952518	122.66	128	124.539	9.81
N383	6768722	1952107	125.53	132.3	126.289	2.311
N384	6768609	1952107	125.64	131.18	126.379	2.16
N386	6768722	1952519	124.14	132.17	124.975	2.649
N387	6768610	1952519	124.23	132.93	124.858	1.637
N388	6768673	1952913	121.95	128.21	123.562	9.81
N389	6768673	1953276	120.11	128.38	121.992	19.122
N390	6768798	1953278	122.83	132.4	123.627	2.278
N391	6768574	1953279	122.69	131.4	124.151	3.494
N392	6768675	1953482	119.83	129.21	121.634	19.122
N394	6768591	1953533	118.4	130.07	121.51	19.122
N395	6767847	1950789	118.11	126.4	121.182	3.351
N396	6767886	1950750	117.58	124.6	119.345	3.351
N397	6767683	1951193	115.81	124.94	118.832	19.915
N398	6767847	1951195	116.31	128.04	119.015	16.599
N399	6767681	1951338	114.6	124.3	118.727	38.417
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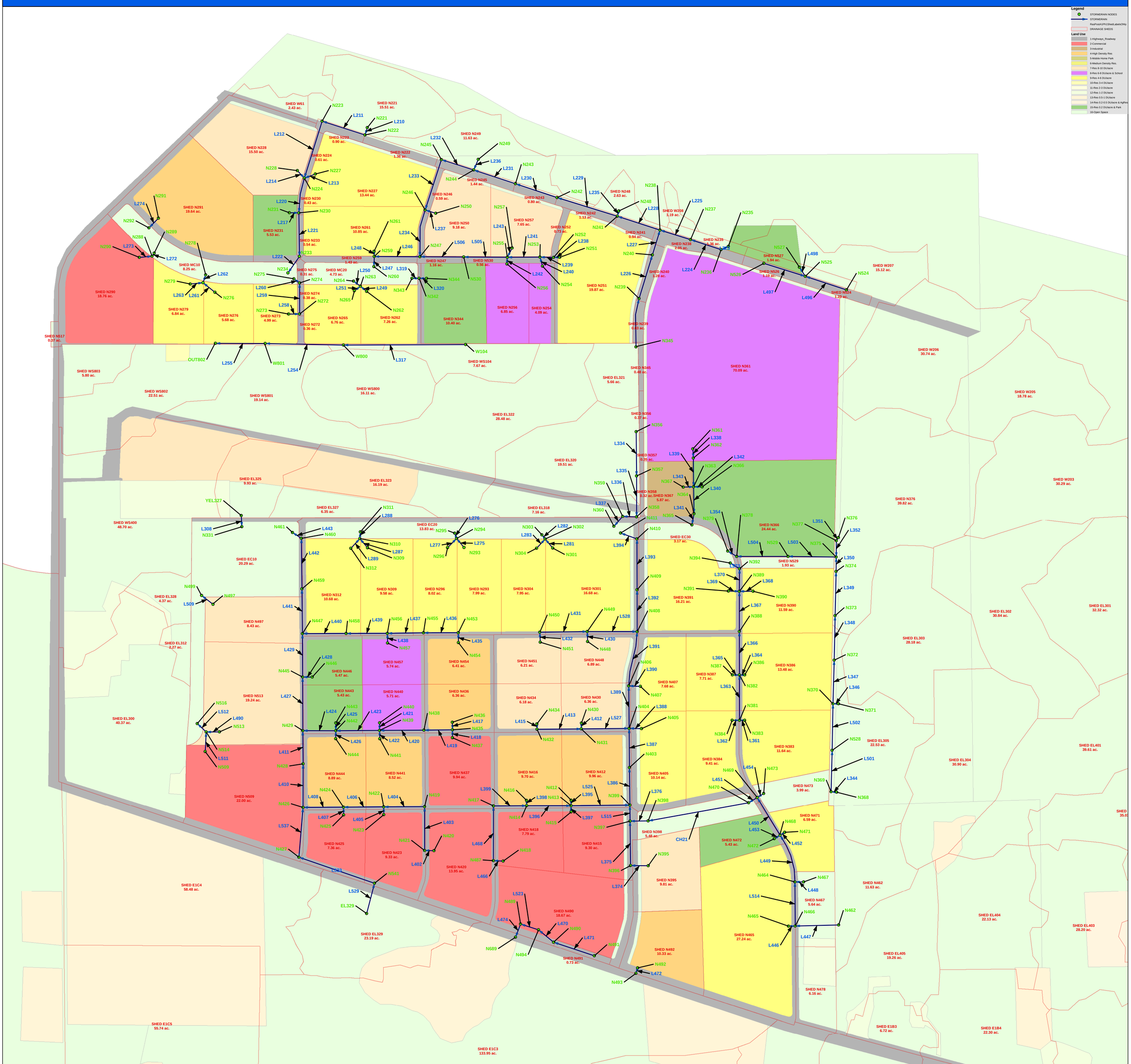
N404	6767674	1952034	113.48	126.69	118.207	52.141
N405	6767787	1952031	117	131.25	118.791	2.23
N406	6767671	1952419	113.17	124.49	117.911	56.999
N407	6767777	1952414	117	132.58	118.19	1.668
N408	6767747	1952911	112.78	125.22	117.443	67.201
N409	6767746	1953291	112.48	123.32	116.926	67.201
N410	6767745	1953792	112.12	124.22	116.319	67.201
N412	6767749	1951383	116.3	125.24	119.439	4.241
N413	6767748	1951333	115.33	123.5	119.153	16.703
N414	6767746	1951333	115.83	122	119.232	8.157
N415	6767749	1951276	116.33	124.38	119.533	4.58
N416	6767744	1951381	116.83	125.21	119.513	4.323
N417	6767444	1951331	117.57	121.76	119.343	4.051
N418	6767533	1950831	119.9	124.4	120.821	4.051
N419	6765820	1951325	110.91	120.2	113.47	7.119
N420	6765806	1950908	112.24	123.9	114.763	7.119
N421	6765820	1950927	112	121.21	114.534	7.119
N422	6765450	1951322	109.13	118.36	112.479	11.679
N423	6765451	1951252	110.37	120.4	112.676	4.854
N424	6765085	1951320	108.26	118.56	112.068	15.324
N425	6765087	1951248	110.06	120.39	112.396	3.625
N426	6764719	1951318	107.45	117.24	111.634	17.025
N428	6764719	1951713	106.92	114.79	111.157	17.025
N429	6764716	1952013	106.02	116.18	110.794	36.445
N430	6767243	1952082	119	128.22	119.654	2.243
N431	6767241	1952029	116.67	123.07	119.066	4.523
N432	6766840	1952025	118.07	120.73	119.496	2.27
N434	6766839	1952074	118.8	126.27	119.736	2.27
N435	6766073	1952021	110.18	120.25	112.961	7.831
N436	6766073	1952089	111.57	125.4	113.534	2.849
N437	6766073	1951940	110.92	122.9	113.192	5.169
N438	6765814	1952018	109.58	119.82	112.53	7.831
N439	6765412	1952015	108.15	118.14	111.862	13.146
N440	6765413	1952084	110.05	122.4	112.056	1.661
N441	6765415	1951939	109.73	120.9	112.208	3.802
N442	6765016	1952012	107.22	116.25	111.339	17.511
N443	6765016	1952083	109.38	118.4	111.344	0.932
N444	6765015	1951940	109.03	118.4	111.643	3.968
N445	6764715	1952495	105.48	113.3	109.75	38.333
N446	6764802	1952499	108.49	118.4	109.831	0.939
N447	6764714	1952893	105.05	113.2	108.883	44.794
N448	6767298	1952821	118.77	125.62	121.158	2.448
N449	6767295	1952912	117.99	125.6	120.596	4.727
N450	6766865	1952906	120.74	125.22	122.899	2.277
N451	6766869	1952815	121.27	126.4	123.387	2.277
N453	6766126	1952902	113.76	119.83	115.696	2.872
N454	6766127	1952812	114.29	125.4	116.464	2.872
N455	6765811	1952901	111.68	118.28	113.02	2.872
N456	6765483	1952896	110.26	116.28	112.189	4.552
N457	6765485	1952808	111.02	122.4	112.445	1.671
N458	6765109	1952895	108.39	114	109.779	4.552
N459	6764709	1953299	104.61	110.25	107.663	44.794
N460	6764704	1953757	104.11	110.1	105.098	44.794
N461	6764623	1953810	94.1	110.1	98.67	44.794
N464	6769177	1950642	125.09	132.52	128.144	9.471
N465	6769119	1950240	126.65	135.12	129.753	5.917
N466	6769179	1950242	126.19	131.97	129.498	8.005
N467	6769256	1950642	126.3	130.96	128.221	0.971
N468	6769043	1951065	123.59	129.95	126.001	13.354
N469	6768835	1951407	118.66	128.66	120.443	14.682
N470	6768758	1951360	117.71	127	119.023	14.682
N471	6769085	1951092	124.88	133.3	126.088	1.292
N472	6768990	1951034	124.94	129.45	126.056	0.932
N473	6768894	1951443	120.07	126.23	120.53	0.679
N487	6766444	1950834	118.57	122.22	119.737	4.051
N489	6766691	1950260	118.43	124.63	120.872	9.483
N490	6766989	1950095	121.9	125.91	123.495	9.483
N491	6767360	1949972	124.17	127.19	125.026	0.382
N492	6767751	1949862	126.34	130.4	128.117	4.458
N493	6767736	1949813	126.04	129.9	127.04	4.458
N497	6764159	1953476	108.08	112.8	109.83	5.685
N499	6764052	1953956	91.2	111.05	98.64	5.685
N500	6762544	1953970	86.67	95.88	91.116	17.205
N501	6762540	1954450	85.47	94.91	88.957	17.205
N503	6763509	1952056	89.8	100.1	98.23	10.771
N504	6763450	1952209	95.54	100.4	99.219	10.771
N506	6762871	1953326	92.14	100.4	94.293	3.798
N509	6763853	1951623	108.88	117.9	112.435	11.035
N511	6763579	1951814	102.21	114.95	102.754	5.117
N513	6763962	1952002	110.01	117.82	111.336	6.717
N514	6763841	1952001	108.11	117.9	108.762	17.904
N516	6763761	1952077	90	111	98.23	17.904
N517	6762525	1955509	83.95	90.28	86.285	17.334
N518	6762533	1955042	84.31	89.25	87.447	17.205
N524	6769644	1956010	133.45	136.46	133.796	0.606
N525	6769271	1956132	131.17	136.2	131.677	1.205
N526	6768896	1956251	133.46	137.2	133.804	0.599
N527	6769216	1956215	130.6	136	131.107	1.026
N528	6769514	1951835	122.66	129.5	126.786	12.331
N529	6769113	1953894	119.64	134.26	123.349	74.269
N530	6766175	1956308	99.71	109.24	104.924	10.899
N689	6766645	1950141	118	123.27	119.5	9.483
N494	6766853	1950208	121.41	126	122.356	9.483
N541	6765367	1950630	112.09	120	114.286	4.338
EL329	6765295	1950353	112.52	118	114.927	4.338
N427	6764681	1950866	109.64	118.5	112.651	4.338
N411	6767597	1953805	112	128.95	116.12	67.201
N295	6766093	1953804	107.93	120.1	110.38	3.146
N311	6765238	1953816	104.1	114.3	108.34	4.159
N462	6765573	1950252	127.78	133	129.712	2.126
N554	6762541	1953394	90.68	94.51	92.079	3.798
N555	6763560	1951925	89.8	110	98.23	5.117
N322	6764411	1953866	92.5	101.62	98.64	3.039

STORM DRAIN SYSTEM PIPE DATA

NAME	USNODE	DSNODE	DIAMETER	LENGTH	US INV	DS INV	SLOPE	MOLTE FLOW
L412	N430	N431	1.00	53	119	118.4	0.585	2.2
L210	N221	N222	1.00	70	105.84	105.44	0.586	2.9
L211	N222	N223	1.00	408	104.44	102.06	0.581	3.1
L212	N223	N224	1.25	541	100.81	98.47	0.433	3.3
L220	N224	N230	1.75	320	96.97	96.08	0.278	11.3
L213	N227	N224	1.00	107	98.34	97.72	0.579	2.5
L214	N228	N224	1.50	93	97.53	97.22	0.333	5.4
L221	N230	N233	2.00	395	95.83	94.92	0.23	13.2
L217	N231	N230	1.00	86	99.84	99.33	0.581	1.0
L222	N233	N234	2.00	182	94.42	85.6	0.231	13.4
L223	N235	N236	1.00	72	119.6	119.41	0.264	0.2
L224	N236	N237	1.00	291	118.61	117.86	0.258	0.2
L225	N237	N238	1.00	290	117.26	116.51	0.259	0.2
L228	N238	N241	1.00	407	115.11	114.06	0.26	2.5
L226	N239	N240	1.00	413	117.69	116.62	0.259	0.9
L227	N240	N238	1.00	236	116.62	116.01	0.258	1.6
L229	N241	N242	1.25	572	111.36	109.88	0.259	2.9
L230	N242	N243	1.25	397	108.63	107.86	0.191	3.5
L231	N243	N244	1.25	399	105.86	105.1	0.193	3.8
L232	N244	N245	1.50	307	103.85	103.38	0.15	6.0
L233	N245	N246	1.50	479	101.96	100.31	0.338	6.3
L246	N246	N247	2.00	430	99.56	98.37	0.277	9.4
L246	N247	N259	2.50	414	97.87	97.16	0.171	24.4
L235	N248	N241	1.00	50	111.48	111.36	0.24	0.4
L374	N249	N250	1.00	105	104.62	104.35	0.257	2.1
L237	N250	N246	1.00	100	101.14	100.56	0.58	3.1
L238	N251	N252	1.00	55	115.38	115.06	0.582	3.7
L239	N252	N253	1.00	124	113.06	112.33	0.581	4.1
L241	N253	N255	1.25	296	108.08	106.8	0.432	5.4
L242	N254	N253	1.00	86	112.83	112.33	0.581	1.2
L505	N255	N550	1.75	395	102.8	101.71	0.278	10.6
L242	N256	N255	1.00	62	107.41	107.05	0.581	1.9
L243	N257	N255	1.00	95	107.61	107.05	0.579	2.5
L247	N259	N260	2.50	92	97.16	97	0.174	28.8
L248	N261	N259	1.00	47	98.93	98.66	0.574	2.0
L249	N262	N263	1.00	73	104.88	104.46	0.589	1.6
L250	N263	N264	1.00	78	104.46	96.64	0.577	3.0
L251	N265	N263	1.00	69	104.86	104.46	0.594	1.3
L252	N266	N267	1.00	396	100.36	98.05	0.583	0.1
L257	N267	N272	1.50	280	97.55	96.8	0.339	6.7
L253	N268	N269	1.00	70	100.74	100.33	0.586	1.7
L254	N269	N267	1.00	391	100.33	98.05	0.583	1.7
L255	N270	N271	1.25	79	99.14	98.8	0.43	4.0
L256	N271	N267	1.50	294	98.55	97.55	0.34	4.7
L259	N272	N274	1.75	281	96.35	95.58	0.274	7.9
L258	N273	N272	1.00	100	97.68	97.1	0.58	0.9
L260	N274	N275	1.75	64	95.58	85.6	0.281	8.1
L261	N276	N277	1.00	138	94.25	93.44	0.587	1.0
L262	N277	N278	1.00	76	93.44	78	0.579	2.3
L263	N279	N277	1.00	117	94.12	93.44	0.581	1.2
L264	N280	N281	1.25	79	85.33	84.99	0.43	3.8
L265	N281	N282	3.00	347	83.24	82.77	0.135	22.4
L266	N282	N283	3.00	202	82.77	82.5	0.134	23.4
L270	N283	N287	3.00	401	82.5	78.46	0.135	27.5
L267	N284	N282	1.00	63	85.14	84.77	0.587	0.9
L268	N285	N286	1.00	78	94.91	94.45	0.582	2.7
L269	N286	N283	1.00	248	94.45	93	0.585	2.9
L271	N287	N288	3.50	398	78.46	77.03	0.106	27.5
L272	N288	N289	4.50	34	77.03	77	0.088	37.8
L273	N290	N288	1.75	117	78.1	77.78	0.274	9.4
L274	N291	N292	1.50	123	91.92	76.6	0.341	8.6
L275	N293	N294	1.00	107	118.92	118.3	0.579	1.5
L276	N294	N295	1.00	51	118.3	107.93	0.586	3.1
L277	N296	N294	1.00	117	118.98	118.3	0.581	1.5
L278	N297	N298	1.00	48	113.24	112.96	0.583	1.6
L279	N298	N299	1.00	165	112.96	106.3	0.585	3.3
L280	N300	N298	1.00	50	113.25	112.96	0.58	1.6
L281	N301	N302	1.00	107	122.9	122.28	0.579	3.4
L282	N302	N303	1.00	48	122.28	110.6	0.583	5.0
L283	N304	N302	1.00	114	122.95	122.28	0.579	1.5
L284	N305	N306	1.00	52	105.52	105.25	0.596	1.6
L285	N306	N307	1.50	140	104.72	104.25	0.336	2.6
L286	N308	N306	1.25	50	105.19	104.97	0.44	0.9
L287	N309	N310	1.00	109	113.15	112.51	0.587	1.8
L288	N310	N311	1.25	61	112.26	104.1	0.426	4.2
L289	N312	N310	1.00	120	113.21	112.51	0.583	2.3
L290	N313	N314	1.00	368	103.93	101.79	0.581	0.4
L291	N314	N315	1.00	373	101.79	99.61	0.582	0.4
L292	N315	N316	1.00	105	99.61	94.1	0.581	1.2
L475	N317	N318	1.25	98	89.17	88.74	0.439	4.4
L302	N318	N500	2.25	542	87.74	86.67	0.197	11.8
L294	N319	N318	1.00	82	89.47	88.99	0.585	1.4
L300	N320	N318	1.50	233	89.28	88.49	0.339	5.4
L301	N321	N320	1.00	56	90.11	89.78	0.589	1.9
L305	N325	N320	1.50	143	89.77	89.28	0.343	3.3
L303	N326	N325	1.00	83	90.75	90.27	0.578	0.9
L304	N327	N325	1.00	68	90.66	90.27	0.574	2.5
L308	N328	N331	1.50	101	93.44	92.7	0.337	3.2
L306	N329	N330	1.00	56	94	93.44	0.586	2.8
L307	N330	N322	2.00	95	93.44	92.5	0.232	3.0
L309	N332	N328	1.00	58	94	93.44	0.586	2.7
L310	N333	N334	1.00	61	108.87	108.51	0.574	1.6
L311	N334	N335	1.00	399	108.51	106.18	0.584	1.6
L313	N335	N337	1.00	585	106.18	102.78	0.581	3.0
L312	N336	N335	1.00	61	106.54	106.18	0.59	1.3
L317	N337	N341	1.50	302	102.28	101.25

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

PROPOSED PROJECT SHEDS ALT 1 PH 1
JULY 2016

JACKSON TOWNSHIP

SHEET
SD-3

JACKSON TOWNSHIP

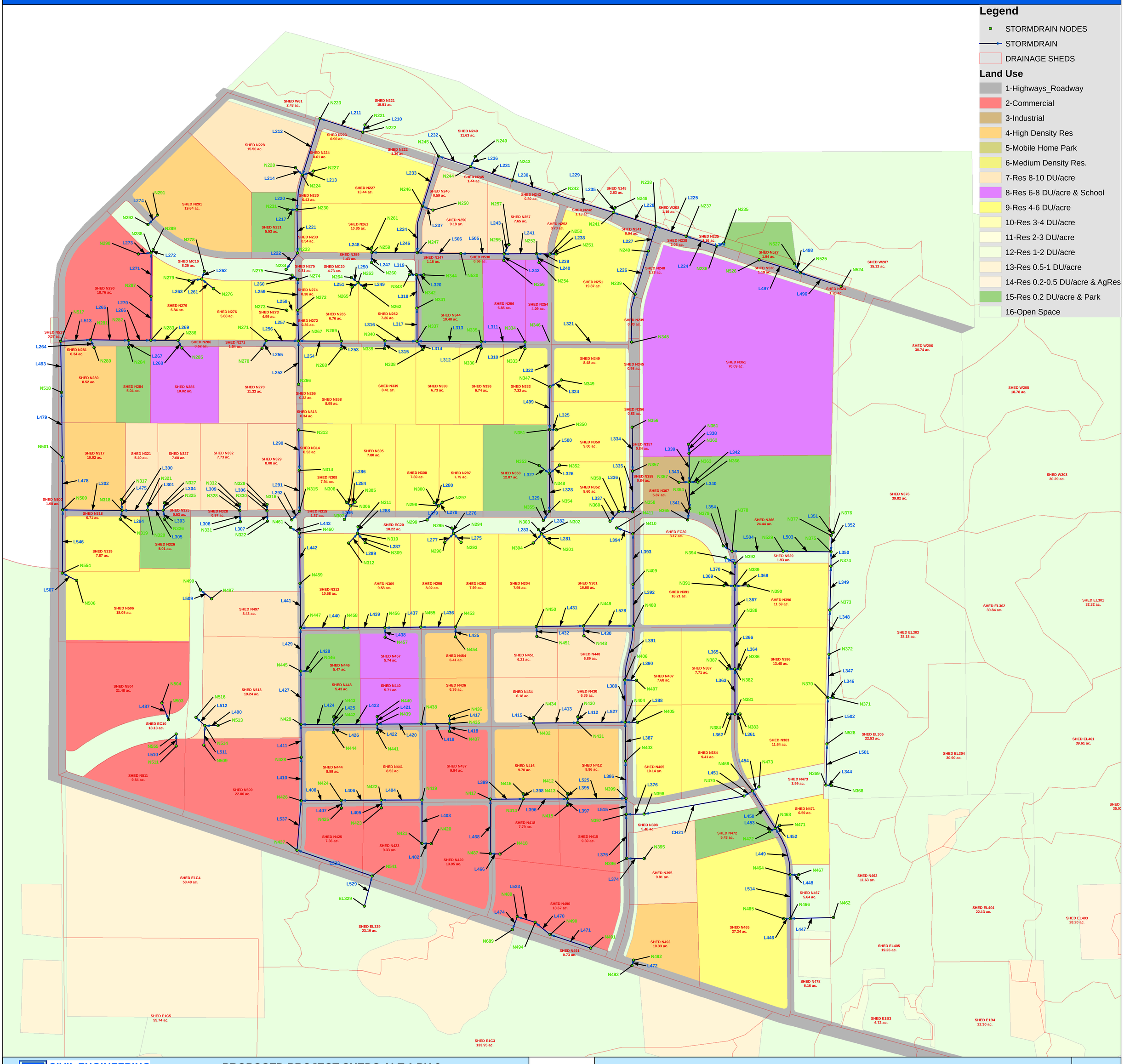
STORM DRAIN SYSTEM NODE DATA

NAME	X	Y	INVERT	GROUND/R	WSEL/HGL	NOLTE Q
N221	6765302	1957481	105.84	114.03	107.603	2.891
N222	6765281	1957414	104.44	112.08	106.994	3.135
N223	6764892	1957540	100.81	106.26	102.116	3.298
N224	6764731	1957023	96.97	106.33	100.291	10.341
N227	6764830	1957060	98.34	109.4	100.972	2.489
N228	6764668	1957091	97.53	102.4	100.61	5.368
N230	6764681	1956708	95.83	104.39	98.169	12.28
N231	6764595	1956709	99.84	104.4	100.287	0.95
N233	6764687	1956313	94.42	100.35	95.241	12.459
N234	6764582	1956163	87.6	100	89.41	12.459
N235	6768573	1956404	119.6	138.15	119.864	0.231
N236	6768508	1956375	118.61	126.23	118.89	0.231
N237	6768231	1956466	117.26	124.29	117.66	0.231
N238	6767954	1956552	115.11	122.35	117.582	2.489
N239	6767765	1955931	117.69	125.08	118.558	0.929
N240	6767885	1956326	116.62	122.09	118.199	1.584
N241	6767567	1956678	111.36	119.6	112.518	2.757
N242	6767021	1956847	108.63	115.67	110.43	3.27
N243	6766644	1956972	105.86	112.69	108.07	3.612
N244	6766265	1957097	103.85	109.7	106.274	4.425
N245	6765973	1957190	101.68	107.68	104.936	4.714
N246	6765826	1956734	99.56	104.7	102.646	7.371
N247	6765778	1956310	97.87	107.2	101.662	22.318
N248	6767582	1956726	111.48	116	112.528	0.448
N249	6766307	1957193	104.62	108.63	106.765	2.126
N250	6765921	1956704	101.14	113.4	103.625	3.081
N251	6767045	1956305	115.38	127.02	116.652	3.694
N252	6766990	1956304	113.06	121.25	115.281	4.063
N253	6766866	1956307	108.08	119.03	110.463	5.364
N254	6766889	1956224	112.83	120.4	113.353	1.238
N255	6766570	1956306	102.8	113.91	106.452	10.597
N256	6766568	1956244	107.41	119.88	108.073	1.852
N257	6766615	1956390	107.61	118.4	108.447	2.483
N259	6765364	1956313	97.16	102.69	99.733	26.759
N260	6765362	1956220	97	101.1	99.1	26.759
N261	6765363	1956359	98.93	106.38	99.911	1.982
N262	6765296	1955996	104.88	110.4	105.493	1.579
N263	6765239	1956042	104.46	109.4	104.84	3
N264	6765177	1956089	96.64	106	99.09	3
N265	6765184	1956001	104.86	108.4	105.406	1.305
W800	6765085	1955509	102.51	110.03	105.613	4.456
W801	6764376	1955524	101.45	106.4	103.933	9.049
OUT802	6763925	1955525	101	103	103	9.448
N272	6764688	1955791	96.35	102.06	96.85	1.048
N273	6764588	1955790	97.68	104.4	98.105	0.853
N274	6764688	1956072	95.58	100.31	95.773	1.254
N275	6764636	1956110	87.6	101.7	89.42	1.42
N276	6763920	1955987	94.25	100.4	94.743	0.979
N277	6763813	1956075	93.44	99.4	93.715	2.304
N278	6763837	1956146	78	96	81.48	2.304
N279	6763697	1956063	94.12	98.4	94.668	1.2
N288	6763351	1956316	77.03	96.4	81.472	9.449
N289	6763370	1956343	77	96.4	81.47	9.449
N290	6763235	1956304	78.1	96.4	82.021	9.449
N291	6763408	1956660	91.92	96.29	92.448	8.556
N292	6763322	1956572	76.6	94	81.47	8.556
N293	6766178	1953674	118.92	126.4	119.537	1.505
N294	6766110	1953756	118.3	123.96	118.616	3.146
N296	6766029	1953672	118.98	122.4	119.605	1.512
N301	6766982	1953669	122.9	128.4	124.819	3.422
N302	6766913	1953751	122.28	128.39	122.675	5.018
N303	6766884	1953789	110.6	124.3	113.27	5.018
N304	6766836	1953667	122.95	126.4	123.562	1.497
N309	6765303	1953671	113.15	119.4	113.82	1.825
N310	6765234	1953755	112.26	116.66	112.657	4.159
N312	6765152	1953666	113.21	116.4	114	2.264
YEL327	6764159	1953963	96	101	101.198	26.486
N331	6764164	1953862	92.7	101	98.41	26.486
W104	6766192	1955514	105.39	108.33	106.344	1.357
N342	6765771	1956114	100.22	106.84	100.828	1.88
N343	6765706	1956115	100	104.4	100.516	1.88
N344	6765838	1956114	101.11	112.07	101.782	1.88
N345	6767737	1955492	118.83	128.14	119.232	0.508
N356	6767738	1954724	125.32	128.39	125.608	0.427
N357	6767742	1954323	122.98	126.52	123.398	0.859
N358	6767742	1953952	120.82	128.19	121.393	1.292
N359	6767616	1953956	120.09	126.78	120.368	1.292
N360	6767537	1953867	112.8	121.5	115.32	1.292
N361	6768252	1954568	126.24	133.4	128.321	21.25
N362	6768257	1954485	126.13	133.85	128.134	21.25
N363	6768259	1954225	125.28	135.68	127.281	30.167
N364	6768263	1953980	125.01	134.31	125.853	30.167
N365	6768244	1953879	117.4	129	122.52	30.167
N366	6768337	1954224	127.87	136.4	128.984	4.587
N367	6768165	1954221	128.33	131.4	129.216	2.633
N368	6769556	1951455	124.26	130.1	127.154	12.331
N369	6769504	1951460	123.67	130.15	127.097	12.331
N370	6769522	1952258	121.7	130.03	126.853	56.333
N371	6769572	1952257	122.26	130.32	126.896	25.601
N372	6769533	1952652	121.34	131.81	126.066	56.333
N373	6769541	1953056	120.97	131.33	125.308	56.333
N374	6769550	1953456	120.6	132.82	124.527	56.333
N375	6769551	1953588	119.98	132.23	124.271	73.449
N376	6769571	1953764	122.9	130.47	124.565	8.254
N377	6769553	1953735	122.82	130.51	124.507	8.254
N378	6768649	1953593	119.27	129.19	122.596	73.449
N379	6768568	1953642	118.4	128.2	122.53	73.449
N381	6768675	1952107	124.76	128.47	125.846	4.523
N382	6768674	1952518	122.86	128	124.577	9.81
N383	6768722	1952107	125.53	132.3	126.289	2.311
N384	6768609	1952107	125.64	131.18	126.379	2.16
N386	6768722	1952519	124.14	132.17	124.981	2.649
N387	6768610	1952519	124.23	132.93	124.869	1.637
N388	6768673	1952913	121.95	128.21	123.655	9.81
N389	6768673	1953276	120.11	128.38	123.043	19.122
N390	6768798	1953278	122.83	132.4	123.624	2.279
N391	6768574	1953279	122.69	131.4	124.151	3.494
N392	6768675	1953482	119.83	129.21	122.755	19.122
N394	6768591	1953533	118.4	130.07	122.53	19.122
N395	6767847	1950789	118.11	126.4	120.836	3.351
N396	6767688	1950790	117.68	124.6	118.972	3.351
N397	6767683	1951193	115.81	124.94	118.397	19.915
N398	6767847	1951195	116.31	128.04	118.657	16.599
N399	6767681	1951338	114.6	124.3	118.277	38.414
N403	6767677	1951679	114.3	125.5	118.022	38.414
N404	6767674	1952034	113.48	126.69	117.756	52.141
N405	6767787	1952031	116.63	131.25	118.339	2.23
N406	6767671	1952419	113.17	124.49	117.464	56.999
N407	6767777	1952414	117	132.58	117.768	1.608
N408	6767747	1952911	112.78	125.22	117.006	67.201
N409	6767746	1953291	112.48	123.32	116.506	67.201
N410	6767745	1953752	112.12	124.22	115.865	67.201
N412	6767149	1951383	116.3	125.24	118.985	4.241
N413	6767148	1951333	115.33	123.5	118.704	16.703
N414	6766746	1951333	113.62	122	118.781	8.157
N415	6767149	1951276	116.33	124.38	119.078	4.581
N416	6766744	1951381	116.83	125.21	119.059	4.323
N417	6766444	1951331	117.57	121.76	118.933	4.051
N418	6766533	1950831	119.9	124.4	120.821	4.051
N419	6765820	1951325	110.91	120.2	113.47	7.119
N420	6765906	1950926	112.24	123.9	114.763	7.119
N421	6765820	1950927	112	121.21	114.534	7.119
N422	6765450	1951322	109.13	118.36	112.479	11.679
N423	6765451	1951252	110.37	120.4	112.679	4.854
N424	6765085	1951320	108.26	118.56	112.068	15.324
N425	6765087	1951249	110.06	120.39	112.396	3.825
N426	6764719	1951318	107.45	117.24	111.634	17.025
N428	6764719	1951713	106.92	114.79	111.157	17.025
N429	6764716	1952013	106.02	116.18	110.794	36.445
N430	6767243	1952082	119	128.22	119.607	2.243
N431	6767241	1952029	116.67	123.07	118.819	4.523
N432	6766840	1952025	118.07	120.73	119.11	2.27
N434	6766839	1952074	118.8	126.27	119.528	2.27
N435	6766073	1952021	110.18	120.25	112.961	7.831
N436	6766073	1952089	111.57	125.4	113.534	2.849
N437	6766073	1951949	110.92	122.9	113.192	5.169
N438	6765814	1952018	109.58	119.82	112.53	7.831
N439	6765412	1952015	108.15	118.14	111.862	13.146
N440	6765413	1952084	110.05	122.4	112.056	1.661
N441	6765415	1951939	109.73	120.9	112.208	3.802
N442	6765016	1952012	107.22	116.25	111.281	17.513
N443	6765016	1952083	109.38	118.4	111.344	0.932
N444	6765015	1951940	109.03	118.4	111.643	3.968
N445	6764715	1952499	105.48	113.3	109.75	38.333
N446	6764802	1952499	108.49	118.4	109.831	0.939
N447	6764714	1952893	105.05	113.2	108.883	44.794
N448	6767298	1952821	118.77	125.62	120.847	2.448
N449	6767295	1952912	117.99	125.6	120.283	4.727
N450	6766865	1952906	120.74	125.22	122.596	2.277
N451	6766869	1952815	121.27	126.4	123.085	2.277
N453	6766126	1952902	113.76	119.83	115.696	2.872
N454	6766127	1952812	114.29	125.4	116.464	2.872
N455	6765811	1952901	111.68	118.28	113.02	2.872
N456	6765483	1952896	110.26	116.28	112.189	4.552
N457	6765485	1952808	111.02	122.4	112.445	1.671
N458	6765109	1952895	108.39	114	109.779	4.552
N459	6764709	1953299	104.61	110.25	107.663	44.794
N460	6764704	1953757	104.11	110.1	105.098	44.794
N461	6764623	1953810	94.1	110.1	98.41	44.794
N464	6769177	1950642	125.09	132.52	128.144	9.471
N465	6769119	1950240	126.65	135.12	129.753	5.917
N466	6769179	1950242	126.19	131.97	129.498	8.005
N467	6769256	1950642	126.3	130.96	128.221	0.971
N468	6769043	1951065	123.59	129.95	126.001	13.354
N469	6768835	1951407	118.66	128.66	120.443	14.682
N470	6768758	1951360	117.71	127	118.677	14.682
N471	6769085	1951092	124.88	133.3	126.088	1.292
N472	6768990	1951034	124.94	129.45	126.056	0.932
N473	6768894	1951443	120.07	126.23	120.53	0.679
N487	6766444	1950834	118.57	122.22	119.591	4.051
N489	6766691	1950260	118.43	124.63	120.872	9.483
N490	6766989	1950095	121.9	125.91	123.495	9.483
N491	6767360	1949972	124.17	127.19	125.026	0.382
N492	6767751	1949862	126.34	130.4	128.117	4.458
N493	6767736	1949813	126.04	129.9	127.04	4.458
N497	6763903	1953159	107.85	112.8	108.22	2.99
N499	6763800	1953239	91.2	111.05	98.41	2.99
N509	6763833	1951823	108.88	117.9	112.435	11.035
N513	6763962	1952002	110.01	117.82	111.336	6.717
N514	6763841	1952001	108.11	117.9	108.757	17.904
N516	6763761	1952077	90	111	94.53	17.904
N524	6769644	1956010	133.45	136.46	133.796	0.606
N525	6769271	1956132	131.17	136.2	131.677	1.205
N526	6768896	1956251	133.46	137.2	133.804	0.599
N527	6769218	1956215	130.6	136	131.107	1.026
N528	6769514	1951835	122.66	129.5	126.936	12.331
N529	6769114	1953593	119.64	134.26	123.53	73.449
N530	6766175	1956308	99.71	109.24	104.124	10.899
N689	6766645	1950141	118	123.27	119.5	9.483
N494	6766853	1950208	121.41	126	122.356	9.483
N541	6765367	1950630	112.09	120	114.286	4.338
EL329	6765295	1950355	112.52	118	114.927	4.338
N427	6764681	1950866	109.64	118.5	112.651	4.338
N411	6767597	1953805	112	128.95	115.62	67.201
N295	6766093	1953804	106.93	120.1	110.55	3.146
N311	6765238	1953816	104.1	114.3	108.52	4.159
N462	6769573	1950252	127.78	133	129.712	2.126

STORM DRAIN SYSTEM PIPE DATA

NAME	USNODE	DSNODE	DIAMETER	LENGTH	USINV	DSINV	SLOPE	NOLTE FLOW
L389	N404	N406	4.50	385	113.48	113.17	0.081	50.3
L391	N406	N408	4.50	499	113.17	112.78	0.078	55.2
L392	N408	N409	4.50	380	112.78	112.48	0.079	65.4
L393	N409	N410	4.50	461	112.48	112.12	0.078	65.4
L394	N410	N411	4.50	157	112.12	112	0.076	65.4
L527	N431	N404	1.50	434	116.67	115.25	0.339	4.5
L413	N432	N431	1.50	401	118.07	116.67	0.339	2.3
L210	N221	N222	1.00	70	105.84	105.44	0.586	2.9
L211	N222	N223	1.00	408	104.44	102.06	0.581	3.1
L212	N223	N224	1.25	541	100.81	98.47	0.433	3.3
L220	N224	N230	1.75	320	96.97	96.08	0.278	11.3
L213	N227	N224	1.00	107	98.34	97.72	0.579	2.5
L214	N228	N224	1.50	93	97.53	97.22	0.333	5.4
L221	N230	N233	2.00	395	95.83	94.92	0.23	13.2
L217	N231	N230	1.00	86	99.84	99.33	0.581	1.0
L222	N233	N234	2.00	182	94.42	87.6	0.231	13.4
L223	N235	N236	1.00	72	119.6	119.41	0.264	0.2
L224	N236	N237	1.00	291	118.61	117.86	0.258	0.2
L225	N237	N238	1.00	290	117.26	116.51	0.259	0.2
L228	N238	N241	1.00	407	115.11	114.06	0.26	2.5
L226	N239	N240	1.00	413	117.69	116.62	0.259	0.9
L227	N240	N238	1.00	236	116.62	116.01	0.258	1.6
L229	N241	N242	1.25	572	111.36	109.88	0.259	2.9
L230	N242	N243	1.25	397	108.63	107.86	0.191	3.5
L231	N243	N244	1.25	399	105.86	105.1	0.193	3.8
L232	N244	N245	1.50	307	103.85	103.38	0.15	6.0
L233	N245	N246	1.50	479	101.93	100.31	0.338	6.3
L234	N246	N247	2.00	430	99.56	98.37	0.277	9.4
L246	N247	N259	2.50	414	97.87	97.16	0.171	24.4
L235	N248	N241	1.00	50	111.48	111.36	0.26	0.4
L236	N249	N244	1.00	105	104.62	104.35	0.257	2.1
L237	N250	N246	1.00	100	101.14	100.56	0.58	3.1
L238	N251	N252	1.00	55	115.38	115.06	0.582	3.7
L239	N252	N253	1.00	124	113.06	112.33	0.581	4.1
L241	N253	N255	1.25	296	108.08	106.8	0.432	5.4
L240	N254	N253	1.00	86	112.83	112.33	0.581	1.2
L505	N255	N530	1.75	395	102.8	101.71	0.278	10.6
L242	N256	N255	1.00	62	107.41	107.05	0.581	1.9
L243	N257	N255	1.00	95	107.61	107.05	0.579	2.5
L247	N259	N260	2.50	92	97.16	97	0.174	28.8
L248	N261	N259	1.00	47	98.93	98.66	0.574	2.0
L249	N262	N263	1.00	73	104.88	104.46	0.589	1.6
L250	N263	N264	1.00	78	104.46	96.64	0.577	3.0
L251	N265	N263	1.00	69	104.86	104.46	0.594	1.3
L254	W800	W801	1.50	709.31	102.51	101.45	0.15	4.5
L255	W801	OUT802	2.00	451	101.45	101	0.1	9.0
L259	N272	N274	1.75	281	96.35	95.58	0.274	1.0
L258	N273	N272	1.00	100	97.68	97.1	0.58	0.9
L260	N274	N275	1.75	64	95.58	87.6	0.281	1.3
L262	N276	N277	1.00	138	94.25	93.44	0.587	1.0
L262	N277	N278	1.00	76	93.44	78	0.579	2.3
L263	N279	N277	1.00	117	94.12	93.44	0.581	1.2
L272	N288	N289	4.50	34	77.03	77	0.088	9.4
L273	N290	N288	1.75	117	78.1	77.79	0.274	9.4
L274	N291	N292	1.50	123	91.92	76.6	0.341	8.6
L275	N293	N294	1.00	107	118.92	118.3	0.579	1.5
L276	N294	N295	1.00	51	118.3	106.93	0.588	3.1
L277	N295	N294	1.00	117	118.98	118.3	0.581	1.5
L281	N301	N302	1.00	107	122.9	122.28	0.579	3.4
L282	N302	N303	1.00	48	122.28	110.6	0.583	5.0
L283	N304	N302	1.00	114	122.95	122.28	0.579	1.5
L287	N309	N310	1.00	109	113.15	112.51	0.587	1.8
L288	N310	N311	1.25	61	112.26	104.1	0.426	4.2
L289	N312	N310	1.00	120	113.21	112.51	0.583	2.3
L308	YEL327	N331	3.50	101	96	92.7	0.05	26.5
L317	W104	W800	1.25	1107	105.39	102.51	0.26	1.4
L319	N342	N343	1.50	65	100.22	100	0.338	1.9
L320	N344	N342	1.00	67	101.11	100.72	0.582	1.9
L321	N345	N239	1.00	440	118.83	117.69	0.259	0.5
L334	N356	N357	1.00	402	125.32	122.98	0.582	0.4
L335	N357	N358	1.00	371	122.98	120.82	0.582	0.9
L336	N358	N359	1.00	125	120.82	120.09	0.584	1.3
L337	N359	N360	1.00	119	120.09	112.8	0.58	1.3
L338	N361	N362	3.00	84	126.24	126.13	0.131	21.3
L339	N362	N363	3.00	260	126.13	125.78	0.135	21.3
L340	N363	N364	3.50	244	125.28	125.01	0.111	30.2
L341	N364	N365	3.50	103	125.01	117.4	0.107	30.2
L342	N366	N363	1.25	78	127.87	127.53	0.436	4.6
L343	N367	N363	1.00	94	128.33	127.78	0.585	2.6
L344	N368	N369	2.50	51	124.26	124.17	0.176	12.3
L501	N369	N528	3.00	375	123.67	123.16	0.136	12.3
L347	N370	N372	4.00	395	121.7	121.34	0.091	56.3
L346	N371	N370	3.50	50	122.26	122.2	0.12	25.6
L348	N372	N373	4.00	404	121.34	120.97	0.092	56.3
L349	N373	N374	4.00	400	120.97	120.6	0.093	56.3
L350	N374	N375	4.00	132	120.6	120.48	0.091	56.3
L503	N375	N529	4.50	437	119.98	119.64	0.078	73.4
L351	N376	N377	2.00	35	122.9	122.82	0.229	8.3
L352	N377	N375	2.00	147	122.82	122.48	0.231	8.3
L354	N378	N379	4.50	94	119.27	118.4	0.074	73.4
L363	N381	N382	1.50	411	124.76	123.36	0.338	4.5
L366	N382	N388	2.00	394	122.86	121.95	0.231	9.8
L361	N383	N381	1.00	47	125.53	125.26		
L362	N384	N381	1.00	66	125.64	125.26		
L364	N386	N382	1.00	48	124.14	123.86		
L365	N387	N382	1.00	63	124.23	123.86		
L367	N388	N389	2.00	364	121.95	121.11		
L370	N389	N392	3.00	206	120.11	119.83		
L368	N390	N389	1.00	124	122.83	122.11		
L369	N391	N389	1.00	99	122.69	122.11		
L373	N392	N394	3.00	98	119.83	118.4		
L374	N395	N396	1.00	160	118.61	118.18		
L375	N396	N397	1.50	403	117.68	117.31		
L515	N397	N399	3.00	145	115.81	115.61		
L376	N398	N397	2.75	164	116.31	116.06		
L386	N399	N403	4.00	341	114.61	114.3		
L387	N403	N404	4.00	355	114.3	113.98		
L388	N405	N404	1.00	113	116.63	115.6		
L390	N407	N406	1.00	106	117	116.6		
L395	N412	N413	1.25	50	116.3	115.33		
L525	N413	N399	3.00	533	115.83	115.11		
L396	N414	N413	3.00	402	116.37	115.83		
L397	N415	N413	1.25	57	116.33	115.33		
L398	N416	N414	1.25	48	116.63	113.62		
L399	N417	N414	2.00	302	117.57	116.87		
L466	N418	N487	1.25	90	119.9	119.32		
L404	N419	N422	1.75	371	110.91	109.68		
L402	N420	N421	1.75	86	112.24	112		
L403	N421	N419	1.75	398	112	110.91		
L406	N422	N424	2.50	364	109.13	108.51		
L405	N423	N422	1.50	71	110.37	110.13		
L408	N424	N426	2.75	367	108.26	107.7		
L407	N425	N424	1.25	71	110.06	109.76		
L410	N426	N428	3.00	395	107.45	106.92		
L411	N428	N429	3.00	301	106.92	106.52		
L427	N429	N445	3.50	486	106.02	105.48		
L412	N430	N431	1.00	53	119	118.4		
L415	N434	N432	1.00	49	118.8	118.48		
L419	N435	N438	2.00	259	110.18	109.58		
L417	N436	N435	1.00	68	111.57	111.18		
L418	N437	N435	1.50	72	110.92	110.68		
L422	N441	N439	1.25	76	109.73	109.4		
L423	N439	N442	2.50	397	108.15	107.47		
L421	N440	N439	1.00	68	110.05	109.65		
L424	N442	N429	2.75	299	107.22	106.77		
L425	N443	N442	1.00	88	108.49	107.98		
L441	N447	N459	3.50	405	105.05	104.61		
L430	N448	N449	1.00	91	118.77	117.99		
L528	N449	N408	1.25	452	117.99	116.03		
L431	N450	N449	1.00	430	120.74	118.24		
L432	N451	N450	1.00	91	121.27	120.74		
L436	N453	N455	1.00	315	113.76	111.93		
L435	N454	N453	1.00	90	114.29	113.76		
L437	N455	N456	1.25	328	111.68	110.26		
L439	N456	N458	1.25	374	110.26	108.64		
L438	N457	N456	1.00	88	111.02	110.51		
L440	N458	N447	1.50	396	108.39	107.05		
L442	N460	N453	3.50	459	104.11	104.11		
L443	N460	N461	3.50	96	104.11	94.1		
L449	N464	N468	1.75	452	125.09	123.84		
L446	N465	N466	1.50	61	126.65	126.44		
L514	N466	N464	1.75	399	126.19	125.09		
L448	N467	N464	1.00	79	126.3	125.84		
L450	N468	N469	2.00	400	123.59	122.66		
L451	N469	N470	2.00	90	118.66	118.46		
O421	N470	N398	2.75	925	117.71	116.31		
L452	N471	N468	1.00	50	124.88	124.59		
L453	N472	N468	1.00	61	124.94	124.59		
L454	N473	N469	1.00	70	120.07	119.66		
L468	N487	N417	2.00	496	118.57	117.57		
L474	N489	N489	1.50	127	118.43	118		
L470	N490	N494	1.75	177	121.9	121.41		
L471	N491	N490	1.00	390	124.77	121.9		
L472	N492	N493	1.00	52	126.34	126.04		
L509	N497	N499	1.00	134	107.85	91.2		
L511	N509

JACKSON TOWNSHIP



CIVIL ENGINEERING SOLUTIONS, INC.

PROPOSED PROJECT SHEDS ALT 1 PH 2
JULY 2016

0 200 400 800
Feet

JACKSON TOWNSHIP

SHEET
SD-5

JACKSON TOWNSHIP

STORM DRAIN SYSTEM NODE DATA

NAME	X	Y	INVERT	GROUND/R	WSEL/HGL	NOLTE Q
N221	6765302	1957481	105.84	114.03	107.603	2.891
N222	6765281	1957414	104.44	112.08	106.994	3.135
N223	6764892	1957540	100.81	106.29	102.116	3.298
N224	6764731	1957023	96.97	106.33	100.291	10.341
N227	6764830	1957060	98.34	109.4	100.972	2.489
N229	6764668	1957091	97.53	102.4	100.61	5.368
N230	6764681	1956708	95.83	104.39	98.169	12.28
N231	6764595	1956709	99.84	104.4	100.287	0.95
N233	6764687	1956313	94.42	100.35	95.252	12.459
N234	6764582	1956163	85.6	100	90.47	12.459
N235	6768573	1956404	119.6	138.15	119.864	0.231
N236	6768508	1956375	118.61	126.23	118.89	0.231
N237	6768231	1956466	117.26	124.29	117.66	0.231
N238	6767954	1956557	115.11	122.35	117.582	2.489
N239	6767765	1955937	117.69	125.08	118.558	0.929
N240	6767885	1956332	116.62	122.09	118.199	1.594
N241	6767567	1956683	111.36	119.6	112.518	2.757
N242	6767021	1956852	108.63	115.67	110.43	3.27
N243	6768644	1956978	105.86	112.69	108.448	3.612
N244	6768265	1957102	103.85	109.7	106.037	4.425
N245	6765973	1957196	101.68	107.68	105.298	4.714
N246	6765826	1956739	99.53	104.7	103.013	7.371
N247	6765778	1956316	97.87	107.2	102.031	22.318
N248	6767582	1956726	111.48	116	112.528	0.448
N249	6766307	1957193	104.62	108.63	107.126	2.126
N250	6765921	1956704	101.14	113.4	103.988	3.081
N251	6767045	1956305	115.38	127.02	116.652	3.694
N252	6766990	1956304	113.06	121.25	115.281	4.063
N253	6766866	1956307	108.08	119.03	110.463	5.364
N254	6766889	1956224	112.83	120.4	113.353	1.238
N255	6766570	1956306	102.8	113.91	106.809	10.597
N256	6766568	1956244	107.41	119.88	108.073	1.852
N258	6766615	1956390	107.61	118.4	108.447	2.463
N259	6765364	1956318	97.16	102.69	100.117	26.759
N260	6765362	1956226	97	101.1	99.55	26.759
N261	6765363	1956359	98.93	106.38	100.309	1.982
N262	6765296	1955966	104.88	110.4	105.493	1.579
N263	6765239	1956042	104.46	109.4	104.842	3
N264	6765177	1956089	96.64	106	99.54	3
N265	6765164	1956001	104.86	108.4	105.406	1.305
N272	6764688	1955791	96.35	102.06	97.677	6.753
N273	6764588	1955790	97.68	104.4	97.68	0.853
N274	6764688	1956072	95.58	100.31	96.031	6.948
N275	6764636	1956110	87.6	101.7	90.48	7.106
N276	6763920	1955987	94.25	100.4	94.743	0.979
N277	6763813	1956075	93.44	99.4	93.715	2.304
N278	6763837	1956146	78	96	83.91	2.304
N279	6763697	1956063	94.12	98.4	94.668	1.2
N280	6763351	1956316	77.03	96.4	84.453	36.931
N289	6763370	1956343	77	96.4	83.9	36.931
N290	6763235	1956304	78.1	96.4	84.457	9.440
N291	6763408	1956660	91.92	96.29	92.474	8.556
N292	6763322	1956572	76.6	94	83.9	8.556
N293	6766178	1953674	118.92	126.4	119.612	1.505
N294	6766110	1953756	118.3	123.96	119.317	3.146
N296	6766029	1953672	118.98	122.4	119.66	1.512
N301	6766982	1953669	122.9	128.4	124.819	3.422
N302	6766913	1953751	122.28	128.39	122.675	5.018
N303	6766864	1953789	110.6	124.3	113.42	5.018
N304	6766836	1953667	122.95	126.4	123.562	1.497
N309	6765303	1953671	113.15	119.4	113.82	1.825
N310	6765234	1953755	112.26	116.66	112.667	4.159
N312	6765152	1953666	113.21	116.4	114	2.264
N313	6765771	1956114	100.22	106.84	101.665	8.196
N343	6765706	1956115	100	104.4	101.108	8.196
N344	6765838	1956114	101.11	112.07	101.899	1.88
N345	6767734	1955500	118.83	128.14	119.232	0.508
N361	6768252	1954568	126.24	133.4	128.406	21.25
N362	6768267	1954485	126.13	133.85	128.244	21.25
N363	6768259	1954225	125.28	135.68	127.645	30.167
N364	6768263	1953980	125.01	134.31	127.055	30.167
N365	6768244	1953879	117.4	129	122.57	30.167
N366	6768337	1954224	127.87	136.4	128.984	4.587
N367	6768165	1954221	128.33	131.4	129.216	2.633
N368	6769566	1951455	124.26	130.1	127.196	12.331
N369	6769504	1951460	123.67	130.15	127.139	12.331
N370	6769522	1952258	121.7	130.03	126.893	56.333
N371	6769572	1952257	122.26	130.32	126.936	25.601
N372	6769533	1952652	121.34	131.81	126.099	56.333
N373	6769541	1953056	120.97	131.33	125.341	56.333
N374	6769550	1953456	120.6	132.82	124.563	56.333
N375	6769551	1953588	119.98	132.23	124.298	73.449
N376	6769571	1953764	122.9	130.47	124.587	8.254
N377	6769553	1953735	122.82	130.51	124.53	8.254
N378	6768649	1953593	119.27	129.19	122.643	73.449
N379	6768568	1953642	118.4	128.2	122.58	73.449
N381	6768675	1952107	124.76	128.47	125.848	4.523
N382	6768674	1952518	122.86	128	124.59	9.81
N383	6768722	1952107	125.53	132.3	126.289	2.311
N384	6768609	1952107	125.64	131.18	126.379	2.16
N386	6768722	1952519	124.14	132.17	124.985	2.649
N387	6768610	1952519	124.23	132.93	124.873	1.637
N388	6768673	1952913	121.95	128.21	123.682	9.81
N389	6768673	1953276	120.11	128.38	123.132	19.122
N390	6768798	1953278	122.83	132.4	123.621	2.279
N391	6768574	1953279	122.69	131.4	124.151	3.494
N392	6768675	1953482	119.83	129.21	122.831	19.122
N394	6768591	1953533	118.4	130.07	122.58	19.122
N395	6767847	1950789	118.11	126.4	120.837	3.351
N396	6767688	1950790	117.68	124.6	118.974	3.351
N397	6767683	1951193	115.81	124.94	118.402	19.915
N398	6767847	1951195	116.31	128.04	118.66	16.599
N399	6767681	1951338	114.6	124.3	118.282	38.414
N403	6767677	1951679	114.3	125.5	118.027	38.414
N404	6767674	1952034	113.48	126.69	117.761	52.141
N405	6767787	1952031	117	131.25	118.332	2.23
N406	6767671	1952419	113.17	124.49	117.47	56.999
N407	6767777	1952414	117	132.58	117.771	1.608
N408	6767747	1952911	112.78	125.22	117.012	67.201
N409	6767746	1953291	112.48	123.32	116.513	67.201
N410	6767745	1953752	112.12	124.22	115.873	67.201
N412	6767149	1951383	116.3	125.24	118.99	4.241
N413	6767148	1951333	115.33	123.5	118.709	16.703
N414	6766746	1951333	115.83	122	118.785	8.157
N415	6767149	1951276	116.33	124.38	119.083	4.581
N416	6766744	1951381	116.83	125.21	119.067	4.323
N417	6766444	1951331	117.57	121.76	118.937	4.051
N418	6766533	1950831	119.9	124.4	120.821	4.051
N419	6765820	1951325	110.91	120.2	113.47	7.119
N420	6765906	1950926	112.24	123.9	114.763	7.119
N421	6765820	1950927	112	121.21	114.534	7.119
N422	6765450	1951322	109.13	118.36	112.479	11.679
N423	6765451	1951252	110.37	120.4	112.679	4.854
N424	6765085	1951320	108.26	118.56	112.068	15.324
N425	6765087	1951249	110.06	120.39	112.396	3.825
N426	6764719	1951318	107.45	117.24	111.634	17.025
N428	6764719	1951713	106.92	114.79	111.157	17.025
N429	6764716	1952013	106.02	116.18	110.794	36.445
N430	6767243	1952082	119	128.22	119.607	2.243
N431	6767241	1952029	116.67	123.07	118.825	4.523
N432	6766840	1952025	118.07	120.73	119.114	2.27
N434	6766839	1952074	118.8	126.27	119.528	2.27
N435	6766073	1952021	110.18	120.25	112.961	7.831
N436	6766073	1952089	111.57	125.4	113.534	2.649
N437	6766073	1951949	110.92	122.9	113.192	5.169
N438	6765814	1952018	109.58	119.82	112.53	7.831
N439	6765412	1952015	106.15	118.14	111.862	13.146
N440	6765413	1952084	110.05	122.4	112.056	1.661
N441	6765415	1951939	109.73	120.9	112.208	3.802
N442	6765016	1952012	107.22	116.25	111.281	17.513
N443	6765016	1952083	109.38	118.4	111.344	0.932
N444	6765015	1951940	109.03	118.4	111.643	3.968
N445	6764715	1952499	105.48	113.3	109.75	38.333
N446	6764822	1952499	108.49	118.4	109.831	0.939
N447	6764714	1952893	105.05	113.2	108.883	44.794
N448	6767298	1952821	118.77	125.62	120.847	2.448
N449	6767295	1952912	117.99	125.6	120.283	4.727
N450	6766865	1952906	120.74	125.22	122.596	2.277
N451	6766869	1952815	121.27	126.4	123.085	2.277
N453	6766126	1952902	113.76	119.83	115.696	2.872
N454	6766127	1952812	114.29	125.4	116.464	2.872
N455	6765811	1952901	111.68	118.28	113.02	2.872
N456	6765483	1952896	110.26	116.28	112.189	4.552
N457	6765485	1952808	111.02	122.4	112.445	1.671
N458	6765109	1952895	108.39	114	109.779	4.552
N459	6764709	1953299	104.61	110.25	107.663	44.794
N460	6764704	1953757	104.11	110.1	105.098	44.794
N461	6764623	1953810	94.1	110.1	99.57	44.794
N464	6769177	1950642	125.09	132.52	128.144	9.471
N465	6769119	1950240	126.65	135.12	129.753	5.917
N466	6769179	1950242	126.19	131.97	129.498	8.005
N467	6769256	1950642	126.3	130.96	128.221	0.971
N468	6769043	1951065	123.59	129.95	126.001	13.354
N469	6768835	1951407	118.66	128.66	120.443	14.682
N470	6768758	1951360	117.71	127	118.68	14.682
N471	6769085	1951092	124.88	133.3	126.088	1.292
N472	6768990	1951034	124.94	129.45	126.056	0.932
N473	6768844	1951443	120.07	126.23	120.53	0.679
N487	6766444	1950834	118.57	122.22	119.592	4.051
N489	6766691	1950260	118.43	124.63	120.872	9.483
N490	6766989	1950095	121.9	125.91	123.495	9.483
N491	6767360	1949972	124.17	127.19	125.026	2.382
N492	6767751	1949862	126.34	130.4	128.117	4.458
N493	6767736	1949813	126.04	129.9	127.04	4.458
N497	6763903	1953159	107.85	112.8	108.211	2.99
N499	6763800	1953239	91.2	111.05	97.64	2.99
N509	6763833	1951823	108.88	117.9	112.435	11.035
N513	6763962	1952002	110.01	117.82	111.336	6.717
N514	6763841	1952001	108.11	117.9	108.757	17.904
N516	6763761	1952077	90	111	97.42	17.904
N524	6769644	1956010	133.45	136.46	133.796	0.606
N525	6769271	1956132	131.17	136.2	131.677	1.205
N526	6768896	1956251	133.46	137.2	133.804	0.599
N527	6769218	1956215	130.6	136	131.107	1.026
N528	6769514	1951835	122.66	129.6	126.977	12.331
N529	6769114	1953593	119.64	134.26	123.559	73.449
N530	6766175	1956308	99.71	109.24	104.487	10.899
N689	6766645	1950141	118	123.27	119.5	9.483
N494	6766853	1952038	121.41	126	122.356	9.483
N541	6765367	1950630	112.09	120	114.286	4.338
EL329	6765295	1950355	112.52	118	114.927	4.338
N427	6764681	1950866	109.64	118.5	112.651	4.338
N411	6767597	1953805	112	128.95	115.63	67.201
N295	6766093	1953804	106.93	120.1	110.72	3.146
N311	6765238	1953816	104.1	114.3	108.83	4.159
N462	6769573	1950252	127.78	133	129.712	2.126
N266	6764695	1955115	100.36	105.61	100.509	0.113
N267	6764694	1955511	97.55	104.26	99.196	6.569
N268	6765084	1955440	100.74	110.42	101.383	1.737
N270	6764363	1955444	99.14	106.4	100.265	3.959
N271	6764400	1955514	98.55	102.38	99.915	4.73
N280	6762831	1955450	85.33	96.4	86.343	3.788
N281	6762799	1955522	83.24	91.91	85.947	21.547
N282	6763146	1955517	82.77	97.08	85.487	22.467
N283	6763348	1955517	82.5	100.04	85.195	26.566
N284	6763145	1955454	85.14	98.4	85.621	0.857
N285	6763632	1955446	94.91	102.4	96.556	2.655
N286	6763596	1955517	94.45	100.39	95.976	2.924
N287	6763349	1955918	78.46	96.9	84.307	26.566
N297	6766007	1954039	113.24	120.4	114.71	1.564
N298	6765972	1954007	112.96	118.43	114.588	3.253
N299	6765868	1953878	107.32	117.76	110.1	3.253
N300	6765933	1954038	113.25	116.4	114.716	1.568
N305	6765211	1954041	105.52	112.4	109.627	1.569
N306	6765172	1954008	104.72	110.33	109.87	3.11
N307	6765114	1953883	104.25	111.7	108.64	3.11
N308	6765133	1954039	105.19	108.4	108.831	1.411
N313	6764697	1954698	103.93	107.79	104.113	0.174
N314	6764702	1954331	101.79	105.51	102.084	0.445
N315	6764704	1953958	99.61	103.31	100.033	1.151
N316	6764634	1953879	94.1	101	99.57	1.151
N317	6763079	1954063	89.17	96.4	93.125	4.358
N318	6763086	1953965	87.74	94.1	92.547	10.94
N319	6763070	1953884	89.47	100.4	92.711	1.403
N320	6763319	1953967	89.28	95.32	93.334	4.465
N321	6763321	1954023	90.11	96.4	93.533	1.866
N325	6763462	1953968	89.77	97.27	93.52	2.428
N326	6763472	1953885	90.75	100.4	93.581	0.851
N327	6763473	1954034	90.66	98.4	93.94	2.462
N328	6764159	1953963	93.44	100.26	97.876	3.196
N329	6764408	1954020	94	104.4	98.128	2.819
N330	6764407	1953962	93.44	101.62	98.545	3.039
N331	6764164	1953862	92.7	100.26	97.64	3.196
N332	6764159	1954021	94	101.4	98.187	2.693
N333	6766760	1955440	108.87	124.46	110.938	1.601
N334	6766760	1955501	108.51	121.39	110.777	1.601
N335	6766361	1955504	106.18	111.26	109.724	3
N336	6766361	1955442	106.54	120.3	109.826	1.282
N337	6765775	1955508	102.28	108.33	104.934	6.197
N338	6765829	1955433	103.31	116.4	104.489	1.283
N339	6765480	1955441	104.89	113.4	105.53	1.623
N340	6765484	1955512	104.47	110.48	105.218	1.623
N341	6765776	1955811	101.25	106.06	102.954	6.197
N347	6766987	1955092	118.45	126.99	122.7	1.709
N348	6766983	1954303	116.17	122.7	120.088	7.819
N349	6767092	1955155	119.16	129.4	123.059	1.709
N350	6767046	1954701	117.8	128.4	121.717	1.625
N351	6766984	1954702	117.19	124.85	121.552	3.445
N352	6767077	1954378	117.37	127.4	120.554	1.962
N353	6766889	1954374	117.36	125.4	120.676	2.214
N354	6766982	1953955	115.65	123	116.348	7.819
N355	6766928	1953875	110.6	121.1	113.42	7.819
N356	6767738	1954724	125.32	128.39	125.608	0.427
N357	6767742	1954323	122.98	126.52	123.398	0.859
N358	6767742	1953952	120.82	128.19	121.393	1.292
N359	6767616	1953956	120.09	126.78	120.368	1.292
N360	6767537	1953867	112.6	121.5	115.34	1.292
N500	6762544	1953970	86.67	95.88	91.51	17.205
N501	6762540	1954450	85.47	94.91	89.355	17.205
N503	6763509	1952056	89.8	100.1	97.42	10.771
N504	6763450	1952209	95.54	100.4	98.718	10.771
N506	6762671	1953326	92.14	100.4	94.626	3.798
N517	6762525	1955509	83.95	90.28	86.642	17.334
N518	6762533	1955042	84.31	89.25	87.833	17.205
N554	6762541	1953394	90.68	94.51	92.455	3.798
N322	6764411	1953866	92.5	101.62	97.64	3.039
N511	6763579	1951815	102.21	114.95	102.725	5.117
N555	6763580	1951925	89.8	110	97.42	5.117

STORM DRAIN SYSTEM PIPE DATA

NAME	USNODE	DSNODE	DIAMETER	LENGTH	USINV	DSINV	SLOPE	NOLTE FLOW
L398	N416	N414	1.25	48	116.83	115.87	0.437	4.3
L210	N221	N222	1.00	70	105.84	105.44	0.586	2.9
L211	N222	N223	1.00	408	104.44	102.06	0.581	3.1
L212	N223	N224	1.25	541	100.81	98.47	0.433	3.3
L220	N224	N230	1.75	320	96.97	96.08	0.278	11.3
L213	N227	N224	1.00	107	98.34	97.72	0.579	2.5
L214	N228	N224	1.50	93	97.53	97.22	0.333	5.4
L221	N230	N233	2.00	395	95.83	94.92	0.23	13.2
L217	N231	N230	1.00	86	99.84	99.33	0.581	1.0
L222	N233	N234	2.00	182	94.42	87.6	0.231	13.4
L223	N235	N236	1.00	72	119.6	119.41	0.264	0.2
L224	N236	N237	1.00	291	118.61	117.86	0.258	0.2
L225	N237	N238	1.00	293	117.26	116.51	0.259	0.2
L228	N238	N241	1.00	407	115.11	114.06	0.26	2.5
L226	N239	N240	1.00	413	117.69	116.62	0.259	0.9
L227	N240	N238	1.00	236	116.62	116.01	0.258	1.6
L229	N241	N242	1.25	572	111.36	109.88	0.259	2.9
L230	N242	N243	1.25	397	108.63	107.86	0.193	3.5
L231	N243	N244	1.25	399	105.86	105.15	0.193	3.8
L232	N244	N245	1.50	307	103.85	103.38	0.15	6.0
L233	N245	N246	1.50	479	101.93	100.31	0.338	6.3
L234	N246	N247	2.00	430	99.56	98.37	0.277	9.4
L246	N247	N259	2.50	414	97.87	97.16	0.171	24.4
L235	N248	N241	1.00	50	111.48	111.36	0.26	0.4
L236	N249	N244	1.00	105	104.62	104.35	0.257	2.1
L237	N250	N246	1.00	100	101.14	100.96	0.58	3.1
L238	N251	N252	1.00	55	115.38	115.06	0.582	3.7
L239	N252	N253	1.00	124	113.06	112.33	0.581	4.1
L241	N253	N255	1.25	296	108.08	106.8	0.432	5.4
L240	N254	N253	1.00	86	112.83	112.33	0.581	1.2
L505	N255	N530	1.75	395	102.8	101.71	0.276	10.6
L242	N256	N255	1.00	62	107.41	107.05	0.581	1.9
L243	N257	N255	1.00	95	107.61	107.05	0.579	2.5
L247	N259	N260	2.50	92	97.16	97	0.174	28.8
L248	N261	N259	1.00	47	98.93	98.66	0.574	2.0
L249	N262	N263	1.00	73	104.88	104.46	0.589	1.6
L250	N263	N264	1.00	78	104.46	96.64	0.577	3.0
L251	N265	N263	1.00	69	104.86	104.46	0.594	1.3
L259	N273	N274	1.75	281	96.35	95.58	0.274	6.9
L260	N274	N275	1.75	64	95.58	87.6	0.281	7.1
L261	N276	N277	1.00	138	94.25	93.44	0.587	1.0
L262	N277	N278	1.00	76	93.44	78	0.579	2.3
L263	N279	N277	1.00	117	94.12	93.44	0.581	1.2
L272	N288	N289	4.50	34	77.03	77	0.088	38.2
L273	N290	N288	1.75	117	78.1	77.78	0.274	9.4
L274	N291	N292	1.50	123	91.92	76.6	0.341	8.6
L275	N293	N294	1.00	107	118.92	118.3	0.579	1.5
L276	N294	N295	1.00	51	118.3	118	0.588	3.1
L277	N295	N294	1.00	117	118.98	118.3	0.581	1.5
L281	N301	N302	1.00	107	122.9	122.28	0.579	3.4
L282	N302	N303	1.00	48	122.28	110.6	0.583	5.0
L283	N304	N302	1.00	114	122.95	122.28	0.579	1.5
L287	N309	N310	1.00	109	113.15	112.51	0.587	1.8
L288	N310	N311	1.25	61	112.26	104.1	0.426	4.2
L289	N312	N310	1.00	120	113.21	112.51	0.583	2.3
L319	N342	N343	1.50	65	100.22	100	0.338	8.2
L320	N344	N342	1.00	67	101.11	100.72	0.582	1.9
L321	N345	N239	1.00	440	118.83	117.69	0.259	0.5
L338	N361	N362	3.00	84	126.24	126.13	0.131	21.3
L339	N362	N363	3.00	260	126.13	125.78	0.135	21.3
L340	N363	N364	3.50	244	125.28	125.01	0.111	30.2
L341	N364	N365	3.50	103	125.01	124.9	0.107	30.2
L342	N366	N363	1.25	78	127.87	127.53	0.436	4.6
L343	N367	N363	1.00	94	128.33	127.78	0.585	2.6
L344	N368	N369	2.50	51	124.26	124.17	0.176	12.3
L501	N369	N528	3.00	375	123.67	123.16	0.136	12.3
L347	N370	N372	4.00	395	121.7	121.34	0.091	56.3
L346	N371	N370	3.50	50	122.26	122.2	0.12	25.6
L348	N372	N373	4.00	404	121.34	120.97	0.092	56.3
L349	N373	N374	4.00	400	120.97	120.6	0.093	56.3
L350	N374	N375	4.00	132	120.6	120.48	0.091	56.3
L503	N375	N529	4.50	437	119.98	119.64	0.078	73.4
L351	N376	N377	2.00	35	122.9	122.82	0.229	8.3
L352	N377	N375	2.00	147	122.82	122.48	0.231	8.3
L354	N378	N379	4.50	94	119.27	118.4	0.074	73.4
L363	N381	N382	1.50	411	124.76	123.36	0.338	4.5
L366	N382	N384	2.00	394	122.66	121.23	0.221	9.8
L361	N383	N381	1.00	47	125.53	125.26	0.596	2.3
L362	N384	N381	1.00	66	125.64	125.26	0.591	2.2
L364	N386	N382	1.00	48	124.14	123.86	0.583	2.7
L365	N387	N382	1.00	63	124.23	123.86	0.587	1.6
L367	N388	N389	2.00	364	121.95	121.11	0.231	9.8
L370	N389	N392	3.00	206	120.11	119.83	0.136	19.1
L368	N390	N389	1.00	124	122.83	122.11	0.581	2.3
L369	N391	N389	1.00	99	122.69	122.11	0.586	3.5
L373	N392	N394	3.00	98	119.83	118.4	0.133	19.1
L374	N395	N396	1.00	160	118.61	118.18	0.581	3.4
L375	N396	N397	1.50	403	117.68	117.31	0.34	3.3
L515	N397	N399	3.00	145	115.81	115.61	0.138	17.7
L376	N398	N397	2.75	164	116.31	116.06	0.152	14.3
L386	N399	N403	4.00	341	114.61	114.3	0.091	36.6
L387	N403	N404	4.00	355	114.3	113.98	0.09	36.6
L389	N404	N406	4.50	385	113.48	113.17	0.081	50.3
L388	N405	N404	1.00	113	117	116.7	0.575	2.2
L391	N406	N408	4.50	499	113.17	112.78	0.078	55.2
L390	N407	N406	1.00	106	117	116.6	0.585	1.6
L392	N408	N409	4.50	380	112.78

APPENDIX G

DATA FILES

Appendix HYD-2

Climate Change
Technical Evaluation

CIVIL ENGINEERING
SOLUTIONS, INC.

590 E Street
Lincoln Ca. 95648
916.645-5700
Fax: 916.645-5706

Technical Memorandum

To: Sacramento County
Planning Department

Attn: Todd Smith

Date: January 16, 2019

Regarding: Jackson Township – Climate Change Technical Evaluation

Dear Todd;

In response to questions regarding the resiliency of the Jackson Township Project to Climate Change (changes in runoff) and the ability of the Project to mitigate peak runoff in a future Climate Change scenario, we have prepared this technical evaluation. This Technical Memorandum addresses the following major concerns for the Project associated with Climate Change:

- **Project Design Resiliency:** Will the design of the project be resilient to the range of possible Climate Change Scaling Factors. For Example, if flow rates increase, will the proposed culverts and channels continue to be able to convey the additional runoff or accommodate changes to the system in the future.
    - **Possible Range of Climate Scaling Factors:** Data forecasts for Climate Change for watersheds within the Sacramento Valley provide a wide range of forecast Scaling Factors. The included analysis will utilize the "bookend approach", analyzing the low Scaling Factor and the high Scaling Factor to determine if project design changes would be required under a range of climate change conditions.
    - **Design Event Duration:** Climate factors vary with duration of event. The current analysis for the project demonstrated that the 24-hour design event created the worst case conditions that needed to be mitigated. Analysis will be done to verify that the 10-day event does not control project design in the Climate Change conditions.
- **Mitigation Verification:** If Climate Change occurs, will the project still be able to demonstrate that peak flows leaving the site would be less than the without development condition.

Climate Change Factors and Application:

Sacramento County does not currently have design standards or adopted factors for the assessment of climate change impacts to a project design. Additionally, the effects of climate change have not been quantified with a reasonable degree of precision at this time. Accordingly, it is currently beyond the ability of the engineering community to predict with precision the probable magnitude of climate change on local hydrology.

Given this situation, a reasonable approach for assessing the impacts of climate change to the Jackson Township project has been developed and applied uniformly to this and other projects. The methodology described in this section mirrors the Methodology described in the Mather South memorandum dated November 14, 2018. As such, the methodology to be used to check the resiliency of the Jackson Township drainage and flood management facilities to contain the increased flows from climate change will incorporate climate change scaling factors to the existing-climate discharge frequency curves from the Central Valley Flood Protection Project (CVFPP) derived by the California Department of Water resources (DWR) for the CVFPP in 20171

A technical memorandum summarizing the DWR findings for several streams in the Sacramento Valley was prepared by David Ford Consulting Engineers, dated April 9, 2018 [2] (attached for reference). The memorandum outlines Climate Scaling Factors that could be applied to various nearby watersheds. Table 1 of the memorandum presented scaling factors for the unregulated 1-day events for the following Sacramento River tributary basins:

- Arcade Creek,
- Pleasant Grove Creek,
- Putah Creek near Davis,
- Ulatis Creek,
- Steelhead Creek below Arcade Creek.

Scaling Factors for the 3-day, 7-day, 15-day and 30-day events are presented in Tables 2-5.

These Scaling Factors will be used to adjust the precipitation-depth factors used in Table 4-1 of the SACCALC software which will result in scaled runoff hydrographs. Per email from Michael Johnson of Sacramento County DWR (December 17, 2018) (1 & 2): *"The David Ford Scaling Factors can be applied to the DDF precipitation data or can be applied to directly to the hydrographs. Water Resources generally prefers applying the scaling factors to the rainfall since this approach is more conservative for evaluating impacts to volume…"*. Additionally in this email Mike recommends using the bookend approach: (3) "*Water Resources recommends using the scaling factors for both Arcade and Pleasant Grove creeks to evaluate the possible range of climate impacts, consistent with the other plan areas"*. Finally in this email Mike states: (5) *"The post project with climate change condition should be used for the preliminary design of the project. It is anticipated that climate change standards will be developed and approved before improvement plan design and development of the project*".

[1] California Department of Water Resources, 2017 CVFPP Update – Climate Change Analysis Technical Memorandum (March 2017)

[2] David Ford Consulting, "Additional information regarding proposed method for accounting for uncertainty associated with climate change for West Jackson Highway Master Plan" (April 9, 2018)

Of the watersheds presented for which data is contained in this memorandum, Arcade Creek and Steelhead Creek are most similar to Morrison and Elder Creek in the Jackson Township Project for the following reasons:

- These watersheds exist at similar elevations as the Jackson Township project site, less than 200-feet elevation
- Orographic effects are similar, the watersheds are for relatively flat lands near the valley floor, a similar distance to the foothills.
- Per Sacramento County documentation in Volume 2 – Hydrology Manual, the watersheds experience similar annual precipitation and would use the same factors in the SACCALC program.

However, since the "bookend approach" is also being requested, the factors for "Pleasant Grove Creek Canal" (otherwise known as the Natomas Cross Canal watershed), will be modeled to determine the high end of the expected climate Scaling Factors which may occur at this project. Unlike Arcade Creek, Pleasant Grove Creek is higher in the Scaling factors because it includes runoff from the foothills. This is significantly different than the characteristics of Morrison and Elder Creeks. Nonetheless, it provides a high bookend for the analysis.

Table 1 below presents the Scaling Factors which were applied for the Arcade Creek basis Climate Change Analysis. Table 2 shows the Scaling Factors Applied for the Pleasant Grove Creek Canal basis analysis.

Table 1 – Scaling Factors for Arcade Creek

Annual Exceedance Probability	Return Period (Yr.)	Arcade Creek Scaling Factors					
		1-Day Volume	3-Day Volume	5-Day Volume(*)	7-Day Volume	10-Day Volume(*)	15-Day Volume
0.005	200	1.00(*)	1.06	1.10	1.13	1.19	1.26
0.01	**100**	**1.08**	**1.14**	**1.18**	**1.21**	**1.25**	**1.31**
0.1	10	1.46	1.44	1.46	1.48	1.49	1.50

(*) Interpolated from published rates, and rectified for reasonableness.

Table 2 – Scaling Factors for Pleasant Grove Creek Canal

Annual Exceedance Probability	Return Period (Yr.)	Arcade Creek Scaling Factors					
		1-Day Volume	3-Day Volume	5-Day Volume(*)	7-Day Volume	10-Day Volume(*)	15-Day Volume
0.005	200	1.60	1.53	1.45	1.38	1.34	1.28
0.01	**100**	**1.54**	**1.48**	**1.42**	**1.36**	**1.33**	**1.27**
0.1	10	1.35	1.32	1.28	1.25	1.24	1.22

(*) Interpolated from published rates, and rectified for reasonableness.

The Project Drainage Study shows that the 24-hour event is the event which generates the highest peak flows at the exit points of discharge from the Jackson Township site. However, since some of the documented Scaling Factors increase with the duration of event, the 10-day event was also analyzed in this climate change analysis.

Table 3 below shows the default SACCALC precipitation values from TABLE 4-1 of the software:

Table 3 – Default SACCALC Precipitation Values

Table 4-1. Depth-Duration-Frequency Relationships (inches)

Duration	Frequency, years 2	5	10	25	50	100	200	500
5 min	0.13	0.20	0.25	0.32	0.38	0.44	0.49	0.58
10 min	0.19	0.29	0.36	0.46	0.54	0.62	0.70	0.82
15 min	0.23	0.35	0.43	0.55	0.64	0.73	0.82	0.96
30 min	0.32	0.47	0.57	0.72	0.83	0.94	1.04	1.22
1 hour	0.45	0.64	0.77	0.94	1.07	1.21	1.33	1.53
2 hours	0.64	0.88	1.04	1.26	1.42	1.59	1.76	2.00
3 hours	0.77	1.04	1.23	1.47	1.66	1.85	2.03	2.31
6 hours	1.06	1.40	1.65	1.95	2.22	2.50	2.75	3.10
12 hours	1.43	1.91	2.25	2.67	3.00	3.30	3.60	4.00
24 hours	1.90	2.50	2.98	3.46	3.85	4.25	4.60	5.20
36 hours	2.25	3.02	3.54	4.15	4.60	5.09	5.53	6.24
2 days	2.51	3.40	3.95	4.65	5.15	5.70	6.20	7.00
3 days	3.00	4.07	4.65	5.50	6.20	6.80	7.50	8.40
5 days	3.61	4.91	5.76	6.85	7.63	8.42	9.20	10.29
10 days	4.73	6.44	7.54	8.96	9.97	11.01	11.95	13.45

In order to be able to run the Climate Change scenario for the 100-year event with 10% higher precipitation values, Table 3 values were created with the Scaling Factor's percentage higher values for all fields. These results are shown in Table 4 for Arcade Creek and Table 5 for Pleasant Grove Creek Canal.

Table 4 – Adjusted Table 4-1 for Arcade Creek Scaling Factor increased Precipitation Values

Duration		2	5	10	25	50	100	200	500
5	min	0.19	0.29	0.37	0.41	0.44	0.48	0.49	0.58
10	min	0.28	0.42	0.53	0.59	0.63	0.67	0.70	0.82
15	min	0.34	0.51	0.63	0.70	0.75	0.79	0.82	0.96
30	min	0.47	0.69	0.83	0.92	0.97	1.02	1.04	1.22
1	hour	0.66	0.93	1.12	1.20	1.25	1.31	1.33	1.53
2	hours	0.93	1.28	1.52	1.61	1.66	1.72	1.76	2.00
3	hours	1.12	1.52	1.80	1.88	1.94	2.00	2.03	2.31
6	hours	1.55	2.04	2.41	2.50	2.60	2.70	2.75	3.10
12	hours	2.09	2.79	3.29	3.42	3.51	3.56	3.60	4.00
24	hours	2.77	3.65	4.35	4.43	4.50	4.59	4.60	5.20
36	hours	3.25	4.36	5.12	5.40	5.47	5.55	5.59	6.30
2	days	3.64	4.93	5.73	6.09	6.18	6.33	6.39	7.21
3	days	4.32	5.86	6.70	7.43	7.56	7.75	7.95	8.90
5	days	5.27	7.17	8.41	9.45	9.84	9.94	10.12	11.32
10	days	7.05	9.60	11.23	12.99	13.66	13.76	14.22	16.01

Table 5 – Adjusted Table 4-1 for Pleasant Grove Creek Canal Scaling Factor increased Precipitation Values

Duration		2	5	10	25	50	100	200	500
5	min	0.18	0.27	0.34	0.44	0.54	0.68	0.78	0.93
10	min	0.26	0.39	0.49	0.63	0.77	0.95	1.12	1.31
15	min	0.31	0.47	0.58	0.76	0.92	1.12	1.31	1.54
30	min	0.43	0.63	0.77	0.99	1.19	1.45	1.66	1.95
1	hour	0.61	0.86	1.04	1.30	1.53	1.86	2.13	2.45
2	hours	0.86	1.19	1.40	1.74	2.03	2.45	2.82	3.20
3	hours	1.04	1.40	1.66	2.03	2.37	2.85	3.25	3.70
6	hours	1.43	1.89	2.23	2.69	3.17	3.85	4.40	4.96
12	hours	1.93	2.58	3.04	3.68	4.29	5.08	5.76	6.40
24	hours	2.57	3.38	4.02	4.77	5.51	6.55	7.36	8.32
36	hours	3.02	4.05	4.74	5.69	6.53	7.74	8.74	9.86
2	days	3.34	4.52	5.25	6.32	7.26	8.61	9.67	10.92
3	days	3.96	5.37	6.14	7.43	8.62	10.06	11.48	12.85
5	days	4.62	6.28	7.37	8.91	10.22	11.96	13.34	14.92
10	days	5.87	7.99	9.35	11.24	12.76	14.64	16.01	18.02

Tables 4 and 5 are used to provide replacement values to “Table 4-1” which is a text file used by the SACCALC software to generate precipitation for the project hydrology analysis.

CLIMATE CHANGE ANALYSIS:

1. ARCADE CREEK BASIS ANALYSIS

The SACCALC for the post-project conditions 100-year analysis was re-run using the Table 4 input values. A HEC-RAS Model was created for the climate change scenario. The results of the analysis show that flood elevation increase does not exceed 0.5 feet anywhere in the project channels or detention basin. Therefore, the increase in flood elevations is contained within the project design freeboard. The analysis results at project discharge locations are provided in Table 6 and compared with the other analysis'.

For the Arcade Creek Climate Scaling Factors, no change to the project design would be required, as adequate freeboard within the channels, detention basins and pad grading would continue to exist in this scenario. No changes in the project design are needed for the Arcade Creek flows.

2. PLEASANT GROVE CREEK CANAL BASIS ANALYSIS

The SACCALC for the post-project conditions 100-year analysis was re-run using the Table 5 input values. A HEC-RAS Model was created for the climate change scenario. The results of the analysis show that flood elevations have the potential to exceed the top of bank of the channels with the current project design. However, with modifications to culvert sizing, the flow levels could be lowered to containment within the current project design. The Analysis results at project discharge locations are provided in Table 6 and compared with the other analysis'.

For the Pleasant Grove Creek Canal Climate Change flows, one mitigation alternative would be to change the culvert sizing and number of culverts at roadway crossings. This will be needed in order to provide consistency with the current project design.

3 PEAK FLOW RATE CHANGES FOR CLIMATE CHANGE

With the application of the Climate Change Scaling Factors to the precipitation, the peak flow rates leaving the property are expected to increase. Table 6 summarizes those changes for both of the "bookend" scenarios for the 100-year 24-hour event.

Table 6 – Summary of Flow Rates for the 100-Year 24-Hour Event, with and without Climate Change

Location	Master Drainage Plan Pre-Project Flow (cfs)	Master Drainage Plan Post-Project Flow (cfs)	Change for Post Project (cfs)	Post-Project Arcade Cr. Climate Change Flow (cfs)	Change for Arcade Cr. Climate Change (cfs)	Post-Project PGCC Climate Change Flow (cfs)	Change for PGCC Climate Change (cfs)
Morrison Creek Tributary Combined	188.5	184.5	-4	202.0	+13.5	390.3	+205.8
Elder Creek Sta. 11.376(*)	845.6	558.8	-286.8	646.0	-199.6	1192.33	+346.73

(*) a station sufficiently downstream of the project to capture all project flows

4 10-DAY ANALYSIS PEAK FLOW RATES

As previously discussed, the analysis of the 100-year 10-day event is included here. Table 7 summarizes the peak flow rates and changes for Arcade Creek and Pleasant Grove Creek Canal for the 100-year 10-day event.

Table 7 – Summary of Flow Rates for the 100-Year 10-Day Event, with and without Climate Change

Location	Pre-Project Flow (cfs)	Post-Project Flow (cfs)	Change for Post Project (cfs)	Post-Project Arcade Cr. Climate Change Flow (cfs)	Change for Arcade Cr. Climate Change (cfs)	Post-Project PGCC Climate Change Flow (cfs)	Change for PGCC Climate Change (cfs)
Morrison Creek Tributary Combined	133.6	135.3	+1.7	161.1	+27.5	170.9	+37.3
Elder Creek Sta. 11.376(*)	654.5	494.9	-159.6	651.2	-3.3	696.3	+37.8

(*) a station sufficiently downstream of the project to capture all project flows

When the flows in Table 6 and Table 7 are compared, the 24-hour event peak flow rates shown in Table 6 are greater than those in Table 7 for all events and scenarios. This verifies the 24-hour event

generates the higher peak flow rates for the current climate scenario and the future climate scenarios.

5 CLIMATE CHANGE SCENARIO SYSTEM OPTIMIZATION

Table 8 compares the optimized culvert sizing for each 100-year flow scenario, and demonstrates that culvert size changes are not needed for the Arcade Creek Climate Change Scenario.

Table 8 – Optimum Culvert Sizing for 100-Year Event Scenarios:

Culvert Location	Master Drainage Plan Culvert Size	Arcade Creek Climate Scaling Factors Culvert Size	Pleasant Grove Creek Canal Scaling Factors Culvert Size
Sta 565 Mor-2, R-1 Internal Project Roadway Culvert	1-48 Inch Pipe	Same as Master Plan	Upsize to 2-54 inch Pipe
Sta. 465 Mor-2, R-1 Internal Project Detention Culvert	1-30 Inch Pipe (overtopping Weir not changed)	Same as Master Plan	Upsize to 1-54 Inch Pipe
Sta. 321.5 Mor-2, R-1 Excelsior Drive Culvert	3-42 Inch Pipe	Same as Master Plan	Upsize to 7-42 Inch Pipe
Sta. 222 Elder 1, R-1 Internal Roadway Culvert	1-60 Inch Pipe	Same as Master Plan	Upsize to 2-54 Inch Pipe
Sta. 158 Elder 1, R-1 Internal Roadway Culvert	2-72 Inch Pipe	Same as Master Plan	Upsize to 3-72 Inch Pipe
Sta. 22.5 Elder 1, R-1_Down Jackson Highway Culvert	2-10’w by 5’h Box Culvert	Same as Master Plan	Upsize to 2-10’w by 5’h Box Culvert + 1-6’w x 5’h Box Culvert

6 DWR BASIS OF MITIGATION ADEQUACY:

Per the December 17th email from Mike Johnson, Item 4 specifies: *"Water Resources agrees that comparing the pre-project condition to the post-project condition, as well as comparing the pre-project with climate change condition to the post-project with climate change condition makes the most sense"*.

Table 9 Compares the Pre-Project with Climate Change peak 100-year flow rates to the Post-Project with Climate Change peak 100-year flow rates for the 24-hour 100-year event.

Table 9 – Same Event Comparison of PRE-PROJECT and POST-PROJECT SCENARIOS

Location	Pre-Project Peak Flow (cfs)	Post-Project Peak Flow (cfs)	Change for Post Project (cfs)	Pre-Project Arcade Cr. Climate Change Peak Flow (cfs)	Post-Project Arcade Cr. Climate Change Flow (cfs)	Change for Arcade Cr. Climate Change (cfs)	Pre-Project PGCC Climate Change Peak Flow (cfs)	Post-Project PGCC Climate Change Flow (cfs)	Change for PGCC Climate Change (cfs)
Morrison Creek Tributary Combined	188.5	184.5	-4	204.5	202.0	-2.5	315.4	390.3	+74.9
Elder Creek Sta. 11.376(*)	845.6	558.8	-286.8	882.4	646.0	-237.6	1598.6	1192.3	-406.3

(*) a station sufficiently downstream of the project to capture all project flows

The proposed plan demonstrates the required mitigation in all Climate Change scenarios for Elder Creek. The proposed project provides the required peak flow reductions for the combined flow leaving the project at the Morrison Creek tributary for the Arcade Creek Climate Change scenario, but not the Pleasant Grove Creek Canal Climate Change scenario. If Sacramento County selects higher climate factors and the subsequent flows, similar to those used in the Pleasant Grove Creek Canal climate change analysis, some culvert sizes would need to be increased to contain flows at the roadway crossings, which would change the attenuation characteristics of the proposed channel at the Morrison Creek Tributary. However, it is likely in this higher climate change scenario, the onsite channel storage may not be sufficient to provide sufficient onsite attenuation to mitigate peak flows leaving the boundary at this location. The original drainage plan considered the potential of the project to increase flows at this location. The design modifications needed for this tributary of the project will be implemented at the small lot tentative map approval process based on adopted County Climate Change Policies.

7 SUMMARY AND CONCLUSIONS:

- The project was analyzed for the "bookend" approach with climate change. Scaling Factors for the low side of Climate Change were applied from Arcade Creek Factors and the high side of Climate Change was applied from Pleasant Grove Creek Canal Factors.
    - The Arcade Creek climate change Factors resulted in little change from the current Project 100-year 24-hour event analysis.
    - The Project design provides conveyance of flows for this climate change scenario.
    - The Pleasant Grove Creek Canal(PGCC) climate change Factors resulted in changes in peak flow rate increases in some locations which would require some design changes such as culvert sizing at roadways.
    - The Project design channel systems will convey the increased PGCC flow rates with the addition and/or upsizing of culverts.
    - The PGCC increase flows will not impact the current proposed project grading design.
- The analysis demonstrated that the 100-year 24-hour event generates the higher peak flows compared to the 10-day 100-year event would in all climate change scenarios.
- The analysis demonstrated Arcade Creek and PGCC climate change scaling factors increase runoff leaving the site above the current estimated flows for the 100-year 24-hour event.

The Jackson Township project provides resilience to climate change for the design criteria and for mitigation criteria. Design changes are only noted as necessary if the County adopts climate scaling factors similar to the estimated Pleasant Grove Creek Canal and even then the existing design can accommodate the required changes when and if they become necessary.

The project design parameters will be re-evaluated, and the design elements modified relative to climate change criteria once Sacramento County DWR identifies new criteria/standards for climate change. Modifications to the drainage systems will be implemented at the time of Tentative Maps, Project Design of Improvements or it becomes necessary due to changes in the climate.

Technical Analysis for this study information are provided at the following download link:
http://www.civilsolutions.com/workspaces/Jackson/2018_12_ClimateCH/

If you have any questions or comments, please contact me at (916) 645-5700.

Sincerely,

Thomas S. Plummer, P.E., CFM

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MEMORANDUM

To: Tim Crush, PE, Wood Rodgers, Inc.

From: David Ford, PE, PhD

Date: April 9, 2018

Subject: Additional information regarding proposed method for accounting for uncertainty associated with climate change for West Jackson Highway Master Plan

Situation

On April 17, 2017, I provided a memo in which I described 3 reasonable approaches for accounting for climate change in development of the West Jackson Highway Master Plan. I recommended you use a climate-informed science approach (CISA) similar to that developed and used by the California Department of Water Resources (CA DWR) for the Central Valley Flood Protection Plan (CVFPP) 2017. With a CISA, the basis of design is adjusted to account for changes predicted with empirical or conceptual models of relevant meteorological and hydrological processes.

CA DWR's approach scales existing-climate discharge frequency curves. Scaling factors were developed by CA DWR through analysis of changed-climate scenarios. In the April 17, 2017 memo, I summarized the method used by CA DWR for this.

I also provided in my April memo the table below (which is labeled Table 3 in the original memo). In this table, factors computed by CA DWR for scaling 1-day volume to reflect climate-change impact are shown for 5 watersheds similar to the West Jackson Highway project location. I explained in my original memo how these could be used.

Table 1. CA DWR's unregulated 1-day frequency curve scaling factors for Sacramento River basin locations similar to project site

		Scale factor for 1-day volume for location shown				
Annual exceedance probability (1)	**Return period (2)**	**Arcade Creek (3)**	**Pleasant Grove Creek Canal (4)**	**Putah Creek near Davis (5)**	**Ulatis Creek (6)**	**Steelhead Creek below Arcade Creek (7)**
0.005	200 yr	0.99	1.60	1.21	1.62	0.99
0.01	100 yr	1.08	1.54	1.23	1.59	1.08
0.1	10 yr	1.46	1.35	1.31	1.44	1.46

Task

After reviewing the information I provided, Mike Nowland of your office wrote in an e-mail on May 11, 2017 *I believe that the Morrison Creek watershed and our project within it are going to need to be checked under longer duration storm events (10-day)...* Thus scaling factors I presented in my memo need to be extended.

Action

We reviewed information provided by CA DWR, and on June 1, 2017, I provided, via e-mail, an Excel spreadsheet with scaling factors for longer durations. For completeness, I've included below tables with the additional values developed by CA DWR.

Table 2. CA DWR's unregulated 3-day frequency curve scaling factors for Sacramento River basin locations similar to project site

		Scale factor for 3-day volume for location shown				
Annual exceedance probability (1)	**Return period (2)**	**Arcade Creek (3)**	**Pleasant Grove Creek Canal (4)**	**Putah Creek near Davis (5)**	**Ulatis Creek (6)**	**Steelhead Creek below Arcade Creek (7)**
0.005	200 yr	1.06	1.53	1.27	1.60	1.06
0.01	100 yr	1.14	1.48	1.28	1.57	1.14
0.1	10 yr	1.44	1.32	1.32	1.42	1.44

Table 3. CA DWR's unregulated 7-day frequency curve scaling factors for Sacramento River basin locations similar to project site

		Scale factor for 7-day volume for location shown				
Annual exceedance probability (1)	**Return period (2)**	**Arcade Creek (3)**	**Pleasant Grove Creek Canal (4)**	**Putah Creek near Davis (5)**	**Ulatis Creek (6)**	**Steelhead Creek below Arcade Creek (7)**
0.005	200 yr	1.13	1.38	1.28	1.46	1.13
0.01	100 yr	1.21	1.36	1.29	1.45	1.21
0.1	10 yr	1.48	1.25	1.30	1.37	1.48

Table 4. CA DWR's unregulated 15-day frequency curve scaling factors for Sacramento River basin locations similar to project site

Annual exceedance probability (1)	Return period (2)	Scale factor for 15-day volume for location shown				
		Arcade Creek (3)	Pleasant Grove Creek Canal (4)	Putah Creek near Davis (5)	Ulatis Creek (6)	Steelhead Creek below Arcade Creek (7)
0.005	200 yr	1.26	1.28	1.23	1.41	1.26
0.01	100 yr	1.31	1.27	1.24	1.40	1.31
0.1	10 yr	1.50	1.22	1.26	1.35	1.50

Table 5. CA DWR's unregulated 30-day frequency curve scaling factors for Sacramento River basin locations similar to project site

Annual exceedance probability (1)	Return period (2)	Scale factor for 30-day volume for location shown				
		Arcade Creek (3)	Pleasant Grove Creek Canal (4)	Putah Creek near Davis (5)	Ulatis Creek (6)	Steelhead Creek below Arcade Creek (7)
0.005	200 yr	1.32	1.25	1.23	1.39	1.32
0.01	100 yr	1.36	1.24	1.23	1.39	1.36
0.1	10 yr	1.50	1.20	1.24	1.35	1.50

Appendix NOI-1

Environmental Noise Analysis



Jackson Township Specific Plan
Environmental Noise Analysis

Sacramento County, California

May 15, 2018

jcb Project # 2018-102

Prepared for:

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Prepared by:

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Jim Brennan, INCE
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INTRODUCTION

This section describes the existing noise environment in the area of the proposed Jackson Township Specific Plan, and the potential of the Proposed Project to significantly increase noise levels due to project construction and increased traffic, and the potential of the Proposed Project to expose new noise sensitive uses to excessive noise levels. The relevant noise standards are contained within the Noise Elements of the local General Plans and noise ordinances.

ENVIRONMENTAL SETTING

BACKGROUND INFORMATION ON NOISE

Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective: one person's music is another's headache.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the

same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. Appendix A provides a summary of acoustical terms used in this report.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

TABLE 1
TYPICAL NOSE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. November 2009.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING CONDITIONS

Sources of ambient noise in the project vicinity include roadway traffic, the Sacramento Raceway and some potential noise from the Mather Airport aircraft operations.

EXISTING ON-SITE AND ADJACENT LAND USES

The project site currently consists of open space and large-lot residential uses. Adjacent uses are primarily open space, agricultural or industrial uses.

EXISTING AMBIENT DAYTIME NOISE LEVELS

To generally quantify existing ambient noise levels in the project vicinity, continuous 24-hour background noise measurements were conducted at four locations around the project site. The ambient noise measurement locations are shown on Figure 1.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

The sound level meters were programmed to record the maximum and average noise levels at each site, as well as other statistical descriptors during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured during the interval period. The average value, denoted L_{eq}, represents the energy average of all of the noise received by the sound level meter microphone during the interval period. Table 2 shows the summary of the noise measurement data. Appendix B graphically shows the results of the continuous measurement results.

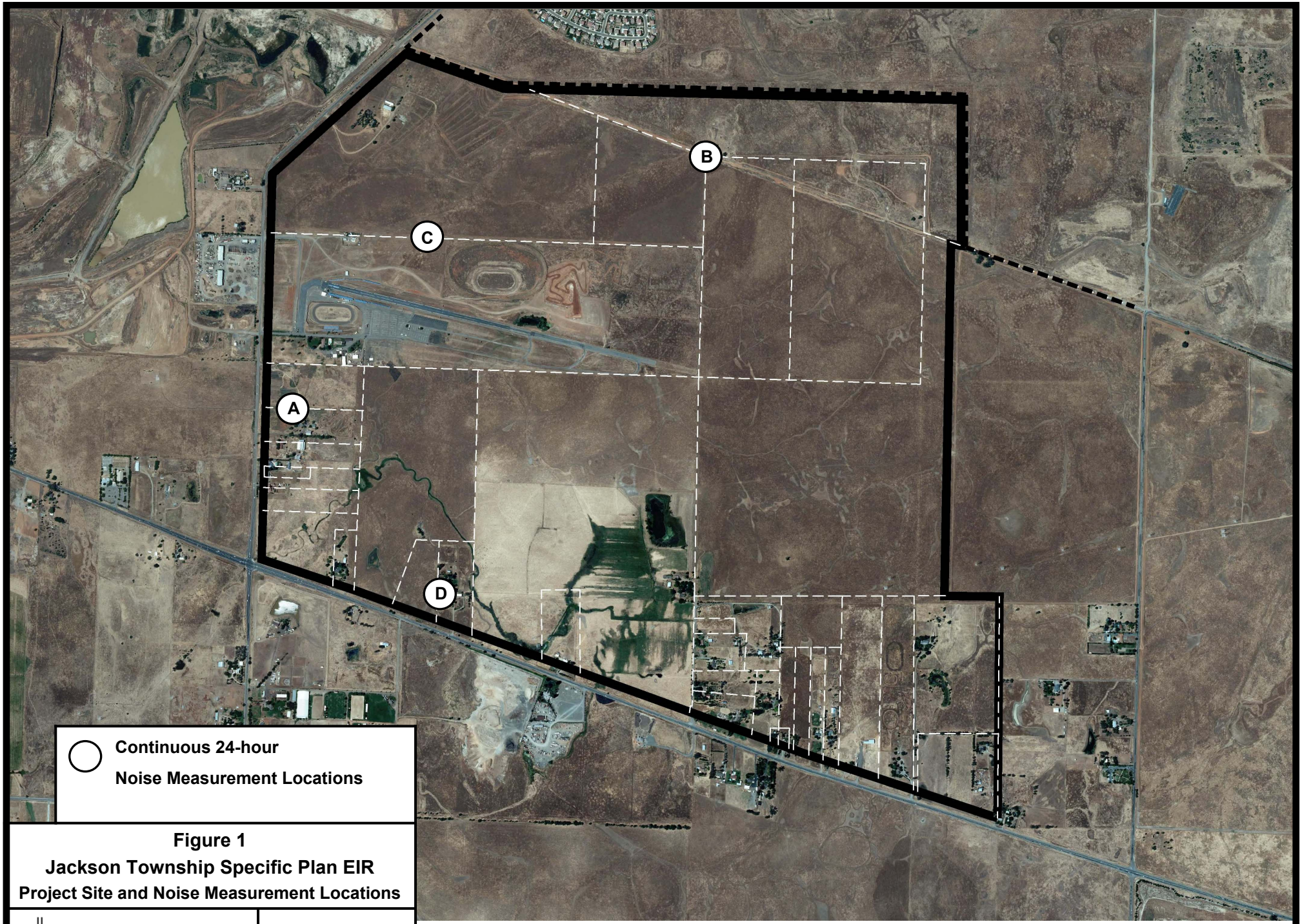


Figure 1
Jackson Township Specific Plan EIR
Project Site and Noise Measurement Locations

j.c. brennan & associates
consultants in acoustics

Figure Prepared Feb. 2014

TABLE 2
SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA
JACKSON TOWNSHIP SPECIFIC PLAN EIR – COUNTY OF SACRAMENTO, CALIFORNIA

Site	Date	Notes	Measured Noise Levels, dB						
				Daytime (7am-10pm)			Nighttime (10pm-7am)		
			L_{dn}	L_{eq}	L_{max}	L_{50}	L_{eq}	L_{max}	L_{50}
A	August 5, 2013 August 6, 2013	On-site 365 feet from centerline of Excelsior Road	53.3 55.7	49.1 52.9	66.1 71.1	44.9 46.4	46.4 48.2	60.9 61.7	42.3 42.8
B	August 5, 2013 August 6, 2013	On-site proposed Kiefer Blvd, 4,140 feet from Excelsior Road and 6,360 feet from Jackson Road	50.9 50.4	51.5 49.0	61.4 66.6	36.8 39.9	39.7 42.1	50.0 53.8	36.9 38.8
C	*August 10, 2013 August 11, 2013	On-site 825 feet north of center racetrack	66.6 47.0	68.6 44.1	80.6 61.7	50.2 36.1	40.0 39.6	50.7 52.2	37.4 34.3
D	*August 10, 2013 August 11, 2013	On-Site, 365 feet from centerline of Jackson rd	56.4 54.8	52.2 50.5	66.0 65.5	49.9 47.2	49.5 47.9	63.9 62.6	44.0 40.0

Source: j.c. brennan & associates, Inc., 2013

* Race Event Day

Existing Project Roadway Noise Levels

To predict noise levels due to traffic, information provided by the Traffic Consultant (DKS) was used. j.c. brennan & associates, Inc. utilized the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). PER supplied the information so as to be consistent between the four separate Specific Plans which are being analyzed simultaneously. The FHWA model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. After applying the day/night traffic distribution, the 24-hour L_{dn} values can be calculated.

Table 3 shows the existing traffic noise levels in terms of L_{dn} at a reference distance of 100 feet from the centerlines of the existing and existing plus project-area roadways identified by DKS. This table also shows the distances to traffic noise contours. A complete listing of the FHWA Model input data is can be obtained from j.c. brennan & associates.

TABLE 3 PREDICTED EXISTING TRAFFIC NOISE LEVELS JACKSON TOWNSHIP						
Roadway	Segment		Ldn @ 100'	Distance to Contours (feet) (Ldn)		
				70 dB	65 dB	60 dB
Bradshaw Rd	Folsom Blvd	US 50	67.6	69	149	321
Bradshaw Rd	US 50	Lincoln Village Dr	70.7	111	239	515
Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	69.8	97	208	449
Bradshaw Rd	Old Placerville Rd	Goethe Rd	69.4	91	196	422
Bradshaw Rd	Goethe Rd	Kiefer Blvd	68.0	74	160	344
Bradshaw Rd	Kiefer Blvd	Jackson Rd	68.3	78	167	360
Bradshaw Rd	Jackson Rd	Elder Creek Rd	67.1	64	137	296
Bradshaw Rd	Elder Creek Rd	Florin Rd	66.9	63	135	291
Bradshaw Rd	Florin Rd	Gerber Rd	67.1	64	137	296
Bradshaw Rd	Gerber Rd	Calvine Rd	65.8	52	113	243
Calvine Rd	Waterman Rd	Bradshaw Rd	65.5	50	108	233
Calvine Rd	Bradshaw Rd	Vineyard Rd	64.4	42	91	197
Calvine Rd	Vineyard Rd	Excelsior Rd	60.2	22	48	103
Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	57.7	15	33	70
Douglas Rd	Mather Blvd	Zinfandel Dr	61.7	28	60	130
Douglas Rd	Zinfandel Dr	Sunrise Blvd	62.7	33	70	152
Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	60.2	22	48	103
Douglas Rd	Rancho Cordova Pkwy	Grant Line Rd	60.2	22	48	103
Eagles Nest Rd	Kiefer Blvd	Jackson Rd	54.1	9	19	40
Eagles Nest Rd	Jackson Rd	Florin Rd	50.6	5	11	24
Eagles Nest Rd	Florin Rd	Grant Line Rd	46.2	3	6	12
Elder Creek Rd	65th St	Power Inn Rd	67.9	73	157	337
Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	65.5	50	107	231
Elder Creek Rd	Florin Perkins Rd	South Watt Ave	63.9	39	85	183
Elder Creek Rd	South Watt Ave	Hedge Ave	61.0	25	54	116
Elder Creek Rd	Hedge Ave	Mayhew Rd	63.9	39	84	181
Elder Creek Rd	Mayhew Rd	Bradshaw Rd	63.5	37	80	171
Elder Creek Rd	Bradshaw Rd	Excelsior Rd	57.8	15	33	71
Elk Grove-Florin Rd	Florin Rd	Gerber Rd	69.8	97	210	452
Excelsior Rd	Kiefer Blvd	Douglas Rd	60.2	22	48	103
Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	61.9	29	62	134
Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	61.9	29	62	134
Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	61.9	29	62	134
Excelsior Rd	Jackson Rd	Elder Creek Rd	64.0	40	86	186
Excelsior Rd	Elder Creek Rd	Florin Rd	63.2	35	76	164
Excelsior Rd	Florin Rd	Gerber Rd	60.8	24	53	114
Excelsior Rd	Gerber Rd	Calvine Rd	59.8	21	45	96
Excelsior Rd	Calvine Rd	Sheldon Rd	60.0	22	46	100
Florin Rd	Stockton Blvd	Power Inn Rd	68.9	85	183	394
Florin Rd	Power Inn Rd	Florin-Perkins Rd	67.9	72	156	336
Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	66.1	55	118	253
Florin Rd	South Watt Ave	Hedge Ave	63.4	36	78	169

TABLE 3
PREDICTED EXISTING TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Roadway	Segment		Ldn @ 100'	Distance to Contours (feet) (Ldn)		
				70 dB	65 dB	60 dB
Florin Rd	Hedge Ave	Mayhew Rd	62.5	32	69	148
Florin Rd	Mayhew Rd	Bradshaw Rd	62.5	32	69	148
Florin Rd	Bradshaw Rd	Excelsior Rd	58.9	18	39	85
Florin Rd	Excelsior Rd	Sunrise Blvd	57.8	15	33	72
Folsom Blvd	Howe Ave	Jackson Rd	67.7	71	152	328
Fruitridge Rd	65th St	Power Inn Rd	65.7	52	111	240
Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	65.3	49	105	226
Fruitridge Rd	Florin Perkins Rd	South Watt Ave	63.6	38	81	174
Fruitridge Rd	South Watt Ave	Hedge Ave	58.1	16	35	75
Fruitridge Rd	Hedge Ave	Mayhew Rd	56.0	12	25	54
Grant Line Rd	White Rock Rd	Douglas Rd	62.1	30	64	137
Grant Line Rd	Douglas Rd	Kiefer Blvd	61.4	27	57	124
Grant Line Rd	Kiefer Blvd	Jackson Rd	61.1	25	55	118
Grant Line Rd	Jackson Rd	Sunrise Blvd	65.2	48	103	221
Grant Line Rd	Sunrise Blvd	Calvine Rd	66.2	56	120	258
Grant Line Rd	Calvine Rd	Sheldon Rd	64.7	44	95	204
Grant Line Rd	Sheldon Rd	Wilton Rd	65.9	53	115	247
Grant Line Rd	Wilton Rd	Bond Rd	65.5	50	108	234
Happy Ln	Old Placerville Rd	Kiefer Blvd	60.1	22	47	102
Hedge Ave	Jackson Rd	Fruitridge Rd	58.3	17	36	77
Hedge Ave	Fruitridge Rd	Elder Creek Rd	59.2	19	41	88
Hedge Ave	Elder Creek Rd	Florin Rd	60.0	21	46	99
Howe Ave	US 50	Folsom Blvd	72.9	156	337	726
International Dr	Mather Field Rd	Zinfandel Dr	68.0	74	159	343
International Dr	Zinfandel Dr	Sunrise Blvd	67.2	65	140	301
Jackson Rd	Folsom Blvd	Florin Perkins Rd	64.4	42	91	196
Jackson Rd	Florin Perkins Rd	South Watt Ave	63.7	38	82	176
Jackson Rd	South Watt Ave	Hedge Ave	66.9	62	133	287
Jackson Rd	Hedge Ave	Mayhew Rd	64.5	43	93	200
Jackson Rd	Mayhew Rd	Bradshaw Rd	64.1	41	87	188
Jackson Rd	Bradshaw Rd	Excelsior Rd	63.5	37	80	172
Jackson Rd	Excelsior Rd	Collector JT-3	62.6	32	69	148
Jackson Rd	Collector JT-3	Tree View Ln	62.6	32	69	148
Jackson Rd	Tree View Ln	Collector JT-4	67.6	69	149	321
Jackson Rd	Collector JT-4	Eagles Nest Rd	68.1	75	162	349
Jackson Rd	Eagles Nest Rd	Sunrise Blvd	67.9	73	157	337
Jackson Rd	Sunrise Blvd	Grant Line Rd	69.2	88	190	409
Kiefer Blvd	Florin Perkins Rd	South Watt Ave	64.0	40	86	186
Kiefer Blvd	South Watt Ave	Mayhew Rd	70.1	102	219	472
Kiefer Blvd	Mayhew Rd	Bradshaw Rd	67.1	64	137	296
Kiefer Blvd	Bradshaw Rd	Happy Ln	64.0	40	86	186
Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	0	0	0	0
Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	60.9	25	53	114
Mather Blvd / Norden Ave	Von Karman St	Bleckely St	62.0	29	63	136
Mather Blvd	Bleckely St	Femoyer St	62.0	29	63	136
Mather Blvd	Femoyer St	Douglas Rd	59.9	21	46	99
Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	60.7	24	51	111
Mather Field Rd	US 50	Rockingham Dr	68.1	75	162	349
Mather Field Rd	Rockingham Dr	International Dr	68.1	75	161	347
Mather Field Rd	International Dr	Peter A McCuen Blvd	64.1	40	87	187

TABLE 3
PREDICTED EXISTING TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Roadway	Segment		Ldn @ 100'	Distance to Contours (feet) (Ldn)		
				70 dB	65 dB	60 dB
Mayhew Rd	Folsom Blvd	Goethe Rd	60.8	24	53	113
Mayhew Rd	Goethe Rd	Kiefer Blvd	61.7	28	60	129
Mayhew Rd	Jackson Rd	Fruitridge Rd	55.6	11	24	51
Old Placerville Rd	Bradshaw Rd	Granby Dr	65.5	50	108	232
Old Placerville Rd	Granby Dr	Happy Ln	65.3	48	104	224
Old Placerville Rd	Happy Ln	Routier Rd	64.2	41	89	192
Old Placerville Rd	Routier Rd	Rockingham Dr	64.2	41	89	192
Power Inn Rd	Folsom Blvd	14th Ave	69.5	93	200	431
Rockingham Dr	Old Placerville Rd	Mather Field Rd	66.9	62	134	289
South Watt Ave	Folsom Blvd	Kiefer Blvd	70.1	101	217	468
South Watt Ave	Kiefer Blvd	Jackson Rd	68.6	81	174	375
South Watt Ave	Jackson Rd	Fruitridge Rd	68.7	81	176	378
South Watt Ave	Fruitridge Rd	Elder Creek Rd	66.8	61	132	285
South Watt Ave	Elder Creek Rd	Florin Rd	65.2	48	103	221
Sunrise Blvd	US 50	Folsom Blvd	69.7	96	207	446
Sunrise Blvd	Folsom Blvd	Trade Center Dr	69.3	90	194	418
Sunrise Blvd	Trade Center Dr	White Rock Rd	67.8	71	153	329
Sunrise Blvd	White Rock Rd	International Dr	71.5	126	272	586
Sunrise Blvd	International Dr	Rio Del Oro Pkwy	72.5	146	315	678
Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	72.1	137	295	636
Sunrise Blvd	Douglas Rd	Kiefer Blvd	71.3	123	264	570
Sunrise Blvd	Kiefer Blvd	Jackson Rd	69.7	95	205	442
Sunrise Blvd	Jackson Rd	Florin Rd	67.9	72	156	335
Sunrise Blvd	Florin Rd	Grant Line Rd	66.3	57	122	263
Vineyard Rd	Gerber Rd	Calvine Rd	64.8	45	97	209
Watt Ave	US 50	Folsom Blvd	75.3	227	489	1054
White Rock Rd	International Rd	Quality Dr	62.4	31	67	145
White Rock Rd	Quality Dr	Zinfandel Dr	66.1	55	118	255
White Rock Rd	Zinfandel Dr	Kilgore Rd	67.3	66	142	306
White Rock Rd	Kilgore Rd	Sunrise Blvd	65.2	48	103	222
White Rock Rd	Sunrise Blvd	Fitzgerald Rd	64.3	41	89	192
White Rock Rd	Fitzgerald Rd	Grant Line Rd	56.3	12	26	57
White Rock Rd	Grant Line Rd	Prairie City Rd	62.1	30	64	138
Zinfandel Dr	US 50	White Rock Rd	68.9	85	183	393
Zinfandel Dr	White Rock Rd	International Rd	64.9	46	99	212
Zinfandel Dr	International Rd	Baroque Dr	62.3	31	66	142
Zinfandel Dr	Baroque Dr	City Limit	62.3	31	66	142
Zinfandel Dr	City Limit	Douglas Rd	62.3	31	66	142
Zinfandel Dr	Douglas Rd	Kiefer Blvd	58.5	17	37	79

[1] Distances to traffic noise contours are measured in feet from the centerlines of the Roadways.
[2] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Source: The County of Sacramento, PER . 2014

Mather Airport Noise Levels

The Mather Airport is located approximately 1.2 miles from the northwest corner of the project site. Figure 2 shows the locations of the noise contours associated with aircraft operations at the Mather Airport (*Source: Mather Airport Master Plan Draft EIR, 2013*). Based upon the location of the 60 dB CNEL noise contour, the project site is approximately 1,869 feet outside of the existing (2014) Mather Airport 60 dB CNEL contour.

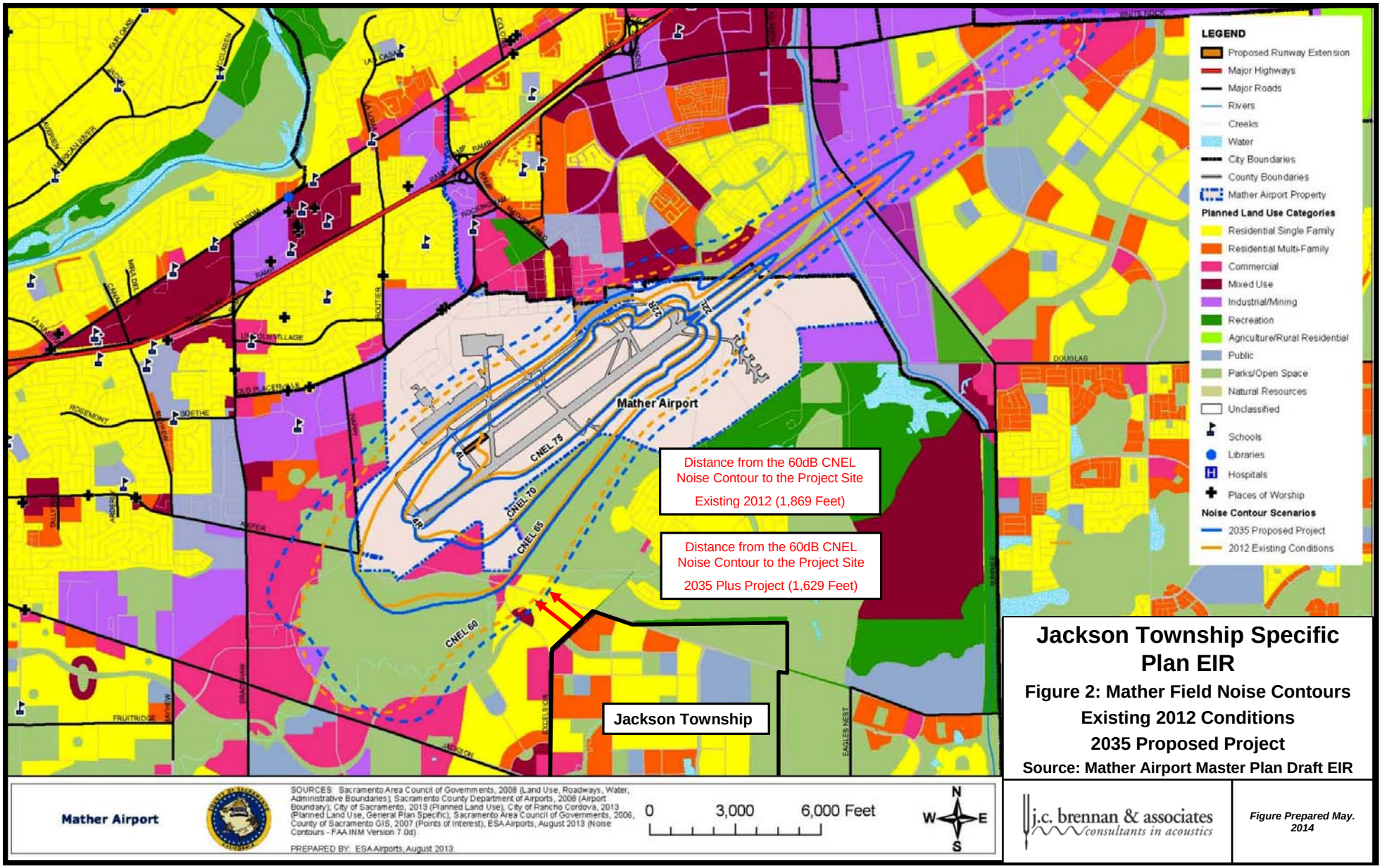
Sacramento Raceway Park Noise Levels

The Sacramento Raceway Park is located near the northwest corner of the project site. Activities at the raceway generally occur throughout the year. The primary race events include pro-drag races, street-legal drag races, MX motorcycle races, and stock car racing. The raceway has a drag strip, a motocross dirt track and an oval track.

j.c. brennan & associates, Inc. conducted both continuous and short-term noise level measurements of racing events in 2013. Noise level measurements were conducted for an MX motorcycle race (August 9, 2013), a pro-drag race (August 10, 2013), and a street-legal drag race (August 7, 2013). The noise level measurements were conducted to determine the maximum (Lmax), hourly average (Leq), and the hourly median (L50) noise levels associated with each of the race events.

Noise contours, which show the 75 dB Lmax and the 55 dB hourly L50 noise levels were developed for each of the racing events. The noise contours were developed using the CadnaA noise prediction model. The CadnaA model has the ability to predict noise levels while accounting for multiple noise sources, noise source heights, shielding effects from topography or intervening structures, and atmospheric conditions. Direct inputs included sound power levels, including the frequency content of the noise sources, topographic mapping in the form of shape files and the configuration of each of the race tracks.

Figures 3 through 5 show the CadnaA modeling results. Based upon the analysis and the noise contours shown on Figure 3, the drag strip noise contours cover a significant portion of the project site, and extend to the west onto the West Jackson Highway Master Plan Area. Figure 4 which shows the street legal drag strip noise contours indicates that the 75 dB Lmax contour also covers a significant portion of the project site. Figure 5 which shows the MX motorcycle race contours indicates that the noise from the MX motorcycle race is contained within a fairly small area of the site.

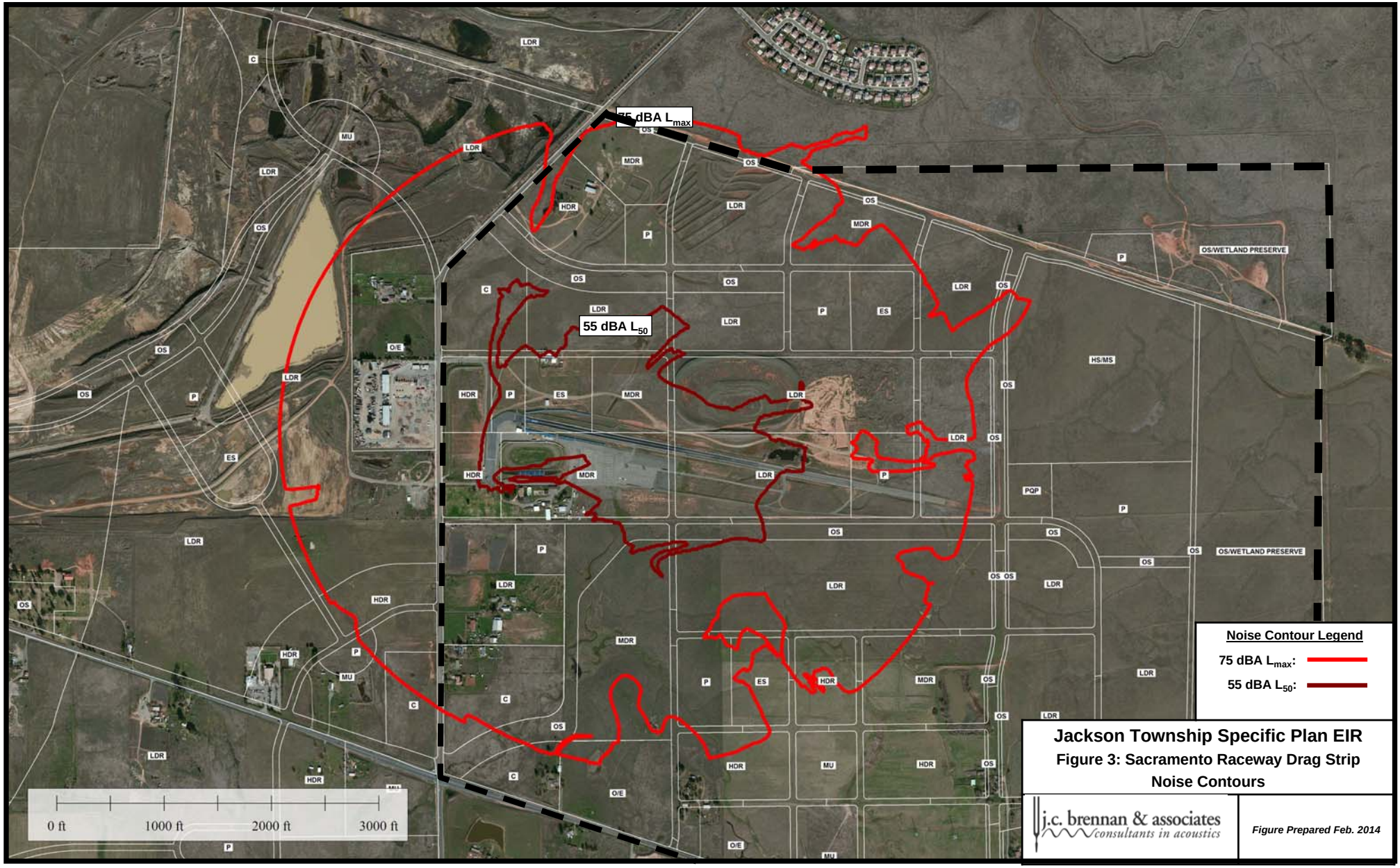


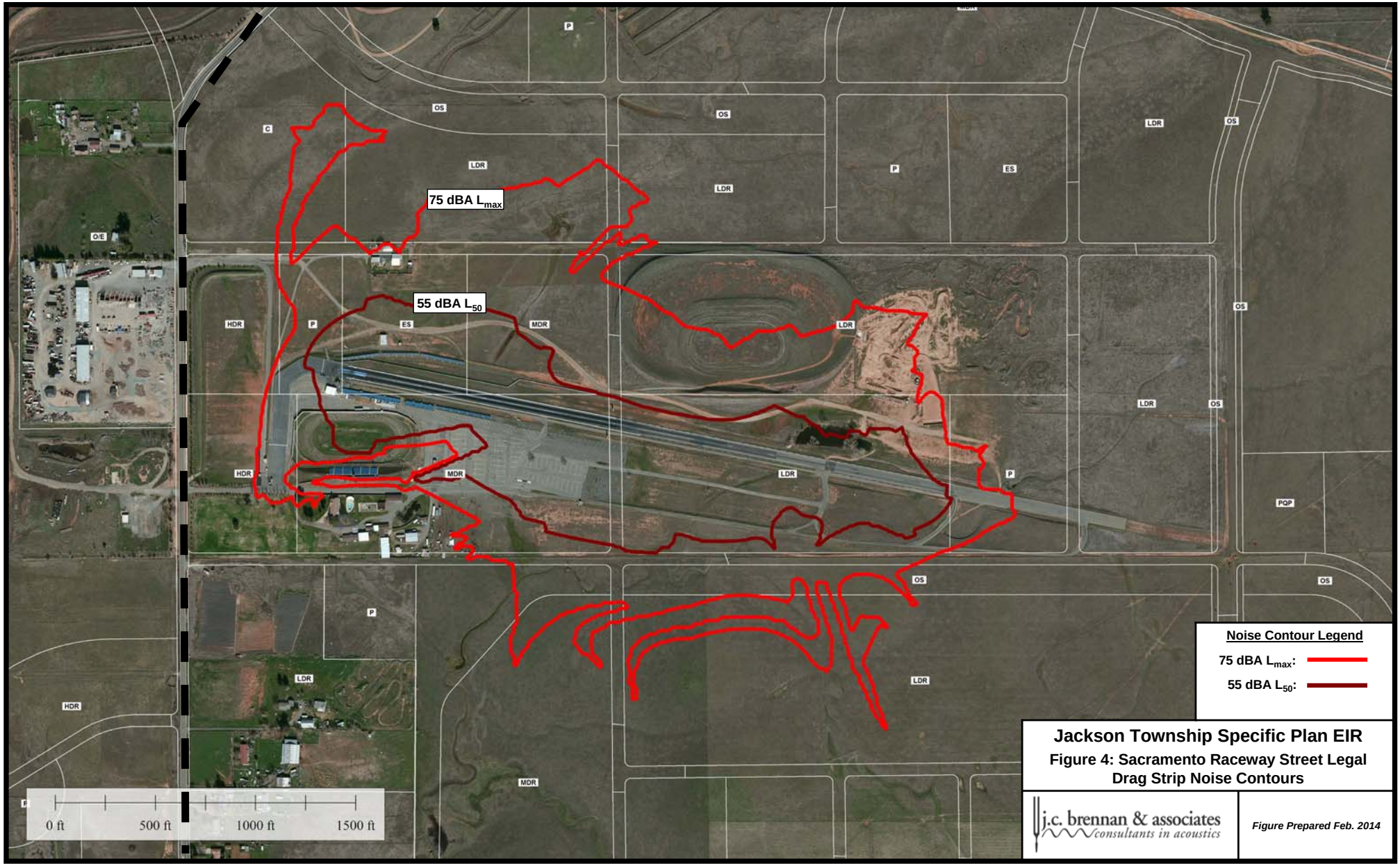
Jackson Township Specific Plan EIR

Figure 2: Mather Field Noise Contours
Existing 2012 Conditions
2035 Proposed Project
Source: Mather Airport Master Plan Draft EIR

j.c. brennan & associates
consultants in acoustics

Figure Prepared May. 2014


75 dBA L_{max}
55 dBA L_{50}
0 ft
1000 ft
2000 ft
3000 ft
Noise Contour Legend
75 dBA L_{max}:
55 dBA L_{50}:
Jackson Township Specific Plan EIR
Figure 3: Sacramento Raceway Drag Strip Noise Contours
j.c. brennan & associates
consultants in acoustics
Figure Prepared Feb. 2014

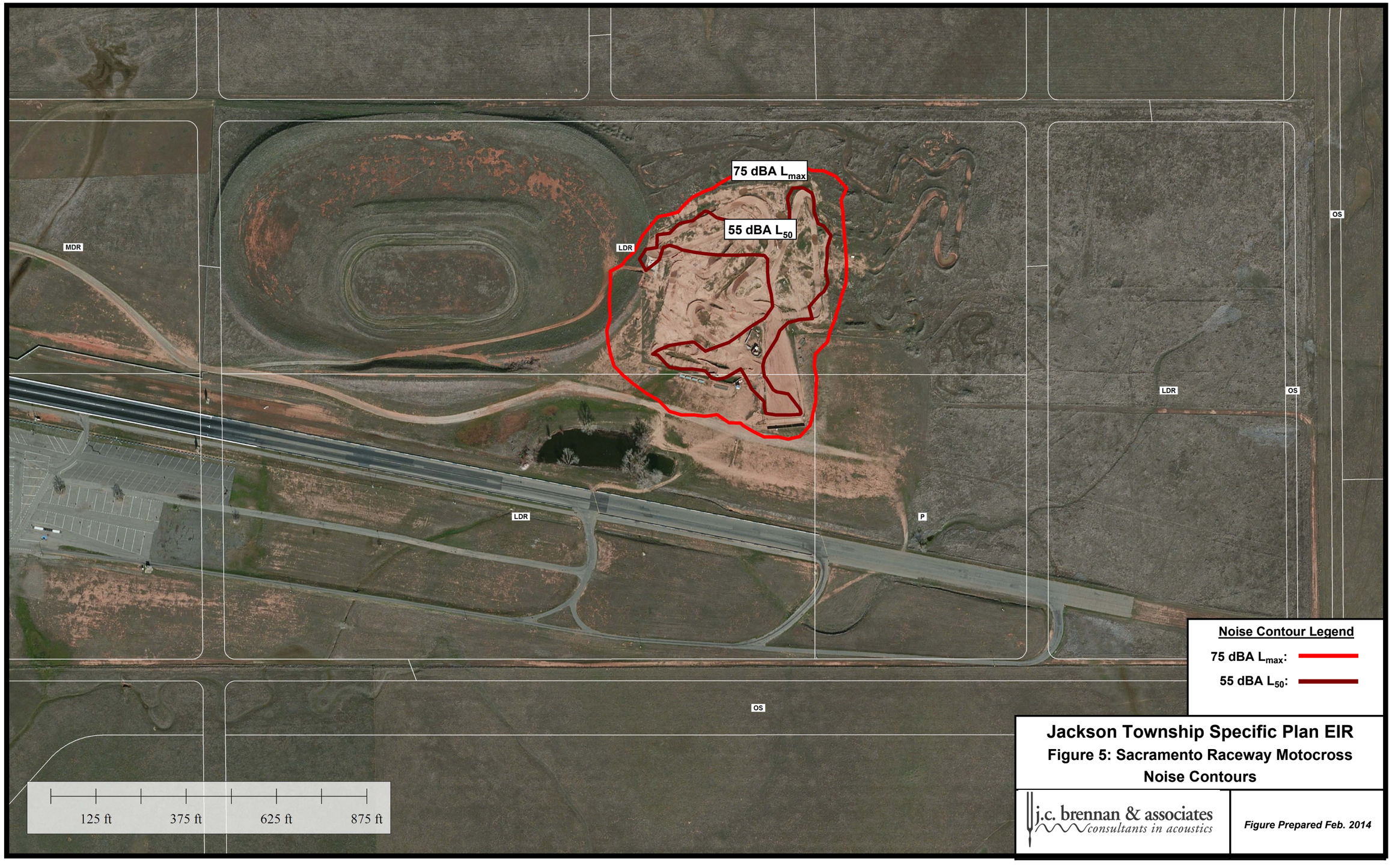


Jackson Township Specific Plan EIR

Figure 4: Sacramento Raceway Street Legal Drag Strip Noise Contours

j.c. brennan & associates
consultants in acoustics

Figure Prepared Feb. 2014



Noise Contour Legend

75 dBA L_{max}:

55 dBA L_{50}:

Jackson Township Specific Plan EIR

Figure 5: Sacramento Raceway Motocross Noise Contours

j.c. brennan & associates
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Figure Prepared Feb. 2014

REGULATORY CONTEXT

FEDERAL

There are no federal regulations related to noise that apply to the Proposed Project.

STATE

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room. Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept close, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

SACRAMENTO COUNTY GENERAL PLAN NOISE ELEMENT

The Sacramento County General Plan Noise Element establishes the following goals and policies for noise that would apply to the proposed project:

GOAL 1 To protect the existing and future citizens of Sacramento County from the harmful effects of exposure to excessive noise. More specifically, to protect existing noise-sensitive land uses from new uses that would generate noise levels which are incompatible with those uses, and to discourage new noise-sensitive land uses from being developed near sources of high noise levels.

GOAL 2 To protect the economic base of Sacramento County by preventing the encroachment of noise-sensitive land uses into areas affected by existing noise-producing uses. More specifically, to recognize that noise is an inherent by-product of many land uses and to prevent new noise-sensitive land uses from being developed in areas affected by existing noise-producing uses.

GOAL 3 To provide the County with flexibility in the development of infill properties which may be located in elevated noise environments.

GOAL 4 To provide sufficient noise exposure information so that existing and potential future noise impacts may be effectively addressed in the land use planning and project review processes.

Traffic and Railroad Noise Sources

NO-1 The noise level standards for noise-sensitive areas of new uses affected by traffic or railroad noise sources in Sacramento County are shown by Table 4 (*Table 1 of the Sacramento General Plan Noise Element*). Where the noise

level standards of Table 4 (*Table 1 of the Sacramento General Plan Noise Element*) are predicted to be exceeded at new uses proposed within Sacramento County which are affected by traffic or railroad noise, appropriate noise mitigation measures shall be included in the project design to reduce projected noise levels to a state of compliance with the Table 4 standards.

Aircraft Noise Sources

NO-2 Proposals for new development within Sacramento County which may be affected by aircraft noise shall be evaluated relative to Table 4 (*of the Sacramento County Noise Element*): Land Use Compatibility for Aircraft Noise.

NO-3 New residential development within the 60 CNEL noise contours adopted by the County for planning purposes at any airport or Helipad within Sacramento County shall be prohibited. This policy is not applicable to Executive Airport.

NO-4 New residential development within adopted Airport Policy Area boundaries, but outside the 60 CNEL, shall be subject to the following conditions:

A. Provide minimum noise insulation to 45 dB CNEL within new residential dwellings, including detached single family dwellings, with windows closed in any habitable room.

B. Notification in the Public Report prepared by the California Department of Real Estate disclosing the fact to prospective buyers that the parcel is located within an Airport Policy Area.

C. An Avigation Easement prepared by the Sacramento County Counsel's Office granted to the County of Sacramento, recorded with the Sacramento County Recorder, and filed with Department of Airports. Such Avigation Easement shall acknowledge the property location within an Airport Planning Policy Area and shall grant the right of flight and unobstructed passage of all aircraft into and out of the subject Airport.

Exceptions: New accessory residential dwellings on parcels zoned Agricultural, Agricultural-Residential, Interim Agricultural, Interim General Agricultural, or Interim Limited Agricultural and between the 60 and 65 CNEL contours, shall be permitted within adopted Airport Policy Area boundaries, but would be subject to the conditions listed above.

Non-Transportation Noise Sources

NO-5 The interior and exterior noise level standards for noise-sensitive areas of new uses affected by existing non-transportation noise sources in Sacramento County are shown by Table 5 (*Table 2 of the Sacramento County General Plan Noise Element*). Where the noise level standards of Table 5 (*Table 2 of the Sacramento County General Plan Noise Element*) are

predicted to be exceeded at a proposed noise-sensitive area due to existing non-transportation noise sources, appropriate noise mitigation measures shall be included in the project design to reduce projected noise levels to a state of compliance with the Table 5 (*Table 2 of the Sacramento County General Plan Noise Element*) standards within sensitive areas.

NO-6 Where a project would consist of or include non-transportation noise sources, the noise generation of those sources shall be mitigated so as not exceed the interior and exterior noise level standards of Table 5 (*Table 2 of the Sacramento County General Plan Noise Element*) at existing noise-sensitive areas in the project vicinity.

NO-7 The "last use there" shall be responsible for noise mitigation. However, if a noise-generating use is proposed adjacent to lands zoned for uses which may have sensitivity to noise, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the Table 5 standards (*Table 2 of the Sacramento County General Plan Noise Element*) at the property line of the generating use in anticipation of the future neighboring development.

Construction Noise

NO-8 Noise associated with construction activities shall adhere to the County Code requirements. Specifically, Section 6.68.090(e) addresses construction noise within the County.

Transportation Projects

NO-9 For capacity enhancing roadway or rail projects, or the construction of new roadways or railways, a noise analysis shall be prepared in accordance with the Table 6 (*Table 3 of the Sacramento County General Plan Noise Element*) requirements. If projected post-project traffic noise levels at existing uses exceed the noise standards of Table 4 (*Table 1 of the Sacramento County General Plan Noise Element*), then feasible methods of reducing noise to levels consistent with the Table 4 standards (*Table 1 of the Sacramento County General Plan Noise Element*) shall be analyzed as part of the noise analysis. In the case of existing residential uses, sensitive outdoor areas shall be mitigated to 60 dB, when possible, through the application of feasible methods to reduce noise. If 60 dB cannot be achieved after the application of all feasible methods of reducing noise, then noise levels up to 65 dB are allowed.

If pre-project traffic noise levels for existing uses already exceed the noise standards of Table 4 (*Table 1 of the Sacramento County General Plan Noise Element*) and the increase is significant as defined below, feasible methods of reducing noise to levels consistent with the Table 4 standards (*Table 1 of the Sacramento County General Plan Noise Element*) should be applied. In no case shall the long-term noise exposure for non-industrial uses be greater than 75 dB; long-term noise exposure above this level has the potential to result in hearing loss.

A significant increase is defined as follows:

Pre-Project Noise Environment (Ldn)	Significant Increase
Less than 60 dB	5+ dB
60 - 65 dB	3+ dB
Greater than 65 dB	1.5+ dB

NO-10 For interim capacity enhancing roadway or rail projects, or the construction of new interim roadways or railways, it may not be practical or feasible to provide mitigation if the ultimate roadway or railway design would render the interim improvements ineffective or obsolete. An example would be a noise barrier constructed for an interim project which would need to be removed to accommodate the ultimate project. The following factors should be considered in determining whether or not noise mitigation will be implemented for interim projects, but in general, noise mitigation for interim projects would not be provided:

a. The severity of the impact
b. The cost and effectiveness of the mitigation.
c. The number of properties which would benefit from the mitigation.
d. The foreseeable duration between interim and ultimate improvements.
e. Aesthetic, safety and engineering considerations.

NO-11 If noise-reducing pavement is to be utilized in conjunction with a roadway improvement project, of if such paving existing adjacent to a proposed new noise-sensitive land use, the acoustical benefits of such pavement shall be included in the noise analysis prepared for the project.

General Noise Policy

NO-12 All noise analyses prepared to determine compliance with the noise level standards contained within this Noise Element shall be prepared in accordance with Table 6 (*Table 3 of the Sacramento County General Plan Noise Element*).

NO-13 Where noise mitigation measures are required to satisfy the noise level standards of this Noise Element, emphasis shall be placed on the use of setbacks and site design to the extent feasible, prior to consideration of the use of noise barriers.

NO-14 Noise analyses prepared for multi-family residential projects, town homes, mixed-use, condominiums, or other residential projects where floor ceiling assemblies or party-walls shall be common to different owners/occupants, shall be consistent with the State of California Noise Insulation standards.

NO-15 The County shall have the flexibility to consider the application of 5 dB less restrictive exterior noise standards than those prescribed in Tables 4 and 5 (*Tables 1 and 2 of the Sacramento County General Plan Noise Element*) in cases where it is impractical or infeasible to reduce exterior noise levels within infill projects to a state of compliance with the Table 4 or 5 standards

(*Tables 1 and 2 of the Sacramento County General Plan Noise Element*). In such cases, the rational for such consideration shall be clearly presented and disclosure statements and noise easements should be included as conditions of project approval. The interior noise level standards of Tables 4 and 5 (*Tables 1 and 2 of the Sacramento County General Plan Noise Element*) would still apply. The maximum allowable long-term noise exposure permissible for non-industrial uses is 75 dB.

Exemptions

NO-16 The following sources of noise shall be exempt from the provisions of this Noise Element:

a) Emergency warning devices and equipment operated in conjunction with emergency situations, such as sirens and generators which are activated during power outages. The routine testing of such warning devices and equipment shall also be exempt provided such testing occurs during daytime hours.

b) Activities associated with events for which a permit has been obtained from the County.

SACRAMENTO COUNTY NOISE ORDINANCE

The Sacramento County Noise Ordinance establishes stationary noise level criteria consistent with the General Plan Table 5 (Table 2 of this report). The Sacramento County Noise Ordinance also provides exemptions (Section 6.68.090) for noise due to various activities, including activities in parks, public playgrounds, school grounds and construction activities. The following are exemptions in the ordinance for such activities:

6.68.090 (c). Activities conducted on parks, public playgrounds and school grounds, provided such parks, playgrounds and school grounds are owned and operated by a public entity or private school;

6.68.090 (e). Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place between the hours of eight p.m. and six a.m. on weekdays and Friday commencing at eight p.m. through and including seven a.m. on Saturday; Saturdays commencing at eight p.m. through and including seven a.m. on the next following Sunday and on each Sunday after the hour of eight p.m. Provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after eight p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

Table 4 - (*Table 1 of the Noise Element*)

Noise Standards for New Uses Affected by Traffic and Railroad Noise
Sacramento County Noise Element

New Land Use	Sensitive[1] Outdoor Area - Ldn	Sensitive Interior[2] Area - Ldn	Notes
All Residential	65	45	5
Transient Lodging	65	45	3,5
Hospitals & Nursing Homes	65	45	3, 4, 5
Theaters & Auditoriums	---	35	3
Churches, Meeting Halls	65	40	3
Schools, Libraries, etc.	65	40	3
Office Buildings	65	45	3
Commercial Buildings	---	50	3
Playgrounds, Parks, etc.	70	---	
Industry	65	50	3

Notes:

1. Sensitive areas are defined in acoustic terminology section.
2. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
3. Where there are no sensitive exterior spaces proposed for these uses, only the interior noise level standard shall apply.
4. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5. If this use is affected by railroad noise, a maximum (Lmax) noise level standard of 70 dB shall be applied to all sleeping rooms to reduce the potential for sleep disturbance during nighttime train passages.

Table 5 - (*Table 2 of the Noise Element*)

Non-Transportation Noise Standards
Sacramento County Noise Element
Median (L50) / Maximum (Lmax)[1]

Receiving Land Use	Outdoor Area[2] Daytime	Outdoor Area[2] Nighttime	Interior[3] Day & Night	Notes
All Residential	55 / 75	50 / 70	35 / 55	
Transient Lodging	55 / 75	---	35 / 55	4
Hospitals & Nursing Homes	55 / 75	---	35 / 55	5, 6
Theaters & Auditoriums	---	---	30 / 50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	---	35 / 60	6
Office Buildings	60 / 75	---	45 / 65	6
Commercial Buildings	---	---	45 / 65	6
Playgrounds, Parks, etc.	65 / 75	---	---	6
Industry	60 / 80	---	50 / 70	6

Notes:

1. The Table 2 standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of Table 2, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
2. Sensitive areas are defined acoustic terminology section.
3. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
5. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
6. The outdoor activity areas of these uses (if any), are not typically utilized during nighttime hours.
7. Where median (L50) noise level data is not available for a particular noise source, average (Leq) values may be substituted for the standards of this table provided the noise source in question operates for at least 30 minutes of an hour. If the source in question operates less than 30 minutes per hour, then the maximum noise level standards shown would apply.

Table 6 – (*Table 3 of the Noise Element*)

Requirements for Acoustical Analyses Prepared in Sacramento County

An acoustical analysis prepared pursuant to the Noise Element shall:

1. Be the responsibility of the applicant.
2. Be prepared by qualified persons experienced in the fields of environmental noise assessment and architectural acoustics.
3. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
4. Estimate projected future (20 year) noise levels in terms of the Standards of Tables 1 and 2, and compare those levels to the adopted policies of the Noise Element.
5. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
6. Estimate interior and exterior noise exposure after the prescribed mitigation measures have been implemented.

Vibration Standards

Sacramento County does not have specific standards for vibration. However, standard criteria which describe annoyance and potential structural damage have been developed. Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 7, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second. Table 7 indicates that the threshold for damage to structures ranges from 2 to 6 in/sec. One-half this minimum threshold or 1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is notes as 0.1 in/sec p.p.v.

Table 7
Effects of Vibration on People and Buildings

Peak Particle Velocity inches/second	Peak Particle Velocity mm/second	Human Reaction	Effect on Buildings
0-.006	0.15	Imperceptible by people	Vibrations unlikely to cause damage of any type
.006-.02	0.5	Range of Threshold of perception	Vibrations unlikely to cause damage of any type
.08	2.0	Vibrations clearly perceptible	Recommended upper level of which ruins and ancient monuments should be subjected
0.1	2.54	Level at which continuous vibrations begin to annoy people	Virtually no risk of architectural damage to normal buildings
0.2	5.0	Vibrations annoying to people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
1.0	25.4		Architectural Damage
2.0	50.4		Structural Damage to Residential Buildings

Source: Survey of Earth-borne Vibrations due to Highway Construction and Highway Traffic, Caltrans 1976.

City of Sacramento General Plan Noise Element

Traffic generated by the Proposed Project could result in traffic noise increases on roadways within the City of Sacramento. Table EC-1 of the City of Sacramento 2030 General Plan Noise Element (Table 8 of this report) provides noise criteria that could be used to assess such traffic noise impacts:

Table 8
(Table EC-1: City of Sacramento General Plan Noise Element)

Table EC 1 Exterior Noise Compatibility Standards for Various Land Uses

Land Use Type	*Highest Level of Noise Exposure That Is Regarded as "Normally Acceptable"[a] (L_{dn}[b] or CNEL[c])*
Residential—Low Density Single Family, Duplex, Mobile Homes	60 dBA[d,e]
Residential—Multi-family	65 dBA
Urban Residential Infill[f] and Mixed-Use Projects[h]	70 dBA
Transient Lodging—Motels, Hotels	65 dBA
Schools, Libraries, Churches, Hospitals, Nursing Homes	70 dBA
Auditoriums, Concert Halls, Amphitheaters	Mitigation based on site-specific study
Sports Arena, Outdoor Spectator Sports	Mitigation based on site-specific study
Playgrounds, Neighborhood Parks	70 dBA
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75 dBA
Office Buildings—Business, Commercial and Professional	70 dBA
Industrial, Manufacturing, Utilities, Agriculture	75 dBA

SOURCE: Governor's Office of Planning and Research, *State of California General Plan Guidelines 2003*, October 2003.

a. As defined in the *Guidelines*, "Normally Acceptable" means that the "specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements."

b. L_{dn} or Day Night Average Level is an average 24-hour noise measurement that factors in day and night noise levels.

c. CNEL or Community Noise Equivalent Level measurements are a weighted average of sound levels gathered throughout a 24-hour period.

d. dBA or A-weighted decibel scale is a measurement of noise levels.

e. The exterior noise standard for the residential area west of McClellan Airport known as McClellan Heights/Parker Homes is 65 dBA.

f. With land use designations of Central Business District, Urban Neighborhood (Low, Medium, or High) Urban Center (Low or High), Urban Corridor (Low or High).

g. All mixed-use projects located anywhere in the City of Sacramento.

City of Elk Grove General Plan Noise Element

Traffic generated by the Proposed Project could result in traffic noise increases on roadways within the City of Elk Grove. Table NO-C of the City of Elk Grove General Plan Noise Element (Table 9 of this report) establishes noise level criteria for transportation noise sources that could apply to such impacts.

Table 9
(Table NO-C of the City of Elk Grove General Plan)
Maximum Allowable Noise Exposure
Transportation Noise Sources

Land Use	Outdoor Activity Areas [1] L_{dn}/CNEL, dB	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq}, dB [2]
Residential	60[3]	45	-
Residential subject to noise from railroad tracks, aircraft over-flights	60[3]	40[5]	-
Transient Lodging	60[4]	45	-
Hospitals, Nursing Homes	60[3]	45	-
Theaters, Auditoriums, Music Halls	-	-	35
Churches, Meeting Halls	60[3]	-	40
Office Buildings	-	-	45
Schools, Libraries, Museums	-	-	45
Playgrounds, Neighborhood Parks	70	-	-
Source: Elk Grove General Plan Noise Element. Adopted 11/19/03 | Amended January 5, 2005. Table NO-C			

1. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

   Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.

2. As determined for a typical worst-case hour during periods of use.

3. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best -available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

4. In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.

5. The intent of this noise standard is to provide increased protection against sleep disturbance for residences located near railroad tracks.

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City of Rancho Cordova General Plan Noise Element

Traffic generated by the Proposed Project could result in traffic noise increases on roadways within the City of Rancho Cordova. Noise level criteria pertaining to project generated traffic noise levels are contained within the City of Rancho Cordova General Plan Noise Element. The following is a summary of the Noise Element Policies and Criteria which could apply to such impacts.

The City of Rancho Cordova establishes a normally acceptable exterior noise level standard of 60 dB Ldn for residential uses. The standard is generally applied at the outdoor activity areas such as patios or designated areas such as play areas. A conditionally acceptable exterior noise level standard of 65 dB Ldn is allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with the 45 dB Ldn interior noise level criterion. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.

IMPACTS AND MITIGATION MEASURES

METHOD OF ANALYSIS

Traffic Noise Impact Assessment Methodology

To assess noise impacts due to, and upon the project site, traffic noise levels are predicted at a representative distance of 100 feet from the roadway centerlines for existing plus project, existing plus all projects, cumulative and cumulative plus project scenarios. To predict noise levels due to traffic, once again, information provided by DKS was used. j.c. brennan & associates, Inc. utilized the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). DKS supplied the traffic volume information so as to be consistent between the four separate Specific Plans which are being analyzed simultaneously. The FHWA model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. After applying the day/night traffic distribution, the 24-hour L_{dn} values can be calculated. Tables 10 and 11 show the existing and existing plus project traffic noise levels, and Tables 12 and 13 show the cumulative and cumulative plus project traffic noise levels.

TABLE 10
PREDICTED EXISTING AND EXISTING + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Roadway	Segment		Distance (feet)	Traffic Noise Level (Ldn, dB)			Distance to Contours (feet) Existing			Distance to Contours (feet) Existing + Project		
				Existing	Existing + Project	Δ	70 dB	65 dB	60 dB	70 dB	65 dB	60 dB
Bradshaw Rd	Folsom Blvd	US 50	100	67.6	67.6	0	69	149	321	69	149	322
Bradshaw Rd	US 50	Lincoln Village Dr	100	70.7	70.8	0.1	111	239	515	113	244	526
Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	100	69.8	69.9	0.1	97	208	449	99	213	460
Bradshaw Rd	Old Placerville Rd	Goethe Rd	100	69.4	69.5	0.1	91	196	422	93	201	433
Bradshaw Rd	Goethe Rd	Kiefer Blvd	100	68.0	68.3	0.3	74	160	344	77	166	357
Bradshaw Rd	Kiefer Blvd	Jackson Rd	100	68.3	69.0	0.7	78	167	360	86	185	398
Bradshaw Rd	Jackson Rd	Elder Creek Rd	100	67.1	66.9	-0.2	64	137	296	62	134	288
Bradshaw Rd	Elder Creek Rd	Florin Rd	100	66.9	67.3	0.4	63	135	291	66	142	306
Bradshaw Rd	Florin Rd	Gerber Rd	100	67.1	67.3	0.2	64	137	296	66	143	308
Bradshaw Rd	Gerber Rd	Calvine Rd	100	65.8	66.2	0.4	52	113	243	56	120	258
Calvine Rd	Waterman Rd	Bradshaw Rd	100	65.5	65.7	0.2	50	108	233	51	110	238
Calvine Rd	Bradshaw Rd	Vineyard Rd	100	64.4	64.9	0.5	42	91	197	46	98	212
Calvine Rd	Vineyard Rd	Excelsior Rd	100	60.2	61.1	0.9	22	48	103	26	55	119
Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	100	57.7	57.9	0.2	15	33	70	16	34	73
Douglas Rd	Mather Blvd	Zinfandel Dr	100	61.7	62.2	0.5	28	60	130	30	65	140
Douglas Rd	Zinfandel Dr	Sunrise Blvd	100	62.7	63.1	0.4	33	70	152	35	75	162
Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	100	60.2	60.8	0.6	22	48	103	24	52	112
Douglas Rd	Rancho Cordova Pkwy	Grant Line Rd	100	60.2	60.5	0.3	22	48	103	23	50	108
Eagles Nest Rd	Kiefer Blvd	Jackson Rd	100	54.1	58.1	4	9	19	40	16	34	74
Eagles Nest Rd	Jackson Rd	Florin Rd	100	50.6	56.1	5.5	5	11	24	12	26	55
Eagles Nest Rd	Florin Rd	Grant Line Rd	100	46.2	55.0	**8.8**	3	6	12	10	21	46
Elder Creek Rd	65th St	Power Inn Rd	100	67.9	68.3	0.4	73	157	337	77	167	359
Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	100	65.5	65.9	0.4	50	107	231	53	115	247
Elder Creek Rd	Florin Perkins Rd	South Watt Ave	100	63.9	64.8	0.9	39	85	183	45	98	210
Elder Creek Rd	South Watt Ave	Hedge Ave	100	61.0	63.1	2.1	25	54	116	34	74	160
Elder Creek Rd	Hedge Ave	Mayhew Rd	100	63.9	66.0	2.1	39	84	181	54	116	249
Elder Creek Rd	Mayhew Rd	Bradshaw Rd	100	63.5	66.0	2.5	37	80	171	54	116	249
Elder Creek Rd	Bradshaw Rd	Excelsior Rd	100	57.8	64.6	**6.8**	15	33	71	44	94	203

TABLE 10
PREDICTED EXISTING AND EXISTING + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Elk Grove-Florin Rd	Florin Rd	Gerber Rd	100	69.8	69.9	0.1	97	210	452	98	212	456
Excelsior Rd	Kiefer Blvd	Douglas Rd	100	60.2	63.1	2.9	22	48	103	35	75	161
Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	100	61.9	64.9	3	29	62	134	46	99	213
Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	100	61.9	67.5	**5.6**	29	62	134	68	146	314
Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	100	61.9	68.0	**6.1**	29	62	134	74	159	342
Excelsior Rd	Jackson Rd	Elder Creek Rd	100	64.0	69.2	**5.2**	40	86	186	88	190	409
Excelsior Rd	Elder Creek Rd	Florin Rd	100	63.2	65.6	2.4	35	76	164	51	109	235
Excelsior Rd	Florin Rd	Gerber Rd	100	60.8	62.3	1.5	24	53	114	31	66	142
Excelsior Rd	Gerber Rd	Calvine Rd	100	59.8	60.7	0.9	21	45	96	24	51	111
Excelsior Rd	Calvine Rd	Sheldon Rd	100	60.0	61.6	1.6	22	46	100	28	59	128
Florin Rd	Stockton Blvd	Power Inn Rd	100	68.9	69.1	0.2	85	183	394	87	188	406
Florin Rd	Power Inn Rd	Florin-Perkins Rd	100	67.9	68.3	0.4	72	156	336	76	165	355
Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	100	66.1	66.7	0.6	55	118	253	60	129	278
Florin Rd	South Watt Ave	Hedge Ave	100	63.4	64.5	1.1	36	78	169	43	93	200
Florin Rd	Hedge Ave	Mayhew Rd	100	62.5	64.1	1.6	32	69	148	40	87	187
Florin Rd	Mayhew Rd	Bradshaw Rd	100	62.5	64.1	1.6	32	69	148	41	87	188
Florin Rd	Bradshaw Rd	Excelsior Rd	100	58.9	61.2	2.3	18	39	85	26	56	120
Florin Rd	Excelsior Rd	Sunrise Blvd	100	57.8	58.7	0.9	15	33	72	18	38	82
Folsom Blvd	Howe Ave	Jackson Rd	100	67.7	68.0	0.3	71	152	328	74	159	343
Fruitridge Rd	65th St	Power Inn Rd	100	65.7	65.7	0	52	111	240	52	111	240
Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	100	65.3	65.7	0.4	49	105	226	52	111	239
Fruitridge Rd	Florin Perkins Rd	South Watt Ave	100	63.6	64.0	0.4	38	81	174	40	85	184
Fruitridge Rd	South Watt Ave	Hedge Ave	100	58.1	58.2	0.1	16	35	75	16	35	76
Fruitridge Rd	Hedge Ave	Mayhew Rd	100	56.0	55.1	-0.9	12	25	54	10	22	47
Grant Line Rd	White Rock Rd	Douglas Rd	100	62.1	62.7	0.6	30	64	137	33	70	151
Grant Line Rd	Douglas Rd	Kiefer Blvd	100	61.4	62.2	0.8	27	57	124	30	65	141
Grant Line Rd	Kiefer Blvd	Jackson Rd	100	61.1	61.9	0.8	25	55	118	29	62	134
Grant Line Rd	Jackson Rd	Sunrise Blvd	100	65.2	65.1	-0.1	48	103	221	47	101	218
Grant Line Rd	Sunrise Blvd	Calvine Rd	100	66.2	66.3	0.1	56	120	258	57	123	265
Grant Line Rd	Calvine Rd	Sheldon Rd	100	64.7	64.8	0.1	44	95	204	45	97	209
Grant Line Rd	Sheldon Rd	Wilton Rd	100	65.9	66.4	0.5	53	115	247	57	124	267

TABLE 10
PREDICTED EXISTING AND EXISTING + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Grant Line Rd	Wilton Rd	Bond Rd	100	65.5	66.0	0.5	50	108	234	54	117	253
Happy Ln	Old Placerville Rd	Kiefer Blvd	100	60.1	61.7	1.6	22	47	102	28	61	130
Hedge Ave	Jackson Rd	Fruitridge Rd	100	58.3	57.7	-0.6	17	36	77	15	33	70
Hedge Ave	Fruitridge Rd	Elder Creek Rd	100	59.2	59.4	0.2	19	41	88	20	43	92
Hedge Ave	Elder Creek Rd	Florin Rd	100	60.0	60.4	0.4	21	46	99	23	49	106
Howe Ave	US 50	Folsom Blvd	100	72.9	73.0	0.1	156	337	726	159	342	737
International Dr	Mather Field Rd	Zinfandel Dr	100	68.0	68.1	0.1	74	159	343	75	162	349
International Dr	Zinfandel Dr	Sunrise Blvd	100	67.2	67.5	0.3	65	140	301	68	147	316
Jackson Rd	Folsom Blvd	Florin Perkins Rd	100	64.4	64.8	0.4	42	91	196	45	97	209
Jackson Rd	Florin Perkins Rd	South Watt Ave	100	63.7	64.8	1.1	38	82	176	45	97	208
Jackson Rd	South Watt Ave	Hedge Ave	100	66.9	68.2	1.3	62	133	287	76	164	353
Jackson Rd	Hedge Ave	Mayhew Rd	100	64.5	66.4	1.9	43	93	200	58	125	268
Jackson Rd	Mayhew Rd	Bradshaw Rd	100	64.1	65.7	1.6	41	87	188	52	112	241
Jackson Rd	Bradshaw Rd	Excelsior Rd	100	63.5	66.5	3	37	80	172	59	127	273
Jackson Rd	Excelsior Rd	Collector JT-3	100	62.6	67.4	**4.8**	32	69	148	68	146	314
Jackson Rd	Collector JT-3	Tree View Ln	100	62.6	65.4	2.8	32	69	148	50	107	230
Jackson Rd	Tree View Ln	Collector JT-4	100	67.6	69.3	1.7	69	149	321	90	194	418
Jackson Rd	Collector JT-4	Eagles Nest Rd	100	68.1	69.7	1.6	75	162	349	96	206	444
Jackson Rd	Eagles Nest Rd	Sunrise Blvd	100	67.9	68.8	0.9	73	157	337	83	178	384
Jackson Rd	Sunrise Blvd	Grant Line Rd	100	69.2	69.6	0.4	88	190	409	94	203	437
Kiefer Blvd	Florin Perkins Rd	South Watt Ave	100	64.0	64.3	0.3	40	86	186	41	89	192
Kiefer Blvd	South Watt Ave	Mayhew Rd	100	70.1	70.4	0.3	102	219	472	107	230	496
Kiefer Blvd	Mayhew Rd	Bradshaw Rd	100	67.1	68.3	1.2	64	137	296	77	166	358
Kiefer Blvd	Bradshaw Rd	Happy Ln	100	64.0	64.9	0.9	40	86	186	46	98	212
Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	100	0	0	0	0	0	0	0	0	0
Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	100	60.9	60.9	0	25	53	114	25	53	114
Mather Blvd / Norden Ave	Von Karman St	Bleckely St	100	62.0	63.2	1.2	29	63	136	35	76	163
Mather Blvd	Bleckely St	Femoyer St	100	62.0	63.2	1.2	29	63	136	35	76	163
Mather Blvd	Femoyer St	Douglas Rd	100	59.9	61.1	1.2	21	46	99	25	55	118
Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	100	60.7	61.8	1.1	24	51	111	28	61	132
Mather Field Rd	US 50	Rockingham Dr	100	68.1	68.3	0.2	75	162	349	77	165	356

TABLE 10
PREDICTED EXISTING AND EXISTING + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Mather Field Rd	Rockingham Dr	International Dr	100	68.1	68.2	0.1	75	161	347	76	163	351
Mather Field Rd	International Dr	Peter A McCuen Blvd	100	64.1	64.2	0.1	40	87	187	41	88	190
Mayhew Rd	Folsom Blvd	Goethe Rd	100	60.8	61.5	0.7	24	53	113	27	58	125
Mayhew Rd	Goethe Rd	Kiefer Blvd	100	61.7	62.5	0.8	28	60	129	31	68	146
Mayhew Rd	Jackson Rd	Fruitridge Rd	100	55.6	54.5	-1.1	11	24	51	9	20	43
Old Placerville Rd	Bradshaw Rd	Granby Dr	100	65.5	65.8	0.3	50	108	232	52	113	243
Old Placerville Rd	Granby Dr	Happy Ln	100	65.3	65.5	0.2	48	104	224	50	108	233
Old Placerville Rd	Happy Ln	Routier Rd	100	64.2	64.8	0.6	41	89	192	45	96	208
Old Placerville Rd	Routier Rd	Rockingham Dr	100	64.2	64.5	0.3	41	89	192	43	93	200
Power Inn Rd	Folsom Blvd	14th Ave	100	69.5	69.5	0	93	200	431	93	201	432
Rockingham Dr	Old Placerville Rd	Mather Field Rd	100	66.9	67.1	0.2	62	134	289	64	138	297
South Watt Ave	Folsom Blvd	Kiefer Blvd	100	70.1	70.4	0.3	101	217	468	106	229	493
South Watt Ave	Kiefer Blvd	Jackson Rd	100	68.6	69.0	0.4	81	174	375	86	185	398
South Watt Ave	Jackson Rd	Fruitridge Rd	100	68.7	68.7	0	81	176	378	82	176	379
South Watt Ave	Fruitridge Rd	Elder Creek Rd	100	66.8	66.9	0.1	61	132	285	62	134	288
South Watt Ave	Elder Creek Rd	Florin Rd	100	65.2	65.2	0	48	103	221	48	103	222
Sunrise Blvd	US 50	Folsom Blvd	100	69.7	69.7	0	96	207	446	96	207	447
Sunrise Blvd	Folsom Blvd	Trade Center Dr	100	69.3	69.4	0.1	90	194	418	91	195	421
Sunrise Blvd	Trade Center Dr	White Rock Rd	100	67.8	67.9	0.1	71	153	329	72	156	336
Sunrise Blvd	White Rock Rd	International Dr	100	71.5	71.7	0.2	126	272	586	130	281	605
Sunrise Blvd	International Dr	Rio Del Oro Pkwy	100	72.5	72.9	0.4	146	315	678	156	335	723
Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	100	72.1	72.6	0.5	137	295	636	149	322	693
Sunrise Blvd	Douglas Rd	Kiefer Blvd	100	71.3	71.9	0.6	123	264	570	133	287	617
Sunrise Blvd	Kiefer Blvd	Jackson Rd	100	69.7	70.2	0.5	95	205	442	104	223	481
Sunrise Blvd	Jackson Rd	Florin Rd	100	67.9	68.0	0.1	72	156	335	73	157	339
Sunrise Blvd	Florin Rd	Grant Line Rd	100	66.3	66.1	-0.2	57	122	263	55	119	256
Vineyard Rd	Gerber Rd	Calvine Rd	100	64.8	65.0	0.2	45	97	209	47	101	217
Watt Ave	US 50	Folsom Blvd	100	75.3	75.5	0.2	227	489	1054	233	501	1080
White Rock Rd	International Rd	Quality Dr	100	62.4	62.5	0.1	31	67	145	31	68	146
White Rock Rd	Quality Dr	Zinfandel Dr	100	66.1	65.9	-0.2	55	118	255	54	115	248
White Rock Rd	Zinfandel Dr	Kilgore Rd	100	67.3	67.3	0	66	142	306	66	142	306
White Rock Rd	Kilgore Rd	Sunrise Blvd	100	65.2	65.2	0	48	103	222	48	104	223
White Rock Rd	Sunrise Blvd	Fitzgerald Rd	100	64.3	64.2	-0.1	41	89	192	41	89	192
White Rock Rd	Fitzgerald Rd	Grant Line Rd	100	56.3	55.9	-0.4	12	26	57	11	25	53
White Rock Rd	Grant Line Rd	Prairie City Rd	100	62.1	62.5	0.4	30	64	138	32	68	147

TABLE 10
PREDICTED EXISTING AND EXISTING + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Zinfandel Dr	US 50	White Rock Rd	100	68.9	69.1	0.2	85	183	393	88	189	407
Zinfandel Dr	White Rock Rd	International Rd	100	64.9	65.6	0.7	46	99	212	51	110	237
Zinfandel Dr	International Rd	Baroque Dr	100	62.3	64.2	1.9	31	66	142	41	89	191
Zinfandel Dr	Baroque Dr	City Limit	100	62.3	64.2	1.9	31	66	142	41	89	192
Zinfandel Dr	City Limit	Douglas Rd	100	62.3	64.2	1.9	31	66	142	41	89	192
Zinfandel Dr	Douglas Rd	Kiefer Blvd	100	58.5	62.3	3.8	17	37	79	31	66	142
Collector JT-1	Excelsior Rd	Collector JT-3	100	0	0	0	0	0	0	0	0	0
Collector JT-1	Collector JT-3	Tree View Ln	100	0	0	0	0	0	0	0	0	0
Collector JT-3	Kiefer Blvd	Collector JT-1	100	0	0	0	0	0	0	0	0	0
Collector JT-3	Collector JT-1	Collector JT-6	100	0	0	0	0	0	0	0	0	0
Collector JT-3	Collector JT-6	Collector JT-5	100	0	0	0	0	0	0	0	0	0

[1] Distances to traffic noise contours are measured in feet from the centerlines of the Roadways.
[2] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Source: DKS & j.c. brennan
Bold indicates a significant increase in noise levels

TABLE 11

PREDICTED EXISTING AND EXISTING + (ALT-2) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Existing	Existing + ALT-2 Project	Δ	Distance to Contours (feet) Existing (Ldn)			Distance to Contours (feet) Existing + Project (Ldn)		
							70	65	60	70	65	60
Bradshaw Rd	Folsom Blvd	US 50	100	67.6	67.6	0	69	149	321	70	150	323
Bradshaw Rd	US 50	Lincoln Village Dr	100	70.7	70.8	0.1	111	239	515	113	243	523
Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	100	69.8	69.9	0.1	97	208	449	99	214	460
Bradshaw Rd	Old Placerville Rd	Goethe Rd	100	69.4	69.6	0.2	91	196	422	93	201	434
Bradshaw Rd	Goethe Rd	Kiefer Blvd	100	68.0	68.3	0.3	74	160	344	77	166	358
Bradshaw Rd	Kiefer Blvd	Jackson Rd	100	68.3	69.0	0.7	78	167	360	85	184	396
Bradshaw Rd	Jackson Rd	Elder Creek Rd	100	67.1	66.9	-0.2	64	137	296	62	133	286
Bradshaw Rd	Elder Creek Rd	Florin Rd	100	66.9	67.3	0.4	63	135	291	66	142	306
Bradshaw Rd	Florin Rd	Gerber Rd	100	67.1	67.3	0.2	64	137	296	66	143	308
Bradshaw Rd	Gerber Rd	Calvine Rd	100	65.8	66.2	0.4	52	113	243	56	120	259
Calvine Rd	Waterman Rd	Bradshaw Rd	100	65.5	65.7	0.2	50	108	233	51	110	238
Calvine Rd	Bradshaw Rd	Vineyard Rd	100	64.4	64.8	0.4	42	91	197	45	97	209
Calvine Rd	Vineyard Rd	Excelsior Rd	100	60.2	60.9	0.7	22	48	103	25	54	116
Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	100	57.7	57.9	0.2	15	33	70	16	34	73
Douglas Rd	Mather Blvd	Zinfandel Dr	100	61.7	62.3	0.6	28	60	130	31	66	143
Douglas Rd	Zinfandel Dr	Sunrise Blvd	100	62.7	63.0	0.3	33	70	152	34	74	159
Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	100	60.2	60.9	0.7	22	48	103	25	53	114
Douglas Rd	Rancho Cordova Pkwy	Grant Line Rd	100	60.2	60.5	0.3	22	48	103	23	50	109
Eagles Nest Rd	Kiefer Blvd	Jackson Rd	100	54.1	58.3	4.2	9	19	40	17	36	77
Eagles Nest Rd	Jackson Rd	Florin Rd	100	50.6	55.6	5	5	11	24	11	24	51
Eagles Nest Rd	Florin Rd	Grant Line Rd	100	46.2	54.4	**8.2**	3	6	12	9	20	42
Elder Creek Rd	65th St	Power Inn Rd	100	67.9	68.3	0.4	73	157	337	77	166	358
Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	100	65.5	65.9	0.4	50	107	231	53	114	246
Elder Creek Rd	Florin Perkins Rd	South Watt Ave	100	63.9	64.8	0.9	39	85	183	45	96	208
Elder Creek Rd	South Watt Ave	Hedge Ave	100	61.0	62.9	1.9	25	54	116	34	72	156
Elder Creek Rd	Hedge Ave	Mayhew Rd	100	63.9	65.8	1.9	39	84	181	52	113	243
Elder Creek Rd	Mayhew Rd	Bradshaw Rd	100	63.5	65.8	2.3	37	80	171	52	113	243
Elder Creek Rd	Bradshaw Rd	Excelsior Rd	100	57.8	64.4	**6.6**	15	33	71	42	91	195
Elk Grove-Florin Rd	Florin Rd	Gerber Rd	100	69.8	69.9	0.1	97	210	452	98	212	456
Excelsior Rd	Kiefer Blvd	Douglas Rd	100	60.2	63.0	2.8	22	48	103	34	74	160

Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	100	61.9	64.9	3	29	62	134	45	98	211
Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	100	61.9	67.1	**5.2**	29	62	134	64	139	299
Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	100	61.9	67.6	**5.7**	29	62	134	70	150	323
Excelsior Rd	Jackson Rd	Elder Creek Rd	100	64.0	68.9	**4.9**	40	86	186	85	183	394
Excelsior Rd	Elder Creek Rd	Florin Rd	100	63.2	65.3	2.1	35	76	164	49	105	227
Excelsior Rd	Florin Rd	Gerber Rd	100	60.8	62.3	1.5	24	53	114	31	66	142
Excelsior Rd	Gerber Rd	Calvine Rd	100	59.8	60.8	1	21	45	96	24	52	113
Excelsior Rd	Calvine Rd	Sheldon Rd	100	60.0	61.6	1.6	22	46	100	27	59	127
Florin Rd	Stockton Blvd	Power Inn Rd	100	68.9	69.1	0.2	85	183	394	87	187	403
Florin Rd	Power Inn Rd	Florin-Perkins Rd	100	67.9	68.2	0.3	72	156	336	76	164	352
Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	100	66.1	66.6	0.5	55	118	253	59	128	275
Florin Rd	South Watt Ave	Hedge Ave	100	63.4	64.3	0.9	36	78	169	42	90	194
Florin Rd	Hedge Ave	Mayhew Rd	100	62.5	63.9	1.4	32	69	148	39	85	182
Florin Rd	Mayhew Rd	Bradshaw Rd	100	62.5	63.9	1.4	32	69	148	39	85	183
Florin Rd	Bradshaw Rd	Excelsior Rd	100	58.9	60.8	1.9	18	39	85	24	52	113
Florin Rd	Excelsior Rd	Sunrise Blvd	100	57.8	58.4	0.6	15	33	72	17	36	78
Folsom Blvd	Howe Ave	Jackson Rd	100	67.7	68.0	0.3	71	152	328	74	159	343
Fruitridge Rd	65th St	Power Inn Rd	100	65.7	65.8	0.1	52	111	240	52	113	243
Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	100	65.3	65.6	0.3	49	105	226	51	110	236
Fruitridge Rd	Florin Perkins Rd	South Watt Ave	100	63.6	63.8	0.2	38	81	174	39	83	179
Fruitridge Rd	South Watt Ave	Hedge Ave	100	58.1	57.6	-0.5	16	35	75	15	32	69
Fruitridge Rd	Hedge Ave	Mayhew Rd	100	56.0	54.3	-1.7	12	25	54	9	19	41
Grant Line Rd	White Rock Rd	Douglas Rd	100	62.1	62.8	0.7	30	64	137	33	71	154
Grant Line Rd	Douglas Rd	Kiefer Blvd	100	61.4	62.4	1	27	57	124	31	67	144
Grant Line Rd	Kiefer Blvd	Jackson Rd	100	61.1	62.1	1	25	55	118	30	64	138
Grant Line Rd	Jackson Rd	Sunrise Blvd	100	65.2	65.0	-0.2	48	103	221	47	101	217
Grant Line Rd	Sunrise Blvd	Calvine Rd	100	66.2	66.3	0.1	56	120	258	57	122	263
Grant Line Rd	Calvine Rd	Sheldon Rd	100	64.7	64.8	0.1	44	95	204	45	96	208
Grant Line Rd	Sheldon Rd	Wilton Rd	100	65.9	66.4	0.5	53	115	247	57	123	265
Grant Line Rd	Wilton Rd	Bond Rd	100	65.5	66.0	0.5	50	108	234	54	117	252
Happy Ln	Old Placerville Rd	Kiefer Blvd	100	60.1	61.7	1.6	22	47	102	28	60	129
Hedge Ave	Jackson Rd	Fruitridge Rd	100	58.3	57.6	-0.7	17	36	77	15	32	69
Hedge Ave	Fruitridge Rd	Elder Creek Rd	100	59.2	59.4	0.2	19	41	88	20	42	91
Hedge Ave	Elder Creek Rd	Florin Rd	100	60.0	60.4	0.4	21	46	99	23	49	106
Howe Ave	US 50	Folsom Blvd	100	72.9	73.0	0.1	156	337	726	159	342	738
International Dr	Mather Field Rd	Zinfandel Dr	100	68.0	68.2	0.2	74	159	343	76	163	352
International Dr	Zinfandel Dr	Sunrise Blvd	100	67.2	67.7	0.5	65	140	301	71	152	328
Jackson Rd	Folsom Blvd	Florin Perkins Rd	100	64.4	64.8	0.4	42	91	196	45	98	210
Jackson Rd	Florin Perkins Rd	South Watt Ave	100	63.7	64.9	1.2	38	82	176	46	98	212
Jackson Rd	South Watt Ave	Hedge Ave	100	66.9	68.3	1.4	62	133	287	77	166	358
Jackson Rd	Hedge Ave	Mayhew Rd	100	64.5	66.5	2	43	93	200	59	127	273
Jackson Rd	Mayhew Rd	Bradshaw Rd	100	64.1	65.8	1.7	41	87	188	52	113	243

Jackson Rd	Bradshaw Rd	Excelsior Rd	100	63.5	66.6	3.1	37	80	172	59	128	275
Jackson Rd	Excelsior Rd	Collector JT-3	100	62.6	67.5	**4.9**	32	69	148	68	147	316
Jackson Rd	Collector JT-3	Tree View Ln	100	62.6	65.4	2.8	32	69	148	50	107	230
Jackson Rd	Tree View Ln	Collector JT-4	100	67.6	69.6	2	69	149	321	94	202	435
Jackson Rd	Collector JT-4	Eagles Nest Rd	100	68.1	69.9	**1.8**	75	162	349	98	211	455
Jackson Rd	Eagles Nest Rd	Sunrise Blvd	100	67.9	69.0	1.1	73	157	337	86	185	398
Jackson Rd	Sunrise Blvd	Grant Line Rd	100	69.2	69.7	0.5	88	190	409	96	206	444
Kiefer Blvd	Florin Perkins Rd	South Watt Ave	100	64.0	64.2	0.2	40	86	186	41	88	190
Kiefer Blvd	South Watt Ave	Mayhew Rd	100	70.1	70.3	0.2	102	219	472	105	226	487
Kiefer Blvd	Mayhew Rd	Bradshaw Rd	100	67.1	68.2	1.1	64	137	296	76	164	353
Kiefer Blvd	Bradshaw Rd	Happy Ln	100	64.0	64.9	0.9	40	86	186	45	98	211
Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	100	0	0	0	0	0	0	0	0	0
Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	100	60.9	60.9	0	25	53	114	25	53	115
Mather Blvd / Norden Ave	Von Karman St	Bleckely St	100	62.0	63.0	1	29	63	136	34	73	158
Mather Blvd	Bleckely St	Femoyer St	100	62.0	63.0	1	29	63	136	34	73	158
Mather Blvd	Femoyer St	Douglas Rd	100	59.9	60.9	1	21	46	99	25	53	114
Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	100	60.7	61.8	1.1	24	51	111	28	61	131
Mather Field Rd	US 50	Rockingham Dr	100	68.1	68.3	0.2	75	162	349	77	165	356
Mather Field Rd	Rockingham Dr	International Dr	100	68.1	68.2	0.1	75	161	347	76	163	351
Mather Field Rd	International Dr	Peter A McCuen Blvd	100	64.1	64.2	0.1	40	87	187	41	88	190
Mayhew Rd	Folsom Blvd	Goethe Rd	100	60.8	61.5	0.7	24	53	113	27	58	125
Mayhew Rd	Goethe Rd	Kiefer Blvd	100	61.7	62.6	0.9	28	60	129	32	69	149
Mayhew Rd	Jackson Rd	Fruitridge Rd	100	55.6	53.5	-2.1	11	24	51	8	17	37
Old Placerville Rd	Bradshaw Rd	Granby Dr	100	65.5	65.8	0.3	50	108	232	52	113	243
Old Placerville Rd	Granby Dr	Happy Ln	100	65.3	65.5	0.2	48	104	224	50	108	233
Old Placerville Rd	Happy Ln	Routier Rd	100	64.2	64.8	0.6	41	89	192	45	97	208
Old Placerville Rd	Routier Rd	Rockingham Dr	100	64.2	64.5	0.3	41	89	192	43	93	201
Power Inn Rd	Folsom Blvd	14th Ave	100	69.5	69.5	0	93	200	431	93	201	432
Rockingham Dr	Old Placerville Rd	Mather Field Rd	100	66.9	67.1	0.2	62	134	289	64	138	297
South Watt Ave	Folsom Blvd	Kiefer Blvd	100	70.1	70.4	0.3	101	217	468	106	228	492
South Watt Ave	Kiefer Blvd	Jackson Rd	100	68.6	69.0	0.4	81	174	375	86	185	399
South Watt Ave	Jackson Rd	Fruitridge Rd	100	68.7	68.7	0	81	176	378	82	176	379
South Watt Ave	Fruitridge Rd	Elder Creek Rd	100	66.8	66.9	0.1	61	132	285	62	133	287
South Watt Ave	Elder Creek Rd	Florin Rd	100	65.2	65.2	0	48	103	221	48	103	223
Sunrise Blvd	US 50	Folsom Blvd	100	69.7	69.8	0.1	96	207	446	97	210	452
Sunrise Blvd	Folsom Blvd	Trade Center Dr	100	69.3	69.4	0.1	90	194	418	92	198	426
Sunrise Blvd	Trade Center Dr	White Rock Rd	100	67.8	68.0	0.2	71	153	329	73	157	339
Sunrise Blvd	White Rock Rd	International Dr	100	71.5	71.8	0.3	126	272	586	131	282	607
Sunrise Blvd	International Dr	Rio Del Oro Pkwy	100	72.5	72.9	0.4	146	315	678	156	337	725
Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	100	72.1	72.6	0.5	137	295	636	149	321	692
Sunrise Blvd	Douglas Rd	Kiefer Blvd	100	71.3	71.8	0.5	123	264	570	133	286	616
Sunrise Blvd	Kiefer Blvd	Jackson Rd	100	69.7	70.2	0.5	95	205	442	103	222	478

Sunrise Blvd	Jackson Rd	Florin Rd	100	67.9	67.9	0	72	156	335	72	156	336
Sunrise Blvd	Florin Rd	Grant Line Rd	100	66.3	66.2	-0.1	57	122	263	56	121	260
Vineyard Rd	Gerber Rd	Calvine Rd	100	64.8	65.1	0.3	45	97	209	47	101	217
Watt Ave	US 50	Folsom Blvd	100	75.3	75.5	0.2	227	489	1054	233	501	1079
White Rock Rd	International Rd	Quality Dr	100	62.4	62.5	0.1	31	67	145	32	68	147
White Rock Rd	Quality Dr	Zinfandel Dr	100	66.1	66.0	-0.1	55	118	255	54	117	252
White Rock Rd	Zinfandel Dr	Kilgore Rd	100	67.3	67.3	0	66	142	306	66	143	308
White Rock Rd	Kilgore Rd	Sunrise Blvd	100	65.2	65.3	0.1	48	103	222	49	105	226
White Rock Rd	Sunrise Blvd	Fitzgerald Rd	100	64.3	64.3	0	41	89	192	42	90	194
White Rock Rd	Fitzgerald Rd	Grant Line Rd	100	56.3	56.2	-0.1	12	26	57	12	26	56
White Rock Rd	Grant Line Rd	Prairie City Rd	100	62.1	62.6	0.5	30	64	138	32	69	150
Zinfandel Dr	US 50	White Rock Rd	100	68.9	69.2	0.3	85	183	393	88	190	410
Zinfandel Dr	White Rock Rd	International Rd	100	64.9	65.6	0.7	46	99	212	51	110	238
Zinfandel Dr	International Rd	Baroque Dr	100	62.3	64.3	2	31	66	142	42	90	194
Zinfandel Dr	Baroque Dr	City Limit	100	62.3	64.4	2.1	31	66	142	42	91	195
Zinfandel Dr	City Limit	Douglas Rd	100	62.3	64.4	2.1	31	66	142	42	91	195
Zinfandel Dr	Douglas Rd	Kiefer Blvd	100	58.5	62.3	3.8	17	37	79	31	66	142
Collector JT-1	Excelsior Rd	Collector JT-3	100	0	0	0	0	0	0	0	0	0
Collector JT-1	Collector JT-3	Tree View Ln	100	0	0	0	0	0	0	0	0	0
Collector JT-3	Kiefer Blvd	Collector JT-1	100	0	0	0	0	0	0	0	0	0
Collector JT-3	Collector JT-1	Collector JT-6	100	0	0	0	0	0	0	0	0	0
Collector JT-3	Collector JT-6	Collector JT-5	100	0	0	0	0	0	0	0	0	0

58.554.154.856.156.165.964.863.166.066.064.669.963.164.967.568.069.2[1] Distances to traffic noise contours are measured in feet from the centerlines of the Roadways.

[2] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.

Source: DKS & j.c. brennan

Bold indicates a significant increase in noise levels

TABLE 12

PREDICTED CUMULATIVE AND CUMULATIVE + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + Original Project (Ldn)		
							70	65	60	70	65	60
Bradshaw Rd	Folsom Blvd	US 50	100	68.2	68.4	0.2	76	164	353	78	169	364
Bradshaw Rd	US 50	Lincoln Village Dr	100	72.6	72.8	0.2	148	319	687	154	332	715
Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	100	72.1	72.4	0.3	137	295	636	144	311	670
Bradshaw Rd	Old Placerville Rd	Goethe Rd	100	71.8	72.2	0.4	132	285	613	140	302	651
Bradshaw Rd	Goethe Rd	Collector WJ-8	100	71.0	71.5	0.5	117	251	541	126	271	584
Bradshaw Rd	Collector WJ-8	Kiefer Blvd	100	70.7	71.2	0.5	111	238	513	121	261	562
Bradshaw Rd	Kiefer Blvd	Collector WJ-9	100	70.9	70.8	-0.1	114	246	530	113	243	524
Bradshaw Rd	Collector WJ-9	Mayhew Rd	100	70.9	70.8	-0.1	114	246	531	113	244	526
Bradshaw Rd	Mayhew Rd	Jackson Rd	100	71.1	71.1	0	118	254	548	119	256	552
Bradshaw Rd	Jackson Rd	Rock Creek Pkwy	100	70.5	70.4	-0.1	108	233	502	107	230	495
Bradshaw Rd	Rock Creek Pkwy	Collector WJ-10	100	70.7	70.6	-0.1	111	240	516	110	238	512
Bradshaw Rd	Collector WJ-10	Collector WJ-11	100	70.3	70.2	-0.1	104	224	483	103	223	480
Bradshaw Rd	Collector WJ-11	Elder Creek Rd	100	68.8	68.7	-0.1	83	178	383	82	177	382
Bradshaw Rd	Elder Creek Rd	Florin Rd	100	69.4	69.6	0.2	91	196	422	94	202	435
Bradshaw Rd	Florin Rd	Gerber Rd	100	70.5	70.7	0.2	109	234	505	111	239	516
Bradshaw Rd	Gerber Rd	Calvine Rd	100	69.1	69.2	0.1	87	188	405	88	191	411
Calvine Rd	Waterman Rd	Bradshaw Rd	100	67.1	67.2	0.1	64	139	298	66	141	304
Calvine Rd	Bradshaw Rd	Vineyard Rd	100	66.2	66.3	0.1	56	121	261	56	121	262
Calvine Rd	Vineyard Rd	Excelsior Rd	100	65.1	65.4	0.3	47	102	220	49	106	229
Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	100	63.2	63.4	0.2	35	76	164	36	78	168
Douglas Rd	Mather Blvd	Zinfandel Dr	100	69.0	68.8	-0.2	86	185	400	84	180	388
Douglas Rd	Zinfandel Dr	Sunrise Blvd	100	72.6	72.4	-0.2	148	319	687	145	312	673
Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	100	70.1	69.9	-0.2	101	218	470	98	211	454
Douglas Rd	Rancho Cordova Pkwy	Americanos Blvd	100	69.9	69.8	-0.1	98	212	456	98	210	453
Douglas Rd	Americanos Blvd	Grant Line Rd	100	68.6	68.5	-0.1	81	174	375	80	172	371
Eagles Nest Rd	Kiefer Blvd	N Bridgewater Dr	100	67.4	66.8	-0.6	67	144	311	61	131	283
Eagles Nest Rd	N Bridgewater Dr	S Bridgewater Dr	100	67.8	66.9	-0.9	72	154	332	63	135	290
Eagles Nest Rd	S Bridgewater Dr	Jackson Rd	100	67.1	65.7	-1.4	64	137	296	52	112	241
Eagles Nest Rd	Jackson Rd	Florin Rd	100	65.4	66.1	0.7	49	106	227	55	119	256

TABLE 12

PREDICTED CUMULATIVE AND CUMULATIVE + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + Original Project (Ldn)		
							70	65	60	70	65	60
Eagles Nest Rd	Florin Rd	Grant Line Rd	100	60.0	61.5	1.5	22	47	101	27	58	125
Elder Creek Rd	65th St	Power Inn Rd	100	70.6	70.7	0.1	110	237	510	111	240	517
Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	100	70.7	70.8	0.1	112	241	519	113	243	524
Elder Creek Rd	Florin Perkins Rd	South Watt Ave	100	71.1	71.2	0.1	118	254	548	120	259	558
Elder Creek Rd	South Watt Ave	Hedge Ave	100	74.2	74.3	0.1	191	411	885	192	414	893
Elder Creek Rd	Hedge Ave	Mayhew Rd	100	73.3	73.4	0.1	166	358	772	169	364	785
Elder Creek Rd	Mayhew Rd	Bradshaw Rd	100	67.5	68.1	0.6	68	147	317	75	161	348
Elder Creek Rd	Bradshaw Rd	Vineyard Rd	100	67.6	68.6	1	69	149	321	81	175	376
Elder Creek Rd	Vineyard Rd	Excelsior Rd	100	65.8	68.0	**2.2**	52	112	242	73	158	340
Elk Grove-Florin Rd	Florin Rd	Gerber Rd	100	71.3	71.3	0	122	263	566	122	262	564
Excelsior Rd	Kiefer Blvd	Douglas Rd	100	57.5	62.8	**5.3**	15	32	68	33	71	154
Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	100	68.4	69.5	1.1	78	168	362	92	199	428
Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	100	68.1	69.1	1	75	162	349	87	188	406
Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	100	68.1	69.0	0.9	75	161	347	86	186	400
Excelsior Rd	Jackson Rd	Collector WJ-6	100	68.6	70.5	**1.9**	81	174	374	108	233	503
Excelsior Rd	Collector WJ-6	Elder Creek Rd	100	67.5	69.4	**1.9**	68	146	314	91	197	424
Excelsior Rd	Elder Creek Rd	Florin Rd	100	62.0	63.1	1.1	29	63	135	35	75	161
Excelsior Rd	Florin Rd	Gerber Rd	100	62.5	63.3	0.8	32	68	147	36	77	166
Excelsior Rd	Gerber Rd	Calvine Rd	100	61.9	62.7	0.8	29	62	134	33	70	151
Excelsior Rd	Calvine Rd	Sheldon Rd	100	62.3	63.2	0.9	30	66	141	35	75	162
Florin Rd	Stockton Blvd	Power Inn Rd	100	70.2	70.3	0.1	104	223	481	105	227	488
Florin Rd	Power Inn Rd	Florin-Perkins Rd	100	69.8	70.0	0.2	97	209	451	100	215	463
Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	100	69.0	69.2	0.2	86	186	400	89	191	413
Florin Rd	South Watt Ave	Hedge Ave	100	64.2	64.5	0.3	41	88	190	43	93	200
Florin Rd	Hedge Ave	Mayhew Rd	100	64.6	65.0	0.4	44	95	204	46	99	214
Florin Rd	Mayhew Rd	Bradshaw Rd	100	69.4	69.7	0.3	91	196	423	95	206	443
Florin Rd	Bradshaw Rd	Vineyard Rd	100	67.6	67.8	0.2	70	150	323	71	154	331
Florin Rd	Vineyard Rd	Excelsior Rd	100	67.3	67.6	0.3	66	142	305	69	149	321
Florin Rd	Excelsior Rd	Sunrise Blvd	100	65.9	65.9	0	53	115	247	54	115	249
Folsom Blvd	Howe Ave	Jackson Rd	100	70.9	71.0	0.1	115	248	534	116	250	539
Fruitridge Rd	65th St	Power Inn Rd	100	67.9	68.0	0.1	72	155	334	73	158	340

TABLE 12

PREDICTED CUMULATIVE AND CUMULATIVE + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + Original Project (Ldn)		
							70	65	60	70	65	60
Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	100	68.3	68.5	0.2	77	165	357	79	171	368
Fruitridge Rd	Florin Perkins Rd	South Watt Ave	100	67.8	68.0	0.2	71	153	330	74	159	343
Fruitridge Rd	South Watt Ave	Hedge Ave	100	67.1	67.5	0.4	64	137	296	68	146	315
Fruitridge Rd	Hedge Ave	Collector WJ-12	100	69.2	69.6	0.4	89	191	411	94	203	437
Fruitridge Rd	Collector WJ-12	Mayhew Rd	100	68.7	69.2	0.5	81	175	378	88	190	409
Grant Line Rd	White Rock Rd	Douglas Rd	100	71.6	71.8	0.2	129	278	598	132	284	612
Grant Line Rd	Douglas Rd	Chrysanthy Blvd	100	75.4	75.4	0	228	491	1057	229	493	1061
Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd	100	70.2	70.3	0.1	103	221	477	105	226	488
Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	100	69.2	69.2	0	89	191	411	89	191	412
Grant Line Rd	Rancho Cordova Pkwy	Jackson Rd	100	70.9	70.8	-0.1	115	247	533	113	244	526
Grant Line Rd	Jackson Rd	Sunrise Blvd	100	68.4	68.3	-0.1	78	168	362	77	166	357
Grant Line Rd	Sunrise Blvd	Calvine Rd	100	68.8	68.8	0	83	179	385	84	180	388
Grant Line Rd	Calvine Rd	Sheldon Rd	100	68.0	68.1	0.1	74	159	343	74	160	346
Grant Line Rd	Sheldon Rd	Wilton Rd	100	68.0	69.0	1	74	159	343	86	185	398
Grant Line Rd	Wilton Rd	Bond Rd	100	68.8	68.5	-0.3	83	179	385	79	171	368
Happy Lane	Old Placerville Road	Routier Ext	100	73.3	70.1	-3.2	165	356	768	101	218	471
Happy Lane	Routier Ext	Kiefer Boulevard	100	69.7	71.7	2	96	206	444	130	279	602
Hedge Ave	Jackson Rd	Rock Creek Pkwy	100	70.2	68.7	-1.5	104	224	482	82	176	378
Hedge Ave	Rock Creek Pkwy	Fruitridge Rd	100	68.7	66.8	-1.9	82	177	382	61	131	282
Hedge Ave	Fruitridge Rd	Elder Creek Rd	100	66.5	67.5	1	58	125	269	68	146	314
Hedge Ave	Elder Creek Rd	Florin Rd	100	67.4	70.9	**3.5**	67	144	309	115	247	533
Howe Ave	US 50	Folsom Blvd	100	70.9	76.0	**5.1**	115	247	533	250	538	1160
International Dr	Mather Field Rd	Zinfandel Dr	100	75.9	74.2	-1.7	248	534	1149	190	409	880
International Dr	Zinfandel Dr	Sunrise Blvd	100	74.1	73.4	-0.7	189	406	876	168	361	778
Jackson Rd	Folsom Blvd	Florin Perkins Rd	100	72.5	72.0	-0.5	146	315	679	136	292	630
Jackson Rd	Florin Perkins Rd	14th Ave	100	71.1	72.1	1	119	256	552	138	298	641
Jackson Rd	14th Ave	Rock Creek Pkwy	100	71.9	73.6	**1.7**	134	289	622	174	375	807
Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	100	71.3	71.2	-0.1	122	262	565	120	259	559
Jackson Rd	Aspen 1 Dwy	South Watt Ave	100	69.8	69.9	0.1	98	210	453	99	213	458
Jackson Rd	South Watt Ave	Hedge Ave	100	69.7	70.7	1	95	205	441	111	239	515
Jackson Rd	Hedge Ave	Collector WJ-3	100	70.5	70.0	-0.5	109	234	505	100	216	465
Jackson Rd	Collector WJ-3	Mayhew Rd	100	69.8	70.1	0.3	97	209	451	102	219	472

TABLE 12

PREDICTED CUMULATIVE AND CUMULATIVE + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + Original Project (Ldn)		
							70	65	60	70	65	60
Jackson Rd	Mayhew Rd	Bradshaw Rd	100	69.9	70.1	0.2	99	213	460	101	217	468
Jackson Rd	Bradshaw Rd	Collector WJ-4	100	70.9	71.4	0.5	115	247	533	125	269	578
Jackson Rd	Collector WJ-4	Happy Ln	100	71.0	71.5	0.5	117	252	543	126	272	585
Jackson Rd	Happy Ln	Rock Creek Pkwy	100	71.0	70.1	-0.9	117	251	541	101	218	469
Jackson Rd	Rock Creek Pkwy	Collector WJ-5	100	69.8	70.5	0.7	97	210	452	108	232	499
Jackson Rd	Collector WJ-5	Collector WJ-6	100	69.8	70.3	0.5	97	209	449	104	224	483
Jackson Rd	Collector WJ-6	Excelsior Rd	100	69.5	70.3	0.8	92	199	428	104	225	484
Jackson Rd	Excelsior Rd	Collector JT-3	100	69.5	72.2	**2.7**	92	199	428	141	303	653
Jackson Rd	Collector JT-3	Tree View Ln	100	70.8	70.9	0.1	114	245	529	115	248	535
Jackson Rd	Tree View Ln	Collector JT-4	100	70.8	70.3	-0.5	114	245	529	105	226	486
Jackson Rd	Collector JT-4	Eagles Nest Rd	100	70.2	69.4	-0.8	103	221	477	91	197	424
Jackson Rd	Eagles Nest Rd	Rockbridge Dr	100	70.6	70.3	-0.3	110	236	509	105	227	489
Jackson Rd	Rockbridge Dr	Sunrise Blvd	100	69.6	69.4	-0.2	95	204	440	91	195	421
Jackson Rd	Sunrise Blvd	Grant Line Rd	100	69.0	69.0	0	86	185	399	86	185	399
Kiefer Blvd	Florin Perkins Rd	South Watt Ave	100	58.7	59.5	0.8	18	38	82	20	43	92
Kiefer Blvd	South Watt Ave	Mayhew Rd	100	66.8	67.5	0.7	62	133	286	68	147	318
Kiefer Blvd	Mayhew Rd	Bradshaw Rd	100	67.9	68.8	0.9	73	156	337	83	179	385
Kiefer Boulevard	Bradshaw Road	Collector WJ-14	100	73.2	74.7	**1.5**	162	350	754	205	441	950
Kiefer Boulevard	Collector WJ-14	Routier Ext	100	73.0	74.9	**1.9**	160	344	741	213	458	986
Kiefer Boulevard	Routier Ext	Happy Lane	100	73.2	75.1	**1.9**	163	352	758	220	474	1022
Kiefer Blvd	Eagles Nest Rd	W Collector MS-1	100	68.0	73.1	**5.1**	73	157	339	160	346	745
Kiefer Blvd	W Collector MS-1	Northbridge Dr	100	67.6	72.2	**4.6**	69	148	319	140	302	650
Kiefer Blvd	Northbridge Dr	E Collector MS-1	100	68.6	72.5	**3.9**	81	174	374	146	314	677
Kiefer Blvd	E Collector MS-1	Sunrise Blvd	100	71.4	73.5	**2.1**	123	265	571	170	367	791
Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	100	71.3	72.6	1.3	123	264	570	150	323	697
Mather Blvd / Norden Ave	Von Karman St	Bleckely St	100	69.0	69.0	0	86	184	397	86	184	397
Mather Blvd	Bleckely St	Femoyer St	100	68.2	68.2	0	76	164	353	76	164	352
Mather Blvd	Femoyer St	Douglas Rd	100	67.4	67.4	0	67	145	311	67	145	311
Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	100	63.6	63.8	0.2	37	80	173	39	84	180
Mather Field Rd	US 50	Rockingham Dr	100	71.6	71.6	0	127	274	591	128	275	593
Mather Field Rd	Rockingham Dr	International Dr	100	71.1	71.1	0	118	254	547	117	253	545
Mather Field Rd	International Dr	Peter A McCuen	100	64.4	64.6	0.2	42	91	196	44	95	204

TABLE 12

PREDICTED CUMULATIVE AND CUMULATIVE + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + Original Project (Ldn)		
							70	65	60	70	65	60
		Blvd										
Mayhew Rd	Folsom Blvd	Goethe Rd	100	63.5	64.1	0.6	37	79	171	41	88	189
Mayhew Rd	Goethe Rd	Kiefer Blvd	100	63.5	63.8	0.3	37	79	171	39	84	180
Mayhew Rd	Jackson Rd	Rock Creek Pkwy	100	69.2	69.2	0	88	189	408	88	191	411
Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	100	70.2	70.2	0	103	221	477	103	223	480
Old Placerville Rd	Bradshaw Rd	Granby Dr	100	67.2	67.1	-0.1	65	141	304	64	138	297
Old Placerville Rd	Granby Dr	Happy Ln	100	66.7	66.7	0	60	129	279	61	130	281
Old Placerville Rd	Happy Ln	Routier Rd	100	66.8	67.4	0.6	62	133	286	67	144	309
Old Placerville Rd	Routier Rd	Rockingham Dr	100	69.5	69.6	0.1	92	198	427	95	204	439
Power Inn Rd	Folsom Blvd	14th Ave	100	70.6	70.7	0.1	110	238	512	112	240	518
Rockingham Dr	Old Placerville Rd	Mather Field Rd	100	69.9	70.1	0.2	99	213	459	101	217	468
South Watt Ave	Folsom Blvd	Kiefer Blvd	100	73.0	73.1	0.1	158	340	732	160	346	745
South Watt Ave	Kiefer Blvd	Jackson Rd	100	72.5	72.4	-0.1	148	318	686	146	313	675
South Watt Ave	Jackson Rd	Rock Creek Pkwy	100	70.2	70.2	0	103	222	478	103	221	476
South Watt Ave	Rock Creek Pkwy	Fruitridge Rd	100	70.2	70.2	0	103	223	480	102	221	475
South Watt Ave	Fruitridge Rd	Elder Creek Rd	100	69.8	69.7	-0.1	97	208	448	96	207	446
South Watt Ave	Elder Creek Rd	Florin Rd	100	72.3	72.3	0	142	306	659	142	306	660
Sunrise Blvd	US 50	Folsom Blvd	100	72.6	72.6	0	148	319	688	148	319	687
Sunrise Blvd	Folsom Blvd	Trade Center Dr	100	71.3	71.3	0	123	265	570	122	264	568
Sunrise Blvd	Trade Center Dr	White Rock Rd	100	69.3	69.3	0	90	194	418	90	193	417
Sunrise Blvd	White Rock Rd	International Dr	100	70.5	70.5	0	108	233	502	109	234	504
Sunrise Blvd	International Dr	Rio Del Oro Pkwy	100	70.9	70.9	0	114	246	531	115	248	535
Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	100	71.5	71.6	0.1	126	271	583	129	277	597
Sunrise Blvd	Douglas Rd	Kiefer Blvd	100	70.0	70.0	0	101	217	467	100	216	465
Sunrise Blvd	Kiefer Blvd	Jackson Rd	100	69.3	68.9	-0.4	90	194	418	84	181	390
Sunrise Blvd	Jackson Rd	Florin Rd	100	68.4	68.4	0	78	168	363	78	168	362
Sunrise Blvd	Florin Rd	Grant Line Rd	100	66.2	66.1	-0.1	55	120	258	55	119	256
Vineyard Rd	Gerber Rd	Calvine Rd	100	62.4	62.7	0.3	31	67	145	32	70	150
Watt Ave	US 50	Folsom Blvd	100	73.7	73.8	0.1	177	380	820	178	385	828
White Rock Rd	International Rd	Quality Dr	100	61.0	60.9	-0.1	25	54	117	25	53	115
White Rock Rd	Quality Dr	Zinfandel Dr	100	67.2	67.1	-0.1	65	139	300	64	137	296
White Rock Rd	Zinfandel Dr	Kilgore Rd	100	69.4	69.5	0.1	91	197	424	92	198	427
White Rock Rd	Kilgore Rd	Sunrise Blvd	100	70.5	70.5	0	107	231	498	108	233	501
White Rock Rd	Sunrise Blvd	Fitzgerald Rd	100	70.0	70.0	0	100	216	465	100	216	464

TABLE 12

PREDICTED CUMULATIVE AND CUMULATIVE + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + Original Project (Ldn)		
							70	65	60	70	65	60
White Rock Rd	Fitzgerald Rd	Rancho Cordova Pkwy	100	72.0	71.9	-0.1	136	292	629	135	290	625
White Rock Rd	Rancho Cordova Pkwy	Americanos Blvd	100	67.8	67.8	0	71	153	329	71	154	332
White Rock Rd	Americanos Blvd	Grant Line Rd	100	67.6	67.6	0	69	149	320	69	149	322
White Rock Rd	Grant Line Rd	Prairie City Rd	100	70.9	71.0	0.1	115	247	533	116	251	540
Zinfandel Dr	US 50	White Rock Rd	100	72.6	72.6	0	150	323	695	150	323	696
Zinfandel Dr	White Rock Rd	International Rd	100	69.8	69.8	0	96	208	447	98	210	453
Zinfandel Dr	International Rd	Baroque Dr	100	70.6	70.7	0.1	110	237	511	111	240	516
Zinfandel Dr	Baroque Dr	City Limit	100	69.7	69.8	0.1	95	206	443	96	208	448
Zinfandel Dr	City Limit	Douglas Rd	100	70.6	70.7	0.1	110	237	511	111	240	516
Zinfandel Dr	Douglas Rd	Collector MS-2	100	69.9	70.0	0.1	98	211	454	100	215	463
Zinfandel Dr	Collector MS-2	Collector MS-3	100	67.4	68.0	0.6	67	145	313	74	158	341
Zinfandel Dr	Collector MS-3	Collector MS-4	100	65.0	66.2	1.2	46	100	214	56	120	259
Zinfandel Dr	Collector MS-4	Kiefer Blvd	100	65.9	68.1	**2.2**	53	115	248	74	160	345
14th Ave	Power Inn Rd	Florin Perkins Rd	100	66.6	66.9	0.3	60	129	277	62	134	289
14th Ave	Florin Perkins Rd	Jackson Rd	100	64.8	65.0	0.2	45	97	208	47	100	216
Chrysanthy Blvd	Rancho Cordova Pkwy	Americanos Blvd	100	65.8	65.7	-0.1	53	113	244	52	111	240
Chrysanthy Blvd	Americanos Blvd	Grant Line Rd	100	64.3	64.4	0.1	42	90	194	42	91	197
Douglas Rd (Extension)	Mather Blvd	Kiefer Blvd	100	68.1	67.9	-0.2	75	161	346	73	157	338
International Dr	Sunrise Blvd	Rancho Cordova Pkwy	100	69.5	69.6	0.1	93	201	433	94	203	437
International Dr	Rancho Cordova Pkwy	Americanos Blvd	100	67.2	67.2	0	65	140	301	65	139	300
Kiefer Blvd	Rancho Cordova Pkwy	Americanos Blvd	100	63.0	64.2	1.2	34	74	159	41	88	190
Kiefer Blvd	Americanos Blvd	Grant Line Rd	100	68.2	69.0	0.8	75	162	350	86	186	401
Rancho Cordova Pkwy	US 50	Easton Valley Pkwy	100	76.8	76.9	0.1	285	614	1323	287	618	1332
Rancho Cordova Pkwy	Easton Valley Pkwy	White Rock Rd	100	70.9	71.0	0.1	115	249	535	116	251	540
Rancho Cordova Pkwy	White Rock Rd	International Dr	100	69.3	69.4	0.1	90	193	416	91	196	422

TABLE 12

PREDICTED CUMULATIVE AND CUMULATIVE + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + Original Project (Ldn)		
							70	65	60	70	65	60
Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy	100	71.2	71.3	0.1	121	260	561	123	265	570
Rancho Cordova Pkwy	Rio Del Oro Pkwy	Villagio Dr	100	69.4	69.4	0	91	195	420	91	196	422
Rancho Cordova Pkwy	Villagio Dr	Douglas Rd	100	68.7	68.7	0	82	176	379	81	175	377
Rancho Cordova Pkwy	Douglas Rd	Chrysanthy Blvd	100	68.9	68.8	-0.1	85	183	394	83	178	384
Rancho Cordova Pkwy	Chrysanthy Blvd	Kiefer Blvd	100	66.8	66.4	-0.4	61	131	282	57	123	266
Rancho Cordova Pkwy	Kiefer Blvd	Grant Line Rd	100	64.4	65.1	0.7	42	91	197	47	101	217
Americanos Blvd	White Rock Rd	Douglas Rd	100	61.3	61.5	0.2	26	56	121	27	58	126
Americanos Blvd	Douglas Rd	Chrysanthy Blvd	100	63.1	63.1	0	35	75	162	35	75	162
Americanos Blvd	Chrysanthy Blvd	Kiefer Blvd	100	63.5	63.2	-0.3	37	79	171	35	76	163
Vineyard Rd	Florin Rd	Gerber Rd	100	63.5	63.9	0.4	37	79	171	39	85	182
Rio Del Oro Pkwy	Sunrise Blvd	Rancho Cordova Pkwy	100	68.4	68.7	0.3	78	168	363	81	175	377
Rio Del Oro Pkwy	Rancho Cordova Pkwy	White Rock Rd	100	62.9	62.8	-0.1	34	72	156	33	72	155
Kiefer Blvd	Tree View Ln	Eagles Nest Rd	100	70.5	70.5	0	108	232	501	108	232	501
Douglas Rd	Excelsior Rd	Rock Creek Pkwy	100	67.3	68.5	1.2	66	142	307	79	171	368
Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	100	68.9	69.6	0.7	85	183	393	94	203	437
Kiefer Blvd	Happy Ln	Douglas Rd	100	68.6	70.7	**2.1**	81	174	375	111	239	516
Kiefer Blvd	Douglas Rd	Excelsior Rd	100	61.7	69.0	**7.3**	28	60	130	85	184	397
Mayhew Rd	Routier Ext	Bradshaw Rd	100	69.4	69.5	0.1	91	196	423	93	200	431
Mayhew Rd	Bradshaw Rd	Jackson Rd	100	69.6	69.7	0.1	94	202	435	95	204	440
Mayhew Rd	Fruitridge Rd	Collector WJ-13	100	68.5	68.2	-0.3	79	171	367	76	165	355
Mayhew Rd	Collector WJ-13	Elder Creek Rd	100	68.8	68.6	-0.2	83	179	385	81	174	375
Rock Creek Pkwy	South Watt Ave	Hedge Ave	100	61.8	62.5	0.7	28	61	132	31	68	146
Rock Creek Pkwy	Hedge Ave	Mayhew Rd	100	0	64.0	0	0	0	0	40	86	185
Rock Creek Pkwy	Mayhew Rd	Bradshaw Rd	100	0	60.6	0	0	0	0	24	51	109
Rock Creek Pkwy East	Excelsior Road	Collector WJ-16	100	0	65.0	0	0	0	0	46	100	215
Rock Creek Pkwy	Collector WJ-16	Jackson Road	100	0	66.5	0	0	0	0	58	126	271

TABLE 12

PREDICTED CUMULATIVE AND CUMULATIVE + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + Original Project (Ldn)		
							70	65	60	70	65	60
East												
Vineyard Rd	Jackson Road	New Collector	100	0	65.8	0	0	0	0	53	113	244
Vineyard Rd	New Collector	Collector WJ-18	100	0	66.6	0	0	0	0	60	128	277
Vineyard Rd	Collector WJ-18	Elder Creek Road	100	0	66.6	0	0	0	0	59	128	275
Vineyard Rd	Elder Creek Road	Florin Road	100	0	65.1	0	0	0	0	47	102	219
Routier Ext	Old Placerville Road	Happy Lane	100	0	69.5	0	0	0	0	93	199	430
Routier Ext	Happy Lane	Kiefer Boulevard	100	0	68.9	0	0	0	0	85	182	392
Routier Ext	Kiefer Boulevard	Mayhew Road	100	0	70.5	0	0	0	0	108	233	502
Collector WJ-16	Rock Creek Pkwy	Collector WJ-6	100	0	53.3	0	0	0	0	8	17	36
Collector WJ-17	Rock Creek Pkwy	Collector WJ-6	100	0	53.0	0	0	0	0	7	16	34
Collector WJ-6	Collector WJ-16/WJ-17	Jackson Road	100	0	58.1	0	0	0	0	16	35	75
Collector WJ-6	Jackson Road	Collector WJ-18	100	0	59.7	0	0	0	0	21	45	96
Collector WJ-2	Excelsior Road	Collector WJ-6	100	0	58.5	0	0	0	0	17	37	80
Collector WJ-18	Vineyard Rd	Collector WJ-6	100	0	59.9	0	0	0	0	21	46	99
Collector WJ-18	Collector WJ-6	Excelsior Road	100	0	59.9	0	0	0	0	21	46	99
Collector WJ-19	Bradshaw Road	Vineyard Road	100	0	63.8	0	0	0	0	39	83	179
Collector JT-1	Excelsior Rd	Collector JT-3	100	0	62.0	0	0	0	0	29	64	137
Collector JT-1	Collector JT-3	Tree View Ln	100	0	57.4	0	0	0	0	14	31	67
Collector JT-3	Kiefer Blvd	Collector JT-1	100	0	55.6	0	0	0	0	11	24	51
Collector JT-3	Collector JT-1	Collector JT-6	100	0	56.8	0	0	0	0	13	28	61
Collector JT-3	Collector JT-6	Collector JT-5	100	0	59.3	0	0	0	0	19	42	90
Collector JT-3	Collector JT-5	Jackson Rd	100	0	65.9	0	0	0	0	53	115	247
Collector JT-4	Jackson Rd	Bridgewater Dr	100	0	58.9	0	0	0	0	18	39	85
Collector JT-5	Collector JT-3	Tree View Ln	100	0	63.0	0	0	0	0	34	74	159
Collector JT-6	Excelsior Rd	Collector JT-3	100	0	61.6	0	0	0	0	27	59	127
Collector JT-6	Collector JT-3	Tree View Ln	100	0	54.2	0	0	0	0	9	19	41
Kiefer Blvd	Excelsior Rd	Tree View Ln	100	0	67.7	0	0	0	0	70	151	324
Tree View Ln	Kiefer Blvd	Collector JT-1	100	0	65.3	0	0	0	0	49	105	226
Tree View Ln	Collector JT-1	Collector JT-6	100	0	65.3	0	0	0	0	48	104	225

TABLE 12

PREDICTED CUMULATIVE AND CUMULATIVE + (ORIGINAL) PROJECT TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + Original Project (Ldn)		
							70	65	60	70	65	60
Tree View Ln	Collector JT-6	Collector JT-5	100	0	62.5	0	0	0	0	32	69	148
Tree View Ln	Collector JT-5	Jackson Rd	100	0	61.2	0	0	0	0	26	56	121

[1] Distances to traffic noise contours are measured in feet from the centerlines of the Roadways.
[2] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Source: DKS & j.c. brennan 2017 $ 2018.
NA = Not Available
Bold indicates a significant increase in traffic noise levels

TABLE 13

PREDICTED CUMULATIVE AND CUMULATIVE + (ALT-2) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + ALT-2 Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + ALT-2 Project (Ldn)		
							70	65	60	70	65	60
Bradshaw Rd	Folsom Blvd	US 50	100	68.2	68.3	0.1	76	164	353	78	167	360
Bradshaw Rd	US 50	Lincoln Village Dr	100	72.6	72.7	0.1	148	319	687	152	328	708
Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	100	72.1	72.3	0.2	137	295	636	143	308	663
Bradshaw Rd	Old Placerville Rd	Goethe Rd	100	71.8	72.1	0.3	132	285	613	139	299	643
Bradshaw Rd	Goethe Rd	Collector WJ-8	100	71.0	71.4	0.4	117	251	541	124	267	576
Bradshaw Rd	Collector WJ-8	Kiefer Blvd	100	70.7	71.2	0.5	111	238	513	119	257	554
Bradshaw Rd	Kiefer Blvd	Collector WJ-9	100	70.9	70.8	-0.1	114	246	530	113	243	523
Bradshaw Rd	Collector WJ-9	Mayhew Rd	100	70.9	70.8	-0.1	114	246	531	113	244	525
Bradshaw Rd	Mayhew Rd	Jackson Rd	100	71.1	71.1	0	118	254	548	118	254	547
Bradshaw Rd	Jackson Rd	Rock Creek Pkwy	100	70.5	70.4	-0.1	108	233	502	106	229	493
Bradshaw Rd	Rock Creek Pkwy	Collector WJ-10	100	70.7	70.6	-0.1	111	240	516	110	236	509
Bradshaw Rd	Collector WJ-10	Collector WJ-11	100	70.3	70.2	-0.1	104	224	483	103	223	480
Bradshaw Rd	Collector WJ-11	Elder Creek Rd	100	68.8	68.7	-0.1	83	178	383	82	177	382
Bradshaw Rd	Elder Creek Rd	Florin Rd	100	69.4	69.5	0.1	91	196	422	93	200	432
Bradshaw Rd	Florin Rd	Gerber Rd	100	70.5	70.6	0.1	109	234	505	110	237	511
Bradshaw Rd	Gerber Rd	Calvine Rd	100	69.1	69.2	0.1	87	188	405	88	190	408
Calvine Rd	Waterman Rd	Bradshaw Rd	100	67.1	67.2	0.1	64	139	298	65	140	301
Calvine Rd	Bradshaw Rd	Vineyard Rd	100	66.2	66.2	0	56	121	261	56	120	259
Calvine Rd	Vineyard Rd	Excelsior Rd	100	65.1	65.2	0.1	47	102	220	48	104	223
Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	100	63.2	63.3	0.1	35	76	164	36	77	166
Douglas Rd	Mather Blvd	Zinfandel Dr	100	69.0	68.7	-0.3	86	185	400	82	177	381
Douglas Rd	Zinfandel Dr	Sunrise Blvd	100	72.6	72.4	-0.2	148	319	687	145	312	672
Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	100	70.1	69.9	-0.2	101	218	470	98	211	454
Douglas Rd	Rancho Cordova Pkwy	Americanos Blvd	100	69.9	69.8	-0.1	98	212	456	97	209	451
Douglas Rd	Americanos Blvd	Grant Line Rd	100	68.6	68.5	-0.1	81	174	375	80	172	371
Eagles Nest Rd	Kiefer Blvd	N Bridgewater Dr	100	67.4	66.7	-0.7	67	144	311	60	130	281
Eagles Nest Rd	N Bridgewater Dr	S Bridgewater Dr	100	67.8	66.9	-0.9	72	154	332	62	133	287
Eagles Nest Rd	S Bridgewater Dr	Jackson Rd	100	67.1	65.6	-1.5	64	137	296	51	110	238
Eagles Nest Rd	Jackson Rd	Florin Rd	100	65.4	65.8	0.4	49	106	227	53	113	244

TABLE 13

PREDICTED CUMULATIVE AND CUMULATIVE + (ALT-2) PROJECT TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + ALT-2 Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + ALT-2 Project (Ldn)		
							70	65	60	70	65	60
Eagles Nest Rd	Florin Rd	Grant Line Rd	100	60.0	61.0	1	22	47	101	25	54	117
Elder Creek Rd	65th St	Power Inn Rd	100	70.6	70.7	0.1	110	237	510	111	239	515
Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	100	70.7	70.8	0.1	112	241	519	112	242	521
Elder Creek Rd	Florin Perkins Rd	South Watt Ave	100	71.1	71.1	0	118	254	548	119	256	552
Elder Creek Rd	South Watt Ave	Hedge Ave	100	74.2	74.2	0	191	411	885	191	412	888
Elder Creek Rd	Hedge Ave	Mayhew Rd	100	73.3	72.3	-1	166	358	772	142	305	657
Elder Creek Rd	Mayhew Rd	Bradshaw Rd	100	67.5	69.6	**2.1**	68	147	317	94	202	434
Elder Creek Rd	Bradshaw Rd	Vineyard Rd	100	67.6	68.4	0.8	69	149	321	78	168	362
Elder Creek Rd	Vineyard Rd	Excelsior Rd	100	65.8	67.5	**1.7**	52	112	242	69	148	318
Elk Grove-Florin Rd	Florin Rd	Gerber Rd	100	71.3	71.3	0	122	263	566	122	262	565
Excelsior Rd	Kiefer Blvd	Douglas Rd	100	57.5	62.0	4.5	15	32	68	29	63	136
Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	100	68.4	68.9	0.5	78	168	362	84	181	389
Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	100	68.1	68.7	0.6	75	162	349	82	176	379
Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	100	68.1	68.6	0.5	75	161	347	81	174	374
Excelsior Rd	Jackson Rd	Collector WJ-6	100	68.6	70.2	**1.6**	81	174	374	103	223	480
Excelsior Rd	Collector WJ-6	Elder Creek Rd	100	67.5	69.1	**1.6**	68	146	314	87	187	403
Excelsior Rd	Elder Creek Rd	Florin Rd	100	62.0	63.0	1	29	63	135	34	73	158
Excelsior Rd	Florin Rd	Gerber Rd	100	62.5	63.2	0.7	32	68	147	35	75	162
Excelsior Rd	Gerber Rd	Calvine Rd	100	61.9	62.7	0.8	29	62	134	33	70	152
Excelsior Rd	Calvine Rd	Sheldon Rd	100	62.3	63.1	0.8	30	66	141	35	75	162
Florin Rd	Stockton Blvd	Power Inn Rd	100	70.2	70.3	0.1	104	223	481	104	224	484
Florin Rd	Power Inn Rd	Florin-Perkins Rd	100	69.8	69.9	0.1	97	209	451	98	212	457
Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	100	69.0	69.1	0.1	86	186	400	87	188	405
Florin Rd	South Watt Ave	Hedge Ave	100	64.2	64.3	0.1	41	88	190	42	90	193
Florin Rd	Hedge Ave	Mayhew Rd	100	64.6	64.7	0.1	44	95	204	45	96	207
Florin Rd	Mayhew Rd	Bradshaw Rd	100	69.4	69.5	0.1	91	196	423	93	201	432
Florin Rd	Bradshaw Rd	Vineyard Rd	100	67.6	67.7	0.1	70	150	323	70	150	324
Florin Rd	Vineyard Rd	Excelsior Rd	100	67.3	67.5	0.2	66	142	305	68	146	314
Florin Rd	Excelsior Rd	Sunrise Blvd	100	65.9	65.8	-0.1	53	115	247	52	113	244
Folsom Blvd	Howe Ave	Jackson Rd	100	70.9	71.0	0.1	115	248	534	116	249	537
Fruitridge Rd	65th St	Power Inn Rd	100	67.9	67.9	0	72	155	334	72	156	335

TABLE 13

PREDICTED CUMULATIVE AND CUMULATIVE + (ALT-2) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + ALT-2 Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + ALT-2 Project (Ldn)		
							70	65	60	70	65	60
Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	100	68.3	68.4	0.1	77	165	357	78	169	363
Fruitridge Rd	Florin Perkins Rd	South Watt Ave	100	67.8	67.9	0.1	71	153	330	73	156	337
Fruitridge Rd	South Watt Ave	Hedge Ave	100	67.1	67.3	0.2	64	137	296	66	143	308
Fruitridge Rd	Hedge Ave	Collector WJ-12	100	69.2	69.5	0.3	89	191	411	92	198	427
Fruitridge Rd	Collector WJ-12	Mayhew Rd	100	68.7	69.0	0.3	81	175	378	86	184	397
Grant Line Rd	White Rock Rd	Douglas Rd	100	71.6	71.7	0.1	129	278	598	131	282	607
Grant Line Rd	Douglas Rd	Chrysanthy Blvd	100	75.4	75.3	-0.1	228	491	1057	227	490	1055
Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd	100	70.2	70.3	0.1	103	221	477	104	224	483
Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	100	69.2	69.2	0	89	191	411	88	190	409
Grant Line Rd	Rancho Cordova Pkwy	Jackson Rd	100	70.9	70.7	-0.2	115	247	533	112	242	520
Grant Line Rd	Jackson Rd	Sunrise Blvd	100	68.4	68.3	-0.1	78	168	362	77	166	357
Grant Line Rd	Sunrise Blvd	Calvine Rd	100	68.8	68.8	0	83	179	385	83	179	385
Grant Line Rd	Calvine Rd	Sheldon Rd	100	68.0	68.0	0	74	159	343	74	159	343
Grant Line Rd	Sheldon Rd	Wilton Rd	100	68.0	68.9	0.9	74	159	343	85	183	395
Grant Line Rd	Wilton Rd	Bond Rd	100	68.8	68.4	-0.4	83	179	385	79	169	365
Happy Lane	Old Placerville Road	Routier Ext	100	73.3	68.8	-4.5	165	356	768	83	179	386
Happy Lane	Routier Ext	Kiefer Boulevard	100	69.7	71.1	1.4	96	206	444	118	254	547
Hedge Ave	Jackson Rd	Rock Creek Pkwy	100	70.2	68.6	-1.6	104	224	482	81	175	377
Hedge Ave	Rock Creek Pkwy	Fruitridge Rd	100	68.7	66.8	-1.9	82	177	382	61	132	284
Hedge Ave	Fruitridge Rd	Elder Creek Rd	100	66.5	67.4	0.9	58	125	269	67	145	312
Hedge Ave	Elder Creek Rd	Florin Rd	100	67.4	70.9	**3.5**	67	144	309	115	248	534
Howe Ave	US 50	Folsom Blvd	100	70.9	75.9	**5**	115	247	533	249	536	1155
International Dr	Mather Field Rd	Zinfandel Dr	100	75.9	74.1	-1.8	248	534	1149	188	406	875
International Dr	Zinfandel Dr	Sunrise Blvd	100	74.1	73.2	-0.9	189	406	876	163	351	757
Jackson Rd	Folsom Blvd	Florin Perkins Rd	100	72.5	72.0	-0.5	146	315	679	135	291	628
Jackson Rd	Florin Perkins Rd	14th Ave	100	71.1	72.0	0.9	119	256	552	137	295	636
Jackson Rd	14th Ave	Rock Creek Pkwy	100	71.9	73.5	**1.6**	134	289	622	172	370	797
Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	100	71.3	71.1	-0.2	122	262	565	118	255	550
Jackson Rd	Aspen 1 Dwy	South Watt Ave	100	69.8	69.8	0	98	210	453	97	209	450
Jackson Rd	South Watt Ave	Hedge Ave	100	69.7	70.6	0.9	95	205	441	109	236	508
Jackson Rd	Hedge Ave	Collector WJ-3	100	70.5	69.9	-0.6	109	234	505	98	212	457
Jackson Rd	Collector WJ-3	Mayhew Rd	100	69.8	70.0	0.2	97	209	451	100	215	464

TABLE 13

PREDICTED CUMULATIVE AND CUMULATIVE + (ALT-2) PROJECT TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + ALT-2 Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + ALT-2 Project (Ldn)		
							70	65	60	70	65	60
Jackson Rd	Mayhew Rd	Bradshaw Rd	100	69.9	69.9	0	99	213	460	98	211	455
Jackson Rd	Bradshaw Rd	Collector WJ-4	100	70.9	71.2	0.3	115	247	533	120	259	559
Jackson Rd	Collector WJ-4	Happy Ln	100	71.0	71.3	0.3	117	252	543	121	261	562
Jackson Rd	Happy Ln	Rock Creek Pkwy	100	71.0	69.7	-1.3	117	251	541	95	205	442
Jackson Rd	Rock Creek Pkwy	Collector WJ-5	100	69.8	70.1	0.3	97	210	452	101	218	470
Jackson Rd	Collector WJ-5	Collector WJ-6	100	69.8	69.8	0	97	209	449	98	210	453
Jackson Rd	Collector WJ-6	Excelsior Rd	100	69.5	69.9	0.4	92	199	428	98	212	456
Jackson Rd	Excelsior Rd	Collector JT-3	100	69.5	71.9	**2.4**	92	199	428	133	287	619
Jackson Rd	Collector JT-3	Tree View Ln	100	70.8	70.6	-0.2	114	245	529	110	236	510
Jackson Rd	Tree View Ln	Collector JT-4	100	70.8	70.1	-0.7	114	245	529	102	219	471
Jackson Rd	Collector JT-4	Eagles Nest Rd	100	70.2	69.2	-1	103	221	477	89	192	413
Jackson Rd	Eagles Nest Rd	Rockbridge Dr	100	70.6	70.2	-0.4	110	236	509	104	224	482
Jackson Rd	Rockbridge Dr	Sunrise Blvd	100	69.6	69.3	-0.3	95	204	440	90	193	416
Jackson Rd	Sunrise Blvd	Grant Line Rd	100	69.0	68.9	-0.1	86	185	399	85	183	394
Kiefer Blvd	Florin Perkins Rd	South Watt Ave	100	58.7	59.2	0.5	18	38	82	19	41	89
Kiefer Blvd	South Watt Ave	Mayhew Rd	100	66.8	67.4	0.6	62	133	286	67	145	313
Kiefer Blvd	Mayhew Rd	Bradshaw Rd	100	67.9	68.6	0.7	73	156	337	81	175	376
Kiefer Boulevard	Bradshaw Road	Collector WJ-14	100	73.2	74.5	1.3	162	350	754	199	428	922
Kiefer Boulevard	Collector WJ-14	Routier Ext	100	73.0	74.7	**1.7**	160	344	741	205	441	950
Kiefer Boulevard	Routier Ext	Happy Lane	100	73.2	74.9	**1.7**	163	352	758	212	458	986
Kiefer Blvd	Eagles Nest Rd	W Collector MS-1	100	68.0	73.0	**5**	73	157	339	158	340	732
Kiefer Blvd	W Collector MS-1	Northbridge Dr	100	67.6	72.1	**4.5**	69	148	319	139	299	644
Kiefer Blvd	Northbridge Dr	E Collector MS-1	100	68.6	72.4	**3.8**	81	174	374	144	311	670
Kiefer Blvd	E Collector MS-1	Sunrise Blvd	100	71.4	73.4	**2**	123	265	571	169	363	782
Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	100	71.3	72.7	1.4	123	264	570	150	324	698
Mather Blvd / Norden Ave	Von Karman St	Bleckely St	100	69.0	68.9	-0.1	86	184	397	85	182	392
Mather Blvd	Bleckely St	Femoyer St	100	68.2	68.1	-0.1	76	164	353	75	162	348
Mather Blvd	Femoyer St	Douglas Rd	100	67.4	67.3	-0.1	67	145	311	66	143	308
Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	100	63.6	63.7	0.1	37	80	173	38	82	176
Mather Field Rd	US 50	Rockingham Dr	100	71.6	71.5	-0.1	127	274	591	127	273	588
Mather Field Rd	Rockingham Dr	International Dr	100	71.1	71.0	-0.1	118	254	547	117	252	543
Mather Field Rd	International Dr	Peter A McCuen	100	64.4	64.7	0.3	42	91	196	44	95	204

TABLE 13

PREDICTED CUMULATIVE AND CUMULATIVE + (ALT-2) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + ALT-2 Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + ALT-2 Project (Ldn)		
							70	65	60	70	65	60
		Blvd										
Mayhew Rd	Folsom Blvd	Goethe Rd	100	63.5	63.9	0.4	37	79	171	39	85	183
Mayhew Rd	Goethe Rd	Kiefer Blvd	100	63.5	63.7	0.2	37	79	171	38	82	177
Mayhew Rd	Jackson Rd	Rock Creek Pkwy	100	69.2	69.2	0	88	189	408	88	189	408
Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	100	70.2	70.2	0	103	221	477	103	222	477
Old Placerville Rd	Bradshaw Rd	Granby Dr	100	67.2	67.1	-0.1	65	141	304	64	137	296
Old Placerville Rd	Granby Dr	Happy Ln	100	66.7	66.7	0	60	129	279	60	129	278
Old Placerville Rd	Happy Ln	Routier Rd	100	66.8	66.5	-0.3	62	133	286	59	126	272
Old Placerville Rd	Routier Rd	Rockingham Dr	100	69.5	69.5	0	92	198	427	93	201	432
Power Inn Rd	Folsom Blvd	14th Ave	100	70.6	70.7	0.1	110	238	512	111	239	515
Rockingham Dr	Old Placerville Rd	Mather Field Rd	100	69.9	70.0	0.1	99	213	459	100	215	463
South Watt Ave	Folsom Blvd	Kiefer Blvd	100	73.0	73.1	0.1	158	340	732	160	345	743
South Watt Ave	Kiefer Blvd	Jackson Rd	100	72.5	72.4	-0.1	148	318	686	146	313	675
South Watt Ave	Jackson Rd	Rock Creek Pkwy	100	70.2	70.1	-0.1	103	222	478	102	220	475
South Watt Ave	Rock Creek Pkwy	Fruitridge Rd	100	70.2	70.2	0	103	223	480	102	221	476
South Watt Ave	Fruitridge Rd	Elder Creek Rd	100	69.8	69.7	-0.1	97	208	448	96	207	445
South Watt Ave	Elder Creek Rd	Florin Rd	100	72.3	72.3	0	142	306	659	142	307	661
Sunrise Blvd	US 50	Folsom Blvd	100	72.6	72.5	-0.1	148	319	688	148	318	686
Sunrise Blvd	Folsom Blvd	Trade Center Dr	100	71.3	71.3	0	123	265	570	122	263	567
Sunrise Blvd	Trade Center Dr	White Rock Rd	100	69.3	69.2	-0.1	90	194	418	89	191	413
Sunrise Blvd	White Rock Rd	International Dr	100	70.5	70.5	0	108	233	502	107	231	498
Sunrise Blvd	International Dr	Rio Del Oro Pkwy	100	70.9	70.8	-0.1	114	246	531	113	244	526
Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	100	71.5	71.5	0	126	271	583	127	273	588
Sunrise Blvd	Douglas Rd	Kiefer Blvd	100	70.0	69.9	-0.1	101	217	467	99	213	458
Sunrise Blvd	Kiefer Blvd	Jackson Rd	100	69.3	68.8	-0.5	90	194	418	83	179	386
Sunrise Blvd	Jackson Rd	Florin Rd	100	68.4	68.3	-0.1	78	168	363	77	166	359
Sunrise Blvd	Florin Rd	Grant Line Rd	100	66.2	66.1	-0.1	55	120	258	55	119	256
Vineyard Rd	Gerber Rd	Calvine Rd	100	62.4	62.6	0.2	31	67	145	32	70	150
Watt Ave	US 50	Folsom Blvd	100	73.7	73.7	0	177	380	820	178	383	825
White Rock Rd	International Rd	Quality Dr	100	61.0	60.9	-0.1	25	54	117	25	53	114
White Rock Rd	Quality Dr	Zinfandel Dr	100	67.2	67.0	-0.2	65	139	300	63	136	294
White Rock Rd	Zinfandel Dr	Kilgore Rd	100	69.4	69.4	0	91	197	424	91	196	423
White Rock Rd	Kilgore Rd	Sunrise Blvd	100	70.5	70.4	-0.1	107	231	498	107	230	496
White Rock Rd	Sunrise Blvd	Fitzgerald Rd	100	70.0	70.0	0	100	216	465	100	215	462

TABLE 13

PREDICTED CUMULATIVE AND CUMULATIVE + (ALT-2) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + ALT-2 Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + ALT-2 Project (Ldn)		
							70	65	60	70	65	60
White Rock Rd	Fitzgerald Rd	Rancho Cordova Pkwy	100	72.0	71.9	-0.1	136	292	629	134	290	624
White Rock Rd	Rancho Cordova Pkwy	Americanos Blvd	100	67.8	67.7	-0.1	71	153	329	70	151	326
White Rock Rd	Americanos Blvd	Grant Line Rd	100	67.6	67.6	0	69	149	320	69	149	320
White Rock Rd	Grant Line Rd	Prairie City Rd	100	70.9	71.0	0.1	115	247	533	116	249	537
Zinfandel Dr	US 50	White Rock Rd	100	72.6	72.6	0	150	323	695	149	320	690
Zinfandel Dr	White Rock Rd	International Rd	100	69.8	69.8	0	96	208	447	96	208	447
Zinfandel Dr	International Rd	Baroque Dr	100	70.6	70.6	0	110	237	511	110	238	512
Zinfandel Dr	Baroque Dr	City Limit	100	69.7	69.7	0	95	206	443	96	206	444
Zinfandel Dr	City Limit	Douglas Rd	100	70.6	70.6	0	110	237	511	110	238	512
Zinfandel Dr	Douglas Rd	Collector MS-2	100	69.9	69.7	-0.2	98	211	454	96	207	446
Zinfandel Dr	Collector MS-2	Collector MS-3	100	67.4	67.7	0.3	67	145	313	70	150	324
Zinfandel Dr	Collector MS-3	Collector MS-4	100	65.0	65.8	0.8	46	100	214	53	114	245
Zinfandel Dr	Collector MS-4	Kiefer Blvd	100	65.9	67.7	1.8	53	115	248	70	151	326
14th Ave	Power Inn Rd	Florin Perkins Rd	100	66.6	66.8	0.2	60	129	277	61	132	285
14th Ave	Florin Perkins Rd	Jackson Rd	100	64.8	64.9	0.1	45	97	208	46	98	212
Chrysanthy Blvd	Rancho Cordova Pkwy	Americanos Blvd	100	65.8	65.7	-0.1	53	113	244	52	111	240
Chrysanthy Blvd	Americanos Blvd	Grant Line Rd	100	64.3	64.4	0.1	42	90	194	42	91	195
Douglas Rd (Extension)	Mather Blvd	Kiefer Blvd	100	68.1	67.7	-0.4	75	161	346	70	151	325
International Dr	Sunrise Blvd	Rancho Cordova Pkwy	100	69.5	69.5	0	93	201	433	92	198	427
International Dr	Rancho Cordova Pkwy	Americanos Blvd	100	67.2	67.2	0	65	140	301	65	140	301
Kiefer Blvd	Rancho Cordova Pkwy	Americanos Blvd	100	63.0	64.3	1.3	34	74	159	42	90	195
Kiefer Blvd	Americanos Blvd	Grant Line Rd	100	68.2	69.1	0.9	75	162	350	87	188	405
Rancho Cordova Pkwy	US 50	Easton Valley Pkwy	100	76.8	76.8	0	285	614	1323	286	616	1327
Rancho Cordova Pkwy	Easton Valley Pkwy	White Rock Rd	100	70.9	71.0	0.1	115	249	535	116	250	538
Rancho Cordova Pkwy	White Rock Rd	International Dr	100	69.3	69.4	0.1	90	193	416	91	195	420

TABLE 13

PREDICTED CUMULATIVE AND CUMULATIVE + (ALT-2) PROJECT TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + ALT-2 Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + ALT-2 Project (Ldn)		
							70	65	60	70	65	60
Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy	100	71.2	71.2	0	121	260	561	121	261	562
Rancho Cordova Pkwy	Rio Del Oro Pkwy	Villagio Dr	100	69.4	69.3	-0.1	91	195	420	89	193	415
Rancho Cordova Pkwy	Villagio Dr	Douglas Rd	100	68.7	68.5	-0.2	82	176	379	80	172	371
Rancho Cordova Pkwy	Douglas Rd	Chrysanthy Blvd	100	68.9	68.7	-0.2	85	183	394	82	177	382
Rancho Cordova Pkwy	Chrysanthy Blvd	Kiefer Blvd	100	66.8	66.3	-0.5	61	131	282	57	123	265
Rancho Cordova Pkwy	Kiefer Blvd	Grant Line Rd	100	64.4	65.0	0.6	42	91	197	46	100	216
Americanos Blvd	White Rock Rd	Douglas Rd	100	61.3	61.4	0.1	26	56	121	27	57	124
Americanos Blvd	Douglas Rd	Chrysanthy Blvd	100	63.1	63.1	0	35	75	162	34	74	160
Americanos Blvd	Chrysanthy Blvd	Kiefer Blvd	100	63.5	63.1	-0.4	37	79	171	35	74	160
Vineyard Rd	Florin Rd	Gerber Rd	100	63.5	64.0	0.5	37	79	171	40	85	184
Rio Del Oro Pkwy	Sunrise Blvd	Rancho Cordova Pkwy	100	68.4	68.5	0.1	78	168	363	80	172	371
Rio Del Oro Pkwy	Rancho Cordova Pkwy	White Rock Rd	100	62.9	62.8	-0.1	34	72	156	33	72	155
Kiefer Blvd	Tree View Ln	Eagles Nest Rd	100	70.2	70.2	0	104	224	482	104	224	482
Douglas Rd	Excelsior Rd	Rock Creek Pkwy	100	67.3	67.8	0.5	66	142	307	72	155	333
Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	100	68.9	69.2	0.3	85	183	393	88	190	409
Kiefer Blvd	Happy Ln	Douglas Rd	100	68.6	70.4	**1.8**	81	174	375	106	228	492
Kiefer Blvd	Douglas Rd	Excelsior Rd	100	61.7	68.7	**7**	28	60	130	82	176	380
Mayhew Rd	Routier Ext	Bradshaw Rd	100	69.4	69.5	0.1	91	196	423	92	198	427
Mayhew Rd	Bradshaw Rd	Jackson Rd	100	69.6	69.6	0	94	202	435	94	203	438
Mayhew Rd	Fruitridge Rd	Collector WJ-13	100	68.5	68.3	-0.2	79	171	367	77	165	356
Mayhew Rd	Collector WJ-13	Elder Creek Rd	100	68.8	68.6	-0.2	83	179	385	81	174	376
Rock Creek Pkwy	South Watt Ave	Hedge Ave	100	61.8	62.2	0.4	28	61	132	30	65	141
Rock Creek Pkwy	Hedge Ave	Mayhew Rd	100	63.9	63.9	0	39	84	182	39	84	182
Rock Creek Pkwy	Mayhew Rd	Bradshaw Rd	100	60.2	60.2	0	22	48	104	22	48	104
Rock Creek Pkwy East	Excelsior Road	Collector WJ-16	100	64.8	64.8	0	45	97	209	45	97	209
Rock Creek Pkwy	Collector WJ-16	Jackson Road	100	66.3	66.3	0	57	123	264	57	123	264

TABLE 13

PREDICTED CUMULATIVE AND CUMULATIVE + (ALT-2) PROJECT TRAFFIC NOISE LEVELS JACKSON TOWNSHIP

Roadway	Segment		Noise Levels (L_{dn}, dB)									
			Distance (feet)	Cumulative	Cumulative + ALT-2 Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + ALT-2 Project (Ldn)		
							70	65	60	70	65	60
East												
Vineyard Rd	Jackson Road	New Collector	100	65.7	65.7	0	52	111	240	52	111	240
Vineyard Rd	New Collector	Collector WJ-18	100	66.6	66.6	0	59	127	274	59	127	274
Vineyard Rd	Collector WJ-18	Elder Creek Road	100	66.5	66.5	0	58	125	269	58	125	269
Vineyard Rd	Elder Creek Road	Florin Road	100	65.1	65.1	0	47	101	217	47	101	217
Routier Ext	Old Placerville Road	Happy Lane	100	69.7	69.7	0	95	205	441	95	205	441
Routier Ext	Happy Lane	Kiefer Boulevard	100	68.9	68.9	0	84	182	392	84	182	392
Routier Ext	Kiefer Boulevard	Mayhew Road	100	70.5	70.5	0	107	231	499	107	231	499
Collector WJ-16	Rock Creek Pkwy	Collector WJ-6	100	53.3	53.3	0	8	17	36	8	17	36
Collector WJ-17	Rock Creek Pkwy	Collector WJ-6	100	52.8	52.8	0	7	15	33	7	15	33
Collector WJ-6	Collector WJ-16/WJ-17	Jackson Road	100	57.9	57.9	0	16	33	72	16	33	72
Collector WJ-6	Jackson Road	Collector WJ-18	100	59.1	59.1	0	19	40	87	19	40	87
Collector WJ-2	Excelsior Road	Collector WJ-6	100	58.1	58.1	0	16	34	74	16	34	74
Collector WJ-18	Vineyard Rd	Collector WJ-6	100	59.8	59.8	0	21	45	97	21	45	97
Collector WJ-18	Collector WJ-6	Excelsior Road	100	59.7	59.7	0	21	44	95	21	44	95
Collector WJ-19	Bradshaw Road	Vineyard Road	100	63.5	63.5	0	37	79	170	37	79	170
Collector JT-1	Excelsior Rd	Collector JT-3	100	60.1	60.1	0	22	47	101	22	47	101
Collector JT-1	Collector JT-3	Tree View Ln	100	55.4	55.4	0	11	23	49	11	23	49
Collector JT-3	Kiefer Blvd	Collector JT-1	100	56.1	56.1	0	12	26	55	12	26	55
Collector JT-3	Collector JT-1	Collector JT-6	100	54.6	54.6	0	9	20	44	9	20	44
Collector JT-3	Collector JT-6	Collector JT-5	100	56.6	56.6	0	13	27	59	13	27	59
Collector JT-3	Collector JT-5	Jackson Rd	100	65.4	65.4	0	49	106	229	49	106	229
Collector JT-4	Jackson Rd	Bridgewater Dr	100	58.8	58.8	0	18	39	84	18	39	84
Collector JT-5	Collector JT-3	Tree View Ln	100	62.4	62.4	0	31	67	145	31	67	145
Collector JT-6	Excelsior Rd	Collector JT-3	100	58.8	58.8	0	18	38	83	18	38	83
Collector JT-6	Collector JT-3	Tree View Ln	100	51.7	51.7	0	6	13	28	6	13	28
Kiefer Blvd	Excelsior Rd	Tree View Ln	100	67.4	67.4	0	0	0	0	67	144	309
Tree View Ln	Kiefer Blvd	Collector JT-1	100	63.8	63.8	0	0	0	0	38	83	178
Tree View Ln	Collector JT-1	Collector JT-6	100	63.6	63.6	0	0	0	0	38	81	175
Tree View Ln	Collector JT-6	Collector JT-5	100	60.9	60.9	0	0	0	0	25	53	115
Tree View Ln	Collector JT-5	Jackson Rd	100	59.5	59.5	0	0	0	0	20	43	92

[1] Distances to traffic noise contours are measured in feet from the centerlines of the Roadways.

TABLE 13

PREDICTED CUMULATIVE AND CUMULATIVE + (ALT-2) PROJECT TRAFFIC NOISE LEVELS
JACKSON TOWNSHIP

Roadway	Segment	Noise Levels (L_{dn}, dB)								
		Distance (feet)	Cumulative	Cumulative + ALT-2 Project	Δ	Distance to Contours (feet) Cumulative (Ldn)			Distance to Contours (feet) Cumulative + ALT-2 Project (Ldn)		
						70	65	60	70	65	60

[2] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Source: DKS & j.c. brennan 2017 $ 2018.
NA = Not Available
Bold indicates a significant increase in traffic noise levels

Sacramento Raceway Park Noise Impact Methodology

Noise levels associated with the Sacramento Raceway Park will be evaluated based upon the noise measurements and modeling of noise levels presented earlier in this report.

Mather Airport Noise Impact Methodology

Noise impacts associated with aircraft operations associated with Mather Airport were based upon noise contours developed for the Mather Airport Master Plan Final EIR, and Policies NO-2, NO-3, and NO-4 contained within the Sacramento County General Plan Noise Element. The analysis includes the location of the project site relative to the future 60 dBA CNEL contour. and an analysis of the potential for sleep disturbance due to single noise events due to aircraft. Since the project is located outside of the 60 dBA CNEL contour, the project complies with the Sacramento County General Plan Noise Element standards, and Policy NO-4 which applies to new residential development within the adopted Airport Policy Area boundaries, but outside the 60 CNEL.

In 2008, the American National Standards Institute (ANSI) published a procedure for predicting sleep disturbance in terms of percent awakening based upon various field studies, including the previous research. The Mather Airport Master Plan Final EIR used the ANSI procedures for evaluating the potential for sleep disturbance due to interior noise from aircraft operations in an overall area of approximately 150 square miles around the Mather Airport environs. A grid analysis in the area was developed and all areas which contained residential uses was evaluated. Land uses that were not residential or areas which were not developed were removed from the analysis area. Therefore, the Jackson Township project site was not included in the analysis of potential sleep disturbance. However, residential locations in close proximity to the project site were analyzed. Based upon the grid analysis for the existing residential area directly north of the project site, the percent of awakening is expected to range between 7% and 10% at the Jackson Township project site.

Construction Noise Impact Methodology

Construction noise was analyzed using data compiled by the US Environmental Protection Agency that lists typical noise levels at 50 feet for construction equipment and various construction activities.

Noise would also be generated during the construction phase by increased truck traffic on area roadways and on-site grading. A significant project-generated noise source would include truck traffic associated with transport of heavy materials and equipment to and from construction sites and the movement of heavy construction equipment on the project site, especially during site grading. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction Vibration Impact Methodology

The types of construction vibration impact include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 14 shows the typical vibration levels produced by construction equipment.

TABLE 14
VIBRATION LEVELS FOR VARYING CONSTRUCTION EQUIPMENT

Type of Equipment	Peak Particle Velocity @ 25 feet	Approximate Velocity Level @ 25 feet
Large Bulldozer	0.089 (inches/second)	87 (VdB)
Loaded Trucks	0.076 (inches/second)	86 (VdB)
Small Bulldozer	0.003 (inches/second)	58 (VdB)
Auger/drill Rigs	0.089 (inches/second)	87 (VdB)
Jackhammer	0.035 (inches/second)	79 (VdB)
Vibratory Hammer	0.070 (inches/second)	85 (VdB)
Vibratory Compactor/roller	0.210 (inches/second)	94 (VdB)

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006

Stationary Noise Source Noise Impact Methodology

Noise impacts associates with future commercial, park land uses and school uses were analyzed using previously collected file data for the various types of uses proposed. These uses were compared to the County stationary noise source criteria.

STANDARDS OF SIGNIFICANCE

CEQA Guidelines state that implementation of the project would result in significant noise impacts if the project would result in either of the following:

a. Exposure of persons to or generation of noise levels in excess of standards established in the Sacramento County General Plan Noise Element or the Sacramento County Noise Control Ordinance.

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Sacramento County has established some standards for roadway noise ranging from 1.5 dB to 5 dB Ldn, depending upon the existing noise environment. For stationary noise sources, this document considers a substantial increase in noise levels is defined as being 5 dB if the resulting total noise level would exceed that considered "normally acceptable" for a given land use category. Based upon the General Plan Noise Element, the recommendations by FICON indicate that when pre-project traffic noise levels are less than 60 dB Ldn, a 5+ dB increase is required before the change is significant. When pre-project noise levels are between 60 dB and 65 dB Ldn, an increase of 3+ dB is required before the change is significant. When pre-project noise levels are above 65 dB Ldn, an increase of 1.5+ dB is required before the change is considered significant.

d. A substantial temporary or periodic increase in ambient noise levels in

the project vicinity above levels existing without the project. A substantial increase in noise levels is defined as being 5 dB if the resulting total noise level would exceed that considered "normally acceptable" for a given land use category. Increases of 6 dB or greater are considered a significant adverse impact due to the potential for adverse community response.

e. For a project located within an airport land use plan or, where such a plan has not be adopted, within two miles of a public airport or public use airport, where the project would expose people residing or working in the area to excessive noise levels.

f. For a project within the vicinity of a private airstrip, where the project would expose people residing or working in the project area to excessive noise levels.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

Impact 1 Construction noise at sensitive receptors

Construction of the Proposed Project would temporarily increase noise levels during construction.

Noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in typical construction would generate maximum noise levels, as indicated in Table 15, ranging from 80 to 89 dB at a distance of 50 feet. Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

TABLE 15
NOISE LEVELS OF TYPICAL CONSTRUCTION EQUIPMENT

Equipment Type	Typical Equipment Level (dBA)- 50 ft from Source
Air Compressor	81
Backhoe	85
Concrete Pump	82
Concrete Breaker	82
Truck Crane	88
Dozer	87
Generator	78
Loader	84
Paver	88
Pneumatic Tools	85
Water Pump	76
Power Hand Saw	78
Shovel	82
Trucks	88

Source: Bolt, Beranek and Newman, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, U.S. EPA, 1971.

The Sacramento County noise ordinance exempts construction activities from the specified noise ordinance standards during the hours of 6:00 a.m. to 8:00 p.m. Monday through Friday, and Saturday and Sunday from 7:00 a.m. to 8:00 p.m. Generally, if a construction project adheres to the construction times identified in the noise ordinance, construction noise is exempted. However, to ensure that construction activities comply with the County's noise ordinance, the following mitigation measures are recommended to reduce the impact of construction noise levels.

Mitigation Measures for Impact 1

The following mitigation measures are required for the Proposed Project to minimize construction noise impacts.

MM1a Construction activities shall comply with the Sacramento County Noise Ordinance.

MM1b Locate fixed construction equipment such as compressors and generators as far as possible from sensitive receptors. Shroud or shield all impact tools, and muffle or shield all intakes and exhaust ports on power construction equipment.

MM1c To the extent possible, minimize construction during Saturdays and Sundays and Holidays.

Impact 2 Construction vibration at sensitive receptors

Construction of the Proposed Project could result in temporarily vibration levels during construction.

The primary construction activities associated with the project would occur when the infrastructure such as buildings and utilities are constructed. Some construction could occur during occupancy of existing and future residential units, however, it is expected that they would occur at considerable distances from existing occupied residences and would be removed from future on-site uses. Comparing Table 7 which contains the criteria for acceptable vibration levels to Table 14, which shows potential vibration impacts, it is not expected that vibration impacts would occur which would cause any structural damage at existing residences, and at future residences, provided that construction does not occur within 50 feet of occupied buildings.

Mitigation for Impact 2

None required

Impact 3 The Proposed Project could expose existing receptors to increases in traffic noise levels

Traffic generated by the Proposed Project could result in significant increases in roadway traffic noise. Based upon the General Plan Noise Element, the recommendations by FICON indicate that when pre-project traffic noise levels are less than 60 dB Ldn, a 5+ dB increase is required before the change is significant. When pre-project noise levels are between 60 dB and 65 dB Ldn, an increase of 3+ dB is required before the change is significant. When pre-project noise levels are above 65 dB Ldn, an increase of 1.5+ dB is required before the change is considered significant. Tables 10 through 13 indicate where the proposed project does result in increases in traffic noise levels, and where the increases in noise levels may be considered significant based upon the FICON criteria. Table 16 summarizes the roadways and segments which potentially will result in a significant increase in traffic noise levels, based upon the FICON criteria. Based upon Table 14, all identified roadway segments are located within the unincorporated areas of Sacramento County.

TABLE 16
ROADWAY SEGMENTS WITH SIGNIFICANT INCREASES IN NOISE LEVELS

Roadway	Segment	Δ	Scenario
Eagles Nest Rd	Jackson to Florin	+5.5 dB	Existing + Original Project
	Florin to Grantline	+8.8 dB	Existing + Original Project
	Florin to Grantline	+8.2 dB	Existing + Alt 2
Elder Creek Rd	Bradshaw to Excelsior	+6.8 dB	Existing + Original Project
	Bradshaw to Excelsior	+6.6 dB	Existing + Alt 2
	Vineyard to Excelsior	+2.2 dB	Cum + Original Project
	Mayhew to Bradshaw	+2.1 dB	Cum + Alt 2
	Vineyard to Excelsior	+1.7 dB	Cum + Alt 2
Excelsior Rd	Collector WJ1 to Collector WJ2	+5.6 dB	Existing + Original Project
	Collector WJ2 to JT2	+6.1 dB	Existing + Original Project
	Jackson to Elder Creek	+5.2 dB	Existing + Original Project

TABLE 16
ROADWAY SEGMENTS WITH SIGNIFICANT INCREASES IN NOISE LEVELS

	Collector WJ1 to Collector WJ2	+5.2 dB	Existing + Alt 2
	Collector WJ2 to JT2	+5.7 dB	Existing + Alt 2
	Jackson to Elder Creek	+4.9 dB	Existing + Alt 2
	Kiefer to Douglas	+5.3 dB	Cum + Original Project
Jackson Rd	Excelsior to Collector JT-3	+4.8 dB	Existing + Original Project
	Collector JT-4 to Tree View	+1.7 dB	Existing + Original Project
	Eagles Nest to JT4	+1.6 dB	Existing + Original Project
	South Watt to Hedge	+1.4 dB	Existing + Alt 2
	Excelsior to Collector JT3	+4.9 dB	Existing + Alt 2
	Excelsior to Collector JT-3	+2.4 dB	Cum + Alt 2
Kiefer Blvd	WJ14 to Routier Ext.	+1.9 dB	Cum + Original Project
	Routier Ext. to Happy Lane	+1.9 dB	Cum + Original Project
	Eagles Nest to W Collector MS1	+5.1 dB	Cum + Original Project
	W Collector MS1 to Northridge	+4.6 dB	Cum + Original Project
	Northridge to E Collector MS1	+3.9 dB	Cum + Original Project
	E Collector MS1 to Sunrise	+2.1 dB	Cum + Original Project
	Happy Lane to Douglas	+2.1 dB	Cum + Original Project
	Douglas to Excelsior	+7.3 dB	Cum + Original Project
	Collector WJ14 to Routier Ext.	+1.7 dB	Cum + Alt 2
	Routier Ext. to Happy Lane	+1.7 dB	Cum + Alt 2
	Eagles Nest to W Collector MS1	+5.0 dB	Cum + Alt 2
	W Collector MS1 to Northridge	+4.5 dB	Cum + Alt 2
	Northridge to E Collector MS1	+3.8 dB	Cum + Alt 2
	E Collector MS1 to Sunrise	+2.0 dB	Cum + Alt 2
	Happy Lane to Douglas	+1.8 dB	Cum + Alt 2
Hedge	Elder Creek to Florin	+3.5 dB	Cum + Original Project
		+3.5 dB	Cum + Alt 2
Howe	U.S. 50 to Folsom	+5.1 dB	Cum + Original Project
Zinfandel	Collector MS4 to Kiefer	+2.2 dB	Cum + Original Project

Mitigation for Impact 3

MM3a The project should consider repaving roadway segments which result in significant increases in traffic noise with alternative pavements. However, these repaving projects should only occur where existing residential uses are adjacent to the roadways, and they are located inside of the 65 dB Ldn contours shown in Tables 10 through 13. 65 dB Ldn is considered an acceptable exterior noise level standard.

Assuming that a minimum noise level reduction of 3 dB can be achieved through the use of alternative pavement, only one roadway segment (Eagles Nest Road from Florin Road to Grantline Road) would continue to experience a substantial increase in traffic noise levels under the Existing + Original Project and Exiting + Alt 2 Scenarios. Furthermore, given the number of affected roadways, it may not be economically feasible to repave all affected roadways. Also, there are situations where the project contribution is less than the minimum 3 dB of traffic noise reduction that would come from the use of alternative pavements and, thus, the project would be "over mitigating" its impacts.

Impact 4 The Proposed Project could expose new noise-sensitive receptors to excessive exterior traffic noise levels.

The Proposed Project could expose new noise sensitive uses to exterior noise levels in excess of the Sacramento County transportation noise level standards.

The Sacramento County General Plan Noise Element specifies an acceptable exterior noise level of 65 dB Ldn for exterior areas of residential uses, including common use areas. Outdoor areas for the residential portions of the project would include backyards. Since the Master Plans do not currently have tentative maps, grading plans or site designs, specific mitigation measures cannot be formalized at this time. Based upon the analysis, internal streets for the Jackson Township site will not result in traffic noise levels which exceed 65 dB Ldn at a distance of 100 feet from the roadway centerlines. However, any residences adjacent to Kiefer Boulevard, Excelsior Road, Jackson Highway and Tree View Lane will exceed the 65 dB Ldn noise level standard at 100 feet from the roadway centerlines. The following are mitigation measures for future tentative maps:

Mitigation for Impact 4

MM4a The future residential uses adjacent to Kiefer Boulevard, Excelsior Road, Jackson Highway and Tree View Lane will be required to comply with the 65 dB Ldn exterior noise level standard at the residential outdoor activity areas. Therefore, when tentative maps are available, a noise analysis will be required to determine the appropriate noise mitigation measures to comply with the exterior noise level standard of 65 dB Ldn.

Barrier Design:

Assuming that grades are relatively flat, and the elevations of the roadways, bases of barriers and building foundations are similar, a typical 6-foot tall barrier will generally provide a 5 dB reduction in overall traffic noise levels. Each additional foot of barrier height will result in an additional reduction of 1 dB, up to 10 feet. At some point barriers provide diminishing reductions in noise levels, depending upon site geometry, heavy truck percentages and roadway elevations.

Site Design:

Buildings can be placed on a project site to shield other structures or areas, to remove them from noise-impacted areas, and to prevent an increase in noise level caused by reflections. The use of one building to shield another can significantly reduce overall project noise control costs, particularly if the shielding structure is insensitive to noise.

Site design should guard against the creation of reflecting surfaces which may increase onsite noise levels. For example, two buildings placed at an angle facing a noise source may cause noise levels within that angle to increase by up to 3 dB. The open end of "U"-shaped buildings should point away from noise sources for the same reason. Landscaping walls or noise barriers located within a development may inadvertently reflect noise back to a noise-sensitive area unless carefully located. Avoidance of these problems while attaining an aesthetic site design requires close coordination between local agencies, the project engineer and architect, and the noise consultant.

Use of Setbacks:

Noise exposure may be reduced by increasing the distance between the noise source and the receiving use. Setback areas can take the form of open space, frontage roads, recreational areas, storage yards, etc. The available noise attenuation from this technique is limited by the characteristics of the noise source, but is generally about 4 to 6 dB per doubling of distance from the source.

Impact 5 ***The Proposed Project could be exposed to excessive noise due to the Sacramento Raceway.***

The Proposed Project could expose new noise sensitive uses to exterior noise levels in excess of the Sacramento County stationary noise source standards. This would be ***a potentially significant*** impact.

The Sacramento County General Plan Noise Element specifies acceptable daytime exterior hourly noise levels of 55 dB L50 and 75 dB Lmax. Based upon the modeled noise levels described earlier in this report, a significant portion of the project site will be exposed to the drag strip noise levels in excess of the standards. In addition, the 75 dB Lmax noise level contour extends off of the project site to the east.

Mitigation for Impact 5

MM5a Based upon the project design, the only practical method of mitigating the raceway noise levels is to have the raceway removed from the project site.

Impact 6: **The proposed project could result in impacts from commercial, retail and office uses on proposed noise-sensitive uses in the project area.** Noise levels associated with loading docks, truck circulation and HVAC equipment could exceed the Sacramento County General Plan Noise Element and Noise ordinance noise level standards.

Mitigation for Impact 6

MM 6a Planned retail commercial and light industrial and office uses shall be required to comply with the requirements of Table 2 of the Noise Element (Table 5 of this report). Potential mitigation measures should include the following:

Barrier Design:

Assuming that grades are relatively flat, barrier should block line-of-sight to the noise sources. For loading docks or truck delivery areas, the noise source is generally considered to be at 8-feet above the ground level. HVAC units or cooling towers can vary in height, and should be evaluated at the time that equipment is specified.

Site Design:

Buildings can be placed on a project site to shield other structures or areas, to remove them from noise-impacted areas, and to prevent an increase in

noise level caused by reflections. The use of one building to shield another can significantly reduce overall project noise control costs, particularly if the shielding structure is insensitive to noise.

HVAC equipment can be located at ground level to reduce visibility and receive shielding from barriers which may be located between residential areas and office or commercial uses. HVAC systems located on roof tops can be shielded with parapets or located in mechanical rooms.

Use of Setbacks:

Noise exposure may be reduced by increasing the distance between the noise source and the receiving use. Setback areas can take the form of open space, frontage roads, recreational areas, storage yards, etc. The available noise attenuation from this technique is limited by the characteristics of the noise source, but is generally about 4 to 6 dB per doubling of distance from the source.

MM 6b When tentative maps for the commercial, retail and office developments are available, a detailed noise analysis shall be completed to ensure compliance with the Sacramento County noise level criteria.

Impact 7: **The proposed project could result in noise levels associated with neighborhood parks at proposed residential uses.** The Sacramento County General Plan Noise Ordinance provides exemptions for park activity noise. However, extended hours of park use could result in annoyance to residential uses.

Mitigation for Impact 7

MM 7a Park activities should be limited to the hours of 7:00 a.m. to 10:00 p.m.

Impact 8: **The proposed project could result in noise levels associated with high school, elementary school and middle school play areas on proposed residential uses.** The Sacramento County Noise Ordinance provides exemptions for activities at schools. However, noise levels associated with play areas and organized sporting activities can produce noise levels which can exceed the general plan noise element standards and could create annoyance.

Mitigation for Impact 8

MM 8a Outdoor school playgrounds and sporting activities should be limited to the hours of 7:00 a.m. to 10:00 p.m.

MM 8b Activities associated with play areas and sporting activities such as football fields, soccer fields, etc., shall be required to comply with the requirements of Table 2 of the Noise Element (Table 5 of this report).

Impact 9: The proposed project could result in noise levels due to aircraft overflights from Mather Airport.

The proposed project is located outside of the 60 dB CNEL Mather Airport noise contour. However, the project may be affected by aircraft noise due to occasional aircraft overflights.

Mitigation for Impact 9

MM9a Implementation of Policy NO-4 of the Sacramento County General Plan Noise Element shall be included. This policy is outlined below:

NO-4 *New residential development within adopted Airport Policy Area boundaries, but outside the 60 CNEL, shall be subject to the following conditions:*

A. Provide minimum noise insulation to 45 dB CNEL within new residential dwellings, including detached single family dwellings, with windows closed in any habitable room.

B. Notification in the Public Report prepared by the California Department of Real Estate disclosing the fact to prospective buyers that the parcel is located within an Airport Policy Area.

C. An Avigation Easement prepared by the Sacramento County Counsel's Office granted to the County of Sacramento, recorded with the Sacramento County Recorder, and filed with Department of Airports. Such Avigation Easement shall acknowledge the property location within an Airport Planning Policy Area and shall grant the right of flight and unobstructed passage of all aircraft into and out of the subject Airport.

CUMULATIVE NOISE IMPACTS

Impact 10 The Proposed Project would add to cumulative noise levels in the project vicinity.

The cumulative context for noise impacts associated with the Proposed Project consists of the existing and future noise sources that could affect the project or surrounding uses. Noise generated by construction would be temporary, and would not add to the permanent noise environment or be considered as part of the cumulative context.

Non-Traffic Noise

The Proposed Project is not expected to create substantial non-traffic noise. Non-traffic noise includes outdoor play or sports activities which will occur at school and park sites which are internal to the project site.

Traffic

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the Proposed Project and other projects within the area. Table 11 above shows cumulative traffic noise levels with and without the Proposed Project. As shown, the Proposed Project would contribute no more than 6 dB Ldn to noise levels on local roadways. Assuming that mitigation measure 3A is implemented, no substantial increases in traffic noise levels would occur under the cumulative scenario. However, repaving all affected roadway segments may not be economically feasible.

Mitigation for Impact 10

MM 10a Implementation of Mitigation Measure 3A

Appendix A

Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the "Maximum" level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site A
Monday, August 05, 2013

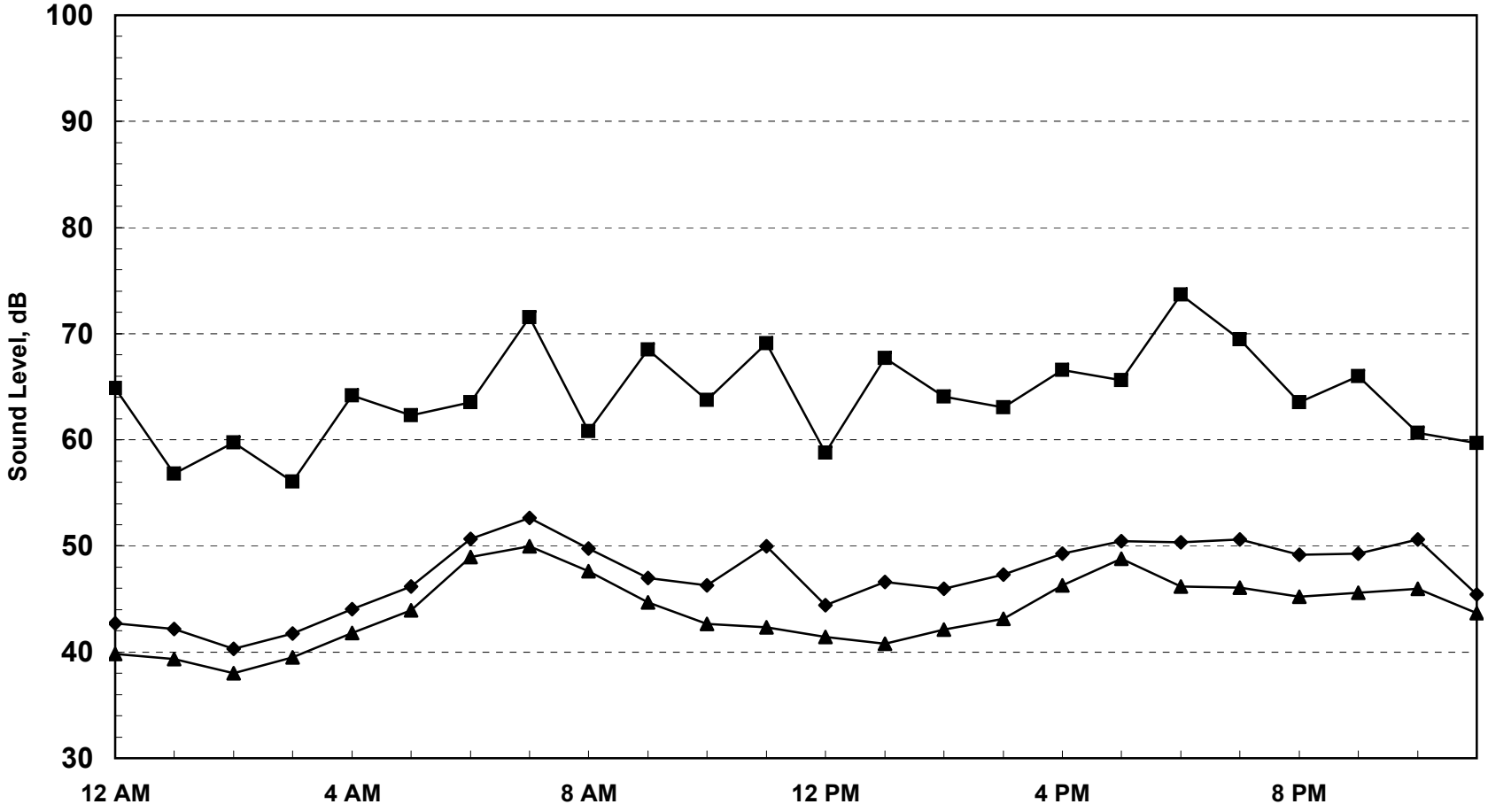
Hour	Leq	Lmax	L50	L90
0:00	43	65	40	38
1:00	42	57	39	38
2:00	40	60	38	36
3:00	42	56	40	36
4:00	44	64	42	39
5:00	46	62	44	41
6:00	51	64	49	46
7:00	53	72	50	46
8:00	50	61	48	44
9:00	47	69	45	42
10:00	46	64	43	40
11:00	50	69	42	39
12:00	44	59	41	38
13:00	47	68	41	38
14:00	46	64	42	38
15:00	47	63	43	38
16:00	49	67	46	42
17:00	50	66	49	43
18:00	50	74	46	41
19:00	51	69	46	41
20:00	49	64	45	40
21:00	49	66	46	44
22:00	51	61	46	42
23:00	45	60	44	41

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	52.6	44.4	49.1	50.7	40.3	46.4
Lmax (Maximum)	73.7	58.8	66.1	64.8	56.1	60.9
L50 (Median)	50.0	40.8	44.9	49.0	38.0	42.3
L90 (Background)	45.9	37.5	40.9	45.6	36.3	39.7

Computed Ldn, dB	53.3
% Daytime Energy	76%
% Nighttime Energy	24%

j.c. brennan & associates
consultants in acoustics

Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site A
Monday, August 05, 2013



Ldn = 53.3 dB

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Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site A
Tuesday, August 06, 2013

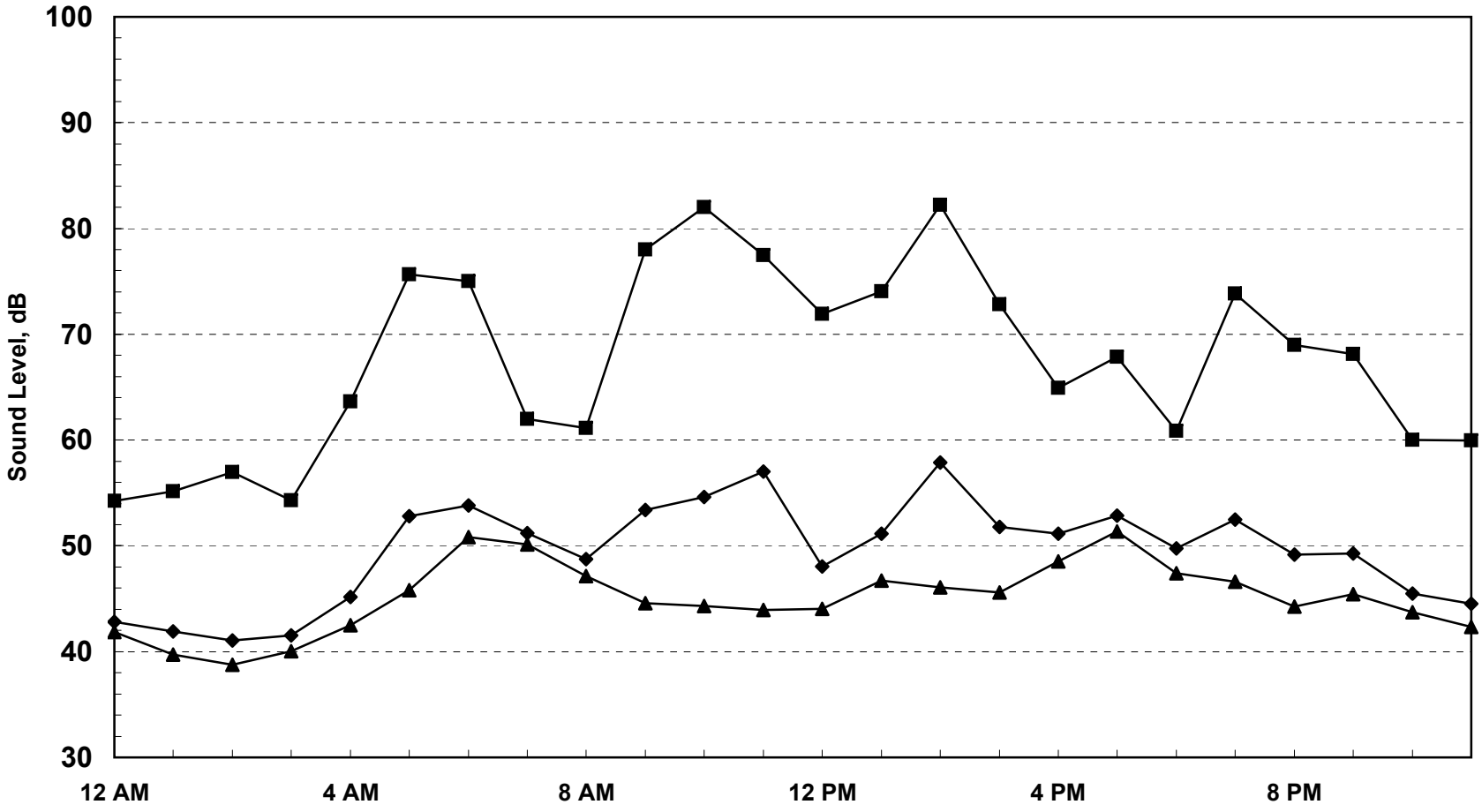
Hour	Leq	Lmax	L50	L90
0:00	43	54	42	39
1:00	42	55	40	37
2:00	41	57	39	36
3:00	42	54	40	38
4:00	45	64	43	39
5:00	53	76	46	43
6:00	54	75	51	48
7:00	51	62	50	47
8:00	49	61	47	44
9:00	53	78	45	42
10:00	55	82	44	41
11:00	57	77	44	40
12:00	48	72	44	40
13:00	51	74	47	44
14:00	58	82	46	41
15:00	52	73	46	41
16:00	51	65	49	43
17:00	53	68	51	45
18:00	50	61	47	43
19:00	52	74	47	42
20:00	49	69	44	41
21:00	49	68	45	43
22:00	46	60	44	42
23:00	45	60	42	40

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	57.9	48.0	52.9	53.8	41.0	48.2
Lmax (Maximum)	82.2	60.9	71.1	75.6	54.2	61.7
L50 (Median)	51.4	44.0	46.4	50.9	38.7	42.8
L90 (Background)	46.8	39.5	42.5	48.2	36.3	40.3

Computed Ldn, dB	55.7
% Daytime Energy	83%
% Nighttime Energy	17%

j.c. brennan & associates
consultants in acoustics

Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site A
Tuesday, August 06, 2013



Ldn = 55.7 dB

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Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site B
Monday, August 05, 2013

Hour	Leq	Lmax	L50	L90
0:00	36	45	36	34
1:00	37	53	34	33
2:00	34	41	34	32
3:00	35	43	35	34
4:00	38	46	37	35
5:00	41	48	41	39
6:00	46	63	44	42
7:00	45	62	44	43
8:00	45	60	44	43
9:00	44	54	43	41
10:00	47	69	40	38
11:00	62	98	39	36
12:00	37	53	35	31
13:00	51	77	34	30
14:00	39	58	33	28
15:00	41	62	33	28
16:00	39	55	35	30
17:00	39	54	35	28
18:00	38	57	35	29
19:00	40	55	34	30
20:00	37	51	34	30
21:00	39	57	35	33
22:00	37	59	35	34
23:00	38	52	36	35

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	62.5	36.7	51.5	46.0	34.0	39.7
Lmax (Maximum)	97.8	51.2	61.4	63.2	40.8	50.0
L50 (Median)	44.1	32.7	36.8	43.7	33.8	36.9
L90 (Background)	43.0	28.4	33.2	42.2	32.3	35.4

Computed Ldn, dB	50.9
% Daytime Energy	96%
% Nighttime Energy	4%

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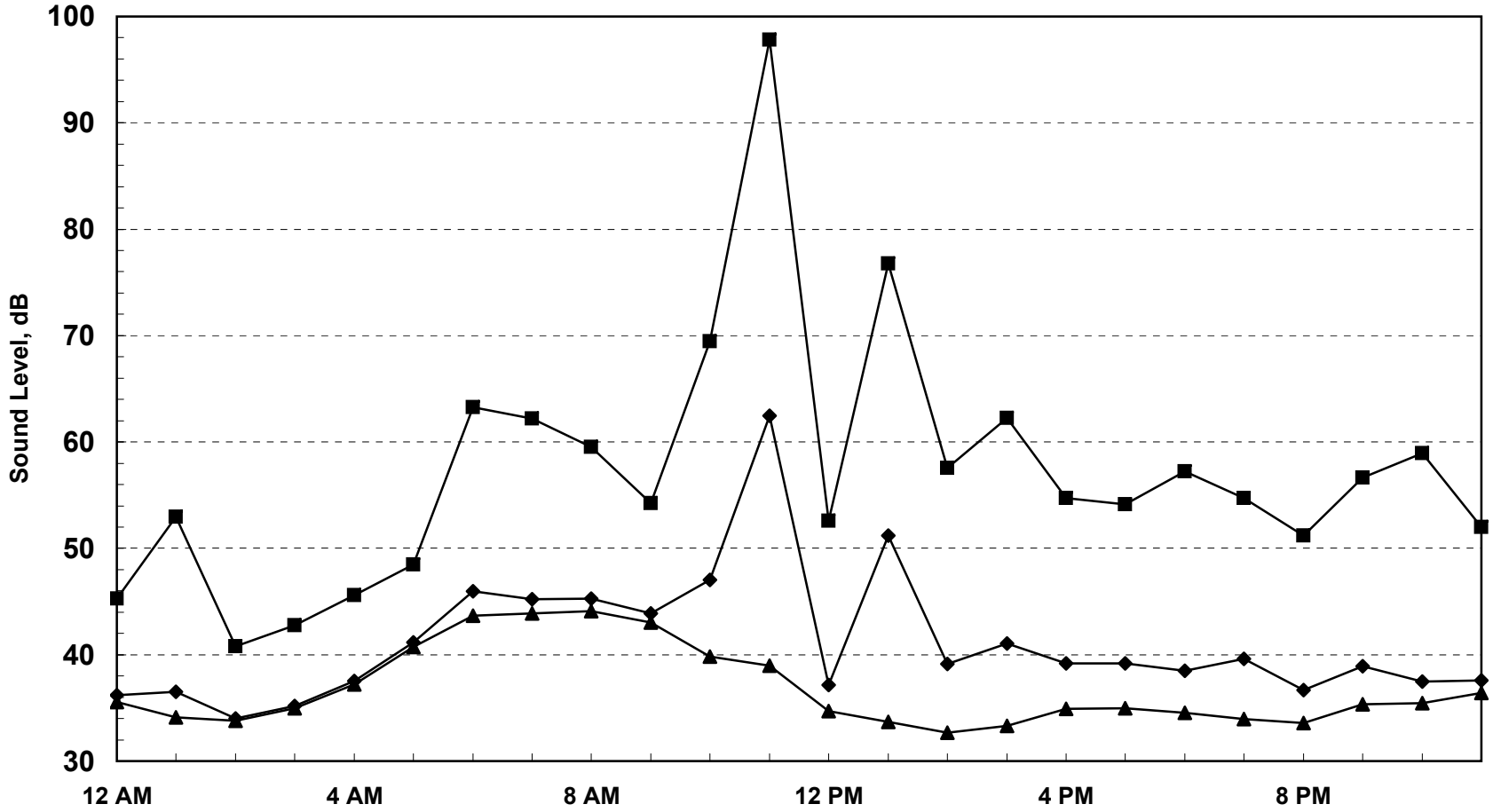
Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site B
Monday, August 05, 2013



Ldn = 50.9 dB

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Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site B
Tuesday, August 06, 2013

Hour	Leq	Lmax	L50	L90
0:00	37	43	36	35
1:00	38	58	36	35
2:00	36	43	35	34
3:00	39	68	38	36
4:00	40	49	39	38
5:00	46	65	42	40
6:00	48	63	46	45
7:00	46	56	46	45
8:00	46	63	45	43
9:00	55	85	43	41
10:00	51	72	42	38
11:00	52	76	40	36
12:00	41	56	37	34
13:00	49	75	35	33
14:00	53	72	41	33
15:00	50	73	39	31
16:00	44	66	39	32
17:00	42	56	39	33
18:00	46	67	40	34
19:00	44	59	41	35
20:00	39	54	35	33
21:00	44	68	38	36
22:00	39	49	38	37
23:00	38	47	37	35

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	54.7	38.8	49.0	47.6	35.7	42.1
Lmax (Maximum)	85.3	54.0	66.6	67.5	42.6	53.8
L50 (Median)	45.7	35.2	39.9	46.3	35.4	38.8
L90 (Background)	44.6	30.8	35.8	44.6	34.0	37.2

Computed Ldn, dB	50.4
% Daytime Energy	89%
% Nighttime Energy	11%

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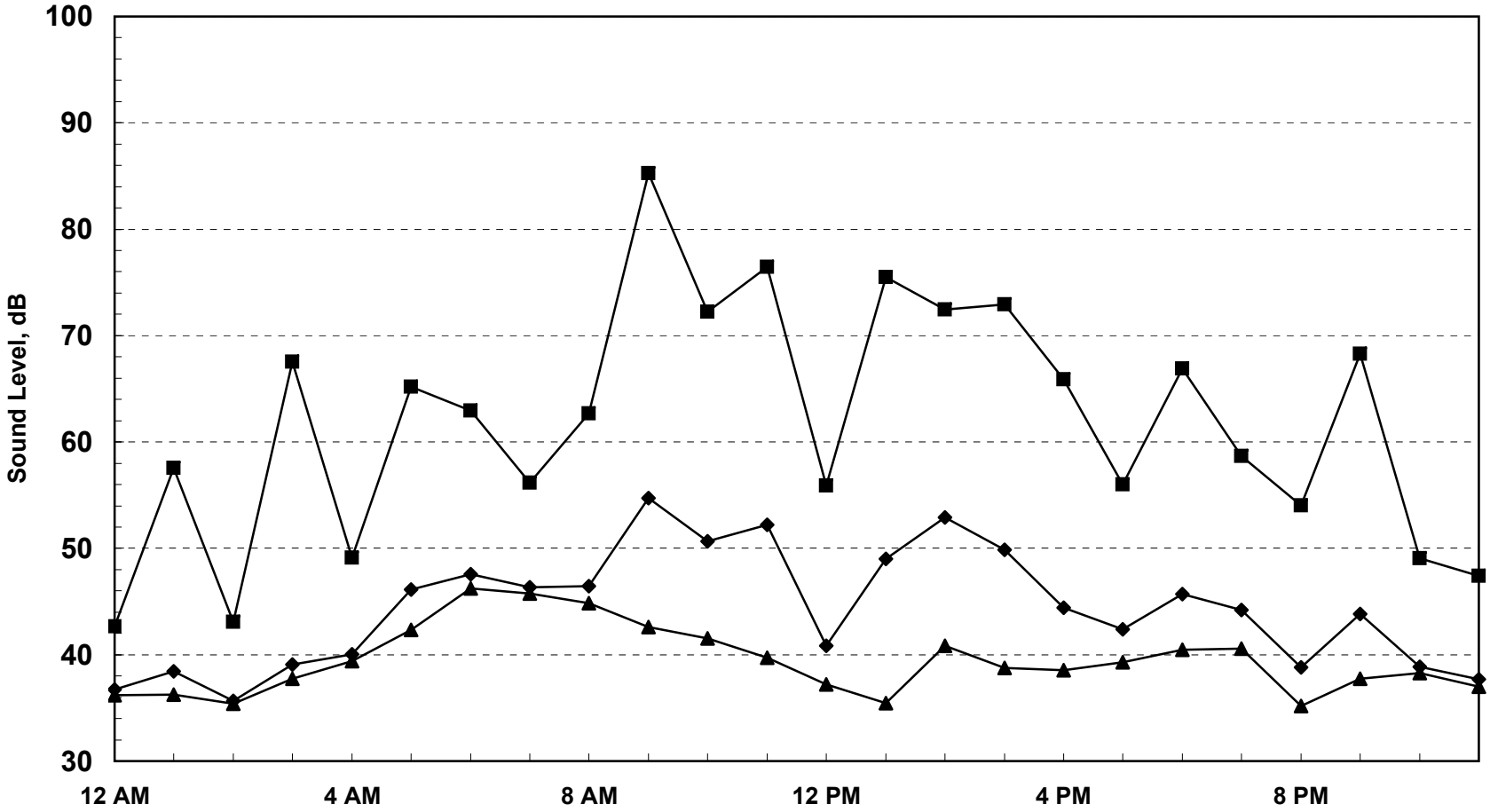
Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site B
Tuesday, August 06, 2013



Ldn = 50.4 dB

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Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site C Race Event
Saturday, August 10, 2013

Hour	Leq	Lmax	L50	L90
0:00	37	45	37	35
1:00	37	50	36	33
2:00	35	43	35	33
3:00	35	48	34	32
4:00	35	47	34	32
5:00	38	54	37	33
6:00	41	55	40	36
7:00	44	59	41	39
8:00	45	58	41	39
9:00	45	62	41	39
10:00	54	73	45	40
11:00	45	63	41	38
12:00	52	75	46	39
13:00	51	70	49	43
14:00	66	92	56	48
15:00	69	93	56	46
16:00	67	86	56	46
17:00	69	93	55	46
18:00	75	99	60	49
19:00	70	93	57	47
20:00	74	97	61	50
21:00	70	95	49	45
22:00	46	63	44	42
23:00	42	52	42	39

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	75.4	43.9	68.6	45.5	34.8	40.0
Lmax (Maximum)	99.3	57.8	80.6	63.2	43.4	50.7
L50 (Median)	61.0	40.9	50.2	43.9	33.7	37.4
L90 (Background)	49.6	37.8	43.6	41.8	31.9	35.1

Computed Ldn, dB	66.6
% Daytime Energy	100%
% Nighttime Energy	0%

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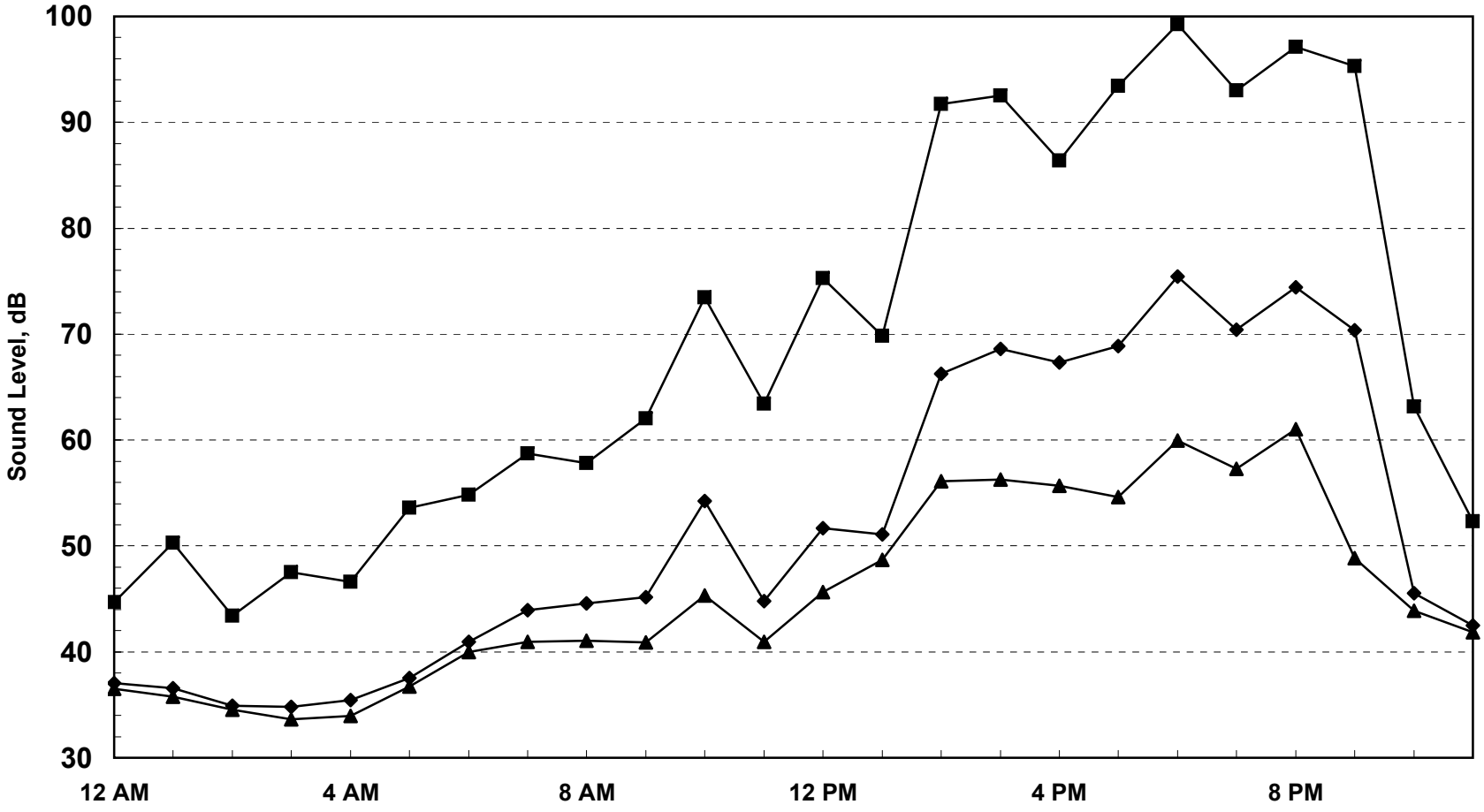
Appendix B

Jackson Township Specific Plan EIR

24hr Continuous Noise Monitoring - Site C Race Event

Saturday, August 10, 2013



Ldn = 66.6 dB

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Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site C
Sunday, August 11, 2013

Hour	Leq	Lmax	L50	L90
0:00	39	53	37	35
1:00	35	48	34	31
2:00	34	50	31	30
3:00	34	51	31	29
4:00	32	45	31	30
5:00	36	51	34	31
6:00	40	54	38	35
7:00	40	57	38	36
8:00	50	73	38	36
9:00	43	61	37	35
10:00	40	54	36	34
11:00	40	55	36	33
12:00	44	65	35	31
13:00	46	69	35	30
14:00	44	62	36	30
15:00	43	61	35	30
16:00	40	57	33	29
17:00	40	59	34	30
18:00	38	55	36	32
19:00	43	61	38	34
20:00	44	65	38	35
21:00	48	72	37	35
22:00	38	49	37	35
23:00	47	70	36	34

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	50.3	38.1	44.1	46.6	32.0	39.6
Lmax (Maximum)	73.0	54.0	61.7	70.1	44.5	52.2
L50 (Median)	38.4	33.3	36.1	37.6	31.1	34.3
L90 (Background)	36.0	29.0	32.8	35.4	29.0	32.2

Computed Ldn, dB	47.0
% Daytime Energy	83%
% Nighttime Energy	17%

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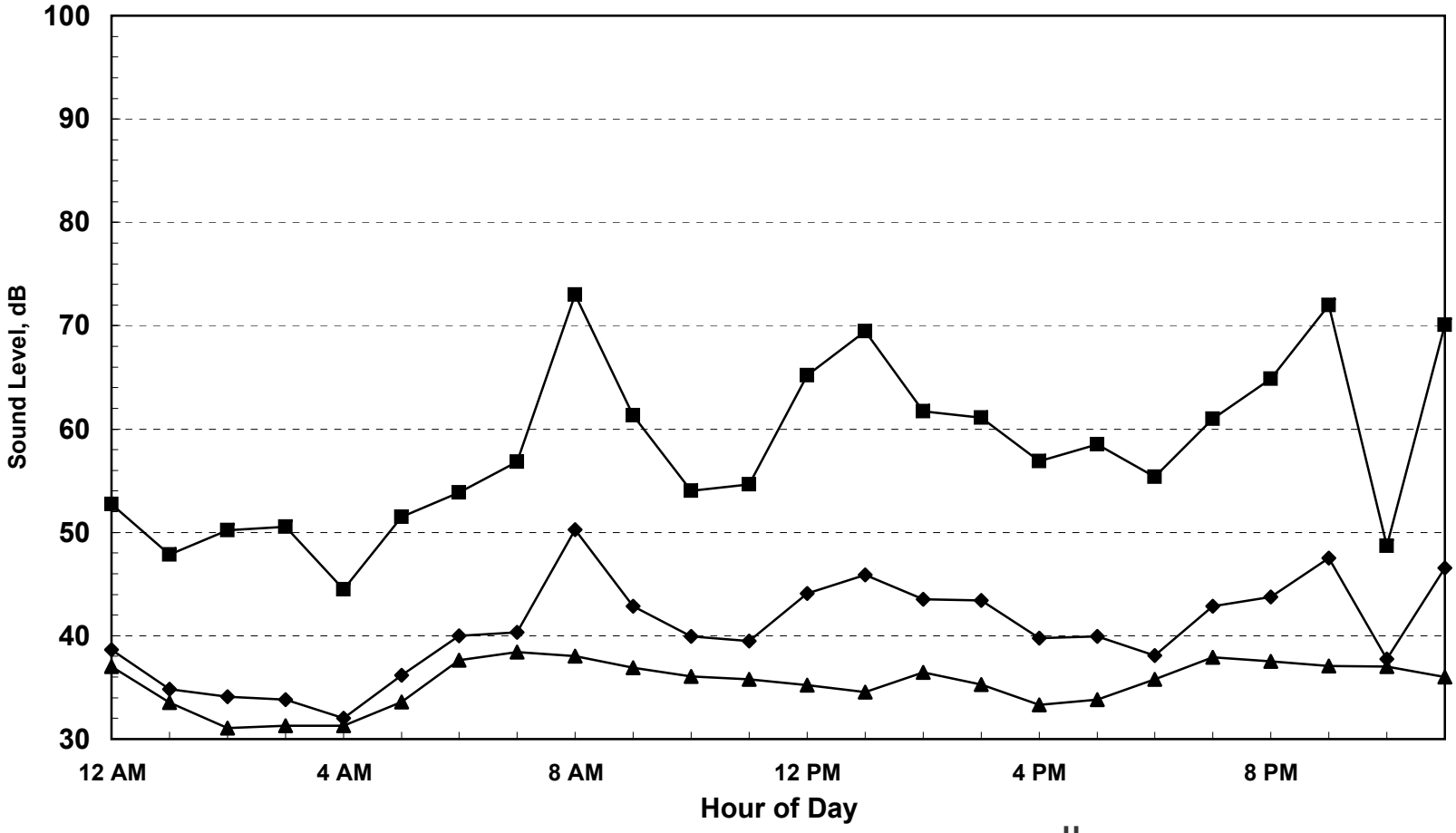
Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site C
Sunday, August 11, 2013



Ldn = 47.0 dB

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Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site D Race Event
Saturday, August 10, 2013

Hour	Leq	Lmax	L50	L90
0:00	48	60	41	39
1:00	47	64	39	37
2:00	46	61	40	38
3:00	46	64	41	38
4:00	47	59	42	39
5:00	50	65	46	42
6:00	51	65	48	44
7:00	52	64	50	48
8:00	53	63	51	48
9:00	51	65	48	46
10:00	52	67	49	47
11:00	50	65	48	46
12:00	49	62	48	46
13:00	50	65	48	46
14:00	51	69	48	46
15:00	51	69	50	48
16:00	52	68	50	48
17:00	54	73	52	50
18:00	54	64	52	50
19:00	54	66	52	50
20:00	53	67	51	49
21:00	53	64	52	50
22:00	53	68	50	46
23:00	52	69	49	45

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	53.9	49.5	52.2	52.6	46.4	49.5
Lmax (Maximum)	73.1	62.3	66.0	68.7	59.5	63.9
L50 (Median)	52.1	47.7	49.9	49.9	39.4	44.0
L90 (Background)	49.9	45.8	47.8	46.3	37.5	41.1

Computed Ldn, dB	56.4
% Daytime Energy	75%
% Nighttime Energy	25%

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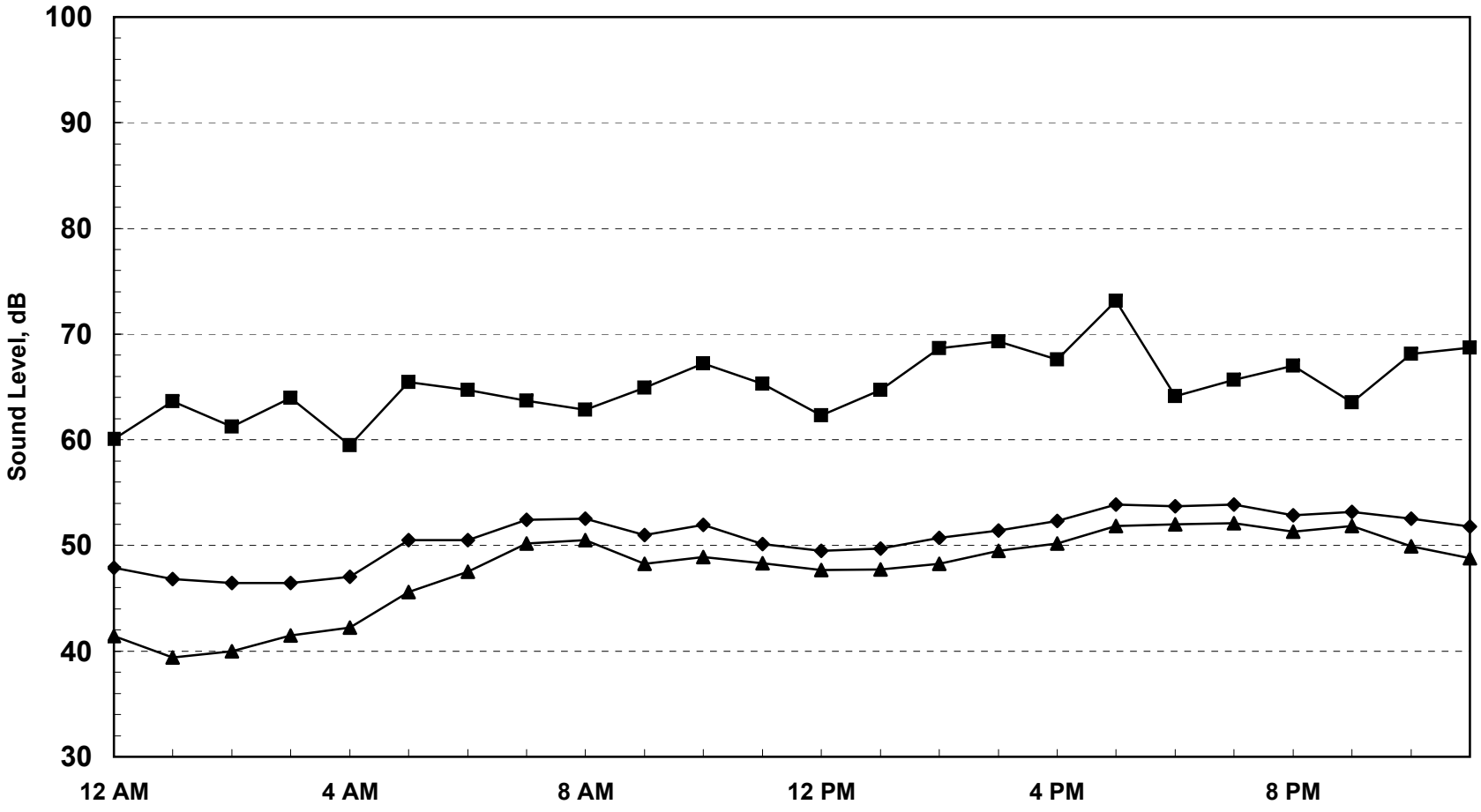
Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site D Race Event
Saturday, August 10, 2013



Ldn = 56.4 dB

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Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site D
Sunday, August 11, 2013

Hour	Leq	Lmax	L50	L90
0:00	49	61	44	39
1:00	46	60	39	36
2:00	44	60	35	34
3:00	46	68	35	33
4:00	44	63	34	33
5:00	47	64	39	36
6:00	50	63	46	42
7:00	49	62	45	42
8:00	51	69	46	44
9:00	48	64	45	42
10:00	47	61	45	43
11:00	48	60	45	43
12:00	50	72	46	43
13:00	50	71	46	44
14:00	50	64	48	45
15:00	49	69	46	44
16:00	49	66	47	45
17:00	50	63	48	46
18:00	52	64	50	47
19:00	53	65	51	48
20:00	52	63	50	47
21:00	53	71	49	45
22:00	50	63	46	41
23:00	49	61	43	40

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	53.1	47.4	50.5	50.3	43.6	47.9
Lmax (Maximum)	71.6	59.6	65.5	68.3	59.7	62.6
L50 (Median)	51.1	45.0	47.2	46.0	34.5	40.0
L90 (Background)	48.1	41.9	44.7	41.8	32.7	37.1

Computed Ldn, dB	54.8
% Daytime Energy	75%
% Nighttime Energy	25%

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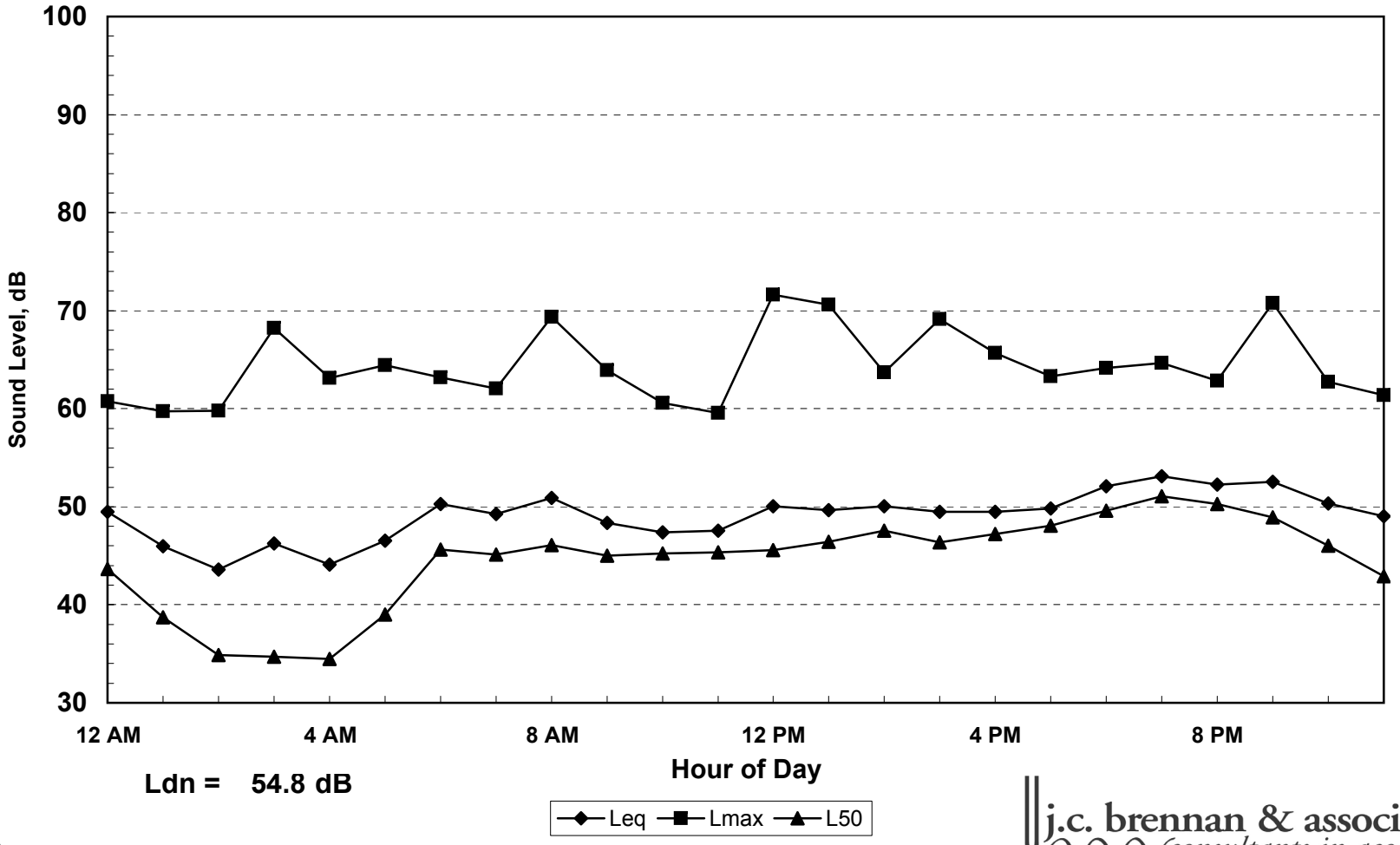
Appendix B
Jackson Township Specific Plan EIR
24hr Continuous Noise Monitoring - Site D
Sunday, August 11, 2013



Ldn = 54.8 dB

j.c. brennan & associates
consultants in acoustics

Appendix TR-1

Transportation Impact Report

Transportation Impact Report
Jackson Township Specific Plan

prepared for:
Sacramento County
Community Development PERD

Prepared by
DKS Associates

February 2019

DKS

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1. INTRODUCTION

1.1 STUDY DEFINITION

This transportation analysis discusses existing and cumulative transportation and circulation conditions associated with the implementation of the Jackson Township Specific Plan development. In addition, the report discusses the combined effects of implementing the following four developments (FOUR PROJECTS):

- West Jackson Highway Master Plan (West Jackson)
- Jackson Township Specific Plan (Jackson Township)
- NewBridge Specific Plan (NewBridge)
- Mather South Specific Plan Amendment (Mather South)

The FOUR PROJECTS are located adjacent to each other in the Jackson Road corridor. Because of this proximity and the concurrent entitlement process, the transportation analysis addresses the combined effects of the FOUR PROJECTS on existing and cumulative transportation and circulation conditions.

Figure 1.1 illustrates the location of the Jackson Township project. The Jackson Township project is located in unincorporated Sacramento County, generally east of the City of Sacramento and south of the City of Rancho Cordova and Mather Airport. It is bounded on the south by Jackson Road (SR 16) and on the west by Excelsior Road. The north boundary is near the future Kiefer Boulevard, while the east boundary is west of Eagles Nest Road.

For more details of the West Jackson, NewBridge, and Mather South projects, please refer to Section 4.1.

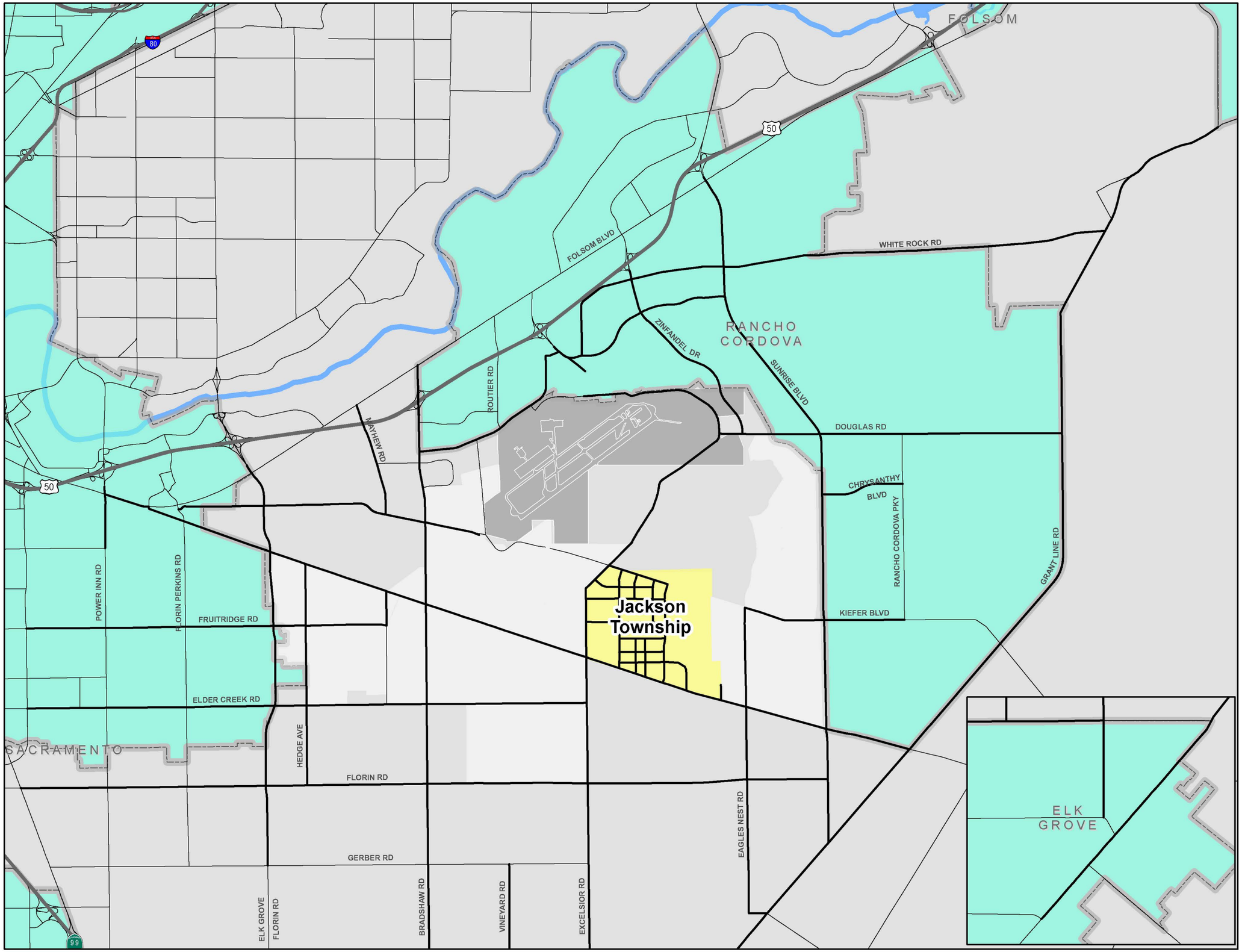
Other development projects in the vicinity are included in the California Environmental Quality Act (CEQA) cumulative analysis scenarios and are discussed in Section 6.1.1.

The transportation analysis documented in this report includes consideration of vehicular traffic impacts on roadway and intersection capacity and safety, transit impacts, and bicycle and pedestrian facility impacts. Quantitative transportation analyses have been conducted for the following scenarios, summarized in **Table 1.1**:

- Existing (without FOUR PROJECTS)
- Existing Plus Jackson Township Project
- Existing Plus FOUR PROJECTS (West Jackson, Jackson Township, NewBridge, and Mather South developments)
- MTP Cumulative (without FOUR PROJECTS)
- MTP Cumulative Plus FOUR PROJECTS
- CEQA Cumulative (without FOUR PROJECTS)
- CEQA Cumulative Plus FOUR PROJECTS
- CEQA Cumulative Plus Jackson Township Project

The scenarios followed by the notation “(without FOUR PROJECTS)” contain no development, beyond existing levels, within the boundaries of the West Jackson, Jackson Township, NewBridge, and Mather South projects.

FIGURE 1.1
JACKSON TOWNSHIP PROJECT
PROJECT LOCATION



Legend

- JT Study Roadway Segments
- Freeways
- Other Major Roadways

Name

- Jackson Township Project
- Cities
- Mather Airport

DKS

Table 1.1: Analysis Scenarios			
Scenario	**Land Use**	**Base Transportation Network**	**Project Improvements**
Existing	Existing	Existing	None
Existing Plus Jackson Township	Existing Plus Jackson Township	Existing	Jackson Township Project
Existing Plus FOUR PROJECTS	Existing Plus West Jackson, Jackson Township, New Bridge, and Mather South	Existing	West Jackson Project Jackson Township Project NewBridge Project Mather South Project
MTP Cumulative	2035 Development Levels without FOUR PROJECTS	Year 2035 (Based on 2012 MTP)	None
MTP Cumulative Plus FOUR PROJECTS	2035 Development Levels plus West Jackson, Jackson Township, New Bridge, and Mather South	Year 2035 (Based on 2012 MTP)	West Jackson Project Jackson Township Project NewBridge Project Mather South Project
CEQA Cumulative	2035 Development Levels (SACOG Projections), Build Out of Additional Readily Foreseeable Projects in Study Area, without FOUR PROJECTS	Year 2035 (Based on 2012 MTP) Plus Improvements Fully Funded by Additional Readily Foreseeable Projects in Study Area	None
CEQA Cumulative Plus FOUR PROJECTS	2035 Development Levels (SACOG Projections), Build Out of Additional Readily Foreseeable Projects in Study Area, plus West Jackson, Jackson Township, New Bridge, and Mather South	Year 2035 (Based on 2012 MTP) Plus Improvements Fully Funded by Additional Readily Foreseeable Projects in Study Area	West Jackson Project Jackson Township Project NewBridge Project Mather South Project
CEQA Cumulative Plus Jackson Township Project	Estimation of Jackson Township Project Impacts based upon CEQA Cumulative Plus FOUR PROJECTS scenario		
Source: *DKS Associates, 2018.*			

1.2 STUDY AREA

For transportation analysis purposes, a set of existing, proposed, and future intersections, roadway segments, and freeway facilities were selected based upon the anticipated volume of additional traffic, the distributional patterns of traffic, and known locations of operational difficulty. The Sacramento County Department of Transportation, Caltrans, City of Sacramento, City of Rancho Cordova, City of Elk Grove, City of Folsom, and Capital Southeast Corridor Joint Powers Authority were consulted. **Figures 1.2 through 1.4** illustrate the study area, which was agreed to by all of the above jurisdictions and agencies.

1.3 ANALYSIS METHODOLOGY

1.3.1 Forecasting

In this transportation analysis, the forecasting of travel patterns and volumes for each of the scenarios was developed through utilization of the Sacramento Area Council of Governments' (SACOG's) SACSIM travel model. SACSIM is an "activity-based" model that tracks the travel of individuals throughout the day in trip "tours", and allocates household and employment to the parcel level. This allows the model to capture smaller-scale land use changes and differences. SACSIM is sensitive to the local physical environment, including the presence (or absence) of pedestrian and bicycle facilities, the patterns of local street networks (e.g., grid vs. cul-de-sacs), and the density, proximity and mix of surrounding land uses (i.e. employment destinations, schools, retail, parks, etc.). SACSIM forecasts automobile, transit, bicycle, and walk trips. SACSIM requires a detailed definition of household population/demographics and employment by type at a parcel-level of geography. During the analysis, SACOG staff assisted in developing household population and demographics within the study area, and was consulted to ensure consistency with the latest and most appropriate modeling procedures and databases.

1.3.2 Operations Analysis

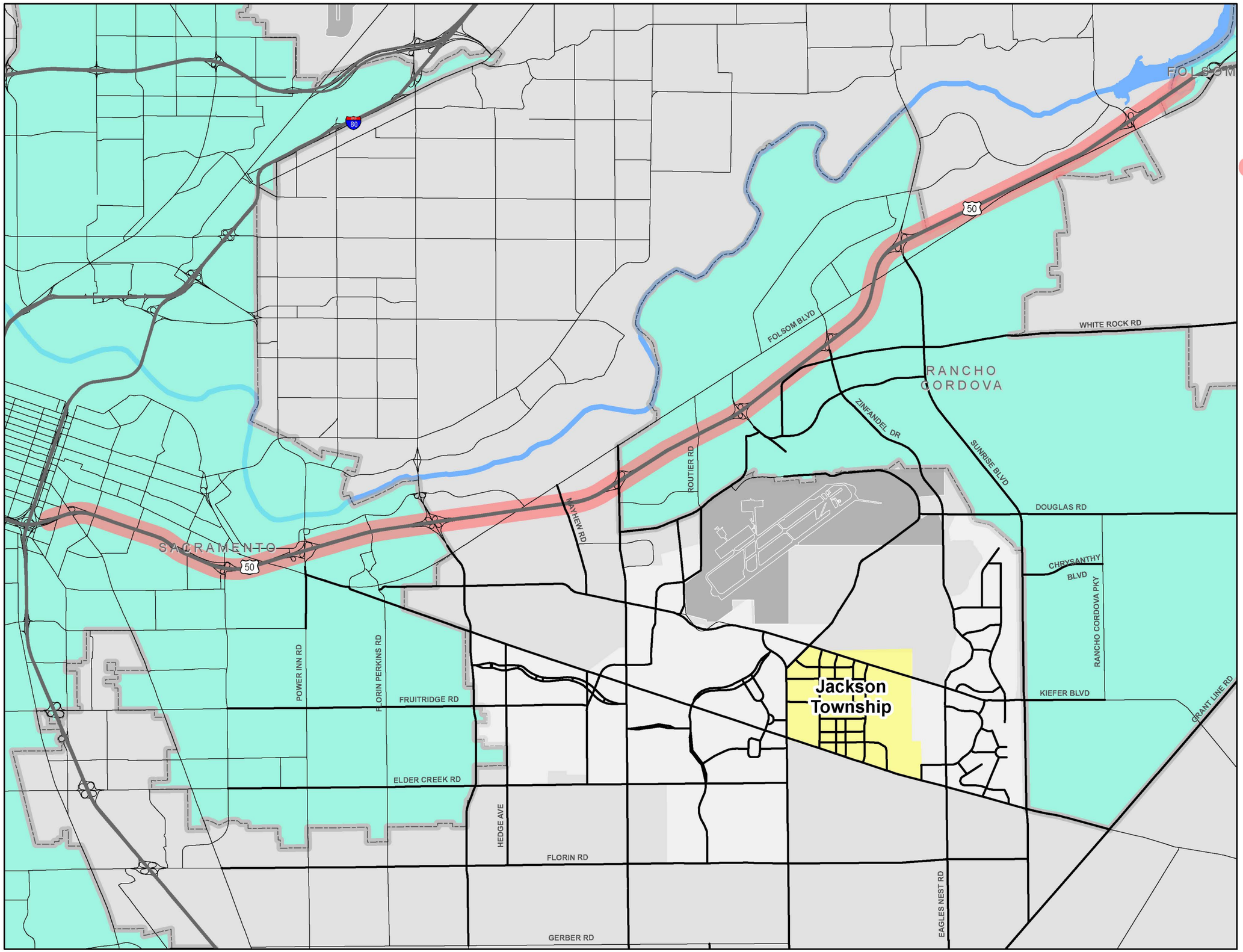
Field reconnaissance was undertaken to ascertain the traffic control and capacity characteristics of each of the study area intersections, roadway segments, and freeway elements. Combined with known or projected traffic volumes, these characteristics enable the calculation of performance measures. Levels of service are a quantitative stratification of performance measures that represent quality of service. There are six levels of service, ranging from A to F. LOS A represents the best operating conditions from the traveler's perspective and LOS F the worst. The specific performance measures that define LOS vary by type of transportation facility, and are discussed in the following sections.

FIGURE 1.2
STUDY AREA MAP
ROADWAY SEGMENTS

Legend

- Study Roadway Segments
- Other Project Roadways
- Freeways
- Other Major Roadways
- Jackson Township Project
- Cities
- Mather Airport

FIGURE 1.3
FREEWAY STUDY AREA



Legend

- Freeway Study Area
- Study Roadway Segments
- Freeways
- Other Major Roadways

Name

- Jackson Township Project
- Cities
- Mather Airport

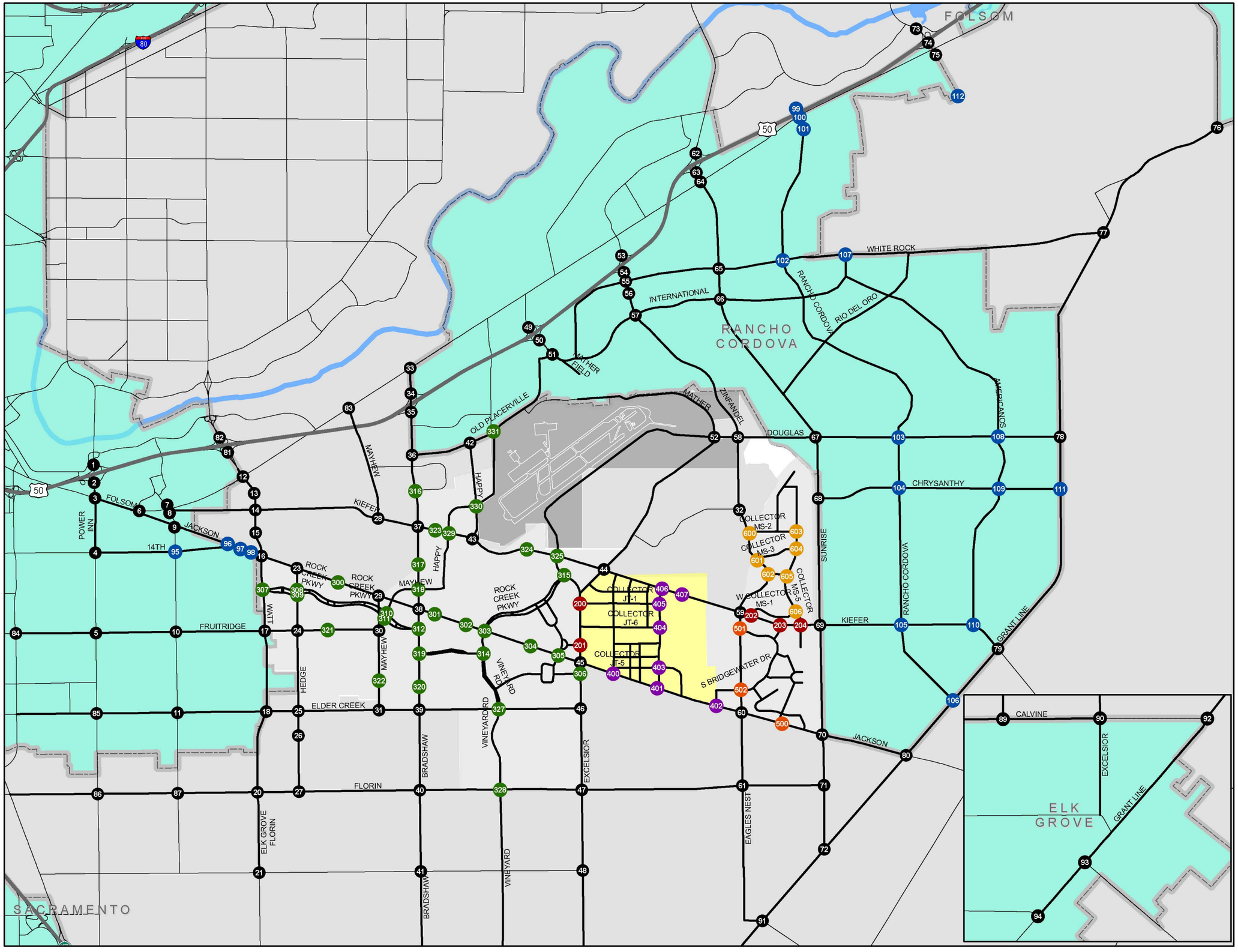


FIGURE 1.4
STUDY AREA MAP
INTERSECTIONS

Legend

- Existing
- Future Outside Project Boundaries
- Shared Between Two Projects
- West Jackson
- Jackson Township
- NewBridge
- Mather South
- Study Roadways
- Freeways
- Other Major Roadways
- Jackson Township Project
- Cities
- Mather Airport

DKS

1.3.2.1 Roadway Segment Analysis

Level of service analyses were conducted for roadway segments in the study area based upon daily traffic volumes, number of traffic lanes between intersections, and roadway characteristics. In this methodology, study area roadways are stratified into "capacity class" categories for level of service determination, as shown in **Tables 1.2, 1.3 and 1.4**, for Sacramento County and the City of Sacramento, respectively. The Sacramento County criteria were also utilized for segments in the City of Rancho Cordova and City of Elk Grove, as these jurisdictions utilize the same roadway segment level of service criteria.

The capacity class categories are based upon the nature of traffic flow along the facility, including number of interruptions due to intersection control and "side-friction" due to driveways and local streets. For each capacity class, relationships were developed between daily traffic volumes and roadway level of service.

Tables 1.2 and 1.3 summarize the maximum daily traffic volumes associated with each level of service designation and capacity class combination. Although the segment-based level of service calculations are based upon daily traffic volumes, the resultant levels of service are representative of peak hour conditions. While a roadway segment's daily capacity could theoretically be very high if traffic were spread evenly throughout the 24-hour period, this is clearly not a realistic condition. The daily roadway segment capacity methodology takes into account typical peak hour volume profiles, as well as the effects of signalized intersections in reducing the roadway's carrying capacity. With good signal timing, spacing, and additional intersection capacity improvements (e.g. additional turn lanes, overlap phasing), a segment would be able to carry more vehicles than one having less-than-ideal intersection conditions.

1.3.2.2 Intersection Analysis

For signalized and unsignalized intersections, operational analyses were conducted using a methodology outlined in the Transportation Research Board's *Highway Capacity Manual, 2000* (HCM 2000) and *Highway Capacity Manual, 2010* (HCM 2010). The HCM 2010 methodology was used in all locations except where signalized intersection characteristics deemed the methodology inappropriate. These locations include intersections with unconventional signal phasing, and locations adjacent to light rail tracks where additional delay occurs due to light rail operations. In the selected locations, the HCM 2000 methodology was employed.

The methodology utilized is known as an "operational analysis". This procedure calculates an average control delay per vehicle for each movement at an intersection, and assigns a level of service designation based upon the average delay per vehicle. **Table 1.5** presents the level of service criteria for signalized and unsignalized intersections based on the HCM methodology.

Table 1.2: Daily Volume Threshold For Roadway Segments (Sacramento County)						
Roadway Capacity Class	**Number of Lanes**	**Daily Volume Threshold (Level of Service)**				
		LOS A	**LOS B**	**LOS C**	**LOS D**	**LOS E**
Residential	2	600	1,200	2,000	3,000	4,500
Residential Collector with Frontage	2	1,600	3,200	4,800	6,400	8,000
Residential Collector without Frontage	2	6,000	7,000	8,000	9,000	10,000
Arterial, Low Access Control	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial, Moderate Access Control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Arterial, High Access Control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	43,000	48,000	54,000	60,000
Rural, 2-lane Highway	2	2,400	4,800	7,900	13,500	22,900
Rural, 2-lane Road, 24' - 36' of pavement, Paved Shoulders	2	2,200	4,300	7,100	12,200	20,000
Rural, 2-lane Road, 24' - 36' of pavement, No Shoulders	2	1,800	3,600	5,900	10,100	17,000

Roadway Capacity Class	**Stops per Mile**	**Driveways**	**Speed**
Arterial, Low Access Control	4 +	Frequent	25 – 35 mph
Arterial, Moderate Access Control	2 – 4	Limited	35 – 45 mph
Arterial, High Access Control	1 - 2	None	45 – 55 mph

Note: *LOS = level of service*

Source: *Traffic Impact Analysis Guidelines, County of Sacramento Department of Transportation, July 2004.*

Table 1.3: Daily Volume Threshold For Roadway Segments (City of Sacramento)						
Roadway Capacity Class	**Number of Lanes**	**Daily Volume Threshold (Level of Service)**				
		LOS A	**LOS B**	**LOS C**	**LOS D**	**LOS E**
Arterial, Low Access Control	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial, Moderate Access Control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Arterial, High Access Control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	43,000	48,000	54,000	60,000
Collector, minor	2	5,250	6,125	7,000	7,875	8,750
Residential	2	3,000	3,500	4,000	4,500	5,000

Roadway Capacity Class	**Stops per Mile**	**Driveways**	**Speed**
Arterial, Low Access Control	4 +	Frequent	25 – 35 mph
Arterial, Moderate Access Control	2 – 4	Limited	35 – 45 mph
Arterial, High Access Control	1 - 2	None	45 – 55 mph

Note: *LOS = level of service*

Source: *City of Sacramento Traffic Impact Analysis Guidelines, 1996; City of Sacramento, Department of Transportation Staff, 2007.*

Table 1.4: Daily Volume Threshold For Roadway Segments (Connector JPA)						
Roadway Capacity Class	**Number of Lanes**	**Daily Volume Threshold (Level of Service)**				
		LOS A	**LOS B**	**LOS C**	**LOS D**	**LOS E**
Expressway (Connector)	4	43,200	50,400	57,600	64,800	72,000
	4+2 HOV	64,800	75,600	86,400	97,200	108,000

Note: *LOS = level of service*

Source: *Capital SouthEast Connector Joint Powers Authority*

Table 1.5: Level of Service Criteria (Intersections)		
Level of Service (LOS)	**Total Delay Per Vehicle (seconds)**	
	Signalized Intersections	**Unsignalized Intersections**
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50
Source: *HCM 2010 Highway Capacity Manual, Transportation Research Board, Washington, D.C., 2010.*		

1.3.2.3 Traffic Signal Warrant Analysis

Traffic signals are valuable devices for the control of motor vehicle, pedestrian, and bicycle traffic. However, because they assign the right-of-way to the various traffic movements, signals exert a profound influence on traffic flow. Properly located and operated control signals may provide for the orderly movement of traffic (motor vehicle, pedestrian, and bicycle), increase the traffic-handling capacity of an intersection, and reduce the frequency of certain types of crashes. After extensive study and analysis, the Federal Highway Administration and Caltrans developed traffic signal warrants. These warrants define minimum conditions under which signal installations may be justified. Traffic control signals should not be installed unless one or more of the signal warrants are met. However, the satisfaction of a warrant or warrants is not in itself justification for a signal. Every situation is unique and warrant guidelines must be supplemented by the review of specific site conditions and the application of good engineering judgment. Installation of a traffic signal should improve the overall safety and/or operation of an intersection and should be considered only when deemed necessary by careful traffic analysis and after less restrictive solutions have been attempted.

1.3.2.4 Freeway Analysis

Freeway mainline segments, ramp junctions, and weaving segments were analyzed utilizing methodologies outlined in the HCM 2010. **Table 1.6** presents the level of service criteria for the freeway mainline, freeway ramp junctions, and freeway weaving segments.

1.4 LEVEL OF SERVICE POLICIES

For analysis purposes, each of the study area roadway segments, intersections, and freeway elements was assigned to a particular jurisdiction (County of Sacramento, City of Sacramento, City of Rancho Cordova, City of Elk Grove, City of Folsom, or Caltrans) for purposes of specifying acceptable traffic operating conditions (level of service) and standards of significance for impact determination. In cases where transportation elements are located on a jurisdictional boundary, the more conservative (e.g., LOS D rather than LOS E) policy was utilized.

1.4.1 County of Sacramento

The County of Sacramento has the following level of service policy:

> *Plan and design the roadway system in a manner that meets Level of Service (LOS) D on rural roadways and LOS E on urban roadways, unless it is infeasible to implement project alternatives or mitigation measures that would achieve LOS D on rural roadways or LOS E on urban roadways. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural.*[1]

1 Sacramento County General Plan, amended November 9, 2011, Circulation Element Policy CI-9.

Table 1.6: Level of Service Criteria (Freeway)			
Level of Service (LOS)	**Maximum Density (Passenger Cars Per Mile Per Lane)**		
	Mainline	**Ramp Junctions**	**Weaving Segments**
A	≤ 11	≤ 10	≤ 10
B	> 11 and ≤ 18	> 10 and ≤ 20	> 10 and ≤ 20
C	> 18 and ≤ 26	> 20 and ≤ 28	> 20 and ≤ 28
D	> 26 and ≤ 35	> 28 and ≤ 35	> 28 and ≤ 35
E	> 35 and ≤ 45	> 35	> 35
F	> 45	Demand Exceeds Capacity	Demand Exceeds Capacity
Source: *HCM 2010 Highway Capacity Manual, Transportation Research Board, Washington, D.C., 2010.*			

The county roadway segments and intersections in the study area are located within the Urban Service Boundary. Therefore, the LOS E standard applies.

1.4.2 City of Sacramento

The Mobility Element of the City of Sacramento 2030 General Plan outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The City of Sacramento has the following level of service policy relevant to this study:

> ***Policy M 1.2.2 LOS Standard.*** *The City shall allow for flexible Level of Service (LOS) standards, which will permit increased densities and mix of uses to increase transit ridership, biking, and walking, which decreases auto travel, thereby reducing air pollution, energy consumption, and greenhouse gas emissions.*
>
> …
>
> *b.* ***Level of Service Standard for Multi-Modal Districts*** *– The City shall seek to maintain the following standards in the Central Business District, in areas within ½ mile walking distance of light rail stations, and in areas designated for urban scale development (Urban Centers, Urban Corridors, and Urban Neighborhoods as designated in the Land Use and Urban Form Diagram). These areas are characterized by frequent transit service, enhanced pedestrian and bicycle systems, a mix of uses, and higher density development.*
>
> - *Maintain operations on all roadways and intersections at LOS A-E at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS F conditions may be acceptable, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation and transit as part of a development project or a City-initiated project.*
>
> *c.* ***Base Level of Service Standard*** *– the City shall seek to maintain the following standards for all areas outside of multi-modal districts.*
>
> - *Maintain operations on all roadways and intersections at LOS A-D at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS E or F conditions may be accepted, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or a City-initiated project.*

d. ***Roadways Exempt from Level of Service Standard*** *– The above LOS standards shall apply to all roads, intersections, or interchanges within the City except as specified below. If a Traffic Study is prepared and identifies a significant LOS impact to a roadway or intersection that is located within one of the roadway corridors described below, the project would not be required in that particular instance to widen roadways in order for the City to find project conformance with the General Plan. Instead, General Plan conformance could still be found if the project provides improvements to other parts of the city wide transportation system in order to improve transportation-system-wide roadway capacity, to make intersection improvements, or to enhance non-auto travel modes in furtherance of the General Plan goals. The improvements would be required within the project site vicinity or within the area affected by the project's vehicular traffic impacts. With the provision of such other transportation infrastructure improvements, the project would not be required to provide any mitigation for vehicular traffic impacts to the listed road segment in order to conform to the General Plan.*

- *12th/14th Avenue: State Route 99 to 36th Street*
- *24th Street: Meadowview Road to Delta Shores Circle*
- *65th Street: Folsom Boulevard to 14th Avenue*
- *Alhambra Boulevard: Folsom Boulevard to P Street*
- *Arcade Boulevard: Marysville Boulevard to Del Paso Boulevard*
- *Arden Way: Capital City Freeway to Ethan Way*
- *Blair Avenue/47th Avenue: S. Land Park Drive to Freeport Boulevard*
- *Broadway: 15th Street to Franklin Boulevard*
- *Broadway: 58th to 65th Streets*
- *El Camino Avenue: Stonecreek Drive to Marysville Boulevard*
- *El Camino Avenue: Capital City Freeway to Howe Avenue*
- *Elder Creek Road: 65th Street to Power Inn Road*
- *Florin Perkins Road: 14th Avenue to Elder Creek Road*
- *Florin Road: Greenhaven Drive to I-5; 24th Street to Franklin Boulevard*
- *Folsom Boulevard: 34th Street to Watt Avenue*
- *Freeport Boulevard: Broadway to Seamas Avenue*
- *Fruitridge Road: Franklin Boulevard to SR 99*
- *Garden Highway: Truxel Road to Northgate Boulevard*
- *Howe Avenue: American River Drive to Folsom Boulevard*
- *J Street: 43rd Street to 56th Street*
- *Mack Road: Meadowview Road to Stockton Boulevard*
- *Martin Luther King Boulevard: Broadway to 12th Avenue*
- *Marysville Boulevard: I-80 to Arcade Boulevard*
- *Northgate Boulevard: Del Paso Road to SR 160*
- *Raley Boulevard: Bell Avenue to I-80*
- *Roseville Road: Marconi Avenue to I-80*

- *Royal Oaks Drive: SR 160 to Arden Way*
- *Truxel Road: I-80 to Gateway Park*[2]

1.4.3 City of Rancho Cordova

The City General Plan Circulation Element has the following level of service policy:

> ***Policy C.1.2*** *- Seek to maintain operations on all roadways and intersections at Level of Service D or better at all times, including peak travel times, unless maintaining this Level of Service would, in the City's judgment, be infeasible and / or conflict with the achievement of other goals. Congestion in excess of Level of Service D may be accepted in these cases, provided that provisions are made to improve traffic flow and / or promote non-vehicular transportation as part of a development project of a City-initiated project.*[3]

1.4.4 City of Elk Grove

The City General Plan Circulation Element has the following level of service policy:

> ***CI-13*** *- The City shall require that all roadways and intersections in Elk Grove operate at a minimum Level of Service "D" at all times.*[4]

1.4.5 City of Folsom

Policy 17.17 of the City of Folsom General Plan identifies the minimum acceptable level of service for traffic operations in the City. Specifically, this policy states:

> *The City should strive to achieve at least a traffic Level of Service 'C' throughout the City.*[5]

As part of the Folsom South of U.S. Highway 50 Specific Plan, the level of service policy for the portion of the City of Folsom to be located south of US 50 is amended as follows:

> *The City should strive to achieve at least a traffic Level of Service "C" within the Folsom South of US 50 Specific Plan. For roadways and intersections within the Specific Plan, LOS "D" conditions may be considered on a case by case basis if improvements required to meet LOS "C" exceeds the "normally accepted maximum" improvements established by the City.*[6]

2 Sacramento 2030 General Plan, Master Environmental Impact Report, Certified March 3, 2009.
3 City of Rancho Cordova General Plan Circulation Element, June 26, 2006.
4 Elk Grove General Plan Circulation Element, Adopted November 19, 2003, Reflects Amendments through July 22, 2009.
5 City of Folsom General Plan, 1993.
6 Folsom South of U.S. Highway 50 Specific Plan DEIR/DEIS, June 2010.

1.4.6 Caltrans

The standards for Caltrans' facilities in the study area are detailed in the U.S. 50 Corridor System Management Plan (CSMP)[7]. Typical Concept LOS standards in Caltrans District 3 are LOS "D" in rural areas and LOS "E" in urban areas. The 20-Year Concept LOS for U.S. 50 in the study area is LOS F, because improvements necessary to improve the LOS to E are not feasible due to environmental, right-of-way, financial, and other constraints. Although the US 50 CSMP allows LOS F, standards of significance hold that any increase in mainline volume greater than 5% would constitute an impact.

1.4.7 Capital SouthEast Connector Joint Powers Authority (Connector JPA)

The Capital SouthEast Connector Joint Powers Authority (JPA) was formed in December 2006 and includes the cities of Elk Grove, Folsom and Rancho Cordova, and El Dorado and Sacramento Counties. Under a policy set forth by the JPA, signalized intersections along the Connector facility are required to operate at level of service "C" or better (with LOS "D" being allowed in the Sheldon area). The Connector JPA's intersection LOS policy does not apply to roadway segments.

1.5 SIGNIFICANCE CRITERIA

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. The standards of significance in this analysis are based upon current practice of the appropriate regulatory agencies.

1.5.1 Roadways Segments and Intersections

Table 1.7 summarizes the significance criteria for intersections and roadway segments for Sacramento County, the City of Sacramento, the City of Rancho Cordova, the City of Elk Grove, and the City of Folsom.

1.5.2 Freeway Facilities

Caltrans considers the following to be significant impacts:

- Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway.

- Project traffic increases that cause any ramp's merge / diverge level of service to be worse than the freeway's level of service.

- Project traffic increases that cause the freeway level of service to deteriorate beyond level of service threshold defined in the Caltrans Route Concept Report for the facility.

7 Highway 50 Corridor System Management Plan, May 2009.

- The expected ramp queue is greater than the storage capacity.

Further, it is Caltrans' position that on segments of the SHS main line where the existing LOS is at or below the Concept LOS, any land use development should not directly or cumulatively lower the existing LOS and/or increase the V/C ratio now or in the future on the identified highway segments by 5 percent or greater. Any impacts exceeding this 5 percent threshold will be viewed by Caltrans as significant and warrant appropriate mitigation.

Table 1.7: Level of Service Standards and Thresholds of Significance						
Jurisdiction	**Area**	**LOS Policy**	**Thresholds of Significance**			**Notes**
			Signalized Intersection	**Unsignalized Intersection**	**Roadway Segment**	
County of Sacramento	Inside Urban Service Boundary	E	> 5 seconds (intersection average)	> 5 seconds (movement / approach) and meet traffic signal warrant	> .05 V/C	
	Outside Urban Service Boundary	D				
City of Sacramento	Base	D	≥ 5 seconds (intersection average)		≥ .02 V/C	Deficient LOS may be accepted provided provisions are made to improve the overall system and / or promote non-vehicular transportation
	Exempt Areas	E / F				
City of Elk Grove	All	D	≥ 5 seconds (intersection average)		≥ .05 V/C	
City of Folsom	Base	C	≥ 5 seconds (intersection average)		Not Applicable	
	South of US 50 Specific Plan	D				
City of Rancho Cordova	All	D	> 5 seconds (intersection average)	> 5 seconds (movement / approach) and meet traffic signal warrant	> .05 V/C	
Connector JPA	Base	C	> 5 seconds (intersection average)	N/A	≥ .05 V/C	Roadway segments above capacity should be grade separated
	Sheldon	D		N/A	≥ .05 V/C	Roadway segments above capacity should be grade separated, unless both intersections operate acceptably

1.5.3 Bicycle and Pedestrian Facilities

Impacts to bicycle and pedestrian facilities are considered significant if the proposed project would:

- Eliminate or adversely affect an existing bikeway or pedestrian facility in a way that would discourage its use;
- Interfere with the implementation of a planned bikeway as shown in the Bicycle Master Plan, or be in conflict with the Pedestrian Master Plan; or
- Result in unsafe conditions for bicyclists or pedestrians, including unsafe bicycle / pedestrian, bicycle / motor vehicle, or pedestrian / motor vehicle conflict.

1.5.4 Transit

Impacts to the transit system are considered significant if the proposed project would:

- Adversely affect public transit operations; or,
- Fail to adequately provide access to transit.

1.5.5 Rural Roadway Functionality

Of specific concern in the study area of this project is the functionality of substandard rural roadways. The County's current rural roadway standard consists of two-twelve foot wide travel lanes and six-foot wide paved shoulders. Therefore, any rural roadway not fitting this definition can be considered substandard.

Many of the existing rural roadways in the study area have travel lanes as narrow as 10 feet wide with no roadside shoulders. These roadways were constructed many years ago and tended to serve as roadway connections between small towns and communities and to serve as farm to market roadways. While these narrow roadways have adequately served the travel demand of the historical past, they are not intended to serve the greater travel demands that nearby residential and commercial development may impose.

The County expects that the functionality of these roadways will change with nearby development, the increase in population, the introduction of various modes of travel in the study area, and the addition of project traffic on these substandard roadways. No longer will these roadways only serve farm to market and small communities. With these changes in functionality of the roadway comes the possibility of increased interactions between varying modes of travel (i.e. pedestrians, bicyclists, etc.) as well as the increased interaction between a greater number of vehicles on substandard roads.

General Plan Policy CI-1 states *Provide complete streets to provide safe and efficient access to a diversity of travel modes for all urban, suburban and rural land uses within Sacramento County. Within rural areas of the County, a complete street may be accommodated through roadway shoulders of sufficient width or other means to accommodate all modes of travel.*

General Plan Policy CI-7 states *Plan and construct transportation facilities as delineated on the Transportation Plan of the Sacramento County General Plan. Transportation facilities shall be consistent with the Sacramento County, Municipal Services Agency Improvement Standards…*

General Plan Policy CI-10 states *Land development projects shall be responsible to mitigate the project's adverse impacts to local and regional roadways.*

Therefore, the County has applied an impact standard to these substandard roadways as follows:

Impacts to substandard rural roadway functionality are considered significant if the proposed project would:

- Cause the substandard rural roadway to exceed an average daily traffic volume of 6,000 daily vehicles; or

- Add 600 or more new daily vehicle trips to a substandard rural roadway that already carries 6,000 or more daily vehicles.

Significant impacts shall be mitigated by requiring reconstruction of the substandard rural roadway to the County standard of 12-foot vehicle lanes with 6-foot paved shoulders.

1.6 DEVELOPMENT OF MITIGATION MEASURES

This transportation analysis includes the development of mitigation measures for those impacts that have been determined to exceed the level of service policies. Important considerations in the development of such mitigation measures are feasibility, consistency with the General Plan and secondary impacts. While most impacts could theoretically be mitigated by adding more traffic lanes, grade separations, new roadways, and other similar measures, such mitigation may not be consistent with public policy, and could result in secondary impacts to the environment and other users.

The Sacramento County General Plan Circulation Element provides guidance regarding the development of mitigation measures. In particular, the Circulation Element specifies the maximum number of through lanes for major County roadways. The General Plans of the other jurisdictions in the study area provide similar guidance. In general, for those impacts that exceed the level of service policies, mitigation measures have been developed for the widening of roadway segments to accommodate additional travel lanes up to the maximum number of lanes designated in the general plans.

Similarly, the County and other jurisdictions have typical intersection cross-sections. In general, on each approach to an intersection on a four-lane or six-lane roadway, the typical cross-section includes two left turn lanes, the appropriate number of through lanes (two or three), and a single right turn lane. Exceptions to the typical intersection geometry will be considered on a case-by-case basis and in special circumstances. Mitigation measures that exceed the typical intersection geometry will be noted as so.

In the development of mitigation measures, the number of roadway segment lanes and intersection lanes has been expanded, where appropriate, to reduce impacts. In most cases, the mitigation measure does not exceed the maximum number of roadway lanes identified in the General Plans nor exceeds the typical intersection geometry. In some cases, mitigation measures consistent with the General Plan and the typical intersection geometry may not reduce the impact consistent with the level of service policies. In these cases, an alternative mitigation measure may be considered that may necessitate an amendment to the County's General Plan or deviate from the typical intersection geometry. In other cases where the roadway is already constructed to the full General Plan designation or an intersection is already constructed to the standard intersection geometry and no alternative mitigation measure is feasible, no mitigation measure may be available to reduce the impacts.

1.7 HIGH CAPACITY INTERSECTIONS

The Sacramento County General Plan recognizes that at-grade intersections may not be able to accommodate all traffic demands along the County's busiest roadways. In selected locations, the General Plan designates High Capacity Intersections. A high capacity intersection would utilize special treatments to increase the capacity of the intersection to reduce congestion and travel delay. Since each intersection has unique travel movements, volumes and existing context sensitive conditions, the special treatments utilized at each high capacity intersection will vary to meet the specific needs of each intersection. The range of special treatments is quite wide, ranging from the restriction of certain turning movements to various combinations that could include grade separating certain movements. Special treatments such as the following could be utilized at a high capacity intersection:

- Restricting turning movements
- Median U-turns
- Roundabouts
- Split intersections
- Quadrant roadway intersections
- Bowtie intersections
- Directional flyovers
- Center turn overpass
- Grade separated roundabout
- Diverging diamond grade separation
- Compact diamond grade separation
- Single point urban grade separation
- Traditional urban grade separation

Implementation of a high capacity intersection treatment could result in secondary impacts, including right-of-way, pedestrian and bicycle impacts, restrictions to local access, fiscal, and many others. As there are many possible solutions that would provide an acceptable LOS at any location, each with related impacts, this transportation analysis cannot identify specific high capacity intersection solutions. While high capacity intersections could theoretically mitigate any of the identified LOS impacts, the feasibility of such measures has not been established at this time.

2. EXISTING CONDITIONS

2.1 ROADWAY SYSTEM

Figure 2.1 illustrates the existing roadway network.

2.1.1 Regional Access

Regional automobile access to the site is provided by the freeway system and by State Route 16.

U.S. Highway 50 (US 50) is an east-west freeway that extends from the Interstate 80 (I-80) junction in West Sacramento to Canal Street in the City of Placerville, where it continues as a highway across the Sierra Nevada to South Lake Tahoe and Nevada. Primary access to US 50 is via a series of interchanges, including (from west to east) Howe Avenue, Watt Avenue, Bradshaw Road, Mather Field Road, and Sunrise Boulevard. To the west, US 50 provides access to Central City Sacramento, SR 99, I-5, and I-80. To the east, US 50 provides access to eastern Sacramento County, the cities of Rancho Cordova and Folsom, and El Dorado County.

State Route 16 (SR 16) is a Caltrans facility. In the vicinity of the site, SR 16 is located on **Jackson Road**, which is the southern boundary of the Jackson Township project site. The roadway generally travels from west-northwest to east-southeast from Folsom Boulevard to the west into Amador County to the east. It is generally a two-lane roadway with some widening at intersections. To the west, SR 16 continues to US 50 via Folsom Boulevard and Howe Avenue in the City of Sacramento.

2.1.2 Local Access

Direct access to the site is provided primarily via Jackson Road, Excelsior Road, and the future Kiefer Boulevard.

Excelsior Road is a north-south roadway that forms the western boundary of the project site. To the north, Excelsior Road extends into the Independence at Mather community. Beyond the community, the roadway becomes Mather Boulevard. To the south, Excelsior Road extends to Sheldon Road in the City of Elk Grove. Excelsior Road is a two-lane roadway.

Kiefer Boulevard is an east-west roadway that crosses the northern portion of the Jackson Township project site. The roadway consists of two segments, divided by Mather Field. The western segment extends from Florin-Perkins Road in the City of Sacramento through the Rosemont community to Happy Lane. This segment has two to four through lanes. East of Mather Field, the roadway begins at Eagles Nest Road and continues easterly to Jackson Road as a two-lane roadway. The portion of Kiefer Boulevard that crosses the northern portion of the Jackson Township project site does not currently exist, and would be implemented as part of the Jackson Township project.

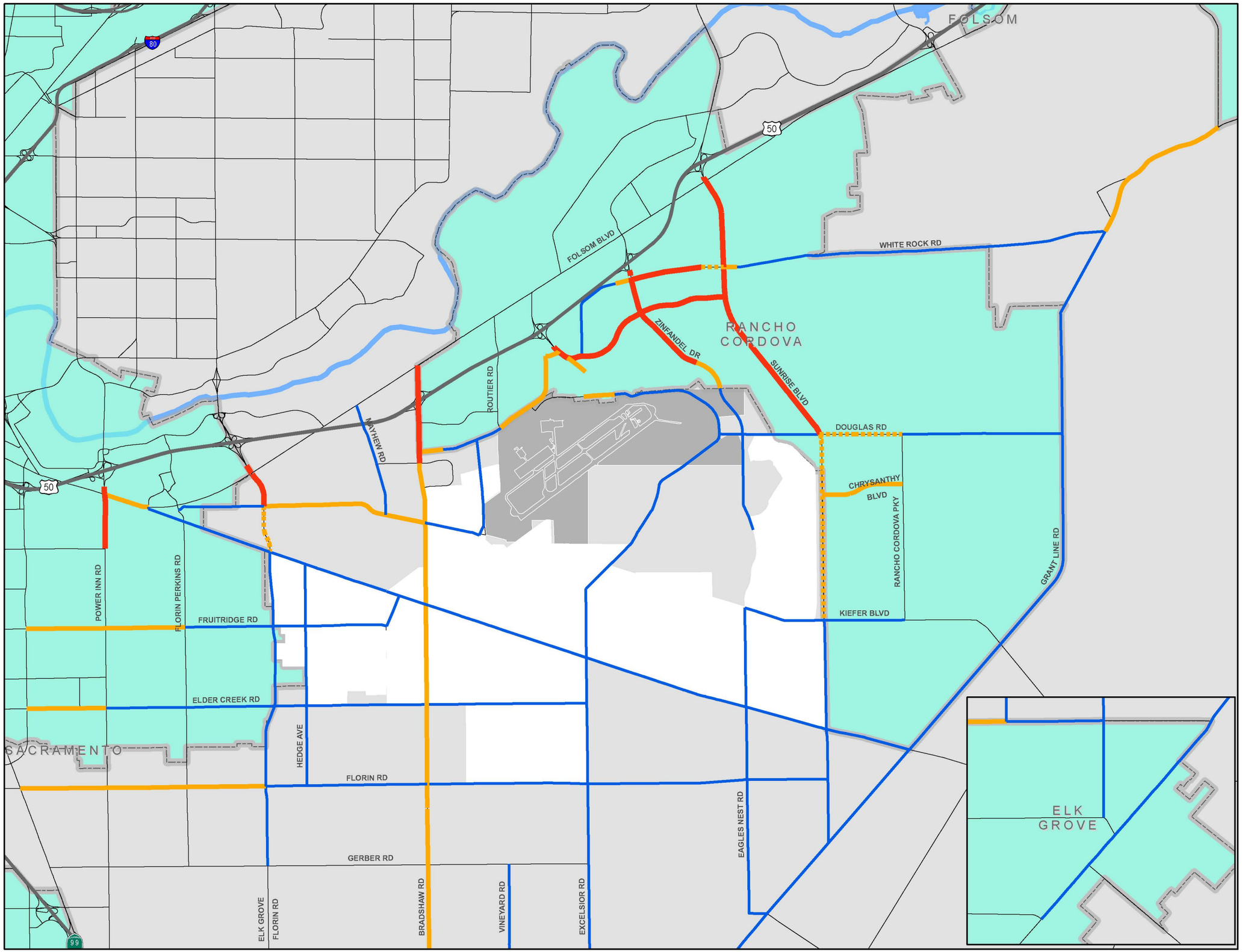


FIGURE 2.1
EXISTING CONDITIONS
ROADWAY NETWORK

Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport

DKS

2.2 TRANSIT SYSTEM

The Sacramento Regional Transit District (RT) operates 67 bus routes and 38.6 miles of light rail covering a 418 square-mile service area. Buses and light rail run 365 days a year using 76 light rail vehicles, 182 buses (with an additional 30 buses in reserve) powered by compressed natural gas (CNG) and 11 shuttle vans. Buses operate daily from 5 a.m. to 11 p.m. every 12 to 75 minutes, depending on the route. Light rail trains begin operation at 4 a.m. with service every 15 minutes during the day and every 30 minutes in the evening and on weekends. Blue Line and Gold Line trains operate until 12:30 a.m. and the Gold Line to Folsom operates until 7 p.m. Green Line trains operate every 30 minutes Monday through Friday. Passenger amenities include 50 light rail stops or stations, 31 bus and light rail transfer centers and 18 park-and-ride lots. RT also serves over 3,300 bus stops throughout Sacramento County.[8]

Figure 2.2 illustrates selected RT service near the Jackson Township project site. The RT Gold Line light rail service is located parallel to Folsom Boulevard north of the Jackson Township project site. Nearby stations include (from west to east) Watt / Manlove, Starfire, Tiber, Butterfield, Mather Field / Mills, Zinfandel, Cordova Town Center, and Sunrise. No RT bus routes operate in the vicinity of the site.

2.3 BICYCLE SYSTEM

Figure 2.3 illustrates the Sacramento County Bikeway Master Plan in the vicinity of the Jackson Township project site, depicting existing and planned bikeways. A future Class I Bikeway, the Elder Creek Trail, crosses the southern portion of the site. Future Class II Bikeways are planned on Jackson Road, Excelsior Road, and Kiefer Boulevard.

2.4 PEDESTRIAN SYSTEM

The pedestrian sidewalk system is incomplete within the Jackson Township project site and in many areas in the vicinity of the Jackson Township project site. As development occurs, sidewalks are being installed along many roadways in the area. With the exception of those locations where such improvements have already occurred, pedestrian access in the immediate vicinity of the Jackson Township project is limited to roadway shoulders, where such shoulders exist.

2.5 TRAFFIC VOLUMES

Peak period (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) intersection turning movement counts were collected on Tuesdays, Wednesdays, and Thursdays in April and Early May, 2013 for the existing intersections in the study area.

Daily (24-hour) segment counts were collected on Tuesdays, Wednesdays, and Thursdays in April and Early May, 2013 for the existing segments in the study area. The existing daily traffic volumes are summarized later in Section 2.6.1 of this report.

8 http://www.sacrt.com/rtataglance.stm Accessed 14 February 2014.

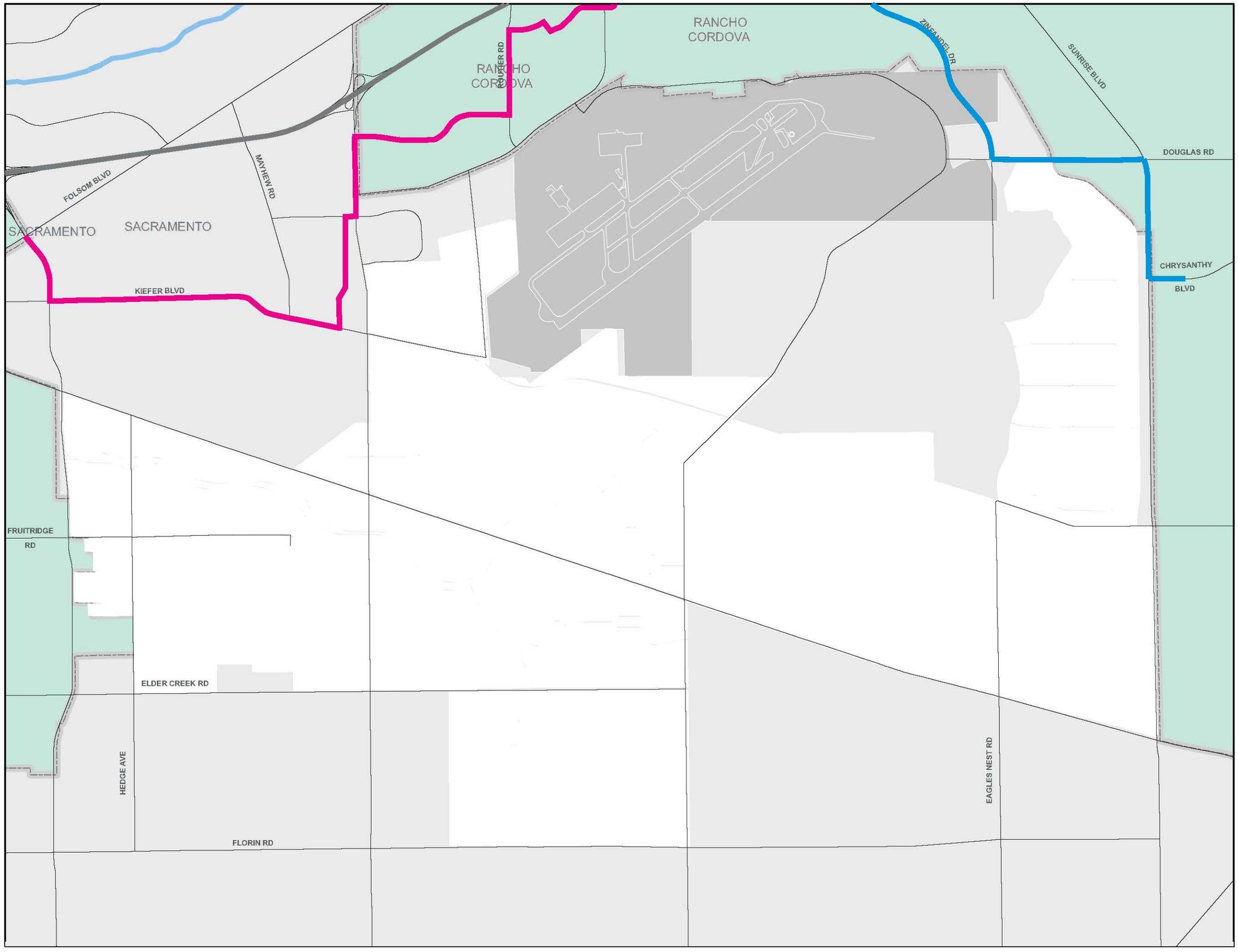


FIGURE 2.2
STUDY AREA TRANSIT NETWORK
EXISTING CONDITIONS

Legend

- Route 72 (Rosemont - Lincoln Village)
- Route 76 (Anatolia Shuttle)
- Cities
- Mather Airport

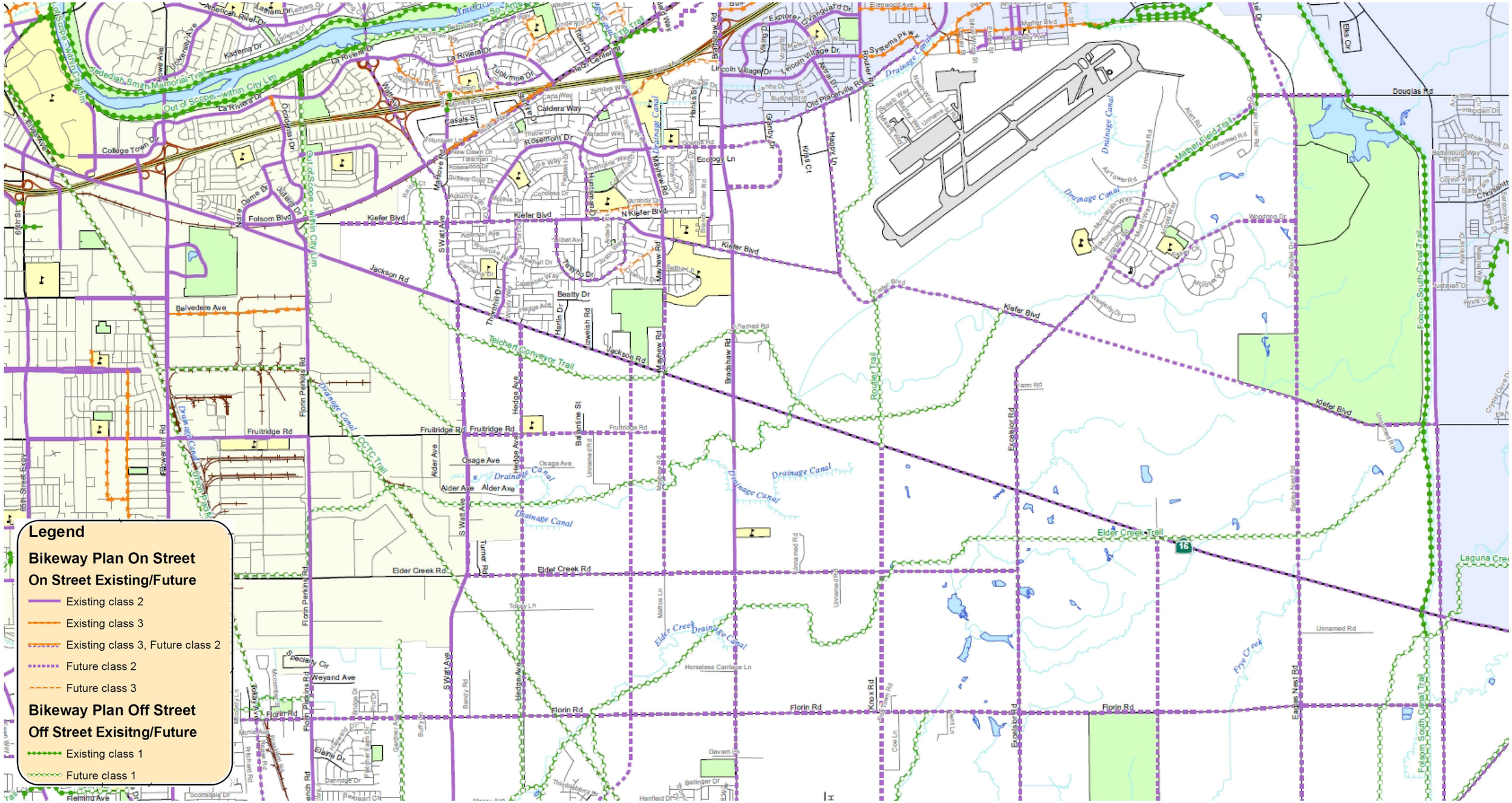


FIGURE 2.3
EXISTING BICYCLE NETWORK

Peak period traffic volumes on the US 50 freeway system (mainline and ramps) were obtained from the California Freeway Performance Measurement System (PeMS). Data recorded on April 16 through 18, 2013, and April 23 through 25, 2013 were utilized in these analyses.

2.6 EXISTING OPERATING CONDITIONS

Figure 2.4 summarizes existing roadway operating conditions.

2.6.1 Roadway Segments

Level of service analyses were also conducted for the roadway segments in the study area based upon daily traffic volumes, number of traffic lanes between intersections, and roadway characteristics. **Table 2.1** summarizes the roadway levels of service, and the performance of the segment compared to the level of service policies of the assigned jurisdiction.

The following segments do not meet the level of service policies:

- Bradshaw Road - US 50 to Lincoln Village Drive
- Elk Grove Florin Road - Florin Road to Gerber Road
- Folsom Boulevard - Howe Avenue to Jackson Road
- Grant Line Road - Calvine Road to Bond Road
- South Watt Avenue - Jackson Road to Florin Road
- Sunrise Boulevard - US 50 to Trade Center Drive
- Sunrise Boulevard - Kiefer Boulevard to Jackson Road
- Watt Avenue - US 50 to Folsom Boulevard

2.6.2 Intersections

Existing intersection geometry (number of approach lanes) is illustrated in the tables below.

Table 2.2 summarizes the existing a.m. and p.m. peak hour operating conditions at the study area intersections, and the performance of the segment compared to the level of service policies of the assigned jurisdiction. At two-way stop unsignalized intersections, Sacramento County determines conformity with the level of service policy on an approach / movement basis, while the City of Sacramento utilizes a calculation of the average intersection level of service (similar to signalized intersections and all-way stop intersections). Details of the intersection operating condition calculations are included in the technical appendix.

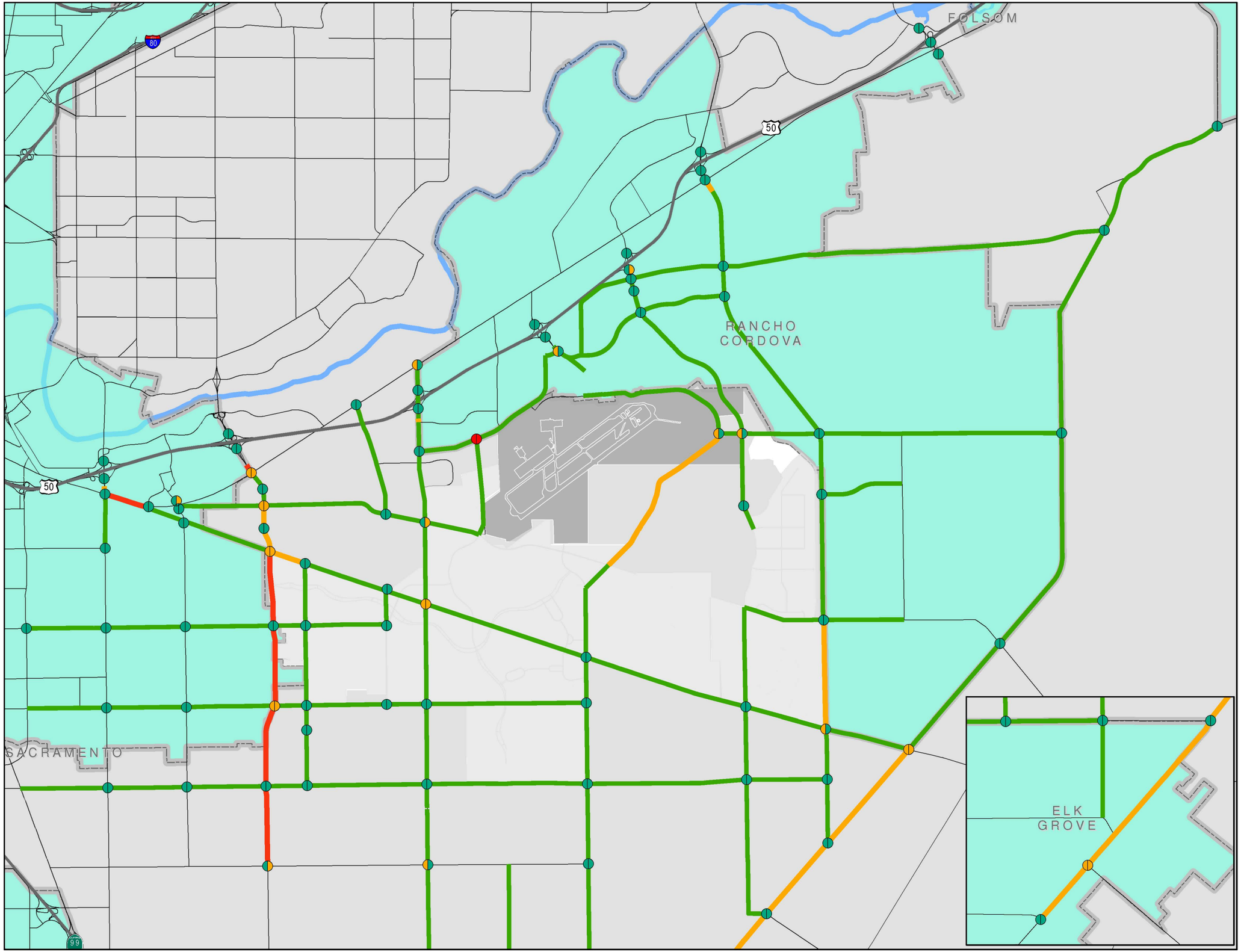


FIGURE 2.4
EXISTING CONDITIONS ROADWAY SEGMENT AND INTERSECTION LOS

Legend

Intersections (AM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Intersections (PM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Roadway Segments
- LOS A-D
- LOS E
- LOS F
- Cities
- Mather Airport

DKS

Table 2.1
Existing Roadway Segment Levels of Service

ID	Roadway	Segment		Jurisdiction	Governing Jurisdiction / Area[1]	LOS Policy Criteria	Existing				
		From	To				Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service
1	Bradshaw Rd	Folsom Blvd	US 50	Rancho Cordova/County	Rancho Cordova	D	6	Arterial M	20,592	0.38	A
2	Bradshaw Rd	US 50	Lincoln Village Dr	Rancho Cordova/County	Rancho Cordova	D	6	Arterial M	52,590	0.97	**E**
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	Rancho Cordova/County	Rancho Cordova	D	6	Arterial M	42,787	0.79	C
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	County	County Urban	E	6	Arterial M	38,984	0.72	C
5	Bradshaw Rd	Goethe Rd	Kiefer Blvd	County	County Urban	E	4	Arterial M	28,651	0.80	C
6	Bradshaw Rd	Kiefer Blvd	Jackson Rd	County	County Urban	E	4	Arterial M	30,726	0.85	D
7	Bradshaw Rd	Jackson Rd	Elder Creek Rd	County	County Urban	E	4	Arterial M	22,871	0.64	B
8	Bradshaw Rd	Elder Creek Rd	Florin Rd	County	County Urban	E	4	Arterial M	22,265	0.62	B
9	Bradshaw Rd	Florin Rd	Gerber Rd	County	County Urban	E	4	Arterial M	22,883	0.64	B
10	Bradshaw Rd	Gerber Rd	Calvine Rd	County	County Urban	E	4	Arterial M	16,984	0.47	A
11	Calvine Rd	Waterman Rd	Bradshaw Rd	Elk Grove/County	Elk Grove	D	4	Arterial M	16,015	0.44	A
12	Calvine Rd	Bradshaw Rd	Vineyard Rd	Elk Grove/County	Elk Grove	D	4	Arterial M	12,395	0.34	A
13	Calvine Rd	Vineyard Rd	Excelsior Rd	Elk Grove/County	Elk Grove	D	2	Arterial M	6,036	0.34	A
14	Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	Rancho Cordova/County	Rancho Cordova	D	4	Arterial M	3,411	0.09	A
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	County Urban	E	2	Arterial M	6,635	0.37	A
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	Rancho Cordova	D	2	Arterial M	8,369	0.46	A
17	Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	Rancho Cordova	Rancho Cordova	D	5	Arterial M	3,674	0.10	A
18	Douglas Rd	Rancho Cordova Pkwy	Grant Line Rd	Rancho Cordova	Rancho Cordova	D	2	Arterial M	3,674	0.20	A
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	County Urban	E	2	Arterial M	740	0.04	A
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	County Urban	E	2	Arterial M	517	0.03	A
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	County Urban	E	2	Arterial M	189	0.01	A
22	Elder Creek Rd	65th St	Power Inn Rd	City of Sacramento	City Exempt Roadway	E	4	Arterial M	17,891	0.50	A
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	City of Sacramento	City Default	D	2	Arterial M	15,734	0.87	D
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave	City of Sacramento	City Default	D	2	Arterial M	11,092	0.62	B
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	County Urban	E	2	Arterial M	5,576	0.31	A
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	County Urban	E	2	Arterial M	5,797	0.32	A
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	County Urban	E	2	Arterial M	5,355	0.30	A
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	County Urban	E	2	Arterial M	2,158	0.12	A
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd	County	County Urban	E	2	Arterial M	22,960	1.28	**F**
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	County Urban	E	2	Arterial M	3,716	0.21	A
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	County Urban	E	2	Arterial M	5,075	0.28	A
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	County Urban	E	2	Arterial M	4,203	0.23	A
33	Excelsior Rd	Florin Rd	Gerber Rd	County	County Urban	E	2	Arterial M	5,423	0.30	A
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	County Urban	E	2	Arterial M	4,229	0.23	A

Bold values do not meet LOS policy.

Table 2.1
Existing Roadway Segment Levels of Service

ID	Roadway	Segment		Jurisdiction	Governing Jurisdiction / Area[1]	LOS Policy Criteria	Existing				
		From	To				Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service
35	Excelsior Rd	Calvine Rd	Sheldon Rd	Elk Grove	Elk Grove	D	2	Arterial M	4,473	0.25	A
36	Florin Rd	Stockton Blvd	Power Inn Rd	County	County Urban	E	4	Arterial M	27,495	0.76	C
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	County	County Urban	E	4	Arterial M	21,595	0.60	A
38	Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	County	County Urban	E	4	Arterial M	14,163	0.39	A
39	Florin Rd	South Watt Ave	Hedge Ave	County	County Urban	E	2	Arterial M	7,718	0.43	A
40	Florin Rd	Hedge Ave	Mayhew Rd	County	County Urban	E	2	Arterial M	6,312	0.35	A
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	County Urban	E	2	Arterial M	6,317	0.35	A
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	County Urban	E	2	Arterial M	3,478	0.19	A
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	County Urban	E	2	Arterial M	3,835	0.21	A
44	Folsom Blvd	Howe Ave	Jackson Rd	City of Sacramento	City Exempt Roadway	E	4	Arterial M	37,516	1.04	**F**
45	Fruitridge Rd	65th St	Power Inn Rd	City of Sacramento	City Default	D	4	Arterial M	16,634	0.46	A
46	Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	City of Sacramento	City Default	D	4	Arterial M	15,214	0.42	A
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	City of Sacramento	City Default	D	2	Arterial M	10,280	0.57	A
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	City Default	D	2	Arterial M	2,890	0.16	A
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	County Urban	E	2	Arterial M	1,790	0.10	A
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	Rancho Cordova	D	2	Rural NS	7,189	0.42	D
51	Grant Line Rd	Douglas Rd	Kiefer Blvd	Rancho Cordova/County	Rancho Cordova	D	2	Rural S	6,143	0.31	C
52	Grant Line Rd	Kiefer Blvd	Jackson Rd	Rancho Cordova/County	Rancho Cordova	D	2	Rural S	5,758	0.29	C
53	Grant Line Rd	Jackson Rd	Sunrise Blvd	County	County Urban	E	2	Rural S	14,720	0.74	E
54	Grant Line Rd	Sunrise Blvd	Calvine Rd	County	County Urban	E	2	Rural S	14,812	0.74	E
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit	Elk Grove/County	Elk Grove	D	2	Rural S	13,140	0.66	**E**
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd	Elk Grove/County	Elk Grove	D	2	Rural S	13,140	0.66	**E**
56	Grant Line Rd	Sheldon Rd	Wilton Rd	Elk Grove	Elk Grove	D	2	Rural S	17,459	0.87	**E**
57	Grant Line Rd	Wilton Rd	Bond Rd	Elk Grove	Elk Grove	D	2	Rural S	16,064	0.80	**E**
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	County Urban	E	2	Rural S	4,635	0.23	C
58.1	Happy Lane	Old Placerville Road	Routier Ext	County	County Urban	E	2	Rural S	4,635	0.23	C
58.2	Happy Lane	Routier Ext	Kiefer Boulevard	County	County Urban	E	2	Rural S	4,635	0.23	C
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	County Urban	E	2	Arterial M	3,061	0.17	A
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	County Urban	E	2	Arterial M	3,737	0.21	A
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	County Urban	E	2	Arterial M	2,722	0.15	A
62	Howe Ave	US 50	Folsom Blvd	City of Sacramento	City Exempt Roadway	E	6	Arterial M	53,849	1.00	E
63	International Dr	Mather Field Rd	Zinfandel Dr	Rancho Cordova	Rancho Cordova	D	6	Arterial M	17,500	0.32	A

Bold values do not meet LOS policy.

Table 2.1
Existing Roadway Segment Levels of Service

ID	Roadway	Segment		Jurisdiction	Governing Jurisdiction / Area[1]	LOS Policy Criteria	Existing				
		From	To				Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service
64	International Dr	Zinfandel Dr	Sunrise Blvd	Rancho Cordova	Rancho Cordova	D	6	Arterial M	8,802	0.16	A
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd	City of Sacramento	City Exempt Light Rail	E	2	Arterial M	12,358	0.69	B
66	Jackson Rd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	City Exempt Light Rail	E	2	Arterial M	10,414	0.58	A
67	Jackson Rd	South Watt Ave	Hedge Ave	County	County Urban	E	2	Arterial M	17,060	0.95	E
68	Jackson Rd	Hedge Ave	Mayhew Rd	County	County Urban	E	2	Arterial M	12,616	0.70	C
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	County	County Urban	E	2	Arterial M	14,996	0.83	D
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	County Urban	E	2	Arterial M	13,030	0.72	C
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	County Urban	E	2	Rural Hwy	10,478	0.46	D
72	Jackson Rd	Eagles Nest Rd	Sunrise Blvd	County	County Urban	E	2	Rural Hwy	9,976	0.44	D
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	Rancho Cordova/County	Rancho Cordova	D	2	Rural Hwy	13,306	0.58	D
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	City Exempt Light Rail	E	2	Arterial M	4,616	0.26	A
75	Kiefer Blvd	South Watt Ave	Mayhew Rd	County	County Urban	E	4	Arterial M	18,668	0.52	A
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	County	County Urban	E	4	Arterial M	9,274	0.26	A
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	County Urban	E	2	Arterial M	4,618	0.26	A
77.3	Kiefer Boulevard	Routier Ext	Happy Lane	County	County Urban	E	2	Arterial M	4,618	0.26	A
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	County Urban	E	2	Arterial M	656	0.04	A
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	Rancho Cordova	Rancho Cordova	D	2	Arterial M	2,786	0.15	A
80	Mather Blvd / Norden Ave	Von Karman St	Bleckely St	Rancho Cordova	Rancho Cordova	D	4	Arterial M	4,373	0.12	A
81	Mather Blvd	Bleckely St	Femoyer St	Rancho Cordova	Rancho Cordova	D	4	Arterial M	4,373	0.12	A
82	Mather Blvd	Femoyer St	Douglas Rd	Rancho Cordova/County	Rancho Cordova	D	2	Arterial M	4,373	0.24	A
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	County	County Urban	E	2	Res Collector F	6,751	0.84	E
84	Mather Field Rd	US 50	Rockingham Dr	Rancho Cordova	Rancho Cordova	D	6	Arterial M	37,755	0.70	B
85	Mather Field Rd	Rockingham Dr	International Dr	Rancho Cordova	Rancho Cordova	D	6	Arterial M	37,520	0.69	B
86	Mather Field Rd	International Dr	Peter A McCuen Blvd	Rancho Cordova	Rancho Cordova	D	4	Arterial M	14,857	0.41	A
87	Mayhew Rd	Folsom Blvd	Goethe Rd	County	County Urban	E	2	Arterial M	6,977	0.39	A
88	Mayhew Rd	Goethe Rd	Kiefer Blvd	County	County Urban	E	2	Arterial L	6,593	0.44	A
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	County Urban	E	2	Arterial L	1,616	0.11	A
90	Old Placerville Rd	Bradshaw Rd	Granby Dr	Rancho Cordova/County	Rancho Cordova	D	4	Arterial M	15,800	0.44	A
91	Old Placerville Rd	Granby Dr	Happy Ln	Rancho Cordova/County	Rancho Cordova	D	2	Arterial M	13,573	0.75	C
92	Old Placerville Rd	Happy Ln	Routier Rd	Rancho Cordova/County	Rancho Cordova	D	2	Arterial M	10,710	0.60	A

Bold values do not meet LOS policy.

Table 2.1
Existing Roadway Segment Levels of Service

ID	Roadway	Segment		Jurisdiction	Governing Jurisdiction / Area[1]	LOS Policy Criteria	Existing				
		From	To				Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service
93	Old Placerville Rd	Routier Rd	Rockingham Dr	Rancho Cordova/County	Rancho Cordova	D	4	Arterial M	10,710	0.30	A
94	Power Inn Rd	Folsom Blvd	14th Ave	City of Sacramento	City Exempt Light Rail	E	6	Arterial M	36,175	0.67	B
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	Rancho Cordova	Rancho Cordova	D	4	Arterial M	19,881	0.55	A
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	County	County Urban	E	6	Arterial M	40,920	0.76	C
97	South Watt Ave	Kiefer Blvd	Jackson Rd	County	County Urban	E	5	Arterial M	32,415	0.90	E
98	South Watt Ave	Jackson Rd	Fruitridge Rd	City of Sacramento/County	City Default	D	2	Arterial M	25,832	1.44	**F**
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	City Default	D	2	Arterial M	21,567	1.20	**F**
100	South Watt Ave	Elder Creek Rd	Florin Rd	City of Sacramento/County	City Default	D	2	Arterial M	19,069	1.06	**F**
101	Sunrise Blvd	US 50	Folsom Blvd	Rancho Cordova	Rancho Cordova	D	7	Arterial M	54,500	1.01	**F**
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr	Rancho Cordova	Rancho Cordova	D	6	Arterial M	49,500	0.92	**E**
103	Sunrise Blvd	Trade Center Dr	White Rock Rd	Rancho Cordova	Rancho Cordova	D	6	Arterial M	34,571	0.64	B
104.1	Sunrise Blvd	White Rock Rd	International Dr	Rancho Cordova	Rancho Cordova	D	6	Arterial M	25,811	0.48	A
104.2	Sunrise Blvd	International Dr	Rio Del Oro Pkwy	Rancho Cordova	Rancho Cordova	D	6	Arterial M	28,400	0.53	A
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	Rancho Cordova	Rancho Cordova	D	6	Arterial M	25,811	0.48	A
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	Rancho Cordova/County	Rancho Cordova	D	5	Arterial M	21,878	0.61	B
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	Rancho Cordova/County	Rancho Cordova	D	2	Arterial M	16,894	0.94	**E**
107	Sunrise Blvd	Jackson Rd	Florin Rd	County	County Urban	E	2	Rural S	11,181	0.56	D
108	Sunrise Blvd	Florin Rd	Grant Line Rd	County	County Urban	E	2	Rural S	7,752	0.39	D
109	Vineyard Rd	Gerber Rd	Calvine Rd	County	County Urban	E	2	Arterial M	5,515	0.31	A
110	Watt Ave	US 50	Folsom Blvd	City of Sacramento/County	City Exempt Light Rail	E	6	Arterial H	65,242	1.09	**F**
111	White Rock Rd	International Rd	Quality Dr	Rancho Cordova	Rancho Cordova	D	2	Arterial M	3,962	0.22	A
112	White Rock Rd	Quality Dr	Zinfandel Dr	Rancho Cordova	Rancho Cordova	D	4	Arterial M	11,200	0.31	A
113	White Rock Rd	Zinfandel Dr	Kilgore Rd	Rancho Cordova	Rancho Cordova	D	6	Arterial M	14,756	0.27	A
114	White Rock Rd	Kilgore Rd	Sunrise Blvd	Rancho Cordova	Rancho Cordova	D	5	Arterial M	14,756	0.41	A
115	White Rock Rd	Sunrise Blvd	Fitzgerald Rd	Rancho Cordova	Rancho Cordova	D	4	Arterial M	15,433	0.43	A
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	Rancho Cordova	D	2	Rural NS	2,490	0.15	B
117	White Rock Rd	Grant Line Rd	Prairie City Rd	County	County Urban	E	4	Arterial M	9,400	0.26	A
118	Zinfandel Dr	US 50	White Rock Rd	Rancho Cordova	Rancho Cordova	D	7	Arterial M	45,228	0.84	D
119	Zinfandel Dr	White Rock Rd	International Rd	Rancho Cordova	Rancho Cordova	D	6	Arterial M	17,923	0.33	A
120	Zinfandel Dr	International Rd	Baroque Dr	Rancho Cordova	Rancho Cordova	D	6	Arterial M	7,595	0.14	A
121	Zinfandel Dr	Baroque Dr	City Limit	Rancho Cordova	Rancho Cordova	D	4	Arterial M	7,595	0.21	A
122	Zinfandel Dr	City Limit	Douglas Rd	County	County Urban	E	2	Arterial M	7,595	0.42	A
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	County Urban	E	2	Arterial M	2,848	0.16	A

Bold values do not meet LOS policy.

Table 2.1
Existing Roadway Segment Levels of Service

ID	Roadway	Segment		Jurisdiction	Governing Jurisdiction / Area[1]	LOS Policy Criteria	Existing				
		From	To				Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

	Intersection	Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
1	Howe Ave & College Town Dr/US 50 WB Ramps	City of Sacramento	City Exempt Roadway	E	Signal	D	36.6	Signal	D	44.4
2	Howe Ave & US 50 EB Ramps	City of Sacramento	City Exempt Roadway	E	Signal	B	16.9	Signal	C	20.5
3	Power Inn Rd/Howe Ave & Folsom Blvd	City of Sacramento	City Exempt Roadway	E	Signal	D	39.1	Signal	D	55.0
4	Power Inn Rd & 14th Ave	City of Sacramento	City Default	D	Signal	C	31.5	Signal	D	39.6
5	Power Inn Rd & Fruitridge Rd	City of Sacramento	City Default	D	Signal	D	43.4	Signal	C	33.5
6	Jackson Rd/Notre Dame Dr. & Folsom Blvd.	City of Sacramento	City Exempt Roadway	E	Signal	D	36.8	Signal	C	32.1
7	Florin Perkins Rd/Julliard Dr. & Folsom Blvd	City of Sacramento	City Exempt Roadway	E	Signal	D	39.0	Signal	E	55.6
8	Florin Perkins Rd & Kiefer Blvd.	City of Sacramento	City Exempt Light Rail	E	Two-way stop			Two-way stop		
	Westbound Left Turn					*C*	*20.1*		*C*	*23.3*
	Westbound Right Turn					*B*	*13.3*		*B*	*12.6*
	Southbound Left Turn					*A*	*10.0*		*B*	*10.9*

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

	Intersection	Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
9	Florin Perkins Rd & Jackson Rd	City of Sacramento	City Exempt Light Rail	E	Signal	D	51.5	Signal	D	54.1
10	Florin Perkins Rd & Fruitridge Rd	City of Sacramento	City Exempt Roadway	E	Signal	C	25.1	Signal	C	25.4
11	Florin Perkins Rd & Elder Creek Rd	City of Sacramento	City Exempt Roadway	E	Signal	C	25.7	Signal	C	26.2
12	Watt Ave & Folsom Blvd.	County	County Urban	E	Signal	E	66.2	Signal	E	71.9
13	S. Watt Ave. & Reith Ct/Manlove Rd	County	County Urban	E	Signal	B	19.6	Signal	D	54.1
14	S. Watt Ave & Kiefer Blvd.	County	County Urban	E	Signal	E	56.0	Signal	E	75.9
15	S. Watt Ave & Canberra Dr.	County	County Urban	E	Signal	B	11.5	Signal	A	9.7
16	S. Watt Ave & Jackson Rd	County	County Urban	E	Signal	E	62.5	Signal	E	66.4
17	S. Watt Ave & Fruitridge Rd	City of Sacramento / County	City Default	D	Signal	D	38.1	Signal	D	41.7
18	S. Watt Ave & Elder Creek Rd	City of Sacramento / County	City Default	D	Signal	E	62.7	Signal	E	68.8

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

	Intersection	Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
20	Elk Grove Florin Rd/S. Watt Ave. & Florin Rd	County	County Urban	E	Signal	D	54.7	Signal	D	51.8
21	Elk Grove Florin Rd & Gerber Rd	County	County Urban	E	Signal	D	49.1	Signal	E	64.6
23	Hedge Ave & Jackson Rd	County	County Urban	E	Signal	D	35.1	Signal	D	37.3
24	Hedge Ave & Fruitridge Rd	County	County Urban	E	All-way stop	B	13.6	All-way stop	A	9.4
25	Hedge Ave & Elder Creek Rd	County	County Urban	E	All-way stop	C	15.9	All-way stop	B	11.6
26	Hedge Ave & Tokay Lane	County	County Urban	E	Two-way stop			Two-way stop		
	Northbound Left Turn			*E*		*A*	*0.0*		*A*	*0.0*
	Southbound Left Turn			*E*		*A*	*8.0*		*A*	*7.3*
	Eastbound			*E*		*B*	*12.2*		*B*	*10.2*
	Westbound			*E*		*B*	*11.1*		*A*	*9.6*
27	Hedge Ave & Florin Rd	County	County Urban	E	All-way stop	B	12.9	All-way stop	B	11.1
28	Mayhew Rd & Kiefer Blvd	County	County Urban	E	Signal	D	48.6	Signal	D	51.1

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

	Intersection	Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
29	Mayhew Rd & Jackson Rd	County	County Urban	E	Two-way stop			Two-way stop		
	Northbound Through - Left Turn			*E*		*D*	*27.6*		*D*	*34.0*
	Northbound Right Turn			*E*		*B*	*11.8*		*C*	*15.0*
	Southbound			*E*		*C*	*18.3*		*C*	*24.9*
	Eastbound Left Turn			*E*		*A*	*8.9*		*A*	*8.4*
	Westbound Left Turn			*E*		*A*	*8.3*		*A*	*9.3*
30	Mayhew Rd & Fruitridge Rd	County	County Urban	E	Two-way stop			Two-way stop		
	Northbound Left Turn			*E*		*A*	*0.0*		*A*	*7.4*
	Eastbound			*E*		*A*	*9.2*		*A*	*9.2*

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

	Intersection	Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
31	Mayhew Rd & Elder Creek Rd	County	County Urban	E	Two-way stop			Two-way stop		
	Northbound			*E*		*B*	*11.9*		*B*	*10.9*
	Southbound			*E*		*B*	*11.1*		*A*	*9.8*
	Eastbound Left Turn			*E*		*A*	*8.3*		*A*	*7.6*
	Westbound Left Turn			*E*		*A*	*7.5*		*A*	*0.0*
32	Woodring Dr & Zinfandel Dr	County	County Urban	E	Two-way stop			Two-way stop		
	Eastbound			*E*		*A*	*9.3*		*A*	*9.3*
	Northbound Left Turn			*E*		*A*	*0.0*		*A*	*0.0*
33	Bradshaw Rd & Folsom Blvd.	City of Rancho Cordova / County	Rancho Cordova	D	Signal	E	56.7	Signal	D	49.9
34	Bradshaw Rd & US 50 WB Ramps	City of Rancho Cordova / County	Rancho Cordova	D	Signal	B	15.9	Signal	B	15.2
35	Bradshaw Rd & US 50 EB Ramps	City of Rancho Cordova / County	Rancho Cordova	D	Signal	C	24.4	Signal	B	16.0
36	Bradshaw Rd & Old Placerville Rd	City of Rancho Cordova / County	Rancho Cordova	D	Signal	D	45.9	Signal	D	52.0
37	Bradshaw Rd & Kiefer Blvd	County	County Urban	E	Signal	D	45.7	Signal	E	66.2

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

	Intersection	Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
38	Bradshaw Rd & Jackson Rd	County	County Urban	E	Signal	E	73.1	Signal	E	59.4
39	Bradshaw Rd & Elder Creek Rd	County	County Urban	E	Signal	D	36.8	Signal	D	36.1
40	Bradshaw Rd & Florin Rd	County	County Urban	E	Signal	D	38.1	Signal	D	53.6
41	Bradshaw Rd & Gerber Rd	County	County Urban	E	Signal	E	72.2	Signal	D	49.9
42	Happy Lane & Old Placerville Rd	City of Rancho Cordova / County	Rancho Cordova	D	Two-way stop			Two-way stop		
	Northbound Left Turn			*D*		*F*	*64.8*		*F*	*95.9*
	Northbound Right Turn			*D*		*D*	*30.6*		*C*	*15.4*
	Westbound Left Turn			*D*		*B*	*10.2*		*B*	*10.1*
45	Excelsior Rd & Jackson Rd	County	County Urban	E	Signal	D	36.7	Signal	D	40.3
46	Excelsior Rd & Elder Creek Rd	County	County Urban	E	Two-way stop			Two-way stop		
	Northbound Left Turn			*E*		*A*	*7.5*		*A*	*8.0*
	Eastbound			*E*		*C*	*18.6*		*B*	*12.3*

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

	Intersection	Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
47	Excelsior Rd & Florin Rd	County	County Urban	E	All-way stop	C	24.9	All-way stop	B	12.5
48	Excelsior Rd & Gerber Rd/Birch Ranch Dr	County	County Urban	E	All-way stop	B	14.0	All-way stop	B	10.6
49	Mather Field Rd & US 50 WB Ramps	City of Rancho Cordova	Rancho Cordova	D	Signal	C	24.7	Signal	A	9.4
50	Mather Field Rd & US 50 EB Ramps	City of Rancho Cordova	Rancho Cordova	D	Signal	C	27.7	Signal	B	13.4
51	Mather Field Rd & Rockingham Dr	City of Rancho Cordova	Rancho Cordova	D	Signal	E	56.4	Signal	D	54.7
52	Mather Blvd & Douglas Rd	County	County Urban	E	All-way stop	E	39.3	All-way stop	C	15.5
53	Zinfandel Dr & US 50 WB Ramps	City of Rancho Cordova	Rancho Cordova	D	Signal	B	16.4	Signal	D	51.7
54	Zinfandel Dr & US 50 EB Ramps/Gold Center Dr	City of Rancho Cordova	Rancho Cordova	D	Signal	D	40.0	Signal	E	60.1
55	Zinfandel Dr & White Rock Rd	City of Rancho Cordova	Rancho Cordova	D	Signal	D	47.7	Signal	D	54.7
56	Zinfandel Dr & Data Dr	City of Rancho Cordova	Rancho Cordova	D	Signal	D	49.3	Signal	D	52.9

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

Intersection		Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
57	Zinfandel Dr & International Dr	City of Rancho Cordova	Rancho Cordova	D	Signal	C	34.0	Signal	D	48.5
58	Zinfandel Dr & Douglas Rd	County	County Urban	E	Signal	E	55.5	Signal	D	54.2
60	Eagles Nest Rd & Jackson Rd	County	County Urban	E	Two-way stop			Two-way stop		
	Northbound			*E*		*C*	*22.0*		*C*	*23.8*
	Southbound			*E*		*B*	*13.9*		*C*	*22.0*
	Eastbound Left Turn			*E*		*A*	*8.8*		*A*	*7.9*
	Westbound Left Turn			*E*		*A*	*7.9*		*A*	*8.7*
61	Eagles Nest Rd & Florin Rd	County	County Urban	E	Two-way stop			Two-way stop		
	Northbound			*E*		*B*	*12.7*		*B*	*12.1*
	Southbound			*E*		*B*	*10.0*		*B*	*10.5*
	Eastbound Left Turn			*E*		*A*	*7.7*		*A*	*7.7*
	Westbound Left Turn			*E*		*A*	*0.0*		*A*	*7.6*
62	Sunrise Blvd & US 50 WB Ramps	City of Rancho Cordova	Rancho Cordova	D	Signal	D	44.7	Signal	B	19.7
63	Sunrise Blvd & US 50 EB Ramps	City of Rancho Cordova	Rancho Cordova	D	Signal	B	16.9	Signal	B	17.6

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

	Intersection	Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
64	Sunrise Blvd & Folsom Blvd	City of Rancho Cordova	Rancho Cordova	D	Signal	D	54.4	Signal	D	48.6
65	Sunrise Blvd & White Rock Rd	City of Rancho Cordova	Rancho Cordova	D	Signal	D	47.8	Signal	D	51.6
66	Sunrise Blvd & International Dr/Monier Circle	City of Rancho Cordova	Rancho Cordova	D	Signal	D	47.8	Signal	D	45.8
67	Sunrise Blvd & Douglas Rd	City of Rancho Cordova	Rancho Cordova	D	Signal	D	51.7	Signal	D	46.5
68	Sunrise Blvd & Chrysanthy Blvd	City of Rancho Cordova / County	Rancho Cordova	D	Signal	C	27.0	Signal	C	21.0
69	Sunrise Blvd & Kiefer Blvd	City of Rancho Cordova / County	Rancho Cordova	D	Signal	D	53.6	Signal	C	27.0
70	Sunrise Blvd & Jackson Rd	City of Rancho Cordova / County	Rancho Cordova	D	Signal	E	57.0	Signal	D	47.2
71	Sunrise Blvd & Florin Rd	County	County Urban	E	Signal	B	11.3	Signal	D	48.3
72	Sheldon Lake Dr/Sunrise Blvd & Grant Line Rd	County [Connector JPA]	County [Connector JPA]	E [C]	Signal	D	43.2	Signal	D	40.7
73	Hazel Ave & Tributary Point Dr/US 50 WB Off-ramp	County	County Urban	E	Signal	C	31.2	Signal	D	41.4

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

Intersection		Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
74	Hazel Ave & US 50 EB Ramps	City of Rancho Cordova / County	Rancho Cordova	D	Signal	C	20.6	Signal	C	29.9
75	Hazel Ave & Folsom Blvd	City of Rancho Cordova / County	Rancho Cordova	D	Signal	D	51.7	Signal	D	46.7
76	Prairie City Rd & White Rock Rd	City of Folsom / County [Connector JPA]	Folsom / [Connector JPA]	C [C]	Signal	B	19.2	Signal	B	15.0
77	Grant Line Rd & White Rock Rd	County [Connector JPA]	County [Connector JPA]	E [C]	Signal	B	10.9	Signal	B	11.2
78	Grant Line Rd & Douglas Rd	City of Rancho Cordova / County [Connector JPA]	Rancho Cordova [Connector JPA]	D [C]	All-way stop	C	15.2	All-way stop	B	12.3
79	Grant Line Rd & Kiefer Blvd	City of Rancho Cordova / County [Connector JPA]	Rancho Cordova [Connector JPA]	D [C]	All-way stop	B	11.4	All-way stop	B	10.5
80	Grant Line Rd & Jackson Rd	City of Rancho Cordova / County [Connector JPA]	Rancho Cordova [Connector JPA]	D [C]	Signal	E	74.0	Signal	E	78.9
81	Watt Ave & US-50 EB Ramps	City of Sacramento / County	City Exempt Light Rail	E	Signal	B	13.0	Signal	B	14.9

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

	Intersection	Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
82	Watt Ave & US-50 WB Ramps	City of Sacramento / County	City Default	D	Signal	C	32.9	Signal	C	28.6
83	Mayhew Rd & Folsom Blvd.	County	County Urban	E	Signal	B	19.8	Signal	C	20.1
84	65th Street Expy & Fruitridge Rd	City of Sacramento	City Default	D	Signal	C	31.2	Signal	D	35.3
85	Power Inn Rd & Elder Creek Rd	City of Sacramento	City Exempt Roadway	E	Signal	D	35.2	Signal	D	36.3
86	Power Inn Rd & Florin Rd	County	County Urban	E	Signal	D	36.3	Signal	D	45.9
87	Florin Perkins Rd & Florin Rd	County	County Urban	E	Signal	D	36.7	Signal	C	32.5
88	Bradshaw Rd & Calvine Rd	City of Elk Grove / County	Elk Grove	D	Signal	C	30.5	Signal	D	36.9
89	Vineyard Rd & Calvine Rd	City of Elk Grove / County	Elk Grove	D	Signal	C	30.8	Signal	C	34.9
90	Excelsior Rd & Calvine Rd	City of Elk Grove / County	Elk Grove	D	All-way stop	C	16.6	All-way stop	B	13.0
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	County [Connector JPA]	County [Connector JPA]	E [C]	Signal	D	51.7	Signal	D	46.5

Bold values do not meet LOS policy.

Table 2.2

Existing Intersection Levels of Service

	Intersection	Jurisdiction	Governing Jurisdiction / Area [1]	LOS Policy Criteria	AM Peak Hour			PM Peak Hour		
					Existing			Existing		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
92	Grant Line Rd & Calvine Rd	City of Elk Grove / County [Connector JPA]	Elk Grove [Connector JPA]	D [C]	Signal	C	21.4	Signal	C	24.0
93	Grant Line Rd & Dwy/Wilton Rd	City of Elk Grove / Connector JPA	Elk Grove [Connector JPA]	D [C]	Signal	E	65.9	Signal	E	64.8
94	Grant Line Rd & Bond Rd/Wrangler Dr	City of Elk Grove / Connector JPA	Elk Grove [Connector JPA]	D [C]	Signal	C	33.3	Signal	D	46.4

[1] The following classifications are used to determine the applicable LOS Policy:
County Rural - Sacramento County, Outside Urban Service Boundary
County Urban - Sacramento County, Within Urban Service Boundary
City Default - City of Sacramento, Base Level of Service Standard
City Exempt Roadway - City of Sacramento, Roadways Exempt from Base Level of Service Standard
City Exempt Light Rail - City of Sacramento, Within 1/2 Mile Walking Distance of Light Rail Station

Bold values do not meet LOS policy.

The following intersections do not meet the level of service policies:

- South Watt Avenue and Elder Creek Road - a.m. and p.m. peak hours
- Bradshaw Road and Folsom Boulevard - a.m. peak hour
- Happy Lane and Old Placerville Road - northbound left turn - a.m. and p.m. peak hours
- Mather Field Road and Rockingham Drive - a.m. peak hour
- Zinfandel Drive and US 50 Eastbound Ramps / Gold Center Drive - p.m. peak hour
- Sunrise Boulevard and Jackson Road - a.m. peak hour
- Grant Line Road and Jackson Road - a.m. and p.m. peak hours
- Grant Line Road and Wilton Road - a.m. and p.m. peak hours

2.6.3 U.S. 50 Freeway

2.6.3.1 Freeway Mainline

Table 2.3 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations. Details of the analysis are included in the technical appendix. The following locations exhibit LOS F conditions:

- Eastbound
    - Stockton Boulevard to 59th Street - a.m. and p.m. peak hours
    - Bradshaw Road to Mather Field Road - a.m. peak hour
    - Zinfandel Drive to Hazel Avenue - p.m. peak hour
- Westbound
    - Mather Field Road to Watt Avenue - a.m. peak hour
    - Watt Avenue to 59th Street - a.m. and p.m. peak hours
    - 59th Street to SR 51 / SR 99 - p.m. peak hour

2.6.3.2 Freeway Ramp Junctions / Weaving

Table 2.4 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas. Details of the analysis are included in the technical appendix. The following locations exhibit LOS F conditions:

- Eastbound
    - Watt Avenue Entrance Merge - a.m. peak hour
    - Mather Field Road to Zinfandel Drive weave - a.m. peak hour
- Westbound
    - Sunrise Boulevard Entrance - a.m. peak hour

2.6.3.3 Freeway Ramp Intersection Queuing

Table 2.5 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. None of the existing queues extends onto the freeway mainline.

Table 2.3: Existing Peak Hour Freeway Mainline Level of Service

Direc-tion	Location	Mixed Flow Lanes	AM Peak Hour			PM Peak Hour		
			Volume	Density	LOS	Volume	Density	LOS
East-bound US 50	SR 99 / SR 51 to Stockton Boulevard	5	7,068	23.46	C	6,415	23.33	C
	Stockton Boulevard to 59th Street	5	7,470	35.05	**F**	7,228	41.46	**F**
	59th Street to 65th Street	4	6,767	27.40	D	6,641	28.36	D
	65th Street to Howe Avenue	5	7,962	28.05	D	7,562	29.71	D
	Howe Avenue to Watt Avenue	4	7,405	31.77	D	7,602	33.01	D
	Watt Avenue to Bradshaw Road	4	7,935	27.22	D	7,176	24.80	C
	Bradshaw Rd to Mather Field Rd	4	7,725	45.10	**F**	7,366	25.50	C
	Mather Field Rd to Zinfandel Drive	5	7,275	19.18	C	7,224	20.13	C
	Zinfandel Drive to Sunrise Blvd	4	5,121	20.08	C	6,649	42.12	**F**
	Sunrise Boulevard to Hazel Avenue	3	4,985	27.67	D	5,323	37.30	**F**
West-bound US 50	Hazel Avenue to Sunrise Boulevard	3	6,068	32.91	D	4,370	23.17	C
	Sunrise Blvd to Zinfandel Drive	4	7,502	33.31	D	4,762	19.30	C
	Zinfandel Drive to Mather Field Rd	5	7,548	21.96	C	5,765	14.85	B
	Mather Field Rd to Bradshaw Road	4	7,859	44.40	**F**	6,939	28.66	D
	Bradshaw Road to Watt Avenue	4	7,488	53.92	**F**	6,466	32.91	D
	Watt Avenue to Howe Avenue	5	7,376	53.44	**F**	6,234	28.04	**F**
	Howe Avenue to 65th Street	5	8,157	35.68	**F**	7,407	41.55	**F**
	65th Street to 59th Street	4	8,278	44.85	**F**	7,358	51.56	**F**
	59th Street to Stockton Boulevard	5	9,115	29.39	D	7,945	32.31	**F**
	Stockton Boulevard to SR 99 / SR 51	5	8,546	31.89	D	8,136	33.25	**F**

Density = passenger cars per hour per lane (pc/ph/pl). **Bold** values denote level of service "F" conditions.

Source: *DKS Associates, 2018.*

Table 2.4: Existing Peak Hour Freeway Ramp Junction/Weaving Level of Service						
Direc-tion	**Location**	**Junction Type**	**A.M. Peak Hour**		**P.M. Peak Hour**	
			Ramp Volume	**LOS**	**Ramp Volume**	**LOS**
East-bound US 50	Northbound 65th Street Slip Entrance	Weave	765	D	653	C
	Howe Avenue / Hornet Drive Exit		1,631		1,417	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	484	C	881	C
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	419	C	431	C
	Watt Avenue Exit	Two-Lane Diverge	1,317	B	1,634	B
	Watt Avenue Entrance	One-Lane Merge	2,134	**F**	1,724	D
	Bradshaw Road Exit	Two-Lane Diverge	1,520	B	1,228	B
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	220	C	422	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	971	C	918	C
	Mather Field Road Exit	Two-Lane Diverge	1,266	B	1,062	A
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	125	C	101	B
	Northbound Mather Field Road Slip Entrance	Weave	317	**F**	816	C
	Zinfandel Drive Exit		2,932		1,452	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	182	B	129	C
	Northbound Zinfandel Drive Slip Entrance	One-Lane Merge	348	B	540	C
	Sunrise Boulevard Exit	Major Diverge	1,773	C	1,959	D
	Sunrise Boulevard Entrance	One-Lane Merge	992	C	889	D
	Hazel Avenue Exit	Two-Lane Diverge	933	B	1,541	C
	Hazel Avenue Entrance	Weave	804	C	945	C
	Aerojet Road Exit		241		55	

Table 2.4: Existing Peak Hour Freeway Ramp Junction/Weaving Level of Service						
Direc-tion	**Location**	**Junction Type**	**A.M. Peak Hour**		**P.M. Peak Hour**	
			Ramp Volume	**LOS**	**Ramp Volume**	**LOS**
West-bound US 50	Hazel Avenue Exit	Two-Lane Diverge	631	A	869	A
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	160	B	600	B
	Southbound Hazel Avenue Slip Entrance	One-Lane Merge	1,550	B	800	B
	Sunrise Boulevard Exit	One-Lane Diverge	749	E	758	D
	Sunrise Blvd Entrance	Lane Addition	2,183	**F**	1,656	D
	Zinfandel Drive Exit	One-Lane Diverge	1,034	E	608	C
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	585	B	1,197	B
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	442	C	561	B
	Mather Field Road Exit	One-Lane Drop	1,093	C	556	A
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	515	B	861	B
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	387	B	380	B
	Bradshaw Road Exit	Two-Lane Diverge	1,236	B	1,327	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	914	D	910	C
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	338	D	590	C
	Watt Avenue Exit	Major Diverge	1,373	D	1,188	C
	Northbound Watt Avenue Entrance	One-Lane Merge	820	D	943	C
	Southbound Watt Avenue Slip Entrance	Lane Addition / Weave	1,232	C	1,317	D
	Howe Avenue Exit	Major Diverge / Weave	1,531	D	1,419	
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	654	D	602	C
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	574	C	574	C

Bold values denote level of service "F" conditions.

Source: *DKS Associates, 2018.*

Table 2.5: Existing Peak Hour Freeway Ramp Termini Queuing

Direction	US 50 Exit Ramp	Available Storage Length (feet / lane)			Maximum Queue Length (feet / lane)					
					Existing AM Peak Hour			Existing PM Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US-50	Howe Avenue	765	-	765	200	-	378	224	-	247
	Watt Avenue	1,500	-	1,500	179	-	201	254	-	181
	Bradshaw Road	1,250	-	1,250	198	-	509	164	-	414
	Mather Field Road	1,385	-	1,385	207	-	554	271	-	61
	Zinfandel Drive	1,025	1,025	1,025	218	810	746	430	361	131
	Sunrise Boulevard	1,695	-	1,695	283	-	184	360	-	76
	Hazel Avenue	1,310	-	1,310	317	-	76	808	-	29
Westbound US-50	Hazel Avenue	1,995		1,995	271		48	281	271	499
	Sunrise Boulevard	1,540	-	1,540	134	-	165	133	-	172
	Zinfandel Drive	1,065	-	1,065	390	-	68	132	-	199
	Mather Field Road	1,335	-	1,335	594	-	538	222	-	97
	Bradshaw Road	1,330	-	1,330	326	-	107	389	-	31
	Watt Avenue	1,480	-	1,480	147	-	448	94	-	425
	Howe Avenue	1,355	1,355	1,355	192	412	123	241	412	239

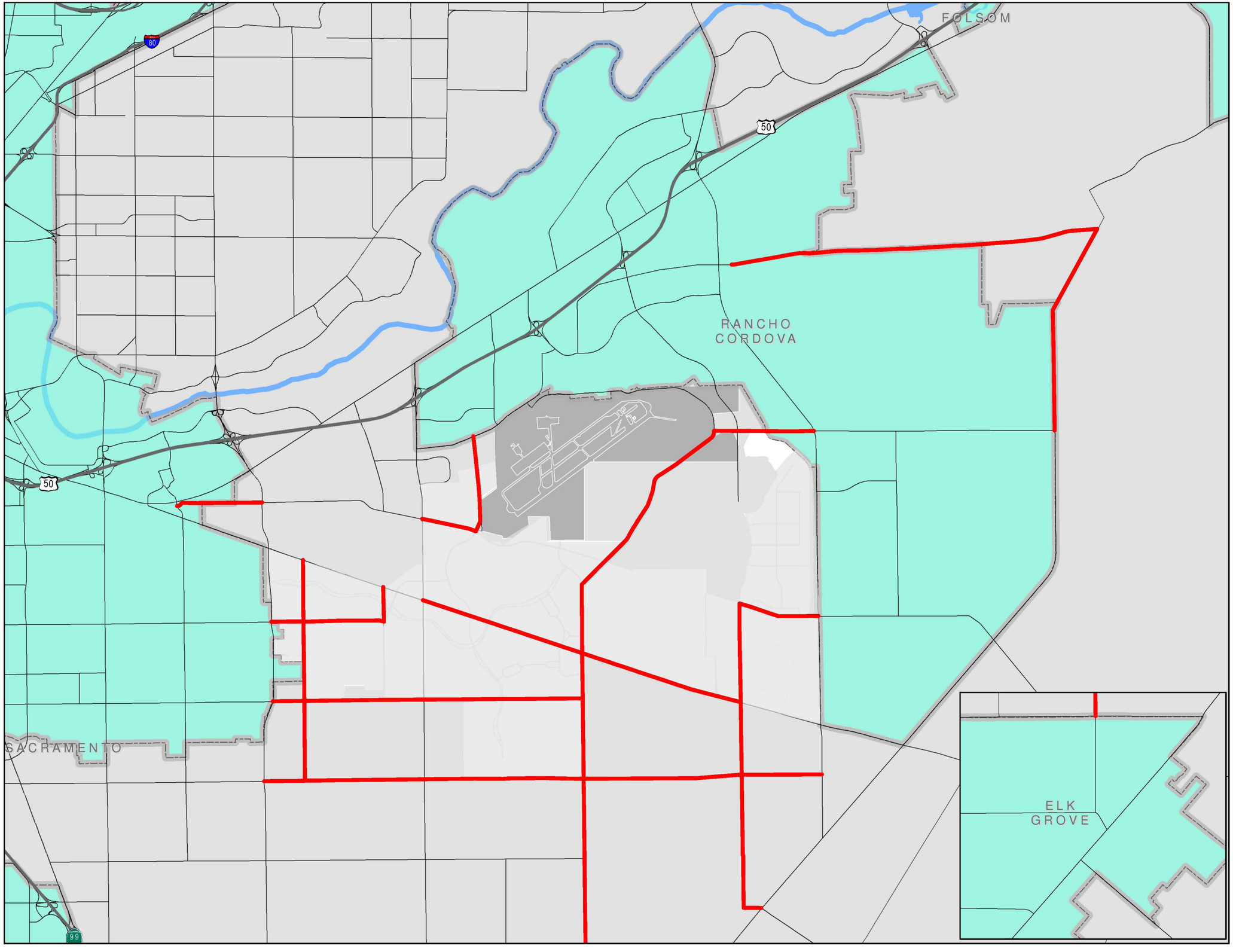
L = left turn movement, T = through movement, R = right turn movement

Source: *DKS Associates, 2018.*

2.6.4 Rural Roadway Functionality

Figure 2.5 shows rural roadway segments that currently do not meet the County standard of 12-foot vehicle lanes with 6-foot paved shoulders. Sacramento County is currently the only jurisdiction that has policies regarding the functionality of rural roadways, therefore the functionality of rural roadways in other jurisdictions was not considered in the traffic study. **Table 2.6** summarizes substandard County rural roadways in the study area.

FIGURE 2.5
EXISTING SUBSTANDARD ROADWAYS



Legend

- Substandard Roadways
- Cities
- Mather Airport

Table 2.6
Existing Substandard Roadway Segments

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	2	22	Yes	3,737
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722

Table 2.6
Existing Substandard Roadway Segments

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	2	22	Yes	4,616
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

3. EXISTING PLUS JACKSON TOWNSHIP PROJECT (ALTERNATIVE 2)

3.1 JACKSON TOWNSHIP PROJECT (ALTERNATIVE 2) DESCRIPTION

As illustrated previously in Figure 1.1, the Jackson Township project is located in unincorporated Sacramento County, generally east of the City of Sacramento and south of the City of Rancho Cordova and Mather Airport. It is bounded on the south by Jackson Road (SR 16) and on the west by Excelsior Road. The north boundary is near the future Kiefer Boulevard, while the east boundary is west of Eagles Nest Road.

3.1.1 Land Use

Table 3.1 summarizes the Jackson Township land use for Alternative 2. The SACSIM model (used to estimate travel demand by travel mode) requires estimates of the number and demographics of people who would live in each household as well as key social/economic characteristics of each household. SACOG helped estimate the required household demographics based on the number housing units by density category and detailed local Census data compiled by housing types.

SACSIM also requires employment by type for each parcel in the Jackson Township project. The applicant provided number of acres and square feet by non-residential category on each parcel. Employment estimates were then estimated using average square feet per employee and per student. The total employment in Jackson Township (Alt. 2) was estimated to be about 5,833.

The model also requires the estimated enrollment at each school within the Jackson Township project. The total enrollment for grades K-12 was estimated at about 6,000 students. Some of those students would come from housing units outside the Jackson Township project.

3.1.2 Transportation Network

3.1.2.1 Roadway Segments and Intersections

Figure 3.1 illustrates the Jackson Township project transportation network. The Jackson Township project would widen and / or complete many roadways that cross or border the site, and would include new roadways to serve the proposed land use. Sections 3.4.1 and 3.4.2 include information regarding the roadway segment and intersection improvements that are considered part of the Jackson Township project.

3.1.2.2 Pedestrian and Bicycle Facilities

Figure 3.2 illustrates the proposed bikeway plan of the Jackson Township project. The roadways within the Jackson Township project would meet County standards, which would provide sidewalks and on- street (Class II) bike lanes on all collector, arterial and thoroughfare roadways. The Jackson Township project also provides several off-street (Class I) multi-purpose trails.

Table 3.1: Land Use Summary for the Jackson Township Project (Alternative 2)						
		Residential			Non-Residential	
Land Use Category	Acres	Density Range	Ave Density	Dwelling Units	Floor Area Ratio	Estimated Square Feet
Low Density	382.6	1.0 – 10.9	6.0	2,295		
Medium Density	124.5	11.0 – 19.9	10.0	1,245		
High Density	82.0	20.0 – 30.0	25.0	2,050		
High Density Bonus Units				76		
General Commercial	59.7				0.25	650,100
Community Commercial	16.2				0.25	176,400
Mixed Use	19.7			100	0.50	429,000
Office	35.2				0.50	766,600
Park	79.1					
Open Space	330.3					
Elementary School	30.0					
High School/Middle School	70.0					
Other Public/Quasi-Public	2.5					
Primary Roadways	84.5					
Agriculture (Ag Res)	74.7			448		
Total	**1,391.0**			**6,214**		**2,022,100**
Source: *Project Applicant*						

FIGURE 3.1
EXISTING PLUS JACKSON TOWNSHIP (ALTERNATIVE 2) ROADWAY NETWORK

Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport

FIGURE 3.2
PROPOSED BIKEWAY MASTER PLAN
JACKSON TOWNSHIP
(ALTERNATIVE 2)

Legend

- Bicycle Paths (Class I)
- Bicycle Lanes (Class II)
- Cities
- Mather Airport

3.1.2.3 Transit System

Consistent with Sacramento County's General Plan policy LU-120, the Jackson Township project incorporates higher density land uses and mixed uses along transportation corridors to help support transit use. However, as described in Section 2.2, existing transit service is very limited near the Jackson Township project. The transit provider for the area, Sacramento Regional Transit (RT), has developed a long-range transit plan that anticipates three additional high frequency transit lines in the general area by the year 2035. However, even with this additional transit network, the Jackson Township project would likely not meet the County's General Plan policy.

To comply with the County's General Plan Policy LU-120, a separate planning effort involving staff from Sacramento County, RT, DKS, and the applicants of the FOUR PROJECTS was conducted to define an appropriate transit network and frequency that could serve the proposed development in the Jackson Corridor consistent with the intent of the County's policies.

An important consideration in the development of a transit network for the Jackson Corridor is that there are four major development projects proposed in the Jackson Corridor (FOUR PROJECTS) The transit planning effort needed to define standalone transit systems for each of the FOUR PROJECTS that would not only serve the transit needs of each of the FOUR PROJECTS independently, but would also serve as cohesive and complementary transit system units that could operate efficiently together should more than one of the FOUR PROJECTS be approved for development.

A series of transit networks and service frequencies were developed and tested using the SACSIM model with the objective of optimizing transit ridership and the number of boardings. Utilizing RT's performance criteria for evaluating the effectiveness of the various transit lines and service frequencies, an optimum transit network and frequency was developed for the Jackson Corridor.

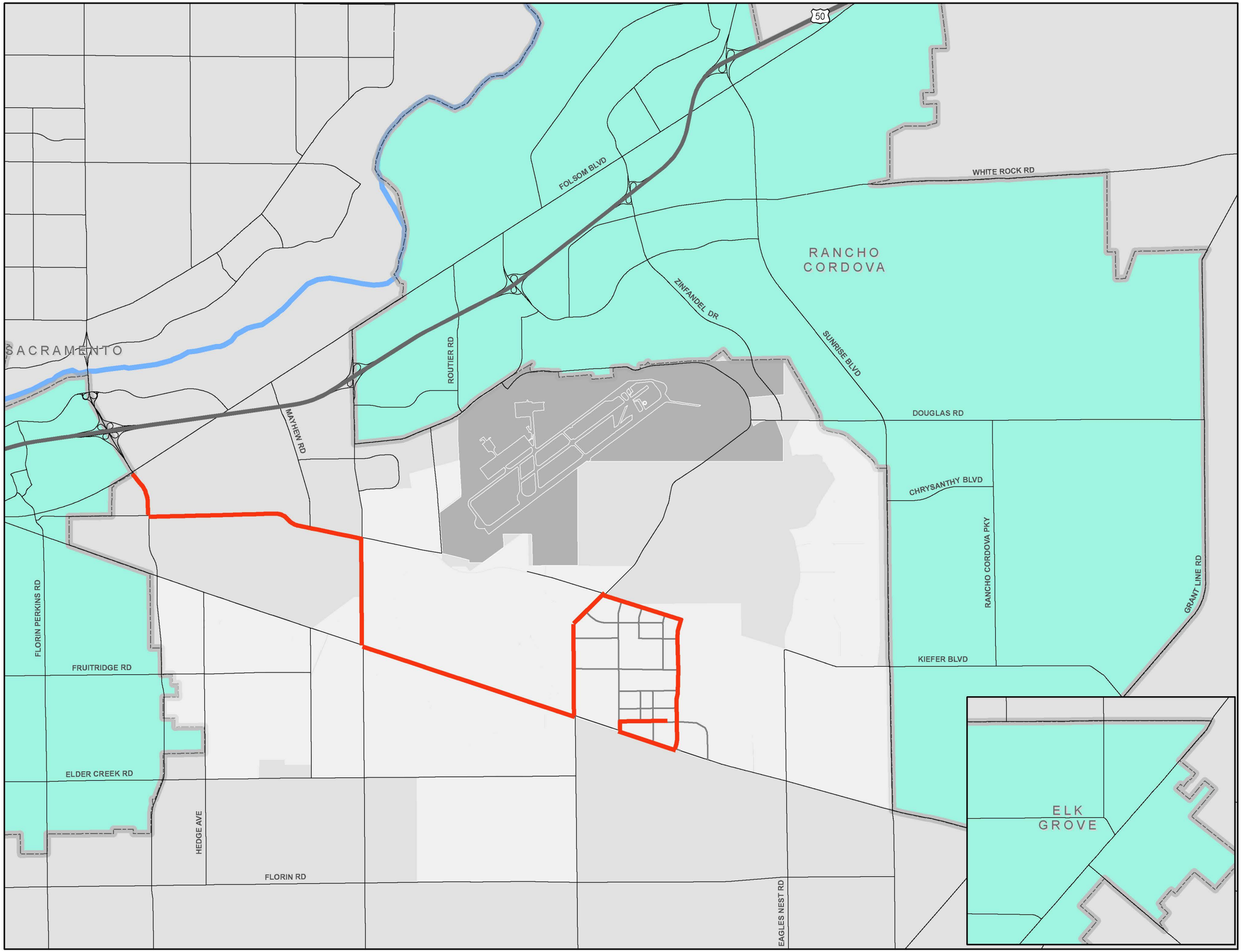
The planning effort resulted in four transit lines that would serve the FOUR PROJECTS in the Jackson Corridor at a frequency of 15 minutes during the peak commute hours (approximately 6-9 AM and 3-6 PM) and 30 minutes during off-peak service hours (approximately 9AM-3PM and 6PM-8PM) on weekdays. **Figure 3.3** illustrates the proposed transit system for the Jackson Township project, which represents a portion of the ultimate transit system that would serve the FOUR PROJECTS. The combined transit system for the FOUR PROJECTS is discussed and illustrated in Section 4.1.2.3.

The proposed transit system for the Jackson Township project has been assumed as an attribute of the Jackson Township project and has been included in the traffic modeling for this traffic analysis. The assumed transit routes and service frequency would be required at full development of the Jackson Township project. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the Jackson Township project, must be phased with development of the Jackson Township project.

FIGURE 3.3
PROJECT TRANSIT NETWORK
EXISTING PLUS JACKSON TOWNSHIP
(ALTERNATIVE 2)

Legend

- Kiefer Jackson Local Route
- Cities
- Mather Airport



3.2 TRIP GENERATION

The SACSIM model that has been utilized for the transportation forecasts in this analysis estimated trip generation of the Jackson Township project. **Table 3.2** summarizes the person trip generation. The Jackson Township project would generate over 15,000 daily work person trip ends, and over 112,000 daily person trip ends for all trip purposes.

Table 3.3 summarizes the estimated mode choice for the Existing plus Jackson Township project scenario. About 84.1 percent of all person trips are expected to be accommodated by automobile. Transit will serve about 1.1 percent of all trips, while walk and bike modes will accommodate about 14.8 percent of all trips. The mode choice assumes full implementation of the project's pedestrian and bicycle systems.

Table 3.4 summarizes the vehicular (auto) trip generation of the Jackson Township project. The Jackson Township project is estimated to generate about 71,000 daily vehicle trip ends. It should be noted that more than one person trip may be accommodated by a vehicle trip (e.g. carpooling). Over 20,000 of the daily vehicle trip ends will be associated with trips with both an origin and destination within the Jackson Township project, over 28 percent of the trip ends. The internal trip ends represent about 10,200 daily vehicle trips (one-half the number of internal trip ends). The Jackson Township project will generate over 50,000 external vehicle trips that have an origin or destination inside the Jackson Township project but the other end of the trip is outside the Jackson Township project. Table 3.4 also shows the vehicle trips generated during the a.m. and p.m. peak hours.

3.3 TRIP DISTRIBUTION

The distribution of trips associated with development on the Jackson Township project site was derived utilizing SACSIM, incorporating the proposed land use and access locations associated with the Jackson Township project site. Trip distribution varies by land use and time period. **Figure 3.4** illustrates the overall trip distribution of daily Jackson Township project trips with the Existing Plus Jackson Township project scenario. The highest percentages of Jackson Township project traffic are accommodated on Jackson Road and Excelsior Road.

3.4 OPERATIONS ANALYSIS AND IMPACTS

For purposes of this analysis, full development of the Jackson Township project is assumed to occur "instantaneously." In this manner, the traffic and impacts associated with the Jackson Township project can be directly compared to known and measured conditions. Existing scenario impacts are determined by comparing the traffic operating conditions associated with the Jackson Township project with the traffic operating conditions associated with the existing (without development) conditions, and comparing the change to the thresholds of significance. **Figure 3.5** illustrates the resultant traffic operating conditions.

Table 3.2: Estimated Daily Person Trip Generation (Existing Plus Project Scenario) Jackson Township (Alternative 2) Specific Plan

Trip Purpose	Daily Person Trip Ends
Work Trips	15,508
Non-Work Trips	99,693
All Trip Purposes	112,200

Source: *DKS Associates, 2018.*

Table 3.3: Mode Split (Existing Plus Project Scenario) Jackson Township (Alternative 2) Specific Plan

Mode	Percentage of Person Trips by Trip Purpose		
	Work Trips	Non-Work Trips	All Trip Purposes
Auto - SOV	84.7%	43.2%	48.9%
Auto - HOV	908%	39.3%	35.2%
Transit	2.2%	1.0%	1.1%
Walk	2.9%	15.7%	14.0%
Bike	0.3%	0.9%	0.8%

Source: *DKS Associates, 2018.*

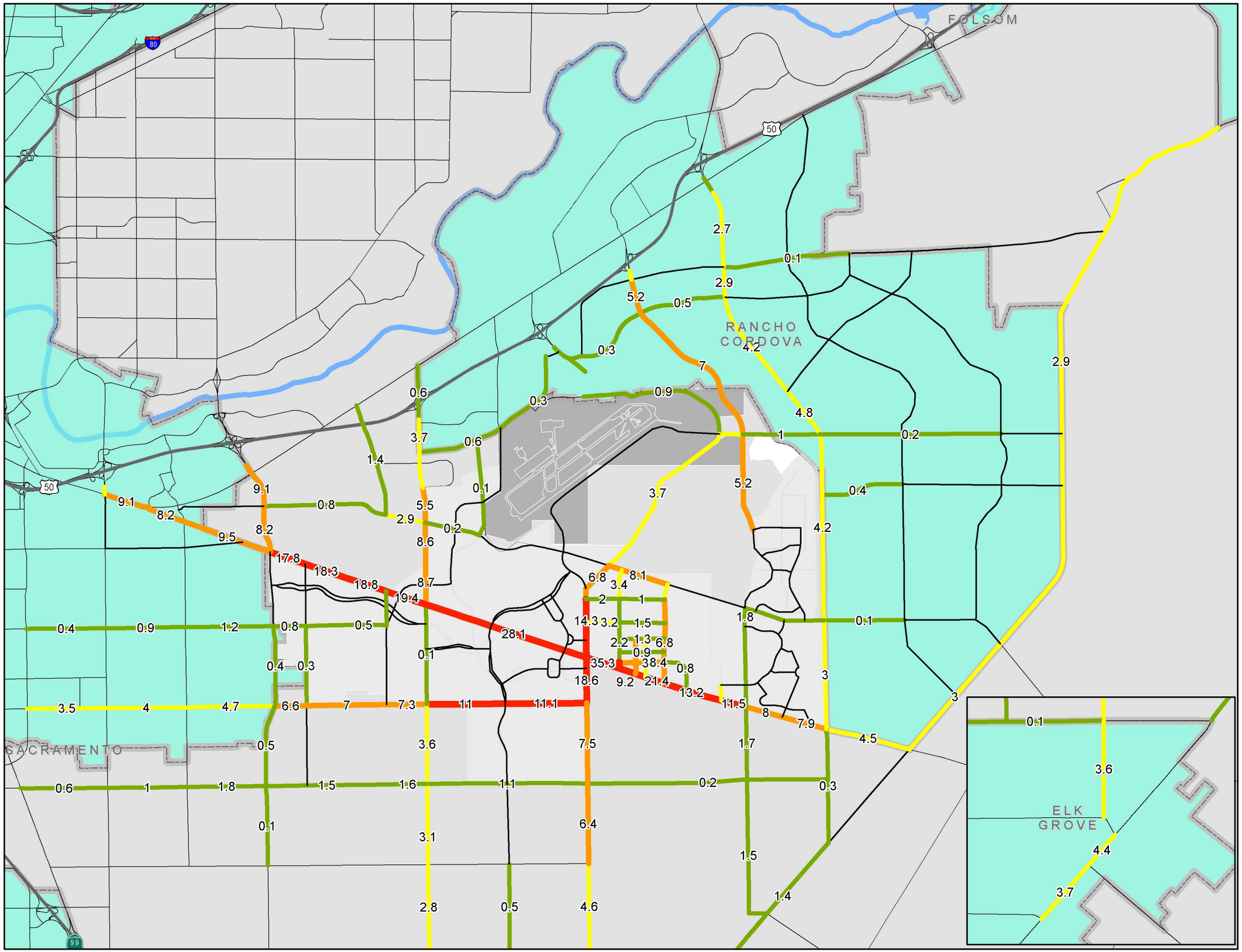
Table 3.4: Estimated Daily Vehicle Trip Generation (Existing Plus Project Scenario) Jackson Township (Alternative 2) Specific Plan

Trip Type		AM Peak Hour	PM Peak Hour	Daily
Total Vehicle Trip Ends		6,423	6,578	70,928
Percent Internal Trip Ends[1]		24.7%	30.1%	28.7%
Vehicle Trips	Internal to Project	793	989	10,170
	External to Project	4,838	4,600	50,585
	Total	5,630	5,589	60,755

[1.] Both trip ends within the project.

Source: *DKS Associates, 2018.*

FIGURE 3.4
EXISTING PLUS JACKSON TOWNSHIP
(ALTERNATIVE 2)
TRIP DISTRIBUTION



Legend

Jackson Township Distribution

Existing Conditions

- 0%
- 0.1% to 2.5%
- 2.6% to 5.0%
- 5.1% to 10.0%
- 10.0% and up
- Freeways
- Other Major Roadways
- Cities
- Mather Airport

DKS

FOLSOM

RANCHO CORDOVA

SACRAMENTO

ELK GROVE

80

50

99

FIGURE 3.5
EXISTING PLUS JACKSON TOWNSHIP (ALTERNATIVE 2) ROADWAY SEGMENT AND INTERSECTION LOS AND IMPACTS

Legend

Intersections (AM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Intersections (PM Peak Hour)
- LOS A-D
- LOS E
- LOS F
- Mitigable Intersection Impact
- Unavoidable Intersection Impact

Roadway Segments
- LOS A-D
- LOS E
- LOS F

Impacts
- Unavoidable Segment Impact
- Mitigable Segment Impact
- Cities
- Mather Airport

DKS

3.4.1 Existing Plus Jackson Township Project Roadway Segment Impacts

Table 3.5 summarizes the results of the operations analysis for the study area roadway segments. The table includes the number of lanes assumed with the implementation of the Jackson Township project, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate new roadways and widened roadways that are assumed part of the Jackson Township project. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact.

As stated above, the traffic analysis assumed that the Jackson Township project would construct a number of travel lanes on roadway segments that are internal to or on the boundary of the Jackson Township project, which would be greater than the number of lanes in the existing condition. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the Jackson Township project.

3.4.2 Existing Plus Jackson Township Project Intersection Impacts

Tables 3.6 and 3.7 summarize the results of the operations analysis for the study area intersections. The tables include the implementation of intersection changes associated with the Jackson Township project. Table 3.7 illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type were assumed to be implemented by the Jackson Township project. Shaded table cells in Table 3.6 illustrate those locations with an LOS impact. Detailed analysis information is included in the technical appendix.

As stated above, the traffic analysis assumed that the Jackson Township project would construct a number of changes to many of the intersections that are internal to or on the boundary of the Jackson Township project, which would be an improvement over the existing condition. The timing of implementation of such intersection improvements on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the Jackson Township project.

Signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. The project is considered to have a significant impact at an unsignalized location if both the impact criteria in Table 1.6 are met, and one or more of the signal warrants specified in the California Manual on Uniform Traffic Control Devices (CAMUTCD) are met. The following unsignalized intersections exhibit significant impacts and meet one or more traffic signal warrants:

- Happy Lane and Old Placerville Road
- Excelsior Road and Elder Creek Road
- Excelsior Road and Florin Road
- Mather Boulevard and Douglas Road

- Eagles Nest Road and Jackson Road
- Excelsior Road and Calvine Road

Table 3.5
Existing Plus Jackson Township Project (Alt. 2) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jackson Township Project (Alt. 2)				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
1	Bradshaw Rd	Folsom Blvd	US 50	6	Arterial M	20,592	0.38	A	6	Arterial M	20,810	0.39	A
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	52,590	0.97	**E**	6	Arterial M	53,830	1.00	**E**
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	42,787	0.79	C	6	Arterial M	44,350	0.82	D
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	38,984	0.72	C	6	Arterial M	40,570	0.75	C
5	Bradshaw Rd	Goethe Rd	Kiefer Blvd	4	Arterial M	28,651	0.80	C	4	Arterial M	30,440	0.85	D
6	Bradshaw Rd	Kiefer Blvd	Jackson Rd	4	Arterial M	30,726	0.85	D	4	Arterial M	35,460	0.99	E
7	Bradshaw Rd	Jackson Rd	Elder Creek Rd	4	Arterial M	22,871	0.64	B	4	Arterial M	21,770	0.60	B
8	Bradshaw Rd	Elder Creek Rd	Florin Rd	4	Arterial M	22,265	0.62	B	4	Arterial M	24,020	0.67	B
9	Bradshaw Rd	Florin Rd	Gerber Rd	4	Arterial M	22,883	0.64	B	4	Arterial M	24,270	0.67	B
10	Bradshaw Rd	Gerber Rd	Calvine Rd	4	Arterial M	16,984	0.47	A	4	Arterial M	18,690	0.52	A
11	Calvine Rd	Waterman Rd	Bradshaw Rd	4	Arterial M	16,015	0.44	A	4	Arterial M	16,510	0.46	A
12	Calvine Rd	Bradshaw Rd	Vineyard Rd	4	Arterial M	12,395	0.34	A	4	Arterial M	13,540	0.38	A
13	Calvine Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	6,036	0.34	A	2	Arterial M	7,210	0.40	A
14	Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	3,411	0.09	A	4	Arterial M	3,580	0.10	A
15	Douglas Rd	Mather Blvd	Zinfandel Dr	2	Arterial M	6,635	0.37	A	2	Arterial M	7,660	0.43	A
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	2	Arterial M	8,369	0.46	A	2	Arterial M	8,990	0.50	A
17	Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	5	Arterial M	3,674	0.10	A	5	Arterial M	4,290	0.12	A
18	Douglas Rd	Rancho Cordova Pkwy	Grant Line Rd	2	Arterial M	3,674	0.20	A	2	Arterial M	3,980	0.22	A
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	740	0.04	A	2	Arterial M	1,960	0.11	A
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Arterial M	517	0.03	A	2	Arterial M	1650	0.09	A
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	2	Arterial M	189	0.01	A	2	Arterial M	1230	0.07	A
22	Elder Creek Rd	65th St	Power Inn Rd	4	Arterial M	17,891	0.50	A	4	Arterial M	19,570	0.54	A
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	15,734	0.87	D	2	Arterial M	17,230	0.96	**E**
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	11,092	0.62	B	2	Arterial M	13,370	0.74	C
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Arterial M	5,576	0.31	A	2	Arterial M	8,730	0.49	A
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Arterial M	5,797	0.32	A	2	Arterial M	9,010	0.50	A
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	5,355	0.30	A	2	Arterial M	9,020	0.50	A
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	2,158	0.12	A	2	Arterial M	9,780	0.54	A
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd	2	Arterial M	22,960	1.28	**F**	2	Arterial M	23,220	1.29	**F**
30.1	Excelsior Rd	Kiefer Blvd	Douglas Rd	2	Arterial M	3,716	0.21	A	2	Arterial M	7,220	0.40	A
30.2	Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	2	Arterial M	3,716	0.21	A	3	Arterial M	7,310	0.41	A

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Table 3.5
Existing Plus Jackson Township Project (Alt. 2) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jackson Township Project (Alt. 2)				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
30.3	Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	2	Arterial M	3,716	0.21	A	3	Arterial M	12,320	0.68	B
30.4	Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	2	Arterial M	3,716	0.21	A	3	Arterial M	13,870	0.77	C
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	2	Arterial M	5,075	0.28	A	2	Arterial M	15,650	0.87	D
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Arterial M	4,203	0.23	A	2	Arterial M	6,850	0.38	A
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	5,423	0.30	A	2	Arterial M	7,580	0.42	A
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Arterial M	4,229	0.23	A	2	Arterial M	5,350	0.30	A
35	Excelsior Rd	Calvine Rd	Sheldon Rd	2	Arterial M	4,473	0.25	A	2	Arterial M	6,430	0.36	A
36	Florin Rd	Stockton Blvd	Power Inn Rd	4	Arterial M	27,495	0.76	C	4	Arterial M	28,440	0.79	C
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	21,595	0.60	A	4	Arterial M	23,230	0.65	B
38	Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	4	Arterial M	14,163	0.39	A	4	Arterial M	16,040	0.45	A
39	Florin Rd	South Watt Ave	Hedge Ave	2	Arterial M	7,718	0.43	A	2	Arterial M	9,520	0.53	A
40	Florin Rd	Hedge Ave	Mayhew Rd	2	Arterial M	6,312	0.35	A	2	Arterial M	8,640	0.48	A
41	Florin Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	6,317	0.35	A	2	Arterial M	8,680	0.48	A
42	Florin Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	3,478	0.19	A	2	Arterial M	5,340	0.30	A
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	3,835	0.21	A	2	Arterial M	4,390	0.24	A
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	37,516	1.04	**F**	4	Arterial M	40,230	1.12	**F**
45	Fruitridge Rd	65th St	Power Inn Rd	4	Arterial M	16,634	0.46	A	4	Arterial M	16,930	0.47	A
46	Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	4	Arterial M	15,214	0.42	A	4	Arterial M	16,220	0.45	A
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	10,280	0.57	A	2	Arterial M	10,750	0.60	A
48	Fruitridge Rd	South Watt Ave	Hedge Ave	2	Arterial M	2,890	0.16	A	2	Arterial M	2,560	0.14	A
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	2	Arterial M	1,790	0.10	A	2	Arterial M	1,190	0.07	A
50	Grant Line Rd	White Rock Rd	Douglas Rd	2	Rural NS	7,189	0.42	D	2	Rural NS	8,530	0.50	D
51	Grant Line Rd	Douglas Rd	Kiefer Blvd	2	Rural S	6,143	0.31	C	2	Rural S	7,740	0.39	D
52	Grant Line Rd	Kiefer Blvd	Jackson Rd	2	Rural S	5,758	0.29	C	2	Rural S	7,220	0.36	D
53	Grant Line Rd	Jackson Rd	Sunrise Blvd	2	Rural S	14,720	0.74	E	2	Rural S	14,260	0.71	E
54	Grant Line Rd	Sunrise Blvd	Calvine Rd	2	Rural S	14,812	0.74	E	2	Rural S	15,270	0.76	E
55	Grant Line Rd	Calvine Rd	Sheldon Rd	2	Rural S	13,140	0.66	**E**	2	Rural S	13,410	0.67	**E**
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	17,459	0.87	**E**	2	Rural S	19,430	0.97	**E**
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	16,064	0.80	**E**	2	Rural S	18,030	0.90	**E**

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Table 3.5
Existing Plus Jackson Township Project (Alt. 2) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jackson Township Project (Alt. 2)				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	2	Rural S	4,635	0.23	C	2	Rural S	6,610	0.33	C
59	Hedge Ave	Jackson Rd	Fruitridge Rd	2	Arterial M	3,061	0.17	A	2	Arterial M	2,570	0.14	A
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	3,737	0.21	A	2	Arterial M	3,880	0.22	A
61	Hedge Ave	Elder Creek Rd	Florin Rd	2	Arterial M	2,722	0.15	A	2	Arterial M	2,990	0.17	A
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	53,849	1.00	E	6	Arterial M	55,140	1.02	**F**
63	International Dr	Mather Field Rd	Zinfandel Dr	6	Arterial M	17,500	0.32	A	6	Arterial M	18,140	0.34	A
64	International Dr	Zinfandel Dr	Sunrise Blvd	6	Arterial M	8,802	0.16	A	6	Arterial M	10,010	0.19	A
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd	2	Arterial M	12,358	0.69	B	2	Arterial M	13,700	0.76	C
66	Jackson Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	10,414	0.58	A	2	Arterial M	13,770	0.77	C
67	Jackson Rd	South Watt Ave	Hedge Ave	2	Arterial M	17,060	0.95	E	2	Arterial M	23,820	1.32	**F**
68	Jackson Rd	Hedge Ave	Mayhew Rd	2	Arterial M	12,616	0.70	C	2	Arterial M	20,130	1.12	**F**
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	14,996	0.83	D	2	Arterial M	21,940	1.22	**F**
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	13,030	0.72	C	2	Arterial M	26,390	1.47	**F**
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	10,478	0.46	D	4	Arterial M	32,560	0.90	E
71.2	Jackson Rd	Collector JT-3	Tree View Ln	2	Rural Hwy	10,478	0.46	D	4	Arterial M	20,280	0.56	A
71.3	Jackson Rd	Tree View Ln	Collector JT-4	2	Rural Hwy	10,478	0.46	D	4	Arterial M	16,520	0.46	A
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	2	Rural Hwy	10,478	0.46	D	2	Rural Hwy	15,600	0.68	E
72	Jackson Rd	Eagles Nest Rd	Sunrise Blvd	2	Rural Hwy	9,976	0.44	D	2	Rural Hwy	12,770	0.56	D
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	13,306	0.58	D	2	Rural Hwy	15,070	0.66	**E**
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	2	Arterial M	4,616	0.26	A	2	Arterial M	4,770	0.27	A
75	Kiefer Blvd	South Watt Ave	Mayhew Rd	4	Arterial M	18,668	0.52	A	4	Arterial M	19,560	0.54	A
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	9,274	0.26	A	4	Arterial M	12,090	0.34	A
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	2	Arterial M	4,618	0.26	A	2	Arterial M	5,580	0.31	A
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	2	Arterial M	656	0.04	A	2	Arterial M	1940	0.11	A
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	2	Arterial M	2,786	0.15	A	2	Arterial M	2,820	0.16	A
80	Mather Blvd / Norden Ave	Von Karman St	Bleckely St	4	Arterial M	4,373	0.12	A	4	Arterial M	5,450	0.15	A
81	Mather Blvd	Bleckely St	Femoyer St	4	Arterial M	4,373	0.12	A	4	Arterial M	5,450	0.15	A
82	Mather Blvd	Femoyer St	Douglas Rd	2	Arterial M	4,373	0.24	A	2	Arterial M	5,450	0.30	A
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	6,751	0.84	E	2	Res Collector F	8,680	1.09	**F**

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Table 3.5
Existing Plus Jackson Township Project (Alt. 2) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jackson Township Project (Alt. 2)				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
84	Mather Field Rd	US 50	Rockingham Dr	6	Arterial M	37,755	0.70	B	6	Arterial M	38,870	0.72	C
85	Mather Field Rd	Rockingham Dr	International Dr	6	Arterial M	37,520	0.69	B	6	Arterial M	38,170	0.71	C
86	Mather Field Rd	International Dr	Peter A McCuen Blvd	4	Arterial M	14,857	0.41	A	4	Arterial M	15,160	0.42	A
87	Mayhew Rd	Folsom Blvd	Goethe Rd	2	Arterial M	6,977	0.39	A	2	Arterial M	8,140	0.45	A
88	Mayhew Rd	Goethe Rd	Kiefer Blvd	2	Arterial L	6,593	0.44	A	2	Arterial L	8,150	0.54	A
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	2	Arterial L	1,616	0.11	A	2	Arterial L	990	0.07	A
90	Old Placerville Rd	Bradshaw Rd	Granby Dr	4	Arterial M	15,800	0.44	A	4	Arterial M	16,930	0.47	A
91	Old Placerville Rd	Granby Dr	Happy Ln	2	Arterial M	13,573	0.75	C	2	Arterial M	14,410	0.80	D
92	Old Placerville Rd	Happy Ln	Routier Rd	2	Arterial M	10,710	0.60	A	2	Arterial M	12,140	0.67	B
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	10,710	0.30	A	4	Arterial M	11,500	0.32	A
94	Power Inn Rd	Folsom Blvd	14th Ave	6	Arterial M	36,175	0.67	B	6	Arterial M	36,320	0.67	B
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	19,881	0.55	A	4	Arterial M	20,650	0.57	A
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	40,920	0.76	C	6	Arterial M	44,120	0.82	D
97	South Watt Ave	Kiefer Blvd	Jackson Rd	5	Arterial M	32,415	0.90	E	5	Arterial M	35,600	0.99	E
98	South Watt Ave	Jackson Rd	Fruitridge Rd	2	Arterial M	25,832	1.44	**F**	2	Arterial M	25,890	1.44	**F**
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	21,567	1.20	**F**	2	Arterial M	21,690	1.21	**F**
100	South Watt Ave	Elder Creek Rd	Florin Rd	2	Arterial M	19,069	1.06	**F**	2	Arterial M	19,290	1.07	**F**
101	Sunrise Blvd	US 50	Folsom Blvd	7	Arterial M	54,500	1.01	**F**	7	Arterial M	55,750	1.03	**F**
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr	6	Arterial M	49,500	0.92	**E**	6	Arterial M	50,930	0.94	**E**
103	Sunrise Blvd	Trade Center Dr	White Rock Rd	6	Arterial M	34,571	0.64	B	6	Arterial M	36,150	0.67	B
104.1	Sunrise Blvd	White Rock Rd	International Dr	6	Arterial M	25,811	0.48	A	6	Arterial M	27,240	0.50	A
104.2	Sunrise Blvd	International Dr	Rio Del Oro Pkwy	6	Arterial M	28,400	0.53	A	6	Arterial M	31,420	0.58	A
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	25,811	0.48	A	6	Arterial M	29,270	0.54	A
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	21,878	0.61	B	5	Arterial M	24,620	0.68	B
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	16,894	0.94	**E**	2	Arterial M	19,040	1.06	**F**
107	Sunrise Blvd	Jackson Rd	Florin Rd	2	Rural S	11,181	0.56	D	2	Rural S	11,210	0.56	D
108	Sunrise Blvd	Florin Rd	Grant Line Rd	2	Rural S	7,752	0.39	D	2	Rural S	7,640	0.38	D
109	Vineyard Rd	Gerber Rd	Calvine Rd	2	Arterial M	5,515	0.31	A	2	Arterial M	5,830	0.32	A
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	65,242	1.09	**F**	6	Arterial H	67,620	1.13	**F**
111	White Rock Rd	International Rd	Quality Dr	2	Arterial M	3,962	0.22	A	2	Arterial M	4,070	0.23	A
112	White Rock Rd	Quality Dr	Zinfandel Dr	4	Arterial M	11,200	0.31	A	4	Arterial M	10,980	0.31	A
113	White Rock Rd	Zinfandel Dr	Kilgore Rd	6	Arterial M	14,756	0.27	A	6	Arterial M	14,850	0.28	A
114	White Rock Rd	Kilgore Rd	Sunrise Blvd	5	Arterial M	14,756	0.41	A	5	Arterial M	15,200	0.42	A

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Table 3.5
Existing Plus Jackson Township Project (Alt. 2) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jackson Township Project (Alt. 2)				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
115	White Rock Rd	Sunrise Blvd	Fitzgerald Rd	4	Arterial M	15,433	0.43	A	4	Arterial M	15,690	0.44	A
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	2	Rural NS	2,490	0.15	B	2	Rural NS	2,410	0.14	B
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial M	9,400	0.26	A	4	Arterial M	10,600	0.29	A
118	Zinfandel Dr	US 50	White Rock Rd	7	Arterial M	45,228	0.84	D	7	Arterial M	48,140	0.89	D
119	Zinfandel Dr	White Rock Rd	International Rd	6	Arterial M	17,923	0.33	A	6	Arterial M	21,240	0.39	A
120	Zinfandel Dr	International Rd	Baroque Dr	6	Arterial M	7,595	0.14	A	6	Arterial M	12,190	0.23	A
121	Zinfandel Dr	Baroque Dr	City Limit	4	Arterial M	7,595	0.21	A	4	Arterial M	12,190	0.34	A
122	Zinfandel Dr	City Limit	Douglas Rd	2	Arterial M	7,595	0.42	A	2	Arterial M	12,190	0.68	B
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	2	Arterial M	2,848	0.16	A	2	Arterial M	6,860	0.38	A
400	Collector JT-1	Excelsior Rd	Collector JT-3						2	Res Collector F	2,180	0.27	B
401	Collector JT-1	Collector JT-3	Tree View Ln						2	Res Collector F	830	0.10	A
402	Collector JT-3	Kiefer Blvd	Collector JT-1						2	Res Collector F	1,330	0.17	A
403	Collector JT-3	Collector JT-1	Collector JT-6						2	Res Collector F	1,560	0.20	A
404	Collector JT-3	Collector JT-6	Collector JT-5						2	Res Collector F	1,590	0.20	A
405	Collector JT-3	Collector JT-5	Jackson Rd						2	Arterial M	16,140	0.90	D
406	Collector JT-4	Jackson Rd	Bridgewater Dr						2	Arterial M	2,340	0.13	A
407	Collector JT-5	Collector JT-3	Tree View Ln						2	Arterial M	8,420	0.47	A
408	Collector JT-6	Excelsior Rd	Collector JT-3						2	Res Collector F	2,860	0.36	B
409	Collector JT-6	Collector JT-3	Tree View Ln						2	Res Collector F	1,060	0.13	A
410	Kiefer Blvd	Excelsior Rd	Tree View Ln						3	Arterial M	5,020	0.28	A
411	Tree View Ln	Kiefer Blvd	Collector JT-1						4	Arterial M	2,510	0.07	A
412	Tree View Ln	Collector JT-1	Collector JT-6						4	Arterial M	4,970	0.14	A
413	Tree View Ln	Collector JT-6	Collector JT-5						4	Arterial M	5,080	0.14	A
414	Tree View Ln	Collector JT-5	Jackson Rd						4	Arterial M	6,500	0.18	A
415	Collector JT-7	Collector JT-3	Tree View Ln						2	Arterial M	800	0.04	A
416	Collector JT-8	Collector JT-3	Tree View Ln						2	Arterial M	990	0.06	A
417	Collector JT-9	Jackson Rd	Collector JT-8						2	Arterial M	3,260	0.18	A

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Table 3.5
Existing Plus Jackson Township Project (Alt. 2) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jackson Township Project (Alt. 2)				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
418	Collector JT-10	Jackson Rd	Collector JT-8						2	Arterial M	1,600	0.09	A
419	Collector JT-6	Tree View Ln	Jackson Rd						2	Res Collector F	1,630	0.20	B

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

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Table 3.6

Existing Plus Jackson Township Project (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
1	Howe Avenue & College Town Drive/US 50 WB Ramps	Signal	D	36.6	Signal	B	19.3	No	Signal	D	44.4	Signal	C	28.1	No
2	Howe Avenue & US 50 EB Ramps	Signal	B	16.9	Signal	B	11.0	No	Signal	C	20.5	Signal	A	9.0	No
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	D	39.1	Signal	C	34.1	No	Signal	D	55.0	Signal	D	41.7	No
4	Power Inn Road & 14th Avenue	Signal	C	31.5	Signal	B	16.1	No	Signal	D	39.6	Signal	C	21.5	No
5	Power Inn Road & Fruitridge Road	Signal	D	43.4	Signal	D	41.2	No	Signal	C	33.5	Signal	C	26.8	No
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	D	36.8	Signal	C	22.7	No	Signal	C	32.1	Signal	B	16.1	No
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	D	39.0	Signal	C	26.3	No	Signal	E	55.6	Signal	C	24.3	No
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop	A	2.8	Two-way stop	A	2.5	No	Two-way stop	A	3.2	Two-way stop	A	3.4	No
	Westbound Left Turn		*C*	*20.1*		*C*	*24.5*			*C*	*23.3*		*D*	*28.6*	
	Westbound Right Turn		*B*	*13.3*		*B*	*13.9*			*B*	*12.6*		*B*	*13.3*	
	Southbound Left Turn		*A*	*10.0*		*B*	*10.7*			*B*	*10.9*		*B*	*12.0*	
9	Florin Perkins Road & Jackson Road	Signal	D	51.5	Signal	B	18.5	No	Signal	D	54.1	Signal	C	26.5	No
10	Florin Perkins Road & Fruitridge Road	Signal	C	25.1	Signal	C	20.3	No	Signal	C	25.4	Signal	B	19.3	No
11	Florin Perkins Road & Elder Creek Road	Signal	C	25.7	Signal	B	18.9	No	Signal	C	26.2	Signal	B	19.9	No
12	Watt Avenue & Folsom Blvd.	Signal	E	66.2	Signal	E	78.5	No	Signal	E	71.9	Signal	E	65.2	No
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	B	19.6	Signal	B	12.8	No	Signal	D	54.1	Signal	B	11.0	No
14	S. Watt Avenue & Kiefer Blvd.	Signal	E	56.0	Signal	E	63.2	No	Signal	E	75.9	Signal	D	39.7	No

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Table 3.6

Existing Plus Jackson Township Project (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
15	S. Watt Avenue & Canberra Dr.	Signal	B	11.5	Signal	A	7.3	No	Signal	A	9.7	Signal	A	6.1	No
16	S. Watt Avenue & Jackson Road	Signal	E	62.5	Signal	E	64.5	No	Signal	E	66.4	Signal	E	64.2	No
17	S. Watt Avenue & Fruitridge Road	Signal	D	38.1	Signal	C	20.0	No	Signal	D	41.7	Signal	C	21.5	No
18	S. Watt Avenue & Elder Creek Road	Signal	E	62.7	Signal	E	71.3	Yes	Signal	E	68.8	Signal	E	75.9	Yes
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	D	54.7	Signal	C	27.7	No	Signal	D	51.8	Signal	C	34.2	No
21	Elk Grove Florin Road & Gerber Road	Signal	D	49.1	Signal	D	37.3	No	Signal	E	64.6	Signal	E	67.3	No
23	Hedge Avenue & Jackson Road	Signal	D	35.1	Signal	C	22.6	No	Signal	D	37.3	Signal	B	13.7	No
24	Hedge Avenue & Fruitridge Road	All-way stop	B	13.6	All-way stop	C	16.3	No	All-way stop	A	9.4	All-way stop	A	9.0	No
25	Hedge Avenue & Elder Creek Road	All-way stop	C	15.9	All-way stop	E	42.9	No	All-way stop	B	11.6	All-way stop	C	20.0	No
26	Hedge Avenue & Tokay Lane	Two-way stop	A	0.4	Two-way stop	A	0.3	No	Two-way stop	A	0.2	Two-way stop	A	0.2	No
	Northbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*0.0*		*A*	*0.0*	
	Southbound Left Turn		*A*	*8.0*		*A*	*8.3*			*A*	*7.3*		*A*	*7.3*	
	Eastbound		*B*	*12.2*		*B*	*13.3*			*B*	*10.2*		*B*	*10.9*	
	Westbound		*B*	*11.1*		*B*	*12.0*			*A*	*9.6*		*A*	*9.9*	
27	Hedge Avenue & Florin Road	All-way stop	B	12.9	All-way stop	C	16.1	No	All-way stop	B	11.1	All-way stop	C	15.9	No
28	Mayhew Road & Kiefer Boulevard	Signal	D	48.6	Signal	C	21.3	No	Signal	D	51.1	Signal	B	18.7	No

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Table 3.6

Existing Plus Jackson Township Project (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
29	Mayhew Road & Jackson Road	Two-way stop	A	1.8	Two-way stop	A	1.7	No	Two-way stop	A	1.9	Two-way stop	A	0.8	No
	Northbound Through - Left Turn		*D*	*27.6*		*E*	*45.0*			*D*	*34.0*		*E*	*45.9*	
	Northbound Right Turn		*B*	*11.8*		*C*	*17.2*			*C*	*15.0*		*B*	*14.7*	
	Southbound		*C*	*18.3*		*D*	*27.6*			*C*	*24.9*		*D*	*30.7*	
	Eastbound Left Turn		*A*	*8.9*		*A*	*9.1*			*A*	*8.4*		*A*	*9.2*	
	Westbound Left Turn		*A*	*8.3*		*A*	*9.3*			*A*	*9.3*		*A*	*9.2*	
30	Mayhew Road & Fruitridge Road	Two-way stop	A	6.2	Two-way stop	A	7.0	No	Two-way stop	A	5.1	Two-way stop	A	6.4	No
	Northbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*7.4*		*A*	*7.3*	
	Eastbound		*A*	*9.2*		*A*	*9.1*			*A*	*9.2*		*A*	*8.8*	
31	Mayhew Road & Elder Creek Road	Two-way stop	A	0.2	Two-way stop	A	0.2	No	Two-way stop	A	0.3	Two-way stop	A	0.2	No
	Northbound		*B*	*11.9*		*B*	*13.5*			*B*	*10.9*		*B*	*12.7*	
	Southbound		*B*	*11.1*		*B*	*12.2*			*A*	*9.8*		*B*	*11.2*	
	Eastbound Left Turn		*A*	*8.3*		*A*	*8.7*			*A*	*7.6*		*A*	*8.0*	
	Westbound Left Turn		*A*	*7.5*		*A*	*7.8*			*A*	*0.0*		*A*	*0.0*	
32	Woodring Drive & Zinfandel Drive	Two-way stop	A	5.9	Two-way stop	A	9.1	No	Two-way stop	A	3.0	Two-way stop	A	4.2	No
	Eastbound		*A*	*9.3*		*B*	*13.3*			*A*	*9.3*		*B*	*11.9*	
	Northbound Left Turn		*A*	*0.0*		*A*	*7.7*			*A*	*0.0*		*A*	*0.0*	
33	Bradshaw Road & Folsom Blvd.	Signal	E	56.7	Signal	C	22.1	No	Signal	D	49.9	Signal	B	19.9	No
34	Bradshaw Road & US 50 WB Ramps	Signal	B	15.9	Signal	A	5.5	No	Signal	B	15.2	Signal	A	6.0	No
35	Bradshaw Road & US 50 EB Ramps	Signal	C	24.4	Signal	B	13.0	No	Signal	B	16.0	Signal	A	9.7	No
36	Bradshaw Road & Old Placerville Road	Signal	D	45.9	Signal	C	31.9	No	Signal	D	52.0	Signal	C	34.3	No
37	Bradshaw Road & Kiefer Boulevard	Signal	D	45.7	Signal	B	19.3	No	Signal	E	66.2	Signal	E	59.6	No

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Table 3.6

Existing Plus Jackson Township Project (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
38	Bradshaw Road & Jackson Road	Signal	E	73.1	Signal	F	130.6	Yes	Signal	E	59.4	Signal	E	70.7	No
39	Bradshaw Road & Elder Creek Road	Signal	D	36.8	Signal	D	40.0	No	Signal	D	36.1	Signal	C	32.7	No
40	Bradshaw Road & Florin Road	Signal	D	38.1	Signal	C	31.4	No	Signal	D	53.6	Signal	D	36.4	No
41	Bradshaw Road & Gerber Road	Signal	E	72.2	Signal	E	67.4	No	Signal	D	49.9	Signal	C	30.8	No
42	Happy Lane & Old Placerville Road	Two-way stop	A	7.3	Two-way stop	B	11.5	Yes	Two-way stop	A	4.7	Two-way stop	B	14.9	Yes
	Northbound Left Turn		*F*	*64.8*		*F*	*199.7*			*F*	*95.9*		*F*	*>300*	
	Northbound Right Turn		*D*	*30.6*		*E*	*35.5*			*C*	*15.4*		*C*	*19.7*	
	Westbound Left Turn		*B*	*10.2*		*B*	*10.9*			*B*	*10.1*		*B*	*10.5*	
43	Happy Lane & Kiefer Boulevard	Free Turn			Free Turn			No	Free Turn			Free Turn			No
44	Excelsior Road & Kiefer Boulevard	West Jackson/Jackson Township Project Int.			Signal	B	18.4	No	West Jackson/Jackson Township Project Int.			Signal	A	9.6	No
45	Excelsior Road & Jackson Road	Signal	D	36.7	Signal	F	167.1	Yes	Signal	D	40.3	Signal	F	108.0	Yes
46	Excelsior Road & Elder Creek Road	Two-way stop	A	3.5	Two-way stop	F	56.2	Yes	Two-way stop	A	2.7	Two-way stop	E	44.8	Yes
	Northbound Left Turn		*A*	*7.5*		*A*	*7.8*			*A*	*8.0*		*A*	*8.9*	
	Eastbound		*C*	*18.6*		*F*	*251.5*			*B*	*12.3*		*F*	*148.1*	
47	Excelsior Road & Florin Road	All-way stop	C	24.9	All-way stop	F	173.7	No	All-way stop	B	12.5	All-way stop	F	67.7	Yes
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	B	14.0	All-way stop	E	45.2	No	All-way stop	B	10.6	All-way stop	C	20.8	No
49	Mather Field Road & US 50 WB Ramps	Signal	C	24.7	Signal	A	8.7	No	Signal	A	9.4	Signal	A	5.3	No
50	Mather Field Road & US 50 EB Ramps	Signal	C	27.7	Signal	B	16.9	No	Signal	B	13.4	Signal	A	7.1	No

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Table 3.6

Existing Plus Jackson Township Project (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
51	Mather Field Road & Rockingham Drive	Signal	E	56.4	Signal	D	42.4	No	Signal	D	54.7	Signal	D	39.5	No
52	Mather Boulevard & Douglas Road	All-way stop	E	39.3	All-way stop	F	84.8	Yes	All-way stop	C	15.5	All-way stop	C	18.7	No
53	Zinfandel Drive & US 50 WB Ramps	Signal	B	16.4	Signal	A	8.7	No	Signal	D	51.7	Signal	D	40.7	No
54	Zinfandel Drive & US 50 EB Ramps/Gold Center Drive	Signal	D	40.0	Signal	D	46.0	No	Signal	E	60.1	Signal	E	64.5	No
55	Zinfandel Drive & White Rock Road	Signal	D	47.7	Signal	C	25.4	No	Signal	D	54.7	Signal	D	39.1	No
56	Zinfandel Drive & Data Drive	Signal	D	49.3	Signal	B	15.7	No	Signal	D	52.9	Signal	C	20.1	No
57	Zinfandel Drive & International Dr	Signal	C	34.0	Signal	B	19.4	No	Signal	D	48.5	Signal	C	21.1	No
58	Zinfandel Drive & Douglas Road	Signal	E	55.5	Signal	E	62.6	No	Signal	D	54.2	Signal	B	17.6	No
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard	Free Turn			Free Turn			No	Free Turn			Free Turn			No
60	Eagles Nest Road & Jackson Road	Two-way stop	A	2.3	Two-way stop	F	96.3	Yes	Two-way stop	A	3.6	Two-way stop	C	20.0	Yes
	Northbound		*C*	*22.0*		*F*	*>300*			*C*	*23.8*		*F*	*216.4*	
	Southbound		*B*	*13.9*		*C*	*15.6*			*C*	*22.0*		*E*	*47.7*	
	Eastbound Left Turn		*A*	*8.8*		*B*	*10.3*			*A*	*7.9*		*A*	*8.1*	
	Westbound Left Turn		*A*	*7.9*		*A*	*8.3*			*A*	*8.7*		*A*	*8.9*	
61	Eagles Nest Road & Florin Road	Two-way stop	A	2.3	Two-way stop	A	5.0	No	Two-way stop	A	2.6	Two-way stop	A	4.8	No
	Northbound		*B*	*12.7*		*B*	*14.9*			*B*	*12.1*		*B*	*13.5*	
	Southbound		*B*	*10.0*		*B*	*12.0*			*B*	*10.5*		*B*	*13.2*	
	Eastbound Left Turn		*A*	*7.7*		*A*	*7.8*			*A*	*7.7*		*A*	*7.8*	
	Westbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*7.6*		*A*	*0.0*	

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Existing Plus Jackson Township Project (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
62	Sunrise Boulevard & US 50 WB Ramps	Signal	D	44.7	Signal	C	30.9	No	Signal	B	19.7	Signal	A	9.3	No
63	Sunrise Boulevard & US 50 EB Ramps	Signal	B	16.9	Signal	A	9.7	No	Signal	B	17.6	Signal	A	9.7	No
64	Sunrise Boulevard & Folsom Boulevard	Signal	D	54.4	Signal	C	28.3	No	Signal	D	48.6	Signal	C	34.7	No
65	Sunrise Boulevard & White Rock Road	Signal	D	47.8	Signal	C	31.9	No	Signal	D	51.6	Signal	D	36.2	No
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	D	47.8	Signal	B	17.0	No	Signal	D	45.8	Signal	C	21.6	No
67	Sunrise Boulevard & Douglas Road	Signal	D	51.7	Signal	C	24.8	No	Signal	D	46.5	Signal	C	22.5	No
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	C	27.0	Signal	C	29.2	No	Signal	C	21.0	Signal	A	8.0	No
69	Sunrise Boulevard & Kiefer Boulevard	Signal	D	53.6	Signal	C	30.4	No	Signal	C	27.0	Signal	B	12.9	No
70	Sunrise Boulevard & Jackson Road	Signal	E	57.0	Signal	D	45.8	No	Signal	D	47.2	Signal	D	35.8	No
71	Sunrise Boulevard & Florin Road	Signal	B	11.3	Signal	A	8.6	No	Signal	D	48.3	Signal	B	19.9	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	D	43.2	Signal	C	22.7	No	Signal	D	40.7	Signal	E	57.4	No
73	Hazel Avenue & Tributary Point Drive/US 50 WB Off-ramp	Signal	C	31.2	Signal	C	27.1	No	Signal	D	41.4	Signal	B	17.3	No
74	Hazel Avenue & US 50 EB Ramps	Signal	C	20.6	Signal	A	8.6	No	Signal	C	29.9	Signal	A	6.0	No
75	Hazel Avenue & Folsom Boulevard	Signal	D	51.7	Signal	C	24.4	No	Signal	D	46.7	Signal	D	36.6	No
76	Prairie City Road & White Rock Road	Signal	B	19.2	Signal	B	12.3	No	Signal	B	15.0	Signal	B	10.1	No

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Table 3.6

Existing Plus Jackson Township Project (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
77	Grant Line Road & White Rock Road	Signal	B	10.9	Signal	A	8.2	No	Signal	B	11.2	Signal	A	7.7	No
78	Grant Line Road & Douglas Road	All-way stop	C	15.2	Signal	B	11.0	No	All-way stop	B	12.3	Signal	A	9.4	No
79	Grant Line Road & Kiefer Boulevard	All-way stop	B	11.4	All-way stop	B	12.9	No	All-way stop	B	10.5	All-way stop	B	12.4	No
80	Grant Line Road & Jackson Road	Signal	E	74.0	Signal	F	96.0	Yes	Signal	E	78.9	Signal	E	70.7	No
81	Watt Avenue & US-50 EB Ramps	Signal	B	13.0	Signal	B	12.3	No	Signal	B	14.9	Signal	B	13.5	No
82	Watt Avenue & US-50 WB Ramps	Signal	C	32.9	Signal	D	35.8	No	Signal	C	28.6	Signal	C	29.9	No
83	Mayhew Rd & Folsom Blvd.	Signal	B	19.8	Signal	B	12.3	No	Signal	C	20.1	Signal	B	13.4	No
84	65th Street Expy & Fruitridge Road	Signal	C	31.2	Signal	C	26.3	No	Signal	D	35.3	Signal	C	26.6	No
85	Power Inn Road & Elder Creek Road	Signal	D	35.2	Signal	C	27.8	No	Signal	D	36.3	Signal	C	34.5	No
86	Power Inn Road & Florin Rd	Signal	D	36.3	Signal	D	37.4	No	Signal	D	45.9	Signal	D	45.0	No
87	Florin Perkins Road & Florin Rd	Signal	D	36.7	Signal	C	31.0	No	Signal	C	32.5	Signal	C	28.1	No
88	Bradshaw Rd & Calvine Rd	Signal	C	30.5	Signal	C	24.3	No	Signal	D	36.9	Signal	C	29.3	No
89	Vineyard Rd & Calvine Rd	Signal	C	30.8	Signal	B	17.5	No	Signal	C	34.9	Signal	B	17.9	No
90	Excelsior Road & Calvine Rd	All-way stop	C	16.6	All-way stop	E	36.2	Yes	All-way stop	B	13.0	All-way stop	C	20.9	No
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	D	51.7	Signal	B	13.7	No	Signal	D	46.5	Signal	C	24.6	No

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	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
92	Grant Line Rd & Calvine Rd	Signal	C	21.4	Signal	B	15.8	No	Signal	C	24.0	Signal	B	16.5	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	E	65.9	Signal	E	69.9	No	Signal	E	64.8	Signal	D	48.6	No
94	Grant Line Rd & Bond Rd/Wrangler Dr	Signal	C	33.3	Signal	B	13.0	No	Signal	D	46.4	Signal	B	15.5	No
95	Florin Perkins Road & 14th Avenue	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
96	Jackson Road & 14th Avenue	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
97	Rock Creek Pkwy & Jackson Road	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
98	Aspen 1 Access Road & Jackson Road	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
99	Rancho Cordova Pkwy & US-50 WB Ramps	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
100	Rancho Cordova Pkwy & US-50 EB Ramps	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
101	Rancho Cordova Pkwy & Easton Valley Pkwy	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
102	Rancho Cordova Pkwy & White Rock Road	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
103	Rancho Cordova Pkwy & Douglas Road	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
104	Rancho Cordova Pkwy & Chrysanthy Boulevard/Chrysanthy Blvd	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
105	Rancho Cordova Pkwy & Kiefer Blvd	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
106	Rancho Cordova Pkwy & Grant Line Road	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No

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	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
107	Americanos Blvd & White Rock Road	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
108	Americanos Blvd & Douglas Road	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
109	Americanos Blvd & Chrysanthy Blvd	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
110	Americanos Blvd & Kiefer Blvd	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
111	Grant Line Road & Chrysanthy Blvd	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
112	Hazel Avenue & Easton Valley Pkwy	Cumulative Intersection			Cumulative Intersection			No	Cumulative Intersection			Cumulative Intersection			No
200	Excelsior Road & Collector WJ-1/Collector JT-1	West Jackson/Jackson Township Project Int.			Signal	A	6.5	No	West Jackson/Jackson Township Project Int.			Signal	A	7.1	No
201	Excelsior Road & Collector WJ-2/Collector JT-2	West Jackson/Jackson Township Project Int.			Signal	B	15.4	No	West Jackson/Jackson Township Project Int.			Signal	B	19.5	No
202	W Collector MS-1 & Kiefer Boulevard	Mather South Project Int.			Mather South Project Int.			No	Mather South Project Int.			Mather South Project Int.			No
203	Northbridge Dr & Kiefer Boulevard	NewBridge Project Int.			NewBridge Project Int.			No	NewBridge Project Int.			NewBridge Project Int.			No
204	E Collector MS-1 & Kiefer Boulevard	Mather South Project Int.			Mather South Project Int.			No	Mather South Project Int.			Mather South Project Int.			No
300	Collector WJ-3 & Jackson Road	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
301	Collector WJ-4 & Jackson Road	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
302	Happy Lane & Jackson Road	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
303	Rock Creek Pkwy & Jackson Road	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No

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Intersection		AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
304	Collector WJ-5 & Jackson Road	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
305	Collector WJ-6 & Jackson Road	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
306	Excelsior Road & Collector WJ-6	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
307	S. Watt Avenue & Rock Creek Pkwy	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
308	Hedge Avenue & Rock Creek Pkwy WB	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
309	Hedge Avenue & Rock Creek Pkwy EB	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
310	Mayhew Road & Rock Creek Pkwy WB	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
311	Mayhew Road & Rock Creek Pkwy EB	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
312	Bradshaw Road & Rock Creek Pkwy	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
313	Collector WJ-7 & Rock Creek Pkwy	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
314	Vineyard Road/Happy Lane & Rock Creek Pkwy	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
315	Douglas Road & Rock Creek Pkwy	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
316	Bradshaw Road & Collector WJ-8	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
317	Bradshaw Road & Collector WJ-9	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
318	Bradshaw Road & Mayhew Road	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 3.6

Existing Plus Jackson Township Project (Alternative 2) Intersection Levels of Service

Intersection		AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
319	Bradshaw Road & Collector WJ-10	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
320	Bradshaw Road & Collector WJ-11	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
321	Collector WJ-12 & Fruitridge Road	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
322	Mayhew Road & Collector WJ-13	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
323	Collector WJ-14 & Kiefer Boulevard	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
324	Collector WJ-15 & Kiefer Boulevard	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
325	Douglas Road/Shopping Center Dwy & Kiefer Boulevard	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
326	Happy Lane & Mayhew Road	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
327	Vineyard Road & Elder Creek Road	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project Int.			West Jackson Project Int.			No
328	Vineyard Road & Florin Road	West Jackson Project Int.			West Jackson Project Int.			No	West Jackson Project/CEQA Cumulative Intersection			West Jackson Project/CEQA Cumulative Intersection			No
400	Collector JT-3 & Jackson Road	Jackson Township Project Int.			Signal	B	17.5	No	Jackson Township Project Int.			Signal	B	15.7	No
401	Tree View Lane & Jackson Road	Jackson Township Project Int.			Signal	B	12.4	No	Jackson Township Project Int.			Signal	A	9.7	No
402	Collector JT-4 & Jackson Road	Jackson Township Project Int.			Signal	B	10.1	No	Jackson Township Project Int.			Signal	A	9.8	No
403	Tree View Lane & Collector JT-5	Jackson Township Project Int.			Signal	B	13.4	No	Jackson Township Project Int.			Signal	B	12.5	No
404	Tree View Lane & Collector JT-6	Jackson Township Project Int.			Signal	A	3.9	No	Jackson Township Project Int.			Signal	A	5.8	No

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 3.6

Existing Plus Jackson Township Project (Alternative 2) Intersection Levels of Service

Intersection		AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact	Existing			Existing Plus Jackson Township Project Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
405	Tree View Lane & Collector JT-1	Jackson Township Project Int.			Signal	B	17.2	No	Jackson Township Project Int.			Signal	B	15.1	No
406	Tree View Lane & Kiefer Boulevard	Jackson Township Project Int.			Signal	A	6.6	No	Jackson Township Project Int.			Signal	A	6.7	No

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 3.7

Existing and Existing Plus Jackson Township Project (Alternative 2) Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus Jackson Township Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
1	Howe Avenue & College Town Drive/US 50 WB Ramps	Signal	Signal	↑↑↑↱	↲↓↓↓↓	↰↱↱	↰↰↰↱↱	↑↑↑↱	↲↓↓↓↓	↰↱↱	↰↰↰↱↱
2	Howe Avenue & US 50 EB Ramps	Signal	Signal	↑↑↑↱	↲↓↓↓	↰↰↱↱		↑↑↑↱	↲↓↓↓	↰↰↱↱	
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	Signal	↰↰↑↑↑↱	↲↓↓↓↘↘	↰↰↑↱	↰↰↑↑↱↱	↰↰↑↑↑↱	↲↓↓↓↘↘	↰↰↑↱	↰↰↑↑↱↱
4	Power Inn Road & 14th Avenue	Signal	Signal	↰↰↑↑↱	↲↓↓↘	↰↰↱	↟	↰↰↑↑↱	↲↓↓↘	↰↰↱	↟
5	Power Inn Road & Fruitridge Road	Signal	Signal	↰↰↑↱	↲↓↓↘↘	↰↑↱	↰↑↑↱	↰↰↑↱	↲↓↓↘↘	↰↑↱	↰↑↑↱
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	Signal	↰↰↱	↲↰	↰↑↑↱	↰↑↑↱	↰↰↱	↲↰	↰↑↑↱	↰↑↑↱
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	Signal	↰↰↱	↲↰	↰↑↑↱	↰↑↱	↰↰↱	↲↰	↰↑↑↱	↰↑↱
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop	Two-way stop	↑↱	↓↓↘		↰↱	↑↱	↓↓↘		↰↱
9	Florin Perkins Road & Jackson Road	Signal	Signal	↰↑↑↱	↲↓↘	↰↑↱↱	↰↑↱	↰↑↑↱	↲↓↘	↰↑↱↱	↰↑↱
10	Florin Perkins Road & Fruitridge Road	Signal	Signal	↰↑↑↱	↲↓↓↘	↰↑↑↱	↰↑↱	↰↑↑↱	↲↓↓↘	↰↑↑↱	↰↑↱
11	Florin Perkins Road & Elder Creek Road	Signal	Signal	↰↑↑↱	↲↓↓↘	↰↑↑↱	↰↑↑↱	↰↑↑↱	↲↓↓↘	↰↑↑↱	↰↑↑↱
12	Watt Avenue & Folsom Blvd.	Signal	Signal	↰↰↑↑↑↱	↲↓↓↓↘↘	↰↰↑↑↱	↰↰↑↑↱	↰↰↑↑↑↱	↲↓↓↓↘↘	↰↰↑↑↱	↰↰↑↑↱
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	Signal	↰↑↑↑↱	↲↓↓↘	↟	↰↱↱	↰↑↑↑↱	↲↓↓↘	↟	↰↱↱
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal	↰↰↑↑↱	↲↓↓↘↘	↰↰↑↑↱	↰↰↑↑↱	↰↰↑↑↱	↲↓↓↘↘	↰↰↑↑↱	↰↰↑↑↱
15	S. Watt Avenue & Canberra Dr.	Signal	Signal	↑↑↱	↓↓↘		↰↱	↑↑↱	↓↓↘		↰↱
16	S. Watt Avenue & Jackson Road	Signal	Signal	↰↑↑↱	↲↓↓↘	↰↱	↰↑↱	↰↑↑↱	↲↓↓↘	↰↱	↰↑↱
17	S. Watt Avenue & Fruitridge Road	Signal	Signal	↰↑↱	↲↓↓↘	↰↑↱	↰↱	↰↑↱	↲↓↓↘	↰↑↱	↰↱
18	S. Watt Avenue & Elder Creek Road	Signal	Signal	↰↑↱	↲↓↘	↰↱	↰↑↱	↰↑↱	↲↓↘	↰↱	↰↑↱
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal	↰↑↱	↲↓↘	↰↑↱	↰↑↑↱	↰↑↱	↲↓↘	↰↑↱	↰↑↑↱
21	Elk Grove Florin Road & Gerber Road	Signal	Signal	↰↰↑↱	↲↓↓↘↘	↰↰↑↑↱	↰↰↑↑↱	↰↰↑↱	↲↓↓↘↘	↰↰↑↑↱	↰↰↑↑↱
23	Hedge Avenue & Jackson Road	Signal	Signal	↰↱	↲↘	↰↑↱	↰↑↱	↰↱	↲↘	↰↑↱	↰↑↱
24	Hedge Avenue & Fruitridge Road	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟
25	Hedge Avenue & Elder Creek Road	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟
26	Hedge Avenue & Tokay Lane	Two-way stop	Two-way stop	↟	↟	↟	↟	↟	↟	↟	↟
27	Hedge Avenue & Florin Road	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟
28	Mayhew Road & Kiefer Boulevard	Signal	Signal	↰↑↱	↲↓↘	↰↑↱	↰↑↱	↰↑↱	↲↓↘	↰↑↱	↰↑↱
29	Mayhew Road & Jackson Road	Two-way stop	Two-way stop	↰↱	↟	↰↑↱	↰↱	↰↱	↟	↰↑↱	↰↱
30	Mayhew Road & Fruitridge Road	Two-way stop	Two-way stop	↰	↰	↱		↰	↰	↱	

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

Table 3.7

Existing and Existing Plus Jackson Township Project (Alternative 2) Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus Jackson Township Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
31	Mayhew Road & Elder Creek Road	Two-way stop	Two-way stop								
32	Zinfandel Drive & Woodring Drive	Two-way stop	Two-way stop								
33	Bradshaw Road & Folsom Blvd.	Signal	Signal								
34	Bradshaw Road & US 50 WB Ramps	Signal	Signal								
35	Bradshaw Road & US 50 EB Ramps	Signal	Signal								
36	Bradshaw Road & Old Placerville Road	Signal	Signal								
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal								
38	Bradshaw Road & Jackson Road	Signal	Signal								
39	Bradshaw Road & Elder Creek Road	Signal	Signal								
40	Bradshaw Road & Florin Road	Signal	Signal								
41	Bradshaw Road & Gerber Road	Signal	Signal								
42	Happy Lane & Old Placerville Road	Two-way stop	Two-way stop								
43	Happy Lane & Kiefer Boulevard										
44	Excelsior Road & Kiefer Boulevard		Signal								
45	Excelsior Road & Jackson Road	Signal	Signal								
46	Excelsior Road & Elder Creek Road	Two-way stop	Two-way stop								
47	Excelsior Road & Florin Road	All-way stop	All-way stop								
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	All-way stop								
49	Mather Field Road & US 50 WB Ramps	Signal	Signal								
50	Mather Field Road & US 50 EB Ramps	Signal	Signal								
51	Mather Field Road & Rockingham Drive	Signal	Signal								
52	Mather Boulevard & Douglas Road	All-way stop	All-way stop								
53	Zinfandel Drive & US 50 WB Ramps	Signal	Signal								
54	Zinfandel Drive & US 50 EB Ramps/Gold Center Drive	Signal	Signal								
55	Zinfandel Drive & White Rock Road	Signal	Signal								
56	Zinfandel Drive & Data Drive	Signal	Signal								
57	Zinfandel Drive & International Dr	Signal	Signal								
58	Zinfandel Drive & Douglas Road	Signal	Signal								

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

Table 3.7

Existing and Existing Plus Jackson Township Project (Alternative 2) Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus Jackson Township Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard			↱			↰	↱			↰
60	Eagles Nest Road & Jackson Road	Two-way stop	Two-way stop	↑	↟	↰↱	↰↱	↑	↟	↰↱	↰↱
61	Eagles Nest Road & Florin Road	Two-way stop	Two-way stop	↑	↟	↑	↑	↑	↟	↑	↑
62	Sunrise Boulevard & US 50 WB Ramps	Signal	Signal	↑↑↑ ↱	↿↓↓↓		↰↰↱↱	↑↑↑ ↱	↿↓↓↓		↰↰↱↱
63	Sunrise Boulevard & US 50 EB Ramps	Signal	Signal	↑↑↑↑ ↱	↿↓↓↓	↰↰↰↱↱		↑↑↑↑ ↱	↿↓↓↓	↰↰↰↱↱	
64	Sunrise Boulevard & Folsom Boulevard	Signal	Signal	↰↰↑↑↑↑ ↱	↿↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱↱	↰↰↑↑↑↑ ↱	↿↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱↱
65	Sunrise Boulevard & White Rock Road	Signal	Signal	↰↰↑↑↑ ↱	↿↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑↑↑ ↱	↰↰↑↑↑ ↱	↿↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑↑↑ ↱
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal	↰↰↑↑ ↱	↿↓↓↓↘	↰↰↑ ↱↱	↰↱	↰↰↑↑ ↱	↿↓↓↓↘	↰↰↑ ↱↱	↰↱
67	Sunrise Boulevard & Douglas Road	Signal	Signal	↰↰↑↑↑ ↱	↿↓↓↓↘↘	↰↰↑ ↱	↰↰↑↑ ↱	↰↰↑↑↑ ↱	↿↓↓↓↘↘	↰↰↑ ↱	↰↰↑↑ ↱
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	Signal	↑↑↑ ↱	↓↓↘↘		↰↰↱	↑↑↑ ↱	↓↓↘↘		↰↰↱
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal	↰↑↑ ↱	↿↓↘↘	↑	↑ ↱	↰↑↑ ↱	↿↓↘↘	↑	↑ ↱
70	Sunrise Boulevard & Jackson Road	Signal	Signal	↰↱	↿↓↘	↰↑ ↱	↰↑ ↱	↰↱	↿↓↘	↰↑ ↱	↰↑ ↱
71	Sunrise Boulevard & Florin Road	Signal	Signal	↰↑	↿	↱		↰↑	↿	↱	
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	Signal	↑	↿↟	↰↑ ↱	↰↱	↑	↿↟	↰↑ ↱	↰↱
73	Hazel Avenue & Tributary Point Drive/US 50 WB Off-ramp	Signal	Signal	↰↰↑↑↑	↿↓↓↓↓	↱	↑↱↱	↰↰↑↑↑	↿↓↓↓↓	↱	↑↱↱
74	Hazel Avenue & US 50 EB Ramps	Signal	Signal		↿↓↓	↰↱↱			↿↓↓	↰↱↱	
75	Hazel Avenue & Folsom Boulevard	Signal	Signal	↰↱	↿↿↟↘	↰↰↑ ↱	↰↑ ↱	↰↱	↿↿↟↘	↰↰↑ ↱	↰↑ ↱
76	Prairie City Road & White Rock Road	Signal	Signal		↿↘	↰↑↑	↑↑ ↱		↿↘	↰↑↑	↑↑ ↱
77	Grant Line Road & White Rock Road	Signal	Signal	↰↑↑	↿↓↓	↰↰↱		↰↑↑	↿↓↓	↰↰↱	
78	Grant Line Road & Douglas Road	All-way stop	Signal[1]	↑	↿	↱		↰↑	↿↓	↰↱	
79	Grant Line Road & Kiefer Boulevard	All-way stop	All-way stop	↑	↟	↑	↑	↑	↟	↑	↑
80	Grant Line Road & Jackson Road	Signal	Signal	↑	↟	↰↱	↰↱	↑	↟	↰↱	↰↱
81	Watt Avenue & US-50 EB Ramps	Signal	Signal	↑↑↑↑ ↱	↿↿↓↓	↰↰↱↱		↑↑↑↑ ↱	↿↿↓↓	↰↰↱↱	
82	Watt Avenue & US-50 WB Ramps	Signal	Signal	↑↑ ↱↱	↿↿↓↓↓		↰↰↱↱↱	↑↑ ↱↱	↿↿↓↓↓		↰↰↱↱↱
83	Mayhew Rd & Folsom Blvd.	Signal	Signal	↰↰↱		↑↑ ↱	↰↑↑	↰↰↱		↑↑ ↱	↰↑↑
84	65th Street Expy & Fruitridge Road	Signal	Signal	↰↑↑ ↱	↿↓↓↘	↰↑↑	↰↑↑ ↱	↰↑↑ ↱	↿↓↓↘	↰↑↑	↰↑↑ ↱
85	Power Inn Road & Elder Creek Road	Signal	Signal	↰↑↱	↿↓↘	↰↑↑ ↱	↰↑ ↱	↰↑↱	↿↓↘	↰↑↑ ↱	↰↑ ↱
86	Power Inn Road & Florin Rd	Signal	Signal	↰↑↱	↿↓↓↘	↰↑↑ ↱	↰↑↑ ↱	↰↑↱	↿↓↓↘	↰↑↑ ↱	↰↑↑ ↱

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

Table 3.7

Existing and Existing Plus Jackson Township Project (Alternative 2) Intersection Geometrics

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus Jackson Township Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
87	Florin Perkins Road & Florin Rd	Signal	Signal	↰↑↑↱	↲↓↓↘	↰↑ ↱	↰↑ ↱	↰↑↑↱	↲↓↓↘	↰↑ ↱	↰↑ ↱
88	Bradshaw Rd & Calvine Rd	Signal	Signal	↰↰↑↱	↲↓↓↘↘	↰↰↑↑↱	↰↰↑ ↱	↰↰↑↱	↲↓↓↘↘	↰↰↑↑↱	↰↰↑ ↱
89	Vineyard Rd & Calvine Rd	Signal	Signal	↾	↲↱↘	↰↑ ↱	↰↑ ↱	↾	↲↱↘	↰↑ ↱	↰↑ ↱
90	Excelsior Road & Calvine Rd	All-way stop	All-way stop	↾	┼	↾	↾	↾	┼	↾	↾
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	Signal	↰↑↱	↲↘	↾	↰↱	↰↑↱	↲↘	↾	↰↱
92	Grant Line Rd & Calvine Rd	Signal	Signal	↰↑	↲	↓		↰↑	↲	↓	
93	Grant Line Rd & Dwy/Wilton Rd	Signal	Signal	↰↱	↲↘	↰↱	↰↱	↰↱	↲↘	↰↱	↰↱
94	Grant Line Rd & Bond Rd/Wrangler Dr	Signal	Signal	↰↱	↲↓↘	↿↱	↾	↰↱	↲↓↘	↿↱	↾
200	Excelsior Road & Collector WJ-1/Collector JT-1		Signal					↑↱	↓↘		↰↱
201	Excelsior Road & Collector WJ-2/Collector JT-2		Signal					↑↱	↓↘		↰↱
400	Collector JT-3 & Jackson Road		Signal						↲↘	↰↰↑↑	↑↑ ↱
401	Tree View Lane & Jackson Road		Signal						↲↓↘	↰↰↑↑	↑↑ ↱
402	Collector JT-4 & Jackson Road		Signal						↲↘	↰↑↑	↑ ↱
403	Tree View Lane & Collector JT-5		Signal					↰↑↱	↲↓↘	↰↑ ↱	↰↑ ↱
404	Tree View Lane & Collector JT-6		Signal					↰↑↑	↲↓	↰↱	
405	Tree View Lane & Collector JT-1		Signal					↰↑↱	↲↓↘	↰↑ ↱	↰↑ ↱
406	Tree View Lane & Kiefer Boulevard		Signal					↰↰↱		↑↑ ↱	↰↰↑↑
407	HS/MS Dwy & Kiefer Boulevard		Signal					↰↱		↑ ↱	↰↑

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

3.4.3 Existing Plus Jackson Township Project U.S. 50 Freeway Impacts

3.4.3.1 Freeway Basic Segments

Table 3.8 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations. Details of the analysis are included in the technical appendix. No locations exhibit significant impacts, based on Caltrans' threshold of significance (5% V/C increase).

3.4.3.2 Freeway Merge / Diverge / Weave Segments

Table 3.9 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas. Details of the analysis are included in the technical appendix. The following locations exhibit significant impacts:

- Westbound
    - Watt Avenue to Howe Avenue weave - p.m. peak hour

3.4.3.3 Freeway Ramp Intersection Queuing

Table 3.10 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. No locations exhibit a significant impact.

3.4.4 Existing Plus Jackson Township Project Pedestrian and Bicycle Facility Impacts

The Jackson Township project would not remove any existing or planned pedestrian facility. The Jackson Township project would not remove any existing bicycle facility, but would modify facilities that are planned in the Bikeway Master Plan. The Jackson Township project would add pedestrian and bicycle demands within the Jackson Township project site and to and from nearby land uses. As illustrated in Figure 3.2, the Jackson Township project has proposed changes to the Bikeway Master Plan. Because the Jackson Township project would add demand for pedestrian and bicycle facilities that may not be available in the site vicinity, the impact of the Jackson Township project on pedestrian and bicycle circulation is potentially significant.

Table 3.8: Existing Plus Jackson Township (Alternative 2) Project Peak Hour Freeway Basic Segment Level of Service									
Direc-tion	**Location**	**Existing**				**Existing Plus Jackson Township Project**			
		AM Peak Hour		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
		Volume	**LOS**	**Volume**	**LOS**	**Volume**	**LOS**	**Volume**	**LOS**
East-bound US 50	SR 99 / SR 51 to Stockton Boulevard	7,068	C	6,415	C	7,156	C	6,475	C
	Stockton Boulevard to 59th Street	7,470	**F**	7,228	**F**	7,564	**F**	7,290	**F**
	59th Street to 65th Street	6,767	D	6,641	D	6,856	D	6,689	D
	65th Street to Howe Avenue	7,962	D	7,562	D	8,084	D	7,611	D
	Howe Avenue to Watt Avenue	7,405	D	7,602	D	7,477	D	7,711	D
	Watt Avenue to Bradshaw Road	7,935	D	7,176	C	8,002	D	7,284	C
	Bradshaw Rd to Mather Field Rd	7,725	**F**	7,366	C	7,712	**F**	7,407	C
	Mather Field Rd to Zinfandel Drive	7,275	C	7,224	C	7,268	C	7,264	C
	Zinfandel Drive to Sunrise Blvd	5,121	C	6,649	**F**	5,289	C	6,708	**F**
	Sunrise Boulevard to Hazel Avenue	4,985	C	5,323	**F**	5,132	C	5,366	**F**
West-bound US 50	Hazel Avenue to Sunrise Boulevard	6,068	D	4,370	C	6,121	D	4,481	C
	Sunrise Blvd to Zinfandel Drive	7,502	D	4,762	C	7,540	D	4,902	C
	Zinfandel Drive to Mather Field Rd	7,548	C	5,765	B	7,551	C	5,710	B
	Mather Field Rd to Bradshaw Road	7,859	**F**	6,939	D	7,857	**F**	6,869	D
	Bradshaw Road to Watt Avenue	7,550	**F**	6,466	D	7,522	**F**	6,556	D
	Watt Avenue to Howe Avenue	7,376	**F**	5,106	**F**	7,326	**F**	5,165	**F**
	Howe Avenue to 65th Street	8,157	**F**	7,407	**F**	8,182	**F**	7,469	**F**
	65th Street to 59th Street	8,278	**F**	7,358	**F**	8,281	**F**	7,413	**F**
	59th Street to Stockton Boulevard	9,115	D	7,945	**F**	9,125	D	8,008	**F**
	Stockton Boulevard to SR 99 / SR 51	8,546	D	8,136	**F**	8,536	D	8,194	**F**

Bold values denote level of service "F" conditions. **Red shaded** values indicate project impacts.

Source: *DKS Associates, 2018.*

Table 3.9: Existing Plus Jackson Township Project (Alt. 2) Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service

Direc-tion	Location	Junction Type	Existing				Existing Plus Jackson Township Project			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
East-bound US 50	Northbound 65th Street Slip Entrance	Weave	765	D	653	C	771	D	636	C
	Howe Avenue / Hornet Drive Exit		1,631		1,417		1,681		1,354	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	484	C	881	C	485	C	853	C
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	419	C	431	C	435	C	426	C
	Watt Avenue Exit	Two-Lane Diverge	1,317	B	1,634	B	1,333	B	1,641	B
	Watt Avenue Entrance	One-Lane Merge	2,134	**F**	1,724	D	2,143	**F**	1,739	D
	Bradshaw Road Exit	Two-Lane Diverge	1,520	B	1,228	B	1,572	B	1,284	B
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	220	C	422	C	224	C	425	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	971	C	918	C	923	C	910	C
	Mather Field Road Exit	Two-Lane Diverge	1,266	B	1,062	A	1,275	B	1,092	A
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	125	C	101	B	134	C	100	B

	Northbound Mather Field Road Slip Entrance	Weave	317	**F**	816	C	325	**F**	828	C
	Zinfandel Drive Exit		2,932		1,452		2,945		1,471	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	182	B	129	C	176	B	132	C
	Northbound Zinfandel Drive Slip Entrance	One-Lane Merge	348	B	540	C	562	B	591	C
	Sunrise Boulevard Exit	Major Diverge	1,773	C	1,959	D	1,821	C	1,954	D
	Sunrise Boulevard Entrance	One-Lane Merge	992	C	889	D	1,011	C	870	D
	Hazel Avenue Exit	Two-Lane Diverge	933	B	1,541	C	993	B	1,555	C
	Hazel Avenue Entrance	Weave	804	C	945	C	803	C	949	C
	Aerojet Road Exit		241		55		242		58	
West-bound US 50	Hazel Avenue Exit	Two-Lane Diverge	631	A	869	A	686	A	877	B
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	160	B	600	B	166	B	595	B
	Southbound Hazel Avenue Slip Entrance	One-Lane Merge	1,550	B	800	B	1,608	B	868	B
	Sunrise Boulevard Exit	One-Lane Diverge	749	E	758	D	729	E	780	D
	Sunrise Blvd Entrance	Lane Addition	2,183	**F**	1,656	D	2,186	**F**	1,685	D
	Zinfandel Drive Exit	One-Lane Diverge	1,034	E	608	C	1,060	E	764	C
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	585	B	1,197	B	599	B	1,194	B
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	442	C	561	B	437	C	533	B
	Mather Field Road Exit	One-Lane Drop	1,093	C	556	A	1,110	C	575	A

Northbound Mather Field Road Loop Entrance	One-Lane Merge	515	B	861	B	511	B	889	B
Southbound Mather Field Road Slip Entrance	One-Lane Merge	387	B	380	B	390	B	370	B
Bradshaw Road Exit	Two-Lane Diverge	1,236	B	1,327	B	1,277	B	1,266	B
Northbound Bradshaw Road Loop Entrance	One-Lane Merge	914	D	910	C	932	D	959	C
Southbound Bradshaw Road Slip Entrance	One-Lane Merge	338	D	590	C	334	D	633	C
Watt Avenue Exit	Major Diverge	1,373	D	1,188	C	1,357	D	1,209	C
Northbound Watt Avenue Entrance	One-Lane Merge	820	D	943	C	803	D	936	C
Southbound Watt Avenue Slip Entrance	Lane Addition / Weave	1,232	C	1,317	D	1,211	C	1,313	**F**
Howe Avenue Exit	Major Diverge / Weave	1,531	D	1,419		1,549	D	1,467	
Northbound Howe Avenue Loop Entrance	One-Lane Merge	654	D	602	C	665	D	621	C
Southbound Howe Avenue Slip Entrance	One-Lane Merge	574	C	574	C	575	C	569	C

Bold values denote level of service "F" conditions.
Red shaded values indicate project impacts.
Source: *DKS Associates, 2018.*

Table 3.10: Existing Plus Jackson Township (Alternative 2) Project Peak Hour Freeway Ramp Termini Queuing

Direction	US 50 Exit Ramp	Available Storage Length (feet / lane)			Maximum Queue Length (feet / lane)					
					AM Peak Hour			PM Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US-50	Howe Avenue	765	-	765	84	-	247	117	-	130
	Watt Avenue	1,500	-	1,500	176	-	213	245	-	219
	Bradshaw Road	1,250	-	1,250	91	-	306	84	-	203
	Mather Field Road	1,385	-	1,385	98	-	337	116	-	70
	Zinfandel Drive	1,025	1,025	1,025	194	708	660	471	398	208
	Sunrise Boulevard	1,695	-	1,695	139	-	95	172	-	56
	Hazel Avenue	1,310	-	1,310	168	-	41	156	-	7
Westbound US-50	Hazel Avenue	1,995		1,995	272		47	157		224
	Sunrise Boulevard	1,540	-	1,540	64	-	61	118	-	133
	Zinfandel Drive	1,065	-	1,065	167	-	51	90	-	122
	Mather Field Road	1,335	-	1,335	249	-	186	104	-	49
	Bradshaw Road	1,330	-	1,330	91	-	50	118	-	13
	Watt Avenue	1,480	-	1,480	167	-	538	92	-	438
	Howe Avenue	1,355	1,355	1,355	126	412	89	169	412	175

Red shaded values indicate project impacts.

L = left turn movement, T = through movement, R = right turn movement

Source: *DKS Associates, 2018.*

3.4.5 Existing Plus Jackson Township Project Transit System Impacts

Public transit is not currently provided to the Jackson Township project site. In the preparation of this analysis, a conceptual transit system to serve the Jackson Township project and adjacent future projects was developed (see Section 3.1.2.3). The additional transit service was assumed to be funded by the Jackson Township project. However, the timing and implementation of the transit system are uncertain at this time. The Jackson Township project would increase demands for public transit facilities. Therefore, the impact of the Jackson Township project on the transit system is potentially significant.

3.4.6 Existing Plus Jackson Township Functionality Impacts

Table 3.11 summarizes the results of the rural roadway segment functionality analysis. **Figure 3.6** illustrates the resultant functionality impacts. The table includes the number of lanes assumed with the implementation of the Jackson Township project, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the Jackson Township project. The "Substandard?" heading indicates whether or not a roadway meets the County standards of 12-foot lanes and 6-foot shoulders. If the project makes improvements to a roadway segment such as widening, it would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact?" heading indicate those locations with a functionality impact.

As stated above, the traffic analysis assumed that the Jackson Township project would construct a number of travel lanes on roadway segments that are internal to or on the boundary of the Jackson Township project, and the entire roadway segment would be reconstructed to County standards at that time. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the Jackson Township project.

Table 3.11
Existing Plus Jackson Township Project (Alt. 2) Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing + Jackson Township Project (Alt. 2)			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	2	Yes	7,660	Yes
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	2	Yes	8,990	Yes
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	2	Yes	1,960	No
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Yes	1,650	No
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Yes	1,230	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	2	Yes	8,730	Yes
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	2	Yes	9,010	Yes
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	2	Yes	9,020	Yes
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	2	Yes	9,780	Yes
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Yes	13,870	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	2	Yes	15,650	Yes
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	2	Yes	6,850	Yes
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Yes	7,580	Yes
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Yes	5,350	No
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	2	Yes	9,520	Yes
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	2	Yes	8,640	Yes
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	2	Yes	8,680	Yes
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	2	Yes	5,340	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Yes	4,390	No
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	2	Yes	2,560	No
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	2	Yes	1,190	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	2	Yes	8,530	Yes
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	2	Yes	6,610	Yes
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Yes	2,570	No
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	2	22	Yes	3,737	2	Yes	3,880	No
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Yes	2,990	No

Red text with light gray shading indicate project impacts.

Table 3.11
Existing Plus Jackson Township Project (Alt. 2) Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing + Jackson Township Project (Alt. 2)			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	2	Yes	26,390	Yes
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	No	32,560	Yes[3]
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	2	22	Yes	4,616	2	Yes	4,770	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	2	Yes	5,580	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	2	Yes	1,940	No
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Yes	8,680	Yes
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	2	Yes	990	No
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490	2	Yes	2,410	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	2	Yes	6,860	Yes

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.
[4] Excluding the roadway segment that is within the developed community of Independence at Mather.
[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

FIGURE 3.6
EXISTING PLUS JACKSON TOWNSHIP
(ALTERNATIVE 2)
FUNCTIONALITY IMPACTS

Legend

- Substandard Roadways
- Functionality Impact
- Functionality Impact if Roadway is Not Already Improved
- Study_Area_Segments
- Cities
- Mather Airport

3.5 MITIGATION

3.5.1 Existing Plus Jackson Township Project Roadway Segment Mitigation

Table 3.12 summarizes the results of the operations analysis for the study area roadway segments with mitigation. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate widened roadways for mitigation purposes, which would be the responsibility of the Jackson Township project to implement. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to have LOS impacts after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the improvements allowed under the General Plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

3.5.2 Existing Plus Jackson Township Project Intersection Mitigation

Tables 3.13 and 3.14 summarize the results of the operations analysis for the study area intersections with mitigation. However, the increased number of lanes on each approach does not exceed the County's standard number of approach lanes. Shaded table cells in Table 3.14 indicate those locations where changes in traffic control and / or number of approach lanes by type have been made which would be the responsibility of the Jackson Township project to implement. As shown in Table 3.13, all LOS impacts have been fully mitigated. Detailed analysis information is included in the technical appendix.

The "LOS Impact with Mitigation?" column in Table 3.14 shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

3.5.3 Existing Plus Jackson Township Project U.S. 50 Freeway Mitigation

Capacity improvements such as widening of the freeway and freeway junctions would reduce the severity of the impacts, but were generally not considered feasible due to right-of-way

restrictions, legal constraints, and the numerous transportation structures that would need to be modified and/or replaced. Potential alternative improvements have been identified from Caltrans' US-50 Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP). The TCR and CSMP is focused on intelligent transportation systems (ITS) and integrated corridor management (ICM) projects that would have operational benefits to US-50 without adding additional capacity. The TCR and CSMP also identify potential improvements to parallel local facilities that would be expected to reduce travel demand on US-50. The Jackson Township project will participate in one or more of these alternative improvements that could directly reduce the severity of the project's impact and/or provide operational benefits to the US-50 corridor in general.

3.5.3.1 US-50 Westbound Alternative Improvements

To lessen the impact to the westbound US-50 weave between Watt Avenue and Howe Avenue, the project may pay a fair share toward the construction of:

- Bus/HOV lanes from Watt Avenue to Downtown Sacramento (2035 SACOG MTP)
- Replacement of existing communication lines with fiber optics to improve performance between SR-51/SR-99 and Watt Avenue (2013 10-Year SHOPP Plan)
- Auxiliary lane between the NB Howe Avenue on-ramp and the SB Howe Avenue on-ramp (2035 SACOG MTP)
- Ramp meter improvements (Caltrans ITS/OPS Project List)

Table 3.12
Existing Plus Jackson Township Project (Alt. 2) Roadway Segment Mitigations

ID	Roadway	Segment		Existing + Jackson Township Project					Mitigated Existing + Jackson Township Project (Alt. 2)						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	17,230	0.96	**E**	4	Arterial M	0.48	A	No		
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	40,230	1.12	**F**	4	Arterial M	1.12	**F**	Yes		Maximum General Plan lanes
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	19,430	0.97	**E**	4	Arterial M	0.54	A	No		
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	18,030	0.90	**E**	4	Arterial M	0.50	A	No		
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	55,140	1.02	**F**	6	Arterial M	1.02	**F**	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	2	Arterial M	23,820	1.32	**F**	4	Arterial M	0.66	B	No		
68	Jackson Rd	Hedge Ave	Mayhew Rd	2	Arterial M	20,130	1.12	**F**	4	Arterial M	0.56	A	No		
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	21,940	1.22	**F**	4	Arterial M	0.61	B	No		
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	26,390	1.47	**F**	4	Arterial M	0.73	C	No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	15,070	0.66	**E**	4	Arterial M	0.42	A	No		
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	8,680	1.09	**F**	2	Res Collector F	0.85	E	No	Construct Douglas Road extension	
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	19,040	1.06	**F**	4	Arterial M	0.53	A	No		
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	67,620	1.13	**F**	6	Arterial H	1.13	**F**	Yes		Maximum General Plan lanes

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 3.12
Existing Plus Jackson Township Project (Alt. 2) Roadway Segment Mitigations

ID	Roadway	Segment		Existing + Jackson Township Project					Mitigated Existing + Jackson Township Project (Alt. 2)						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible

Note: Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, as proposed by the County of Sacramento.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 3.13

Existing Plus Jackson Township Project (Alternative 2) Impacted Intersections and Mitigations

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing Plus Jackson Township Project			LOS Impact	Mitigated Existing Plus Jackson Township Project			Existing Plus Jackson Township Project			LOS Impact	Mitigated Existing Plus Jackson Township Project		
		Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)
18	S. Watt Avenue & Elder Creek Road	Signal	E	71.3	Yes	Signal	D	41.6	Signal	E	75.9	Yes	Signal	D	36.4
38	Bradshaw Road & Jackson Road	Signal	F	130.6	Yes	Signal	E	69.4	Signal	E	70.7	No	Signal	D	41.0
42	Happy Lane & Old Placerville Road	Two-way stop	B	11.5	Yes	Signal	C	35.0	Two-way stop	B	14.9	Yes	Signal	C	24.9
	Northbound Left Turn		*F*	*199.7*						*F*	*>300*				
	Northbound Right Turn		*E*	*35.5*						*C*	*19.7*				
	Westbound Left Turn		*B*	*10.9*						*B*	*10.5*				
45	Excelsior Road & Jackson Road	Signal	F	167.1	Yes	Signal	E	63.0	Signal	F	108.0	Yes	Signal	D	45.4
46	Excelsior Road & Elder Creek Road	Two-way stop	F	56.2	Yes	Signal	D	41.2	Two-way stop	E	44.8	Yes	Signal	C	31.0
	Northbound Left Turn		*A*	*7.8*						*A*	*8.9*				
	Eastbound		*F*	*251.5*						*F*	*148.1*				
47	Excelsior Road & Florin Road	All-way stop	F	173.7	Yes	Signal	B	16.4	All-way stop	F	67.7	Yes	Signal	B	11.9
52	Mather Boulevard & Douglas Road	All-way stop	F	84.8	Yes	Signal	A	9.0	All-way stop	C	18.7	No	Signal	B	11.3
60	Eagles Nest Road & Jackson Road	Two-way stop	F	96.3	Yes	Signal	C	26.0	Two-way stop	C	20.0	Yes	Signal	C	26.5
	Northbound		*F*	*>300*						*F*	*216.4*				
	Southbound		*C*	*15.6*						*E*	*47.7*				
	Eastbound Left Turn		*B*	*10.3*						*A*	*8.1*				
	Westbound Left Turn		*A*	*8.3*						*A*	*8.9*				
80	Grant Line Road & Jackson Road	Signal	F	96.0	Yes	Signal	D	41.8	Signal	E	70.7	Yes	Signal	C	32.4
90	Excelsior Road & Calvine Rd	All-way stop	E	36.2	Yes	Signal	C	21.2	All-way stop	C	20.9	No	Signal	C	31.2

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 3.14

Existing Plus Jackson Township Project (Alternative 2) Intersection Impacts and Mitigations

	Intersection	Traffic Control		Existing Plus Jackson Township Project Lane Geometrics				Mitigated Existing Plus Jackson Township Project Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		Existing Plus Project	Mitigated Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
18	S. Watt Avenue & Elder Creek Road	Signal	Signal									No	No		
38	Bradshaw Road & Jackson Road	Signal	Signal									No	No		
42	Happy Lane & Old Placerville Road	Two-way stop	Signal									No	No	Realign Happy Lane to Routier Road (2 lanes)	
45	Excelsior Road & Jackson Road	Signal	Signal									No	No		
46	Excelsior Road & Elder Creek Road	Two-way stop	Signal									No	No		
47	Excelsior Road & Florin Road	All-way stop	Signal												
52	Mather Boulevard & Douglas Road	All-way stop	Signal									No	No		
60	Eagles Nest Road & Jackson Road	Two-way stop	Signal									No	No		
80	Grant Line Road & Jackson Road	Signal	Signal									No	No		
90	Excelsior Road & Calvine Rd	All-way stop	Signal									No	No		

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

3.5.4 Existing Plus Jackson Township Project Pedestrian and Bicycle Facility Mitigation

The Jackson Township project applicant shall coordinate with Sacramento County to identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development. These facilities shall be incorporated into the Jackson Township project and could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, pedestrian signal heads, and all appropriate traffic calming measures as defined in the County's Neighborhood Traffic Management Program (NTMP). Sidewalks would be required as part of the frontage improvements along all new roadway construction in the Jackson Township project vicinity in conformance with County design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards.

3.5.5 Existing Plus Jackson Township Project Transit System Mitigation

The Jackson Township project applicant shall coordinate with Regional Transit (or other transit operators) to provide the additional transit facilities and services assumed in transportation analysis (see Section 3.1.2.3), or a cost-effective equivalent level of transit facilities and services.

The assumed transit routes and service frequency would be required at full development of the Jackson Township project. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the Jackson Township project, must be phased with development of the Jackson Township project.

3.5.6 Existing Plus Jackson Township Project Functionality Mitigation

Table 3.15 summarizes the results of the functionality analysis for the study area rural roadway segments with mitigation.

3.5.7 Existing Plus Jackson Township Project Mitigation Summary

Tables 3.16 through 3.19 summarize all of the roadway segments, intersections, and freeway facilities that would exhibit significant LOS impacts along with the mitigation success for these impacts.

Table 3.15
Existing Plus Jackson Township Project (Alt. 2) Functionality Mitigations

ID	Roadway	Segment		Existing + Jackson Township Project (Alt. 2)				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]		
15	Douglas Rd	Mather Blvd	Zinfandel Dr	2	Yes	7,660	**Yes**	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	2	Yes	8,990	**Yes**	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Yes	8,730	**Yes**	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Yes	9,010	**Yes**	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	2	Yes	9,020	**Yes**	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	2	Yes	9,780	**Yes**	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Yes	13,870	**Yes**	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	2	Yes	15,650	**Yes**	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Yes	6,850	**Yes**	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Yes	7,580	**Yes**	Widen to County standards [5]	No
39	Florin Rd	South Watt Ave	Hedge Ave	2	Yes	9,520	**Yes**	Widen to County standards [5]	No
40	Florin Rd	Hedge Ave	Mayhew Rd	2	Yes	8,640	**Yes**	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	2	Yes	8,680	**Yes**	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	2	Yes	8,530	**Yes**	Widen to County standards [5]	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	2	Yes	6,610	**Yes**	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Yes	26,390	**Yes**	Widen to County standards [5]	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	No	32,560	**Yes[3]**	Widen to County standards [5]	No
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	2	Yes	8,680	**Yes**	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	2	Yes	6,860	**Yes**	Widen to County standards [5]	No

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

Table 3.16
Existing Plus Jackson Township Project (Alt. 2) List of Impacted Roadway Segments

ID	Roadway	Segment	
		From	To
Level of Service Impact Fully Mitigated by General Plan Lanes			
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd
56	Grant Line Rd	Sheldon Rd	Wilton Rd
57	Grant Line Rd	Wilton Rd	Bond Rd
67	Jackson Rd	South Watt Ave	Hedge Ave
68	Jackson Rd	Hedge Ave	Mayhew Rd
69	Jackson Rd	Mayhew Rd	Bradshaw Rd
70	Jackson Rd	Bradshaw Rd	Excelsior Rd
73	Jackson Rd	Sunrise Blvd	Grant Line Rd
83	Mather Blvd	Bleckely St	Femoyer St
106	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd
Level of Service Impact Not Fully Mitigated by General Plan Lanes			
44	Folsom Blvd	Howe Ave	Jackson Rd
62	Howe Ave	US 50	Folsom Blvd
110	Watt Ave	US 50	Folsom Blvd

Note: Refer to Table 3.12 for detailed description of impacts and mitigations.

Table 3.17

Existing Plus Jackson Township Project (Alternative 2) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
Level of Service Impact Fully Mitigated by General Plan Lanes		
18	S. Watt Avenue & Elder Creek Road	
38	Bradshaw Road & Jackson Road	
42	Happy Lane & Old Placerville Road	**
45	Excelsior Road & Jackson Road	
46	Excelsior Road & Elder Creek Road	
47	Excelsior Road & Florin Road	
52	Mather Boulevard & Douglas Road	
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard	
60	Eagles Nest Road & Jackson Road	
80	Grant Line Road & Jackson Road	
90	Excelsior Road & Calvine Rd	

[1] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding designated high capacity intersections, as proposed by the County of Sacramento.

* denotes alternative mitigations that improve operations but do not fully mitigate the impact.
** denotes alternative mitigations that fully mitigate the impact.

Table 3.18

Existing Plus Jackson Township (Alternative 2) Project
Summary of Impacted Freeway Merge/Diverge/Weave Segments

Direction	Location	Junction Type
Level of Service Impact Not Mitigated		
Westbound US-50	Southbound Watt Avenue Slip Entrance	Weave
	Howe Avenue Exit	

Source: *DKS Associates, 2018.*

Table 3.19
Existing Plus Jackson Township Project (Alt. 2) Functionality Impact Summary

ID	Roadway	Segment	
		From	To
Functionality Impact Fully Mitigated			
15	Douglas Rd	Mather Blvd	Zinfandel Dr
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd
30	Excelsior Rd	Kiefer Blvd	Jackson Rd
31	Excelsior Rd	Jackson Rd	Elder Creek Rd
32	Excelsior Rd	Elder Creek Rd	Florin Rd
33	Excelsior Rd	Florin Rd	Gerber Rd
39	Florin Rd	South Watt Ave	Hedge Ave
40	Florin Rd	Hedge Ave	Mayhew Rd
41	Florin Rd	Mayhew Rd	Bradshaw Rd
50	Grant Line Rd	White Rock Rd	Douglas Rd
58	Happy Ln	Old Placerville Rd	Kiefer Blvd
70	Jackson Rd	Bradshaw Rd	Excelsior Rd
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd

4. EXISTING PLUS FOUR PROJECTS SCENARIO (JACKSON TOWNSHIP PROJECT ALTERNATIVE 2)

4.1 PROJECT DESCRIPTION

The existing plus FOUR PROJECTS scenario evaluates the effects of the traffic of four developments (FOUR PROJECTS) added to existing conditions. **Figure 4.1** illustrates the location of the FOUR PROJECTS:

- West Jackson
- Jackson Township
- NewBridge
- Mather South

The FOUR PROJECTS are located in unincorporated Sacramento County, generally east of the City of Sacramento and south of the community of Rosemont and the City of Rancho Cordova. The FOUR PROJECTS are located both north and south of Jackson Road (SR 16). The FOUR PROJECTS are generally bounded to the west by South Watt Avenue, to the north by the Community of Rosemont and Mather Airport, to the east by Sunrise Boulevard, and to the south by Elder Creek Road and Florin Road.

4.1.1 Land Use

Table 4.1 summarizes the land use assumptions for the FOUR PROJECTS in Jackson Corridor. Together, the FOUR PROJECTS would contain over 28,600 dwelling units and contain enough non-residential land uses to employ over 38,200 workers.

4.1.2 Transportation Network

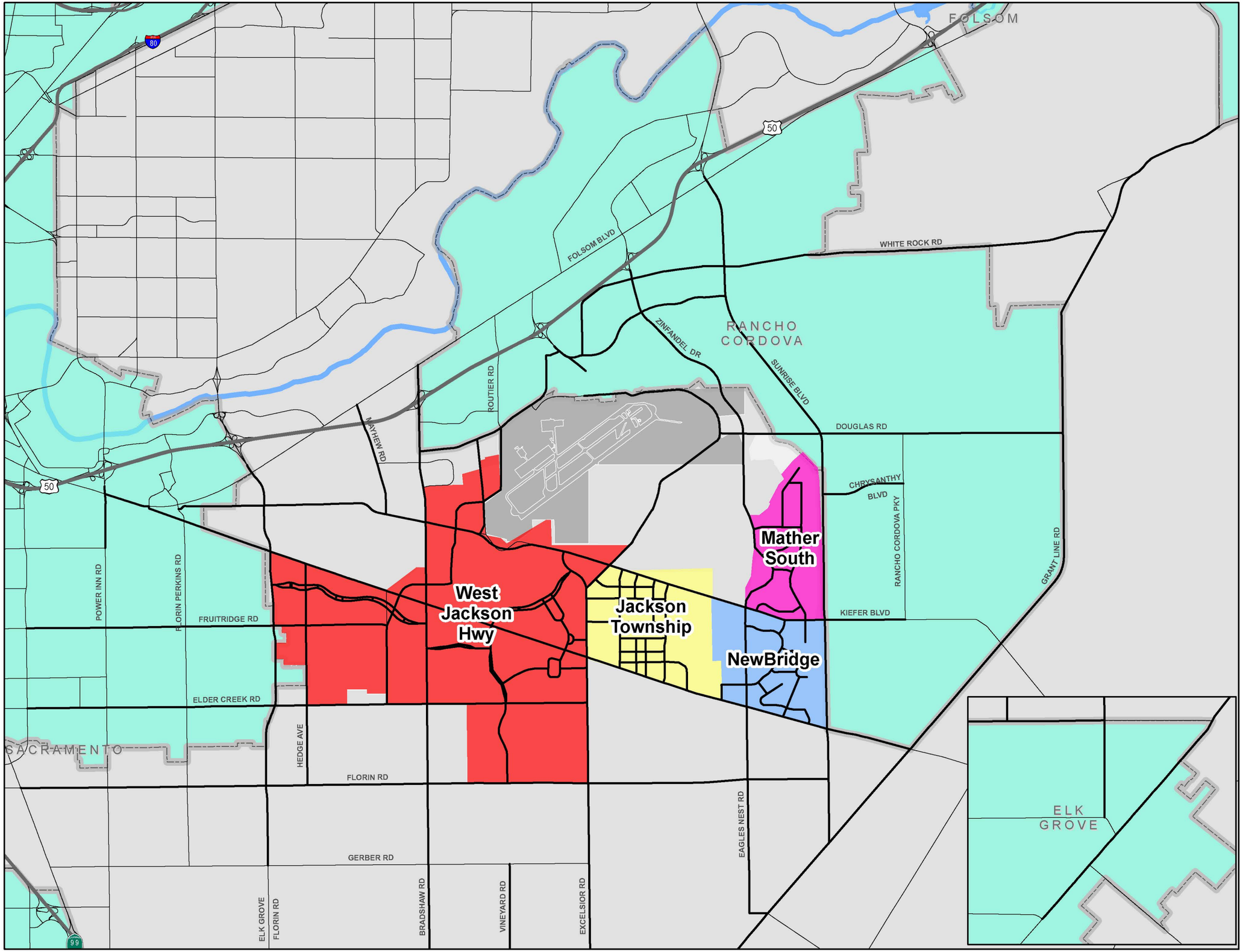
4.1.2.1 Roadway Segments and Intersections

Figure 4.2 illustrates the FOUR PROJECTS transportation network. The FOUR PROJECTS would widen and / or complete many roadways that cross or border the FOUR PROJECTS sites. The FOUR PROJECTS would improve many intersections within or on the borders of the projects. In addition, the FOUR PROJECTS would include new roadways to serve the proposed land use. The proposed improvements associated with the FOUR PROJECTS are summarized later in Sections 4.2.1 and 4.2.2.

4.1.2.2 Pedestrian and Bicycle Facilities

The roadways within the FOUR PROJECTS would meet County standards, which would provide sidewalks and on-street (Class II) bike lanes on all collector, arterial and thoroughfare roadways. The FOUR PROJECTS also provide several off-street (Class I) multi-purpose trails.

FIGURE 4.1
FOUR PROJECTS
PROJECT LOCATIONS



Legend

- Study Roadway Segments
- Freeways
- Other Major Roadways
- West Jackson Hwy Project
- Jackson Township Project
- NewBridge Project
- Mather South Project
- Cities
- Mather Airport

Table 4.1: Assumed Land Use for Existing Plus FOUR PROJECTS (Alt. 2) Scenario			
Project	**General Land Use**	**Acres**	**Dwelling Units**
West Jackson	Residential	1979.9	12,345
	Assumed Density Bonus[1]		237
	Mixed Use	120.9	2,418
	Commercial	342.8	
	Employment	803.3	
	Industrial	154.8	
	Schools	131.7	
	Park/Open Space/Ag	2108.3	
	Institutional	23.4	
	Primary Roadways	248.2	
	Subtotal	**5913.3**	**15,000**
Jackson Township	Residential	589.1	5,590
	Assumed Density Bonus[1]		76
	Commercial/Mixed Use	95.6	100
	Office	35.2	
	Pubic/Quasi Public	102.5	
	Park/Open Space/Ag	409.4	448
	Primary Roadways	84.2	
	Subtotal	**1,391.0**	**6,214**
NewBridge	Residential	368.0	2,915
	Assumed Density Bonus[1]		108
	Commercial/Mixed Use	31.7	160
	Office	13.8	
	Pubic/Quasi Public	13.8	
	Park/Open Space/Ag	514.7	660
	Primary Roadways	47.9	
	Subtotal	**1,095.3**	**3,843**

Table 4.1: Assumed Land Use for Existing Plus FOUR PROJECTS (Alt. 2) Scenario			
Project	**General Land Use**	**Acres**	**Dwelling Units**
Mather South	Residential	428.7	3,352
	Assumed Density Bonus[1]		30
	Commercial	21.1	
	Environmental Education Campus	27.9	200
	Research and Development	21.4	
	Parks & Recreation	43.1	
	Public Utilities	3.5	
	Schools	23.7	
	Open Space	210.5	
	Streets	62.7	
	Subtotal	**848.2**	**3,552**

[1] Reflects estimated potential for additional units that may occur due to County's Housing Incentive Program.

Source: *Project Applicants and Sacramento County, 2018.*

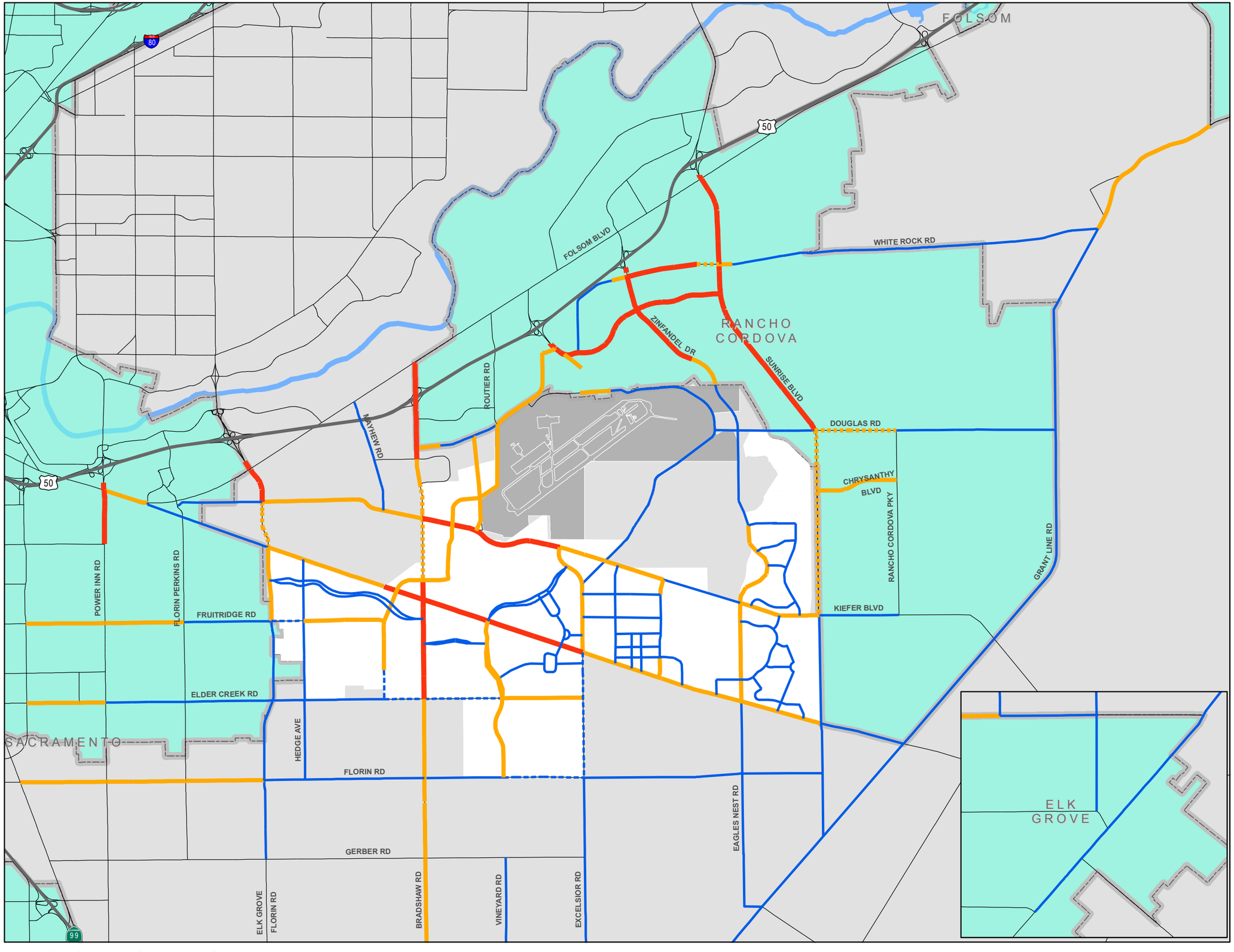


FIGURE 4.2
EXISTING PLUS FOUR PROJECTS (JACKSON TOWNSHIP ALT 2) ROADWAY NETWORK

Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport

DKS

4.1.2.3 Transit System

As described in Section 2.2, transit service in the vicinity of the FOUR PROJECTS is very limited. The FOUR PROJECTS are designed with significant amounts of higher density and mixed uses to help support transit use but transit service within walking distances of those uses is required to achieve significant transit ridership.

An accurate estimation of transit use requires the definition of specific transit routes and frequency of service on those routes. A separate planning effort, involving staff from Sacramento County and Sacramento Regional Transit (RT), was conducted to define an appropriate transit system for the transportation analysis. That effort is described in Section 3.1.2.3.

The planning effort resulted in four transit lines that would serve the FOUR PROJECTS at a frequency of 15 minutes during the peak commute hours (approximately 6-9 AM and 3-6 PM) and 30 minutes during off-peak service hours (approximately 9AM-3PM and 6PM-8PM) on weekdays. Another key characteristic of the proposed transit system built into the modeling assumptions is the targeted use of queue jumps on portions of key corridors (Bradshaw Road from Kiefer Boulevard to Rock Creek Parkway, and Jackson Road from Watt Avenue to Excelsior Road). Queue jumps ensure that buses are not excessively delayed at signals along congested corridors, and therefore not too heavily penalized from a travel time perspective. This is necessary to achieve the adequate ridership levels that were forecast and ensure reliable operations. **Figure 4.3** shows the assumed transit routes for this scenario.

The assumed transit routes, service frequency, and supporting infrastructure (i.e. queue jumps) would be required at full development of the FOUR PROJECTS. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the FOUR PROJECTS, must be phased with development of the FOUR PROJECTS.

4.2 TRIP GENERATION

The SACSIM model that has been utilized for the transportation forecasts in this analysis estimated trip generation of the FOUR PROJECTS. **Table 4.2** summarizes the person trip generation. The FOUR PROJECTS would generate over 85,000 daily work person trip ends, and over 672,000 daily person trip ends for all trip purposes.

Table 4.3 summarizes the estimated mode choice for the Existing plus FOUR PROJECTS scenario. Over 90 percent of all person trips are expected to be accommodated by automobile. Transit will serve about 1.4 percent of all trips, while walk and bike modes will accommodate about 7.7 percent of all trips. The mode choice assumes full implementation of the project's pedestrian and bicycle systems.

Table 4.4 summarizes the vehicular (auto) trip generation of the FOUR PROJECTS. The FOUR PROJECTS are estimated to generate nearly 462,000 daily vehicle trip ends. About 100,700 of the daily vehicle trip ends will be associated with trips with both an origin and destination within

the individual projects, about 21.8 percent of the trip ends. The internal trip ends represent about 50,300 daily vehicle trips (one-half the number of internal trip ends). The FOUR PROJECTS will generate about 361,200 external vehicle trips that have an origin or destination inside one of the FOUR PROJECTS but the other end of the trip is outside the project from which it originated. Table 4.4 also shows the vehicle trips generated during the a.m. and p.m. peak hours.

Table 4.2: Estimated Daily Person Trip Generation (Existing Plus FOUR PROJECTS Alt. 2 Scenario)

Trip Purpose	Daily Person Trip Ends
Work Trips	85,601
Non-Work Trips	587,097
All Trip Purposes	672,698

Source: *DKS Associates, 2018.*

Table 4.3: Mode Split (Existing Plus FOUR PROJECTS Alt. 2 Scenario)

Mode	Percentage of Person Trips by Trip Purpose		
	Work Trips	Non-Work Trips	All Trip Purposes
Auto - SOV	85.5%	48.7%	53.4%
Auto - HOV	10.3%	41.5%	37.5%
Transit	2.7%	1.3%	1.4%
Walk	1.0%	7.7%	6.9%
Bike	0.5%	0.8%	0.8%

Source: *DKS Associates, 2018.*

Table 4.4: Estimated Daily Vehicle Trip Generation (Existing Plus FOUR PROJECTS Alt. 2 Scenario)

Trip Type		AM Peak Hour	PM Peak Hour	Daily
Total Vehicle Trip Ends		39,960	43,388	461,920
Percent Internal Trip Ends[1]		18.5%	22.3%	21.8%
Vehicle Trips	Internal to Projects	3,687	4,838	50,315
	External to Projects	32,585	33,712	361,290
	Total	36,273	38,550	411,605

[1.] Both trip ends within individual projects.

Source: *DKS Associates, 2018.*

4.3 TRIP DISTRIBUTION

The distribution of trips associated with development of the FOUR PROJECTS was derived utilizing SACSIM, incorporating the proposed land use and access locations associated with the FOUR PROJECTS. Trip distribution varies by land use and time period. **Figure 4.4** illustrates the overall trip distribution of daily FOUR PROJECTS trips with the Existing Plus FOUR PROJECTS scenario. The highest percentages of FOUR PROJECTS traffic are accommodated on Jackson Road, Bradshaw Road, Kiefer Boulevard, and Vineyard Road.

4.4 OPERATIONS ANALYSIS AND IMPACTS

For purposes of this analysis, full development of the FOUR PROJECTS is assumed to occur "instantaneously." In this manner, the traffic and impacts associated with the FOUR PROJECTS can be directly compared to known and measured conditions. Existing scenario impacts are determined by comparing the traffic operating conditions associated with the FOUR PROJECTS with the traffic operating conditions associated with the existing (without FOUR PROJECTS) conditions, and comparing the change to the thresholds of significance. **Figure 4.5** illustrates the resultant traffic operating conditions.

4.4.1 Existing Plus FOUR PROJECTS Roadway Segment Impacts

Table 4.5 summarizes the results of the operations analysis for the study area roadway segments. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate new roadways or widened roadways. The last column of the table shows the project(s) responsible for the increase in the number of roadway lanes. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact.

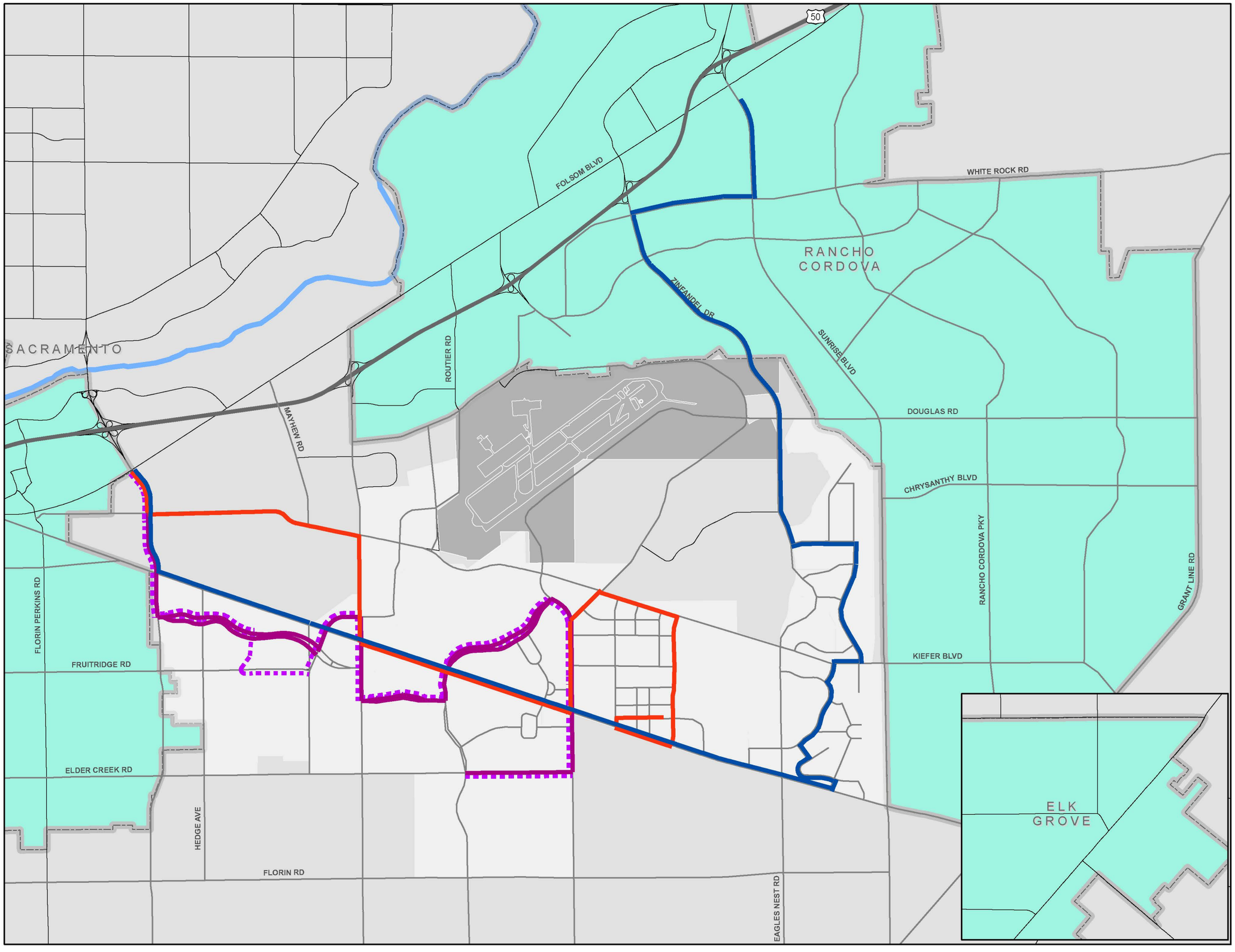


FIGURE 4.3
PROJECT TRANSIT NETWORK
EXISTING PLUS FOUR PROJECTS

Legend

- Jackson Express Route
- Kiefer Jackson Local Route
- West Jackson Local Route A
- West Jackson Local Route B
- Cities
- Mather Airport

DKS

FIGURE 4.4
EXISTING PLUS FOUR PROJECTS
FOUR PROJECTS TRIP DISTRIBUTION
(JACKSON TOWNSHIP ALT 2)

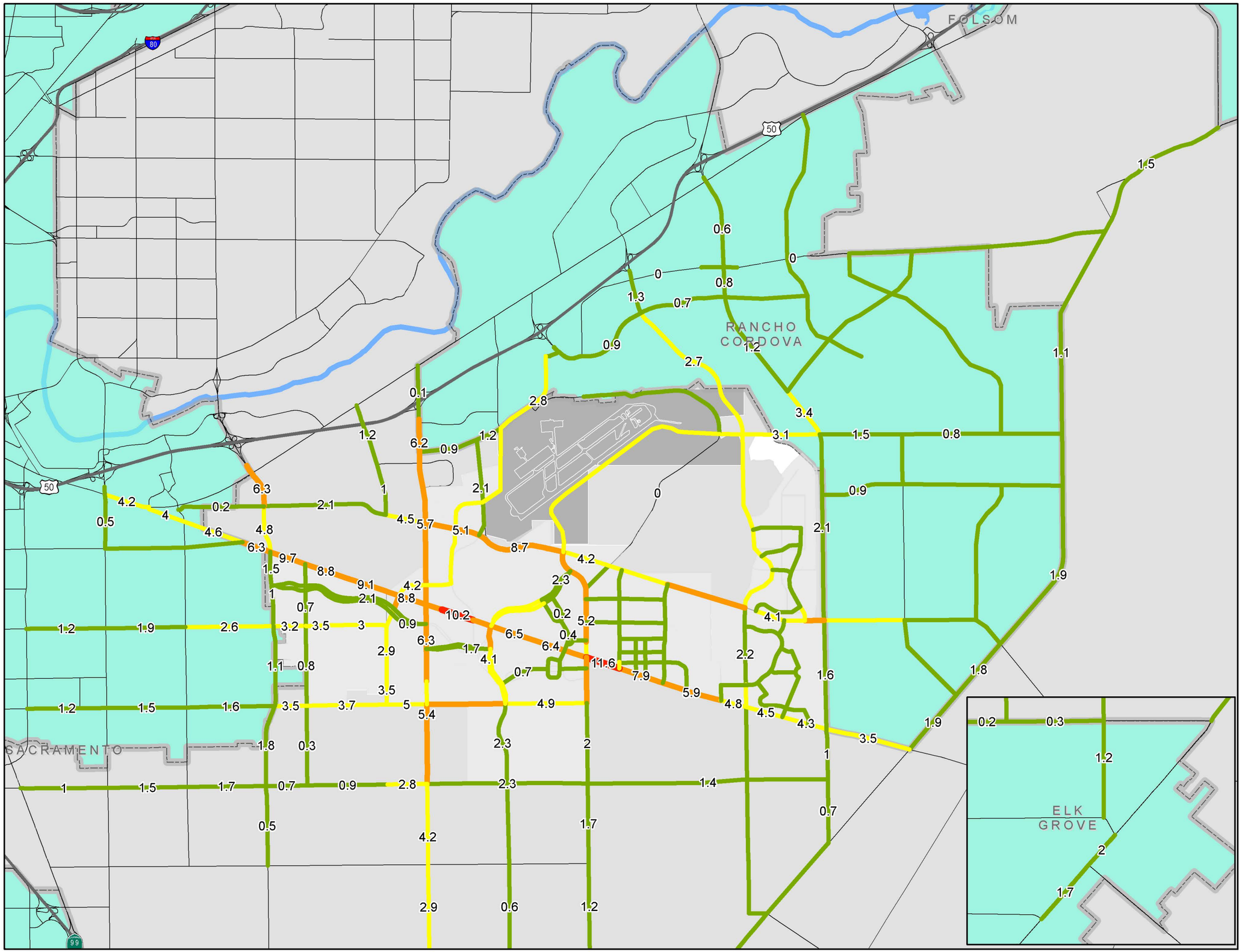
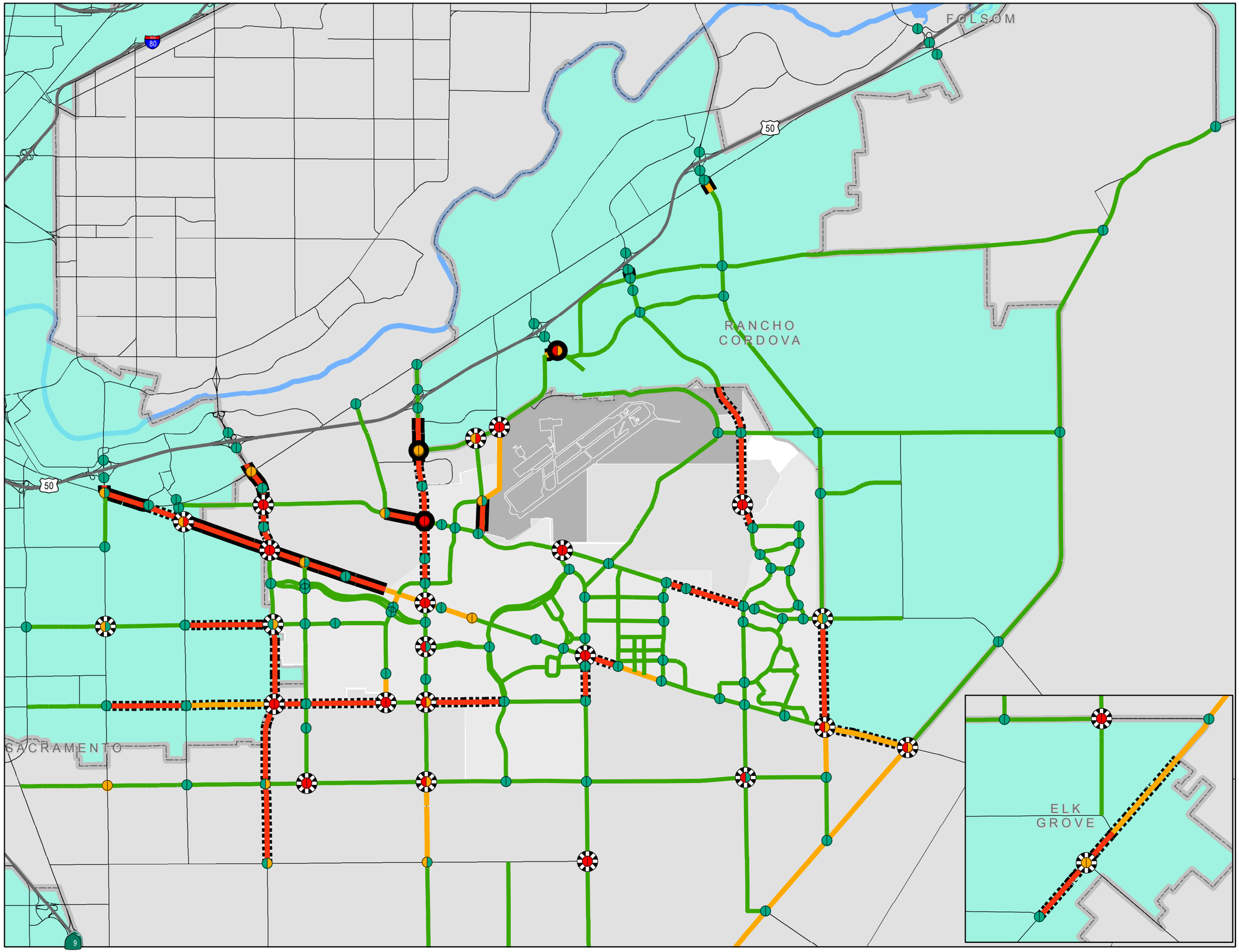


FIGURE 4.5
EXISTING PLUS FOUR PROJECTS (JACKSON TOWNSHIP ALT 2) ROADWAY SEGMENT AND INTERSECTION LOS AND IMPACTS



Legend

Intersections (AM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Intersections (PM Peak Hour)
- LOS A-D
- LOS E
- LOS F
- Mitigable Intersection Impact
- Unavoidable Intersection Impact

Roadway Segments
- LOS A-D
- LOS E
- LOS F

Impacts
- Unavoidable Segment Impact
- Mitigable Segment Impact
- Cities
- Mather Airport

DKS

Table 4.5
Existing Plus FOUR PROJECTS Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
1	Bradshaw Rd	Folsom Blvd	US 50	6	Arterial M	20,592	0.38	A	6	Arterial M	19,200	0.36	A	
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	52,590	0.97	**E**	6	Arterial M	74,850	1.39	**F**	
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	42,787	0.79	C	6	Arterial M	68,340	1.27	**F**	
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	38,984	0.72	C	6	Arterial M	60,800	1.13	**F**	
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	4	Arterial M	28,651	0.80	C	4	Arterial M	52,590	1.46	**F**	
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	4	Arterial M	28,651	0.80	C	5	Arterial M	48,280	1.34	**F**	West Jackson
6.1	Bradshaw Rd	Kiefer Blvd	Collector WJ-9	4	Arterial M	30,726	0.85	D	5	Arterial M	43,190	1.20	**F**	West Jackson
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	4	Arterial M	30,726	0.85	D	5	Arterial M	43,450	1.21	**F**	West Jackson
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd	4	Arterial M	30,726	0.85	D	6	Arterial M	45,410	0.84	D	West Jackson
7.1	Bradshaw Rd	Jackson Rd	Rock Creek Pkwy	4	Arterial M	22,871	0.64	B	6	Arterial M	35,380	0.66	B	West Jackson
7.2	Bradshaw Rd	Rock Creek Pkwy	Collector WJ-10	4	Arterial M	22,871	0.64	B	6	Arterial M	36,740	0.68	B	West Jackson
7.3	Bradshaw Rd	Collector WJ-10	Collector WJ-11	4	Arterial M	22,871	0.64	B	6	Arterial M	29,220	0.54	A	West Jackson
7.4	Bradshaw Rd	Collector WJ-11	Elder Creek Rd	4	Arterial M	22,871	0.64	B	6	Arterial M	23,920	0.44	A	West Jackson
8	Bradshaw Rd	Elder Creek Rd	Florin Rd	4	Arterial M	22,265	0.62	B	4	Arterial M	32,200	0.89	D	
9	Bradshaw Rd	Florin Rd	Gerber Rd	4	Arterial M	22,883	0.64	B	4	Arterial M	32,640	0.91	E	
10	Bradshaw Rd	Gerber Rd	Calvine Rd	4	Arterial M	16,984	0.47	A	4	Arterial M	24,860	0.69	B	
11	Calvine Rd	Waterman Rd	Bradshaw Rd	4	Arterial M	16,015	0.44	A	4	Arterial M	21,490	0.60	A	
12	Calvine Rd	Bradshaw Rd	Vineyard Rd	4	Arterial M	12,395	0.34	A	4	Arterial M	13,180	0.37	A	
13	Calvine Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	6,036	0.34	A	2	Arterial M	6,840	0.38	A	
14	Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	3,411	0.09	A	4	Arterial M	4,910	0.14	A	
15	Douglas Rd	Mather Blvd	Zinfandel Dr	2	Arterial M	6,635	0.37	A	2	Arterial M	5,950	0.33	A	
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	2	Arterial M	8,369	0.46	A	2	Arterial M	8,740	0.49	A	
17	Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	5	Arterial M	3,674	0.10	A	5	Arterial M	5,370	0.15	A	
18	Douglas Rd	Rancho Cordova Pkwy	Grant Line Rd	2	Arterial M	3,674	0.20	A	2	Arterial M	5,150	0.29	A	
19.1	Eagles Nest Rd	Kiefer Blvd	N Bridgewater Dr	2	Arterial M	740	0.04	A	4	Arterial M	8,640	0.24	A	NewBridge
19.2	Eagles Nest Rd	N Bridgewater Dr	S Bridgewater Dr	2	Arterial M	740	0.04	A	4	Arterial M	8,840	0.25	A	NewBridge
19.3	Eagles Nest Rd	S Bridgewater Dr	Jackson Rd	2	Arterial M	740	0.04	A	4	Arterial M	9,500	0.26	A	NewBridge
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Arterial M	517	0.03	A	2	Arterial M	6470	0.36	A	
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	2	Arterial M	189	0.01	A	2	Arterial M	3430	0.19	A	
22	Elder Creek Rd	65th St	Power Inn Rd	4	Arterial M	17,891	0.50	A	4	Arterial M	23,360	0.65	B	
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	15,734	0.87	D	2	Arterial M	22,490	1.25	**F**	
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	11,092	0.62	B	2	Arterial M	17,930	1.00	**E**	
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Arterial M	5,576	0.31	A	2	Arterial M	24,370	1.35	**F**	
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Arterial M	5,797	0.32	A	2	Arterial M	23,830	1.32	**F**	

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Table 4.5
Existing Plus FOUR PROJECTS Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	5,355	0.30	A	3	Arterial M	14,080	0.78	C	West Jackson
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	2	Arterial M	2,158	0.12	A	3	Arterial M	20,830	1.16	**F**	West Jackson
28.2	Elder Creek Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	2,158	0.12	A	4	Arterial M	17,660	0.49	A	West Jackson
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd	2	Arterial M	22,960	1.28	**F**	2	Arterial M	24,620	1.37	**F**	
30.1	Excelsior Rd	Kiefer Blvd	Douglas Rd	2	Arterial M	3,716	0.21	A	2	Arterial M	3,900	0.22	A	
30.2	Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	2	Arterial M	3,716	0.21	A	4	Arterial M	22,740	0.63	B	West Jackson; Jackson Township
30.3	Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	2	Arterial M	3,716	0.21	A	4	Arterial M	19,950	0.55	A	West Jackson; Jackson Township
30.4	Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	2	Arterial M	3,716	0.21	A	4	Arterial M	18,210	0.51	A	West Jackson; Jackson Township
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	2	Arterial M	5,075	0.28	A	3	Arterial M	28,310	1.57	**F**	West Jackson
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	2	Arterial M	5,075	0.28	A	3	Arterial M	27,210	1.51	**F**	West Jackson
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Arterial M	4,203	0.23	A	3	Arterial M	11,850	0.66	B	West Jackson
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	5,423	0.30	A	2	Arterial M	12,980	0.72	C	
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Arterial M	4,229	0.23	A	2	Arterial M	10,200	0.57	A	
35	Excelsior Rd	Calvine Rd	Sheldon Rd	2	Arterial M	4,473	0.25	A	2	Arterial M	8,490	0.47	A	
36	Florin Rd	Stockton Blvd	Power Inn Rd	4	Arterial M	27,495	0.76	C	4	Arterial M	31,530	0.88	D	
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	21,595	0.60	A	4	Arterial M	30,800	0.86	D	
38	Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	4	Arterial M	14,163	0.39	A	4	Arterial M	23,570	0.65	B	
39	Florin Rd	South Watt Ave	Hedge Ave	2	Arterial M	7,718	0.43	A	2	Arterial M	16,070	0.89	D	
40	Florin Rd	Hedge Ave	Mayhew Rd	2	Arterial M	6,312	0.35	A	2	Arterial M	13,050	0.73	C	
41	Florin Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	6,317	0.35	A	2	Arterial M	13,290	0.74	C	
42.1	Florin Rd	Bradshaw Rd	Vineyard Rd	2	Arterial M	3,478	0.19	A	2	Arterial M	12,760	0.71	C	
42.2	Florin Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	3,478	0.19	A	3	Arterial M	10,520	0.58	A	West Jackson
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	3,835	0.21	A	2	Arterial M	7,380	0.41	A	
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	37,516	1.04	**F**	4	Arterial M	54,050	1.50	**F**	
45	Fruitridge Rd	65th St	Power Inn Rd	4	Arterial M	16,634	0.46	A	4	Arterial M	22,930	0.64	B	
46	Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	4	Arterial M	15,214	0.42	A	4	Arterial M	27,790	0.77	C	
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	10,280	0.57	A	2	Arterial M	22,220	1.23	**F**	
48	Fruitridge Rd	South Watt Ave	Hedge Ave	2	Arterial M	2,890	0.16	A	3	Arterial M	14,950	0.83	D	West Jackson
49.1	Fruitridge Rd	Hedge Ave	Collector WJ-12	2	Arterial M	1,790	0.10	A	4	Arterial M	17,660	0.49	A	West Jackson

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Table 4.5
Existing Plus FOUR PROJECTS Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
49.2	Fruitridge Rd	Collector WJ-12	Mayhew Rd	2	Arterial M	1,790	0.10	A	4	Arterial M	15,820	0.44	A	West Jackson
50	Grant Line Rd	White Rock Rd	Douglas Rd	2	Rural NS	7,189	0.42	D	2	Rural NS	9,020	0.53	D	
51	Grant Line Rd	Douglas Rd	Kiefer Blvd	2	Rural S	6,143	0.31	C	2	Rural S	8,210	0.41	D	
52	Grant Line Rd	Kiefer Blvd	Jackson Rd	2	Rural S	5,758	0.29	C	2	Rural S	7,480	0.37	D	
53	Grant Line Rd	Jackson Rd	Sunrise Blvd	2	Rural S	14,720	0.74	E	2	Rural S	13,300	0.67	E	
54	Grant Line Rd	Sunrise Blvd	Calvine Rd	2	Rural S	14,812	0.74	E	2	Rural S	18,610	0.93	E	
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit	2	Rural S	13,140	0.66	E	2	Rural S	15,900	0.80	E	
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd	2	Rural S	13,140	0.66	**E**	2	Rural S	15,870	0.79	**E**	
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	17,459	0.87	**E**	2	Rural S	22,700	1.14	**F**	
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	16,064	0.80	**E**	2	Rural S	20,180	1.01	**F**	
58.1	Happy Lane	Old Placerville Road	Routier Ext	2	Rural S	4,635	0.23	C	2	Arterial M	7,540	0.42	A	
58.2	Happy Lane	Routier Ext	Kiefer Boulevard	2	Rural S	4,635	0.23	C	2	Arterial M	19,200	1.07	**F**	
59.1	Hedge Ave	Jackson Rd	Rock Creek Pkwy	2	Arterial M	3,061	0.17	A	2	Arterial M	7,900	0.44	A	
59.2	Hedge Ave	Rock Creek Pkwy	Fruitridge Rd	2	Arterial M	3,061	0.17	A	2	Arterial M	2,480	0.14	A	
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	3,737	0.21	A	2	Arterial M	3,630	0.20	A	
61	Hedge Ave	Elder Creek Rd	Florin Rd	2	Arterial M	2,722	0.15	A	2	Arterial M	3,650	0.20	A	
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	53,849	1.00	E	6	Arterial M	61,820	1.14	**F**	
63	International Dr	Mather Field Rd	Zinfandel Dr	6	Arterial M	17,500	0.32	A	6	Arterial M	22,320	0.41	A	
64	International Dr	Zinfandel Dr	Sunrise Blvd	6	Arterial M	8,802	0.16	A	6	Arterial M	10,890	0.20	A	
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd	2	Arterial M	12,358	0.69	B	2	Arterial M	33,010	1.83	**F**	
66	Jackson Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	10,414	0.58	A	2	Arterial M	37,200	2.07	**F**	
67	Jackson Rd	South Watt Ave	Hedge Ave	2	Arterial M	17,060	0.95	E	4	Arterial M	58,720	1.63	**F**	West Jackson
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	2	Arterial M	12,616	0.70	C	4	Arterial M	50,220	1.40	**F**	West Jackson
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	2	Arterial M	12,616	0.70	C	4	Arterial M	51,620	1.43	**F**	West Jackson
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	14,996	0.83	D	6	Arterial M	49,790	0.92	E	West Jackson
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	2	Arterial M	13,030	0.72	C	6	Arterial M	52,830	0.98	E	West Jackson
70.2	Jackson Rd	Collector WJ-4	Rock Creek Pkwy	2	Arterial M	13,030	0.72	C	6	Arterial M	52,860	0.98	E	West Jackson
70.3	Jackson Rd	Rock Creek Pkwy	Commercial Access	2	Arterial M	13,030	0.72	C	6	Arterial M	33,860	0.63	B	West Jackson
70.4	Jackson Rd	Commercial Access	Collector WJ-5	2	Arterial M	13,030	0.72	C	6	Arterial M	33,510	0.62	B	West Jackson
70.5	Jackson Rd	Collector WJ-5	Collector WJ-6	2	Arterial M	13,030	0.72	C	6	Arterial M	30,650	0.57	A	West Jackson
70.6	Jackson Rd	Collector WJ-6	Excelsior Rd	2	Arterial M	13,030	0.72	C	6	Arterial M	30,660	0.57	A	West Jackson
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	10,478	0.46	D	4	Arterial M	46,410	1.29	**F**	Jackson Township
71.2	Jackson Rd	Collector JT-3	Tree View Ln	2	Rural Hwy	10,478	0.46	D	4	Arterial M	32,930	0.91	E	Jackson Township
71.3	Jackson Rd	Tree View Ln	Collector JT-4	2	Rural Hwy	10,478	0.46	D	4	Arterial M	25,300	0.70	C	Jackson Township
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	2	Rural Hwy	10,478	0.46	D	4	Arterial M	21,520	0.60	A	Jackson Township

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Table 4.5
Existing Plus FOUR PROJECTS Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr	2	Rural Hwy	9,976	0.44	D	4	Arterial M	19,150	0.53	A	NewBridge
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd	2	Rural Hwy	9,976	0.44	D	4	Arterial M	18,210	0.51	A	NewBridge
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	13,306	0.58	D	2	Rural Hwy	17,610	0.77	**E**	
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	2	Arterial M	4,616	0.26	A	2	Arterial M	5,490	0.31	A	
75	Kiefer Blvd	South Watt Ave	Mayhew Rd	4	Arterial M	18,668	0.52	A	4	Arterial M	25,980	0.72	C	
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	9,274	0.26	A	4	Arterial M	36,970	1.03	**F**	
77.1	Kiefer Boulevard	Bradshaw Road	Collector WJ-14	2	Arterial M	4,618	0.26	A	6	Arterial M	42,680	0.79	C	West Jackson
77.2	Kiefer Boulevard	Collector WJ-14	Routier Ext	2	Arterial M	4,618	0.26	A	6	Arterial M	38,960	0.72	C	West Jackson
77.3	Kiefer Boulevard	Routier Ext	Happy Lane	2	Arterial M	4,618	0.26	A	6	Arterial M	38,960	0.72	C	West Jackson
78.1	Kiefer Blvd	Eagles Nest Rd	W Collector MS-1	2	Arterial M	656	0.04	A	4	Arterial M	15,450	0.43	A	NewBridge; Mather South
78.2	Kiefer Blvd	W Collector MS-1	Northbridge Dr	2	Arterial M	656	0.04	A	4	Arterial M	12,100	0.34	A	NewBridge; Mather South
78.3	Kiefer Blvd	Northbridge Dr	E Collector MS-1	2	Arterial M	656	0.04	A	4	Arterial M	12,590	0.35	A	NewBridge; Mather South
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	2	Arterial M	656	0.04	A	4	Arterial M	14,640	0.41	A	NewBridge; Mather South
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	2	Arterial M	2,786	0.15	A	2	Arterial M	2,870	0.16	A	
80	Mather Blvd / Norden Ave	Von Karman St	Bleckely St	4	Arterial M	4,373	0.12	A	4	Arterial M	5,110	0.14	A	
81	Mather Blvd	Bleckely St	Femoyer St	4	Arterial M	4,373	0.12	A	4	Arterial M	5,110	0.14	A	
82	Mather Blvd	Femoyer St	Douglas Rd	2	Arterial M	4,373	0.24	A	2	Arterial M	5,060	0.28	A	
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	6,751	0.84	E	2	Res Collector F	4,400	0.55	C	
84	Mather Field Rd	US 50	Rockingham Dr	6	Arterial M	37,755	0.70	B	6	Arterial M	39,970	0.74	C	
85	Mather Field Rd	Rockingham Dr	International Dr	6	Arterial M	37,520	0.69	B	6	Arterial M	43,990	0.81	D	
86	Mather Field Rd	International Dr	Peter A McCuen Blvd	4	Arterial M	14,857	0.41	A	4	Arterial M	15,120	0.42	A	
87	Mayhew Rd	Folsom Blvd	Goethe Rd	2	Arterial M	6,977	0.39	A	2	Arterial M	13,250	0.74	C	
88	Mayhew Rd	Goethe Rd	Kiefer Blvd	2	Arterial L	6,593	0.44	A	2	Arterial L	10,550	0.70	C	
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy	2	Arterial L	1,616	0.11	A	4	Arterial M	34,140	0.95	E	West Jackson
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	2	Arterial L	1,616	0.11	A	4	Arterial M	30,710	0.85	D	West Jackson
90	Old Placerville Rd	Bradshaw Rd	Granby Dr	4	Arterial M	15,800	0.44	A	4	Arterial M	13,480	0.37	A	
91	Old Placerville Rd	Granby Dr	Happy Ln	2	Arterial M	13,573	0.75	C	2	Arterial M	10,000	0.56	A	
92	Old Placerville Rd	Happy Ln	Routier Rd	2	Arterial M	10,710	0.60	A	2	Arterial M	6,820	0.38	A	
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	10,710	0.30	A	4	Arterial M	28,740	0.80	C	

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ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
94	Power Inn Rd	Folsom Blvd	14th Ave	6	Arterial M	36,175	0.67	B	6	Arterial M	35,440	0.66	B	
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	19,881	0.55	A	4	Arterial M	32,640	0.91	**E**	
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	40,920	0.76	C	6	Arterial M	64,430	1.19	**F**	
97	South Watt Ave	Kiefer Blvd	Jackson Rd	5	Arterial M	32,415	0.90	E	5	Arterial M	49,470	1.37	**F**	
98.1	South Watt Ave	Jackson Rd	Rock Creek Pkwy	2	Arterial M	25,832	1.44	**F**	4	Arterial M	30,560	0.85	D	West Jackson
98.2	South Watt Ave	Rock Creek Pkwy	Fruitridge Rd	2	Arterial M	25,832	1.44	**F**	4	Arterial M	29,530	0.82	D	West Jackson
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	21,567	1.20	**F**	2	Arterial M	22,290	1.24	**F**	
100	South Watt Ave	Elder Creek Rd	Florin Rd	2	Arterial M	19,069	1.06	**F**	2	Arterial M	24,510	1.36	**F**	
101	Sunrise Blvd	US 50	Folsom Blvd	7	Arterial M	54,500	1.01	**F**	7	Arterial M	56,110	1.04	**F**	
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr	6	Arterial M	49,500	0.92	**E**	6	Arterial M	52,840	0.98	**E**	
103	Sunrise Blvd	Trade Center Dr	White Rock Rd	6	Arterial M	34,571	0.64	B	6	Arterial M	39,700	0.74	C	
104.1	Sunrise Blvd	White Rock Rd	International Dr	6	Arterial M	25,811	0.48	A	6	Arterial M	30,620	0.57	A	
104.2	Sunrise Blvd	International Dr	Rio Del Oro Pkwy	6	Arterial M	28,400	0.53	A	6	Arterial M	34,510	0.64	B	
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	25,811	0.48	A	6	Arterial M	33,060	0.61	B	
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	21,878	0.61	B	5	Arterial M	28,140	0.78	C	
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	16,894	0.94	**E**	2	Arterial M	20,300	1.13	**F**	
107	Sunrise Blvd	Jackson Rd	Florin Rd	2	Rural S	11,181	0.56	D	2	Rural S	14,360	0.72	E	
108	Sunrise Blvd	Florin Rd	Grant Line Rd	2	Rural S	7,752	0.39	D	2	Rural S	10,370	0.52	D	
109	Vineyard Rd	Gerber Rd	Calvine Rd	2	Arterial M	5,515	0.31	A	2	Arterial M	5,610	0.31	A	
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	65,242	1.09	**F**	6	Arterial H	77,770	1.30	**F**	
111	White Rock Rd	International Rd	Quality Dr	2	Arterial M	3,962	0.22	A	2	Arterial M	4,010	0.22	A	
112	White Rock Rd	Quality Dr	Zinfandel Dr	4	Arterial M	11,200	0.31	A	4	Arterial M	10,270	0.29	A	
113	White Rock Rd	Zinfandel Dr	Kilgore Rd	6	Arterial M	14,756	0.27	A	6	Arterial M	14,920	0.28	A	
114	White Rock Rd	Kilgore Rd	Sunrise Blvd	5	Arterial M	14,756	0.41	A	5	Arterial M	15,670	0.44	A	
115	White Rock Rd	Sunrise Blvd	Fitzgerald Rd	4	Arterial M	15,433	0.43	A	4	Arterial M	15,950	0.44	A	
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	2	Rural NS	2,490	0.15	B	2	Rural NS	2,090	0.12	B	
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial M	9,400	0.26	A	4	Arterial M	10,840	0.30	A	
118	Zinfandel Dr	US 50	White Rock Rd	7	Arterial M	45,228	0.84	D	7	Arterial M	49,950	0.93	**E**	
119	Zinfandel Dr	White Rock Rd	International Rd	6	Arterial M	17,923	0.33	A	6	Arterial M	26,460	0.49	A	
120	Zinfandel Dr	International Rd	Baroque Dr	6	Arterial M	7,595	0.14	A	6	Arterial M	20,710	0.38	A	
121	Zinfandel Dr	Baroque Dr	City Limit	4	Arterial M	7,595	0.21	A	4	Arterial M	20,710	0.58	A	
122	Zinfandel Dr	City Limit	Douglas Rd	2	Arterial M	7,595	0.42	A	2	Arterial M	20,710	1.15	**F**	
123.1	Zinfandel Dr	Douglas Rd	Collector MS-2	2	Arterial M	2,848	0.16	A	2	Arterial M	19,830	1.10	**F**	

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 4.5
Existing Plus FOUR PROJECTS Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
123.2	Zinfandel Dr	Collector MS-2	Collector MS-3						4	Arterial M	14,290	0.40	A	Mather South
123.3	Zinfandel Dr	Collector MS-3	Collector MS-4						4	Arterial M	13,870	0.39	A	Mather South
123.4	Zinfandel Dr	Collector MS-4	Kiefer Blvd						4	Arterial M	14,340	0.40	A	Mather South
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd						2	Arterial M	22,170	1.23	**F**	West Jackson; Jackson Township; NewBridge; Mather South
300	Douglas Rd	Excelsior Rd	Rock Creek Pkwy						4	Arterial M	22,870	0.64	B	West Jackson
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd						4	Arterial M	25,560	0.71	C	West Jackson
302	Kiefer Blvd	Happy Ln	Douglas Rd						6	Arterial M	48,300	0.89	D	West Jackson
303	Kiefer Blvd	Douglas Rd	Excelsior Rd						4	Arterial M	22,770	0.63	B	West Jackson
304	Mayhew Rd	Routier Ext	Bradshaw Rd						4	Arterial M	24,750	0.69	B	West Jackson
305	Mayhew Rd	Bradshaw Rd	Jackson Rd						4	Arterial M	26,950	0.75	C	West Jackson
306	Mayhew Rd	Fruitridge Rd	Collector WJ-13						4	Arterial M	17,410	0.48	A	West Jackson
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd						3	Arterial M	17,620	0.98	E	West Jackson
308	Rock Creek Pkwy	South Watt Ave	Hedge Ave						2	Arterial M	2,370	0.13	A	West Jackson
309	Rock Creek Pkwy	Hedge Ave	Mayhew Rd						2	Arterial M	7,530	0.42	A	West Jackson
310	Rock Creek Pkwy	Mayhew Rd	Bradshaw Rd						2	Arterial M	3,550	0.20	A	West Jackson
311	Rock Creek Pkwy East	Excelsior Road	Collector WJ-16						2	Arterial M	6,200	0.34	A	West Jackson
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road						2	Arterial M	12,670	0.70	C	West Jackson
313	Vineyard Rd	Jackson Road	New Collector						4	Arterial M	22,670	0.63	B	West Jackson
314	Vineyard Rd	New Collector	Collector WJ-18						4	Arterial M	19,780	0.55	A	West Jackson
315	Vineyard Rd	Collector WJ-18	Elder Creek Road						4	Arterial M	17,170	0.48	A	West Jackson
316	Vineyard Rd	Elder Creek Road	Florin Road						4	Arterial M	8,760	0.24	A	West Jackson
317	Routier Ext	Old Placerville Road	Happy Lane						4	Arterial M	34,000	0.94	E	West Jackson
318	Routier Ext	Happy Lane	Kiefer Boulevard						4	Arterial M	22,830	0.63	B	West Jackson
319	Routier Ext	Kiefer Boulevard	Mayhew Road						4	Arterial M	23,730	0.66	B	West Jackson
320	Collector WJ-16	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	780	0.10	A	West Jackson
321	Collector WJ-17	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	710	0.09	A	West Jackson
322	Collector WJ-6	Collector WJ-16/WJ-17	Jackson Road						2	Res Collector F	2,600	0.33	B	West Jackson

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Table 4.5
Existing Plus FOUR PROJECTS Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
323	Collector WJ-6	Jackson Road	Collector WJ-18						2	Res Collector F	2,860	0.36	B	West Jackson
324	Collector WJ-2	Excelsior Road	Collector WJ-6						2	Res Collector F	2,360	0.30	B	West Jackson
325	Collector WJ-18	Vineyard Rd	Collector WJ-6						2	Res Collector F	2,880	0.36	B	West Jackson
326	Collector WJ-18	Collector WJ-6	Excelsior Road						2	Res Collector F	3,110	0.39	B	West Jackson
327	Collector WJ-19	Bradshaw Road	Vineyard Road						2	Arterial M	4,740	0.26	A	West Jackson
400	Collector JT-1	Excelsior Rd	Collector JT-3						2	Res Collector F	3,340	0.42	C	Jackson Township
401	Collector JT-1	Collector JT-3	Tree View Ln						2	Res Collector F	1,170	0.15	A	Jackson Township
402	Collector JT-3	Kiefer Blvd	Collector JT-1						2	Res Collector F	2,980	0.37	B	Jackson Township
403	Collector JT-3	Collector JT-1	Collector JT-6						2	Res Collector F	1,400	0.18	A	Jackson Township
404	Collector JT-3	Collector JT-6	Collector JT-5						2	Res Collector F	2,670	0.33	B	Jackson Township
405	Collector JT-3	Collector JT-5	Jackson Rd						2	Arterial M	15,060	0.84	D	Jackson Township
406	Collector JT-4	Jackson Rd	Bridgewater Dr						2	Arterial M	3,930	0.22	A	Jackson Township
407	Collector JT-5	Collector JT-3	Tree View Ln						2	Arterial M	7,370	0.41	A	Jackson Township
408	Collector JT-6	Excelsior Rd	Collector JT-3						2	Res Collector F	3,420	0.43	C	Jackson Township
409	Collector JT-6	Collector JT-3	Tree View Ln						2	Res Collector F	630	0.08	A	Jackson Township
410	Kiefer Blvd	Excelsior Rd	Tree View Ln						4	Arterial M	20,080	0.56	A	Jackson Township
411	Tree View Ln	Kiefer Blvd	Collector JT-1						4	Arterial M	9,360	0.26	A	Jackson Township
412	Tree View Ln	Collector JT-1	Collector JT-6						2	Arterial M	8,940	0.50	A	Jackson Township
413	Tree View Ln	Collector JT-6	Collector JT-5						2	Arterial M	8,860	0.49	A	Jackson Township
414	Tree View Ln	Collector JT-5	Jackson Rd						4	Arterial M	4,520	0.13	A	Jackson Township
415	Collector JT-7	Collector JT-3	Tree View Ln						2	Arterial M	1,320	0.07	A	Jackson Township
416	Collector JT-8	Collector JT-3	Tree View Ln						2	Arterial M	1,740	0.10	A	Jackson Township

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Table 4.5
Existing Plus FOUR PROJECTS Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
417	Collector JT-9	Jackson Rd	Collector JT-8						2	Arterial M	6,240	0.35	A	Jackson Township
418	Collector JT-10	Jackson Rd	Collector JT-8						2	Arterial M	1,820	0.10	A	Jackson Township
419	Collector JT-6	Tree View Ln	Jackson Rd						2	Res Collector F	640	0.08	A	Jackson Township
500	S Bridgewater Dr	Collector JT-4	Eagles Nest Rd						2	Res Collector F	4,000	0.50	C	NewBridge
501	S Bridgewater Dr	Eagles Nest Rd	Northbridge Dr						2	Res Collector F	3,240	0.41	C	NewBridge
502	N Bridgewater Dr	Northbridge Dr	Eagles Nest Rd						2	Res Collector F	1,060	0.13	A	NewBridge
503	Northbridge Dr	Kiefer Blvd	Bridgewater Dr						2	Arterial M	2,710	0.15	A	NewBridge
504	Street A	S Bridgewater Dr	Street B						2	Res Collector F	1,470	0.18	A	NewBridge
505	Street B	S Bridgewater Dr	Street A						2	Res Collector F	1,270	0.16	A	NewBridge
506	Rockbridge Dr	Street B	Stonebridge Dr						2	Res Collector F	1,480	0.19	A	NewBridge
507	Rockbridge Dr	Stonebridge Dr	Jackson Rd						2	Arterial M	4,320	0.24	A	NewBridge
508	Stonebridge Dr	S Bridgewater Dr	Rockbridge Dr						2	Arterial M	2,290	0.13	A	NewBridge
509	Stonebridge Dr	Rockbridge Dr	Jackson Rd						2	Res Collector F	2,440	0.31	B	NewBridge
600	Collector MS-1	Kiefer Boulevard	Collector MS-5						2	Arterial M	9,920	0.55	A	Mather South
601	Collector MS-1	Collector MS-5	Collector MS-4						2	Arterial M	4,820	0.27	A	Mather South
602	Collector MS-1	Collector MS-4	Collector MS-3						2	Res Collector F	5,130	0.64	D	Mather South
603	Collector MS-1	Collector MS-3	Collector MS-2						2	Arterial M	2,470	0.14	A	Mather South
604	Collector MS-2	Eagles Nest Road	Collector MS-5						2	Arterial M	7,530	0.42	A	Mather South
605	Collector MS-3	Eagles Nest Road	Collector MS-5						2	Arterial M	6,120	0.34	A	Mather South
606	Collector MS-4	Eagles Nest Road	Collector MS-5						2	Arterial M	5,940	0.33	A	Mather South
607	Collector MS-5	Kiefer Boulevard	Collector MS-1						2	Arterial M	4,650	0.26	A	Mather South

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 4.5
Existing Plus FOUR PROJECTS Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

4.4.2 Existing Plus FOUR PROJECTS Intersection Impacts

Tables 4.6 and 4.7 summarize the results of the operations analysis for the study area intersections. The tables include the implementation of intersection changes associated with the FOUR PROJECTS. Table 4.7 illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type would be fully funded by the project(s) shown in the last column. Shaded table cells in Table 4.6 illustrate those locations with an LOS impact. Detailed analysis information is included in the technical appendix.

Signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. The project is considered to have a significant impact at an unsignalized location if both the impact criteria in Table 1.6 are met, and one or more of the signal warrants specified in the California Manual on Uniform Traffic Control Devices (CAMUTCD) are met. The following unsignalized intersections exhibit significant impacts and meet one or more traffic signal warrants:

- Hedge Avenue and Florin Road
- Happy Lane and Old Placerville Road
- Excelsior Road and Gerber Road
- Eagles Nest Road and Florin Road
- Excelsior Road and Calvine Road

4.4.3 Existing Plus FOUR PROJECTS U.S. 50 Freeway Impacts

4.4.3.1 Freeway Basic Segments

Table 4.8 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations. Details of the analysis are included in the technical appendix. The following locations exhibit significant impacts:

- Eastbound US 50
    - Stockton Boulevard to 59th Street - a.m. peak hour
    - Zinfandel Drive to Hazel Avenue - p.m. peak hour
- Westbound US 50
    - Watt Avenue to SR 99 / SR 51 - p.m. peak hour

4.4.3.2 Freeway Merge/Diverge/Weave Segments

Table 4.9 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas. Details of the analysis are included in the technical appendix. The following locations exhibit significant impacts:

- Eastbound
    - 65th Street to Howe Avenue weave - a.m. peak hour
    - Mather Field Road to Zinfandel Drive weave - a.m. peak hour

4.4.3.3 Freeway Ramp Intersection Queuing

Table 4.10 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. No locations exhibit a significant impact.

Table 4.6

Existing Plus FOUR PROJECTS Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
1	Howe Avenue & College Town Drive/US 50 WB Ramps	Signal	D	36.6	Signal	B	18.1	No	Signal	D	44.4	Signal	C	25.2	No
2	Howe Avenue & US 50 EB Ramps	Signal	B	16.9	Signal	C	27.2	No	Signal	C	20.5	Signal	B	11.9	No
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	D	39.1	Signal	E	73.4	No	Signal	D	55.0	Signal	D	53.3	No
4	Power Inn Road & 14th Avenue	Signal	C	31.5	Signal	B	16.6	No	Signal	D	39.6	Signal	C	20.5	No
5	Power Inn Road & Fruitridge Road	Signal	D	43.4	Signal	E	59.5	Yes	Signal	C	33.5	Signal	D	35.3	No
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	D	36.8	Signal	C	30.5	No	Signal	C	32.1	Signal	D	41.8	No
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	D	39.0	Signal	C	23.9	No	Signal	E	55.6	Signal	C	30.1	No
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop			Two-way stop			No	Two-way stop			Two-way stop			No
	Westbound Left Turn		*C*	*20.1*		*C*	*19.4*			*C*	*23.3*		D	33.5	
	Westbound Right Turn		*B*	*13.3*		*B*	*11.3*			*B*	*12.6*		*B*	*13.3*	
	Southbound Left Turn		*A*	*10.0*		*A*	*9.3*			*B*	*10.9*		*B*	*12.9*	
9	Florin Perkins Road & Jackson Road	Signal	D	51.5	Signal	**E**	**70.0**	No	Signal	D	54.1	Signal	F	144.0	Yes
10	Florin Perkins Road & Fruitridge Road	Signal	C	25.1	Signal	C	29.3	No	Signal	C	25.4	Signal	C	22.6	No
11	Florin Perkins Road & Elder Creek Road	Signal	C	25.7	Signal	B	18.5	No	Signal	C	26.2	Signal	C	26.9	No
12	Watt Avenue & Folsom Blvd.	Signal	E	66.2	Signal	E	78.0	No	Signal	E	71.9	Signal	E	75.9	No
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	B	19.6	Signal	B	10.6	No	Signal	D	54.1	Signal	B	13.4	No
14	S. Watt Avenue & Kiefer Blvd.	Signal	E	56.0	Signal	F	121.3	Yes	Signal	E	75.9	Signal	F	105.7	Yes

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Table 4.6

Existing Plus FOUR PROJECTS (**Alternative 2**) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
15	S. Watt Avenue & Canberra Dr.	Signal	B	11.5	Signal	A	8.4	No	Signal	A	9.7	Signal	A	6.4	No
16	S. Watt Avenue & Jackson Road	Signal	E	62.5	Signal	F	331.7	Yes	Signal	E	66.4	Signal	F	773.1	Yes
17	S. Watt Avenue & Fruitridge Road	Signal	D	38.1	Signal	D	52.2	No	Signal	D	41.7	Signal	E	65.2	Yes
18	S. Watt Avenue & Elder Creek Road	Signal	E	62.7	Signal	F	125.6	Yes	Signal	E	68.8	Signal	F	143.8	Yes
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	D	54.7	Signal	D	45.9	No	Signal	D	51.8	Signal	E	56.1	No
21	Elk Grove Florin Road & Gerber Road	Signal	D	49.1	Signal	D	44.5	No	Signal	E	64.6	Signal	E	73.9	No
23	Hedge Avenue & Jackson Road	Signal	D	35.1	Signal	E	75.7	No	Signal	D	37.3	Signal	C	32.0	No
24	Hedge Avenue & Fruitridge Road	All-way stop	B	13.6	Signal	B	17.4	No	All-way stop	A	9.4	Signal	B	14.6	No
25	Hedge Avenue & Elder Creek Road	All-way stop	C	15.9	Signal	B	18.2	No	All-way stop	B	11.6	Signal	C	23.5	No
26	Hedge Avenue & Tokay Lane	Two-way stop			Two-way stop			No	Two-way stop			Two-way stop			No
	Northbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*0.0*		*A*	*0.0*	
	Southbound Left Turn		*A*	*8.0*		*A*	*0.0*			*A*	*7.3*		*A*	*7.4*	
	Eastbound		*B*	*12.2*		*B*	*14.6*			*B*	*10.2*		*B*	*12.4*	
	Westbound		*B*	*11.1*		*B*	*13.1*			*A*	*9.6*		*B*	*10.9*	
27	Hedge Avenue & Florin Road	All-way stop	B	12.9	All-way stop	F	217.6	Yes	All-way stop	B	11.1	All-way stop	F	68.8	Yes
28	Mayhew Road & Kiefer Boulevard	Signal	D	48.6	Signal	E	74.9	No	Signal	D	51.1	Signal	D	49.5	No

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Table 4.6

Existing Plus FOUR PROJECTS (**Alternative 2**) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
29	Mayhew Road & Jackson Road	Two-way stop			Signal	D	48.6	No	Two-way stop			Signal	D	51.0	No
	Northbound Through - Left Turn		*D*	*27.6*						*D*	*34.0*				
	Northbound Right Turn		*B*	*11.8*						*C*	*15.0*				
	Southbound		*C*	*18.3*						*C*	*24.9*				
	Eastbound Left Turn		*A*	*8.9*						*A*	*8.4*				
	Westbound Left Turn		*A*	*8.3*						*A*	*9.3*				
30	Mayhew Road & Fruitridge Road	Two-way stop			Signal	B	13.8	No	Two-way stop			Signal	B	19.7	No
	Northbound Left Turn		*A*	*0.0*						*A*	*7.4*				
	Eastbound		*A*	*9.2*						*A*	*9.2*				
31	Mayhew Road & Elder Creek Road	Two-way stop			Signal	F	294.2	Yes	Two-way stop			Signal	F	275.9	Yes
	Northbound		*B*	*11.9*						*B*	*10.9*				
	Southbound		*B*	*11.1*						*A*	*9.8*				
	Eastbound Left Turn		*A*	*8.3*						*A*	*7.6*				
	Westbound Left Turn		*A*	*7.5*						*A*	*0.0*				
32	Woodring Drive & Zinfandel Drive	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Eastbound		*A*	*9.3*		F	83.8			*A*	*9.3*		F	78.8	
	Northbound Left Turn		*A*	*0.0*		*A*	*9.4*			*A*	*0.0*		*B*	*10.1*	
33	Bradshaw Road & Folsom Blvd.	Signal	E	56.7	Signal	B	19.7	No	Signal	D	49.9	Signal	B	18.7	No
34	Bradshaw Road & US 50 WB Ramps	Signal	B	15.9	Signal	A	7.6	No	Signal	B	15.2	Signal	C	22.4	No
35	Bradshaw Road & US 50 EB Ramps	Signal	C	24.4	Signal	D	37.8	No	Signal	B	16.0	Signal	C	28.9	No
36	Bradshaw Road & Old Placerville Road	Signal	D	45.9	Signal	E	61.2	Yes	Signal	D	52.0	Signal	E	62.7	Yes
37	Bradshaw Road & Kiefer Boulevard	Signal	D	45.7	Signal	F	101.3	Yes	Signal	E	66.2	Signal	F	104.5	Yes

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Table 4.6

Existing Plus FOUR PROJECTS (**Alternative 2**) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
38	Bradshaw Road & Jackson Road	Signal	E	73.1	Signal	F	92.6	Yes	Signal	E	59.4	Signal	F	82.1	Yes
39	Bradshaw Road & Elder Creek Road	Signal	D	36.8	Signal	F	80.1	Yes	Signal	D	36.1	Signal	E	71.5	No
40	Bradshaw Road & Florin Road	Signal	D	38.1	Signal	F	109.0	Yes	Signal	D	53.6	Signal	E	72.3	No
41	Bradshaw Road & Gerber Road	Signal	E	72.2	Signal	E	74.9	No	Signal	D	49.9	Signal	D	44.1	No
42	Happy Lane & Old Placerville Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound Left Turn		*F*	*64.8*		*E*	*40.0*			*F*	*95.9*		*F*	*>300*	
	Northbound Right Turn		*D*	*30.6*		C	16.2			*C*	*15.4*		B	13.6	
	Westbound Left Turn		*B*	*10.2*		A	9.0			*B*	*10.1*		*A*	*9.2*	
43	Happy Lane & Kiefer Boulevard	Free Turn			Signal	D	46.8	No	Free Turn			Signal	C	26.5	No
44	Excelsior Road & Kiefer Boulevard	West Jackson/Jackson Township Project Int.			Signal	C	30.2	No	West Jackson/Jackson Township Project Int.			Signal	C	21.3	No
45	Excelsior Road & Jackson Road	Signal	D	36.7	Signal	F	273.0	Yes	Signal	D	40.3	Signal	F	222.4	Yes
46	Excelsior Road & Elder Creek Road	Two-way stop			Signal	D	44.9	No	Two-way stop			Signal	D	42.5	No
	Northbound Left Turn		*A*	*7.5*						*A*	*8.0*				
	Eastbound		*C*	*18.6*						*B*	*12.3*				
47	Excelsior Road & Florin Road	All-way stop	C	24.9	Signal	D	48.4	No	All-way stop	B	12.5	Signal	D	41.2	No
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	B	14.0	All-way stop	F	151.9	Yes	All-way stop	B	10.6	All-way stop	F	108.0	Yes
49	Mather Field Road & US 50 WB Ramps	Signal	C	24.7	Signal	B	13.5	No	Signal	A	9.4	Signal	A	6.0	No
50	Mather Field Road & US 50 EB Ramps	Signal	C	27.7	Signal	B	17.7	No	Signal	B	13.4	Signal	A	6.8	No

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Table 4.6

Existing Plus FOUR PROJECTS (**Alternative 2**) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
51	Mather Field Road & Rockingham Drive	Signal	E	56.4	Signal	F	125.6	Yes	Signal	D	54.7	Signal	E	61.8	Yes
52	Mather Boulevard & Douglas Road	All-way stop	E	39.3	All-way stop	B	14.9	No	All-way stop	C	15.5	All-way stop	B	12.3	No
53	Zinfandel Drive & US 50 WB Ramps	Signal	B	16.4	Signal	B	10.1	No	Signal	D	51.7	Signal	C	28.7	No
54	Zinfandel Drive & US 50 EB Ramps/Gold Center Drive	Signal	D	40.0	Signal	D	54.5	No	Signal	E	60.1	Signal	D	47.6	No
55	Zinfandel Drive & White Rock Road	Signal	D	47.7	Signal	C	22.9	No	Signal	D	54.7	Signal	D	40.2	No
56	Zinfandel Drive & Data Drive	Signal	D	49.3	Signal	B	15.8	No	Signal	D	52.9	Signal	C	21.9	No
57	Zinfandel Drive & International Dr	Signal	C	34.0	Signal	C	23.0	No	Signal	D	48.5	Signal	C	29.4	No
58	Zinfandel Drive & Douglas Road	Signal	E	55.5	Signal	D	38.3	No	Signal	D	54.2	Signal	C	25.5	No
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard	Free Turn			Signal	C	27.6	No	Free Turn			Signal	C	22.2	No
60	Eagles Nest Road & Jackson Road	Two-way stop			Signal	C	23.1	No	Two-way stop			Signal	C	20.3	No
	Northbound		*C*	*22.0*						*C*	*23.8*				
	Southbound		*B*	*13.9*						*C*	*22.0*				
	Eastbound Left Turn		*A*	*8.8*						*A*	*7.9*				
	Westbound Left Turn		*A*	*7.9*						*A*	*8.7*				
61	Eagles Nest Road & Florin Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound		*B*	*12.7*		*F*	*147.4**			*B*	*12.1*		D	25.4	
	Southbound		*B*	*10.0*		C	20.3*			*B*	*10.5*		*F*	*71.3*	
	Eastbound Left Turn		*A*	*7.7*		*A*	*5.4**			*A*	*7.7*		*A*	*8.0*	
	Westbound Left Turn		*A*	*0.0*		*A*	*0.0**			*A*	*7.6*		*A*	*0.0*	

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Table 4.6

Existing Plus FOUR PROJECTS (**Alternative 2**) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
62	Sunrise Boulevard & US 50 WB Ramps	Signal	D	44.7	Signal	D	35.8	No	Signal	B	19.7	Signal	A	9.5	No
63	Sunrise Boulevard & US 50 EB Ramps	Signal	B	16.9	Signal	B	13.7	No	Signal	B	17.6	Signal	B	12.6	No
64	Sunrise Boulevard & Folsom Boulevard	Signal	D	54.4	Signal	C	31.6	No	Signal	D	48.6	Signal	D	37.1	No
65	Sunrise Boulevard & White Rock Road	Signal	D	47.8	Signal	C	33.0	No	Signal	D	51.6	Signal	D	38.3	No
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	D	47.8	Signal	B	16.1	No	Signal	D	45.8	Signal	C	22.8	No
67	Sunrise Boulevard & Douglas Road	Signal	D	51.7	Signal	C	32.3	No	Signal	D	46.5	Signal	C	20.8	No
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	C	27.0	Signal	B	10.3	No	Signal	C	21.0	Signal	A	8.0	No
69	Sunrise Boulevard & Kiefer Boulevard	Signal	D	53.6	Signal	E	59.7	Yes	Signal	C	27.0	Signal	D	40.0	No
70	Sunrise Boulevard & Jackson Road	Signal	E	57.0	Signal	F	124.5	Yes	Signal	D	47.2	Signal	E	69.9	Yes
71	Sunrise Boulevard & Florin Road	Signal	B	11.3	Signal	A	8.9	No	Signal	D	48.3	Signal	B	15.3	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	D	43.2	Signal	C	22.8	No	Signal	D	40.7	Signal	C	20.7	No
73	Hazel Avenue & Tributary Point Drive/US 50 WB Off-ramp	Signal	C	31.2	Signal	C	27.7	No	Signal	D	41.4	Signal	B	17.1	No
74	Hazel Avenue & US 50 EB Ramps	Signal	C	20.6	Signal	B	10.3	No	Signal	C	29.9	Signal	A	4.8	No
75	Hazel Avenue & Folsom Boulevard	Signal	D	51.7	Signal	C	30.8	No	Signal	D	46.7	Signal	D	39.4	No
76	Prairie City Road & White Rock Road	Signal	B	19.2	Signal	B	12.4	No	Signal	B	15.0	Signal	A	9.8	No

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Table 4.6

Existing Plus FOUR PROJECTS (**Alternative 2**) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
77	Grant Line Road & White Rock Road	Signal	B	10.9	Signal	A	6.7	No	Signal	B	11.2	Signal	A	7.3	No
78	Grant Line Road & Douglas Road	Two-way stop	C	15.2	Signal	D	38.5	No	Two-way stop	B	12.3	Signal	B	10.9	No
79	Grant Line Road & Kiefer Boulevard	All-way stop	B	11.4	All-way stop	B	14.1	No	All-way stop	B	10.5	All-way stop	B	14.6	No
80	Grant Line Road & Jackson Road	Signal	E	74.0	Signal	F	86.2	Yes	Signal	E	78.9	Signal	E	63.6	No
81	Watt Avenue & US-50 EB Ramps	Signal	B	13.0	Signal	B	12.1	No	Signal	B	14.9	Signal	B	13.3	No
82	Watt Avenue & US-50 WB Ramps	Signal	C	32.9	Signal	C	33.8	No	Signal	C	28.6	Signal	C	28.9	No
83	Mayhew Rd & Folsom Blvd.	Signal	B	19.8	Signal	B	15.6	No	Signal	C	20.1	Signal	B	16.7	No
84	65th Street Expy & Fruitridge Road	Signal	C	31.2	Signal	C	34.5	No	Signal	D	35.3	Signal	C	29.8	No
85	Power Inn Road & Elder Creek Road	Signal	D	35.2	Signal	D	35.7	No	Signal	D	36.3	Signal	C	34.2	No
86	Power Inn Road & Florin Rd	Signal	D	36.3	Signal	E	67.2	No	Signal	D	45.9	Signal	E	65.7	No
87	Florin Perkins Road & Florin Rd	Signal	D	36.7	Signal	D	38.4	No	Signal	C	32.5	Signal	D	44.0	No
88	Bradshaw Rd & Calvine Rd	Signal	C	30.5	Signal	C	34.0	No	Signal	D	36.9	Signal	D	51.1	No
89	Vineyard Rd & Calvine Rd	Signal	C	30.8	Signal	B	14.1	No	Signal	C	34.9	Signal	B	12.8	No
90	Excelsior Road & Calvine Rd	All-way stop	C	16.6	All-way stop	F	106.7	Yes	All-way stop	B	13.0	All-way stop	F	82.2	Yes
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	D	51.7	Signal	B	16.2	No	Signal	D	46.5	Signal	D	51.3	No

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Table 4.6

Existing Plus FOUR PROJECTS (**Alternative 2**) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
92	Grant Line Rd & Calvine Rd	Signal	C	21.4	Signal	C	21.9	No	Signal	C	24.0	Signal	C	24.8	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	E	65.9	Signal	E	79.8	Yes	Signal	E	64.8	Signal	E	71.9	Yes
94	Grant Line Rd & Bond Rd/Wrangler Dr	Signal	C	33.3	Signal	B	13.8	No	Signal	D	46.4	Signal	B	15.6	No
200	Excelsior Road & Collector WJ-1/Collector JT-1	West Jackson/Jackson Township Project Int.			Signal	B	18.3	No	West Jackson/Jackson Township Project Int.			Signal	B	17.4	No
201	Excelsior Road & Collector WJ-2/Collector JT-2	West Jackson/Jackson Township Project Int.			Signal	B	15.8	No	West Jackson/Jackson Township Project Int.			Signal	B	17.6	No
202	W Collector MS-1 & Kiefer Boulevard	Mather South Project Int.			Signal	B	18.5	No	Mather South Project Int.			Signal	B	14.5	No
203	Northbridge Dr & Kiefer Boulevard	NewBridge Project Int.			Signal	B	11.2	No	NewBridge Project Int.			Signal	A	6.6	No
204	E Collector MS-5 & Kiefer Boulevard	Mather South Project Int.			Signal	B	11.9	No	Mather South Project Int.			Signal	B	13.2	No
300	Collector WJ-3 & Jackson Road	West Jackson Project Int.			Signal	B	14.2	No	West Jackson Project Int.			Signal	A	8.9	No
301	Collector WJ-4 & Jackson Road	West Jackson Project Int.			Signal	B	17.4	No	West Jackson Project Int.			Signal	B	17.7	No
302	Happy Lane & Jackson Road	West Jackson Project Int.			Signal	E	63.0	No	West Jackson Project Int.			Signal	E	65.3	No
304	Collector WJ-5 & Jackson Road	West Jackson Project Int.			Signal	B	12.7	No	West Jackson Project Int.			Signal	B	14.7	No
305	Collector WJ-6 & Jackson Road	West Jackson Project Int.			Signal	B	13.1	No	West Jackson Project Int.			Signal	B	13.9	No
306	Excelsior Road & Collector WJ-6	West Jackson Project Int.			Signal	C	20.9	No	West Jackson Project Int.			Signal	A	6.4	No
307	S. Watt Avenue & Rock Creek Pkwy	West Jackson Project Int.			Signal	A	6.0	No	West Jackson Project Int.			Signal	A	7.9	No

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Existing Plus FOUR PROJECTS (**Alternative 2**) Intersection Levels of Service

Intersection		AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
308	Hedge Avenue & Rock Creek Pkwy WB	West Jackson Project Int.			Roundabout	A	7.3	No	West Jackson Project Int.			Roundabout	A	6.3	No
309	Hedge Avenue & Rock Creek Pkwy EB	West Jackson Project Int.			Roundabout	A	6.9	No	West Jackson Project Int.			Roundabout	A	6.2	No
310	Mayhew Road & Rock Creek Pkwy WB	West Jackson Project Int.			Roundabout	C	21.6	No	West Jackson Project Int.			Roundabout	C	24.2	No
311	Mayhew Road & Rock Creek Pkwy EB	West Jackson Project Int.			Roundabout	C	24.5	No	West Jackson Project Int.			Roundabout	C	18.2	No
312	Bradshaw Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	A	6.6	No	West Jackson Project Int.			Signal	B	13.1	No
315	Douglas Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	A	9.8	No	West Jackson Project Int.			Signal	B	11.7	No
316	Bradshaw Road & Collector WJ-8	West Jackson Project Int.			Signal	B	12.1	No	West Jackson Project Int.			Signal	A	7.7	No
317	Bradshaw Road & Collector WJ-9	West Jackson Project Int.			Signal	A	2.6	No	West Jackson Project Int.			Signal	A	3.2	No
318	Bradshaw Road & Mayhew Road	West Jackson Project Int.			Signal	D	41.0	No	West Jackson Project Int.			Signal	D	41.5	No
319	Bradshaw Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	F	96.4	Yes	West Jackson Project Int.			Signal	B	16.5	No
320	Bradshaw Road & Collector WJ-11	West Jackson Project Int.			Signal	A	7.4	No	West Jackson Project Int.			Signal	A	9.4	No
321	Collector WJ-12 & Fruitridge Road	West Jackson Project Int.			Signal	A	6.9	No	West Jackson Project Int.			Signal	A	6.8	No
322	Mayhew Road & Collector WJ-13	West Jackson Project Int.			Signal	B	12.5	No	West Jackson Project Int.			Signal	B	13.8	No
323	Collector WJ-14 & Kiefer Boulevard	West Jackson Project Int.			Signal	B	16.9	No	West Jackson Project Int.			Signal	B	17.2	No
325	Douglas Road & Kiefer Boulevard	West Jackson Project Int.			Signal	F	111.2	Yes	West Jackson Project Int.			Signal	F	133.8	Yes

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Existing Plus FOUR PROJECTS (**Alternative 2**) Intersection Levels of Service

Intersection		AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
327	Vineyard Road & Elder Creek Road	West Jackson Project Int.			Signal	B	16.1	No	West Jackson Project Int.			Signal	B	16.1	No
328	Vineyard Road & Florin Road	West Jackson Project Int.			Signal	B	10.6	No	West Jackson Project/CEQA Cumulative Intersection			Signal	A	6.3	No
329	Routier Ext & Kiefer Boulevard	West Jackson Project Int.			Signal	C	32.5	No	West Jackson Project Int.			Signal	C	27.3	No
330	Happy Ln & Routier Ext	West Jackson Project Int.			Signal	E	63.8	No	West Jackson Project Int.			Signal	D	49.5	No
331	Routier Ext/Routier Rd & Old Placerville Rd.	West Jackson Project Int.			Signal	F	231.2	Yes	West Jackson Project Int.			Signal	F	189.8	Yes
400	Collector JT-3 & Jackson Road	Jackson Township Project Int.			Signal	B	19.6	No	Jackson Township Project Int.			Signal	C	25.1	No
401	Tree View Lane & Jackson Road	Jackson Township Project Int.			Signal	A	9.6	No	Jackson Township Project Int.			Signal	A	7.0	No
402	Collector JT-4 & Jackson Road	Jackson Township Project Int.			Signal	B	10.3	No	Jackson Township Project Int.			Signal	A	7.1	No
403	Tree View Lane & Collector JT-5	Jackson Township Project Int.			Signal	B	13.5	No	Jackson Township Project Int.			Signal	B	13.1	No
404	Tree View Lane & Collector JT-6	Jackson Township Project Int.			Signal	A	4.2	No	Jackson Township Project Int.			Signal	A	4.5	No
405	Tree View Lane & Collector JT-1	Jackson Township Project Int.			Signal	B	14.8	No	Jackson Township Project Int.			Signal	B	14.0	No
406	Tree View Lane & Kiefer Boulevard	Jackson Township Project Int.			Signal	B	11.1	No	Jackson Township Project Int.			Signal	C	24.4	No
407	HS/MS Dwy & Kiefer Boulevard	Jackson Township Project Int.			Signal	A	7.3	No	Jackson Township Project Int.			Signal	A	7.5	No
500	Rockbridge Dr & Jackson Road	NewBridge Project Int.			Signal	A	9.8	No	NewBridge Project Int.			Signal	A	7.3	No
501	Eagles Nest Road & N Bridgewater Dr	NewBridge Project Int.			Signal	A	5.5	No	NewBridge Project Int.			Signal	A	4.0	No

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Table 4.6

Existing Plus FOUR PROJECTS (**Alternative 2**) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
502	Eagles Nest Road & S Bridgewater Dr	NewBridge Project Int.			Signal	B	14.5	No	NewBridge Project Int.			Signal	B	13.8	No
600	Zinfandel Drive & Collector MS-2	Mather South Project Int.			Roundabout	C	16.8	No	Mather South Project Int.			Roundabout	C	21.8	No
601	Zinfandel Drive & Collector MS-3	Mather South Project Int.			Roundabout	B	13.8	No	Mather South Project Int.			Roundabout	B	13.7	No
602	Zinfandel Drive & Collector MS-4	Mather South Project Int.			Roundabout	C	15.2	No	Mather South Project Int.			Roundabout	B	13.2	No
603	Collector MS-5 & Collector MS-2	Mather South Project Int.			Two-way stop	A	2.6	No	Mather South Project Int.			Two-way stop	A	4.6	No
604	Collector MS-5 & Collector MS-3	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					*A*	*1.2*						*A*	*0.4*	
	Southbound Left Turn					*A*	*0.0*						*A*	*0.0*	
	Eastbound					*A*	*9.7*						*A*	*8.3*	
605	Collector MS-5 & Collector MS-4	Mather South Project Int.			Two-way stop	A	5.1	No	Mather South Project Int.			Two-way stop	A	8.3	No
606	Collector MS-5 & W Collector MS-1/E Collector MS-1	Mather South Project Int.			Two-way stop	A	1.0	No	Mather South Project Int.			Two-way stop	A	2.0	No

Note: Gray shading represents changes in traffic control for which the project is responsible to pay a fair share.

* : 2000 HCM methodology was used, 2010 HCM does not produce an output for SB movement.

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Table 4.7

Existing and Existing Plus FOUR PROJECTS Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
1	Howe Avenue & College Town Drive/US 50 Westbound Ramps	Signal	Signal	↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↓	↰ ⌜⌜	↰ ↰ ↰ ↱ ⌜	↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↓	↰ ⌜⌜	↰ ↰ ↰ ↱ ⌜	
2	Howe Avenue & US 50 Eastbound Ramps/US 50 Eastbound Entrance	Signal	Signal	↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓	↰ ↰ ⌜ ⌜		↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓	↰ ↰ ⌜ ⌜		
3	Power Inn Road/Howe Avenue & Folsom Blvd.	Signal	Signal	↰ ↰ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↱	↰ ↰ ↑ ↑ ⌜⌜	↰ ↰ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↱	↰ ↰ ↑ ↑ ⌜⌜	
4	Power Inn Road & 14th Avenue	Signal	Signal	↰ ↰ ↑ ↑ ↱	⌟ ↓ ↓ ↳	↰ ↰ ⌜	↱	↰ ↰ ↑ ↑ ↱	⌟ ↓ ↓ ↳	↰ ↰ ⌜	↱	
5	Power Inn Road & Fruitridge Road	Signal	Signal	↰ ↰ ↑ ↱	⌟ ↓ ↓ ↳ ↳	↰ ↑ ↱	↰ ↑ ↑ ⌜	↰ ↰ ↑ ↱	⌟ ↓ ↓ ↳ ↳	↰ ↑ ↱	↰ ↑ ↑ ⌜	
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	Signal	↰ ↰ ⌜	⌟ ↱	↰ ↑ ↑ ⌜	↰ ↑ ↑ ⌜	↰ ↰ ⌜	⌟ ↱	↰ ↑ ↑ ⌜	↰ ↑ ↑ ⌜	
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	Signal	↰ ↰ ⌜	⌟ ↱	↰ ↑ ↑ ⌜	↰ ↑ ↱	↰ ↰ ⌜	⌟ ↱	↰ ↑ ↑ ⌜	↰ ↑ ↱	
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop	Two-way stop	↑ ↱	↓ ↓ ↳		↰ ⌜	↑ ↱	↓ ↓ ↳		↰ ⌜	
9	Florin Perkins Road & Jackson Road	Signal	Signal	↰ ↑ ↑ ⌜	⌟ ↓ ↳	↰ ↑ ⌜⌜	↰ ↑ ↱	↰ ↑ ↑ ⌜	⌟ ↓ ↳	↰ ↑ ⌜⌜	↰ ↑ ↱	
10	Florin Perkins Road & Fruitridge Road	Signal	Signal	↰ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	↰ ↑ ↑ ⌜	↰ ↑ ↱	↰ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	↰ ↑ ↑ ⌜	↰ ↑ ↱	
11	Florin Perkins Road & Elder Creek Road	Signal	Signal	↰ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	↰ ↑ ↑ ⌜	↰ ↑ ↑ ⌜	↰ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	↰ ↑ ↑ ⌜	↰ ↑ ↑ ⌜	
12	S. Watt Ave./Watt Avenue & Folsom Blvd.	Signal	Signal	↰ ↰ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↑ ⌜	↰ ↰ ↑ ↑ ⌜	↰ ↰ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↑ ⌜	↰ ↰ ↑ ↑ ⌜	
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	Signal	↰ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	↰	↰ ↱ ⌜	↰ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	↰	↰ ↱ ⌜	
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal	↰ ↰ ↑ ↑ ↱	⌟ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↑ ⌜	↰ ↰ ↑ ↑ ⌜	↰ ↰ ↑ ↑ ↱	⌟ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↑ ⌜	↰ ↰ ↑ ↑ ⌜	
15	S. Watt Avenue & Canberra Dr.	Signal	Signal	↑ ↑ ↱	↓ ↓ ↳		↰ ⌜	↑ ↑ ↱	↓ ↓ ↳		↰ ⌜	
16	S. Watt Avenue & Jackson Road	Signal	Signal	↰ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	↰ ↱	↰ ↑ ⌜	↰ ↰ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	↰ ↱	↰ ↰ ↑ ↑ ⌜	West Jackson
17	S. Watt Avenue & Fruitridge Road	Signal	Signal	↰ ↑ ↱	⌟ ↓ ↓ ↳	↰ ↑ ⌜	↰ ↱	↰ ↑ ↱	⌟ ↓ ↓ ↳	↰ ↑ ⌜	↰ ↑ ↱	West Jackson
18	S. Watt Avenue & Elder Creek Road	Signal	Signal	↰ ↑ ⌜	⌟ ↓ ↳	↰ ⌜	↰ ↑ ⌜	↰ ↑ ⌜	⌟ ↓ ↳	↰ ⌜	↰ ↑ ⌜	
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal	↰ ↑ ↱	⌟ ↓ ↳	↰ ↑ ↱	↰ ↑ ↑ ⌜	↰ ↑ ↱	⌟ ↓ ↳	↰ ↑ ↱	↰ ↑ ↑ ⌜	
21	Elk Grove Florin Road & Gerber Rd./Gerber Road	Signal	Signal	↰ ↰ ↑ ↱	⌟ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↑ ⌜	↰ ↰ ↑ ↑ ⌜	↰ ↰ ↑ ↱	⌟ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↑ ⌜	↰ ↰ ↑ ↑ ⌜	
23	Hedge Avenue & Jackson Road	Signal	Signal	↰ ↱	⌟ ↳	↰ ↑ ⌜	↰ ↑ ⌜	↰ ↱	⌟ ↳	↰ ↑ ↱	↰ ↑ ↱	West Jackson
24	Hedge Avenue & Fruitridge Road	All-way stop	Signal	↰	↰	↰	↰	↰ ↑ ⌜	⌟ ↓ ↳	↰ ↑ ↱	↰ ↑ ↱	West Jackson
25	Hedge Avenue & Elder Creek Road	All-way stop	Signal	↰	↰	↰	↰	↰ ↑ ⌜	⌟ ↓ ↳	↰ ↑ ↱	↰ ↑ ↱	West Jackson
26	Hedge Avenue & Tokay Lane	Two-way stop	Two-way stop	↰	↰	↰	↰	↰	↰	↰	↰	
27	Hedge Avenue & Florin Road	All-way stop	All-way stop	↰	↰	↰	↰	↰	↰	↰	↰	
28	Mayhew Road & Kiefer Boulevard	Signal	Signal	↰ ↑ ⌜	⌟ ↓ ↳	↰ ↑ ↱	↰ ↑ ↱	↰ ↑ ⌜	⌟ ↓ ↳	↰ ↑ ↱	↰ ↑ ↱	

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 4.7

Existing and Existing Plus FOUR PROJECTS Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
29	Mayhew Road & Jackson Road	Two-way stop	Signal	↰ ↱	⅄	↰ ↑ ↱	↰ ↱	↰ ↰ ↑ ↑ ↱	↲ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	West Jackson
30	Mayhew Road & Fruitridge Road	Two-way stop	Signal	↰	⅄	⅄		↰ ↰ ↑ ↑	↲ ↓ ↓	↰ ↰ ↱		West Jackson
31	Mayhew Road & Elder Creek Road	Two-way stop	Signal	⅄	⅄	⅄	⅄	⅄	⅄	⅄	↰ ↑ ↱	West Jackson
32	Zinfandel Drive & Woodring Drive	Two-way stop	Two-way stop	↰	⅄	⅄		↰ ↑	⅄	⅄		Mather South
33	Bradshaw Road & Folsom Blvd.	Signal	Signal	↰ ↰ ↑ ↱	↲ ↓ ↓ ↘	↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↱	↲ ↓ ↓ ↘	↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	
34	Bradshaw Road & US 50 Westbound Ramps	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓		↰ ↰ ↱ ↱	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓		↰ ↰ ↱ ↱	
35	Bradshaw Road & US 50 Eastbound Ramps	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓	↰ ↰ ↱ ↱		↑ ↑ ↑ ↱	↲ ↓ ↓ ↓	↰ ↰ ↱ ↱		
36	Bradshaw Road & Old Placerville Road	Signal	Signal	↰ ↑ ↑ ↑ ↱	⅄ ↓ ↓ ↘ ↘	↰ ↱	↰ ↰ ↑ ↱	↰ ↑ ↑ ↑ ↱	⅄ ↓ ↓ ↘ ↘	↰ ↱	↰ ↰ ↑ ↱	
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal	↰ ↰ ↑ ↑ ↑ ↱	↲ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↱	↰ ↰ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	↲ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
38	Jackson Road & Bradshaw Road	Signal	Signal	↰ ↑ ↱	↲ ↓ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	West Jackson
39	Bradshaw Road & Elder Creek Road	Signal	Signal	↰ ↑ ↱	⅄ ↓ ↘	↰ ↰ ↱	↰ ↰ ↱	↰ ↑ ↱	↲ ↓ ↓ ↘ ↘	↰ ↰ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
40	Bradshaw Road & Florin Road	Signal	Signal	↰ ↑ ↱	⅄ ↓ ↘	↰ ↰ ↱	↰ ↰ ↱	↰ ↑ ↱	⅄ ↓ ↘	↰ ↰ ↱	↰ ↰ ↱	
41	Bradshaw Road & Gerber Road	Signal	Signal	↰ ↑ ↱	⅄ ↓ ↘	↰ ↰ ↱	↰ ↱	↰ ↑ ↱	⅄ ↓ ↘	↰ ↰ ↱	↰ ↱	
42	Happy Lane & Old Placerville Road	Two-way stop	Two-way stop	↰ ↱		↑ ↱	↰ ↑	↰ ↱		↑ ↱	↰ ↑	
43	Kiefer Boulevard & Happy Ln		Signal		↲	↰			↲ ↓ ↘	↰ ↰ ↑ ↑ ↑	↑ ↑ ↑ ↱	West Jackson
44	Excelsior Road & Kiefer Boulevard	Two-way stop	Signal	↱	⅄		↰ ↱	↰ ↑ ↱	↲ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	West Jackson; Jackson Township
45	Excelsior Road & Jackson Road	Signal	Signal	↰ ↱	⅄ ↘	↰ ↑ ↱	↰ ↑ ↱	↰ ↱	↲ ↓ ↓ ↘ ↘	↰ ↑ ↑ ↱	↰ ↑ ↑ ↱	West Jackson; Jackson Township
46	Excelsior Road & Elder Creek Road	Two-way stop	Signal	↰	↲ ↓	↰		↰ ↑	↲ ↓	↰ ↱		West Jackson
47	Excelsior Road & Florin Road	All-way stop	Signal	⅄	⅄	⅄	⅄	↰ ↱	⅄ ↘	↰ ↱	↰ ↱	West Jackson
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	All-way stop	⅄	⅄	⅄	⅄	⅄	⅄	⅄	⅄	
49	Mather Field Road & US 50 Westbound Ramps	Signal	Signal	↑ ↑ ↱	↲ ↓ ↓		↰ ⅄	↑ ↑ ↱	↲ ↓ ↓		↰ ⅄	
50	Mather Field Road & US 50 Eastbound Ramps	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓	↰ ⅄ ↱		↑ ↑ ↑ ↱	↲ ↓ ↓	↰ ⅄ ↱		
51	Mather Field Road & Rockingham Drive	Signal	Signal	↰ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↘	↰ ↰ ↱	↰ ↱	↰ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↘	↰ ↰ ↱	↰ ↱	
52	Mather Boulevard & Douglas Road	All-way stop	All-way stop	⅄	⅄ ↘	⅄	⅄	⅄	⅄ ↘	⅄	⅄	
53	Zinfandel Drive & US 50 Westbound	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓		↰ ↰ ↱	↑ ↑ ↑ ↱	↲ ↓ ↓		↰ ↰ ↱	
54	Zinfandel Drive & US 50 Eastbound Ramps/Gold Center Drive	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓	↰ ↰ ↱ ↱	↱ ↱	↑ ↑ ↑ ↱	↲ ↓ ↓	↰ ↰ ↱ ↱	↱ ↱	

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 4.7

Existing and Existing Plus FOUR PROJECTS Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
55	Zinfandel Drive & White Rock Road	Signal	Signal									
56	Zinfandel Drive & Data Drive	Signal	Signal									
57	Zinfandel Dr & International Dr	Signal	Signal									
58	Zinfandel Drive & Douglas Road	Signal	Signal									
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard		Signal									NewBridge; Mather South
60	Eagles Nest Road & Jackson Road	Two-way stop	Signal									NewBridge
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Two-way stop									
62	Sunrise Boulevard & US 50 Westbound Ramps	Signal	Signal									
63	Sunrise Boulevard & US 50 Eastbound Ramps	Signal	Signal									
64	Sunrise Boulevard & Folsom Boulevard	Signal	Signal									
65	Sunrise Boulevard & White Rock Road	Signal	Signal									
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal									
67	Sunrise Boulevard & Douglas Road	Signal	Signal									
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	Signal									
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									NewBridge; Mather South
70	Sunrise Boulevard & Jackson Road	Signal	Signal									
71	Sunrise Boulevard & Florin Road	Signal	Signal									
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	Signal									
73	Hazel Avenue & Tributary Point Drive/US 50 Westbound Off-ramp	Signal	Signal									
74	Hazel Aveneu/Hazel Avenue & US 50 Eastbound Ramps	Signal	Signal									
75	Hazel Avenue & Folsom Boulevard	Signal	Signal									
76	White Rock Road & Prairie City Road	Signal	Signal									
77	Grant Line Road & White Rock Road	Signal	Signal									
78	Grant Line Road & Douglas Road	All-way stop	Signal[1]									
79	Grant Line Road & Kiefer Boulevard	All-way stop	All-way stop									
80	Grant Line Road & Jackson Road	Signal	Signal									

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 4.7

Existing and Existing Plus FOUR PROJECTS Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
81	Watt Avenue & US-50 EB Ramps	Signal	Signal	↑↑↑↑ ↱	↲↰↓↓	↰↰↱↱		↑↑↑↑ ↱	↲↰↓↓	↰↰↱↱		
82	Watt Avenue & US-50 WB Ramps	Signal	Signal	↑↑ ↱↱	↲↰↓↓↓		↰↰↱↱↱	↑↑ ↱↱	↲↰↓↓↓		↰↰↱↱↱	
83	Mayhew Rd & Folsom Blvd.	Signal	Signal	↰↰↱		↑↑ ↱	↰↑↑	↰↰↱		↑↑ ↱	↰↑↑	
84	65th Street Expy & Fruitridge Road	Signal	Signal	↰↑↑ ↱	↲↓↓↘	↰↑↑	↰↑↑ ↱	↰↑↑ ↱	↲↓↓↘	↰↑↑	↰↑↑ ↱	
85	Power Inn Road & Elder Creek Road	Signal	Signal	↰↑↱	↰↓↘	↰↑↑ ↱	↰↑ ↱	↰↑↱	↰↓↘	↰↑↑ ↱	↰↑ ↱	
86	Power Inn Road & Florin Rd	Signal	Signal	↰↑↱	↲↓↓↘	↰↑↑ ↱	↰↑↑ ↱	↰↑↱	↲↓↓↘	↰↑↑ ↱	↰↑↑ ↱	
87	Florin Perkins Road & Florin Rd	Signal	Signal	↰↑↑ ↱	↲↓↓↘	↰↑ ↱	↰↑ ↱	↰↑↑ ↱	↲↓↓↘	↰↑ ↱	↰↑ ↱	
88	Bradshaw Rd & Calvine Rd	Signal	Signal	↰↰↑↱	↲↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱	↰↰↑↱	↲↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱	
89	Vineyard Rd & Calvine Rd	Signal	Signal	↓	↲↰↘	↰↑ ↱	↰↑ ↱	↓	↲↰↘	↰↑ ↱	↰↑ ↱	
90	Excelsior Road & Calvine Rd	All-way stop	All-way stop	↓	↰	↓	↓	↓	↰	↓	↓	
91	Grant Line Road & Eagles Nest Rd/Sloughhouse Rd	Signal	Signal	↰↑↱	↰↘	↓	↰↱	↰↑↱	↰↘	↓	↰↱	
92	Grant Line Road & Calvine Rd	Signal	Signal	↰↑	↰	↓		↰↑	↰	↓		
93	Grant Line Road & Driveway/Wilton Rd	Signal	Signal	↰↱	↰↘	↰↱	↰↱	↰↱	↰↘	↰↱	↰↱	
94	Bond Rd/Wrangler Dr & Grant Line Road	Signal	Signal	↰↱	↲↓↘	↰↱	↓	↰↱	↲↓↘	↰↱	↓	
200	Excelsior Road & Collector WJ-1/Collector JT-1		Signal					↰↑↱	↰↓↘	↰↑ ↱	↰↑ ↱	West Jackson; Jackson Township
201	Excelsior Road & Collector WJ-2/Collector JT-2		Signal					↰↑↱	↰↓↘	↰↑ ↱	↰↑ ↱	West Jackson; Jackson Township
202	Kiefer Boulevard & W Collector MS-1		Signal						↲↘	↰↑↑	↑ ↱	Mather South
203	Northbridge Dr & Kiefer Boulevard		Signal					↰↱		↑ ↱	↰↑↑	NewBridge
204	Kiefer Boulevard & E Collector MS-5		Signal						↲↘	↰↑	↑↑ ↱	Mather South
300	Collector WJ-3 & Jackson Road		Signal					↰↱		↑ ↱	↰↑↑	West Jackson
301	Collector WJ-4 & Jackson Road		Signal					↰↑↱	↲↓↘	↰↑↑ ↱	↰↑↑ ↱	West Jackson
302	Rock Creek Pkwy & Jackson Road		Signal					↰↰↑↱	↲↓↘	↰↑↑↑ ↱	↰↰↑↑↑ ↱	West Jackson
304	Collector WJ-5 & Jackson Road		Signal					↰↑↱	↲↓↘	↰↑↑ ↱	↰↑↑ ↱	West Jackson
305	Collector WJ-6 & Jackson Road		Signal					↰↑↱	↲↓↘	↰↑↑ ↱	↰↑↑ ↱	West Jackson
306	Excelsior Road & Collector WJ-6		Signal					↰↑	↰↓	↰↱		West Jackson

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 4.7

Existing and Existing Plus FOUR PROJECTS Intersection Geometrics

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
307	S. Watt Avenue & Rock Creek Pkwy		Signal					↑ ↱	↓ ↓ ↳↳		↰ ↱	West Jackson
308	Hedge Avenue & Rock Creek Pkwy WB		Roundabout					↰	↲		↟	West Jackson
309	Hedge Avenue & Rock Creek Pkwy EB		Roundabout					↱	↳	↟		West Jackson
310	Mayhew Road & Rock Creek Pkwy WB		Roundabout					↰ ↑	↲ ↓		↟	West Jackson
311	Mayhew Road & Rock Creek Pkwy EB		Roundabout					↑ ↱	↓ ↳	↰ ↱		West Jackson
312	Bradshaw Road & Rock Creek Pkwy		Signal					↰ ↑ ↑ ↑	↲ ↓ ↓	↰ ↱		West Jackson
314	Vineyard Road & Rock Creek Pkwy		Signal					↰ ↑ ↑	↲ ↓	↰ ↱		West Jackson
315	Douglas Road & Rock Creek Pkwy		Signal					↰ ↑ ↑	↲ ↓	↰ ↱		West Jackson
316	Bradshaw Road & Collector WJ-8		Signal					↑ ↑ ↱	↓ ↓ ↳		↰ ↱	West Jackson
317	Bradshaw Road & Collector WJ-9		Signal					↑ ↑ ↱	↓ ↓ ↳		↰ ↱	West Jackson
318	Bradshaw Road & Mayhew Road		Signal					↰ ↰ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↳↳	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
319	Bradshaw Road & Rock Creek Pkwy		Signal					↑ ↑ ↱	↓ ↓ ↓ ↳		↰ ↱	West Jackson
320	Bradshaw Road & Collector WJ-11		Signal					↰ ↑ ↑ ↑	↲ ↓ ↓	↰ ↱		West Jackson
321	Collector WJ-12 & Fruitridge Road		Signal					↰ ↑ ↱	↲ ↓ ↳	↰ ↑ ↱	↰ ↑ ↱	West Jackson
322	Collector WJ-13 & Mayhew Road		Signal					↰ ↑ ↑	↲ ↓	↰ ↱		West Jackson
323	Collector WJ-14 & Kiefer Boulevard		Signal					↰ ↱	↲ ↓ ↳	↰ ↑ ↑ ↱	↰ ↑ ↑ ↱	West Jackson
325	Douglas Road & Kiefer Boulevard		Signal					↰ ↰ ↑ ↱	↲ ↓ ↳	↰ ↑ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
327	Vineyard Road & Elder Creek Road		Signal					↰ ↰ ↑ ↑ ↱	↲ ↓ ↓ ↳↳	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
328	Florin Road & Vineyard Road		Signal						↲ ↳	↰ ↑	↑ ↱	West Jackson
329	Routier Ext & Kiefer Boulevard		Signal					↰ ↰ ↑ ↑ ↱	↲ ↓ ↓ ↳↳	↰ ↰ ↑ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	West Jackson
330	Happy Ln & Routier Ext		Signal					↰ ↑ ↑ ↱	↲ ↓ ↓ ↳	↰ ↰ ↑ ↱	↰ ↰ ↑ ↱	West Jackson
331	Routier Ext/Routier Rd & Old Placerville Rd		Signal					↰ ↑ ↑ ↱	↲ ↓ ↓ ↳↳	↰ ↑ ↱	↰ ↰ ↑ ↱	West Jackson
400	Jackson Road & Collector JT-3		Signal						↲ ↳	↰ ↰ ↑ ↑	↑ ↑ ↱	Jackson Township
401	Jackson Road & Tree View Lane		Signal						↲ ↳↳	↰ ↰ ↑ ↑	↑ ↑ ↱	Jackson Township
402	Jackson Road & Collector JT-4		Signal						↲ ↳	↰ ↑ ↑	↑ ↱	Jackson Township
403	Tree View Lane & Collector JT-5		Signal					↰ ↑ ↱	↲ ↓ ↳	↰ ↑ ↱	↰ ↑ ↱	Jackson Township
404	Tree View Lane & Collector JT-6		Signal					↰ ↑ ↱	↲ ↓ ↳	↰ ↑ ↱	↰ ↑ ↱	Jackson Township

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 4.7

Existing and Existing Plus FOUR PROJECTS Intersection Geometrics

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
405	Tree View Lane & Collector JT-1		Signal									Jackson Township
406	Tree View Lane & Kiefer Boulevard		Signal									Jackson Township
407	HS/MS Dwy & Kiefer Boulevard		Signal									Jackson Township
500	Jackson Road & Rockbridge Dr		Signal									NewBridge
501	Eagles Nest Road & N Bridgewater Dr		Signal									NewBridge
502	Eagles Nest Road & S Bridgewater Dr		Signal									NewBridge
600	Zinfandel Drive & Collector MS-2		Roundabout									Mather South
601	Zinfandel Drive & Collector MS-3		Roundabout									Mather South
602	Zinfandel Drive & Collector MS-4		Roundabout									Mather South
603	Collector MS-5 & Collector MS-2		Two-way stop									Mather South
604	Collector MS-5 & Collector MS-3		Two-way stop									Mather South
605	Collector MS-5 & Collector MS-4		Two-way stop									Mather South
606	E Collector MS-1/Collector MS-5 & W Collector MS-1		Two-way stop									Mather South

1. Reflects 2017 intersection improvements.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 4.8: Existing Plus FOUR PROJECTS (Alternative 2) Peak Hour Freeway Basic Segment Level of Service									
Direc-tion	**Location**	**Existing**				**Existing Plus FOUR PROJECTS**			
		AM Peak Hour		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
		Volume	**LOS**	**Volume**	**LOS**	**Volume**	**LOS**	**Volume**	**LOS**
East-bound US 50	SR 99 / SR 51 to Stockton Boulevard	7,068	C	6,415	C	7,705	C	6,711	C
	Stockton Boulevard to 59th Street	7,470	**F**	7,228	**F**	8,136	**F**	7,546	**F**
	59th Street to 65th Street	6,767	D	6,641	D	7,439	D	6,931	D
	65th Street to Howe Avenue	7,962	D	7,562	D	8,668	D	7,854	D
	Howe Avenue to Watt Avenue	7,405	D	7,602	D	7,609	D	7,700	D
	Watt Avenue to Bradshaw Road	7,935	D	7,176	C	8,145	D	7,310	C
	Bradshaw Rd to Mather Field Rd	7,725	**F**	7,366	C	7,761	**F**	7,248	C
	Mather Field Rd to Zinfandel Drive	7,275	C	7,224	C	7,713	C	7,560	C
	Zinfandel Drive to Sunrise Blvd	5,121	C	6,649	**F**	5,726	C	7,083	**F**
	Sunrise Boulevard to Hazel Avenue	4,985	C	5,323	**F**	5,461	C	5,611	**F**
West-bound US 50	Hazel Avenue to Sunrise Boulevard	6,068	D	4,370	C	6,334	E	4,707	C
	Sunrise Blvd to Zinfandel Drive	7,502	D	4,762	C	7,846	E	5,134	C
	Zinfandel Drive to Mather Field Rd	7,548	C	5,765	B	7,829	C	5,928	B
	Mather Field Rd to Bradshaw Road	7,859	**F**	6,939	D	7,810	**F**	6,892	D
	Bradshaw Road to Watt Avenue	7,550	**F**	6,466	D	7,424	**F**	6,913	E
	Watt Avenue to Howe Avenue	7,376	**F**	5,106	**F**	7,192	**F**	5,395	**F**
	Howe Avenue to 65th Street	8,157	**F**	7,407	**F**	8,489	**F**	8,031	**F**
	65th Street to 59th Street	8,278	**F**	7,358	**F**	8,605	**F**	7,953	**F**
	59th Street to Stockton Boulevard	9,115	D	7,945	**F**	9,448	D	8,537	**F**
	Stockton Boulevard to SR 99 / SR 51	8,546	D	8,136	**F**	8,836	D	8,635	**F**

Bold values denote level of service "F" conditions.

Red shaded values indicate project impacts.

Source: *DKS Associates, 2018.*

Table 4.9: Existing Plus FOUR PROJECTS (Alt. 2) Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service										
Direc-tion	**Location**	**Junction Type**	**Existing**				**Existing Plus FOUR PROJECTS**			
			A.M. Peak Hour		**P.M. Peak Hour**		**A.M. Peak Hour**		**P.M. Peak Hour**	
			Ramp Volume	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**
East-bound US 50	Northbound 65th Street Slip Entrance	Weave	765	D	653	C	730	F	576	C
	Howe Avenue / Hornet Drive Exit		1,631		1,417		2,175		1,627	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	484	C	881	C	556	C	927	D
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	419	C	431	C	390	C	401	C
	Watt Avenue Exit	Two-Lane Diverge	1,317	B	1,634	B	1,149	B	1,470	B
	Watt Avenue Entrance	One-Lane Merge	2,134	**F**	1,724	D	1,951	E	1,553	D
	Bradshaw Road Exit	Two-Lane Diverge	1,520	B	1,228	B	1,891	C	1,574	B
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	220	C	422	C	151	C	423	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	971	C	918	C	1,280	D	1,105	C
	Mather Field Road Exit	Two-Lane Diverge	1,266	B	1,062	A	1,188	B	987	A
	Southbound Mather Field	One-Lane Merge	125	C	101	B	121	C	107	B

Table 4.9: Existing Plus FOUR PROJECTS (Alt. 2) Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service										
Direc-tion	**Location**	**Junction Type**	**Existing**				**Existing Plus FOUR PROJECTS**			
			A.M. Peak Hour		**P.M. Peak Hour**		**A.M. Peak Hour**		**P.M. Peak Hour**	
			Ramp Volume	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**
	Road Loop Entrance									
	Northbound Mather Field Road Slip Entrance	Weave	317	**F**	816	C	634	**F**	1,187	D
	Zinfandel Drive Exit		2,932		1,452		2,918		1,419	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	182	B	129	C	177	B	116	C
	Northbound Zinfandel Drive Slip Entrance	One-Lane Merge	348	B	540	C	522	C	627	C
	Sunrise Boulevard Exit	Major Diverge	1,773	C	1,959	D	1,953	C	2,073	D
	Sunrise Boulevard Entrance	One-Lane Merge	992	C	889	D	1,028	C	834	D
	Hazel Avenue Exit	Two-Lane Diverge	933	B	1,541	C	1,094	C	1,673	C
	Hazel Avenue Entrance	Weave	804	C	945	C	704	C	945	C
	Aerojet Road Exit		241		55		241		52	
West-bound US 50	Hazel Avenue Exit	Two-Lane Diverge	631	A	869	A	622	A	849	B
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	160	B	600	B	174	B	593	B
	Southbound Hazel Avenue	One-Lane Merge	1,550	B	800	B	1,748	C	962	B

Table 4.9: Existing Plus FOUR PROJECTS (Alt. 2) Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service										
Direc-tion	Location	Junction Type	Existing				Existing Plus FOUR PROJECTS			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Slip Entrance									
	Sunrise Boulevard Exit	One-Lane Diverge	749	E	758	D	655	E	763	D
	Sunrise Blvd Entrance	Lane Addition	2,183	**F**	1,656	D	2,192	**F**	1,686	D
	Zinfandel Drive Exit	One-Lane Diverge	1,034	E	608	C	1,088	E	759	C
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	585	B	1,197	B	532	B	1,118	B
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	442	C	561	B	410	C	550	B
	Mather Field Road Exit	One-Lane Drop	1,093	C	556	A	1,496	C	740	A
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	515	B	861	B	385	B	843	B
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	387	B	380	B	519	B	363	B
	Bradshaw Road Exit	Two-Lane Diverge	1,236	B	1,327	B	1,583	B	1,510	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	914	D	910	C	1,236	D	1,523	D
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	338	D	590	C	365	D	669	D
	Watt Avenue Exit	Major Diverge	1,373	D	1,188	C	1,257	D	1,181	C
	Northbound Watt Avenue	One-Lane Merge	820	D	943	C	788	D	900	C

Table 4.9: Existing Plus FOUR PROJECTS (Alt. 2) Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service										
Direc-tion	**Location**	**Junction Type**	**Existing**				**Existing Plus FOUR PROJECTS**			
			A.M. Peak Hour		**P.M. Peak Hour**		**A.M. Peak Hour**		**P.M. Peak Hour**	
			Ramp Volume	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**
	Entrance									
	Southbound Watt Avenue Slip Entrance	Lane Addition / Weave	1,232	C	1,317	D	1,091	C	1,196	B
	Howe Avenue Exit	Major Diverge / Weave	1,531	D	1,419		1,349	D	1,313	D
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	654	D	602	C	689	D	647	C
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	574	C	574	C	688	C	484	C

Bold values denote level of service "F" conditions.
Red shaded values indicate project impacts.
Source: *DKS Associates, 2018.*

Table 4.10: Existing Plus FOUR PROJECTS (Alternative 2) Peak Hour Freeway Ramp Termini Queuing

Direction	US 50 Exit Ramp	Available Storage Length (feet / lane)			Maximum Queue Length (feet / lane)					
					AM Peak Hour			PM Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US-50	Howe Avenue	765	-	765	118	-	603	120	-	248
	Watt Avenue	1,500	-	1,500	110	-	221	162	-	242
	Bradshaw Road	1,250	-	1,250	119	-	759	67	-	604
	Mather Field Road	1,385	-	1,385	157	-	354	103	-	63
	Zinfandel Drive	1,025	1,025	1,025	231	776	698	439	324	180
	Sunrise Boulevard	1,695	-	1,695	231	-	119	217	-	72
	Hazel Avenue	1,310	-	1,310	186	-	50	201	-	8
Westbound US-50	Hazel Avenue	1,995		1,995	262		47	177		218
	Sunrise Boulevard	1,540	-	1,540	67	-	48	136	-	122
	Zinfandel Drive	1,065	-	1,065	203	-	38	94	-	89
	Mather Field Road	1,335	-	1,335	417	-	396	121	-	101
	Bradshaw Road	1,330	-	1,330	184	-	32	189	-	13
	Watt Avenue	1,480	-	1,480	205	-	571	104	-	460
	Howe Avenue	1,355	1,355	1,355	81	412	79	147	412	160

Red shaded values indicate project impacts.

L = left turn movement, T = through movement, R = right turn movement

Source: *DKS Associates, 2018.*

4.4.4 Existing Plus FOUR PROJECTS Pedestrian and Bicycle Facility Impacts

The FOUR PROJECTS would not remove any existing or planned pedestrian facility. The FOUR PROJECTS would not remove any existing bicycle facility or any facility that is planned in the Bikeway Master Plan. The FOUR PROJECTS would add pedestrian and bicycle demands within the FOUR PROJECTS site and to and from nearby land uses. Complete information on improvements to on- and off-site bicycle and pedestrian facilities is not available at this time. Because the FOUR PROJECTS would add demand for pedestrian and bicycle facilities that may not be available, the impact of the FOUR PROJECTS on pedestrian and bicycle circulation is potentially significant.

4.4.5 Existing Plus FOUR PROJECTS Transit System Impacts

Public transit service is currently limited in the vicinity of the FOUR PROJECTS. In the preparation of this analysis, a conceptual transit system to serve the FOUR PROJECTS was developed (see Section 3.1.2.3). The additional transit service was assumed to be funded by the FOUR PROJECTS. However, the timing and implementation of the transit system are uncertain at this time. The FOUR PROJECTS would increase demands for public transit facilities. Therefore, the impact of the FOUR PROJECTS on the transit system is potentially significant.

4.4.6 Existing Plus FOUR PROJECTS Functionality Impacts

Table 4.11 summarizes the results of the rural roadway segment functionality analysis. **Figure 4.6** illustrates the resultant functionality impacts. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the FOUR PROJECTS. The "Substandard?" heading indicates whether or not a roadway meets the County standards of 12-foot lanes and 6-foot shoulders. If the FOUR PROJECTS make improvements to a roadway segment such as widening, they would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact?" heading indicate those locations with a functionality impact.

As stated above, the traffic analysis assumed that the FOUR PROJECTS would construct a number of travel lanes on roadway segments that are internal to or on the boundary of the FOUR PROJECTS, and the entire roadway segment would be reconstructed to County standards at that time. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the FOUR PROJECTS.

Table 4.11
Existing Plus FOUR PROJECTS Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	2	Yes	5,950	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	2	Yes	8,740	No
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	4	No	9,500	Yes[3]
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Yes	6,470	Yes
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Yes	3,430	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	2	Yes	24,370	Yes
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	2	Yes	23,830	Yes
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	3	No	14,080	Yes[3]
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	3	No	20,830	Yes[3]
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Yes	22,740	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	3	No	27,210	Yes[3]
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	3	No	11,850	Yes[3]
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Yes	12,980	Yes
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Yes	10,200	Yes
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	2	Yes	16,070	Yes
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	2	Yes	13,050	Yes
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	2	Yes	13,290	Yes
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	2	Yes	12,760	Yes
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Yes	7,380	Yes
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	3	No	14,950	Yes[3]
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	4	No	15,820	Yes[3]
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	2	Yes	9,020	Yes
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	2	Yes	7,540	Yes
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Yes	7,900	Yes

Red text with light gray shading indicate project impacts.

Table 4.11
Existing Plus FOUR PROJECTS Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	2	22	Yes	3,737	2	Yes	3,630	No
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Yes	3,650	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	6	No	52,830	Yes[3]
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	No	46,410	Yes[3]
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	2	22	Yes	4,616	2	Yes	5,490	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	6	No	42,680	Yes[3]
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	3	No	14,640	Yes[3]
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Yes	4,400	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	4	No	34,140	Yes[3]
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490	2	Yes	2,090	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	2	Yes	19,830	Yes

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.
[4] Excluding the roadway segment that is within the developed community of Independence at Mather.
[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

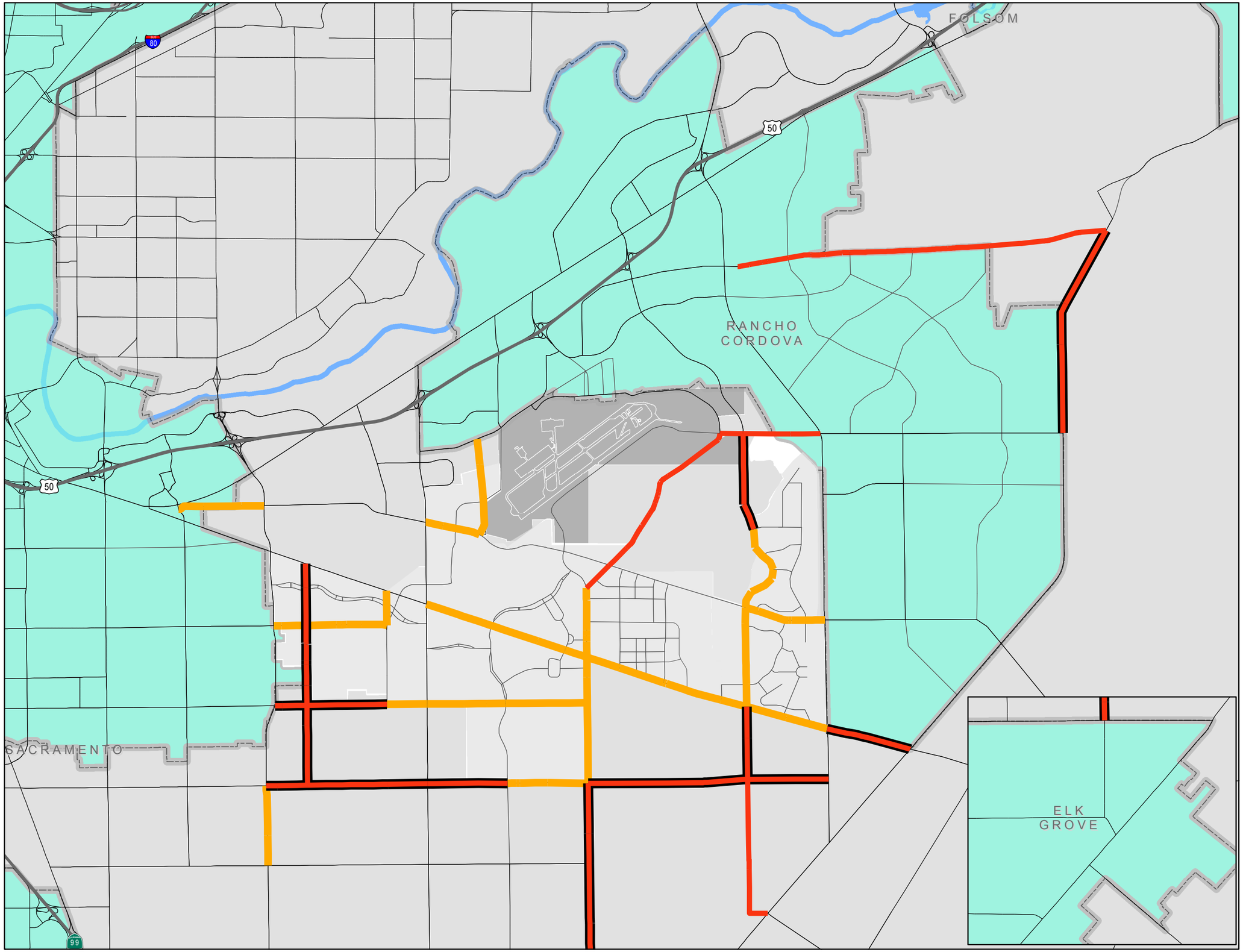

FIGURE 4.6
EXISTING PLUS FOUR PROJECTS
FUNCTIONALITY IMPACTS

Legend

- Substandard Roadways
- Functionality Impact
- Functionality Impact if Roadway is Not Already Improved
- Cities
- Mather Airport

DKS

4.5 MITIGATION

4.5.1 Existing Plus FOUR PROJECTS Roadway Segment Mitigation

Table 4.12 summarizes the results of the operations analysis for the study area roadway segments with mitigation. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate widened roadways for mitigation purposes, which would be the responsibility of the FOUR PROJECTS to fund and provide. The Jackson Township project would contribute a fair share. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to have LOS impacts after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the improvements allowed under the General Plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

4.5.2 Existing Plus FOUR PROJECTS Intersection Mitigation

Tables 4.13 and 4.14 summarize the results of the operations analysis for the study area intersections with mitigation. However, the increased number of lanes on each approach does not exceed the County's standard number of approach lanes. Shaded table cells in Table 4.14 indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the FOUR PROJECTS to fund and provide. The Jackson Township project would contribute a fair share. The shaded table cells in Table 4.13 under the "Level of Service" heading indicate those locations with an LOS impact after mitigation. Table 4.14 also identifies those intersections that would continue to have LOS impacts after mitigation, along with the constraint that precluded full mitigation. Detailed analysis information is included in the technical appendix.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

High Capacity Intersections

Three intersections are currently designated as "High Capacity Intersections" on the County's General Plan: Watt Avenue & Folsom Boulevard, Watt Avenue & Kiefer Boulevard, and Watt Avenue & Jackson Road.

A high capacity intersection would utilize special treatments to increase the capacity of the intersection so as to reduce congestion and travel delay. Since each intersection could have unique travel movements, volumes and existing context sensitive conditions, the special treatments utilized at each high capacity intersection will be selected to meet the specific needs of each intersection. The range of special treatments is quite wide, ranging from the restriction of certain turning movements to various combinations that could include grade separating certain movements. While the field of traffic engineering is ever expending and evolving resulting in the use of new technologies and treatments, special treatments such as the following could be utilized at a high capacity intersection:

- Restricting turning movements
- Median U-turns
- Roundabouts
- Split intersections
- Quadrant roadway intersections
- Bowtie intersections
- Directional flyovers
- Center turn overpass
- Grade separated Roundabout
- Diverging diamond grade separation
- Compact diamond grade separation
- Single point urban grade separation
- Traditional urban grade separation

The County has conducted conceptual engineering to define potential improvements at the three study area intersections on Watt Avenue that are currently designated as "High Capacity Intersections" on the County's General Plan. These are:

- At the **Watt Avenue & Folsom Boulevard** intersection, the County proposes an ultimate configuration involving grade separation of the northbound and southbound through movements of Watt Avenue. Access to and from Folsom Boulevard would be accomplished via on and off-ramps from the left lanes of Watt Avenue to a single signalized intersection. A bus rapid transit (BRT) lane along Watt Avenue would also intersect Folsom Boulevard at the traffic signal. This design is consistent with the recommendations of the South Watt Area Transportation Study (SWATS) dated November 1, 2002 and approved by the Board of Supervisors on November 26, 2002, and with the planning study for the *State Route 16 (Jackson Road) Corridor Study* (Fehr & Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of

Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

- At the **Watt Avenue & Kiefer Boulevard** intersection, the County proposes a tight diamond interchange as the ultimate improvement. The through movements (and BRT lane) on Watt Avenue would be grade separated from Kiefer Boulevard. Access to and from Kiefer Boulevard would be accomplished via on and off-ramps at two signalized intersections along Kiefer Boulevard. This design is proposed in the planning study prepared for *State Route 16 (Jackson Road) Corridor Study* (Fehr & Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

- At the **Watt Avenue & Jackson Road** intersection, the County proposes a standard six-by-six signalized intersection (two left-turn lanes, three through lanes, and one right-turn lane, on each approach) with three modifications. 1) The southbound left-turn movement would be grade separated; 2) The westbound right-turn movement would be grade separated; and 3) Three northbound left-turn lanes are proposed. This configuration represents an enhanced version of Alternative 6 in the planning study prepared for *State Route 16 (Jackson Road) Corridor Study* (Fehr and Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

Table 4.12
Existing Plus FOUR PROJECTS Roadway Segment Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS					Mitigated Existing + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	74,850	1.39	**F**	6	Arterial M	1.39	**F**	Yes		Maximum General Plan lanes
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	68,340	1.27	**F**	6	Arterial M	1.27	**F**	Yes		Maximum General Plan lanes
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	60,800	1.13	**F**	6	Arterial M	1.13	**F**	Yes		Maximum General Plan lanes
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	4	Arterial M	52,590	1.46	**F**	6	Arterial M	0.97	E	No		
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	5	Arterial M	48,280	1.34	**F**	6	Arterial M	0.89	D	No		
6.1	Bradshaw Rd	Kiefer Blvd	Collector WJ-9	5	Arterial M	43,190	1.20	**F**	6	Arterial M	0.80	C	No		
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	5	Arterial M	43,450	1.21	**F**	6	Arterial M	0.80	D	No		
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	22,490	1.25	**F**	4	Arterial M	0.62	B	No		
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	17,930	1.00	**E**	4	Arterial M	0.50	A	No		
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Arterial M	24,370	1.35	**F**	4	Arterial M	0.68	B	No		
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Arterial M	23,830	1.32	**F**	4	Arterial M	0.66	B	No		
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	3	Arterial M	20,830	1.16	**F**	4	Arterial M	0.58	A	No		
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd	2	Arterial M	24,620	1.37	**F**	4	Arterial M	0.68	B	No		
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	3	Arterial M	28,310	1.57	**F**	4	Arterial M	0.79	C	No		
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	3	Arterial M	27,210	1.51	**F**	4	Arterial M	0.76	C	No		
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	54,050	1.50	**F**	4	Arterial M	1.50	**F**	Yes		Maximum General Plan lanes
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	22,220	1.23	**F**	4	Arterial M	0.62	B	No		
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit	2	Rural S	15,900	0.80	E		Arterial M			No		
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd	2	Rural S	15,870	0.79	**E**	4	Arterial M	0.44	A	No		
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	22,700	1.14	**F**	4	Arterial M	0.63	B	No		
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	20,180	1.01	**F**	4	Arterial M	0.56	A	No		

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 4.12
Existing Plus FOUR PROJECTS Roadway Segment Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS					Mitigated Existing + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
58.2	Happy Ln	Routier Ext	Kiefer Blvd	2	Arterial M	19,200	1.07	**F**	2	Arterial M	1.07	**F**	Yes	Construct Routier extension.	
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	61,820	1.14	**F**	6	Arterial M	1.14	**F**	Yes		Maximum General Plan lanes
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd	2	Arterial M	33,010	1.83	**F**	4	Arterial M	0.92	E	No		
66	Jackson Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	37,200	2.07	**F**	4	Arterial M	1.03	**F**	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	58,720	1.63	**F**	6	Arterial M	1.09	**F**	Yes		Maximum General Plan lanes
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	4	Arterial M	50,220	1.40	**F**	6	Arterial M	0.93	E	No		
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	4	Arterial M	51,620	1.43	**F**	6	Arterial M	0.96	E	No		
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	4	Arterial M	46,410	1.29	**F**	6	Arterial M	0.86	D	No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	17,610	0.77	**E**	4	Arterial M	0.49	A	No		
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	36,970	1.03	**F**	4	Arterial M	1.03	**F**	Yes		Maximum General Plan lanes

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 4.12
Existing Plus FOUR PROJECTS Roadway Segment Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS					Mitigated Existing + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	32,640	0.91	**E**	4	Arterial M	0.91	**E**	Yes		Maximum General Plan lanes
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	64,430	1.19	**F**	6	Arterial M	1.19	**F**	Yes		Maximum General Plan lanes
97	South Watt Ave	Kiefer Blvd	Jackson Rd	5	Arterial M	49,470	1.37	**F**	6	Arterial M	0.92	E	No		
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	22,290	1.24	**F**	4	Arterial M	0.62	B	No		
100	South Watt Ave	Elder Creek Rd	Florin Rd	2	Arterial M	24,510	1.36	**F**	4	Arterial M	0.68	B	No		
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr	6	Arterial M	52,840	0.98	**E**	6	Arterial M	0.98	**E**	Yes		Maximum General Plan lanes
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	20,300	1.13	**F**	4	Arterial M	0.56	A	No		
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	77,770	1.30	**F**	6	Arterial H	1.30	**F**	Yes		Maximum General Plan lanes
118	Zinfandel Dr	US 50	White Rock Rd	7	Arterial M	49,950	0.93	**E**	7	Arterial M	0.93	**E**	Yes		Maximum General Plan lanes
122	Zinfandel Dr	City Limit	Douglas Rd	2	Arterial M	20,710	1.15	**F**	4	Arterial M	0.58	A	No		
123.1	Zinfandel Dr	Douglas Rd	Collector MS-2	2	Arterial M	19,830	1.10	**F**	4	Arterial M	0.55	A	No		
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd	2	Arterial M	22,170	1.23	**F**	4	Arterial M	0.62	B	No		

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Table 4.12
Existing Plus FOUR PROJECTS Roadway Segment Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS					Mitigated Existing + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible

Note: Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, as proposed by the County of Sacramento.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 4.13

Existing Plus FOUR PROJECTS (**Alternative 2**) Impacted Intersections and Mitigations

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing Plus FOUR PROJECTS				Mitigated Existing Plus FOUR PROJECTS			Existing Plus FOUR PROJECTS				Mitigated Existing Plus FOUR PROJECTS		
		Control	Int LOS	Delay (sec)	LOS Impact	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	LOS Impact	Control	Int LOS	Delay (sec)
5	Power Inn Road & Fruitridge Road	Signal	E	59.5	Yes	Signal	D	46.8	Signal	D	35.3	No	Signal	C	33.0
9	Florin Perkins Road & Jackson Road	Signal	E	70.0	Yes	Signal	C	29.8	Signal	F	144.0	Yes	Signal	D	44.0
14	S. Watt Avenue & Kiefer Blvd.	Signal	F	121.3	Yes	Signal	E	71.2	Signal	F	105.7	Yes	Signal	E	59.3
16	S. Watt Avenue & Jackson Road	Signal	F	331.7	Yes	Signal	E	62.0	Signal	F	773.1	Yes	Signal	E	61.7
17	S. Watt Avenue & Fruitridge Road	Signal	D	52.2	No	Signal	D	30.7	Signal	E	65.2	Yes	Signal	D	50.0
18	S. Watt Avenue & Elder Creek Road	Signal	F	125.6	Yes	Signal	D	38.8	Signal	F	143.8	Yes	Signal	D	43.6
27	Hedge Avenue & Florin Road	All-way stop	F	217.6	Yes	Signal	D	47.5	All-way stop	F	68.8	Yes	Signal	B	10.1
31	Mayhew Road & Elder Creek Road	Signal	F	294.2	Yes	Signal	C	33.0	Signal	F	275.9	Yes	Signal	C	25.6
32	Woodring Drive & Zinfandel Drive	Two-way stop			Yes	Roundabout	C	18.0	Two-way stop			Yes	Roundabout	C	19.6
	Eastbound		F	83.8						F	78.8				
	Northbound Left Turn		*A*	*9.4*						B	10.1				
36	Bradshaw Road & Old Placerville Road	Signal	E	61.2	Yes	Signal	-	-	Signal	E	62.7	Yes	Signal	-	-
37	Bradshaw Road & Kiefer Boulevard	Signal	F	101.3	Yes	Signal	F	96.5	Signal	F	104.5	Yes	Signal	E	73.1
38	Bradshaw Road & Jackson Road	Signal	F	92.6	Yes	Signal	E	73.9	Signal	F	82.1	Yes	Signal	E	69.3
39	Bradshaw Road & Elder Creek Road	Signal	F	80.1	Yes	Signal	D	52.0	Signal	E	71.5	No	Signal	E	63.7

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Table 4.13

Existing Plus FOUR PROJECTS (**Alternative 2**) Impacted Intersections and Mitigations

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing Plus FOUR PROJECTS				Mitigated Existing Plus FOUR PROJECTS			Existing Plus FOUR PROJECTS				Mitigated Existing Plus FOUR PROJECTS		
		Control	Int LOS	Delay (sec)	LOS Impact	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	LOS Impact	Control	Int LOS	Delay (sec)
40	Bradshaw Road & Florin Road	Signal	F	109.0	Yes	Signal	D	54.9	Signal	E	72.3	No	Signal	E	71.9
42	Happy Lane & Old Placerville Road	Two-way stop			Yes	Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left-turns to Happy Lane. Construct Routier extension.			Two-way stop			Yes	Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left-turns to Happy Lane. Construct Routier Extension.		
	Northbound Left Turn		*E*	*40.0*						F	>300				
	Northbound Right Turn		C	16.2						B	13.6				
	Westbound Left Turn		A	9.0						A	9.2				
45	Excelsior Road & Jackson Road	Signal	F	273.0	Yes	Signal	D	47.6	Signal	F	222.4	Yes	Signal	D	38.3
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	F	151.9	Yes	Signal	C	30.0	All-way stop	F	108.0	Yes	Signal	A	8.6
51	Mather Field Road & Rockingham Drive	Signal	F	125.6	Yes	Signal	-	-	Signal	E	61.8	Yes	Signal	-	-
61	Eagles Nest Road & Florin Road	Two-way stop			Yes	Signal	C	26.7	Two-way stop			Yes	Signal	C	29.9
	Northbound		*F*	*147.4**						D	25.4				
	Southbound		C	20.3*						F	71.3				
	Eastbound Left Turn		*A*	*5.4**						A	8.0				
	Westbound Left Turn		*A*	*0.0**						A	0.0				
69	Sunrise Boulevard & Kiefer Boulevard	Signal	E	59.7	Yes	Signal	D	47.1	Signal	D	40.0	No	Signal	C	30.1
70	Sunrise Boulevard & Jackson Road	Signal	F	124.5	Yes	Signal	D	39.4	Signal	E	69.9	Yes	Signal	D	46.0
80	Grant Line Road & Jackson Road	Signal	F	86.2	Yes	Signal	D	44.6	Signal	E	63.6	No	Signal	E	**61.4**
90	Excelsior Road & Calvine Rd	All-way stop	F	106.7	Yes	Signal	C	30.8	All-way stop	F	82.2	Yes	Signal	C	30.3
93	Grant Line Rd & Dwy/Wilton Rd	Signal	E	79.8	Yes	Signal	C	31.2	Signal	E	71.9	Yes	Signal	C	34.1

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Table 4.13

Existing Plus FOUR PROJECTS (**Alternative 2**) Impacted Intersections and Mitigations

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing Plus FOUR PROJECTS				Mitigated Existing Plus FOUR PROJECTS			Existing Plus FOUR PROJECTS				Mitigated Existing Plus FOUR PROJECTS		
		Control	Int LOS	Delay (sec)	LOS Impact	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	LOS Impact	Control	Int LOS	Delay (sec)
319	Bradshaw Road & Collector WJ-10	Signal	F	96.4	Yes	Signal	C	33.5	Signal	B	16.5	No	Signal	B	14.0
325	Douglas Road & Kiefer Boulevard	Signal	F	111.2	Yes	Signal	D	52.3	Signal	F	133.8	Yes	Signal	D	48.6
331	Routier Ext/Routier Rd & Old Placerville Rd.	Signal	F	231.2	Yes	Signal	E	65.5	Signal	F	189.8	Yes	Signal	E	56.6

Note: Gray shading represents changes in traffic control for which the project is responsible to pay a fair share.
(-): No change to tintersection geometry or operation.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 4.14

Existing Plus FOUR PROJECTS Intersection Impacts and Mitigations

	Intersection	Traffic Control		Existing Plus FOUR PROJECTS Lane Geometrics				Mitigated Existing Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		Existing Plus FOUR PROJECTS	Mitigated Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
5	Power Inn Road & Fruitridge Road	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No		
9	Florin Perkins Road & Jackson Road	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No		
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No	WBR Overlap	
16	S. Watt Avenue & Jackson Road	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	Yes	Free WBR	
17	S. Watt Avenue & Fruitridge Road	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No		
18	S. Watt Avenue & Elder Creek Road	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No		
27	Hedge Avenue & Florin Road	All-way stop	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No		
31	Mayhew Road & Elder Creek Road	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No	Dual SBR	
32	Zinfandel Drive & Woodring Drive	Two-way stop	Roundabout	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No		
36	Bradshaw Road & Old Placerville Road	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	Yes	No		Existing development
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	Yes	No	Carry 3 EBT and 3 WBT lanes through intersection	Maximum General Plan Lanes
38	Jackson Road & Bradshaw Road	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No	Dual EBR	
39	Bradshaw Road & Elder Creek Road	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No		
40	Bradshaw Road & Florin Road	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No		
42	Happy Lane & Old Placerville Road	Two-way stop	Access Control	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	Happy Lane to become right-in and right-out only. Median will allow westbound left turns.				Yes	No	Construct Routier extension from Old Placerville Road to Kiefer Road.	
45	Excelsior Road & Jackson Road	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No	NBR overlap	
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175		No		
51	Mather Field Road & Rockingham Drive	Signal	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	Yes	No		Existing development
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	3:0.111,0.139,0.132,0.175	3:0.139,0.139,0.164,0.175	3:0.164,0.139,0.183,0.175	3:0.183,0.139,0.202,0.175	No	No		

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 4.14

Existing Plus FOUR PROJECTS Intersection Impacts and Mitigations

	Intersection	Traffic Control		Existing Plus FOUR PROJECTS Lane Geometrics				Mitigated Existing Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		Existing Plus FOUR PROJECTS	Mitigated Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									No	No		
70	Sunrise Boulevard & Jackson Road	Signal	Signal									No	No		
80	Grant Line Road & Jackson Road	Signal	Signal									No	No		
90	Excelsior Road & Calvine Rd	All-way stop	Signal									No	No		
93	Grant Line Road & Driveway/Wilton Rd	Signal	Signal									No	No		
319	Tree View Lane & Collector JT-1	Signal	Signal									No	No	Dual WBR	
325	Douglas Road & Kiefer Boulevard	Signal	Signal									No	No	Dual EBR	
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	Signal									No	No	NBR overlap	

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

4.5.3 Existing Plus FOUR PROJECTS U.S. 50 Freeway Mitigation

According to Caltrans' US-50 Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP), all mainline freeway lanes of the 8-lane ultimate facility (4 lanes in each direction) have already been built, with the exception of the segment between Zinfandel Drive and Sunrise Boulevard (where 6 of the 8 ultimate lanes exist today). With the exception of this segment, capacity improvements to widen the freeway mainline are precluded by the ultimate configuration in the TCR/CSMP. The TCR/CSMP does conceptualize other projects that will benefit the US-50 corridor without adding additional mainline travel lanes. These improvements generally fall into one of three categories:

- Intelligent transportation systems (ITS) and integrated corridor management (ICM) projects. Some examples may include ramp metering and multimodal improvements.
- Improvements to parallel local facilities. Such projects are expected to reduce travel demand on US-50.
- Future HOV lanes and auxiliary lanes. These projects would extend, or bridge gaps in, the existing HOV and auxiliary lane network. Constructing these lanes is permissible even when further widening of the mainline is not allowable, and is consistent with the ultimate configuration in the TCR/CSMP.

The FOUR PROJECTS shall participate in one or more of these alternative improvements that could directly reduce the severity of the project's impact and/or provide operational benefits to the US-50 corridor in general.

4.5.3.1 US-50 Eastbound Alternative Improvements

To lessen the impact to the eastbound US-50 mainline between Stockton Boulevard and 59th Street, the project may pay a fair share toward the construction of:

- Ramp meter improvements (Caltrans ITS/OPS Project List)

To lessen the impact to the eastbound US-50 weave between 65th Street and Howe Avenue, the project may pay a fair share toward the construction of:

- Ramp meter improvements (Caltrans ITS/OPS Project List)
- Widen 65th Street to 5 lanes from US-50 to Broadway (2035 SACOG MTP)

To lessen the impact to the eastbound US-50 weave between Mather Field Road and Zinfandel Drive, the project may pay a fair share toward the construction of:

- An interchange modification of US-50 at Mather Field Road (2035 SACOG MTP)

To lessen the impact to the eastbound US-50 mainline between Zinfandel Drive and Hazel Avenue, the project may pay a fair share toward the construction of:

- Auxiliary lanes between Zinfandel Drive and Sunrise Boulevard (2035 SACOG MTP)
- Auxiliary lanes between Sunrise Boulevard and Hazel Avenue (2035 SACOG MTP)
- Widen Sunrise Boulevard to 6 lanes with special treatments, including intersection improvements at White Rock Road, Folsom Boulevard, Coloma Road, Gold Express Drive, and Gold Country Boulevard (2035 SACOG MTP)
- A new interchange at Rancho Cordova Parkway, including a 4-lane arterial from US-50 to White Rock Road (2035 SACOG MTP)

- Multi-modal corridor improvements and interchange improvements at Hazel Avenue (2035 SACOG MTP)

4.5.3.2 US-50 Westbound Alternative Improvements

To lessen the impact to the westbound US-50 mainline between Watt Avenue and SR-51/SR-99, the project may pay a fair share toward the construction of:

- Bus/HOV lanes from Watt Avenue to Downtown Sacramento (2035 SACOG MTP)
- Replacement of existing communication lines with fiber optics to improve performance between SR-51/SR-99 and Watt Avenue (2013 10-Year SHOPP Plan)
- Auxiliary lane between the NB Howe Avenue on-ramp and the SB Howe Avenue on-ramp (2035 SACOG MTP)
- Ramp meter improvements (Caltrans ITS/OPS Project List)

4.5.4 Existing Plus FOUR PROJECTS Pedestrian and Bicycle Facility Mitigation

The FOUR PROJECTS applicants shall coordinate with Sacramento County to identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development. These facilities shall be incorporated into the FOUR PROJECTS and could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, pedestrian signal heads, and all appropriate traffic calming measures as defined in the County's Neighborhood Traffic Management Program (NTMP). Sidewalks would be required as part of the frontage improvements along all new roadway construction in the FOUR PROJECTS vicinity in conformance with County design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards.

4.5.5 Existing Plus FOUR PROJECTS Transit System Mitigation

The applicants of the FOUR PROJECTS shall coordinate with Regional Transit (or other transit operators) to provide the additional transit facilities and services assumed in transportation analysis (see Section 3.1.2.3), or a cost-effective equivalent level of transit facilities and services.

The assumed transit routes and service frequency would be required at full development of the FOUR PROJECTS. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the FOUR PROJECTS, must be phased with development of the FOUR PROJECTS.

4.5.6 Existing Plus FOUR PROJECTS Functionality Mitigation

Table 4.15 summarizes the results of the functionality analysis for the study area rural roadway segments with mitigation.

4.5.7 Existing Plus FOUR PROJECTS Mitigation Summary

Tables 4.16 through 4.21 summarize all of the roadway segments, intersections, and freeway facilities that would exhibit significant LOS impacts along with the mitigation success for these impacts.

Table 4.15
Existing Plus FOUR PROJECTS Functionality Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]		
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	4	No	9,500	Yes[3]	Widen to County standards [5]	No
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Yes	6,470	Yes	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Yes	24,370	Yes	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Yes	23,830	Yes	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	3	No	14,080	Yes[3]	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	3	No	20,830	Yes[3]	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Yes	22,740	Yes	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	3	No	27,210	Yes[3]	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	3	No	11,850	Yes[3]	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Yes	12,980	Yes	Widen to County standards [5]	No
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Yes	10,200	Yes	Widen to County standards [5]	No
39	Florin Rd	South Watt Ave	Hedge Ave	2	Yes	16,070	Yes	Widen to County standards [5]	No
40	Florin Rd	Hedge Ave	Mayhew Rd	2	Yes	13,050	Yes	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	2	Yes	13,290	Yes	Widen to County standards [5]	No
42	Florin Rd	Bradshaw Rd	Excelsior Rd	2	Yes	12,760	Yes	Widen to County standards [5]	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Yes	7,380	Yes	Widen to County standards [5]	No
48	Fruitridge Rd	South Watt Ave	Hedge Ave	3	No	14,950	Yes[3]	Widen to County standards [5]	No
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	4	No	15,820	Yes[3]	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	2	Yes	9,020	Yes	Widen to County standards [5]	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	2	Yes	7,540	Yes	Widen to County standards [5]	No
59	Hedge Ave	Jackson Rd	Fruitridge Rd	2	Yes	7,900	Yes	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	6	No	52,830	Yes[3]	Widen to County standards [5]	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	No	46,410	Yes[3]	Widen to County standards [5]	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	6	No	42,680	Yes[3]	Widen to County standards [5]	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	3	No	14,640	Yes[3]	Widen to County standards [5]	No

Red text with light gray shading indicate project impacts.

Table 4.15
Existing Plus FOUR PROJECTS Functionality Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]		
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	4	No	34,140	Yes[3]	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	2	Yes	19,830	Yes	Widen to County standards [5]	No

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.
[4] Excluding the roadway segment that is within the developed community of Independence at Mather.
[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

Table 4.16
Existing Plus FOUR PROJECTS Summary of Impacted Roadway Segments

ID	Roadway	Segment	
		From	To
Level of Service Impact Fully Mitigated by General Plan Lanes			
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd
6.1	Bradshaw Rd	Kiefer Blvd	Collector WJ-9
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd
56	Grant Line Rd	Sheldon Rd	Wilton Rd
57	Grant Line Rd	Wilton Rd	Bond Rd
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd
68.1	Jackson Rd	Hedge Ave	Collector WJ-3
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd
71.1	Jackson Rd	Excelsior Rd	Collector JT-3
73	Jackson Rd	Sunrise Blvd	Grant Line Rd
97	South Watt Ave	Kiefer Blvd	Jackson Rd
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd
100	South Watt Ave	Elder Creek Rd	Florin Rd
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd
122	Zinfandel Dr	City Limit	Douglas Rd
123.1	Zinfandel Dr	Douglas Rd	Collector MS-2
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd
Level of Service Impact Not Fully Mitigated by General Plan Lanes			
2	Bradshaw Rd	US 50	Lincoln Village Dr
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd
44	Folsom Blvd	Howe Ave	Jackson Rd
58.2	Happy Lane	Routier Ext	Kiefer Boulevard
62	Howe Ave	US 50	Folsom Blvd

Note: Refer to Table 4.12 for detailed description of impacts and mitigations.

Table 4.16
Existing Plus FOUR PROJECTS Summary of Impacted Roadway Segments

ID	Roadway	Segment	
		From	To
66	Jackson Rd	Florin Perkins Rd	South Watt Ave
67	Jackson Rd	South Watt Ave	Hedge Ave
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd
96	South Watt Ave	Folsom Blvd	Kiefer Blvd
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr
110	Watt Ave	US 50	Folsom Blvd
118	Zinfandel Dr	US 50	White Rock Rd

Note: Refer to Table 4.12 for detailed description of impacts and mitigations.

Table 4.17
Existing Plus FOUR PROJECTS (Alternative 2) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
Level of Service Impact Fully Mitigated by General Plan Lanes		
5	Power Inn Road & Fruitridge Road	
9	Florin Perkins Road & Jackson Road	
14	S. Watt Avenue & Kiefer Blvd.	**
17	S. Watt Avenue & Fruitridge Road	
18	S. Watt Avenue & Elder Creek Road	
27	Hedge Avenue & Florin Road	
31	Mayhew Road & Elder Creek Road	**
32	Woodring Drive & Zinfandel Drive	
38	Bradshaw Road & Jackson Road	**
39	Bradshaw Road & Elder Creek Road	
40	Bradshaw Road & Florin Road	
45	Excelsior Road & Jackson Road	**
48	Excelsior Road & Gerber Road/Birch Ranch Drive	
61	Eagles Nest Road & Florin Road	
69	Sunrise Boulevard & Kiefer Boulevard	
70	Sunrise Boulevard & Jackson Road	
80	Grant Line Road & Jackson Road	
90	Excelsior Road & Calvine Rd	

Table 4.17
Existing Plus FOUR PROJECTS (Alternative 2) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
93	Grant Line Rd & Dwy/Wilton Rd	
319	Bradshaw Road & Rock Creek Pkwy	
325	Douglas Road & Kiefer Boulevard	**
331	Routier Ext/Routier Rd & Old Placerville Rd.	**
	Level of Service Impact Not Fully Mitigated by General Plan Lanes But Designated High Capacity Intersection	
16	S. Watt Avenue & Jackson Road	**
	Level of Service Impact Not Fully Mitigated by General Plan Lanes	
36	Bradshaw Road & Old Placerville Road	
37	Bradshaw Road & Kiefer Boulevard	
42	Happy Lane & Old Placerville Road	**
51	Mather Field Road & Rockingham Drive	

[1] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding designated high capacity intersections, as proposed by the County of Sacramento.

* denotes alternative mitigations that improve operations but do not fully mitigate the impact.
** denotes alternative mitigations that fully mitigate the impact.

Table 4.18

Existing Plus FOUR PROJECTS (Alternative 2)
Summary of Impacted Freeway Basic Segments

Direction	Location
Level of Service Impact Not Mitigated	
Eastbound US-50	Stockton Boulevard to 59th Street
	Zinfandel Drive to Sunrise Boulevard
	Sunrise Boulevard to Hazel Avenue
Westbound US-50	Watt Avenue to Howe Avenue
	Howe Avenue to 65th Street
	65th Street to 59th Street
	59th Street to Stockton Boulevard
	Stockton Boulevard to SR 99 / SR 51

Source: *DKS Associates, 2018.*

Table 4.19

Existing Plus FOUR PROJECTS (Alternative 2)
Summary of Impacted Freeway Merge/Diverge/Weave Segments

Direction	Location	Junction Type
Level of Service Impact Not Mitigated		
Eastbound US-50	Northbound 65th Street Slip Entrance	Weave
	Howe Avenue / Hornet Drive Exit	
	Northbound Mather Field Road Slip Entrance	Weave
	Zinfandel Drive Exit	

Source: *DKS Associates, 2018.*

Table 4.20
Existing Plus FOUR PROJECTS (Alt 2) Functionality Impact Summary

ID	Roadway	Segment	
		From	To
Functionality Impact Fully Mitigated			
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd
20	Eagles Nest Rd	Jackson Rd	Florin Rd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd
30	Excelsior Rd	Kiefer Blvd	Jackson Rd
31	Excelsior Rd	Jackson Rd	Elder Creek Rd
32	Excelsior Rd	Elder Creek Rd	Florin Rd
33	Excelsior Rd	Florin Rd	Gerber Rd
34	Excelsior Rd	Gerber Rd	Calvine Rd
39	Florin Rd	South Watt Ave	Hedge Ave
40	Florin Rd	Hedge Ave	Mayhew Rd
41	Florin Rd	Mayhew Rd	Bradshaw Rd
42	Florin Rd	Bradshaw Rd	Excelsior Rd
43	Florin Rd	Excelsior Rd	Sunrise Blvd
48	Fruitridge Rd	South Watt Ave	Hedge Ave
49	Fruitridge Rd	Hedge Ave	Mayhew Rd
50	Grant Line Rd	White Rock Rd	Douglas Rd
58	Happy Ln	Old Placerville Rd	Kiefer Blvd
59	Hedge Ave	Jackson Rd	Fruitridge Rd
70	Jackson Rd	Bradshaw Rd	Excelsior Rd
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd
77	Kiefer Blvd	Bradshaw Rd	Happy Ln
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd
89	Mayhew Rd	Jackson Rd	Fruitridge Rd
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd

5. MTP CUMULATIVE PLUS FOUR PROJECTS SCENARIO

5.1 FOUR PROJECTS DESCRIPTION

The MTP Cumulative plus FOUR PROJECTS scenario evaluates the effects of the traffic of four developments (the FOUR PROJECTS) added to MTP Cumulative conditions.

5.1.1 MTP Cumulative Land Use

Outside the FOUR PROJECTS, SACOG's 2035 development forecasts (the amount and location of housing and employment) for the adopted 2012 Metropolitan Transportation Plan (MTP) were used to prepare travel demand forecasts for this scenario.

Table 5.1 summarizes the MTP Cumulative Plus Four Project scenario land use.

Table 5.1: Assumed Land Use for MTP Cumulative Plus FOUR PROJECTS Scenario			
Project	**General Land Use**	**Acres**	**Dwelling Units**
West Jackson	Residential	1979.9	12,345
	Assumed Density Bonus[1]		237
	Mixed Use	120.9	2,418
	Commercial	342.8	
	Employment	803.3	
	Industrial	154.8	
	Schools	131.7	
	Park/Open Space/Ag	2108.3	
	Institutional	23.4	
	Primary Roadways	248.2	
	Subtotal	**5913.3**	**15,000**
Jackson Township	Residential	589.1	5,590
	Assumed Density Bonus[1]		76
	Commercial/Mixed Use	95.6	100
	Office	35.2	
	Pubic/Quasi Public	102.5	
	Park/Open Space/Ag	409.4	448
	Primary Roadways	84.2	
	Subtotal	**1,391.0**	**6,214**
New Bridge	Residential	368.0	2,915
	Assumed Density Bonus[1]		108
	Commercial/Mixed Use	31.7	160
	Office	13.8	
	Pubic/Quasi Public	13.8	
	Park/Open Space/Ag	514.7	660
	Primary Roadways	47.9	
	Subtotal	**1,095.3**	**3,843**

Project	General Land Use	Acres	Dwelling Units
Mather South	Residential	428.7	3,352
	Assumed Density Bonus[1]		30
	Commercial	21.1	
	Environmental Education Campus	27.9	200
	Research and Development	21.4	
	Parks & Recreation	43.1	
	Public Utilities	3.5	
	Schools	23.7	
	Open Space	210.5	
	Streets	62.7	
	Subtotal	**848.2**	**3,552**

[1] Reflects estimated potential for additional units that may occur due to County's Housing Incentive Program.

Source: *Project Applicants and Sacramento County, 2018*

5.1.2 Transportation Network

Figure 5.1 illustrates the transportation network associated with the MTP Cumulative without FOUR PROJECTS scenario, consisting of the improvements in the adopted 2012 Metropolitan Transportation Plan (MTP).

Figure 5.2 shows the transportation network associated with the MTP Cumulative with FOUR PROJECTS scenario. The FOUR PROJECTS would widen and / or complete many roadways that cross or border the PROJECT site. The FOUR PROJECTS would include new roadways to serve the proposed land use.

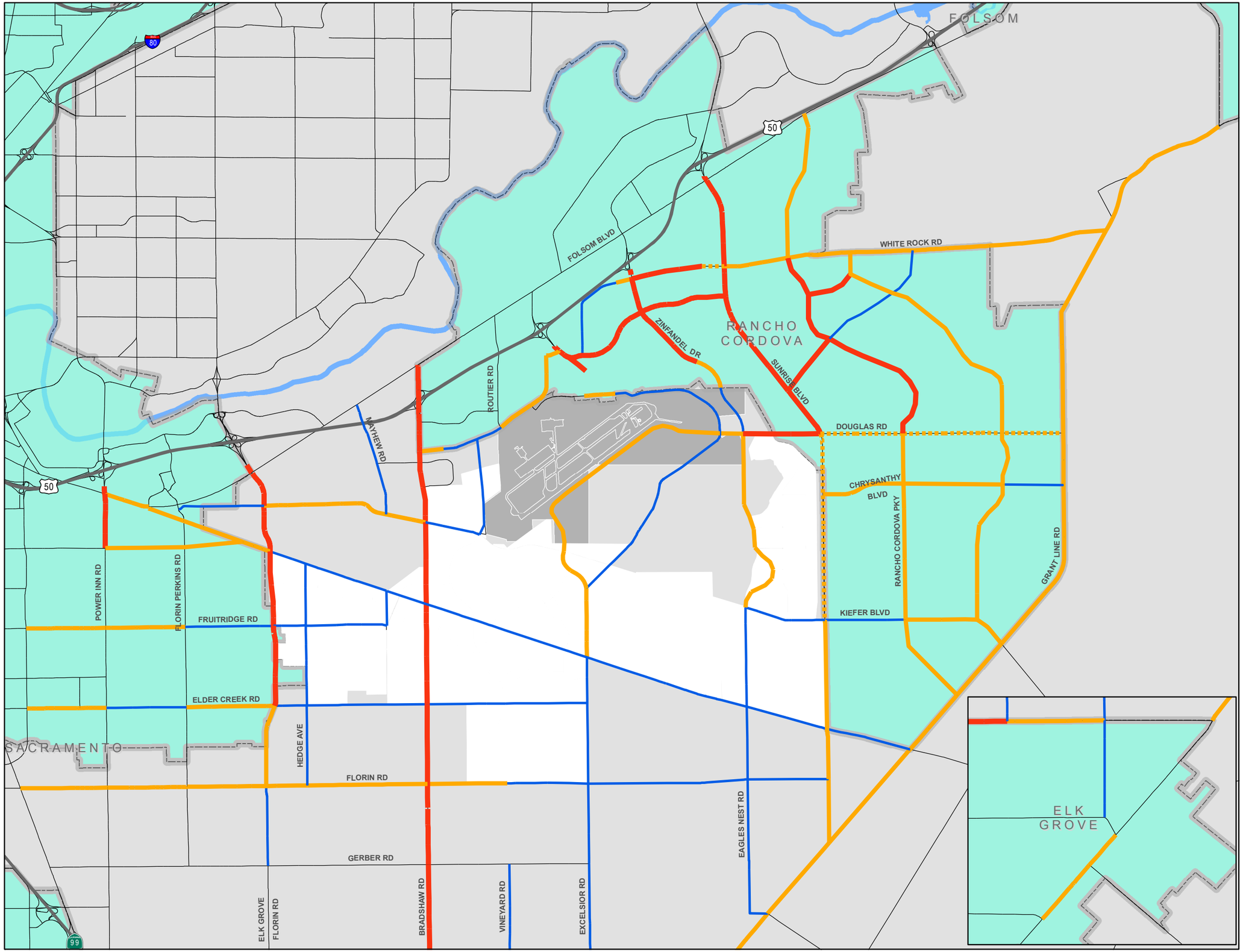
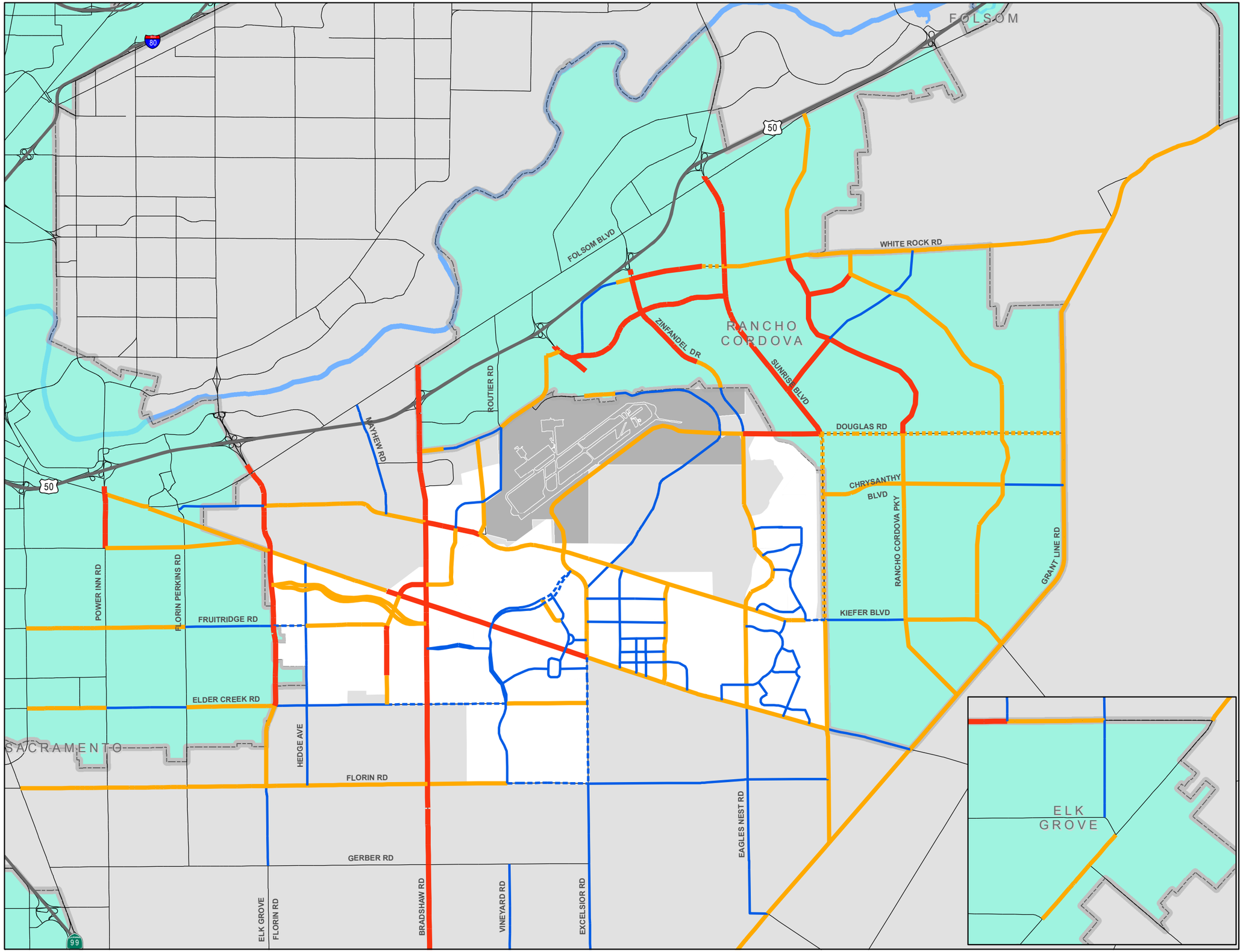


FIGURE 5.1
MTP CUMULATIVE NO PROJECT ROADWAY NETWORK

Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport

FIGURE 5.2
MTP CUM PLUS FOUR PROJECTS
ROADWAY NETWORK



Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport

DKS

5.2 TRIP GENERATION

The SACSIM model that has been utilized for the transportation forecasts in this analysis estimated trip generation of the FOUR PROJECTS. **Table 5.2** summarizes the person trip generation. The FOUR PROJECTS would generate over 84,500 daily work person trip ends, and over 688,000 daily person trip ends for all trip purposes.

Table 5.3 summarizes the estimated mode choice for the MTP plus FOUR PROJECTS scenario. Over 90 percent of all person trips are expected to be accommodated by automobile. Transit will serve about 2.2 percent of all trips, while walk and bike modes will accommodate about 7.3 percent of all trips. The mode choice assumes full implementation of the project's pedestrian and bicycle systems.

Table 5.4 summarizes the vehicular (auto) trip generation of the FOUR PROJECTS. The FOUR PROJECTS are estimated to generate over 464,500 daily vehicle trip ends. Over 96,000 of the daily vehicle trip ends will be associated with trips with both an origin and destination within the individual projects, representing over 20.5 percent of the trip ends. The internal trip ends represent over 48,000 daily vehicle trips (one-half the number of internal trip ends). The FOUR PROJECTS will generate over 363,500 external vehicle trips that have an origin or destination inside one of the FOUR PROJECTS but the other end of the trip is outside the project from which it originated. **Table 5.4** also shows the vehicle trips generated during the a.m. and p.m. peak hours.

Table 5.2: Estimated Daily Person Trip Generation (MTP Cumulative)

FOUR PROJECTS

Trip Purpose	Daily Person Trip Ends
Work Trips	84,574
Non-Work Trips	603,767
All Trip Purposes	688,341

Source: *DKS Associates, 2018.*

Table 5.3: Mode Split (MTP Cumulative)

FOUR PROJECTS

Mode	Percentage of Person Trips by Trip Purpose		
	Work Trips	Non-Work Trips	All Trip Purposes
Auto - SOV	82.8%	47.4%	51.7%
Auto - HOV	11.1%	42.7%	38.8%
Transit	4.8%	1.8%	2.2%
Walk	0.7%	7.2%	6.4%
Bike	0.6%	0.9%	0.9%

Source: *DKS Associates, 2018.*

Table 5.4: Estimated Daily Vehicle Trip Generation (MTP Cumulative)

FOUR PROJECTS

Trip Type		AM Peak Hour	PM Peak Hour	Daily
Total Vehicle Trip Ends		39,936	43,134	464,853
Percent Internal Trip Ends[1]		16.7%	21.4%	20.7%
Vehicle Trips	Internal to Projects	3,341	4,608	48,083
	External to Projects	33,254	33,917	368,687
	Total	36,595	38,525	416,770

[1.] Both trip ends within individual projects.

Source: *DKS Associates, 2018.*

5.3 OPERATIONS ANALYSIS

This analysis compares the traffic operating conditions associated with the FOUR PROJECTS with the traffic operating conditions associated with the MTP Cumulative (without FOUR PROJECTS) conditions. While the MTP Cumulative scenario is not used for purposes of impact determination, this analysis notes where thresholds of significance are exceeded.

5.3.1 MTP Cumulative Plus FOUR PROJECTS Roadway Segments

Table 5.5 summarizes the results of the operations analysis for the study area roadway segments. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate new roadways or widened roadways. The last column of the table shows the project(s) responsible for the increase in the number of roadway lanes. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS that has exceeded the threshold of significance.

Table 5.5
MTP Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		MTP Cumulative No Project					MTP Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
1	Bradshaw Rd	Folsom Blvd	US 50	6	Arterial M	25,820	0.48	A	6	Arterial M	23,520	0.44	A	
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	63,890	1.18	**F**	6	Arterial M	81,320	1.51	**F**	
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	49,520	0.92	**E**	6	Arterial M	73,450	1.36	**F**	
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	57,310	1.06	**F**	6	Arterial M	69,670	1.29	**F**	
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	6	Arterial M	41,070	0.76	C	6	Arterial M	57,850	1.07	**F**	
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	6	Arterial M	39,290	0.73	C	6	Arterial M	53,030	0.98	E	
6.1	Bradshaw Rd	Kiefer Blvd	Collector WJ-9	6	Arterial M	44,340	0.82	D	6	Arterial M	51,160	0.95	E	
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	6	Arterial M	45,100	0.84	D	6	Arterial M	49,820	0.92	E	
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd	6	Arterial M	45,040	0.83	D	6	Arterial M	54,530	1.01	**F**	
7.1	Bradshaw Rd	Jackson Rd	Rock Creek Pkwy	6	Arterial M	38,180	0.71	C	6	Arterial M	44,110	0.82	D	
7.2	Bradshaw Rd	Rock Creek Pkwy	Collector WJ-10	6	Arterial M	38,210	0.71	C	6	Arterial M	46,280	0.86	D	
7.3	Bradshaw Rd	Collector WJ-10	Collector WJ-11	6	Arterial M	38,380	0.71	C	6	Arterial M	39,710	0.74	C	
7.4	Bradshaw Rd	Collector WJ-11	Elder Creek Rd	6	Arterial M	38,180	0.71	C	6	Arterial M	34,100	0.63	B	
8	Bradshaw Rd	Elder Creek Rd	Florin Rd	6	Arterial M	38,550	0.71	C	6	Arterial M	43,150	0.80	C	
9	Bradshaw Rd	Florin Rd	Gerber Rd	6	Arterial M	36,170	0.67	B	6	Arterial M	43,350	0.80	D	
10	Bradshaw Rd	Gerber Rd	Calvine Rd	6	Arterial M	27,310	0.51	A	6	Arterial M	32,350	0.60	A	
11	Calvine Rd	Waterman Rd	Bradshaw Rd	6	Arterial M	14,350	0.27	A	6	Arterial M	14,120	0.26	A	
12	Calvine Rd	Bradshaw Rd	Vineyard Rd	6	Arterial M	11,570	0.21	A	6	Arterial M	11,570	0.21	A	
13	Calvine Rd	Vineyard Rd	Excelsior Rd	4	Arterial M	5,470	0.15	A	4	Arterial M	5,500	0.15	A	
14	Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	6,190	0.17	A	4	Arterial M	9,680	0.27	A	
15	Douglas Rd	Mather Blvd	Zinfandel Dr	4	Arterial M	16,800	0.47	A	4	Arterial M	26,770	0.74	C	
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	28,850	0.53	A	6	Arterial M	40,360	0.75	C	
17	Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	5	Arterial M	35,190	0.98	**E**	5	Arterial M	29,070	0.81	D	
18.1	Douglas Rd	Rancho Cordova Pkwy	Americanos Blvd	5	Arterial M	30,030	0.83	D	5	Arterial M	23,400	0.65	B	
18.2	Douglas Rd	Americanos Blvd	Grant Line Rd	5	Arterial M	7,100	0.20	A	5	Arterial M	7,400	0.21	A	
19.1	Eagles Nest Rd	Kiefer Blvd	N Bridgewater Dr	2	Arterial M	6,090	0.34	A	4	Arterial M	10,950	0.30	A	NewBridge
19.2	Eagles Nest Rd	N Bridgewater Dr	S Bridgewater Dr	2	Arterial M	6,090	0.34	A	4	Arterial M	11,190	0.31	A	NewBridge
19.3	Eagles Nest Rd	S Bridgewater Dr	Jackson Rd	2	Arterial M	6,220	0.35	A	4	Arterial M	11,050	0.31	A	NewBridge
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Arterial M	4540	0.25	A	2	Arterial M	7810	0.43	A	
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	2	Arterial M	4020	0.22	A	2	Arterial M	4730	0.26	A	
22	Elder Creek Rd	65th St	Power Inn Rd	4	Arterial M	21,860	0.61	B	4	Arterial M	26,920	0.75	C	
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	22,160	1.23	**F**	2	Arterial M	27,090	1.51	**F**	
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave	4	Arterial M	20,990	0.58	A	4	Arterial M	26,210	0.73	C	
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Arterial M	17,360	0.96	E	2	Arterial M	40,370	2.24	**F**	

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Table 5.5
MTP Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		MTP Cumulative No Project					MTP Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Arterial M	20,040	1.11	**F**	2	Arterial M	41,550	2.31	**F**	
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	3,460	0.19	A	3	Arterial M	18,490	1.03	**F**	West Jackson
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	2	Arterial M	4,580	0.25	A	3	Arterial M	25,250	1.40	**F**	West Jackson
28.2	Elder Creek Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	4,450	0.25	A	4	Arterial M	20,780	0.58	A	West Jackson
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd	2	Arterial M	27,430	1.52	**F**	2	Arterial M	26,590	1.48	**F**	
30.1	Excelsior Rd	Kiefer Blvd	Douglas Rd	2	Arterial M	4,420	0.25	A	2	Arterial M	5,210	0.29	A	
30.2	Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	4	Arterial M	6,380	0.18	A	4	Arterial M	25,650	0.71	C	
30.3	Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	4	Arterial M	6,830	0.19	A	4	Arterial M	22,760	0.63	B	
30.4	Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	4	Arterial M	6,830	0.19	A	4	Arterial M	21,410	0.59	A	
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	2	Arterial M	8,280	0.46	A	3	Arterial M	30,840	1.71	**F**	West Jackson
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	2	Arterial M	8,280	0.46	A	3	Arterial M	30,360	1.69	**F**	West Jackson
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Arterial M	4,780	0.27	A	3	Arterial M	12,360	0.69	B	West Jackson
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	6,760	0.38	A	2	Arterial M	12,480	0.69	B	
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Arterial M	3,920	0.22	A	2	Arterial M	7,870	0.44	A	
35	Excelsior Rd	Calvine Rd	Sheldon Rd	2	Arterial M	4,720	0.26	A	2	Arterial M	8,270	0.46	A	
36	Florin Rd	Stockton Blvd	Power Inn Rd	4	Arterial M	33,820	0.94	E	4	Arterial M	37,580	1.04	**F**	
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	32,940	0.92	E	4	Arterial M	38,320	1.06	**F**	
38	Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	4	Arterial M	16,770	0.47	A	4	Arterial M	21,460	0.60	A	
39	Florin Rd	South Watt Ave	Hedge Ave	4	Arterial M	9,690	0.27	A	4	Arterial M	7,750	0.22	A	
40	Florin Rd	Hedge Ave	Mayhew Rd	4	Arterial M	11,120	0.31	A	4	Arterial M	7,540	0.21	A	
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	21,320	0.59	A	4	Arterial M	27,800	0.77	C	
42.1	Florin Rd	Bradshaw Rd	Vineyard Rd	4	Arterial M	4,900	0.14	A	4	Arterial M	13,870	0.39	A	
42.2	Florin Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	4,940	0.27	A	3	Arterial M	11,050	0.61	B	West Jackson
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	6,840	0.38	A	2	Arterial M	10,280	0.57	A	
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	47,700	1.33	**F**	4	Arterial M	54,410	1.51	**F**	
45	Fruitridge Rd	65th St	Power Inn Rd	4	Arterial M	21,560	0.60	A	4	Arterial M	25,610	0.71	C	
46	Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	4	Arterial M	18,680	0.52	A	4	Arterial M	27,950	0.78	C	

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Table 5.5
MTP Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		MTP Cumulative No Project					MTP Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	12,750	0.71	C	2	Arterial M	24,750	1.38	**F**	
48	Fruitridge Rd	South Watt Ave	Hedge Ave	2	Arterial M	5,140	0.29	A	3	Arterial M	18,250	1.01	**F**	West Jackson
49.1	Fruitridge Rd	Hedge Ave	Collector WJ-12	2	Arterial M	1,230	0.07	A	4	Arterial M	19,210	0.53	A	West Jackson
49.2	Fruitridge Rd	Collector WJ-12	Mayhew Rd	2	Arterial M	1,200	0.07	A	4	Arterial M	16,840	0.47	A	West Jackson
50	Grant Line Rd	White Rock Rd	Douglas Rd	4	Arterial H	17,660	0.44	A	4	Arterial H	20,260	0.51	A	
51.1	Grant Line Rd	Douglas Rd	Chrysanthy Blvd	4	Arterial M	10,670	0.30	A	4	Arterial M	15,950	0.44	A	
51.2	Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd	4	Arterial M	10,610	0.29	A	4	Arterial M	15,630	0.43	A	
52.1	Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	4	Arterial M	11,540	0.32	A	4	Arterial M	14,910	0.41	A	
52.2	Grant Line Rd	Rancho Cordova Pkwy	Jackson Rd	4	Arterial M	15,280	0.42	A	4	Arterial M	16,510	0.46	A	
53	Grant Line Rd	Jackson Rd	Sunrise Blvd	4	Arterial H	19,260	0.48	A	4	Arterial H	18,970	0.47	A	
54	Grant Line Rd	Sunrise Blvd	Calvine Rd	4	Arterial H	29,550	0.74	C	4	Arterial H	30,590	0.76	C	
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit	4	Arterial M	27,060	0.75	C	4	Arterial M	27,900	0.78	C	
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd	4	Arterial M	27,110	0.75	C	4	Arterial M	28,020	0.78	C	
56	Grant Line Rd	Sheldon Rd	Wilton Rd	4	Arterial M	32,400	0.90	**E**	4	Arterial M	37,210	1.03	**F**	
57	Grant Line Rd	Wilton Rd	Bond Rd	4	Arterial M	27,860	0.77	C	4	Arterial M	32,640	0.91	**E**	
58.1	Happy Lane	Old Placerville Road	Routier Ext	2	Arterial M	3,890	0.22	A	2	Arterial M	15,650	0.87	D	West Jackson
58.2	Happy Lane	Routier Ext	Kiefer Boulevard	2	Arterial M	4,930	0.27	A	2	Arterial M	21,060	1.17	**F**	West Jackson
59.1	Hedge Ave	Jackson Rd	Rock Creek Pkwy	2	Arterial M	2,100	0.12	A	2	Arterial M	8,450	0.47	A	
59.2	Hedge Ave	Rock Creek Pkwy	Fruitridge Rd	2	Arterial M	2,210	0.12	A	2	Arterial M	3,090	0.17	A	
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	3,400	0.19	A	2	Arterial M	2,980	0.17	A	
61	Hedge Ave	Elder Creek Rd	Florin Rd	2	Arterial M	4,060	0.23	A	2	Arterial M	2,350	0.13	A	
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	65,240	1.21	**F**	6	Arterial M	70,390	1.30	**F**	
63	International Dr	Mather Field Rd	Zinfandel Dr	6	Arterial M	40,150	0.74	C	6	Arterial M	39,820	0.74	C	
64	International Dr	Zinfandel Dr	Sunrise Blvd	6	Arterial M	18,880	0.35	A	6	Arterial M	25,300	0.47	A	
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd	4	Arterial M	27,560	0.77	C	4	Arterial M	35,200	0.98	E	
66.1	Jackson Rd	Florin Perkins Rd	14th Ave	4	Arterial M	23,560	0.65	B	4	Arterial M	40,500	1.13	**F**	
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	30,220	0.84	D	4	Arterial M	55,280	1.54	**F**	
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	23,660	0.66	B	4	Arterial M	56,280	1.56	**F**	

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Table 5.5
MTP Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		MTP Cumulative No Project					MTP Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave	4	Arterial M	23,660	0.66	B	4	Arterial M	56,280	1.56	**F**	
67	Jackson Rd	South Watt Ave	Hedge Ave	2	Arterial M	20,730	1.15	**F**	4	Arterial M	62,720	1.74	**F**	West Jackson
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	2	Arterial M	17,260	0.96	E	4	Arterial M	55,150	1.53	**F**	West Jackson
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	2	Arterial M	17,220	0.96	E	4	Arterial M	56,230	1.56	**F**	West Jackson
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	19,150	1.06	**F**	6	Arterial M	51,740	0.96	E	West Jackson
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	2	Rural Hwy	16,970	0.74	E	6	Arterial M	55,490	1.03	**F**	West Jackson
70.2	Jackson Rd	Collector WJ-4	Rock Creek Pkwy	2	Rural Hwy	17,050	0.74	E	6	Arterial M	54,270	1.01	**F**	West Jackson
70.3	Jackson Rd	Rock Creek Pkwy	Commercial Access	2	Rural Hwy	16,900	0.74	E	6	Arterial M	34,360	0.64	B	West Jackson
70.4	Jackson Rd	Commercial Access	Collector WJ-5	2	Rural Hwy	16,900	0.74	E	6	Arterial M	33,710	0.62	B	West Jackson
70.5	Jackson Rd	Collector WJ-5	Collector WJ-6	2	Rural Hwy	16,910	0.74	E	6	Arterial M	31,930	0.59	A	West Jackson
70.6	Jackson Rd	Collector WJ-6	Excelsior Rd	2	Rural Hwy	16,910	0.74	E	6	Arterial M	32,280	0.60	A	West Jackson
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	13,810	0.60	E	4	Arterial M	48,840	1.36	**F**	Jackson Township
71.2	Jackson Rd	Collector JT-3	Tree View Ln	2	Rural Hwy	13,810	0.60	E	4	Arterial M	33,840	0.94	E	Jackson Township
71.3	Jackson Rd	Tree View Ln	Collector JT-4	2	Rural Hwy	13,790	0.60	E	4	Arterial M	27,320	0.76	C	Jackson Township
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	2	Rural Hwy	13,820	0.60	E	4	Arterial M	23,920	0.66	B	Jackson Township
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr	2	Rural Hwy	14,460	0.63	E	4	Arterial M	22,840	0.63	B	NewBridge
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd	2	Rural Hwy	14,940	0.65	E	4	Arterial M	22,150	0.62		NewBridge
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	17,950	0.78	**E**	2	Rural Hwy	20,810	0.91	**E**	
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	2	Arterial M	2,860	0.16	A	2	Arterial M	4,190	0.23	A	
75	Kiefer Blvd	South Watt Ave	Mayhew Rd	4	Arterial M	24,250	0.67	B	4	Arterial M	30,240	0.84	D	
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	13,590	0.38	A	4	Arterial M	38,980	1.08	**F**	
77.1	Kiefer Boulevard	Bradshaw Road	Collector WJ-14	2	Arterial M	5,900	0.33	A	6	Arterial M	43,390	0.80	D	West Jackson
77.2	Kiefer Boulevard	Collector WJ-14	Routier Ext	2	Arterial M	6,060	0.34	A	6	Arterial M	39,400	0.73	C	West Jackson
77.3	Kiefer Boulevard	Routier Ext	Happy Lane	2	Arterial M	6,060	0.34	A	6	Arterial M	39,400	0.73	C	West Jackson
78.1	Kiefer Blvd	Eagles Nest Rd	W Collector MS-1	2	Arterial M	3420	0.19	A	4	Arterial M	20,980	0.58	A	NewBridge; Mather South
78.2	Kiefer Blvd	W Collector MS-1	Northbridge Dr	2	Arterial M	3420	0.19	A	4	Arterial M	18,390	0.51	A	NewBridge; Mather South
78.3	Kiefer Blvd	Northbridge Dr	E Collector MS-1	2	Arterial M	3420	0.19	A	4	Arterial M	19,480	0.54	A	NewBridge; Mather South
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	2	Arterial M	3350	0.19	A	3	Arterial M	24,640	1.37	**F**	NewBridge
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	2	Arterial M	7,140	0.40	A	2	Arterial M	13,850	0.77	C	
80	Mather Blvd / Norden Ave	Von Karman St	Bleckely St	4	Arterial M	12,240	0.34	A	4	Arterial M	12,910	0.36	A	
81	Mather Blvd	Bleckely St	Femoyer St	4	Arterial M	12,240	0.34	A	4	Arterial M	12,910	0.36	A	

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ID	Roadway	Segment		MTP Cumulative No Project					MTP Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
82	Mather Blvd	Femoyer St	Douglas Rd	2	Arterial M	12,280	0.68	B	2	Arterial M	12,940	0.72	C	
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	6,290	0.79	D	2	Res Collector F	6,290	0.79	D	
84	Mather Field Rd	US 50	Rockingham Dr	6	Arterial M	60,650	1.12	**F**	6	Arterial M	60,700	1.12	**F**	
85	Mather Field Rd	Rockingham Dr	International Dr	6	Arterial M	66,090	1.22	**F**	6	Arterial M	68,600	1.27	**F**	
86	Mather Field Rd	International Dr	Peter A McCuen Blvd	6	Arterial M	18,050	0.33	A	6	Arterial M	19,120	0.35	A	
87	Mayhew Rd	Folsom Blvd	Goethe Rd	2	Arterial M	6,240	0.35	A	2	Arterial M	13,020	0.72	C	
88	Mayhew Rd	Goethe Rd	Kiefer Blvd	2	Arterial M	10,000	0.56	A	2	Arterial M	12,830	0.71	C	
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy						4	Arterial M	39,500	1.10	**F**	West Jackson
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd						4	Arterial M	36,780	1.02	**F**	West Jackson
90	Old Placerville Rd	Bradshaw Rd	Granby Dr	4	Arterial M	28,420	0.79	C	4	Arterial M	22,730	0.63	B	
91	Old Placerville Rd	Granby Dr	Happy Ln	2	Arterial M	24,920	1.38	**F**	2	Arterial M	20,000	1.11	**F**	
92	Old Placerville Rd	Happy Ln	Routier Rd	2	Arterial M	21,080	1.17	**F**	2	Arterial M	18,780	1.04	**F**	
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	22,110	0.61	B	4	Arterial M	34,480	0.96	**E**	
94	Power Inn Rd	Folsom Blvd	14th Ave	6	Arterial M	41,910	0.78	C	6	Arterial M	45,960	0.85	D	
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	28,120	0.78	C	4	Arterial M	37,930	1.05	**F**	
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	62,480	1.16	**F**	6	Arterial M	79,530	1.47	**F**	
97	South Watt Ave	Kiefer Blvd	Jackson Rd	6	Arterial M	61,930	1.15	**F**	6	Arterial M	71,890	1.33	**F**	
98.1	South Watt Ave	Jackson Rd	Rock Creek Pkwy	6	Arterial M	59,430	1.10	**F**	6	Arterial M	47,920	0.89	D	
98.2	South Watt Ave	Rock Creek Pkwy	Fruitridge Rd	6	Arterial M	58,210	1.08	**F**	6	Arterial M	50,380	0.93	**E**	
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd	6	Arterial M	52,470	0.97	**E**	6	Arterial M	47,790	0.89	D	
100	South Watt Ave	Elder Creek Rd	Florin Rd	4	Arterial M	34,420	0.96	**E**	4	Arterial M	36,240	1.01	**F**	
101	Sunrise Blvd	US 50	Folsom Blvd	7	Arterial M	58,140	1.08	**F**	7	Arterial M	56,480	1.05	**F**	
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr	6	Arterial M	54,340	1.01	**F**	6	Arterial M	53,000	0.98	**E**	
103	Sunrise Blvd	Trade Center Dr	White Rock Rd	6	Arterial M	31,660	0.59	A	6	Arterial M	34,240	0.63	B	
104.1	Sunrise Blvd	White Rock Rd	International Dr	6	Arterial M	37,910	0.70	C	6	Arterial M	41,100	0.76	C	
104.2	Sunrise Blvd	International Dr	Rio Del Oro Pkwy	6	Arterial M	43,690	0.81	D	6	Arterial M	52,620	0.97	**E**	
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	35,010	0.65	B	6	Arterial M	50,780	0.94	**E**	
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	21,430	0.60	A	5	Arterial M	37,070	1.03	**F**	
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	4	Arterial M	25,040	0.70	B	4	Arterial M	30,550	0.85	D	
107	Sunrise Blvd	Jackson Rd	Florin Rd	4	Arterial M	20,680	0.57	A	4	Arterial M	22,430	0.62	B	
108	Sunrise Blvd	Florin Rd	Grant Line Rd	4	Arterial M	14,480	0.40	A	4	Arterial M	15,560	0.43	A	
109	Vineyard Rd	Gerber Rd	Calvine Rd	2	Arterial M	9,080	0.50	A	2	Arterial M	9,210	0.51	A	

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		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	93,840	1.56	**F**	6	Arterial H	104,320	1.74	**F**	
111	White Rock Rd	International Rd	Quality Dr	2	Arterial M	4,670	0.26	A	2	Arterial M	4,690	0.26	A	
112	White Rock Rd	Quality Dr	Zinfandel Dr	4	Arterial M	19,310	0.54	A	4	Arterial M	17,450	0.48	A	
113	White Rock Rd	Zinfandel Dr	Kilgore Rd	6	Arterial M	29,180	0.54	A	6	Arterial M	27,210	0.50	A	
114	White Rock Rd	Kilgore Rd	Sunrise Blvd	5	Arterial M	33,540	0.93	**E**	5	Arterial M	30,970	0.86	D	
115	White Rock Rd	Sunrise Blvd	Fitzgerald Rd	4	Arterial M	33,750	0.94	**E**	4	Arterial M	31,660	0.88	D	
116.1	White Rock Rd	Fitzgerald Rd	Rancho Cordova Pkwy	4	Arterial M	45,470	1.26	**F**	4	Arterial M	39,330	1.09	**F**	
116.2	White Rock Rd	Rancho Cordova Pkwy	Americanos Blvd	4	Arterial M	10,970	0.30	A	4	Arterial M	6,160	0.17	A	
116.3	White Rock Rd	Americanos Blvd	Grant Line Rd	4	Arterial M	8,250	0.23	A	4	Arterial M	8,990	0.25	A	
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial H	26,710	0.67	B	4	Arterial H	30,060	0.75	C	
118	Zinfandel Dr	US 50	White Rock Rd	7	Arterial M	77,540	1.44	**F**	7	Arterial M	77,630	1.44	**F**	
119	Zinfandel Dr	White Rock Rd	International Rd	6	Arterial M	33,300	0.62	B	6	Arterial M	39,280	0.73	C	
120	Zinfandel Dr	International Rd	Baroque Dr	6	Arterial M	26,950	0.50	A	6	Arterial M	31,440	0.58	A	
121	Zinfandel Dr	Baroque Dr	City Limit	4	Arterial M	26,950	0.75	C	4	Arterial M	31,440	0.87	D	
122	Zinfandel Dr	City Limit	Douglas Rd	2	Arterial M	26,950	1.50	**F**	2	Arterial M	31,440	1.75	**F**	
123.1	Zinfandel Dr	Douglas Rd	Collector MS-2	4	Arterial M	10,000	0.28	A	4	Arterial M	22,420	0.62	B	
123.2	Zinfandel Dr	Collector MS-2	Collector MS-3	4	Arterial M	8,420	0.23	A	4	Arterial M	17,460	0.49	A	
123.3	Zinfandel Dr	Collector MS-3	Collector MS-4	4	Arterial M	0	0.00	A	4	Arterial M	17,200	0.48	A	
123.4	Zinfandel Dr	Collector MS-4	Kiefer Blvd	4	Arterial M	8,420	0.23	A	4	Arterial M	16,940	0.47	A	
124	14th Ave	Power Inn Rd	Florin Perkins Rd	4	Arterial M	13,060	0.36	A	4	Arterial M	25,160	0.70	B	
125	14th Ave	Florin Perkins Rd	Jackson Rd	4	Arterial M	7,070	0.20	A	4	Arterial M	14,860	0.41	A	
126	Chrysanthy Blvd	Rancho Cordova Pkwy	Americanos Blvd	4	Arterial M	8,010	0.22	A	4	Arterial M	16,980	0.47	A	
127	Chrysanthy Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	2,200	0.12	A	2	Arterial M	4,650	0.26	A	
128	Douglas Rd (Extension)	Mather Blvd	Kiefer Blvd	4	Arterial M	2,210	0.06	A	4	Arterial M	16,100	0.45	A	
130	International Dr	Rancho Cordova Pkwy	Americanos Blvd	6	Arterial M	2,340	0.04	A	6	Arterial M	1,620	0.03	A	
131	Kiefer Blvd	Rancho Cordova Pkwy	Americanos Blvd	4	Arterial M	520	0.01	A	4	Arterial M	2,330	0.06	A	
132	Kiefer Blvd	Americanos Blvd	Grant Line Rd	4	Arterial M	520	0.01	A	4	Arterial M	2,340	0.07	A	
133	Rancho Cordova Pkwy	US 50	Easton Valley Pkwy	4	Arterial M	34,920	0.97	E	4	Arterial M	36,140	1.00	**F**	
134	Rancho Cordova Pkwy	Easton Valley Pkwy	White Rock Rd	4	Arterial M	35,100	0.98	E	4	Arterial M	36,410	1.01	**F**	
135	Rancho Cordova Pkwy	White Rock Rd	International Dr	6	Arterial M	43,480	0.81	D	6	Arterial M	39,260	0.73	C	
136	Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy	6	Arterial M	41,770	0.77	C	6	Arterial M	38,350	0.71	C	
137	Rancho Cordova Pkwy	Rio Del Oro Pkwy	Villagio Dr	6	Arterial M	27,820	0.52	A	6	Arterial M	22,260	0.41	A	
138	Rancho Cordova Pkwy	Villagio Dr	Douglas Rd	6	Arterial M	14,600	0.27	A	6	Arterial M	14,130	0.26	A	
139	Rancho Cordova Pkwy	Douglas Rd	Chrysanthy Blvd	4	Arterial M	15,040	0.42	A	4	Arterial M	17,790	0.49	A	

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Table 5.5
MTP Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		MTP Cumulative No Project					MTP Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
140	Rancho Cordova Pkwy	Chrysanthy Blvd	Kiefer Blvd	4	Arterial M	7,500	0.21	A	4	Arterial M	5,340	0.15	A	
141	Rancho Cordova Pkwy	Kiefer Blvd	Grant Line Rd	4	Arterial M	6,190	0.17	A	4	Arterial M	1,690	0.05	A	
142	Americanos Blvd	White Rock Rd	Douglas Rd	4	Arterial M	2,670	0.07	A	4	Arterial M	2,780	0.08	A	
143	Americanos Blvd	Douglas Rd	Chrysanthy Blvd	4	Arterial M	7,740	0.22	A	4	Arterial M	6,410	0.18	A	
144	Americanos Blvd	Chrysanthy Blvd	Kiefer Blvd	4	Arterial M	2,000	0.06	A	4	Arterial M	3,250	0.09	A	
146	Rio Del Oro Pkwy	Sunrise Blvd	Rancho Cordova Pkwy	6	Arterial M	19,290	0.36	A	6	Arterial M	37,670	0.70	B	
147	Rio Del Oro Pkwy	Rancho Cordova Pkwy	White Rock Rd	2	Arterial M	2,630	0.15	A	2	Arterial M	2,960	0.16	A	
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd						4	Arterial M	27,770	0.77	C	West Jackson; Jackson Township; NewBridge; Mather South
300	Douglas Rd	Excelsior Rd	Rock Creek Pkwy	4	Arterial M	2,210	0.06	A	4	Arterial M	25,530	0.71	C	
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	4	Arterial M	2,210	0.06	A	4	Arterial M	31,850	0.88	D	
302	Kiefer Blvd	Happy Ln	Douglas Rd						4	Arterial M	55,000	1.53	**F**	West Jackson
303	Kiefer Blvd	Douglas Rd	Excelsior Rd						4	Arterial M	26,330	0.73	C	West Jackson
304	Mayhew Rd	Routier Ext	Bradshaw Rd						4	Arterial M	34,870	0.97	E	West Jackson
305	Mayhew Rd	Bradshaw Rd	Jackson Rd						6	Arterial M	34,520	0.64	B	West Jackson
306	Mayhew Rd	Fruitridge Rd	Collector WJ-13						6	Arterial M	22,890	0.42	A	West Jackson
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd						4	Arterial M	23,660	0.66	B	West Jackson
308	Rock Creek Pkwy	South Watt Ave	Hedge Ave						4	Arterial M	4,730	0.13	A	West Jackson
309	Rock Creek Pkwy	Hedge Ave	Mayhew Rd						4	Arterial M	8,200	0.23	A	West Jackson
310	Rock Creek Pkwy	Mayhew Rd	Bradshaw Rd						4	Arterial M	3,640	0.10	A	West Jackson
311	Rock Creek Pkwy East	Excelsior Road	Collector WJ-16						3	Arterial M	10,960	0.61	B	West Jackson
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road						2	Arterial M	#VALUE!	#VALUE!	#VALUE!	West Jackson
313	Vineyard Rd	Jackson Road	New Collector						2	Arterial M	24,890	1.38	**F**	West Jackson
314	Vineyard Rd	New Collector	Collector WJ-18						2	Arterial M	21,750	1.21	**F**	West Jackson
315	Vineyard Rd	Collector WJ-18	Elder Creek Road						2	Arterial M	19,030	1.06	**F**	West Jackson
316	Vineyard Rd	Elder Creek Road	Florin Road						2	Arterial M	8,300	0.46	A	West Jackson
317	Routier Ext	Old Placerville Road	Happy Lane						2	Arterial M	#VALUE!	#VALUE!	#VALUE!	West Jackson
318	Routier Ext	Happy Lane	Kiefer Boulevard						2	Arterial M	#VALUE!	#VALUE!	#VALUE!	West Jackson
319	Routier Ext	Kiefer Boulevard	Mayhew Road						4	Arterial M	#VALUE!	#VALUE!	#VALUE!	West Jackson
320	Collector WJ-16	Rock Creek Pkwy	Collector WJ-6						4	Arterial M	900	0.03	A	West Jackson

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Table 5.5
MTP Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		MTP Cumulative No Project					MTP Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
321	Collector WJ-17	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	800	0.10	A	West Jackson
322	Collector WJ-6	Collector WJ-16/WJ-17	Jackson Road						2	Res Collector F	2,390	0.30	B	West Jackson
323	Collector WJ-6	Jackson Road	Collector WJ-18						2	Res Collector F	2,800	0.35	B	West Jackson
324	Collector WJ-2	Excelsior Road	Collector WJ-6						2	Res Collector F	2,470	0.31	B	West Jackson
325	Collector WJ-18	Vineyard Rd	Collector WJ-6						2	Arterial M	2,810	0.16	A	West Jackson
326	Collector WJ-18	Collector WJ-6	Excelsior Road						2	Arterial M	#VALUE!	#VALUE!	#VALUE!	West Jackson
327	Collector WJ-19	Bradshaw Road	Vineyard Road						2	Arterial M	5,540	0.31	A	West Jackson
400	Collector JT-1	Excelsior Rd	Collector JT-3						2	Res Collector F	3,590	0.45	C	Jackson Township
401	Collector JT-1	Collector JT-3	Tree View Ln						2	Res Collector F	1,030	0.13	A	Jackson Township
402	Collector JT-3	Kiefer Blvd	Collector JT-1						2	Res Collector F	2,020	0.25	B	Jackson Township
403	Collector JT-3	Collector JT-1	Collector JT-6						2	Res Collector F	1,270	0.16	A	Jackson Township
404	Collector JT-3	Collector JT-6	Collector JT-5						2	Res Collector F	2,470	0.31	B	Jackson Township
405	Collector JT-3	Collector JT-5	Jackson Rd						2	Arterial M	17,850	0.99	E	Jackson Township
406	Collector JT-4	Jackson Rd	Bridgewater Dr						2	Arterial M	3,870	0.22	A	Jackson Township
407	Collector JT-5	Collector JT-3	Tree View Ln						2	Arterial M	9,260	0.51	A	Jackson Township
408	Collector JT-6	Excelsior Rd	Collector JT-3						2	Res Collector F	3,630	0.45	C	Jackson Township
409	Collector JT-6	Collector JT-3	Tree View Ln						2	Res Collector F	630	0.08	A	Jackson Township
410	Kiefer Blvd	Excelsior Rd	Tree View Ln						4	Arterial M	22,760	0.63	B	Jackson Township
411	Tree View Ln	Kiefer Blvd	Collector JT-1						4	Arterial M	10,840	0.30	A	Jackson Township
412	Tree View Ln	Collector JT-1	Collector JT-6						2	Arterial M	10,470	0.58	A	Jackson Township

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Table 5.5
MTP Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		MTP Cumulative No Project					MTP Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
413	Tree View Ln	Collector JT-6	Collector JT-5						4	Arterial M	#VALUE!	#VALUE!	#VALUE!	Jackson Township
414	Tree View Ln	Collector JT-5	Jackson Rd						4	Arterial M	5,840	0.16	A	Jackson Township
415	Collector JT-7	Collector JT-3	Tree View Ln						2	Arterial M	1,520	0.08	A	Jackson Township
416	Collector JT-8	Collector JT-3	Tree View Ln						2	Arterial M	1,930	0.11	A	Jackson Township
417	Collector JT-9	Jackson Rd	Collector JT-8						2	Arterial M	4,290	0.24	A	Jackson Township
418	Collector JT-10	Jackson Rd	Collector JT-8						2	Arterial M	1,610	0.09	A	Jackson Township
419	Collector JT-6	Tree View Ln	Jackson Rd						2	Res Collector F	1,420	0.18	A	Jackson Township
500	S Bridgewater Dr	Collector JT-4	Eagles Nest Rd						2	Res Collector F	4,700	0.59	C	NewBridge
501	S Bridgewater Dr	Eagles Nest Rd	Northbridge Dr						2	Res Collector F	3,880	0.49	C	NewBridge
502	N Bridgewater Dr	Northbridge Dr	Eagles Nest Rd						2	Res Collector F	1,040	0.13	A	NewBridge
503	Northbridge Dr	Kiefer Blvd	Bridgewater Dr						2	Arterial M	3,640	0.20	A	NewBridge
504	Street A	S Bridgewater Dr	Street B						2	Res Collector F	1,630	0.20	B	NewBridge
505	Street B	S Bridgewater Dr	Street A						2	Res Collector F	1,280	0.16	A	NewBridge
506	Rockbridge Dr	Street B	Stonebridge Dr						2	Res Collector F	1,480	0.19	A	NewBridge
507	Rockbridge Dr	Stonebridge Dr	Jackson Rd						2	Arterial M	5,870	0.33	A	NewBridge
508	Stonebridge Dr	S Bridgewater Dr	Rockbridge Dr						2	Arterial M	2,520	0.14	A	NewBridge
509	Stonebridge Dr	Rockbridge Dr	Jackson Rd						2	Res Collector F	3,640	0.46	C	NewBridge
600	Collector MS-1	Kiefer Boulevard	Collector MS-5						2	Arterial M	#VALUE!	#VALUE!	#VALUE!	Mather South
601	Collector MS-1	Collector MS-5	Collector MS-4						2	Arterial M	#REF!	#REF!	#REF!	Mather South
602	Collector MS-1	Collector MS-4	Collector MS-3						2	Res Collector F	#VALUE!	#VALUE!	#VALUE!	Mather South
603	Collector MS-1	Collector MS-3	Collector MS-2						2	Arterial M	#VALUE!	#VALUE!	#VALUE!	Mather South
604	Collector MS-2	Eagles Nest Road	Collector MS-5						2	Arterial M	#VALUE!	#VALUE!	#VALUE!	Mather South
605	Collector MS-3	Eagles Nest Road	Collector MS-5						2	Arterial M	3,640	0.20	A	Mather South
606	Collector MS-4	Eagles Nest Road	Collector MS-5						2	Arterial M	12,790	0.71	C	Mather South
607	Collector MS-5	Kiefer Boulevard	Collector MS-1						2	Arterial M	#VALUE!	#VALUE!	#VALUE!	Mather South
608	Collector MS-3	Collector MS-5	Sunrise Boulevard						2	Arterial M	5,770	0.32	A	Mather South

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Table 5.5
MTP Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		MTP Cumulative No Project					MTP Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

5.3.2 MTP Cumulative Plus FOUR PROJECTS Functionality Exceeding the Threshold

Table 5.6 summarizes the results of the rural roadway segment functionality analysis. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the FOUR PROJECTS. The "Substandard?" heading indicates whether or not a roadway meets the County standards of 12-foot lanes and 6-foot shoulders. If the FOUR PROJECTS make improvements to a roadway segment such as widening, they would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Exceed Functionality Threshold?" heading indicate those locations with a functionality that exceeds the threshold of significance.

As stated above, the traffic analysis assumed that the FOUR PROJECTS would construct a number of travel lanes on roadway segments that are internal to or on the boundary of the FOUR PROJECTS, and the entire roadway segment would be reconstructed to County standards at that time. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether or not volumes would exceed the threshold of significance at some time prior to full build out of the FOUR PROJECTS.

Table 5.6
MTP Cumulative Plus FOUR PROJECTS Roadway Segment Functionality

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				MTP Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Exceeed Functionality Threshold? [2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	4	No	26,770	Yes[3]
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	6	No	40,360	Yes[3]
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	4	No	11,050	Yes[3]
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Yes	7,810	Yes
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Yes	4,730	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	2	Yes	40,370	Yes
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	2	Yes	41,550	Yes
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	3	No	18,490	Yes[3]
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	3	No	25,250	Yes[3]
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Yes	25,650	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	3	No	30,360	Yes[3]
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	3	No	12,360	Yes[3]
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Yes	12,480	Yes
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Yes	7,870	Yes
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	4	No	7,750	No
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	4	No	7,540	Yes[3]
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	4	No	27,800	Yes[3]
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	4	No	13,870	Yes[3]
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Yes	10,280	Yes
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	3	No	18,250	Yes[3]
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	4	No	16,840	Yes[3]
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	4	No	20,260	Yes[3]
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	2	Yes	15,650	Yes
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Yes	8,450	Yes

Red text with light gray shading indicates threshold exceeded.

Table 5.6
MTP Cumulative Plus FOUR PROJECTS Roadway Segment Functionality

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				MTP Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Exceeed Functionality Threshold? [2]
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	2	22	Yes	3,737	2	Yes	2,980	No
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Yes	2,350	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	6	No	55,490	**Yes[3]**
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	No	48,840	**Yes[3]**
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	2	22	Yes	4,616	2	Yes	4,190	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	6	No	43,390	**Yes[3]**
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	3	No	24,640	**Yes[3]**
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Yes	6,290	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	4	No	39,500	**Yes[3]**
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490	4	No	39,330	**Yes[3]**
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	4	No	22,420	**Yes[3]**

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.
[4] Excluding the roadway segment that is within the developed community of Independence at Mather.
[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicates threshold exceeded.

5.4 MTP Cumulative Plus FOUR PROJECTS Mitigation Summary

Tables 5.7 and 5.8 summarize all roadway segments that would exceed the thresholds of significance for level of service and functionality.

Table 5.7
MTP Cumulative Plus FOUR PROJECTS Roadway Segment Summary

ID	Roadway	Segment	
		From	To
Roadway Segments Exceeding the Threshold of Significance			
2	Bradshaw Rd	US 50	Lincoln Village Dr
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd
36	Florin Rd	Stockton Blvd	Power Inn Rd
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd
44	Folsom Blvd	Howe Ave	Jackson Rd
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave
48	Fruitridge Rd	South Watt Ave	Hedge Ave
56	Grant Line Rd	Sheldon Rd	Wilton Rd
57	Grant Line Rd	Wilton Rd	Bond Rd
62	Howe Ave	US 50	Folsom Blvd
66.1	Jackson Rd	Florin Perkins Rd	14th Ave
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave
67	Jackson Rd	South Watt Ave	Hedge Ave
68.1	Jackson Rd	Hedge Ave	Collector WJ-3
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4
70.2	Jackson Rd	Collector WJ-4	Rock Creek Pkwy
71.1	Jackson Rd	Excelsior Rd	Collector JT-3
73	Jackson Rd	Sunrise Blvd	Grant Line Rd
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd
93	Old Placerville Rd	Routier Rd	Rockingham Dr

Table 5.7
MTP Cumulative Plus FOUR PROJECTS Roadway Segment Summary

ID	Roadway	Segment	
		From	To
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd
96	South Watt Ave	Folsom Blvd	Kiefer Blvd
97	South Watt Ave	Kiefer Blvd	Jackson Rd
100	South Watt Ave	Elder Creek Rd	Florin Rd
104.2	Sunrise Blvd	International Dr	Rio Del Oro Pkwy
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd
110	Watt Ave	US 50	Folsom Blvd
122	Zinfandel Dr	City Limit	Douglas Rd
133	Rancho Cordova Pkwy	US 50	Easton Valley Pkwy
134	Rancho Cordova Pkwy	Easton Valley Pkwy	White Rock Rd
302	Kiefer Blvd	Happy Ln	Douglas Rd
313	Vineyard Rd	Jackson Road	New Collector
314	Vineyard Rd	New Collector	Collector WJ-18
315	Vineyard Rd	Collector WJ-18	Elder Creek Road

Table 5.8
MTP Cumulative Plus FOUR PROJECTS Functionality Summary

ID	Roadway	Segment	
		From	To
Roadway Segments Exceeding the Functionality Threshold			
15	Douglas Rd	Mather Blvd	Zinfandel Dr
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd
20	Eagles Nest Rd	Jackson Rd	Florin Rd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd
30	Excelsior Rd	Kiefer Blvd	Jackson Rd
31	Excelsior Rd	Jackson Rd	Elder Creek Rd
32	Excelsior Rd	Elder Creek Rd	Florin Rd
33	Excelsior Rd	Florin Rd	Gerber Rd
34	Excelsior Rd	Gerber Rd	Calvine Rd
40	Florin Rd	Hedge Ave	Mayhew Rd
41	Florin Rd	Mayhew Rd	Bradshaw Rd
42	Florin Rd	Bradshaw Rd	Excelsior Rd
43	Florin Rd	Excelsior Rd	Sunrise Blvd
48	Fruitridge Rd	South Watt Ave	Hedge Ave
49	Fruitridge Rd	Hedge Ave	Mayhew Rd
50	Grant Line Rd	White Rock Rd	Douglas Rd
58	Happy Ln	Old Placerville Rd	Kiefer Blvd
59	Hedge Ave	Jackson Rd	Fruitridge Rd
70	Jackson Rd	Bradshaw Rd	Excelsior Rd
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd

Table 5.8
MTP Cumulative Plus FOUR PROJECTS Functionality Summary

ID	Roadway	Segment	
		From	To
77	Kiefer Blvd	Bradshaw Rd	Happy Ln
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd
89	Mayhew Rd	Jackson Rd	Fruitridge Rd
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd

6. CEQA CUMULATIVE PLUS FOUR PROJECTS SCENARIO (JACKSON TOWNSHIP ALTERNATIVE 2)

6.1 FOUR PROJECTS DESCRIPTION

The CEQA Cumulative plus FOUR PROJECTS scenario evaluates the effects of the traffic of four developments added to CEQA Cumulative conditions. Figure 4.1 illustrates the location of the FOUR PROJECTS:

- West Jackson Highway Master Plan (West Jackson)
- Jackson Township Specific Plan (Jackson Township)
- NewBridge Specific Plan (NewBridge)
- Mather South Specific Plan Amendment (Mather South)

6.1.1 CEQA Cumulative Land Use

Outside the FOUR PROJECTS area (see Figure 4.1), SACOG's 2035 development forecasts (the amount and location of housing and employment) for the adopted 2012 Metropolitan Transportation Plan (MTP) were used to prepare travel demand forecasts for this scenario. In addition, full build out of all reasonably foreseeable development projects was assumed within the study area, including the following major developments:

- Unincorporated Sacramento County
  - Vineyard Springs Comprehensive Plan
  - North Vineyard Station Specific Plan
  - Florin Vineyard Gap Community Plan
  - Mather Airport Specific Plan
  - Cordova Hills
  - Easton
  - Glenborough
  - East County Quarries

- City of Ranch Cordova
  - Arboretum
  - Suncreek
  - Sunridge Ranch
  - Rio del Oro
  - Westborough

- City of Folsom
  - Folsom South of 50 Specific Plan

- City of Sacramento

– Aspen 1

6.1.2 Transportation Network

Figure 6.1 illustrates the transportation network associated with the CEQA Cumulative without FOUR PROJECTS scenario. Outside the FOUR PROJECTS area (see Figure 4.1), it consists of the improvements through 2035 in the adopted 2012 Metropolitan Transportation Plan (MTP). Within the FOUR PROJECTS area, it includes roadway improvements beyond those in the MTP, which would be fully funded by the developments assumed in this scenario or by other committed funding sources. Sacramento County staff helped define such improvements and the number of roadway lanes for this scenario.

Figure 6.2 illustrates the transportation network associated with the CEQA Cumulative with FOUR PROJECTS scenario. The FOUR PROJECTS would construct new roadways within their sites, and widen many existing roadways within or on the borders of their sites. Details of this expansion of the roadway system is included in Section 6.2.1.

6.1.2.3 Pedestrian and Bicycle Facilities

The roadways within the FOUR PROJECTS would meet County standards, which would provide sidewalks and on-street (Class II) bike lanes on all collector, arterial and thoroughfare roadways. The FOUR PROJECTS also provide several off-street (Class I) multi-purpose trails.

6.1.2.4 Transit System

The FOUR PROJECTS are designed with significant amounts of higher density and mixed uses to help support transit use but transit service within walking distances of those uses is required to achieve a significant transit ridership. An accurate estimation of transit use requires the definition of specific transit routes and frequency of service on those routes. A separate planning effort, involving staff from Sacramento County and Sacramento Regional Transit (RT), was conducted to define an appropriate transit system for the transportation analysis. That effort is described in Section 3.1.2.3.

The planning effort resulted in four transit lines that would serve the FOUR PROJECTS at a frequency of 15 minutes during the peak commute hours (approximately 6-9 AM and 3-6 PM) and 30 minutes during off-peak service hours (approximately 9AM-3PM and 6PM-8PM) on weekdays. Another key characteristic of the proposed transit system built into the modeling assumptions is the targeted use of queue jumps on portions of key corridors (Bradshaw Road from Kiefer Boulevard to Rock Creek Parkway, and Jackson Road from Watt Avenue to Excelsior Road). Queue jumps ensure that buses are not excessively delayed at signals along congested corridors, and therefore not too heavily penalized from a travel time perspective. This is necessary to achieve the adequate ridership levels that were forecast and ensure reliable operations. **Figure 6.3** shows the assumed transit routes for this scenario.

The assumed transit routes, service frequency, and supporting infrastructure (i.e. queue jumps) would be required at full development of the FOUR PROJECTS. The full level of transit service

would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the FOUR PROJECTS, must be phased with development of the FOUR PROJECTS.

FIGURE 6.1
CEQA CUMULATIVE NO PROJECT
ROADWAY NETWORK

Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport

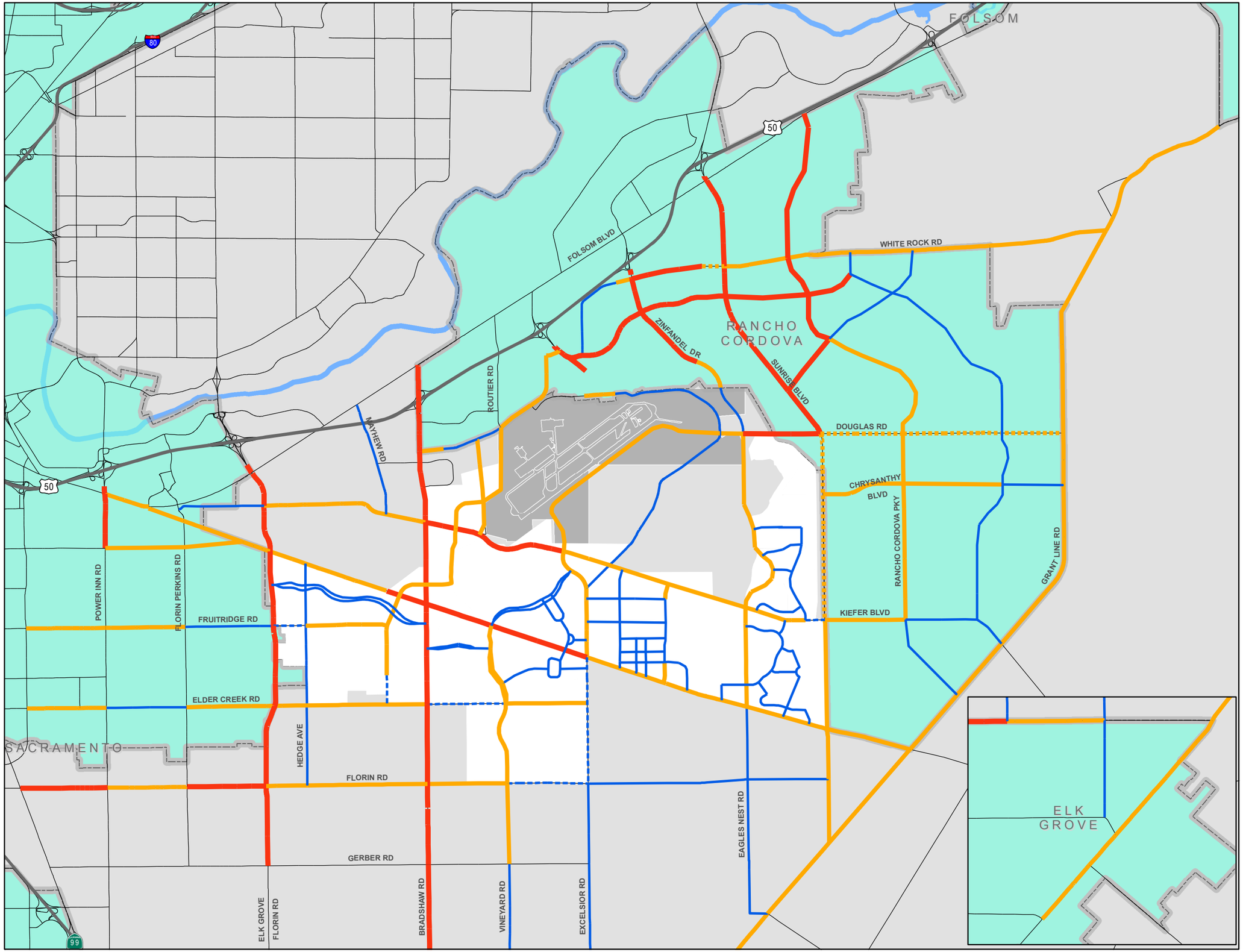


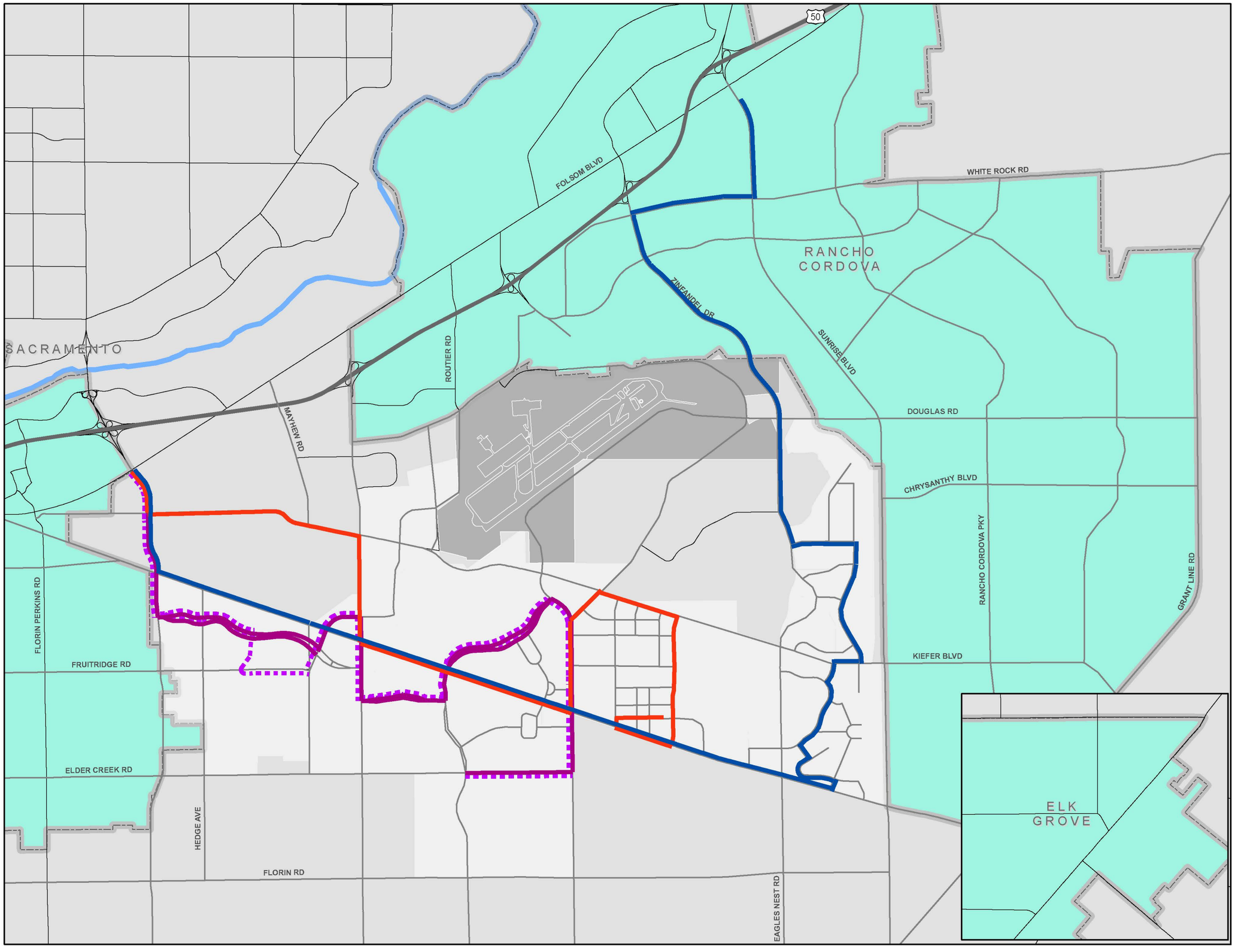
FIGURE 6.2
CEQA CUM PLUS FOUR PROJECTS (JACKSON TOWNSHIP ALT 2) ROADWAY NETWORK

Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport

DKS

FIGURE 6.3
PROJECT TRANSIT NETWORK
CEQA CUM PLUS FOUR PROJECTS



Legend

- Jackson Express Route
- Kiefer Jackson Local Route
- West Jackson Local Route A
- West Jackson Local Route B
- Cities
- Mather Airport

DKS

6.2 TRIP GENERATION

The SACSIM model that has been utilized for the transportation forecasts in this analysis estimated trip generation of the FOUR PROJECTS. **Table 6.1** summarizes the person trip generation. The FOUR PROJECTS would generate over 86,000 daily work person trip ends, and over 730,000 daily person trip ends for all trip purposes.

Table 6.2 summarizes the estimated mode choice for the CEQA cumulative with FOUR PROJECTS scenario. Over 90 percent of all person trips are expected to be accommodated by automobile. Transit will serve about 1.9 percent of all trips, while walk and bike modes will accommodate about 6.9 percent of all trips. The mode choice assumes full implementation of the project's pedestrian and bicycle systems.

Table 6.3 summarizes the vehicular (auto) trip generation of the FOUR PROJECTS. The FOUR PROJECTS are estimated to generate nearly 498,000 daily vehicle trip ends. Over 62,700 of the daily vehicle trip ends will be associated with trips with both an origin and destination within the individual projects, about 12.6 percent of the trip ends. The internal trip ends represent over 31,000 daily vehicle trips (one-half the number of internal trip ends). The FOUR PROJECTS will generate about 435,000 external vehicle trips that have an origin or destination inside one of the FOUR PROJECTS but the other end of the trip is outside the project from which it originated. Table 6.3 also shows the vehicle trips generated during the a.m. and p.m. peak hours.

6.3 TRIP DISTRIBUTION

The distribution of trips associated with development of the FOUR PROJECTS was derived utilizing SACSIM, incorporating the proposed land use and access locations associated with the FOUR PROJECTS. Trip distribution varies by land use and time period. **Figure 6.4** illustrates the overall trip distribution of daily FOUR PROJECTS trips with the CEQA Plus FOUR PROJECTS scenario. The highest percentages of FOUR PROJECTS traffic are accommodated on Jackson Road, Bradshaw Road, Kiefer Boulevard, and Vineyard Road.

Table 6.1: Estimated Daily Person Trip Generation
(CEQA Cumulative Plus FOUR PROJECTS Alternative 2 Scenario)

Trip Purpose	Daily Person Trip Ends
Work Trips	86,484
Non-Work Trips	643,573
All Trip Purposes	730,057

Source: *DKS Associates, 2018.*

Table 6.2: Mode Split
(CEQA Cumulative Plus FOUR PROJECTS Alternative 2 Scenario)

Mode	Percentage of Person Trips by Trip Purpose		
	Work Trips	Non-Work Trips	All Trip Purposes
Auto - SOV	83.4%	48.2%	52.4%
Auto - HOV	10.3%	42.6%	38.8%
Transit	4.1%	1.6%	1.9%
Walk	1.2%	6.7%	6.0%
Bike	0.9%	0.9%	0.9%

Source: *DKS Associates, 2018.*

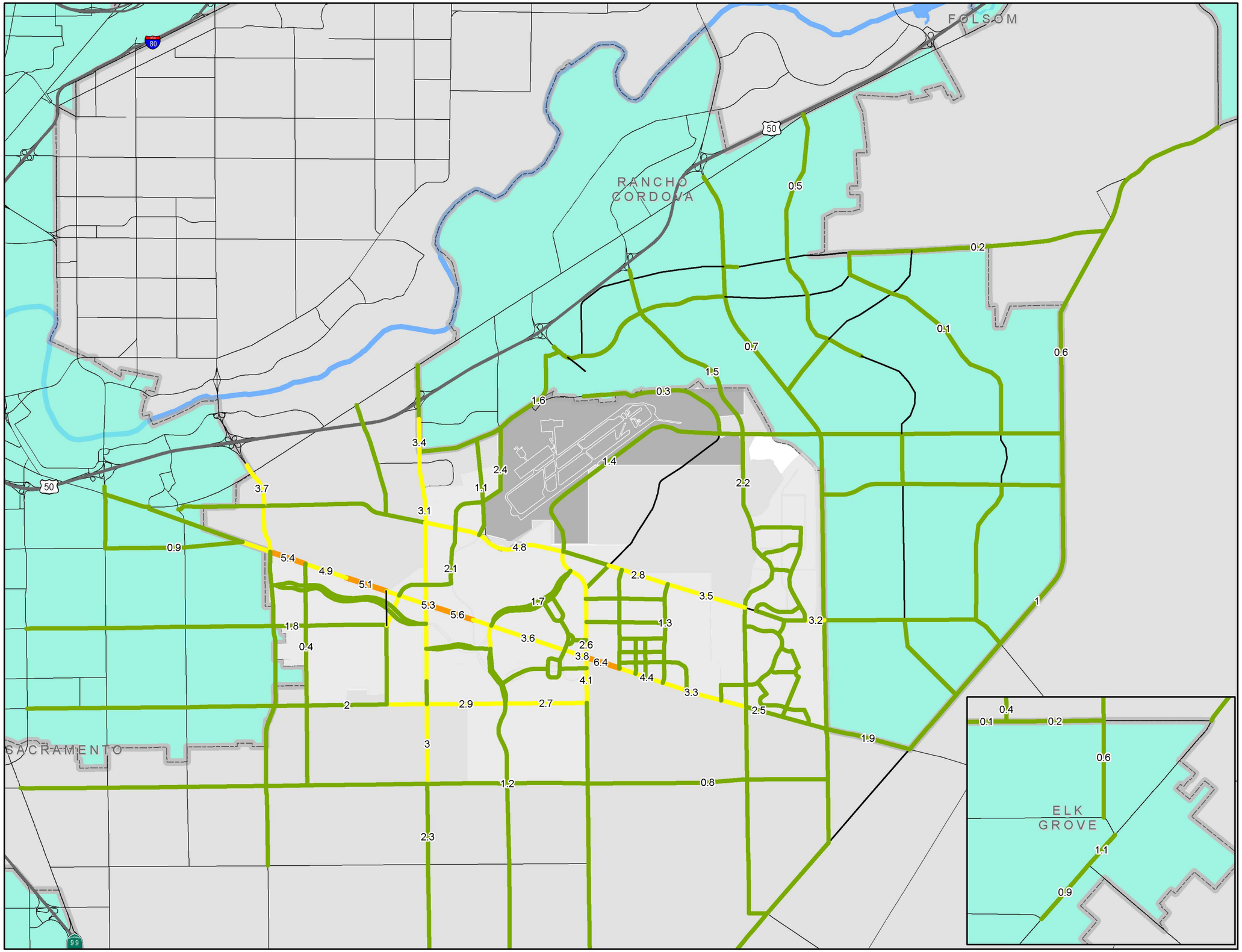
Table 6.3: Estimated Daily Vehicle Trip Generation
(CEQA Cumulative Plus FOUR PROJECTS Alternative 2 Scenario)

Trip Type		AM Peak Hour	PM Peak Hour	Daily
Total Vehicle Trip Ends		42,469	68,316	497,930
Percent Internal Trip Ends[1]		15.9%	22.5%	19.2%
Vehicle Trips	Internal to Projects	3,384	7,673	47,725
	External to Projects	35,700	52,970	402,480
	Total	39,084	60,643	450,205

[1.] Both trip ends within individual projects.

Source: *DKS Associates, 2018.*

FIGURE 6.4
CEQA CUM PLUS FOUR PROJECTS
FOUR PROJECTS TRIP DISTRIBUTION
(JACKSON TOWNSHIP ALT 2)



6.4 OPERATIONS ANALYSIS AND IMPACTS

Cumulative scenario impacts are determined by comparing the traffic operating conditions associated with the FOUR PROJECTS with the traffic operating conditions associated with the cumulative (without FOUR PROJECTS) conditions, and comparing the change to the thresholds of significance. **Figure 6.5** illustrates the resultant traffic operating conditions associated with the CEQA Cumulative (without FOUR PROJECTS) scenario. **Figure 6.6** illustrates the resultant traffic operating conditions associated with the CEQA Cumulative Plus FOUR PROJECTS scenario.

6.4.1 CEQA Cumulative Plus FOUR PROJECTS Roadway Segment Impacts

Table 6.4 summarizes the results of the operations analysis for the study area roadway segments. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate new roadways or widened roadways. The last column of the table shows the project(s) responsible for the increase in the number of roadway lanes. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact.

6.4.2 CEQA Cumulative Plus FOUR PROJECTS Intersection Impacts

Table 6.5 and 6.6 summarize the results of the operations analysis for the study area intersections. The tables include the implementation of intersection changes associated with the FOUR PROJECTS. Table 6.6 illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type would be fully funded by the project(s) shown in the last column. Shaded table cells in Table 6.5 illustrate those locations with an LOS impact. Detailed analysis information is included in the technical appendix.

Signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. The project is considered to have a significant impact at an unsignalized location if both the impact criteria in Table 1.6 are met, and one or more of the signal warrants specified in the California Manual on Uniform Traffic Control Devices (CAMUTCD) are met. The following unsignalized intersections exhibit significant impacts and meet one or more traffic signal warrants:

- Happy Lane and Old Placerville Road
- Eagles Nest Road and Florin Road

6.4.3 CEQA Cumulative Plus FOUR PROJECTS U.S. 50 Freeway Impacts

6.4.3.1 Freeway Basic Segments

Table 6.7 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations. Details of the analysis are included in the technical appendix. The following locations exhibit significant impacts:

- Eastbound
    - Stockton Boulevard to 59th Street - a.m. peak hour

6.4.3.2 Freeway Merge/Diverge/Weave Segments

Table 6.8 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas. Details of the analysis are included in the technical appendix. The following locations exhibit significant impacts:

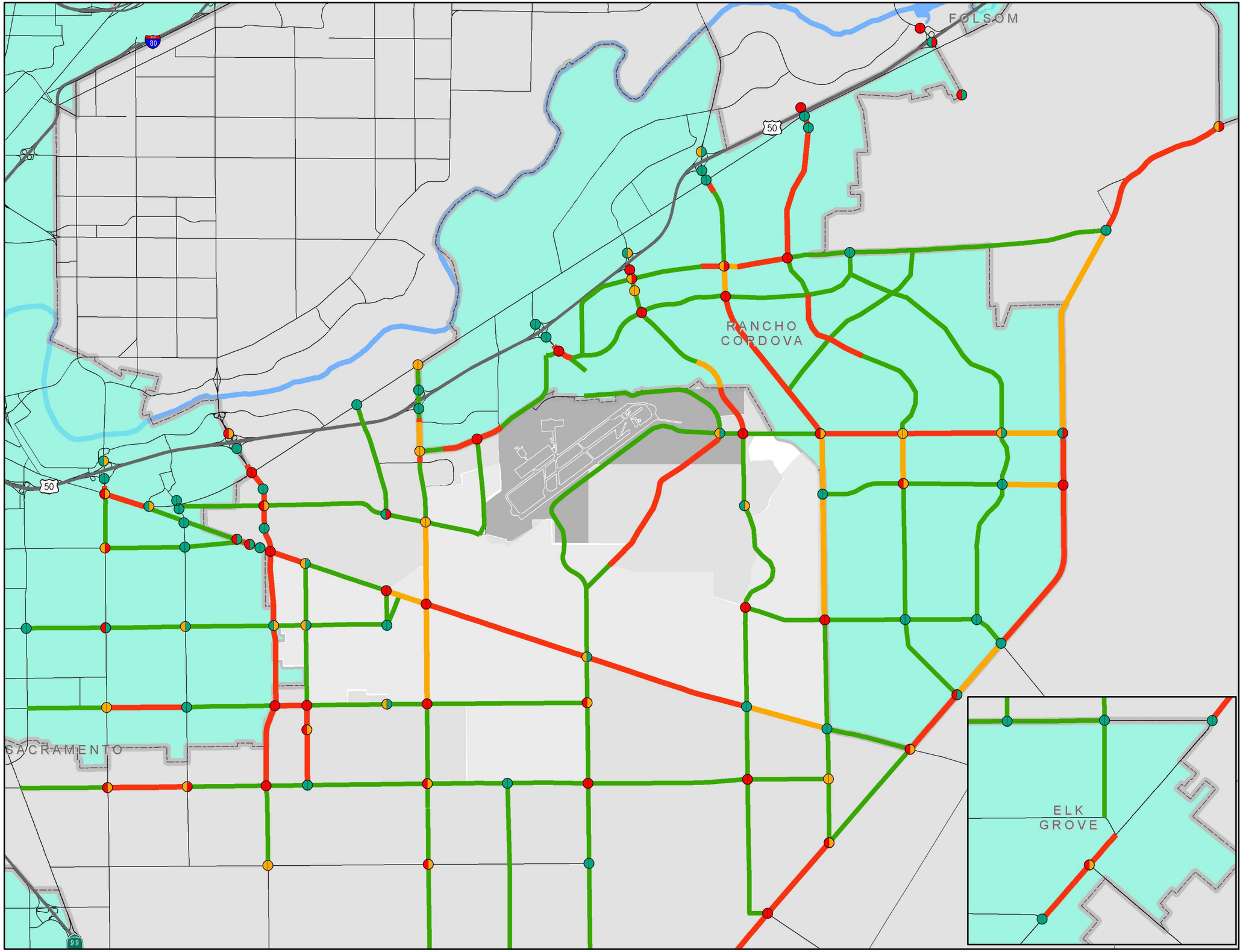
- Westbound
    - Hazel Avenue to Rancho Cordova Parkway weave - a.m. peak hour

6.4.3.3 Freeway Ramp Intersection Queuing

Tables 6.9 and 6.10 summarize a.m. and p.m. peak hour freeway ramp intersection queuing. The following locations exhibit a significant impact:

- Eastbound
    - Exit ramp to Howe Avenue - right turn queue length exceeds available storage – a.m. peak hour
    - Exit ramp to Zinfandel Drive-right turn and through queue length exceeds available storage – a.m. peak hour
- Westbound
    - Exit ramp to Rancho Cordova Parkway - left turn queue length exceeds available storage – a.m. and p.m. peak hours

FIGURE 6.5
CEQA CUMULATIVE NO PROJECT ROADWAY SEGMENT AND INTERSECTION LOS



Legend

Intersections (AM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Intersections (PM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Roadway Segments
- LOS A-D
- LOS E
- LOS F
- Cities
- Mather Airport

DKS

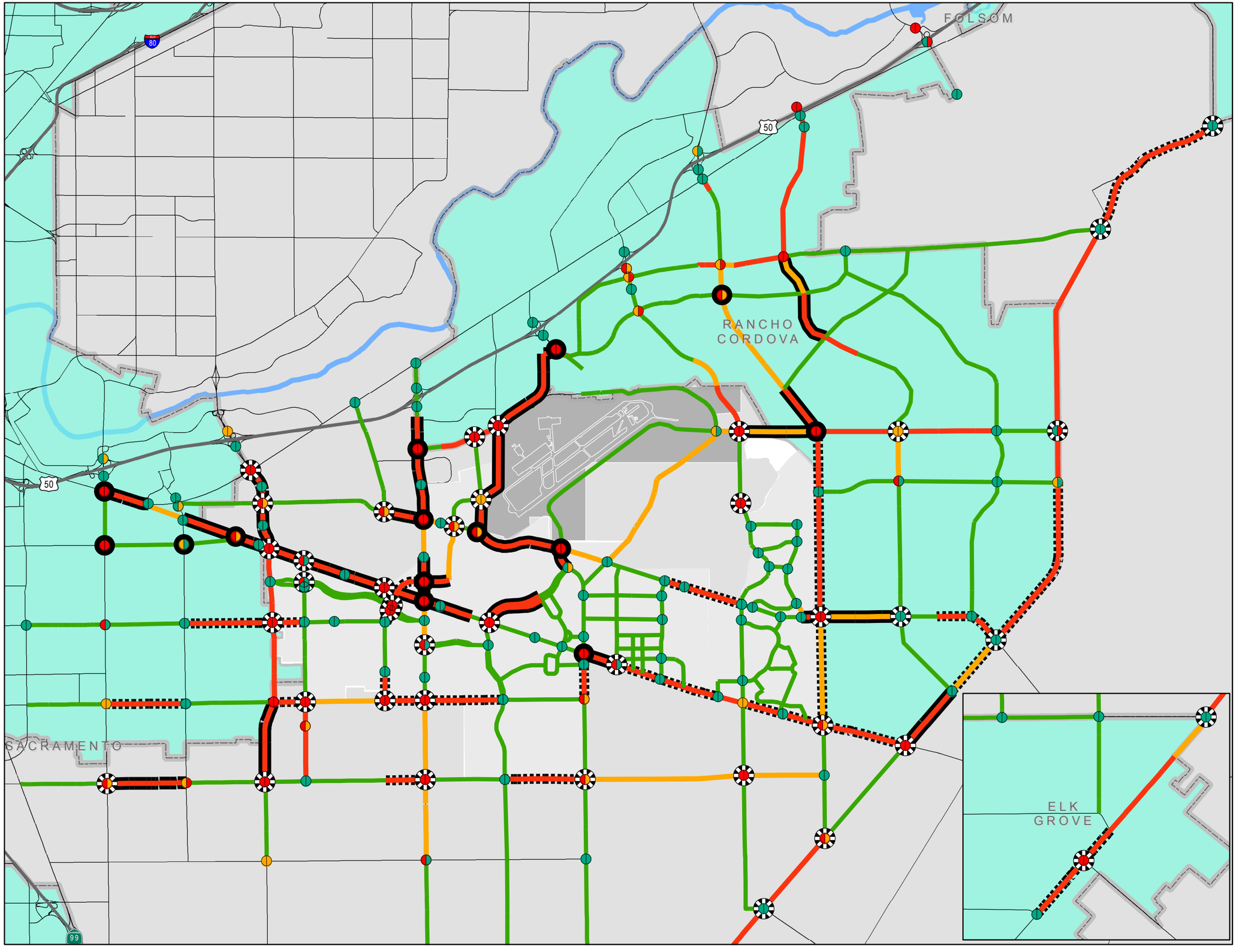


FIGURE 6.6
CEQA CUM PLUS FOUR PROJECTS (JACKSON TOWNSHIP ALT 2) ROADWAY SEGMENT AND INTERSECTION LOS AND IMPACTS

Legend

Intersections (AM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Intersections (PM Peak Hour)
- LOS A-D
- LOS E
- LOS F
- Mitigable Intersection Impact
- Unavoidable Intersection Impact

Roadway Segments
- LOS A-D
- LOS E
- LOS F

Impacts
- Unavoidable Segment Impact
- Mitigable Segment Impact
- Cities
- Mather Airport

DKS

FOLSOM

RANCHO CORDOVA

SACRAMENTO

ELK GROVE

80

50

99

FIGURE 10.6
CEQA CUM PLUS FOUR PROJECTS (JT PROPOSED PROJECT) ROADWAY SEGMENT AND INTERSECTION LOS AND IMPACTS

Legend

Intersections (AM Peak Hour)

- LOS A-D (84)
- LOS E (18)
- LOS F (52)

Intersections (PM Peak Hour)

- LOS A-D
- LOS E
- LOS F
- Mitigable Intersection Impact
- Unavoidable Intersection impact

Study_Area_Segments

- LOS A-D
- LOS E
- LOS F
- Cities
- Mather Airport

DKS

Table 6.4
CEQA Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
1	Bradshaw Rd	Folsom Blvd	US 50	6	Arterial M	27,240	0.50	A	6	Arterial M	24,460	0.45	A	
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	66,770	1.24	**F**	6	Arterial M	84,620	1.57	**F**	
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	52,940	0.98	**E**	6	Arterial M	76,770	1.42	**F**	
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	62,600	1.16	**F**	6	Arterial M	73,340	1.36	**F**	
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	6	Arterial M	47,100	0.87	D	6	Arterial M	62,160	1.15	**F**	
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	6	Arterial M	45,320	0.84	D	6	Arterial M	58,600	1.09	**F**	
6.1	Bradshaw Rd	Kiefer Blvd	Collector WJ-9	6	Arterial M	51,270	0.95	E	6	Arterial M	53,770	1.00	E	
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	6	Arterial M	52,070	0.96	E	6	Arterial M	54,090	1.00	**F**	
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd	6	Arterial M	52,020	0.96	E	6	Arterial M	57,490	1.06	**F**	
7.1	Bradshaw Rd	Jackson Rd	Rock Creek Pkwy	6	Arterial M	52,190	0.97	E	6	Arterial M	49,210	0.91	E	
7.2	Bradshaw Rd	Rock Creek Pkwy	Collector WJ-10	6	Arterial M	52,220	0.97	E	6	Arterial M	51,610	0.96	E	
7.3	Bradshaw Rd	Collector WJ-10	Collector WJ-11	6	Arterial M	52,390	0.97	E	6	Arterial M	47,250	0.88	D	
7.4	Bradshaw Rd	Collector WJ-11	Elder Creek Rd	6	Arterial M	52,410	0.97	E	6	Arterial M	43,190	0.80	C	
8	Bradshaw Rd	Elder Creek Rd	Florin Rd	6	Arterial M	44,990	0.83	D	6	Arterial M	51,950	0.96	E	
9	Bradshaw Rd	Florin Rd	Gerber Rd	6	Arterial M	42,300	0.78	C	6	Arterial M	51,660	0.96	E	
10	Bradshaw Rd	Gerber Rd	Calvine Rd	6	Arterial M	29,810	0.55	A	6	Arterial M	36,900	0.68	B	
11	Calvine Rd	Waterman Rd	Bradshaw Rd	6	Arterial M	16,370	0.30	A	6	Arterial M	18,310	0.34	A	
12	Calvine Rd	Bradshaw Rd	Vineyard Rd	6	Arterial M	14,540	0.27	A	6	Arterial M	14,680	0.27	A	
13	Calvine Rd	Vineyard Rd	Excelsior Rd	4	Arterial M	8,500	0.24	A	4	Arterial M	9,620	0.27	A	
14	Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	8,010	0.22	A	4	Arterial M	9,590	0.27	A	
15	Douglas Rd	Mather Blvd	Zinfandel Dr	4	Arterial M	21,870	0.61	B	4	Arterial M	33,390	0.93	E	
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	37,550	0.70	B	6	Arterial M	50,360	0.93	**E**	
17	Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	5	Arterial M	42,770	1.19	**F**	5	Arterial M	43,250	1.20	**F**	
18.1	Douglas Rd	Rancho Cordova Pkwy	Americanos Blvd	5	Arterial M	42,630	1.18	**F**	5	Arterial M	42,870	1.19	**F**	
18.2	Douglas Rd	Americanos Blvd	Grant Line Rd	5	Arterial M	33,520	0.93	**E**	5	Arterial M	31,900	0.89	D	
19.1	Eagles Nest Rd	Kiefer Blvd	N Bridgewater Dr	2	Arterial M	4,620	0.26	A	4	Arterial M	11,220	0.31	A	NewBridge
19.2	Eagles Nest Rd	N Bridgewater Dr	S Bridgewater Dr	2	Arterial M	4,620	0.26	A	4	Arterial M	11,620	0.32	A	NewBridge
19.3	Eagles Nest Rd	S Bridgewater Dr	Jackson Rd	2	Arterial M	4,710	0.26	A	4	Arterial M	13,130	0.36	A	NewBridge
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Arterial M	3,670	0.20	A	2	Arterial M	9110	0.51	A	
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	2	Arterial M	3,300	0.18	A	2	Arterial M	4530	0.25	A	
22	Elder Creek Rd	65th St	Power Inn Rd	4	Arterial M	24,130	0.67	B	4	Arterial M	27,900	0.78	C	
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	25,170	1.40	**F**	2	Arterial M	28,360	1.58	**F**	
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave	4	Arterial M	27,840	0.77	C	4	Arterial M	30,940	0.86	D	
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	40,860	1.14	**F**	4	Arterial M	52,900	1.47	**F**	

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.4
CEQA Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	4	Arterial M	29,970	0.83	D	4	Arterial M	33,660	0.94	E	
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	17,980	0.50	A	4	Arterial M	40,490	1.12	**F**	
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	2	Arterial M	9,230	0.51	A	3	Arterial M	30,740	1.71	**F**	West Jackson
28.2	Elder Creek Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	9,430	0.52	A	4	Arterial M	25,360	0.70	C	West Jackson
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd	6	Arterial M	48,390	0.90	D	6	Arterial M	47,190	0.87	D	
30.1	Excelsior Rd	Kiefer Blvd	Douglas Rd	2	Arterial M	4,150	0.23	A	2	Arterial M	5,600	0.31	A	
30.2	Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	4	Arterial M	11,290	0.31	A	4	Arterial M	26,970	0.75	C	
30.3	Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	4	Arterial M	11,840	0.33	A	4	Arterial M	25,900	0.72	C	
30.4	Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	4	Arterial M	11,840	0.33	A	4	Arterial M	25,400	0.71	C	
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	2	Arterial M	11,960	0.66	B	3	Arterial M	36,910	2.05	**F**	West Jackson
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	2	Arterial M	11,960	0.66	B	3	Arterial M	36,220	2.01	**F**	West Jackson
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Arterial M	4,670	0.26	A	3	Arterial M	12,520	0.70	B	West Jackson
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	5,970	0.33	A	2	Arterial M	13,080	0.73	C	
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Arterial M	2,520	0.14	A	2	Arterial M	8,360	0.46	A	
35	Excelsior Rd	Calvine Rd	Sheldon Rd	2	Arterial M	2,960	0.16	A	2	Arterial M	9,180	0.51	A	
36	Florin Rd	Stockton Blvd	Power Inn Rd	6	Arterial M	42,720	0.79	C	6	Arterial M	47,560	0.88	D	
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	37,240	1.03	**F**	4	Arterial M	43,690	1.21	**F**	
38	Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	6	Arterial M	29,890	0.55	A	6	Arterial M	36,490	0.68	B	
39	Florin Rd	South Watt Ave	Hedge Ave	4	Arterial M	9,760	0.27	A	4	Arterial M	12,010	0.33	A	
40	Florin Rd	Hedge Ave	Mayhew Rd	4	Arterial M	10,420	0.29	A	4	Arterial M	13,280	0.37	A	
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	30,290	0.84	D	4	Arterial M	40,200	1.12	**F**	
42.1	Florin Rd	Bradshaw Rd	Vineyard Rd	4	Arterial M	19,680	0.55	A	4	Arterial M	26,070	0.72	C	
42.2	Florin Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	11,650	0.65	B	3	Arterial M	19,920	1.11	**F**	West Jackson
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	14,020	0.78	C	2	Arterial M	17,090	0.95	E	
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	50,520	1.40	**F**	4	Arterial M	56,000	1.56	**F**	
45	Fruitridge Rd	65th St	Power Inn Rd	4	Arterial M	23,040	0.64	B	4	Arterial M	27,610	0.77	C	
46	Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	4	Arterial M	20,400	0.57	A	4	Arterial M	31,090	0.86	D	
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	13,770	0.77	C	2	Arterial M	27,770	1.54	**F**	
48	Fruitridge Rd	South Watt Ave	Hedge Ave	2	Arterial M	5,770	0.32	A	3	Arterial M	24,240	1.35	**F**	West Jackson

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Table 6.4
CEQA Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
49.1	Fruitridge Rd	Hedge Ave	Collector WJ-12	2	Arterial M	2,140	0.12	A	4	Arterial M	24,260	0.67	B	West Jackson
49.2	Fruitridge Rd	Collector WJ-12	Mayhew Rd	2	Arterial M	2,110	0.12	A	4	Arterial M	21,800	0.61	B	West Jackson
50	Grant Line Rd	White Rock Rd	Douglas Rd	4	Arterial H	39,480	0.99	**E**	4	Arterial H	41,130	1.03	**F**	
51.1	Grant Line Rd	Douglas Rd	Chrysanthy Blvd	4	Arterial H	58,610	1.47	**F**	4	Arterial H	57,810	1.45	**F**	
51.2	Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd	4	Arterial H	44,930	1.12	**F**	4	Arterial H	47,640	1.19	**F**	
52.1	Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	4	Arterial H	34,170	0.85	D	4	Arterial H	37,030	0.93	**E**	
52.2	Grant Line Rd	Rancho Cordova Pkwy	Jackson Rd	4	Arterial H	43,400	1.09	**F**	4	Arterial H	41,700	1.04	**F**	
53	Grant Line Rd	Jackson Rd	Sunrise Blvd	4	Arterial H	33,180	0.83	D	4	Arterial H	30,160	0.75	C	
54	Grant Line Rd	Sunrise Blvd	Calvine Rd	4	Arterial H	42,840	1.07	**F**	4	Arterial H	43,760	1.09	**F**	
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit	4	Arterial H	36,290	0.91	E	4	Arterial H	36,840	0.92	E	
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd	4	Arterial M	36,380	1.01	**F**	4	Arterial M	36,890	1.02	**F**	
56	Grant Line Rd	Sheldon Rd	Wilton Rd	4	Arterial M	40,570	1.13	**F**	4	Arterial M	45,430	1.26	**F**	
57	Grant Line Rd	Wilton Rd	Bond Rd	4	Arterial M	36,110	1.00	**F**	4	Arterial M	40,370	1.12	**F**	
58.1	Happy Lane	Old Placerville Road	Routier Ext	2	Arterial M	3,980	0.22	A	2	Arterial M	13,820	0.77	C	West Jackson
58.2	Happy Lane	Routier Ext	Kiefer Boulevard	2	Arterial M	4,970	0.28	A	2	Arterial M	20,580	1.14	**F**	West Jackson
59.1	Hedge Ave	Jackson Rd	Rock Creek Pkwy	2	Arterial M	7,060	0.39	A	2	Arterial M	11,760	0.65	B	
59.2	Hedge Ave	Rock Creek Pkwy	Fruitridge Rd	2	Arterial M	7,180	0.40	A	2	Arterial M	7,720	0.43	A	
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	8,460	0.47	A	2	Arterial M	10,010	0.56	A	
61	Hedge Ave	Elder Creek Rd	Florin Rd	2	Arterial M	22,520	1.25	**F**	2	Arterial M	22,460	1.25	**F**	
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	67,180	1.24	**F**	6	Arterial M	71,420	1.32	**F**	
63	International Dr	Mather Field Rd	Zinfandel Dr	6	Arterial M	48,380	0.90	D	6	Arterial M	47,100	0.87	D	
64	International Dr	Zinfandel Dr	Sunrise Blvd	6	Arterial M	35,840	0.66	B	6	Arterial M	39,710	0.74	C	
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd	4	Arterial M	30,450	0.85	D	4	Arterial M	35,860	1.00	E	
66.1	Jackson Rd	Florin Perkins Rd	14th Ave	4	Arterial M	30,980	0.86	D	4	Arterial M	44,100	1.23	**F**	
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	40,320	1.12	**F**	4	Arterial M	61,980	1.72	**F**	
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	34,630	0.96	E	4	Arterial M	57,690	1.60	**F**	
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave	4	Arterial M	32,480	0.90	E	4	Arterial M	55,370	1.54	**F**	
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	38,240	1.06	**F**	4	Arterial M	66,380	1.84	**F**	
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	4	Arterial M	31,080	0.86	D	4	Arterial M	56,540	1.57	**F**	
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	4	Arterial M	31,040	0.86	D	4	Arterial M	57,880	1.61	**F**	
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	33,920	0.94	E	6	Arterial M	56,220	1.04	**F**	West Jackson

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Table 6.4
CEQA Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	2	Rural Hwy	23,120	1.01	**F**	6	Arterial M	59,380	1.10	**F**	West Jackson
70.2	Jackson Rd	Collector WJ-4	Rock Creek Pkwy	2	Rural Hwy	23,190	1.01	**F**	6	Arterial M	59,660	1.10	**F**	West Jackson
70.3	Jackson Rd	Rock Creek Pkwy	Commercial Access	2	Rural Hwy	23,000	1.00	**F**	6	Arterial M	41,550	0.77	C	West Jackson
70.4	Jackson Rd	Commercial Access	Collector WJ-5	2	Rural Hwy	23,000	1.00	**F**	6	Arterial M	41,200	0.76	C	West Jackson
70.5	Jackson Rd	Collector WJ-5	Collector WJ-6	2	Rural Hwy	23,010	1.00	**F**	6	Arterial M	38,910	0.72	C	West Jackson
70.6	Jackson Rd	Collector WJ-6	Excelsior Rd	2	Rural Hwy	23,010	1.00	**F**	6	Arterial M	39,330	0.73	C	West Jackson
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	23,020	1.01	**F**	4	Arterial M	62,220	1.73	**F**	Jackson Township
71.2	Jackson Rd	Collector JT-3	Tree View Ln	2	Rural Hwy	23,020	1.01	**F**	4	Arterial M	46,480	1.29	**F**	Jackson Township
71.3	Jackson Rd	Tree View Ln	Collector JT-4	2	Rural Hwy	22,990	1.00	**F**	4	Arterial M	41,360	1.15	**F**	Jackson Township
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	2	Rural Hwy	23,020	1.01	**F**	4	Arterial M	37,600	1.04	**F**	Jackson Township
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr	2	Rural Hwy	21,910	0.96	E	4	Arterial M	37,120	1.03	**F**	NewBridge
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd	2	Rural Hwy	22,630	0.99	E	4	Arterial M	37,910	1.05	**F**	NewBridge
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	31,730	0.88	D	4	Arterial M	45,290	1.26	**F**	
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	2	Arterial M	3,290	0.18	A	2	Arterial M	4,830	0.27	A	
75	Kiefer Blvd	South Watt Ave	Mayhew Rd	4	Arterial M	21,620	0.60	B	4	Arterial M	32,130	0.89	D	
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	13,290	0.37	A	4	Arterial M	42,310	1.18	**F**	
77.1	Kiefer Boulevard	Bradshaw Road	Collector WJ-14	2	Arterial M	5,940	0.33	A	6	Arterial M	50,960	0.94	E	West Jackson
77.2	Kiefer Boulevard	Collector WJ-14	Routier Ext	2	Arterial M	6,100	0.34	A	6	Arterial M	47,140	0.87	D	West Jackson
77.3	Kiefer Boulevard	Routier Ext	Happy Lane	2	Arterial M	6,100	0.34	A	6	Arterial M	49,820	0.92	E	West Jackson
78.1	Kiefer Blvd	Eagles Nest Rd	W Collector MS-1	2	Arterial M	10,210	0.57	A	4	Arterial M	31,900	0.89	D	NewBridge; Mather South
78.2	Kiefer Blvd	W Collector MS-1	Northbridge Dr	2	Arterial M	10,210	0.57	A	4	Arterial M	29,740	0.83	D	NewBridge; Mather South
78.3	Kiefer Blvd	Northbridge Dr	E Collector MS-1	2	Arterial M	10,210	0.57	A	4	Arterial M	31,570	0.88	D	NewBridge; Mather South
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	2	Arterial M	10,150	0.56	A	3	Arterial M	39,820	2.21	**F**	NewBridge
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	20,760	0.58	A	4	Arterial M	33,580	0.93	**E**	
80	Mather Blvd / Norden Ave	Von Karman St	Bleckely St	4	Arterial M	14,470	0.40	A	4	Arterial M	14,820	0.41	A	
81	Mather Blvd	Bleckely St	Femoyer St	4	Arterial M	14,470	0.40	A	4	Arterial M	14,820	0.41	A	
82	Mather Blvd	Femoyer St	Douglas Rd	2	Arterial M	14,510	0.81	D	2	Arterial M	14,850	0.83	D	
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	8,260	1.03	**F**	2	Res Collector F	6,410	0.80	E	
84	Mather Field Rd	US 50	Rockingham Dr	6	Arterial M	65,530	1.21	**F**	6	Arterial M	63,760	1.18	**F**	

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Table 6.4
CEQA Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
85	Mather Field Rd	Rockingham Dr	International Dr	6	Arterial M	71,740	1.33	**F**	6	Arterial M	73,260	1.36	**F**	
86	Mather Field Rd	International Dr	Peter A McCuen Blvd	6	Arterial M	15,810	0.29	A	6	Arterial M	16,910	0.31	A	
87	Mayhew Rd	Folsom Blvd	Goethe Rd	2	Arterial M	7,280	0.40	A	2	Arterial M	14,330	0.80	C	
88	Mayhew Rd	Goethe Rd	Kiefer Blvd	2	Arterial M	10,630	0.59	A	2	Arterial M	13,680	0.76	C	
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy	2	Arterial L	1,930	0.13	A	4	Arterial M	47,790	1.33	**F**	West Jackson
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	2	Arterial L	1,930	0.13	A	4	Arterial M	46,860	1.30	**F**	West Jackson
90	Old Placerville Rd	Bradshaw Rd	Granby Dr	4	Arterial M	30,190	0.84	D	4	Arterial M	22,760	0.63	B	
91	Old Placerville Rd	Granby Dr	Happy Ln	2	Arterial M	26,590	1.48	**F**	2	Arterial M	20,690	1.15	**F**	
92	Old Placerville Rd	Happy Ln	Routier Rd	2	Arterial M	22,820	1.27	**F**	2	Arterial M	18,090	1.01	**F**	
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	24,070	0.67	B	4	Arterial M	36,350	1.01	**F**	
94	Power Inn Rd	Folsom Blvd	14th Ave	6	Arterial M	43,320	0.80	D	6	Arterial M	47,170	0.87	D	
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	31,970	0.89	D	4	Arterial M	40,280	1.12	**F**	
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	68,980	1.28	**F**	6	Arterial M	81,880	1.52	**F**	
97	South Watt Ave	Kiefer Blvd	Jackson Rd	6	Arterial M	67,470	1.25	**F**	6	Arterial M	70,930	1.31	**F**	
98.1	South Watt Ave	Jackson Rd	Rock Creek Pkwy	6	Arterial M	61,290	1.14	**F**	6	Arterial M	59,970	1.11	**F**	
98.2	South Watt Ave	Rock Creek Pkwy	Fruitridge Rd	6	Arterial M	64,380	1.19	**F**	6	Arterial M	60,090	1.11	**F**	
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd	6	Arterial M	61,240	1.13	**F**	6	Arterial M	59,400	1.10	**F**	
100	South Watt Ave	Elder Creek Rd	Florin Rd	6	Arterial M	55,580	1.03	**F**	6	Arterial M	59,670	1.11	**F**	
101	Sunrise Blvd	US 50	Folsom Blvd	7	Arterial M	64,250	1.19	**F**	7	Arterial M	63,100	1.17	**F**	
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr	6	Arterial M	61,340	1.14	**F**	6	Arterial M	60,460	1.12	**F**	
103	Sunrise Blvd	Trade Center Dr	White Rock Rd	6	Arterial M	38,330	0.71	C	6	Arterial M	37,470	0.69	B	
104.1	Sunrise Blvd	White Rock Rd	International Dr	6	Arterial M	49,020	0.91	**E**	6	Arterial M	49,770	0.92	**E**	
104.2	Sunrise Blvd	International Dr	Rio Del Oro Pkwy	6	Arterial M	54,190	1.00	**F**	6	Arterial M	53,890	1.00	**E**	
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	54,110	1.00	**F**	6	Arterial M	63,690	1.18	**F**	
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	34,760	0.97	**E**	5	Arterial M	43,880	1.22	**F**	
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	4	Arterial M	30,000	0.83	D	4	Arterial M	33,930	0.94	**E**	
107	Sunrise Blvd	Jackson Rd	Florin Rd	4	Arterial M	28,280	0.79	C	4	Arterial M	30,370	0.84	D	
108	Sunrise Blvd	Florin Rd	Grant Line Rd	4	Arterial M	15,030	0.42	A	4	Arterial M	18,270	0.51	A	
109	Vineyard Rd	Gerber Rd	Calvine Rd	2	Arterial M	7,900	0.44	A	2	Arterial M	10,620	0.59	A	
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	98,040	1.63	**F**	6	Arterial H	106,480	1.77	**F**	
111	White Rock Rd	International Rd	Quality Dr	2	Arterial M	5,420	0.30	A	2	Arterial M	5,490	0.31	A	
112	White Rock Rd	Quality Dr	Zinfandel Dr	4	Arterial M	18,300	0.51	A	4	Arterial M	18,020	0.50	A	
113	White Rock Rd	Zinfandel Dr	Kilgore Rd	6	Arterial M	31,760	0.59	A	6	Arterial M	31,090	0.58	A	

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ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
114	White Rock Rd	Kilgore Rd	Sunrise Blvd	5	Arterial M	40,310	1.12	**F**	5	Arterial M	39,540	1.10	**F**	
115	White Rock Rd	Sunrise Blvd	Fitzgerald Rd	4	Arterial M	34,470	0.96	**E**	4	Arterial M	35,570	0.99	**E**	
116.1	White Rock Rd	Fitzgerald Rd	Rancho Cordova Pkwy	4	Arterial M	56,320	1.56	**F**	4	Arterial M	55,810	1.55	**F**	
116.2	White Rock Rd	Rancho Cordova Pkwy	Americanos Blvd	4	Arterial M	22,050	0.61	B	4	Arterial M	21,040	0.58	A	
116.3	White Rock Rd	Americanos Blvd	Grant Line Rd	4	Arterial M	15,870	0.44	A	4	Arterial M	16,530	0.46	A	
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial H	53,780	1.34	**F**	4	Arterial H	56,000	1.40	**F**	
118	Zinfandel Dr	US 50	White Rock Rd	7	Arterial M	82,790	1.53	**F**	7	Arterial M	81,540	1.51	**F**	
119	Zinfandel Dr	White Rock Rd	International Rd	6	Arterial M	40,800	0.76	C	6	Arterial M	42,520	0.79	C	
120	Zinfandel Dr	International Rd	Baroque Dr	6	Arterial M	32,660	0.60	B	6	Arterial M	33,450	0.62	B	
121	Zinfandel Dr	Baroque Dr	City Limit	4	Arterial M	32,660	0.91	**E**	4	Arterial M	33,450	0.93	**E**	
122	Zinfandel Dr	City Limit	Douglas Rd	2	Arterial M	32,660	1.81	**F**	2	Arterial M	33,450	1.86	**F**	
123.1	Zinfandel Dr	Douglas Rd	Collector MS-2	4	Arterial M	14,770	0.41	A	4	Arterial M	22,250	0.62	B	
123.2	Zinfandel Dr	Collector MS-2	Collector MS-3	4	Arterial M	12,590	0.35	A	4	Arterial M	16,860	0.47	A	
123.3	Zinfandel Dr	Collector MS-3	Collector MS-4	4	Arterial M	0	0.00	A	4	Arterial M	17,200	0.48	A	
123.4	Zinfandel Dr	Collector MS-4	Kiefer Blvd	4	Arterial M	12,590	0.35	A	4	Arterial M	16,970	0.47	A	
124	14th Ave	Power Inn Rd	Florin Perkins Rd	4	Arterial M	15,910	0.44	A	4	Arterial M	27,820	0.77	C	
125	14th Ave	Florin Perkins Rd	Jackson Rd	4	Arterial M	9,360	0.26	A	4	Arterial M	17,910	0.50	A	
126	Chrysanthy Blvd	Rancho Cordova Pkwy	Americanos Blvd	4	Arterial M	22,200	0.62	B	4	Arterial M	21,510	0.60	A	
127	Chrysanthy Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	16,570	0.92	**E**	2	Arterial M	15,790	0.88	D	
128	Douglas Rd (Extension)	Mather Blvd	Kiefer Blvd	4	Arterial M	7,380	0.21	A	4	Arterial M	20,970	0.58	A	
129	International Dr	Sunrise Blvd	Rancho Cordova Pkwy	6	Arterial M	31,010	0.57	A	6	Arterial M	31,560	0.58	A	
130	International Dr	Rancho Cordova Pkwy	Americanos Blvd	6	Arterial M	19,350	0.36	A	6	Arterial M	18,670	0.35	A	
131	Kiefer Blvd	Rancho Cordova Pkwy	Americanos Blvd	2	Arterial M	3,870	0.22	A	2	Arterial M	9,730	0.54	A	
132	Kiefer Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	10,250	0.57	A	2	Arterial M	19,200	1.07	**F**	
133	Rancho Cordova Pkwy	US 50	Easton Valley Pkwy	6	Arterial M	70,390	1.30	**F**	6	Arterial M	69,710	1.29	**F**	
134	Rancho Cordova Pkwy	Easton Valley Pkwy	White Rock Rd	6	Arterial M	72,220	1.34	**F**	6	Arterial M	72,320	1.34	**F**	
135	Rancho Cordova Pkwy	White Rock Rd	International Dr	6	Arterial M	46,590	0.86	D	6	Arterial M	49,960	0.93	**E**	
136	Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy	6	Arterial M	55,520	1.03	**F**	6	Arterial M	59,540	1.10	**F**	
137	Rancho Cordova Pkwy	Rio Del Oro Pkwy	Villagio Dr	4	Arterial M	37,890	1.05	**F**	4	Arterial M	37,840	1.05	**F**	
138	Rancho Cordova Pkwy	Villagio Dr	Douglas Rd	4	Arterial M	32,060	0.89	D	4	Arterial M	32,000	0.89	D	
139	Rancho Cordova Pkwy	Douglas Rd	Chrysanthy Blvd	4	Arterial M	34,220	0.95	**E**	4	Arterial M	33,340	0.93	**E**	
140	Rancho Cordova Pkwy	Chrysanthy Blvd	Kiefer Blvd	4	Arterial M	20,780	0.58	A	4	Arterial M	19,280	0.54	A	
141	Rancho Cordova Pkwy	Kiefer Blvd	Grant Line Rd	2	Arterial M	15,510	0.86	D	2	Arterial M	14,180	0.79	C	
142	Americanos Blvd	White Rock Rd	Douglas Rd	2	Arterial M	5,630	0.31	A	2	Arterial M	6,150	0.34	A	
143	Americanos Blvd	Douglas Rd	Chrysanthy Blvd	2	Arterial M	9,560	0.53	A	2	Arterial M	9,060	0.50	A	

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Table 6.4
CEQA Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
144	Americanos Blvd	Chrysanthy Blvd	Kiefer Blvd	2	Arterial M	9,030	0.50	A	2	Arterial M	8,210	0.46	A	
145	Vineyard Rd	Florin Rd	Gerber Rd	4	Arterial M	1,500	0.04	A	4	Arterial M	10,060	0.28	A	
146	Rio Del Oro Pkwy	Sunrise Blvd	Rancho Cordova Pkwy	6	Arterial M	24,000	0.44	A	6	Arterial M	31,920	0.59	A	
147	Rio Del Oro Pkwy	Rancho Cordova Pkwy	White Rock Rd	2	Arterial M	8,220	0.46	A	2	Arterial M	8,590	0.48	A	
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd						4	Arterial M	37,180	1.03	**F**	West Jackson; Jackson Township; NewBridge; Mather South
300	Douglas Rd	Excelsior Rd	Rock Creek Pkwy	4	Arterial M	7,380	0.21	A	4	Arterial M	27,160	0.75	C	West Jackson
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	4	Arterial M	7,380	0.21	A	4	Arterial M	36,990	1.03	**F**	West Jackson
302	Kiefer Blvd	Happy Ln	Douglas Rd						6	Arterial M	63,170	1.17	**F**	West Jackson
303	Kiefer Blvd	Douglas Rd	Excelsior Rd						4	Arterial M	33,150	0.92	E	West Jackson
304	Mayhew Rd	Routier Ext	Bradshaw Rd						4	Arterial M	39,470	1.10	**F**	West Jackson
305	Mayhew Rd	Bradshaw Rd	Jackson Rd						4	Arterial M	40,970	1.14	**F**	West Jackson
306	Mayhew Rd	Fruitridge Rd	Collector WJ-13						4	Arterial M	30,030	0.83	D	West Jackson
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd						3	Arterial M	32,580	1.81	**F**	West Jackson
308	Rock Creek Pkwy	South Watt Ave	Hedge Ave						2	Arterial M	7,450	0.41	A	West Jackson
309	Rock Creek Pkwy	Hedge Ave	Mayhew Rd						2	Arterial M	10,940	0.61	B	West Jackson
310	Rock Creek Pkwy	Mayhew Rd	Bradshaw Rd						2	Arterial M	4,730	0.26	A	West Jackson
311	Rock Creek Pkwy East	Excelsior Road	Collector WJ-16						2	Arterial M	13,510	0.75	C	West Jackson
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road						2	Arterial M	19,230	1.07	**F**	West Jackson
313	Vineyard Rd	Jackson Road	New Collector						4	Arterial M	31,060	0.86	D	West Jackson
314	Vineyard Rd	New Collector	Collector WJ-18						4	Arterial M	26,270	0.73	C	West Jackson
315	Vineyard Rd	Collector WJ-18	Elder Creek Road						4	Arterial M	25,590	0.71	C	West Jackson
316	Vineyard Rd	Elder Creek Road	Florin Road						4	Arterial M	14,340	0.40	A	West Jackson
317	Routier Ext	Old Placerville Road	Happy Lane						4	Arterial H	41,410	1.04	**F**	West Jackson
318	Routier Ext	Happy Lane	Kiefer Boulevard						4	Arterial H	34,670	0.87	D	West Jackson
319	Routier Ext	Kiefer Boulevard	Mayhew Road						4	Arterial H	39,110	0.98	E	West Jackson
320	Collector WJ-16	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	950	0.12	A	West Jackson
321	Collector WJ-17	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	850	0.11	A	West Jackson
322	Collector WJ-6	Collector WJ-16/WJ-17	Jackson Road						2	Res Collector F	2,730	0.34	B	West Jackson

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Table 6.4
CEQA Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
323	Collector WJ-6	Jackson Road	Collector WJ-18						2	Res Collector F	3,640	0.46	C	West Jackson
324	Collector WJ-2	Excelsior Road	Collector WJ-6						2	Res Collector F	2,860	0.36	B	West Jackson
325	Collector WJ-18	Vineyard Rd	Collector WJ-6						2	Res Collector F	3,360	0.42	C	West Jackson
326	Collector WJ-18	Collector WJ-6	Excelsior Road						2	Res Collector F	3,270	0.41	C	West Jackson
327	Collector WJ-19	Bradshaw Road	Vineyard Road						2	Arterial M	7,820	0.43	A	West Jackson
400	Collector JT-1	Excelsior Rd	Collector JT-3						2	Res Collector F	4,570	0.57	C	Jackson Township
401	Collector JT-1	Collector JT-3	Tree View Ln						2	Res Collector F	1,550	0.19	A	Jackson Township
402	Collector JT-3	Kiefer Blvd	Collector JT-1						2	Res Collector F	1,840	0.23	B	Jackson Township
403	Collector JT-3	Collector JT-1	Collector JT-6						2	Res Collector F	1,290	0.16	A	Jackson Township
404	Collector JT-3	Collector JT-6	Collector JT-5						2	Res Collector F	2,630	0.33	B	Jackson Township
405	Collector JT-3	Collector JT-5	Jackson Rd						2	Arterial M	20,070	1.12	**F**	Jackson Township
406	Collector JT-4	Jackson Rd	Bridgewater Dr						2	Arterial M	4,440	0.25	A	Jackson Township
407	Collector JT-5	Collector JT-3	Tree View Ln						2	Arterial M	10,100	0.56	A	Jackson Township
408	Collector JT-6	Excelsior Rd	Collector JT-3						2	Res Collector F	4,370	0.55	C	Jackson Township
409	Collector JT-6	Collector JT-3	Tree View Ln						2	Res Collector F	850	0.11	A	Jackson Township
410	Kiefer Blvd	Excelsior Rd	Tree View Ln						4	Arterial M	31,510	0.88	D	Jackson Township
411	Tree View Ln	Kiefer Blvd	Collector JT-1						4	Arterial M	10,660	0.30	A	Jackson Township
412	Tree View Ln	Collector JT-1	Collector JT-6						2	Arterial M	10,340	0.57	A	Jackson Township
413	Tree View Ln	Collector JT-6	Collector JT-5						2	Arterial M	10,250	0.57	A	Jackson Township
414	Tree View Ln	Collector JT-5	Jackson Rd						4	Arterial M	7,370	0.20	A	Jackson Township
415	Collector JT-7	Collector JT-3	Tree View Ln						2	Arterial M	1,590	0.09	A	Jackson Township
416	Collector JT-8	Collector JT-3	Tree View Ln						2	Arterial M	1,740	0.10	A	Jackson Township

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Table 6.4
CEQA Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
417	Collector JT-9	Jackson Rd	Collector JT-8						2	Arterial M	3,600	0.20	A	Jackson Township
418	Collector JT-10	Jackson Rd	Collector JT-8						2	Arterial M	1,570	0.09	A	Jackson Township
419	Collector JT-6	Tree View Ln	Jackson Rd						2	Res Collector F	1,770	0.22	B	Jackson Township
500	S Bridgewater Dr	Collector JT-4	Eagles Nest Rd						2	Res Collector F	5,220	0.65	D	NewBridge
501	S Bridgewater Dr	Eagles Nest Rd	Northbridge Dr						2	Res Collector F	4,620	0.58	C	NewBridge
502	N Bridgewater Dr	Northbridge Dr	Eagles Nest Rd						2	Res Collector F	1,240	0.16	A	NewBridge
503	Northbridge Dr	Kiefer Blvd	Bridgewater Dr						2	Arterial M	4,320	0.24	A	NewBridge
504	Street A	S Bridgewater Dr	Street B						2	Res Collector F	1,800	0.23	B	NewBridge
505	Street B	S Bridgewater Dr	Street A						2	Res Collector F	1,440	0.18	A	NewBridge
506	Rockbridge Dr	Street B	Stonebridge Dr						2	Res Collector F	1,850	0.23	B	NewBridge
507	Rockbridge Dr	Stonebridge Dr	Jackson Rd						2	Arterial M	7,640	0.42	A	NewBridge
508	Stonebridge Dr	S Bridgewater Dr	Rockbridge Dr						2	Arterial M	2,480	0.14	A	NewBridge
509	Stonebridge Dr	Rockbridge Dr	Jackson Rd						2	Res Collector F	4,440	0.56	C	NewBridge
600	Collector MS-1	Kiefer Boulevard	Collector MS-5						2	Arterial M	16,870	0.94	E	Mather South
601	Collector MS-1	Collector MS-5	Collector MS-4						2	Arterial M	7,670	0.43	A	Mather South
602	Collector MS-1	Collector MS-4	Collector MS-3						2	Res Collector F	6,350	0.79	D	Mather South
603	Collector MS-1	Collector MS-3	Collector MS-2						2	Arterial M	3,140	0.17	A	Mather South
604	Collector MS-2	Eagles Nest Road	Collector MS-5						2	Arterial M	8,910	0.50	A	Mather South
605	Collector MS-3	Eagles Nest Road	Collector MS-5						2	Arterial M	6,860	0.38	A	Mather South
606	Collector MS-4	Eagles Nest Road	Collector MS-5						2	Arterial M	7,130	0.40	A	Mather South
607	Collector MS-5	Kiefer Boulevard	Collector MS-1						2	Arterial M	8,770	0.49	A	Mather South

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Table 6.4
CEQA Cumulative Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

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Table 6.5

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
1	Howe Avenue & College Town Drive/US 50 WB Ramps	Signal	D	45.6	Signal	D	34.3	No	Signal	E	77.0	Signal	E	73.6	No
2	Howe Avenue & US 50 EB Ramps	Signal	C	34.6	Signal	D	50.5	No	Signal	B	16.5	Signal	C	23.6	No
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	**F**	**88.0**	Signal	**F**	**108.2**	Yes	Signal	E	66.5	Signal	**F**	**88.4**	Yes
4	Power Inn Road & 14th Avenue	Signal	**E**	**61.0**	Signal	**F**	**166.0**	Yes	Signal	**E**	**72.6**	Signal	**F**	**123.7**	Yes
5	Power Inn Road & Fruitridge Road	Signal	**F**	**114.5**	Signal	**F**	**112.7**	No	Signal	D	47.4	Signal	D	48.7	No
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	C	27.7	Signal	C	27.8	No	Signal	C	24.1	Signal	D	38.6	No
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	C	20.8	Signal	C	29.6	No	Signal	D	41.2	Signal	C	31.2	No
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop			Two-way stop			No	Two-way stop			Two-way stop			No
	Westbound Left Turn		*C*	*16.4*		*C*	*21.3*			*C*	*20.7*		*E*	*35.1*	
	Westbound Right Turn		*C*	*10.9*		*B*	*12.2*			*B*	*11.2*		*B*	*13.6*	
	Southbound Left Turn		*A*	*9.3*		*B*	*10.1*			*B*	*10.4*		*B*	*13.4*	
9	Florin Perkins Road & Jackson Road	Signal	C	25.1	Signal	D	46.3	No	Signal	D	38.5	Signal	D	49.0	No
10	Florin Perkins Road & Fruitridge Road	Signal	C	26.7	Signal	D	40.4	No	Signal	D	50.3	Signal	D	41.7	No
11	Florin Perkins Road & Elder Creek Road	Signal	C	31.7	Signal	C	29.4	No	Signal	C	30.0	Signal	C	33.4	No
12	Watt Avenue & Folsom Blvd.	Signal	**F**	**169.1**	Signal	**F**	**182.3**	Yes	Signal	**F**	**140.0**	Signal	**F**	**199.9**	Yes
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	B	15.7	Signal	B	13.5	No	Signal	A	9.8	Signal	B	10.9	No
14	S. Watt Avenue & Kiefer Blvd.	Signal	E	62.2	Signal	**F**	**91.8**	Yes	Signal	D	41.7	Signal	E	73.3	No

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Table 6.5

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
15	S. Watt Avenue & Canberra Dr.	Signal	B	13.4	Signal	B	13.6	No	Signal	A	9.1	Signal	A	9.2	No
16	S. Watt Avenue & Jackson Road	Signal	**F**	**135.9**	Signal	**F**	**237.3**	Yes	Signal	**F**	**98.2**	Signal	**F**	**185.0**	Yes
17	S. Watt Avenue & Fruitridge Road	Signal	D	44.4	Signal	**F**	**93.1**	Yes	Signal	**E**	**79.3**	Signal	**F**	**114.3**	Yes
18	S. Watt Avenue & Elder Creek Road	Signal	**F**	**222.9**	Signal	**F**	**160.8**	No	Signal	**F**	**177.7**	Signal	**F**	**116.5**	No
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	**F**	**199.7**	Signal	**F**	**>300**	Yes	Signal	**F**	**137.1**	Signal	**F**	**238.2**	Yes
21	Elk Grove Florin Road & Gerber Road	Signal	E	56.7	Signal	E	59.3	No	Signal	E	74.9	Signal	E	78.2	No
23	Hedge Avenue & Jackson Road	Signal	C	34.7	Signal	**F**	**123.1**	Yes	Signal	B	16.3	Signal	D	41.8	No
24	Hedge Avenue & Fruitridge Road	All-way stop	E	44.2	All-way stop	C	34.3	No	All-way stop	D	30.7	All-way stop	D	36.5	No
25	Hedge Avenue & Elder Creek Road	Signal	**F**	**103.7**	Signal	**F**	**138.8**	Yes	Signal	**F**	**103.2**	Signal	**F**	**135.0**	Yes
26	Hedge Avenue & Tokay Lane	Two-way stop			Two-way stop			No	Two-way stop			Two-way stop			No
	Northbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*0.0*		*A*	*0.0*	
	Southbound Left Turn		*B*	*10.9*		*B*	*10.9*			*A*	*9.3*		*A*	*9.3*	
	Eastbound		***F***	***99.5***		***F***	***102.1***			*E*	*47.3*		*E*	*49.9*	
	Westbound		***F***	***52.9***		***F***	***52.9***			*E*	*38.3*		*E*	*38.0*	
27	Hedge Avenue & Florin Road	All-way stop	B	15.8	Signal	A	9.9	No	All-way stop	B	12.6	Signal	A	6.1	No
28	Mayhew Road & Kiefer Boulevard	Signal	C	27.7	Signal	**F**	**91.2**	Yes	Signal	D	44.9	Signal	E	74.2	No

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Table 6.5

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
29	Mayhew Road & Jackson Road	Two-way stop			Signal	F	117.9	Yes	Two-way stop			Signal	F	107.2	Yes
	Northbound Through - Left Turn		***F***	***114.1***						***F***	***>300***				
	Northbound Right Turn		*C*	*16.1*						*C*	*18.5*				
	Southbound		***F***	***99.2***						***F***	***>300***				
	Eastbound Left Turn		*B*	*13.5*						*B*	*11.0*				
	Westbound Left Turn		*B*	*11.2*						*C*	*17.6*				
30	Mayhew Road & Fruitridge Road	Two-way stop			Signal	B	18.5	No	Two-way stop			Signal	B	18.8	No
	Northbound Left Turn		*A*	*0.0*						*A*	*7.5*				
	Eastbound		*A*	*9.8*						*A*	*9.3*				
31	Mayhew Road & Elder Creek Road	Signal	A	7.0	Signal	F	>300	Yes	Signal	A	6.0	Signal	F	<300	Yes
32	Woodring Drive & Zinfandel Drive	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Eastbound		*C*	*20.1*		***F***	***85.0***			*A*	*9.0*		***F***	***223.4***	
	Northbound Left Turn		*A*	*8.0*		*B*	*10.6*			*A*	*0.0*		*B*	*12.4*	
33	Bradshaw Road & Folsom Blvd.	Signal	C	31.9	Signal	C	25.5	No	Signal	C	25.3	Signal	C	22.4	No
34	Bradshaw Road & US 50 WB Ramps	Signal	A	7.8	Signal	B	11.1	No	Signal	A	8.9	Signal	B	12.2	No
35	Bradshaw Road & US 50 EB Ramps	Signal	C	24.5	Signal	D	54.7	No	Signal	B	15.1	Signal	D	39.5	No
36	Bradshaw Road & Old Placerville Road	Signal	**F**	**81.9**	Signal	F	101.6	Yes	Signal	**E**	**68.1**	Signal	F	82.4	Yes
37	Bradshaw Road & Kiefer Boulevard	Signal	C	27.6	Signal	F	144.2	Yes	Signal	D	54.1	Signal	F	137.6	Yes
38	Bradshaw Road & Jackson Road	Signal	**F**	**186.0**	Signal	**F**	**172.2**	No	Signal	**F**	**118.2**	Signal	F	161.0	Yes
39	Bradshaw Road & Elder Creek Road	Signal	**F**	**122.6**	Signal	F	173.1	Yes	Signal	**F**	**98.8**	Signal	F	201.7	Yes

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Table 6.5

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
40	Bradshaw Road & Florin Road	Signal	**F**	**129.5**	Signal	**F**	**125.3**	No	Signal	E	59.7	Signal	**F**	**89.9**	Yes
41	Bradshaw Road & Gerber Road	Signal	**F**	**83.1**	Signal	**F**	**80.6**	No	Signal	D	43.0	Signal	D	49.7	No
42	Happy Lane & Old Placerville Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound Left Turn		***F***	***>300***		***F***	***>300***			*F*	*294.1*		***F***	***>300***	
	Northbound Right Turn		***E***	***40.9***		***F***	***236.0***			*C*	*16.9*		*C*	*19.2*	
	Westbound Left Turn		*C*	*16.0*		*C*	*23.4*			*C*	*15.3*		***F***	***53.3***	
43	Happy Lane & Kiefer Boulevard	Free Turn			Signal	**F**	**139.2**	Yes	Free Turn			Signal	E	67.8	No
44	Excelsior Road & Kiefer Boulevard	Two-way stop	A	0.0	Signal	A	9.9	No	Two-way stop	A	0.0	Signal	B	14.0	No
45	Excelsior Road & Jackson Road	Signal	E	59.9	Signal	**F**	**330.8**	Yes	Signal	D	39.0	Signal	**F**	**269.1**	Yes
46	Excelsior Road & Elder Creek Road	Two-way stop			Signal	**F**	**81.2**	No	Two-way stop			Signal	E	58.8	No
	Northbound Left Turn		*A*	*7.9*						*A*	*7.9*				
	Eastbound		***F***	***>300***						*D*	*30.0*				
47	Excelsior Road & Florin Road	All-way stop	**F**	**62.4**	Signal	**F**	**111.2**	Yes	All-way stop	**F**	**67.3**	Signal	E	74.2	No
48	Excelsior Road & Gerber Road/Birch Ranch Drive	Signal	B	13.6	Signal	B	11.7	No	Signal	B	14.3	Signal	B	11.7	No
49	Mather Field Road & US 50 WB Ramps	Signal	B	14.4	Signal	B	18.1	No	Signal	A	8.6	Signal	B	10.1	No
50	Mather Field Road & US 50 EB Ramps	Signal	B	19.2	Signal	B	17.9	No	Signal	C	21.1	Signal	B	14.6	No
51	Mather Field Road & Rockingham Drive	Signal	**F**	**156.5**	Signal	**F**	**>300**	Yes	Signal	**F**	**119.4**	Signal	**F**	**170.3**	Yes
52	Mather Boulevard & Douglas Road	Signal	E	55.6	Signal	E	62.1	Yes	Signal	C	27.2	Signal	E	66.9	Yes

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Table 6.5

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
53	Zinfandel Drive & US 50 WB Ramps	Signal	C	20.9	Signal	B	10.6	No	Signal	**E**	**65.0**	Signal	D	49.1	No
54	Zinfandel Drive & US 50 EB Ramps/Gold Center Drive	Signal	**F**	**120.8**	Signal	**F**	**116.8**	No	Signal	**F**	**95.0**	Signal	**E**	**79.3**	No
55	Zinfandel Drive & White Rock Road	Signal	**E**	**76.3**	Signal	**E**	**68.2**	No	Signal	**F**	**117.3**	Signal	**F**	**111.6**	No
56	Zinfandel Drive & Data Drive	Signal	B	18.9	Signal	B	19.1	No	Signal	C	25.6	Signal	C	26.7	No
57	Zinfandel Drive & International Dr	Signal	**E**	**77.2**	Signal	**E**	**77.5**	No	Signal	**F**	**97.3**	Signal	**F**	**81.8**	No
58	Zinfandel Drive & Douglas Road	Signal	**F**	**156.8**	Signal	**F**	**216.8**	Yes	Signal	E	73.1	Signal	**F**	**220.1**	Yes
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard	Two-way stop			Signal	D	42.5	No	Two-way stop			Signal	D	39.2	No
	Southbound Left Turn		*A*	*8.1*						*A*	*9.2*				
	Westbound		***F***	***85.8***						***F***	***208.0***				
60	Eagles Nest Road & Jackson Road	Signal	C	23.0	Signal	E	69.6	No	Signal	C	23.3	Signal	E	63.7	No
61	Eagles Nest Road & Florin Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound		***F***	***>300***		***F***	***>300***			***F***	***>300***		***F***	***>300***	
	Southbound		***F***	***>300***		***F***	***>300***			***F***	***>300***		***F***	***>300***	
	Eastbound Left Turn		*B*	*10.2*		*B*	*11.3*			*A*	*8.5*		*A*	*9.3*	
	Westbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*9.4*		*A*	*8.7*	
62	Sunrise Boulevard & US 50 WB Ramps	Signal	**E**	**68.1**	Signal	**E**	**71.2**	No	Signal	C	22.7	Signal	C	21.5	No
63	Sunrise Boulevard & US 50 EB Ramps	Signal	B	10.2	Signal	B	10.1	No	Signal	B	12.7	Signal	B	13.2	No
64	Sunrise Boulevard & Folsom Boulevard	Signal	D	43.5	Signal	D	47.3	No	Signal	D	40.5	Signal	D	43.1	No

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Table 6.5

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
65	Sunrise Boulevard & White Rock Road	Signal	**E**	**69.3**	Signal	**E**	**69.5**	No	Signal	**F**	**127.3**	Signal	**F**	**126.9**	No
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	**F**	**109.1**	Signal	**F**	**118.6**	Yes	Signal	**F**	**81.3**	Signal	**E**	**76.7**	No
67	Sunrise Boulevard & Douglas Road	Signal	**F**	**140.5**	Signal	**F**	**190.0**	Yes	Signal	**E**	**73.5**	Signal	**F**	**105.4**	Yes
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	C	21.4	Signal	B	18.8	No	Signal	A	9.4	Signal	B	10.2	No
69	Sunrise Boulevard & Kiefer Boulevard	Signal	**F**	**151.0**	Signal	**F**	**>300**	Yes	Signal	**F**	**138.0**	Signal	**F**	**261.4**	Yes
70	Sunrise Boulevard & Jackson Road	Signal	D	39.6	Signal	**F**	**90.0**	Yes	Signal	D	45.4	Signal	**E**	**79.3**	Yes
71	Sunrise Boulevard & Florin Road	Signal	D	50.3	Signal	C	22.9	No	Signal	E	57.4	Signal	D	45.9	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	**F**	**91.2**	Signal	**F**	**120.4**	Yes	Signal	C	33.1	Signal	**E**	**71.0**	Yes
73	Hazel Avenue & Tributary Point Drive/US 50 WB Off-ramp	Signal	**F**	**148.3**	Signal	**F**	**149.4**	No	Signal	**F**	**103.3**	Signal	**F**	**105.3**	No
74	Hazel Avenue & US 50 EB Ramps	Signal	B	16.4	Signal	B	17.6	No	Signal	**F**	**83.6**	Signal	**F**	**81.4**	No
76	Prairie City Road & White Rock Road	Signal	C	32.8	Signal	**D**	**37.6**	No	Signal	**D**	**35.2**	Signal	**D**	**36.1**	No
77	Grant Line Road & White Rock Road	Signal	C	26.1	Signal	B	16.2	No	Signal	C	29.8	Signal	C	33.4	No
78	Grant Line Road & Douglas Road	Signal	**D**	**44.8**	Signal	**D**	**39.0**	No	Signal	**F**	**107.9**	Signal	**F**	**92.2**	No
79	Grant Line Road & Kiefer Boulevard	Signal	B	12.5	Signal	B	14.7	No	Signal	B	10.6	Signal	B	16.8	No
80	Grant Line Road & Jackson Road	Signal	**F**	**88.9**	Signal	**F**	**119.0**	Yes	Signal	**E**	**67.4**	Signal	**F**	**101.1**	Yes

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Table 6.5

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
81	Watt Avenue & US-50 EB Ramps	Signal	C	23.3	Signal	C	33.1	No	Signal	B	15.6	Signal	B	18.8	No
82	Watt Avenue & US-50 WB Ramps	Signal	**F**	**82.8**	Signal	**E**	**67.2**	No	Signal	**E**	**57.1**	Signal	**E**	**61.2**	No
83	Mayhew Rd & Folsom Blvd.	Signal	B	12.8	Signal	B	19.8	No	Signal	B	15.8	Signal	C	20.4	No
84	65th Street Expy & Fruitridge Road	Signal	D	44.3	Signal	D	46.0	No	Signal	D	41.1	Signal	D	46.2	No
85	Power Inn Road & Elder Creek Road	Signal	E	67.3	Signal	E	79.0	No	Signal	D	45.0	Signal	E	61.6	No
86	Power Inn Road & Florin Rd	Signal	**F**	**97.4**	Signal	**F**	**119.3**	Yes	Signal	E	65.8	Signal	E	73.9	No
87	Florin Perkins Road & Florin Rd	Signal	D	44.2	Signal	E	60.6	No	Signal	**F**	**107.4**	Signal	**F**	**111.6**	No
88	Bradshaw Rd & Calvine Rd	Signal	C	26.4	Signal	D	37.0	No	Signal	C	20.9	Signal	C	25.0	No
89	Vineyard Rd & Calvine Rd	Signal	B	18.5	Signal	B	18.6	No	Signal	B	17.6	Signal	B	19.5	No
90	Excelsior Road & Calvine Rd	Signal	B	12.8	Signal	C	29.0	No	Signal	B	12.9	Signal	B	17.9	No
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	C	34.4	Signal	**D**	**43.2**	Yes	Signal	**D**	**44.8**	Signal	**D**	**52.0**	Yes
92	Grant Line Rd & Calvine Rd	Signal	C	32.4	Signal	**D**	**36.5**	Yes	Signal	C	33.3	Signal	C	30.9	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	**E**	**78.8**	Signal	**F**	**83.4**	Yes	Signal	**E**	**69.8**	Signal	**F**	**95.2**	Yes
94	Grant Line Rd & Bond Rd/Wrangler Dr	Signal	B	14.8	Signal	B	17.6	No	Signal	B	15.5	Signal	B	17.3	No
95	Florin Perkins Road & 14th Avenue	Signal	D	44.1	Signal	**E**	**67.8**	Yes	Signal	C	30.9	Signal	D	46.9	No

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Table 6.5

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
96	Jackson Road & 14th Avenue	Signal	**F**	**91.0**	Signal	**F**	**119.3**	Yes	Signal	B	15.3	Signal	**E**	**57.0**	Yes
98	Aspen 1 Access Road & Jackson Road	Signal	A	0.0	Signal	A	0.0	No	Signal	A	6.6	Signal	A	0.0	No
99	Rancho Cordova Pkwy & US-50 WB Ramps	Signal	**F**	**147.0**	Signal	**F**	**147.6**	No	Signal	**F**	**117.9**	Signal	**F**	**104.1**	No
100	Rancho Cordova Pkwy & US-50 EB Ramps	Signal	C	24.0	Signal	B	16.9	No	Signal	C	28.3	Signal	C	30.1	No
101	Rancho Cordova Pkwy & Easton Valley Pkwy	Signal	C	24.2	Signal	C	24.7	No	Signal	B	11.2	Signal	B	14.5	No
102	Rancho Cordova Pkwy & White Rock Road	Signal	**F**	**221.3**	Signal	**F**	**200.8**	No	Signal	**F**	**135.5**	Signal	**F**	**128.0**	No
103	Rancho Cordova Pkwy & Douglas Road	Signal	**E**	**67.2**	Signal	**E**	**57.2**	No	Signal	**E**	**58.0**	Signal	**E**	**76.1**	Yes
104	Rancho Cordova Pkwy & Chrysanthy Boulevard/Chrysanthy Blvd	Signal	**F**	**105.7**	Signal	**F**	**93.5**	No	Signal	D	54.9	Signal	D	54.9	No
105	Rancho Cordova Pkwy & Kiefer Blvd	Signal	B	17.9	Signal	C	20.9	No	Signal	B	16.1	Signal	B	19.4	No
106	Rancho Cordova Pkwy & Grant Line Road	Signal	**E**	**78.8**	Signal	**D**	**38.4**	No	Signal	C	28.8	Signal	B	14.8	No
107	Americanos Blvd & White Rock Road	Signal	A	9.5	Signal	A	8.9	No	Signal	A	9.5	Signal	A	8.4	No
108	Americanos Blvd & Douglas Road	Signal	C	34.9	Signal	D	47.0	No	Signal	C	22.4	Signal	C	23.5	No
109	Americanos Blvd & Chrysanthy Blvd	Signal	C	24.7	Signal	C	22.2	No	Signal	C	22.2	Signal	C	25.4	No
110	Americanos Blvd & Kiefer Blvd	Signal	A	7.6	Signal	A	8.7	No	Signal	A	7.3	Signal	A	9.8	No
111	Grant Line Road & Chrysanthy Blvd	Signal	**E**	**72.0**	Signal	**E**	**71.1**	No	Signal	**E**	**57.5**	Signal	D	54.9	No

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Table 6.5

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service

Intersection		AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
112	Hazel Avenue & Easton Valley Pkwy	Signal	B	10.3	Signal	B	10.2	No	Signal	A	6.0	Signal	A	6.1	No
200	Excelsior Road & Collector WJ-1/Collector JT-1	West Jackson/Jackson Township Project Int.			Signal	C	22.4	No	West Jackson/Jackson Township Project Int.			Signal	B	19.6	No
201	Excelsior Road & Collector WJ-2/Collector JT-2	West Jackson/Jackson Township Project Int.			Signal	B	15.2	No	West Jackson/Jackson Township Project Int.			Signal	B	19.8	No
202	W Collector MS-1 & Kiefer Boulevard	Mather South Project Int.			Signal	B	17.3	No	Mather South Project Int.			Signal	B	12.6	No
203	Northbridge Dr & Kiefer Boulevard	NewBridge Project Int.			Signal	A	7.3	No	NewBridge Project Int.			Signal	A	6.8	No
204	E Collector MS-5 & Kiefer Boulevard	Mather South Project Int.			Signal	B	19.1	No	Mather South Project Int.			Signal	C	29.9	No
300	Collector WJ-3 & Jackson Road	West Jackson Project Int.			Signal	B	13.7	No	West Jackson Project Int.			Signal	A	9.2	No
301	Collector WJ-4 & Jackson Road	West Jackson Project Int.			Signal	C	23.3	No	West Jackson Project Int.			Signal	C	22.5	No
303	Rock Creek Pkwy & Jackson Road	West Jackson Project Int.			Signal	**F**	**128.3**	Yes	West Jackson Project Int.			Signal	**F**	**96.4**	Yes
304	Collector WJ-5 & Jackson Road	West Jackson Project Int.			Signal	B	13.6	No	West Jackson Project Int.			Signal	B	14.7	No
305	Collector WJ-6 & Jackson Road	West Jackson Project Int.			Signal	B	17.7	No	West Jackson Project Int.			Signal	B	15.7	No
306	Excelsior Road & Collector WJ-6	West Jackson Project Int.			Signal	D	38.3	No	West Jackson Project Int.			Signal	B	14.5	No
307	S. Watt Avenue & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	18.2	No	West Jackson Project Int.			Signal	B	18.4	No
308	Hedge Avenue & Rock Creek Pkwy Westbound	West Jackson Project Int.			Round	**F**	**60.5**	Yes	West Jackson Project Int.			Round	B	11.2	No
309	Hedge Avenue & Rock Creek Pkwy Eastbound	West Jackson Project Int.			Round	C	24.0	No	West Jackson Project Int.			Round	B	11.2	No

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CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
310	Mayhew Road & Rock Creek Pkwy Westbound	West Jackson Project Int.			Round	**F**	**181.2**	Yes	West Jackson Project Int.			Round	**F**	**106.4**	Yes
311	Mayhew Road & Rock Creek Pkwy Eastbound	West Jackson Project Int.			Round	**F**	**171.2**	Yes	West Jackson Project Int.			Round	**F**	**215.2**	Yes
312	Bradshaw Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	11.0	No	West Jackson Project Int.			Signal	D	47.7	No
314	Vineyard Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	10.7	No	West Jackson Project Int.			Signal	C	21.9	No
315	Douglas Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	C	32.1	No	West Jackson Project Int.			Signal	E	61.9	No
316	Bradshaw Road & Collector WJ-8	West Jackson Project Int.			Signal	B	12.2	No	West Jackson Project Int.			Signal	A	6.6	No
317	Bradshaw Road & Collector WJ-9	West Jackson Project Int.			Signal	A	9.3	No	West Jackson Project Int.			Signal	A	5.8	No
318	Bradshaw Road & Mayhew Road	West Jackson Project Int.			Signal	**F**	**142.3**	Yes	West Jackson Project Int.			Signal	**F**	**118.1**	Yes
319	Bradshaw Road & Collector WJ-10	West Jackson Project Int.			Signal	**F**	**182.7**	Yes	West Jackson Project Int.			Signal	C	26.9	No
320	Bradshaw Road & Collector WJ-11	West Jackson Project Int.			Signal	A	7.6	No	West Jackson Project Int.			Signal	B	15.0	No
321	Collector WJ-12 & Fruitridge Road	West Jackson Project Int.			Signal	B	17.9	No	West Jackson Project Int.			Signal	B	15.6	No
322	Mayhew Road & Collector WJ-13	West Jackson Project Int.			Signal	C	22.3	No	West Jackson Project Int.			Signal	C	20.9	No
323	Collector WJ-14 & Kiefer Boulevard	West Jackson Project Int.			Signal	C	30.0	No	West Jackson Project Int.			Signal	C	24.7	No
325	Douglas Road & Kiefer Boulevard	West Jackson Project Int.			Signal	**F**	**237.5**	Yes	West Jackson Project Int.			Signal	**F**	**191.3**	Yes
327	Vineyard Road & Elder Creek Road	West Jackson Project Int.			Signal	C	34.6	No	West Jackson Project Int.			Signal	C	28.1	No

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CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service

Intersection		AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
328	Vineyard Road & Florin Road	West Jackson Project Int.			Signal	C	29.1	No	West Jackson Project Int.			Signal	C	29.6	No
329	Routier Ext & Kiefer Boulevard	West Jackson Project Int.			Signal	**F**	**87.8**	Yes	West Jackson Project Int.			Signal	E	71.6	No
330	Happy Ln/Happy Lane & Routier Ext	West Jackson Project Int.			Signal	E	79.6	No	West Jackson Project Int.			Signal	E	79.3	No
331	Routier Ext/Routier Rd & Old Placerville Road	West Jackson Project Int.			Signal	**F**	**164.0**	Yes	West Jackson Project Int.			Signal	**F**	**117.3**	Yes
400	Collector JT-3 & Jackson Road	Jackson Township Project Int.			Signal	**F**	**81.2**	Yes	Jackson Township Project Int.			Signal	D	47.0	No
401	Tree View Lane & Jackson Road	Jackson Township Project Int.			Signal	D	37.7	No	Jackson Township Project Int.			Signal	B	12.5	No
402	Collector JT-4 & Jackson Road	Jackson Township Project Int.			Signal	C	23.5	No	Jackson Township Project Int.			Signal	B	10.2	No
403	Tree View Lane & Collector JT-5	Jackson Township Project Int.			Signal	B	12.7	No	Jackson Township Project Int.			Signal	B	13.1	No
404	Tree View Lane & Collector JT-6	Jackson Township Project Int.			Signal	A	7.9	No	Jackson Township Project Int.			Signal	A	7.0	No
405	Tree View Lane & Collector JT-1	Jackson Township Project Int.			Signal	B	14.4	No	Jackson Township Project Int.			Signal	B	14.4	No
406	Tree View Lane & Kiefer Boulevard	Jackson Township Project Int.			Signal	B	10.8	No	Jackson Township Project Int.			Signal	B	13.2	No
407	HS/MS Dwy & Kiefer Boulevard	Jackson Township Project Int.			Signal	A	5.3	No	Jackson Township Project Int.			Signal	A	7.7	No
500	Rockbridge Dr & Jackson Road	NewBridge Project Int.			Signal	C	34.2	No	NewBridge Project Int.			Signal	B	19.7	No
501	Eagles Nest Road & N Bridgewater Dr	NewBridge Project Int.			Signal	A	3.4	No	NewBridge Project Int.			Signal	A	3.1	No
502	Eagles Nest Road & S Bridgewater Dr	NewBridge Project Int.			Signal	B	15.7	No	NewBridge Project Int.			Signal	B	13.6	No

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	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
600	Zinfandel Drive & Collector MS-2	Mather South Project Int.			Round	B	10.9	No	Mather South Project Int.			Round	B	11.6	No
601	Zinfandel Drive & Collector MS-3	Mather South Project Int.			Round	A	8.3	No	Mather South Project Int.			Round	A	9.1	No
602	Zinfandel Drive & Collector MS-4	Mather South Project Int.			Round	A	9.1	No	Mather South Project Int.			Round	A	9.1	No
603	Collector MS-5 & Collector MS-2	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					*A*	*7.8*						*A*	*7.5*	
	Eastbound Left Turn					*B*	*10.2*						*B*	*10.8*	
604	Collector MS-5 & Collector MS-3	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					A	7.8						*A*	*7.5*	
	Eastbound					A	9.9						*A*	*9.7*	
605	Collector MS-5 & Collector MS-4	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					*A*	*8.4*						*A*	*8.2*	
	Eastbound					*C*	*17.7*						*D*	*33.0*	
606	Collector MS-5 & W Collector MS-1/E Collector MS-1	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					*A*	*7.6*						*A*	*7.7*	
	Eastbound Left Turn					*B*	*11.7*						*B*	*12.3*	
	Eastbound					*A*	*9.3*						*A*	*9.3*	

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.6

CEQA Cumulative and CEQA Cumulative Plus FOUR PROJECTS Intersection Geometrics

	Intersection	Traffic Control		CEQA Cumulative No Project Lane Geometrics				CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
1	Howe Avenue & College Town Drive/US 50 Westbound Ramps	Signal	Signal	1! 1! 1! r	l! 1! 1! 1!	l! r r	l! l! r r	1! 1! 1! r	l! 1! 1! 1!	l! r r	l! l! r r	
2	Howe Avenue & US 50 Eastbound Ramps/US 50 Eastbound Entrance	Signal	Signal	1! 1! 1! r	l! 1! 1!	l! l! r r		1! 1! 1! r	l! 1! 1!	l! l! r r		
3	Power Inn Road/Howe Avenue & Folsom Blvd.	Signal	Signal	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! l! 1! r	l! l! 1! 1! r r	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! l! 1! r	l! l! 1! 1! r r	
4	Power Inn Road & 14th Avenue	Signal	Signal	l! 1! 1! r	l! 1! 1! 1! l!	l! 1! r	l! 1! r	l! 1! 1! r	l! 1! 1! 1! l!	l! 1! r	l! 1! r	
5	Power Inn Road & Fruitridge Road	Signal	Signal	l! l! 1! r	l! 1! 1! l! l!	l! 1! r	l! 1! 1! r	l! l! 1! r	l! 1! 1! l! l!	l! 1! r	l! 1! 1! r	
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	Signal	l! l! r	l! r	l! 1! 1! r	l! 1! 1! r	l! l! r	l! r	l! 1! 1! r	l! 1! 1! r	
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	Signal	l! l! r	l! r	l! 1! 1! r	l! 1! r	l! l! r	l! r	l! 1! 1! r	l! 1! r	
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop	Two-way stop	1! r	1! 1! l!		l! r	1! r	1! 1! l!		l! r	
9	Florin Perkins Road & Jackson Road	Signal	Signal	l! 1! 1! r	l! 1! l!	l! 1! 1! r	l! 1! r	l! 1! 1! r	l! 1! l!	l! 1! 1! r	l! 1! r	
10	Florin Perkins Road & Fruitridge Road	Signal	Signal	l! 1! 1! r	l! 1! 1! l!	l! 1! 1! r	l! 1! r	l! 1! 1! r	l! 1! 1! l!	l! 1! 1! r	l! 1! r	
11	Florin Perkins Road & Elder Creek Road	Signal	Signal	l! 1! 1! r	l! 1! 1! l!	l! 1! 1! r	l! 1! 1! r	l! 1! 1! r	l! 1! 1! l!	l! 1! 1! r	l! 1! 1! r	
12	S. Watt Ave./Watt Avenue & Folsom Blvd.	Signal	Signal	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! l! 1! 1! r	l! l! 1! 1! r	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! l! 1! 1! r	l! l! 1! 1! r	
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	Signal	l! 1! 1! 1! r	l! 1! 1! l!	Y	l! 1! r r	l! 1! 1! 1! r	l! 1! 1! l!	Y	l! 1! r r	
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal	l! l! 1! 1! r	l! 1! 1! l! l!	l! l! 1! 1! r	l! l! 1! 1! r	l! l! 1! 1! r	l! 1! 1! l! l!	l! l! 1! 1! r	l! l! 1! 1! r	
15	S. Watt Avenue & Canberra Dr.	Signal	Signal	1! 1! r	l! 1! l!		l! r r	1! 1! r	l! 1! l!		l! r r	
16	S. Watt Avenue & Jackson Road	Signal	Signal	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! l! 1! 1! r	l! l! 1! 1! r	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! l! 1! 1! r	l! l! 1! 1! r	West Jackson
17	S. Watt Avenue & Fruitridge Road	Signal	Signal	l! 1! 1! 1! r	l! 1! 1! 1! l!	l! 1! r	l! r r	l! 1! 1! 1! r	l! 1! 1! 1! l!	l! 1! r	l! l! 1! 1! r	West Jackson
18	S. Watt Avenue & Elder Creek Road	Signal	Signal	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! l! 1! r	l! 1! 1! r	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! l! 1! r	l! 1! 1! r	
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! 1! 1! r	l! 1! 1! r	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! 1! 1! r	l! 1! 1! r	
21	Elk Grove Florin Road & Gerber Rd./Gerber Road	Signal	Signal	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! l! 1! 1! r	l! l! 1! 1! r	l! l! 1! 1! 1! r	l! 1! 1! 1! l! l!	l! l! 1! 1! r	l! l! 1! 1! r	
23	Hedge Avenue & Jackson Road	Signal	Signal	l! r r	l! l!	l! 1! 1! r	l! 1! 1! r	l! 1! r	l! l!	l! 1! 1! r	l! 1! 1! r	West Jackson
24	Hedge Avenue & Fruitridge Road	All-way stop	Signal	Y	+	Y	Y	l! 1! r	1! 1! l!	l! 1! r	l! 1! r	West Jackson
25	Hedge Avenue & Elder Creek Road	All-way stop	Signal	l! 1! r	1! 1! l!	l! 1! r	l! 1! r	l! 1! r	1! 1! l!	l! 1! r	l! 1! r	West Jackson
26	Hedge Avenue & Tokay Lane	Two-way stop	Two-way stop	Y	+	Y	Y	Y	+	Y	Y	
27	Hedge Avenue & Florin Road	All-way stop	All-way stop	Y	+	l! 1! r	l! 1! r	Y	+	l! 1! r	l! 1! r	

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 6.6

CEQA Cumulative and CEQA Cumulative Plus FOUR PROJECTS Intersection Geometrics

	Intersection	Traffic Control		CEQA Cumulative No Project Lane Geometrics				CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
28	Mayhew Road & Kiefer Boulevard	Signal	Signal									
29	Mayhew Road & Jackson Road	Two-way stop	Signal									West Jackson
30	Mayhew Road & Fruitridge Road	Two-way stop	Signal									West Jackson
31	Mayhew Road & Elder Creek Road	Two-way stop	Signal									West Jackson
32	Zinfandel Drive & Woodring Drive	Two-way stop	Two-way stop									Mather South
33	Bradshaw Road & Folsom Blvd.	Signal	Signal									
34	Bradshaw Road & US 50 Westbound Ramps	Signal	Signal									
35	Bradshaw Road & US 50 Eastbound Ramps	Signal	Signal									
36	Bradshaw Road & Old Placerville Road	Signal	Signal									
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal									West Jackson
38	Jackson Road & Bradshaw Road	Signal	Signal									West Jackson
39	Bradshaw Road & Elder Creek Road	Signal	Signal									West Jackson
40	Bradshaw Road & Florin Road	Signal	Signal									
41	Bradshaw Road & Gerber Road	Signal	Signal									
42	Happy Lane & Old Placerville Road	Two-way stop	Signal									
43	Kiefer Boulevard & Happy Ln		Signal									West Jackson
44	Excelsior Road & Kiefer Boulevard	Two-way stop	Signal									West Jackson; Jackson Township
45	Excelsior Road & Jackson Road	Signal	Signal									West Jackson; Jackson Township
46	Excelsior Road & Elder Creek Road	Two-way stop	Signal									West Jackson
47	Excelsior Road & Florin Road	All-way stop	Signal									West Jackson
48	Excelsior Road & Gerber Road/Birch Ranch Drive	Signal	Signal									
49	Mather Field Road & US 50 Westbound Ramps	Signal	Signal									
50	Mather Field Road & US 50 Eastbound Ramps	Signal	Signal									
51	Mather Field Road & Rockingham Drive	Signal	Signal									
52	Mather Boulevard & Douglas Road	Signal	Signal									

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 6.6

CEQA Cumulative and CEQA Cumulative Plus FOUR PROJECTS Intersection Geometrics

	Intersection	Traffic Control		CEQA Cumulative No Project Lane Geometrics				CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
53	Zinfandel Drive & US 50 Westbound	Signal	Signal	↑↑↑ r	L↓↓↓		↰↰r	↑↑↑ r	L↓↓↓		↰↰r	
54	Zinfandel Drive & US 50 Eastbound Ramps/Gold Center Drive	Signal	Signal	↑↑↑ ↱	L↓↓↓	↰↰ ↱r	rr	↑↑↑ ↱	L↓↓↓	↰↰ ↱r	rr	
55	Zinfandel Drive & White Rock Road	Signal	Signal	↰↰↑↑ ↱	L↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱r	↰↰↑↑ ↱	L↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱r	
56	Zinfandel Drive & Data Drive	Signal	Signal	↰↑↑ ↱	↓↓↓↘	↰Y	↰↰r	↰↑↑ ↱	↓↓↓↘	↰Y	↰↰r	
57	Zinfandel Dr & International Dr	Signal	Signal	↰↰↑↑↑ r	↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑↑↑ r	↰↰↑↑↑ r	↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑↑↑ r	
58	Zinfandel Drive & Douglas Road	Signal	Signal	↰↱	L↓↘↘	↰↑ ↱	↰↰↑↑ r	↰↱	L↓↘↘	↰↑ ↱	↰↰↑↑ r	
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard		Signal	r			↰	↰↰↑↑ r	L↓↓↘↘	↰↰↑↑ r	↰↰↑↑ r	NewBridge; Mather South
60	Eagles Nest Road & Jackson Road	Two-way stop	Signal	Y	⅄	↰↱	↰↱	↰↑r	L↓↘↘	↰↰↑ ↱	↰↑↑ r	NewBridge
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal	Y	⅄	Y	Y	Y	⅄	Y	Y	
62	Sunrise Boulevard & US 50 Westbound Ramps	Signal	Signal	↑↑↑ r	L↓↓↓		↰↰rr	↑↑↑ r	L↓↓↓		↰↰rr	
63	Sunrise Boulevard & US 50 Eastbound Ramps	Signal	Signal	↑↑↑↑ r	L↓↓↓	↰↰↰rr		↑↑↑↑ r	L↓↓↓	↰↰↰rr		
64	Sunrise Boulevard & Folsom Boulevard	Signal	Signal	↰↰↑↑↑↑ r	L↓↓↓↘↘	↰↰↑↑ r	↰↰↑ ↱r	↰↰↑↑↑↑ r	L↓↓↓↘↘	↰↰↑↑ r	↰↰↑ ↱r	
65	Sunrise Boulevard & White Rock Road	Signal	Signal	↰↰↑↑↑ r	L↓↓↓↘↘	↰↰↑↑ r	↰↰↑↑↑ r	↰↰↑↑↑ r	L↓↓↓↘↘	↰↰↑↑ r	↰↰↑↑↑ r	
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal	↰↰↑↑↑ r	L↓↓↓↘↘	↰↰↑↑↑ r	↰↰↑↑↑ r	↰↰↑↑↑ r	L↓↓↓↘↘	↰↰↑↑↑ r	↰↰↑↑↑ r	
67	Sunrise Boulevard & Douglas Road	Signal	Signal	↰↰↑↑↑ r	L↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑↑↑ r	↰↰↑↑↑ r	L↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑↑↑ r	
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	Signal	↑↑↑ r	↓↓↘↘		↰↰r	↑↑↑ r	↓↓↘↘		↰↰r	
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal	↰↑↑ r	⅄↓↘↘	Y	↰Y r	↰↑↑ r	⅄↓↘↘	↰↰↑↑ r	↰Y r	NewBridge; Mather South
70	Sunrise Boulevard & Jackson Road	Signal	Signal	↰↰↑↑ r	L↓↓↘↘	↰↰↑↑ r	↰↰↑↑ r	↰↰↑↑ r	L↓↓↘↘	↰↰↑↑ r	↰↰↑↑ r	
71	Sunrise Boulevard & Florin Road	Signal	Signal	↰↑↑	⅄↓	⅄		↰↑↑	⅄↓	⅄		
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	Signal	Y	⅄↱	↰↑↑ r	↰↑ ↱	Y	⅄↱	↰↑↑ r	↰↑ ↱	
73	Hazel Avenue & Tributary Point Drive/US 50 Westbound Off-ramp	Signal	Signal	↰↰↑↑↑	L↓↓↓↓	r	Y rr	↰↰↑↑↑	L↓↓↓↓	r	Y rr	
74	Hazel Aveneu/Hazel Avenue & US 50 Eastbound Ramps	Signal	Signal	↑↑ ↱	L↓↓↓	↰↰↰rr		↑↑ ↱	L↓↓↓	↰↰↰rr		
76	White Rock Road & Prairie City Road	Signal	Signal		LL↘↘	↰↰↑↑	↑↑ r		LL↘↘	↰↰↑↑	↑↑ r	
77	Grant Line Road & White Rock Road	Signal	Signal	↰↑↑	L↓↓	↰↰r		↰↑↑	L↓↓	↰↰r		
78	Grant Line Road & Douglas Road	All-way stop	All-way stop	↰↰↑↑	L↓↓	↰r		↰↰↑↑	L↓↓	↰r		

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 6.6

CEQA Cumulative and CEQA Cumulative Plus FOUR PROJECTS Intersection Geometrics

	Intersection	Traffic Control		CEQA Cumulative No Project Lane Geometrics				CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
79	Grant Line Road & Kiefer Boulevard	All-way stop	All-way stop	2 2 1 1	1 1 1	2 2 1	2 1	2 2 1 1	1 1 1	2 2 1	2 1	
80	Grant Line Road & Jackson Road	Signal	Signal	2 2 1 1	1 1 1 1	2 2 1 1	2 2 1 1	2 2 1 1	1 1 1 1	2 2 1 1	2 2 1 1	
81	Watt Avenue & US-50 EB Ramps	Signal	Signal	1 1 1 1	1 1	2 2		1 1 1 1	1 1	2 2		
82	Watt Avenue & US-50 WB Ramps	Signal	Signal	1 1	1 1 1		2 2	1 1	1 1 1		2 2	
83	Mayhew Rd & Folsom Blvd.	Signal	Signal	2 2		1 1	2 1 1	2 2		1 1	2 1 1	
84	65th Street Expy & Fruitridge Road	Signal	Signal	2 1 1	1 1 1	2 1 1	2 1 1	2 1 1	1 1 1	2 1 1	2 1 1	
85	Power Inn Road & Elder Creek Road	Signal	Signal	2 1	1 1	2 1 1	2 1	2 1	1 1	2 1 1	2 1	
86	Power Inn Road & Florin Rd	Signal	Signal	2 1	1 1 1	2 1 1	2 1 1 1	2 1	1 1 1	2 1 1	2 1 1 1	
87	Florin Perkins Road & Florin Rd	Signal	Signal	2 1 1	1 1 1	2 1	2 1 1	2 1 1	1 1 1	2 1	2 1 1	
88	Bradshaw Rd & Calvine Rd	Signal	Signal	2 2 1	1 1 1 1	2 2 1 1 1	2 2 1 1 1	2 2 1	1 1 1 1	2 2 1 1 1	2 2 1 1 1	
89	Vineyard Rd & Calvine Rd	Signal	Signal	3	1 1	2 1	2 1	3	1 1	2 1	2 1	
90	Excelsior Road & Calvine Rd	Signal	Signal	2 1	1 1	2 1	2 1	2 1	1 1	2 1	2 1	
91	Grant Line Road & Eagles Nest Rd/Sloughhouse Rd	Signal	Signal	2 1 1	2 1	3	2	2 1 1	2 1	3	2	
92	Grant Line Road & Calvine Rd	Signal	Signal	2 1	2	2		2 1	2	2		
93	Grant Line Road & Driveway/Wilton Rd	Signal	Signal	2 1	2 1	2	2	2 1	2 1	2	2	
94	Bond Rd/Wrangler Dr & Grant Line Road	Signal	Signal	2 1	1 1	3	3	2 1	1 1	3	3	
95	Florin Perkins Road & 14th Avenue		Signal	2 2 1 1	1 1 1 1	2 2 1 1	2 2 1 1	2 2 1 1	1 1 1 1	2 2 1 1	2 2 1 1	
96	14th Avenue & Jackson Road		Signal		3 1	2 1 1	2 1 1		3 1	2 2 1 1	2 1 1	
97	Rock Creek Pkwy & Jackson Road		Signal	2 1	1 1	2 1	2 1	2 1	1 1	2 1	2 1	
98	Aspen 1 Access Road & Jackson Road		Signal	2		1 2	2 1 1	2		1 2	2 1 1	
99	Rancho Cordova Pkwy & US-50 WB Ramps		Signal	2 2			2 3	2 2			2 3	
100	Rancho Cordova Pkwy & US-50 EB Ramps		Signal	1 2 2	1 1 1	3 2		1 2 2	1 1 1	3 2		
101	Rancho Cordova Pkwy & Easton Valley Pkwy		Signal	1 1 1	1 1 1 1		2 2 2	1 1 1	1 1 1 1		2 2 2	
102	Rancho Cordova Pkwy & White Rock Road		Signal	2 2 1 1 1	2 1 1 1 1	2 2 1 1	2 2 1 1	2 2 1 1 1	2 1 1 1 1	2 2 1 1	2 2 1 1 1	
103	Rancho Cordova Pkwy & Douglas Road		Signal	2 2 1 1	2 1 1 1 1	2 2 1 1 1	2 2 1 1 1	2 2 1 1	2 1 1 1 1	2 2 1 1 1	2 2 1 1 1	
104	Rancho Cordova Pkwy & Chrysanthy Blvd		Signal	2 2 1 1	2 1 1 1 1	2 2 1 1	2 2 1 1	2 2 1 1	2 1 1 1 1	2 2 1 1	2 2 1 1	

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 6.6

CEQA Cumulative and CEQA Cumulative Plus FOUR PROJECTS Intersection Geometrics

Intersection		Traffic Control		CEQA Cumulative No Project Lane Geometrics				CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
105	Rancho Cordova Pkwy & Kiefer Blvd		Signal									
106	Grant Line Road & Rancho Cordova Pkwy		Signal									
107	Americanos Blvd & White Rock Road		Signal									
108	Americanos Blvd & Douglas Road		Signal									
109	Americanos Blvd & Chrysanthy Blvd		Signal									
110	Kiefer Blvd & Americanos Blvd		Signal									
111	Grant Line Road & Chrysanthy Blvd		Signal									
112	Easton Valley Pkwy & Hazel Avenue		Signal									
200	Excelsior Road & Collector WJ-1/Collector JT-1		Signal									West Jackson; Jackson Township
201	Excelsior Road & Collector WJ-2/Collector JT-2		Signal									West Jackson; Jackson Township
202	Kiefer Boulevard & W Collector MS-1		Signal									Mather South
203	Northbridge Dr & Kiefer Boulevard		Signal									NewBridge
204	Kiefer Boulevard & E Collector MS-5		Signal									Mather South
300	Collector WJ-3 & Jackson Road		Signal									West Jackson
301	Collector WJ-4 & Jackson Road		Signal									West Jackson
303	Vineyard Road & Jackson Road		Signal									West Jackson
304	Collector WJ-5 & Jackson Road		Signal									West Jackson
305	Collector WJ-6 & Jackson Road		Signal									West Jackson
306	Excelsior Road & Collector WJ-6		Signal									West Jackson
307	S. Watt Avenue & Rock Creek Pkwy		Signal									West Jackson
308	Hedge Avenue & Rock Creek Pkwy Westbound		Roundabout									West Jackson
309	Hedge Avenue & Rock Creek Pkwy Eastbound		Roundabout									West Jackson
310	Mayhew Road & Rock Creek Pkwy Westbound		Roundabout									West Jackson
311	Mayhew Road & Rock Creek Pkwy Eastbound		Roundabout									West Jackson

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 6.6

CEQA Cumulative and CEQA Cumulative Plus FOUR PROJECTS Intersection Geometrics

Intersection		Traffic Control		CEQA Cumulative No Project Lane Geometrics				CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
312	Bradshaw Road & Rock Creek Pkwy		Signal					↰ ↑ ↑ ↑	↲ ↓ ↓	↰ ↱		West Jackson
314	Vineyard Road & Rock Creek Pkwy		Signal					↰ ↑ ↑	↲ ↓	↰ ↱		West Jackson
315	Douglas Road & Rock Creek Pkwy		Signal					↰ ↑ ↑	↲ ↓	↰ ↱		West Jackson
316	Bradshaw Road & Collector WJ-8		Signal					↑ ↑ ↱	↓ ↓ ↓ ↘		↰ ↱	West Jackson
317	Bradshaw Road & Collector WJ-9		Signal					↑ ↑ ↱	↓ ↓ ↓ ↘		↰ ↱	West Jackson
318	Bradshaw Road & Mayhew Road		Signal					↰ ↰ ↑ ↑ ↑ ↱	↙ ↓ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
319	Bradshaw Road & Collector WJ-10		Signal					↑ ↑ ↱	↓ ↓ ↓ ↘		↰ ↱	West Jackson
320	Bradshaw Road & Collector WJ-11		Signal					↰ ↑ ↑ ↑	↲ ↓ ↓	↰ ↱		West Jackson
321	Collector WJ-12 & Fruitridge Road		Signal					↰ ↑ ↱	↙ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	West Jackson
322	Mayhew Road & Collector WJ-13		Signal					↰ ↑ ↑	↲ ↓	↰ ↱		West Jackson
323	Collector WJ-14 & Kiefer Boulevard		Signal					↰ ↑ ↱	↙ ↓ ↘	↰ ↑ ↑ ↱	↰ ↑ ↑ ↱	West Jackson
325	Douglas Road Extension & Kiefer Boulevard		Signal					↰ ↰ ↑ ↑ ↱	↙ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
327	Vineyard Road & Elder Creek Road		Signal					↰ ↰ ↑ ↑ ↱	↙ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
328	Vineyard Road & Florin Road	Signal	Signal	↰ ↰ ↱		↑ ↱	↰ ↑	↰ ↰ ↑ ↑ ↱	↙ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
329	Routier Ext & Kiefer Boulevard		Signal					↰ ↰ ↑ ↑ ↱	↙ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	West Jackson
330	Happy Lane & Routier Ext		Signal					↰ ↑ ↱	↙ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	West Jackson
331	Routier Ext/Routier Rd & Old Placerville Road		Signal					↰ ↑ ↑ ↱	↙ ↓ ↓ ↘ ↘	↰ ↑ ↑ ↱	↰ ↰ ↑ ↱	West Jackson
400	Jackson Road & Collector JT-3		Signal						↙ ↘	↰ ↰ ↑ ↑	↑ ↑ ↱	Jackson Township
401	Jackson Road & Tree View Lane		Signal						↙ ↘ ↘	↰ ↰ ↑ ↑	↑ ↑ ↱	Jackson Township
402	Jackson Road & Collector JT-4		Signal						↙ ↘	↰ ↑ ↑	↑ ↱	Jackson Township
403	Tree View Lane & Collector JT-5		Signal					↰ ↑ ↱	↲ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	Jackson Township
404	Tree View Lane & Collector JT-6		Signal					↰ ↑ ↱	↲ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	Jackson Township
405	Tree View Lane & Collector JT-1		Signal					↰ ↑ ↱	↲ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	Jackson Township
406	Tree View Lane & Kiefer Boulevard		Signal					↰ ↰ ↱		↑ ↑ ↱	↰ ↰ ↑ ↑	Jackson Township
407	HS/MS Dwy & Kiefer Boulevard		Signal					↰ ↱		↑ ↱	↰ ↑ ↑	Jackson Township
500	Jackson Road & Rockbridge Dr		Signal						↙ ↘	↰ ↑ ↑	↑ ↱	NewBridge

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 6.6

CEQA Cumulative and CEQA Cumulative Plus FOUR PROJECTS Intersection Geometrics

Intersection		Traffic Control		CEQA Cumulative No Project Lane Geometrics				CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
501	Eagles Nest Road & N Bridgewater Dr		Signal					↑ ↱	↓ ↓ ↳		↰	NewBridge
502	Eagles Nest Road & S Bridgewater Dr		Signal					↰ ↑ ↱	↲ ↓ ↳	↰ ↑	↰ ↑	NewBridge
600	Zinfandel Drive & Collector MS-2		Roundabout					↑ ↱	↓ ↳		↖	Mather South
601	Zinfandel Drive & Collector MS-3		Roundabout					↑ ↱	↓ ↳		↰	Mather South
602	Zinfandel Drive & Collector MS-4		Roundabout					↑ ↱	↓ ↳		↰	Mather South
603	Collector MS-5 & Collector MS-2		Two-way stop					↰	↲	↖		Mather South
604	Collector MS-5 & Collector MS-3		Two-way stop					↰	↲	↖		Mather South
605	Collector MS-5 & Collector MS-4		Two-way stop					↰	↲	↖		Mather South
606	E Collector MS-1/Collector MS-5 & W Collector MS-1		Two-way stop					↰ ↑	↲ ↓	↰		Mather South

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 6.7: CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Peak Hour Freeway Basic Segment Level of Service									
Direc-tion	Location	CEQA Cumulative				CEQA Cumulative Plus FOUR PROJECTS			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
East-bound US 50	SR 99 / SR 51 to Stockton Boulevard	8,751	D	8,638	D	9,295	D	8,855	D
	Stockton Boulevard to 59th Street	8,168	**F**	7,819	**F**	8,642	**F**	8,051	**F**
	59th Street to 65th Street	7,637	D	7,343	D	8,099	E	7,521	D
	65th Street to Howe Avenue	8,019	D	7,667	D	8,272	D	7,812	D
	Howe Avenue to Watt Avenue	7,213	C	6,672	C	7,366	C	6,679	C
	Watt Avenue to Bradshaw Road	9,633	**F**	8,982	E	9,825	**F**	9,056	E
	Bradshaw Rd to Mather Field Rd	9,467	**F**	9,052	C	9,483	**F**	9,015	C
	Mather Field Rd to Zinfandel Drive	9,072	D	8,767	D	9,211	D	8,916	D
	Zinfandel Drive to Sunrise Blvd	6,313	C	6,370	**F**	6,400	C	6,551	**F**
	Sunrise Bl to Rancho Cordova Pkwy	5,835	C	5,878	**F**	5,892	C	6,121	**F**
	Rancho Cordova Pkwy to Hazel Ave	7,170	D	6,636	**F**	7,249	D	6,929	**F**
West-bound US 50	Hazel Ave to Rancho Cordova Pkwy	5,376	B	5,162	C	5,643	B	5,218	C
	Rancho Cordova Pkwy to Sunrise Bl	6,906	C	4,366	B	7,103	C	4,461	B
	Sunrise Blvd to Zinfandel Drive	8,587	D	5,233	B	8,801	D	5,378	B
	Zinfandel Drive to Mather Field Rd	9,480	D	7,406	C	9,493	D	7,454	C
	Mather Field Rd to Bradshaw Road	9,560	**F**	8,720	D	9,406	**F**	8,544	D
	Bradshaw Road to Watt Avenue	9,001	**F**	7,882	D	8,854	**F**	8,099	E
	Watt Avenue to Howe Avenue	7,880	**F**	5,892	**F**	7,679	**F**	6,132	**F**
	Howe Avenue to 65th Street	8,761	**F**	8,070	**F**	8,972	**F**	8,384	**F**
	65th Street to 59th Street	8,809	**F**	7,978	**F**	9,012	**F**	8,296	**F**
	59th Street to Stockton Boulevard	9,692	D	8,294	**F**	9,890	D	8,656	**F**
	Stockton Boulevard to SR 99 / SR 51	10,187	E	9,674	**F**	10,300	E	9,916	**F**

Bold values denote level of service "F" conditions.

Red shaded values indicate project impacts.

Source: *DKS Associates, 2018.*

6.4.4 CEQA Cumulative Plus FOUR PROJECTS Pedestrian and Bicycle Facility Impacts

The FOUR PROJECTS would not remove any existing or planned pedestrian facility that is planned in the Bikeway Master Plan. The FOUR PROJECTS would add pedestrian and bicycle demands within the FOUR PROJECTS site and to and from nearby land uses. Specific information on improvements to on- and off-site bicycle and pedestrian facilities is not available at this time. Because the FOUR PROJECTS would add demand for pedestrian and bicycle facilities that may not be available, the impact of the FOUR PROJECTS on pedestrian and bicycle circulation is potentially significant.

Table 6.8 CEQA Cumulative Plus FOUR PROJECTS (Alt. 2) Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service										
Direc-tion	**Location**	**Junction Type**	**CEQA Cumulative**				**CEQA Cumulative Plus FOUR PROJECTS**			
			A.M. Peak Hour		**P.M. Peak Hour**		**A.M. Peak Hour**		**P.M. Peak Hour**	
			Ramp Volume	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**
East-bound US 50	Northbound 65th Street Slip Entrance	Weave	945	**F**	777	**F**	918	**F**	724	**F**
	Howe Avenue / Hornet Drive Exit		2,088		2,140		2,120		2,267	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	729	D	1,342	D	750	D	1,332	D
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	609	D	532	D	528	D	524	D
	Watt Avenue Exit	Two-Lane Diverge	1,538	B	1,705	B	1,532	B	1,604	A
	Southbound Watt Avenue Loop Entrance	One-Lane Merge	1,615	D	1,368	C	1,551	D	1,213	C
	Northbound Watt Avenue Slip Entrance	One-Lane Merge	682	D	588	C	608	D	597	C
	Bradshaw Road Exit	Two-Lane Diverge	2,068	**F**	1,631	B	2,264	**F**	1,835	C
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	268	D	422	D	274	D	505	D
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	1,486	D	1,029	C	1,511	D	1,102	C

Table 6.8
CEQA Cumulative Plus FOUR PROJECTS (Alt. 2) Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service

Direc-tion	Location	Junction Type	CEQA Cumulative				CEQA Cumulative Plus FOUR PROJECTS			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Mather Field Road Exit	Two-Lane Diverge	1,490	B	1,530	B	1,481	B	1,489	B
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	252	C	222	C	252	C	169	C
	Northbound Mather Field Road Slip Entrance	Weave	431	**F**	894	**F**	571	**F**	1,123	**F**
	Zinfandel Drive Exit		3,083		1,861		3,082		1,797	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	183	C	173	C	185	C	151	C
	Northbound Zinfandel Drive Slip Entrance	Lane Addition	665	A	714	B	656	B	784	B
	Sunrise Boulevard Exit	Major Diverge	1,878	C	2,308	C	1,899	C	2,364	C
	Sunrise Boulevard Entrance	Lane Addition / Weave	1,233	D	1,122	C	1,174	B	1,162	C
	Rancho Cordova Parkway Exit	Major Diverge / Weave	374		763		327	C	816	
	Rancho Cordova Parkway Entrance	Weave	1,787	**F**	1,748	**F**	1,748	**F**	1,823	**F**
	Hazel Avenue Exit		1,904		2,611		1,950		2,718	

Table 6.8
CEQA Cumulative Plus FOUR PROJECTS (Alt. 2) Peak Hour Freeway Ramp Junction/Weaving Level of Service

Direc-tion	Location	Junction Type	CEQA Cumulative				CEQA Cumulative Plus FOUR PROJECTS			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Hazel Avenue Entrance	Weave	1,174	E	2,148	**F**	1,072	D	2,091	D
	Aerojet Road Exit		584		203		613		171	
West-bound US 50	Hazel Avenue Exit	Two-Lane Diverge	1,098	B	1,031	C	1,057	B	1,032	C
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	69	B	434	C	93	B	434	C
	Southbound Hazel Avenue Slip Entrance	Weave	2,306	**F**	2,263	**F**	2,369	**F**	2,302	**F**
	Rancho Cordova Parkway Exit		1,800		2,225		1,867		2,173	
	Rancho Cordova Parkway Entrance	Lane Addition / Weave	1,428	C	1,165	B	1,389	C	1,138	B
	Sunrise Boulevard Exit	Major Diverge / Weave	729		751	C	760		729	C
	Northbound Sunrise Boulevard Loop Entrance	Lane Addition	169	A	259	A	170	A	234	A
	Southbound Sunrise Boulevard Slip Entrance	Lane Addition	2,323	**F**	1,524	C	2,354	**F**	1,613	C
	Zinfandel Drive Exit	One-Lane Diverge	1,384	E	1,183	D	1,393	E	1,200	D

Table 6.8
CEQA Cumulative Plus FOUR PROJECTS (Alt. 2) Peak Hour Freeway Ramp Junction/Weaving Level of Service

Direc-tion	Location	Junction Type	CEQA Cumulative				CEQA Cumulative Plus FOUR PROJECTS			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	909	C	1,443	D	803	C	1,295	C
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	1,544	D	663	B	1,349	D	663	B
	Mather Field Road Exit	One-Lane Drop	1,350	D	826	C	1,581	D	1,025	C
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	626	C	1,192	C	499	C	1,193	C
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	303	C	504	C	427	C	428	B
	Bradshaw Road Exit	Two-Lane Diverge	1,533	C	1,756	B	1,692	C	1,809	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	999	**F**	927	D	1,318	**F**	1,593	D
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	385	**F**	851	D	391	**F**	816	D
	Watt Avenue Exit	Major Diverge	1,568	E	1,112	D	1,364	E	991	D
	Northbound Watt Avenue Loop Entrance	One-Lane Merge	774	D	1,125	D	726	D	1,100	D
	Southbound Watt Avenue Slip Entrance	Lane Addition	1,134	D	1,062	C	919	D	1,006	D
	Howe Avenue Exit	Major Diverge	1,879	E	1,687	D	1,709	E	1,695	D

Table 6.8
CEQA Cumulative Plus FOUR PROJECTS (Alt. 2) Peak Hour Freeway Ramp Junction/Weaving Level of Service

Direc-tion	Location	Junction Type	CEQA Cumulative				CEQA Cumulative Plus FOUR PROJECTS			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	613	D	572	D	607	D	563	D
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	668	**F**	699	C	807	**F**	646	C

Bold values denote level of service "F" conditions.
Red shaded values indicate project impacts.
Source: *DKS Associates, 2018.*

Table 6.9: CEQA Cumulative Peak Hour Freeway Ramp Termini Queuing

Direction	US 50 Exit Ramp	Available Storage Length (feet / lane)			Maximum Queue Length (feet / lane)					
					AM Peak Hour			PM Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US-50	Howe Avenue	765	-	765	136	-	**797**	137	-	346
	Watt Avenue	1,500	-	1,500	210	-	403	244	-	242
	Bradshaw Road	1,250	-	1,250	149	-	566	159	-	317
	Mather Field Road	1,385	-	1,385	132	-	383	241	-	453
	Zinfandel Drive	1,025	1,025	1,025	163	**1,416**	1,306	396	368	930
	Sunrise Boulevard	1,695	-	1,695	106	-	199	196	-	114
	Rancho Cordova Pkwy.	-	-	1,850	-	-	394	-	-	528
	Hazel Avenue	1,310	-	1,310	305	-	23	711	-	18
Westbound US-50	Hazel Avenue	1,995		1,995	302		855	300		669
	Rancho Cordova Pkwy	1,065	-	-	**1,651**	-	-	**1,746**	-	-
	Sunrise Boulevard	1,540	-	1,540	52	-	198	23	-	442
	Zinfandel Drive	1,065	-	1,065	245	-	70	143	-	197
	Mather Field Road	1,335	-	1,335	362	-	331	176	-	183
	Bradshaw Road	1,330	-	1,330	177	-	122	265	-	47
	Watt Avenue	1,480	-	1,480	230	-	778	164	-	567
	Howe Avenue	1,355	1,355	1,355	85	412	804	199	412	684

Bold values exceed storage capacity.
L = left turn movement, T = through movement, R = right turn movement
Source: *DKS Associates, 2018.*

Table 6.10: CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Peak Hour Freeway Ramp Termini Queuing											
		Available Storage Length (feet / lane)			Maximum Queue Length (feet / lane)						
					AM Peak Hour			PM Peak Hour			
Direction	US 50 Exit Ramp	L	T	R	L	T	R	L	T	R	
Eastbound US-50	Howe Avenue	765	-	765	143	-	**1,025**	161	-	514	
	Watt Avenue	1,500	-	1,500	274	-	605	226	-	328	
	Bradshaw Road	1,250	-	1,250	191	-	1,147	119	-	734	
	Mather Field Road	1,385	-	1,385	168	-	386	311	-	289	
	Zinfandel Drive	1,025	1,025	1,025	152	**1,398**	**1,359**	439	369	662	
	Sunrise Boulevard	1,695	-	1,695	111	-	188	220	-	98	
	Rancho Cordova Pkwy.	-	-	1,850	-	-	365	-	-	555	
	Hazel Avenue	1,310	-	1,310	311	-	27	760	-	16	
Westbound US-50	Hazel Avenue	1,995		1,995	317		796	319		656	
	Rancho Cordova Pkwy	1,065	-	-	**1,705**	-	-	**1,682**	-	-	
	Sunrise Boulevard	1,540	-	1,540	57	-	185	38	-	410	
	Zinfandel Drive	1,065	-	1,065	253	-	69	183	-	192	
	Mather Field Road	1,335	-	1,335	489	-	456	248	-	221	
	Bradshaw Road	1,330	-	1,330	232	-	118	291	-	53	
	Watt Avenue	1,480	-	1,480	268	-	682	174	-	607	
	Howe Avenue	1,355	1,355	1,355	47	412	754	170	412	785	

Red shaded values indicate project impacts.
L = left turn movement, T = through movement, R = right turn movement
Source: *DKS Associates, 2018.*

6.4.5 CEQA Cumulative Plus FOUR PROJECTS Transit System Impacts

Public transit would not be provided to the sites of the FOUR PROJECTS under CEQA Cumulative scenario without development of the FOUR PROJECTS. In the preparation of this analysis, a transit system to serve the FOUR PROJECTS was developed (see Section 3.1.2.3). However, the timing and implementation of the transit system are uncertain at this time. The FOUR PROJECTS would increase demands for public transit facilities. Therefore, the impact of the FOUR PROJECTS on the transit system is potentially significant.

6.4.6 CEQA Cumulative Plus FOUR PROJECTS Functionality Impacts

Table 6.11 summarizes the results of the rural roadway segment functionality analysis. **Figure 6.7** illustrates the resultant functionality impacts. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the FOUR PROJECTS. The "Substandard?" heading indicates whether or not a roadway meets the County standards of 12-foot lanes and 6-foot shoulders. If the FOUR PROJECTS make improvements to a roadway segment such as widening, they would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact?" heading indicate those locations with a functionality impact.

As stated above, the traffic analysis assumed that the FOUR PROJECTS would construct a number of travel lanes on roadway segments that are internal to or on the boundary of the FOUR PROJECTS, and the entire roadway segment would be reconstructed to County standards at that time. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the FOUR PROJECTS.

Table 6.11
CEQA Cumulative Plus FOUR PROJECTS Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				CEQA Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	4	Arterial M	33,390	Yes[3]
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	6	Arterial M	50,360	Yes[3]
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	4	Arterial M	13,130	Yes[3]
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Arterial M	9,110	Yes
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Arterial M	4,530	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	4	Arterial M	52,900	Yes[3]
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	4	Arterial M	33,660	Yes[3]
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	4	Arterial M	40,490	Yes[3]
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	3	Arterial M	30,740	Yes[3]
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Arterial M	26,970	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	3	Arterial M	36,220	Yes[3]
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	3	Arterial M	12,520	Yes[3]
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Arterial M	13,080	Yes
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Arterial M	8,360	Yes
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	4	Arterial M	12,010	Yes[3]
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	4	Arterial M	13,280	Yes[3]
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	4	Arterial M	40,200	Yes[3]
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	4	Arterial M	26,070	Yes[3]
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Arterial M	17,090	Yes
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	3	Arterial M	24,240	Yes[3]
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	4	Arterial M	21,800	Yes[3]
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	4	Arterial M	41,130	Yes[3]
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	2	Arterial M	13,820	Yes
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Arterial M	11,760	Yes

Red text with light gray shading indicate project impacts.

Table 6.11
CEQA Cumulative Plus FOUR PROJECTS Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				CEQA Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	2	22	Yes	3,737	2	Arterial M	10,010	**Yes**
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Arterial M	22,460	**Yes**
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	6	Arterial M	59,380	**Yes[3]**
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	Arterial M	62,220	**Yes[3]**
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	2	22	Yes	4,616	2	Arterial M	4,830	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	6	Arterial M	50,960	**Yes[3]**
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	3	Arterial M	39,820	**Yes[3]**
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Res Collector F	6,410	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	4	Arterial M	47,790	**Yes[3]**
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490	4	Arterial M	55,810	**Yes[3]**
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	4	Arterial M	22,250	**Yes[3]**

Red text with light gray shading indicate project impacts.

Table 6.11
CEQA Cumulative Plus FOUR PROJECTS Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				CEQA Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.
[4] Excluding the roadway segment that is within the developed community of Independence at Mather.
[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

FIGURE 6.7
CEQA CUM PLUS FOUR PROJECTS
(JT ALTERNATIVE 2)
FUNCTIONALITY IMPACTS

Legend

- Substandard Roadways
- Functionality Impact
- Functionality Impact if Roadway is Not Already Improved
- Cities
- Mather Airport

6.5 MITIGATION

6.5.1 CEQA Cumulative Plus FOUR PROJECTS Roadway Segment Mitigation

Table 6.12 summarizes the results of the operations analysis for the study area roadway segments with mitigation. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate widened roadways for mitigation purposes, which would be the responsibility of the FOUR PROJECTS to fund. The Jackson Township project would contribute a fair share. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to have LOS impacts after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the improvements allowed under the General Plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

6.5.2 CEQA Cumulative Plus FOUR PROJECTS Intersection Mitigation

Tables 6.13a and 6.14a summarize the results of the operations analysis for the study area intersections with mitigation. However, the increased number of lanes on each approach does not exceed the County's standard number of approach lanes. **Tables 6.13b and 6.14b** summarize the results of the operations analysis for the study area intersections with the ultimate mitigation, which may exceed the County's standard number of approach lanes. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the FOUR PROJECTS to fund. The Jackson Township project would contribute a fair share. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact after mitigation. Table 6.14a and Table 6.14b also identify those intersections that would continue to have LOS impacts after mitigation, along with the constraint that precluded full mitigation. Detailed analysis information is included in the technical appendix.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These

alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

High Capacity Intersections

Three intersections are currently designated as "High Capacity Intersections" on the County's General Plan: Watt Avenue & Folsom Boulevard, Watt Avenue & Kiefer Boulevard, and Watt Avenue & Jackson Road. At two intersections on Bradshaw Road where an LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures by designating those two intersections as High Capacity Intersections: Bradshaw Road & Mayhew Road and Bradshaw Road & Jackson Road.

A high capacity intersection would utilize special treatments to increase the capacity of the intersection so as to reduce congestion and travel delay. Since each intersection could have unique travel movements, volumes and existing context sensitive conditions, the special treatments utilized at each high capacity intersection will be selected to meet the specific needs of each intersection. The range of special treatments is quite wide, ranging from the restriction of certain turning movements to various combinations that could include grade separating certain movements. While the field of traffic engineering is ever expending and evolving resulting in the use of new technologies and treatments, special treatments such as the following could be utilized at a high capacity intersection:

- Restricting turning movements
- Median U-turns
- Roundabouts
- Split intersections
- Quadrant roadway intersections
- Bowtie intersections
- Directional flyovers
- Center turn overpass
- Grade separated Roundabout
- Diverging diamond grade separation
- Compact diamond grade separation
- Single point urban grade separation
- Traditional urban grade separation

The County has conducted conceptual engineering to define potential improvements at the three study area intersections on Watt Avenue that are currently designated as "High Capacity Intersections" on the County's General Plan. These are:

- At the **Watt Avenue & Folsom Boulevard** intersection, the County proposes an ultimate configuration involving grade separation of the northbound and southbound through movements of Watt Avenue. Access to and from Folsom Boulevard would be accomplished via on and off-ramps from the left lanes of Watt Avenue to a single signalized intersection. A bus rapid transit (BRT) lane along Watt Avenue would also intersect Folsom Boulevard at the traffic signal. This design is consistent with the

recommendations of the South Watt Area Transportation Study (SWATS) dated November 1, 2002 and approved by the Board of Supervisors on November 26, 2002, and with the planning study for the *State Route 16 (Jackson Road) Corridor Study* (Fehr & Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

- At the **Watt Avenue & Kiefer Boulevard** intersection, the County proposes a tight diamond interchange as the ultimate improvement. The through movements (and BRT lane) on Watt Avenue would be grade separated from Kiefer Boulevard. Access to and from Kiefer Boulevard would be accomplished via on and off-ramps at two signalized intersections along Kiefer Boulevard. This design is proposed in the planning study prepared for *State Route 16 (Jackson Road) Corridor Study* (Fehr & Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

- At the **Watt Avenue & Jackson Road** intersection, the County proposes a standard six-by-six signalized intersection (two left-turn lanes, three through lanes, and one right-turn lane, on each approach) with three modifications. 1) The southbound left-turn movement would be grade separated; 2) The westbound right-turn movement would be grade separated; and 3) Three northbound left-turn lanes are proposed. This configuration represents an enhanced version of Alternative 6 in the planning study prepared for *State Route 16 (Jackson Road) Corridor Study* (Fehr and Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

At the new proposed "High Capacity Intersection" at Bradshaw Road and Jackson Road, the ultimate configuration has not been defined. A number of improvement options involving one or more of the special treatments identified above could be defined that would mitigate the LOS impact at this location.

Additionally, grade separated intersections are proposed along Grant Line Road, in order to meet the Connector JPA's level of service policy. These grade separations would be constructed at Prairie City Road (which is also a designated High Capacity Intersection), White Rock Road, Douglas Road, Kiefer Boulevard, Jackson Road, and Sunrise Boulevard.

Since each of these intersections have unique travel movements, volumes and existing context sensitive conditions (potential environmental issues, right-of-way, physical constraints, etc.), the special treatments utilized at each location will need to be studied to select the treatments that mitigate the LOS impact, while avoiding or minimizing other impacts.

6.5.3 CEQA Cumulative Plus FOUR PROJECTS U.S. 50 Freeway Mitigation

According to Caltrans' US-50 Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP), all mainline freeway lanes of the 8-lane ultimate facility (4 lanes in each direction) have already been built, with the exception of the segment between Zinfandel Drive and Sunrise Boulevard (where 6 of the 8 ultimate lanes exist today). With the exception of this segment, capacity improvements to widen the freeway mainline are precluded by the ultimate configuration in the TCR/CSMP. The TCR/CSMP does conceptualize other projects that will benefit the US-50 corridor without adding additional mainline travel lanes. These improvements generally fall into one of three categories:

- Intelligent transportation systems (ITS) and integrated corridor management (ICM) projects. Some examples may include ramp metering and multimodal improvements.
- Improvements to parallel local facilities. Such projects are expected to reduce travel demand on US-50.
- Future HOV lanes and auxiliary lanes. These projects would extend, or bridge gaps in, the existing HOV and auxiliary lane network. Constructing these lanes is permissible even when further widening of the mainline is not allowable, and is consistent with the ultimate configuration in the TCR/CSMP.

The FOUR PROJECTS shall participate in one or more of these alternative improvements that could directly reduce the severity of the project's impact and/or provide operational benefits to the US-50 corridor in general.

6.5.3.1 US-50 Eastbound Alternative Improvements

To lessen the impact to the eastbound US-50 mainline between Stockton Boulevard and 59th Street, the project may pay a fair share toward the construction of:

- Ramp meter improvements (Caltrans ITS/OPS Project List)

6.5.3.2 US-50 Westbound Alternative Improvements

To lessen the impact to the westbound US-50 weave between Hazel Avenue and Rancho Cordova Parkway, the project may pay a fair share toward the construction of:

- Multi-modal corridor improvements and interchange improvements at Hazel Avenue (2035 SACOG MTP)
- Auxiliary lanes between Hazel Avenue and Rancho Cordova Parkway (2035 SACOG MTP)

Table 6.12
CEQA Cumulative Plus FOUR PROJECTS Roadway Segment Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	84,620	1.57	**F**	6	Arterial M	1.57	**F**	Yes		Maximum General Plan lanes
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	76,770	1.42	**F**	6	Arterial M	1.42	**F**	Yes		Maximum General Plan lanes
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	73,340	1.36	**F**	6	Arterial M	1.36	**F**	Yes		Maximum General Plan lanes
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	6	Arterial M	62,160	1.15	**F**	6	Arterial M	1.15	**F**	Yes		Maximum General Plan lanes
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	6	Arterial M	58,600	1.09	**F**	6	Arterial M	1.09	**F**	Yes		Maximum General Plan lanes
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	6	Arterial M	54,090	1.00	**F**	6	Arterial M	1.00	**F**	Yes		Maximum General Plan lanes
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd	6	Arterial M	57,490	1.06	**F**	6	Arterial M	1.06	**F**	Yes		Maximum General Plan lanes
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,360	0.93	**E**	6	Arterial M	0.93	**E**	Yes		Maximum General Plan lanes
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	28,360	1.58	**F**	4	Arterial M	0.79	C	No		
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	52,900	1.47	**F**	6	Arterial M	0.98	**E**	No		
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,490	1.12	**F**	6	Arterial M	0.75	C	No		
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	3	Arterial M	30,740	1.71	**F**	4	Arterial M	0.85	D	No		
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	3	Arterial M	36,910	2.05	**F**	6	Arterial M	0.68	B	No		
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	3	Arterial M	36,220	2.01	**F**	6	Arterial M	0.67	B	No		
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	43,690	1.21	**F**	4	Arterial M	1.21	**F**	Yes	Construct 2-lane Alta Florin Road	Maximum General Plan lanes
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,200	1.12	**F**	6	Arterial M	0.74	C	No		
42.2	Florin Rd	Vineyard Rd	Excelsior Rd	3	Arterial M	19,920	1.11	**F**	4	Arterial M	0.55	A	No		

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.12
CEQA Cumulative Plus FOUR PROJECTS Roadway Segment Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	56,000	1.56	**F**	4	Arterial M	1.56	**F**	Yes		Maximum General Plan lanes
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	27,770	1.54	**F**	4	Arterial M	0.77	C	No		
48	Fruitridge Rd	South Watt Ave	Hedge Ave	3	Arterial M	24,240	1.35	**F**	4	Arterial M	0.67	B	No		
51.2	Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd	4	Arterial H	47,640	1.19	**F**	4	Arterial H	1.19	**F**	Yes		Maximum General Plan lanes
52.1	Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	4	Arterial H	37,030	0.93	**E**	4	Arterial H	0.93	**E**	Yes		Maximum General Plan lanes
56	Grant Line Rd	Sheldon Rd	Wilton Rd	4	Arterial M	45,430	1.26	**F**	4	Arterial M	1.26	**F**	Yes		Maximum General Plan lanes
57	Grant Line Rd	Wilton Rd	Bond Rd	4	Arterial M	40,370	1.12	**F**	4	Arterial M	1.12	**F**	Yes		Maximum General Plan lanes
58.2	Happy Ln	Routier Ext	Kiefer Blvd	2	Arterial M	20,580	1.14	**F**	2	Arterial M	1.14	**F**	Yes		Maximum General Plan lanes
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	71,420	1.32	**F**	6	Arterial M	1.32	**F**	Yes		Maximum General Plan lanes
66.1	Jackson Rd	Florin Perkins Rd	14th Ave	4	Arterial M	44,100	1.23	**F**	4	Arterial M	1.23	**F**	Yes		Maximum General Plan lanes
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	61,980	1.72	**F**	4	Arterial M	1.72	**F**	Yes		Maximum General Plan lanes
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	57,690	1.60	**F**	4	Arterial M	1.60	**F**	Yes		Maximum General Plan lanes
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave	4	Arterial M	55,370	1.54	**F**	4	Arterial M	1.54	**F**	Yes		Maximum General Plan lanes

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.12
CEQA Cumulative Plus FOUR PROJECTS Roadway Segment Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	66,380	1.84	**F**	6	Arterial M	1.23	**F**	Yes		Maximum General Plan lanes
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	4	Arterial M	56,540	1.57	**F**	6	Arterial M	1.05	**F**	Yes		Maximum General Plan lanes
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	4	Arterial M	57,880	1.61	**F**	6	Arterial M	1.07	**F**	Yes		Maximum General Plan lanes
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	6	Arterial M	56,220	1.04	**F**	6	Arterial M	1.04	**F**	Yes		Maximum General Plan lanes
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	6	Arterial M	59,380	1.10	**F**	6	Arterial M	1.10	**F**	Yes		Maximum General Plan lanes
70.2	Jackson Rd	Collector WJ-4	Rock Creek Pkwy	6	Arterial M	59,660	1.10	**F**	6	Arterial M	1.10	**F**	Yes		Maximum General Plan lanes
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	4	Arterial M	62,220	1.73	**F**	6	Arterial M	1.15	**F**	Yes		Maximum General Plan lanes
71.2	Jackson Rd	Collector JT-3	Tree View Ln	4	Arterial M	46,480	1.29	**F**	6	Arterial M	0.86	D	No		
71.3	Jackson Rd	Tree View Ln	Collector JT-4	4	Arterial M	41,360	1.15	**F**	6	Arterial M	0.77	C	No		
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr	4	Arterial M	37,120	1.03	**F**	6	Arterial M	0.69	B	No		
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd	4	Arterial M	37,910	1.05	**F**	6	Arterial M	0.70	C	No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	45,290	1.26	**F**	6	Arterial M	0.84	D	No		
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	42,310	1.18	**F**	4	Arterial M	1.18	**F**	Yes		Maximum General Plan lanes
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	3	Arterial M	39,820	2.21	**F**	4	Arterial M	1.11	**F**	Yes		Maximum General Plan lanes
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	33,580	0.93	**E**	4	Arterial M	0.93	**E**	Yes		Maximum General Plan lanes

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.12
CEQA Cumulative Plus FOUR PROJECTS Roadway Segment Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy	4	Arterial M	47,790	1.33	**F**	6	Arterial M	0.89	D	No		
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	4	Arterial M	46,860	1.30	**F**	6	Arterial M	0.87	D	No		
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	36,350	1.01	**F**	4	Arterial M	1.01	**F**	Yes		Maximum General Plan lanes
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	40,280	1.12	**F**	4	Arterial M	1.12	**F**	Yes		Maximum General Plan lanes
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	81,880	1.52	**F**	6	Arterial M	1.52	**F**	Yes		Maximum General Plan lanes
97	South Watt Ave	Kiefer Blvd	Jackson Rd	6	Arterial M	70,930	1.31	**F**	6	Arterial M	1.31	**F**	Yes		Maximum General Plan lanes
100	South Watt Ave	Elder Creek Rd	Florin Rd	6	Arterial M	59,670	1.11	**F**	6	Arterial M	1.11	**F**	Yes		Maximum General Plan lanes
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	63,690	1.18	**F**	6	Arterial M	1.18	**F**	Yes		Maximum General Plan lanes
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	43,880	1.22	**F**	6	Arterial M	0.81	D	No		
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	4	Arterial M	33,930	0.94	**E**	6	Arterial M	0.63	B	No		
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	106,480	1.77	**F**	6	Arterial H	1.77	**F**	Yes		Maximum General Plan lanes
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial H	56,000	1.40	**F**	4	Arterial H	1.40	**F**	Yes		Maximum General Plan lanes
132	Kiefer Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	19,200	1.07	**F**	4	Arterial M	0.53	A	No		
135	Rancho Cordova Pkwy	White Rock Rd	International Dr	6	Arterial M	49,960	0.93	**E**	6	Arterial M	0.93	**E**	Yes		Maximum General Plan lanes
136	Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy	6	Arterial M	59,540	1.10	**F**	6	Arterial M	1.10	**F**	Yes		Maximum General Plan lanes

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.12
CEQA Cumulative Plus FOUR PROJECTS Roadway Segment Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd	4	Arterial M	37,180	1.03	**F**	4	Arterial M	1.03	**F**	Yes		Maximum General Plan lanes
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	4	Arterial M	36,990	1.03	**F**	4	Arterial M	1.03	**F**	Yes		Maximum General Plan lanes
302	Kiefer Blvd	Happy Ln	Douglas Rd	6	Arterial M	63,170	1.17	**F**	6	Arterial M	1.17	**F**	Yes		Maximum General Plan lanes
304	Mayhew Rd	Routier Ext	Bradshaw Rd	4	Arterial M	39,470	1.10	**F**	6	Arterial M	0.73	C	No		
305	Mayhew Rd	Bradshaw Rd	Jackson Rd	4	Arterial M	40,970	1.14	**F**	6	Arterial M	0.76	C	No		
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd	3	Arterial M	32,580	1.81	**F**	4	Arterial M	0.91	E	No		
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road	2	Arterial M	19,230	1.07	**F**	2	Arterial M	1.07	**F**	Yes		Maximum General Plan lanes
317	Routier Ext	Old Placerville Road	Happy Lane	4	Arterial H	41,410	1.04	**F**	4	Arterial H	1.04	**F**	Yes		Maximum General Plan lanes
405	Collector JT-3	Collector JT-5	Jackson Rd	2	Arterial M	20,070	1.12	**F**	4	Arterial M	0.56	A	No		

Note: Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, as proposed by the County of Sacramento.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.13a

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Impacted Intersections and County Standard Intersection Geometry

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative Plus All			County Standard Geometry CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation	CEQA Cumulative Plus All			County Standard Geometry CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	**F**	**108.2**	**-**	**-**	**-**	Yes	Signal	**F**	**88.4**	**-**	**-**	**-**	Yes
4	Power Inn Road & 14th Avenue	Signal	**F**	**166.0**	Signal	**F**	**126.4**	Yes	Signal	**F**	**123.7**	Signal	**F**	**109.2**	Yes
12	Watt Avenue & Folsom Blvd.	Signal	**F**	**182.3**	Signal	**F**	**185.2**	Yes	Signal	**F**	**199.9**	Signal	E	57.6	No
14	S. Watt Avenue & Kiefer Blvd.	Signal	**F**	**91.8**	Signal	**F**	**83.2**	Yes	Signal	E	73.3	Signal	E	66.2	No
16	S. Watt Avenue & Jackson Road	Signal	**F**	**237.3**	Signal	**F**	**153.4**	Yes	Signal	**F**	**185.0**	Signal	**F**	**121.0**	Yes
17	S. Watt Avenue & Fruitridge Road	Signal	**F**	**93.1**	Signal	D	44.0	No	Signal	**F**	**114.3**	Signal	D	49.6	No
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	**F**	**>300**	Signal	**F**	**157.3**	No	Signal	**F**	**238.2**	Signal	**F**	**164.5**	Yes
23	Hedge Avenue & Jackson Road	Signal	**F**	**123.1**	Signal	D	53.3	No	Signal	D	41.8	Signal	C	24.1	No
25	Hedge Avenue & Elder Creek Road	Signal	**F**	**138.8**	**-**	**-**	**-**	Yes	Signal	**F**	**135.0**	**-**	**-**	**-**	Yes
28	Mayhew Road & Kiefer Boulevard	Signal	**F**	**91.2**	Signal	E	68.2	No	Signal	E	74.2	Signal	E	62.4	No
29	Mayhew Road & Jackson Road	Signal	**F**	**117.9**	Signal	E	64.5	No	Signal	**F**	**107.2**	Signal	E	61.7	No
31	Mayhew Road & Elder Creek Road	Signal	**F**	**>300**	Signal	E	68.5	No	Signal	**F**	**<300**	Signal	D	43.3	No
32	Woodring Drive & Zinfandel Drive	Two-way stop			Round	A	8.7	No	Two-way stop			Round	B	10.4	No
	Eastbound		***F***	***85.0***						***F***	***223.4***				

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.13a

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Impacted Intersections and County Standard Intersection Geometry

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative Plus All			County Standard Geometry CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation	CEQA Cumulative Plus All			County Standard Geometry CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
	Northbound Left Turn		*B*	*10.6*						*B*	*12.4*				
36	Bradshaw Road & Old Placerville Road	Signal	**F**	**101.6**	Signal	**F**	**98.6**	Yes	Signal	**F**	**82.4**	Signal	E	76.4	No
37	Bradshaw Road & Kiefer Boulevard	Signal	**F**	**144.2**	Signal	**F**	**117.3**	Yes	Signal	**F**	**137.6**	Signal	**F**	**113.1**	Yes
38	Bradshaw Road & Jackson Road	Signal	**F**	**172.2**	**-**	-	-	No	Signal	**F**	**161.0**	**-**	**-**	**-**	Yes
39	Bradshaw Road & Elder Creek Road	Signal	**F**	**173.1**	Signal	E	66.1	No	Signal	**F**	**201.7**	Signal	D	49.4	No
40	Bradshaw Road & Florin Road	Signal	**F**	**125.3**	Signal	**F**	**85.3**	No	Signal	**F**	**89.9**	Signal	E	72.8	No
42	Happy Lane & Old Placerville Road	Two-way stop			Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left-turns to Happy Lane. Construct 4-lane Routier extension.			Yes	Two-way stop			Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left-turns to Happy Lane. Construct 4-lane Routier extension.			Yes
	Northbound Left Turn		***F***	***>300***						***F***	***>300***				
	Northbound Right Turn		***F***	***236.0***						***C***	***19.2***				
	Westbound Left Turn		*C*	*23.4*						***F***	***53.3***				
43	Happy Lane & Kiefer Boulevard	Signal	**F**	**139.2**	**-**	**-**	**-**	Yes	Signal	E	67.8	-	-	-	No
45	Excelsior Road & Jackson Road	Signal	**F**	**330.8**	Signal	**F**	**106.9**	Yes	Signal	**F**	**269.1**	Signal	**F**	**144.6**	Yes
47	Excelsior Road & Florin Road	Signal	**F**	**111.2**	Signal	D	48.4	No	Signal	E	74.2	Signal	E	73.1	No
51	Mather Field Road & Rockingham Drive	Signal	**F**	**>300**	**-**	**-**	**-**	Yes	Signal	**F**	**170.3**	**-**	**-**	**-**	Yes
58	Zinfandel Drive & Douglas Road	Signal	**F**	**216.8**	Signal	E	62.1	No	Signal	**F**	**220.1**	Signal	E	66.9	No

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.13a

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Impacted Intersections and County Standard Intersection Geometry

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative Plus All			County Standard Geometry CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation	CEQA Cumulative Plus All			County Standard Geometry CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
61	Eagles Nest Road & Florin Road	Two-way stop			Signal	F	121.3	Yes	Two-way stop			Signal	F	138.5	Yes
	Northbound		***F***	***>300***						***F***	***>300***				
	Southbound		***F***	***>300***						***F***	***>300***				
	Eastbound Left Turn		*B*	*11*						*A*	*9.3*				
	Westbound Left Turn		*A*	*0*						*A*	*8.7*				
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	F	118.6	-	-	-	Yes	Signal	E	76.7	-	-	-	No
67	Sunrise Boulevard & Douglas Road	Signal	F	190.0	Signal	F	189.8	Yes	Signal	F	105.4	Signal	F	90.9	Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	F	>300	Signal	F	113.3	No	Signal	F	261.4	Signal	E	70.7	No
70	Sunrise Boulevard & Jackson Road	Signal	F	90.0	Signal	D	53.7	No	Signal	E	79.3	Signal	D	52.9	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	F	120.4	Signal	D	36.4	No	Signal	E	71.0	Signal	E	70.1	Yes
80	Grant Line Road & Jackson Road	Signal	F	119.0	Signal	F	119.0	Yes	Signal	F	101.1	Signal	F	101.1	Yes
86	Power Inn Road & Florin Rd	Signal	F	119.3	Signal	E	57.1	No	Signal	E	73.9	Signal	D	47.1	No
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	D	43.2	Signal	D	39.1	No	Signal	D	52.0	Signal	D	38.4	No
92	Grant Line Rd & Calvine Rd	Signal	D	36.5	Signal	B	11.6	No	Signal	C	30.9	Signal	A	9.5	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	F	83.4	Signal	E	59.8	No	Signal	F	95.2	Signal	F	82.1	Yes

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Table 6.13a

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Impacted Intersections and County Standard Intersection Geometry

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative Plus All			County Standard Geometry CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation	CEQA Cumulative Plus All			County Standard Geometry CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
95	Florin Perkins Road & 14th Avenue	Signal	**E**	**67.8**	-	-	-	Yes	Signal	D	46.9	-	-	-	No
96	Jackson Road & 14th Avenue	Signal	**F**	**119.3**	-	-	-	Yes	Signal	**E**	**57.0**	-	-	-	Yes
103	Rancho Cordova Pkwy & Douglas Road	Signal	**E**	**57.9**	Signal	**E**	**57.2**	No	Signal	**E**	**76.1**	Signal	**E**	**76.1**	Yes
303	Rock Creek Pkwy & Jackson Road	Signal	**F**	**128.3**	Signal	E	77.4	No	Signal	**F**	**96.4**	Signal	D	54.7	No
308	Hedge Avenue & Rock Creek Pkwy WB	Round	**F**	**60.5**	Round	C	15.5	No	Round	B	11.2	Round	B	10.2	No
310	Mayhew Road & Rock Creek Pkwy WB	Round	**F**	**181.2**	-	-	-	Yes	Round	**F**	**106.4**	-	-	-	Yes
311	Mayhew Road & Rock Creek Pkwy EB	Round	**F**	**171.2**	-	-	-	Yes	Round	**F**	**215.2**	-	-	-	Yes
318	Bradshaw Road & Mayhew Road	Signal	**F**	**142.3**	Signal	**F**	**115.8**	Yes	Signal	**F**	**118.1**	Signal	**F**	**95.2**	Yes
319	Bradshaw Road & Collector WJ-10	Signal	**F**	**182.7**	Signal	**F**	**146.9**	Yes	Signal	C	26.9	Signal	C	22.5	No
325	Douglas Road & Kiefer Boulevard	Signal	**F**	**237.5**	Signal	**F**	**128.4**	Yes	Signal	**F**	**191.3**	Signal	**F**	**103.7**	Yes
329	Routier Ext & Kiefer Boulevard	Signal	**F**	**87.8**	-	-	-	Yes	Signal	E	71.6	-	-	-	No
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	**F**	**164.0**	Signal	**F**	**127.4**	Yes	Signal	**F**	**117.3**	Signal	**F**	**108.8**	Yes
400	Collector JT-3 & Jackson Road	Signal	**F**	**81.2**	Signal	D	47.2	No	Signal	D	47.0	Signal	B	18.9	No

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.13a

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Impacted Intersections and County Standard Intersection Geometry

Intersection	AM Peak Hour							PM Peak Hour						
	CEQA Cumulative Plus All			County Standard Geometry CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation	CEQA Cumulative Plus All			County Standard Geometry CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation
	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
(-): No changes to intersection geometry or operation.														

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.13b

CEQA Cumulative Plus FOUR PROJECTS County Standard and Ultimate Mitigations

	Intersection	AM Peak Hour						PM Peak Hour					
		County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS		
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	F	108.2	-	-	-	Signal	F	88.4	-	-	-
4	Power Inn Road & 14th Avenue	Signal	F	126.4	-	-	-	Signal	F	109.2	-	-	-
12	Watt Avenue & Folsom Blvd.	Signal	F	185.2	Signal	D	*39.4*	Signal	**E**	**57.6**	Signal	D	41.7
14	S. Watt Avenue & Kiefer Blvd.	Signal	F	83.2	Signal	SB Ramps A NB Ramps A	SB Ramps 6.5 NB Ramps 4.8	Signal	E	66.2	Signal	SB Ramps B NB Ramps B	SB Ramps 15.9 NB Ramps 12.7
16	S. Watt Avenue & Jackson Road	Signal	F	153.4	Signal	**F**	**130.1**	Signal	F	121.0	Signal	**F**	**102.6**
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	**F**	**157.3**	Signal	**F**	**103.5**	Signal	F	164.5	Signal	**F**	**101.9**
25	Hedge Avenue & Elder Creek Road	Signal	F	138.8	Signal	E	76.1	A	F	145.8	Signal	E	79.5
36	Bradshaw Road & Old Placerville Road	Signal	F	98.6	-	-	-	Signal	**E**	**76.4**	-	-	-
37	Bradshaw Road & Kiefer Boulevard	Signal	F	117.3	-	-	-	Signal	F	113.1	-	-	-
38	Bradshaw Road & Jackson Road	Signal	F	139.2	Grade Separate			Signal	F	67.8	Grade Separate		
42	Happy Lane & Old Placerville Road	Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left-turns to Happy Lane. Alternative mitigation is to construct the 4-lane Routier extension from Old Placerville Rd to Kiefer Blvd..											
43	Happy Lane & Kiefer Boulevard	Signal	F	106.9	-	-	-	Signal	E	67.8	-	-	-
45	Excelsior Road & Jackson Road	Signal	F	106.9	-	-	-	Signal	F	144.6	-	-	-
51	Mather Field Road & Rockingham Drive	Signal	F	>300	-	-	-	Signal	F	170.3	-	-	-

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.13b

CEQA Cumulative Plus FOUR PROJECTS County Standard and Ultimate Mitigations

	Intersection	AM Peak Hour						PM Peak Hour					
		County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS		
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
61	Eagles Nest Road & Florin Road	Signal	F	121.3	Signal	E	69.6	Signal	F	138.5	Signal	D	49.1
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	F	118.6	-	-	-	Signal	E	76.7	-	-	-
67	Sunrise Boulevard & Douglas Road	Signal	F	189.8	-	-	-	Signal	F	90.9	-	-	-
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	D	36.4	Signal	D	35.1	Signal	E	70.1	Signal	C	27.5
80	Grant Line Road & Jackson Road	Signal	F	119.0	Signal	F	87.6	Signal	F	101.1	Signal	D	52.7
93	Grant Line Rd & Dwy/Wilton Rd	Signal	E	59.8	Signal	D	52.6	Signal	F	82.1	Signal	C	27.9
95	Florin Perkins Road & 14th Avenue	Signal	E	67.8	-	-	-	Signal	D	46.9	-	-	-
96	Jackson Road & 14th Avenue	Signal	F	119.3	-	-	-	Signal	E	57.0	-	-	-
103	Rancho Cordova Pkwy & Douglas Road	Signal	E	57.2	Signal	D	39.5	Signal	E	76.1	Signal	E	68.7
310	Mayhew Road & Rock Creek Pkwy WB	Round	F	181.2	Signal	E	78.6	Round	F	106.4	Signal	E	73.7
311	Mayhew Road & Rock Creek Pkwy EB	Round	F	171.2				Round	F	215.2			
318	Bradshaw Road & Mayhew Road	Signal	F	115.8	Signal	F	85.0	Signal	F	95.2	Signal	F	80.4
319	Bradshaw Road & Collector WJ-10	Signal	F	146.9	Signal	D	40.7	Signal	C	22.5	Signal	B	17.0
325	Douglas Road & Kiefer Boulevard	Signal	F	128.4	-	-	-	Signal	F	103.7	-	-	-
329	Routier Ext & Kiefer Boulevard	Signal	F	87.8	Signal	D	48.4	Signal	E	71.6	Signal	E	63.2

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.13b

CEQA Cumulative Plus FOUR PROJECTS County Standard and Ultimate Mitigations

Intersection		AM Peak Hour						PM Peak Hour					
		County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS		
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	**F**	**127.4**	Signal	D	47.2	Signal	**F**	**108.8**	Signal	C	32.3

Note: Gray shading represents changes in traffic control that the project is responsible to provide.
(-): No changes to intersection geometry or operation.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 6.14a

CEQA Cumulative Plus FOUR PROJECTS Intersection Impacts and Mitigations

	Intersection	Traffic Control		CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				CEQA County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?
		CEQA Cumulative Plus FOUR PROJECTS	Mitigated CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
3	Power Inn Road/Howe Avenue & Folsom Blvd.	Signal	Signal									Yes
4	Power Inn Road & 14th Avenue	Signal	Signal									Yes
12	S. Watt Ave./Watt Avenue & Folsom Blvd.	Signal	Signal									Yes
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal									Yes
16	S. Watt Avenue & Jackson Road	Signal	Signal									Yes
17	S. Watt Avenue & Fruitridge Road	Signal	Signal									No
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal									Yes
23	Hedge Avenue & Jackson Road	Signal	Signal									No
25	Hedge Avenue & Elder Creek Road	Signal	Signal									Yes
28	Mayhew Road & Kiefer Boulevard	Signal	Signal									No
29	Mayhew Road & Jackson Road	Signal	Signal									No
31	Waterman Road/Mayhew Road & Elder Creek Road	Signal	Signal									No
32	Woodring Drive & Zinfandel Drive	Two-way stop	Roundabout									No
36	Bradshaw Road & Old Placerville Road	Signal	Signal									Yes
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal									Yes
38	Jackson Road & Bradshaw Road	Signal	Signal									Yes
39	Bradshaw Road & Elder Creek Road	Signal	Signal									No
40	Bradshaw Road & Florin Road	Signal	Signal									No
42	Happy Lane & Old Placerville Road	Two-way stop	Access Control					Happy Lane to become right-in and right-out only. Median will allow westbound left turns.				Yes

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 6.14a

CEQA Cumulative Plus FOUR PROJECTS Intersection Impacts and Mitigations

	Intersection	Traffic Control		CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				CEQA County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?
		CEQA Cumulative Plus FOUR PROJECTS	Mitigated CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
43	Kiefer Boulevard & Happy Ln	Signal	Signal									Yes
45	Excelsior Road & Jackson Road	Signal	Signal									Yes
47	Excelsior Road & Florin Road	Signal	Signal									No
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes
58	Zinfandel Drive & Douglas Road	Signal	Signal									No
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									Yes
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal									Yes
67	Sunrise Boulevard & Douglas Road	Signal	Signal									Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									No
70	Jackson Road & Sunrise Boulevard	Signal	Signal									No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Rd/Grant	Signal	Signal									Yes
80	Grant Line Road & Jackson Road	Signal	Signal									Yes
86	Power Inn Road & Florin Rd	Signal	Signal									No
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	Signal									No
92	Grant Line Rd & Calvine Rd	Signal	Signal									No
93	Grant Line Rd & Driveway/Wilton Rd	Signal	Signal									Yes
95	Florin Perkins Road & 14th Avenue	Signal	Signal									Yes
96	14th Avenue & Jackson Road	Signal	Signal									Yes
103	Rancho Cordova Pkwy & Douglas Road	Signal	Signal									Yes

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 6.14a

CEQA Cumulative Plus FOUR PROJECTS Intersection Impacts and Mitigations

Intersection		Traffic Control		CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				CEQA County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?
		CEQA Cumulative Plus FOUR PROJECTS	Mitigated CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
303	Rock Creek Pkwy & Jackson Road	Signal	Signal									No
308	Hedge Avenue & Rock Creek Pkwy Westbound	Roundabout	Roundabout									No
310	Mayhew Road & Rock Creek Pkwy Westbound	Roundabout	Roundabout									Yes
311	Mayhew Road & Rock Creek Pkwy Eastbound	Roundabout	Roundabout									Yes
318	Bradshaw Road & Mayhew Road	Signal	Signal									Yes
319	Bradshaw Road & Collector WJ-10	Signal	Signal									Yes
325	Douglas Road Extension & Kiefer Boulevard	Signal	Signal									Yes
329	Routier Ext & Kiefer Boulevard	Signal	Signal									Yes
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	Signal									Yes
400	Collector JT-3 & Jackson Road	Signal	Signal									No

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 6.14b

CEQA Cumulative Plus FOUR PROJECTS Intersection Impacts and Mitigations

	Intersection	Traffic Control		County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		County Standard CEQA Cumulative Plus FOUR PROJECTS	Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
3	Power Inn Road/Howe Avenue & Folsom Blvd.	Signal	Signal									Yes	No		Existing development
4	Power Inn Road & 14th Avenue	Signal	Signal									Yes	No		Existing development
12	S. Watt Ave./Watt Avenue & Folsom Blvd.	Signal	Signal									No	Yes	Grade separated NBT and SBT	
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal									No	Yes	Tight Diamond Interchange (SB Watt Ramps/Kiefer intersection shown)	
			Signal											Tight Diamond Interchange (NB Watt Ramps/Kiefer intersection shown)	
16	S. Watt Avenue & Jackson Road	Signal	Signal									No	Yes	Triple SBL, Free WBR	
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal									No	No	Dual SBR, Triple EBL	
25	Hedge Avenue & Elder Creek Road	Signal	Signal									No	No		
36	Bradshaw Road & Old Placerville Road	Signal	Signal									Yes	No		Existing development
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal									Yes	No	Carry 3 EBT and 3 WBT lanes through intersection	Maximum General Plan Lanes
38	Jackson Road & Bradshaw Road	Signal	Signal					Grade Separate				No	No		
42	Happy Lane & Old Placerville Road	Access Control	Access Control	Happy Lane to become right-in and right-out only. Median will allow westbound left turns.								Yes	No	Construct 4-lane Routier extension from Old Placerville Rd to Kiefer Blvd	Maximum General Plan Lanes
43	Kiefer Boulevard & Happy Ln	Signal	Signal									Yes	No		Maximum lanes
45	Excelsior Road & Jackson Road	Signal	Signal									Yes	No	NBR overlap	Maximum General Plan Lanes
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes	No		Existing development
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Signal	Signal									No	No		
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal									Yes	No		Maximum General Plan Lanes
67	Sunrise Boulevard & Douglas Road	Signal	Signal									Yes	No		Maximum General Plan Lanes
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Rd/Grant	Signal	Signal									No	No	Dual SBR	

*Free right

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 6.14b

CEQA Cumulative Plus FOUR PROJECTS Intersection Impacts and Mitigations

	Intersection	Traffic Control		County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		County Standard CEQA Cumulative Plus FOUR PROJECTS	Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
80	Grant Line Road & Jackson Road	Signal	Signal									No	No	Dual SBR	
93	Grant Line Rd & Driveway/Wilton Rd	Signal	Signal									No	No		
95	Florin Perkins Road & 14th Avenue	Signal	Signal									Yes	No		Maximum lanes
96	14th Avenue & Jackson Road	Signal	Signal									Yes	No		Maximum lanes
103	Rancho Cordova Pkwy & Douglas Road	Signal	Signal									Yes	No	WBR Overlap	
310	Mayhew Road & Rock Creek Pkwy Westbound	Roundabout	Signal									No	No		
311	Mayhew Road & Rock Creek Pkwy Eastbound	Roundabout										No	No		
318	Bradshaw Road & Mayhew Road	Signal	Signal									Yes	No	HCI, Triple EBL and dual SBR	Maximum General Plan lanes
319	Bradshaw Road & Collector WJ-10	Signal	Signal									No	No	Dual SBL and Dual WBL	
325	Douglas Road Extension & Kiefer Boulevard	Signal	Signal									Yes	No		Maximum lanes
329	Routier Ext & Kiefer Boulevard	Signal	Signal									No	No		
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	Signal									No	No	NBR overlap	

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

6.5.4 CEQA Cumulative Plus FOUR PROJECTS Pedestrian and Bicycle Facility Mitigation

The FOUR PROJECTS applicants shall coordinate with Sacramento County to identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development. These facilities shall be incorporated into the FOUR PROJECTS and could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, pedestrian signal heads, and all appropriate traffic calming measures as defined in the County's Neighborhood Traffic Management Program (NTMP). Sidewalks would be required as part of the frontage improvements along all new roadway construction in the FOUR PROJECTS vicinity in conformance with County design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards.

6.5.5 CEQA Cumulative Plus FOUR PROJECTS Transit System Mitigation

The applicants of the FOUR PROJECTS shall coordinate with Regional Transit (or other transit operators) to provide the additional transit facilities and services assumed in transportation analysis (see Section 3.1.2.3), or a cost-effective equivalent level of transit facilities and services.

The assumed transit routes and service frequency would be required at full development of the FOUR PROJECTS. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the FOUR PROJECTS, must be phased with development of the FOUR PROJECTS.

6.5.6 CEQA Cumulative Plus FOUR PROJECTS Functionality Mitigation

Table 6.15 summarizes the results of the functionality analysis for the study area rural roadway segments with mitigation.

6.5.7 CEQA Cumulative Plus FOUR PROJECTS Mitigation Summary

Tables 6.16 through 6.21 summarize the roadway segments, intersections, and freeway facilities that would exhibit significant LOS impacts, along with the mitigation success for these impacts.

Table 6.15
CEQA Cumulative Plus FOUR PROJECTS Functionality Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		
15	Douglas Rd	Mather Blvd	Zinfandel Dr	4	Arterial M	33,390	Yes[3]	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,360	Yes[3]	Widen to County standards [5]	No
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	4	Arterial M	13,130	Yes[3]	Widen to County standards [5]	No
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Arterial M	9,110	Yes	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	52,900	Yes[3]	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	4	Arterial M	33,660	Yes[3]	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,490	Yes[3]	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	3	Arterial M	30,740	Yes[3]	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	26,970	Yes	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	3	Arterial M	36,220	Yes[3]	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	3	Arterial M	12,520	Yes[3]	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	13,080	Yes	Widen to County standards [5]	No
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Arterial M	8,360	Yes	Widen to County standards [5]	No
39	Florin Rd	South Watt Ave	Hedge Ave	4	Arterial M	12,010	Yes[3]	Widen to County standards [5]	No
40	Florin Rd	Hedge Ave	Mayhew Rd	4	Arterial M	13,280	Yes[3]	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,200	Yes[3]	Widen to County standards [5]	No
42	Florin Rd	Bradshaw Rd	Excelsior Rd	4	Arterial M	26,070	Yes[3]	Widen to County standards [5]	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	17,090	Yes	Widen to County standards [5]	No
48	Fruitridge Rd	South Watt Ave	Hedge Ave	3	Arterial M	24,240	Yes[3]	Widen to County standards [5]	No
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	4	Arterial M	21,800	Yes[3]	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	4	Arterial M	41,130	Yes[3]	Widen to County standards [5]	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	2	Arterial M	13,820	Yes	Widen to County standards [5]	No
59	Hedge Ave	Jackson Rd	Fruitridge Rd	2	Arterial M	11,760	Yes	Widen to County standards [5]	No
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	10,010	Yes	Widen to County standards [5]	No

Red text with light gray shading indicate project impacts.

Table 6.15
CEQA Cumulative Plus FOUR PROJECTS Functionality Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		
61	Hedge Ave	Elder Creek Rd	Florin Rd	2	Arterial M	22,460	Yes	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	6	Arterial M	59,380	Yes[3]	Widen to County standards [5]	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	Arterial M	62,220	Yes[3]	Widen to County standards [5]	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	6	Arterial M	50,960	Yes[3]	Widen to County standards [5]	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	3	Arterial M	39,820	Yes[3]	Widen to County standards [5]	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	4	Arterial M	47,790	Yes[3]	Widen to County standards [5]	No
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	4	Arterial M	55,810	Yes[3]	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	4	Arterial M	22,250	Yes[3]	Widen to County standards [5]	No

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

Table 6.16
CEQA Cumulative Plus FOUR PROJECTS Summary of Impacted Roadway Segments

ID	Roadway	Segment	
		From	To
Level of Service Impact Fully Mitigated by General Plan Lanes			
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd
41	Florin Rd	Mayhew Rd	Bradshaw Rd
42.2	Florin Rd	Vineyard Rd	Excelsior Rd
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave
48	Fruitridge Rd	South Watt Ave	Hedge Ave
51.1	Grant Line Rd	Douglas Rd	Chrysanthy Blvd
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd
71.2	Jackson Rd	Collector JT-3	Tree View Ln
71.3	Jackson Rd	Tree View Ln	Collector JT-4
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd
73	Jackson Rd	Sunrise Blvd	Grant Line Rd
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd
132	Kiefer Blvd	Americanos Blvd	Grant Line Rd
304	Mayhew Rd	Routier Ext	Bradshaw Rd
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd
405	Collector JT-3	Collector JT-5	Jackson Rd
Level of Service Impact Not Fully Mitigated by General Plan Lanes			
2	Bradshaw Rd	US 50	Lincoln Village Dr
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd
44	Folsom Blvd	Howe Ave	Jackson Rd

Note: Refer to Table 6.12 for detailed description of impacts and mitigations.

Table 6.16
CEQA Cumulative Plus FOUR PROJECTS Summary of Impacted Roadway Segments

ID	Roadway	Segment	
		From	To
51.2	Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd
52.1	Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy
56	Grant Line Rd	Sheldon Rd	Wilton Rd
57	Grant Line Rd	Wilton Rd	Bond Rd
58.2	Happy Lane	Routier Ext	Kiefer Boulevard
62	Howe Ave	US 50	Folsom Blvd
66.1	Jackson Rd	Florin Perkins Rd	14th Ave
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave
67	Jackson Rd	South Watt Ave	Hedge Ave
68.1	Jackson Rd	Hedge Ave	Collector WJ-3
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd
69	Jackson Rd	Mayhew Rd	Bradshaw Rd
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4
70.2	Jackson Rd	Collector WJ-4	Rock Creek Pkwy
71.1	Jackson Rd	Excelsior Rd	Collector JT-3
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy
92	Old Placerville Rd	Happy Ln	Routier Rd
93	Old Placerville Rd	Routier Rd	Rockingham Dr
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd
96	South Watt Ave	Folsom Blvd	Kiefer Blvd
97	South Watt Ave	Kiefer Blvd	Jackson Rd
100	South Watt Ave	Elder Creek Rd	Florin Rd
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd
110	Watt Ave	US 50	Folsom Blvd
117	White Rock Rd	Grant Line Rd	Prairie City Rd
135	Rancho Cordova Pkwy	White Rock Rd	International Dr
136	Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd
302	Kiefer Blvd	Happy Ln	Douglas Rd
305	Mayhew Rd	Bradshaw Rd	Jackson Rd
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road
317	Routier Ext	Old Placerville Road	Happy Lane

Note: Refer to Table 6.12 for detailed description of impacts and mitigations.

Table 6.17

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
Level of Service Impact Fully Mitigated by General Plan Lanes		
17	S. Watt Avenue & Fruitridge Road	
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	**
23	Hedge Avenue & Jackson Road	
25	Hedge Avenue & Elder Creek Road	**
28	Mayhew Road & Kiefer Boulevard	
29	Mayhew Road & Jackson Road	
31	Mayhew Road & Elder Creek Road	
32	Woodring Drive & Zinfandel Drive	
39	Bradshaw Road & Elder Creek Road	
40	Bradshaw Road & Florin Road	
47	Excelsior Road & Florin Road	
58	Zinfandel Drive & Douglas Road	
69	Sunrise Boulevard & Kiefer Boulevard	
70	Sunrise Boulevard & Jackson Road	
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	**

Table 6.17

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
86	Power Inn Road & Florin Rd	
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	
92	Grant Line Rd & Calvine Rd	
303	Rock Creek Pkwy & Jackson Road	
308	Hedge Avenue & Rock Creek Pkwy WB	
400	Collector JT-3 & Jackson Road	
	Level of Service Impact Not Fully Mitigated by General Plan Lanes But Designated High Capacity Intersection	
12	Watt Avenue & Folsom Blvd.	**
14	S. Watt Avenue & Kiefer Blvd.	**
16	S. Watt Avenue & Jackson Road	**
	Level of Service Impact Not Fully Mitigated by General Plan Lanes	
3	Power Inn Road/Howe Avenue & Folsom Blvd	
4	Power Inn Road & 14th Avenue	
36	Bradshaw Road & Old Placerville Road	
37	Bradshaw Road & Kiefer Boulevard	*
38	Bradshaw Road & Jackson Road	**

Table 6.17

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
42	Happy Lane & Old Placerville Road	
43	Happy Lane & Kiefer Boulevard	**
45	Excelsior Road & Jackson Road	*
51	Mather Field Road & Rockingham Drive	
61	Eagles Nest Road & Florin Road	**
66	Sunrise Boulevard & International Drive/Monier Circle	
67	Sunrise Boulevard & Douglas Road	
80	Grant Line Road & Jackson Road	**
93	Grant Line Rd & Dwy/Wilton Rd	**
95	Florin Perkins Road & 14th Avenue	
96	Jackson Road & 14th Avenue	
103	Rancho Cordova Pkwy & Douglas Road	**
310	Mayhew Road & Rock Creek Pkwy WB	**
311	Mayhew Road & Rock Creek Pkwy EB	**
318	Bradshaw Road & Mayhew Road	*
319	Bradshaw Road & Collector WJ-10	**

Table 6.17

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
325	Douglas Road & Kiefer Boulevard	
329	Routier Ext & Kiefer Boulevard	*
331	Routier Ext/Routier Rd & Old Placerville Road	**

[1] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding designated high capacity intersections, as proposed by the County of Sacramento.

* denotes alternative mitigations that improve operations but do not fully mitigate the impact.
** denotes alternative mitigations that fully mitigate the impact.

Table 6.18

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2)
Summary of Impacted Freeway Basic Segments

Direction	Location
Level of Service Impact Not Mitigated	
Eastbound US-50	Stockton Boulevard to 59th Street

Source: *DKS Associates, 2018.*

Table 6.19

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2)
Summary of Impacted Freeway Merge/Diverge/Weave Segments

Direction	Location	Junction Type
Level of Service Impact Not Mitigated		
Westbound US-50	Southbound Hazel Avenue Slip Entrance	Weave
	Rancho Cordova Parkway Exit	

Source: *DKS Associates, 2018.*

Table 6.20

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2)
Summary of Impacted Freeway Ramp Termini

Direction	US 50 Exit Ramp
Queuing Impact Not Mitigated	
Eastbound US-50	Howe Avenue
	Zinfandel Drive
Westbound US-50	Rancho Cordova Parkway

Source: *DKS Associates, 2018.*

Table 6.21
CEQA Cumulative Plus FOUR PROJECTS (Alt. 2) Functionality Impact Summary

ID	Roadway	Segment	
		From	To
Functionality Impact Fully Mitigated			
15	Douglas Rd	Mather Blvd	Zinfandel Dr
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd
20	Eagles Nest Rd	Jackson Rd	Florin Rd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd
30	Excelsior Rd	Kiefer Blvd	Jackson Rd
31	Excelsior Rd	Jackson Rd	Elder Creek Rd
32	Excelsior Rd	Elder Creek Rd	Florin Rd
33	Excelsior Rd	Florin Rd	Gerber Rd
34	Excelsior Rd	Gerber Rd	Calvine Rd
39	Florin Rd	South Watt Ave	Hedge Ave
40	Florin Rd	Hedge Ave	Mayhew Rd
41	Florin Rd	Mayhew Rd	Bradshaw Rd
42	Florin Rd	Bradshaw Rd	Excelsior Rd
43	Florin Rd	Excelsior Rd	Sunrise Blvd
48	Fruitridge Rd	South Watt Ave	Hedge Ave
49	Fruitridge Rd	Hedge Ave	Mayhew Rd
50	Grant Line Rd	White Rock Rd	Douglas Rd
58	Happy Ln	Old Placerville Rd	Kiefer Blvd
59	Hedge Ave	Jackson Rd	Fruitridge Rd
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd
61	Hedge Ave	Elder Creek Rd	Florin Rd
70	Jackson Rd	Bradshaw Rd	Excelsior Rd

Table 6.21
CEQA Cumulative Plus FOUR PROJECTS (Alt. 2) Functionality Impact Summary

ID	Roadway	Segment	
		From	To
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd
77	Kiefer Blvd	Bradshaw Rd	Happy Ln
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd
89	Mayhew Rd	Jackson Rd	Fruitridge Rd
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd

7. CEQA CUMULATIVE PLUS JACKSON TOWNSHIP (ALTERNATIVE 2) SCENARIO

7.1 JACKSON TOWNSHIP PROJECT DESCRIPTION AND METHODOLOGY

7.1.1 Project Description

As illustrated previously in Figure 1.1, the Jackson Township project is located in unincorporated Sacramento County, generally east of the City of Sacramento and south of the City of Rancho Cordova and Mather Airport. It is bounded on the south by Jackson Road (SR 16) and on the west by Excelsior Road. The north boundary is near the future Kiefer Boulevard, while the east boundary is west of Eagles Nest Road.

7.1.2 Methodology

The analysis of the CEQA Cumulative Plus Jackson Township Project scenario is based upon the analysis of the CEQA Cumulative Plus FOUR PROJECTS scenario discussed in Section 6. The travel model was utilized to estimate the portion of the FOUR PROJECTS traffic that is associated with the Jackson Township project. With this information, it was possible to identify whether the Jackson Township project, on its own, would trigger significant impacts. It should be noted that, even at locations where the Jackson Township project on its own would not trigger a significant impact, the Jackson Township project contributes to the cumulative impacts associated with the CEQA Cumulative Plus FOUR PROJECTS scenario.

7.1.1 CEQA Cumulative Land Use

Section 6.1.1 discusses land use associated with CEQA Cumulative conditions.

7.1.2 Transportation Network

Section 6.1.2 discusses the transportation network associated with the CEQA Cumulative conditions, including the transportation network improvements associated with the FOUR PROJECTS.

7.1.3 Jackson Township Project Trip Generation

The trip generation of the Jackson Township project was estimated by the SACSIM model, which has been utilized to prepare transportation forecasts for this analysis. **Table 7.1** summarizes the person trip generation. The Jackson Township project would generate over 15,000 daily work person trip ends, and over 133,000 daily person trip ends for all trip purposes.

The total trip generation of the Jackson Township project is somewhat higher under the CEQA Cumulative scenario than with existing conditions. The SACSIM model will vary the trips generated by retail and service uses depending on the amount of development that is near those uses. This result is expected as commercial development with much housing and/or employment

nearby will be more successful (and generate more trips) than the same commercial development located in an area with less nearby population.

Table 7.1: Estimated Daily Person Trip Generation (CEQA Cumulative Plus FOUR PROJECTS Alternative 2 Scenario)

Jackson Township Specific Plan

Project	Trip Purpose	Daily Person Trip Ends
Jackson Township	Work Trips	15,296
	Non-Work Trips	117,799
	All Trip Purposes	133,095

Source: *DKS Associates, 2018.*

Table 7.2 summarizes the estimated mode choice for the Jackson Township Project. Over 86 percent of all person trips are expected to be accommodated by automobile. Transit will serve about 2.0 percent of all trips, while walk and bike modes will accommodate about 11.2 percent of all trips.

Table 7.3 summarizes the vehicular (auto) trip generation of the Jackson Township project. The Jackson Township project is estimated to generate over 84,000 daily vehicle trip ends. About 14,300 of the daily vehicle trip ends will be associated with trips with both an origin and destination within the Jackson Township project, about 17 percent of the trip ends. Those internal trip ends represent about 7,150 daily vehicle trips (one-half the number of internal trip ends). The Jackson Township project will generate about 69,900 external vehicle trips that have an origin or destination inside the Jackson Township project but the other end of the trip is outside the Jackson Township project. Table 7.3 also shows the vehicle trips generated during the a.m. and p.m. peak hours.

7.1.4 Jackson Township Project Trip Distribution

The distribution of trips associated with development on the Jackson Township project site was derived utilizing SACSIM, incorporating the proposed land use and access locations associated with the Jackson Township project site. Trip distribution varies by land use and time period. **Figure 7.1** illustrates the overall trip distribution of daily Jackson Township project trips with the CEQA Cumulative scenario.

7.2 OPERATIONS ANALYSIS AND IMPACTS

7.2.1 CEQA Cumulative Plus Jackson Township Project Roadway Segment Impacts

Table 7.4 summarizes the results of the operations analysis for the study area roadway segments. Only those segments where an impact would be triggered by the Jackson Township project are shown. The table includes the number of lanes assumed with the implementation of the

FOUR PROJECTS. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate new roadways or widened roadways. The last column of the table shows the project(s) responsible for the increase in the number of roadway lanes. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact.

7.2.2 CEQA Cumulative Plus Jackson Township Project Intersection Impacts

Table 7.5 and 7.6 summarize the results of the operations analysis for the study area intersections. Only those intersections where an impact would be triggered by the Jackson Township project are shown. The tables include the implementation of intersection changes associated with the FOUR PROJECTS. Table 7.6 illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type would be fully funded by the project(s) shown in the last column. Shaded table cells in Table 7.5 illustrate those locations with an LOS impact. Detailed analysis information is included in the technical appendix.

Signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. The project is considered to have a significant impact at an unsignalized location if both the impact criteria in Table 1.6 are met, and one or more of the signal warrants specified in the California Manual on Uniform Traffic Control Devices (CAMUTCD) are met. The following unsignalized intersections exhibit significant impacts and meet one or more traffic signal warrants:

- Eagles Nest Road and Florin Road

Table 7.2: Mode Split (CEQA Cumulative Plus FOUR PROJECTS Alt. 2 Scenario)

Jackson Township Specific Plan

Project	Mode	Percentage of Person Trips by Trip Purpose		
		Work Trips	Non-Work Trips	All Trip Purposes
Jackson Township	Auto - SOV	81.4%	42.6%	47.1%
	Auto - HOV	9.2%	43.7%	39.7%
	Transit	4.8%	1.7%	2.0%
	Walk	3.3%	11.0%	10.1%
	Bike	1.3%	1.0%	1.1%

Source: *DKS Associates, 2018.*

Table 7.3: Estimated Daily Vehicle Trip Generation (CEQA CUMULATIVE Plus FOUR PROJECTS Alt. 2 Scenario)

Jackson Township Specific Plan

Trip Type		AM Peak Hour	PM Peak Hour	Daily
Total Vehicle Trip Ends		7,321	11,123	84,170
Percent Internal Trip Ends[1]		15.7%	18.5%	17.0%
Vehicle trips	Internal to Project	574	1,029	7,155
	External to Project	6,173	9,066	69,860
	Total	6,747	10,094	77,015

[1.] Both trip ends within the project.

Source: *DKS Associates, 2018.*

FIGURE 7.1
CEQA CUM PLUS FOUR PROJECTS
JT TRIP DISTRIBUTION
(ALTERNATIVE 2)

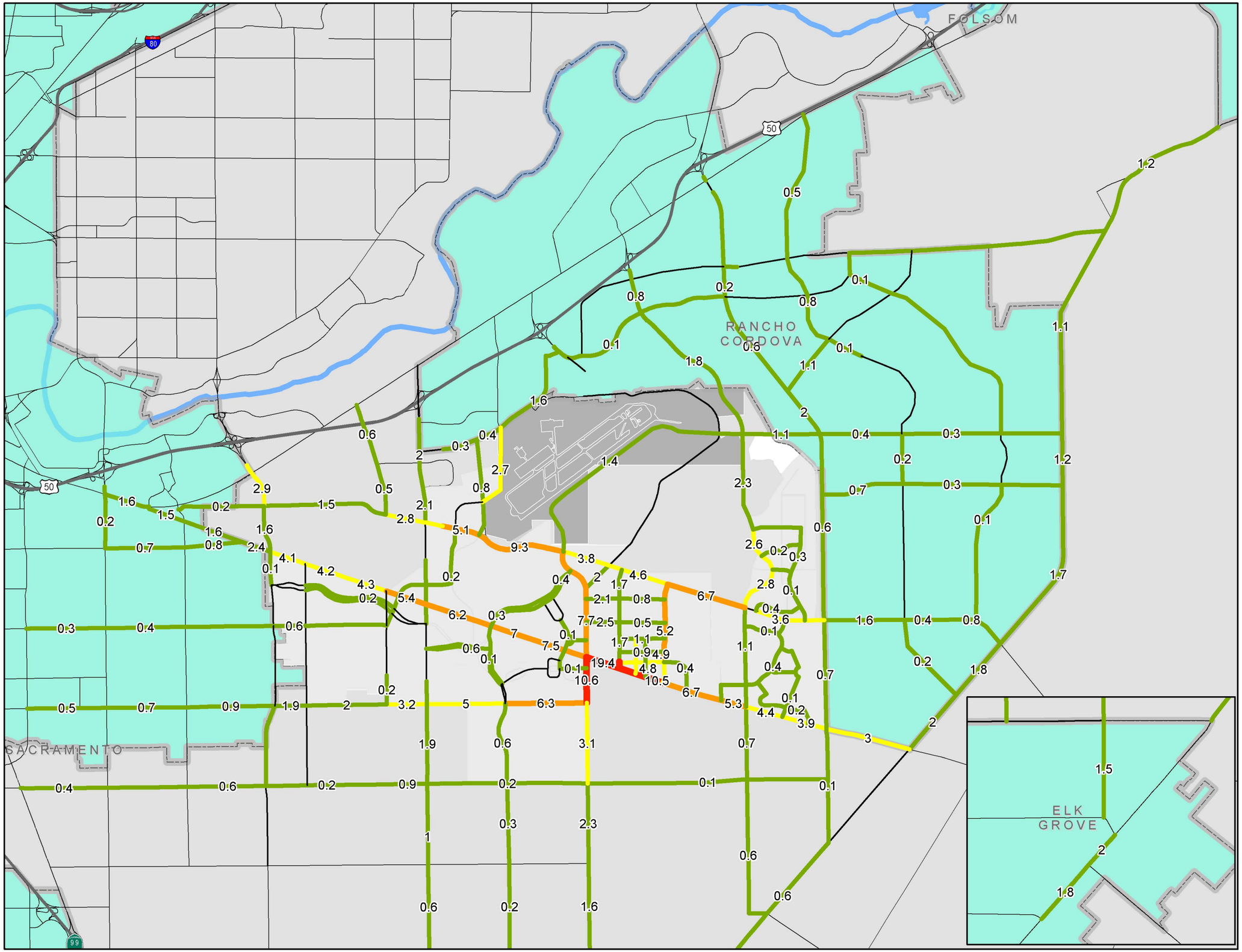


Table 7.4
CEQA Cumulative (Alternative 2) Roadway Segment Levels of Service - Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	25,170	1.40	**F**	2	Arterial M	28,360	1.58	**F**	
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	40,860	1.14	**F**	4	Arterial M	52,900	1.47	**F**	
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	2	Arterial M	11,960	0.66	B	3	Arterial M	36,910	2.05	**F**	West Jackson
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	2	Arterial M	11,960	0.66	B	3	Arterial M	36,220	2.01	**F**	West Jackson
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	40,320	1.12	**F**	4	Arterial M	61,980	1.72	**F**	
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	34,630	0.96	E	4	Arterial M	57,690	1.60	**F**	
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	38,240	1.06	**F**	4	Arterial M	66,380	1.84	**F**	
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	2	Rural Hwy	23,120	1.01	**F**	6	Arterial M	59,380	1.10	**F**	West Jackson
70.2	Jackson Rd	Collector WJ-4	Happy Ln	2	Rural Hwy	23,190	1.01	**F**	6	Arterial M	59,660	1.10	**F**	West Jackson
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	23,020	1.01	**F**	4	Arterial M	62,220	1.73	**F**	Jackson Township
71.2	Jackson Rd	Collector JT-3	Tree View Ln	2	Rural Hwy	23,020	1.01	**F**	4	Arterial M	46,480	1.29	**F**	Jackson Township
71.3	Jackson Rd	Tree View Ln	Collector JT-4	2	Rural Hwy	22,990	1.00	**F**	4	Arterial M	41,360	1.15	**F**	Jackson Township
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	31,730	0.88	D	4	Arterial M	45,290	1.26	**F**	
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	31,970	0.89	D	4	Arterial M	40,280	1.12	**F**	

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 7.5

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Levels of Service - Impacts Triggered by Jackson Township Project

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
45	Excelsior Road & Jackson Road	Signal	E	59.9	Signal	F	330.8	Yes	Signal	D	39.0	Signal	F	269.1	Yes
51	Mather Field Road & Rockingham Drive	Signal	F	156.5	Signal	F	>300	Yes	Signal	F	119.4	Signal	F	170.3	Yes
61	Eagles Nest Road & Florin Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound		*F*	*>300*		*F*	*>300*			*F*	*>300*		*F*	*>300*	
	Southbound		*F*	*>300*		*F*	*>300*			*F*	*>300*		*F*	*>300*	
	Eastbound Left Turn		*B*	*10.2*		*B*	*11.3*			*A*	*8.5*		*A*	*9.3*	
	Westbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*9.4*		*A*	*8.7*	

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 7.6

CEQA Cumulative (Alternative 2) Intersection Geometrics - Impacts Triggered by Jackson Township

	Intersection	Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
45	Excelsior Road & Jackson Road	Signal	Signal									West Jackson; Jackson Township
51	Mather Field Road & Rockingham Drive	Signal	Signal									
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

7.2.3 CEQA Cumulative Plus Jackson Township Project U.S. 50 Freeway Impacts

Based upon the Caltrans' thresholds of significance, any volume contribution to a significant impact of the CEQA Cumulative Plus FOUR PROJECTS scenario is considered significant. Therefore, the impacts of the CEQA Cumulative Plus Jackson Township Project scenario are identical to those of the CEQA Cumulative Plus FOUR PROJECTS scenario.

7.2.3.1 Freeway Basic Segments

Table 6.4 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations. Details of the analysis are included in the technical appendix. None of the impacts would be triggered by the Jackson Township project alone.

7.2.3.2 Freeway Merge/Diverge/Weave Segments

Table 6.5 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas. Details of the analysis are included in the technical appendix. None of the impacts would be triggered by the Jackson Township project alone.

7.2.3.3 Freeway Ramp Intersection Queuing

Tables 6.6 and 6.7 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. None of the impacts would be triggered by the Jackson Township project alone.

7.2.4 CEQA Cumulative Plus Jackson Township Project Pedestrian and Bicycle Facility Impacts

The Jackson Township project would not remove any existing or planned pedestrian facility. The Jackson Township project would not remove any existing bicycle facility, but would modify facilities that are planned in the Bikeway Master Plan. The Jackson Township project would add pedestrian and bicycle demands within the Jackson Township project site and to and from nearby land uses. As illustrated in Figure 3.2, the Jackson Township project has proposed changes to the Bikeway Master Plan. Because the Jackson Township project would add demand for pedestrian and bicycle facilities that may not be available in the site vicinity, the impact of the Jackson Township project on pedestrian and bicycle circulation is potentially significant.

7.2.5 CEQA Cumulative Plus Jackson Township Project Transit System Impacts

Public transit would not be provided to the site of the Jackson Township project under CEQA Cumulative scenario without development of the Jackson Township project. In the preparation of this analysis, a transit system to serve the FOUR PROJECTS was developed (see Section 3.1.2.3).

However, the timing and implementation of the transit system are uncertain at this time. The Jackson Township project would increase demands for public transit facilities. Therefore, the impact of the Jackson Township project on the transit system is potentially significant.

7.2.6 CEQA Cumulative Plus Jackson Township Project Functionality Impacts

Table 7.7 summarizes the results of the functionality analysis. Only those segments where an impact would be triggered by the Jackson Township project are shown. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the FOUR PROJECTS. The "Substandard?" heading indicates whether or not a roadway meets the County standards of 12-foot lanes and 6-foot shoulders. If the FOUR PROJECTS make improvements to a roadway segment such as widening, they would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact?" heading indicate those locations with a functionality impact.

As stated above, the traffic analysis assumed that the FOUR PROJECTS would construct a number of travel lanes on roadway segments that are internal to or on the boundary of the FOUR PROJECTS, and the entire roadway segment would be reconstructed to County standards at that time. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the FOUR PROJECTS.

Table 7.7
CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Functionality Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				CEQA Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	4	Arterial M	33,390	Yes[3]
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	6	Arterial M	50,360	Yes[3]
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	4	Arterial M	52,900	Yes[3]
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	4	Arterial M	33,660	Yes[3]
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	4	Arterial M	40,490	Yes[3]
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	3	Arterial M	30,740	Yes[3]
30.2	Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	County	2		Yes	3,716	4	Arterial M	26,970	Yes[3]
30.3	Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	County	2		Yes	3,716	4	Arterial M	25,900	Yes[3]
30.4	Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	County	2		Yes	3,716	4	Arterial M	25,400	Yes[3]
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	3	Arterial M	36,220	Yes[3]
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	3	Arterial M	12,520	Yes[3]
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Arterial M	13,080	Yes
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	4	Arterial M	13,280	Yes[3]
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	4	Arterial M	40,200	Yes[3]
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	3	Arterial M	24,240	Yes[3]
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	4	Arterial M	41,130	Yes[3]
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	6	Arterial M	59,380	Yes[3]
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	Arterial M	62,220	Yes[3]
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	6	Arterial M	50,960	Yes[3]
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	3	Arterial M	39,820	Yes[3]
116.3	White Rock Rd	Americanos Blvd	Grant Line Rd	Rancho Cordova/County	2		Yes	2,490	4	Arterial M	16,530	Yes[3]
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	4	Arterial M	22,250	Yes[3]

Red text with light gray shading indicate project impacts.

Table 7.7
CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Functionality Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				CEQA Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

7.3 MITIGATION

7.3.1 CEQA Cumulative Plus Jackson Township Project Roadway Segment Mitigation

Table 7.8 summarizes the results of the operations analysis for the study area roadway segments with mitigation. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate widened roadways for mitigation purposes, which would be the responsibility of the FOUR PROJECTS to fund. The Jackson Township project would contribute a fair share. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to have LOS impacts after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the improvements allowed under the General Plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

Table 7.8
CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Roadway Segment Mitigations - Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	28,360	1.58	**F**	4	Arterial M	0.79	C	No		
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	52,900	1.47	**F**	6	Arterial M	0.98	**E**	No		
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	3	Arterial M	36,910	2.05	**F**	6	Arterial M	0.68	B	No		
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	3	Arterial M	36,220	2.01	**F**	6	Arterial M	0.67	B	No		
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	61,980	1.72	**F**	4	Arterial M	1.72	**F**	Yes		Maximum General Plan lanes
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	57,690	1.60	**F**	4	Arterial M	1.60	**F**	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	66,380	1.84	**F**	6	Arterial M	1.23	**F**	Yes		Maximum General Plan lanes
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	6	Arterial M	59,380	1.10	**F**	6	Arterial M	1.10	**F**	Yes		Maximum General Plan lanes
70.2	Jackson Rd	Collector WJ-4	Happy Ln	6	Arterial M	59,660	1.10	**F**	6	Arterial M	1.10	**F**	Yes		Maximum General Plan lanes
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	4	Arterial M	62,220	1.73	**F**	6	Arterial M	1.15	**F**	Yes		Maximum General Plan lanes
71.2	Jackson Rd	Collector JT-3	Tree View Ln	4	Arterial M	46,480	1.29	**F**	6	Arterial M	0.86	D	No		
71.3	Jackson Rd	Tree View Ln	Collector JT-4	4	Arterial M	41,360	1.15	**F**	6	Arterial M	0.77	C	No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	45,290	1.26	**F**	6	Arterial M	0.84	D	No		
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	40,280	1.12	**F**	4	Arterial M	1.12	**F**	Yes		Maximum General Plan lanes

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 7.8
CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Roadway Segment Mitigations - Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible

Note: Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, as proposed by the County of Sacramento.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

7.3.2 CEQA Cumulative Plus Jackson Township Project Intersection Mitigation

Tables 7.9a and 7.10a summarize the results of the operations analysis for the study area intersections with mitigation. However, the increased number of lanes on each approach does not exceed the County's standard number of approach lanes. **Tables 7.9b and 7.10b** summarize the results of the operations analysis for the study area intersections with the ultimate mitigation, which may exceed the County's standard number of approach lanes. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the FOUR PROJECTS to fund. The Jackson Township project would contribute a fair share. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact after mitigation. Table 7.10a and Table 7.10b also identifies those intersections that would continue to have LOS impacts after mitigation, along with the constraint that precluded full mitigation. Detailed analysis information is included in the technical appendix.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

High Capacity Intersections

Grade separated intersections are proposed along Grant Line Road, in order to meet the Connector JPA's level of service policy. These grade separations would be constructed at Prairie City Road (which is also a designated High Capacity Intersection) and Sunrise Boulevard. Since each of these intersections have unique travel movements, volumes and existing context sensitive conditions (potential environmental issues, right-of-way, physical constraints, etc.), the special treatments utilized at each location will need to be studied to select the treatments that mitigate the LOS impact, while avoiding or minimizing other impacts.

7.3.3 CEQA Cumulative Plus Jackson Township Project Pedestrian and Bicycle Facility Mitigation

The Jackson Township project applicant shall coordinate with Sacramento County to identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development. These facilities shall be incorporated into the Jackson Township project and could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, pedestrian signal heads, and all appropriate traffic calming measures as defined in the County's Neighborhood Traffic Management Program (NTMP). Sidewalks would be required as part of the frontage improvements along all new roadway construction in the Jackson

Township project vicinity in conformance with County design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards.

7.3.4 CEQA Cumulative Plus Jackson Township Project Transit System Mitigation

The applicant of the Jackson Township project shall coordinate with Regional Transit (or other transit operators) to provide the additional transit facilities and services assumed in transportation analysis (see Section 3.1.2.3), or a cost-effective equivalent level of transit facilities and services.

The assumed transit routes and service frequency would be required at full development of the Jackson Township project. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the Jackson Township project, must be phased with development of the Jackson Township project.

7.3.5 CEQA Cumulative Plus Jackson Township Project Functionality Mitigation

Table 7.11 summarizes the results of the functionality analysis for the rural roadway segments with mitigation.

Table 7.9a

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Impacted Intersections and County Standard Mitigations - Impacts Triggered by Jackson Township Project

	Intersection	AM Peak Hour													
		CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed	CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
45	Excelsior Road & Jackson Road	Signal	F	330.8	Signal	F	106.9	Yes	Signal	F	269.1	Signal	F	144.6	Yes
51	Mather Field Road & Rockingham Drive	Signal	F	>300				Yes	Signal	F	170.3				Yes
61	Eagles Nest Road & Florin Road	Two-way stop			Signal	F	121.3	Yes	Two-way stop			Signal	F	138.5	Yes
	Northbound		*F*	*>300*						*F*	*>300*				
	Southbound		*F*	*>300*						*F*	*>300*				
	Eastbound Left Turn		*B*	*11*						*A*	*9.3*				
	Westbound Left Turn		*A*	*0*						*A*	*8.7*				

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 7.9b

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) County Standard and Ultimate Mitigations - Impacts Triggered by Jackson Township Project

	Intersection	AM Peak Hour											
		County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS		
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
45	Excelsior Road & Jackson Road	Signal	F	106.9				Signal	F	144.6			
51	Mather Field Road & Rockingham Drive	Signal	F	>300				Signal	F	170.3			
61	Eagles Nest Road & Florin Road	Signal	F	121.3	Signal	E	69.6	Signal	F	138.5	Signal	D	49.1

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 7.10a

CEQA Cumulative Plus FOUR PROJECTS (Alt. 2) Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township

Intersection		Traffic Control		Super Cumulative Plus FOUR PROJECTS Lane Geometrics				County Standard Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?
		Super Cumulative Plus FOUR PROJECTS	Mitigated Super Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
45	Excelsior Road & Jackson Road	Signal	Signal									Yes
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									Yes

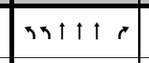
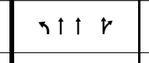
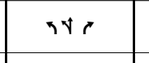
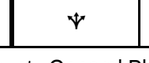
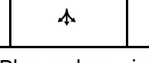
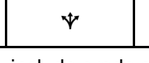
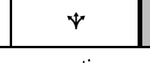
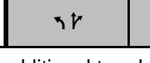
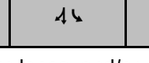
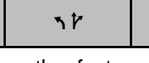
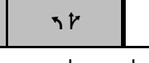
[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 7.10b

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township

Intersection		Traffic Control		County Standard Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Ultimate Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		Super Cumulative Plus FOUR PROJECTS	Mitigated Super Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
45	Excelsior Road & Jackson Road	Signal	Signal									Yes	No	NBR overlap	Maximum General Plan Lanes
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes	No		Existing development
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Signal	Signal									No	No		

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 7.11
CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Functionality Mitigations - Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		
15	Douglas Rd	Mather Blvd	Zinfandel Dr	4	Arterial M	33,390	Yes[3]	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,360	Yes[3]	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	52,900	Yes[3]	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	4	Arterial M	33,660	Yes[3]	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,490	Yes[3]	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	3	Arterial M	30,740	Yes[3]	Widen to County standards [5]	No
30.2	Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	4	Arterial M	26,970	Yes[3]	Widen to County standards [5]	No
30.3	Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	4	Arterial M	25,900	Yes[3]	Widen to County standards [5]	No
30.4	Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	4	Arterial M	25,400	Yes[3]	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	3	Arterial M	36,220	Yes[3]	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	3	Arterial M	12,520	Yes[3]	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	13,080	Yes	Widen to County standards [5]	No
40	Florin Rd	Hedge Ave	Mayhew Rd	4	Arterial M	13,280	Yes[3]	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,200	Yes[3]	Widen to County standards [5]	No
48	Fruitridge Rd	South Watt Ave	Hedge Ave	3	Arterial M	24,240	Yes[3]	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	4	Arterial M	41,130	Yes[3]	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	6	Arterial M	59,380	Yes[3]	Widen to County standards [5]	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	Arterial M	62,220	Yes[3]	Widen to County standards [5]	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	6	Arterial M	50,960	Yes[3]	Widen to County standards [5]	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	3	Arterial M	39,820	Yes[3]	Widen to County standards [5]	No
116.3	White Rock Rd	Americanos Blvd	Grant Line Rd	4	Arterial M	16,530	Yes[3]	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	4	Arterial M	22,250	Yes[3]	Widen to County standards [5]	No

Red text with light gray shading indicate project impacts.

Table 7.11
CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) Functionality Mitigations - Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

7.3.6 CEQA Cumulative Plus Jackson Township Project Mitigation Summary

Tables 7.12 and 7.13 summarize the mitigation success for the roadway segments and intersections that exhibit significant LOS impacts. **Table 7.14** summarizes the mitigation success for the rural roadway segments that exhibit functionality impacts. Tables 7.13 through 7.15 summarize the mitigation success for the freeway system facilities that exhibit significant impacts.

Table 7.12
CEQA Cumulative Plus FOUR PROJECTS (Alternative 2)
Summary of Impacted Roadway Segments Triggered by Jackson Township Project

ID	Roadway	Segment	
		From	To
Level of Service Impact Fully Mitigated by General Plan Lanes			
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd
71.2	Jackson Rd	Collector JT-3	Tree View Ln
71.3	Jackson Rd	Tree View Ln	Collector JT-4
73	Jackson Rd	Sunrise Blvd	Grant Line Rd
Level of Service Impact Not Fully Mitigated by General Plan Lanes			
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy
67	Jackson Rd	South Watt Ave	Hedge Ave
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4
70.2	Jackson Rd	Collector WJ-4	Happy Ln
71.1	Jackson Rd	Excelsior Rd	Collector JT-3
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd

Note: Refer to Table 7.8 for detailed description of impacts and mitigations.

Table 7.13

CEQA Cumulative Plus FOUR PROJECTS (Alternative 2) -
Summary of Intersection Impacts Triggered by Jackson Township

	Intersection	Alternative Mitigation
Level of Service Impact Fully Mitigated by General Plan Lanes		
61	Eagles Nest Road & Florin Road	**
Level of Service Impact Not Fully Mitigated by General Plan Lanes		
45	Excelsior Road & Jackson Road	*
51	Mather Field Road & Rockingham Drive	

[1] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding designated high capacity intersections, as proposed by the County of Sacramento.

* denotes alternative mitigations that improve operations but do not fully mitigate the impact.
** denotes alternative mitigations that fully mitigate the impact.

Table 7.14
CEQA Cumulative Plus FOUR PROJECTS (Alternative 2)
Summary of Functionality Impacts Triggered by Jackson Township Project

ID	Roadway	Segment	
		From	To
Functionality Impact Fully Mitigated			
15	Douglas Rd	Mather Blvd	Zinfandel Dr
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd
30.2	Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1
30.3	Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2
30.4	Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd
31	Excelsior Rd	Jackson Rd	Elder Creek Rd
32	Excelsior Rd	Elder Creek Rd	Florin Rd
33	Excelsior Rd	Florin Rd	Gerber Rd
40	Florin Rd	Hedge Ave	Mayhew Rd
41	Florin Rd	Mayhew Rd	Bradshaw Rd
48	Fruitridge Rd	South Watt Ave	Hedge Ave
50	Grant Line Rd	White Rock Rd	Douglas Rd
70	Jackson Rd	Bradshaw Rd	Excelsior Rd
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd
77	Kiefer Blvd	Bradshaw Rd	Happy Ln
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd
116.3	White Rock Rd	Americanos Blvd	Grant Line Rd
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd

Table 7.14
CEQA Cumulative Plus FOUR PROJECTS (Alternative 2)
Summary of Functionality Impacts Triggered by Jackson Township Project

ID	Roadway	Segment	
		From	To

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

8. EXISTING PLUS JACKSON TOWNSHIP (PROPOSED PROJECT)

8.1 JACKSON TOWNSHIP PROPOSED PROJECT DESCRIPTION

As illustrated previously in Figure 1.1, the Jackson Township project is located in unincorporated Sacramento County, generally east of the City of Sacramento and south of the City of Rancho Cordova and Mather Airport. It is bounded on the south by Jackson Road (SR 16) and on the west by Excelsior Road. The north boundary is near the future Kiefer Boulevard, while the east boundary is west of Eagles Nest Road.

8.1.1 Land Use

Table 8.1 summarizes the Jackson Township project land use.

The SACSIM model (used to estimate travel demand by travel mode) requires estimates of the number and demographics of people who would live in each household as well as key social/economic characteristics of each household. SACOG helped estimate the required household demographics based on the number housing units by density category and detailed local Census data compiled by housing types.

SACSIM also requires employment by type for each parcel in the Jackson Township project. The applicant provided number of acres and square feet by non-residential category on each parcel. Employment estimates were then estimated using average square feet per employee and per student. The total employment in the Jackson Township project was estimated to be about 5,740. The model also requires the estimated enrollment at each school within the Jackson Township project. The total enrollment for grades K-12 was estimated at about 6,000 students. Some of those students would come from housing units outside the Jackson Township project.

8.1.2 Transportation Network

8.1.2.1 Roadway Segments and Intersections

Figure 8.1 illustrates the Jackson Township project transportation network. The Jackson Township project would widen and / or complete many roadways that cross or border the site, and would include new roadways to serve the proposed land use. Sections 3.4.1 and 3.4.2 include information regarding the roadway segment and intersection improvements that are considered part of the Jackson Township project.

8.1.2.2 Pedestrian and Bicycle Facilities

Figure 8.2 illustrates the proposed bikeway plan of the Jackson Township project. The roadways within the Jackson Township project would meet County standards, which would provide sidewalks and on- street (Class II) bike lanes on all collector, arterial and thoroughfare roadways. The Jackson Township project also provides several off-street (Class I) multi-purpose trails.

Table 8.1: Land Use Summary for the Jackson Township Specific Plan						
		Residential			Non-Residential	
Land Use Category	Acres	Density Range	Ave Density	Dwelling Units	Floor Area Ratio	Estimated Square Feet
Low Density	355.7	1.0 – 10.9	6.0	2134		
Medium Density	136.3	11.0 – 19.9	13.0	1,772		
High Density	85.5	20.0 – 30.0	25.0	2,137		
High Density Bonus Units				76		
General Commercial	59.3				0.25	645,700
Community Commercial	17.6				0.25	191,600
Mixed Use	19.6			100	0.50	427,000
Office	33.6				0.50	731,800
Park	78.3					
Open Space	300.6					
Elementary School	30.0					
High School/Middle School	70.0					
Other Public/Quasi-Public	5.0					
Primary Roadways	90.2					
Agriculture (Ag Res)	109.3			545		
Total	**1,391.0**			**6,764**		**1,996,100**
Source: *Project Applicant*						

FIGURE 8.1
EXISTING PLUS JACKSON TOWNSHIP (PROPOSED PROJECT) ROADWAY NETWORK

Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport

FIGURE 8.2
PROPOSED BIKEWAY MASTER PLAN
JACKSON TOWNSHIP
(PROPOSED PROJECT)

Legend

- Bicycle Paths (Class I)
- Bicycle Lanes (Class II)
- Cities
- Mather Airport

8.1.2.3 Transit System

Consistent with Sacramento County's General Plan policy LU-120, the Jackson Township project incorporates higher density land uses and mixed uses along transportation corridors to help support transit use. However, as described in Section 2.2, existing transit service is very limited near the Jackson Township project. The transit provider for the area, Sacramento Regional Transit (RT), has developed a long-range transit plan that anticipates three additional high frequency transit lines in the general area by the year 2035. However, even with this additional transit network, the Jackson Township project would likely not meet the County's General Plan policy.

To comply with the County's General Plan Policy LU-120, a separate planning effort involving staff from Sacramento County, RT, DKS, and the applicants of the FOUR PROJECTS was conducted to define an appropriate transit network and frequency that could serve the proposed development in the Jackson Corridor consistent with the intent of the County's policies.

An important consideration in the development of a transit network for the Jackson Corridor is that there are four major development projects proposed in the Jackson Corridor (FOUR PROJECTS) The transit planning effort needed to define standalone transit systems for each of the FOUR PROJECTS that would not only serve the transit needs of each of the FOUR PROJECTS independently, but would also serve as cohesive and complementary transit system units that could operate efficiently together should more than one of the FOUR PROJECTS be approved for development.

A series of transit networks and service frequencies were developed and tested using the SACSIM model with the objective of optimizing transit ridership and the number of boardings. Utilizing RT's performance criteria for evaluating the effectiveness of the various transit lines and service frequencies, an optimum transit network and frequency was developed for the Jackson Corridor.

The planning effort resulted in four transit lines that would serve the FOUR PROJECTS in the Jackson Corridor at a frequency of 15 minutes during the peak commute hours (approximately 6-9 AM and 3-6 PM) and 30 minutes during off-peak service hours (approximately 9AM-3PM and 6PM-8PM) on weekdays. **Figure 8.3** illustrates the proposed transit system for the Jackson Township project, which represents a portion of the ultimate transit system that would serve the FOUR PROJECTS. The combined transit system for the FOUR PROJECTS is discussed and illustrated in Section 4.1.2.3.

The proposed transit system for the Jackson Township project has been assumed as an attribute of the Jackson Township project and has been included in the traffic modeling for this traffic analysis. The assumed transit routes and service frequency would be required at full development of the Jackson Township project. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the Jackson Township project, must be phased with development of the Jackson Township project.

FIGURE 8.3
PROJECT TRANSIT NETWORK
EXISTING PLUS JACKSON TOWNSHIP
(PROPOSED PROJECT)

Legend

- Jackson Express Route
- Kiefer Jackson Local Route
- West Jackson Local Route A
- West Jackson Local Route B
- Cities
- Mather Airport

8.2 TRIP GENERATION

The SACSIM model that has been utilized for the transportation forecasts in this analysis estimated trip generation of the Jackson Township project. **Table 8.2** summarizes the person trip generation. The Jackson Township project would generate over 15,000 daily work person trip ends, and about 115,000 daily person trip ends for all trip purposes.

Table 8.3 summarizes the estimated mode choice for the Existing plus Jackson Township project scenario. About 84.1 percent of all person trips are expected to be accommodated by automobile. Transit will serve about 1.2 percent of all trips, while walk and bike modes will accommodate about 14.7 percent of all trips. The mode choice assumes full implementation of the project's pedestrian and bicycle systems.

Table 8.4 summarizes the vehicular (auto) trip generation of the Jackson Township project. The Jackson Township project is estimated to generate over 72,500 daily vehicle trip ends. It should be noted that more than one person trip may be accommodated by a vehicle trip (e.g. carpooling). Over 20,500 of the daily vehicle trip ends will be associated with trips with both an origin and destination within the Jackson Township project, over 28 percent of the trip ends. The internal trip ends represent over 10,000 daily vehicle trips (one-half the number of internal trip ends). The Jackson Township project will generate over 52,000 external vehicle trips that have an origin or destination inside the Jackson Township project but the other end of the trip is outside the Jackson Township project. Table 8.4 also shows the vehicle trips generated during the a.m. and p.m. peak hours.

8.3 TRIP DISTRIBUTION

The distribution of trips associated with development on the Jackson Township project site was derived utilizing SACSIM, incorporating the proposed land use and access locations associated with the Jackson Township project site. Trip distribution varies by land use and time period. **Figure 8.4** illustrates the overall trip distribution of daily Jackson Township project trips with the Existing Plus Jackson Township project scenario. The highest percentages of Jackson Township project traffic are accommodated on Jackson Road and Excelsior Road.

8.4 OPERATIONS ANALYSIS AND IMPACTS

For purposes of this analysis, full development of the Jackson Township project is assumed to occur "instantaneously." In this manner, the traffic and impacts associated with the Jackson Township project can be directly compared to known and measured conditions. Existing scenario impacts are determined by comparing the traffic operating conditions associated with the Jackson Township project with the traffic operating conditions associated with the existing (without development) conditions, and comparing the change to the thresholds of significance. **Figure 8.5** illustrates the resultant traffic operating conditions.

Table 8.2: Estimated Daily Person Trip Generation (Existing Plus Proposed Project Scenario)
Jackson Township Specific Plan

Trip Purpose	Daily Person Trip Ends
Work Trips	15,882
Non-Work Trips	99,078
All Trip Purposes	114,960

Source: *DKS Associates, 2018.*

Table 8.3: Mode Split (Existing Plus Proposed Project Scenario)
Jackson Township Specific Plan

Mode	Percentage of Person Trips by Trip Purpose		
	Work Trips	Non-Work Trips	All Trip Purposes
Auto - SOV	84.9%	43.1%	48.9%
Auto - HOV	9.9%	39.3%	35.2%
Transit	2.4%	1.0%	1.2%
Walk	2.1%	15.7%	13.8%
Bike	0.6%	1.0%	0.9%

Source: *DKS Associates, 2018.*

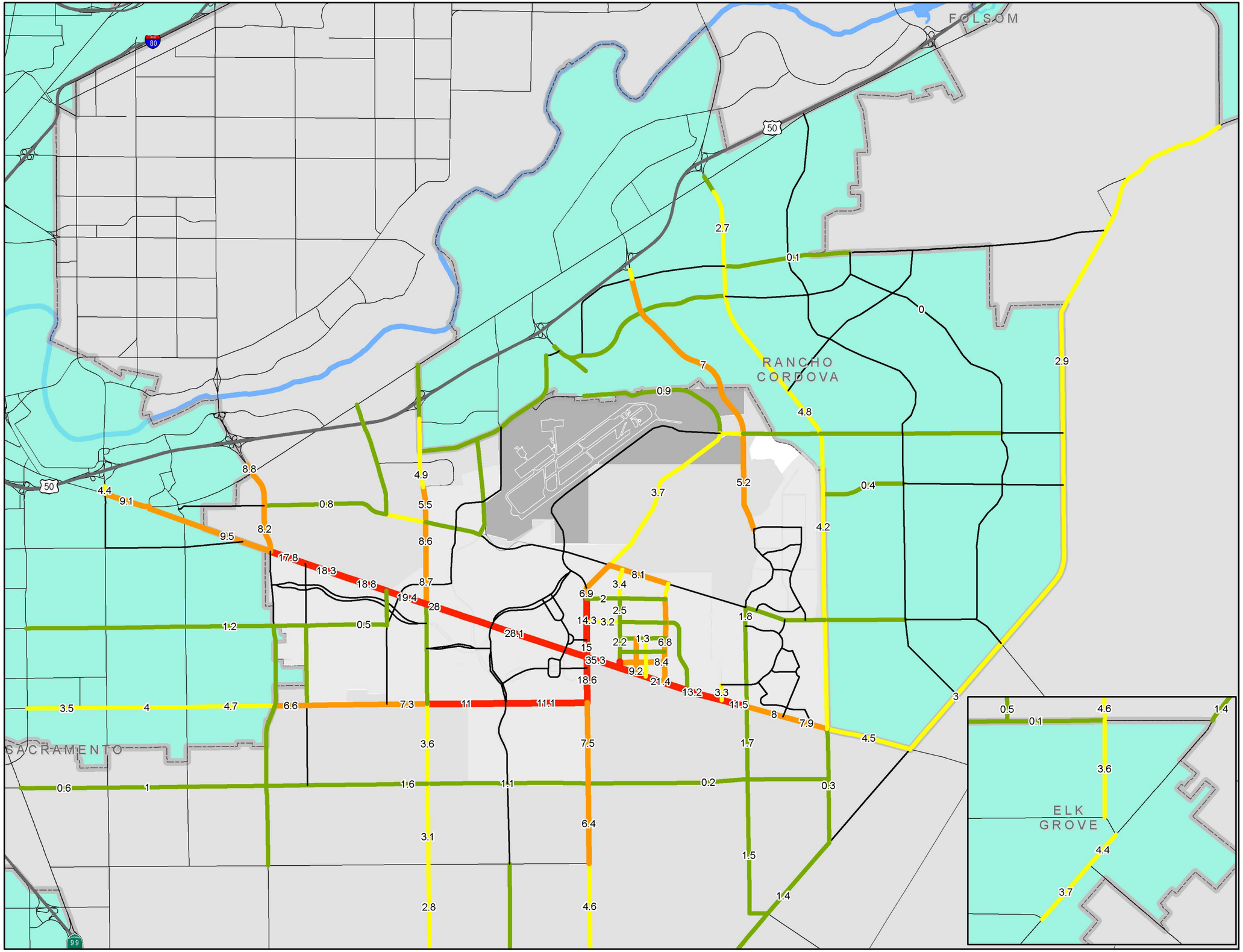
Table 8.4: Estimated Daily Vehicle Trip Generation (Existing Plus Proposed Project Scenario)
Jackson Township Specific Plan

Trip Type		AM Peak Hour	PM Peak Hour	Daily
Total Vehicle Trip Ends		6,762	6,615	72,665
Percent Internal Trip Ends[1]		25.3%	29.1%	28.3%
Vehicle Trips	Internal to Project	854	964	10,281
	External to Project	5,055	4,687	52,103
	Total	5,909	5,651	62,384

[1.] Both trip ends within the project.

Source: *DKS Associates, 2018.*

FIGURE 8.4
EXISTING PLUS JACKSON TOWNSHIP (PROPOSED PROJECT) TRIP DISTRIBUTION



Legend

Existing Conditions

- 0%
- 0.1% to 2.5%
- 2.6% to 5.0%
- 5.1% to 10.0%
- 10.0% and up
- Freeways
- Other Major Roadways
- Cities
- Mather Airport

DKS

FIGURE 8.5
EXISTING PLUS JACKSON TOWNSHIP (PROPOSED PROJECT) ROADWAY SEGMENT AND INTERSECTION LOS AND IMPACTS

FOLSOM

RANCHO CORDOVA

SACRAMENTO

ELK GROVE

Legend

Intersections (AM Peak Hour)

- LOS A-D
- LOS E
- LOS F

Intersections (PM Peak Hour)

- LOS A-D
- LOS E
- LOS F
- Mitigable Intersection Impact
- Unavoidable Intersection impact

- LOS A-D
- LOS E
- LOS F
- Unavoidable Segment Impact
- Mitigable Segment Impact
- Cities
- Mather Airport

DKS

8.4.1 Existing Plus Jackson Township Project Roadway Segment Impacts

Table 8.5 summarizes the results of the operations analysis for the study area roadway segments. The table includes the number of lanes assumed with the implementation of the Jackson Township project, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate new roadways and widened roadways that are assumed part of the Jackson Township project. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact.

As stated above, the traffic analysis assumed that the Jackson Township project would construct a number of travel lanes on roadway segments that are internal to or on the boundary of the Jackson Township project, which would be greater than the number of lanes in the existing condition. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the Jackson Township project.

8.4.2 Existing Plus Jackson Township Project Intersection Impacts

Tables 8.6 and 8.7 summarize the results of the operations analysis for the study area intersections. The tables include the implementation of intersection changes associated with the Jackson Township project. Table 8.7 illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type were assumed to be implemented by the Jackson Township project. Shaded table cells in Table 8.6 illustrate those locations with an LOS impact. Detailed analysis information is included in the technical appendix.

As stated above, the traffic analysis assumed that the Jackson Township project would construct a number of changes to many of the intersections that are internal to or on the boundary of the Jackson Township project, which would be an improvement over the existing condition. The timing of implementation of such intersection improvements on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the Jackson Township project.

Signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. The project is considered to have a significant impact at an unsignalized location if both the impact criteria in Table 1.6 are met, and one or more of the signal warrants specified in the California Manual on Uniform Traffic Control Devices (CAMUTCD) are met. The following unsignalized intersections exhibit significant impacts and meet one or more traffic signal warrants:

- Mayhew Road and Jackson Road
- Happy Lane and Old Placerville Road
- Excelsior Road and Elder Creek Road
- Excelsior Road and Florin Road

- Mather Boulevard and Douglas Road
- Eagles Nest Road and Jackson Road
- Excelsior Road and Calvine Road

Table 8.5
Existing Plus Jackson Township Project (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jackson Township Project				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
1	Bradshaw Rd	Folsom Blvd	US 50	6	Arterial M	20,592	0.38	A	6	Arterial M	20,680	0.38	A
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	52,590	0.97	**E**	6	Arterial M	54,170	1.00	**F**
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	42,787	0.79	C	6	Arterial M	44,300	0.82	D
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	38,984	0.72	C	6	Arterial M	40,500	0.75	C
5	Bradshaw Rd	Goethe Rd	Kiefer Blvd	4	Arterial M	28,651	0.80	C	4	Arterial M	30,270	0.84	D
6	Bradshaw Rd	Kiefer Blvd	Jackson Rd	4	Arterial M	30,726	0.85	D	4	Arterial M	35,630	0.99	E
7	Bradshaw Rd	Jackson Rd	Elder Creek Rd	4	Arterial M	22,871	0.64	B	4	Arterial M	21,980	0.61	B
8	Bradshaw Rd	Elder Creek Rd	Florin Rd	4	Arterial M	22,265	0.62	B	4	Arterial M	24,110	0.67	B
9	Bradshaw Rd	Florin Rd	Gerber Rd	4	Arterial M	22,883	0.64	B	4	Arterial M	24,240	0.67	B
10	Bradshaw Rd	Gerber Rd	Calvine Rd	4	Arterial M	16,984	0.47	A	4	Arterial M	18,660	0.52	A
11	Calvine Rd	Waterman Rd	Bradshaw Rd	4	Arterial M	16,015	0.44	A	4	Arterial M	16,510	0.46	A
12	Calvine Rd	Bradshaw Rd	Vineyard Rd	4	Arterial M	12,395	0.34	A	4	Arterial M	13,860	0.39	A
13	Calvine Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	6,036	0.34	A	2	Arterial M	7,530	0.42	A
14	Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	3,411	0.09	A	4	Arterial M	3,610	0.10	A
15	Douglas Rd	Mather Blvd	Zinfandel Dr	2	Arterial M	6,635	0.37	A	2	Arterial M	7,390	0.41	A
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	2	Arterial M	8,369	0.46	A	2	Arterial M	9,210	0.51	A
17	Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	5	Arterial M	3,674	0.10	A	5	Arterial M	4,180	0.12	A
18	Douglas Rd	Rancho Cordova Pkwy	Grant Line Rd	2	Arterial M	3,674	0.20	A	2	Arterial M	3,930	0.22	A
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	740	0.04	A	2	Arterial M	1,850	0.10	A
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Arterial M	517	0.03	A	2	Arterial M	1850	0.10	A
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	2	Arterial M	189	0.01	A	2	Arterial M	1410	0.08	A
22	Elder Creek Rd	65th St	Power Inn Rd	4	Arterial M	17,891	0.50	A	4	Arterial M	19,680	0.55	A
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	15,734	0.87	D	2	Arterial M	17,400	0.97	**E**
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	11,092	0.62	B	2	Arterial M	13,650	0.76	C
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Arterial M	5,576	0.31	A	2	Arterial M	9,060	0.50	A
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Arterial M	5,797	0.32	A	2	Arterial M	9,390	0.52	A
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	5,355	0.30	A	2	Arterial M	9,400	0.52	A
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	2,158	0.12	A	2	Arterial M	10,340	0.57	A
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd	2	Arterial M	22,960	1.28	**F**	2	Arterial M	23,240	1.29	**F**
30.1	Excelsior Rd	Kiefer Blvd	Douglas Rd	2	Arterial M	3,716	0.21	A	2	Arterial M	7,280	0.40	A
30.2	Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	2	Arterial M	3,716	0.21	A	3	Arterial M	7,400	0.41	A

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Table 8.5
Existing Plus Jackson Township Project (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jackson Township Project				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
30.3	Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	2	Arterial M	3,716	0.21	A	3	Arterial M	13,300	0.74	C
30.4	Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	2	Arterial M	3,716	0.21	A	3	Arterial M	15,060	0.84	D
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	2	Arterial M	5,075	0.28	A	2	Arterial M	16,560	0.92	E
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Arterial M	4,203	0.23	A	2	Arterial M	7,220	0.40	A
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	5,423	0.30	A	2	Arterial M	7,580	0.42	A
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Arterial M	4,229	0.23	A	2	Arterial M	5,220	0.29	A
35	Excelsior Rd	Calvine Rd	Sheldon Rd	2	Arterial M	4,473	0.25	A	2	Arterial M	6,480	0.36	A
36	Florin Rd	Stockton Blvd	Power Inn Rd	4	Arterial M	27,495	0.76	C	4	Arterial M	28,690	0.80	C
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	21,595	0.60	A	4	Arterial M	23,490	0.65	B
38	Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	4	Arterial M	14,163	0.39	A	4	Arterial M	16,250	0.45	A
39	Florin Rd	South Watt Ave	Hedge Ave	2	Arterial M	7,718	0.43	A	2	Arterial M	9,910	0.55	A
40	Florin Rd	Hedge Ave	Mayhew Rd	2	Arterial M	6,312	0.35	A	2	Arterial M	9,010	0.50	A
41	Florin Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	6,317	0.35	A	2	Arterial M	9,080	0.50	A
42	Florin Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	3,478	0.19	A	2	Arterial M	5,910	0.33	A
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	3,835	0.21	A	2	Arterial M	4,690	0.26	A
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	37,516	1.04	**F**	4	Arterial M	40,090	1.11	**F**
45	Fruitridge Rd	65th St	Power Inn Rd	4	Arterial M	16,634	0.46	A	4	Arterial M	16,630	0.46	A
46	Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	4	Arterial M	15,214	0.42	A	4	Arterial M	16,550	0.46	A
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	10,280	0.57	A	2	Arterial M	11,160	0.62	B
48	Fruitridge Rd	South Watt Ave	Hedge Ave	2	Arterial M	2,890	0.16	A	2	Arterial M	2,940	0.16	A
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	2	Arterial M	1,790	0.10	A	2	Arterial M	1,440	0.08	A
50	Grant Line Rd	White Rock Rd	Douglas Rd	2	Rural NS	7,189	0.42	D	2	Rural NS	8,310	0.49	D
51	Grant Line Rd	Douglas Rd	Kiefer Blvd	2	Rural S	6,143	0.31	C	2	Rural S	7,460	0.37	D
52	Grant Line Rd	Kiefer Blvd	Jackson Rd	2	Rural S	5,758	0.29	C	2	Rural S	6,950	0.35	C
53	Grant Line Rd	Jackson Rd	Sunrise Blvd	2	Rural S	14,720	0.74	E	2	Rural S	14,430	0.72	E
54	Grant Line Rd	Sunrise Blvd	Calvine Rd	2	Rural S	14,812	0.74	E	2	Rural S	15,420	0.77	E
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit	2	Rural S	13,140	0.66	**E**	2	Rural S	13,570	0.68	**E**
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd	2	Rural S	13,140	0.66	**E**	2	Rural S	13,520	0.68	**E**
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	17,459	0.87	**E**	2	Rural S	19,560	0.98	**E**

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Table 8.5
Existing Plus Jackson Township Project (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jackson Township Project				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	16,064	0.80	**E**	2	Rural S	18,070	0.90	**E**
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	2	Rural S	4,635	0.23	C	2	Rural S	6,700	0.34	C
59	Hedge Ave	Jackson Rd	Fruitridge Rd	2	Arterial M	3,061	0.17	A	2	Arterial M	2,640	0.15	A
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	3,737	0.21	A	2	Arterial M	3,960	0.22	A
61	Hedge Ave	Elder Creek Rd	Florin Rd	2	Arterial M	2,722	0.15	A	2	Arterial M	3,010	0.17	A
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	53,849	1.00	E	6	Arterial M	55,120	1.02	**F**
63	International Dr	Mather Field Rd	Zinfandel Dr	6	Arterial M	17,500	0.32	A	6	Arterial M	17,910	0.33	A
64	International Dr	Zinfandel Dr	Sunrise Blvd	6	Arterial M	8,802	0.16	A	6	Arterial M	9,480	0.18	A
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd	2	Arterial M	12,358	0.69	B	2	Arterial M	13,570	0.75	C
66	Jackson Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	10,414	0.58	A	2	Arterial M	13,450	0.75	C
67	Jackson Rd	South Watt Ave	Hedge Ave	2	Arterial M	17,060	0.95	E	2	Arterial M	23,280	1.29	**F**
68	Jackson Rd	Hedge Ave	Mayhew Rd	2	Arterial M	12,616	0.70	C	2	Arterial M	19,660	1.09	**F**
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	14,996	0.83	D	2	Arterial M	21,730	1.21	**F**
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	13,030	0.72	C	2	Arterial M	26,090	1.45	**F**
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	10,478	0.46	D	4	Arterial M	32,180	0.89	D
71.2	Jackson Rd	Collector JT-3	Tree View Ln	2	Rural Hwy	10,478	0.46	D	4	Arterial M	20,200	0.56	A
71.3	Jackson Rd	Tree View Ln	Collector JT-4	2	Rural Hwy	10,478	0.46	D	4	Arterial M	15,530	0.43	A
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	2	Rural Hwy	10,478	0.46	D	2	Rural Hwy	15,040	0.66	E
72	Jackson Rd	Eagles Nest Rd	Sunrise Blvd	2	Rural Hwy	9,976	0.44	D	2	Rural Hwy	12,130	0.53	D
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	13,306	0.58	D	2	Rural Hwy	14,680	0.64	**E**
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	2	Arterial M	4,616	0.26	A	2	Arterial M	4,860	0.27	A
75	Kiefer Blvd	South Watt Ave	Mayhew Rd	4	Arterial M	18,668	0.52	A	4	Arterial M	20,090	0.56	A
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	9,274	0.26	A	4	Arterial M	12,350	0.34	A
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	2	Arterial M	4,618	0.26	A	2	Arterial M	5,620	0.31	A
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	2	Arterial M	656	0.04	A	2	Arterial M	1790	0.10	A
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	2	Arterial M	2,786	0.15	A	2	Arterial M	2,780	0.15	A
80	Mather Blvd / Norden Ave	Von Karman St	Bleckely St	4	Arterial M	4,373	0.12	A	4	Arterial M	5,730	0.16	A
81	Mather Blvd	Bleckely St	Femoyer St	4	Arterial M	4,373	0.12	A	4	Arterial M	5,730	0.16	A
82	Mather Blvd	Femoyer St	Douglas Rd	2	Arterial M	4,373	0.24	A	2	Arterial M	5,730	0.32	A

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Table 8.5
Existing Plus Jackson Township Project (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jackson Township Project				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	6,751	0.84	E	2	Res Collector F	8,760	1.10	**F**
84	Mather Field Rd	US 50	Rockingham Dr	6	Arterial M	37,755	0.70	B	6	Arterial M	38,850	0.72	C
85	Mather Field Rd	Rockingham Dr	International Dr	6	Arterial M	37,520	0.69	B	6	Arterial M	38,120	0.71	C
86	Mather Field Rd	International Dr	Peter A McCuen Blvd	4	Arterial M	14,857	0.41	A	4	Arterial M	15,230	0.42	A
87	Mayhew Rd	Folsom Blvd	Goethe Rd	2	Arterial M	6,977	0.39	A	2	Arterial M	8,140	0.45	A
88	Mayhew Rd	Goethe Rd	Kiefer Blvd	2	Arterial L	6,593	0.44	A	2	Arterial L	7,920	0.53	A
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	2	Arterial L	1,616	0.11	A	2	Arterial L	1,260	0.08	A
90	Old Placerville Rd	Bradshaw Rd	Granby Dr	4	Arterial M	15,800	0.44	A	4	Arterial M	16,920	0.47	A
91	Old Placerville Rd	Granby Dr	Happy Ln	2	Arterial M	13,573	0.75	C	2	Arterial M	14,340	0.80	C
92	Old Placerville Rd	Happy Ln	Routier Rd	2	Arterial M	10,710	0.60	A	2	Arterial M	12,110	0.67	B
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	10,710	0.30	A	4	Arterial M	11,390	0.32	A
94	Power Inn Rd	Folsom Blvd	14th Ave	6	Arterial M	36,175	0.67	B	6	Arterial M	36,330	0.67	B
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	19,881	0.55	A	4	Arterial M	20,650	0.57	A
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	40,920	0.76	C	6	Arterial M	44,220	0.82	D
97	South Watt Ave	Kiefer Blvd	Jackson Rd	5	Arterial M	32,415	0.90	E	5	Arterial M	35,480	0.99	E
98	South Watt Ave	Jackson Rd	Fruitridge Rd	2	Arterial M	25,832	1.44	**F**	2	Arterial M	25,930	1.44	**F**
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	21,567	1.20	**F**	2	Arterial M	21,820	1.21	**F**
100	South Watt Ave	Elder Creek Rd	Florin Rd	2	Arterial M	19,069	1.06	**F**	2	Arterial M	19,210	1.07	**F**
101	Sunrise Blvd	US 50	Folsom Blvd	7	Arterial M	54,500	1.01	**F**	7	Arterial M	54,700	1.01	**F**
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr	6	Arterial M	49,500	0.92	**E**	6	Arterial M	50,090	0.93	**E**
103	Sunrise Blvd	Trade Center Dr	White Rock Rd	6	Arterial M	34,571	0.64	B	6	Arterial M	35,720	0.66	B
104.1	Sunrise Blvd	White Rock Rd	International Dr	6	Arterial M	25,811	0.48	A	6	Arterial M	27,070	0.50	A
104.2	Sunrise Blvd	International Dr	Rio Del Oro Pkwy	6	Arterial M	28,400	0.53	A	6	Arterial M	31,270	0.58	A
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	25,811	0.48	A	6	Arterial M	29,350	0.54	A
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	21,878	0.61	B	5	Arterial M	24,690	0.69	B
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	16,894	0.94	**E**	2	Arterial M	19,180	1.07	**F**
107	Sunrise Blvd	Jackson Rd	Florin Rd	2	Rural S	11,181	0.56	D	2	Rural S	11,360	0.57	D
108	Sunrise Blvd	Florin Rd	Grant Line Rd	2	Rural S	7,752	0.39	D	2	Rural S	7,440	0.37	D
109	Vineyard Rd	Gerber Rd	Calvine Rd	2	Arterial M	5,515	0.31	A	2	Arterial M	5,820	0.32	A
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	65,242	1.09	**F**	6	Arterial H	67,710	1.13	**F**
111	White Rock Rd	International Rd	Quality Dr	2	Arterial M	3,962	0.22	A	2	Arterial M	4,030	0.22	A
112	White Rock Rd	Quality Dr	Zinfandel Dr	4	Arterial M	11,200	0.31	A	4	Arterial M	10,780	0.30	A

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		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
113	White Rock Rd	Zinfandel Dr	Kilgore Rd	6	Arterial M	14,756	0.27	A	6	Arterial M	14,730	0.27	A
114	White Rock Rd	Kilgore Rd	Sunrise Blvd	5	Arterial M	14,756	0.41	A	5	Arterial M	14,940	0.42	A
115	White Rock Rd	Sunrise Blvd	Fitzgerald Rd	4	Arterial M	15,433	0.43	A	4	Arterial M	15,360	0.43	A
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	2	Rural NS	2,490	0.15	B	2	Rural NS	2,230	0.13	B
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial M	9,400	0.26	A	4	Arterial M	10,290	0.29	A
118	Zinfandel Dr	US 50	White Rock Rd	7	Arterial M	45,228	0.84	D	7	Arterial M	47,500	0.88	D
119	Zinfandel Dr	White Rock Rd	International Rd	6	Arterial M	17,923	0.33	A	6	Arterial M	21,200	0.39	A
120	Zinfandel Dr	International Rd	Baroque Dr	6	Arterial M	7,595	0.14	A	6	Arterial M	11,870	0.22	A
121	Zinfandel Dr	Baroque Dr	City Limit	4	Arterial M	7,595	0.21	A	4	Arterial M	11,870	0.33	A
122	Zinfandel Dr	City Limit	Douglas Rd	2	Arterial M	7,595	0.42	A	2	Arterial M	11,870	0.66	B
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	2	Arterial M	2,848	0.16	A	2	Arterial M	6,870	0.38	A
400	Collector JT-1	Excelsior Rd	Collector JT-3						2	Res Collector F	2,890	0.36	B
401	Collector JT-1	Collector JT-3	Tree View Ln						2	Res Collector F	1,050	0.13	A
402	Collector JT-3	Kiefer Blvd	Collector JT-1						2	Res Collector F	1,220	0.15	A
403	Collector JT-3	Collector JT-1	Collector JT-6						2	Res Collector F	1,640	0.21	B
404	Collector JT-3	Collector JT-6	Collector JT-5						2	Res Collector F	1,640	0.21	B
405	Collector JT-3	Collector JT-5	Jackson Rd						4	Arterial M	15,990	0.44	A
406	Collector JT-4	Jackson Rd	Bridgewater Dr						2	Arterial M	190	0.01	A
407	Collector JT-5	Collector JT-3	Tree View Ln						2	Res Collector NF	8,270	0.83	D
408	Collector JT-6	Excelsior Rd	Collector JT-3						2	Res Collector F	3,140	0.39	B
409	Collector JT-6	Collector JT-3	Tree View Ln						2	Res Collector F	1,100	0.14	A
410	Kiefer Blvd	Excelsior Rd	Tree View Ln						3	Arterial M	5,090	0.28	A
411	Tree View Ln	Kiefer Blvd	Collector JT-1						4	Arterial M	2,610	0.07	A
412	Tree View Ln	Collector JT-1	Collector JT-6						4	Arterial M	5,330	0.15	A
413	Tree View Ln	Collector JT-6	Collector JT-5						4	Arterial M	5,440	0.15	A
414	Tree View Ln	Collector JT-5	Jackson Rd						4	Arterial M	7,670	0.21	A

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 8.5
Existing Plus Jackson Township Project (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jackson Township Project				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
415	Collector JT-7	Collector JT-3	Tree View Ln						2	Arterial M	980	0.05	A
416	Collector JT-8	Collector JT-3	Tree View Ln						2	Arterial M	1,070	0.06	A
417	Collector JT-9	Jackson Rd	Collector JT-8						2	Arterial M	3,250	0.18	A
418	Collector JT-10	Jackson Rd	Collector JT-8						2	Arterial M	1,670	0.09	A
419	Collector JT-6	Tree View Ln	Jackson Rd						2	Res Collector F	2,190	0.27	B

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

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Table 8.6

Existing Plus Jackson Township Project (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project			LOS Impact	Existing			Existing Plus Jackson Township Project			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
1	Howe Avenue & College Town Drive/US 50 WB Ramps	Signal	D	36.6	Signal	B	19.0	No	Signal	D	44.4	Signal	C	27.8	No
2	Howe Avenue & US 50 EB Ramps	Signal	B	16.9	Signal	B	11.0	No	Signal	C	20.5	Signal	A	9.1	No
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	D	39.1	Signal	C	34.7	No	Signal	D	55.0	Signal	D	43.3	No
4	Power Inn Road & 14th Avenue	Signal	C	31.5	Signal	B	15.6	No	Signal	D	39.6	Signal	C	20.8	No
5	Power Inn Road & Fruitridge Road	Signal	D	43.4	Signal	D	43.8	No	Signal	C	33.5	Signal	C	26.5	No
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	D	36.8	Signal	C	23.0	No	Signal	C	32.1	Signal	B	16.2	No
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	D	39.0	Signal	C	27.3	No	Signal	E	55.6	Signal	C	27.5	No
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop	A	2.8	Two-way stop	A	2.8	No	Two-way stop	A	3.2	Two-way stop	A	3.4	No
	Westbound Left Turn		*C*	*20.1*		*C*	*24.2*			*C*	*23.3*		*D*	*28.6*	
	Westbound Right Turn		*B*	*13.3*		*C*	*15.1*			*B*	*12.6*		*B*	*13.6*	
	Southbound Left Turn		*A*	*10.0*		*B*	*10.7*			*B*	*10.9*		*B*	*12.0*	
9	Florin Perkins Road & Jackson Road	Signal	D	51.5	Signal	B	17.4	No	Signal	D	54.1	Signal	C	27.2	No
10	Florin Perkins Road & Fruitridge Road	Signal	C	25.1	Signal	C	20.6	No	Signal	C	25.4	Signal	C	20.3	No
11	Florin Perkins Road & Elder Creek Road	Signal	C	25.7	Signal	B	18.6	No	Signal	C	26.2	Signal	C	20.2	No
12	Watt Avenue & Folsom Blvd.	Signal	E	66.2	Signal	E	72.6	No	Signal	E	71.9	Signal	E	65.9	No
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	B	19.6	Signal	B	12.6	No	Signal	D	54.1	Signal	B	11.4	No
14	S. Watt Avenue & Kiefer Blvd.	Signal	E	56.0	Signal	E	69.1	No	Signal	E	75.9	Signal	D	45.2	No

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Table 8.6

Existing Plus Jackson Township Project (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project			LOS Impact	Existing			Existing Plus Jackson Township Project			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
15	S. Watt Avenue & Canberra Dr.	Signal	B	11.5	Signal	A	7.3	No	Signal	A	9.7	Signal	A	6.1	No
16	S. Watt Avenue & Jackson Road	Signal	E	62.5	Signal	E	73.0	No	Signal	E	66.4	Signal	E	64.3	No
17	S. Watt Avenue & Fruitridge Road	Signal	D	38.1	Signal	C	21.2	No	Signal	D	41.7	Signal	C	21.4	No
18	S. Watt Avenue & Elder Creek Road	Signal	E	62.7	Signal	E	80.0	Yes	Signal	E	68.8	Signal	E	79.1	Yes
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	D	54.7	Signal	C	28.5	No	Signal	D	51.8	Signal	D	38.4	No
21	Elk Grove Florin Road & Gerber Road	Signal	D	49.1	Signal	D	37.0	No	Signal	E	64.6	Signal	E	62.6	No
23	Hedge Avenue & Jackson Road	Signal	D	35.1	Signal	C	24.2	No	Signal	D	37.3	Signal	B	13.9	No
24	Hedge Avenue & Fruitridge Road	All-way stop	B	13.6	All-way stop	C	21.2	No	All-way stop	A	9.4	All-way stop	A	9.2	No
25	Hedge Avenue & Elder Creek Road	All-way stop	C	15.9	All-way stop	F	62.2	Yes	All-way stop	B	11.6	All-way stop	C	23.1	No
26	Hedge Avenue & Tokay Lane	Two-way stop	A	0.4	Two-way stop	A	0.3	No	Two-way stop	A	0.2	Two-way stop	A	0.2	No
	Northbound Left Turn		*A*	*0.0*		A	0.0			*A*	*0.0*		*A*	*0.0*	
	Southbound Left Turn		*A*	*8.0*		*A*	*8.3*			*A*	*7.3*		*A*	*7.3*	
	Eastbound		*B*	*12.2*		*B*	*13.2*			*B*	*10.2*		*B*	*11.1*	
	Westbound		*B*	*11.1*		*B*	*12.0*			*A*	*9.6*		*B*	*10.0*	
27	Hedge Avenue & Florin Road	All-way stop	B	12.9	All-way stop	C	17.8	No	All-way stop	B	11.1	All-way stop	C	17.1	No
28	Mayhew Road & Kiefer Boulevard	Signal	D	48.6	Signal	C	23.8	No	Signal	D	51.1	Signal	B	19.3	No

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Table 8.6

Existing Plus Jackson Township Project (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project			LOS Impact	Existing			Existing Plus Jackson Township Project			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
29	Mayhew Road & Jackson Road	Two-way stop	A	1.8	Two-way stop	A	1.8	Yes	Two-way stop	A	1.9	Two-way stop	A	0.8	No
	Northbound Through - Left Turn		*D*	*27.6*		*F*	*50.0*			*D*	*34.0*		*E*	*48.9*	
	Northbound Right Turn		*B*	*11.8*		*C*	*18.0*			*C*	*15.0*		*C*	*15.3*	
	Southbound		*C*	*18.3*		*D*	*30.3*			*C*	*24.9*		*D*	*32.7*	
	Eastbound Left Turn		*A*	*8.9*		*A*	*9.3*			*A*	*8.4*		*A*	*9.3*	
	Westbound Left Turn		*A*	*8.3*		*A*	*9.4*			*A*	*9.3*		*A*	*9.3*	
30	Mayhew Road & Fruitridge Road	Two-way stop	A	6.2	Two-way stop	A	7.1	No	Two-way stop	A	5.1	Two-way stop	A	6.6	No
	Northbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*7.4*		*A*	*7.3*	
	Eastbound		*A*	*9.2*		*A*	*9.2*			*A*	*9.2*		*A*	*8.8*	
31	Mayhew Road & Elder Creek Road	Two-way stop	A	0.2	Two-way stop	A	0.1	No	Two-way stop	A	0.3	Two-way stop	A	0.2	No
	Northbound		*B*	*11.9*		*B*	*14.3*			*B*	*10.9*		B	13.1	
	Southbound		*B*	*11.1*		*B*	*13.1*			*A*	*9.8*		*B*	*11.3*	
	Eastbound Left Turn		*A*	*8.3*		*A*	*9.0*			*A*	*7.6*		*A*	*8.0*	
	Westbound Left Turn		*A*	*7.5*		*A*	*7.7*			*A*	*0.0*		*A*	*0.0*	
32	Woodring Drive & Zinfandel Drive	Two-way stop	A	5.9	Two-way stop	A	8.7	No	Two-way stop	A	3.0	Two-way stop	A	4.3	No
	Eastbound		*A*	*9.3*		*B*	*12.9*			*A*	*9.3*		*B*	*11.9*	
	Northbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*0.0*		*A*	*0.0*	
33	Bradshaw Road & Folsom Blvd.	Signal	E	56.7	Signal	C	22.5	No	Signal	D	49.9	Signal	B	19.8	No
34	Bradshaw Road & US 50 WB Ramps	Signal	B	15.9	Signal	A	5.6	No	Signal	B	15.2	Signal	A	6.0	No
35	Bradshaw Road & US 50 EB Ramps	Signal	C	24.4	Signal	B	12.8	No	Signal	B	16.0	Signal	B	10.2	No
36	Bradshaw Road & Old Placerville Road	Signal	D	45.9	Signal	C	33.1	No	Signal	D	52.0	Signal	C	34.2	No
37	Bradshaw Road & Kiefer Boulevard	Signal	D	45.7	Signal	C	20.8	No	Signal	E	66.2	Signal	E	69.5	No

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Table 8.6

Existing Plus Jackson Township Project (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project			LOS Impact	Existing			Existing Plus Jackson Township Project			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
38	Bradshaw Road & Jackson Road	Signal	E	73.1	Signal	F	158.7	Yes	Signal	E	59.4	Signal	E	77.3	No
39	Bradshaw Road & Elder Creek Road	Signal	D	36.8	Signal	E	55.2	No	Signal	D	36.1	Signal	D	41.7	No
40	Bradshaw Road & Florin Road	Signal	D	38.1	Signal	D	38.8	No	Signal	D	53.6	Signal	D	43.6	No
41	Bradshaw Road & Gerber Road	Signal	E	72.2	Signal	E	66.7	No	Signal	D	49.9	Signal	C	31.2	No
42	Happy Lane & Old Placerville Road	Two-way stop	A	7.3	Two-way stop	B	11.8	Yes	Two-way stop	A	4.7	Two-way stop	B	12.8	Yes
	Northbound Left Turn		*F*	*64.8*		*F*	*215.4*			*F*	*95.9*		*F*	*>300*	
	Northbound Right Turn		*D*	*30.6*		*D*	*31.3*			*C*	*15.4*		*C*	*19.9*	
	Westbound Left Turn		*B*	*10.2*		*B*	*10.6*			*B*	*10.1*		*B*	*10.7*	
44	Excelsior Road & Kiefer Boulevard	West Jackson/Jackson Township Project Int.			Signal	B	18.5	No	West Jackson/Jackson Township Project Int.			Signal	B	10.4	No
45	Excelsior Road & Jackson Road	Signal	D	36.7	Signal	F	171.2	Yes	Signal	D	40.3	Signal	F	134.9	Yes
46	Excelsior Road & Elder Creek Road	Two-way stop	A	3.5	Two-way stop	F	62.0	Yes	Two-way stop	A	2.7	Two-way stop	F	101.5	Yes
	Northbound Left Turn		*A*	*7.5*		*A*	*8.1*			*A*	*8.0*		*A*	*8.8*	
	Eastbound		*C*	*18.6*		*F*	*>300*			*B*	*12.3*		*F*	*>300*	
47	Excelsior Road & Florin Road	All-way stop	C	24.9	All-way stop	F	173.9	Yes	All-way stop	B	12.5	All-way stop	F	72.7	Yes
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	B	14.0	All-way stop	E	44.1	No	All-way stop	B	10.6	All-way stop	C	19.7	No
49	Mather Field Road & US 50 WB Ramps	Signal	C	24.7	Signal	A	8.7	No	Signal	A	9.4	Signal	A	5.2	No
50	Mather Field Road & US 50 EB Ramps	Signal	C	27.7	Signal	B	16.4	No	Signal	B	13.4	Signal	A	7.0	No
51	Mather Field Road & Rockingham Drive	Signal	E	56.4	Signal	D	41.6	No	Signal	D	54.7	Signal	D	39.7	No

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Table 8.6

Existing Plus Jackson Township Project (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project			LOS Impact	Existing			Existing Plus Jackson Township Project			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
52	Mather Boulevard & Douglas Road	All-way stop	E	39.3	All-way stop	F	80.1	Yes	All-way stop	C	15.5	All-way stop	C	17.0	No
53	Zinfandel Drive & US 50 WB Ramps	Signal	B	16.4	Signal	A	8.6	No	Signal	D	51.7	Signal	D	35.3	No
54	Zinfandel Drive & US 50 EB Ramps/Gold Center Drive	Signal	D	40.0	Signal	D	45.2	No	Signal	E	60.1	Signal	E	61.4	No
55	Zinfandel Drive & White Rock Road	Signal	D	47.7	Signal	C	23.5	No	Signal	D	54.7	Signal	D	39.7	No
56	Zinfandel Drive & Data Drive	Signal	D	49.3	Signal	B	15.6	No	Signal	D	52.9	Signal	C	20.0	No
57	Zinfandel Drive & International Dr	Signal	C	34.0	Signal	B	18.9	No	Signal	D	48.5	Signal	C	20.9	No
58	Zinfandel Drive & Douglas Road	Signal	E	55.5	Signal	C	28.2	No	Signal	D	54.2	Signal	B	17.6	No
60	Eagles Nest Road & Jackson Road	Two-way stop	A	2.3	Two-way stop	F	83.6	Yes	Two-way stop	A	3.6	Two-way stop	C	23.3	Yes
	Northbound		*C*	*22.0*		*F*	*>300*			*C*	*23.8*		*F*	*271.8*	
	Southbound		*B*	*13.9*		*C*	*15.7*			*C*	*22.0*		*E*	*41.0*	
	Eastbound Left Turn		*A*	*8.8*		*B*	*10.3*			*A*	*7.9*		*A*	*8.0*	
	Westbound Left Turn		*A*	*7.9*		*A*	*8.1*			*A*	*8.7*		*A*	*8.9*	
61	Eagles Nest Road & Florin Road	Two-way stop	A	2.3	Two-way stop	A	5.6	No	Two-way stop	A	2.6	Two-way stop	A	4.8	No
	Northbound		*B*	*12.7*		*C*	*15.3*			*B*	*12.1*		*B*	*13.2*	
	Southbound		*B*	*10.0*		*B*	*13.3*			*B*	*10.5*		*B*	*12.6*	
	Eastbound Left Turn		*A*	*7.7*		*A*	*7.8*			*A*	*7.7*		*A*	*7.8*	
	Westbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*7.6*		*A*	*7.6*	
62	Sunrise Boulevard & US 50 WB Ramps	Signal	D	44.7	Signal	C	30.8	No	Signal	B	19.7	Signal	A	9.1	No
63	Sunrise Boulevard & US 50 EB Ramps	Signal	B	16.9	Signal	A	9.4	No	Signal	B	17.6	Signal	A	9.8	No

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Table 8.6

Existing Plus Jackson Township Project (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project			LOS Impact	Existing			Existing Plus Jackson Township Project			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
64	Sunrise Boulevard & Folsom Boulevard	Signal	D	54.4	Signal	C	26.7	No	Signal	D	48.6	Signal	C	33.9	No
65	Sunrise Boulevard & White Rock Road	Signal	D	47.8	Signal	C	31.4	No	Signal	D	51.6	Signal	D	35.8	No
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	D	47.8	Signal	B	16.6	No	Signal	D	45.8	Signal	C	20.4	No
67	Sunrise Boulevard & Douglas Road	Signal	D	51.7	Signal	C	27.2	No	Signal	D	46.5	Signal	C	22.1	No
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	C	27.0	Signal	C	23.8	No	Signal	C	21.0	Signal	A	7.9	No
69	Sunrise Boulevard & Kiefer Boulevard	Signal	D	53.6	Signal	C	27.9	No	Signal	C	27.0	Signal	B	13.2	No
70	Sunrise Boulevard & Jackson Road	Signal	E	57.0	Signal	D	52.3	No	Signal	D	47.2	Signal	C	31.7	No
71	Sunrise Boulevard & Florin Road	Signal	B	11.3	Signal	A	8.8	No	Signal	D	48.3	Signal	B	18.2	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	D	43.2	Signal	B	19.6	No	Signal	D	40.7	Signal	E	66.4	No
73	Hazel Avenue & Tributary Point Drive/US 50 WB Off-ramp	Signal	C	31.2	Signal	C	25.7	No	Signal	D	41.4	Signal	B	16.6	No
74	Hazel Avenue & US 50 EB Ramps	Signal	C	20.6	Signal	A	8.3	No	Signal	C	29.9	Signal	A	5.4	No
75	Hazel Avenue & Folsom Boulevard	Signal	D	51.7	Signal	C	22.9	No	Signal	D	46.7	Signal	D	45.0	No
76	Prairie City Road & White Rock Road	Signal	B	19.2	Signal	B	12.3	No	Signal	B	15.0	Signal	B	10.0	No
77	Grant Line Road & White Rock Road	Signal	B	10.9	Signal	A	7.3	No	Signal	B	11.2	Signal	A	7.4	No
78	Grant Line Road & Douglas Road	All-way stop	C	15.2	Signal	B	11.0	No	All-way stop	B	12.3	Signal	A	8.7	No

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Table 8.6

Existing Plus Jackson Township Project (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project			LOS Impact	Existing			Existing Plus Jackson Township Project			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
79	Grant Line Road & Kiefer Boulevard	All-way stop	B	11.4	All-way stop	B	12.8	No	All-way stop	B	10.5	All-way stop	B	12.0	No
80	Grant Line Road & Jackson Road	Signal	E	74.0	Signal	F	80.8	Yes	Signal	E	78.9	Signal	E	68.2	No
81	Watt Avenue & US-50 EB Ramps	Signal	B	13.0	Signal	B	12.7	No	Signal	B	14.9	Signal	B	13.8	No
82	Watt Avenue & US-50 WB Ramps	Signal	C	32.9	Signal	C	32.4	No	Signal	C	28.6	Signal	C	29.4	No
83	Mayhew Rd & Folsom Blvd.	Signal	B	19.8	Signal	B	12.1	No	Signal	C	20.1	Signal	B	13.2	No
84	65th Street Expy & Fruitridge Road	Signal	C	31.2	Signal	C	27.6	No	Signal	D	35.3	Signal	C	28.0	No
85	Power Inn Road & Elder Creek Road	Signal	D	35.2	Signal	C	28.2	No	Signal	D	36.3	Signal	D	35.6	No
86	Power Inn Road & Florin Rd	Signal	D	36.3	Signal	D	38.0	No	Signal	D	45.9	Signal	D	44.5	No
87	Florin Perkins Road & Florin Rd	Signal	D	36.7	Signal	C	34.5	No	Signal	C	32.5	Signal	C	29.0	No
88	Bradshaw Rd & Calvine Rd	Signal	C	30.5	Signal	C	24.3	No	Signal	D	36.9	Signal	C	27.9	No
89	Vineyard Rd & Calvine Rd	Signal	C	30.8	Signal	B	17.5	No	Signal	C	34.9	Signal	B	17.8	No
90	Excelsior Road & Calvine Rd	All-way stop	C	16.6	All-way stop	E	43.9	Yes	All-way stop	B	13.0	All-way stop	C	20.3	No
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	D	51.7	Signal	B	14.5	No	Signal	D	46.5	Signal	C	24.4	No
92	Grant Line Rd & Calvine Rd	Signal	C	21.4	Signal	B	16.9	No	Signal	C	24.0	Signal	B	16.5	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	E	65.9	Signal	E	67.4	No	Signal	E	64.8	Signal	D	50.9	No

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Table 8.6

Existing Plus Jackson Township Project (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Jackson Township Project			LOS Impact	Existing			Existing Plus Jackson Township Project			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
94	Grant Line Rd & Bond Rd/Wrangler Dr	Signal	C	33.3	Signal	B	12.8	No	Signal	D	46.4	Signal	B	15.7	No
200	Excelsior Road & Collector WJ-1/Collector JT-1	West Jackson/Jackson Township Project Int.			Signal	B	12.4	No	West Jackson/Jackson Township Project Int.			Signal	B	11.8	No
201	Excelsior Road & Collector WJ-2/Collector JT-2	West Jackson/Jackson Township Project Int.			Signal	B	11.0	No	West Jackson/Jackson Township Project Int.			Signal	A	7.8	No
400	Collector JT-3 & Jackson Road	Jackson Township Project Int.			Signal	B	19.0	No	Jackson Township Project Int.			Signal	B	15.9	No
401	Tree View Lane & Jackson Road	Jackson Township Project Int.			Signal	B	11.4	No	Jackson Township Project Int.			Signal	B	10.3	No
402	Collector JT-4 & Jackson Road	Jackson Township Project Int.			Signal	A	6.1	No	Jackson Township Project Int.			Signal	B	10.3	No
403	Tree View Lane & Collector JT-5	Jackson Township Project Int.			Signal	B	13.5	No	Jackson Township Project Int.			Signal	B	12.8	No
404	Tree View Lane & Collector JT-6	Jackson Township Project Int.			Signal	A	3.9	No	Jackson Township Project Int.			Signal	A	5.1	No
405	Tree View Lane & Collector JT-1	Jackson Township Project Int.			Signal	B	17.0	No	Jackson Township Project Int.			Signal	B	14.6	No
406	Tree View Lane & Kiefer Boulevard	Jackson Township Project Int.			Signal	A	6.4	No	Jackson Township Project Int.			Signal	A	6.5	No

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 8.7

Existing and Existing Plus Jackson Township Project (Proposed Project) Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus Jackson Township Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
1	Howe Avenue & College Town Drive/US 50 WB Ramps	Signal	Signal	↑↑↑ r	↲↓↓↓↓	↰ rr	↰↰↰ ↱r	↑↑↑ r	↲↓↓↓↓	↰ rr	↰↰↰ ↱r
2	Howe Avenue & US 50 EB Ramps	Signal	Signal	↑↑↑ r	↲↓↓↓	↰↰rr		↑↑↑ r	↲↓↓↓	↰↰rr	
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	Signal	↰↰↑↑↑ r	↲↓↓↓↰↰	↰↰↑ ↱	↰↰↑↑ rr	↰↰↑↑↑ r	↲↓↓↓↰↰	↰↰↑ ↱	↰↰↑↑ rr
4	Power Inn Road & 14th Avenue	Signal	Signal	↰↰↑↑ ↱	↲↓↓↰	↰↰ r	↟	↰↰↑↑ ↱	↲↓↓↰	↰↰ r	↟
5	Power Inn Road & Fruitridge Road	Signal	Signal	↰↰↑↱	↲↓↓↰↰	↰↑ ↱	↰↑↑ r	↰↰↑↱	↲↓↓↰↰	↰↑ ↱	↰↑↑ r
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	Signal	↰↰ r	↲↱	↰↑↑ r	↰↑↑ r	↰↰ r	↲↱	↰↑↑ r	↰↑↑ r
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	Signal	↰↰ r	↲↱	↰↑↑ r	↰↑ ↱	↰↰ r	↲↱	↰↑↑ r	↰↑ ↱
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop	Two-way stop	↑↱	↓↓↰		↰r	↑↱	↓↓↰		↰r
9	Florin Perkins Road & Jackson Road	Signal	Signal	↰↑↑ r	↲↓↰	↰↑ rr	↰↑ ↱	↰↑↑ r	↲↓↰	↰↑ rr	↰↑ ↱
10	Florin Perkins Road & Fruitridge Road	Signal	Signal	↰↑↑ r	↲↓↓↰	↰↑↑ r	↰↑ ↱	↰↑↑ r	↲↓↓↰	↰↑↑ r	↰↑ ↱
11	Florin Perkins Road & Elder Creek Road	Signal	Signal	↰↑↑ r	↲↓↓↰	↰↑↑ r	↰↑↑ r	↰↑↑ r	↲↓↓↰	↰↑↑ r	↰↑↑ r
12	Watt Avenue & Folsom Blvd.	Signal	Signal	↰↰↑↑↑ r	↲↓↓↓↰↰	↰↰↑↑ r	↰↰↑↑ r	↰↰↑↑↑ r	↲↓↓↓↰↰	↰↰↑↑ r	↰↰↑↑ r
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	Signal	↰↑↑↑ r	↲↓↓↰	↟	↰↱r	↰↑↑↑ r	↲↓↓↰	↟	↰↱r
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal	↰↰↑↑ ↱	↲↓↓↰↰	↰↰↑↑ r	↰↰↑↑ r	↰↰↑↑ ↱	↲↓↓↰↰	↰↰↑↑ r	↰↰↑↑ r
15	S. Watt Avenue & Canberra Dr.	Signal	Signal	↑↑ ↱	↓↓↰		↰r	↑↑ ↱	↓↓↰		↰r
16	S. Watt Avenue & Jackson Road	Signal	Signal	↰↑↑ r	↲↓↓↰	↰↱	↰↑ r	↰↑↑ r	↲↓↓↰	↰↱	↰↑ r
17	S. Watt Avenue & Fruitridge Road	Signal	Signal	↰↑↱	↲↓↓↰	↰↑ r	↰↱	↰↑↱	↲↓↓↰	↰↑ r	↰↱
18	S. Watt Avenue & Elder Creek Road	Signal	Signal	↰↑r	↲↓↰	↰ r	↰↑ r	↰↑r	↲↓↰	↰ r	↰↑ r
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal	↰↑↱	↲↓↰	↰↑ ↱	↰↑↑ r	↰↑↱	↲↓↰	↰↑ ↱	↰↑↑ r
21	Elk Grove Florin Road & Gerber Road	Signal	Signal	↰↰↑↱	↲↓↓↰↰	↰↰↑↑ r	↰↰↑↑ r	↰↰↑↱	↲↓↓↰↰	↰↰↑↑ r	↰↰↑↑ r
23	Hedge Avenue & Jackson Road	Signal	Signal	↰↱	↲↰	↰↑ r	↰↑ r	↰↱	↲↰	↰↑ r	↰↑ r
24	Hedge Avenue & Fruitridge Road	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟
25	Hedge Avenue & Elder Creek Road	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟
26	Hedge Avenue & Tokay Lane	Two-way stop	Two-way stop	↟	↟	↟	↟	↟	↟	↟	↟
27	Hedge Avenue & Florin Road	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟
28	Mayhew Road & Kiefer Boulevard	Signal	Signal	↰↑r	↲↓↰	↰↑ ↱	↰↑ ↱	↰↑r	↲↓↰	↰↑ ↱	↰↑ ↱
29	Mayhew Road & Jackson Road	Two-way stop	Two-way stop	↰ r	↟	↰↑ r	↰↱	↰ r	↟	↰↑ r	↰↱
30	Mayhew Road & Fruitridge Road	Two-way stop	Two-way stop	↰	↰	↱		↰	↰	↱	

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

Table 8.7

Existing and Existing Plus Jackson Township Project (Proposed Project) Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus Jackson Township Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
31	Mayhew Road & Elder Creek Road	Two-way stop	Two-way stop								
32	Zinfandel Drive & Woodring Drive	Two-way stop	Two-way stop								
33	Bradshaw Road & Folsom Blvd.	Signal	Signal								
34	Bradshaw Road & US 50 WB Ramps	Signal	Signal								
35	Bradshaw Road & US 50 EB Ramps	Signal	Signal								
36	Bradshaw Road & Old Placerville Road	Signal	Signal								
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal								
38	Bradshaw Road & Jackson Road	Signal	Signal								
39	Bradshaw Road & Elder Creek Road	Signal	Signal								
40	Bradshaw Road & Florin Road	Signal	Signal								
41	Bradshaw Road & Gerber Road	Signal	Signal								
42	Happy Lane & Old Placerville Road	Two-way stop	Two-way stop								
44	Excelsior Road & Kiefer Boulevard		Signal								
45	Excelsior Road & Jackson Road	Signal	Signal								
46	Excelsior Road & Elder Creek Road	Two-way stop	Two-way stop								
47	Excelsior Road & Florin Road	All-way stop	All-way stop								
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	All-way stop								
49	Mather Field Road & US 50 WB Ramps	Signal	Signal								
50	Mather Field Road & US 50 EB Ramps	Signal	Signal								
51	Mather Field Road & Rockingham Drive	Signal	Signal								
52	Mather Boulevard & Douglas Road	All-way stop	All-way stop								
53	Zinfandel Drive & US 50 WB Ramps	Signal	Signal								
54	Zinfandel Drive & US 50 EB Ramps/Gold Center Drive	Signal	Signal								
55	Zinfandel Drive & White Rock Road	Signal	Signal								
56	Zinfandel Drive & Data Drive	Signal	Signal								
57	Zinfandel Drive & International Dr	Signal	Signal								
58	Zinfandel Drive & Douglas Road	Signal	Signal								
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard										

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

Table 8.7

Existing and Existing Plus Jackson Township Project (Proposed Project) Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus Jackson Township Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
60	Eagles Nest Road & Jackson Road	Two-way stop	Two-way stop								
61	Eagles Nest Road & Florin Road	Two-way stop	Two-way stop								
62	Sunrise Boulevard & US 50 WB Ramps	Signal	Signal								
63	Sunrise Boulevard & US 50 EB Ramps	Signal	Signal								
64	Sunrise Boulevard & Folsom Boulevard	Signal	Signal								
65	Sunrise Boulevard & White Rock Road	Signal	Signal								
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal								
67	Sunrise Boulevard & Douglas Road	Signal	Signal								
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	Signal								
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal								
70	Sunrise Boulevard & Jackson Road	Signal	Signal								
71	Sunrise Boulevard & Florin Road	Signal	Signal								
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	Signal								
73	Hazel Avenue & Tributary Point Drive/US 50 WB Off-ramp	Signal	Signal								
74	Hazel Avenue & US 50 EB Ramps	Signal	Signal								
75	Hazel Avenue & Folsom Boulevard	Signal	Signal								
76	Prairie City Road & White Rock Road	Signal	Signal								
77	Grant Line Road & White Rock Road	Signal	Signal								
78	Grant Line Road & Douglas Road	All-way stop	Signal[1]								
79	Grant Line Road & Kiefer Boulevard	All-way stop	All-way stop								
80	Grant Line Road & Jackson Road	Signal	Signal								
81	Watt Avenue & US-50 EB Ramps	Signal	Signal								
82	Watt Avenue & US-50 WB Ramps	Signal	Signal								
83	Mayhew Rd & Folsom Blvd.	Signal	Signal								
84	65th Street Expy & Fruitridge Road	Signal	Signal								
85	Power Inn Road & Elder Creek Road	Signal	Signal								
86	Power Inn Road & Florin Rd	Signal	Signal								
87	Florin Perkins Road & Florin Rd	Signal	Signal								

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

Table 8.7

Existing and Existing Plus Jackson Township Project (Proposed Project) Intersection Geometrics

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus Jackson Township Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
88	Bradshaw Rd & Calvine Rd	Signal	Signal								
89	Vineyard Rd & Calvine Rd	Signal	Signal								
90	Excelsior Road & Calvine Rd	All-way stop	All-way stop								
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	Signal								
92	Grant Line Rd & Calvine Rd	Signal	Signal								
93	Grant Line Rd & Dwy/Wilton Rd	Signal	Signal								
94	Grant Line Rd & Bond Rd/Wrangler Dr	Signal	Signal								
200	Excelsior Road & Collector WJ-1/Collector JT-1		Signal								
201	Excelsior Road & Collector WJ-2/Collector JT-2		Signal								
400	Collector JT-3 & Jackson Road		Signal								
401	Tree View Lane & Jackson Road		Signal								
402	Collector JT-4 & Jackson Road		Signal								
403	Tree View Lane & Collector JT-5		Signal								
404	Tree View Lane & Collector JT-6		Signal								
405	Tree View Lane & Collector JT-1		Signal								
406	Tree View Lane & Kiefer Boulevard		Signal								
407	HS/MS Dwy & Kiefer Boulevard		Signal								

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

8.4.3 Existing Plus Jackson Township Project U.S. 50 Freeway Impacts

8.4.3.1 Freeway Basic Segments

Table 8.8 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations. Details of the analysis are included in the technical appendix. No locations exhibit significant impacts, based on Caltrans' threshold of significance (5% V/C increase).

8.4.3.2 Freeway Merge / Diverge / Weave Segments

Table 8.9 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas. Details of the analysis are included in the technical appendix. The following locations exhibit significant impacts:

- Westbound
    - Watt Avenue to Howe Avenue weave - p.m. peak hour

8.4.3.3 Freeway Ramp Intersection Queuing

Table 8.10 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. No locations exhibit a significant impact.

8.4.4 Existing Plus Jackson Township Project Pedestrian and Bicycle Facility Impacts

The Jackson Township project would not remove any existing or planned pedestrian facility. The Jackson Township project would not remove any existing bicycle facility, but would modify facilities that are planned in the Bikeway Master Plan. The Jackson Township project would add pedestrian and bicycle demands within the Jackson Township project site and to and from nearby land uses. As illustrated in Figure 8.2, the Jackson Township project has proposed changes to the Bikeway Master Plan. Because the Jackson Township project would add demand for pedestrian and bicycle facilities that may not be available in the site vicinity, the impact of the Jackson Township project on pedestrian and bicycle circulation is potentially significant.

Table 8.8: Existing Plus Jackson Township (Proposed Project) Project Peak Hour Freeway Basic Segment Level of Service									
Direc-tion	**Location**	**Existing**				**Existing Plus Jackson Township Project**			
		AM Peak Hour		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
		Volume	**LOS**	**Volume**	**LOS**	**Volume**	**LOS**	**Volume**	**LOS**
East-bound US 50	SR 99 / SR 51 to Stockton Boulevard	7,068	C	6,415	C	7,137	C	6,501	C
	Stockton Boulevard to 59th Street	7,470	**F**	7,228	**F**	7,553	**F**	7,307	**F**
	59th Street to 65th Street	6,767	D	6,641	D	6,851	D	6,711	D
	65th Street to Howe Avenue	7,962	D	7,562	D	8,042	D	7,632	D
	Howe Avenue to Watt Avenue	7,405	D	7,602	D	7,434	D	7,718	D
	Watt Avenue to Bradshaw Road	7,935	D	7,176	C	7,954	D	7,284	C
	Bradshaw Rd to Mather Field Rd	7,725	**F**	7,366	C	7,690	**F**	7,378	C
	Mather Field Rd to Zinfandel Drive	7,275	C	7,224	C	7,258	C	7,238	C
	Zinfandel Drive to Sunrise Blvd	5,121	C	6,649	**F**	5,205	C	6,681	**F**
	Sunrise Boulevard to Hazel Avenue	4,985	C	5,323	**F**	5,054	C	5,341	**F**
West-bound US 50	Hazel Avenue to Sunrise Boulevard	6,068	D	4,370	C	6,114	D	4,411	C
	Sunrise Blvd to Zinfandel Drive	7,502	D	4,762	C	7,521	D	4,823	C
	Zinfandel Drive to Mather Field Rd	7,548	C	5,765	B	7,572	C	5,728	B
	Mather Field Rd to Bradshaw Road	7,859	**F**	6,939	D	7,870	**F**	6,877	D
	Bradshaw Road to Watt Avenue	7,550	**F**	6,466	D	7,564	**F**	6,554	D
	Watt Avenue to Howe Avenue	7,376	**F**	5,106	**F**	7,343	**F**	5,177	**F**
	Howe Avenue to 65th Street	8,157	**F**	7,407	**F**	8,186	**F**	7,470	**F**
	65th Street to 59th Street	8,278	**F**	7,358	**F**	8,304	**F**	7,426	**F**
	59th Street to Stockton Boulevard	9,115	D	7,945	**F**	9,154	D	8,017	**F**
	Stockton Boulevard to SR 99 / SR 51	8,546	D	8,136	**F**	8,573	D	8,186	**F**

Bold values denote level of service "F" conditions. **Red shaded** values indicate project impacts.

Source: *DKS Associates, 2018.*

Table 8.9: Existing Plus Jackson Township (Proposed Project) Project Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service

Direc-tion	Location	Junction Type	Existing				Existing Plus Jackson Township Project			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
East-bound US 50	Northbound 65th Street Slip Entrance	Weave	765	D	653	C	771	D	637	C
	Howe Avenue / Hornet Drive Exit		1,631		1,417		1,684		1,353	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	484	C	881	C	485	C	853	C
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	419	C	431	C	435	C	426	C
	Watt Avenue Exit	Two-Lane Diverge	1,317	B	1,634	B	1,330	B	1,629	B
	Watt Avenue Entrance	One-Lane Merge	2,134	**F**	1,724	D	2,134	**F**	1,721	D
	Bradshaw Road Exit	Two-Lane Diverge	1,520	B	1,228	B	1,538	B	1,294	B
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	220	C	422	C	228	C	397	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	971	C	918	C	921	C	920	C
	Mather Field Road Exit	Two-Lane Diverge	1,266	B	1,062	A	1,266	B	1,092	A
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	125	C	101	B	133	C	100	B

	Northbound Mather Field Road Slip Entrance	Weave	317	**F**	816	C	325	**F**	841	C
	Zinfandel Drive Exit		2,932		1,452		2,938		1,472	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	182	B	129	C	177	B	128	C
	Northbound Zinfandel Drive Slip Entrance	One-Lane Merge	348	B	540	C	471	B	574	C
	Sunrise Boulevard Exit	Major Diverge	1,773	C	1,959	D	1,799	C	1,975	D
	Sunrise Boulevard Entrance	One-Lane Merge	992	C	889	D	1,002	C	892	D
	Hazel Avenue Exit	Two-Lane Diverge	933	B	1,541	C	961	B	1,544	C
	Hazel Avenue Entrance	Weave	804	C	945	C	799	C	947	C
	Aerojet Road Exit		241		55		241		51	
West-bound US 50	Hazel Avenue Exit	Two-Lane Diverge	631	A	869	A	653	A	874	A
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	160	B	600	B	164	B	601	B
	Southbound Hazel Avenue Slip Entrance	One-Lane Merge	1,550	B	800	B	1,574	B	820	B
	Sunrise Boulevard Exit	One-Lane Diverge	749	E	758	D	745	E	763	D
	Sunrise Blvd Entrance	Lane Addition	2,183	**F**	1,656	D	2,189	**F**	1,672	D
	Zinfandel Drive Exit	One-Lane Diverge	1,034	E	608	C	1,037	E	680	C
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	585	B	1,197	B	606	B	1,173	B
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	442	C	561	B	445	C	557	B
	Mather Field Road Exit	One-Lane Drop	1,093	C	556	A	1,119	C	588	A

Northbound Mather Field Road Loop Entrance	One-Lane Merge	515	B	861	B	514	B	895	B
Southbound Mather Field Road Slip Entrance	One-Lane Merge	387	B	380	B	386	B	358	B
Bradshaw Road Exit	Two-Lane Diverge	1,236	B	1,327	B	1,276	B	1,278	B
Northbound Bradshaw Road Loop Entrance	One-Lane Merge	914	D	910	C	967	D	962	C
Southbound Bradshaw Road Slip Entrance	One-Lane Merge	338	D	590	C	333	D	645	C
Watt Avenue Exit	Major Diverge	1,373	D	1,188	C	1,345	D	1,205	C
Northbound Watt Avenue Entrance	One-Lane Merge	820	D	943	C	782	D	938	C
Southbound Watt Avenue Slip Entrance	Lane Addition / Weave	1,232	C	1,317	D	1,195	C	1,322	**F**
Howe Avenue Exit	Major Diverge / Weave	1,531	D	1,419		1,530	D	1,462	
Northbound Howe Avenue Loop Entrance	One-Lane Merge	654	D	602	C	659	D	621	C
Southbound Howe Avenue Slip Entrance	One-Lane Merge	574	C	574	C	572	C	566	C

Bold values denote level of service "F" conditions.
Red shaded values indicate project impacts.
Source: *DKS Associates, 2018.*

Table 8.10: Existing Plus Jackson Township (Proposed Project) Project Peak Hour Freeway Ramp Termini Queuing

Direction	US 50 Exit Ramp	Available Storage Length (feet / lane)			Maximum Queue Length (feet / lane)					
					AM Peak Hour			PM Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US-50	Howe Avenue	765	-	765	89	-	250	119	-	127
	Watt Avenue	1,500	-	1,500	163	-	228	252	-	242
	Bradshaw Road	1,250	-	1,250	87	-	303	75	-	215
	Mather Field Road	1,385	-	1,385	104	-	327	115	-	70
	Zinfandel Drive	1,025	1,025	1,025	196	707	651	443	368	176
	Sunrise Boulevard	1,695	-	1,695	136	-	90	175	-	52
	Hazel Avenue	1,310	-	1,310	163	-	38	130	-	6
Westbound US-50	Hazel Avenue	1,995		1,995	262		44	149		202
	Sunrise Boulevard	1,540	-	1,540	60	-	64	110	-	146
	Zinfandel Drive	1,065	-	1,065	165	-	50	76	-	86
	Mather Field Road	1,335	-	1,335	248	-	184	102	-	48
	Bradshaw Road	1,330	-	1,330	89	-	48	119	-	13
	Watt Avenue	1,480	-	1,480	167	-	524	92	-	430
	Howe Avenue	1,355	1,355	1,355	126	412	87	167	412	187

Red shaded values indicate project impacts.

L = left turn movement, T = through movement, R = right turn movement

Source: *DKS Associates, 2018.*

8.4.5 Existing Plus Jackson Township Project Transit System Impacts

Public transit is not currently provided to the Jackson Township project site. In the preparation of this analysis, a conceptual transit system to serve the Jackson Township project and adjacent future projects was developed (see Section 8.1.2.3). The additional transit service was assumed to be funded by the Jackson Township project. However, the timing and implementation of the transit system are uncertain at this time. The Jackson Township project would increase demands for public transit facilities. Therefore, the impact of the Jackson Township project on the transit system is potentially significant.

8.4.6 Existing Plus Jackson Township Functionality Impacts

Table 8.11 summarizes the results of the rural roadway segment functionality analysis. **Figure 8.6** illustrates the resultant functionality impacts. The table includes the number of lanes assumed with the implementation of the Jackson Township project, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the Jackson Township project. The "Substandard?" heading indicates whether or not a roadway meets the County standards of 12-foot lanes and 6-foot shoulders. If the project makes improvements to a roadway segment such as widening, it would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact?" heading indicate those locations with a functionality impact.

As stated above, the traffic analysis assumed that the Jackson Township project would construct a number of travel lanes on roadway segments that are internal to or on the boundary of the Jackson Township project, and the entire roadway segment would be reconstructed to County standards at that time. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the Jackson Township project.

Table 8.11
Existing Plus Jackson Township Project (Proposed Project) Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing + Jackson Township Project (Proposed Project)			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	2	Yes	7,390	Yes
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	2	Yes	9,210	Yes
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	2	Yes	1,850	No
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Yes	1,850	No
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Yes	1,410	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	2	Yes	9,060	Yes
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	2	Yes	9,390	Yes
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	2	Yes	9,400	Yes
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	2	Yes	10,340	Yes
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Yes	15,060	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	2	Yes	16,560	Yes
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	2	Yes	7,220	Yes
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Yes	7,580	Yes
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Yes	5,220	No
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	2	Yes	9,910	Yes
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	2	Yes	9,010	Yes
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	2	Yes	9,080	Yes
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	2	Yes	5,910	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Yes	4,690	No
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	2	Yes	2,940	No
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	2	Yes	1,440	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	2	Yes	8,310	Yes
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	2	Yes	6,700	Yes
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Yes	2,640	No
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	2	22	Yes	3,737	2	Yes	3,960	No
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Yes	3,010	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	2	Yes	26,090	Yes
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	No	32,180	Yes[3]

Red text with light gray shading indicate project impacts.

Table 8.11
Existing Plus Jackson Township Project (Proposed Project) Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing + Jackson Township Project (Proposed Project)			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	2	22	Yes	4,616	2	Yes	4,860	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	2	Yes	5,620	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	2	Yes	1,790	No
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Yes	8,760	**Yes**
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	2	Yes	1,260	No
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490	2	Yes	2,230	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	2	Yes	6,870	**Yes**

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.
[4] Excluding the roadway segment that is within the developed community of Independence at Mather.
[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

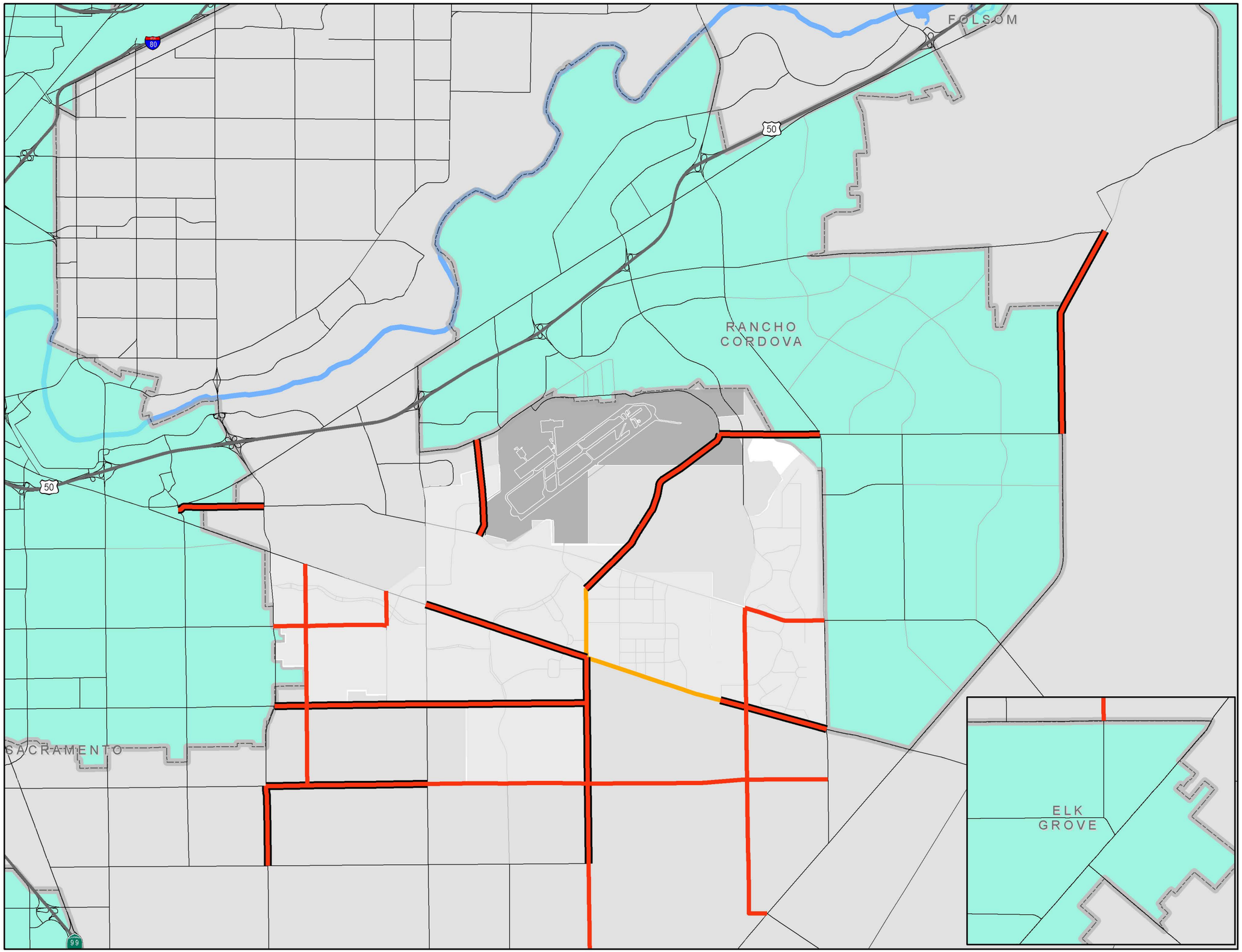

FIGURE 8.6
EXISTING PLUS JACKSON TOWNSHIP (PROPOSED PROJECT) FUNCTIONALITY IMPACTS

Legend

- Substandard Roadways
- Functionality Impact
- Functionality Impact if Roadway is Not Already Improved
- Cities
- Mather Airport

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8.5 MITIGATION

8.5.1 Existing Plus Jackson Township Project Roadway Segment Mitigation

Table 8.12 summarizes the results of the operations analysis for the study area roadway segments with mitigation. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate widened roadways for mitigation purposes, which would be the responsibility of the Jackson Township project to implement. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to have LOS impacts after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the improvements allowed under the General Plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

8.5.2 Existing Plus Jackson Township Project Intersection Mitigation

Tables 8.13 and 8.14 summarize the results of the operations analysis for the study area intersections with mitigation. However, the increased number of lanes on each approach does not exceed the County's standard number of approach lanes. Shaded table cells in Table 8.14 indicate those locations where changes in traffic control and / or number of approach lanes by type have been made which would be the responsibility of the Jackson Township project to implement. As shown in Table 8.13, all LOS impacts have been fully mitigated. Detailed analysis information is included in the technical appendix.

The "LOS Impact with Mitigation?" column in Table 8.14 shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

8.5.3 Existing Plus Jackson Township Project U.S. 50 Freeway Mitigation

Capacity improvements such as widening of the freeway and freeway junctions would reduce the severity of the impacts, but were generally not considered feasible due to right-of-way

restrictions, legal constraints, and the numerous transportation structures that would need to be modified and/or replaced. Potential alternative improvements have been identified from Caltrans' US-50 Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP). The TCR and CSMP is focused on intelligent transportation systems (ITS) and integrated corridor management (ICM) projects that would have operational benefits to US-50 without adding additional capacity. The TCR and CSMP also identify potential improvements to parallel local facilities that would be expected to reduce travel demand on US-50. The Jackson Township project will participate in one or more of these alternative improvements that could directly reduce the severity of the project's impact and/or provide operational benefits to the US-50 corridor in general.

8.5.3.1 US-50 Westbound Alternative Improvements

To lessen the impact to the westbound US-50 weave between Watt Avenue and Howe Avenue, the project may pay a fair share toward the construction of:

- Bus/HOV lanes from Watt Avenue to Downtown Sacramento (2035 SACOG MTP)
- Replacement of existing communication lines with fiber optics to improve performance between SR-51/SR-99 and Watt Avenue (2013 10-Year SHOPP Plan)
- Auxiliary lane between the NB Howe Avenue on-ramp and the SB Howe Avenue on-ramp (2035 SACOG MTP)
- Ramp meter improvements (Caltrans ITS/OPS Project List)

Table 8.12
Existing Plus Jackson Township Project (Proposed Project) Roadway Segment Mitigations

ID	Roadway	Segment		Existing + Jackson Township Project					Mitigated Existing + Jackson Township Project (Proposed Project)						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	17,400	0.97	**E**	4	Arterial M	0.48	A	No		
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	40,090	1.11	**F**	4	Arterial M	1.11	**F**	Yes		Maximum General Plan lanes
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	19,560	0.98	**E**	4	Arterial M	0.54	A	No		
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	18,070	0.90	**E**	4	Arterial M	0.50	A	No		
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	55,120	1.02	**F**	6	Arterial M	1.02	**F**	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	2	Arterial M	23,280	1.29	**F**	4	Arterial M	0.65	B	No		
68	Jackson Rd	Hedge Ave	Mayhew Rd	2	Arterial M	19,660	1.09	**F**	4	Arterial M	0.55	A	No		
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	21,730	1.21	**F**	4	Arterial M	0.60	B	No		
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	26,090	1.45	**F**	4	Arterial M	0.72	C	No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	14,680	0.64	**E**	4	Arterial M	0.41	A	No		
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	8,760	1.10	**F**	2	Res Collector F	0.85	E	No	Construct Douglas Road extension	
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	19,180	1.07	**F**	4	Arterial M	0.53	A	No		
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	67,710	1.13	**F**	6	Arterial H	1.13	**F**	Yes		Maximum General Plan lanes

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 8.12
Existing Plus Jackson Township Project (Proposed Project) Roadway Segment Mitigations

ID	Roadway	Segment		Existing + Jackson Township Project					Mitigated Existing + Jackson Township Project (Proposed Project)						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible

Note: Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, as proposed by the County of Sacramento.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 8.13

Existing Plus Jackson Township Project (Proposed Project) Impacted Intersections and Mitigations

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing Plus Jackson Township Project			LOS Impact	Mitigated Existing Plus Jackson Township Project			Existing Plus Jackson Township Project			LOS Impact	Mitigated Existing Plus Jackson Township Project		
		Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)
18	S. Watt Avenue & Elder Creek Road	Signal	E	80.0	Yes	Signal	D	45.0	Signal	E	79.1	Yes	Signal	D	37.3
25	Hedge Avenue & Elder Creek Road	All-way stop	F	62.2	Yes	Signal	B	18.8	All-way stop	C	23.1	No	Signal	C	24.6
29	Mayhew Road & Jackson Road	Two-way stop	A	1.8	Yes	Signal	B	18.9	Two-way stop	A	0.8	No	Signal	B	14.6
	Northbound Through - Left Turn		*F*	*50.0*						*E*	*48.9*				
	Northbound Right Turn		*C*	*18.0*						*C*	*15.3*				
	Southbound		*D*	*30.3*						*D*	*32.7*				
	Eastbound Left Turn		*A*	*9.3*						*A*	*9.3*				
	Westbound Left Turn		*A*	*9.4*						*A*	*9.3*				
38	Bradshaw Road & Jackson Road	Signal	F	158.7	Yes	Signal	E	79.7	Signal	E	77.3	No	Signal	D	45.5
42	Happy Lane & Old Placerville Road	Two-way stop	B	11.8	Yes	Signal	C	31.7	Two-way stop	B	12.8	Yes	Signal	C	25.6
	Northbound Left Turn		*F*	*215.4*						*F*	*>300*				
	Northbound Right Turn		*D*	*31.3*						*C*	*19.9*				
	Westbound Left Turn		*B*	*10.6*						*B*	*10.7*				
45	Excelsior Road & Jackson Road	Signal	F	171.2	Yes	Signal	E	59.6	Signal	F	134.9	Yes	Signal	D	54.1
46	Excelsior Road & Elder Creek Road	Two-way stop	F	62.0	Yes	Signal	B	10.2	Two-way stop	F	101.5	Yes	Signal	D	42.0
	Northbound Left Turn		*A*	*8.1*						*A*	*8.8*				
	Eastbound		*F*	*>300*						*F*	*>300*				
47	Excelsior Road & Florin Road	All-way stop	F	173.9	Yes	Signal	D	50.7	All-way stop	F	72.7	Yes	Signal	D	36.6
52	Mather Boulevard & Douglas Road	All-way stop	F	80.1	Yes	Signal			All-way stop	E	44.0	No	Signal		
60	Eagles Nest Road & Jackson Road	Two-way stop	F	83.6	Yes	Signal	C	26.5	Two-way stop	C	23.3	Yes	Signal	C	26.9

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 8.13

Existing Plus Jackson Township Project (Proposed Project) Impacted Intersections and Mitigations

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing Plus Jackson Township Project			LOS Impact	Mitigated Existing Plus Jackson Township Project			Existing Plus Jackson Township Project			LOS Impact	Mitigated Existing Plus Jackson Township Project		
		Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)
	Northbound		*F*	*>300*						*F*	*271.8*				
	Southbound		*C*	*15.7*						*E*	*41.0*				
	Eastbound Left Turn		*B*	*10.3*						*A*	*8.0*				
	Westbound Left Turn		*A*	*8.1*						*A*	*8.9*				
80	Grant Line Road & Jackson Road	Signal	F	80.8	Yes	Signal	C	27.6	Signal	E	68.2	Yes	Signal	C	30.4
90	Excelsior Road & Calvine Rd	All-way stop	E	43.9	Yes	Signal	D	36.7	All-way stop	C	20.3	No	Signal	C	32.5

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 8.14

Existing Plus Jackson Township Project (Proposed Project) Intersection Impacts and Mitigations

	Intersection	Traffic Control		Existing Plus Jackson Township Project Lane Geometrics				Mitigated Existing Plus Jackson Township Project Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		Existing Plus Project	Mitigated Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
18	S. Watt Avenue & Elder Creek Road	Signal	Signal									No	No		
25	Hedge Avenue & Elder Creek Road	All-way stop	Signal												
29	Mayhew Road & Jackson Road	Two-way stop	Signal									No	No		
38	Bradshaw Road & Jackson Road	Signal	Signal									No	No		
42	Happy Lane & Old Placerville Road	Two-way stop	Signal									No	No	Realign Happy Lane to Routier Road (2 lanes)	
45	Excelsior Road & Jackson Road	Signal	Signal									No	No		
46	Excelsior Road & Elder Creek Road	Two-way stop	Signal									No	No		
47	Excelsior Road & Florin Road	All-way stop	Signal									No	No		
52	Mather Boulevard & Douglas Road	All-way stop	Signal									No	No		
60	Eagles Nest Road & Jackson Road	Two-way stop	Signal									No	No		
80	Grant Line Road & Jackson Road	Signal	Signal									No	No		
90	Excelsior Road & Calvine Rd	All-way stop	Signal									No	No		

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

8.5.4 Existing Plus Jackson Township Project Pedestrian and Bicycle Facility Mitigation

The Jackson Township project applicant shall coordinate with Sacramento County to identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development. These facilities shall be incorporated into the Jackson Township project and could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, pedestrian signal heads, and all appropriate traffic calming measures as defined in the County's Neighborhood Traffic Management Program (NTMP). Sidewalks would be required as part of the frontage improvements along all new roadway construction in the Jackson Township project vicinity in conformance with County design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards.

8.5.5 Existing Plus Jackson Township Project Transit System Mitigation

The Jackson Township project applicant shall coordinate with Regional Transit (or other transit operators) to provide the additional transit facilities and services assumed in transportation analysis (see Section 8.1.2.3), or a cost-effective equivalent level of transit facilities and services.

The assumed transit routes and service frequency would be required at full development of the Jackson Township project. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the Jackson Township project, must be phased with development of the Jackson Township project.

8.5.6 Existing Plus Jackson Township Project Functionality Mitigation

Table 8.15 summarizes the results of the functionality analysis for the study area rural roadway segments with mitigation.

8.5.7 Existing Plus Jackson Township Project Mitigation Summary

Tables 8.16 through 8.19 summarize all of the roadway segments, intersections, and freeway facilities that would exhibit significant LOS impacts along with the mitigation success for these impacts.

Table 8.15
Existing Plus Jackson Township Project (Proposed Project) Functionality Mitigations

ID	Roadway	Segment		Existing + Jackson Township Project (Proposed Project)				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]		
15	Douglas Rd	Mather Blvd	Zinfandel Dr	2	Yes	7,390	**Yes**	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	2	Yes	9,210	**Yes**	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Yes	9,060	**Yes**	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Yes	9,390	**Yes**	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	2	Yes	9,400	**Yes**	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	2	Yes	10,340	**Yes**	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Yes	15,060	**Yes**	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	2	Yes	16,560	**Yes**	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Yes	7,220	**Yes**	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Yes	7,580	**Yes**	Widen to County standards [5]	No
39	Florin Rd	South Watt Ave	Hedge Ave	2	Yes	9,910	**Yes**	Widen to County standards [5]	No
40	Florin Rd	Hedge Ave	Mayhew Rd	2	Yes	9,010	**Yes**	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	2	Yes	9,080	**Yes**	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	2	Yes	8,310	**Yes**	Widen to County standards [5]	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	2	Yes	6,700	**Yes**	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Yes	26,090	**Yes**	Widen to County standards [5]	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	No	32,180	**Yes[3]**	Widen to County standards [5]	No
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	2	Yes	8,760	**Yes**	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	2	Yes	6,870	**Yes**	Widen to County standards [5]	No

Red text with light gray shading indicate project impacts.

Table 8.15
Existing Plus Jackson Township Project (Proposed Project) Functionality Mitigations

ID	Roadway	Segment		Existing + Jackson Township Project (Proposed Project)				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]		

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

Table 8.16
Existing Plus Jackson Township Project (Prop. Proj.) List of Impacted Roadway Segments

ID	Roadway	Segment	
		From	To
Level of Service Impact Fully Mitigated by General Plan Lanes			
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd
56	Grant Line Rd	Sheldon Rd	Wilton Rd
57	Grant Line Rd	Wilton Rd	Bond Rd
67	Jackson Rd	South Watt Ave	Hedge Ave
68	Jackson Rd	Hedge Ave	Mayhew Rd
69	Jackson Rd	Mayhew Rd	Bradshaw Rd
70	Jackson Rd	Bradshaw Rd	Excelsior Rd
73	Jackson Rd	Sunrise Blvd	Grant Line Rd
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd
Level of Service Impact Not Fully Mitigated by General Plan Lanes			
44	Folsom Blvd	Howe Ave	Jackson Rd
62	Howe Ave	US 50	Folsom Blvd
110	Watt Ave	US 50	Folsom Blvd

Note: Refer to Table 3.12 for detailed description of impacts and mitigations.

Table 8.17

Existing Plus Jackson Township Project (Proposed Project) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
Level of Service Impact Fully Mitigated by General Plan Lanes		
18	S. Watt Avenue & Elder Creek Road	
25	Hedge Avenue & Elder Creek Road	
29	Mayhew Road & Jackson Road	
38	Bradshaw Road & Jackson Road	
42	Happy Lane & Old Placerville Road	**
45	Excelsior Road & Jackson Road	
46	Excelsior Road & Elder Creek Road	
48	Excelsior Road & Gerber Road/Birch Ranch Drive	
52	Mather Boulevard & Douglas Road	
60	Eagles Nest Road & Jackson Road	
80	Grant Line Road & Jackson Road	
90	Excelsior Road & Calvine Rd	

[1] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding designated high capacity intersections, as proposed by the County of Sacramento.

* denotes alternative mitigations that improve operations but do not fully mitigate the impact.
** denotes alternative mitigations that fully mitigate the impact.

Table 8.18

Existing Plus Jackson Township (Proposed Project)
Summary of Impacted Freeway Merge/Diverge/Weave Segments

Direction	Location	Junction Type
Level of Service Impact Not Mitigated		
Westbound US-50	Southbound Watt Avenue Slip Entrance	Weave
	Howe Avenue Exit	

Source: *DKS Associates, 2018.*

Table 8.19
Existing Plus Jackson Township Project (Prop. Proj.) Functionality Impact Summary

ID	Roadway	Segment	
		From	To
Functionality Impact Fully Mitigated			
15	Douglas Rd	Mather Blvd	Zinfandel Dr
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd
30	Excelsior Rd	Kiefer Blvd	Jackson Rd
31	Excelsior Rd	Jackson Rd	Elder Creek Rd
32	Excelsior Rd	Elder Creek Rd	Florin Rd
33	Excelsior Rd	Florin Rd	Gerber Rd
39	Florin Rd	South Watt Ave	Hedge Ave
40	Florin Rd	Hedge Ave	Mayhew Rd
41	Florin Rd	Mayhew Rd	Bradshaw Rd
50	Grant Line Rd	White Rock Rd	Douglas Rd
58	Happy Ln	Old Placerville Rd	Kiefer Blvd
70	Jackson Rd	Bradshaw Rd	Excelsior Rd
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd

9. EXISTING PLUS FOUR PROJECTS SCENARIO (JACKSON TOWNSHIP PROPOSED PROJECT)

9.1 PROJECT DESCRIPTION

The existing plus FOUR PROJECTS scenario evaluates the effects of the traffic of four developments (FOUR PROJECTS) added to existing conditions. **Figure 9.1** illustrates the location of the FOUR PROJECTS:

- West Jackson
- Jackson Township
- NewBridge
- Mather South

The FOUR PROJECTS are located in unincorporated Sacramento County, generally east of the City of Sacramento and south of the community of Rosemont and the City of Rancho Cordova. The FOUR PROJECTS are located both north and south of Jackson Road (SR 16). The FOUR PROJECTS are generally bounded to the west by South Watt Avenue, to the north by the Community of Rosemont and Mather Airport, to the east by Sunrise Boulevard, and to the south by Elder Creek Road and Florin Road.

9.1.1 Land Use

Table 9.1 summarizes the land use assumptions for the FOUR PROJECTS in Jackson Corridor. Together, the FOUR PROJECTS would contain over 29,100 dwelling units and contain enough non-residential land uses to employ over 38,100 workers.

9.1.2 Transportation Network

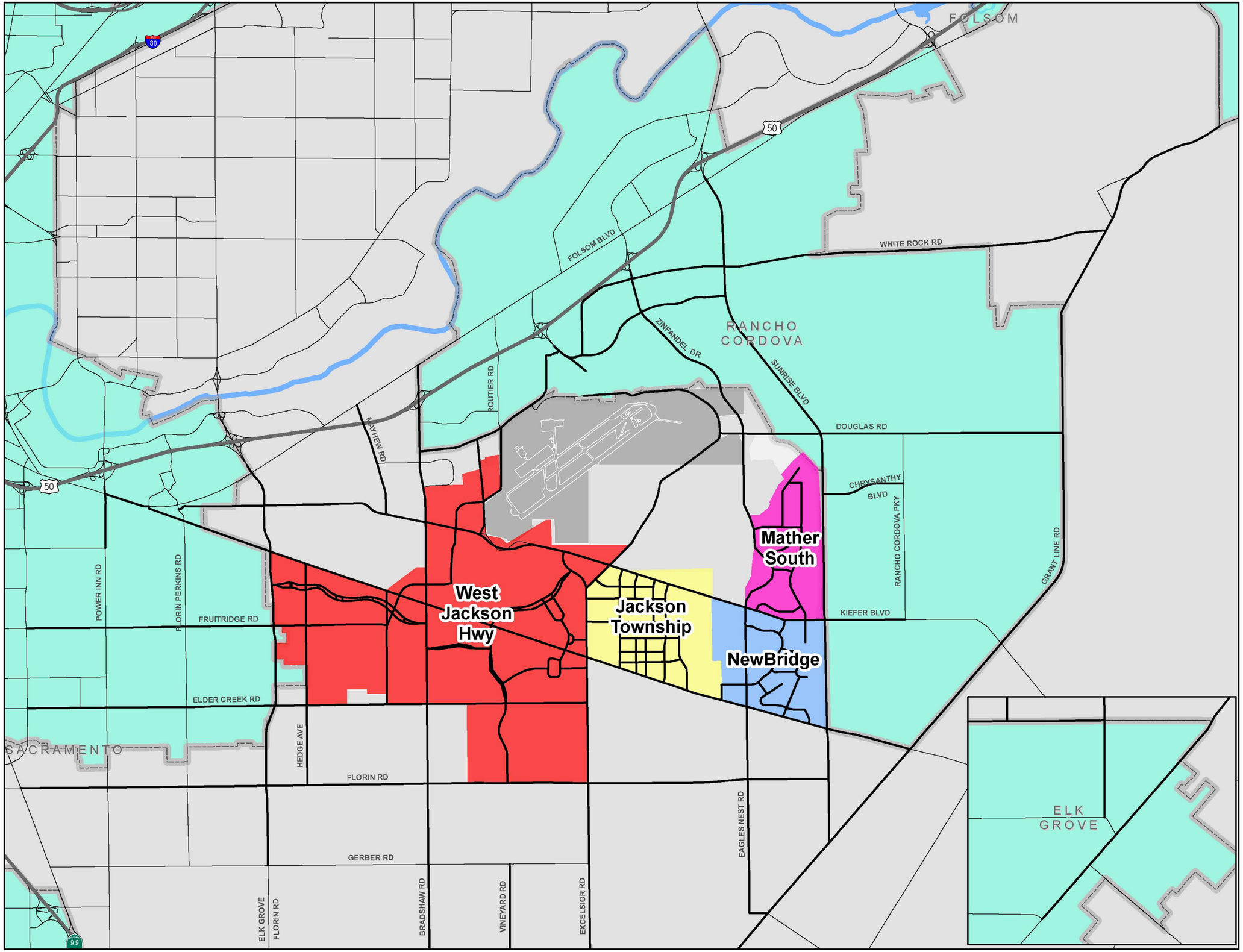
9.1.2.1 Roadway Segments and Intersections

Figure 9.2 illustrates the FOUR PROJECTS transportation network. The FOUR PROJECTS would widen and / or complete many roadways that cross or border the FOUR PROJECTS sites. The FOUR PROJECTS would improve many intersections within or on the borders of the projects. In addition, the FOUR PROJECTS would include new roadways to serve the proposed land use. The proposed improvements associated with the FOUR PROJECTS are summarized later in Sections 9.2.1 and 9.2.2.

9.1.2.2 Pedestrian and Bicycle Facilities

The roadways within the FOUR PROJECTS would meet County standards, which would provide sidewalks and on-street (Class II) bike lanes on all collector, arterial and thoroughfare roadways. The FOUR PROJECTS also provide several off-street (Class I) multi-purpose trails.

FIGURE 9.1
FOUR PROJECTS
PROJECT LOCATIONS



Legend

- Study Roadway Segments
- Freeways
- Other Major Roadways
- West Jackson Hwy Project
- Jackson Township Project
- NewBridge Project
- Mather South Project
- Cities
- Mather Airport

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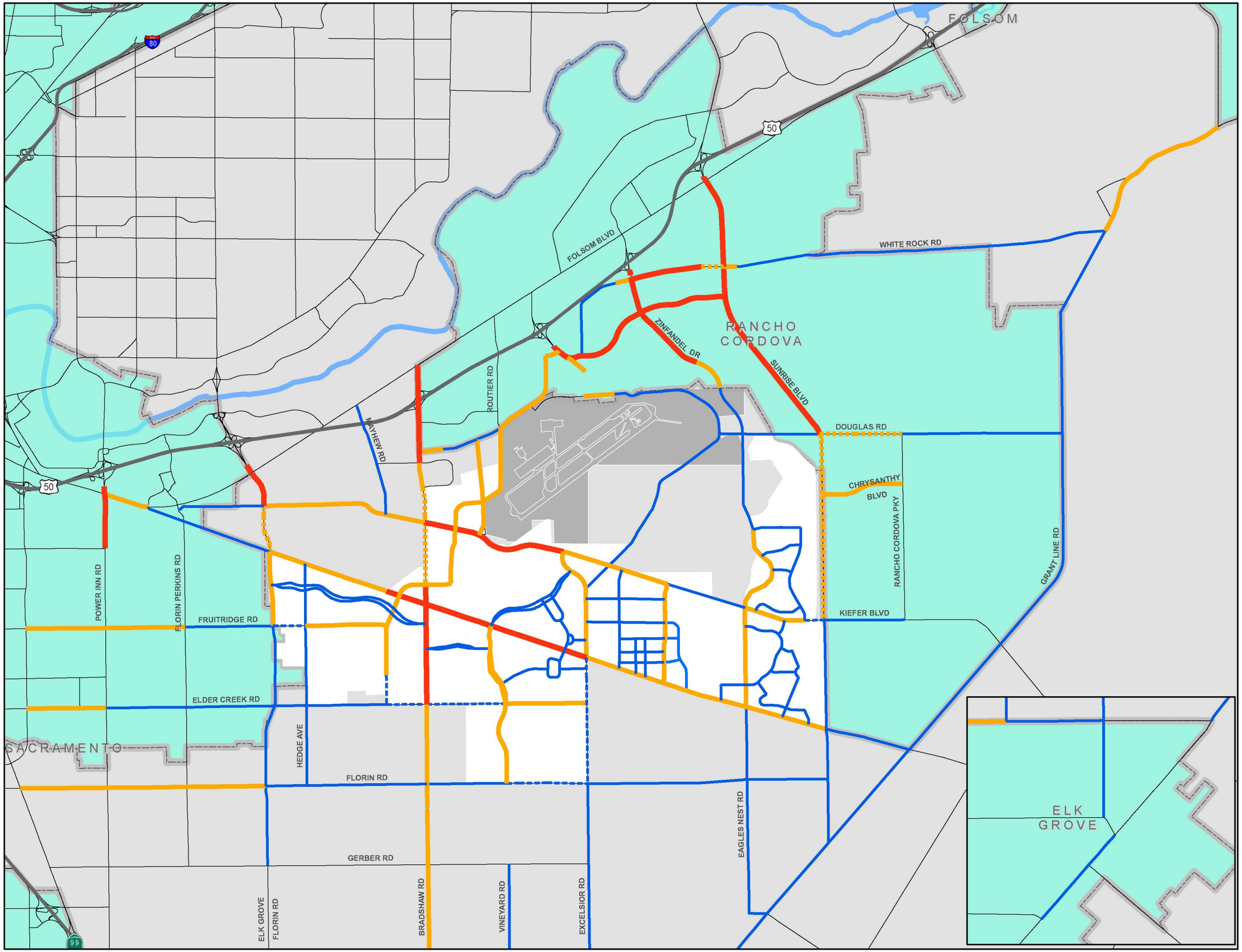
Table 9.1: Assumed Land Use for Existing Plus FOUR PROJECTS Scenario			
Project	**General Land Use**	**Acres**	**Dwelling Units**
West Jackson	Residential	1979.9	12,345
	Assumed Density Bonus[1]		237
	Mixed Use	120.9	2,418
	Commercial	342.8	
	Employment	803.3	
	Industrial	154.8	
	Schools	131.7	
	Park/Open Space/Ag	2108.3	
	Institutional	23.4	
	Primary Roadways	248.2	
	Subtotal	**5913.3**	**15,000**
Jackson Township	Residential	577.5	6,043
	Assumed Density Bonus[1]		76
	Commercial/Mixed Use	96.5	100
	Office	33.6	
	Pubic/Quasi Public	105.0	
	Park/Open Space/Ag	488.2	545
	Primary Roadways	90.2	
	Subtotal	**1,391.0**	**6,764**
NewBridge	Residential	368.0	2,915
	Assumed Density Bonus[1]		108
	Commercial/Mixed Use	31.7	160
	Office	13.8	
	Pubic/Quasi Public	13.8	
	Park/Open Space/Ag	514.7	660
	Primary Roadways	47.9	
	Subtotal	**1,095.3**	**3,843**

Mather South	Residential	428.7	3,352
	Assumed Density Bonus[1]		30
	Commercial	21.1	
	Environmental Education Campus	27.9	200
	Research and Development	21.4	
	Parks & Recreation	43.1	
	Public Utilities	3.5	
	Schools	23.7	
	Open Space	210.5	
	Streets	62.7	
	Subtotal	**848.2**	**3,552**

[1] Reflects estimated potential for additional units that may occur due to County's Housing Incentive Program.

Source: *Project Applicants and Sacramento County, 2018.*

FIGURE 9.2
EXISTING PLUS FOUR PROJECTS ROADWAY NETWORK



Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport

DKS

9.1.2.3 Transit System

As described in Section 2.2, transit service in the vicinity of the FOUR PROJECTS is very limited. The FOUR PROJECTS are designed with significant amounts of higher density and mixed uses to help support transit use but transit service within walking distances of those uses is required to achieve significant transit ridership.

An accurate estimation of transit use requires the definition of specific transit routes and frequency of service on those routes. A separate planning effort, involving staff from Sacramento County and Sacramento Regional Transit (RT), was conducted to define an appropriate transit system for the transportation analysis. That effort is described in Section 8.1.2.3.

The planning effort resulted in four transit lines that would serve the FOUR PROJECTS at a frequency of 15 minutes during the peak commute hours (approximately 6-9 AM and 3-6 PM) and 30 minutes during off-peak service hours (approximately 9AM-3PM and 6PM-8PM) on weekdays. Another key characteristic of the proposed transit system built into the modeling assumptions is the targeted use of queue jumps on portions of key corridors (Bradshaw Road from Kiefer Boulevard to Rock Creek Parkway, and Jackson Road from Watt Avenue to Excelsior Road). Queue jumps ensure that buses are not excessively delayed at signals along congested corridors, and therefore not too heavily penalized from a travel time perspective. This is necessary to achieve the adequate ridership levels that were forecast and ensure reliable operations. **Figure 9.3** shows the assumed transit routes for this scenario.

The assumed transit routes, service frequency, and supporting infrastructure (i.e. queue jumps) would be required at full development of the FOUR PROJECTS. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the FOUR PROJECTS, must be phased with development of the FOUR PROJECTS.

9.2 TRIP GENERATION

The SACSIM model that has been utilized for the transportation forecasts in this analysis estimated trip generation of the FOUR PROJECTS. **Table 9.2** summarizes the person trip generation. The FOUR PROJECTS would generate over 85,000 daily work person trip ends, and over ,000 daily person trip ends for all trip purposes.

Table 9.3 summarizes the estimated mode choice for the Existing plus FOUR PROJECTS scenario. About 90.9 percent of all person trips are expected to be accommodated by automobile. Transit will serve about 1.5 percent of all trips, while walk and bike modes will accommodate about 7.6 percent of all trips. The mode choice assumes full implementation of the project's pedestrian and bicycle systems.

Table 9.4 summarizes the vehicular (auto) trip generation of the FOUR PROJECTS. The FOUR PROJECTS are estimated to generate over 463,000 daily vehicle trip ends. About 100,000 of the daily vehicle trip ends will be associated with trips with both an origin and destination within the

individual projects, over 21 percent of the trip ends. The internal trip ends represent about 50,000 daily vehicle trips (one-half the number of internal trip ends). The FOUR PROJECTS will generate about 363,000 external vehicle trips that have an origin or destination inside one of the FOUR PROJECTS but the other end of the trip is outside the project from which it originated. Table 9.4 also shows the vehicle trips generated during the a.m. and p.m. peak hours.

Table 9.2: Estimated Daily Person Trip Generation
Existing Plus FOUR PROJECTS Scenario (Proposed Project)

Trip Purpose	Daily Person Trip Ends
Work Trips	85,644
Non-Work Trips	590,680
All Trip Purposes	676,324

Source: *DKS Associates, 2018.*

Table 9.3: Mode Split
Existing Plus FOUR PROJECTS Scenario (Proposed Project)

Mode	Percentage of Person Trips by Trip Purpose		
	Work Trips	Non-Work Trips	All Trip Purposes
Auto - SOV	85.8%	48.4%	53.2%
Auto - HOV	10.4%	41.6%	37.7%
Transit	2.8%	1.3%	1.5%
Walk	0.5%	7.8%	6.8%
Bike	0.5%	0.8%	0.8%

Source: *DKS Associates, 2018.*

Table 9.4: Estimated Daily Vehicle Trip Generation
Existing Plus FOUR PROJECTS Scenario (Proposed Project)

Trip Type		AM Peak Hour	PM Peak Hour	Daily
Total Vehicle Trip Ends		40,317	43,108	463,209
Percent Internal Trip Ends[1]		18.2%	21.8%	21.6%
Vehicle Trips	Internal to Projects	3,675	4,706	50,087
	External to Projects	32.966	33,696	363,034
	Total	36,642	38,402	413,122

[1.] Both trip ends within individual projects.

Source: *DKS Associates, 2018.*

9.3 TRIP DISTRIBUTION

The distribution of trips associated with development of the FOUR PROJECTS was derived utilizing SACSIM, incorporating the proposed land use and access locations associated with the FOUR PROJECTS. Trip distribution varies by land use and time period. **Figure 9.4** illustrates the overall trip distribution of daily FOUR PROJECTS trips with the Existing Plus FOUR PROJECTS scenario. The highest percentages of FOUR PROJECTS traffic are accommodated on Jackson Road, Bradshaw Road, Kiefer Boulevard, and Vineyard Road.

9.4 OPERATIONS ANALYSIS AND IMPACTS

For purposes of this analysis, full development of the FOUR PROJECTS is assumed to occur "instantaneously." In this manner, the traffic and impacts associated with the FOUR PROJECTS can be directly compared to known and measured conditions. Existing scenario impacts are determined by comparing the traffic operating conditions associated with the FOUR PROJECTS with the traffic operating conditions associated with the existing (without FOUR PROJECTS) conditions, and comparing the change to the thresholds of significance. **Figure 9.5** illustrates the resultant traffic operating conditions.

9.4.1 Existing Plus FOUR PROJECTS Roadway Segment Impacts

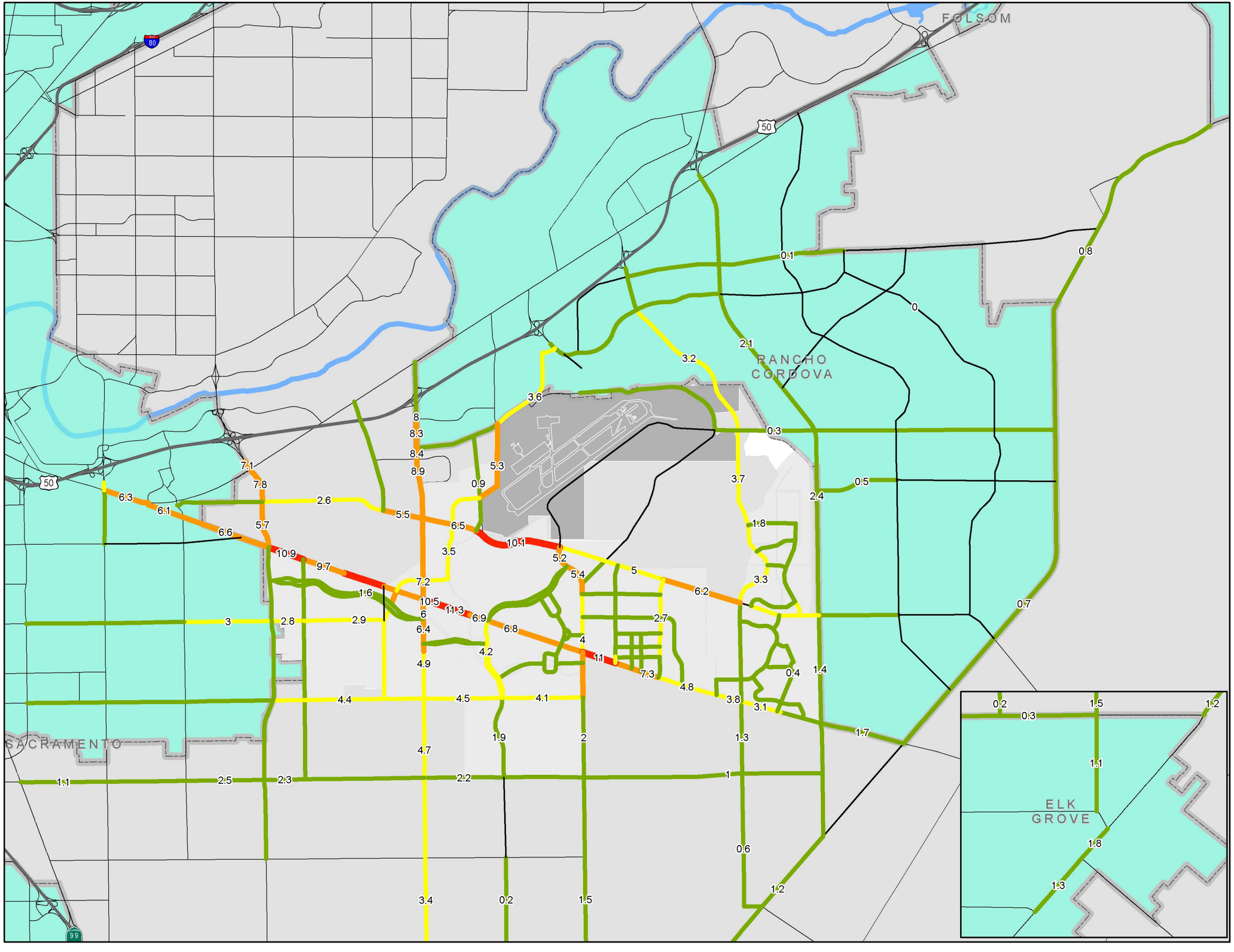
Table 9.5 summarizes the results of the operations analysis for the study area roadway segments. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate new roadways or widened roadways. The last column of the table shows the project(s) responsible for the increase in the number of roadway lanes. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact.

FIGURE 9.3
PROJECT TRANSIT NETWORK
EXISTING PLUS JACKSON TOWNSHIP
(PROPOSED PROJECT)

Legend

- Jackson Express Route
- Kiefer Jackson Local Route
- West Jackson Local Route A
- West Jackson Local Route B
- Cities
- Mather Airport

FIGURE 9.4
EXISTING PLUS FOUR PROJECTS
FOUR PROJECTS TRIP DISTRIBUTION
(JT PROPOSED PROJ)



Legend

- 0%
- 0.1% to 2.5%
- 2.6% to 5.0%
- 5.1% to 10.0%
- 10.0% and up
- Freeways
- Other Major Roadways
- Cities
- Mather Airport

DKS

FIGURE 9.5
EXISTING PLUS FOUR PROJECTS (JT PROPOSED PROJECT) ROADWAY SEGMENT AND INTERSECTION LOS AND IMPACTS

FOLSOM

RANCHO CORDOVA

SACRAMENTO

ELK GROVE

Legend

Intersections (AM Peak Hour)

- LOS A-D
- LOS E
- LOS F

Intersections (PM Peak Hour)

- LOS A-D
- LOS E
- LOS F
- Mitigable Intersection Impact
- Unavoidable Intersection impact

- LOS A-D
- LOS E
- LOS F
- Unavoidable Segment Impact
- Mitigable Segment Impact
- Cities
- Mather Airport

DKS

Table 9.5
Existing Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
1	Bradshaw Rd	Folsom Blvd	US 50	6	Arterial M	20,592	0.38	A	6	Arterial M	18,970	0.35	A	
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	52,590	0.97	**E**	6	Arterial M	74,990	1.39	**F**	
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	42,787	0.79	C	6	Arterial M	68,530	1.27	**F**	
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	38,984	0.72	C	6	Arterial M	61,140	1.13	**F**	
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	4	Arterial M	28,651	0.80	C	4	Arterial M	52,870	1.47	**F**	
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	4	Arterial M	28,651	0.80	C	5	Arterial M	48,770	1.35	**F**	West Jackson
6.1	Bradshaw Rd	Kiefer Blvd	Collector WJ-9	4	Arterial M	30,726	0.85	D	5	Arterial M	42,990	1.19	**F**	West Jackson
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	4	Arterial M	30,726	0.85	D	5	Arterial M	43,240	1.20	**F**	West Jackson
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd	4	Arterial M	30,726	0.85	D	6	Arterial M	45,370	0.84	D	West Jackson
7.1	Bradshaw Rd	Jackson Rd	Rock Creek Pkwy	4	Arterial M	22,871	0.64	B	6	Arterial M	35,310	0.65	B	West Jackson
7.2	Bradshaw Rd	Rock Creek Pkwy	Collector WJ-10	4	Arterial M	22,871	0.64	B	6	Arterial M	36,570	0.68	B	West Jackson
7.3	Bradshaw Rd	Collector WJ-10	Collector WJ-11	4	Arterial M	22,871	0.64	B	6	Arterial M	29,270	0.54	A	West Jackson
7.4	Bradshaw Rd	Collector WJ-11	Elder Creek Rd	4	Arterial M	22,871	0.64	B	6	Arterial M	23,960	0.44	A	West Jackson
8	Bradshaw Rd	Elder Creek Rd	Florin Rd	4	Arterial M	22,265	0.62	B	4	Arterial M	32,240	0.90	D	
9	Bradshaw Rd	Florin Rd	Gerber Rd	4	Arterial M	22,883	0.64	B	4	Arterial M	32,680	0.91	E	
10	Bradshaw Rd	Gerber Rd	Calvine Rd	4	Arterial M	16,984	0.47	A	4	Arterial M	24,850	0.69	B	
11	Calvine Rd	Waterman Rd	Bradshaw Rd	4	Arterial M	16,015	0.44	A	4	Arterial M	21,310	0.59	A	
12	Calvine Rd	Bradshaw Rd	Vineyard Rd	4	Arterial M	12,395	0.34	A	4	Arterial M	13,150	0.37	A	
13	Calvine Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	6,036	0.34	A	2	Arterial M	6,810	0.38	A	
14	Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	3,411	0.09	A	4	Arterial M	4,910	0.14	A	
15	Douglas Rd	Mather Blvd	Zinfandel Dr	2	Arterial M	6,635	0.37	A	2	Arterial M	6,020	0.33	A	
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	2	Arterial M	8,369	0.46	A	2	Arterial M	8,710	0.48	A	
17	Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	5	Arterial M	3,674	0.10	A	5	Arterial M	5,360	0.15	A	
18	Douglas Rd	Rancho Cordova Pkwy	Grant Line Rd	2	Arterial M	3,674	0.20	A	2	Arterial M	5,140	0.29	A	
19.1	Eagles Nest Rd	Kiefer Blvd	N Bridgewater Dr	2	Arterial M	740	0.04	A	4	Arterial M	8,200	0.23	A	NewBridge
19.2	Eagles Nest Rd	N Bridgewater Dr	S Bridgewater Dr	2	Arterial M	740	0.04	A	4	Arterial M	8,370	0.23	A	NewBridge
19.3	Eagles Nest Rd	S Bridgewater Dr	Jackson Rd	2	Arterial M	740	0.04	A	4	Arterial M	9,540	0.27	A	NewBridge
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Arterial M	517	0.03	A	2	Arterial M	6430	0.36	A	
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	2	Arterial M	189	0.01	A	2	Arterial M	3480	0.19	A	
22	Elder Creek Rd	65th St	Power Inn Rd	4	Arterial M	17,891	0.50	A	4	Arterial M	23,200	0.64	B	
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	15,734	0.87	D	2	Arterial M	22,450	1.25	**F**	
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	11,092	0.62	B	2	Arterial M	17,920	1.00	**E**	
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Arterial M	5,576	0.31	A	2	Arterial M	24,330	1.35	**F**	
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Arterial M	5,797	0.32	A	2	Arterial M	23,810	1.32	**F**	

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.5
Existing Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	5,355	0.30	A	3	Arterial M	14,060	0.78	C	West Jackson
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	2	Arterial M	2,158	0.12	A	3	Arterial M	20,840	1.16	**F**	West Jackson
28.2	Elder Creek Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	2,158	0.12	A	4	Arterial M	17,590	0.49	A	West Jackson
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd	2	Arterial M	22,960	1.28	**F**	2	Arterial M	24,660	1.37	**F**	
30.1	Excelsior Rd	Kiefer Blvd	Douglas Rd	2	Arterial M	3,716	0.21	A	2	Arterial M	4,000	0.22	A	
30.2	Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	2	Arterial M	3,716	0.21	A	4	Arterial M	23,640	0.66	B	West Jackson; Jackson Township
30.3	Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	2	Arterial M	3,716	0.21	A	4	Arterial M	20,080	0.56	A	West Jackson; Jackson Township
30.4	Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	2	Arterial M	3,716	0.21	A	4	Arterial M	18,460	0.51	A	West Jackson; Jackson Township
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	2	Arterial M	5,075	0.28	A	3	Arterial M	28,300	1.57	**F**	West Jackson
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	2	Arterial M	5,075	0.28	A	3	Arterial M	27,200	1.51	**F**	West Jackson
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Arterial M	4,203	0.23	A	3	Arterial M	11,810	0.66	B	West Jackson
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	5,423	0.30	A	2	Arterial M	12,980	0.72	C	
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Arterial M	4,229	0.23	A	2	Arterial M	10,200	0.57	A	
35	Excelsior Rd	Calvine Rd	Sheldon Rd	2	Arterial M	4,473	0.25	A	2	Arterial M	8,520	0.47	A	
36	Florin Rd	Stockton Blvd	Power Inn Rd	4	Arterial M	27,495	0.76	C	4	Arterial M	31,670	0.88	D	
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	21,595	0.60	A	4	Arterial M	31,000	0.86	D	
38	Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	4	Arterial M	14,163	0.39	A	4	Arterial M	23,830	0.66	B	
39	Florin Rd	South Watt Ave	Hedge Ave	2	Arterial M	7,718	0.43	A	2	Arterial M	16,140	0.90	D	
40	Florin Rd	Hedge Ave	Mayhew Rd	2	Arterial M	6,312	0.35	A	2	Arterial M	13,120	0.73	C	
41	Florin Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	6,317	0.35	A	2	Arterial M	13,330	0.74	C	
42.1	Florin Rd	Bradshaw Rd	Vineyard Rd	2	Arterial M	3,478	0.19	A	2	Arterial M	12,770	0.71	C	
42.2	Florin Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	3,478	0.19	A	3	Arterial M	10,520	0.58	A	West Jackson
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	3,835	0.21	A	2	Arterial M	7,260	0.40	A	
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	37,516	1.04	**F**	4	Arterial M	54,050	1.50	**F**	
45	Fruitridge Rd	65th St	Power Inn Rd	4	Arterial M	16,634	0.46	A	4	Arterial M	22,960	0.64	B	
46	Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	4	Arterial M	15,214	0.42	A	4	Arterial M	27,800	0.77	C	
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	10,280	0.57	A	2	Arterial M	22,110	1.23	**F**	

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Table 9.5
Existing Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
48	Fruitridge Rd	South Watt Ave	Hedge Ave	2	Arterial M	2,890	0.16	A	3	Arterial M	14,910	0.83	D	West Jackson
49.1	Fruitridge Rd	Hedge Ave	Collector WJ-12	2	Arterial M	1,790	0.10	A	4	Arterial M	17,470	0.49	A	West Jackson
49.2	Fruitridge Rd	Collector WJ-12	Mayhew Rd	2	Arterial M	1,790	0.10	A	4	Arterial M	15,870	0.44	A	West Jackson
50	Grant Line Rd	White Rock Rd	Douglas Rd	2	Rural NS	7,189	0.42	D	2	Rural NS	9,330	0.55	D	
51	Grant Line Rd	Douglas Rd	Kiefer Blvd	2	Rural S	6,143	0.31	C	2	Rural S	8,500	0.43	D	
52	Grant Line Rd	Kiefer Blvd	Jackson Rd	2	Rural S	5,758	0.29	C	2	Rural S	7,820	0.39	D	
53	Grant Line Rd	Jackson Rd	Sunrise Blvd	2	Rural S	14,720	0.74	E	2	Rural S	13,350	0.67	E	
54	Grant Line Rd	Sunrise Blvd	Calvine Rd	2	Rural S	14,812	0.74	E	2	Rural S	18,520	0.93	E	
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit	2	Rural S	13,140	0.66	**E**	2	Rural S	15,870	0.79	**E**	
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd	2	Rural S	13,140	0.66	**E**	2	Rural S	15,920	0.80	**E**	
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	17,459	0.87	**E**	2	Rural S	22,670	1.13	**F**	
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	16,064	0.80	**E**	2	Rural S	20,150	1.01	**F**	
58.1	Happy Lane	Old Placerville Road	Routier Ext	2	Rural S	4,635	0.23	C	4	Arterial M	7,410	0.21	A	West Jackson
58.2	Happy Lane	Routier Ext	Kiefer Boulevard	2	Rural S	4,635	0.23	C	4	Arterial M	19,570	0.54	A	West Jackson
59.1	Hedge Ave	Jackson Rd	Rock Creek Pkwy	2	Arterial M	3,061	0.17	A	2	Arterial M	7,630	0.42	A	
59.2	Hedge Ave	Rock Creek Pkwy	Fruitridge Rd	2	Arterial M	3,061	0.17	A	2	Arterial M	2,480	0.14	A	
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	3,737	0.21	A	2	Arterial M	3,770	0.21	A	
61	Hedge Ave	Elder Creek Rd	Florin Rd	2	Arterial M	2,722	0.15	A	2	Arterial M	3,630	0.20	A	
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	53,849	1.00	E	6	Arterial M	61,660	1.14	**F**	
63	International Dr	Mather Field Rd	Zinfandel Dr	6	Arterial M	17,500	0.32	A	6	Arterial M	22,200	0.41	A	
64	International Dr	Zinfandel Dr	Sunrise Blvd	6	Arterial M	8,802	0.16	A	6	Arterial M	10,660	0.20	A	
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd	2	Arterial M	12,358	0.69	B	2	Arterial M	32,990	1.83	**F**	
66	Jackson Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	10,414	0.58	A	2	Arterial M	37,140	2.06	**F**	
67	Jackson Rd	South Watt Ave	Hedge Ave	2	Arterial M	17,060	0.95	E	4	Arterial M	58,480	1.62	**F**	West Jackson
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	2	Arterial M	12,616	0.70	C	4	Arterial M	50,280	1.40	**F**	West Jackson
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	2	Arterial M	12,616	0.70	C	4	Arterial M	51,720	1.44	**F**	West Jackson
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	14,996	0.83	D	6	Arterial M	49,930	0.92	E	West Jackson
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	2	Arterial M	13,030	0.72	C	6	Arterial M	53,130	0.98	E	West Jackson
70.2	Jackson Rd	Collector WJ-4	Happy Ln	2	Arterial M	13,030	0.72	C	6	Arterial M	53,010	0.98	E	West Jackson
70.3	Jackson Rd	Happy Ln	Rock Creek Pkwy	2	Arterial M	13,030	0.72	C	6	Arterial M	34,050	0.63	B	West Jackson
70.4	Jackson Rd	Rock Creek Pkwy	Collector WJ-5	2	Arterial M	13,030	0.72	C	6	Arterial M	33,720	0.62	B	West Jackson
70.5	Jackson Rd	Collector WJ-5	Collector WJ-6	2	Arterial M	13,030	0.72	C	6	Arterial M	30,710	0.57	A	West Jackson

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Table 9.5
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ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
70.6	Jackson Rd	Collector WJ-6	Excelsior Rd	2	Arterial M	13,030	0.72	C	6	Arterial M	30,730	0.57	A	West Jackson
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	10,478	0.46	D	4	Arterial M	46,470	1.29	**F**	Jackson Township
71.2	Jackson Rd	Collector JT-3	Tree View Ln	2	Rural Hwy	10,478	0.46	D	4	Arterial M	33,450	0.93	E	Jackson Township
71.3	Jackson Rd	Tree View Ln	Collector JT-4	2	Rural Hwy	10,478	0.46	D	4	Arterial M	25,090	0.70	B	Jackson Township
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	2	Rural Hwy	10,478	0.46	D	4	Arterial M	22,080	0.61	B	Jackson Township
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr	2	Rural Hwy	9,976	0.44	D	4	Arterial M	19,670	0.55	A	NewBridge
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd	2	Rural Hwy	9,976	0.44	D	4	Arterial M	18,650	0.52	A	NewBridge
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	13,306	0.58	D	2	Rural Hwy	17,810	0.78	**E**	
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	2	Arterial M	4,616	0.26	A	2	Arterial M	5,570	0.31	A	
75	Kiefer Blvd	South Watt Ave	Mayhew Rd	4	Arterial M	18,668	0.52	A	4	Arterial M	26,360	0.73	C	
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	9,274	0.26	A	4	Arterial M	37,250	1.03	**F**	
77.1	Kiefer Boulevard	Bradshaw Road	Collector WJ-14	2	Arterial M	4,618	0.26	A	6	Arterial M	43,540	0.81	D	West Jackson
77.2	Kiefer Boulevard	Collector WJ-14	Routier Ext	2	Arterial M	4,618	0.26	A	6	Arterial M	39,840	0.74	C	West Jackson
77.3	Kiefer Boulevard	Routier Ext	Happy Lane	2	Arterial M	4,618	0.26	A	6	Arterial M	39,840	0.74	C	West Jackson
78.1	Kiefer Blvd	Eagles Nest Rd	W Collector MS-1	2	Arterial M	656	0.04	A	4	Arterial M	15,640	0.43	A	NewBridge; Mather South
78.2	Kiefer Blvd	W Collector MS-1	Northbridge Dr	2	Arterial M	656	0.04	A	4	Arterial M	12,280	0.34	A	NewBridge; Mather South
78.3	Kiefer Blvd	Northbridge Dr	E Collector MS-1	2	Arterial M	656	0.04	A	4	Arterial M	12,770	0.35	A	NewBridge; Mather South
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	2	Arterial M	656	0.04	A	3	Arterial M	14,640	0.81	D	NewBridge
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	2	Arterial M	2,786	0.15	A	2	Arterial M	2,860	0.16	A	
80	Mather Blvd / Norden Ave	Von Karman St	Bleckely St	4	Arterial M	4,373	0.12	A	4	Arterial M	5,090	0.14	A	
81	Mather Blvd	Bleckely St	Femoyer St	4	Arterial M	4,373	0.12	A	4	Arterial M	5,090	0.14	A	
82	Mather Blvd	Femoyer St	Douglas Rd	2	Arterial M	4,373	0.24	A	2	Arterial M	5,030	0.28	A	
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	6,751	0.84	E	2	Res Collector F	4,430	0.55	C	
84	Mather Field Rd	US 50	Rockingham Dr	6	Arterial M	37,755	0.70	B	6	Arterial M	40,020	0.74	C	
85	Mather Field Rd	Rockingham Dr	International Dr	6	Arterial M	37,520	0.69	B	6	Arterial M	43,830	0.81	D	
86	Mather Field Rd	International Dr	Peter A McCuen Blvd	4	Arterial M	14,857	0.41	A	4	Arterial M	15,210	0.42	A	
87	Mayhew Rd	Folsom Blvd	Goethe Rd	2	Arterial M	6,977	0.39	A	2	Arterial M	13,220	0.73	C	
88	Mayhew Rd	Goethe Rd	Kiefer Blvd	2	Arterial L	6,593	0.44	A	2	Arterial L	10,500	0.70	C	
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy	2	Arterial L	1,616	0.11	A	4	Arterial M	34,120	0.95	E	West Jackson

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Table 9.5
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ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	2	Arterial L	1,616	0.11	A	4	Arterial M	30,700	0.85	D	West Jackson
90	Old Placerville Rd	Bradshaw Rd	Granby Dr	4	Arterial M	15,800	0.44	A	4	Arterial M	13,610	0.38	A	
91	Old Placerville Rd	Granby Dr	Happy Ln	2	Arterial M	13,573	0.75	C	2	Arterial M	10,140	0.56	A	
92	Old Placerville Rd	Happy Ln	Routier Rd	2	Arterial M	10,710	0.60	A	2	Arterial M	6,860	0.38	A	
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	10,710	0.30	A	4	Arterial M	28,890	0.80	D	
94	Power Inn Rd	Folsom Blvd	14th Ave	6	Arterial M	36,175	0.67	B	6	Arterial M	35,350	0.65	B	
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	19,881	0.55	A	4	Arterial M	32,660	0.91	**E**	
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	40,920	0.76	C	6	Arterial M	64,520	1.19	**F**	
97	South Watt Ave	Kiefer Blvd	Jackson Rd	5	Arterial M	32,415	0.90	E	5	Arterial M	49,130	1.36	**F**	
98.1	South Watt Ave	Jackson Rd	Rock Creek Pkwy	2	Arterial M	25,832	1.44	**F**	4	Arterial M	30,510	0.85	D	West Jackson
98.2	South Watt Ave	Rock Creek Pkwy	Fruitridge Rd	2	Arterial M	25,832	1.44	**F**	4	Arterial M	29,520	0.82	D	West Jackson
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	21,567	1.20	**F**	2	Arterial M	22,370	1.24	**F**	
100	South Watt Ave	Elder Creek Rd	Florin Rd	2	Arterial M	19,069	1.06	**F**	2	Arterial M	24,520	1.36	**F**	
101	Sunrise Blvd	US 50	Folsom Blvd	7	Arterial M	54,500	1.01	**F**	7	Arterial M	55,970	1.04	**F**	
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr	6	Arterial M	49,500	0.92	**E**	6	Arterial M	52,560	0.97	**E**	
103	Sunrise Blvd	Trade Center Dr	White Rock Rd	6	Arterial M	34,571	0.64	B	6	Arterial M	39,340	0.73	C	
104.1	Sunrise Blvd	White Rock Rd	International Dr	6	Arterial M	25,811	0.48	A	6	Arterial M	30,740	0.57	A	
104.2	Sunrise Blvd	International Dr	Rio Del Oro Pkwy	6	Arterial M	28,400	0.53	A	6	Arterial M	34,450	0.64	B	
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	25,811	0.48	A	6	Arterial M	32,950	0.61	B	
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	21,878	0.61	B	5	Arterial M	28,160	0.78	C	
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	16,894	0.94	**E**	2	Arterial M	20,180	1.12	**F**	
107	Sunrise Blvd	Jackson Rd	Florin Rd	2	Rural S	11,181	0.56	D	2	Rural S	14,170	0.71	E	
108	Sunrise Blvd	Florin Rd	Grant Line Rd	2	Rural S	7,752	0.39	D	2	Rural S	10,190	0.51	D	
109	Vineyard Rd	Gerber Rd	Calvine Rd	2	Arterial M	5,515	0.31	A	2	Arterial M	5,630	0.31	A	
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	65,242	1.09	**F**	6	Arterial H	77,810	1.30	**F**	
111	White Rock Rd	International Rd	Quality Dr	2	Arterial M	3,962	0.22	A	2	Arterial M	4,000	0.22	A	
112	White Rock Rd	Quality Dr	Zinfandel Dr	4	Arterial M	11,200	0.31	A	4	Arterial M	10,170	0.28	A	
113	White Rock Rd	Zinfandel Dr	Kilgore Rd	6	Arterial M	14,756	0.27	A	6	Arterial M	14,990	0.28	A	
114	White Rock Rd	Kilgore Rd	Sunrise Blvd	5	Arterial M	14,756	0.41	A	5	Arterial M	15,780	0.44	A	
115	White Rock Rd	Sunrise Blvd	Fitzgerald Rd	4	Arterial M	15,433	0.43	A	4	Arterial M	15,890	0.44	A	
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	2	Rural NS	2,490	0.15	B	2	Rural NS	2,090	0.12	B	
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial M	9,400	0.26	A	4	Arterial M	11,130	0.31	A	
118	Zinfandel Dr	US 50	White Rock Rd	7	Arterial M	45,228	0.84	D	7	Arterial M	49,830	0.92	**E**	

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ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
119	Zinfandel Dr	White Rock Rd	International Rd	6	Arterial M	17,923	0.33	A	6	Arterial M	26,360	0.49	A	
120	Zinfandel Dr	International Rd	Baroque Dr	6	Arterial M	7,595	0.14	A	6	Arterial M	20,550	0.38	A	
121	Zinfandel Dr	Baroque Dr	City Limit	4	Arterial M	7,595	0.21	A	4	Arterial M	20,550	0.57	A	
122	Zinfandel Dr	City Limit	Douglas Rd	2	Arterial M	7,595	0.42	A	2	Arterial M	20,550	1.14	**F**	
123.1	Zinfandel Dr	Douglas Rd	Collector MS-2	2	Arterial M	2,848	0.16	A	2	Arterial M	19,650	1.09	**F**	
123.2	Zinfandel Dr	Collector MS-2	Collector MS-3						4	Arterial M	14,360	0.40	A	Mather South
123.3	Zinfandel Dr	Collector MS-3	Collector MS-4						4	Arterial M	14,020	0.39	A	Mather South
123.4	Zinfandel Dr	Collector MS-4	Kiefer Blvd						4	Arterial M	14,660	0.41	A	Mather South
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd						2	Arterial M	22,730	1.26	**F**	West Jackson; Jackson Township; NewBridge; Mather South
300	Douglas Rd	Excelsior Rd	Rock Creek Pkwy						4	Arterial M	23,910	0.66	B	West Jackson
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd						4	Arterial M	26,420	0.73	C	West Jackson
302	Kiefer Blvd	Happy Ln	Douglas Rd						6	Arterial M	49,610	0.92	E	West Jackson
303	Kiefer Blvd	Douglas Rd	Excelsior Rd						4	Arterial M	23,190	0.64	B	West Jackson
304	Mayhew Rd	Routier Ext	Bradshaw Rd						4	Arterial M	24,860	0.69	B	West Jackson
305	Mayhew Rd	Bradshaw Rd	Jackson Rd						4	Arterial M	26,920	0.75	C	West Jackson
306	Mayhew Rd	Fruitridge Rd	Collector WJ-13						4	Arterial M	17,260	0.48	A	West Jackson
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd						3	Arterial M	17,510	0.97	E	West Jackson
308	Rock Creek Pkwy	South Watt Ave	Hedge Ave						2	Arterial M	2,340	0.13	A	West Jackson
309	Rock Creek Pkwy	Hedge Ave	Mayhew Rd						2	Arterial M	7,500	0.42	A	West Jackson
310	Rock Creek Pkwy	Mayhew Rd	Bradshaw Rd						2	Arterial M	3,460	0.19	A	West Jackson
311	Rock Creek Pkwy East	Excelsior Road	Collector WJ-16						2	Arterial M	6,250	0.35	A	West Jackson
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road						2	Arterial M	12,990	0.72	C	West Jackson
313	Vineyard Rd	Jackson Road	New Collector						4	Arterial M	22,830	0.63	B	West Jackson
314	Vineyard Rd	New Collector	Collector WJ-18						4	Arterial M	19,760	0.55	A	West Jackson
315	Vineyard Rd	Collector WJ-18	Elder Creek Road						4	Arterial M	17,260	0.48	A	West Jackson
316	Vineyard Rd	Elder Creek Road	Florin Road						4	Arterial M	8,820	0.25	A	West Jackson
317	Routier Ext	Old Placerville Road	Happy Lane						4	Arterial M	34,310	0.95	E	West Jackson
318	Routier Ext	Happy Lane	Kiefer Boulevard						4	Arterial M	22,770	0.63	B	West Jackson
319	Routier Ext	Kiefer Boulevard	Mayhew Road						4	Arterial M	23,800	0.66	B	West Jackson
320	Collector WJ-16	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	830	0.10	A	West Jackson

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		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
321	Collector WJ-17	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	730	0.09	A	West Jackson
322	Collector WJ-6	Collector WJ-16/WJ-17	Jackson Road						2	Res Collector F	2,550	0.32	B	West Jackson
323	Collector WJ-6	Jackson Road	Collector WJ-18						2	Res Collector F	2,970	0.37	B	West Jackson
324	Collector WJ-2	Excelsior Road	Collector WJ-6						2	Res Collector F	2,510	0.31	B	West Jackson
325	Collector WJ-18	Vineyard Rd	Collector WJ-6						2	Res Collector F	2,830	0.35	B	West Jackson
326	Collector WJ-18	Collector WJ-6	Excelsior Road						2	Res Collector F	3,150	0.39	B	West Jackson
327	Collector WJ-19	Bradshaw Road	Vineyard Road						2	Arterial M	4,850	0.27	A	West Jackson
400	Collector JT-1	Excelsior Rd	Collector JT-3						2	Res Collector F	3,360	0.42	C	Jackson Township
401	Collector JT-1	Collector JT-3	Tree View Ln						2	Res Collector F	1,430	0.18	A	Jackson Township
402	Collector JT-3	Kiefer Blvd	Collector JT-1						2	Res Collector F	2,230	0.28	B	Jackson Township
403	Collector JT-3	Collector JT-1	Collector JT-6						2	Res Collector F	1,420	0.18	A	Jackson Township
404	Collector JT-3	Collector JT-6	Collector JT-5						2	Res Collector F	2,860	0.36	B	Jackson Township
405	Collector JT-3	Collector JT-5	Jackson Rd						2	Arterial M	14,560	0.81	D	Jackson Township
406	Collector JT-4	Jackson Rd	Bridgewater Dr						2	Arterial M	2,400	0.13	A	Jackson Township
407	Collector JT-5	Collector JT-3	Tree View Ln						2	Arterial M	6,980	0.39	A	Jackson Township
408	Collector JT-6	Excelsior Rd	Collector JT-3						2	Res Collector F	4,020	0.50	C	Jackson Township
409	Collector JT-6	Collector JT-3	Tree View Ln						2	Res Collector F	590	0.07	A	Jackson Township
410	Kiefer Blvd	Excelsior Rd	Tree View Ln						4	Arterial M	20,420	0.57	A	Jackson Township
411	Tree View Ln	Kiefer Blvd	Collector JT-1						4	Arterial M	10,300	0.29	A	Jackson Township
412	Tree View Ln	Collector JT-1	Collector JT-6						4	Arterial M	9,810	0.27	A	Jackson Township

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Existing Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
413	Tree View Ln	Collector JT-6	Collector JT-5						4	Arterial M	9,720	0.27	A	Jackson Township
414	Tree View Ln	Collector JT-5	Jackson Rd						4	Arterial M	4,900	0.14	A	Jackson Township
415	Collector JT-7	Collector JT-3	Tree View Ln						2	Arterial M	1,490	0.08	A	Jackson Township
416	Collector JT-8	Collector JT-3	Tree View Ln						2	Arterial M	1,940	0.11	A	Jackson Township
417	Collector JT-9	Jackson Rd	Collector JT-8						2	Arterial M	6,430	0.36	A	Jackson Township
418	Collector JT-10	Jackson Rd	Collector JT-8						2	Arterial M	1,980	0.11	A	Jackson Township
419	Collector JT-6	Tree View Ln	Jackson Rd						2	Res Collector F	780	0.10	A	Jackson Township
500	S Bridgewater Dr	Collector JT-4	Eagles Nest Rd						2	Res Collector F	3,470	0.43	C	NewBridge
501	S Bridgewater Dr	Eagles Nest Rd	Northbridge Dr						2	Res Collector F	3,150	0.39	B	NewBridge
502	N Bridgewater Dr	Northbridge Dr	Eagles Nest Rd						2	Res Collector F	1,070	0.13	A	NewBridge
503	Northbridge Dr	Kiefer Blvd	Bridgewater Dr						2	Arterial M	2,750	0.15	A	NewBridge
504	Street A	S Bridgewater Dr	Street B						2	Res Collector F	1,470	0.18	A	NewBridge
505	Street B	S Bridgewater Dr	Street A						2	Res Collector F	1,270	0.16	A	NewBridge
506	Rockbridge Dr	Street B	Stonebridge Dr						2	Res Collector F	1,490	0.19	A	NewBridge
507	Rockbridge Dr	Stonebridge Dr	Jackson Rd						2	Arterial M	4,380	0.24	A	NewBridge
508	Stonebridge Dr	S Bridgewater Dr	Rockbridge Dr						2	Arterial M	2,210	0.12	A	NewBridge
509	Stonebridge Dr	Rockbridge Dr	Jackson Rd						2	Res Collector F	2,450	0.31	B	NewBridge
600	Collector MS-1	Kiefer Boulevard	Collector MS-5						2	Arterial M	9,910	0.55	A	Mather South
601	Collector MS-1	Collector MS-5	Collector MS-4						2	Arterial M	4,810	0.27	A	Mather South
602	Collector MS-1	Collector MS-4	Collector MS-3						2	Res Collector F	5,260	0.66	D	Mather South
603	Collector MS-1	Collector MS-3	Collector MS-2						2	Arterial M	2,560	0.14	A	Mather South
604	Collector MS-2	Eagles Nest Road	Collector MS-5						2	Arterial M	7,330	0.41	A	Mather South
605	Collector MS-3	Eagles Nest Road	Collector MS-5						2	Arterial M	5,980	0.33	A	Mather South
606	Collector MS-4	Eagles Nest Road	Collector MS-5						2	Arterial M	6,020	0.33	A	Mather South
607	Collector MS-5	Kiefer Boulevard	Collector MS-1						2	Arterial M	4,650	0.26	A	Mather South

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.5
Existing Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

9.4.2 Existing Plus FOUR PROJECTS Intersection Impacts

Tables 9.6 and 9.7 summarize the results of the operations analysis for the study area intersections. The tables include the implementation of intersection changes associated with the FOUR PROJECTS. Table 9.7 illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type would be fully funded by the project(s) shown in the last column. Shaded table cells in Table 9.6 illustrate those locations with an LOS impact. Detailed analysis information is included in the technical appendix.

Signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. The project is considered to have a significant impact at an unsignalized location if both the impact criteria in Table 1.6 are met, and one or more of the signal warrants specified in the California Manual on Uniform Traffic Control Devices (CAMUTCD) are met. The following unsignalized intersections exhibit significant impacts and meet one or more traffic signal warrants:

- Hedge Avenue and Florin Road
- Happy Lane and Old Placerville Road
- Excelsior Road and Gerber Road
- Eagles Nest Road and Florin Road
- Excelsior Road and Calvine Road

9.4.3 Existing Plus FOUR PROJECTS U.S. 50 Freeway Impacts

9.4.3.1 Freeway Basic Segments

Table 9.8 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations. Details of the analysis are included in the technical appendix. The following locations exhibit significant impacts:

- Eastbound US 50
    - Stockton Boulevard to 59th Street - a.m. peak hour
    - Zinfandel Drive to Hazel Avenue - p.m. peak hour
- Westbound US 50
    - Watt Avenue to SR 99 / SR 51 - p.m. peak hour

9.4.3.2 Freeway Merge/Diverge/Weave Segments

Table 9.9 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas. Details of the analysis are included in the technical appendix. The following locations exhibit significant impacts:

- Eastbound
    - 65th Street to Howe Avenue weave - a.m. peak hour
    - Mather Field Road to Zinfandel Drive weave - a.m. peak hour

9.4.3.3 Freeway Ramp Intersection Queuing

Table 9.10 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. No locations exhibit a significant impact.

Table 9.6

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
1	Howe Avenue & College Town Drive/US 50 WB Ramps	Signal	D	36.6	Signal	B	17.6	No	Signal	D	44.4	Signal	C	25.7	No
2	Howe Avenue & US 50 EB Ramps	Signal	B	16.9	Signal	C	29.5	No	Signal	C	20.5	Signal	B	12.0	No
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	D	39.1	Signal	E	74.2	No	Signal	D	55.0	Signal	E	56.6	No
4	Power Inn Road & 14th Avenue	Signal	C	31.5	Signal	B	15.9	No	Signal	D	39.6	Signal	C	20.7	No
5	Power Inn Road & Fruitridge Road	Signal	D	43.4	Signal	D	53.3	No	Signal	C	33.5	Signal	D	36.3	No
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	D	36.8	Signal	C	31.1	No	Signal	C	32.1	Signal	D	43.0	No
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	D	39.0	Signal	C	25.1	No	Signal	E	55.6	Signal	C	31.7	No
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop			Two-way stop			No	Two-way stop			Two-way stop			No
	Westbound Left Turn		*C*	*20.1*		*C*	*19.4*			*C*	*23.3*		D	33.5	
	Westbound Right Turn		*B*	*13.3*		*B*	*11.6*			*B*	*12.6*		*B*	*13.4*	
	Southbound Left Turn		*A*	*10.0*		*A*	*9.4*			*B*	*10.9*		*B*	*13.0*	
9	Florin Perkins Road & Jackson Road	Signal	D	51.5	Signal	E	68.8	No	Signal	D	54.1	Signal	F	146.5	Yes
10	Florin Perkins Road & Fruitridge Road	Signal	C	25.1	Signal	C	27.3	No	Signal	C	25.4	Signal	C	22.9	No
11	Florin Perkins Road & Elder Creek Road	Signal	C	25.7	Signal	C	23.9	No	Signal	C	26.2	Signal	C	26.7	No
12	Watt Avenue & Folsom Blvd.	Signal	E	66.2	Signal	E	75.0	No	Signal	E	71.9	Signal	E	75.2	No
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	B	19.6	Signal	B	10.8	No	Signal	D	54.1	Signal	B	12.9	No
14	S. Watt Avenue & Kiefer Blvd.	Signal	E	56.0	Signal	F	125.6	Yes	Signal	E	75.9	Signal	F	111.6	Yes

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.6

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
15	S. Watt Avenue & Canberra Dr.	Signal	B	11.5	Signal	A	8.3	No	Signal	A	9.7	Signal	A	6.3	No
16	S. Watt Avenue & Jackson Road	Signal	E	62.5	Signal	F	336.6	Yes	Signal	E	66.4	Signal	F	730.1	Yes
17	S. Watt Avenue & Fruitridge Road	Signal	D	38.1	Signal	D	51.4	No	Signal	D	41.7	Signal	E	63.6	Yes
18	S. Watt Avenue & Elder Creek Road	Signal	E	62.7	Signal	F	124.3	Yes	Signal	E	68.8	Signal	F	144.2	Yes
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	D	54.7	Signal	D	47.6	No	Signal	D	51.8	Signal	E	56.8	No
21	Elk Grove Florin Road & Gerber Road	Signal	D	49.1	Signal	D	44.6	No	Signal	E	64.6	Signal	E	77.9	No
23	Hedge Avenue & Jackson Road	Signal	D	35.1	Signal	E	77.9	No	Signal	D	37.3	Signal	C	30.6	No
24	Hedge Avenue & Fruitridge Road	All-way stop	B	13.6	Signal	B	18.1	No	All-way stop	A	9.4	Signal	B	14.4	No
25	Hedge Avenue & Elder Creek Road	All-way stop	C	15.9	Signal	B	18.8	No	All-way stop	B	11.6	Signal	C	24.6	No
26	Hedge Avenue & Tokay Lane	Two-way stop			Two-way stop			No	Two-way stop			Two-way stop			No
	Northbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*0.0*		*A*	*0.0*	
	Southbound Left Turn		*A*	*8.0*		*A*	*8.6*			*A*	*7.3*		*A*	*7.4*	
	Eastbound		*B*	*12.2*		*B*	*14.5*			*B*	*10.2*		*B*	*12.6*	
	Westbound		*B*	*11.1*		*B*	*13.0*			*A*	*9.6*		*B*	*11.0*	
27	Hedge Avenue & Florin Road	All-way stop	B	12.9	All-way stop	F	221.8	Yes	All-way stop	B	11.1	All-way stop	E	47.3	No
28	Mayhew Road & Kiefer Boulevard	Signal	D	48.6	Signal	E	74.7	No	Signal	D	51.1	Signal	D	51.6	No

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.6

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
29	Mayhew Road & Jackson Road	Two-way stop			Signal	D	53.7	No	Two-way stop			Signal	D	52.8	No
	Northbound Through - Left Turn		*D*	*27.6*						*D*	*34.0*				
	Northbound Right Turn		*B*	*11.8*						*C*	*15.0*				
	Southbound		*C*	*18.3*						*C*	*24.9*				
	Eastbound Left Turn		*A*	*8.9*						*A*	*8.4*				
	Westbound Left Turn		*A*	*8.3*						*A*	*9.3*				
30	Mayhew Road & Fruitridge Road	Two-way stop			Signal	B	14.5	No	Two-way stop			Signal	C	20.2	No
	Northbound Left Turn		*A*	*0.0*						*A*	*7.4*				
	Eastbound		*A*	*9.2*						*A*	*9.2*				
31	Mayhew Road & Elder Creek Road	Two-way stop			Signal	F	>300	Yes	Two-way stop			Signal	F	269.2	Yes
	Northbound		*B*	*11.9*						*B*	*10.9*				
	Southbound		*B*	*11.1*						*A*	*9.8*				
	Eastbound Left Turn		*A*	*8.3*						*A*	*7.6*				
	Westbound Left Turn		*A*	*7.5*						*A*	*0.0*				
32	Woodring Drive & Zinfandel Drive	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Eastbound		*A*	*9.3*		F	86.5			*A*	*9.3*		F	79.1	
	Northbound Left Turn		*A*	*0.0*		*A*	*9.5*			*A*	*0.0*		*B*	*10.1*	
33	Bradshaw Road & Folsom Blvd.	Signal	E	56.7	Signal	B	19.5	No	Signal	D	49.9	Signal	B	18.4	No
34	Bradshaw Road & US 50 WB Ramps	Signal	B	15.9	Signal	A	7.5	No	Signal	B	15.2	Signal	C	24.2	No
35	Bradshaw Road & US 50 EB Ramps	Signal	C	24.4	Signal	D	40.0	No	Signal	B	16.0	Signal	C	30.2	No
36	Bradshaw Road & Old Placerville Road	Signal	D	45.9	Signal	E	62.3	Yes	Signal	D	52.0	Signal	E	62.5	Yes
37	Bradshaw Road & Kiefer Boulevard	Signal	D	45.7	Signal	F	108.6	Yes	Signal	E	66.2	Signal	F	105.4	Yes

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Table 9.6

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
38	Bradshaw Road & Jackson Road	Signal	E	73.1	Signal	F	100.6	Yes	Signal	E	59.4	Signal	F	82.4	Yes
39	Bradshaw Road & Elder Creek Road	Signal	D	36.8	Signal	F	81.6	Yes	Signal	D	36.1	Signal	E	71.6	No
40	Bradshaw Road & Florin Road	Signal	D	38.1	Signal	F	112.5	Yes	Signal	D	53.6	Signal	E	74.7	No
41	Bradshaw Road & Gerber Road	Signal	E	72.2	Signal	E	76.1	No	Signal	D	49.9	Signal	D	45.4	No
42	Happy Lane & Old Placerville Road	Two-way stop			Two-way stop			No	Two-way stop			Two-way stop			Yes
	Northbound Left Turn		*F*	*64.8*		E	45.9			*F*	*95.9*		*F*	*>300*	
	Northbound Right Turn		*D*	*30.6*		C	15.9			*C*	*15.4*		B	13.6	
	Westbound Left Turn		*B*	*10.2*		A	9.0			*B*	*10.1*		*A*	*9.2*	
43	Happy Lane & Kiefer Boulevard	Free Turn			Signal	D	47.9	No	Free Turn			Signal	C	27.8	No
44	Excelsior Road & Kiefer Boulevard	West Jackson/Jackson Township Project Int.			Signal	C	32.1	No	West Jackson/Jackson Township Project Int.			Signal	C	22.4	No
45	Excelsior Road & Jackson Road	Signal	D	36.7	Signal	F	281.1	Yes	Signal	D	40.3	Signal	F	225.2	Yes
46	Excelsior Road & Elder Creek Road	Two-way stop	A	3.5	Signal	D	46.2	No	Two-way stop	A	2.7	Signal	D	45.5	No
	Northbound Left Turn		*A*	*7.5*						*A*	*8.0*				
	Eastbound		*C*	*18.6*						*B*	*12.3*				
47	Excelsior Road & Florin Road	All-way stop	C	24.9	Signal	D	50.7	No	All-way stop	B	12.5	Signal	D	40.8	No
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	B	14.0	All-way stop	F	158.8	Yes	All-way stop	B	10.6	All-way stop	F	104.3	Yes
49	Mather Field Road & US 50 WB Ramps	Signal	C	24.7	Signal	B	13.2	No	Signal	A	9.4	Signal	A	6.0	No
50	Mather Field Road & US 50 EB Ramps	Signal	C	27.7	Signal	B	17.7	No	Signal	B	13.4	Signal	A	6.9	No

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.6

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
51	Mather Field Road & Rockingham Drive	Signal	E	56.4	Signal	F	132.2	Yes	Signal	D	54.7	Signal	E	62.0	Yes
52	Mather Boulevard & Douglas Road	All-way stop	E	39.3	All-way stop	B	14.9	No	All-way stop	C	15.5	All-way stop	B	12.4	No
53	Zinfandel Drive & US 50 WB Ramps	Signal	B	16.4	Signal	A	9.8	No	Signal	D	51.7	Signal	C	28.7	No
54	Zinfandel Drive & US 50 EB Ramps/Gold Center Drive	Signal	D	40.0	Signal	D	53.8	No	Signal	E	60.1	Signal	D	45.0	No
55	Zinfandel Drive & White Rock Road	Signal	D	47.7	Signal	C	23.2	No	Signal	D	54.7	Signal	D	39.2	No
56	Zinfandel Drive & Data Drive	Signal	D	49.3	Signal	B	15.8	No	Signal	D	52.9	Signal	C	21.9	No
57	Zinfandel Drive & International Dr	Signal	C	34.0	Signal	C	23.1	No	Signal	D	48.5	Signal	C	29.6	No
58	Zinfandel Drive & Douglas Road	Signal	E	55.5	Signal	D	40.5	No	Signal	D	54.2	Signal	C	26.8	No
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard	Free Turn			Signal	C	27.3	No	Free Turn			Signal	C	21.7	No
60	Eagles Nest Road & Jackson Road	Two-way stop			Signal	C	23.5	No	Two-way stop			Signal	C	21.0	No
	Northbound		*C*	*22.0*						*C*	*23.8*				
	Southbound		*B*	*13.9*						*C*	*22.0*				
	Eastbound Left Turn		*A*	*8.8*						*A*	*7.9*				
	Westbound Left Turn		*A*	*7.9*						*A*	*8.7*				
61	Eagles Nest Road & Florin Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound		*B*	*12.7*		*F*	*141.4*			*B*	*12.1*		D	25.5	
	Southbound		*B*	*10.0*		C	20.3			*B*	*10.5*		*F*	*76.6*	
	Eastbound Left Turn		*A*	*7.7*		*A*	*5.4*			*A*	*7.7*		*A*	*8.0*	
	Westbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*7.6*		*A*	*7.6*	

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.6

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
62	Sunrise Boulevard & US 50 WB Ramps	Signal	D	44.7	Signal	D	36.0	No	Signal	B	19.7	Signal	A	9.5	No
63	Sunrise Boulevard & US 50 EB Ramps	Signal	B	16.9	Signal	B	13.2	No	Signal	B	17.6	Signal	B	12.5	No
64	Sunrise Boulevard & Folsom Boulevard	Signal	D	54.4	Signal	C	31.6	No	Signal	D	48.6	Signal	D	36.1	No
65	Sunrise Boulevard & White Rock Road	Signal	D	47.8	Signal	C	33.1	No	Signal	D	51.6	Signal	D	36.5	No
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	D	47.8	Signal	B	16.3	No	Signal	D	45.8	Signal	C	21.0	No
67	Sunrise Boulevard & Douglas Road	Signal	D	51.7	Signal	C	32.6	No	Signal	D	46.5	Signal	C	20.7	No
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	C	27.0	Signal	B	10.4	No	Signal	C	21.0	Signal	A	7.9	No
69	Sunrise Boulevard & Kiefer Boulevard	Signal	D	53.6	Signal	E	60.7	Yes	Signal	C	27.0	Signal	D	39.5	No
70	Sunrise Boulevard & Jackson Road	Signal	E	57.0	Signal	F	123.0	Yes	Signal	D	47.2	Signal	E	72.6	Yes
71	Sunrise Boulevard & Florin Road	Signal	B	11.3	Signal	A	8.6	No	Signal	D	48.3	Signal	B	15.8	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	D	43.2	Signal	C	22.4	No	Signal	D	40.7	Signal	C	27.6	No
73	Hazel Avenue & Tributary Point Drive/US 50 WB Off-ramp	Signal	C	31.2	Signal	C	27.7	No	Signal	D	41.4	Signal	B	17.1	No
74	Hazel Avenue & US 50 EB Ramps	Signal	C	20.6	Signal	B	10.5	No	Signal	C	29.9	Signal	A	4.6	No
75	Hazel Avenue & Folsom Boulevard	Signal	D	51.7	Signal	C	30.1	No	Signal	D	46.7	Signal	D	43.6	No
76	Prairie City Road & White Rock Road	Signal	B	19.2	Signal	B	12.4	No	Signal	B	15.0	Signal	B	10.2	No

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Table 9.6

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
77	Grant Line Road & White Rock Road	Signal	B	10.9	Signal	A	6.7	No	Signal	B	11.2	Signal	A	6.8	No
78	Grant Line Road & Douglas Road	All-way stop	C	15.2	Signal	B	14.8	No	All-way stop	B	12.3	Signal	B	11.0	No
79	Grant Line Road & Kiefer Boulevard	All-way stop	B	11.4	All-way stop	C	15.1	No	All-way stop	B	10.5	All-way stop	C	15.6	No
80	Grant Line Road & Jackson Road	Signal	E	74.0	Signal	F	98.3	Yes	Signal	E	78.9	Signal	E	70.7	No
81	Watt Avenue & US-50 EB Ramps	Signal	B	13.0	Signal	B	11.9	No	Signal	B	14.9	Signal	B	12.9	No
82	Watt Avenue & US-50 WB Ramps	Signal	C	32.9	Signal	C	31.5	No	Signal	C	28.6	Signal	C	29.6	No
83	Mayhew Rd & Folsom Blvd.	Signal	B	19.8	Signal	B	15.6	No	Signal	C	20.1	Signal	B	16.3	No
84	65th Street Expy & Fruitridge Road	Signal	C	31.2	Signal	C	34.8	No	Signal	D	35.3	Signal	C	32.9	No
85	Power Inn Road & Elder Creek Road	Signal	D	35.2	Signal	C	30.1	No	Signal	D	36.3	Signal	C	33.7	No
86	Power Inn Road & Florin Rd	Signal	D	36.3	Signal	E	70.9	No	Signal	D	45.9	Signal	E	64.8	No
87	Florin Perkins Road & Florin Rd	Signal	D	36.7	Signal	D	37.6	No	Signal	C	32.5	Signal	D	44.1	No
88	Bradshaw Rd & Calvine Rd	Signal	C	30.5	Signal	C	34.0	No	Signal	D	36.9	Signal	D	45.7	No
89	Vineyard Rd & Calvine Rd	Signal	C	30.8	Signal	B	14.1	No	Signal	C	34.9	Signal	B	12.7	No
90	Excelsior Road & Calvine Rd	All-way stop	C	16.6	All-way stop	F	121.0	Yes	All-way stop	B	13.0	All-way stop	F	80.4	Yes
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	D	51.7	Signal	B	16.2	No	Signal	D	46.5	Signal	D	52.6	No

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.6

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
92	Grant Line Rd & Calvine Rd	Signal	C	21.4	Signal	C	21.3	No	Signal	C	24.0	Signal	C	24.6	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	E	65.9	Signal	F	83.2	Yes	Signal	E	64.8	Signal	E	73.0	Yes
94	Grant Line Rd & Bond Rd/Wrangler Dr	Signal	C	33.3	Signal	B	14.6	No	Signal	D	46.4	Signal	B	15.1	No
200	Excelsior Road & Collector WJ-1/Collector JT-1	West Jackson/Jackson Township Project Int.			Signal	C	21.7	No	West Jackson/Jackson Township Project Int.			Signal	B	18.6	No
201	Excelsior Road & Collector WJ-2/Collector JT-2	West Jackson/Jackson Township Project Int.			Signal	B	17.9	No	West Jackson/Jackson Township Project Int.			Signal	B	16.9	No
202	W Collector MS-1 & Kiefer Boulevard	Mather South Project Int.			Signal	B	16.4	No	Mather South Project Int.			Signal	B	10.9	No
203	Northbridge Dr & Kiefer Boulevard	NewBridge Project Int.			Signal	A	7.3	No	NewBridge Project Int.			Signal	A	6.1	No
204	E Collector MS-1 & Kiefer Boulevard	Mather South Project Int.			Signal	B	12.0	No	Mather South Project Int.			Signal	B	12.8	No
300	Collector WJ-3 & Jackson Road	West Jackson Project Int.			Signal	B	14.6	No	West Jackson Project Int.			Signal	A	8.4	No
301	Collector WJ-4 & Jackson Road	West Jackson Project Int.			Signal	B	19.7	No	West Jackson Project Int.			Signal	B	17.3	No
302	Happy Lane & Jackson Road	West Jackson Project Int.			Signal	E	69.5	No	West Jackson Project Int.			Signal	E	65.6	No
304	Collector WJ-5 & Jackson Road	West Jackson Project Int.			Signal	B	12.6	No	West Jackson Project Int.			Signal	B	15.0	No
305	Collector WJ-6 & Jackson Road	West Jackson Project Int.			Signal	B	13.1	No	West Jackson Project Int.			Signal	B	13.6	No
306	Excelsior Road & Collector WJ-6	West Jackson Project Int.			Signal	C	22.1	No	West Jackson Project Int.			Signal	A	6.7	No
307	S. Watt Avenue & Rock Creek Pkwy	West Jackson Project Int.			Signal	A	5.6	No	West Jackson Project Int.			Signal	A	6.8	No

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.6

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

Intersection		AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
308	Hedge Avenue & Rock Creek Pkwy WB	West Jackson Project Int.			Roundabout	A	7.5	No	West Jackson Project Int.			Roundabout	A	6.0	No
309	Hedge Avenue & Rock Creek Pkwy EB	West Jackson Project Int.			Roundabout	A	6.8	No	West Jackson Project Int.			Roundabout	A	6.1	No
310	Mayhew Road & Rock Creek Pkwy WB	West Jackson Project Int.			Roundabout	C	22.2	No	West Jackson Project Int.			Roundabout	C	23.2	Yes
311	Mayhew Road & Rock Creek Pkwy EB	West Jackson Project Int.			Roundabout	D	26.2	No	West Jackson Project Int.			Roundabout	C	17.7	No
312	Bradshaw Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	A	6.7	No	West Jackson Project Int.			Signal	B	12.7	No
314	Vineyard Road/Happy Lane & Rock Creek Pkwy	West Jackson Project Int.			Signal	A	6.0	No	West Jackson Project Int.			Signal	A	9.2	No
315	Douglas Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	A	9.6	No	West Jackson Project Int.			Signal	B	12.5	No
316	Bradshaw Road & Collector WJ-8	West Jackson Project Int.			Signal	B	12.4	No	West Jackson Project Int.			Signal	A	7.8	No
317	Bradshaw Road & Collector WJ-9	West Jackson Project Int.			Signal	A	3.3	No	West Jackson Project Int.			Signal	A	3.3	No
318	Bradshaw Road & Mayhew Road	West Jackson Project Int.			Signal	D	41.9	No	West Jackson Project Int.			Signal	D	39.6	No
319	Bradshaw Road & Collector WJ-10	West Jackson Project Int.			Signal	F	96.2	Yes	West Jackson Project Int.			Signal	B	14.7	No
320	Bradshaw Road & Collector WJ-11	West Jackson Project Int.			Signal	A	7.5	No	West Jackson Project Int.			Signal	A	9.8	No
321	Collector WJ-12 & Fruitridge Road	West Jackson Project Int.			Signal	A	6.9	No	West Jackson Project Int.			Signal	A	6.7	No
322	Mayhew Road & Collector WJ-13	West Jackson Project Int.			Signal	B	13.0	No	West Jackson Project Int.			Signal	B	13.3	No
323	Collector WJ-14 & Kiefer Boulevard	West Jackson Project Int.			Signal	B	18.4	No	West Jackson Project Int.			Signal	B	16.4	No

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Table 9.6

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

Intersection		AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
325	Douglas Road & Kiefer Boulevard	West Jackson Project Int.			Signal	F	117.8	Yes	West Jackson Project Int.			Signal	F	137.6	Yes
327	Vineyard Road & Elder Creek Road	West Jackson Project Int.			Signal	B	16.3	No	West Jackson Project Int.			Signal	B	16.2	No
328	Vineyard Road & Florin Road	West Jackson Project Int.			Signal	B	10.8	No	West Jackson Project/CEQA Cumulative Intersection			Signal	A	8.5	No
329	Routier Ext & Kiefer Boulevard	West Jackson Project Int.			Signal	C	34.9	No	West Jackson Project Int.			Signal	C	30.1	No
330	Happy Ln & Routier Ext	West Jackson Project Int.			Signal	E	60.0	No	West Jackson Project Int.			Signal	D	52.4	No
331	Routier Ext/Routier Rd & Old Placerville Rd.	West Jackson Project Int.			Signal	F	242.3	Yes	West Jackson Project Int.			Signal	F	192.3	Yes
400	Collector JT-3 & Jackson Road	Jackson Township Project Int.			Signal	B	18.6	No	Jackson Township Project Int.			Signal	C	21.5	No
401	Tree View Lane & Jackson Road	Jackson Township Project Int.			Signal	B	11.6	No	Jackson Township Project Int.			Signal	A	7.3	No
402	Collector JT-4 & Jackson Road	Jackson Township Project Int.			Signal	A	7.7	No	Jackson Township Project Int.			Signal	A	5.8	No
403	Tree View Lane & Collector JT-5	Jackson Township Project Int.			Signal	B	13.4	No	Jackson Township Project Int.			Signal	B	13.9	No
404	Tree View Lane & Collector JT-6	Jackson Township Project Int.			Signal	C	22.0	No	Jackson Township Project Int.			Signal	B	15.0	No
405	Tree View Lane & Collector JT-1	Jackson Township Project Int.			Signal	B	15.0	No	Jackson Township Project Int.			Signal	B	13.8	No
406	Tree View Lane & Kiefer Boulevard	Jackson Township Project Int.			Signal	B	13.6	No	Jackson Township Project Int.			Signal	C	25.2	No
407	HS/MS Dwy & Kiefer Boulevard	Jackson Township Project Int.			Signal	A	7.4	No	Jackson Township Project Int.			Signal	A	7.0	No
500	Rockbridge Dr & Jackson Road	NewBridge Project Int.			Signal	A	9.6	No	NewBridge Project Int.			Signal	A	7.5	No

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.6

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus FOUR PROJECTS			LOS Impact	Existing			Existing Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
501	Eagles Nest Road & N Bridgewater Dr	NewBridge Project Int.			Signal	A	5.5	No	NewBridge Project Int.			Signal	A	4.1	No
502	Eagles Nest Road & S Bridgewater Dr	NewBridge Project Int.			Signal	B	14.3	No	NewBridge Project Int.			Signal	B	13.5	No
600	Zinfandel Drive & Collector MS-2	Mather South Project Int.			Roundabout	C	17.6	No	Mather South Project Int.			Roundabout	C	22.2	No
601	Zinfandel Drive & Collector MS-3	Mather South Project Int.			Roundabout	B	14.7	No	Mather South Project Int.			Roundabout	B	13.7	No
602	Zinfandel Drive & Collector MS-4	Mather South Project Int.			Roundabout	C	16.1	No	Mather South Project Int.			Roundabout	B	13.2	No
603	Collector MS-5 & Collector MS-2	Mather South Project Int.			Two-way stop	A	2.6	No	Mather South Project Int.			Two-way stop	A	4.4	No
604	Collector MS-5 & Collector MS-3	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					*A*	*7.6*						*A*	*7.4*	
	Eastbound					*A*	*9.7*						*A*	*9.3*	
605	Collector MS-5 & Collector MS-4	Mather South Project Int.			Two-way stop	A	5.4	No	Mather South Project Int.			Two-way stop	A	8.3	No
606	Collector MS-5 & W Collector MS-1/E Collector MS-1	Mather South Project Int.			Two-way stop	A	1.2	No	Mather South Project Int.			Two-way stop	A	2.1	No

Note: Gray shading represents changes in traffic control for which the project is responsible to pay a fair share.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.7

Existing and Existing Plus (Proposed Project) FOUR PROJECTS Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
1	Howe Avenue & College Town Drive/US 50 Westbound Ramps	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↓	↰ ↱↱	↰↰↰ ↱↱	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↓	↰ ↱↱	↰↰↰ ↱↱	
2	Howe Avenue & US 50 Eastbound Ramps/US 50 Eastbound Entrance	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓	↰↰↱↱		↑ ↑ ↑ ↱	↲ ↓ ↓ ↓	↰↰↱↱		
3	Power Inn Road/Howe Avenue & Folsom Blvd.	Signal	Signal	↰↰↑ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↳↳	↰↰↑ ↱	↰↰↑ ↑ ↱↱	↰↰↑ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↳↳	↰↰↑ ↱	↰↰↑ ↑ ↱↱	
4	Power Inn Road & 14th Avenue	Signal	Signal	↰↰↑ ↑ ↱	↲ ↓ ↓ ↳	↰↰↱	↟	↰↰↑ ↑ ↱	↲ ↓ ↓ ↳	↰↰↱	↟	
5	Power Inn Road & Fruitridge Road	Signal	Signal	↰↰↑ ↱	↲ ↓ ↓ ↳↳	↰↑ ↱	↰↑ ↑ ↱	↰↰↑ ↱	↲ ↓ ↓ ↳↳	↰↑ ↱	↰↑ ↑ ↱	
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	Signal	↰↰↱	↲↱	↰↑ ↑ ↱	↰↑ ↑ ↱	↰↰↱	↲↱	↰↑ ↑ ↱	↰↑ ↑ ↱	
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	Signal	↰↰↱	↲↱	↰↑ ↑ ↱	↰↑ ↱	↰↰↱	↲↱	↰↑ ↑ ↱	↰↑ ↱	
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop	Two-way stop	↑ ↱	↓ ↓ ↳		↰↱	↑ ↱	↓ ↓ ↳		↰↱	
9	Florin Perkins Road & Jackson Road	Signal	Signal	↰↑ ↑ ↱	↲↓ ↳	↰↑ ↱↱	↰↑ ↱	↰↑ ↑ ↱	↲↓ ↳	↰↑ ↱↱	↰↑ ↱	
10	Florin Perkins Road & Fruitridge Road	Signal	Signal	↰↑ ↑ ↱	↲ ↓ ↓ ↳	↰↑ ↑ ↱	↰↑ ↱	↰↑ ↑ ↱	↲ ↓ ↓ ↳	↰↑ ↑ ↱	↰↑ ↱	
11	Florin Perkins Road & Elder Creek Road	Signal	Signal	↰↑ ↑ ↱	↲ ↓ ↓ ↳	↰↑ ↑ ↱	↰↑ ↑ ↱	↰↑ ↑ ↱	↲ ↓ ↓ ↳	↰↑ ↑ ↱	↰↑ ↑ ↱	
12	S. Watt Ave./Watt Avenue & Folsom Blvd.	Signal	Signal	↰↰↑ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↳↳	↰↰↑ ↑ ↱	↰↰↑ ↑ ↱	↰↰↑ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↳↳	↰↰↑ ↑ ↱	↰↰↑ ↑ ↱	
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	Signal	↰↑ ↑ ↑ ↱	↲ ↓ ↓ ↳	↟	↰↱↱	↰↑ ↑ ↑ ↱	↲ ↓ ↓ ↳	↟	↰↱↱	
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal	↰↰↑ ↑ ↱	↲ ↓ ↓ ↳↳	↰↰↑ ↑ ↱	↰↰↑ ↑ ↱	↰↰↑ ↑ ↱	↲ ↓ ↓ ↳↳	↰↰↑ ↑ ↱	↰↰↑ ↑ ↱	
15	S. Watt Avenue & Canberra Dr.	Signal	Signal	↑ ↑ ↱	↓ ↓ ↳		↰↱	↑ ↑ ↱	↓ ↓ ↳		↰↱	
16	S. Watt Avenue & Jackson Road	Signal	Signal	↰↑ ↑ ↱	↲ ↓ ↓ ↳	↰↱	↰↑ ↱	↰↰↑ ↑ ↱	↲ ↓ ↓ ↳	↰↱	↰↰↑ ↑ ↱	West Jackson
17	S. Watt Avenue & Fruitridge Road	Signal	Signal	↰↑ ↱	↲ ↓ ↓ ↳	↰↑ ↱	↰↱	↰↑ ↱	↲ ↓ ↓ ↳	↰↑ ↱	↰↑ ↱	West Jackson
18	S. Watt Avenue & Elder Creek Road	Signal	Signal	↰↑ ↱	↲ ↓ ↳	↟ ↱	↰↑ ↱	↰↑ ↱	↲ ↓ ↳	↟ ↱	↰↑ ↱	
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal	↰↑ ↱	↲ ↓ ↳	↰↑ ↱	↰↑ ↑ ↱	↰↑ ↱	↲ ↓ ↳	↰↑ ↱	↰↑ ↑ ↱	
21	Elk Grove Florin Road & Gerber Rd./Gerber Road	Signal	Signal	↰↰↑ ↱	↲ ↓ ↓ ↳↳	↰↰↑ ↑ ↱	↰↰↑ ↑ ↱	↰↰↑ ↱	↲ ↓ ↓ ↳↳	↰↰↑ ↑ ↱	↰↰↑ ↑ ↱	
23	Hedge Avenue & Jackson Road	Signal	Signal	↰↱	↲ ↳	↰↑ ↱	↰↑ ↱	↰↱	↲ ↳	↰↑ ↱	↰↑ ↱	West Jackson
24	Hedge Avenue & Fruitridge Road	All-way stop	Signal	↟	↟	↟	↟	↰↑ ↱	↲ ↓ ↳	↰↑ ↱	↰↑ ↱	West Jackson
25	Hedge Avenue & Elder Creek Road	All-way stop	Signal	↟	↟	↟	↟	↰↑ ↱	↲ ↓ ↳	↰↑ ↱	↰↑ ↱	West Jackson
26	Hedge Avenue & Tokay Lane	Two-way stop	Two-way stop	↟	↟	↟	↟	↟	↟	↟	↟	
27	Hedge Avenue & Florin Road	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟	
28	Mayhew Road & Kiefer Boulevard	Signal	Signal	↰↑ ↱	↲ ↓ ↳	↰↑ ↱	↰↑ ↱	↰↑ ↱	↲ ↓ ↳	↰↑ ↱	↰↑ ↱	

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 9.7

Existing and Existing Plus (Proposed Project) FOUR PROJECTS Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
29	Mayhew Road & Jackson Road	Two-way stop	Signal	↰ ↱	⅄	↰ ↑ ↱	↰ ↱	↰ ↰ ↑ ↑ ↱	↲ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	West Jackson
30	Mayhew Road & Fruitridge Road	Two-way stop	Signal	↰	⅄	⅄		↰ ↰ ↑ ↑	↲ ↓ ↓	↰ ↰ ↱		West Jackson
31	Mayhew Road & Elder Creek Road	Two-way stop	Signal	⅄	⅄	⅄	⅄	⅄	⅄	⅄	↰ ↑ ↱	West Jackson
32	Zinfandel Drive & Woodring Drive	Two-way stop	Two-way stop	↰	⅄	⅄		↰ ↑	⅄	⅄		Mather South
33	Bradshaw Road & Folsom Blvd.	Signal	Signal	↰ ↰ ↑ ↱	↲ ↓ ↓ ↳	↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↱	↲ ↓ ↓ ↳	↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	
34	Bradshaw Road & US 50 Westbound Ramps	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓		↰ ↰ ↱ ↱	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓		↰ ↰ ↱ ↱	
35	Bradshaw Road & US 50 Eastbound Ramps	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓	↰ ↰ ↱ ↱		↑ ↑ ↑ ↱	↲ ↓ ↓ ↓	↰ ↰ ↱ ↱		
36	Bradshaw Road & Old Placerville Road	Signal	Signal	↰ ↑ ↑ ↑ ↱	⅄ ↓ ↓ ↳ ↳	↰ ↱	↰ ↰ ↑ ↱	↰ ↑ ↑ ↑ ↱	⅄ ↓ ↓ ↳ ↳	↰ ↱	↰ ↰ ↑ ↱	
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal	↰ ↰ ↑ ↑ ↑ ↱	↲ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↱	↰ ↰ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	↲ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
38	Jackson Road & Bradshaw Road	Signal	Signal	↰ ↑ ↱	↲ ↓ ↓ ↳	↰ ↑ ↱	↰ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	West Jackson
39	Bradshaw Road & Elder Creek Road	Signal	Signal	↰ ↑ ↱	⅄ ↓ ↳	↰ ↰ ↱	↰ ↰ ↱	↰ ↑ ↱	↲ ↓ ↓ ↳ ↳	↰ ↰ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
40	Bradshaw Road & Florin Road	Signal	Signal	↰ ↑ ↱	⅄ ↓ ↳	↰ ↰ ↱	↰ ↰ ↱	↰ ↑ ↱	⅄ ↓ ↳	↰ ↰ ↱	↰ ↰ ↱	
41	Bradshaw Road & Gerber Road	Signal	Signal	↰ ↑ ↱	⅄ ↓ ↳	↰ ↰ ↱	↰ ↱	↰ ↑ ↱	⅄ ↓ ↳	↰ ↰ ↱	↰ ↱	
42	Happy Lane & Old Placerville Road	Two-way stop	Two-way stop	↰ ↱		↑ ↱	↰ ↑	↰ ↱		↑ ↱	↰ ↑	
43	Kiefer Boulevard & Happy Ln		Signal		↲	↰			↲ ↳ ↳	↰ ↰ ↑ ↑ ↑	↑ ↑ ↑ ↱	West Jackson
44	Excelsior Road & Kiefer Boulevard	Two-way stop	Signal	↱	↳		↰ ↱	↰ ↑ ↱	↲ ↓ ↳	↰ ↑ ↱	↰ ↑ ↱	West Jackson; Jackson Township
45	Excelsior Road & Jackson Road	Signal	Signal	↰ ↱	⅄ ↳	↰ ↑ ↱	↰ ↑ ↱	↰ ↱	↲ ↓ ↓ ↳ ↳	↰ ↑ ↑ ↱	↰ ↑ ↑ ↱	West Jackson; Jackson Township
46	Excelsior Road & Elder Creek Road	Two-way stop	Signal	↰	↲ ↓	↰		↰ ↑	↲ ↓	↰ ↱		West Jackson
47	Excelsior Road & Florin Road	All-way stop	Signal	⅄	⅄	⅄	⅄	↰ ↱	⅄ ↳	↰ ↱	↰ ↱	West Jackson
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	All-way stop	⅄	⅄	⅄	⅄	⅄	⅄	⅄	⅄	
49	Mather Field Road & US 50 Westbound Ramps	Signal	Signal	↑ ↑ ↱	↲ ↓ ↓		↰ ⅄	↑ ↑ ↱	↲ ↓ ↓		↰ ⅄	
50	Mather Field Road & US 50 Eastbound Ramps	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓	↰ ⅄ ↱		↑ ↑ ↑ ↱	↲ ↓ ↓	↰ ⅄ ↱		
51	Mather Field Road & Rockingham Drive	Signal	Signal	↰ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↳	↰ ↰ ↱	↰ ↱	↰ ↑ ↑ ↱	↲ ↓ ↓ ↓ ↳	↰ ↰ ↱	↰ ↱	
52	Mather Boulevard & Douglas Road	All-way stop	All-way stop	⅄	⅄ ↳	⅄	⅄	⅄	⅄ ↳	⅄	⅄	
53	Zinfandel Drive & US 50 Westbound	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓		↰ ↰ ↱	↑ ↑ ↑ ↱	↲ ↓ ↓		↰ ↰ ↱	
54	Zinfandel Drive & US 50 Eastbound Ramps/Gold Center Drive	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓	↰ ↰ ↱ ↱	↱ ↱	↑ ↑ ↑ ↱	↲ ↓ ↓	↰ ↰ ↱ ↱	↱ ↱	

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 9.7

Existing and Existing Plus (Proposed Project) FOUR PROJECTS Intersection Geometrics

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
55	Zinfandel Drive & White Rock Road	Signal	Signal	↰↰↑↑ ↱	↲↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱↱	↰↰↑↑ ↱	↲↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱↱	
56	Zinfandel Drive & Data Drive	Signal	Signal	↰↑↑ ↱	↲↓↓↘	↰Y	↰↱ ↱	↰↑↑ ↱	↲↓↓↘	↰Y	↰↱ ↱	
57	Zinfandel Dr & International Dr	Signal	Signal	↰↰↑↑↑ ↱	↲↓↓↘↘	↰↰↑↑ ↱	↰↰↑↑↑ ↱	↰↰↑↑↑ ↱	↲↓↓↘↘	↰↰↑↑ ↱	↰↰↑↑↑ ↱	
58	Zinfandel Drive & Douglas Road	Signal	Signal	↰↱	↲↓↘↘	↰↑ ↱	↰↑ ↱	↰↱	↲↓↘↘	↰↑ ↱	↰↑ ↱	
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard		Signal	↱			↰	↰↰↑↑ ↱	↲↓↓↘↘	↰↰↑↑ ↱	↰↰↑↑ ↱	NewBridge; Mather South
60	Eagles Nest Road & Jackson Road	Two-way stop	Signal	Y	⅄	↰↱	↰↱	↰↑↱	↲↓↘↘	↰↰↑ ↱	↰↑↑ ↱	NewBridge
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Two-way stop	Y	⅄	Y	Y	Y	⅄	Y	Y	
62	Sunrise Boulevard & US 50 Westbound Ramps	Signal	Signal	↑↑↑ ↱	↲↓↓↓		↰↰↱↱	↑↑↑ ↱	↲↓↓↓		↰↰↱↱	
63	Sunrise Boulevard & US 50 Eastbound Ramps	Signal	Signal	↑↑↑↑ ↱	↲↓↓↓	↰↰↰↱↱		↑↑↑↑ ↱	↲↓↓↓	↰↰↰↱↱	Y	
64	Sunrise Boulevard & Folsom Boulevard	Signal	Signal	↰↰↑↑↑↑ ↱	↲↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱↱	↰↰↑↑↑↑ ↱	↲↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱↱	
65	Sunrise Boulevard & White Rock Road	Signal	Signal	↰↰↑↑↑ ↱	↲↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑↑↑ ↱	↰↰↑↑↑ ↱	↲↓↓↓↘↘	↰↰↑↑ ↱	↰↰↑↑↑ ↱	
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal	↰↰↑↑ ↱	↲↓↓↓↘	↰↰↑ ↱↱	↰↱	↰↰↑↑ ↱	↲↓↓↓↘	↰↰↑ ↱↱	↰↱	
67	Sunrise Boulevard & Douglas Road	Signal	Signal	↰↰↑↑↑ ↱	↲↓↓↓↘↘	↰↰↑ ↱	↰↰↑↑ ↱	↰↰↑↑↑ ↱	↲↓↓↓↘↘	↰↰↑ ↱	↰↰↑↑ ↱	
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	Signal	↑↑↑ ↱	↓↓↘↘		↰↰↱	↑↑↑ ↱	↓↓↘↘		↰↰↱	
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal	↰↑↑ ↱	↲↓↘↘	Y	Y↱	↰↑↑ ↱	↲↓↘↘	↰↰↑↑ ↱	Y↱	NewBridge; Mather South
70	Sunrise Boulevard & Jackson Road	Signal	Signal	↰↱	↲↓↘	↰↑ ↱	↰↑ ↱	↰↱	↲↓↘	↰↑ ↱	↰↑ ↱	
71	Sunrise Boulevard & Florin Road	Signal	Signal	↰↑	↲	Y		↰↑	↲	Y		
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	Signal	Y	↲⅄	↰↑ ↱	↰↱	Y	↲⅄	↰↑ ↱	↰↱	
73	Hazel Avenue & Tributary Point Drive/US 50 Westbound Off-ramp	Signal	Signal	↰↰↑↑↑	↲↓↓↓↓	↱	Y↱↱	↰↰↑↑↑	↲↓↓↓↓	↱	Y↱↱	
74	Hazel Aveneu/Hazel Avenue & US 50 Eastbound Ramps	Signal	Signal		↲↓↓	↰Y↱			↲↓↓	↰Y↱		
75	Hazel Avenue & Folsom Boulevard	Signal	Signal	↰↱	↲⅄⅄↘	↰↰↑ ↱	↰↑ ↱	↰↱	↲⅄⅄↘	↰↰↑ ↱	↰↑ ↱	
76	White Rock Road & Prairie City Road	Signal	Signal		↲↘	↰↑↑	↑↑ ↱		↲↘	↰↑↑	↑↑ ↱	
77	Grant Line Road & White Rock Road	Signal	Signal	↰↑↑	↲↓↓	↰↰↱		↰↑↑	↲↓↓	↰↰↱		
78	Grant Line Road & Douglas Road	All-way stop	Signal[1]	Y	⅄	Y		↰↑	↲↓	↰↱		
79	Grant Line Road & Kiefer Boulevard	All-way stop	All-way stop	Y	⅄	Y	Y	Y	⅄	Y	Y	
80	Grant Line Road & Jackson Road	Signal	Signal	Y	⅄	↰↱	↰↱	Y	⅄	↰↱	↰↱	

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 9.7

Existing and Existing Plus (Proposed Project) FOUR PROJECTS Intersection Geometrics

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
81	Watt Avenue & US-50 EB Ramps	Signal	Signal	↑↑↑↑ ↱	↲↲↓↓	↰↰↱↱		↑↑↑↑ ↱	↲↲↓↓	↰↰↱↱		
82	Watt Avenue & US-50 WB Ramps	Signal	Signal	↑↑ ↱↱	↲↲↓↓↓		↰↰↱↱↱	↑↑ ↱↱	↲↲↓↓↓		↰↰↱↱↱	
83	Mayhew Rd & Folsom Blvd.	Signal	Signal	↰↰↱		↑↑ ↱	↰↑↑	↰↰↱		↑↑ ↱	↰↑↑	
84	65th Street Expy & Fruitridge Road	Signal	Signal	↰↑↑ ↱	↲↓↓↘	↰↑↑	↰↑↑ ↱	↰↑↑ ↱	↲↓↓↘	↰↑↑	↰↑↑ ↱	
85	Power Inn Road & Elder Creek Road	Signal	Signal	↰↑↱	↲↓↘	↰↑↑ ↱	↰↑ ↱	↰↑↱	↲↓↘	↰↑↑ ↱	↰↑ ↱	
86	Power Inn Road & Florin Rd	Signal	Signal	↰↑↱	↲↓↓↘	↰↑↑ ↱	↰↑↑ ↱	↰↑↱	↲↓↓↘	↰↑↑ ↱	↰↑↑ ↱	
87	Florin Perkins Road & Florin Rd	Signal	Signal	↰↑↑ ↱	↲↓↓↘	↰↑ ↱	↰↑ ↱	↰↑↑ ↱	↲↓↓↘	↰↑ ↱	↰↑ ↱	
88	Bradshaw Rd & Calvine Rd	Signal	Signal	↰↰↑↱	↲↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱	↰↰↑↱	↲↓↓↘↘	↰↰↑↑ ↱	↰↰↑ ↱	
89	Vineyard Rd & Calvine Rd	Signal	Signal	↟	↲↱↘	↰↑ ↱	↰↑ ↱	↟	↲↱↘	↰↑ ↱	↰↑ ↱	
90	Excelsior Road & Calvine Rd	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟	
91	Grant Line Road & Eagles Nest Rd/Sloughhouse Rd	Signal	Signal	↰↑↱	↲↘	↟	↰↱	↰↑↱	↲↘	↟	↰↱	
92	Grant Line Road & Calvine Rd	Signal	Signal	↰↑	↲	↾		↰↑	↲	↾		
93	Grant Line Road & Driveway/Wilton Rd	Signal	Signal	↰↱	↲↘	↰↱	↰↱	↰↱	↲↘	↰↱	↰↱	
94	Bond Rd/Wrangler Dr & Grant Line Road	Signal	Signal	↰↱	↲↓↘	↰↱	↟	↰↱	↲↓↘	↰↱	↟	
200	Excelsior Road & Collector WJ-1/Collector JT-1		Signal					↰↑↱	↲↓↘	↰↑ ↱	↰↑ ↱	West Jackson; Jackson Township
201	Excelsior Road & Collector WJ-2/Collector JT-2		Signal					↰↑↱	↲↓↘	↰↑ ↱	↰↑ ↱	West Jackson; Jackson Township
202	Kiefer Boulevard & W Collector MS-1		Signal						↲↘	↰↑↑	↑ ↱	Mather South
203	Northbridge Dr & Kiefer Boulevard		Signal					↰↱		↑ ↱	↰↑↑	NewBridge
204	Kiefer Boulevard & E Collector MS-1		Signal						↲↘	↰↑	↑↑ ↱	Mather South
300	Collector WJ-3 & Jackson Road		Signal					↰↱		↑ ↱	↰↑↑	West Jackson
301	Collector WJ-4 & Jackson Road		Signal					↰↑↱	↲↓↘	↰↑↑ ↱	↰↑↑ ↱	West Jackson
302	Rock Creek Pkwy & Jackson Road		Signal					↰↰↑↱	↲↓↘	↰↑↑↑ ↱	↰↰↑↑↑ ↱	West Jackson
304	Collector WJ-5 & Jackson Road		Signal					↰↑↱	↲↓↘	↰↑↑ ↱	↰↑↑ ↱	West Jackson
305	Collector WJ-6 & Jackson Road		Signal					↰↑↱	↲↓↘	↰↑↑ ↱	↰↑↑ ↱	West Jackson
306	Excelsior Road & Collector WJ-6		Signal					↰↑	↲↓	↰↱		West Jackson
307	S. Watt Avenue & Rock Creek Pkwy		Signal					↑↱	↓↓↘↘		↰↱	West Jackson

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 9.7

Existing and Existing Plus (Proposed Project) FOUR PROJECTS Intersection Geometrics

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
308	Hedge Avenue & Rock Creek Pkwy WB		Roundabout									West Jackson
309	Hedge Avenue & Rock Creek Pkwy EB		Roundabout									West Jackson
310	Mayhew Road & Rock Creek Pkwy WB		Roundabout									West Jackson
311	Mayhew Road & Rock Creek Pkwy EB		Roundabout									West Jackson
312	Bradshaw Road & Rock Creek Pkwy		Signal									West Jackson
314	Vineyard Road & Rock Creek Pkwy		Signal									West Jackson
315	Douglas Road & Rock Creek Pkwy		Signal									West Jackson
316	Bradshaw Road & Collector WJ-8		Signal									West Jackson
317	Bradshaw Road & Collector WJ-9		Signal									West Jackson
318	Bradshaw Road & Mayhew Road		Signal									West Jackson
319	Bradshaw Road & Rock Creek Pkwy		Signal									West Jackson
320	Bradshaw Road & Collector WJ-11		Signal									West Jackson
321	Collector WJ-12 & Fruitridge Road		Signal									West Jackson
322	Collector WJ-13 & Mayhew Road		Signal									West Jackson
323	Collector WJ-14 & Kiefer Boulevard		Signal									West Jackson
325	Douglas Road & Kiefer Boulevard		Signal									West Jackson
327	Vineyard Road & Elder Creek Road		Signal									West Jackson
328	Florin Road & Vineyard Road		Signal									West Jackson
329	Routier Ext & Kiefer Boulevard		Signal									West Jackson
330	Happy Ln/Happy Lane & Routier Ext		Signal									West Jackson
331	Routier Ext/Routier Rd & Old Placerville Road		Signal									West Jackson
400	Jackson Road & Collector JT-3		Signal									Jackson Township
401	Jackson Road & Tree View Lane		Signal									Jackson Township
402	Jackson Road & Collector JT-4		Signal									Jackson Township
403	Tree View Lane & Collector JT-5		Signal									Jackson Township
404	Tree View Lane & Collector JT-6		Signal									Jackson Township
405	Tree View Lane & Collector JT-1		Signal									Jackson Township

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 9.7

Existing and Existing Plus (Proposed Project) FOUR PROJECTS Intersection Geometrics

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
406	Tree View Lane & Kiefer Boulevard		Signal									Jackson Township
407	HS/MS Dwy & Kiefer Boulevard		Signal									Jackson Township
500	Jackson Road & Rockbridge Dr		Signal									NewBridge
501	Eagles Nest Road & N Bridgewater Dr		Signal									NewBridge
502	Eagles Nest Road & S Bridgewater Dr		Signal									NewBridge
600	Zinfandel Drive & Collector MS-2		Roundabout									Mather South
601	Zinfandel Drive & Collector MS-3		Roundabout									Mather South
602	Zinfandel Drive & Collector MS-4		Roundabout									Mather South
603	Collector MS-5 & Collector MS-2		Two-way stop									Mather South
604	Collector MS-5 & Collector MS-3		Two-way stop									Mather South
605	Collector MS-5 & Collector MS-4		Two-way stop									Mather South
606	E Collector MS-1/Collector MS-5 & W Collector MS-1		Two-way stop									Mather South

1. Reflects 2017 intersection improvements.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 9.8: Existing Plus FOUR PROJECTS (Proposed Project) Peak Hour Freeway Basic Segment Level of Service									
Direc-tion	**Location**	**Existing**				**Existing Plus FOUR PROJECTS**			
		AM Peak Hour		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
		Volume	**LOS**	**Volume**	**LOS**	**Volume**	**LOS**	**Volume**	**LOS**
East-bound US 50	SR 99 / SR 51 to Stockton Boulevard	7,068	C	6,415	C	7,677	C	6,755	C
	Stockton Boulevard to 59th Street	7,470	**F**	7,228	**F**	8,103	**F**	7,596	**F**
	59th Street to 65th Street	6,767	D	6,641	D	7,393	D	6,983	D
	65th Street to Howe Avenue	7,962	D	7,562	D	8,651	D	7,891	D
	Howe Avenue to Watt Avenue	7,405	D	7,602	D	7,596	D	7,741	D
	Watt Avenue to Bradshaw Road	7,935	D	7,176	C	8,147	D	7,345	C
	Bradshaw Rd to Mather Field Rd	7,725	**F**	7,366	C	7,749	**F**	7,251	C
	Mather Field Rd to Zinfandel Drive	7,275	C	7,224	C	7,712	C	7,557	C
	Zinfandel Drive to Sunrise Blvd	5,121	C	6,649	**F**	5,735	C	7,068	**F**
	Sunrise Boulevard to Hazel Avenue	4,985	C	5,323	**F**	5,496	C	5,610	**F**
West-bound US 50	Hazel Avenue to Sunrise Boulevard	6,068	D	4,370	C	6,324	E	4,696	C
	Sunrise Blvd to Zinfandel Drive	7,502	D	4,762	C	7,827	E	5,105	C
	Zinfandel Drive to Mather Field Rd	7,548	C	5,765	B	7,839	C	5,894	B
	Mather Field Rd to Bradshaw Road	7,859	**F**	6,939	D	7,809	**F**	6,845	D
	Bradshaw Road to Watt Avenue	7,550	**F**	6,466	D	7,467	**F**	6,929	E
	Watt Avenue to Howe Avenue	7,376	**F**	5,106	**F**	7,217	**F**	5,404	**F**
	Howe Avenue to 65th Street	8,157	**F**	7,407	**F**	8,497	**F**	8,037	**F**
	65th Street to 59th Street	8,278	**F**	7,358	**F**	8,610	**F**	7,952	**F**
	59th Street to Stockton Boulevard	9,115	D	7,945	**F**	9,462	D	8,535	**F**
	Stockton Boulevard to SR 99 / SR 51	8,546	D	8,136	**F**	8,853	D	8,639	**F**

Bold values denote level of service "F" conditions.

Red shaded values indicate project impacts.

Source: *DKS Associates, 2018.*

Table 9.9: Existing Plus FOUR PROJECTS (Prop. Proj.) Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service										
Direc-tion	**Location**	**Junction Type**	**Existing**				**Existing Plus FOUR PROJECTS**			
			A.M. Peak Hour		**P.M. Peak Hour**		**A.M. Peak Hour**		**P.M. Peak Hour**	
			Ramp Volume	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**
East-bound US 50	Northbound 65th Street Slip Entrance	Weave	765	D	653	C	752	F	575	D
	Howe Avenue / Hornet Drive Exit		1,631		1,417		2,178		1,619	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	484	C	881	C	566	C	922	D
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	419	C	431	C	392	C	394	C
	Watt Avenue Exit	Two-Lane Diverge	1,317	B	1,634	B	1,137	B	1,457	B
	Watt Avenue Entrance	One-Lane Merge	2,134	**F**	1,724	D	1,963	E	1,539	D
	Bradshaw Road Exit	Two-Lane Diverge	1,520	B	1,228	B	1,876	C	1,599	B
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	220	C	422	C	164	C	412	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	971	C	918	C	1,237	D	1,114	C
	Mather Field Road Exit	Two-Lane Diverge	1,266	B	1,062	A	1,192	B	1,000	A
	Southbound Mather Field	One-Lane Merge	125	C	101	B	124	C	103	B

Table 9.9: Existing Plus FOUR PROJECTS (Prop. Proj.) Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service										
Direc-tion	**Location**	**Junction Type**	**Existing**				**Existing Plus FOUR PROJECTS**			
			A.M. Peak Hour		**P.M. Peak Hour**		**A.M. Peak Hour**		**P.M. Peak Hour**	
			Ramp Volume	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**
	Road Loop Entrance									
	Northbound Mather Field Road Slip Entrance	Weave	317	**F**	816	C	644	**F**	1,196	D
	Zinfandel Drive Exit		2,932		1,452		2,923		1,419	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	182	B	129	C	178	B	119	C
	Northbound Zinfandel Drive Slip Entrance	One-Lane Merge	348	B	540	C	540	C	610	C
	Sunrise Boulevard Exit	Major Diverge	1,773	C	1,959	D	1,931	C	2,077	D
	Sunrise Boulevard Entrance	One-Lane Merge	992	C	889	D	1,029	C	851	D
	Hazel Avenue Exit	Two-Lane Diverge	933	B	1,541	C	1,105	C	1,661	C
	Hazel Avenue Entrance	Weave	804	C	945	C	722	C	945	C
	Aerojet Road Exit		241		55		242		52	
West-bound US 50	Hazel Avenue Exit	Two-Lane Diverge	631	A	869	A	621	A	837	B
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	160	B	600	B	172	B	592	B
	Southbound Hazel Avenue	One-Lane Merge	1,550	B	800	B	1,727	C	961	B

Table 9.9: Existing Plus FOUR PROJECTS (Prop. Proj.) Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service										
Direc-tion	Location	Junction Type	Existing				Existing Plus FOUR PROJECTS			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Slip Entrance									
	Sunrise Boulevard Exit	One-Lane Diverge	749	E	758	D	660	E	762	D
	Sunrise Blvd Entrance	Lane Addition	2,183	**F**	1,656	D	2,191	**F**	1,667	D
	Zinfandel Drive Exit	One-Lane Diverge	1,034	E	608	C	1,077	E	756	C
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	585	B	1,197	B	543	B	1,117	B
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	442	C	561	B	412	C	540	B
	Mather Field Road Exit	One-Lane Drop	1,093	C	556	A	1,505	C	741	A
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	515	B	861	B	391	B	846	B
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	387	B	380	B	516	B	358	B
	Bradshaw Road Exit	Two-Lane Diverge	1,236	B	1,327	B	1,591	B	1,465	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	914	D	910	C	1,266	D	1,540	D
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	338	D	590	C	377	D	666	D
	Watt Avenue Exit	Major Diverge	1,373	D	1,188	C	1,243	D	1,174	C
	Northbound Watt Avenue	One-Lane Merge	820	D	943	C	773	D	903	C

Table 9.9: Existing Plus FOUR PROJECTS (Prop. Proj.) Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service

Direc-tion	Location	Junction Type	Existing				Existing Plus FOUR PROJECTS			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Entrance									
	Southbound Watt Avenue Slip Entrance	Lane Addition / Weave	1,232	C	1,317	D	1,073	C	1,178	B
	Howe Avenue Exit	Major Diverge / Weave	1,531	D	1,419		1,359	D	1,319	D
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	654	D	602	C	684	D	653	C
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	574	C	574	C	689	C	499	C

Bold values denote level of service "F" conditions.
Red shaded values indicate project impacts.
Source: *DKS Associates, 2018.*

Table 9.10: Existing Plus FOUR PROJECTS (Proposed Project) Peak Hour Freeway Ramp Termini Queuing

Direction	US 50 Exit Ramp	Available Storage Length (feet / lane)			Maximum Queue Length (feet / lane)					
					AM Peak Hour			PM Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US-50	Howe Avenue	765	-	765	119	-	634	118	-	244
	Watt Avenue	1,500	-	1,500	113	-	212	161	-	225
	Bradshaw Road	1,250	-	1,250	115	-	740	62	-	624
	Mather Field Road	1,385	-	1,385	156	-	358	103	-	60
	Zinfandel Drive	1,025	1,025	1,025	236	792	709	429	319	175
	Sunrise Boulevard	1,695	-	1,695	223	-	117	218	-	75
	Hazel Avenue	1,310	-	1,310	196	-	48	182	-	8
Westbound US-50	Hazel Avenue	1,995		1,995	262		47	159		217
	Sunrise Boulevard	1,540	-	1,540	67	-	46	139	-	123
	Zinfandel Drive	1,065	-	1,065	188	-	38	93	-	103
	Mather Field Road	1,335	-	1,335	429	-	403	121	-	100
	Bradshaw Road	1,330	-	1,330	179	-	34	175	-	13
	Watt Avenue	1,480	-	1,480	205	-	546	104	-	459
	Howe Avenue	1,355	1,355	1,355	76	412	65	149	412	151

Red shaded values indicate project impacts.

L = left turn movement, T = through movement, R = right turn movement

Source: *DKS Associates, 2018.*

9.4.4 Existing Plus FOUR PROJECTS Pedestrian and Bicycle Facility Impacts

The FOUR PROJECTS would not remove any existing or planned pedestrian facility. The FOUR PROJECTS would not remove any existing bicycle facility or any facility that is planned in the Bikeway Master Plan. The FOUR PROJECTS would add pedestrian and bicycle demands within the FOUR PROJECTS site and to and from nearby land uses. Complete information on improvements to on- and off-site bicycle and pedestrian facilities is not available at this time. Because the FOUR PROJECTS would add demand for pedestrian and bicycle facilities that may not be available, the impact of the FOUR PROJECTS on pedestrian and bicycle circulation is potentially significant.

9.4.5 Existing Plus FOUR PROJECTS Transit System Impacts

Public transit service is currently limited in the vicinity of the FOUR PROJECTS. In the preparation of this analysis, a conceptual transit system to serve the FOUR PROJECTS was developed (see Section 8.1.2.3). The additional transit service was assumed to be funded by the FOUR PROJECTS. However, the timing and implementation of the transit system are uncertain at this time. The FOUR PROJECTS would increase demands for public transit facilities. Therefore, the impact of the FOUR PROJECTS on the transit system is potentially significant.

9.4.6 Existing Plus FOUR PROJECTS Functionality Impacts

Table 9.11 summarizes the results of the rural roadway segment functionality analysis. **Figure 9.6** illustrates the resultant functionality impacts. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the FOUR PROJECTS. The "Substandard?" heading indicates whether or not a roadway meets the County standards of 12-foot lanes and 6-foot shoulders. If the FOUR PROJECTS make improvements to a roadway segment such as widening, they would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact?" heading indicate those locations with a functionality impact.

As stated above, the traffic analysis assumed that the FOUR PROJECTS would construct a number of travel lanes on roadway segments that are internal to or on the boundary of the FOUR PROJECTS, and the entire roadway segment would be reconstructed to County standards at that time. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the FOUR PROJECTS.

Table 9.11
Existing Plus FOUR PROJECTS (Proposed Project) Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	2	Yes	6,020	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	2	Yes	8,710	No
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	4	No	9,540	Yes[3]
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Yes	6,430	Yes
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Yes	3,480	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	2	Yes	24,330	Yes
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	2	Yes	23,810	Yes
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	3	No	14,060	Yes[3]
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	3	No	20,840	Yes[3]
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Yes	23,640	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	3	No	27,200	Yes[3]
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	3	No	11,810	Yes[3]
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Yes	12,980	Yes
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Yes	10,200	Yes
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	2	Yes	16,140	Yes
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	2	Yes	13,120	Yes
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	2	Yes	13,330	Yes
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	2	Yes	12,770	Yes
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Yes	7,260	Yes
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	3	No	14,910	Yes[3]
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	4	No	15,870	Yes[3]
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	2	Yes	9,330	Yes
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	4	No	7,410	Yes[3]
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Yes	7,630	Yes
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	2	22	Yes	3,737	2	Yes	3,770	No
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Yes	3,630	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	6	No	53,130	Yes[3]
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	No	46,470	Yes[3]

Red text with light gray shading indicate project impacts.

Table 9.11
Existing Plus FOUR PROJECTS (Proposed Project) Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	2	22	Yes	4,616	2	Yes	5,570	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	6	No	43,540	Yes[3]
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	3	No	14,640	Yes[3]
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Yes	4,430	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	4	No	34,120	Yes[3]
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490	2	Yes	2,090	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	2	Yes	19,650	Yes

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

FIGURE 9.6
EXISTING PLUS FOUR PROJECTS
(PROPOSED PROJECT)
FUNCTIONALITY IMPACTS

Legend

- Substandard Roadways
- Functionality Impact
- Functionality Impact if Roadway is Not Already Improved
- Cities
- Mather Airport

9.5 MITIGATION

9.5.1 Existing Plus FOUR PROJECTS Roadway Segment Mitigation

Table 9.12 summarizes the results of the operations analysis for the study area roadway segments with mitigation. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate widened roadways for mitigation purposes, which would be the responsibility of the FOUR PROJECTS to fund and provide. The Jackson Township project would contribute a fair share. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to have LOS impacts after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the improvements allowed under the General Plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

9.5.2 Existing Plus FOUR PROJECTS Intersection Mitigation

Tables 9.13 and 9.14 summarize the results of the operations analysis for the study area intersections with mitigation. However, the increased number of lanes on each approach does not exceed the County's standard number of approach lanes. Shaded table cells in Table 4.14 indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the FOUR PROJECTS to fund and provide. The Jackson Township project would contribute a fair share. The shaded table cells in Table 9.13 under the "Level of Service" heading indicate those locations with an LOS impact after mitigation. Table 9.14 also identifies those intersections that would continue to have LOS impacts after mitigation, along with the constraint that precluded full mitigation. Detailed analysis information is included in the technical appendix.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

High Capacity Intersections

Three intersections are currently designated as "High Capacity Intersections" on the County's General Plan: Watt Avenue & Folsom Boulevard, Watt Avenue & Kiefer Boulevard, and Watt Avenue & Jackson Road.

A high capacity intersection would utilize special treatments to increase the capacity of the intersection so as to reduce congestion and travel delay. Since each intersection could have unique travel movements, volumes and existing context sensitive conditions, the special treatments utilized at each high capacity intersection will be selected to meet the specific needs of each intersection. The range of special treatments is quite wide, ranging from the restriction of certain turning movements to various combinations that could include grade separating certain movements. While the field of traffic engineering is ever expending and evolving resulting in the use of new technologies and treatments, special treatments such as the following could be utilized at a high capacity intersection:

- Restricting turning movements
- Median U-turns
- Roundabouts
- Split intersections
- Quadrant roadway intersections
- Bowtie intersections
- Directional flyovers
- Center turn overpass
- Grade separated Roundabout
- Diverging diamond grade separation
- Compact diamond grade separation
- Single point urban grade separation
- Traditional urban grade separation

The County has conducted conceptual engineering to define potential improvements at the three study area intersections on Watt Avenue that are currently designated as "High Capacity Intersections" on the County's General Plan. These are:

- At the **Watt Avenue & Folsom Boulevard** intersection, the County proposes an ultimate configuration involving grade separation of the northbound and southbound through movements of Watt Avenue. Access to and from Folsom Boulevard would be accomplished via on and off-ramps from the left lanes of Watt Avenue to a single signalized intersection. A bus rapid transit (BRT) lane along Watt Avenue would also intersect Folsom Boulevard at the traffic signal. This design is consistent with the recommendations of the South Watt Area Transportation Study (SWATS) dated November 1, 2002 and approved by the Board of Supervisors on November 26, 2002, and with the planning study for the *State Route 16 (Jackson Road) Corridor Study* (Fehr & Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of

Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

- At the **Watt Avenue & Kiefer Boulevard** intersection, the County proposes a tight diamond interchange as the ultimate improvement. The through movements (and BRT lane) on Watt Avenue would be grade separated from Kiefer Boulevard. Access to and from Kiefer Boulevard would be accomplished via on and off-ramps at two signalized intersections along Kiefer Boulevard. This design is proposed in the planning study prepared for *State Route 16 (Jackson Road) Corridor Study* (Fehr & Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

- At the **Watt Avenue & Jackson Road** intersection, the County proposes a standard six-by-six signalized intersection (two left-turn lanes, three through lanes, and one right-turn lane, on each approach) with three modifications. 1) The southbound left-turn movement would be grade separated; 2) The westbound right-turn movement would be grade separated; and 3) Three northbound left-turn lanes are proposed. This configuration represents an enhanced version of Alternative 6 in the planning study prepared for *State Route 16 (Jackson Road) Corridor Study* (Fehr and Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

Table 9.12
Existing Plus FOUR PROJECTS (Proposed Project) Roadway Segment Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS					Mitigated Existing + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	74,990	1.39	**F**	6	Arterial M	1.39	**F**	Yes		Maximum General Plan lanes
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	68,530	1.27	**F**	6	Arterial M	1.27	**F**	Yes		Maximum General Plan lanes
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	61,140	1.13	**F**	6	Arterial M	1.13	**F**	Yes		Maximum General Plan lanes
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	4	Arterial M	52,870	1.47	**F**	6	Arterial M	0.98	E	No		
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	5	Arterial M	48,770	1.35	**F**	6	Arterial M	0.90	E	No		
6.1	Bradshaw Rd	Kiefer Blvd	Collector WJ-9	5	Arterial M	42,990	1.19	**F**	6	Arterial M	0.80	C	No		
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	5	Arterial M	43,240	1.20	**F**	6	Arterial M	0.80	D	No		
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	22,450	1.25	**F**	4	Arterial M	0.62	B	No		
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	17,920	1.00	**E**	4	Arterial M	0.50	A	No		
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Arterial M	24,330	1.35	**F**	4	Arterial M	0.68	B	No		
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Arterial M	23,810	1.32	**F**	4	Arterial M	0.66	B	No		
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	3	Arterial M	20,840	1.16	**F**	4	Arterial M	0.58	A	No		
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd	2	Arterial M	24,660	1.37	**F**	4	Arterial M	0.69	B	No		
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	3	Arterial M	28,300	1.57	**F**	4	Arterial M	0.79	C	No		
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	3	Arterial M	27,200	1.51	**F**	4	Arterial M	0.76	C	No		
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	54,050	1.50	**F**	4	Arterial M	1.50	**F**	Yes		Maximum General Plan lanes
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	22,110	1.23	**F**	4	Arterial M	0.61	B	No		

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.12
Existing Plus FOUR PROJECTS (Proposed Project) Roadway Segment Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS					Mitigated Existing + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit	2	Rural S	15,870	0.79	**E**	4	Arterial M	0.44	A	No		
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd	2	Rural S	15,920	0.80	**E**	4	Arterial M	0.44	A	No		
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	22,670	1.13	**F**	4	Arterial M	0.63	B	No		
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	20,150	1.01	**F**	4	Arterial M	0.56	A	No		
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	61,660	1.14	**F**	6	Arterial M	1.14	**F**	Yes		Maximum General Plan lanes
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd	2	Arterial M	32,990	1.83	**F**	4	Arterial M	0.92	E	No		
66	Jackson Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	37,140	2.06	**F**	4	Arterial M	1.03	**F**	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	58,480	1.62	**F**	6	Arterial M	1.08	**F**	Yes		Maximum General Plan lanes
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	4	Arterial M	50,280	1.40	**F**	6	Arterial M	0.93	E	No		
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	4	Arterial M	51,720	1.44	**F**	6	Arterial M	0.96	E	No		
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	4	Arterial M	46,470	1.29	**F**	6	Arterial M	0.86	D	No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	17,810	0.78	**E**	4	Arterial M	0.49	A	No		
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	37,250	1.03	**F**	4	Arterial M	1.03	**F**	Yes		Maximum General Plan lanes

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.12
Existing Plus FOUR PROJECTS (Proposed Project) Roadway Segment Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS					Mitigated Existing + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	32,660	0.91	**E**	4	Arterial M	0.91	**E**	Yes		Maximum General Plan lanes
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	64,520	1.19	**F**	6	Arterial M	1.19	**F**	Yes		Maximum General Plan lanes
97	South Watt Ave	Kiefer Blvd	Jackson Rd	5	Arterial M	49,130	1.36	**F**	6	Arterial M	0.91	E	No		
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	22,370	1.24	**F**	4	Arterial M	0.62	B	No		
100	South Watt Ave	Elder Creek Rd	Florin Rd	2	Arterial M	24,520	1.36	**F**	4	Arterial M	0.68	B	No		
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr	6	Arterial M	52,560	0.97	**E**	6	Arterial M	0.97	**E**	Yes		Maximum General Plan lanes
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	20,180	1.12	**F**	4	Arterial M	0.56	A	No		
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	77,810	1.30	**F**	6	Arterial H	1.30	**F**	Yes		Maximum General Plan lanes
118	Zinfandel Dr	US 50	White Rock Rd	7	Arterial M	49,830	0.92	**E**	7	Arterial M	0.92	**E**	Yes		Maximum General Plan lanes
122	Zinfandel Dr	City Limit	Douglas Rd	2	Arterial M	20,550	1.14	**F**	4	Arterial M	0.57	A	No		
123.1	Zinfandel Dr	Douglas Rd	Collector MS-2	2	Arterial M	19,650	1.09	**F**	4	Arterial M	0.55	A	No		
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd	2	Arterial M	22,730	1.26	**F**	4	Arterial M	0.63	B	No		

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.12
Existing Plus FOUR PROJECTS (Proposed Project) Roadway Segment Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS					Mitigated Existing + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible

Note: Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, as proposed by the County of Sacramento.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.13

Existing Plus FOUR PROJECTS (Proposed Project) Impacted Intersections and Mitigations

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing Plus FOUR ALL OJTS			LOS Impact	Mitigated Existing Plus FOUR ALL OJTS			Existing Plus FOUR ALL OJTS			LOS Impact	Mitigated Existing Plus FOUR ALL OJTS		
		Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)
9	Florin Perkins Road & Jackson Road	Signal	E	68.8	No	Signal	C	28.6	Signal	F	146.5	Yes	Signal	D	42.2
14	S. Watt Avenue & Kiefer Blvd.	Signal	F	125.6	Yes	Signal	SB Ramps B NB Ramps D	SB Ramps 14.2 NB Ramps 50.4	Signal	F	111.6	Yes	Signal	SB Ramps B NB Ramps D	SB Ramps 14.3 NB Ramps 50.1
16	S. Watt Avenue & Jackson Road	Signal	F	336.6	Yes	Signal	E	67.5	Signal	F	730.1	Yes	Signal	E	68.3
17	S. Watt Avenue & Fruitridge Road	Signal	D	51.4	No	Signal	C	33.3	Signal	E	63.6	Yes	Signal	D	48.4
18	S. Watt Avenue & Elder Creek Road	Signal	F	124.3	Yes	Signal	D	39.6	Signal	F	144.2	Yes	Signal	D	42.7
27	Hedge Avenue & Florin Road	All-way stop	F	221.8	Yes	Signal	D	47.1	All-way stop	E	47.3	No	Signal	B	12.0
31	Mayhew Road & Elder Creek Road	Signal	F	>300	Yes	Signal	C	22.3	Signal	F	269.2	Yes	Signal	C	24.4
32	Woodring Drive & Zinfandel Drive	Two-way stop			Yes	Roundabout	C	18.5	Two-way stop			Yes	Roundabout	C	19.5
	Eastbound		F	86.5						F	79.1				
	Northbound Left Turn		*A*	*9.5*						B	10.1				
36	Bradshaw Road & Old Placerville Road	Signal	E	62.3	Yes	Signal			Signal	E	62.5	Yes	Signal		
37	Bradshaw Road & Kiefer Boulevard	Signal	F	108.6	Yes	Signal	F	102.7	Signal	F	105.4	Yes	Signal	E	78.8
38	Bradshaw Road & Jackson Road	Signal	F	100.6	Yes	Signal	E	77.5	Signal	F	82.4	Yes	Signal	E	69.9
39	Bradshaw Road & Elder Creek Road	Signal	F	81.6	Yes	Signal	D	54.0	Signal	E	71.6	No	Signal	E	63.0
40	Bradshaw Road & Florin Road	Signal	F	112.5	Yes	Signal	E	57.7	Signal	E	74.7	No	Signal	E	74.4

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.13

Existing Plus FOUR PROJECTS (Proposed Project) Impacted Intersections and Mitigations

	Intersection	AM Peak Hour							PM Peak Hour						
		Existing Plus FOUR ALL OJTS			LOS Impact	Mitigated Existing Plus FOUR ALL OJTS			Existing Plus FOUR ALL OJTS			LOS Impact	Mitigated Existing Plus FOUR ALL OJTS		
		Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)
42	Happy Lane & Old Placerville Road	Two-way stop			No	Signal	B	19.4	Two-way stop			Yes	Signal	B	17.6
	Northbound Left Turn		E	45.9						F	>300				
	Northbound Right Turn		C	15.9						B	13.6				
	Westbound Left Turn		A	9.0						A	9.2				
45	Excelsior Road & Jackson Road	Signal	F	281.1	Yes	Signal	D	47.3	Signal	F	225.2	Yes	Signal	D	38.7
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	F	158.8	Yes	Signal	C	31.0	All-way stop	F	104.3	Yes	Signal	A	7.7
51	Mather Field Road & Rockingham Drive	Signal	F	132.2	Yes				Signal	E	62.0	Yes			
61	Eagles Nest Road & Florin Road	Two-way stop			Yes	Signal	C	29.1	Two-way stop			Yes	Signal	C	31.7
	Northbound		*F*	*141.4*						D	25.5				
	Southbound		C	20.3						F	76.6				
	Eastbound Left Turn		*A*	*5.4*						A	8.0				
	Westbound Left Turn		*A*	*0.0*						A	7.6				
69	Sunrise Boulevard & Kiefer Boulevard	Signal	E	60.7	Yes	Signal	C	24.8	Signal	D	39.5	No	Signal	C	29.6
70	Sunrise Boulevard & Jackson Road	Signal	F	123.0	Yes	Signal	D	41.0	Signal	E	72.6	Yes	Signal	D	48.2
80	Grant Line Road & Jackson Road	Signal	F	98.3	Yes	Signal	D	49.7	Signal	E	70.7	No	Signal	E	66.2
90	Excelsior Road & Calvine Rd	All-way stop	F	121.0	Yes	Signal	C	32.7	All-way stop	F	80.4	Yes	Signal	C	22.7
93	Grant Line Rd & Dwy/Wilton Rd	Signal	F	83.2	Yes	Signal	C	32.6	Signal	E	73.0	Yes	Signal	D	35.6
319	Bradshaw Road & Collector WJ-10	Signal	F	96.2	Yes	Signal	C	39.8	Signal	B	14.7	No	Signal	C	24.1

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.13

Existing Plus FOUR PROJECTS (Proposed Project) Impacted Intersections and Mitigations

Intersection		AM Peak Hour							PM Peak Hour						
		Existing Plus FOUR ALL OJTS			LOS Impact	Mitigated Existing Plus FOUR ALL OJTS			Existing Plus FOUR ALL OJTS			LOS Impact	Mitigated Existing Plus FOUR ALL OJTS		
		Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)
325	Douglas Road & Kiefer Boulevard	Signal	F	117.8	Yes	Signal	D	54.1	Signal	F	137.6	Yes	Signal	D	50.0
331	Routier Ext/Routier Rd & Old Placerville Rd.	Signal	F	242.3	Yes	Signal	E	69.4	Signal	F	192.3	Yes	Signal	E	56.8

Note: Gray shading represents changes in traffic control for which the ALL OJT is responsible to pay a fair share.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 9.14

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Impacts and Mitigations

	Intersection	Traffic Control		Existing Plus FOUR PROJECTS Lane Geometrics				Mitigated Existing Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		Existing Plus FOUR PROJECTS	Mitigated Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
9	Florin Perkins Road & Jackson Road	Signal	Signal									No	No		
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal									No	Yes	Tight Diamond Interchange (SB Watt Ramps/Kiefer intersection shown)	
			Signal											Tight Diamond Interchange (NB Watt Ramps/Kiefer intersection shown)	
16	S. Watt Avenue & Jackson Road	Signal	Signal									No	Yes	Free WBR	
											*Free right				
17	S. Watt Avenue & Fruitridge Road	Signal	Signal									No	No		
18	S. Watt Avenue & Elder Creek Road	Signal	Signal									No	No		
27	Hedge Avenue & Florin Road	All-way stop	Signal									No	No		
31	Mayhew Road & Elder Creek Road	Signal	Signal									No	No	Dual SBR	
32	Zinfandel Drive & Woodring Drive	Two-way stop	Roundabout									No	No		
36	Bradshaw Road & Old Placerville Road	Signal	Signal									Yes	No		Existing development
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal									Yes	No	Carry 3 EBT and 3 WBT lanes through intersection	Maximum General Plan lanes
38	Jackson Road & Bradshaw Road	Signal	Signal									No	No	Dual EBR	
39	Bradshaw Road & Elder Creek Road	Signal	Signal									No	No		
40	Bradshaw Road & Florin Road	Signal	Signal									No	No		
42	Happy Lane & Old Placerville Road	Two-way stop	Signal									No	No		
45	Excelsior Road & Jackson Road	Signal	Signal									No	No	NBR overlap	
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	Signal										No		
52	Mather Boulevard & Douglas Road	All-way stop	Signal									No	No		
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									No	No		

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 9.14

Existing Plus FOUR PROJECTS (Proposed Project) Intersection Impacts and Mitigations

Intersection		Traffic Control		Existing Plus FOUR PROJECTS Lane Geometrics				Mitigated Existing Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		Existing Plus FOUR PROJECTS	Mitigated Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									No	No		
70	Sunrise Boulevard & Jackson Road	Signal	Signal									No	No		
78	Grant Line Road & Douglas Road	Signal	All-way stop									No	No		
80	Grant Line Road & Jackson Road	Signal	Signal									No	No		
90	Excelsior Road & Calvine Rd	All-way stop	Signal									No	No		
93	Grant Line Road & Driveway/Wilton Rd	Signal	Signal									No	No		
319	Tree View Lane & Collector JT-1	Signal	Signal									No	No	Dual WBR	
325	Douglas Road & Kiefer Boulevard	Signal	Signal									No	No	Dual EBR	
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	Signal									No	No	NBR overlap	

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

9.5.3 Existing Plus FOUR PROJECTS U.S. 50 Freeway Mitigation

According to Caltrans' US-50 Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP), all mainline freeway lanes of the 8-lane ultimate facility (4 lanes in each direction) have already been built, with the exception of the segment between Zinfandel Drive and Sunrise Boulevard (where 6 of the 8 ultimate lanes exist today). With the exception of this segment, capacity improvements to widen the freeway mainline are precluded by the ultimate configuration in the TCR/CSMP. The TCR/CSMP does conceptualize other projects that will benefit the US-50 corridor without adding additional mainline travel lanes. These improvements generally fall into one of three categories:

- Intelligent transportation systems (ITS) and integrated corridor management (ICM) projects. Some examples may include ramp metering and multimodal improvements.
- Improvements to parallel local facilities. Such projects are expected to reduce travel demand on US-50.
- Future HOV lanes and auxiliary lanes. These projects would extend, or bridge gaps in, the existing HOV and auxiliary lane network. Constructing these lanes is permissible even when further widening of the mainline is not allowable, and is consistent with the ultimate configuration in the TCR/CSMP.

The FOUR PROJECTS shall participate in one or more of these alternative improvements that could directly reduce the severity of the project's impact and/or provide operational benefits to the US-50 corridor in general.

9.5.3.1 US-50 Eastbound Alternative Improvements

To lessen the impact to the eastbound US-50 mainline between Stockton Boulevard and 59th Street, the project may pay a fair share toward the construction of:

- Ramp meter improvements (Caltrans ITS/OPS Project List)

To lessen the impact to the eastbound US-50 weave between 65th Street and Howe Avenue, the project may pay a fair share toward the construction of:

- Ramp meter improvements (Caltrans ITS/OPS Project List)
- Widen 65th Street to 5 lanes from US-50 to Broadway (2035 SACOG MTP)

To lessen the impact to the eastbound US-50 weave between Mather Field Road and Zinfandel Drive, the project may pay a fair share toward the construction of:

- An interchange modification of US-50 at Mather Field Road (2035 SACOG MTP)

To lessen the impact to the eastbound US-50 mainline between Zinfandel Drive and Hazel Avenue, the project may pay a fair share toward the construction of:

- Auxiliary lanes between Zinfandel Drive and Sunrise Boulevard (2035 SACOG MTP)
- Auxiliary lanes between Sunrise Boulevard and Hazel Avenue (2035 SACOG MTP)
- Widen Sunrise Boulevard to 6 lanes with special treatments, including intersection improvements at White Rock Road, Folsom Boulevard, Coloma Road, Gold Express Drive, and Gold Country Boulevard (2035 SACOG MTP)
- A new interchange at Rancho Cordova Parkway, including a 4-lane arterial from US-50 to White Rock Road (2035 SACOG MTP)

- Multi-modal corridor improvements and interchange improvements at Hazel Avenue (2035 SACOG MTP)

9.5.3.2 US-50 Westbound Alternative Improvements

To lessen the impact to the westbound US-50 mainline between Watt Avenue and SR-51/SR-99, the project may pay a fair share toward the construction of:

- Bus/HOV lanes from Watt Avenue to Downtown Sacramento (2035 SACOG MTP)
- Replacement of existing communication lines with fiber optics to improve performance between SR-51/SR-99 and Watt Avenue (2013 10-Year SHOPP Plan)
- Auxiliary lane between the NB Howe Avenue on-ramp and the SB Howe Avenue on-ramp (2035 SACOG MTP)
- Ramp meter improvements (Caltrans ITS/OPS Project List)

9.5.4 Existing Plus FOUR PROJECTS Pedestrian and Bicycle Facility Mitigation

The FOUR PROJECTS applicants shall coordinate with Sacramento County to identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development. These facilities shall be incorporated into the FOUR PROJECTS and could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, pedestrian signal heads, and all appropriate traffic calming measures as defined in the County's Neighborhood Traffic Management Program (NTMP). Sidewalks would be required as part of the frontage improvements along all new roadway construction in the FOUR PROJECTS vicinity in conformance with County design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards.

9.5.5 Existing Plus FOUR PROJECTS Transit System Mitigation

The applicants of the FOUR PROJECTS shall coordinate with Regional Transit (or other transit operators) to provide the additional transit facilities and services assumed in transportation analysis (see Section 8.1.2.3), or a cost-effective equivalent level of transit facilities and services.

The assumed transit routes and service frequency would be required at full development of the FOUR PROJECTS. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the FOUR PROJECTS, must be phased with development of the FOUR PROJECTS.

9.5.6 Existing Plus FOUR PROJECTS Functionality Mitigation

Table 9.15 summarizes the results of the functionality analysis for the study area rural roadway segments with mitigation.

9.5.7 Existing Plus FOUR PROJECTS Mitigation Summary

Tables 9.16 through 9.21 summarize all of the roadway segments, intersections, and freeway facilities that would exhibit significant LOS impacts along with the mitigation success for these impacts.

Table 9.15
Existing Plus FOUR PROJECTS (Proposed Project) Functionality Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]		
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	4	No	9,540	Yes[3]	Widen to County standards [5]	No
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Yes	6,430	Yes	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Yes	24,330	Yes	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Yes	23,810	Yes	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	3	No	14,060	Yes[3]	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	3	No	20,840	Yes[3]	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Yes	23,640	Yes	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	3	No	27,200	Yes[3]	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	3	No	11,810	Yes[3]	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Yes	12,980	Yes	Widen to County standards [5]	No
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Yes	10,200	Yes	Widen to County standards [5]	No
39	Florin Rd	South Watt Ave	Hedge Ave	2	Yes	16,140	Yes	Widen to County standards [5]	No
40	Florin Rd	Hedge Ave	Mayhew Rd	2	Yes	13,120	Yes	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	2	Yes	13,330	Yes	Widen to County standards [5]	No
42	Florin Rd	Bradshaw Rd	Excelsior Rd	2	Yes	12,770	Yes	Widen to County standards [5]	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Yes	7,260	Yes	Widen to County standards [5]	No
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave	3	No	14,910	Yes[3]	Widen to County standards [5]	No
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	4	No	15,870	Yes[3]	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	2	Yes	9,330	Yes	Widen to County standards [5]	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	4	No	7,410	Yes[3]	Widen to County standards [5]	No
59	Hedge Ave	Jackson Rd	Fruitridge Rd	2	Yes	7,630	Yes	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	6	No	53,130	Yes[3]	Widen to County standards [5]	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	No	46,470	Yes[3]	Widen to County standards [5]	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	6	No	43,540	Yes[3]	Widen to County standards [5]	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	3	No	14,640	Yes[3]	Widen to County standards [5]	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	4	No	34,120	Yes[3]	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	2	Yes	19,650	Yes	Widen to County standards [5]	No

Red text with light gray shading indicate project impacts.

Table 9.15
Existing Plus FOUR PROJECTS (Proposed Project) Functionality Mitigations

ID	Roadway	Segment		Existing + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]		

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.
[4] Excluding the roadway segment that is within the developed community of Independence at Mather.
[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

Table 9.16
Existing Plus FOUR PROJECTS (Prop. Proj.) Summary of Impacted Roadway Segments

ID	Roadway	Segment	
		From	To
Level of Service Impact Fully Mitigated by General Plan Lanes			
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd
6.1	Bradshaw Rd	Kiefer Blvd	Collector WJ-9
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd
56	Grant Line Rd	Sheldon Rd	Wilton Rd
57	Grant Line Rd	Wilton Rd	Bond Rd
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd
68.1	Jackson Rd	Hedge Ave	Collector WJ-3
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd
71.1	Jackson Rd	Excelsior Rd	Collector JT-3
73	Jackson Rd	Sunrise Blvd	Grant Line Rd
97	South Watt Ave	Kiefer Blvd	Jackson Rd
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd
100	South Watt Ave	Elder Creek Rd	Florin Rd
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd
122	Zinfandel Dr	City Limit	Douglas Rd
123.1	Zinfandel Dr	Douglas Rd	Collector MS-2
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd
Level of Service Impact Not Fully Mitigated by General Plan Lanes			
2	Bradshaw Rd	US 50	Lincoln Village Dr
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd
44	Folsom Blvd	Howe Ave	Jackson Rd
62	Howe Ave	US 50	Folsom Blvd
66	Jackson Rd	Florin Perkins Rd	South Watt Ave

Note: Refer to Table 4.12 for detailed description of impacts and mitigations.

Table 9.16
Existing Plus FOUR PROJECTS (Prop. Proj.) Summary of Impacted Roadway Segments

ID	Roadway	Segment	
		From	To
67	Jackson Rd	South Watt Ave	Hedge Ave
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd
96	South Watt Ave	Folsom Blvd	Kiefer Blvd
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr
110	Watt Ave	US 50	Folsom Blvd
118	Zinfandel Dr	US 50	White Rock Rd

Note: Refer to Table 4.12 for detailed description of impacts and mitigations.

Table 9.17
Existing Plus FOUR PROJECTS (Proposed Project) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
Level of Service Impact Fully Mitigated by General Plan Lanes		
9	Florin Perkins Road & Jackson Road	
17	S. Watt Avenue & Fruitridge Road	
18	S. Watt Avenue & Elder Creek Road	
27	Hedge Avenue & Florin Road	
31	Mayhew Road & Elder Creek Road	**
32	Woodring Drive & Zinfandel Drive	
38	Bradshaw Road & Jackson Road	**
39	Bradshaw Road & Elder Creek Road	
40	Bradshaw Road & Florin Road	
42	Happy Lane & Old Placerville Road	
45	Excelsior Road & Jackson Road	**
48	Excelsior Road & Gerber Road/Birch Ranch Drive	
61	Eagles Nest Road & Florin Road	
69	Sunrise Boulevard & Kiefer Boulevard	
70	Sunrise Boulevard & Jackson Road	
80	Grant Line Road & Jackson Road	
90	Excelsior Road & Calvine Rd	
93	Grant Line Rd & Dwy/Wilton Rd	

Table 9.17
Existing Plus FOUR PROJECTS (Proposed Project) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
319	Bradshaw Road & Collector WJ-10	
325	Douglas Road & Kiefer Boulevard	**
331	Routier Ext/Routier Rd & Old Placerville Rd.	**
	Level of Service Impact Not Fully Mitigated by General Plan Lanes But Designated High Capacity Intersection	
14	S. Watt Avenue & Kiefer Blvd.	**
16	S. Watt Avenue & Jackson Road	**
	Level of Service Impact Not Fully Mitigated by General Plan Lanes	
36	Bradshaw Road & Old Placerville Road	
37	Bradshaw Road & Kiefer Boulevard	
51	Mather Field Road & Rockingham Drive	

[1] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding designated high capacity intersections, as proposed by the County of Sacramento.

* denotes alternative mitigations that improve operations but do not fully mitigate the impact.
** denotes alternative mitigations that fully mitigate the impact.

Table 9.18

Existing Plus FOUR PROJECTS (Proposed Project)
Summary of Impacted Freeway Basic Segments

Direction	Location
Level of Service Impact Not Mitigated	
Eastbound US-50	Stockton Boulevard to 59th Street
	Zinfandel Drive to Sunrise Boulevard
	Sunrise Boulevard to Hazel Avenue
Westbound US-50	Watt Avenue to Howe Avenue
	Howe Avenue to 65th Street
	65th Street to 59th Street
	59th Street to Stockton Boulevard
	Stockton Boulevard to SR 99 / SR 51

Source: *DKS Associates, 2018.*

Table 9.19

Existing Plus FOUR PROJECTS (Proposed Project)
Summary of Impacted Freeway Merge/Diverge/Weave Segments

Direction	Location	Junction Type
Level of Service Impact Not Mitigated		
Eastbound US-50	Northbound 65th Street Slip Entrance	Weave
	Howe Avenue / Hornet Drive Exit	
	Northbound Mather Field Road Slip Entrance	Weave
	Zinfandel Drive Exit	

Source: *DKS Associates, 2018.*

Table 9.20
Existing Plus FOUR PROJECTS (Prop. Proj.) Functionality Impact Summary

ID	Roadway	Segment	
		From	To
Functionality Impact Fully Mitigated			
15	Douglas Rd	Mather Blvd	Zinfandel Dr
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd
20	Eagles Nest Rd	Jackson Rd	Florin Rd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd
30	Excelsior Rd	Kiefer Blvd	Jackson Rd
31	Excelsior Rd	Jackson Rd	Elder Creek Rd
32	Excelsior Rd	Elder Creek Rd	Florin Rd
33	Excelsior Rd	Florin Rd	Gerber Rd
34	Excelsior Rd	Gerber Rd	Calvine Rd
39	Florin Rd	South Watt Ave	Hedge Ave
40	Florin Rd	Hedge Ave	Mayhew Rd
41	Florin Rd	Mayhew Rd	Bradshaw Rd
42	Florin Rd	Bradshaw Rd	Excelsior Rd
43	Florin Rd	Excelsior Rd	Sunrise Blvd
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave
49	Fruitridge Rd	Hedge Ave	Mayhew Rd
50	Grant Line Rd	White Rock Rd	Douglas Rd
58	Happy Ln	Old Placerville Rd	Kiefer Blvd
59	Hedge Ave	Jackson Rd	Fruitridge Rd
70	Jackson Rd	Bradshaw Rd	Excelsior Rd
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd
77	Kiefer Blvd	Bradshaw Rd	Happy Ln
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd

Table 9.20
Existing Plus FOUR PROJECTS (Prop. Proj.) Functionality Impact Summary

ID	Roadway	Segment	
		From	To
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd
89	Mayhew Rd	Jackson Rd	Fruitridge Rd
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd

10. CEQA CUMULATIVE PLUS FOUR PROJECTS SCENARIO (JACKSON TOWNSHIP PROPOSED PROJECT)

10.1 FOUR PROJECTS DESCRIPTION

The CEQA Cumulative plus FOUR PROJECTS scenario evaluates the effects of the traffic of four developments added to CEQA Cumulative conditions. Figure 9.1 illustrates the location of the FOUR PROJECTS:

- West Jackson Highway Master Plan (West Jackson)
- Jackson Township Specific Plan (Jackson Township)
- NewBridge Specific Plan (NewBridge)
- Mather South Specific Plan Amendment (Mather South)

10.1.1 CEQA Cumulative Land Use

Outside the FOUR PROJECTS area (see Figure 10.1), SACOG's 2035 development forecasts (the amount and location of housing and employment) for the adopted 2012 Metropolitan Transportation Plan (MTP) were used to prepare travel demand forecasts for this scenario. In addition, full build out of all reasonably foreseeable development projects was assumed within the study area, including the following major developments:

- Unincorporated Sacramento County
  - Vineyard Springs Comprehensive Plan
  - North Vineyard Station Specific Plan
  - Florin Vineyard Gap Community Plan
  - Mather Airport Specific Plan
  - Cordova Hills
  - Easton
  - Glenborough
  - East County Quarries

- City of Ranch Cordova
  - Arboretum
  - Suncreek
  - Sunridge Ranch
  - Rio del Oro
  - Westborough

- City of Folsom
  - Folsom South of 50 Specific Plan

- City of Sacramento
  - Aspen 1

10.1.2 Transportation Network

Figure 10.1 illustrates the transportation network associated with the CEQA Cumulative without FOUR PROJECTS scenario. Outside the FOUR PROJECTS area (see Figure 9.1), it consists of the improvements through 2035 in the adopted 2012 Metropolitan Transportation Plan (MTP). Within the FOUR PROJECTS area, it includes roadway improvements beyond those in the MTP, which would be fully funded by the developments assumed in this scenario or by other committed funding sources. Sacramento County staff helped define such improvements and the number of roadway lanes for this scenario.

Figure 10.2 illustrates the transportation network associated with the CEQA Cumulative with FOUR PROJECTS scenario. The FOUR PROJECTS would construct new roadways within their sites, and widen many existing roadways within or on the borders of their sites. Details of this expansion of the roadway system is included in Section 10.2.1.

10.1.2.3 Pedestrian and Bicycle Facilities

The roadways within the FOUR PROJECTS would meet County standards, which would provide sidewalks and on-street (Class II) bike lanes on all collector, arterial and thoroughfare roadways. The FOUR PROJECTS also provide several off-street (Class I) multi-purpose trails.

10.1.2.4 Transit System

The FOUR PROJECTS are designed with significant amounts of higher density and mixed uses to help support transit use but transit service within walking distances of those uses is required to achieve a significant transit ridership. An accurate estimation of transit use requires the definition of specific transit routes and frequency of service on those routes. A separate planning effort, involving staff from Sacramento County and Sacramento Regional Transit (RT), was conducted to define an appropriate transit system for the transportation analysis. That effort is described in Section 8.1.2.3.

The planning effort resulted in four transit lines that would serve the FOUR PROJECTS at a frequency of 15 minutes during the peak commute hours (approximately 6-9 AM and 3-6 PM) and 30 minutes during off-peak service hours (approximately 9AM-3PM and 6PM-8PM) on weekdays. Another key characteristic of the proposed transit system built into the modeling assumptions is the targeted use of queue jumps on portions of key corridors (Bradshaw Road from Kiefer Boulevard to Rock Creek Parkway, and Jackson Road from Watt Avenue to Excelsior Road). Queue jumps ensure that buses are not excessively delayed at signals along congested corridors, and therefore not too heavily penalized from a travel time perspective. This is necessary to achieve the adequate ridership levels that were forecast and ensure reliable operations. **Figure 10.3** shows the assumed transit routes for this scenario.

The assumed transit routes, service frequency, and supporting infrastructure (i.e. queue jumps) would be required at full development of the FOUR PROJECTS. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the

ultimate transit service, like the roadway system serving the FOUR PROJECTS, must be phased with development of the FOUR PROJECTS.

FIGURE 10.1
CEQA CUMULATIVE NO PROJECT
ROADWAY NETWORK

Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport

FIGURE 10.2
CEQA CUM PLUS FOUR PROJECTS
ROADWAY NETWORK

Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport

FIGURE 10.3
PROJECT TRANSIT NETWORK
CEQA CUM PLUS FOUR PROJECTS
(JT PROPOSED PROJECT)

Legend

- Jackson Express Route
- Kiefer Jackson Local Route
- West Jackson Local Route A
- West Jackson Local Route B
- Cities
- Mather Airport

10.2 TRIP GENERATION

The SACSIM model that has been utilized for the transportation forecasts in this analysis estimated trip generation of the Jackson Township project. **Table 10.2** summarizes the person trip generation. The Jackson Township project would generate over 95,000 daily work person trip ends, and over 804,000 daily person trip ends for all trip purposes.

Table 10.3 summarizes the estimated mode choice for the Existing plus Jackson Township project scenario. About 90.4 percent of all person trips are expected to be accommodated by automobile. Transit will serve about 2.0 percent of all trips, while walk and bike modes will accommodate about 7.7 percent of all trips. The mode choice assumes full implementation of the project's pedestrian and bicycle systems.

Table 10.4 summarizes the vehicular (auto) trip generation of the Jackson Township project. The Jackson Township project is estimated to generate over 541,000 daily vehicle trip ends. It should be noted that more than one person trip may be accommodated by a vehicle trip (e.g. carpooling). Over 107,000 of the daily vehicle trip ends will be associated with trips with both an origin and destination within the Jackson Township project, about 20 percent of the trip ends. The internal trip ends represent over 53,500 daily vehicle trips (one-half the number of internal trip ends). The Jackson Township project will generate about 434,000 external vehicle trips that have an origin or destination inside the Jackson Township project but the other end of the trip is outside the Jackson Township project. Table 10.4 also shows the vehicle trips generated during the a.m. and p.m. peak hours.

10.3 TRIP DISTRIBUTION

The distribution of trips associated with development of the FOUR PROJECTS was derived utilizing SACSIM, incorporating the proposed land use and access locations associated with the FOUR PROJECTS. Trip distribution varies by land use and time period. **Figure 10.4** illustrates the overall trip distribution of daily FOUR PROJECTS trips with the CEQA Plus FOUR PROJECTS scenario. The highest percentages of FOUR PROJECTS traffic are accommodated on Jackson Road, Bradshaw Road, Kiefer Boulevard, and Vineyard Road.

Table 10.1: Estimated Daily Person Trip Generation
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project)

Trip Purpose	Daily Person Trip Ends
Work Trips	95,402
Non-Work Trips	708,805
All Trip Purposes	804,206

Source: *DKS Associates, 2018.*

Table 10.2: Mode Split
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project)

Mode	Percentage of Person Trips by Trip Purpose		
	Work Trips	Non-Work Trips	All Trip Purposes
Auto - SOV	83.2%	47.0%	51.3%
Auto - HOV	10.0%	43.0%	39.1%
Transit	4.6%	1.7%	2.0%
Walk	1.3%	7.4%	6.7%
Bike	0.1%	1.0%	1.0%

Source: *DKS Associates, 2018.*

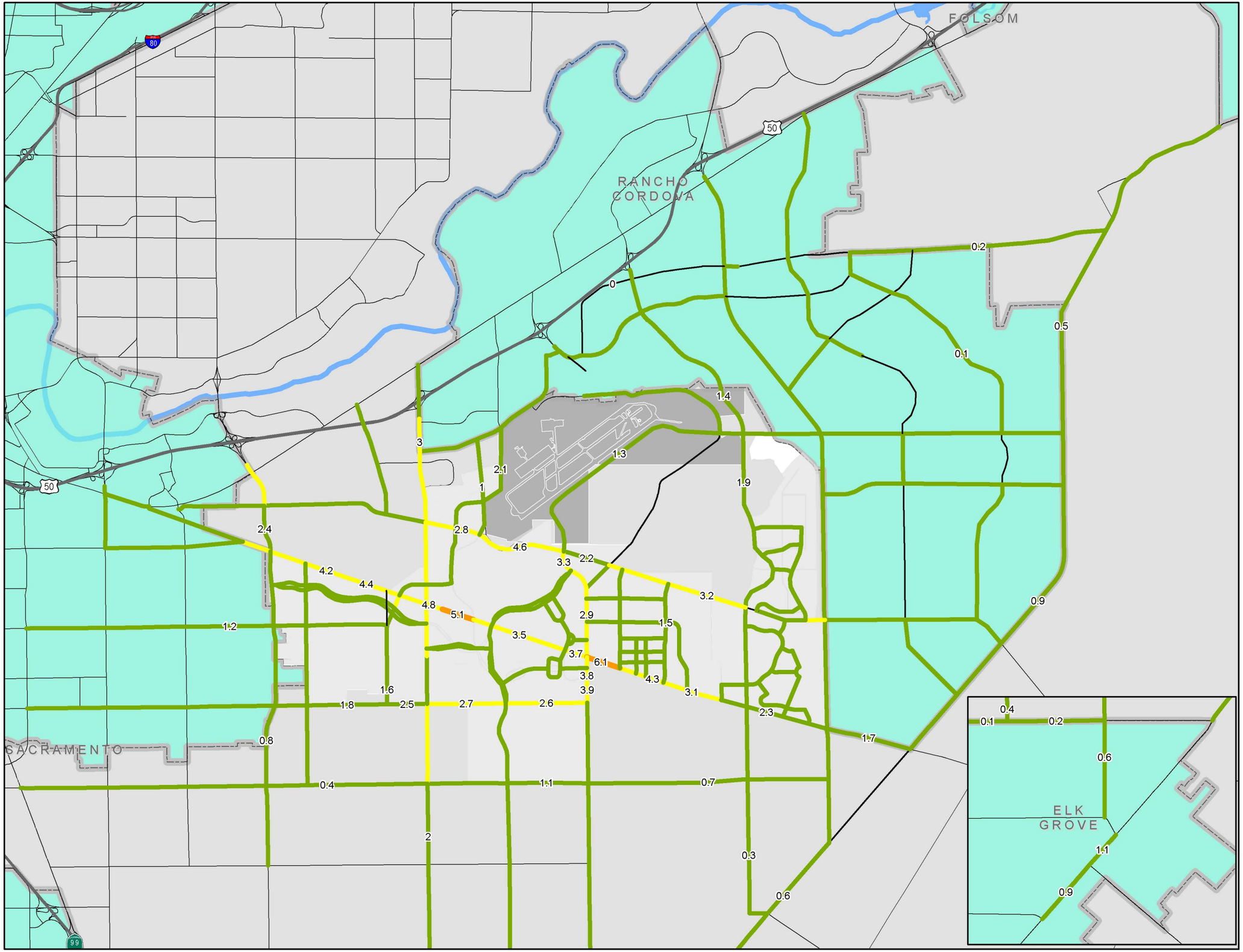
Table 10.3: Estimated Daily Vehicle Trip Generation
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project)

Trip Type		AM Peak Hour	PM Peak Hour	Daily
Total Vehicle Trip Ends		46,032	50,381	541,167
Percent Internal Trip Ends[1]		16.7%	20.4%	19.8%
Vehicle Trips	Internal to Project	3,851	5,132	53,638
	External to Project	38,331	40,118	433,891
	Total	42,182	45,249	487,529

[1.] Both trip ends within the project.

Source: *DKS Associates, 2018.*

FIGURE 10.4
CEQA CUM PLUS FOUR PROJECTS
FOUR PROJECTS TRIP DISTRIBUTION
(JT PROPOSED PROJECT)



10.4 OPERATIONS ANALYSIS AND IMPACTS

Cumulative scenario impacts are determined by comparing the traffic operating conditions associated with the FOUR PROJECTS with the traffic operating conditions associated with the cumulative (without FOUR PROJECTS) conditions, and comparing the change to the thresholds of significance. **Figure 10.5** illustrates the resultant traffic operating conditions associated with the CEQA Cumulative (without FOUR PROJECTS) scenario. **Figure 10.6** illustrates the resultant traffic operating conditions associated with the CEQA Cumulative Plus FOUR PROJECTS scenario.

10.4.1 CEQA Cumulative Plus FOUR PROJECTS Roadway Segment Impacts

Table 10.4 summarizes the results of the operations analysis for the study area roadway segments. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate new roadways or widened roadways. The last column of the table shows the project(s) responsible for the increase in the number of roadway lanes. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact.

10.4.2 CEQA Cumulative Plus FOUR PROJECTS Intersection Impacts

Table 10.5 and 10.6 summarize the results of the operations analysis for the study area intersections. The tables include the implementation of intersection changes associated with the FOUR PROJECTS. Table 10.6 illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type would be fully funded by the project(s) shown in the last column. Shaded table cells in Table 10.5 illustrate those locations with an LOS impact. Detailed analysis information is included in the technical appendix.

Signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. The project is considered to have a significant impact at an unsignalized location if both the impact criteria in Table 1.6 are met, and one or more of the signal warrants specified in the California Manual on Uniform Traffic Control Devices (CAMUTCD) are met. The following unsignalized intersections exhibit significant impacts and meet one or more traffic signal warrants:

- Happy Lane and Old Placerville Road
- Eagles Nest Road and Florin Road

10.4.3 CEQA Cumulative Plus FOUR PROJECTS U.S. 50 Freeway Impacts

10.4.3.1 Freeway Basic Segments

Table 10.7 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations. Details of the analysis are included in the technical appendix. The following locations exhibit significant impacts:

- Eastbound
    - Stockton Boulevard to 59th Street - a.m. peak hour

10.4.3.2 Freeway Ramp Junctions / Weaving

Table 10.8 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas. Details of the analysis are included in the technical appendix. The following locations exhibit significant impacts:

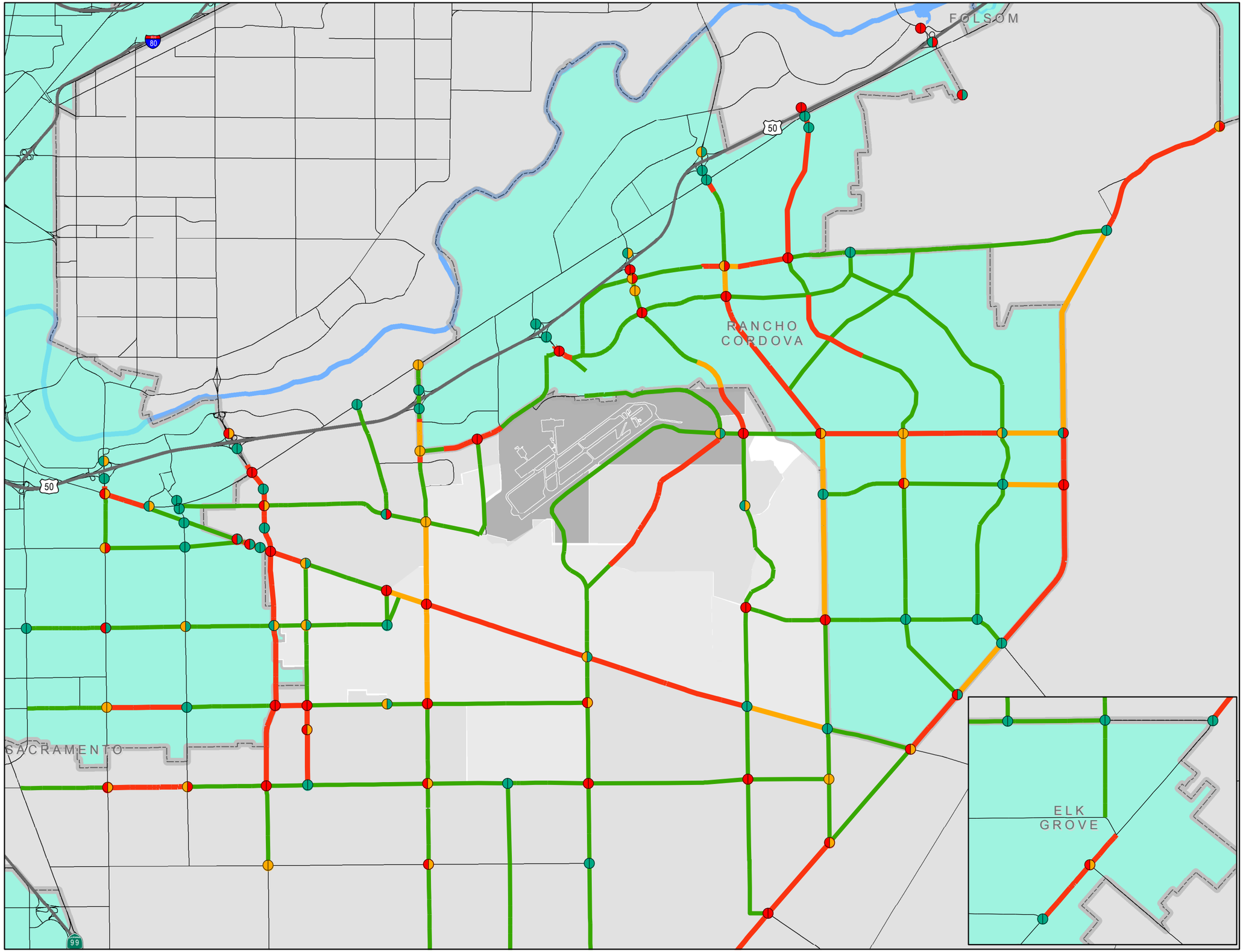
- Westbound
    - Hazel Avenue to Rancho Cordova Parkway weave - a.m. peak hour

10.4.3.3 Freeway Ramp Intersection Queuing

Tables 10.9 and 10.10 summarize a.m. and p.m. peak hour freeway ramp intersection queuing. The following locations exhibit a significant impact:

- Eastbound
    - Exit ramp to Howe Avenue - right turn queue length exceeds available storage – a.m. peak hour
    - Exit ramp to Zinfandel Drive-right turn and through queue length exceeds available storage – a.m. peak hour
- Westbound
    - Exit ramp to Rancho Cordova Parkway - left turn queue length exceeds available storage – a.m. and p.m. peak hours

FIGURE 10.5
CEQA CUMULATIVE NO PROJECT ROADWAY SEGMENT AND INTERSECTION LOS



Legend

Intersections (AM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Intersections (PM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Roadway Segments
- LOS A-D
- LOS E
- LOS F
- Cities
- Mather Airport

DKS

FOLSOM

RANCHO CORDOVA

SACRAMENTO

ELK GROVE

FIGURE 10.6
CEQA CUM PLUS FOUR PROJECTS (JT PROPOSED PROJECT) ROADWAY SEGMENT AND INTERSECTION LOS AND IMPACTS

Legend

Intersections (AM Peak Hour)

- LOS A-D (84)
- LOS E (14)
- LOS F (56)

Intersections (PM Peak Hour)

- LOS A-D
- LOS E
- LOS F
- Mitigable Intersection Impact
- Unavoidable Intersection impact

Study_Area_Segments

- LOS A-D
- LOS E
- LOS F
- Cities
- Mather Airport

DKS

Table 10.4
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
1	Bradshaw Rd	Folsom Blvd	US 50	6	Arterial M	27,240	0.50	A	6	Arterial M	24,420	0.45	A	
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	66,770	1.24	**F**	6	Arterial M	85,400	1.58	**F**	
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	52,940	0.98	**E**	6	Arterial M	77,570	1.44	**F**	
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	62,600	1.16	**F**	6	Arterial M	74,760	1.38	**F**	
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	6	Arterial M	47,100	0.87	D	6	Arterial M	63,620	1.18	**F**	
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	6	Arterial M	45,320	0.84	D	6	Arterial M	59,990	1.11	**F**	
6.1	Bradshaw Rd	Kiefer Blvd	Collector WJ-9	6	Arterial M	51,270	0.95	E	6	Arterial M	54,800	1.01	**F**	
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	6	Arterial M	52,070	0.96	E	6	Arterial M	55,140	1.02	**F**	
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd	6	Arterial M	52,020	0.96	E	6	Arterial M	52,240	0.97	E	
7.1	Bradshaw Rd	Jackson Rd	Rock Creek Pkwy	6	Arterial M	52,190	0.97	E	6	Arterial M	48,640	0.90	E	
7.2	Bradshaw Rd	Rock Creek Pkwy	Collector WJ-10	6	Arterial M	52,220	0.97	E	6	Arterial M	51,500	0.95	E	
7.3	Bradshaw Rd	Collector WJ-10	Collector WJ-11	6	Arterial M	52,390	0.97	E	6	Arterial M	47,570	0.88	D	
7.4	Bradshaw Rd	Collector WJ-11	Elder Creek Rd	6	Arterial M	52,410	0.97	E	6	Arterial M	43,850	0.81	D	
8	Bradshaw Rd	Elder Creek Rd	Florin Rd	6	Arterial M	44,990	0.83	D	6	Arterial M	47,860	0.89	D	
9	Bradshaw Rd	Florin Rd	Gerber Rd	6	Arterial M	42,300	0.78	C	6	Arterial M	45,520	0.84	D	
10	Bradshaw Rd	Gerber Rd	Calvine Rd	6	Arterial M	29,810	0.55	A	6	Arterial M	33,570	0.62	B	
11	Calvine Rd	Waterman Rd	Bradshaw Rd	6	Arterial M	16,370	0.30	A	6	Arterial M	18,040	0.33	A	
12	Calvine Rd	Bradshaw Rd	Vineyard Rd	6	Arterial M	14,540	0.27	A	6	Arterial M	14,770	0.27	A	
13	Calvine Rd	Vineyard Rd	Excelsior Rd	4	Arterial M	8,500	0.24	A	4	Arterial M	9,630	0.27	A	
14	Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	8,010	0.22	A	4	Arterial M	9,680	0.27	A	
15	Douglas Rd	Mather Blvd	Zinfandel Dr	4	Arterial M	21,870	0.61	B	4	Arterial M	34,000	0.94	E	
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	37,550	0.70	B	6	Arterial M	50,410	0.93	**E**	
17	Douglas Rd	Sunrise Blvd	Rancho Cordova Pkwy	5	Arterial M	42,770	1.19	**F**	5	Arterial M	43,300	1.20	**F**	
18.1	Douglas Rd	Rancho Cordova Pkwy	Americanos Blvd	5	Arterial M	42,630	1.18	**F**	5	Arterial M	42,980	1.19	**F**	
18.2	Douglas Rd	Americanos Blvd	Grant Line Rd	5	Arterial M	33,520	0.93	**E**	5	Arterial M	31,870	0.89	D	
19.1	Eagles Nest Rd	Kiefer Blvd	N Bridgewater Dr	2	Arterial M	4,620	0.26	A	4	Arterial M	10,850	0.30	A	NewBridge
19.2	Eagles Nest Rd	N Bridgewater Dr	S Bridgewater Dr	2	Arterial M	4,620	0.26	A	4	Arterial M	11,320	0.31	A	NewBridge
19.3	Eagles Nest Rd	S Bridgewater Dr	Jackson Rd	2	Arterial M	4,710	0.26	A	4	Arterial M	13,170	0.37	A	NewBridge
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Arterial M	3,670	0.20	A	2	Arterial M	9180	0.51	A	
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	2	Arterial M	3,300	0.18	A	2	Arterial M	4470	0.25	A	
22	Elder Creek Rd	65th St	Power Inn Rd	4	Arterial M	24,130	0.67	B	4	Arterial M	27,810	0.77	C	
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	25,170	1.40	**F**	2	Arterial M	28,490	1.58	**F**	
24	Elder Creek Rd	Florin Perkins Rd	South Watt Ave	4	Arterial M	27,840	0.77	C	4	Arterial M	30,330	0.84	D	
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	40,860	1.14	**F**	4	Arterial M	48,190	1.34	**F**	

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 10.4
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	4	Arterial M	29,970	0.83	D	4	Arterial M	33,950	0.94	E	
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	17,980	0.50	A	4	Arterial M	40,630	1.13	**F**	
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	2	Arterial M	9,230	0.51	A	3	Arterial M	33,740	1.87	**F**	West Jackson
28.2	Elder Creek Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	9,430	0.52	A	4	Arterial M	27,000	0.75	C	West Jackson
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd	6	Arterial M	48,390	0.90	D	6	Arterial M	48,930	0.91	E	
30.1	Excelsior Rd	Kiefer Blvd	Douglas Rd	2	Arterial M	4,150	0.23	A	2	Arterial M	5,600	0.31	A	
30.2	Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	4	Arterial M	11,290	0.31	A	4	Arterial M	27,590	0.77	C	
30.3	Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	4	Arterial M	11,840	0.33	A	4	Arterial M	25,990	0.72	C	
30.4	Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	4	Arterial M	11,840	0.33	A	4	Arterial M	25,560	0.71	C	
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	2	Arterial M	11,960	0.66	B	3	Arterial M	37,780	2.10	**F**	West Jackson
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	2	Arterial M	11,960	0.66	B	3	Arterial M	37,130	2.06	**F**	West Jackson
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Arterial M	4,670	0.26	A	3	Arterial M	12,510	0.70	B	West Jackson
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	5,970	0.33	A	2	Arterial M	12,810	0.71	C	
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Arterial M	2,520	0.14	A	2	Arterial M	8,160	0.45	A	
35	Excelsior Rd	Calvine Rd	Sheldon Rd	2	Arterial M	2,960	0.16	A	2	Arterial M	9,000	0.50	A	
36	Florin Rd	Stockton Blvd	Power Inn Rd	6	Arterial M	42,720	0.79	C	6	Arterial M	48,190	0.89	D	
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	37,240	1.03	**F**	4	Arterial M	43,980	1.22	**F**	
38	Florin Rd	Florin-Perkins Rd	So Watt Ave/ Elk Grove Florin Rd	6	Arterial M	29,890	0.55	A	6	Arterial M	37,130	0.69	B	
39	Florin Rd	South Watt Ave	Hedge Ave	4	Arterial M	9,760	0.27	A	4	Arterial M	14,880	0.41	A	
40	Florin Rd	Hedge Ave	Mayhew Rd	4	Arterial M	10,420	0.29	A	4	Arterial M	17,360	0.48	A	
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	30,290	0.84	D	4	Arterial M	23,450	0.65	B	
42.1	Florin Rd	Bradshaw Rd	Vineyard Rd	4	Arterial M	19,680	0.55	A	4	Arterial M	25,600	0.71	C	
42.2	Florin Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	11,650	0.65	B	3	Arterial M	19,620	1.09	**F**	West Jackson
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	14,020	0.78	C	2	Arterial M	17,620	0.98	E	
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	50,520	1.40	**F**	4	Arterial M	55,790	1.55	**F**	
45	Fruitridge Rd	65th St	Power Inn Rd	4	Arterial M	23,040	0.64	B	4	Arterial M	26,980	0.75	C	
46	Fruitridge Rd	Power Inn Rd	Florin Perkins Rd	4	Arterial M	20,400	0.57	A	4	Arterial M	30,040	0.83	D	

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 10.4
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	13,770	0.77	C	2	Arterial M	26,960	1.50	**F**	
48	Fruitridge Rd	South Watt Ave	Hedge Ave	2	Arterial M	5,770	0.32	A	3	Arterial M	20,600	1.14	**F**	West Jackson
49.1	Fruitridge Rd	Hedge Ave	Collector WJ-12	2	Arterial M	2,140	0.12	A	4	Arterial M	19,590	0.54	A	West Jackson
49.2	Fruitridge Rd	Collector WJ-12	Mayhew Rd	2	Arterial M	2,110	0.12	A	4	Arterial M	17,810	0.49	A	West Jackson
50	Grant Line Rd	White Rock Rd	Douglas Rd	4	Arterial H	39,480	0.99	**E**	4	Arterial H	41,060	1.03	**F**	
51.1	Grant Line Rd	Douglas Rd	Chrysanthy Blvd	4	Arterial M	58,610	1.63	**F**	4	Arterial M	57,770	1.60	**F**	
51.2	Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd	4	Arterial M	44,930	1.25	**F**	4	Arterial M	47,740	1.33	**F**	
52.1	Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	4	Arterial M	34,170	0.95	**E**	4	Arterial M	37,000	1.03	**F**	
52.2	Grant Line Rd	Rancho Cordova Pkwy	Jackson Rd	4	Arterial M	43,400	1.21	**F**	4	Arterial M	41,720	1.16	**F**	
53	Grant Line Rd	Jackson Rd	Sunrise Blvd	4	Arterial H	33,180	0.83	D	4	Arterial H	30,250	0.76	C	
54	Grant Line Rd	Sunrise Blvd	Calvine Rd	4	Arterial H	42,840	1.07	**F**	4	Arterial H	43,790	1.09	**F**	
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit	4	Arterial M	36,290	1.01	**F**	4	Arterial M	36,860	1.02	**F**	
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd	4	Arterial M	36,380	1.01	**F**	4	Arterial M	36,970	1.03	**F**	
56	Grant Line Rd	Sheldon Rd	Wilton Rd	4	Arterial M	40,570	1.13	**F**	4	Arterial M	45,270	1.26	**F**	
57	Grant Line Rd	Wilton Rd	Bond Rd	4	Arterial M	36,110	1.00	**F**	4	Arterial M	40,140	1.12	**F**	
58.1	Happy Lane	Old Placerville Road	Routier Ext	2	Arterial M	3,980	0.22	A	2	Arterial M	13,720	0.76	C	West Jackson
58.2	Happy Lane	Routier Ext	Kiefer Boulevard	2	Arterial M	4,970	0.28	A	2	Arterial M	20,770	1.15	**F**	West Jackson
59.1	Hedge Ave	Jackson Rd	Rock Creek Pkwy	2	Arterial M	7,060	0.39	A	2	Arterial M	9,920	0.55	A	
59.2	Hedge Ave	Rock Creek Pkwy	Fruitridge Rd	2	Arterial M	7,180	0.40	A	2	Arterial M	5,690	0.32	A	
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	8,460	0.47	A	2	Arterial M	6,870	0.38	A	
61	Hedge Ave	Elder Creek Rd	Florin Rd	2	Arterial M	22,520	1.25	**F**	2	Arterial M	21,920	1.22	**F**	
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	67,180	1.24	**F**	6	Arterial M	71,330	1.32	**F**	
63	International Dr	Mather Field Rd	Zinfandel Dr	6	Arterial M	48,380	0.90	D	6	Arterial M	47,380	0.88	D	
64	International Dr	Zinfandel Dr	Sunrise Blvd	6	Arterial M	35,840	0.66	B	6	Arterial M	40,130	0.74	C	
65	Jackson Rd	Folsom Blvd	Florin Perkins Rd	4	Arterial M	30,450	0.85	D	4	Arterial M	35,630	0.99	E	
66.1	Jackson Rd	Florin Perkins Rd	14th Ave	4	Arterial M	30,980	0.86	D	4	Arterial M	43,840	1.22	**F**	
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	40,320	1.12	**F**	4	Arterial M	61,500	1.71	**F**	
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	34,630	0.96	E	4	Arterial M	57,370	1.59	**F**	
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave	4	Arterial M	32,480	0.90	E	4	Arterial M	55,060	1.53	**F**	

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Table 10.4
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	38,240	1.06	**F**	4	Arterial M	67,850	1.88	**F**	
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	4	Arterial M	31,080	0.86	D	4	Arterial M	60,230	1.67	**F**	
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	4	Arterial M	31,040	0.86	D	4	Arterial M	60,910	1.69	**F**	
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	33,920	0.94	E	6	Arterial M	59,440	1.10	**F**	West Jackson
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	2	Rural Hwy	23,120	1.01	**F**	6	Arterial M	59,220	1.10	**F**	West Jackson
70.2	Jackson Rd	Collector WJ-4	Happy Ln	2	Rural Hwy	23,190	1.01	**F**	6	Arterial M	59,210	1.10	**F**	West Jackson
70.3	Jackson Rd	Happy Ln	Rock Creek Pkwy	2	Rural Hwy	23,000	1.00	**F**	6	Arterial M	41,240	0.76	C	West Jackson
70.4	Jackson Rd	Rock Creek Pkwy	Collector WJ-5	2	Rural Hwy	23,000	1.00	**F**	6	Arterial M	40,890	0.76	C	West Jackson
70.5	Jackson Rd	Collector WJ-5	Collector WJ-6	2	Rural Hwy	23,010	1.00	**F**	6	Arterial M	38,420	0.71	C	West Jackson
70.6	Jackson Rd	Collector WJ-6	Excelsior Rd	2	Rural Hwy	23,010	1.00	**F**	6	Arterial M	38,840	0.72	C	West Jackson
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	23,020	1.01	**F**	4	Arterial M	62,440	1.73	**F**	Jackson Township
71.2	Jackson Rd	Collector JT-3	Tree View Ln	2	Rural Hwy	23,020	1.01	**F**	4	Arterial M	46,480	1.29	**F**	Jackson Township
71.3	Jackson Rd	Tree View Ln	Collector JT-4	2	Rural Hwy	22,990	1.00	**F**	4	Arterial M	40,520	1.13	**F**	Jackson Township
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	2	Rural Hwy	23,020	1.01	**F**	4	Arterial M	37,510	1.04	**F**	Jackson Township
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr	2	Rural Hwy	21,910	0.96	E	4	Arterial M	37,200	1.03	**F**	NewBridge
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd	2	Rural Hwy	22,630	0.99	E	4	Arterial M	38,040	1.06	**F**	NewBridge
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	31,730	0.88	D	4	Arterial M	45,430	1.26	**F**	
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	2	Arterial M	3,290	0.18	A	2	Arterial M	4,940	0.27	A	
75	Kiefer Blvd	South Watt Ave	Mayhew Rd	4	Arterial M	21,620	0.60	B	4	Arterial M	32,720	0.91	E	
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	13,290	0.37	A	4	Arterial M	42,880	1.19	**F**	
77.1	Kiefer Boulevard	Bradshaw Road	Collector WJ-14	2	Arterial M	5,940	0.33	A	6	Arterial M	51,510	0.95	E	West Jackson
77.2	Kiefer Boulevard	Collector WJ-14	Routier Ext	2	Arterial M	6,100	0.34	A	6	Arterial M	47,760	0.88	D	West Jackson
77.3	Kiefer Boulevard	Routier Ext	Happy Lane	2	Arterial M	6,100	0.34	A	6	Arterial M	50,290	0.93	E	West Jackson
78.1	Kiefer Blvd	Eagles Nest Rd	W Collector MS-1	2	Arterial M	10,210	0.57	A	4	Arterial M	31,860	0.89	D	NewBridge; Mather South
78.2	Kiefer Blvd	W Collector MS-1	Northbridge Dr	2	Arterial M	10,210	0.57	A	4	Arterial M	29,600	0.82	D	NewBridge; Mather South
78.3	Kiefer Blvd	Northbridge Dr	E Collector MS-1	2	Arterial M	10,210	0.57	A	4	Arterial M	31,310	0.87	D	NewBridge; Mather South
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	2	Arterial M	10,150	0.56	A	3	Arterial M	39,640	2.20	**F**	NewBridge
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	20,760	0.58	A	4	Arterial M	33,480	0.93	**E**	
80	Mather Blvd / Norden Ave	Von Karman St	Bleckely St	4	Arterial M	14,470	0.40	A	4	Arterial M	14,800	0.41	A	
81	Mather Blvd	Bleckely St	Femoyer St	4	Arterial M	14,470	0.40	A	4	Arterial M	14,800	0.41	A	

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ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
82	Mather Blvd	Femoyer St	Douglas Rd	2	Arterial M	14,510	0.81	D	2	Arterial M	14,830	0.82	D	
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	8,260	1.03	**F**	2	Res Collector F	6,350	0.79	D	
84	Mather Field Rd	US 50	Rockingham Dr	6	Arterial M	65,530	1.21	**F**	6	Arterial M	63,640	1.18	**F**	
85	Mather Field Rd	Rockingham Dr	International Dr	6	Arterial M	71,740	1.33	**F**	6	Arterial M	73,220	1.36	**F**	
86	Mather Field Rd	International Dr	Peter A McCuen Blvd	6	Arterial M	15,810	0.29	A	6	Arterial M	16,640	0.31	A	
87	Mayhew Rd	Folsom Blvd	Goethe Rd	2	Arterial M	7,280	0.40	A	2	Arterial M	14,530	0.81	D	
88	Mayhew Rd	Goethe Rd	Kiefer Blvd	2	Arterial M	10,630	0.59	A	2	Arterial M	13,740	0.76	C	
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy	2	Arterial L	1,930	0.13	A	4	Arterial M	53,200	1.48	**F**	West Jackson
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	2	Arterial L	1,930	0.13	A	4	Arterial M	52,650	1.46	**F**	West Jackson
90	Old Placerville Rd	Bradshaw Rd	Granby Dr	4	Arterial M	30,190	0.84	D	4	Arterial M	23,370	0.65	B	
91	Old Placerville Rd	Granby Dr	Happy Ln	2	Arterial M	26,590	1.48	**F**	2	Arterial M	21,070	1.17	**F**	
92	Old Placerville Rd	Happy Ln	Routier Rd	2	Arterial M	22,820	1.27	**F**	2	Arterial M	18,020	1.00	**F**	
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	24,070	0.67	B	4	Arterial M	36,370	1.01	**F**	
94	Power Inn Rd	Folsom Blvd	14th Ave	6	Arterial M	43,320	0.80	D	6	Arterial M	47,240	0.87	D	
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	31,970	0.89	D	4	Arterial M	40,120	1.11	**F**	
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	68,980	1.28	**F**	6	Arterial M	81,710	1.51	**F**	
97	South Watt Ave	Kiefer Blvd	Jackson Rd	6	Arterial M	67,470	1.25	**F**	6	Arterial M	70,440	1.30	**F**	
98.1	South Watt Ave	Jackson Rd	Rock Creek Pkwy	6	Arterial M	61,290	1.14	**F**	6	Arterial M	57,810	1.07	**F**	
98.2	South Watt Ave	Rock Creek Pkwy	Fruitridge Rd	6	Arterial M	64,380	1.19	**F**	6	Arterial M	57,430	1.06	**F**	
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd	6	Arterial M	61,240	1.13	**F**	6	Arterial M	56,130	1.04	**F**	
100	South Watt Ave	Elder Creek Rd	Florin Rd	6	Arterial M	55,580	1.03	**F**	6	Arterial M	61,020	1.13	**F**	
101	Sunrise Blvd	US 50	Folsom Blvd	7	Arterial M	64,250	1.19	**F**	7	Arterial M	62,970	1.17	**F**	
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr	6	Arterial M	61,340	1.14	**F**	6	Arterial M	60,650	1.12	**F**	
103	Sunrise Blvd	Trade Center Dr	White Rock Rd	6	Arterial M	38,330	0.71	C	6	Arterial M	37,900	0.70	C	
104.1	Sunrise Blvd	White Rock Rd	International Dr	6	Arterial M	49,020	0.91	**E**	6	Arterial M	49,750	0.92	**E**	
104.2	Sunrise Blvd	International Dr	Rio Del Oro Pkwy	6	Arterial M	54,190	1.00	**F**	6	Arterial M	54,030	1.00	**F**	
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	54,110	1.00	**F**	6	Arterial M	64,030	1.19	**F**	
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	34,760	0.97	**E**	5	Arterial M	43,840	1.22	**F**	
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	4	Arterial M	30,000	0.83	D	4	Arterial M	34,190	0.95	**E**	
107	Sunrise Blvd	Jackson Rd	Florin Rd	4	Arterial M	28,280	0.79	C	4	Arterial M	30,710	0.85	D	
108	Sunrise Blvd	Florin Rd	Grant Line Rd	4	Arterial M	15,030	0.42	A	4	Arterial M	18,210	0.51	A	
109	Vineyard Rd	Gerber Rd	Calvine Rd	2	Arterial M	7,900	0.44	A	2	Arterial M	10,380	0.58	A	

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ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	98,040	1.63	**F**	6	Arterial H	106,270	1.77	**F**	
111	White Rock Rd	International Rd	Quality Dr	2	Arterial M	5,420	0.30	A	2	Arterial M	5,550	0.31	A	
112	White Rock Rd	Quality Dr	Zinfandel Dr	4	Arterial M	18,300	0.51	A	4	Arterial M	18,180	0.51	A	
113	White Rock Rd	Zinfandel Dr	Kilgore Rd	6	Arterial M	31,760	0.59	A	6	Arterial M	31,210	0.58	A	
114	White Rock Rd	Kilgore Rd	Sunrise Blvd	5	Arterial M	40,310	1.12	**F**	5	Arterial M	39,610	1.10	**F**	
115	White Rock Rd	Sunrise Blvd	Fitzgerald Rd	4	Arterial M	34,470	0.96	**E**	4	Arterial M	35,590	0.99	**E**	
116.1	White Rock Rd	Fitzgerald Rd	Rancho Cordova Pkwy	4	Arterial M	56,320	1.56	**F**	4	Arterial M	55,990	1.56	**F**	
116.2	White Rock Rd	Rancho Cordova Pkwy	Americanos Blvd	4	Arterial M	22,050	0.61	B	4	Arterial M	21,380	0.59	A	
116.3	White Rock Rd	Americanos Blvd	Grant Line Rd	4	Arterial M	15,870	0.44	A	4	Arterial M	16,610	0.46	A	
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial H	53,780	1.34	**F**	4	Arterial H	55,950	1.40	**F**	
118	Zinfandel Dr	US 50	White Rock Rd	7	Arterial M	82,790	1.53	**F**	7	Arterial M	81,490	1.51	**F**	
119	Zinfandel Dr	White Rock Rd	International Rd	6	Arterial M	40,800	0.76	C	6	Arterial M	42,380	0.78	C	
120	Zinfandel Dr	International Rd	Baroque Dr	6	Arterial M	32,660	0.60	B	6	Arterial M	33,430	0.62	B	
121	Zinfandel Dr	Baroque Dr	City Limit	4	Arterial M	32,660	0.91	**E**	4	Arterial M	33,430	0.93	**E**	
122	Zinfandel Dr	City Limit	Douglas Rd	2	Arterial M	32,660	1.81	**F**	2	Arterial M	33,430	1.86	**F**	
123.1	Zinfandel Dr	Douglas Rd	Collector MS-2	4	Arterial M	14,770	0.41	A	4	Arterial M	22,240	0.62	B	
123.2	Zinfandel Dr	Collector MS-2	Collector MS-3	4	Arterial M	12,590	0.35	A	4	Arterial M	17,090	0.47	A	
123.3	Zinfandel Dr	Collector MS-3	Collector MS-4	4	Arterial M	0	0.00	A	4	Arterial M	17,220	0.48	A	
123.4	Zinfandel Dr	Collector MS-4	Kiefer Blvd	4	Arterial M	12,590	0.35	A	4	Arterial M	17,070	0.47	A	
124	14th Ave	Power Inn Rd	Florin Perkins Rd	4	Arterial M	15,910	0.44	A	4	Arterial M	27,490	0.76	C	
125	14th Ave	Florin Perkins Rd	Jackson Rd	4	Arterial M	9,360	0.26	A	4	Arterial M	17,700	0.49	A	
126	Chrysanthy Blvd	Rancho Cordova Pkwy	Americanos Blvd	4	Arterial M	22,200	0.62	B	4	Arterial M	21,600	0.60	B	
127	Chrysanthy Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	16,570	0.92	**E**	2	Arterial M	15,820	0.88	D	
128	Douglas Rd (Extension)	Mather Blvd	Kiefer Blvd	4	Arterial M	7,380	0.21	A	4	Arterial M	21,530	0.60	A	
129	International Dr	Sunrise Blvd	Rancho Cordova Pkwy	6	Arterial M	31,010	0.57	A	6	Arterial M	31,830	0.59	A	
130	International Dr	Rancho Cordova Pkwy	Americanos Blvd	6	Arterial M	19,350	0.36	A	6	Arterial M	18,590	0.34	A	
131	Kiefer Blvd	Rancho Cordova Pkwy	Americanos Blvd	2	Arterial M	3,870	0.22	A	2	Arterial M	9,730	0.54	A	
132	Kiefer Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	10,250	0.57	A	2	Arterial M	19,150	1.06	**F**	
133	Rancho Cordova Pkwy	US 50	Easton Valley Pkwy	6	Arterial M	70,390	1.30	**F**	6	Arterial M	69,520	1.29	**F**	
134	Rancho Cordova Pkwy	Easton Valley Pkwy	White Rock Rd	6	Arterial M	72,220	1.34	**F**	6	Arterial M	72,130	1.34	**F**	
135	Rancho Cordova Pkwy	White Rock Rd	International Dr	6	Arterial M	46,590	0.86	D	6	Arterial M	49,910	0.92	**E**	
136	Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy	6	Arterial M	55,520	1.03	**F**	6	Arterial M	59,780	1.11	**F**	
137	Rancho Cordova Pkwy	Rio Del Oro Pkwy	Villagio Dr	4	Arterial M	37,890	1.05	**F**	4	Arterial M	38,100	1.06	**F**	
138	Rancho Cordova Pkwy	Villagio Dr	Douglas Rd	4	Arterial M	32,060	0.89	D	4	Arterial M	32,170	0.89	D	

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		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
139	Rancho Cordova Pkwy	Douglas Rd	Chrysanthy Blvd	4	Arterial M	34,220	0.95	**E**	4	Arterial M	33,210	0.92	**E**	
140	Rancho Cordova Pkwy	Chrysanthy Blvd	Kiefer Blvd	4	Arterial M	20,780	0.58	A	4	Arterial M	19,120	0.53	A	
141	Rancho Cordova Pkwy	Kiefer Blvd	Grant Line Rd	2	Arterial M	15,510	0.86	D	2	Arterial M	14,080	0.78	C	
142	Americanos Blvd	White Rock Rd	Douglas Rd	2	Arterial M	5,630	0.31	A	2	Arterial M	6,070	0.34	A	
143	Americanos Blvd	Douglas Rd	Chrysanthy Blvd	2	Arterial M	9,560	0.53	A	2	Arterial M	8,980	0.50	A	
144	Americanos Blvd	Chrysanthy Blvd	Kiefer Blvd	2	Arterial M	9,030	0.50	A	2	Arterial M	8,230	0.46	A	
145	Vineyard Rd	Florin Rd	Gerber Rd	4	Arterial M	1,500	0.04	A	4	Arterial M	9,160	0.25	A	
146	Rio Del Oro Pkwy	Sunrise Blvd	Rancho Cordova Pkwy	6	Arterial M	24,000	0.44	A	6	Arterial M	32,210	0.60	A	
147	Rio Del Oro Pkwy	Rancho Cordova Pkwy	White Rock Rd	2	Arterial M	8,220	0.46	A	2	Arterial M	8,600	0.48	A	
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd						4	Arterial M	37,540	1.04	**F**	West Jackson; Jackson Township; NewBridge; Mather South
300	Douglas Rd	Excelsior Rd	Rock Creek Pkwy	4	Arterial M	7,380	0.21	A	4	Arterial M	27,610	0.77	C	
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	4	Arterial M	7,380	0.21	A	4	Arterial M	37,470	1.04	**F**	
302	Kiefer Blvd	Happy Ln	Douglas Rd						6	Arterial M	62,910	1.17	**F**	West Jackson
303	Kiefer Blvd	Douglas Rd	Excelsior Rd						4	Arterial M	33,240	0.92	E	West Jackson
304	Mayhew Rd	Routier Ext	Bradshaw Rd						4	Arterial M	39,790	1.11	**F**	West Jackson
305	Mayhew Rd	Bradshaw Rd	Jackson Rd						4	Arterial M	47,420	1.32	**F**	West Jackson
306	Mayhew Rd	Fruitridge Rd	Collector WJ-13						4	Arterial M	39,410	1.09	**F**	West Jackson
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd						3	Arterial M	42,630	2.37	**F**	West Jackson
308	Rock Creek Pkwy	South Watt Ave	Hedge Ave						2	Arterial M	6,140	0.34	A	West Jackson
309	Rock Creek Pkwy	Hedge Ave	Mayhew Rd						2	Arterial M	11,590	0.64	B	West Jackson
310	Rock Creek Pkwy	Mayhew Rd	Bradshaw Rd						2	Arterial M	6,840	0.38	A	West Jackson
311	Rock Creek Pkwy East	Excelsior Road	Collector WJ-16						2	Arterial M	13,750	0.76	C	West Jackson
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road						2	Arterial M	19,410	1.08	**F**	West Jackson
313	Vineyard Rd	Jackson Road	New Collector						4	Arterial M	31,230	0.87	D	West Jackson
314	Vineyard Rd	New Collector	Collector WJ-18						4	Arterial M	26,470	0.74	C	West Jackson
315	Vineyard Rd	Collector WJ-18	Elder Creek Road						4	Arterial M	25,960	0.72	C	West Jackson
316	Vineyard Rd	Elder Creek Road	Florin Road						4	Arterial M	14,250	0.40	A	West Jackson
317	Routier Ext	Old Placerville Road	Happy Lane						4	Arterial H	41,580	1.04	**F**	West Jackson
318	Routier Ext	Happy Lane	Kiefer Boulevard						4	Arterial H	34,490	0.86	D	West Jackson
319	Routier Ext	Kiefer Boulevard	Mayhew Road						4	Arterial H	39,540	0.99	E	West Jackson

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CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
320	Collector WJ-16	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	980	0.12	A	West Jackson
321	Collector WJ-17	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	850	0.11	A	West Jackson
322	Collector WJ-6	Collector WJ-16/WJ-17	Jackson Road						2	Res Collector F	2,740	0.34	B	West Jackson
323	Collector WJ-6	Jackson Road	Collector WJ-18						2	Res Collector F	3,680	0.46	C	West Jackson
324	Collector WJ-2	Excelsior Road	Collector WJ-6						2	Res Collector F	2,940	0.37	B	West Jackson
325	Collector WJ-18	Vineyard Rd	Collector WJ-6						2	Res Collector F	3,430	0.43	C	West Jackson
326	Collector WJ-18	Collector WJ-6	Excelsior Road						2	Res Collector F	3,200	0.40	C	West Jackson
327	Collector WJ-19	Bradshaw Road	Vineyard Road						2	Arterial M	7,730	0.43	A	West Jackson
400	Collector JT-1	Excelsior Rd	Collector JT-3						2	Res Collector F	5,430	0.68	D	Jackson Township
401	Collector JT-1	Collector JT-3	Tree View Ln						2	Res Collector F	1,720	0.22	B	Jackson Township
402	Collector JT-3	Kiefer Blvd	Collector JT-1						2	Res Collector F	1,290	0.16	A	Jackson Township
403	Collector JT-3	Collector JT-1	Collector JT-6						2	Res Collector F	1,280	0.16	A	Jackson Township
404	Collector JT-3	Collector JT-6	Collector JT-5						2	Res Collector F	2,920	0.37	B	Jackson Township
405	Collector JT-3	Collector JT-5	Jackson Rd						2	Arterial M	20,320	1.13	**F**	Jackson Township
406	Collector JT-4	Jackson Rd	Bridgewater Dr						2	Arterial M	2,860	0.16	A	Jackson Township
407	Collector JT-5	Collector JT-3	Tree View Ln						2	Arterial M	10,040	0.56	A	Jackson Township
408	Collector JT-6	Excelsior Rd	Collector JT-3						2	Res Collector F	4,760	0.60	C	Jackson Township
409	Collector JT-6	Collector JT-3	Tree View Ln						2	Res Collector F	720	0.09	A	Jackson Township
410	Kiefer Blvd	Excelsior Rd	Tree View Ln						4	Arterial M	31,550	0.88	D	Jackson Township

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 10.4
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
411	Tree View Ln	Kiefer Blvd	Collector JT-1						4	Arterial M	11,780	0.33	A	Jackson Township
412	Tree View Ln	Collector JT-1	Collector JT-6						4	Arterial M	11,530	0.32	A	Jackson Township
413	Tree View Ln	Collector JT-6	Collector JT-5						4	Arterial M	11,460	0.32	A	Jackson Township
414	Tree View Ln	Collector JT-5	Jackson Rd						4	Arterial M	8,420	0.23	A	Jackson Township
415	Collector JT-7	Collector JT-3	Tree View Ln						2	Arterial M	1,800	0.10	A	Jackson Township
416	Collector JT-8	Collector JT-3	Tree View Ln						2	Arterial M	1,900	0.11	A	Jackson Township
417	Collector JT-9	Jackson Rd	Collector JT-8						2	Arterial M	3,830	0.21	A	Jackson Township
418	Collector JT-10	Jackson Rd	Collector JT-8						2	Arterial M	1,680	0.09	A	Jackson Township
419	Collector JT-6	Tree View Ln	Jackson Rd						2	Res Collector F	2,400	0.30	B	Jackson Township
500	S Bridgewater Dr	Collector JT-4	Eagles Nest Rd						2	Res Collector F	4,540	0.57	C	NewBridge
501	S Bridgewater Dr	Eagles Nest Rd	Northbridge Dr						2	Res Collector F	4,550	0.57	C	NewBridge
502	N Bridgewater Dr	Northbridge Dr	Eagles Nest Rd						2	Res Collector F	1,270	0.16	A	NewBridge
503	Northbridge Dr	Kiefer Blvd	Bridgewater Dr						2	Arterial M	4,150	0.23	A	NewBridge
504	Street A	S Bridgewater Dr	Street B						2	Res Collector F	1,790	0.22	B	NewBridge
505	Street B	S Bridgewater Dr	Street A						2	Res Collector F	1,390	0.17	A	NewBridge
506	Rockbridge Dr	Street B	Stonebridge Dr						2	Res Collector F	1,840	0.23	B	NewBridge
507	Rockbridge Dr	Stonebridge Dr	Jackson Rd						2	Arterial M	7,660	0.43	A	NewBridge
508	Stonebridge Dr	S Bridgewater Dr	Rockbridge Dr						2	Arterial M	2,490	0.14	A	NewBridge
509	Stonebridge Dr	Rockbridge Dr	Jackson Rd						2	Res Collector F	4,520	0.57	C	NewBridge
600	Collector MS-1	Kiefer Boulevard	Collector MS-5						2	Arterial M	16,820	0.93	E	Mather South
601	Collector MS-1	Collector MS-5	Collector MS-4						2	Arterial M	7,640	0.42	A	Mather South
602	Collector MS-1	Collector MS-4	Collector MS-3						2	Res Collector F	6,430	0.80	E	Mather South
603	Collector MS-1	Collector MS-3	Collector MS-2						2	Arterial M	3,130	0.17	A	Mather South
604	Collector MS-2	Eagles Nest Road	Collector MS-5						2	Arterial M	8,930	0.50	A	Mather South
605	Collector MS-3	Eagles Nest Road	Collector MS-5						2	Arterial M	6,730	0.37	A	Mather South
606	Collector MS-4	Eagles Nest Road	Collector MS-5						2	Arterial M	7,090	0.39	A	Mather South

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Table 10.4
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Levels of Service

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
607	Collector MS-5	Kiefer Boulevard	Collector MS-1						2	Arterial M	8,870	0.49	A	Mather South

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
1	Howe Avenue & College Town Drive/US 50 WB Ramps	Signal	D	45.6	Signal	D	40.0	No	Signal	E	77.0	Signal	E	64.9	No
2	Howe Avenue & US 50 EB Ramps	Signal	C	34.6	Signal	D	49.1	No	Signal	B	16.5	Signal	C	22.5	No
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	**F**	**88.0**	Signal	**F**	**91.7**	No	Signal	E	66.5	Signal	**F**	**84.6**	Yes
4	Power Inn Road & 14th Avenue	Signal	**E**	**61.0**	Signal	**F**	**157.9**	Yes	Signal	**E**	**72.6**	Signal	**F**	**116.5**	Yes
5	Power Inn Road & Fruitridge Road	Signal	**F**	**114.5**	Signal	**F**	**113.5**	No	Signal	D	47.4	Signal	D	48.8	No
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	C	27.7	Signal	C	32.1	No	Signal	C	24.1	Signal	D	40.6	No
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	C	20.8	Signal	C	28.6	No	Signal	D	41.2	Signal	C	30.1	No
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop			Two-way stop			No	Two-way stop			Two-way stop			No
	Westbound Left Turn		*C*	*16.4*		*C*	*20.9*			*C*	*20.7*		*D*	*32.6*	
	Westbound Right Turn		*C*	*10.9*		*B*	*12.3*			*B*	*11.2*		*B*	*13.0*	
	Southbound Left Turn		*A*	*9.3*		*B*	*10.1*			*B*	*10.4*		*B*	*12.8*	
9	Florin Perkins Road & Jackson Road	Signal	C	25.1	Signal	D	42.9	No	Signal	D	38.5	Signal	D	46.5	No
10	Florin Perkins Road & Fruitridge Road	Signal	C	26.7	Signal	D	37.1	No	Signal	D	50.3	Signal	C	30.1	No
11	Florin Perkins Road & Elder Creek Road	Signal	C	31.7	Signal	C	27.5	No	Signal	C	30.0	Signal	C	32.8	No
12	Watt Avenue & Folsom Blvd.	Signal	**F**	**169.1**	Signal	**F**	**180.3**	Yes	Signal	**F**	**140.0**	Signal	**F**	**203.6**	Yes
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	B	15.7	Signal	B	12.7	No	Signal	A	9.8	Signal	B	11.0	No
14	S. Watt Avenue & Kiefer Blvd.	Signal	E	62.2	Signal	**F**	**101.5**	Yes	Signal	D	41.7	Signal	E	75.9	No

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
15	S. Watt Avenue & Canberra Dr.	Signal	B	13.4	Signal	B	13.1	No	Signal	A	9.1	Signal	A	9.0	No
16	S. Watt Avenue & Jackson Road	Signal	**F**	**135.9**	Signal	**F**	**234.0**	Yes	Signal	**F**	**98.2**	Signal	**F**	**191.8**	Yes
17	S. Watt Avenue & Fruitridge Road	Signal	D	44.4	Signal	**E**	**71.5**	Yes	Signal	**E**	**79.3**	Signal	**F**	**102.4**	Yes
18	S. Watt Avenue & Elder Creek Road	Signal	**F**	**222.9**	Signal	**F**	**139.9**	No	Signal	**F**	**177.7**	Signal	**F**	**106.4**	No
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	**F**	**199.7**	Signal	**F**	**277.4**	Yes	Signal	**F**	**137.1**	Signal	**F**	**204.3**	Yes
21	Elk Grove Florin Road & Gerber Road	Signal	E	56.7	Signal	E	71.0	No	Signal	E	74.9	Signal	E	79.7	No
23	Hedge Avenue & Jackson Road	Signal	C	34.7	Signal	**F**	**128.3**	Yes	Signal	B	16.3	Signal	D	40.4	40.4
24	Hedge Avenue & Fruitridge Road	All-way stop	E	44.2	All-way stop	C	25.5	No	All-way stop	D	30.7	All-way stop	B	18.6	No
25	Hedge Avenue & Elder Creek Road	Signal	**F**	**103.7**	Signal	**F**	**109.3**	Yes	Signal	**F**	**103.2**	Signal	**F**	**122.4**	Yes
26	Hedge Avenue & Tokay Lane	Two-way stop			Two-way stop			No	Two-way stop			Two-way stop			No
	Northbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*0.0*		*A*	*0.0*	
	Southbound Left Turn		*B*	*10.9*		*B*	*10.6*			*A*	*9.3*		*A*	*9.3*	
	Eastbound		***F***	***99.5***		***F***	***92.7***			*E*	*47.3*		*E*	*45.0*	
	Westbound		***F***	***52.9***		*E*	*49.4*			*E*	*38.3*		*E*	*36.3*	
27	Hedge Avenue & Florin Road	All-way stop	B	15.8	Signal	B	11.7	No	All-way stop	B	12.6	Signal	A	5.7	No
28	Mayhew Road & Kiefer Boulevard	Signal	C	27.7	Signal	**F**	**97.5**	Yes	Signal	D	44.9	Signal	E	72.8	No

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
29	Mayhew Road & Jackson Road	Two-way stop			Signal	F	160.2	Yes	Two-way stop			Signal	F	129.9	Yes
	Northbound Through - Left Turn		***F***	***114.1***						***F***	***>300***				
	Northbound Right Turn		*C*	*16.1*						*C*	*18.5*				
	Southbound		***F***	***99.2***						***F***	***>300***				
	Eastbound Left Turn		*B*	*13.5*						*B*	*11.0*				
	Westbound Left Turn		*B*	*11.2*						*C*	*17.6*				
30	Mayhew Road & Fruitridge Road	Two-way stop			Signal	B	18.8	No	Two-way stop		3.5	Signal	B	19.5	No
	Northbound Left Turn		*A*	*0.0*						*A*	*7.5*				
	Eastbound		*A*	*9.8*						*A*	*9.3*				
31	Mayhew Road & Elder Creek Road	Signal	A	7.0	Signal	F	>300	Yes	Signal	A	6.0	Signal	F	>300	Yes
32	Woodring Drive & Zinfandel Drive	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Eastbound		*C*	*20.1*		F	85.7			*A*	*9.0*		F	247.0	
	Northbound Left Turn		*A*	*8.0*		*B*	*10.6*			*A*	*0.0*		*B*	*12.4*	
33	Bradshaw Road & Folsom Blvd.	Signal	C	31.9	Signal	C	26.0	No	Signal	C	25.3	Signal	C	22.3	No
34	Bradshaw Road & US 50 WB Ramps	Signal	A	7.8	Signal	B	11.5	No	Signal	A	8.9	Signal	B	12.6	No
35	Bradshaw Road & US 50 EB Ramps	Signal	C	24.5	Signal	E	56.8	Yes	Signal	B	15.1	Signal	D	39.7	No
36	Bradshaw Road & Old Placerville Road	Signal	**F**	**81.9**	Signal	F	103.0	Yes	Signal	**E**	**68.1**	Signal	F	84.8	Yes
37	Bradshaw Road & Kiefer Boulevard	Signal	C	27.6	Signal	F	146.6	Yes	Signal	D	54.1	Signal	F	140.2	Yes
38	Bradshaw Road & Jackson Road	Signal	**F**	**186.0**	Signal	**F**	**161.3**	No	Signal	**F**	**118.2**	Signal	F	161.2	Yes
39	Bradshaw Road & Elder Creek Road	Signal	**F**	**122.6**	Signal	F	210.1	Yes	Signal	**F**	**98.8**	Signal	F	226.7	Yes

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
40	Bradshaw Road & Florin Road	Signal	**F**	**129.5**	Signal	**F**	**112.4**	No	Signal	E	59.7	Signal	E	57.0	No
41	Bradshaw Road & Gerber Road	Signal	**F**	**83.1**	Signal	**F**	**84.3**	No	Signal	D	43.0	Signal	D	49.2	No
42	Happy Lane & Old Placerville Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound Left Turn		***F***	***>300***		***F***	***>300***			*F*	*294.1*		***F***	***>300***	
	Northbound Right Turn		***E***	***40.9***		***F***	***243.1***			*C*	*16.9*		***F***	***61.9***	
	Westbound Left Turn		*C*	*16.0*		*C*	*22.5*			*C*	*15.3*		E	42.4	
43	Happy Lane & Kiefer Boulevard	Free Turn			Signal	F	140.2	Yes	Free Turn			Signal	E	70.8	No
44	Excelsior Road & Kiefer Boulevard	Two-way stop			Signal	A	9.9	No	Two-way stop			Signal	B	14.8	No
45	Excelsior Road & Jackson Road	Signal	E	59.9	Signal	F	>300	Yes	Signal	D	39.0	Signal	F	280.2	Yes
46	Excelsior Road & Elder Creek Road	Two-way stop			Signal	F	88.7	Yes	Two-way stop			Signal	E	60.6	No
	Northbound Left Turn		*A*	*7.9*						*A*	*7.9*				
	Eastbound		***F***	***>300***						*D*	*30.0*				
47	Excelsior Road & Florin Road	All-way stop	**F**	**62.4**	Signal	F	109.4	Yes	All-way stop	**F**	**67.3**	Signal	E	68.0	No
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	B	13.6	Signal	E	43.6	No	All-way stop	B	14.3	Signal	E	38.8	No
49	Mather Field Road & US 50 WB Ramps	Signal	B	14.4	Signal	B	18.4	No	Signal	A	8.6	Signal	A	9.8	No
50	Mather Field Road & US 50 EB Ramps	Signal	B	19.2	Signal	B	17.8	No	Signal	C	21.1	Signal	B	14.2	No
51	Mather Field Road & Rockingham Drive	Signal	**F**	**156.5**	Signal	F	304.1	Yes	Signal	**F**	**119.4**	Signal	F	169.0	Yes
52	Mather Boulevard & Douglas Road	All-way stop	E	55.6	Signal	E	57.6	No	All-way stop	C	27.2	Signal	D	41.0	No

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
53	Zinfandel Drive & US 50 WB Ramps	Signal	C	20.9	Signal	B	10.9	No	Signal	**E**	**65.0**	Signal	D	49.7	No
54	Zinfandel Drive & US 50 EB Ramps/Gold Center Drive	Signal	**F**	**120.8**	Signal	**F**	**112.6**	No	Signal	**F**	**95.0**	Signal	**F**	**81.5**	No
55	Zinfandel Drive & White Rock Road	Signal	**E**	**76.3**	Signal	**E**	**68.8**	No	Signal	**F**	**117.3**	Signal	**F**	**115.5**	No
56	Zinfandel Drive & Data Drive	Signal	B	18.9	Signal	B	18.9	No	Signal	C	25.6	Signal	C	26.6	No
57	Zinfandel Drive & International Dr	Signal	**E**	**77.2**	Signal	**E**	**80.0**	No	Signal	**F**	**97.3**	Signal	**F**	**81.7**	No
58	Zinfandel Drive & Douglas Road	Signal	**F**	**156.8**	Signal	**F**	**219.8**	Yes	Signal	E	73.1	Signal	**F**	**218.2**	Yes
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard	Two-way stop			Signal	D	45.7	No	Two-way stop			Signal	D	41.7	No
	Southbound Left Turn		*A*	*8.1*						*A*	*9.2*				
	Westbound		***F***	***85.8***						***F***	***208.0***				
60	Eagles Nest Road & Jackson Road	Signal	C	23.0	Signal	E	67.6	No	Signal	C	23.3	Signal	E	62.5	No
61	Eagles Nest Road & Florin Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound		***F***	***>300***		***F***	***>300***			***F***	***>300***		***F***	***>300***	
	Southbound		***F***	***>300***		***F***	***>300***			***F***	***>300***		***F***	***>300***	
	Eastbound Left Turn		*B*	*10.2*		*B*	*11.1*			*A*	*8.5*		*A*	*9.4*	
	Westbound Left Turn		*A*	*0.0*		*A*	*8.3*			*A*	*9.4*		*A*	*8.7*	
62	Sunrise Boulevard & US 50 WB Ramps	Signal	**E**	**68.1**	Signal	**E**	**71.2**	No	Signal	C	22.7	Signal	B	19.8	No
63	Sunrise Boulevard & US 50 EB Ramps	Signal	B	10.2	Signal	A	9.9	No	Signal	B	12.7	Signal	B	13.4	No
64	Sunrise Boulevard & Folsom Boulevard	Signal	D	43.5	Signal	D	45.7	No	Signal	D	40.5	Signal	D	43.6	No

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
65	Sunrise Boulevard & White Rock Road	Signal	**E**	**69.3**	Signal	**E**	**67.9**	No	Signal	**F**	**127.3**	Signal	**F**	**128.3**	No
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	**F**	**109.1**	Signal	**F**	**111.4**	No	Signal	**F**	**81.3**	Signal	**E**	**79.1**	No
67	Sunrise Boulevard & Douglas Road	Signal	**F**	**140.5**	Signal	**F**	**192.2**	Yes	Signal	**E**	**73.5**	Signal	**F**	**107.9**	Yes
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	C	21.4	Signal	B	17.7	No	Signal	A	9.4	Signal	B	10.7	No
69	Sunrise Boulevard & Kiefer Boulevard	Signal	**F**	**151.0**	Signal	**F**	**>300**	Yes	Signal	**F**	**138.0**	Signal	**F**	**259.2**	Yes
70	Sunrise Boulevard & Jackson Road	Signal	D	39.6	Signal	**F**	**90.3**	Yes	Signal	D	45.4	Signal	**E**	**78.3**	Yes
71	Sunrise Boulevard & Florin Road	Signal	D	50.3	Signal	C	22.1	No	Signal	E	57.4	Signal	D	46.1	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	**F**	**91.2**	Signal	**F**	**127.9**	Yes	Signal	C	33.1	Signal	**E**	**65.0**	Yes
73	Hazel Avenue & Tributary Point Drive/US 50 WB Off-ramp	Signal	**F**	**148.3**	Signal	**F**	**149.0**	No	Signal	**F**	**103.3**	Signal	**F**	**102.5**	No
74	Hazel Avenue & US 50 EB Ramps	Signal	B	16.4	Signal	B	17.7	No	Signal	**F**	**83.6**	Signal	**F**	**85.2**	No
76	Prairie City Road & White Rock Road	Signal	C	32.8	Signal	**D**	**37.8**	No	Signal	**D**	**35.2**	Signal	**D**	**36.0**	No
77	Grant Line Road & White Rock Road	Signal	C	26.1	Signal	B	16.0	No	Signal	C	29.8	Signal	C	24.3	No
78	Grant Line Road & Douglas Road	Signal	**D**	**44.8**	Signal	**D**	**39.6**	No	Signal	**F**	**107.9**	Signal	**F**	**93.8**	No
79	Grant Line Road & Kiefer Boulevard	Signal	B	12.5	Signal	B	14.9	No	Signal	B	10.6	Signal	B	16.7	No
80	Grant Line Road & Jackson Road	Signal	**F**	**88.9**	Signal	**F**	**117.3**	Yes	Signal	**E**	**67.4**	Signal	**F**	**106.5**	Yes

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
81	Watt Avenue & US-50 EB Ramps	Signal	C	23.3	Signal	C	29.4	No	Signal	B	15.6	Signal	B	19.5	No
82	Watt Avenue & US-50 WB Ramps	Signal	**F**	**82.8**	Signal	**E**	**64.6**	No	Signal	**E**	**57.1**	Signal	**E**	**61.3**	No
83	Mayhew Rd & Folsom Blvd.	Signal	B	12.8	Signal	C	20.7	No	Signal	B	15.8	Signal	B	19.6	No
84	65th Street Expy & Fruitridge Road	Signal	D	44.3	Signal	D	42.3	No	Signal	D	41.1	Signal	D	45.4	No
85	Power Inn Road & Elder Creek Road	Signal	E	67.3	Signal	E	75.1	No	Signal	D	45.0	Signal	E	61.8	No
86	Power Inn Road & Florin Rd	Signal	**F**	**97.4**	Signal	**F**	**116.1**	Yes	Signal	E	65.8	Signal	E	72.5	No
87	Florin Perkins Road & Florin Rd	Signal	D	44.2	Signal	E	59.3	No	Signal	**F**	**107.4**	Signal	**F**	**113.8**	Yes
88	Bradshaw Rd & Calvine Rd	Signal	C	26.4	Signal	D	38.6	No	Signal	C	20.9	Signal	C	23.1	No
89	Vineyard Rd & Calvine Rd	Signal	B	18.5	Signal	B	19.0	No	Signal	B	17.6	Signal	B	19.1	No
90	Excelsior Road & Calvine Rd	All-way stop	B	12.8	All-way stop	C	21.2	No	All-way stop	B	12.9	All-way stop	B	17.5	No
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	C	34.4	Signal	**D**	**44.1**	Yes	Signal	**D**	**44.8**	Signal	**D**	**50.5**	Yes
92	Grant Line Rd & Calvine Rd	Signal	C	32.4	Signal	**D**	**37.0**	Yes	Signal	C	33.3	Signal	C	27.4	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	**E**	**78.8**	Signal	**F**	**83.4**	No	Signal	**E**	**69.8**	Signal	**F**	**97.4**	Yes
94	Grant Line Rd & Bond Rd/Wrangler Dr	Signal	B	14.8	Signal	B	16.8	No	Signal	B	15.5	Signal	B	16.9	No
95	Florin Perkins Road & 14th Avenue	Signal	D	44.1	Signal	**E**	**65.6**	Yes	Signal	C	30.9	Signal	D	45.3	No

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
96	Jackson Road & 14th Avenue	Signal	**F**	**91.0**	Signal	**F**	**119.8**	Yes	Signal	B	15.3	Signal	D	54.7	No
98	Aspen 1 Access Road & Jackson Road	Signal	A	0.0	Signal	A	0.0	No	Signal	A	6.6	Signal	A	0.0	No
99	Rancho Cordova Pkwy & US-50 WB Ramps	Signal	**F**	**147.0**	Signal	**F**	**146.3**	No	Signal	**F**	**117.9**	Signal	**F**	**101.0**	No
100	Rancho Cordova Pkwy & US-50 EB Ramps	Signal	C	24.0	Signal	B	17.1	No	Signal	C	28.3	Signal	C	27.3	No
101	Rancho Cordova Pkwy & Easton Valley Pkwy	Signal	C	24.2	Signal	C	25.5	No	Signal	B	11.2	Signal	B	14.3	No
102	Rancho Cordova Pkwy & White Rock Road	Signal	**F**	**221.3**	Signal	**F**	**209.0**	No	Signal	**F**	**135.5**	Signal	**F**	**125.2**	No
103	Rancho Cordova Pkwy & Douglas Road	Signal	**E**	**67.2**	Signal	**E**	**57.4**	No	Signal	**E**	**58.0**	Signal	**E**	**77.2**	Yes
104	Rancho Cordova Pkwy & Chrysanthy Boulevard/Chrysanthy Blvd	Signal	**F**	**105.7**	Signal	**F**	**91.1**	No	Signal	D	54.9	Signal	D	54.5	No
105	Rancho Cordova Pkwy & Kiefer Blvd	Signal	B	17.9	Signal	C	20.7	No	Signal	B	16.1	Signal	B	19.5	No
106	Rancho Cordova Pkwy & Grant Line Road	Signal	**E**	**78.8**	Signal	**D**	**39.9**	No	Signal	C	28.8	Signal	B	14.3	No
107	Americanos Blvd & White Rock Road	Signal	A	9.5	Signal	A	8.7	No	Signal	A	9.5	Signal	A	8.6	No
108	Americanos Blvd & Douglas Road	Signal	C	34.9	Signal	D	47.3	No	Signal	C	22.4	Signal	C	22.7	No
109	Americanos Blvd & Chrysanthy Blvd	Signal	C	24.7	Signal	C	22.5	No	Signal	C	22.2	Signal	C	25.5	No
110	Americanos Blvd & Kiefer Blvd	Signal	A	7.6	Signal	A	8.7	No	Signal	A	7.3	Signal	B	10.1	No
111	Grant Line Road & Chrysanthy Blvd	Signal	**E**	**72.0**	Signal	**E**	**64.0**	Yes	Signal	**E**	**57.5**	Signal	D	52.4	No

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
112	Hazel Avenue & Easton Valley Pkwy	Signal	B	10.3	Signal	A	8.7	No	Signal	A	6.0	Signal	A	6.0	No
200	Excelsior Road & Collector WJ-1/Collector JT-1	West Jackson/Jackson Township Project Int.			Signal	C	26.3	No	West Jackson/Jackson Township Project Int.			Signal	C	21.4	No
201	Excelsior Road & Collector WJ-2/Collector JT-2	West Jackson/Jackson Township Project Int.			Signal	B	14.1	No	West Jackson/Jackson Township Project Int.			Signal	B	16.7	No
202	W Collector MS-1 & Kiefer Boulevard	Mather South Project Int.			Signal	B	16.8	No	Mather South Project Int.			Signal	B	12.8	No
203	Northbridge Dr & Kiefer Boulevard	NewBridge Project Int.			Signal	A	6.6	No	NewBridge Project Int.			Signal	A	6.7	No
204	E Collector MS-1 & Kiefer Boulevard	Mather South Project Int.			Signal	B	19.5	No	Mather South Project Int.			Signal	C	30.1	No
300	Collector WJ-3 & Jackson Road	West Jackson Project Int.			Signal	B	16.7	No	West Jackson Project Int.			Signal	B	12.9	No
301	Collector WJ-4 & Jackson Road	West Jackson Project Int.			Signal	C	24.8	No	West Jackson Project Int.			Signal	C	20.7	No
303	Rock Creek Pkwy & Jackson Road	West Jackson Project Int.			Signal	**F**	**128.3**	Yes	West Jackson Project Int.			Signal	**F**	**96.4**	Yes
304	Collector WJ-5 & Jackson Road	West Jackson Project Int.			Signal	B	14.0	No	West Jackson Project Int.			Signal	B	15.0	No
305	Collector WJ-6 & Jackson Road	West Jackson Project Int.			Signal	B	17.5	No	West Jackson Project Int.			Signal	B	15.8	No
306	Excelsior Road & Collector WJ-6	West Jackson Project Int.			Signal	D	46.1	No	West Jackson Project Int.			Signal	B	16.5	No
307	S. Watt Avenue & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	16.1	No	West Jackson Project Int.			Signal	B	13.5	No
308	Hedge Avenue & Rock Creek Pkwy Westbound	West Jackson Project Int.			Round	E	49.0	No	West Jackson Project Int.			Round	A	9.9	No
309	Hedge Avenue & Rock Creek Pkwy Eastbound	West Jackson Project Int.			Round	B	12.3	No	West Jackson Project Int.			Round	D	28.5	No

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
310	Mayhew Road & Rock Creek Pkwy Westbound	West Jackson Project Int.			Round	**F**	**297.2**	Yes	West Jackson Project Int.			Round	**F**	**210.1**	Yes
311	Mayhew Road & Rock Creek Pkwy Eastbound	West Jackson Project Int.			Round	**F**	**191.0**	Yes	West Jackson Project Int.			Round	**F**	**>300**	Yes
312	Bradshaw Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	17.8	No	West Jackson Project Int.			Signal	D	50.3	No
314	Vineyard Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	10.1	No	West Jackson Project Int.			Signal	C	22.4	No
315	Douglas Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	D	35.8	No	West Jackson Project Int.			Signal	E	62.2	No
316	Bradshaw Road & Collector WJ-8	West Jackson Project Int.			Signal	B	12.5	No	West Jackson Project Int.			Signal	A	6.4	No
317	Bradshaw Road & Collector WJ-9	West Jackson Project Int.			Signal	B	10.2	No	West Jackson Project Int.			Signal	A	5.7	No
318	Bradshaw Road & Mayhew Road	West Jackson Project Int.			Signal	**F**	**163.9**	Yes	West Jackson Project Int.			Signal	**F**	**128.4**	Yes
319	Bradshaw Road & Collector WJ-10	West Jackson Project Int.			Signal	**F**	**190.9**	Yes	West Jackson Project Int.			Signal	C	28.5	No
320	Bradshaw Road & Collector WJ-11	West Jackson Project Int.			Signal	A	8.1	No	West Jackson Project Int.			Signal	B	15.0	No
321	Collector WJ-12 & Fruitridge Road	West Jackson Project Int.			Signal	A	6.6	No	West Jackson Project Int.			Signal	A	6.6	No
322	Mayhew Road & Collector WJ-13	West Jackson Project Int.			Signal	D	41.7	No	West Jackson Project Int.			Signal	C	31.9	No
323	Collector WJ-14 & Kiefer Boulevard	West Jackson Project Int.			Signal	C	28.2	No	West Jackson Project Int.			Signal	C	23.9	No
325	Douglas Road & Kiefer Boulevard	West Jackson Project Int.			Signal	**F**	**162.1**	Yes	West Jackson Project Int.			Signal	**F**	**103.1**	Yes
327	Vineyard Road & Elder Creek Road	West Jackson Project Int.			Signal	D	37.2	No	West Jackson Project Int.			Signal	C	29.0	No

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

Intersection		AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
328	Vineyard Road & Florin Road	West Jackson Project Int.			Signal	C	25.2	No	West Jackson Project Int.			Signal	C	32.8	No
329	Routier Ext & Kiefer Boulevard	West Jackson Project Int.			Signal	**F**	**88.4**	Yes	West Jackson Project Int.			Signal	E	71.4	No
330	Happy Ln/Happy Lane & Routier Ext	West Jackson Project Int.			Signal	E	78.9	No	West Jackson Project Int.			Signal	E	79.9	No
331	Routier Ext/Routier Rd & Old Placerville Road	West Jackson Project Int.			Signal	**F**	**168.4**	Yes	West Jackson Project Int.			Signal	**F**	**118.4**	Yes
400	Collector JT-3 & Jackson Road	Jackson Township Project Int.			Signal	**F**	**83.6**	Yes	Jackson Township Project Int.			Signal	D	48.2	No
401	Tree View Lane & Jackson Road	Jackson Township Project Int.			Signal	D	38.0	No	Jackson Township Project Int.			Signal	B	13.4	No
402	Collector JT-4 & Jackson Road	Jackson Township Project Int.			Signal	B	14.5	No	Jackson Township Project Int.			Signal	A	9.0	No
403	Tree View Lane & Collector JT-5	Jackson Township Project Int.			Signal	B	14.0	No	Jackson Township Project Int.			Signal	B	13.7	No
404	Tree View Lane & Collector JT-6	Jackson Township Project Int.			Signal	B	19.1	No	Jackson Township Project Int.			Signal	C	25.6	No
405	Tree View Lane & Collector JT-1	Jackson Township Project Int.			Signal	B	14.5	No	Jackson Township Project Int.			Signal	B	14.3	No
406	Tree View Lane & Kiefer Boulevard	Jackson Township Project Int.			Signal	B	11.6	No	Jackson Township Project Int.			Signal	B	14.0	No
407	HS/MS Dwy & Kiefer Boulevard	Jackson Township Project Int.			Signal	A	8.1	No	Jackson Township Project Int.			Signal	A	7.9	No
500	Rockbridge Dr & Jackson Road	NewBridge Project Int.			Signal	C	32.2	No	NewBridge Project Int.			Signal	B	18.3	No
501	Eagles Nest Road & N Bridgewater Dr	NewBridge Project Int.			Signal	A	3.4	No	NewBridge Project Int.			Signal	A	3.1	No
502	Eagles Nest Road & S Bridgewater Dr	NewBridge Project Int.			Signal	B	15.2	No	NewBridge Project Int.			Signal	B	13.4	No

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Table 10.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS (OJT)			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
600	Zinfandel Drive & Collector MS-2	Mather South Project Int.			Round	B	11.4	No	Mather South Project Int.			Round	B	12.1	No
601	Zinfandel Drive & Collector MS-3	Mather South Project Int.			Round	A	8.3	No	Mather South Project Int.			Round	A	9.2	No
602	Zinfandel Drive & Collector MS-4	Mather South Project Int.			Round	A	9.0	No	Mather South Project Int.			Round	A	9.2	No
603	Collector MS-5 & Collector MS-2	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					*A*	*7.8*						*A*	*7.5*	
	Eastbound Left Turn					*B*	*10.2*						*B*	*10.7*	
604	Collector MS-5 & Collector MS-3	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					A	7.8						*A*	*7.5*	
	Eastbound					B	10.1						*A*	*9.7*	
605	Collector MS-5 & Collector MS-4	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					*A*	*8.5*						*A*	*8.2*	
	Eastbound					*C*	*18.2*						*D*	*33.3*	
606	Collector MS-5 & W Collector MS-1/E Collector MS-1	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					*A*	*7.6*						*A*	*7.7*	
	Eastbound Left Turn					*B*	*11.8*						*B*	*12.4*	
	Eastbound					*A*	*9.4*						*A*	*9.3*	

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

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Table 10.6

Super Cumulative and Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Geometrics

	Intersection	Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
1	Howe Avenue & College Town Drive/US 50 Westbound Ramps	Signal	Signal	↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↓	⌝ ⌜ ⌜	⌝ ⌝ ↰ ↱ ⌜	↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↓	⌝ ⌜ ⌜	⌝ ⌝ ↰ ↱ ⌜	
2	Howe Avenue & US 50 Eastbound Ramps/US 50 Eastbound Entrance	Signal	Signal	↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓	⌝ ⌝ ⌜ ⌜		↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓	⌝ ⌝ ⌜ ⌜		
3	Power Inn Road/Howe Avenue & Folsom Blvd.	Signal	Signal	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ↱	⌝ ⌝ ↑ ↑ ⌜ ⌜	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ↱	⌝ ⌝ ↑ ↑ ⌜ ⌜	
4	Power Inn Road & 14th Avenue	Signal	Signal	⌝ ↑ ↑ ↱	⌟ ↓ ↓ ↓ ↳	⌝ ↑ ↱	⌝ ↑ ⌜	⌝ ↑ ↑ ↱	⌟ ↓ ↓ ↓ ↳	⌝ ↑ ↱	⌝ ↑ ⌜	
5	Power Inn Road & Fruitridge Road	Signal	Signal	⌝ ⌝ ↑ ↱	⌟ ↓ ↓ ↳ ↳	⌝ ↑ ↱	⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↱	⌟ ↓ ↓ ↳ ↳	⌝ ↑ ↱	⌝ ↑ ↑ ⌜	
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	Signal	⌝ ↰ ⌜	⌟ ↰	⌝ ↑ ↑ ⌜	⌝ ↑ ↑ ⌜	⌝ ↰ ⌜	⌟ ↰	⌝ ↑ ↑ ⌜	⌝ ↑ ↑ ⌜	
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	Signal	⌝ ↰ ⌜	⌟ ↰	⌝ ↑ ↑ ⌜	⌝ ↑ ↱	⌝ ↰ ⌜	⌟ ↰	⌝ ↑ ↑ ⌜	⌝ ↑ ↱	
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop	Two-way stop	↑ ↱	↓ ↓ ↳		⌝ ⌜	↑ ↱	↓ ↓ ↳		⌝ ⌜	
9	Florin Perkins Road & Jackson Road	Signal	Signal	⌝ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	⌝ ↑ ↑ ⌜	⌝ ↑ ↱	⌝ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	⌝ ↑ ↑ ⌜	⌝ ↑ ↱	
10	Florin Perkins Road & Fruitridge Road	Signal	Signal	⌝ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	⌝ ↑ ↑ ⌜	⌝ ↑ ↱	⌝ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	⌝ ↑ ↑ ⌜	⌝ ↑ ↱	
11	Florin Perkins Road & Elder Creek Road	Signal	Signal	⌝ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	⌝ ↑ ↑ ⌜	⌝ ↑ ↑ ⌜	⌝ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	⌝ ↑ ↑ ⌜	⌝ ↑ ↑ ⌜	
12	S. Watt Ave./Watt Avenue & Folsom Blvd.	Signal	Signal	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ⌜	
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	Signal	⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	⌖	⌝ ↱ ⌜	⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↳	⌖	⌝ ↱ ⌜	
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal	⌝ ⌝ ↑ ↑ ↱	⌟ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ↱	⌟ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ⌜	
15	S. Watt Avenue & Canberra Dr.	Signal	Signal	↑ ↑ ↱	↓ ↓ ↓ ↳		⌝ ⌜	↑ ↑ ↱	↓ ↓ ↳		⌝ ⌜	
16	S. Watt Avenue & Jackson Road	Signal	Signal	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ⌜	West Jackson
17	S. Watt Avenue & Fruitridge Road	Signal	Signal	⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳	⌝ ↑ ⌜	⌝ ↱	⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳	⌝ ↑ ⌜	⌝ ⌝ ↑ ↑ ⌜	West Jackson
18	S. Watt Avenue & Elder Creek Road	Signal	Signal	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ⌜	⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ⌜	⌝ ↑ ↑ ⌜	
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ↑ ↑ ⌜	⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ↑ ↑ ⌜	⌝ ↑ ↑ ⌜	
21	Elk Grove Florin Road & Gerber Rd./Gerber Road	Signal	Signal	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ↑ ⌜	⌟ ↓ ↓ ↓ ↳ ↳	⌝ ⌝ ↑ ↑ ⌜	⌝ ⌝ ↑ ↑ ⌜	
23	Hedge Avenue & Jackson Road	Signal	Signal	⌝ ↱	⌟ ↰	⌝ ↑ ↑ ⌜	⌝ ↑ ↑ ⌜	⌝ ↑ ⌜	⌟ ↰	⌝ ↑ ↑ ⌜	⌝ ↑ ↑ ⌜	West Jackson
24	Hedge Avenue & Fruitridge Road	All-way stop	Signal	⌖	⌖	⌖	⌖	⌝ ↑ ⌜	⌟ ↓ ↳	⌝ ↑ ↱	⌝ ↑ ↱	West Jackson
25	Hedge Avenue & Elder Creek Road	All-way stop	Signal	⌝ ↑ ⌜	⌟ ↓ ↳	⌝ ↑ ↱	⌝ ↑ ↱	⌝ ↑ ⌜	⌟ ↓ ↳	⌝ ↑ ↱	⌝ ↑ ↱	West Jackson
26	Hedge Avenue & Tokay Lane	Two-way stop	Two-way stop	⌖	⌖	⌖	⌖	⌖	⌖	⌖	⌖	
27	Hedge Avenue & Florin Road	All-way stop	All-way stop	⌖	⌖	⌝ ↑ ↱	⌝ ↑ ↱	⌖	⌖	⌝ ↑ ↱	⌝ ↑ ↱	
28	Mayhew Road & Kiefer Boulevard	Signal	Signal	⌝ ↑ ⌜	⌟ ↓ ↳	⌝ ↑ ↱	⌝ ↑ ↱	⌝ ↑ ⌜	⌟ ↓ ↳	⌝ ↑ ↱	⌝ ↑ ↱	

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 10.6

Super Cumulative and Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Geometrics

	Intersection	Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
29	Mayhew Road & Jackson Road	Two-way stop	Signal									West Jackson
30	Mayhew Road & Fruitridge Road	Two-way stop	Signal									West Jackson
31	Mayhew Road & Elder Creek Road	Two-way stop	Signal									West Jackson
32	Zinfandel Drive & Woodring Drive	Two-way stop	Two-way stop									Mather South
33	Bradshaw Road & Folsom Blvd.	Signal	Signal									
34	Bradshaw Road & US 50 Westbound Ramps	Signal	Signal									
35	Bradshaw Road & US 50 Eastbound Ramps	Signal	Signal									
36	Bradshaw Road & Old Placerville Road	Signal	Signal									
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal									West Jackson
38	Jackson Road & Bradshaw Road	Signal	Signal									West Jackson
39	Bradshaw Road & Elder Creek Road	Signal	Signal									West Jackson
40	Bradshaw Road & Florin Road	Signal	Signal									
41	Bradshaw Road & Gerber Road	Signal	Signal									
42	Happy Lane & Old Placerville Road	Two-way stop	Signal									
43	Kiefer Boulevard & Happy Ln		Signal									West Jackson
44	Excelsior Road & Kiefer Boulevard	Two-way stop	Signal									West Jackson; Jackson Township
45	Excelsior Road & Jackson Road	Signal	Signal									West Jackson; Jackson Township
46	Excelsior Road & Elder Creek Road	Two-way stop	Signal									West Jackson
47	Excelsior Road & Florin Road	All-way stop	Signal									West Jackson
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	All-way stop									
49	Mather Field Road & US 50 Westbound Ramps	Signal	Signal									
50	Mather Field Road & US 50 Eastbound Ramps	Signal	Signal									
51	Mather Field Road & Rockingham Drive	Signal	Signal									
52	Mather Boulevard & Douglas Road	All-way stop	All-way stop									
53	Zinfandel Drive & US 50 Westbound	Signal	Signal									
54	Zinfandel Drive & US 50 Eastbound Ramps/Gold Center Drive	Signal	Signal									

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 10.6

Super Cumulative and Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Geometrics

	Intersection	Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
55	Zinfandel Drive & White Rock Road	Signal	Signal									
56	Zinfandel Drive & Data Drive	Signal	Signal									
57	Zinfandel Dr & International Dr	Signal	Signal									
58	Zinfandel Drive & Douglas Road	Signal	Signal									
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard		Signal									NewBridge; Mather South
60	Eagles Nest Road & Jackson Road	Two-way stop	Signal									NewBridge
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									
62	Sunrise Boulevard & US 50 Westbound Ramps	Signal	Signal									
63	Sunrise Boulevard & US 50 Eastbound Ramps	Signal	Signal									
64	Sunrise Boulevard & Folsom Boulevard	Signal	Signal									
65	Sunrise Boulevard & White Rock Road	Signal	Signal									
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal									
67	Sunrise Boulevard & Douglas Road	Signal	Signal									
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	Signal									
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									NewBridge; Mather South
70	Sunrise Boulevard & Jackson Road	Signal	Signal									
71	Sunrise Boulevard & Florin Road	Signal	Signal									
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	Signal									
73	Hazel Avenue & Tributary Point Drive/US 50 Westbound Off-ramp	Signal	Signal									
74	Hazel Aveneu/Hazel Avenue & US 50 Eastbound Ramps	Signal	Signal									
76	White Rock Road & Prairie City Road	Signal	Signal									
77	Grant Line Road & White Rock Road	Signal	Signal									
78	Grant Line Road & Douglas Road	All-way stop	All-way stop									
79	Grant Line Road & Kiefer Boulevard	All-way stop	All-way stop									
80	Grant Line Road & Jackson Road	Signal	Signal									
81	Watt Avenue & US-50 EB Ramps	Signal	Signal									

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 10.6

Super Cumulative and Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Geometrics

	Intersection	Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
82	Watt Avenue & US-50 WB Ramps	Signal	Signal									
83	Mayhew Rd & Folsom Blvd.	Signal	Signal									
84	65th Street Expy & Fruitridge Road	Signal	Signal									
85	Power Inn Road & Elder Creek Road	Signal	Signal									
86	Power Inn Road & Florin Rd	Signal	Signal									
87	Florin Perkins Road & Florin Rd	Signal	Signal									
88	Bradshaw Rd & Calvine Rd	Signal	Signal									
89	Vineyard Rd & Calvine Rd	Signal	Signal									
90	Excelsior Road & Calvine Rd	All-way stop	Signal									
91	Grant Line Road & Eagles Nest Rd/Sloughhouse Rd	Signal	Signal									
92	Grant Line Road & Calvine Rd	Signal	Signal									
93	Grant Line Road & Driveway/Wilton Rd	Signal	Signal									
94	Bond Rd/Wrangler Dr & Grant Line Road	Signal	Signal									
95	Florin Perkins Road & 14th Avenue		Signal									
96	14th Avenue & Jackson Road		Signal									
97	Rock Creek Pkwy & Jackson Road		Signal									
98	Aspen 1 Access Road & Jackson Road		Signal									
99	Rancho Cordova Pkwy & US-50 WB Ramps		Signal									
100	Rancho Cordova Pkwy & US-50 EB Ramps		Signal									
101	Rancho Cordova Pkwy & Easton Valley Pkwy		Signal									
102	Rancho Cordova Pkwy & White Rock Road		Signal									
103	Rancho Cordova Pkwy & Douglas Road		Signal									
104	Rancho Cordova Pkwy & Chrysanthy Blvd		Signal									
105	Rancho Cordova Pkwy & Kiefer Blvd		Signal									
106	Grant Line Road & Rancho Cordova Pkwy		Signal									
107	Americanos Blvd & White Rock Road		Signal									
108	Americanos Blvd & Douglas Road		Signal									

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 10.6

Super Cumulative and Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Geometrics

Intersection		Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
109	Americanos Blvd & Chrysanthy Blvd		Signal									
110	Kiefer Blvd & Americanos Blvd		Signal									
111	Grant Line Road & Chrysanthy Blvd		Signal									
112	Easton Valley Pkwy & Hazel Avenue		Signal									
200	Excelsior Road & Collector WJ-1/Collector JT-1		Signal									West Jackson; Jackson Township
201	Excelsior Road & Collector WJ-2/Collector JT-2		Signal									West Jackson; Jackson Township
202	Kiefer Boulevard & W Collector MS-1		Signal									Mather South
203	Northbridge Dr & Kiefer Boulevard		Signal									NewBridge
204	Kiefer Boulevard & E Collector MS-1		Signal									Mather South
300	Collector WJ-3 & Jackson Road		Signal									West Jackson
301	Collector WJ-4 & Jackson Road		Signal									West Jackson
303	Vineyard Road & Jackson Road		Signal									West Jackson
304	Collector WJ-5 & Jackson Road		Signal									West Jackson
305	Collector WJ-6 & Jackson Road		Signal									West Jackson
306	Excelsior Road & Collector WJ-6		Signal									West Jackson
307	S. Watt Avenue & Rock Creek Pkwy		Signal									West Jackson
308	Hedge Avenue & Rock Creek Pkwy Westbound		Roundabout									West Jackson
309	Hedge Avenue & Rock Creek Pkwy Eastbound		Roundabout									West Jackson
310	Mayhew Road & Rock Creek Pkwy Westbound		Roundabout									West Jackson
311	Mayhew Road & Rock Creek Pkwy Eastbound		Roundabout									West Jackson
312	Bradshaw Road & Rock Creek Pkwy		Signal									West Jackson
314	Vineyard Road & Rock Creek Pkwy		Signal									West Jackson
315	Douglas Road & Rock Creek Pkwy		Signal									West Jackson
316	Bradshaw Road & Collector WJ-8		Signal									West Jackson
317	Bradshaw Road & Collector WJ-9		Signal									West Jackson

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 10.6

Super Cumulative and Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Geometrics

Intersection		Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
318	Bradshaw Road & Mayhew Road		Signal									West Jackson
319	Bradshaw Road & Collector WJ-10		Signal									West Jackson
320	Bradshaw Road & Collector WJ-11		Signal									West Jackson
321	Collector WJ-12 & Fruitridge Road		Signal									West Jackson
322	Mayhew Road & Collector WJ-13		Signal									West Jackson
323	Collector WJ-14 & Kiefer Boulevard		Signal									West Jackson
325	Douglas Road Extension & Kiefer Boulevard		Signal									West Jackson
327	Vineyard Road & Elder Creek Road		Signal									West Jackson
328	Vineyard Road & Florin Road	Signal	Signal									West Jackson
329	Routier Ext & Kiefer Boulevard		Signal									West Jackson
330	Happy Lane & Routier Ext		Signal									West Jackson
331	Routier Ext/Routier Rd & Old Placerville Road		Signal									West Jackson
400	Jackson Road & Collector JT-3		Signal									Jackson Township
401	Jackson Road & Tree View Lane		Signal									Jackson Township
402	Jackson Road & Collector JT-4		Signal									Jackson Township
403	Tree View Lane & Collector JT-5		Signal									Jackson Township
404	Tree View Lane & Collector JT-6		Signal									Jackson Township
405	Tree View Lane & Collector JT-1		Signal									Jackson Township
406	Tree View Lane & Kiefer Boulevard		Signal									Jackson Township
407	HS/MS Dwy & Kiefer Boulevard		Signal									Jackson Township
500	Jackson Road & Rockbridge Dr		Signal									NewBridge
501	Eagles Nest Road & N Bridgewater Dr		Signal									NewBridge
502	Eagles Nest Road & S Bridgewater Dr		Signal									NewBridge
600	Zinfandel Drive & Collector MS-2		Roundabout									Mather South
601	Zinfandel Drive & Collector MS-3		Roundabout									Mather South
602	Zinfandel Drive & Collector MS-4		Roundabout									Mather South
603	Collector MS-5 & Collector MS-2		Two-way stop									Mather South

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 10.6

Super Cumulative and Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Geometrics

Intersection		Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
604	Collector MS-5 & Collector MS-3		Two-way stop					1	1	2		Mather South
605	Collector MS-5 & Collector MS-4		Two-way stop					1	1	2		Mather South
606	E Collector MS-1/Collector MS-5 & W Collector MS-1		Two-way stop					1 1	2 1	1 1		Mather South

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 10.7: CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Peak Hour Freeway Mainline Level of Service									
Direc-tion	**Location**	**CEQA Cumulative**				**CEQA Cumulative Plus FOUR PROJECTS**			
		AM Peak Hour		**PM Peak Hour**		**AM Peak Hour**		**PM Peak Hour**	
		Volume	**LOS**	**Volume**	**LOS**	**Volume**	**LOS**	**Volume**	**LOS**
East-bound US 50	SR 99 / SR 51 to Stockton Boulevard	8,751	D	8,621	D	9,283	D	8,855	D
	Stockton Boulevard to 59th Street	8,168	**F**	7,811	**F**	8,622	**F**	8,051	**F**
	59th Street to 65th Street	7,637	D	7,341	D	8,092	E	7,521	D
	65th Street to Howe Avenue	8,019	D	7,658	D	8,284	D	7,812	D
	Howe Avenue to Watt Avenue	7,213	C	6,680	C	7,350	C	6,679	C
	Watt Avenue to Bradshaw Road	9,633	**F**	8,976	E	9,853	**F**	9,056	E
	Bradshaw Rd to Mather Field Rd	9,467	**F**	9,033	C	9,492	**F**	9,015	C
	Mather Field Rd to Zinfandel Drive	9,072	D	8,765	D	9,251	D	8,916	D
	Zinfandel Drive to Sunrise Blvd	6,313	C	6,367	**F**	6,426	C	6,551	**F**
	Sunrise Bl to Rancho Cordova Pkwy	5,835	C	5,875	**F**	5,918	C	6,121	**F**
	Rancho Cordova Pkwy to Hazel Ave	7,170	D	6,651	**F**	7,270	D	6,929	**F**
West-bound US 50	Hazel Ave to Rancho Cordova Pkwy	5,376	B	5,168	C	5,642	B	5,218	C
	Rancho Cordova Pkwy to Sunrise Bl	6,906	C	4,367	B	7,074	C	4,461	B
	Sunrise Blvd to Zinfandel Drive	8,587	D	5,211	B	8,789	D	5,378	B
	Zinfandel Drive to Mather Field Rd	9,480	D	7,384	C	9,503	D	7,454	C
	Mather Field Rd to Bradshaw Road	9,560	**F**	8,696	D	9,424	**F**	8,544	D
	Bradshaw Road to Watt Avenue	9,001	**F**	7,871	D	8,902	**F**	8,099	E
	Watt Avenue to Howe Avenue	7,880	**F**	5,864	**F**	7,704	**F**	6,132	**F**
	Howe Avenue to 65th Street	8,761	**F**	8,080	**F**	9,014	**F**	8,384	**F**
	65th Street to 59th Street	8,809	**F**	7,970	**F**	9,037	**F**	8,296	**F**
	59th Street to Stockton Boulevard	9,692	D	8,290	**F**	9,903	D	8,656	**F**
	Stockton Boulevard to SR 99 / SR 51	10,187	E	9,660	**F**	10,330	E	9,916	**F**

Bold values denote level of service "F" conditions.

Red shaded values indicate project impacts.

Source: *DKS Associates, 2018.*

10.4.4 CEQA Cumulative Plus FOUR PROJECTS Pedestrian and Bicycle Facility Impacts

The FOUR PROJECTS would not remove any existing or planned pedestrian facility that is planned in the Bikeway Master Plan. The FOUR PROJECTS would add pedestrian and bicycle demands within the FOUR PROJECTS site and to and from nearby land uses. Specific information on improvements to on- and off-site bicycle and pedestrian facilities is not available at this time. Because the FOUR PROJECTS would add demand for pedestrian and bicycle facilities that may not be available, the impact of the FOUR PROJECTS on pedestrian and bicycle circulation is potentially significant.

Table 10.8 CEQA Cumulative Plus FOUR PROJECTS (Prop. Proj.) Peak Hour Freeway Ramp Junction/Weaving Level of Service										
Direc-tion	**Location**	**Junction Type**	**CEQA Cumulative**				**CEQA Cumulative Plus FOUR PROJECTS**			
			A.M. Peak Hour		**P.M. Peak Hour**		**A.M. Peak Hour**		**P.M. Peak Hour**	
			Ramp Volume	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**
East-bound US 50	Northbound 65th Street Slip Entrance	Weave	945	**F**	777	**F**	928	**F**	724	**F**
	Howe Avenue / Hornet Drive Exit		2,088		2,140		2,125		2,267	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	729	D	1,342	D	722	D	1,338	D
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	609	D	532	D	520	D	519	D
	Watt Avenue Exit	Two-Lane Diverge	1,538	B	1,705	B	1,530	B	1,604	A
	Southbound Watt Avenue Loop Entrance	One-Lane Merge	1,615	D	1,368	C	1,546	D	1,213	C
	Northbound Watt Avenue Slip Entrance	One-Lane Merge	682	D	588	C	642	D	597	C
	Bradshaw Road Exit	Two-Lane Diverge	2,068	**F**	1,631	B	2,255	**F**	1,835	C
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	268	D	422	D	272	D	505	D
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	1,486	D	1,029	C	1,491	D	1,102	C

Table 10.8
CEQA Cumulative Plus FOUR PROJECTS (Prop. Proj.) Peak Hour Freeway Ramp Junction/Weaving Level of Service

Direc-tion	Location	Junction Type	CEQA Cumulative				CEQA Cumulative Plus FOUR PROJECTS			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Mather Field Road Exit	Two-Lane Diverge	1,490	B	1,530	B	1,481	B	1,489	B
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	252	C	222	C	251	C	169	C
	Northbound Mather Field Road Slip Entrance	Weave	431	**F**	894	**F**	607	**F**	1,123	**F**
	Zinfandel Drive Exit		3,083		1,861		3,090		1,797	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	183	C	173	C	186	C	151	C
	Northbound Zinfandel Drive Slip Entrance	Lane Addition	665	A	714	B	667	B	784	B
	Sunrise Boulevard Exit	Major Diverge	1,878	C	2,308	C	1,923	C	2,364	C
	Sunrise Boulevard Entrance	Lane Addition / Weave	1,233	D	1,122	C	1,185	B	1,162	C
	Rancho Cordova Parkway Exit	Major Diverge / Weave	374		763		330	C	816	
	Rancho Cordova Parkway Entrance	Weave	1,787	**F**	1,748	**F**	1,747	**F**	1,823	**F**
	Hazel Avenue Exit		1,904		2,611		1,915		2,718	

Table 10.8
CEQA Cumulative Plus FOUR PROJECTS (Prop. Proj.) Peak Hour Freeway Ramp Junction/Weaving Level of Service

Direc-tion	Location	Junction Type	CEQA Cumulative				CEQA Cumulative Plus FOUR PROJECTS			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Hazel Avenue Entrance	Weave	1,174	E	2,148	**F**	1,070	D	2,091	D
	Aerojet Road Exit		584		203		625		171	
West-bound US 50	Hazel Avenue Exit	Two-Lane Diverge	1,098	B	1,031	C	1,058	B	1,032	C
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	69	B	434	C	89	B	434	C
	Southbound Hazel Avenue Slip Entrance	Weave	2,306	**F**	2,263	**F**	2,374	**F**	2,302	**F**
	Rancho Cordova Parkway Exit		1,800		2,225		1,882		2,173	
	Rancho Cordova Parkway Entrance	Lane Addition / Weave	1,428	C	1,165	B	1,380	C	1,138	B
	Sunrise Boulevard Exit	Major Diverge / Weave	729		751	C	736		729	C
	Northbound Sunrise Boulevard Loop Entrance	Lane Addition	169	A	259	A	174	A	234	A
	Southbound Sunrise Boulevard Slip Entrance	Lane Addition	2,323	**F**	1,524	C	2,355	**F**	1,613	C
	Zinfandel Drive Exit	One-Lane Diverge	1,384	E	1,183	D	1,409	E	1,200	D

Table 10.8 CEQA Cumulative Plus FOUR PROJECTS (Prop. Proj.) Peak Hour Freeway Ramp Junction/Weaving Level of Service										
Direc-tion	**Location**	**Junction Type**	**CEQA Cumulative**				**CEQA Cumulative Plus FOUR PROJECTS**			
			A.M. Peak Hour		**P.M. Peak Hour**		**A.M. Peak Hour**		**P.M. Peak Hour**	
			Ramp Volume	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**	**Ramp Volume**	**LOS**
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	909	C	1,443	D	797	C	1,295	C
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	1,544	D	663	B	1,400	D	663	B
	Mather Field Road Exit	One-Lane Drop	1,350	D	826	C	1,586	D	1,025	C
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	626	C	1,192	C	507	C	1,193	C
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	303	C	504	C	423	C	428	B
	Bradshaw Road Exit	Two-Lane Diverge	1,533	C	1,756	B	1,704	C	1,809	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	999	**F**	927	D	1,381	**F**	1,593	D
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	385	**F**	851	D	393	**F**	816	D
	Watt Avenue Exit	Major Diverge	1,568	E	1,112	D	1,407	E	991	D
	Northbound Watt Avenue Loop Entrance	One-Lane Merge	774	D	1,125	D	742	D	1,100	D
	Southbound Watt Avenue Slip Entrance	Lane Addition	1,134	D	1,062	C	912	D	1,006	D
	Howe Avenue Exit	Major Diverge	1,879	E	1,687	D	1,701	E	1,695	D
	Northbound Howe Avenue	One-Lane Merge	613	D	572	D	608	D	563	D

Table 10.8 CEQA Cumulative Plus FOUR PROJECTS (Prop. Proj.) Peak Hour Freeway Ramp Junction/Weaving Level of Service

Direc-tion	Location	Junction Type	CEQA Cumulative				CEQA Cumulative Plus FOUR PROJECTS			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Loop Entrance									
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	668	**F**	699	C	812	**F**	646	C

Bold values denote level of service "F" conditions.

Red shaded values indicate project impacts.

Source: *DKS Associates, 2018.*

Table 10.9: CEQA Cumulative Peak Hour Freeway Ramp Termini Queuing

Direction	US 50 Exit Ramp	Available Storage Length (feet / lane)			Maximum Queue Length (feet / lane)					
					AM Peak Hour			PM Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US-50	Howe Avenue	765	-	765	136	-	**797**	137	-	346
	Watt Avenue	1,500	-	1,500	210	-	403	244	-	242
	Bradshaw Road	1,250	-	1,250	149	-	566	159	-	317
	Mather Field Road	1,385	-	1,385	132	-	383	241	-	453
	Zinfandel Drive	1,025	1,025	1,025	163	**1,416**	1,306	396	368	930
	Sunrise Boulevard	1,695	-	1,695	106	-	199	196	-	114
	Rancho Cordova Pkwy.	-	-	1,850	-	-	394	-	-	528
	Hazel Avenue	1,310	-	1,310	305	-	23	711	-	18
Westbound US-50	Hazel Avenue	1,995		1,995	302		855	300		669
	Rancho Cordova Pkwy	1,065	-	-	**1,651**	-	-	**1,746**	-	-
	Sunrise Boulevard	1,540	-	1,540	52	-	198	23	-	442
	Zinfandel Drive	1,065	-	1,065	245	-	70	143	-	197
	Mather Field Road	1,335	-	1,335	362	-	331	176	-	183
	Bradshaw Road	1,330	-	1,330	177	-	122	265	-	47
	Watt Avenue	1,480	-	1,480	230	-	778	164	-	567
	Howe Avenue	1,355	1,355	1,355	85	412	804	199	412	684

Bold values exceed storage capacity.
L = left turn movement, T = through movement, R = right turn movement
Source: *DKS Associates, 2018.*

Table 10.10: CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Peak Hour Freeway Ramp Termini Queuing											
		Available Storage Length (feet / lane)			Maximum Queue Length (feet / lane)						
					AM Peak Hour			PM Peak Hour			
Direction	US 50 Exit Ramp	L	T	R	L	T	R	L	T	R	
Eastbound US-50	Howe Avenue	765	-	765	148	-	**1,065**	167	-	510	
	Watt Avenue	1,500	-	1,500	273	-	567	213	-	373	
	Bradshaw Road	1,250	-	1,250	189	-	1132	119	-	764	
	Mather Field Road	1,385	-	1,385	165	-	383	315	-	285	
	Zinfandel Drive	1,025	1,025	1,025	150	**1,407**	**1,341**	448	371	675	
	Sunrise Boulevard	1,695	-	1,695	109	-	196	211	-	105	
	Rancho Cordova Pkwy.	-	-	1,850	-	-	369	-	-	521	
	Hazel Avenue	1,310	-	1,310	302	-	27	770	-	18	
Westbound US-50	Hazel Avenue	1,995		1,995	320		801	343		654	
	Rancho Cordova Pkwy	1,065	-	-	**1,736**	-	-	**1,703**	-	-	
	Sunrise Boulevard	1,540	-	1,540	58	-	165	44	-	403	
	Zinfandel Drive	1,065	-	1,065	271	-	58	177	-	202	
	Mather Field Road	1,335	-	1,335	512	-	474	264	-	238	
	Bradshaw Road	1,330	-	1,330	237	-	119	324	-	54	
	Watt Avenue	1,480	-	1,480	271	-	764	174	-	606	
	Howe Avenue	1,355	1,355	1,355	43	412	707	175	412	742	

Red shaded values indicate project impacts.
L = left turn movement, T = through movement, R = right turn movement
Source: *DKS Associates, 2018.*

10.4.5 CEQA Cumulative Plus FOUR PROJECTS Transit System Impacts

Public transit would not be provided to the sites of the FOUR PROJECTS under CEQA Cumulative scenario without development of the FOUR PROJECTS. In the preparation of this analysis, a transit system to serve the FOUR PROJECTS was developed (see Section 8.1.2.3). However, the timing and implementation of the transit system are uncertain at this time. The FOUR PROJECTS would increase demands for public transit facilities. Therefore, the impact of the FOUR PROJECTS on the transit system is potentially significant.

10.4.6 CEQA Cumulative Plus FOUR PROJECTS Functionality Impacts

Table 10.11 summarizes the results of the rural roadway segment functionality analysis. Figure 10.7 illustrates the resultant functionality impacts. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the FOUR PROJECTS. The "Substandard?" heading indicates whether or not a roadway meets the County standards of 12-foot lanes and 6-foot shoulders. If the FOUR PROJECTS make improvements to a roadway segment such as widening, they would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact?" heading indicate those locations with a functionality impact.

As stated above, the traffic analysis assumed that the FOUR PROJECTS would construct a number of travel lanes on roadway segments that are internal to or on the boundary of the FOUR PROJECTS, and the entire roadway segment would be reconstructed to County standards at that time. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the FOUR PROJECTS.

Table 10.11
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				CEQA Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	4	Arterial M	34,000	Yes[3]
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	6	Arterial M	50,410	Yes[3]
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	4	Arterial M	13,170	Yes[3]
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Arterial M	9,180	Yes
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Arterial M	4,470	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	4	Arterial M	48,190	Yes[3]
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	4	Arterial M	33,950	Yes[3]
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	4	Arterial M	40,630	Yes[3]
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	3	Arterial M	33,740	Yes[3]
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Arterial M	27,590	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	3	Arterial M	37,130	Yes[3]
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	3	Arterial M	12,510	Yes[3]
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Arterial M	12,810	Yes
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Arterial M	8,160	Yes
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	4	Arterial M	14,880	Yes[3]
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	4	Arterial M	17,360	Yes[3]
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	4	Arterial M	23,450	Yes[3]
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	4	Arterial M	25,600	Yes[3]
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Arterial M	17,620	Yes
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	3	Arterial M	20,600	Yes[3]
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	4	Arterial M	17,810	Yes[3]
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	4	Arterial M	41,060	Yes[3]
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	4	Arterial M	13,720	Yes[3]
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Arterial M	9,920	Yes
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	2	22	Yes	3,737	2	Arterial M	6,870	Yes
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Arterial M	21,920	Yes
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	6	Arterial M	59,220	Yes[3]

Red text with light gray shading indicate project impacts.

Table 10.11
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				CEQA Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	Arterial M	62,440	Yes[3]
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	2	22	Yes	4,616	2	Arterial M	4,940	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	6	Arterial M	51,510	Yes[3]
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	3	Arterial M	39,640	Yes[3]
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Res Collector E	6,350	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	4	Arterial M	53,200	Yes[3]
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490	4	Arterial M	55,990	Yes[3]
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	4	Arterial M	22,240	Yes[3]

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

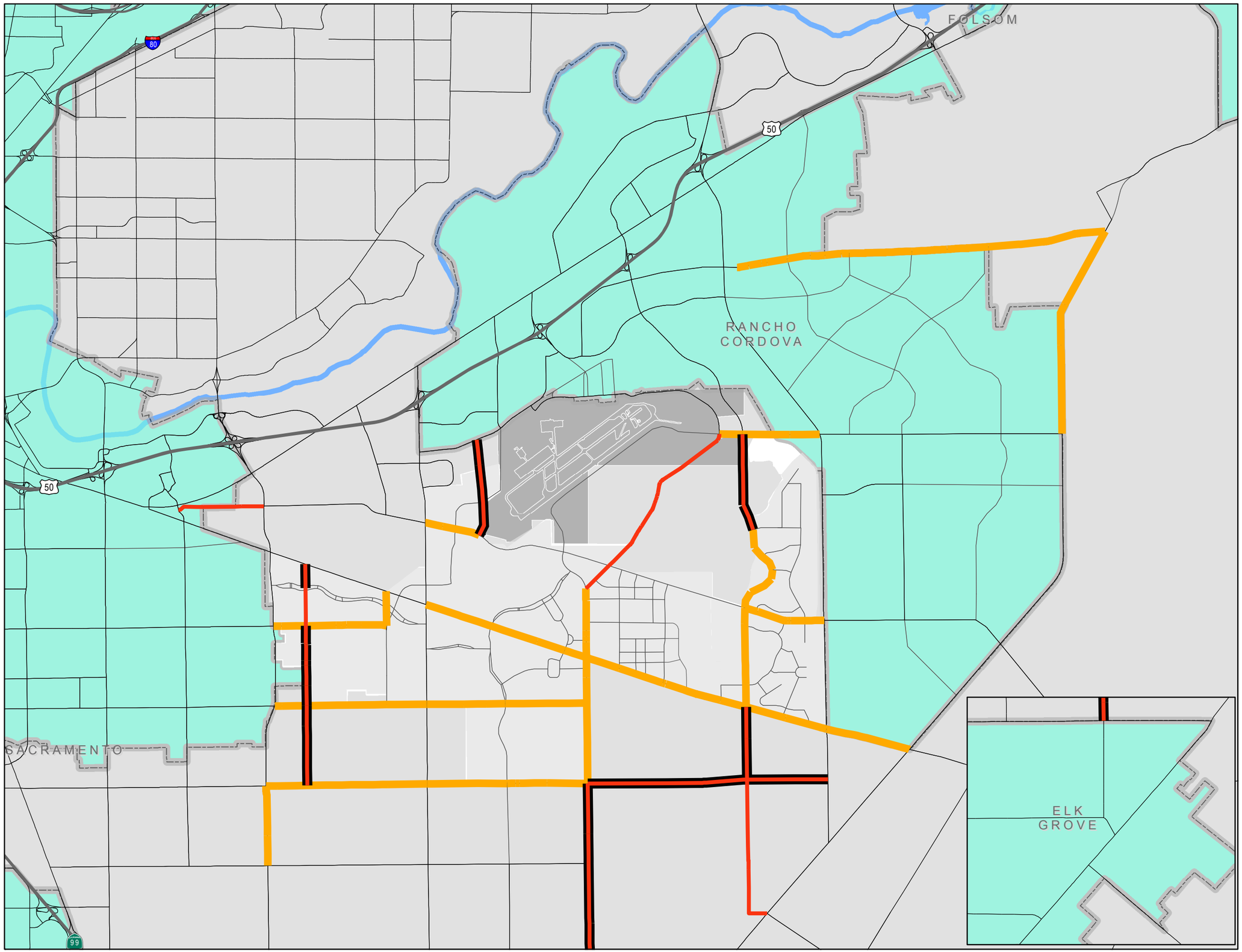

FIGURE 10.7
CEQA CUM PLUS FOUR PROJECTS
JT PROPOSED PROJECT
FUNCTIONALITY IMPACTS

Legend

- Substandard Roadways
- Functionality Impact
- Functionality Impact if Roadway is Not Already Improved
- Cities
- Mather Airport

DKS

10.5 MITIGATION

10.5.1 CEQA Cumulative Plus FOUR PROJECTS Roadway Segment Mitigation

Table 10.12 summarizes the results of the operations analysis for the study area roadway segments with mitigation. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate widened roadways for mitigation purposes, which would be the responsibility of the FOUR PROJECTS to fund. The Jackson Township project would contribute a fair share. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to have LOS impacts after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the improvements allowed under the General Plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

10.5.2 CEQA Cumulative Plus FOUR PROJECTS Intersection Mitigation

Tables 10.13a and 10.14a summarize the results of the operations analysis for the study area intersections with mitigation. However, the increased number of lanes on each approach does not exceed the County's standard number of approach lanes. **Tables 10.13b and 10.14b** summarize the results of the operations analysis for the study area intersections with the ultimate mitigation, which may exceed the County's standard number of approach lanes. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the FOUR PROJECTS to fund. The Jackson Township project would contribute a fair share. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact after mitigation. Table 10.14a and Table 10.14b also identify those intersections that would continue to have LOS impacts after mitigation, along with the constraint that precluded full mitigation. Detailed analysis information is included in the technical appendix.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These

alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

High Capacity Intersections

Three intersections are currently designated as "High Capacity Intersections" on the County's General Plan: Watt Avenue & Folsom Boulevard, Watt Avenue & Kiefer Boulevard, and Watt Avenue & Jackson Road. At two intersections on Bradshaw Road where an LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures by designating those two intersections as High Capacity Intersections: Bradshaw Road & Mayhew Road and Bradshaw Road & Jackson Road.

A high capacity intersection would utilize special treatments to increase the capacity of the intersection so as to reduce congestion and travel delay. Since each intersection could have unique travel movements, volumes and existing context sensitive conditions, the special treatments utilized at each high capacity intersection will be selected to meet the specific needs of each intersection. The range of special treatments is quite wide, ranging from the restriction of certain turning movements to various combinations that could include grade separating certain movements. While the field of traffic engineering is ever expending and evolving resulting in the use of new technologies and treatments, special treatments such as the following could be utilized at a high capacity intersection:

- Restricting turning movements
- Median U-turns
- Roundabouts
- Split intersections
- Quadrant roadway intersections
- Bowtie intersections
- Directional flyovers
- Center turn overpass
- Grade separated Roundabout
- Diverging diamond grade separation
- Compact diamond grade separation
- Single point urban grade separation
- Traditional urban grade separation

The County has conducted conceptual engineering to define potential improvements at the three study area intersections on Watt Avenue that are currently designated as "High Capacity Intersections" on the County's General Plan. These are:

- At the **Watt Avenue & Folsom Boulevard** intersection, the County proposes an ultimate configuration involving grade separation of the northbound and southbound through movements of Watt Avenue. Access to and from Folsom Boulevard would be accomplished via on and off-ramps from the left lanes of Watt Avenue to a single signalized intersection. A bus rapid transit (BRT) lane along Watt Avenue would also intersect Folsom Boulevard at the traffic signal. This design is consistent with the

recommendations of the South Watt Area Transportation Study (SWATS) dated November 1, 2002 and approved by the Board of Supervisors on November 26, 2002, and with the planning study for the *State Route 16 (Jackson Road) Corridor Study* (Fehr & Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

- At the **Watt Avenue & Kiefer Boulevard** intersection, the County proposes a tight diamond interchange as the ultimate improvement. The through movements (and BRT lane) on Watt Avenue would be grade separated from Kiefer Boulevard. Access to and from Kiefer Boulevard would be accomplished via on and off-ramps at two signalized intersections along Kiefer Boulevard. This design is proposed in the planning study prepared for *State Route 16 (Jackson Road) Corridor Study* (Fehr & Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

- At the **Watt Avenue & Jackson Road** intersection, the County proposes a standard six-by-six signalized intersection (two left-turn lanes, three through lanes, and one right-turn lane, on each approach) with three modifications. 1) The southbound left-turn movement would be grade separated; 2) The westbound right-turn movement would be grade separated; and 3) Three northbound left-turn lanes are proposed. This configuration represents an enhanced version of Alternative 6 in the planning study prepared for *State Route 16 (Jackson Road) Corridor Study* (Fehr and Peers, 2012). It should be noted that the State Route 16 study has only had a staff-level review done by Caltrans, Sacramento County Department of Transportation, City of Rancho Cordova, and City of Sacramento. Other equivalent mitigation measures may be selected to the satisfaction of the Department of Transportation to mitigate the project's impact.

At the new proposed "High Capacity Intersection" at Bradshaw Road and Jackson Road, the ultimate configuration has not been defined. A number of improvement options involving one or more of the special treatments identified above could be defined that would mitigate the LOS impact at this location.

Additionally, grade separated intersections are proposed along Grant Line Road, in order to meet the Connector JPA's level of service policy. These grade separations would be constructed at Prairie City Road (which is also a designated High Capacity Intersection), White Rock Road, Douglas Road, Kiefer Boulevard, Jackson Road, and Sunrise Boulevard.

Since each of these intersections have unique travel movements, volumes and existing context sensitive conditions (potential environmental issues, right-of-way, physical constraints, etc.), the special treatments utilized at each location will need to be studied to select the treatments that mitigate the LOS impact, while avoiding or minimizing other impacts.

10.5.3 CEQA Cumulative Plus FOUR PROJECTS U.S. 50 Freeway Mitigation

According to Caltrans' US-50 Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP), all mainline freeway lanes of the 8-lane ultimate facility (4 lanes in each direction) have already been built, with the exception of the segment between Zinfandel Drive and Sunrise Boulevard (where 6 of the 8 ultimate lanes exist today). With the exception of this segment, capacity improvements to widen the freeway mainline are precluded by the ultimate configuration in the TCR/CSMP. The TCR/CSMP does conceptualize other projects that will benefit the US-50 corridor without adding additional mainline travel lanes. These improvements generally fall into one of three categories:

- Intelligent transportation systems (ITS) and integrated corridor management (ICM) projects. Some examples may include ramp metering and multimodal improvements.
- Improvements to parallel local facilities. Such projects are expected to reduce travel demand on US-50.
- Future HOV lanes and auxiliary lanes. These projects would extend, or bridge gaps in, the existing HOV and auxiliary lane network. Constructing these lanes is permissible even when further widening of the mainline is not allowable, and is consistent with the ultimate configuration in the TCR/CSMP.

The FOUR PROJECTS shall participate in one or more of these alternative improvements that could directly reduce the severity of the project's impact and/or provide operational benefits to the US-50 corridor in general.

10.5.3.1 US-50 Eastbound Alternative Improvements

To lessen the impact to the eastbound US-50 mainline between Stockton Boulevard and 59th Street, the project may pay a fair share toward the construction of:

- Ramp meter improvements (Caltrans ITS/OPS Project List)

10.5.3.2 US-50 Westbound Alternative Improvements

To lessen the impact to the westbound US-50 weave between Hazel Avenue and Rancho Cordova Parkway, the project may pay a fair share toward the construction of:

- Multi-modal corridor improvements and interchange improvements at Hazel Avenue (2035 SACOG MTP)
- Auxiliary lanes between Hazel Avenue and Rancho Cordova Parkway (2035 SACOG MTP)

Table 10.12
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	85,400	1.58	**F**	6	Arterial M	1.58	**F**	Yes		Maximum General Plan lanes
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	77,570	1.44	**F**	6	Arterial M	1.44	**F**	Yes		Maximum General Plan lanes
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	74,760	1.38	**F**	6	Arterial M	1.38	**F**	Yes		Maximum General Plan lanes
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	6	Arterial M	63,620	1.18	**F**	6	Arterial M	1.18	**F**	Yes		Maximum General Plan lanes
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	6	Arterial M	59,990	1.11	**F**	6	Arterial M	1.11	**F**	Yes		Maximum General Plan lanes
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	6	Arterial M	55,140	1.02	**F**	6	Arterial M	1.02	**F**	Yes		Maximum General Plan lanes
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd	6	Arterial M	52,240	0.97	E	6	Arterial M	0.97	**E**	Yes		Maximum General Plan lanes
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,410	0.93	**E**	6	Arterial M	0.93	**E**	Yes		Maximum General Plan lanes
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	28,490	1.58	**F**	4	Arterial M	0.79	C	No		
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	48,190	1.34	**F**	6	Arterial M	0.89	**D**	No		
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,630	1.13	**F**	6	Arterial M	0.75	C	No		
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	3	Arterial M	33,740	1.87	**F**	4	Arterial M	0.94	E	No		
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	3	Arterial M	37,780	2.10	**F**	6	Arterial M	0.70	B	No		
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	3	Arterial M	37,130	2.06	**F**	6	Arterial M	0.69	B	No		
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	43,980	1.22	**F**	4	Arterial M	1.22	**F**	Yes		Maximum General Plan lanes

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 10.12
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	23,450	0.65	B					No		
42.2	Florin Rd	Vineyard Rd	Excelsior Rd	3	Arterial M	19,620	1.09	**F**	4	Arterial M	0.55	A	No		
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	55,790	1.55	**F**	4	Arterial M	1.55	**F**	Yes		Maximum General Plan lanes
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	26,960	1.50	**F**	4	Arterial M	0.75	C	No		
48	Fruitridge Rd	South Watt Ave	Hedge Ave	3	Arterial M	20,600	1.14	**F**	4	Arterial M	0.57	A	No		
51.2	Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd	4	Arterial M	47,740	1.33	**F**	4	Expressway	0.88	B	No		
52.1	Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	4	Arterial M	37,000	1.03	**F**	4	Expressway	0.69	A	No		
56	Grant Line Rd	Sheldon Rd	Wilton Rd	4	Arterial M	45,270	1.26	**F**	4	Expressway	0.84	B	No		
57	Grant Line Rd	Wilton Rd	Bond Rd	4	Arterial M	40,140	1.12	**F**	4	Expressway	0.74	A	No		
58.2	Happy Ln	Routier Ext	Kiefer Blvd	2	Arterial M	20,770	1.15	**F**	4	Arterial M	0.58	A	No		
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	71,330	1.32	**F**	6	Arterial M	1.32	**F**	Yes		Maximum General Plan lanes
66.1	Jackson Rd	Florin Perkins Rd	14th Ave	4	Arterial M	43,840	1.22	**F**	4	Arterial M	1.22	**F**	Yes		Maximum General Plan lanes
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	61,500	1.71	**F**	4	Arterial M	1.71	**F**	Yes		Maximum General Plan lanes
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	57,370	1.59	**F**	4	Arterial M	1.59	**F**	Yes		Maximum General Plan lanes
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave	4	Arterial M	55,060	1.53	**F**	4	Arterial M	1.53	**F**	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	67,850	1.88	**F**	6	Arterial M	1.26	**F**	Yes		Maximum General Plan lanes
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	4	Arterial M	60,230	1.67	**F**	6	Arterial M	1.12	**F**	Yes		Maximum General Plan lanes

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 10.12
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	4	Arterial M	60,910	1.69	**F**	6	Arterial M	1.13	**F**	Yes		Maximum General Plan lanes
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	6	Arterial M	59,440	1.10	**F**	6	Arterial M	1.10	**F**	Yes		Maximum General Plan lanes
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	6	Arterial M	59,220	1.10	**F**	6	Arterial M	1.10	**F**	Yes		Maximum General Plan lanes
70.2	Jackson Rd	Collector WJ-4	Happy Ln	6	Arterial M	59,210	1.10	**F**	6	Arterial M	1.10	**F**	Yes		Maximum General Plan lanes
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	4	Arterial M	62,440	1.73	**F**	6	Arterial M	1.16	**F**	Yes		Maximum General Plan lanes
71.2	Jackson Rd	Collector JT-3	Tree View Ln	4	Arterial M	46,480	1.29	**F**	6	Arterial M	0.86	D	No		
71.3	Jackson Rd	Tree View Ln	Collector JT-4	4	Arterial M	40,520	1.13	**F**	6	Arterial M	0.75	C	No		
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr	4	Arterial M	37,200	1.03	**F**	6	Arterial M	0.69	B	No		
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd	4	Arterial M	38,040	1.06	**F**	6	Arterial M	0.70	C	No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	45,430	1.26	**F**	6	Arterial M	0.84	D	No		
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	42,880	1.19	**F**	4	Arterial M	1.19	**F**	Yes		Maximum General Plan lanes
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	3	Arterial M	39,640	2.20	**F**	4	Arterial M	1.10	**F**	Yes		Maximum General Plan lanes
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	33,480	0.93	**E**	4	Arterial M	0.93	**E**	Yes		Maximum General Plan lanes
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy	4	Arterial M	53,200	1.48	**F**	6	Arterial M	0.99	E	No		
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	4	Arterial M	52,650	1.46	**F**	6	Arterial M	0.98	E	No		

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Table 10.12
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	36,370	1.01	**F**	4	Arterial M	1.01	**F**	Yes		Maximum General Plan lanes
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	40,120	1.11	**F**	4	Arterial M	1.11	**F**	Yes		Maximum General Plan lanes
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	81,710	1.51	**F**	6	Arterial M	1.51	**F**	Yes		Maximum General Plan lanes
97	South Watt Ave	Kiefer Blvd	Jackson Rd	6	Arterial M	70,440	1.30	**F**	6	Arterial M	1.30	**F**	Yes		Maximum General Plan lanes
100	South Watt Ave	Elder Creek Rd	Florin Rd	6	Arterial M	61,020	1.13	**F**	6	Arterial M	1.13	**F**	Yes		Maximum General Plan lanes
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	64,030	1.19	**F**	6	Arterial M	1.19	**F**	Yes		Maximum General Plan lanes
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	43,840	1.22	**F**	6	Arterial M	0.81	D	No		
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	4	Arterial M	34,190	0.95	**E**	6	Arterial M	0.63	B	No		
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	106,270	1.77	**F**	6	Arterial H	1.77	**F**	Yes		Maximum General Plan lanes
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial M	55,950	1.55	**F**	4	Expressway	1.04	C	No		
132	Kiefer Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	19,150	1.06	**F**	4	Arterial M	0.53	A	No		
135	Rancho Cordova Pkwy	White Rock Rd	International Dr	6	Arterial M	49,910	0.92	**E**	6	Arterial M	0.92	**E**	Yes		Maximum General Plan lanes
136	Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy	6	Arterial M	59,780	1.11	**F**	6	Arterial M	1.11	**F**	Yes		Maximum General Plan lanes

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Table 10.12
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Roadway Segment Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd	4	Arterial M	37,540	1.04	**F**	4	Arterial M	1.04	**F**	Yes		Maximum General Plan lanes
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	4	Arterial M	37,470	1.04	**F**	4	Arterial M	1.04	**F**	Yes		Maximum General Plan lanes
302	Kiefer Blvd	Happy Ln	Douglas Rd	6	Arterial M	62,910	1.17	**F**	6	Arterial M	1.17	**F**	Yes		Maximum General Plan lanes
304	Mayhew Rd	Routier Ext	Bradshaw Rd	4	Arterial M	39,790	1.11	**F**	6	Arterial M	0.74	C	No		
305	Mayhew Rd	Bradshaw Rd	Jackson Rd	4	Arterial M	47,420	1.32	**F**	6	Arterial M	0.88	D	No		
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd	3	Arterial M	42,630	2.37	**F**	4	Arterial M	1.18	F	No		
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road	2	Arterial M	19,410	1.08	**F**	4	Arterial M	0.54	A	No		
317	Routier Ext	Old Placerville Road	Happy Lane	4	Arterial H	41,580	1.04	**F**							Maximum General Plan lanes
405	Collector JT-3	Collector JT-5	Jackson Rd	2	Arterial M	20,320	1.13	**F**	4	Arterial M	0.56	A	No		

Note: Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, as proposed by the County of Sacramento.

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Table 10.13a

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Impacted Intersections and County Standard Mitigations

	Intersection	AM Peak Hour												
		CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed	CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	**F**	**91.7**	Signal	**-**	**-**	Yes	Signal	**F**	**84.6**	Signal	**-**	**-**	Yes
4	Power Inn Road & 14th Avenue	Signal	**F**	**157.9**	Signal	**F**	**116.0**	Yes	Signal	**F**	**116.5**	Signal	**F**	**104.9**	Yes
12	Watt Avenue & Folsom Blvd.	Signal	**F**	**180.3**	Signal	**-**	**-**	Yes	Signal	**F**	**203.6**	Signal	**-**	**-**	Yes
14	S. Watt Avenue & Kiefer Blvd.	Signal	**F**	**101.5**	Signal	**F**	**91.0**	Yes	Signal	E	75.9	Signal	E	68.1	No
16	S. Watt Avenue & Jackson Road	Signal	**F**	**234.0**	Signal	**F**	**147.2**	Yes	Signal	**F**	**191.8**	Signal	**F**	**125.7**	Yes
17	S. Watt Avenue & Fruitridge Road	Signal	**E**	**71.5**	Signal	D	39.2	No	Signal	**F**	**102.4**	Signal	D	54.0	No
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	**F**	**277.4**	Signal	**F**	**146.0**	No	Signal	**F**	**204.3**	Signal	**F**	**122.6**	No
23	Hedge Avenue & Jackson Road	Signal	**F**	**128.3**	Signal	D	48.1	No	Signal	D	40.4	Signal	B	19.8	No
25	Hedge Avenue & Elder Creek Road	Signal	**F**	**109.3**	Signal	**-**	**-**	Yes	Signal	**F**	**122.4**	Signal	**-**	**-**	Yes
28	Mayhew Road & Kiefer Boulevard	Signal	**F**	**97.5**	Signal	E	73.5	No	Signal	E	72.8	Signal	E	60.6	No
29	Mayhew Road & Jackson Road	Signal	**F**	**160.2**	Signal	E	69.7	No	Signal	**F**	**129.9**	Signal	E	77.9	No
31	Mayhew Road & Elder Creek Road	Signal	**F**	**>300**	Signal	E	79.8	No	Signal	**F**	**>300**	Signal	D	41.4	No
32	Woodring Drive & Zinfandel Drive	Two-way stop			Round	A	8.8	No	Two-way stop			Round	B	10.5	No
	Eastbound		***F***	***85.7***						***F***	***247.0***				
	Northbound Left Turn		*B*	*10.6*						*B*	*12.4*				
35	Bradshaw Road & US 50 EB Ramps	Signal	**E**	**56.8**	Signal	**-**	**-**	Yes	Signal	D	39.7	Signal	-	-	No
36	Bradshaw Road & Old Placerville Road	Signal	**F**	**103.0**	Signal	**F**	**101.3**	Yes	Signal	**F**	**84.8**	Signal	**E**	**77.2**	Yes
37	Bradshaw Road & Kiefer Boulevard	Signal	**F**	**146.6**	Signal	**F**	**119.8**	Yes	Signal	**F**	**140.2**	Signal	**F**	**116.4**	Yes

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Table 10.13a

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Impacted Intersections and County Standard Mitigations

	Intersection	AM Peak Hour													
		CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed	CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
38	Bradshaw Road & Jackson Road	Signal	**F**	**161.3**	Signal	**-**	**-**	No	Signal	**F**	**161.2**	Signal	**-**	**-**	Yes
39	Bradshaw Road & Elder Creek Road	Signal	**F**	**210.1**	Signal	**F**	**96.6**	No	Signal	**F**	**226.7**	Signal	D	67.9	No
42	Happy Lane & Old Placerville Road	Two-way stop			Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left-turns to Happy Lane. Construct 4-lane Routier extension.			No	Two-way stop			Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left-turns to Happy Lane. Construct 4-lane Routier extension.			No
	Northbound Left Turn		***F***	***>300***						***F***	***>300***				
	Northbound Right Turn		***F***	***243.1***						***F***	***61.9***				
	Westbound Left Turn		*C*	*22.5*						***E***	***42.4***				
43	Happy Lane & Kiefer Boulevard	Signal	**F**	**140.2**	Signal	**-**	**-**	Yes	Signal	E	70.8	Signal	**-**	**-**	No
45	Excelsior Road & Jackson Road	Signal	**F**	**>300**	Signal	**F**	**118.6**	Yes	Signal	**F**	**280.2**	Signal	**F**	**150.7**	Yes
46	Excelsior Road & Elder Creek Road	Signal	**F**	**88.7**	Signal	B	14.6	No	Signal	E	60.6		B	17.3	No
47	Excelsior Road & Florin Road	Signal	**F**	**109.4**	Signal	D	47.2	No	Signal	E	68.0	Signal	E	67.3	No
51	Mather Field Road & Rockingham Drive	Signal	**F**	**>300**	Signal	**-**	**-**	Yes	Signal	**F**	**169.0**	Signal	**-**	**-**	Yes
58	Zinfandel Drive & Douglas Road	Signal	**F**	**219.8**	Signal	E	61.9	No	Signal	**F**	**218.2**	Signal	E	68.4	No
61	Eagles Nest Road & Florin Road	Two-way stop			Signal	**F**	**142.4**	Yes	Two-way stop			Signal	**F**	**137.7**	Yes
	Northbound		***F***	***>300***						***F***	***>300***				
	Southbound		***F***	***>300***						***F***	***>300***				
	Eastbound Left Turn		*B*	*11*						*A*	*9.4*				
	Westbound Left Turn		*A*	*8*						*A*	*8.7*				
67	Sunrise Boulevard & Douglas Road	Signal	**F**	**192.2**	Signal	**-**	**-**	Yes	Signal	**F**	**107.9**	Signal	**-**	**-**	Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	**F**	**>300**	Signal	**F**	**118.3**	No	Signal	**F**	**259.2**	Signal	**E**	**71.1**	No
70	Sunrise Boulevard & Jackson Road	Signal	**F**	**90.3**	Signal	D	54.4	No	Signal	**E**	**78.3**	Signal	D	52.8	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	**F**	**127.9**	Signal	**-**	**-**	Yes	Signal	**E**	**71.0**	Signal	**-**	**-**	Yes

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Table 10.13a

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Impacted Intersections and County Standard Mitigations

	Intersection	AM Peak Hour													
		CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed	CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
80	Grant Line Road & Jackson Road	Signal	F	117.3	Signal	E	76.3	No	Signal	F	106.5	Signal	C	34.0	No
86	Power Inn Road & Florin Rd	Signal	F	116.1	Signal	E	60.5	No	Signal	E	72.5	Signal	D	46.2	No
87	Florin Perkins Road & Florin Rd	Signal	E	59.3	Signal	E	58.8	No	Signal	F	113.8	Signal	F	100.0	No
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	D	43.2	Signal	D	39.2	No	Signal	D	52.0	Signal	D	36.8	No
92	Grant Line Rd & Calvine Rd	Signal	D	36.5	Signal	B	11.3	No	Signal	C	27.4	Signal	A	9.3	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	F	83.4	Signal	E	59.7	No	Signal	F	97.4	Signal	F	82.2	Yes
95	Florin Perkins Road & 14th Avenue	Signal	E	65.6	Signal	-	-	Yes	Signal	D	45.3	Signal	-	-	No
96	Jackson Road & 14th Avenue	Signal	F	119.8	Signal	-	-	Yes	Signal	D	54.7	Signal	-	-	Yes
103	Rancho Cordova Pkwy & Douglas Road	Signal	E	57.9	Signal	-	-	No	Signal	E	77.2	Signal	-	-	Yes
303	Rock Creek Pkwy & Jackson Road	Signal	F	128.3	Signal	E	77.4	No	Signal	F	96.4	Signal	D	54.7	No
308	Hedge Avenue & Rock Creek Pkwy WB	Round	E	49.0	Round	B	13.8	No	Round	A	9.9	Round	B	13.4	No
310	Mayhew Road & Rock Creek Pkwy WB	Round	F	297.2	Round	-	-	Yes	Round	F	210.1	Round	-	-	Yes
311	Mayhew Road & Rock Creek Pkwy EB	Round	F	191.0	Round	-	-	Yes	Round	F	>300	Round	-	-	Yes
318	Bradshaw Road & Mayhew Road	Signal	F	163.9	Signal	F	120.2	Yes	Signal	F	128.4	Signal	F	103.6	Yes
319	Bradshaw Road & Collector WJ-10	Signal	F	190.9	Signal	D	44.6	No	Signal	C	28.5	Signal	C	20.5	No
325	Douglas Road & Kiefer Boulevard	Signal	F	162.1	Signal	F	125.9	Yes	Signal	F	103.1	Signal	F	95.7	Yes
329	Routier Ext & Kiefer Boulevard	Signal	F	88.4	Signal	-	-	Yes	Signal	E	71.4	Signal	-	-	Yes

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Table 10.13a

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Impacted Intersections and County Standard Mitigations

	Intersection	AM Peak Hour													
		CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed	CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	**F**	**168.4**	Signal	**F**	**130.5**	Yes	Signal	**F**	**118.4**	Signal	**F**	**110.8**	Yes
400	Collector JT-3 & Jackson Road	Signal	**F**	**83.6**	Signal	D	47.3	No	Signal	D	48.2	Signal	C	20.7	No

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

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Table 10.13b

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) County Standard and Ultimate Mitigations

	Intersection	AM Peak Hour											
		County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS		
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	**F**	**91.7**	-	-	-	Signal	**F**	**84.6**	-	-	-
4	Power Inn Road & 14th Avenue	Signal	**F**	**116.0**	-	-	-	Signal	**F**	**104.9**	-	-	-
12	Watt Avenue & Folsom Blvd.	Signal	**F**	**180.3**	Signal	D	40.6	Signal	**F**	**203.6**	Signal	D	41.7
14	S. Watt Avenue & Kiefer Blvd.	Signal	**F**	**91.0**	Signal	SB Ramps A NB Ramps A	SB Ramps 6.5 NB Ramps 4.8	Signal	E	68.1	Signal	SB Ramps B NB Ramps A	SB Ramps 13.9 NB Ramps 5.1
16	S. Watt Avenue & Jackson Road	Signal	**F**	**147.2**	-	-	-	Signal	**F**	**125.7**	-	-	-
25	Hedge Avenue & Elder Creek Road	Signal	**F**	**109.3**	Signal	E	61.0	Signal	**F**	**122.4**	Signal	E	74.3
35	Bradshaw Road & US 50 EB Ramps	Signal	**E**	**56.8**	-	-	-	Signal	D	39.7	-	-	-
36	Bradshaw Road & Old Placerville Road	Signal	**F**	**101.3**	-	-	-	Signal	E	77.2	-	-	-
37	Bradshaw Road & Kiefer Boulevard	Signal	**F**	**119.8**	-	-	-	Signal	**F**	**116.4**	-	-	-
38	Bradshaw Road & Jackson Road	Signal	**F**	**161.3**	Grade Separate			Signal	**F**	**161.2**	Grade Separate		
42	Happy Lane & Old Placerville Road	Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left-turns to Happy Lane. Alternative mitigation is to construct the 4-lane Routier extension from Old Placerville Rd to Kiefer Blvd..											
43	Happy Lane & Kiefer Boulevard	Signal	**F**	**140.2**	Signal	C	26.5	Signal	E	70.8	Signal	B	19.7
45	Excelsior Road & Jackson Road	Signal	**F**	**118.6**	-	-	-	Signal	**F**	**150.7**	-	-	-

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Table 10.13b

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) County Standard and Ultimate Mitigations

	Intersection	AM Peak Hour											
		County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS		
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
51	Mather Field Road & Rockingham Drive	Signal	F	>300	-	-	-	Signal	F	169.0	-	-	-
61	Eagles Nest Road & Florin Road	Signal	F	142.4	Signal	D	50.4	Signal	F	137.7	Signal	D	45.5
67	Sunrise Boulevard & Douglas Road	Signal	F	192.2	-	-	-	Signal	F	107.9	-	-	-
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	F	127.9	Signal	**E**	**68.0**	Signal	E	71.0	Signal	C	27.3
93	Grant Line Rd & Dwy/Wilton Rd	Signal	E	59.7	Signal	C	22.0	Signal	F	82.2	Signal	C	28.6
95	Florin Perkins Road & 14th Avenue	Signal	E	65.6	-	-	-	Signal	**D**	**45.3**	-	-	-
96	Jackson Road & 14th Avenue	Signal	F	119.8	-	-	-	Signal	D	54.7	-	-	-
103	Rancho Cordova Pkwy & Douglas Road	Signal	E	57.9	Signal	D	39.0	Signal	E	77.2	Signal	**E**	**62.7**
310	Mayhew Road & Rock Creek Pkwy WB	Round	F	297.2	Signal	E	78.6	Round	F	210.1	Signal	D	40.5
311	Mayhew Road & Rock Creek Pkwy EB	Round	F	191.0				Round	F	>300			
318	Bradshaw Road & Mayhew Road	Signal	F	120.2	Signal	E	78.3	Signal	F	103.6	Signal	E	68.6
325	Douglas Road & Kiefer Boulevard	Signal	F	125.9	-	-	-	Signal	F	95.7	-	-	-
329	Routier Ext & Kiefer Boulevard	Signal	F	88.4	Signal	D	48.6	Signal	E	71.4	Signal	E	59.4
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	F	130.5	Signal	D	53.6	Signal	F	110.8	Signal	D	35.0

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 10.14a

Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Impacts and Mitigations

	Intersection	Traffic Control		Super Cumulative Plus FOUR PROJECTS Lane Geometrics				County Standard Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?
		Super Cumulative Plus FOUR PROJECTS	Mitigated Super Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
3	Power Inn Road/Howe Avenue & Folsom Blvd.	Signal	Signal	2nd, 3T, R	2nd, 3T, 2L	2nd, T, 2R	2nd, 3T, 2R	2nd, 3T, R	2nd, 3T, 2L	2nd, T, 2R	2nd, 3T, 2R	Yes
4	Power Inn Road & 14th Avenue	Signal	Signal	2nd, 2T	2nd, 3T, L	2nd, T	2nd, T, R	2nd, 2T	2nd, 3T, L	2nd, T	2nd, T, 2R	Yes
12	S. Watt Ave./Watt Avenue & Folsom Blvd.	Signal	Signal	2nd, 3T, R	2nd, 3T, 2L	2nd, 3T, R	2nd, 3T, R	2nd, 3T, R	2nd, 3T, 2L	2nd, 3T, R	2nd, 3T, R	Yes
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal	2nd, 2T, R	4th, 3T, 2L	2nd, 3T, R	2nd, 3T, R	2nd, 3T, R	2nd, 3T, 2L	2nd, 3T, R	2nd, 3T, R	Yes
16	S. Watt Avenue & Jackson Road	Signal	Signal	2nd, 4T, R	2nd, 3T, 2L	2nd, 3T, R	2nd, 3T, R	2nd, 4T, R	2nd, 3T, 2L	2nd, 4T, R	2nd, 4T, R	Yes
17	S. Watt Avenue & Fruitridge Road	Signal	Signal	2nd, 3T, R	2nd, 3T, L	2nd, T, R	2nd, 3T, R	2nd, 4T, R	2nd, 3T, 2L	2nd, 3T, R	2nd, 3T, R	No
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal	2nd, 4T, R	2nd, 3T, 2L	2nd, 3T, R	2nd, 3T, R	2nd, 4T, R	2nd, 3T, 2L	2nd, 4T, R	2nd, 4T, R	No
23	Hedge Avenue & Jackson Road	Signal	Signal	2nd, T, R	4th, 2L	2nd, 3T, R	2nd, 3T, R	2nd, T, R	2nd, L	2nd, 3T, 2R	2nd, 3T, 2R	No
25	Hedge Avenue & Elder Creek Road	Signal	Signal	2nd, T, R	2nd, L	2nd, T, 2R	2nd, T, 2R	2nd, T, R	2nd, L	2nd, T, 2R	2nd, T, 2R	Yes
28	Mayhew Road & Kiefer Boulevard	Signal	Signal	2nd, T, R	2nd, L	2nd, T, 2R	2nd, T, 2R	2nd, T, R	2nd, L	2nd, T, 2R	2nd, 3T, R	No
29	Mayhew Road & Jackson Road	Signal	Signal	2nd, 3T, R	2nd, 3T, 2L	2nd, 4T, R	2nd, 4T, R	2nd, 4T, R	2nd, 3T, 2L	2nd, 4T, R	2nd, 4T, R	No
31	Waterman Road/Mayhew Road & Elder Creek Road	Signal	Signal	2nd, 3T, R	2nd, 2L	2nd, T, 2R	2nd, T, 2R	2nd, 3T, R	2nd, 3T, 2L	2nd, 4T, R	2nd, 4T, R	No
32	Woodring Drive & Zinfandel Drive	Two-way stop	Roundabout	2nd, T, R	4th, 2L	1st		1st, T	4th, 2L	1st		No
35	Bradshaw Road & US 50 Eastbound Ramps	Signal	Signal	T, 3T, R	2nd, 3T, L	2nd, 2R		T, 3T, R	2nd, 3T, L	2nd, 2R		Yes
36	Bradshaw Road & Old Placerville Road	Signal	Signal	2nd, T, 3T, R	4th, 3T, 2L	2nd, 2T	2nd, T, R	2nd, T, 3T, R	4th, 3T, 2L	2nd, T, R	2nd, 2T, R	Yes
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal	2nd, 3T, 2T, R	2nd, 3T, 2L	2nd, 3T, R	2nd, 3T, R	2nd, 3T, 2T, R	2nd, 3T, 2L	2nd, 3T, 2T, R	2nd, 3T, 2T, R	Yes
38	Jackson Road & Bradshaw Road	Signal	Signal	2nd, 3T, 2T, R	2nd, 3T, 2L	2nd, 3T, 2T, R	2nd, 3T, 2T, R	2nd, 3T, 2T, R	2nd, 3T, 2L	2nd, 3T, 2T, R	2nd, 3T, 2T, R	Yes
39	Bradshaw Road & Elder Creek Road	Signal	Signal	2nd, T, 2R	2nd, 3T, 2L	2nd, 2T, R	2nd, T, 2R	2nd, 3T, 2T, R	2nd, 3T, 2L	2nd, 3T, 2T, R	2nd, 3T, 2T, R	No
42	Happy Lane & Old Placerville Road	Two-way stop	Access Control	2nd, R		1st, 2R	2nd, T, T	Happy Lane to become right-in and right-out only. Median will allow westbound left turns.				No

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 10.14a

Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Impacts and Mitigations

	Intersection	Traffic Control		Super Cumulative Plus FOUR PROJECTS Lane Geometrics				County Standard Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?
		Super Cumulative Plus FOUR PROJECTS	Mitigated Super Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
43	Kiefer Boulevard & Happy Ln	Signal	Signal									No
45	Excelsior Road & Jackson Road	Signal	Signal									Yes
46	Excelsior Road & Elder Creek Road	Signal	Signal									No
47	Excelsior Road & Florin Road	Signal	Signal									No
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes
58	Zinfandel Drive & Douglas Road	Signal	Signal									No
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									Yes
67	Sunrise Boulevard & Douglas Road	Signal	Signal									Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									No
70	Jackson Road & Sunrise Boulevard	Signal	Signal									No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Rd/Grant	Signal	Signal									Yes
80	Grant Line Road & Jackson Road	Signal	Signal									No
86	Power Inn Road & Florin Rd	Signal	Signal									No
87	Florin Perkins Road & Florin Rd	Signal	Signal									
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	Signal									No
92	Grant Line Rd & Calvine Rd	Signal	Signal									No
93	Grant Line Rd & Driveway/Wilton Rd	Signal	Signal									Yes
95	Florin Perkins Road & 14th Avenue	Signal	Signal									Yes
96	14th Avenue & Jackson Road	Signal	Signal									Yes

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 10.14a

Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Impacts and Mitigations

Intersection		Traffic Control		Super Cumulative Plus FOUR PROJECTS Lane Geometrics				County Standard Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?
		Super Cumulative Plus FOUR PROJECTS	Mitigated Super Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
103	Rancho Cordova Pkwy & Douglas Road	Signal	Signal	↰↰↑↑↱	↲↓↓↳↳	↰↰↑↑↑↱	↰↰↑↑↑↱	↰↰↑↑↱	↲↓↓↳↳	↰↰↑↑↑↱	↰↰↑↑↑↱	Yes
303	Vineyard Road & Jackson Road	Signal	Signal	↰↰↑↱	↲↓↳	↰↰↑↑↑↱	↰↰↑↑↑↱	↰↰↑↑↱	↲↓↓↳↳	↰↰↑↑↑↱	↰↰↑↑↑↱	No
308	Hedge Avenue & Rock Creek Pkwy Westbound	Roundabout	Roundabout	↰	↱		↱	↰	↱		↱↱	No
310	Mayhew Road & Rock Creek Pkwy Westbound	Roundabout	Signal	↰↑	↱↓		↱	↰↑↑↱	↱↓↓↳	↰↑↱	↰↑↱	Yes
311	Mayhew Road & Rock Creek Pkwy Eastbound	Roundabout		↑↱	↓↱	↱						Yes
318	Bradshaw Road & Mayhew Road	Signal	Signal	↰↰↑↑↑↱	↲↓↓↓↳↳	↰↰↑↑↱	↰↰↑↑↱	↰↰↑↑↑↱	↲↲↓↓↓↳↳	↰↰↑↑↑↱	↰↰↑↑↑↱	Yes
319	Bradshaw Road & Collector WJ-10	Signal	Signal	↑↑↱	↓↓↓↳		↰↱	↑↑↑↱	↓↓↓↳↳		↰↰↱	No
325	Douglas Road Extension & Kiefer Boulevard	Signal	Signal	↰↰↑↑↱	↲↓↓↳↳	↰↰↑↑↑↱	↰↰↑↑↱	↰↰↑↑↱	↲↓↓↳↳	↰↰↑↑↑↱	↰↰↑↑↑↱	Yes
329	Routier Ext & Kiefer Boulevard	Signal	Signal	↰↰↑↑↱	↲↓↓↳↳	↰↰↑↑↑↱	↰↰↑↑↑↱	↰↰↑↑↱	↲↓↓↳↳	↰↰↑↑↑↱	↰↰↑↑↑↱	Yes
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	Signal	↰↑↑↱	↲↓↓↳↳	↰↑↑↱	↰↰↑↱	↰↰↑↑↱	↲↓↓↳↳	↰↰↑↑↑↱	↰↰↑↑↑↱	Yes
400	Collector JT-3 & Jackson Road	Signal	Signal		↲↳	↰↰↑↑	↑↑↱		↲↲↳	↰↰↑↑↑	↑↑↱	No

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 10.14b

Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Impacts and Mitigations

	Intersection	Traffic Control		County Standard Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Ultimate Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		Super Cumulative Plus FOUR PROJECTS	Mitigated Super Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
3	Power Inn Road/Howe Avenue & Folsom Blvd.	Signal	Signal									Yes	No		Existing development
4	Power Inn Road & 14th Avenue	Signal	Signal									Yes	No		Existing development
12	S. Watt Ave./Watt Avenue & Folsom Blvd.	Signal	Signal									No	Yes	Grade separated NBT and SBT	
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal									No	Yes	Tight Diamond Interchange (SB Watt Ramps/Kiefer intersection shown)	
			Signal											Tight Diamond Interchange (NB Watt Ramps/Kiefer intersection shown)	
16	S. Watt Avenue & Jackson Road	Signal	Signal									Yes	Yes	Triple NBL, Free WBR and SBL via tunnel	Maximum General Plan Lanes
25	Hedge Avenue & Elder Creek Road	Signal	Signal									No	No	Dual NBL, Dual SBL	
35	Bradshaw Road & US 50 Eastbound Ramps	Signal	Signal									Yes	No		Maximum General Plan Lanes
36	Bradshaw Road & Old Placerville Road	Signal	Signal									Yes	No		Existing development
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal									Yes	No	Carry 3 EBT and 3 WBT lanes through intersection	Maximum General Plan Lanes
38	Jackson Road & Bradshaw Road	Signal	Signal					Grade Separate				No	No		
42	Happy Lane & Old Placerville Road	Access Control	Access Control	Happy Lane to become right-in and right-out only. Median will allow westbound left turns.								Yes	No	Construct 4-lane Route extension from Old Placerville Rd to Kiefer Blvd	Maximum General Plan Lanes
43	Kiefer Boulevard & Happy Ln	Signal	Signal									No	No		Maximum lanes
45	Excelsior Road & Jackson Road	Signal	Signal									Yes	No	NBR overlap	Maximum General Plan Lanes
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes	No		Existing development
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Signal	Signal									No	No		
67	Sunrise Boulevard & Douglas Road	Signal	Signal									Yes	No		Maximum General Plan Lanes
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Rd/Grant	Signal	Signal									No	No		
93	Grant Line Rd & Driveway/Wilton Rd	Signal	Signal									No	No	Dual SBL, Dual WBL, Dual WBR	

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 10.14b

Super Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Impacts and Mitigations

	Intersection	Traffic Control		County Standard Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Ultimate Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		Super Cumulative Plus FOUR PROJECTS	Mitigated Super Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
95	Florin Perkins Road & 14th Avenue	Signal	Signal									Yes	No		Maximum lanes
96	14th Avenue & Jackson Road	Signal	Signal									Yes	No		Maximum lanes
103	Rancho Cordova Pkwy & Douglas Road	Signal	Signal									No	No	WBR Overlap	Maximum General Plan lanes
310	Mayhew Road & Rock Creek Pkwy Westbound	Roundabout	Signal									No	No		
311	Mayhew Road & Rock Creek Pkwy Eastbound	Roundabout										No	No		
318	Bradshaw Road & Mayhew Road	Signal	Signal									No	No	HCI, Triple EBL and dual SBR	Maximum General Plan lanes
325	Douglas Road Extension & Kiefer Boulevard	Signal	Signal									Yes	No		Maximum lanes
329	Routier Ext & Kiefer Boulevard	Signal	Signal									No	No		
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	Signal									No	No	NBR overlap	

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

10.5.4 CEQA Cumulative Plus FOUR PROJECTS Pedestrian and Bicycle Facility Mitigation

The FOUR PROJECTS applicants shall coordinate with Sacramento County to identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development. These facilities shall be incorporated into the FOUR PROJECTS and could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, pedestrian signal heads, and all appropriate traffic calming measures as defined in the County's Neighborhood Traffic Management Program (NTMP). Sidewalks would be required as part of the frontage improvements along all new roadway construction in the FOUR PROJECTS vicinity in conformance with County design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards.

10.5.5 CEQA Cumulative Plus FOUR PROJECTS Transit System Mitigation

The applicants of the FOUR PROJECTS shall coordinate with Regional Transit (or other transit operators) to provide the additional transit facilities and services assumed in transportation analysis (see Section 8.1.2.3), or a cost-effective equivalent level of transit facilities and services.

The assumed transit routes and service frequency would be required at full development of the FOUR PROJECTS. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the FOUR PROJECTS, must be phased with development of the FOUR PROJECTS.

10.5.6 CEQA Cumulative Plus FOUR PROJECTS Functionality Mitigation

Table 10.15 summarizes the results of the functionality analysis for the study area rural roadway segments with mitigation.

10.5.7 CEQA Cumulative Plus FOUR PROJECTS Mitigation Summary

Tables 10.16 through 10.21 summarize the roadway segments, intersections, and freeway facilities that would exhibit significant LOS impacts, along with the mitigation success for these impacts.

Table 10.15
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Functionality Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		
15	Douglas Rd	Mather Blvd	Zinfandel Dr	4	Arterial M	34,000	Yes[3]	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,410	Yes[3]	Widen to County standards [5]	No
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	4	Arterial M	13,170	Yes[3]	Widen to County standards [5]	No
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Arterial M	9,180	Yes	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	48,190	Yes[3]	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	4	Arterial M	33,950	Yes[3]	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,630	Yes[3]	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	3	Arterial M	33,740	Yes[3]	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	27,590	Yes	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	3	Arterial M	37,130	Yes[3]	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	3	Arterial M	12,510	Yes[3]	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	12,810	Yes	Widen to County standards [5]	No
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Arterial M	8,160	Yes	Widen to County standards [5]	No
39	Florin Rd	South Watt Ave	Hedge Ave	4	Arterial M	14,880	Yes[3]	Widen to County standards [5]	No
40	Florin Rd	Hedge Ave	Mayhew Rd	4	Arterial M	17,360	Yes[3]	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	23,450	Yes[3]	Widen to County standards [5]	No
42	Florin Rd	Bradshaw Rd	Excelsior Rd	4	Arterial M	25,600	Yes[3]	Widen to County standards [5]	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	17,620	Yes	Widen to County standards [5]	No
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave	3	Arterial M	20,600	Yes[3]	Widen to County standards [5]	No
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	4	Arterial M	17,810	Yes[3]	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	4	Arterial M	41,060	Yes[3]	Widen to County standards [5]	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	4	Arterial M	13,720	Yes[3]	Widen to County standards [5]	No
59	Hedge Ave	Jackson Rd	Fruitridge Rd	2	Arterial M	9,920	Yes	Widen to County standards [5]	No
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	6,870	Yes	Widen to County standards [5]	No
61	Hedge Ave	Elder Creek Rd	Florin Rd	2	Arterial M	21,920	Yes	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	6	Arterial M	59,220	Yes[3]	Widen to County standards [5]	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	Arterial M	62,440	Yes[3]	Widen to County standards [5]	No

Red text with light gray shading indicate project impacts.

Table 10.15
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Functionality Mitigations

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	6	Arterial M	51,510	Yes[3]	Widen to County standards [5]	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	3	Arterial M	39,640	Yes[3]	Widen to County standards [5]	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	4	Arterial M	53,200	Yes[3]	Widen to County standards [5]	No
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	4	Arterial M	55,990	Yes[3]	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	4	Arterial M	22,240	Yes[3]	Widen to County standards [5]	No

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

Table 10.16
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Summary of Impacted Roadway Segr

ID	Roadway	Segment	
		From	To
Level of Service Impact Fully Mitigated by General Plan Lanes			
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd
41	Florin Rd	Mayhew Rd	Bradshaw Rd
42.2	Florin Rd	Vineyard Rd	Excelsior Rd
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave
48	Fruitridge Rd	South Watt Ave	Hedge Ave
51.1	Grant Line Rd	Douglas Rd	Chrysanthy Blvd
51.2	Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd
56	Grant Line Rd	Sheldon Rd	Wilton Rd
57	Grant Line Rd	Wilton Rd	Bond Rd
58.2	Happy Lane	Routier Ext	Kiefer Boulevard
71.2	Jackson Rd	Collector JT-3	Tree View Ln
71.3	Jackson Rd	Tree View Ln	Collector JT-4
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd
73	Jackson Rd	Sunrise Blvd	Grant Line Rd
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd
117	White Rock Rd	Grant Line Rd	Prairie City Rd
132	Kiefer Blvd	Americanos Blvd	Grant Line Rd
304	Mayhew Rd	Routier Ext	Bradshaw Rd
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road
405	Collector JT-3	Collector JT-5	Jackson Rd
Level of Service Impact Not Fully Mitigated by General Plan Lanes			
2	Bradshaw Rd	US 50	Lincoln Village Dr
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8

Note: Refer to Table 6.12 for detailed description of impacts and mitigations.

Table 10.16
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Summary of Impacted Roadway Segr

ID	Roadway	Segment	
		From	To
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd
44	Folsom Blvd	Howe Ave	Jackson Rd
62	Howe Ave	US 50	Folsom Blvd
66.1	Jackson Rd	Florin Perkins Rd	14th Ave
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave
67	Jackson Rd	South Watt Ave	Hedge Ave
68.1	Jackson Rd	Hedge Ave	Collector WJ-3
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd
69	Jackson Rd	Mayhew Rd	Bradshaw Rd
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4
70.2	Jackson Rd	Collector WJ-4	Happy Ln
71.1	Jackson Rd	Excelsior Rd	Collector JT-3
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd
93	Old Placerville Rd	Routier Rd	Rockingham Dr
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd
96	South Watt Ave	Folsom Blvd	Kiefer Blvd
97	South Watt Ave	Kiefer Blvd	Jackson Rd
100	South Watt Ave	Elder Creek Rd	Florin Rd
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd
110	Watt Ave	US 50	Folsom Blvd
135	Rancho Cordova Pkwy	White Rock Rd	International Dr
136	Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd
302	Kiefer Blvd	Happy Ln	Douglas Rd
305	Mayhew Rd	Bradshaw Rd	Jackson Rd
317	Routier Ext	Old Placerville Road	Happy Lane

Note: Refer to Table 6.12 for detailed description of impacts and mitigations.

Table 10.17

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
Level of Service Impact Fully Mitigated by General Plan Lanes		
17	S. Watt Avenue & Fruitridge Road	
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	
23	Hedge Avenue & Jackson Road	
28	Mayhew Road & Kiefer Boulevard	
29	Mayhew Road & Jackson Road	
31	Mayhew Road & Elder Creek Road	
32	Woodring Drive & Zinfandel Drive	
39	Bradshaw Road & Elder Creek Road	
46	Excelsior Road & Elder Creek Road	
47	Excelsior Road & Florin Road	
58	Zinfandel Drive & Douglas Road	
69	Sunrise Boulevard & Kiefer Boulevard	
70	Sunrise Boulevard & Jackson Road	
80	Grant Line Road & Jackson Road	
86	Power Inn Road & Florin Rd	
87	Florin Perkins Road & Florin Rd	
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	
92	Grant Line Rd & Calvine Rd	
303	Happy Lane & Jackson Road	

Table 10.17

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
308	Hedge Avenue & Rock Creek Pkwy WB	
319	Bradshaw Road & Collector WJ-10	
400	Collector JT-3 & Jackson Road	
	Level of Service Impact Not Fully Mitigated by General Plan Lanes But Designated High Capacity Intersection	
12	Watt Avenue & Folsom Blvd.	**
14	S. Watt Avenue & Kiefer Blvd.	**
16	S. Watt Avenue & Jackson Road	
	Level of Service Impact Not Fully Mitigated by General Plan Lanes	
3	Power Inn Road/Howe Avenue & Folsom Blvd	
4	Power Inn Road & 14th Avenue	
25	Hedge Avenue & Elder Creek Road	**
35	Bradshaw Road & US 50 EB Ramps	
36	Bradshaw Road & Old Placerville Road	
37	Bradshaw Road & Kiefer Boulevard	
38	Bradshaw Road & Jackson Road	**
42	Happy Lane & Old Placerville Road	**
43	Happy Lane & Kiefer Boulevard	**
45	Excelsior Road & Jackson Road	
51	Mather Field Road & Rockingham Drive	

Table 10.17

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Summary of Impacted Intersections

	Intersection	Alternative Mitigation
61	Eagles Nest Road & Florin Road	**
67	Sunrise Boulevard & Douglas Road	
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	**
93	Grant Line Rd & Dwy/Wilton Rd	**
95	Florin Perkins Road & 14th Avenue	
96	Jackson Road & 14th Avenue	
103	Rancho Cordova Pkwy & Douglas Road	**
310	Douglas Road & Rock Creek Pkwy	**
311	Bradshaw Road & Collector WJ-8	**
318	Bradshaw Road & Mayhew Road	**
325	Douglas Road & Kiefer Boulevard	
329	Routier Ext & Kiefer Boulevard	**
331	Routier Ext/Routier Rd & Old Placerville Road	**

[1] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding designated high capacity intersections, as proposed by the County of Sacramento.

* denotes alternative mitigations that improve operations but do not fully mitigate the impact.
** denotes alternative mitigations that fully mitigate the impact.

Table 10.18

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project)
Summary of Impacted Freeway Basic Segments

Direction	Location
Level of Service Impact Not Mitigated	
Eastbound US-50	Stockton Boulevard to 59th Street

Source: *DKS Associates, 2018.*

Table 10.19

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project)
Summary of Impacted Freeway Merge/Diverge/Weave Segments

Direction	Location	Junction Type
Level of Service Impact Not Mitigated		
Westbound US-50	Southbound Hazel Avenue Slip Entrance	Weave
	Rancho Cordova Parkway Exit	

Source: *DKS Associates, 2018.*

Table 10.20

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project)
Summary of Impacted Freeway Ramp Termini

Direction	US 50 Exit Ramp
Queuing Impact Not Mitigated	
Eastbound US-50	Howe Avenue
	Zinfandel Drive
Westbound US-50	Rancho Cordova Parkway

Source: *DKS Associates, 2018.*

Table 10.21
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Functionality Impact Summary

ID	Roadway	Segment	
		From	To
Functionality Impact Fully Mitigated			
15	Douglas Rd	Mather Blvd	Zinfandel Dr
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd
20	Eagles Nest Rd	Jackson Rd	Florin Rd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd
30	Excelsior Rd	Kiefer Blvd	Jackson Rd
31	Excelsior Rd	Jackson Rd	Elder Creek Rd
32	Excelsior Rd	Elder Creek Rd	Florin Rd
33	Excelsior Rd	Florin Rd	Gerber Rd
34	Excelsior Rd	Gerber Rd	Calvine Rd
39	Florin Rd	South Watt Ave	Hedge Ave
40	Florin Rd	Hedge Ave	Mayhew Rd
41	Florin Rd	Mayhew Rd	Bradshaw Rd
42	Florin Rd	Bradshaw Rd	Excelsior Rd
43	Florin Rd	Excelsior Rd	Sunrise Blvd
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave
49	Fruitridge Rd	Hedge Ave	Mayhew Rd
50	Grant Line Rd	White Rock Rd	Douglas Rd
58	Happy Ln	Old Placerville Rd	Kiefer Blvd
59	Hedge Ave	Jackson Rd	Fruitridge Rd
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd
61	Hedge Ave	Elder Creek Rd	Florin Rd
70	Jackson Rd	Bradshaw Rd	Excelsior Rd

Table 10.21
CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Functionality Impact Summary

ID	Roadway	Segment	
		From	To
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd
77	Kiefer Blvd	Bradshaw Rd	Happy Ln
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd
89	Mayhew Rd	Jackson Rd	Fruitridge Rd
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd

11. CEQA CUMULATIVE PLUS JACKSON TOWNSHIP (PROPOSED PROJECT) SCENARIO

11.1 JACKSON TOWNSHIP PROJECT DESCRIPTION AND METHODOLOGY

11.1.1 Project Description

As illustrated previously in Figure 1.1, the Jackson Township project is located in unincorporated Sacramento County, generally east of the City of Sacramento and south of the City of Rancho Cordova and Mather Airport. It is bounded on the south by Jackson Road (SR 16) and on the west by Excelsior Road. The north boundary is near the future Kiefer Boulevard, while the east boundary is west of Eagles Nest Road.

11.1.2 Methodology

The analysis of the CEQA Cumulative Plus Jackson Township Project scenario is based upon the analysis of the CEQA Cumulative Plus FOUR PROJECTS scenario discussed in Section 6. The travel model was utilized to estimate the portion of the FOUR PROJECTS traffic that is associated with the Jackson Township project. With this information, it was possible to identify whether the Jackson Township project, on its own, would trigger significant impacts. It should be noted that, even at locations where the Jackson Township project on its own would not trigger a significant impact, the Jackson Township project contributes to the cumulative impacts associated with the CEQA Cumulative Plus FOUR PROJECTS scenario.

11.1.1 CEQA Cumulative Land Use

Section 10.1.1 discusses land use associated with CEQA Cumulative conditions.

11.1.2 Transportation Network

Section 10.1.2 discusses the transportation network associated with the CEQA Cumulative conditions, including the transportation network improvements associated with the FOUR PROJECTS.

11.1.3 Jackson Township Project Trip Generation

The trip generation of the Jackson Township project was estimated by the SACSIM model, which has been utilized to prepare transportation forecasts for this analysis. **Table 11.1** summarizes the person trip generation. The Jackson Township project would generate over 24,000 daily work person trip ends, and over 192,000 daily person trip ends for all trip purposes.

The total trip generation of the Jackson Township project is somewhat higher under the CEQA Cumulative scenario than with existing conditions. The SACSIM model will vary the trips generated by retail and service uses depending on the amount of development that is near those uses. This result is expected as commercial development with much housing and/or employment

nearby will be more successful (and generate more trips) than the same commercial development located in an area with less nearby population.

Table 11.1: Estimated Daily Person Trip Generation (CEQA Cumulative Plus FOUR PROJECTS Proposed Project Scenario)

Jackson Township Specific Plan

Project	Trip Purpose	Daily Person Trip Ends
Jackson Township	Work Trips	24,001
	Non-Work Trips	168,919
	All Trip Purposes	192,920

Source: *DKS Associates, 2018.*

Table 11.2 summarizes the estimated mode choice for the Jackson Township Project. Over 84 percent of all person trips are expected to be accommodated by automobile. Transit will serve about 2.4 percent of all trips, while walk and bike modes will accommodate about 12.9 percent of all trips.

Table 11.3 summarizes the vehicular (auto) trip generation of the Jackson Township project. The Jackson Township project is estimated to generate over 118,000 daily vehicle trip ends. About 24,400 of the daily vehicle trip ends will be associated with trips with both an origin and destination within the Jackson Township project, about 20 percent of the trip ends. Those internal trip ends represent about 12,200 daily vehicle trips (one-half the number of internal trip ends). The Jackson Township project will generate about 94,000 external vehicle trips that have an origin or destination inside the Jackson Township project but the other end of the trip is outside the Jackson Township project. Table 11.3 also shows the vehicle trips generated during the a.m. and p.m. peak hours.

11.1.4 Jackson Township Project Trip Distribution

The distribution of trips associated with development on the Jackson Township project site was derived utilizing SACSIM, incorporating the proposed land use and access locations associated with the Jackson Township project site. Trip distribution varies by land use and time period. **Figure 11.1** illustrates the overall trip distribution of daily Jackson Township project trips with the CEQA Cumulative scenario.

11.2 OPERATIONS ANALYSIS AND IMPACTS

11.2.1 CEQA Cumulative Plus Jackson Township Project Roadway Segment Impacts

Table 11.4 summarizes the results of the operations analysis for the study area roadway segments. Only those segments where an impact would be triggered by the Jackson Township project are shown. The table includes the number of lanes assumed with the implementation of

the FOUR PROJECTS. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate new roadways or widened roadways. The last column of the table shows the project(s) responsible for the increase in the number of roadway lanes. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact.

11.2.2 CEQA Cumulative Plus Jackson Township Project Intersection Impacts

Table 11.5 and 11.6 summarize the results of the operations analysis for the study area intersections. Only those intersections where an impact would be triggered by the Jackson Township project are shown. The tables include the implementation of intersection changes associated with the FOUR PROJECTS. Table 11.6 illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type would be fully funded by the project(s) shown in the last column. Shaded table cells in Table 11.5 illustrate those locations with an LOS impact. Detailed analysis information is included in the technical appendix.

Signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. The project is considered to have a significant impact at an unsignalized location if both the impact criteria in Table 1.6 are met, and one or more of the signal warrants specified in the California Manual on Uniform Traffic Control Devices (CAMUTCD) are met. The following unsignalized intersections exhibit significant impacts and meet one or more traffic signal warrants:

- Eagles Nest Road and Florin Road

Table 11.2: Mode Split (CEQA Cumulative Plus FOUR PROJECTS Prop. Proj. Scenario)

Jackson Township Specific Plan

Project	Mode	Percentage of Person Trips by Trip Purpose		
		Work Trips	Non-Work Trips	All Trip Purposes
Jackson Township	Auto - SOV	81.0%	40.1%	45.2%
	Auto - HOV	9.4%	43.8%	39.5%
	Transit	5.8%	1.9%	2.4%
	Walk	2.6%	12.9%	11.7%
	Bike	1.1%	1.3%	1.2%

Source: *DKS Associates, 2018.*

Table 11.3: Estimated Daily Vehicle Trip Generation (CEQA CUMULATIVE Plus FOUR PROJECTS Prop. Proj. Scenario)

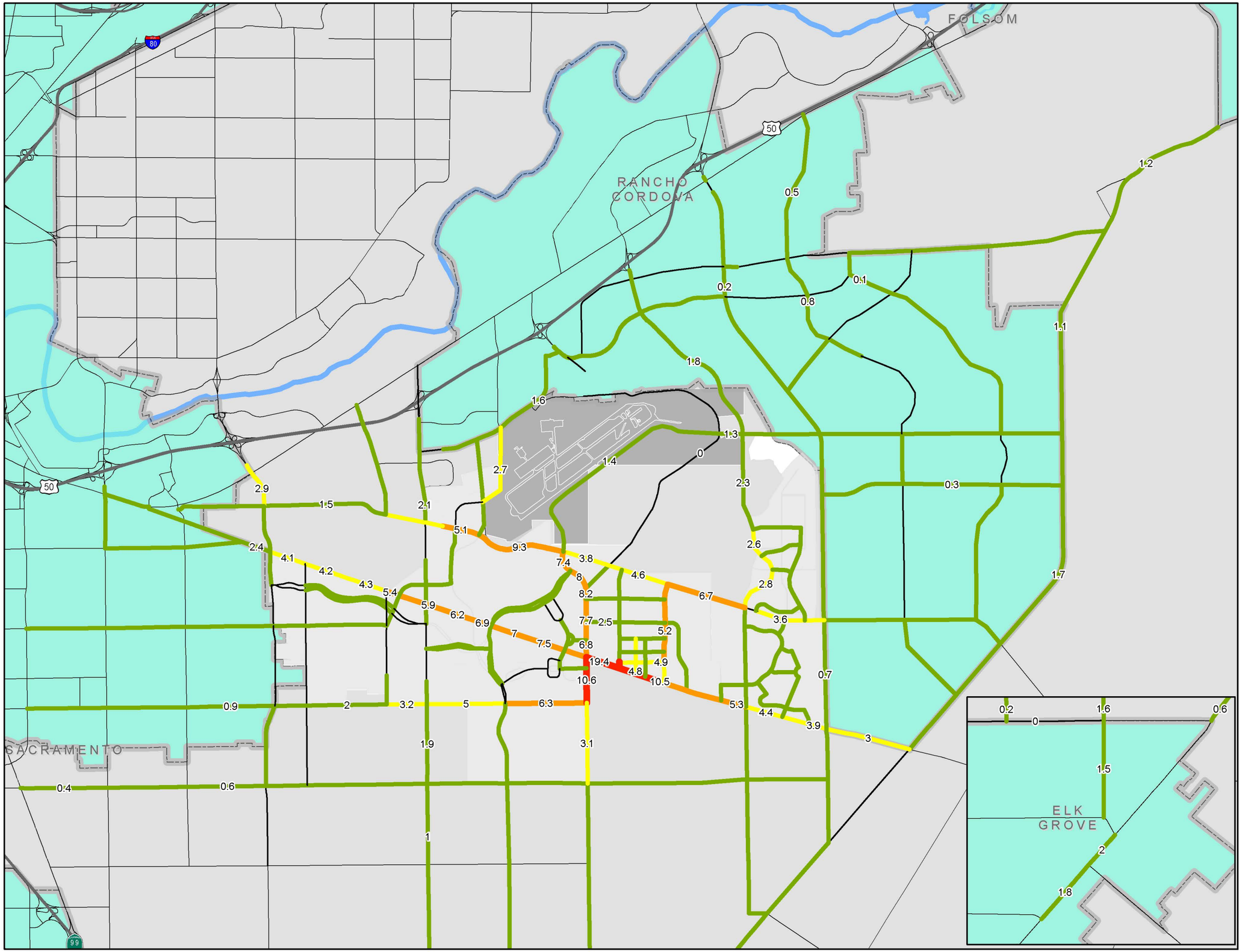
Jackson Township Specific Plan

Trip Type		AM Peak Hour	PM Peak Hour	Daily
Total Vehicle Trip Ends		10,419	10,878	118,567
Percent Internal Trip Ends[1]		19.4%	21.4%	20.6%
Vehicle trips	Internal to Project	1,012	1,163	12,229
	External to Project	8,395	8,553	94,111
	Total	9,407	9,716	106,340

[1.] Both trip ends within the project.

Source: *DKS Associates, 2018.*

FIGURE 11.1
CEQA CUM PLUS FOUR PROJECTS
JT TRIP DISTRIBUTION
(PROPOSED PROJECT)



Legend

- 0.0%
- 0.1% to 2.5%
- 2.6% to 5.0%
- 5.1% to 10.0%
- 10.0% and up
- Freeways
- Other Major Roadways
- Cities
- Mather Airport

DKS

Table 11.4
CEQA Cumulative Roadway Segment Levels of Service - Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		CEQA Cumulative No Project					CEQA Cumulative + FOUR PROJECTS					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	2	Arterial M	11,960	0.66	B	3	Arterial M	37,780	2.10	**F**	West Jackson
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	2	Arterial M	11,960	0.66	B	3	Arterial M	37,130	2.06	**F**	West Jackson
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	40,320	1.12	**F**	4	Arterial M	61,500	1.71	**F**	
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	34,630	0.96	E	4	Arterial M	57,370	1.59	**F**	
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	38,240	1.06	**F**	4	Arterial M	67,850	1.88	**F**	
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	2	Rural Hwy	23,120	1.01	**F**	6	Arterial M	59,220	1.10	**F**	West Jackson
70.2	Jackson Rd	Collector WJ-4	Happy Ln	2	Rural Hwy	23,190	1.01	**F**	6	Arterial M	59,210	1.10	**F**	West Jackson
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	23,020	1.01	**F**	4	Arterial M	62,440	1.73	**F**	Jackson Township
71.2	Jackson Rd	Collector JT-3	Tree View Ln	2	Rural Hwy	23,020	1.01	**F**	4	Arterial M	46,480	1.29	**F**	Jackson Township
71.3	Jackson Rd	Tree View Ln	Collector JT-4	2	Rural Hwy	22,990	1.00	**F**	4	Arterial M	40,520	1.13	**F**	Jackson Township
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	2	Rural Hwy	23,020	1.01	**F**	4	Arterial M	37,510	1.04	**F**	Jackson Township
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	31,730	0.88	D	4	Arterial M	45,430	1.26	**F**	
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	20,760	0.58	A	4	Arterial M	33,480	0.93	**E**	
405	Collector JT-3	Collector JT-5	Jackson Rd						2	Arterial M	20,320	1.13	**F**	Jackson Township

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 11.5

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Levels of Service - Impacts Triggered by Jackson Township Project

	Intersection	AM Peak Hour							PM Peak Hour						
		CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact	CEQA Cumulative No Project			CEQA Cumulative Plus FOUR PROJECTS			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
45	Excelsior Road & Jackson Road	Signal	E	59.9	Signal	F	>300	Yes	Signal	D	39.0	Signal	F	269.1	Yes
47	Excelsior Road & Florin Road	All-way stop	**F**	**62.4**	Signal	F	111.2	Yes	All-way stop	**F**	**67.3**	Signal	E	74.2	No
51	Mather Field Road & Rockingham Drive	Signal	**F**	**156.5**	Signal	F	>300	Yes	Signal	**F**	**119.4**	Signal	F	170.3	Yes
58	Zinfandel Drive & Douglas Road	Signal	**F**	**156.8**	Signal	F	216.8	Yes	Signal	E	73.1	Signal	F	220.1	Yes
61	Eagles Nest Road & Florin Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound		***F***	***>300***		***F***	***>300***			***F***	***>300***		***F***	***>300***	
	Southbound		***F***	***>300***		***F***	***>300***			***F***	***>300***		***F***	***>300***	
	Eastbound Left Turn		*B*	*10.2*		*B*	*11.3*			*A*	*8.5*		*A*	*9.3*	
	Westbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*9.4*		*A*	*8.7*	
69	Sunrise Boulevard & Kiefer Boulevard	Signal	**F**	**151.0**	Signal	F	>300	Yes	Signal	**F**	**138.0**	Signal	F	261.4	Yes

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 11.6

CEQA Cumulative (Proposed Project) Intersection Geometrics - Impacts Triggered by Jackson Township

	Intersection	Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
45	Excelsior Road & Jackson Road	Signal	Signal									West Jackson; Jackson Township
47	Excelsior Road & Florin Road	All-way stop	Signal									West Jackson
51	Mather Field Road & Rockingham Drive	Signal	Signal									
58	Zinfandel Drive & Douglas Road	Signal	Signal									
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									NewBridge; Mather South

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

11.2.3 CEQA Cumulative Plus Jackson Township Project U.S. 50 Freeway Impacts

Based upon the Caltrans' thresholds of significance, any volume contribution to a significant impact of the CEQA Cumulative Plus FOUR PROJECTS scenario is considered significant. Therefore, the impacts of the CEQA Cumulative Plus Jackson Township Project scenario are identical to those of the CEQA Cumulative Plus FOUR PROJECTS scenario.

11.2.3.1 Freeway Basic Segments

Table 10.7 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations. Details of the analysis are included in the technical appendix. None of the impacts would be triggered by the Jackson Township project alone.

11.2.3.2 Freeway Merge/Diverge/Weave Segments

Table 10.8 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas. Details of the analysis are included in the technical appendix. None of the impacts would be triggered by the Jackson Township project alone.

11.2.3.3 Freeway Ramp Intersection Queuing

Tables 10.9 and 10.10 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. None of the impacts would be triggered by the Jackson Township project alone.

11.2.4 CEQA Cumulative Plus Jackson Township Project Pedestrian and Bicycle Facility Impacts

The Jackson Township project would not remove any existing or planned pedestrian facility. The Jackson Township project would not remove any existing bicycle facility, but would modify facilities that are planned in the Bikeway Master Plan. The Jackson Township project would add pedestrian and bicycle demands within the Jackson Township project site and to and from nearby land uses. As illustrated in Figure 3.2, the Jackson Township project has proposed changes to the Bikeway Master Plan. Because the Jackson Township project would add demand for pedestrian and bicycle facilities that may not be available in the site vicinity, the impact of the Jackson Township project on pedestrian and bicycle circulation is potentially significant.

11.2.5 CEQA Cumulative Plus Jackson Township Project Transit System Impacts

Public transit would not be provided to the site of the Jackson Township project under CEQA Cumulative scenario without development of the Jackson Township project. In the preparation of this analysis, a transit system to serve the FOUR PROJECTS was developed (see Section 8.1.2.3).

However, the timing and implementation of the transit system are uncertain at this time. The Jackson Township project would increase demands for public transit facilities. Therefore, the impact of the Jackson Township project on the transit system is potentially significant.

11.2.6 CEQA Cumulative Plus Jackson Township Project Functionality Impacts

Table 11.7 summarizes the results of the functionality analysis. Only those segments where an impact would be triggered by the Jackson Township project are shown. The table includes the number of lanes assumed with the implementation of the FOUR PROJECTS, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the FOUR PROJECTS. The "Substandard?" heading indicates whether or not a roadway meets the County standards of 12-foot lanes and 6-foot shoulders. If the FOUR PROJECTS make improvements to a roadway segment such as widening, they would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact?" heading indicate those locations with a functionality impact.

As stated above, the traffic analysis assumed that the FOUR PROJECTS would construct a number of travel lanes on roadway segments that are internal to or on the boundary of the FOUR PROJECTS, and the entire roadway segment would be reconstructed to County standards at that time. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether or not impacts would exist at some time prior to full build out of the FOUR PROJECTS.

Table 11.7
CEQA Cumulative Plus FOUR PROJECTS Functionality Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				CEQA Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	4	Arterial M	34,000	Yes[3]
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	6	Arterial M	50,410	Yes[3]
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	4	Arterial M	48,190	Yes[3]
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	4	Arterial M	33,950	Yes[3]
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	4	Arterial M	40,630	Yes[3]
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	3	Arterial M	33,740	Yes[3]
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Arterial M	27,590	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	3	Arterial M	37,130	Yes[3]
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	3	Arterial M	12,510	Yes[3]
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Arterial M	12,810	Yes
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	4	Arterial M	23,450	Yes[3]
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	4	Arterial M	25,600	Yes[3]
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	3	Arterial M	20,600	Yes[3]
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	4	Arterial M	41,060	Yes[3]
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	6	Arterial M	59,220	Yes[3]
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	Arterial M	62,440	Yes[3]
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	6	Arterial M	51,510	Yes[3]
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	3	Arterial M	39,640	Yes[3]
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490	4	Arterial M	55,990	Yes[3]
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	4	Arterial M	22,240	Yes[3]

Red text with light gray shading indicate project impacts.

Table 11.7
CEQA Cumulative Plus FOUR PROJECTS Functionality Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				CEQA Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

11.3 MITIGATION

11.3.1 CEQA Cumulative Plus Jackson Township Project Roadway Segment Mitigation

Table 11.8 summarizes the results of the operations analysis for the study area roadway segments with mitigation. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate widened roadways for mitigation purposes, which would be the responsibility of the FOUR PROJECTS to fund. The Jackson Township project would contribute a fair share. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to have LOS impacts after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the improvements allowed under the General Plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

Table 11.8
CEQA Cumulative Plus FOUR PROJECTS Roadway Segment Mitigations - Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	3	Arterial M	37,780	2.10	**F**	6	Arterial M	0.70	B	No		
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	3	Arterial M	37,130	2.06	**F**	6	Arterial M	0.69	B	No		
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	61,500	1.71	**F**	4	Arterial M	1.71	**F**	Yes		Maximum General Plan lanes
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	57,370	1.59	**F**	4	Arterial M	1.59	**F**	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	67,850	1.88	**F**	6	Arterial M	1.26	**F**	Yes		Maximum General Plan lanes
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	6	Arterial M	59,220	1.10	**F**	6	Arterial M	1.10	**F**	Yes		Maximum General Plan lanes
70.2	Jackson Rd	Collector WJ-4	Happy Ln	6	Arterial M	59,210	1.10	**F**	6	Arterial M	1.10	**F**	Yes		Maximum General Plan lanes
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	4	Arterial M	62,440	1.73	**F**	6	Arterial M	1.16	**F**	Yes		Maximum General Plan lanes
71.2	Jackson Rd	Collector JT-3	Tree View Ln	4	Arterial M	46,480	1.29	**F**	6	Arterial M	0.86	D	No		
71.3	Jackson Rd	Tree View Ln	Collector JT-4	4	Arterial M	40,520	1.13	**F**	6	Arterial M	0.75	C	No		
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	4	Arterial M	37,510	1.04	**F**					No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	45,430	1.26	**F**	6	Arterial M	0.84	D	No		
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	33,480	0.93	**E**	4	Arterial M	0.93	**E**	Yes		Maximum General Plan lanes
405	Collector JT-3	Collector JT-5	Jackson Rd	2	Arterial M	20,320	1.13	**F**	4	Arterial M	0.56	A	No		

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 11.8
CEQA Cumulative Plus FOUR PROJECTS Roadway Segment Mitigations - Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS					Mitigated CEQA Cumulative + FOUR PROJECTS						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible

Note: Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, as proposed by the County of Sacramento.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

11.3.2 CEQA Cumulative Plus Jackson Township Project Intersection Mitigation

Tables 11.9a and 11.10a summarize the results of the operations analysis for the study area intersections with mitigation. However, the increased number of lanes on each approach does not exceed the County's standard number of approach lanes. **Tables 11.9b and 11.10b** summarize the results of the operations analysis for the study area intersections with the ultimate mitigation, which may exceed the County's standard number of approach lanes. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the FOUR PROJECTS to fund. The Jackson Township project would contribute a fair share. The shaded table cells under the "Level of Service" heading indicate those locations with an LOS impact after mitigation. Table 11.10a and Table 11.10b also identifies those intersections that would continue to have LOS impacts after mitigation, along with the constraint that precluded full mitigation. Detailed analysis information is included in the technical appendix.

The "LOS Impact with Mitigation?" column shows whether there is still an LOS impact after the mitigation measure is applied. In other words, this column shows whether a mitigation measure successfully mitigates the impact or not. In several locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

High Capacity Intersections

Grade separated intersections are proposed along Grant Line Road, in order to meet the Connector JPA's level of service policy. These grade separations would be constructed at Prairie City Road (which is also a designated High Capacity Intersection) and Sunrise Boulevard. Since each of these intersections have unique travel movements, volumes and existing context sensitive conditions (potential environmental issues, right-of-way, physical constraints, etc.), the special treatments utilized at each location will need to be studied to select the treatments that mitigate the LOS impact, while avoiding or minimizing other impacts.

11.3.3 CEQA Cumulative Plus Jackson Township Project Pedestrian and Bicycle Facility Mitigation

The Jackson Township project applicant shall coordinate with Sacramento County to identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development. These facilities shall be incorporated into the Jackson Township project and could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, pedestrian signal heads, and all appropriate traffic calming measures as defined in the County's Neighborhood Traffic Management Program (NTMP). Sidewalks would be required as part of the frontage improvements along all new roadway construction in the Jackson

Township project vicinity in conformance with County design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards.

11.3.4 CEQA Cumulative Plus Jackson Township Project Transit System Mitigation

The applicant of the Jackson Township project shall coordinate with Regional Transit (or other transit operators) to provide the additional transit facilities and services assumed in transportation analysis (see Section 8.1.2.3), or a cost-effective equivalent level of transit facilities and services.

The assumed transit routes and service frequency would be required at full development of the Jackson Township project. The full level of transit service would not achieve adequate transit ridership during the early stages of development. Thus the ultimate transit service, like the roadway system serving the Jackson Township project, must be phased with development of the Jackson Township project.

11.3.5 CEQA Cumulative Plus Jackson Township Project Functionality Mitigation

Table 11.11 summarizes the results of the functionality analysis for the rural roadway segments with mitigation.

Table 11.9a

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Impacted Intersections and County Standard Mitigations - Impacts Triggered by Jackson Township Project

	Intersection	AM Peak Hour													
		CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed	CEQA Cumulative Plus All			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Alternative Mitigation Needed
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
45	Excelsior Road & Jackson Road	Signal	**F**	**>300**	Signal	**F**	**118.6**	Yes	Signal	**F**	**269.1**	Signal	**F**	**150.7**	Yes
47	Excelsior Road & Florin Road	Signal	**F**	**111.2**	Signal	D	47.2	No	Signal	E	74.2	Signal	E	67.3	No
51	Mather Field Road & Rockingham Drive	Signal	**F**	**>300**	Signal	**-**	**-**	Yes	Signal	**F**	**170.3**	Signal	**-**	**-**	Yes
58	Zinfandel Drive & Douglas Road	Signal	**F**	**216.8**	Signal	E	61.9	No	Signal	**F**	**220.1**	Signal	E	68.4	No
61	Eagles Nest Road & Florin Road	Two-way stop			Signal	**F**	**142.4**	Yes	Two-way stop			Signal	**F**	**137.7**	Yes
	Northbound		***F***	***>300***						***F***	***>300***				
	Southbound		***F***	***>300***						***F***	***>300***				
	Eastbound Left Turn		*B*	*11*						*A*	*9.3*				
	Westbound Left Turn		*A*	*0*						*A*	*8.7*				
69	Sunrise Boulevard & Kiefer Boulevard	Signal	**F**	**>300**	Signal	**F**	**118.3**	No	Signal	**F**	**261.4**	Signal	**E**	**71.1**	No

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 11.9b

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) County Standard and Ultimate Mitigations - Impacts Triggered by Jackson Township Project

	Intersection	AM Peak Hour											
		County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS			County Standard Mitigated CEQA Cumulative Plus FOUR PROJECTS			Ultimate Mitigated CEQA Cumulative Plus FOUR PROJECTS		
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
45	Excelsior Road & Jackson Road	Signal	**F**	**118.6**	Signal	-	-	Signal	**F**	**150.7**	Signal	-	-
51	Mather Field Road & Rockingham Drive	Signal	**F**	**>300**	Signal	-	-	Signal	**F**	**>300**	Signal	-	-
61	Eagles Nest Road & Florin Road	Signal	**F**	**142.4**	Signal	D	50.4	Signal	**F**	**137.7**	Signal	D	45.5

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

Table 11.10a

CEQA Cumulative Plus FOUR PROJECTS (Prop. Proj.) Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township

		Traffic Control		Super Cumulative Plus FOUR PROJECTS Lane Geometrics				County Standard Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?
		Super Cumulative Plus FOUR PROJECTS	Mitigated Super Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
45	Excelsior Road & Jackson Road	Signal	Signal									Yes
47	Excelsior Road & Florin Road	Signal	Signal									No
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes
58	Zinfandel Drive & Douglas Road	Signal	Signal									No
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									No

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 11.10b

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township

	Intersection	Traffic Control		County Standard Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				Ultimate Mitigated Super Cumulative Plus FOUR PROJECTS Lane Geometrics				LOS Impact with Mitgation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		Super Cumulative Plus FOUR PROJECTS	Mitigated Super Cumulative Plus FOUR PROJECTS	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
45	Excelsior Road & Jackson Road	Signal	Signal									Yes	No	NBR overlap	Maximum General Plan Lanes
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes	No		Existing development
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Signal	Signal									No	No		

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

Table 11.11
CEQA Cumulative Plus FOUR PROJECTS Functionality Mitigations - Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		
15	Douglas Rd	Mather Blvd	Zinfandel Dr	4	Arterial M	34,000	Yes[3]	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,410	Yes[3]	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	48,190	Yes[3]	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	4	Arterial M	33,950	Yes[3]	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,630	Yes[3]	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	3	Arterial M	33,740	Yes[3]	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	27,590	Yes	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	3	Arterial M	37,130	Yes[3]	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	3	Arterial M	12,510	Yes[3]	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	12,810	Yes	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	23,450	Yes[3]	Widen to County standards [5]	No
42	Florin Rd	Bradshaw Rd	Excelsior Rd	4	Arterial M	25,600	Yes[3]	Widen to County standards [5]	No
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave	3	Arterial M	20,600	Yes[3]	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	4	Arterial M	41,060	Yes[3]	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	6	Arterial M	59,220	Yes[3]	Widen to County standards [5]	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	Arterial M	62,440	Yes[3]	Widen to County standards [5]	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	6	Arterial M	51,510	Yes[3]	Widen to County standards [5]	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	3	Arterial M	39,640	Yes[3]	Widen to County standards [5]	No
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	4	Arterial M	55,990	Yes[3]	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	4	Arterial M	22,240	Yes[3]	Widen to County standards [5]	No

Red text with light gray shading indicate project impacts.

Table 11.11
CEQA Cumulative Plus FOUR PROJECTS Functionality Mitigations - Impacts Triggered by Jackson Township Project

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[4] Excluding the roadway segment that is within the developed community of Independence at Mather.

[5] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Red text with light gray shading indicate project impacts.

11.3.6 CEQA Cumulative Plus Jackson Township Project Mitigation Summary

Tables 11.12 and 11.13 summarize the mitigation success for the roadway segments and intersections that exhibit significant LOS impacts. **Table 11.14** summarizes the mitigation success for the rural roadway segments that exhibit functionality impacts. Tables 11.13 through 11.15 summarize the mitigation success for the freeway system facilities that exhibit significant impacts.

Table 11.12
CEQA Cumulative Plus FOUR PROJECTS
Summary of Impacted Roadway Segments Triggered by Jackson Township Project

ID	Roadway	Segment	
		From	To
Level of Service Impact Fully Mitigated by General Plan Lanes			
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd
71.2	Jackson Rd	Collector JT-3	Tree View Ln
71.3	Jackson Rd	Tree View Ln	Collector JT-4
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd
73	Jackson Rd	Sunrise Blvd	Grant Line Rd
405	Collector JT-3	Collector JT-5	Jackson Rd
Level of Service Impact Not Fully Mitigated by General Plan Lanes			
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy
67	Jackson Rd	South Watt Ave	Hedge Ave
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4
70.2	Jackson Rd	Collector WJ-4	Happy Ln
71.1	Jackson Rd	Excelsior Rd	Collector JT-3

Note: Refer to Table 7.8 for detailed description of impacts and mitigations.

Table 11.13

CEQA Cumulative Plus FOUR PROJECTS (Proposed Project) -
Summary of Intersection Impacts Triggered by Jackson Township

	Intersection	Alternative Mitigation
Level of Service Impact Fully Mitigated by General Plan Lanes		
47	Excelsior Road & Florin Road	
58	Zinfandel Drive & Douglas Road	
61	Eagles Nest Road & Florin Road	**
69	Sunrise Boulevard & Kiefer Boulevard	
Level of Service Impact Not Fully Mitigated by General Plan Lanes		
45	Excelsior Road & Jackson Road	
51	Mather Field Road & Rockingham Drive	

[1] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding designated high capacity intersections, as proposed by the County of Sacramento.

* denotes alternative mitigations that improve operations but do not fully mitigate the impact.
** denotes alternative mitigations that fully mitigate the impact.

Table 11.14
CEQA Cumulative Plus FOUR PROJECTS
Summary of Functionality Impacts Triggered by Jackson Township Project

ID	Roadway	Segment	
		From	To
Functionality Impact Fully Mitigated			
15	Douglas Rd	Mather Blvd	Zinfandel Dr
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd
25	Elder Creek Rd	South Watt Ave	Hedge Ave
26	Elder Creek Rd	Hedge Ave	Mayhew Rd
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd
30	Excelsior Rd	Kiefer Blvd	Jackson Rd
31	Excelsior Rd	Jackson Rd	Elder Creek Rd
32	Excelsior Rd	Elder Creek Rd	Florin Rd
33	Excelsior Rd	Florin Rd	Gerber Rd
41	Florin Rd	Mayhew Rd	Bradshaw Rd
42	Florin Rd	Bradshaw Rd	Excelsior Rd
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave
50	Grant Line Rd	White Rock Rd	Douglas Rd
70	Jackson Rd	Bradshaw Rd	Excelsior Rd
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd
77	Kiefer Blvd	Bradshaw Rd	Happy Ln
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd

12. VEHICLE MILES TRAVELED PER CAPITA

12.1 VMT DESCRIPTION

For CEQA purposes, California Senate Bill 743 (SB 743) dictates a change in the evaluation of transportation impacts, primarily shifting from level of service (LOS) to vehicle miles traveled (VMT). The VMT metric combines mode choice and trip length into a single parameter that is generally proportional to greenhouse gas (GHG) effects. The CEQA changes proposed under SB 743, however, are currently voluntary and will not become mandatory until at least January 1, 2020. This section discusses VMT analysis that was prepared for the proposed projects under Existing Plus Project and MTP Cumulative Plus Four Projects conditions.

12.2 METHODOLOGY

The analysis presented in this section was prepared using a methodology generally consistent with the methodology adopted by SACOG to determine regional thresholds and VMT Per Capita regionally. Because SACOG's adopted model (SacSIM) is a "tour-based" Activity Based Model (ABM) it is possible to trace every daily trip undertaken by each member of each household, whether or not each trip originates or terminates at the person's home or somewhere else. Therefore, it is also possible to trace the total distance traveled by each person during the day and the mode used for each trip. This allows SACOG (and this analysis) to calculate detailed VMT per capita for all trips undertaken by residents of the region or a particular study or project area. This VMT, combined with VMT of trips for non-residential uses within the study or project area, results in overall VMT (and VMT per capita) generated by the study or project area.

12.3 EXISTING PLUS PROJECT

Table 12.1 shows the estimated VMT per capita under Existing Plus Jackson Township conditions. Over 14,500 people are anticipated to generate over 297,500 vehicle miles traveled per day. That equates to an average 20.4 vehicle miles traveled per capita per day, higher than the predicted 18.6 VMT per capita average in the total region.

12.3 MTP PLUS ALL PROJECTS

Table 12.1 also depicts the estimated VMT per capita in the Jackson Corridor under MTP Cumulative Plus Four Projects condition. Each of the four projects are anticipated to have a higher VMT per capita than the remainder of the region. In total, the population in the region (3,139,601) is predicted to generate 54,154,989 daily vehicle miles; translating to 17.3 vehicle miles traveled per capita per day.

Table 12.1
Estimated VMT per Capita Jackson Corridor Joint TIS

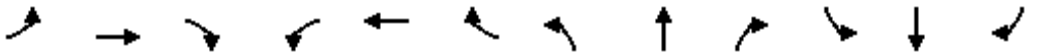
Scenario	Population	VMT	VMT/Capita
Existing plus Jackson Township			
Jackson Township	14,597	297,769	20.4
Remainder of Regional	2,214,577	Varies	18.5
Total Region	Varies	Varies	18.6
MTP Plus All Projects			
Jackson Township	14,597	264,306	18.1
Mather South	8,703	159,094	18.3
New Bridge	9,183	187,527	20.4
West Jackson	35,561	674,632	19.0
Remainder of Regional	3,071,557	52,869,430	17.2
Total Region	3,139,601	54,154,989	17.3

Appendix A

Existing Synchro Reports

Existing No Project

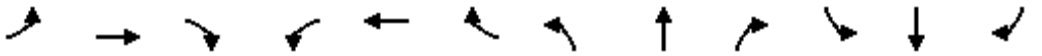
AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	662	0	969	0	0	0	0	1392	552	0	1131	343
Future Volume (vph)	662	0	969	0	0	0	0	1392	552	0	1131	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	662	0	969	0	0	0	0	1392	552	0	1131	343
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	662	0	943	0	0	0	0	1392	552	0	1131	343
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	61.0		61.0					51.0	120.0		51.0	120.0
Effective Green, g (s)	61.0		61.0					51.0	120.0		51.0	120.0
Actuated g/C Ratio	0.51		0.51					0.42	1.00		0.42	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Lane Grp Cap (vph)	1711		1389					2119	1553		2119	1553
v/s Ratio Prot								c0.28			0.23	
v/s Ratio Perm	0.20		c0.35						0.36			0.22
v/c Ratio	0.39		0.68					0.66	0.36		0.53	0.22
Uniform Delay, d1	18.1		22.2					27.5	0.0		25.7	0.0
Progression Factor	1.00		1.00					0.68	1.00		0.69	1.00
Incremental Delay, d2	0.7		2.7					1.2	0.5		0.8	0.3
Delay (s)	18.7		24.8					20.0	0.5		18.4	0.3
Level of Service	B		C					B	A		B	A
Approach Delay (s)		22.4			0.0			14.4			14.2	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

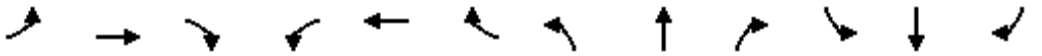
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	250	71	238	743	706	292	1103	178	665	1409	132
Future Volume (vph)	133	250	71	238	743	706	292	1103	178	665	1409	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3356		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3356		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	133	250	71	238	743	706	292	1103	178	665	1409	132
RTOR Reduction (vph)	0	21	0	0	0	518	0	0	101	0	0	74
Lane Group Flow (vph)	133	300	0	238	743	188	292	1103	77	665	1409	58
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	7.0	25.0		14.0	32.0	32.0	16.0	35.0	35.0	30.0	49.0	49.0
Effective Green, g (s)	7.0	25.0		14.0	32.0	32.0	16.0	35.0	35.0	30.0	49.0	49.0
Actuated g/C Ratio	0.06	0.21		0.12	0.27	0.27	0.13	0.29	0.29	0.25	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	196	699		392	925	728	448	1454	452	841	2036	634
v/s Ratio Prot	c0.04	0.09		0.07	c0.21		0.09	c0.22		c0.20	0.28	
v/s Ratio Perm						0.07			0.05			0.04
v/c Ratio	0.68	0.43		0.61	0.80	0.26	0.65	0.76	0.17	0.79	0.69	0.09
Uniform Delay, d1	55.4	41.3		50.4	41.1	34.7	49.4	38.7	31.7	42.1	29.3	21.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.65	0.61	0.42	1.12	1.16	1.60
Incremental Delay, d2	17.3	1.9		6.8	7.3	0.9	5.9	3.1	0.7	6.3	1.6	0.2
Delay (s)	72.7	43.2		57.2	48.4	35.5	38.0	26.7	13.9	53.2	35.7	35.2
Level of Service	E	D		E	D	D	D	C	B	D	D	D
Approach Delay (s)		51.9			44.3			27.3			41.0	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

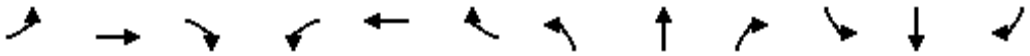
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	357	376	5	1001	27	351	12	2	20	13	225
Future Volume (vph)	138	357	376	5	1001	27	351	12	2	20	13	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1627	1524		1790	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1627	1524		1790	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	138	357	376	5	1001	27	351	12	2	20	13	225
RTOR Reduction (vph)	0	0	147	0	0	19	0	0	2	0	0	170
Lane Group Flow (vph)	138	357	229	5	1001	8	183	180	0	0	33	55
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	39.0	64.0	4.0	32.0	32.0	25.0	25.0	25.0		16.0	16.0
Effective Green, g (s)	11.0	39.0	64.0	4.0	32.0	32.0	25.0	25.0	25.0		16.0	16.0
Actuated g/C Ratio	0.10	0.37	0.61	0.04	0.30	0.30	0.24	0.24	0.24		0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Grp Cap (vph)	181	1289	946	66	1057	473	385	387	362		272	238
v/s Ratio Prot	c0.08	0.10	0.06	0.00	c0.29		c0.11	0.11			0.02	
v/s Ratio Perm			0.09			0.01			0.00			c0.03
v/c Ratio	0.76	0.28	0.24	0.08	0.95	0.02	0.48	0.47	0.00		0.12	0.23
Uniform Delay, d1	45.7	23.1	9.4	48.7	35.7	25.5	34.4	34.3	30.5		38.4	39.1
Progression Factor	1.00	1.00	1.00	1.20	0.84	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	25.7	0.5	0.6	1.8	15.3	0.1	4.2	4.0	0.0		0.9	2.2
Delay (s)	71.5	23.7	10.0	60.3	45.4	25.6	38.5	38.3	30.5		39.3	41.3
Level of Service	E	C	A	E	D	C	D	D	C		D	D
Approach Delay (s)		25.3			44.9			38.3			41.1	
Approach LOS		C			D			D			D	

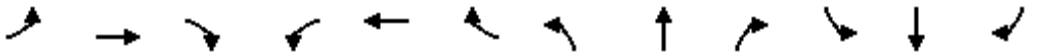
Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	214	97	183	471	56	592	57	275	87	114	34
Future Volume (vph)	26	214	97	183	471	56	592	57	275	87	114	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.98	
Satd. Flow (prot)	1752	3505	1568	1752	3449		1665	1683	1568		3366	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.98	
Satd. Flow (perm)	1752	3505	1568	1752	3449		1665	1683	1568		3366	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	26	214	97	183	471	56	592	57	275	87	114	34
RTOR Reduction (vph)	0	0	82	0	9	0	0	0	186	0	13	0
Lane Group Flow (vph)	26	214	15	183	518	0	326	323	89	0	222	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	5.0	16.0	16.0	18.0	29.0		34.0	34.0	34.0		16.0	
Effective Green, g (s)	5.0	16.0	16.0	18.0	29.0		34.0	34.0	34.0		16.0	
Actuated g/C Ratio	0.05	0.15	0.15	0.17	0.28		0.32	0.32	0.32		0.15	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Grp Cap (vph)	83	534	238	300	952		539	544	507		512	
v/s Ratio Prot	0.01	0.06		c0.10	c0.15		c0.20	0.19			c0.07	
v/s Ratio Perm			0.01						0.06			
v/c Ratio	0.31	0.40	0.06	0.61	0.54		0.60	0.59	0.18		0.43	
Uniform Delay, d1	48.3	40.2	38.1	40.3	32.4		29.9	29.7	25.5		40.4	
Progression Factor	0.91	1.55	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	9.4	2.2	0.5	8.9	2.2		5.0	4.7	0.8		2.7	
Delay (s)	53.3	64.5	38.6	49.2	34.6		34.8	34.4	26.2		43.1	
Level of Service	D	E	D	D	C		C	C	C		D	
Approach Delay (s)		56.2			38.4			32.1			43.1	
Approach LOS		E			D			C			D	

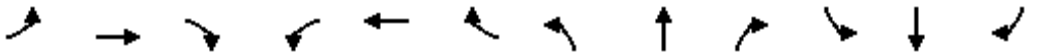
Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	277	262	250	691	19	462	48	135	28	144	39
Future Volume (vph)	21	277	262	250	691	19	462	48	135	28	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3087		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3087		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	277	262	250	691	19	462	48	135	28	144	39
RTOR Reduction (vph)	0	0	166	0	0	12	0	108	0	0	0	31
Lane Group Flow (vph)	21	277	96	250	691	7	462	75	0	28	144	8
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	19.5	66.1	66.1	19.5	66.0	66.0	35.7	35.7		34.9	34.9	34.9
Effective Green, g (s)	19.5	66.1	66.1	19.5	66.0	66.0	35.7	35.7		34.9	34.9	34.9
Actuated g/C Ratio	0.11	0.37	0.37	0.11	0.37	0.37	0.20	0.20		0.19	0.19	0.19
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Grp Cap (vph)	189	1287	575	368	1285	574	667	612		339	679	304
v/s Ratio Prot	0.01	0.08		c0.07	c0.20		c0.14	0.02		0.02	c0.04	
v/s Ratio Perm			0.06			0.00						0.00
v/c Ratio	0.11	0.22	0.17	0.68	0.54	0.01	0.69	0.12		0.08	0.21	0.02
Uniform Delay, d1	72.4	39.1	38.4	77.2	45.0	36.3	67.1	59.3		59.4	61.0	58.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.4	0.6	9.7	1.6	0.0	5.8	0.4		0.5	0.7	0.2
Delay (s)	73.6	39.5	39.0	87.0	46.6	36.3	72.9	59.7		59.9	61.7	58.9
Level of Service	E	D	D	F	D	D	E	E		E	E	E
Approach Delay (s)		40.6			56.9			69.1			61.0	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	56.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	22.9
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

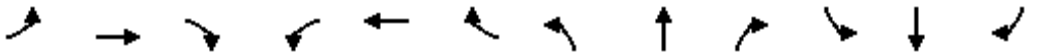
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	794	0	480	0	881	850	0	374	338
Future Volume (vph)	0	0	0	794	0	480	0	881	850	0	374	338
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.6		4.6		3.5	4.0		5.1	5.1
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3367		2733		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3367		2733		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	794	0	480	0	881	850	0	374	338
RTOR Reduction (vph)	0	0	0	0	0	192	0	0	0	0	0	139
Lane Group Flow (vph)	0	0	0	794	0	288	0	881	850	0	374	199
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Prot		Perm		NA	Free		NA	Perm
Protected Phases				4				6			2	
Permitted Phases						4			Free			2
Actuated Green, G (s)				35.4		35.4		66.5	110.0		64.9	64.9
Effective Green, g (s)				35.4		35.4		66.5	110.0		64.9	64.9
Actuated g/C Ratio				0.32		0.32		0.60	1.00		0.59	0.59
Clearance Time (s)				4.6		4.6		3.5			5.1	5.1
Lane Grp Cap (vph)				1083		879		3015	1553		2942	916
v/s Ratio Prot				c0.24				0.18			0.07	
v/s Ratio Perm						0.11			c0.55			0.13
v/c Ratio				0.73		0.33		0.29	0.55		0.13	0.22
Uniform Delay, d1				33.1		28.3		10.4	0.0		10.0	10.6
Progression Factor				1.00		1.00		0.70	1.00		1.00	1.00
Incremental Delay, d2				4.4		1.0		0.2	1.3		0.1	0.5
Delay (s)				37.5		29.3		7.6	1.3		10.1	11.2
Level of Service				D		C		A	A		B	B
Approach Delay (s)		0.0			34.4			4.5			10.6	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

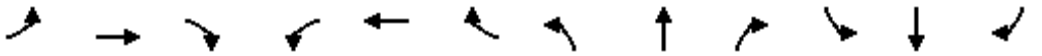
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	499	0	1021	0	0	0	0	1232	807	0	944	220
Future Volume (vph)	499	0	1021	0	0	0	0	1232	807	0	944	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	499	0	1021	0	0	0	0	1232	807	0	944	220
RTOR Reduction (vph)	0	0	165	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	499	0	856	0	0	0	0	1232	807	0	944	220
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	33.6		33.6					64.9	110.0		65.4	110.0
Effective Green, g (s)	33.6		33.6					64.9	110.0		65.4	110.0
Actuated g/C Ratio	0.31		0.31					0.59	1.00		0.59	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Lane Grp Cap (vph)	1028		834					2942	1553		2965	1553
v/s Ratio Prot								0.25			0.19	
v/s Ratio Perm	0.15		c0.31						c0.52			0.14
v/c Ratio	0.49		1.03					0.42	0.52		0.32	0.14
Uniform Delay, d1	31.2		38.2					12.3	0.0		11.2	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.39	1.00
Incremental Delay, d2	1.6		38.2					0.4	1.2		0.2	0.2
Delay (s)	32.8		76.4					12.7	1.2		4.5	0.2
Level of Service	C		E					B	A		A	A
Approach Delay (s)		62.1			0.0			8.2			3.7	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

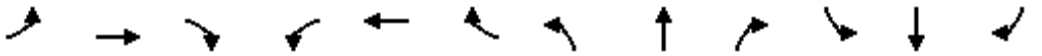
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	792	0	198	0	624	473	0	691	345
Future Volume (vph)	0	0	0	792	0	198	0	624	473	0	691	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.95	1.00		0.95	1.00
Frt				1.00	0.94			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.97			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1582			3471	1553		3471	1553
Flt Permitted				0.95	0.97			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1582			3471	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	792	0	198	0	624	473	0	691	345
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	507	461	0	0	624	473	0	691	345
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Perm	NA			NA	Free		NA	Free
Protected Phases					8			2			6	
Permitted Phases				8					Free			Free
Actuated Green, G (s)				35.1	35.1			65.2	110.0		65.2	110.0
Effective Green, g (s)				35.1	35.1			65.2	110.0		65.2	110.0
Actuated g/C Ratio				0.32	0.32			0.59	1.00		0.59	1.00
Clearance Time (s)				4.9	4.9			4.8			4.8	
Lane Grp Cap (vph)				526	504			2057	1553		2057	1553
v/s Ratio Prot								0.18			c0.20	
v/s Ratio Perm				c0.31	0.29				0.30			0.22
v/c Ratio				0.96	0.91			0.30	0.30		0.34	0.22
Uniform Delay, d1				36.8	36.0			11.1	0.0		11.4	0.0
Progression Factor				1.00	1.00			0.75	1.00		1.00	1.00
Incremental Delay, d2				31.2	23.5			0.4	0.5		0.4	0.3
Delay (s)				68.1	59.5			8.7	0.5		11.8	0.3
Level of Service				E	E			A	A		B	A
Approach Delay (s)		0.0			63.9			5.2			8.0	
Approach LOS		A			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

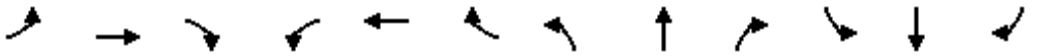
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	0	977	0	0	0	0	898	295	0	1234	201
Future Volume (vph)	250	0	977	0	0	0	0	898	295	0	1234	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.95	1.00
Frt	1.00	0.86	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1422	1475					4988	1553		3471	1553
Flt Permitted	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1422	1475					4988	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	250	0	977	0	0	0	0	898	295	0	1234	201
RTOR Reduction (vph)	0	46	46	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	225	458	452	0	0	0	0	898	295	0	1234	201
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA	Perm					NA	Free		NA	Free
Protected Phases		4						2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	34.9	34.9	34.9					65.1	110.0		65.2	110.0
Effective Green, g (s)	34.9	34.9	34.9					65.1	110.0		65.2	110.0
Actuated g/C Ratio	0.32	0.32	0.32					0.59	1.00		0.59	1.00
Clearance Time (s)	5.1	5.1	5.1					4.9			4.8	
Lane Grp Cap (vph)	523	451	467					2951	1553		2057	1553
v/s Ratio Prot								0.18			c0.36	
v/s Ratio Perm	0.14	0.32	0.31						0.19			0.13
v/c Ratio	0.43	1.01	0.97					0.30	0.19		0.60	0.13
Uniform Delay, d1	29.7	37.5	37.0					11.2	0.0		14.2	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		0.60	1.00
Incremental Delay, d2	2.6	46.1	34.2					0.3	0.3		1.0	0.1
Delay (s)	32.3	83.6	71.2					11.4	0.3		9.5	0.1
Level of Service	C	F	E					B	A		A	A
Approach Delay (s)		69.2			0.0			8.7			8.1	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

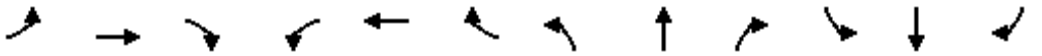
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	880	0	154	0	815	686	0	737	303
Future Volume (vph)	0	0	0	880	0	154	0	815	686	0	737	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.95	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		3505	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	880	0	154	0	815	686	0	737	303
RTOR Reduction (vph)	0	0	0	0	0	82	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	880	0	72	0	815	686	0	737	303
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				33.2		33.2		65.4	110.0		65.4	110.0
Effective Green, g (s)				33.2		33.2		65.4	110.0		65.4	110.0
Actuated g/C Ratio				0.30		0.30		0.59	1.00		0.59	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Lane Grp Cap (vph)				1026		473		2994	1568		2083	1568
v/s Ratio Prot								0.16			0.21	
v/s Ratio Perm				c0.26		0.05			c0.44			0.19
v/c Ratio				0.86		0.15		0.27	0.44		0.35	0.19
Uniform Delay, d1				36.2		28.1		10.8	0.0		11.5	0.0
Progression Factor				1.00		1.00		0.56	1.00		1.00	1.00
Incremental Delay, d2				9.2		0.7		0.2	0.7		0.5	0.3
Delay (s)				45.4		28.8		6.2	0.7		11.9	0.3
Level of Service				D		C		A	A		B	A
Approach Delay (s)		0.0			42.9			3.7			8.5	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

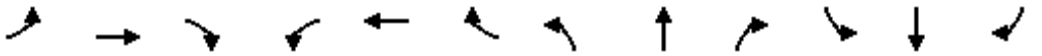
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	344	947	1227	0	0	202	0	1376	9	0	1439	178
Future Volume (vph)	344	947	1227	0	0	202	0	1376	9	0	1439	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		0.86			0.95	1.00
Frt	1.00	0.95	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	3000	1427			2733		6339			3505	1568
Flt Permitted	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (perm)	1595	3000	1427			2733		6339			3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	344	947	1227	0	0	202	0	1376	9	0	1439	178
RTOR Reduction (vph)	0	6	25	0	0	191	0	1	0	0	0	61
Lane Group Flow (vph)	310	1516	662	0	0	11	0	1384	0	0	1439	117
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA			NA	Perm
Protected Phases	4	4				1		2			6	
Permitted Phases			4									6
Actuated Green, G (s)	55.0	55.0	55.0			6.0		37.0			47.0	47.0
Effective Green, g (s)	55.0	55.0	55.0			6.0		37.0			47.0	47.0
Actuated g/C Ratio	0.50	0.50	0.50			0.05		0.34			0.43	0.43
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Grp Cap (vph)	797	1500	713			149		2132			1497	669
v/s Ratio Prot	0.19	c0.51				0.00		0.22			c0.41	
v/s Ratio Perm			0.46									0.07
v/c Ratio	0.39	1.01	0.93			0.07		0.65			0.96	0.17
Uniform Delay, d1	17.1	27.5	25.7			49.4		31.0			30.6	19.5
Progression Factor	1.00	1.00	1.00			1.00		1.00			0.78	0.62
Incremental Delay, d2	1.4	25.8	20.2			1.0		1.5			13.2	0.4
Delay (s)	18.5	53.3	45.8			50.3		32.5			36.9	12.5
Level of Service	B	D	D			D		C			D	B
Approach Delay (s)		47.0			50.3			32.5			34.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		

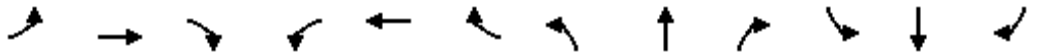
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	352	0	397	0	1893	295	0	1863	1771
Future Volume (vph)	0	0	0	352	0	397	0	1893	295	0	1863	1771
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	352	0	397	0	1893	295	0	1863	1771
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	352	0	381	0	1893	295	0	1863	1771
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				36.5		36.5		65.2	110.0		64.9	110.0
Effective Green, g (s)				36.5		36.5		65.2	110.0		64.9	110.0
Actuated g/C Ratio				0.33		0.33		0.59	1.00		0.59	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Lane Grp Cap (vph)				1095		889		2956	1553		2942	1553
v/s Ratio Prot								0.38			0.37	
v/s Ratio Perm				0.11		0.14			0.19			c1.14
v/c Ratio				0.32		0.43		0.64	0.19		0.63	1.14
Uniform Delay, d1				27.5		28.6		14.7	0.0		14.8	55.0
Progression Factor				1.00		1.00		0.60	1.00		1.00	1.00
Incremental Delay, d2				0.8		1.5		1.0	0.2		1.0	71.5
Delay (s)				28.3		30.1		9.7	0.2		15.8	126.5
Level of Service				C		C		A	A		B	F
Approach Delay (s)		0.0			29.3			8.4			69.7	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

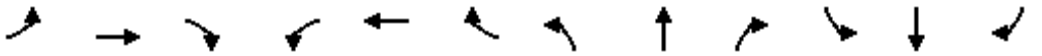
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1092	0	436	0	0	0	0	1103	449	0	1977	236
Future Volume (vph)	1092	0	436	0	0	0	0	1103	449	0	1977	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1092	0	436	0	0	0	0	1103	449	0	1977	236
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1092	0	422	0	0	0	0	1103	449	0	1977	236
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	36.5		36.5					65.2	110.0		64.9	110.0
Effective Green, g (s)	36.5		36.5					65.2	110.0		64.9	110.0
Actuated g/C Ratio	0.33		0.33					0.59	1.00		0.59	1.00
Clearance Time (s)	3.5		3.5					4.8			5.1	
Lane Grp Cap (vph)	1623		906					3725	1553		2942	1553
v/s Ratio Prot								0.18			c0.40	
v/s Ratio Perm	c0.22		0.15						0.29			0.15
v/c Ratio	0.67		0.47					0.30	0.29		0.67	0.15
Uniform Delay, d1	31.6		29.0					11.1	0.0		15.3	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.80	1.00
Incremental Delay, d2	2.2		1.7					0.2	0.5		1.0	0.2
Delay (s)	33.9		30.8					11.3	0.5		13.3	0.2
Level of Service	C		C					B	A		B	A
Approach Delay (s)		33.0			0.0			8.1			11.9	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

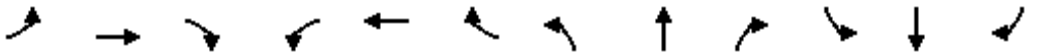
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	570	328	7	0	285	15	8	30	5	7	6	227
Future Volume (vph)	570	328	7	0	285	15	8	30	5	7	6	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Frt	1.00	1.00	0.85		0.99			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (prot)	1703	1792	1524		1796			1799			1779	1553
Flt Permitted	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (perm)	1703	1792	1524		1796			1799			1779	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	570	328	7	0	285	15	8	30	5	7	6	227
RTOR Reduction (vph)	0	0	2	0	1	0	0	3	0	0	0	125
Lane Group Flow (vph)	570	328	5	0	299	0	0	40	0	0	13	102
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	Over
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									
Actuated Green, G (s)	80.5	120.8	120.8		44.2			9.5			22.0	80.5
Effective Green, g (s)	80.5	120.8	120.8		44.2			9.5			22.0	80.5
Actuated g/C Ratio	0.45	0.67	0.67		0.25			0.05			0.12	0.45
Clearance Time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Lane Grp Cap (vph)	761	1202	1022		441			94			217	694
v/s Ratio Prot	c0.33	0.18			c0.17			c0.02			c0.01	0.07
v/s Ratio Perm			0.00									
v/c Ratio	0.75	0.27	0.00		0.68			0.43			0.06	0.15
Uniform Delay, d1	41.4	11.9	9.8		61.5			82.6			69.9	29.4
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	6.7	0.6	0.0		8.2			13.6			0.5	0.4
Delay (s)	48.0	12.5	9.8		69.6			96.2			70.4	29.9
Level of Service	D	B	A		E			F			E	C
Approach Delay (s)		34.8			69.6			96.2			32.1	
Approach LOS		C			E			F			C	

Intersection Summary			
HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

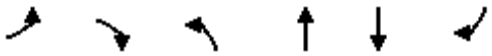
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	229	55	163	413	284	654	0	0	2885	161
Future Volume (vph)	0	0	229	55	163	413	284	654	0	0	2885	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1770	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1770	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	229	55	163	413	284	654	0	0	2885	161
RTOR Reduction (vph)	0	0	159	0	0	337	0	0	0	0	0	50
Lane Group Flow (vph)	0	0	70	0	218	76	284	654	0	0	2885	111
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			20.0		24.8	24.8	20.0	99.0			74.1	74.1
Effective Green, g (s)			20.0		24.8	24.8	20.0	99.0			74.1	74.1
Actuated g/C Ratio			0.15		0.18	0.18	0.15	0.73			0.55	0.55
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Grp Cap (vph)			236		325	492	489	3588			3384	836
v/s Ratio Prot			0.04		c0.12		c0.09	0.13			c0.47	
v/s Ratio Perm						0.03						0.07
v/c Ratio			0.30		0.67	0.15	0.58	0.18			0.85	0.13
Uniform Delay, d1			51.2		51.3	46.3	53.6	5.5			25.8	14.8
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			3.2		10.5	0.7	5.0	0.1			2.9	0.3
Delay (s)			54.4		61.8	47.0	58.6	5.7			28.8	15.1
Level of Service			D		E	D	E	A			C	B
Approach Delay (s)		54.4			52.1			21.7			28.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

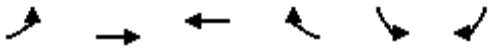
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	794	139	0	0	999	741
Future Volume (vph)	794	139	0	0	999	741
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			4.7	4.0
Lane Util. Factor	0.97	0.91			0.95	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00
Satd. Flow (prot)	3306	1386			3406	1524
Flt Permitted	0.95	1.00			1.00	1.00
Satd. Flow (perm)	3306	1386			3406	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	794	139	0	0	999	741
RTOR Reduction (vph)	1	33	0	0	0	0
Lane Group Flow (vph)	807	92	0	0	999	741
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%
Turn Type	Prot	Perm			NA	Free
Protected Phases	4				2	
Permitted Phases		4				Free
Actuated Green, G (s)	66.5	66.5			65.3	140.0
Effective Green, g (s)	66.5	66.5			65.3	140.0
Actuated g/C Ratio	0.48	0.48			0.47	1.00
Clearance Time (s)	3.5	3.5			4.7	
Lane Grp Cap (vph)	1570	658			1588	1524
v/s Ratio Prot	c0.24				c0.29	
v/s Ratio Perm		0.07				0.49
v/c Ratio	0.51	0.14			0.63	0.49
Uniform Delay, d1	25.5	20.7			28.2	0.0
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.2	0.4			1.9	1.1
Delay (s)	26.7	21.1			30.1	1.1
Level of Service	C	C			C	A
Approach Delay (s)	26.0			0.0	17.8	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.2
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

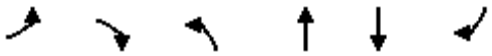
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	313	215	440	118	23	141
Future Volume (vph)	313	215	440	118	23	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	3343	3343	1495	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1671	3343	3343	1495	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	313	215	440	118	23	141
RTOR Reduction (vph)	0	0	0	87	0	103
Lane Group Flow (vph)	313	215	440	31	23	38
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	16.0	36.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	36.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.27	0.60	0.27	0.27	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	445	2005	891	398	467	418
v/s Ratio Prot	c0.19	0.06	c0.13		0.01	
v/s Ratio Perm				0.02		c0.02
v/c Ratio	0.70	0.11	0.49	0.08	0.05	0.09
Uniform Delay, d1	19.9	5.1	18.6	16.5	16.3	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	0.1	2.0	0.4	0.2	0.4
Delay (s)	28.8	5.2	20.5	16.9	16.5	17.0
Level of Service	C	A	C	B	B	B
Approach Delay (s)		19.2	19.8		16.9	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

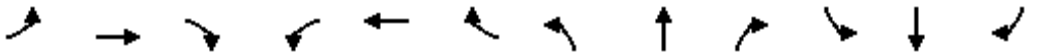
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	7	23	522	257	329
Future Volume (vph)	13	7	23	522	257	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3367	1553	1719	3438	3343	1495
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3367	1553	1719	3438	3343	1495
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	13	7	23	522	257	329
RTOR Reduction (vph)	0	6	0	0	0	211
Lane Group Flow (vph)	13	1	23	522	257	118
Heavy Vehicles (%)	4%	4%	5%	5%	8%	8%
Turn Type	Prot	Over	Prot	NA	NA	Over
Protected Phases	4	5	5	2	6	4
Permitted Phases						
Actuated Green, G (s)	18.0	4.0	4.0	24.0	16.0	18.0
Effective Green, g (s)	18.0	4.0	4.0	24.0	16.0	18.0
Actuated g/C Ratio	0.36	0.08	0.08	0.48	0.32	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1212	124	137	1650	1069	538
v/s Ratio Prot	0.00	0.00	0.01	c0.15	0.08	c0.08
v/s Ratio Perm						
v/c Ratio	0.01	0.00	0.17	0.32	0.24	0.22
Uniform Delay, d1	10.3	21.2	21.4	8.0	12.5	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	2.6	0.5	0.5	0.9
Delay (s)	10.3	21.2	24.1	8.5	13.1	12.1
Level of Service	B	C	C	A	B	B
Approach Delay (s)	14.1			9.1	12.5	
Approach LOS	B			A	B	

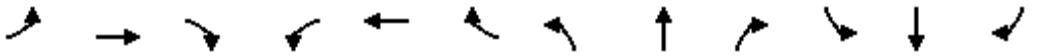
Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	695	0	622	0	0	0	0	2255	550	0	1790	1584
Future Volume (vph)	695	0	622	0	0	0	0	2255	550	0	1790	1584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.95	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4540	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4540	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	695	0	622	0	0	0	0	2255	550	0	1790	1584
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	0	0	133	0
Lane Group Flow (vph)	695	0	598	0	0	0	0	2255	550	0	2449	792
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	16.0		16.0					36.0	60.0		36.0	60.0
Effective Green, g (s)	16.0		16.0					36.0	60.0		36.0	60.0
Actuated g/C Ratio	0.27		0.27					0.60	1.00		0.60	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Lane Grp Cap (vph)	906		736					3807	1568		2724	1348
v/s Ratio Prot	0.20							0.36			c0.54	
v/s Ratio Perm			c0.22						0.35			0.59
v/c Ratio	0.77		0.81					0.59	0.35		0.90	0.59
Uniform Delay, d1	20.3		20.6					7.4	0.0		10.4	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	6.2		9.5					0.7	0.6		5.3	1.9
Delay (s)	26.5		30.1					8.1	0.6		15.7	1.9
Level of Service	C		C					A	A		B	A
Approach Delay (s)		28.2			0.0			6.7			12.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



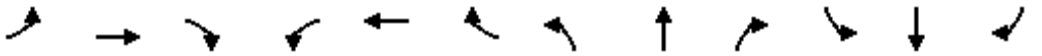
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	460	0	1232	0	2123	823	0	2914	1435
Future Volume (vph)	0	0	0	460	0	1232	0	2123	823	0	2914	1435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		0.99	0.85		0.97	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4708	1348		5814	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4708	1348		5814	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	460	0	1232	0	2123	823	0	2914	1435
RTOR Reduction (vph)	0	0	0	0	0	13	0	8	0	0	36	0
Lane Group Flow (vph)	0	0	0	460	0	1219	0	2280	658	0	3524	789
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				36.0		36.0		66.0	110.0		66.0	110.0
Effective Green, g (s)				36.0		36.0		66.0	110.0		66.0	110.0
Actuated g/C Ratio				0.33		0.33		0.60	1.00		0.60	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Lane Grp Cap (vph)				1112		1170		2824	1348		3488	1270
v/s Ratio Prot				0.14				0.48			c0.61	
v/s Ratio Perm						c0.34			0.49			0.62
v/c Ratio				0.41		1.04		0.81	0.49		1.01	0.62
Uniform Delay, d1				28.8		37.0		17.1	0.0		22.0	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				1.1		37.9		2.6	1.3		17.8	2.3
Delay (s)				29.9		74.9		19.7	1.3		39.8	2.3
Level of Service				C		E		B	A		D	A
Approach Delay (s)		0.0			62.7			15.6			33.0	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	597	367	217	693	291	149
Future Volume (vph)	597	367	217	693	291	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	597	367	217	693	291	149
RTOR Reduction (vph)	0	271	0	0	0	112
Lane Group Flow (vph)	597	96	217	693	291	37
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	17.0	17.0	15.0	36.0	16.0	16.0
Effective Green, g (s)	17.0	17.0	15.0	36.0	16.0	16.0
Actuated g/C Ratio	0.26	0.26	0.23	0.55	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	824	369	363	1746	753	347
v/s Ratio Prot	c0.19		c0.14	0.22	c0.10	
v/s Ratio Perm		0.07				0.03
v/c Ratio	0.72	0.26	0.60	0.40	0.39	0.11
Uniform Delay, d1	21.9	19.0	22.3	8.3	20.4	19.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	1.7	7.1	0.7	1.5	0.6
Delay (s)	27.4	20.7	29.4	9.0	21.9	19.6
Level of Service	C	C	C	A	C	B
Approach Delay (s)	24.8			13.8	21.1	
Approach LOS	C			B	C	

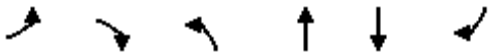
Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	340	0	1	278	32	1	1	0	45	2	455
Future Volume (vph)	219	340	0	1	278	32	1	1	0	45	2	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.98			1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (prot)	1736	3471		1736	3417			1800		1665	1676	1568
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (perm)	1736	3471		1736	3417			1800		1665	1676	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	219	340	0	1	278	32	1	1	0	45	2	455
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	358
Lane Group Flow (vph)	219	340	0	1	298	0	0	2	0	23	24	97
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	11.0	23.0		4.0	16.0			16.0		16.0	16.0	16.0
Effective Green, g (s)	11.0	23.0		4.0	16.0			16.0		16.0	16.0	16.0
Actuated g/C Ratio	0.15	0.31		0.05	0.21			0.21		0.21	0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	254	1064		92	728			384		355	357	334
v/s Ratio Prot	c0.13	0.10		0.00	c0.09			c0.00		0.01	0.01	
v/s Ratio Perm												c0.06
v/c Ratio	0.86	0.32		0.01	0.41			0.01		0.06	0.07	0.29
Uniform Delay, d1	31.3	20.0		33.6	25.4			23.2		23.5	23.5	24.7
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	29.9	0.8		0.2	1.7			0.0		0.4	0.4	2.2
Delay (s)	61.2	20.8		33.8	27.1			23.3		23.9	23.9	26.9
Level of Service	E	C		C	C			C		C	C	C
Approach Delay (s)		36.6			27.2			23.3			26.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	277	27	21	784	654	103
Future Volume (vph)	277	27	21	784	654	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.99		1.00	1.00	0.98	
Flt Protected	0.96		0.95	1.00	1.00	
Satd. Flow (prot)	1743		1752	1845	1811	
Flt Permitted	0.96		0.95	1.00	1.00	
Satd. Flow (perm)	1743		1752	1845	1811	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	277	27	21	784	654	103
RTOR Reduction (vph)	6	0	0	0	10	0
Lane Group Flow (vph)	298	0	21	784	747	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	16.0		4.0	36.0	28.0	
Effective Green, g (s)	16.0		4.0	36.0	28.0	
Actuated g/C Ratio	0.27		0.07	0.60	0.47	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	464		116	1107	845	
v/s Ratio Prot	c0.17		0.01	c0.43	c0.41	
v/s Ratio Perm						
v/c Ratio	0.64		0.18	0.71	0.88	
Uniform Delay, d1	19.5		26.5	8.3	14.5	
Progression Factor	1.00		0.97	1.37	1.00	
Incremental Delay, d2	6.7		1.6	1.9	13.0	
Delay (s)	26.2		27.4	13.3	27.6	
Level of Service	C		C	B	C	
Approach Delay (s)	26.2			13.7	27.6	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
1: Howe Avenue & College Town Drive/US 50 Westbound Ramps

03/07/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	0	223	458	534	539	0	1438	662	0	1266	311
Future Volume (veh/h)	58	0	223	458	534	539	0	1438	662	0	1266	311
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1827	1827	1827	0	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	58	0	223	458	804	359	0	1438	0	0	1266	311
Adj No. of Lanes	0	1	2	2	2	1	0	3	1	0	4	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	0	4	4	0	4	4
Cap, veh/h	366	0	575	1189	1248	531	0	1746	544	0	2200	544
Arrive On Green	0.21	0.00	0.21	0.34	0.34	0.34	0.00	0.35	0.00	0.00	0.35	0.35
Sat Flow, veh/h	1757	0	2760	3480	3654	1553	0	5152	1553	0	6540	1553
Grp Volume(v), veh/h	58	0	223	458	804	359	0	1438	0	0	1266	311
Grp Sat Flow(s),veh/h/ln	1757	0	1380	1740	1827	1553	0	1663	1553	0	1571	1553
Q Serve(g_s), s	3.2	0.0	8.4	12.0	22.3	23.8	0.0	31.6	0.0	0.0	19.7	19.5
Cycle Q Clear(g_c), s	3.2	0.0	8.4	12.0	22.3	23.8	0.0	31.6	0.0	0.0	19.7	19.5
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	366	0	575	1189	1248	531	0	1746	544	0	2200	544
V/C Ratio(X)	0.16	0.00	0.39	0.39	0.64	0.68	0.00	0.82	0.00	0.00	0.58	0.57
Avail Cap(c_a), veh/h	366	0	575	1189	1248	531	0	1746	544	0	2200	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	0.0	40.9	29.9	33.3	33.8	0.0	35.6	0.0	0.0	31.7	31.7
Incr Delay (d2), s/veh	0.9	0.0	2.0	0.9	2.6	6.8	0.0	4.6	0.0	0.0	1.1	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	3.3	5.9	11.7	11.2	0.0	15.3	0.0	0.0	8.7	9.0
LnGrp Delay(d),s/veh	39.8	0.0	42.9	30.9	35.9	40.6	0.0	40.2	0.0	0.0	32.8	36.0
LnGrp LOS	D		D	C	D	D		D			C	D
Approach Vol, veh/h		281			1621			1438			1577	
Approach Delay, s/veh		42.2			35.5			40.2			33.5	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		46.0		29.0		46.0		45.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		42.0		25.0		42.0		41.0
Max Q Clear Time (g_c+I1), s		33.6		10.4		21.7		25.8
Green Ext Time (p_c), s		4.0		0.2		5.5		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	36.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	249	34	137	10	73	39	151	1419	19	20	846	219
Future Volume (veh/h)	249	34	137	10	73	39	151	1419	19	20	846	219
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	273	0	137	10	73	39	151	1419	19	20	846	219
Adj No. of Lanes	2	0	1	0	1	0	2	3	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	644	0	287	22	163	87	338	2367	32	101	1475	660
Arrive On Green	0.18	0.00	0.18	0.16	0.16	0.16	0.10	0.47	0.47	0.06	0.43	0.43
Sat Flow, veh/h	3514	0	1568	141	1031	551	3375	5072	68	1740	3471	1553
Grp Volume(v), veh/h	273	0	137	122	0	0	151	930	508	20	846	219
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1723	0	0	1688	1663	1815	1740	1736	1553
Q Serve(g_s), s	8.3	0.0	9.4	7.7	0.0	0.0	5.1	24.9	24.9	1.3	22.2	11.3
Cycle Q Clear(g_c), s	8.3	0.0	9.4	7.7	0.0	0.0	5.1	24.9	24.9	1.3	22.2	11.3
Prop In Lane	1.00		1.00	0.08		0.32	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	644	0	287	273	0	0	338	1552	847	101	1475	660
V/C Ratio(X)	0.42	0.00	0.48	0.45	0.00	0.00	0.45	0.60	0.60	0.20	0.57	0.33
Avail Cap(c_a), veh/h	644	0	287	273	0	0	338	1552	847	101	1475	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	0.0	43.8	45.7	0.0	0.0	50.9	23.7	23.7	53.8	26.2	23.1
Incr Delay (d2), s/veh	2.0	0.0	5.6	5.2	0.0	0.0	4.2	1.7	3.1	4.3	1.6	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	4.5	4.1	0.0	0.0	2.6	11.7	13.1	0.8	10.9	5.1
LnGrp Delay(d),s/veh	45.4	0.0	49.4	51.0	0.0	0.0	55.1	25.4	26.8	58.1	27.9	24.4
LnGrp LOS	D		D	D			E	C	C	E	C	C
Approach Vol, veh/h		410			122			1589			1085	
Approach Delay, s/veh		46.8			51.0			28.7			27.7	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	60.0		26.0	16.0	55.0		23.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	56.0		22.0	12.0	51.0		19.0
Max Q Clear Time (g_c+I1), s	3.3	26.9		11.4	7.1	24.2		9.7
Green Ext Time (p_c), s	0.8	1.9		0.4	0.1	1.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	380	41	90	270	187	70	1237	97	254	441	88
Future Volume (veh/h)	239	380	41	90	270	187	70	1237	97	254	441	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	239	380	41	90	270	187	70	1237	97	254	441	88
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	273	710	76	195	623	279	188	1341	105	263	1504	673
Arrive On Green	0.16	0.22	0.22	0.11	0.18	0.18	0.06	0.41	0.41	0.08	0.43	0.43
Sat Flow, veh/h	1757	3194	343	1757	3505	1568	3375	3262	255	3375	3471	1553
Grp Volume(v), veh/h	239	207	214	90	270	187	70	657	677	254	441	88
Grp Sat Flow(s),veh/h/ln	1757	1752	1784	1757	1752	1568	1688	1736	1782	1688	1736	1553
Q Serve(g_s), s	12.0	9.4	9.5	4.3	6.2	10.0	1.8	32.3	32.5	6.8	7.4	3.1
Cycle Q Clear(g_c), s	12.0	9.4	9.5	4.3	6.2	10.0	1.8	32.3	32.5	6.8	7.4	3.1
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	273	389	396	195	623	279	188	714	733	263	1504	673
V/C Ratio(X)	0.87	0.53	0.54	0.46	0.43	0.67	0.37	0.92	0.92	0.97	0.29	0.13
Avail Cap(c_a), veh/h	273	389	396	195	623	279	188	714	733	263	1504	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	30.9	30.9	37.5	33.0	34.5	41.0	25.1	25.2	41.4	16.6	15.3
Incr Delay (d2), s/veh	30.0	5.1	5.2	7.6	2.2	12.2	5.6	19.1	19.2	47.8	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	5.1	5.3	2.5	3.2	5.3	1.0	19.1	19.7	4.9	3.7	1.4
LnGrp Delay(d),s/veh	67.1	36.0	36.1	45.1	35.2	46.7	46.6	44.2	44.3	89.2	17.0	15.7
LnGrp LOS	E	D	D	D	D	D	D	D	D	F	B	B
Approach Vol, veh/h		660			547			1404			783	
Approach Delay, s/veh		47.3			40.7			44.4			40.3	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	41.0	14.0	24.0	9.0	43.0	18.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	37.0	10.0	20.0	5.0	39.0	14.0	16.0
Max Q Clear Time (g_c+I1), s	8.8	34.5	6.3	11.5	3.8	9.4	14.0	12.0
Green Ext Time (p_c), s	0.0	1.0	0.0	0.8	0.0	2.2	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	43.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	116	303	197	283	206	114	616	102	16	409	5
Future Volume (veh/h)	11	116	303	197	283	206	114	616	102	16	409	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	11	116	303	197	283	206	114	616	102	16	409	5
Adj No. of Lanes	1	1	2	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	85	329	492	474	785	554	322	1382	618	98	946	12
Arrive On Green	0.05	0.18	0.18	0.28	0.41	0.41	0.18	0.39	0.39	0.06	0.27	0.27
Sat Flow, veh/h	1707	1792	2682	1707	1909	1349	1757	3505	1568	1757	3546	43
Grp Volume(v), veh/h	11	116	303	197	252	237	114	616	102	16	202	212
Grp Sat Flow(s),veh/h/ln	1707	1792	1341	1707	1703	1554	1757	1752	1568	1757	1752	1837
Q Serve(g_s), s	1.1	10.2	18.7	17.0	18.4	19.1	10.2	23.2	7.6	1.6	17.2	17.2
Cycle Q Clear(g_c), s	1.1	10.2	18.7	17.0	18.4	19.1	10.2	23.2	7.6	1.6	17.2	17.2
Prop In Lane	1.00		1.00	1.00		0.87	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	85	329	492	474	700	639	322	1382	618	98	467	490
V/C Ratio(X)	0.13	0.35	0.62	0.42	0.36	0.37	0.35	0.45	0.16	0.16	0.43	0.43
Avail Cap(c_a), veh/h	85	329	492	474	700	639	322	1382	618	98	467	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.8	64.2	67.7	53.1	36.6	36.8	64.2	40.0	35.3	81.0	54.7	54.7
Incr Delay (d2), s/veh	3.1	3.0	5.7	2.7	1.4	1.7	3.0	1.0	0.6	3.6	2.9	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.3	7.3	8.3	8.9	8.5	5.2	11.5	3.4	0.9	8.7	9.2
LnGrp Delay(d),s/veh	84.8	67.1	73.4	55.7	38.1	38.5	67.2	41.1	35.9	84.6	57.6	57.5
LnGrp LOS	F	E	E	E	D	D	E	D	D	F	E	E
Approach Vol, veh/h		430			686			832			430	
Approach Delay, s/veh		72.0			43.3			44.0			58.6	
Approach LOS		E			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	75.0	54.0	37.0	37.0	52.0	13.0	78.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	71.0	50.0	33.0	33.0	48.0	9.0	74.0
Max Q Clear Time (g_c+I1), s	3.6	25.2	19.0	20.7	12.2	19.2	3.1	21.1
Green Ext Time (p_c), s	0.0	1.3	0.2	0.9	0.1	1.3	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	51.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	225	115	115	275	102	166	760	117	44	384	104
Future Volume (veh/h)	84	225	115	115	275	102	166	760	117	44	384	104
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	84	225	115	115	275	102	166	760	117	44	384	104
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	146	935	418	146	672	244	205	1110	497	117	935	418
Arrive On Green	0.08	0.27	0.27	0.08	0.27	0.27	0.12	0.32	0.32	0.07	0.27	0.27
Sat Flow, veh/h	1757	3505	1568	1757	2522	914	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	84	225	115	115	189	188	166	760	117	44	384	104
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1683	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	2.8	3.0	3.5	3.9	5.3	5.5	5.5	11.4	3.3	1.4	5.4	3.1
Cycle Q Clear(g_c), s	2.8	3.0	3.5	3.9	5.3	5.5	5.5	11.4	3.3	1.4	5.4	3.1
Prop In Lane	1.00		1.00	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	935	418	146	467	449	205	1110	497	117	935	418
V/C Ratio(X)	0.57	0.24	0.28	0.79	0.40	0.42	0.81	0.68	0.24	0.38	0.41	0.25
Avail Cap(c_a), veh/h	146	935	418	146	467	449	205	1110	497	117	935	418
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	17.2	17.4	27.0	18.1	18.2	25.9	17.9	15.1	26.8	18.1	17.3
Incr Delay (d2), s/veh	15.3	0.6	1.6	33.4	2.6	2.9	28.2	3.4	1.1	9.0	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.5	1.7	3.2	2.9	2.9	4.3	6.0	1.6	1.0	2.8	1.5
LnGrp Delay(d),s/veh	41.8	17.8	19.0	60.4	20.7	21.0	54.0	21.3	16.3	35.8	19.5	18.7
LnGrp LOS	D	B	B	E	C	C	D	C	B	D	B	B
Approach Vol, veh/h		424			492			1043			532	
Approach Delay, s/veh		22.9			30.1			26.0			20.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	23.0	9.0	20.0	11.0	20.0	9.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	19.0	5.0	16.0	7.0	16.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	3.4	13.4	5.9	5.5	7.5	7.4	4.8	7.5
Green Ext Time (p_c), s	0.0	1.3	0.0	0.7	0.0	1.5	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	219	99	79	204	98	114	791	99	39	252	85
Future Volume (veh/h)	146	219	99	79	204	98	114	791	99	39	252	85
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	146	219	99	79	204	98	114	791	99	39	252	85
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	176	935	418	176	935	418	146	1051	470	117	993	444
Arrive On Green	0.10	0.27	0.27	0.10	0.27	0.27	0.08	0.30	0.30	0.07	0.28	0.28
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	146	219	99	79	204	98	114	791	99	39	252	85
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	4.9	2.9	3.0	2.5	2.7	2.9	3.8	12.2	2.8	1.3	3.3	2.5
Cycle Q Clear(g_c), s	4.9	2.9	3.0	2.5	2.7	2.9	3.8	12.2	2.8	1.3	3.3	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	935	418	176	935	418	146	1051	470	117	993	444
V/C Ratio(X)	0.83	0.23	0.24	0.45	0.22	0.23	0.78	0.75	0.21	0.33	0.25	0.19
Avail Cap(c_a), veh/h	176	935	418	176	935	418	146	1051	470	117	993	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	17.2	17.2	25.4	17.1	17.2	27.0	19.0	15.7	26.7	16.6	16.3
Incr Delay (d2), s/veh	34.6	0.6	1.3	8.1	0.5	1.3	32.6	5.0	1.0	7.5	0.6	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	1.5	1.4	1.6	1.4	1.4	3.2	6.5	1.3	0.9	1.7	1.2
LnGrp Delay(d),s/veh	61.1	17.8	18.6	33.6	17.7	18.5	59.5	24.0	16.7	34.2	17.2	17.2
LnGrp LOS	E	B	B	C	B	B	E	C	B	C	B	B
Approach Vol, veh/h		464			381			1004			376	
Approach Delay, s/veh		31.6			21.2			27.3			19.0	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	22.0	10.0	20.0	9.0	21.0	10.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	18.0	6.0	16.0	5.0	17.0	6.0	16.0
Max Q Clear Time (g_c+I1), s	3.3	14.2	4.5	5.0	5.8	5.3	6.9	4.9
Green Ext Time (p_c), s	0.0	0.9	0.0	0.6	0.0	1.5	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	364	344	77	111	357	543	85	1898	204	616	1290	507
Future Volume (veh/h)	364	344	77	111	357	543	85	1898	204	616	1290	507
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	364	344	77	111	357	543	85	1898	204	616	1290	507
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	366	946	423	206	781	630	172	1852	577	604	2489	775
Arrive On Green	0.11	0.27	0.27	0.06	0.22	0.22	0.05	0.37	0.37	0.18	0.50	0.50
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	364	344	77	111	357	543	85	1898	204	616	1290	507
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	18.2	13.5	6.4	5.4	15.0	38.0	4.2	63.3	16.2	30.5	29.8	41.4
Cycle Q Clear(g_c), s	18.2	13.5	6.4	5.4	15.0	38.0	4.2	63.3	16.2	30.5	29.8	41.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	366	946	423	206	781	630	172	1852	577	604	2489	775
V/C Ratio(X)	1.00	0.36	0.18	0.54	0.46	0.86	0.49	1.03	0.35	1.02	0.52	0.65
Avail Cap(c_a), veh/h	366	946	423	206	781	630	172	1852	577	604	2489	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.1	50.4	47.8	77.8	57.3	46.7	78.8	53.6	38.8	70.0	28.8	31.8
Incr Delay (d2), s/veh	45.8	1.1	0.9	9.8	1.9	14.5	9.8	27.5	1.7	41.8	0.8	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	6.7	2.9	2.8	7.5	25.9	2.2	33.7	7.3	17.7	13.8	18.6
LnGrp Delay(d),s/veh	121.9	51.5	48.7	87.6	59.2	61.1	88.5	81.1	40.5	111.8	29.6	36.0
LnGrp LOS	F	D	D	F	E	E	F	F	D	F	C	D
Approach Vol, veh/h		785			1011			2187			2413	
Approach Delay, s/veh		83.9			63.4			77.6			52.0	
Approach LOS		F			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	89.9	23.8	42.6	36.0	68.1	15.8	50.6
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	8.7	84.9	18.3	* 38	30.5	* 63	10.3	45.7
Max Q Clear Time (g_c+I1), s	6.2	43.4	20.2	40.0	32.5	65.3	7.4	15.5
Green Ext Time (p_c), s	0.0	8.8	0.0	0.0	0.0	0.0	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	66.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	2	32	0	232	0	1858	47	70	1335	6
Future Volume (veh/h)	10	0	2	32	0	232	0	1858	47	70	1335	6
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	10	0	2	32	0	232	0	1858	47	70	1335	6
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	60	0	12	292	0	521	2	2141	667	123	2924	13
Arrive On Green	0.04	0.00	0.04	0.17	0.00	0.17	0.00	0.43	0.43	0.07	0.57	0.57
Sat Flow, veh/h	1435	0	287	1757	0	3136	1740	4988	1553	1740	5125	23
Grp Volume(v), veh/h	12	0	0	32	0	232	0	1858	47	70	866	475
Grp Sat Flow(s),veh/h/ln	1722	0	0	1757	0	1568	1740	1663	1553	1740	1663	1823
Q Serve(g_s), s	0.5	0.0	0.0	1.1	0.0	4.8	0.0	24.5	1.3	2.8	10.9	10.9
Cycle Q Clear(g_c), s	0.5	0.0	0.0	1.1	0.0	4.8	0.0	24.5	1.3	2.8	10.9	10.9
Prop In Lane	0.83		0.17	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	72	0	0	292	0	521	2	2141	667	123	1897	1040
V/C Ratio(X)	0.17	0.00	0.00	0.11	0.00	0.45	0.00	0.87	0.07	0.57	0.46	0.46
Avail Cap(c_a), veh/h	72	0	0	292	0	521	72	2141	667	123	1897	1040
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	0.0	0.0	25.6	0.0	27.1	0.0	18.7	12.1	32.5	9.0	9.0
Incr Delay (d2), s/veh	5.0	0.0	0.0	0.8	0.0	2.7	0.0	5.1	0.2	17.8	0.8	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.6	0.0	2.3	0.0	12.2	0.6	1.9	5.1	5.8
LnGrp Delay(d),s/veh	38.4	0.0	0.0	26.3	0.0	29.8	0.0	23.8	12.3	50.2	9.8	10.4
LnGrp LOS	D			C		C		C	B	D	A	B
Approach Vol, veh/h		12			264			1905			1411	
Approach Delay, s/veh		38.4			29.4			23.5			12.0	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	46.2		8.5	10.2	36.0		17.5
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 3	33.4		3.0	* 5.1	* 31		12.0
Max Q Clear Time (g_c+I1), s	0.0	12.9		2.5	4.8	26.5		6.8
Green Ext Time (p_c), s	0.0	6.2		0.0	0.0	2.9		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	100	23	195	172	529	34	1438	162	263	946	104
Future Volume (veh/h)	48	100	23	195	172	529	34	1438	162	263	946	104
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	48	100	23	195	172	529	34	1438	162	263	946	104
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	97	959	429	326	1203	538	105	1775	200	367	2134	234
Arrive On Green	0.03	0.28	0.28	0.10	0.34	0.34	0.03	0.39	0.39	0.11	0.47	0.47
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4549	512	3375	4563	500
Grp Volume(v), veh/h	48	100	23	195	172	529	34	1051	549	263	689	361
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1737	1688	1663	1739
Q Serve(g_s), s	2.4	3.7	1.9	9.3	5.8	56.9	1.7	48.0	48.0	12.8	23.7	23.8
Cycle Q Clear(g_c), s	2.4	3.7	1.9	9.3	5.8	56.9	1.7	48.0	48.0	12.8	23.7	23.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		0.29
Lane Grp Cap(c), veh/h	97	959	429	326	1203	538	105	1297	677	367	1555	813
V/C Ratio(X)	0.49	0.10	0.05	0.60	0.14	0.98	0.32	0.81	0.81	0.72	0.44	0.44
Avail Cap(c_a), veh/h	97	959	429	326	1203	538	105	1297	677	367	1555	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.4	45.9	45.3	73.8	38.6	55.4	80.7	46.3	46.3	73.3	30.4	30.4
Incr Delay (d2), s/veh	16.8	0.2	0.2	7.8	0.2	34.9	8.0	5.6	10.2	11.4	0.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.8	0.8	4.8	2.8	29.9	0.9	23.0	24.9	6.6	11.1	11.8
LnGrp Delay(d),s/veh	98.3	46.1	45.5	81.6	38.9	90.3	88.7	51.8	56.4	84.7	31.3	32.2
LnGrp LOS	F	D	D	F	D	F	F	D	E	F	C	C
Approach Vol, veh/h		171			896			1634			1313	
Approach Delay, s/veh		60.7			78.5			54.2			42.3	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	84.9	10.4	64.1	24.0	71.7	21.8	52.7
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	5.3	79.5	4.9	* 58	18.5	* 66	16.3	* 47
Max Q Clear Time (g_c+I1), s	3.7	25.8	4.4	58.9	14.8	50.0	11.3	5.7
Green Ext Time (p_c), s	0.0	4.2	0.0	0.0	0.1	4.0	0.1	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	56.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	46	103	1462	24	61	1153
Future Volume (veh/h)	46	103	1462	24	61	1153
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	46	103	1462	24	61	1153
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	244	218	2265	37	235	2327
Arrive On Green	0.14	0.14	0.45	0.45	0.14	0.67
Sat Flow, veh/h	1757	1568	5219	83	1740	3563
Grp Volume(v), veh/h	46	103	962	524	61	1153
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1812	1740	1736
Q Serve(g_s), s	1.3	3.3	12.1	12.1	1.7	8.9
Cycle Q Clear(g_c), s	1.3	3.3	12.1	12.1	1.7	8.9
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	244	218	1490	812	235	2327
V/C Ratio(X)	0.19	0.47	0.65	0.65	0.26	0.50
Avail Cap(c_a), veh/h	244	218	1490	812	235	2327
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	21.4	11.6	11.6	20.9	4.4
Incr Delay (d2), s/veh	1.7	7.2	2.2	3.9	2.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.8	5.9	6.9	1.0	4.4
LnGrp Delay(d),s/veh	22.3	28.6	13.7	15.5	23.6	5.2
LnGrp LOS	C	C	B	B	C	A
Approach Vol, veh/h	149		1486			1214
Approach Delay, s/veh	26.7		14.4			6.1
Approach LOS	C		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		41.0			12.0	29.0		13.0
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		36.2			* 7.3	24.2		7.5
Max Q Clear Time (g_c+I1), s		10.9			3.7	14.1		5.3
Green Ext Time (p_c), s		4.4			0.0	3.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.5
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	175	26	73	429	481	81	1010	55	231	842	149
Future Volume (veh/h)	64	175	26	73	429	481	81	1010	55	231	842	149
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	64	175	26	73	429	481	81	1010	55	231	842	149
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	90	433	64	141	567	482	159	1166	522	312	1466	656
Arrive On Green	0.05	0.28	0.28	0.08	0.32	0.32	0.09	0.34	0.34	0.18	0.42	0.42
Sat Flow, veh/h	1707	1526	227	1707	1792	1524	1740	3471	1553	1740	3471	1553
Grp Volume(v), veh/h	64	0	201	73	429	481	81	1010	55	231	842	149
Grp Sat Flow(s),veh/h/ln	1707	0	1752	1707	1792	1524	1740	1736	1553	1740	1736	1553
Q Serve(g_s), s	6.3	0.0	15.8	7.0	36.6	53.7	7.6	46.4	4.2	21.4	31.5	10.4
Cycle Q Clear(g_c), s	6.3	0.0	15.8	7.0	36.6	53.7	7.6	46.4	4.2	21.4	31.5	10.4
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	0	497	141	567	482	159	1166	522	312	1466	656
V/C Ratio(X)	0.71	0.00	0.40	0.52	0.76	1.00	0.51	0.87	0.11	0.74	0.57	0.23
Avail Cap(c_a), veh/h	90	0	497	141	567	482	159	1166	522	312	1466	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	79.4	0.0	49.4	74.8	52.3	58.1	73.7	53.0	38.9	66.2	37.5	31.4
Incr Delay (d2), s/veh	37.8	0.0	2.4	12.8	9.1	40.4	11.1	8.7	0.4	14.7	1.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	8.0	3.8	19.5	28.0	4.1	23.7	1.8	11.6	15.4	4.6
LnGrp Delay(d),s/veh	117.2	0.0	51.8	87.7	61.4	98.5	84.8	61.7	39.3	80.9	39.2	32.3
LnGrp LOS	F		D	F	E	F	F	E	D	F	D	C
Approach Vol, veh/h		265			983			1146			1222	
Approach Delay, s/veh		67.6			81.5			62.3			46.2	
Approach LOS		E			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	59.3	20.3	76.7	19.6	53.7	35.0	62.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.5	4.8
Max Green Setting (Gmax), s	9.0	* 54	* 16	71.9	14.1	* 48	30.5	57.2
Max Q Clear Time (g_c+I1), s	8.3	55.7	9.6	33.5	9.0	17.8	23.4	48.4
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.0	0.9	0.1	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	62.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	105	32	31	105	11	95	897	19	18	584	276
Future Volume (veh/h)	180	105	32	31	105	11	95	897	19	18	584	276
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	180	105	32	31	105	11	95	897	19	18	584	276
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	171	371	315	179	330	35	193	1001	21	175	999	447
Arrive On Green	0.10	0.20	0.20	0.10	0.20	0.20	0.11	0.29	0.29	0.10	0.29	0.29
Sat Flow, veh/h	1757	1845	1568	1757	1642	172	1740	3476	74	1740	3471	1553
Grp Volume(v), veh/h	180	105	32	31	0	116	95	448	468	18	584	276
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1814	1740	1736	1814	1740	1736	1553
Q Serve(g_s), s	6.5	3.2	1.1	1.1	0.0	3.6	3.4	16.5	16.5	0.6	9.6	10.3
Cycle Q Clear(g_c), s	6.5	3.2	1.1	1.1	0.0	3.6	3.4	16.5	16.5	0.6	9.6	10.3
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	171	371	315	179	0	364	193	500	522	175	999	447
V/C Ratio(X)	1.05	0.28	0.10	0.17	0.00	0.32	0.49	0.90	0.90	0.10	0.58	0.62
Avail Cap(c_a), veh/h	171	371	315	179	0	364	193	500	522	175	999	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	22.6	21.7	27.4	0.0	22.8	27.9	22.8	22.8	27.3	20.3	20.6
Incr Delay (d2), s/veh	83.0	1.9	0.6	2.1	0.0	2.3	8.7	21.4	20.7	1.2	2.5	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	1.8	0.5	0.6	0.0	2.0	2.1	10.8	11.2	0.4	4.9	5.2
LnGrp Delay(d),s/veh	113.2	24.5	22.4	29.5	0.0	25.0	36.6	44.2	43.5	28.4	22.8	26.8
LnGrp LOS	F	C	C	C		C	D	D	D	C	C	C
Approach Vol, veh/h		317			147			1011			878	
Approach Delay, s/veh		74.6			26.0			43.1			24.2	
Approach LOS		E			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	24.0	12.0	18.7	12.0	24.0	12.0	18.7
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 7.4	19.2	6.5	* 13	* 6.7	19.2	* 6.8	* 13
Max Q Clear Time (g_c+I1), s	5.4	12.3	8.5	5.6	2.6	18.5	3.1	5.2
Green Ext Time (p_c), s	0.0	1.6	0.0	0.2	0.0	0.3	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	39.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	153	36	21	183	56	87	846	18	34	350	221
Future Volume (veh/h)	115	153	36	21	183	56	87	846	18	34	350	221
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	115	153	36	21	183	56	87	846	18	34	350	221
Adj No. of Lanes	0	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	142	189	287	291	306	260	163	887	754	47	771	656
Arrive On Green	0.18	0.18	0.18	0.17	0.17	0.17	0.09	0.49	0.49	0.03	0.42	0.42
Sat Flow, veh/h	775	1031	1568	1757	1845	1568	1740	1827	1553	1740	1827	1553
Grp Volume(v), veh/h	268	0	36	21	183	56	87	846	18	34	350	221
Grp Sat Flow(s),veh/h/ln	1806	0	1568	1757	1845	1568	1740	1827	1553	1740	1827	1553
Q Serve(g_s), s	24.9	0.0	3.4	1.8	16.1	5.4	8.3	77.6	1.1	3.4	24.0	16.8
Cycle Q Clear(g_c), s	24.9	0.0	3.4	1.8	16.1	5.4	8.3	77.6	1.1	3.4	24.0	16.8
Prop In Lane	0.43		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	0	287	291	306	260	163	887	754	47	771	656
V/C Ratio(X)	0.81	0.00	0.13	0.07	0.60	0.22	0.53	0.95	0.02	0.73	0.45	0.34
Avail Cap(c_a), veh/h	330	0	287	291	306	260	163	887	754	47	771	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.6	0.0	59.8	61.6	67.6	63.2	75.7	43.1	23.4	84.5	36.1	34.0
Incr Delay (d2), s/veh	19.2	0.0	0.9	0.5	8.4	1.9	11.9	20.8	0.1	66.6	1.9	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	0.0	1.5	0.9	8.9	2.5	4.6	44.1	0.5	2.5	12.5	7.4
LnGrp Delay(d),s/veh	87.8	0.0	60.7	62.1	76.0	65.1	87.6	63.9	23.5	151.2	38.0	35.4
LnGrp LOS	F		E	E	E	E	F	E	C	F	D	D
Approach Vol, veh/h		304			260			951			605	
Approach Delay, s/veh		84.6			72.5			65.3			43.5	
Approach LOS		F			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.1	79.0		35.8	10.0	90.1		39.1
Change Period (Y+Rc), s	* 4.7	5.1		6.8	* 5.3	5.1		7.1
Max Green Setting (Gmax), s	* 16	73.9		29.0	* 4.7	85.0		32.0
Max Q Clear Time (g_c+I1), s	10.3	26.0		18.1	5.4	79.6		26.9
Green Ext Time (p_c), s	0.0	1.5		0.2	0.0	1.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	62.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	286	101	44	242	7	340	860	182	9	303	94
Future Volume (veh/h)	73	286	101	44	242	7	340	860	182	9	303	94
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	73	286	101	44	242	7	340	860	182	9	303	94
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	199	290	100	200	397	178	803	1313	278	260	403	123
Arrive On Green	0.11	0.11	0.11	0.12	0.11	0.11	0.46	0.46	0.46	0.15	0.15	0.15
Sat Flow, veh/h	1740	2532	876	1740	3471	1553	1740	2852	604	1740	2622	799
Grp Volume(v), veh/h	73	194	193	44	242	7	340	523	519	9	199	198
Grp Sat Flow(s),veh/h/ln	1740	1736	1672	1740	1736	1553	1740	1736	1720	1740	1736	1686
Q Serve(g_s), s	5.1	14.5	14.9	3.0	8.6	0.5	17.0	30.3	30.4	0.6	14.3	14.7
Cycle Q Clear(g_c), s	5.1	14.5	14.9	3.0	8.6	0.5	17.0	30.3	30.4	0.6	14.3	14.7
Prop In Lane	1.00		0.52	1.00		1.00	1.00		0.35	1.00		0.47
Lane Grp Cap(c), veh/h	199	198	191	200	397	178	803	799	792	260	266	259
V/C Ratio(X)	0.37	0.98	1.01	0.22	0.61	0.04	0.42	0.65	0.65	0.03	0.75	0.77
Avail Cap(c_a), veh/h	199	198	191	200	397	178	803	799	792	260	266	259
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	57.5	57.7	52.3	54.9	51.3	23.5	27.1	27.2	47.4	52.7	52.9
Incr Delay (d2), s/veh	5.1	58.4	67.4	2.5	6.8	0.4	1.6	4.2	4.2	0.2	17.2	19.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	10.2	10.4	1.6	4.5	0.2	8.6	15.5	15.3	0.3	8.1	8.2
LnGrp Delay(d),s/veh	58.5	115.9	125.1	54.8	61.8	51.7	25.1	31.3	31.3	47.6	69.9	72.2
LnGrp LOS	E	F	F	D	E	D	C	C	C	D	E	E
Approach Vol, veh/h		460			293			1382			406	
Approach Delay, s/veh		110.7			60.5			29.8			70.5	
Approach LOS		F			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	65.0	25.2	20.0	20.1	25.0	65.2	20.0	20.1
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 60	* 20	* 15	* 15	19.5	* 60	15.0	* 15
Max Q Clear Time (g_c+I1), s	19.0	16.7	7.1	10.6	2.6	32.4	5.0	16.9
Green Ext Time (p_c), s	0.4	0.8	0.0	0.4	0.0	1.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	246	257	44	277	46	660	1218	186	27	351	55
Future Volume (veh/h)	98	246	257	44	277	46	660	1218	186	27	351	55
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	98	246	257	44	277	46	660	1218	186	27	351	55
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	236	750	336	142	653	292	1002	1787	272	103	1128	505
Arrive On Green	0.07	0.21	0.21	0.04	0.19	0.19	0.30	0.59	0.59	0.03	0.33	0.33
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	3022	459	3375	3471	1553
Grp Volume(v), veh/h	98	246	257	44	277	46	660	697	707	27	351	55
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1736	1746	1688	1736	1553
Q Serve(g_s), s	5.0	10.7	27.8	2.3	12.6	4.4	30.8	49.4	50.2	1.4	13.7	4.5
Cycle Q Clear(g_c), s	5.0	10.7	27.8	2.3	12.6	4.4	30.8	49.4	50.2	1.4	13.7	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	236	750	336	142	653	292	1002	1026	1032	103	1128	505
V/C Ratio(X)	0.41	0.33	0.77	0.31	0.42	0.16	0.66	0.68	0.69	0.26	0.31	0.11
Avail Cap(c_a), veh/h	236	750	336	142	653	292	1002	1026	1032	103	1128	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.4	59.9	66.6	83.9	64.8	61.5	55.4	25.2	25.3	85.4	45.7	42.6
Incr Delay (d2), s/veh	5.3	1.2	15.3	5.6	2.0	1.1	3.4	3.6	3.7	6.1	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	5.3	13.5	1.2	6.3	2.0	14.9	24.6	25.2	0.7	6.7	2.0
LnGrp Delay(d),s/veh	85.7	61.1	81.9	89.5	66.8	62.6	58.8	28.8	29.0	91.5	46.4	43.0
LnGrp LOS	F	E	F	F	E	E	E	C	C	F	D	D
Approach Vol, veh/h		601			367			2064			433	
Approach Delay, s/veh		74.0			69.0			38.5			48.8	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	59.0	64.1	18.0	39.2	11.0	112.1	13.0	44.2
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	53.5	* 59	12.5	33.4	5.5	* 1.1E2	7.5	* 39
Max Q Clear Time (g_c+I1), s	32.8	15.7	7.0	14.6	3.4	52.2	4.3	29.8
Green Ext Time (p_c), s	1.0	2.2	0.0	0.8	0.0	2.2	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	49.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	391	36	26	612	8	196	42	139	7	16	55
Future Volume (veh/h)	14	391	36	26	612	8	196	42	139	7	16	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	14	391	36	26	612	8	196	42	139	7	16	55
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	54	803	683	85	836	710	328	124	410	56	61	210
Arrive On Green	0.03	0.45	0.45	0.05	0.47	0.47	0.19	0.33	0.33	0.03	0.17	0.17
Sat Flow, veh/h	1707	1792	1524	1707	1792	1524	1757	377	1248	1757	366	1257
Grp Volume(v), veh/h	14	391	36	26	612	8	196	0	181	7	0	71
Grp Sat Flow(s),veh/h/ln	1707	1792	1524	1707	1792	1524	1757	0	1625	1757	0	1623
Q Serve(g_s), s	1.0	19.4	1.7	1.8	34.8	0.4	12.9	0.0	10.6	0.5	0.0	4.8
Cycle Q Clear(g_c), s	1.0	19.4	1.7	1.8	34.8	0.4	12.9	0.0	10.6	0.5	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.77	1.00		0.77
Lane Grp Cap(c), veh/h	54	803	683	85	836	710	328	0	534	56	0	271
V/C Ratio(X)	0.26	0.49	0.05	0.30	0.73	0.01	0.60	0.00	0.34	0.13	0.00	0.26
Avail Cap(c_a), veh/h	54	803	683	85	836	710	328	0	534	56	0	271
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.5	24.5	19.6	57.7	27.2	18.0	46.9	0.0	31.9	59.2	0.0	45.7
Incr Delay (d2), s/veh	11.2	2.1	0.1	9.0	5.6	0.0	7.8	0.0	1.7	4.6	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	10.0	0.7	1.1	18.5	0.2	7.0	0.0	5.0	0.3	0.0	2.3
LnGrp Delay(d),s/veh	70.7	26.6	19.8	66.6	32.9	18.1	54.7	0.0	33.6	63.8	0.0	48.0
LnGrp LOS	E	C	B	E	C	B	D		C	E		D
Approach Vol, veh/h		441			646			377			78	
Approach Delay, s/veh		27.5			34.0			44.6			49.5	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	62.8	27.9	25.4	7.5	65.1	7.5	45.8
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	6.3	56.4	23.5	* 21	4.0	58.7	4.0	40.5
Max Q Clear Time (g_c+I1), s	3.8	21.4	14.9	6.8	3.0	36.8	2.5	12.6
Green Ext Time (p_c), s	0.0	1.0	0.1	0.3	0.0	1.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	114	101	114	121	99	110	437	105	40	248	133
Future Volume (veh/h)	137	114	101	114	121	99	110	437	105	40	248	133
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	137	114	101	114	121	99	110	437	105	40	248	133
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	305	418	339	263	385	291	269	779	662	137	641	545
Arrive On Green	0.17	0.23	0.23	0.15	0.20	0.20	0.15	0.42	0.42	0.08	0.35	0.35
Sat Flow, veh/h	1757	1839	1494	1757	1904	1439	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	137	108	107	114	111	109	110	437	105	40	248	133
Grp Sat Flow(s),veh/h/ln	1757	1752	1581	1757	1752	1591	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	11.2	8.1	9.0	9.5	8.6	9.4	9.1	28.7	6.6	3.4	16.2	9.7
Cycle Q Clear(g_c), s	11.2	8.1	9.0	9.5	8.6	9.4	9.1	28.7	6.6	3.4	16.2	9.7
Prop In Lane	1.00		0.95	1.00		0.90	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	398	359	263	354	322	269	779	662	137	641	545
V/C Ratio(X)	0.45	0.27	0.30	0.43	0.31	0.34	0.41	0.56	0.16	0.29	0.39	0.24
Avail Cap(c_a), veh/h	305	398	359	263	354	322	269	779	662	137	641	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.4	51.0	51.4	62.0	54.5	54.8	61.4	35.0	28.7	69.7	39.4	37.3
Incr Delay (d2), s/veh	4.7	1.7	2.1	5.1	2.3	2.9	4.6	2.9	0.5	5.3	1.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	4.2	4.1	5.0	4.4	4.4	4.7	15.3	3.0	1.9	8.6	4.4
LnGrp Delay(d),s/veh	64.1	52.7	53.5	67.1	56.8	57.7	65.9	38.0	29.2	75.1	41.2	38.4
LnGrp LOS	E	D	D	E	E	E	E	D	C	E	D	D
Approach Vol, veh/h		352			334			652			421	
Approach Delay, s/veh		57.4			60.6			41.3			43.5	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	37.2	30.0	60.1	29.0	41.2	18.0	72.1
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 28	32.2	24.5	* 56	24.0	* 36	12.5	* 68
Max Q Clear Time (g_c+I1), s	13.2	11.4	11.1	18.2	11.5	11.0	5.4	30.7
Green Ext Time (p_c), s	0.1	0.4	0.1	0.8	0.1	0.5	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	40	32	300	30	210	57	1401	264	481	968	59
Future Volume (veh/h)	76	40	32	300	30	210	57	1401	264	481	968	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	76	40	32	300	30	210	57	1401	264	481	968	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	159	86	69	564	305	260	140	1959	610	727	2550	155
Arrive On Green	0.09	0.09	0.09	0.17	0.17	0.17	0.08	0.39	0.39	0.22	0.53	0.53
Sat Flow, veh/h	1757	950	760	3408	1845	1568	1740	4988	1553	3375	4808	293
Grp Volume(v), veh/h	76	0	72	300	30	210	57	1401	264	481	669	358
Grp Sat Flow(s),veh/h/ln	1757	0	1711	1704	1845	1568	1740	1663	1553	1688	1663	1775
Q Serve(g_s), s	6.6	0.0	6.4	12.9	2.2	20.7	5.0	38.0	19.9	20.9	18.9	19.0
Cycle Q Clear(g_c), s	6.6	0.0	6.4	12.9	2.2	20.7	5.0	38.0	19.9	20.9	18.9	19.0
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	159	0	155	564	305	260	140	1959	610	727	1763	941
V/C Ratio(X)	0.48	0.00	0.46	0.53	0.10	0.81	0.41	0.71	0.43	0.66	0.38	0.38
Avail Cap(c_a), veh/h	159	0	155	564	305	260	140	1959	610	727	1763	941
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.2	0.0	69.1	61.1	56.7	64.4	70.0	41.0	35.5	57.5	22.1	22.1
Incr Delay (d2), s/veh	9.9	0.0	9.7	3.6	0.6	23.2	8.5	2.3	2.2	4.7	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	3.4	6.4	1.2	10.6	2.7	17.8	8.9	10.2	8.8	9.6
LnGrp Delay(d),s/veh	79.1	0.0	78.8	64.7	57.3	87.5	78.5	43.3	37.8	62.1	22.7	23.3
LnGrp LOS	E		E	E	E	F	E	D	D	E	C	C
Approach Vol, veh/h		148			540			1722			1508	
Approach Delay, s/veh		79.0			73.2			43.6			35.4	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.0	90.1		20.0	40.0	68.1		32.0
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 13	* 85		14.5	34.5	* 63		26.5
Max Q Clear Time (g_c+I1), s	7.0	21.0		8.6	22.9	40.0		22.7
Green Ext Time (p_c), s	0.0	4.5		0.1	0.6	4.4		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	45.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	141	95	98	96	10	126	1484	184	43	561	176
Future Volume (veh/h)	234	141	95	98	96	10	126	1484	184	43	561	176
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	234	141	95	98	96	10	126	1484	184	43	561	176
Adj No. of Lanes	2	2	0	2	2	0	2	3	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	414	446	282	414	693	71	410	2006	625	410	1396	625
Arrive On Green	0.12	0.22	0.22	0.12	0.22	0.22	0.12	0.40	0.40	0.12	0.40	0.40
Sat Flow, veh/h	3408	2062	1305	3408	3209	330	3375	4988	1553	3375	3471	1553
Grp Volume(v), veh/h	234	118	118	98	52	54	126	1484	184	43	561	176
Grp Sat Flow(s),veh/h/ln	1704	1752	1614	1704	1752	1786	1688	1663	1553	1688	1736	1553
Q Serve(g_s), s	10.4	9.1	9.9	4.2	3.8	3.9	5.5	40.7	12.9	1.8	18.5	12.3
Cycle Q Clear(g_c), s	10.4	9.1	9.9	4.2	3.8	3.9	5.5	40.7	12.9	1.8	18.5	12.3
Prop In Lane	1.00		0.81	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	414	379	349	414	379	386	410	2006	625	410	1396	625
V/C Ratio(X)	0.57	0.31	0.34	0.24	0.14	0.14	0.31	0.74	0.29	0.10	0.40	0.28
Avail Cap(c_a), veh/h	414	379	349	414	379	386	410	2006	625	410	1396	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.6	52.9	53.2	63.8	50.9	50.9	64.4	40.8	32.5	62.8	34.2	32.4
Incr Delay (d2), s/veh	5.5	2.1	2.6	1.3	0.8	0.8	1.9	2.5	1.2	0.5	0.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	4.7	4.7	2.1	1.9	2.0	2.7	19.2	5.7	0.9	9.0	5.5
LnGrp Delay(d),s/veh	72.1	55.1	55.8	65.2	51.6	51.7	66.3	43.3	33.7	63.3	35.1	33.5
LnGrp LOS	E	E	E	E	D	D	E	D	C	E	D	C
Approach Vol, veh/h		470			204			1794			780	
Approach Delay, s/veh		63.7			58.1			44.0			36.3	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	70.2	25.0	40.4	25.0	70.2	25.0	40.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	19.5	* 65	19.5	* 35	19.5	* 64	19.5	* 34
Max Q Clear Time (g_c+I1), s	7.5	20.5	12.4	5.9	3.8	42.7	6.2	11.9
Green Ext Time (p_c), s	0.1	3.9	0.2	0.3	0.0	3.8	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	45.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	201	59	13	418	228	107	1520	24	99	556	170
Future Volume (veh/h)	216	201	59	13	418	228	107	1520	24	99	556	170
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	216	201	59	13	418	228	107	1520	24	99	556	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	227	606	515	54	430	365	187	1576	25	109	1400	626
Arrive On Green	0.13	0.34	0.34	0.03	0.24	0.24	0.11	0.45	0.45	0.06	0.40	0.00
Sat Flow, veh/h	1707	1792	1524	1707	1792	1524	1740	3498	55	1740	3471	1553
Grp Volume(v), veh/h	216	201	59	13	418	228	107	754	790	99	556	0
Grp Sat Flow(s),veh/h/ln	1707	1792	1524	1707	1792	1524	1740	1736	1817	1740	1736	1553
Q Serve(g_s), s	22.0	14.7	4.7	1.3	40.6	23.5	10.3	74.0	74.2	9.9	20.0	0.0
Cycle Q Clear(g_c), s	22.0	14.7	4.7	1.3	40.6	23.5	10.3	74.0	74.2	9.9	20.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	227	606	515	54	430	365	187	782	819	109	1400	626
V/C Ratio(X)	0.95	0.33	0.11	0.24	0.97	0.62	0.57	0.96	0.97	0.91	0.40	0.00
Avail Cap(c_a), veh/h	227	606	515	54	430	365	187	782	819	109	1400	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	75.6	43.3	40.0	82.9	66.1	59.6	74.4	46.8	46.9	81.7	37.2	0.0
Incr Delay (d2), s/veh	48.7	1.5	0.5	10.1	37.0	7.8	12.0	24.4	24.0	63.9	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	7.5	2.0	0.8	24.5	10.7	5.6	40.7	42.6	6.7	9.7	0.0
LnGrp Delay(d),s/veh	124.3	44.8	40.5	92.9	103.1	67.4	86.5	71.2	70.9	145.7	38.0	0.0
LnGrp LOS	F	D	D	F	F	E	F	E	E	F	D	
Approach Vol, veh/h		476			659			1651			655	
Approach Delay, s/veh		80.3			90.6			72.0			54.3	
Approach LOS		F			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.3	75.9	27.6	47.7	16.0	84.2	10.4	64.9
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 19	70.8	* 23	41.6	11.0	79.1	* 5.6	* 59
Max Q Clear Time (g_c+I1), s	12.3	22.0	24.0	42.6	11.9	76.2	3.3	16.7
Green Ext Time (p_c), s	0.0	2.7	0.0	0.0	0.0	1.2	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	73.4
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	48	51	12	129	30	214	1587	29	14	499	115
Future Volume (veh/h)	35	48	51	12	129	30	214	1587	29	14	499	115
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	35	48	51	12	129	30	214	1587	29	14	499	115
Adj No. of Lanes	2	1	0	2	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	117	173	183	77	288	67	364	2079	38	66	1192	273
Arrive On Green	0.03	0.21	0.21	0.02	0.20	0.20	0.21	0.60	0.60	0.04	0.43	0.43
Sat Flow, veh/h	3408	820	871	3408	1448	337	1740	3488	64	1740	2806	643
Grp Volume(v), veh/h	35	0	99	12	0	159	214	789	827	14	308	306
Grp Sat Flow(s),veh/h/ln	1704	0	1691	1704	0	1785	1740	1736	1816	1740	1736	1713
Q Serve(g_s), s	1.6	0.0	7.9	0.6	0.0	12.5	17.7	53.8	54.1	1.2	19.8	20.0
Cycle Q Clear(g_c), s	1.6	0.0	7.9	0.6	0.0	12.5	17.7	53.8	54.1	1.2	19.8	20.0
Prop In Lane	1.00		0.52	1.00		0.19	1.00		0.04	1.00		0.38
Lane Grp Cap(c), veh/h	117	0	356	77	0	355	364	1035	1083	66	738	728
V/C Ratio(X)	0.30	0.00	0.28	0.16	0.00	0.45	0.59	0.76	0.76	0.21	0.42	0.42
Avail Cap(c_a), veh/h	117	0	356	77	0	355	364	1035	1083	66	738	728
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.4	0.0	52.9	76.7	0.0	56.4	57.0	23.9	24.0	74.6	32.1	32.2
Incr Delay (d2), s/veh	6.4	0.0	1.9	4.3	0.0	4.1	6.8	5.3	5.1	7.1	1.7	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.9	0.3	0.0	6.6	9.2	27.2	28.4	0.7	9.8	9.8
LnGrp Delay(d),s/veh	81.8	0.0	54.9	81.0	0.0	60.4	63.8	29.2	29.1	81.7	33.9	34.0
LnGrp LOS	F		D	F		E	E	C	C	F	C	C
Approach Vol, veh/h		134			171			1830			628	
Approach Delay, s/veh		61.9			61.9			33.2			35.0	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.0	73.0	11.0	37.0	11.6	100.4	9.1	38.9
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	33.5	68.0	5.5	* 32	6.1	95.4	3.6	* 34
Max Q Clear Time (g_c+I1), s	19.7	22.0	3.6	14.5	3.2	56.1	2.6	9.9
Green Ext Time (p_c), s	0.2	2.7	0.0	0.2	0.0	2.7	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	36.8
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	87	55	23	81	17	131	1834	69	7	439	79
Future Volume (veh/h)	63	87	55	23	81	17	131	1834	69	7	439	79
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1792	1792	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	63	87	55	23	81	17	131	1834	69	7	439	79
Adj No. of Lanes	2	1	0	2	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	6	6	6	4	4	4	4	4	4
Cap, veh/h	116	212	134	85	279	58	236	2114	79	36	1485	265
Arrive On Green	0.03	0.20	0.20	0.03	0.19	0.19	0.14	0.62	0.62	0.02	0.50	0.50
Sat Flow, veh/h	3375	1048	662	3312	1438	302	1740	3412	128	1740	2943	526
Grp Volume(v), veh/h	63	0	142	23	0	98	131	928	975	7	258	260
Grp Sat Flow(s),veh/h/ln	1688	0	1710	1656	0	1739	1740	1736	1804	1740	1736	1734
Q Serve(g_s), s	2.9	0.0	11.6	1.1	0.0	7.7	11.3	69.9	71.7	0.6	13.8	14.0
Cycle Q Clear(g_c), s	2.9	0.0	11.6	1.1	0.0	7.7	11.3	69.9	71.7	0.6	13.8	14.0
Prop In Lane	1.00		0.39	1.00		0.17	1.00		0.07	1.00		0.30
Lane Grp Cap(c), veh/h	116	0	346	85	0	337	236	1075	1118	36	875	875
V/C Ratio(X)	0.54	0.00	0.41	0.27	0.00	0.29	0.56	0.86	0.87	0.20	0.29	0.30
Avail Cap(c_a), veh/h	116	0	346	85	0	337	236	1075	1118	36	875	875
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.0	0.0	55.5	76.5	0.0	55.1	64.6	24.9	25.2	77.0	23.1	23.1
Incr Delay (d2), s/veh	17.0	0.0	3.6	7.7	0.0	2.2	9.1	9.2	9.5	11.8	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	5.8	0.6	0.0	3.9	6.0	36.0	38.4	0.4	6.8	6.9
LnGrp Delay(d),s/veh	93.0	0.0	59.1	84.2	0.0	57.3	73.7	34.1	34.7	88.8	23.9	24.0
LnGrp LOS	F		E	F		E	E	C	C	F	C	C
Approach Vol, veh/h		205			121			2034			525	
Approach Delay, s/veh		69.5			62.4			36.9			24.8	
Approach LOS		E			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.2	85.8	11.0	36.0	8.8	104.2	9.6	37.4
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	21.7	* 81	5.5	* 31	3.3	* 99	4.1	* 32
Max Q Clear Time (g_c+I1), s	13.3	16.0	4.9	9.7	2.6	73.7	3.1	13.6
Green Ext Time (p_c), s	0.1	3.2	0.0	0.2	0.0	3.1	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	38.1
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	141	128	22	134	268	69	1388	49	57	380	77
Future Volume (veh/h)	380	141	128	22	134	268	69	1388	49	57	380	77
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	380	141	128	22	134	268	69	1388	49	57	380	77
Adj No. of Lanes	2	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	465	319	290	61	141	282	138	1542	54	88	1219	245
Arrive On Green	0.14	0.36	0.36	0.03	0.26	0.26	0.08	0.45	0.45	0.05	0.42	0.42
Sat Flow, veh/h	3408	892	810	1757	550	1100	1740	3421	121	1740	2882	578
Grp Volume(v), veh/h	380	0	269	22	0	402	69	703	734	57	227	230
Grp Sat Flow(s),veh/h/ln	1704	0	1702	1757	0	1650	1740	1736	1806	1740	1736	1725
Q Serve(g_s), s	21.7	0.0	24.1	2.5	0.0	48.0	7.6	74.9	75.3	6.4	17.4	17.8
Cycle Q Clear(g_c), s	21.7	0.0	24.1	2.5	0.0	48.0	7.6	74.9	75.3	6.4	17.4	17.8
Prop In Lane	1.00		0.48	1.00		0.67	1.00		0.07	1.00		0.34
Lane Grp Cap(c), veh/h	465	0	609	61	0	423	138	782	814	88	734	729
V/C Ratio(X)	0.82	0.00	0.44	0.36	0.00	0.95	0.50	0.90	0.90	0.65	0.31	0.31
Avail Cap(c_a), veh/h	465	0	609	61	0	423	138	782	814	88	734	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	84.1	0.0	49.0	94.6	0.0	73.3	88.4	50.8	50.9	93.4	38.4	38.5
Incr Delay (d2), s/veh	14.8	0.0	2.3	16.1	0.0	33.1	12.3	15.3	15.1	31.7	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	0.0	11.7	1.5	0.0	25.8	4.2	39.3	40.9	3.9	8.6	8.7
LnGrp Delay(d),s/veh	98.8	0.0	51.3	110.6	0.0	106.3	100.7	66.1	66.0	125.0	39.5	39.6
LnGrp LOS	F		D	F		F	F	E	E	F	D	D
Approach Vol, veh/h		649			424			1506			514	
Approach Delay, s/veh		79.2			106.6			67.6			49.0	
Approach LOS		E			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	89.8	32.8	56.7	15.4	95.4	12.4	77.1
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 16	84.7	27.3	* 51	* 10	90.3	6.9	* 71
Max Q Clear Time (g_c+I1), s	9.6	19.8	23.7	50.0	8.4	77.3	4.5	26.1
Green Ext Time (p_c), s	0.0	2.1	0.2	0.2	0.0	2.0	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	72.3
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	210	24	71	532	4	102	398	97	6	63	63
Future Volume (veh/h)	40	210	24	71	532	4	102	398	97	6	63	63
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	40	210	24	71	532	4	102	398	97	6	63	63
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	116	794	90	172	1006	8	223	623	152	46	280	280
Arrive On Green	0.07	0.26	0.26	0.10	0.29	0.29	0.13	0.43	0.43	0.03	0.33	0.33
Sat Flow, veh/h	1707	3085	349	1707	3465	26	1757	1434	349	1757	848	848
Grp Volume(v), veh/h	40	115	119	71	261	275	102	0	495	6	0	126
Grp Sat Flow(s),veh/h/ln	1707	1703	1731	1707	1703	1788	1757	0	1783	1757	0	1695
Q Serve(g_s), s	2.6	6.2	6.3	4.5	14.8	14.8	6.2	0.0	25.0	0.4	0.0	6.2
Cycle Q Clear(g_c), s	2.6	6.2	6.3	4.5	14.8	14.8	6.2	0.0	25.0	0.4	0.0	6.2
Prop In Lane	1.00		0.20	1.00		0.01	1.00		0.20	1.00		0.50
Lane Grp Cap(c), veh/h	116	438	446	172	495	519	223	0	775	46	0	560
V/C Ratio(X)	0.35	0.26	0.27	0.41	0.53	0.53	0.46	0.00	0.64	0.13	0.00	0.22
Avail Cap(c_a), veh/h	116	438	446	172	495	519	223	0	775	46	0	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.2	34.0	34.1	48.5	34.2	34.2	46.5	0.0	25.4	54.7	0.0	27.8
Incr Delay (d2), s/veh	8.0	1.5	1.5	7.1	4.0	3.8	6.6	0.0	4.0	5.8	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.1	3.2	2.5	7.5	7.9	3.4	0.0	13.1	0.3	0.0	3.0
LnGrp Delay(d),s/veh	59.2	35.5	35.5	55.6	38.2	38.0	53.1	0.0	29.4	60.6	0.0	28.8
LnGrp LOS	E	D	D	E	D	D	D		C	E		C
Approach Vol, veh/h		274			607			597			132	
Approach Delay, s/veh		38.9			40.2			33.5			30.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	36.0	19.0	44.0	12.2	39.8	7.0	56.0
Change Period (Y+Rc), s	4.4	6.4	4.4	6.0	4.4	6.4	* 4	6.0
Max Green Setting (Gmax), s	11.6	29.6	14.6	38.0	7.8	33.4	* 3	50.0
Max Q Clear Time (g_c+I1), s	6.5	8.3	8.2	8.2	4.6	16.8	2.4	27.0
Green Ext Time (p_c), s	0.0	0.7	0.0	0.7	0.0	0.7	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	36.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	326	47	323	25	63	161	194	614	13	105	1248	867
Future Volume (veh/h)	326	47	323	25	63	161	194	614	13	105	1248	867
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	360	0	323	25	63	161	194	614	13	105	1248	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	1042	0	465	32	79	96	218	1427	30	233	1443	449
Arrive On Green	0.30	0.00	0.30	0.06	0.06	0.06	0.13	0.28	0.28	0.13	0.29	0.00
Sat Flow, veh/h	3480	0	1553	517	1302	1568	1740	5027	106	1740	4988	1553
Grp Volume(v), veh/h	360	0	323	88	0	161	194	406	221	105	1248	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1819	0	1568	1740	1663	1808	1740	1663	1553
Q Serve(g_s), s	7.3	0.0	16.6	4.3	0.0	5.5	9.9	9.0	9.0	5.0	21.4	0.0
Cycle Q Clear(g_c), s	7.3	0.0	16.6	4.3	0.0	5.5	9.9	9.0	9.0	5.0	21.4	0.0
Prop In Lane	1.00		1.00	0.28		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	1042	0	465	111	0	96	218	944	513	233	1443	449
V/C Ratio(X)	0.35	0.00	0.69	0.79	0.00	1.68	0.89	0.43	0.43	0.45	0.86	0.00
Avail Cap(c_a), veh/h	1042	0	465	111	0	96	218	944	513	233	1443	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.7	0.0	28.0	41.8	0.0	42.3	38.8	26.3	26.4	36.0	30.4	0.0
Incr Delay (d2), s/veh	0.9	0.0	8.3	42.7	0.0	348.7	37.9	1.4	2.6	6.2	7.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	8.2	3.5	0.0	11.6	7.0	4.3	4.9	2.8	10.8	0.0
LnGrp Delay(d),s/veh	25.6	0.0	36.3	84.5	0.0	391.1	76.7	27.8	29.0	42.1	37.5	0.0
LnGrp LOS	C		D	F		F	E	C	C	D	D	
Approach Vol, veh/h		683			249			821			1353	
Approach Delay, s/veh		30.6			282.7			39.7			37.9	
Approach LOS		C			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	30.9		11.0	16.5	30.4		32.3
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 11	25.9		5.5	* 12	* 26		27.0
Max Q Clear Time (g_c+I1), s	11.9	23.4		7.5	7.0	11.0		18.6
Green Ext Time (p_c), s	0.0	1.1		0.0	0.0	2.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	56.4
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	114	35	44	117	282	37	886	30	668	1355	644
Future Volume (veh/h)	226	114	35	44	117	282	37	886	30	668	1355	644
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	226	114	35	44	117	282	37	886	30	668	1355	644
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	410	987	281	135	316	1476	113	1477	50	1020	2826	880
Arrive On Green	0.12	0.25	0.25	0.04	0.17	0.17	0.03	0.30	0.30	0.30	0.56	0.56
Sat Flow, veh/h	3408	3898	1109	3514	1845	3136	3408	5003	169	3408	5036	1568
Grp Volume(v), veh/h	226	97	52	44	117	282	37	594	322	668	1355	644
Grp Sat Flow(s),veh/h/ln	1704	1679	1649	1757	1845	1568	1704	1679	1815	1704	1679	1568
Q Serve(g_s), s	12.2	4.3	4.8	2.4	11.0	10.2	2.1	29.6	29.7	33.4	31.6	59.8
Cycle Q Clear(g_c), s	12.2	4.3	4.8	2.4	11.0	10.2	2.1	29.6	29.7	33.4	31.6	59.8
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	410	850	418	135	316	1476	113	991	536	1020	2826	880
V/C Ratio(X)	0.55	0.11	0.12	0.33	0.37	0.19	0.33	0.60	0.60	0.65	0.48	0.73
Avail Cap(c_a), veh/h	410	850	418	135	316	1476	113	991	536	1020	2826	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.0	56.1	56.3	91.5	71.7	30.1	92.4	59.0	59.0	59.7	25.8	32.0
Incr Delay (d2), s/veh	5.3	0.3	0.6	6.3	3.3	0.3	7.5	2.7	4.9	3.3	0.6	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	2.1	2.2	1.3	5.9	4.5	1.1	14.1	15.7	16.2	14.8	27.2
LnGrp Delay(d),s/veh	86.3	56.4	56.9	97.9	75.0	30.4	99.9	61.7	64.0	63.0	26.3	37.3
LnGrp LOS	F	E	E	F	E	C	F	E	E	E	C	D
Approach Vol, veh/h		375			443			953			2667	
Approach Delay, s/veh		74.5			48.9			63.9			38.2	
Approach LOS		E			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	115.3	29.0	39.2	64.0	63.3	13.0	55.2
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	6.5	109.4	23.5	* 34	58.5	* 58	7.5	* 49
Max Q Clear Time (g_c+I1), s	4.1	61.8	14.2	13.0	35.4	31.7	4.4	6.8
Green Ext Time (p_c), s	0.0	4.6	0.2	0.6	1.0	4.5	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	47.8
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	64	13	38	46	66	37	817	63	133	754	215
Future Volume (veh/h)	105	64	13	38	46	66	37	817	63	133	754	215
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	91	84	13	38	46	66	37	817	63	133	754	215
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	346	308	48	346	364	309	203	1777	137	205	1455	411
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.12	0.37	0.37	0.12	0.37	0.37
Sat Flow, veh/h	1757	1561	242	1757	1845	1568	1757	4771	366	1757	3905	1102
Grp Volume(v), veh/h	91	0	97	38	46	66	37	574	306	133	647	322
Grp Sat Flow(s),veh/h/ln	1757	0	1802	1757	1845	1568	1757	1679	1780	1757	1679	1650
Q Serve(g_s), s	7.7	0.0	8.0	3.1	3.6	6.2	3.3	22.6	22.8	12.7	26.2	26.6
Cycle Q Clear(g_c), s	7.7	0.0	8.0	3.1	3.6	6.2	3.3	22.6	22.8	12.7	26.2	26.6
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.21	1.00		0.67
Lane Grp Cap(c), veh/h	346	0	355	346	364	309	203	1251	663	205	1251	615
V/C Ratio(X)	0.26	0.00	0.27	0.11	0.13	0.21	0.18	0.46	0.46	0.65	0.52	0.52
Avail Cap(c_a), veh/h	346	0	355	346	364	309	203	1251	663	205	1251	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	0.0	59.6	57.6	57.8	58.9	69.9	41.5	41.6	73.9	42.7	42.8
Incr Delay (d2), s/veh	1.8	0.0	1.9	0.6	0.7	1.6	2.0	1.2	2.3	14.9	1.5	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	4.2	1.6	1.9	2.8	1.7	10.7	11.6	7.0	12.4	12.7
LnGrp Delay(d),s/veh	61.3	0.0	61.5	58.3	58.6	60.5	71.9	42.8	43.9	88.8	44.2	46.0
LnGrp LOS	E		E	E	E	E	E	D	D	F	D	D
Approach Vol, veh/h		188			150			917			1102	
Approach Delay, s/veh		61.4			59.3			44.3			50.1	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.0	70.0		40.0	25.0	70.0		40.0
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 20	65.2		34.5	* 20	65.2		34.5
Max Q Clear Time (g_c+I1), s	5.3	28.6		8.2	14.7	24.8		10.0
Green Ext Time (p_c), s	0.0	2.6		0.1	0.1	2.6		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	49.3
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

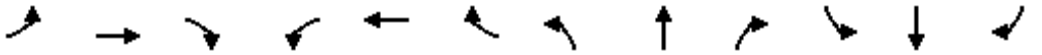
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	289	128	70	279	123	242	673	89	120	261	160
Future Volume (veh/h)	109	289	128	70	279	123	242	673	89	120	261	160
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	109	289	128	70	279	123	242	673	89	120	261	160
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	136	1120	463	144	1623	505	258	1662	517	201	1052	491
Arrive On Green	0.04	0.32	0.32	0.04	0.32	0.32	0.08	0.33	0.33	0.06	0.31	0.31
Sat Flow, veh/h	3408	3501	1446	3408	5036	1568	3408	5036	1568	3408	3357	1568
Grp Volume(v), veh/h	109	276	141	70	279	123	242	673	89	120	261	160
Grp Sat Flow(s),veh/h/ln	1704	1679	1590	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	2.9	5.5	5.9	1.8	3.6	5.2	6.4	9.3	3.6	3.1	5.2	7.0
Cycle Q Clear(g_c), s	2.9	5.5	5.9	1.8	3.6	5.2	6.4	9.3	3.6	3.1	5.2	7.0
Prop In Lane	1.00		0.91	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	1074	509	144	1623	505	258	1662	517	201	1052	491
V/C Ratio(X)	0.80	0.26	0.28	0.49	0.17	0.24	0.94	0.40	0.17	0.60	0.25	0.33
Avail Cap(c_a), veh/h	136	1074	509	144	1623	505	258	1662	517	201	1052	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	22.7	22.8	42.1	21.9	22.4	41.4	23.3	21.4	41.3	23.0	23.6
Incr Delay (d2), s/veh	37.3	0.6	1.3	11.3	0.2	1.1	42.5	0.7	0.7	12.5	0.6	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.6	2.8	1.1	1.7	2.4	4.5	4.4	1.7	1.8	2.5	3.3
LnGrp Delay(d),s/veh	80.1	23.3	24.2	53.4	22.1	23.6	83.9	24.1	22.1	53.8	23.6	25.4
LnGrp LOS	F	C	C	D	C	C	F	C	C	D	C	C
Approach Vol, veh/h		526			472			1004			541	
Approach Delay, s/veh		35.3			27.1			38.3			30.8	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	33.8	9.1	34.8	10.8	35.3	9.3	34.6
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	6.8	* 28	3.6	29.0	5.3	* 30	3.8	28.8
Max Q Clear Time (g_c+I1), s	8.4	9.0	4.9	7.2	5.1	11.3	3.8	7.9
Green Ext Time (p_c), s	0.0	1.6	0.0	1.0	0.0	1.6	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	181	11	34	264	226	13	75	45	64	32	57
Future Volume (veh/h)	298	181	11	34	264	226	13	75	45	64	32	57
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	298	181	11	34	264	226	13	75	45	64	32	57
Adj No. of Lanes	1	2	0	1	1	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	577	1873	113	119	544	463	78	223	134	206	409	348
Arrive On Green	0.33	0.56	0.56	0.07	0.30	0.30	0.04	0.21	0.21	0.06	0.22	0.22
Sat Flow, veh/h	1757	3359	203	1757	1845	1568	1757	1081	649	3408	1845	1568
Grp Volume(v), veh/h	298	94	98	34	264	226	13	0	120	64	32	57
Grp Sat Flow(s),veh/h/ln	1757	1752	1809	1757	1845	1568	1757	0	1730	1704	1845	1568
Q Serve(g_s), s	26.1	4.8	4.8	3.5	22.4	22.6	1.4	0.0	11.3	3.4	2.6	5.6
Cycle Q Clear(g_c), s	26.1	4.8	4.8	3.5	22.4	22.6	1.4	0.0	11.3	3.4	2.6	5.6
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	577	977	1009	119	544	463	78	0	356	206	409	348
V/C Ratio(X)	0.52	0.10	0.10	0.29	0.48	0.49	0.17	0.00	0.34	0.31	0.08	0.16
Avail Cap(c_a), veh/h	577	977	1009	119	544	463	78	0	356	206	409	348
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	19.7	19.7	84.4	55.2	55.3	87.5	0.0	64.5	85.7	58.7	59.9
Incr Delay (d2), s/veh	3.3	0.2	0.2	5.9	3.1	3.7	4.5	0.0	2.5	3.9	0.4	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	2.4	2.5	1.9	11.9	10.3	0.8	0.0	5.7	1.7	1.4	2.5
LnGrp Delay(d),s/veh	55.0	19.9	19.9	90.3	58.3	58.9	92.0	0.0	67.1	89.6	59.1	60.9
LnGrp LOS	E	B	B	F	E	E	F		E	F	E	E
Approach Vol, veh/h		490			524			133			153	
Approach Delay, s/veh		41.2			60.6			69.5			72.5	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	68.0	61.1	14.0	47.3	18.0	111.1	17.0	44.3
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	62.5	* 56	8.5	* 42	* 13	* 1.1E2	11.5	* 39
Max Q Clear Time (g_c+I1), s	28.1	24.6	3.4	7.6	5.5	6.8	5.4	13.3
Green Ext Time (p_c), s	0.3	0.6	0.0	0.2	0.0	0.6	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	55.6
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	106	60	399	279	187	56	1147	86	224	1919	319
Future Volume (veh/h)	159	106	60	399	279	187	56	1147	86	224	1919	319
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	159	106	60	399	327	155	56	1147	86	224	1919	319
Adj No. of Lanes	2	2	1	2	2	1	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	415	751	336	428	790	527	411	2536	627	411	2012	627
Arrive On Green	0.12	0.21	0.21	0.12	0.21	0.21	0.12	0.40	0.40	0.12	0.40	0.40
Sat Flow, veh/h	3408	3505	1568	3514	3689	1568	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	159	106	60	399	327	155	56	1147	86	224	1919	319
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	6.9	3.9	5.0	18.0	12.2	11.7	2.4	21.3	5.6	10.0	59.7	24.7
Cycle Q Clear(g_c), s	6.9	3.9	5.0	18.0	12.2	11.7	2.4	21.3	5.6	10.0	59.7	24.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	751	336	428	790	527	411	2536	627	411	2012	627
V/C Ratio(X)	0.38	0.14	0.18	0.93	0.41	0.29	0.14	0.45	0.14	0.54	0.95	0.51
Avail Cap(c_a), veh/h	415	751	336	428	790	527	411	2536	627	411	2012	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	51.0	51.4	69.6	54.2	39.2	62.8	34.8	30.2	66.1	46.3	35.8
Incr Delay (d2), s/veh	2.7	0.4	1.2	29.5	1.6	1.4	0.7	0.6	0.5	5.1	11.8	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	1.9	2.3	10.5	6.4	5.3	1.1	9.3	2.5	5.0	29.6	11.1
LnGrp Delay(d),s/veh	67.4	51.4	52.6	99.1	55.8	40.6	63.5	35.4	30.6	71.2	58.1	38.8
LnGrp LOS	E	D	D	F	E	D	E	D	C	E	E	D
Approach Vol, veh/h		325			881			1289			2462	
Approach Delay, s/veh		59.4			72.7			36.3			56.8	
Approach LOS		E			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	70.0	25.0	40.1	25.0	70.0	25.0	40.1
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	19.5	* 65	19.5	34.2	19.5	* 65	19.5	* 34
Max Q Clear Time (g_c+I1), s	4.4	61.7	8.9	14.2	12.0	23.3	20.0	7.0
Green Ext Time (p_c), s	0.0	2.1	0.1	0.7	0.2	7.6	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	54.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	195	118	138	328	129	316	1117	62	217	853	326
Future Volume (veh/h)	107	195	118	138	328	129	316	1117	62	217	853	326
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	107	195	118	138	328	129	316	1117	62	217	853	326
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	414	747	334	410	1063	331	410	2002	623	410	2002	623
Arrive On Green	0.12	0.21	0.21	0.12	0.21	0.21	0.12	0.40	0.40	0.12	0.40	0.40
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	107	195	118	138	328	129	316	1117	62	217	853	326
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	4.6	7.4	10.3	6.0	8.9	11.4	14.6	27.7	4.0	9.7	19.8	25.5
Cycle Q Clear(g_c), s	4.6	7.4	10.3	6.0	8.9	11.4	14.6	27.7	4.0	9.7	19.8	25.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	414	747	334	410	1063	331	410	2002	623	410	2002	623
V/C Ratio(X)	0.26	0.26	0.35	0.34	0.31	0.39	0.77	0.56	0.10	0.53	0.43	0.52
Avail Cap(c_a), veh/h	414	747	334	410	1063	331	410	2002	623	410	2002	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.9	52.6	53.7	64.5	53.1	54.1	68.3	37.0	29.9	66.1	34.7	36.4
Incr Delay (d2), s/veh	1.5	0.8	2.9	2.2	0.8	3.4	13.0	1.1	0.3	4.8	0.7	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	3.7	4.7	2.9	4.2	5.2	7.5	12.9	1.8	4.8	9.2	11.5
LnGrp Delay(d),s/veh	65.4	53.4	56.6	66.7	53.9	57.6	81.3	38.1	30.2	71.0	35.3	39.5
LnGrp LOS	E	D	E	E	D	E	F	D	C	E	D	D
Approach Vol, veh/h		420			595			1495			1396	
Approach Delay, s/veh		57.4			57.7			46.9			41.8	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	70.2	25.0	40.2	25.0	70.2	25.0	40.2
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	19.5	* 64	19.5	* 34	19.5	* 64	19.5	34.0
Max Q Clear Time (g_c+I1), s	16.6	27.5	6.6	13.4	11.7	29.7	8.0	12.3
Green Ext Time (p_c), s	0.2	3.8	0.1	0.9	0.2	3.8	0.1	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	47.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	70	151	12	30	14	354	1360	5	51	643	214
Future Volume (veh/h)	107	70	151	12	30	14	354	1360	5	51	643	214
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	107	70	151	12	30	14	354	1360	5	51	643	214
Adj No. of Lanes	2	1	2	1	1	0	2	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	413	394	589	213	254	119	409	2057	8	211	2000	623
Arrive On Green	0.12	0.21	0.21	0.12	0.21	0.21	0.12	0.40	0.40	0.12	0.40	0.40
Sat Flow, veh/h	3408	1845	2760	1757	1191	556	3375	5130	19	1740	4988	1553
Grp Volume(v), veh/h	107	70	151	12	0	44	354	882	483	51	643	214
Grp Sat Flow(s),veh/h/ln	1704	1845	1380	1757	0	1747	1688	1663	1824	1740	1663	1553
Q Serve(g_s), s	4.6	5.0	7.3	1.0	0.0	3.3	16.6	34.8	34.8	4.3	14.3	15.4
Cycle Q Clear(g_c), s	4.6	5.0	7.3	1.0	0.0	3.3	16.6	34.8	34.8	4.3	14.3	15.4
Prop In Lane	1.00		1.00	1.00		0.32	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	413	394	589	213	0	373	409	1333	731	211	2000	623
V/C Ratio(X)	0.26	0.18	0.26	0.06	0.00	0.12	0.87	0.66	0.66	0.24	0.32	0.34
Avail Cap(c_a), veh/h	413	394	589	213	0	373	409	1333	731	211	2000	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.2	51.8	52.7	62.7	0.0	51.1	69.5	39.3	39.3	64.1	33.2	33.5
Incr Delay (d2), s/veh	1.5	1.0	1.0	0.5	0.0	0.6	21.1	2.6	4.7	2.7	0.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.7	2.9	0.5	0.0	1.6	9.0	16.4	18.4	2.2	6.6	6.9
LnGrp Delay(d),s/veh	65.8	52.8	53.8	63.2	0.0	51.8	90.7	41.9	44.0	66.8	33.6	35.0
LnGrp LOS	E	D	D	E		D	F	D	D	E	C	D
Approach Vol, veh/h		328			56			1719			908	
Approach Delay, s/veh		57.5			54.2			52.5			35.8	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	70.6	25.0	40.5	25.0	70.6	25.0	40.5
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	19.5	64.0	19.5	* 34	19.5	* 65	19.5	* 34
Max Q Clear Time (g_c+I1), s	18.6	17.4	6.6	5.3	6.3	36.8	3.0	9.3
Green Ext Time (p_c), s	0.1	3.2	0.1	0.2	0.0	3.2	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	48.1
HCM 2010 LOS	D

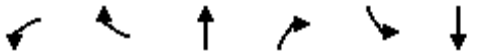
Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	42	71	31	163	191	383	1484	47	50	433	65
Future Volume (veh/h)	146	42	71	31	163	191	383	1484	47	50	433	65
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	146	42	71	31	163	191	383	1484	47	50	433	65
Adj No. of Lanes	2	2	0	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	415	378	338	396	721	322	411	2011	626	411	2011	626
Arrive On Green	0.12	0.22	0.22	0.12	0.22	0.22	0.12	0.40	0.40	0.12	0.40	0.40
Sat Flow, veh/h	3408	1752	1568	3250	3343	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	146	42	71	31	163	191	383	1484	47	50	433	65
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1625	1671	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	6.3	3.1	6.0	1.4	6.4	18.4	18.0	40.5	3.0	2.1	9.1	4.2
Cycle Q Clear(g_c), s	6.3	3.1	6.0	1.4	6.4	18.4	18.0	40.5	3.0	2.1	9.1	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	378	338	396	721	322	411	2011	626	411	2011	626
V/C Ratio(X)	0.35	0.11	0.21	0.08	0.23	0.59	0.93	0.74	0.08	0.12	0.22	0.10
Avail Cap(c_a), veh/h	415	378	338	396	721	322	411	2011	626	411	2011	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	50.4	51.6	62.3	51.7	56.4	69.6	40.6	29.4	62.6	31.2	29.7
Incr Delay (d2), s/veh	2.3	0.6	1.4	0.4	0.7	7.8	30.0	2.5	0.2	0.6	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	1.6	2.7	0.6	3.0	8.3	10.1	19.0	1.3	1.0	4.2	1.9
LnGrp Delay(d),s/veh	66.8	51.0	53.0	62.7	52.5	64.2	99.6	43.0	29.6	63.2	31.5	30.1
LnGrp LOS	E	D	D	E	D	E	F	D	C	E	C	C
Approach Vol, veh/h		259			385			1914			548	
Approach Delay, s/veh		60.4			59.1			54.0			34.2	
Approach LOS		E			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	70.0	25.0	40.0	25.0	70.0	25.0	40.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	19.5	64.5	19.5	34.5	19.5	64.5	19.5	34.5
Max Q Clear Time (g_c+I1), s	20.0	11.1	8.3	20.4	4.1	42.5	3.4	8.0
Green Ext Time (p_c), s	0.0	3.5	0.1	0.4	0.0	3.4	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	51.7
HCM 2010 LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	38	269	1356	36	57	445
Future Volume (veh/h)	38	269	1356	36	57	445
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1827	1827	1827
Adj Flow Rate, veh/h	38	269	1356	36	57	445
Adj No. of Lanes	2	1	3	1	2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	871	401	2364	736	513	2314
Arrive On Green	0.26	0.26	0.47	0.47	0.15	0.67
Sat Flow, veh/h	3408	1568	5152	1553	3375	3563
Grp Volume(v), veh/h	38	269	1356	36	57	445
Grp Sat Flow(s),veh/h/ln	1704	1568	1663	1553	1688	1736
Q Serve(g_s), s	1.1	20.8	26.5	1.7	2.0	6.6
Cycle Q Clear(g_c), s	1.1	20.8	26.5	1.7	2.0	6.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	871	401	2364	736	513	2314
V/C Ratio(X)	0.04	0.67	0.57	0.05	0.11	0.19
Avail Cap(c_a), veh/h	871	401	2364	736	513	2314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	45.2	25.6	19.1	49.4	8.6
Incr Delay (d2), s/veh	0.1	8.7	1.0	0.1	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	18.5	12.4	0.7	0.9	3.2
LnGrp Delay(d),s/veh	37.9	53.8	26.7	19.2	49.8	8.8
LnGrp LOS	D	D	C	B	D	A
Approach Vol, veh/h	307		1392			502
Approach Delay, s/veh	51.9		26.5			13.4
Approach LOS	D		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		95.0		40.0	26.0	69.0		
Change Period (Y+Rc), s		5.0		5.5	5.5	5.0		
Max Green Setting (Gmax), s		90.0		34.5	20.5	64.0		
Max Q Clear Time (g_c+I1), s		8.6		22.8	4.0	28.5		
Green Ext Time (p_c), s		3.1		0.2	0.0	3.1		

Intersection Summary	
HCM 2010 Ctrl Delay	27.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1	3	46	3	143	5	1062	29	59	423	12
Future Volume (veh/h)	74	1	3	46	3	143	5	1062	29	59	423	12
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1900	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	74	1	3	46	3	143	5	1062	29	59	423	12
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	4	4	4	4	4	4
Cap, veh/h	312	4	13	327	21	310	203	1289	577	388	1281	36
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.12	0.37	0.37	0.11	0.37	0.37
Sat Flow, veh/h	1583	21	64	1654	108	1568	1740	3471	1553	3375	3448	98
Grp Volume(v), veh/h	78	0	0	49	0	143	5	1062	29	59	213	222
Grp Sat Flow(s),veh/h/ln	1669	0	0	1762	0	1568	1740	1736	1553	1688	1736	1810
Q Serve(g_s), s	6.9	0.0	0.0	4.0	0.0	14.1	0.4	48.5	2.1	2.8	15.4	15.4
Cycle Q Clear(g_c), s	6.9	0.0	0.0	4.0	0.0	14.1	0.4	48.5	2.1	2.8	15.4	15.4
Prop In Lane	0.95		0.04	0.94		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	329	0	0	348	0	310	203	1289	577	388	645	672
V/C Ratio(X)	0.24	0.00	0.00	0.14	0.00	0.46	0.02	0.82	0.05	0.15	0.33	0.33
Avail Cap(c_a), veh/h	329	0	0	348	0	310	203	1289	577	388	645	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.2	0.0	0.0	57.9	0.0	62.0	68.5	49.8	35.2	69.8	39.4	39.4
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.8	0.0	4.9	0.2	6.1	0.2	0.8	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	2.0	0.0	6.5	0.2	24.4	0.9	1.3	7.6	8.0
LnGrp Delay(d),s/veh	60.9	0.0	0.0	58.8	0.0	66.8	68.7	55.9	35.4	70.6	40.8	40.7
LnGrp LOS	E			E		E	E	E	D	E	D	D
Approach Vol, veh/h		78			192			1096			494	
Approach Delay, s/veh		60.9			64.8			55.4			44.3	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.0	70.0		40.0	25.0	70.0		40.0
Change Period (Y+Rc), s	* 4.6	5.0		* 5.4	* 4.9	5.0		5.5
Max Green Setting (Gmax), s	* 20	65.0		* 35	* 20	65.0		34.5
Max Q Clear Time (g_c+I1), s	2.4	17.4		16.1	4.8	50.5		8.9
Green Ext Time (p_c), s	0.0	2.1		0.1	0.0	2.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	53.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	187	3	31	510	276	11	670	21	110	307	86
Future Volume (veh/h)	84	187	3	31	510	276	11	670	21	110	307	86
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	84	187	3	31	510	276	11	670	21	110	307	86
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	102	621	528	80	597	620	35	705	22	128	828	797
Arrive On Green	0.06	0.35	0.35	0.05	0.33	0.33	0.02	0.40	0.40	0.07	0.45	0.45
Sat Flow, veh/h	1707	1792	1524	1707	1792	1524	1740	1762	55	1740	1827	1553
Grp Volume(v), veh/h	84	187	3	31	510	276	11	0	691	110	307	86
Grp Sat Flow(s),veh/h/ln	1707	1792	1524	1707	1792	1524	1740	0	1817	1740	1827	1553
Q Serve(g_s), s	7.3	11.4	0.2	2.6	39.8	19.7	0.9	0.0	55.2	9.4	16.6	4.3
Cycle Q Clear(g_c), s	7.3	11.4	0.2	2.6	39.8	19.7	0.9	0.0	55.2	9.4	16.6	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	102	621	528	80	597	620	35	0	727	128	828	797
V/C Ratio(X)	0.82	0.30	0.01	0.39	0.85	0.45	0.32	0.00	0.95	0.86	0.37	0.11
Avail Cap(c_a), veh/h	102	621	528	80	597	620	35	0	727	128	828	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.7	35.7	32.1	69.4	46.6	32.2	72.5	0.0	43.6	68.7	26.9	18.8
Incr Delay (d2), s/veh	49.7	1.2	0.0	13.7	14.4	2.3	22.3	0.0	23.3	49.2	1.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	5.9	0.1	1.6	22.1	8.7	0.7	0.0	32.3	6.3	8.7	1.9
LnGrp Delay(d),s/veh	119.4	37.0	32.1	83.1	61.0	34.6	94.8	0.0	66.9	117.9	28.2	19.1
LnGrp LOS	F	D	C	F	E	C	F		E	F	C	B
Approach Vol, veh/h		274			817			702			503	
Approach Delay, s/veh		62.2			52.9			67.3			46.3	
Approach LOS		E			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	58.0	7.0	74.0	13.0	56.0	15.0	66.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	7.0	52.0	3.0	68.0	9.0	50.0	11.0	60.0
Max Q Clear Time (g_c+I1), s	4.6	13.4	2.9	18.6	9.3	41.8	11.4	57.2
Green Ext Time (p_c), s	0.0	0.9	0.0	1.1	0.0	0.8	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	57.0
HCM 2010 LOS	E

Notes

User approved changes to right turn type.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	123	8	31	570	228	118
Future Volume (veh/h)	123	8	31	570	228	118
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	123	8	31	570	228	118
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	252	16	208	1199	495	256
Arrive On Green	0.17	0.17	0.12	0.66	0.44	0.44
Sat Flow, veh/h	1522	99	1740	1827	1136	588
Grp Volume(v), veh/h	132	0	31	570	0	346
Grp Sat Flow(s),veh/h/ln	1634	0	1740	1827	0	1723
Q Serve(g_s), s	4.0	0.0	0.9	8.5	0.0	7.7
Cycle Q Clear(g_c), s	4.0	0.0	0.9	8.5	0.0	7.7
Prop In Lane	0.93	0.06	1.00			0.34
Lane Grp Cap(c), veh/h	270	0	208	1199	0	751
V/C Ratio(X)	0.49	0.00	0.15	0.48	0.00	0.46
Avail Cap(c_a), veh/h	270	0	208	1199	0	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.6	0.0	21.5	4.7	0.0	10.8
Incr Delay (d2), s/veh	6.2	0.0	1.5	1.4	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.5	4.6	0.0	4.1
LnGrp Delay(d),s/veh	26.8	0.0	23.0	6.0	0.0	12.9
LnGrp LOS	C		C	A		B
Approach Vol, veh/h	132			601	346	
Approach Delay, s/veh	26.8			6.9	12.9	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	12.0	29.4		13.0		41.4		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.5	* 23		9.0		* 36		
Max Q Clear Time (g_c+I1), s	2.9	9.7		6.0		10.5		
Green Ext Time (p_c), s	0.0	0.9		0.0		0.9		

Intersection Summary	
HCM 2010 Ctrl Delay	11.2
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	126	17	24	499	288	9	25	4	280	206	652
Future Volume (veh/h)	113	126	17	24	499	288	9	25	4	280	206	652
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1792	1792	1900	1792	1792	1792
Adj Flow Rate, veh/h	113	126	17	24	499	288	9	25	4	187	296	679
Adj No. of Lanes	2	2	0	1	1	1	1	1	0	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	6	6	6	6	6	6
Cap, veh/h	145	874	116	99	536	456	355	313	50	405	426	723
Arrive On Green	0.04	0.28	0.28	0.06	0.29	0.29	0.21	0.21	0.21	0.24	0.24	0.24
Sat Flow, veh/h	3408	3111	413	1757	1845	1568	1707	1508	241	1707	1792	3047
Grp Volume(v), veh/h	113	70	73	24	499	288	9	0	29	187	296	679
Grp Sat Flow(s),veh/h/ln	1704	1752	1772	1757	1845	1568	1707	0	1750	1707	1792	1524
Q Serve(g_s), s	3.3	3.0	3.1	1.3	26.6	16.1	0.4	0.0	1.3	9.5	15.3	22.1
Cycle Q Clear(g_c), s	3.3	3.0	3.1	1.3	26.6	16.1	0.4	0.0	1.3	9.5	15.3	22.1
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	145	492	498	99	536	456	355	0	363	405	426	723
V/C Ratio(X)	0.78	0.14	0.15	0.24	0.93	0.63	0.03	0.00	0.08	0.46	0.70	0.94
Avail Cap(c_a), veh/h	145	492	498	99	536	456	355	0	363	405	426	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	27.2	27.3	45.6	34.9	31.1	31.9	0.0	32.3	33.0	35.2	37.8
Incr Delay (d2), s/veh	33.0	0.6	0.6	5.7	24.9	6.5	0.1	0.0	0.4	3.7	9.1	21.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	1.5	1.6	0.8	17.3	7.8	0.2	0.0	0.7	4.9	8.6	11.4
LnGrp Delay(d),s/veh	80.9	27.8	27.9	51.3	59.8	37.7	32.0	0.0	32.7	36.8	44.3	59.3
LnGrp LOS	F	C	C	D	E	D	C		C	D	D	E
Approach Vol, veh/h		256			811			38			1162	
Approach Delay, s/veh		51.3			51.7			32.5			51.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.8	35.3		29.5	10.8	34.3		26.5
Change Period (Y+Rc), s	5.5	* 5.9		5.5	* 5.1	* 5.9		5.5
Max Green Setting (Gmax), s	4.3	* 29		24.0	* 5.7	* 27		21.0
Max Q Clear Time (g_c+I1), s	5.3	28.6		24.1	3.3	5.1		3.3
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	0.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.4
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	252	5	70	724	40	2	282	31	13	222	13
Future Volume (veh/h)	38	252	5	70	724	40	2	282	31	13	222	13
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1900	1810	1900	1900	1810	1900
Adj Flow Rate, veh/h	38	252	5	70	724	40	2	282	31	13	222	13
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	68	755	15	143	799	44	2	327	36	15	263	15
Arrive On Green	0.04	0.43	0.43	0.08	0.47	0.47	0.21	0.21	0.21	0.16	0.16	0.16
Sat Flow, veh/h	1707	1752	35	1707	1683	93	11	1592	175	94	1601	94
Grp Volume(v), veh/h	38	0	257	70	0	764	315	0	0	248	0	0
Grp Sat Flow(s),veh/h/ln	1707	0	1786	1707	0	1776	1778	0	0	1788	0	0
Q Serve(g_s), s	4.3	0.0	18.6	7.6	0.0	77.3	33.4	0.0	0.0	26.2	0.0	0.0
Cycle Q Clear(g_c), s	4.3	0.0	18.6	7.6	0.0	77.3	33.4	0.0	0.0	26.2	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.05	0.01		0.10	0.05		0.05
Lane Grp Cap(c), veh/h	68	0	770	143	0	843	365	0	0	293	0	0
V/C Ratio(X)	0.56	0.00	0.33	0.49	0.00	0.91	0.86	0.00	0.00	0.85	0.00	0.00
Avail Cap(c_a), veh/h	68	0	770	143	0	843	365	0	0	293	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	91.9	0.0	36.8	85.4	0.0	47.2	74.9	0.0	0.0	79.1	0.0	0.0
Incr Delay (d2), s/veh	28.9	0.0	1.2	11.6	0.0	15.1	22.8	0.0	0.0	24.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	9.5	4.1	0.0	41.3	18.8	0.0	0.0	15.0	0.0	0.0
LnGrp Delay(d),s/veh	120.8	0.0	38.0	96.9	0.0	62.3	97.7	0.0	0.0	103.8	0.0	0.0
LnGrp LOS	F		D	F		E	F			F		
Approach Vol, veh/h		295			834			315			248	
Approach Delay, s/veh		48.7			65.2			97.7			103.8	
Approach LOS		D			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.4	98.6		38.0	20.9	90.1		46.0
Change Period (Y+Rc), s	4.6	6.0		6.0	4.6	6.0		6.0
Max Green Setting (Gmax), s	7.8	92.6		32.0	16.3	84.1		40.0
Max Q Clear Time (g_c+I1), s	6.3	79.3		28.2	9.6	20.6		35.4
Green Ext Time (p_c), s	0.0	1.1		0.1	0.0	1.1		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		74.0
HCM 2010 LOS		E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	456	92	119	451	206	110	992	170	114	547	154
Future Volume (veh/h)	177	456	92	119	451	206	110	992	170	114	547	154
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	177	456	92	119	451	206	110	992	170	114	547	154
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	189	716	144	189	863	386	216	1132	507	135	971	434
Arrive On Green	0.11	0.25	0.25	0.11	0.25	0.25	0.12	0.32	0.32	0.08	0.28	0.28
Sat Flow, veh/h	1757	2911	583	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	177	273	275	119	451	206	110	992	170	114	547	154
Grp Sat Flow(s),veh/h/ln	1757	1752	1742	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	6.5	9.1	9.2	4.2	7.2	7.4	3.8	17.4	5.4	4.2	8.7	5.1
Cycle Q Clear(g_c), s	6.5	9.1	9.2	4.2	7.2	7.4	3.8	17.4	5.4	4.2	8.7	5.1
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	431	429	189	863	386	216	1132	507	135	971	434
V/C Ratio(X)	0.94	0.63	0.64	0.63	0.52	0.53	0.51	0.88	0.34	0.84	0.56	0.35
Avail Cap(c_a), veh/h	189	431	429	189	863	386	216	1132	507	135	971	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	21.9	21.9	27.8	21.2	21.3	26.7	20.8	16.7	29.6	20.1	18.8
Incr Delay (d2), s/veh	50.4	6.9	7.2	14.8	2.3	5.2	8.3	9.6	1.8	44.1	2.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	5.2	5.2	2.8	3.8	3.8	2.3	9.8	2.6	3.7	4.5	2.5
LnGrp Delay(d),s/veh	79.2	28.8	29.1	42.6	23.5	26.5	35.0	30.4	18.5	73.8	22.5	21.1
LnGrp LOS	E	C	C	D	C	C	C	C	B	E	C	C
Approach Vol, veh/h		725			776			1272			815	
Approach Delay, s/veh		41.2			27.2			29.2			29.4	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	25.0	11.0	20.0	12.0	22.0	11.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	21.0	7.0	16.0	8.0	18.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	19.4	6.2	11.2	5.8	10.7	8.5	9.4
Green Ext Time (p_c), s	0.0	0.7	0.0	0.9	0.0	2.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	341	113	79	291	95	73	1087	108	70	458	109
Future Volume (veh/h)	177	341	113	79	291	95	73	1087	108	70	458	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	177	341	113	79	291	95	73	1087	108	70	458	109
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	201	801	358	201	597	191	174	1185	118	99	916	216
Arrive On Green	0.11	0.23	0.23	0.11	0.23	0.23	0.10	0.37	0.37	0.06	0.33	0.33
Sat Flow, veh/h	1757	3505	1568	1757	2613	836	1740	3190	317	1740	2787	659
Grp Volume(v), veh/h	177	341	113	79	193	193	73	591	604	70	284	283
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1697	1740	1736	1771	1740	1736	1711
Q Serve(g_s), s	6.9	5.8	4.2	2.9	6.7	6.9	2.8	22.7	22.8	2.8	9.2	9.3
Cycle Q Clear(g_c), s	6.9	5.8	4.2	2.9	6.7	6.9	2.8	22.7	22.8	2.8	9.2	9.3
Prop In Lane	1.00		1.00	1.00		0.49	1.00		0.18	1.00		0.39
Lane Grp Cap(c), veh/h	201	801	358	201	401	388	174	645	658	99	570	562
V/C Ratio(X)	0.88	0.43	0.32	0.39	0.48	0.50	0.42	0.92	0.92	0.70	0.50	0.50
Avail Cap(c_a), veh/h	201	801	358	201	401	388	174	645	658	99	570	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	23.1	22.4	28.7	23.4	23.5	29.6	21.0	21.0	32.4	18.9	18.9
Incr Delay (d2), s/veh	38.7	1.7	2.3	5.7	4.1	4.5	7.3	20.0	19.9	34.3	3.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	3.0	2.0	1.7	3.7	3.7	1.7	14.4	14.7	2.3	4.8	4.9
LnGrp Delay(d),s/veh	69.2	24.7	24.7	34.4	27.5	28.0	36.9	41.0	40.9	66.7	22.0	22.1
LnGrp LOS	E	C	C	C	C	C	D	D	D	E	C	C
Approach Vol, veh/h		631			465			1268			637	
Approach Delay, s/veh		37.2			28.9			40.7			26.9	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	30.0	12.0	20.0	11.0	27.0	12.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	26.0	8.0	16.0	7.0	23.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	4.8	24.8	4.9	7.8	4.8	11.3	8.9	8.9
Green Ext Time (p_c), s	0.0	0.5	0.0	0.8	0.0	1.8	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	35.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	518	166	55	683	137	209	1009	152	106	462	125
Future Volume (veh/h)	156	518	166	55	683	137	209	1009	152	106	462	125
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	156	518	166	55	683	137	209	1009	152	106	462	125
Adj No. of Lanes	1	3	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	174	916	285	149	793	355	298	1124	169	124	942	421
Arrive On Green	0.10	0.24	0.24	0.09	0.23	0.23	0.17	0.37	0.37	0.07	0.27	0.27
Sat Flow, veh/h	1740	3771	1174	1740	3471	1553	1740	3027	456	1740	3471	1553
Grp Volume(v), veh/h	156	455	229	55	683	137	209	578	583	106	462	125
Grp Sat Flow(s),veh/h/ln	1740	1663	1620	1740	1736	1553	1740	1736	1747	1740	1736	1553
Q Serve(g_s), s	6.2	8.4	8.7	2.1	13.2	5.2	7.9	22.0	22.0	4.2	7.8	4.5
Cycle Q Clear(g_c), s	6.2	8.4	8.7	2.1	13.2	5.2	7.9	22.0	22.0	4.2	7.8	4.5
Prop In Lane	1.00		0.72	1.00		1.00	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	174	808	393	149	793	355	298	645	649	124	942	421
V/C Ratio(X)	0.90	0.56	0.58	0.37	0.86	0.39	0.70	0.90	0.90	0.85	0.49	0.30
Avail Cap(c_a), veh/h	174	808	393	149	793	355	298	645	649	124	942	421
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	23.2	23.4	30.2	25.9	22.8	27.3	20.7	20.8	32.1	21.4	20.2
Incr Delay (d2), s/veh	45.4	2.8	6.2	6.9	11.8	3.2	12.9	17.6	17.7	48.5	1.8	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	4.2	4.6	1.3	7.6	2.6	4.8	13.6	13.7	3.7	4.0	2.1
LnGrp Delay(d),s/veh	76.5	26.1	29.5	37.1	37.7	26.0	40.2	38.3	38.4	80.6	23.3	22.0
LnGrp LOS	E	C	C	D	D	C	D	D	D	F	C	C
Approach Vol, veh/h		840			875			1370			693	
Approach Delay, s/veh		36.4			35.9			38.7			31.8	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	30.0	10.0	21.0	16.0	23.0	11.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	26.0	6.0	17.0	12.0	19.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	24.0	4.1	10.7	9.9	9.8	8.2	15.2
Green Ext Time (p_c), s	0.0	0.8	0.0	1.5	0.1	1.8	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	36.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	307	93	59	556	203	148	726	41	44	170	81
Future Volume (veh/h)	232	307	93	59	556	203	148	726	41	44	170	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	232	307	93	59	556	203	148	726	41	44	170	81
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	268	812	242	161	614	224	162	1024	458	108	917	410
Arrive On Green	0.15	0.31	0.31	0.09	0.25	0.25	0.09	0.29	0.29	0.06	0.26	0.26
Sat Flow, veh/h	1740	2638	785	1740	2494	908	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	232	200	200	59	386	373	148	726	41	44	170	81
Grp Sat Flow(s),veh/h/ln	1740	1736	1688	1740	1736	1667	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	8.5	5.9	6.0	2.1	14.0	14.1	5.4	12.0	1.2	1.6	2.4	2.6
Cycle Q Clear(g_c), s	8.5	5.9	6.0	2.1	14.0	14.1	5.4	12.0	1.2	1.6	2.4	2.6
Prop In Lane	1.00		0.47	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	534	519	161	427	410	162	1024	458	108	917	410
V/C Ratio(X)	0.87	0.37	0.38	0.37	0.90	0.91	0.91	0.71	0.09	0.41	0.19	0.20
Avail Cap(c_a), veh/h	268	534	519	161	427	410	162	1024	458	108	917	410
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	17.6	17.7	27.7	23.8	23.8	29.2	20.5	16.7	29.4	18.6	18.7
Incr Delay (d2), s/veh	29.4	2.0	2.2	6.4	25.2	26.5	50.7	4.1	0.4	11.0	0.4	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	3.1	3.1	1.3	9.6	9.4	4.9	6.3	0.6	1.1	1.2	1.2
LnGrp Delay(d),s/veh	56.2	19.6	19.8	34.1	48.9	50.3	79.9	24.7	17.1	40.3	19.1	19.8
LnGrp LOS	E	B	B	C	D	D	E	C	B	D	B	B
Approach Vol, veh/h		632			818			915			295	
Approach Delay, s/veh		33.1			48.5			33.3			22.4	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	23.0	10.0	24.0	10.0	21.0	14.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	19.0	6.0	20.0	6.0	17.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	3.6	14.0	4.1	8.0	7.4	4.6	10.5	16.1
Green Ext Time (p_c), s	0.0	0.9	0.0	1.2	0.0	1.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	367	393	17	70	541	254	45	476	39	95	267	284
Future Volume (veh/h)	367	393	17	70	541	254	45	476	39	95	267	284
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	367	393	17	70	541	254	45	476	39	95	267	284
Adj No. of Lanes	2	2	1	2	2	0	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	450	1157	518	225	613	287	225	867	71	225	926	414
Arrive On Green	0.13	0.33	0.33	0.07	0.27	0.27	0.07	0.27	0.27	0.07	0.27	0.27
Sat Flow, veh/h	3375	3471	1553	3375	2297	1076	3375	3250	265	3375	3471	1553
Grp Volume(v), veh/h	367	393	17	70	408	387	45	254	261	95	267	284
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1688	1736	1637	1688	1736	1780	1688	1736	1553
Q Serve(g_s), s	6.3	5.1	0.4	1.2	13.5	13.6	0.8	7.5	7.6	1.6	3.7	9.8
Cycle Q Clear(g_c), s	6.3	5.1	0.4	1.2	13.5	13.6	0.8	7.5	7.6	1.6	3.7	9.8
Prop In Lane	1.00		1.00	1.00		0.66	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	450	1157	518	225	463	437	225	463	475	225	926	414
V/C Ratio(X)	0.82	0.34	0.03	0.31	0.88	0.89	0.20	0.55	0.55	0.42	0.29	0.69
Avail Cap(c_a), veh/h	450	1157	518	225	463	437	225	463	475	225	926	414
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	15.0	13.5	26.7	21.1	21.1	26.5	18.9	18.9	26.9	17.5	19.7
Incr Delay (d2), s/veh	15.0	0.8	0.1	3.6	20.9	22.3	2.0	4.6	4.5	5.7	0.8	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	2.5	0.2	0.7	9.2	8.8	0.4	4.2	4.3	0.9	1.8	5.2
LnGrp Delay(d),s/veh	40.3	15.8	13.6	30.3	42.0	43.4	28.5	23.5	23.5	32.6	18.3	28.7
LnGrp LOS	D	B	B	C	D	D	C	C	C	C	B	C
Approach Vol, veh/h		777			865			560			646	
Approach Delay, s/veh		27.3			41.7			23.9			24.9	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	20.0	8.0	24.0	8.0	20.0	12.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	4.0	20.0	4.0	16.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	3.6	9.6	3.2	7.1	2.8	11.8	8.3	15.6
Green Ext Time (p_c), s	0.0	0.8	0.0	1.4	0.0	0.7	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	1	110	3	1	20	941	37	0	488	0
Future Volume (veh/h)	0	1	1	110	3	1	20	941	37	0	488	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	0	1	1	110	3	1	20	941	37	0	488	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	0	134	134	291	219	73	29	890	757	12	872	0
Arrive On Green	0.00	0.17	0.17	0.17	0.17	0.17	0.02	0.50	0.50	0.00	0.49	0.00
Sat Flow, veh/h	0	808	808	1757	1325	442	1707	1792	1524	1707	1792	0
Grp Volume(v), veh/h	0	0	2	110	0	4	20	941	37	0	488	0
Grp Sat Flow(s),veh/h/ln	0	0	1617	1757	0	1767	1707	1792	1524	1707	1792	0
Q Serve(g_s), s	0.0	0.0	0.1	5.4	0.0	0.2	1.1	48.0	1.2	0.0	18.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.1	5.4	0.0	0.2	1.1	48.0	1.2	0.0	18.6	0.0
Prop In Lane	0.00		0.50	1.00		0.25	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	268	291	0	292	29	890	757	12	872	0
V/C Ratio(X)	0.00	0.00	0.01	0.38	0.00	0.01	0.68	1.06	0.05	0.00	0.56	0.00
Avail Cap(c_a), veh/h	0	0	268	291	0	292	88	890	757	71	872	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	33.7	35.9	0.0	33.7	47.2	24.3	12.6	0.0	17.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	3.7	0.0	0.1	9.8	46.5	0.1	0.0	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	2.9	0.0	0.1	0.6	35.0	0.5	0.0	9.7	0.0
LnGrp Delay(d),s/veh	0.0	0.0	33.8	39.6	0.0	33.8	57.1	70.8	12.7	0.0	20.1	0.0
LnGrp LOS			C	D		C	E	F	B		C	
Approach Vol, veh/h		2			114			998			488	
Approach Delay, s/veh		33.7			39.4			68.4			20.1	
Approach LOS		C			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.7	52.0		20.0	5.7	51.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	5.0	47.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	50.0		2.1	3.1	20.6		7.4
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.5		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		51.6
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	2	2	250	1	404	3	727	122	186	527	0
Future Volume (veh/h)	2	2	2	250	1	404	3	727	122	186	527	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	2	2	2	250	1	404	3	727	122	186	527	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	59	113	113	264	1	391	59	732	123	190	1015	0
Arrive On Green	0.03	0.13	0.13	0.15	0.25	0.25	0.03	0.47	0.47	0.11	0.55	0.00
Sat Flow, veh/h	1757	848	848	1757	4	1565	1757	1541	259	1757	1845	0
Grp Volume(v), veh/h	2	0	4	250	0	405	3	0	849	186	527	0
Grp Sat Flow(s),veh/h/ln	1757	0	1695	1757	0	1569	1757	0	1799	1757	1845	0
Q Serve(g_s), s	0.1	0.0	0.2	16.9	0.0	30.0	0.2	0.0	56.3	12.7	21.6	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.2	16.9	0.0	30.0	0.2	0.0	56.3	12.7	21.6	0.0
Prop In Lane	1.00		0.50	1.00		1.00	1.00		0.14	1.00		0.00
Lane Grp Cap(c), veh/h	59	0	226	264	0	392	59	0	855	190	1015	0
V/C Ratio(X)	0.03	0.00	0.02	0.95	0.00	1.03	0.05	0.00	0.99	0.98	0.52	0.00
Avail Cap(c_a), veh/h	59	0	226	264	0	392	59	0	855	190	1015	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.1	0.0	45.2	50.5	0.0	45.0	56.2	0.0	31.3	53.4	17.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.1	43.7	0.0	54.2	1.7	0.0	29.3	59.6	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	11.4	0.0	18.9	0.1	0.0	34.8	9.3	11.5	0.0
LnGrp Delay(d),s/veh	57.2	0.0	45.3	94.2	0.0	99.2	57.8	0.0	60.6	112.9	18.9	0.0
LnGrp LOS	E		D	F		F	E		E	F	B	
Approach Vol, veh/h		6			655			852			713	
Approach Delay, s/veh		49.3			97.3			60.6			43.4	
Approach LOS		D			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	61.0	22.0	20.0	8.0	70.0	8.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	57.0	18.0	16.0	4.0	66.0	4.0	30.0
Max Q Clear Time (g_c+I1), s	14.7	58.3	18.9	2.2	2.2	23.6	2.1	32.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	1.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	6	4	1	5	7	3	378	1	0	480	286
Future Volume (veh/h)	290	6	4	1	5	7	3	378	1	0	480	286
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	290	6	4	1	5	7	3	378	1	0	480	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	368	8	334	28	138	193	94	760	2	2	566	481
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.05	0.41	0.41	0.00	0.31	0.00
Sat Flow, veh/h	1723	36	1568	129	646	904	1757	1839	5	1757	1845	1568
Grp Volume(v), veh/h	296	0	4	13	0	0	3	0	379	0	480	0
Grp Sat Flow(s),veh/h/ln	1759	0	1568	1679	0	0	1757	0	1844	1757	1845	1568
Q Serve(g_s), s	11.9	0.0	0.2	0.5	0.0	0.0	0.1	0.0	11.4	0.0	18.3	0.0
Cycle Q Clear(g_c), s	11.9	0.0	0.2	0.5	0.0	0.0	0.1	0.0	11.4	0.0	18.3	0.0
Prop In Lane	0.98		1.00	0.08		0.54	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	0	334	358	0	0	94	0	762	2	566	481
V/C Ratio(X)	0.79	0.00	0.01	0.04	0.00	0.00	0.03	0.00	0.50	0.00	0.85	0.00
Avail Cap(c_a), veh/h	375	0	334	358	0	0	94	0	762	94	566	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	27.9	0.0	23.3	23.4	0.0	0.0	33.7	0.0	16.2	0.0	24.4	0.0
Incr Delay (d2), s/veh	15.4	0.0	0.1	0.2	0.0	0.0	0.6	0.0	2.3	0.0	14.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.0	0.1	0.2	0.0	0.0	0.1	0.0	6.3	0.0	11.5	0.0
LnGrp Delay(d),s/veh	43.3	0.0	23.3	23.6	0.0	0.0	34.3	0.0	18.6	0.0	39.0	0.0
LnGrp LOS	D		C	C			C		B		D	
Approach Vol, veh/h		300			13			382			480	
Approach Delay, s/veh		43.1			23.6			18.7			39.0	
Approach LOS		D			C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	35.0		20.0	8.0	27.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0	4.0	23.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	13.4		13.9	2.1	20.3		2.5
Green Ext Time (p_c), s	0.0	0.8		0.1	0.0	0.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.3
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	97	10	68	72	17	44	311	144	7	46	17
Future Vol, veh/h	32	97	10	68	72	17	44	311	144	7	46	17
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	32	97	10	68	72	17	44	311	144	7	46	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.3	10.6	16.7	9.1
HCM LOS	B	B	C	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	23%	43%	10%
Vol Thru, %	62%	70%	46%	66%
Vol Right, %	29%	7%	11%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	499	139	157	70
LT Vol	44	32	68	7
Through Vol	311	97	72	46
RT Vol	144	10	17	17
Lane Flow Rate	499	139	157	70
Geometry Grp	1	1	1	1
Degree of Util (X)	0.663	0.219	0.247	0.105
Departure Headway (Hd)	4.785	5.676	5.662	5.382
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	758	632	634	665
Service Time	2.785	3.717	3.701	3.421
HCM Lane V/C Ratio	0.658	0.22	0.248	0.105
HCM Control Delay	16.7	10.3	10.6	9.1
HCM Lane LOS	C	B	B	A
HCM 95th-tile Q	5.1	0.8	1	0.4

Intersection	
Intersection Delay, s/veh	16
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	147	3	5	250	140	18	335	21	29	87	12
Future Vol, veh/h	27	147	3	5	250	140	18	335	21	29	87	12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	27	147	3	5	250	140	18	335	21	29	87	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.2	17.4	18	11.4
HCM LOS	B	C	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	15%	1%	23%
Vol Thru, %	90%	83%	63%	68%
Vol Right, %	6%	2%	35%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	374	177	395	128
LT Vol	18	27	5	29
Through Vol	335	147	250	87
RT Vol	21	3	140	12
Lane Flow Rate	374	177	395	128
Geometry Grp	1	1	1	1
Degree of Util (X)	0.617	0.311	0.614	0.23
Departure Headway (Hd)	5.935	6.324	5.716	6.472
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	613	568	636	556
Service Time	3.935	4.357	3.716	4.498
HCM Lane V/C Ratio	0.61	0.312	0.621	0.23
HCM Control Delay	18	12.2	17.4	11.4
HCM Lane LOS	C	B	C	B
HCM 95th-tile Q	4.2	1.3	4.2	0.9

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	285	188	5	1	211	76	10	3	2	17	4	72
Future Vol, veh/h	285	188	5	1	211	76	10	3	2	17	4	72
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	3	3	3	3	3	3
Mvmt Flow	285	188	5	1	211	76	10	3	2	17	4	72
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.2	10.4	9.1	9.2
HCM LOS	C	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	67%	60%	0%	18%
Vol Thru, %	20%	39%	73%	4%
Vol Right, %	13%	1%	26%	77%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	478	288	93
LT Vol	10	285	1	17
Through Vol	3	188	211	4
RT Vol	2	5	76	72
Lane Flow Rate	15	478	288	93
Geometry Grp	1	1	1	1
Degree of Util (X)	0.025	0.622	0.37	0.136
Departure Headway (Hd)	5.897	4.681	4.63	5.261
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	601	770	772	676
Service Time	3.994	2.731	2.686	3.339
HCM Lane V/C Ratio	0.025	0.621	0.373	0.138
HCM Control Delay	9.1	15.2	10.4	9.2
HCM Lane LOS	A	C	B	A
HCM 95th-tile Q	0.1	4.4	1.7	0.5

Intersection	
Intersection Delay, s/veh	24.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	105	6	38	81	11	20	507	113	3	69	15
Future Vol, veh/h	63	105	6	38	81	11	20	507	113	3	69	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	6	6	6	8	8	8	3	3	3	3	3	3
Mvmt Flow	63	105	6	38	81	11	20	507	113	3	69	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12	11.3	33.3	9.8
HCM LOS	B	B	D	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	36%	29%	3%
Vol Thru, %	79%	60%	62%	79%
Vol Right, %	18%	3%	8%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	640	174	130	87
LT Vol	20	63	38	3
Through Vol	507	105	81	69
RT Vol	113	6	11	15
Lane Flow Rate	640	174	130	87
Geometry Grp	1	1	1	1
Degree of Util (X)	0.882	0.301	0.228	0.14
Departure Headway (Hd)	4.963	6.234	6.321	5.778
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	730	574	566	618
Service Time	2.998	4.293	4.385	3.839
HCM Lane V/C Ratio	0.877	0.303	0.23	0.141
HCM Control Delay	33.3	12	11.3	9.8
HCM Lane LOS	D	B	B	A
HCM 95th-tile Q	11	1.3	0.9	0.5

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	223	2	11	8	1	1	25	459	2	0	62	41
Future Vol, veh/h	223	2	11	8	1	1	25	459	2	0	62	41
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	223	2	11	8	1	1	25	459	2	0	62	41
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.8	9.1	16.2	9
HCM LOS	B	A	C	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	94%	80%	0%
Vol Thru, %	94%	1%	10%	60%
Vol Right, %	0%	5%	10%	40%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	486	236	10	103
LT Vol	25	223	8	0
Through Vol	459	2	1	62
RT Vol	2	11	1	41
Lane Flow Rate	486	236	10	103
Geometry Grp	1	1	1	1
Degree of Util (X)	0.644	0.362	0.017	0.146
Departure Headway (Hd)	4.772	5.62	5.991	5.095
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	748	644	601	708
Service Time	2.844	3.62	3.996	3.095
HCM Lane V/C Ratio	0.65	0.366	0.017	0.145
HCM Control Delay	16.2	11.8	9.1	9
HCM Lane LOS	C	B	A	A
HCM 95th-tile Q	4.7	1.6	0.1	0.5

Intersection	
Intersection Delay, s/veh	39.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	99	0	235	0	297	440	48	40	0
Future Vol, veh/h	0	0	0	99	0	235	0	297	440	48	40	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	99	0	235	0	297	440	48	40	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	0	14.8	53.9	10.1
HCM LOS	-	B	F	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	30%	100%	0%
Vol Thru, %	40%	100%	0%	0%	100%
Vol Right, %	60%	0%	70%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	737	0	334	48	40
LT Vol	0	0	99	48	0
Through Vol	297	0	0	0	40
RT Vol	440	0	235	0	0
Lane Flow Rate	737	0	334	48	40
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.996	0	0.525	0.093	0.072
Departure Headway (Hd)	4.863	6.792	5.659	6.958	6.448
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	744	0	635	514	554
Service Time	2.899	4.877	3.71	4.721	4.211
HCM Lane V/C Ratio	0.991	0	0.526	0.093	0.072
HCM Control Delay	53.9	9.9	14.8	10.4	9.7
HCM Lane LOS	F	N	B	B	A
HCM 95th-tile Q	16.4	0	3.1	0.3	0.2

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	161	21	82	424	217	61
Future Vol, veh/h	161	21	82	424	217	61
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	8	8	6	6	5	5
Mvmt Flow	161	21	82	424	217	61
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	11.8	19.1	11.4
HCM LOS	B	C	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	16%	88%	0%
Vol Thru, %	84%	0%	78%
Vol Right, %	0%	12%	22%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	506	182	278
LT Vol	82	161	0
Through Vol	424	0	217
RT Vol	0	21	61
Lane Flow Rate	506	182	278
Geometry Grp	1	1	1
Degree of Util (X)	0.706	0.307	0.394
Departure Headway (Hd)	5.021	6.07	5.108
Convergence, Y/N	Yes	Yes	Yes
Cap	724	592	706
Service Time	3.021	4.106	3.138
HCM Lane V/C Ratio	0.699	0.307	0.394
HCM Control Delay	19.1	11.8	11.4
HCM Lane LOS	C	B	B
HCM 95th-tile Q	5.9	1.3	1.9

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1	0	6	0	81	0	409	31	16	220	0
Future Vol, veh/h	0	1	0	6	0	81	0	409	31	16	220	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	20	20	20	5	5	5	6	6	6
Mvmt Flow	0	1	0	6	0	81	0	409	31	16	220	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.7	9	12.6	9.9
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	7%	7%
Vol Thru, %	93%	100%	0%	93%
Vol Right, %	7%	0%	93%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	440	1	87	236
LT Vol	0	0	6	16
Through Vol	409	1	0	220
RT Vol	31	0	81	0
Lane Flow Rate	440	1	87	236
Geometry Grp	1	1	1	1
Degree of Util (X)	0.542	0.002	0.125	0.309
Departure Headway (Hd)	4.434	5.605	5.192	4.708
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	814	634	687	762
Service Time	2.466	3.675	3.247	2.747
HCM Lane V/C Ratio	0.541	0.002	0.127	0.31
HCM Control Delay	12.6	8.7	9	9.9
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	3.3	0	0.4	1.3

Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	142	210	42	9	151	23	64	296	22	10	67	28
Future Vol, veh/h	142	210	42	9	151	23	64	296	22	10	67	28
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	3	3	3
Mvmt Flow	142	210	42	9	151	23	64	296	22	10	67	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	18.6	12.1	18.3	10.9
HCM LOS	C	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	36%	5%	10%
Vol Thru, %	77%	53%	83%	64%
Vol Right, %	6%	11%	13%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	382	394	183	105
LT Vol	64	142	9	10
Through Vol	296	210	151	67
RT Vol	22	42	23	28
Lane Flow Rate	382	394	183	105
Geometry Grp	1	1	1	1
Degree of Util (X)	0.622	0.635	0.316	0.187
Departure Headway (Hd)	5.866	5.8	6.225	6.418
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	611	619	580	562
Service Time	3.963	3.893	4.232	4.429
HCM Lane V/C Ratio	0.625	0.637	0.316	0.187
HCM Control Delay	18.3	18.6	12.1	10.9
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	4.3	4.5	1.3	0.7

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	62	148	776	50	74	320
Future Vol, veh/h	62	148	776	50	74	320
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	62	148	776	50	74	320

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1109	413	0	0	826	0
Stage 1	801	-	-	-	-	-
Stage 2	308	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	201	583	-	-	794	-
Stage 1	397	-	-	-	-	-
Stage 2	713	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	182	583	-	-	794	-
Mov Cap-2 Maneuver	300	-	-	-	-	-
Stage 1	397	-	-	-	-	-
Stage 2	647	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	300	583	794	-
HCM Lane V/C Ratio	-	-	0.207	0.254	0.093	-
HCM Control Delay (s)	-	-	20.1	13.3	10	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	1	0.3	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	952	0	0	409
Future Vol, veh/h	0	0	952	0	0	409
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	0	0	952	0	0	409

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1361	952	0	0	952	0
Stage 1	952	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.14	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.236	-
Pot Cap-1 Maneuver	163	313	-	-	714	-
Stage 1	373	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	163	313	-	-	714	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	373	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	714	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	418	844	34	10	93
Future Vol, veh/h	27	418	844	34	10	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	27	418	844	34	10	93

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	878	0	-	0	1333	861
Stage 1	-	-	-	-	861	-
Stage 2	-	-	-	-	472	-
Critical Hdwy	4.16	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.254	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	753	-	-	-	169	354
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	753	-	-	-	163	354
Mov Cap-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	604	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	21.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	753	-	-	-	318
HCM Lane V/C Ratio	0.036	-	-	-	0.324
HCM Control Delay (s)	10	-	-	-	21.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	0	3	1	6	0	365	1	1	89	1
Future Vol, veh/h	3	1	0	3	1	6	0	365	1	1	89	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	1	0	3	1	6	0	365	1	1	89	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	461	458	90	458	458	366	90	0	0	366	0	0
Stage 1	92	92	-	366	366	-	-	-	-	-	-	-
Stage 2	369	366	-	92	92	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	509	498	965	511	498	677	1499	-	-	1187	-	-
Stage 1	913	817	-	651	621	-	-	-	-	-	-	-
Stage 2	649	621	-	913	817	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	503	498	965	510	498	677	1499	-	-	1187	-	-
Mov Cap-2 Maneuver	503	498	-	510	498	-	-	-	-	-	-	-
Stage 1	913	816	-	651	621	-	-	-	-	-	-	-
Stage 2	642	621	-	911	816	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	11.1	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1499	-	-	502	597	1187	-	-
HCM Lane V/C Ratio	-	-	-	0.008	0.017	0.001	-	-
HCM Control Delay (s)	0	-	-	12.2	11.1	8	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	401	2	58	616	3	3	0	119	2	0	5
Future Vol, veh/h	11	401	2	58	616	3	3	0	119	2	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	90	200	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	6	6	3	3	3	3	3	3
Mvmt Flow	11	401	2	58	616	3	3	0	119	2	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	619	0	0	401	0	0	1159	1158	401	1157	1157	618
Stage 1	-	-	-	-	-	-	423	423	-	734	734	-
Stage 2	-	-	-	-	-	-	736	735	-	423	423	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	942	-	-	1136	-	-	172	195	647	173	195	487
Stage 1	-	-	-	-	-	-	607	586	-	410	424	-
Stage 2	-	-	-	-	-	-	409	424	-	607	586	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	942	-	-	1136	-	-	162	183	647	134	183	487
Mov Cap-2 Maneuver	-	-	-	-	-	-	162	183	-	134	183	-
Stage 1	-	-	-	-	-	-	600	579	-	405	402	-
Stage 2	-	-	-	-	-	-	384	402	-	490	579	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.7	12.2	18.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	162	647	942	-	-	1136	-	-	278
HCM Lane V/C Ratio	0.019	0.184	0.012	-	-	0.051	-	-	0.025
HCM Control Delay (s)	27.6	11.8	8.9	-	-	8.3	-	-	18.3
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.7	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	118	1	0	2	3	54
Future Vol, veh/h	118	1	0	2	3	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	118	1	0	2	3	54

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	32	30	57	0	-	0
Stage 1	30	-	-	-	-	-
Stage 2	2	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	979	1042	1541	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	979	1042	1541	-	-	-
Mov Cap-2 Maneuver	979	-	-	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	1019	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1541	-	979	-	-
HCM Lane V/C Ratio	-	-	0.122	-	-
HCM Control Delay (s)	0	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	134	6	1	464	0	4	0	1	0	0	5
Future Vol, veh/h	1	134	6	1	464	0	4	0	1	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	134	6	1	464	0	4	0	1	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	464	0	0	140	0	0	608	605	137	606	608	464
Stage 1	-	-	-	-	-	-	139	139	-	466	466	-
Stage 2	-	-	-	-	-	-	469	466	-	140	142	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1092	-	-	1437	-	-	406	411	909	408	409	596
Stage 1	-	-	-	-	-	-	862	780	-	575	561	-
Stage 2	-	-	-	-	-	-	573	561	-	861	777	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1092	-	-	1437	-	-	402	410	909	407	408	596
Mov Cap-2 Maneuver	-	-	-	-	-	-	402	410	-	407	408	-
Stage 1	-	-	-	-	-	-	861	779	-	574	560	-
Stage 2	-	-	-	-	-	-	568	560	-	859	776	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	13.1	11.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	452	1092	-	-	1437	-	-	596
HCM Lane V/C Ratio	0.011	0.001	-	-	0.001	-	-	0.008
HCM Control Delay (s)	13.1	8.3	0	-	7.5	0	-	11.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	133	0	0	0	0	77
Future Vol, veh/h	133	0	0	0	0	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	133	0	0	0	0	77

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	39	39	77	0	-	0
Stage 1	39	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	970	1030	1515	-	-	-
Stage 1	981	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	970	1030	1515	-	-	-
Mov Cap-2 Maneuver	970	-	-	-	-	-
Stage 1	981	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1515	-	970	-	-
HCM Lane V/C Ratio	-	-	0.137	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	639	26	243	621	10	347
Future Vol, veh/h	639	26	243	621	10	347
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	300	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	639	26	243	621	10	347

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	639	0	1746	639
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	1107	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	940	-	94	474
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	315	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	940	-	70	474
Mov Cap-2 Maneuver	-	-	-	-	70	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	234	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	31.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	70	474	-	-	940	-
HCM Lane V/C Ratio	0.143	0.732	-	-	0.259	-
HCM Control Delay (s)	64.8	30.6	-	-	10.2	-
HCM Lane LOS	F	D	-	-	B	-
HCM 95th %tile Q(veh)	0.5	6	-	-	1	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	450	0	0	117
Future Vol, veh/h	0	0	450	0	0	117
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	450	0	0	117

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	567	450	0	0	450	0
Stage 1	450	-	-	-	-	-
Stage 2	117	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	483	607	-	-	1105	-
Stage 1	640	-	-	-	-	-
Stage 2	906	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	483	607	-	-	1105	-
Mov Cap-2 Maneuver	483	-	-	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	906	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1105	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	109	7	66	512	82	85
Future Vol, veh/h	109	7	66	512	82	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	-	-	90
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	109	7	66	512	82	85

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	726	82	82	0	-	0
Stage 1	82	-	-	-	-	-
Stage 2	644	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	390	975	1509	-	-	0
Stage 1	939	-	-	-	-	0
Stage 2	521	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	366	975	1509	-	-	-
Mov Cap-2 Maneuver	366	-	-	-	-	-
Stage 1	939	-	-	-	-	-
Stage 2	489	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	0.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1509	-	380	-
HCM Lane V/C Ratio	0.044	-	0.305	-
HCM Control Delay (s)	7.5	0	18.6	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0.1	-	1.3	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	272	1	9	591	0	10	57	19	0	2	7
Future Vol, veh/h	19	272	1	9	591	0	10	57	19	0	2	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	355	-	-	350	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	6	6	8	8	8	8	8	8
Mvmt Flow	19	272	1	9	591	0	10	57	19	0	2	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	591	0	0	273	0	0	925	920	273	958	920	591
Stage 1	-	-	-	-	-	-	311	311	-	609	609	-
Stage 2	-	-	-	-	-	-	614	609	-	349	311	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	965	-	-	1267	-	-	243	265	752	231	265	496
Stage 1	-	-	-	-	-	-	687	648	-	472	476	-
Stage 2	-	-	-	-	-	-	469	476	-	655	648	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	965	-	-	1267	-	-	233	258	752	183	258	496
Mov Cap-2 Maneuver	-	-	-	-	-	-	233	258	-	183	258	-
Stage 1	-	-	-	-	-	-	673	635	-	463	473	-
Stage 2	-	-	-	-	-	-	457	473	-	570	635	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	22	13.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	297	965	-	-	1267	-	-	412
HCM Lane V/C Ratio	0.29	0.02	-	-	0.007	-	-	0.022
HCM Control Delay (s)	22	8.8	-	-	7.9	-	-	13.9
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.2	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	72	135	0	0	142	7	5	10	0	0	3	9
Future Vol, veh/h	72	135	0	0	142	7	5	10	0	0	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	72	135	0	0	142	7	5	10	0	0	3	9

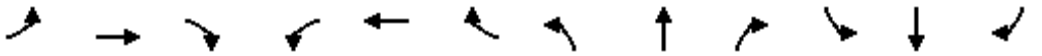
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	135	0	0	431	428	135	430	425	146
Stage 1	-	-	-	-	-	-	279	279	-	146	146	-
Stage 2	-	-	-	-	-	-	152	149	-	284	279	-
Critical Hdwy	4.18	-	-	4.2	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.29	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1396	-	-	1401	-	-	524	510	898	525	512	885
Stage 1	-	-	-	-	-	-	715	669	-	843	765	-
Stage 2	-	-	-	-	-	-	836	763	-	710	669	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1396	-	-	1401	-	-	494	481	898	495	483	885
Mov Cap-2 Maneuver	-	-	-	-	-	-	494	481	-	495	483	-
Stage 1	-	-	-	-	-	-	675	632	-	796	765	-
Stage 2	-	-	-	-	-	-	824	763	-	660	632	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.7	0	12.7	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	485	1396	-	-	1401	-	-	733
HCM Lane V/C Ratio	0.031	0.052	-	-	-	-	-	0.016
HCM Control Delay (s)	12.7	7.7	0	-	0	-	-	10
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.1

Existing No Project

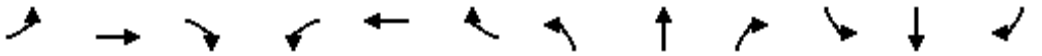
PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	729	0	688	0	0	0	0	1581	509	0	1679	789
Future Volume (vph)	729	0	688	0	0	0	0	1581	509	0	1679	789
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	729	0	688	0	0	0	0	1581	509	0	1679	789
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	729	0	684	0	0	0	0	1581	509	0	1679	789
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	61.0		61.0					51.0	120.0		51.0	120.0
Effective Green, g (s)	61.0		61.0					51.0	120.0		51.0	120.0
Actuated g/C Ratio	0.51		0.51					0.42	1.00		0.42	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Lane Grp Cap (vph)	1711		1389					2119	1553		2119	1553
v/s Ratio Prot								0.32			c0.34	
v/s Ratio Perm	0.22		0.25						0.33			c0.51
v/c Ratio	0.43		0.49					0.75	0.33		0.79	0.51
Uniform Delay, d1	18.5		19.3					29.0	0.0		29.9	0.0
Progression Factor	1.00		1.00					0.67	1.00		1.15	1.00
Incremental Delay, d2	0.8		1.2					1.6	0.4		1.7	0.6
Delay (s)	19.3		20.6					20.9	0.4		36.1	0.6
Level of Service	B		C					C	A		D	A
Approach Delay (s)		19.9			0.0			15.9			24.8	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

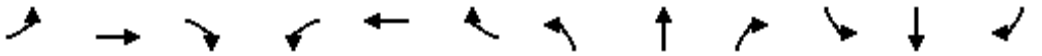
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	245	631	147	284	473	765	228	1078	165	889	1443	150
Future Volume (vph)	245	631	147	284	473	765	228	1078	165	889	1443	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3373		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3373		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	245	631	147	284	473	765	228	1078	165	889	1443	150
RTOR Reduction (vph)	0	17	0	0	0	561	0	0	95	0	0	82
Lane Group Flow (vph)	245	761	0	284	473	204	228	1078	70	889	1443	68
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	7.0	25.0		14.0	32.0	32.0	16.0	35.0	35.0	30.0	49.0	49.0
Effective Green, g (s)	7.0	25.0		14.0	32.0	32.0	16.0	35.0	35.0	30.0	49.0	49.0
Actuated g/C Ratio	0.06	0.21		0.12	0.27	0.27	0.13	0.29	0.29	0.25	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	196	702		392	925	728	448	1454	452	841	2036	634
v/s Ratio Prot	0.07	c0.23		c0.08	0.14		0.07	c0.22		c0.26	0.29	
v/s Ratio Perm						0.07			0.05			0.04
v/c Ratio	1.25	1.08		0.72	0.51	0.28	0.51	0.74	0.16	1.06	0.71	0.11
Uniform Delay, d1	56.5	47.5		51.1	37.4	34.9	48.3	38.4	31.5	45.0	29.6	22.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.78	0.79	0.64	0.86	0.80	0.67
Incremental Delay, d2	147.5	59.2		11.1	2.0	1.0	4.0	3.4	0.7	43.0	1.6	0.3
Delay (s)	204.0	106.7		62.2	39.4	35.8	41.7	33.8	21.0	81.7	25.2	15.1
Level of Service	F	F		E	D	D	D	C	C	F	C	B
Approach Delay (s)		130.0			41.9			33.6			44.8	
Approach LOS		F			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	55.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

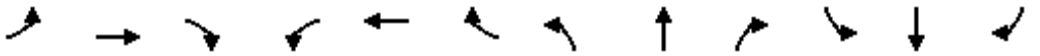
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	788	696	12	920	19	309	2	3	14	11	89
Future Volume (vph)	125	788	696	12	920	19	309	2	3	14	11	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1794	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1794	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	125	788	696	12	920	19	309	2	3	14	11	89
RTOR Reduction (vph)	0	0	272	0	0	13	0	0	2	0	0	75
Lane Group Flow (vph)	125	788	424	12	920	6	154	157	1	0	25	14
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	39.0	64.0	4.0	32.0	32.0	25.0	25.0	25.0		16.0	16.0
Effective Green, g (s)	11.0	39.0	64.0	4.0	32.0	32.0	25.0	25.0	25.0		16.0	16.0
Actuated g/C Ratio	0.10	0.37	0.61	0.04	0.30	0.30	0.24	0.24	0.24		0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Grp Cap (vph)	181	1289	946	66	1057	473	385	386	362		273	238
v/s Ratio Prot	c0.07	0.23	c0.11	0.01	c0.27		0.10	0.10			c0.01	
v/s Ratio Perm			0.17			0.00			0.00			0.01
v/c Ratio	0.69	0.61	0.45	0.18	0.87	0.01	0.40	0.41	0.00		0.09	0.06
Uniform Delay, d1	45.4	26.8	11.0	48.9	34.5	25.5	33.7	33.7	30.5		38.3	38.0
Progression Factor	1.00	1.00	1.00	1.04	0.99	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	19.5	2.2	1.5	4.9	8.2	0.0	3.1	3.2	0.0		0.7	0.5
Delay (s)	64.8	29.0	12.6	55.9	42.6	25.5	36.8	36.9	30.5		38.9	38.5
Level of Service	E	C	B	E	D	C	D	D	C		D	D
Approach Delay (s)		24.7			42.4			36.8			38.6	
Approach LOS		C			D			D			D	

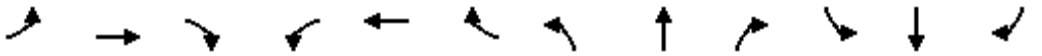
Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	437	189	136	530	98	383	149	329	123	99	37
Future Volume (vph)	38	437	189	136	530	98	383	149	329	123	99	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98	1.00		0.98	
Satd. Flow (prot)	1752	3505	1568	1752	3423		1665	1714	1568		3350	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.98	1.00		0.98	
Satd. Flow (perm)	1752	3505	1568	1752	3423		1665	1714	1568		3350	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	437	189	136	530	98	383	149	329	123	99	37
RTOR Reduction (vph)	0	0	160	0	14	0	0	0	222	0	13	0
Lane Group Flow (vph)	38	437	29	136	614	0	264	268	107	0	246	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	5.0	16.0	16.0	18.0	29.0		34.0	34.0	34.0		16.0	
Effective Green, g (s)	5.0	16.0	16.0	18.0	29.0		34.0	34.0	34.0		16.0	
Actuated g/C Ratio	0.05	0.15	0.15	0.17	0.28		0.32	0.32	0.32		0.15	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Grp Cap (vph)	83	534	238	300	945		539	555	507		510	
v/s Ratio Prot	0.02	c0.12		c0.08	c0.18		c0.16	0.16			c0.07	
v/s Ratio Perm			0.02						0.07			
v/c Ratio	0.46	0.82	0.12	0.45	0.65		0.49	0.48	0.21		0.48	
Uniform Delay, d1	48.7	43.1	38.4	39.1	33.5		28.5	28.5	25.8		40.7	
Progression Factor	0.79	1.49	5.58	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	13.9	10.8	0.8	4.9	3.5		3.2	3.0	0.9		3.3	
Delay (s)	52.4	74.9	215.3	44.0	37.0		31.7	31.4	26.7		44.0	
Level of Service	D	E	F	D	D		C	C	C		D	
Approach Delay (s)		113.5			38.2			29.7			44.0	
Approach LOS		F			D			C			D	

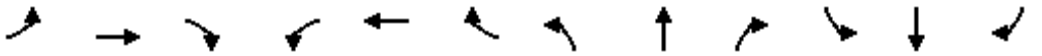
Intersection Summary			
HCM 2000 Control Delay	55.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	618	767	226	463	40	366	160	305	36	80	31
Future Volume (vph)	34	618	767	226	463	40	366	160	305	36	80	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3130		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3130		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	34	618	767	226	463	40	366	160	305	36	80	31
RTOR Reduction (vph)	0	0	366	0	0	19	0	190	0	0	0	27
Lane Group Flow (vph)	34	618	401	226	463	21	366	275	0	36	80	4
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	9.5	82.9	82.9	19.5	92.8	92.8	29.7	29.7		24.1	24.1	24.1
Effective Green, g (s)	9.5	82.9	82.9	19.5	92.8	92.8	29.7	29.7		24.1	24.1	24.1
Actuated g/C Ratio	0.05	0.46	0.46	0.11	0.52	0.52	0.16	0.16		0.13	0.13	0.13
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Grp Cap (vph)	92	1614	722	368	1807	808	555	516		234	469	209
v/s Ratio Prot	0.02	0.18		c0.07	0.13		c0.11	0.09		0.02	c0.02	
v/s Ratio Perm			c0.26			0.01						0.00
v/c Ratio	0.37	0.38	0.56	0.61	0.26	0.03	0.66	0.53		0.15	0.17	0.02
Uniform Delay, d1	82.4	31.8	35.2	76.7	24.3	21.4	70.4	68.8		68.9	69.1	67.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	11.0	0.7	3.1	7.5	0.3	0.1	6.0	3.9		1.4	0.8	0.2
Delay (s)	93.4	32.5	38.3	84.1	24.7	21.5	76.5	72.7		70.3	69.9	67.9
Level of Service	F	C	D	F	C	C	E	E		E	E	E
Approach Delay (s)		37.1			42.9			74.3			69.6	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	49.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	22.9
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

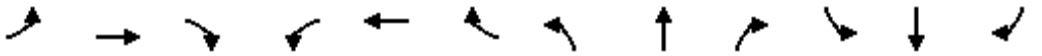
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	914	0	280	0	599	860	0	883	590
Future Volume (vph)	0	0	0	914	0	280	0	599	860	0	883	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.6		4.6		3.5	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3367		2733		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3367		2733		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	914	0	280	0	599	860	0	883	590
RTOR Reduction (vph)	0	0	0	0	0	190	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	914	0	90	0	599	860	0	883	590
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				4				6			2	
Permitted Phases						4			Free			Free
Actuated Green, G (s)				35.4		35.4		66.5	110.0		64.9	110.0
Effective Green, g (s)				35.4		35.4		66.5	110.0		64.9	110.0
Actuated g/C Ratio				0.32		0.32		0.60	1.00		0.59	1.00
Clearance Time (s)				4.6		4.6		3.5			5.1	
Lane Grp Cap (vph)				1083		879		3015	1553		2942	1553
v/s Ratio Prot				c0.27				0.12			0.18	
v/s Ratio Perm						0.03			c0.55			0.38
v/c Ratio				0.84		0.10		0.20	0.55		0.30	0.38
Uniform Delay, d1				34.7		26.2		9.8	0.0		11.2	0.0
Progression Factor				1.00		1.00		0.72	1.00		1.00	1.00
Incremental Delay, d2				8.1		0.2		0.1	1.4		0.3	0.7
Delay (s)				42.8		26.4		7.2	1.4		11.5	0.7
Level of Service				D		C		A	A		B	A
Approach Delay (s)		0.0			38.9			3.7			7.2	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

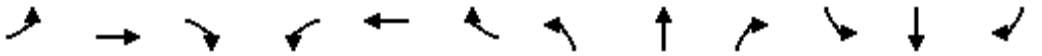
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	415	0	813	0	0	0	0	1043	801	0	1372	422
Future Volume (vph)	415	0	813	0	0	0	0	1043	801	0	1372	422
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	415	0	813	0	0	0	0	1043	801	0	1372	422
RTOR Reduction (vph)	0	0	60	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	415	0	753	0	0	0	0	1043	801	0	1372	422
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	33.6		33.6					64.9	110.0		65.4	110.0
Effective Green, g (s)	33.6		33.6					64.9	110.0		65.4	110.0
Actuated g/C Ratio	0.31		0.31					0.59	1.00		0.59	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Lane Grp Cap (vph)	1028		834					2942	1553		2965	1553
v/s Ratio Prot								0.21			0.28	
v/s Ratio Perm	0.12		c0.28						c0.52			0.27
v/c Ratio	0.40		0.90					0.35	0.52		0.46	0.27
Uniform Delay, d1	30.3		36.6					11.7	0.0		12.5	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.50	1.00
Incremental Delay, d2	1.2		14.9					0.3	1.2		0.4	0.4
Delay (s)	31.4		51.5					12.0	1.2		6.7	0.4
Level of Service	C		D					B	A		A	A
Approach Delay (s)		44.7			0.0			7.3			5.2	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

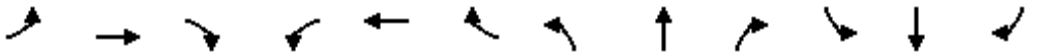
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	268	0	198	0	857	980	0	574	390
Future Volume (vph)	0	0	0	268	0	198	0	857	980	0	574	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.95	1.00		0.95	1.00
Frt				1.00	0.87			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.99			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1497			3471	1553		3471	1553
Flt Permitted				0.95	0.99			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1497			3471	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	268	0	198	0	857	980	0	574	390
RTOR Reduction (vph)	0	0	0	0	111	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	241	114	0	0	857	980	0	574	390
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Perm	NA			NA	Free		NA	Free
Protected Phases					8			2			6	
Permitted Phases				8					Free			Free
Actuated Green, G (s)				35.1	35.1			65.2	110.0		65.2	110.0
Effective Green, g (s)				35.1	35.1			65.2	110.0		65.2	110.0
Actuated g/C Ratio				0.32	0.32			0.59	1.00		0.59	1.00
Clearance Time (s)				4.9	4.9			4.8			4.8	
Lane Grp Cap (vph)				526	477			2057	1553		2057	1553
v/s Ratio Prot								0.25			0.17	
v/s Ratio Perm				0.15	0.08				c0.63			0.25
v/c Ratio				0.46	0.24			0.42	0.63		0.28	0.25
Uniform Delay, d1				29.9	27.6			12.1	0.0		10.9	0.0
Progression Factor				1.00	1.00			0.73	1.00		1.00	1.00
Incremental Delay, d2				2.9	1.2			0.5	1.7		0.3	0.4
Delay (s)				32.7	28.8			9.3	1.7		11.3	0.4
Level of Service				C	C			A	A		B	A
Approach Delay (s)		0.0			30.8			5.3			6.9	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

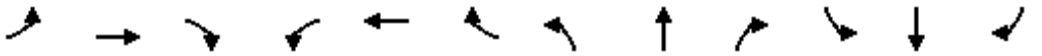
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	414	0	426	0	0	0	0	1424	852	0	608	235
Future Volume (vph)	414	0	426	0	0	0	0	1424	852	0	608	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.95	1.00
Frt	1.00	0.92	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	0.98	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1490	1475					4988	1553		3471	1553
Flt Permitted	0.95	0.98	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1490	1475					4988	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	414	0	426	0	0	0	0	1424	852	0	608	235
RTOR Reduction (vph)	0	42	183	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	290	240	85	0	0	0	0	1424	852	0	608	235
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA	Perm					NA	Free		NA	Free
Protected Phases		4						2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	34.9	34.9	34.9					65.1	110.0		65.2	110.0
Effective Green, g (s)	34.9	34.9	34.9					65.1	110.0		65.2	110.0
Actuated g/C Ratio	0.32	0.32	0.32					0.59	1.00		0.59	1.00
Clearance Time (s)	5.1	5.1	5.1					4.9			4.8	
Lane Grp Cap (vph)	523	472	467					2951	1553		2057	1553
v/s Ratio Prot								0.29			0.18	
v/s Ratio Perm	0.18	0.16	0.06						c0.55			0.15
v/c Ratio	0.55	0.51	0.18					0.48	0.55		0.30	0.15
Uniform Delay, d1	31.1	30.6	27.2					12.8	0.0		11.1	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		0.73	1.00
Incremental Delay, d2	4.2	3.9	0.9					0.6	1.4		0.4	0.2
Delay (s)	35.3	34.5	28.1					13.4	1.4		8.5	0.2
Level of Service	D	C	C					B	A		A	A
Approach Delay (s)		32.7			0.0			8.9			6.2	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

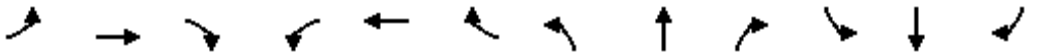
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	352	0	256	0	1429	1790	0	720	540
Future Volume (vph)	0	0	0	352	0	256	0	1429	1790	0	720	540
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.95	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		3505	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	352	0	256	0	1429	1790	0	720	540
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	352	0	233	0	1429	1790	0	720	540
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				37.2		37.2		61.4	110.0		61.4	110.0
Effective Green, g (s)				37.2		37.2		61.4	110.0		61.4	110.0
Actuated g/C Ratio				0.34		0.34		0.56	1.00		0.56	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Lane Grp Cap (vph)				1149		530		2811	1568		1956	1568
v/s Ratio Prot								0.28			0.21	
v/s Ratio Perm				0.10		0.15			c1.14			0.34
v/c Ratio				0.31		0.44		0.51	1.14		0.37	0.34
Uniform Delay, d1				26.9		28.3		15.0	55.0		13.5	0.0
Progression Factor				1.00		1.00		0.97	1.00		1.00	1.00
Incremental Delay, d2				0.7		2.6		0.1	64.5		0.5	0.6
Delay (s)				27.6		31.0		14.5	119.5		14.0	0.6
Level of Service				C		C		B	F		B	A
Approach Delay (s)		0.0			29.0			72.9			8.3	
Approach LOS		A			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	51.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

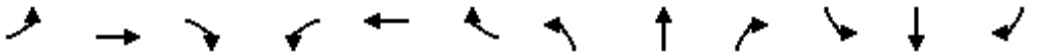
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	578	135	419	0	0	923	0	2340	8	0	942	128
Future Volume (vph)	578	135	419	0	0	923	0	2340	8	0	942	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		*0.75			0.95	1.00
Frt	1.00	0.96	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	0.98	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	2971	1427			2733		5531			3505	1568
Flt Permitted	0.95	0.98	1.00			1.00		1.00			1.00	1.00
Satd. Flow (perm)	1595	2971	1427			2733		5531			3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	578	135	419	0	0	923	0	2340	8	0	942	128
RTOR Reduction (vph)	0	29	171	0	0	35	0	1	0	0	0	33
Lane Group Flow (vph)	295	544	93	0	0	888	0	2347	0	0	942	95
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA			NA	Perm
Protected Phases	4	4				1		2			6	
Permitted Phases			4									6
Actuated Green, G (s)	20.0	20.0	20.0			33.0		45.0			82.0	82.0
Effective Green, g (s)	20.0	20.0	20.0			33.0		45.0			82.0	82.0
Actuated g/C Ratio	0.18	0.18	0.18			0.30		0.41			0.75	0.75
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Grp Cap (vph)	290	540	259			819		2262			2612	1168
v/s Ratio Prot	c0.18	0.18				c0.32		c0.42			0.27	
v/s Ratio Perm			0.07									0.06
v/c Ratio	1.02	1.01	0.36			1.08		1.04			0.36	0.08
Uniform Delay, d1	45.0	45.0	39.4			38.5		32.5			4.9	3.8
Progression Factor	1.00	1.00	1.00			1.00		1.00			0.77	1.17
Incremental Delay, d2	57.3	40.7	3.8			56.8		29.6			0.4	0.1
Delay (s)	102.3	85.7	43.2			95.3		62.1			4.1	4.6
Level of Service	F	F	D			F		E			A	A
Approach Delay (s)		80.2			95.3			62.1			4.2	
Approach LOS		F			F			E			A	

Intersection Summary			
HCM 2000 Control Delay	60.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

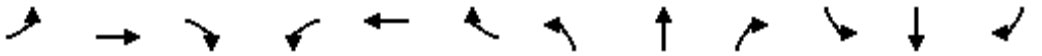
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	349	0	409	0	2985	520	0	1205	1078
Future Volume (vph)	0	0	0	349	0	409	0	2985	520	0	1205	1078
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	349	0	409	0	2985	520	0	1205	1078
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	349	0	395	0	2985	520	0	1205	1078
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				36.5		36.5		65.2	110.0		64.9	110.0
Effective Green, g (s)				36.5		36.5		65.2	110.0		64.9	110.0
Actuated g/C Ratio				0.33		0.33		0.59	1.00		0.59	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Lane Grp Cap (vph)				1095		889		2956	1553		2942	1553
v/s Ratio Prot								c0.60			0.24	
v/s Ratio Perm				0.11		0.15			0.33			c0.69
v/c Ratio				0.32		0.44		1.01	0.33		0.41	0.69
Uniform Delay, d1				27.5		28.8		22.4	0.0		12.2	0.0
Progression Factor				1.00		1.00		0.58	1.00		1.00	1.00
Incremental Delay, d2				0.8		1.6		16.6	0.4		0.4	2.6
Delay (s)				28.2		30.4		29.6	0.4		12.6	2.6
Level of Service				C		C		C	A		B	A
Approach Delay (s)		0.0			29.4			25.3			7.9	
Approach LOS		A			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

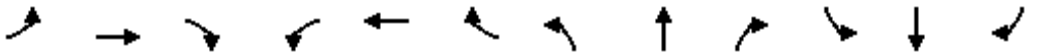
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1327	0	304	0	0	0	0	2177	394	0	1095	458
Future Volume (vph)	1327	0	304	0	0	0	0	2177	394	0	1095	458
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1327	0	304	0	0	0	0	2177	394	0	1095	458
RTOR Reduction (vph)	0	0	109	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1327	0	195	0	0	0	0	2177	394	0	1095	458
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	36.5		36.5					65.2	110.0		64.9	110.0
Effective Green, g (s)	36.5		36.5					65.2	110.0		64.9	110.0
Actuated g/C Ratio	0.33		0.33					0.59	1.00		0.59	1.00
Clearance Time (s)	3.5		3.5					4.8			5.1	
Lane Grp Cap (vph)	1623		906					3725	1553		2942	1553
v/s Ratio Prot								c0.35			0.22	
v/s Ratio Perm	c0.27		0.07						0.25			0.29
v/c Ratio	0.82		0.22					0.58	0.25		0.37	0.29
Uniform Delay, d1	33.7		26.4					14.0	0.0		11.8	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.75	1.00
Incremental Delay, d2	4.7		0.5					0.7	0.4		0.3	0.5
Delay (s)	38.4		27.0					14.6	0.4		9.3	0.5
Level of Service	D		C					B	A		A	A
Approach Delay (s)		36.3			0.0			12.5			6.7	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

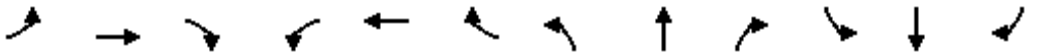
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	328	9	2	344	6	7	15	2	5	21	581
Future Volume (vph)	203	328	9	2	344	6	7	15	2	5	21	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1703	1792	1524	1719	1805			1798			1810	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)	1703	1792	1524	1719	1805			1798			1810	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	203	328	9	2	344	6	7	15	2	5	21	581
RTOR Reduction (vph)	0	0	3	0	1	0	0	2	0	0	0	177
Lane Group Flow (vph)	203	328	6	2	349	0	0	22	0	0	26	404
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	66.5	121.1	121.1	3.5	59.0			7.9			22.8	89.3
Effective Green, g (s)	66.5	121.1	121.1	3.5	59.0			7.9			22.8	89.3
Actuated g/C Ratio	0.37	0.67	0.67	0.02	0.33			0.04			0.13	0.50
Clearance Time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Lane Grp Cap (vph)	629	1205	1025	33	591			78			229	770
v/s Ratio Prot	0.12	0.18		0.00	c0.19			c0.01			0.01	c0.19
v/s Ratio Perm			0.00									0.07
v/c Ratio	0.32	0.27	0.01	0.06	0.59			0.28			0.11	0.52
Uniform Delay, d1	40.6	11.8	9.7	86.6	50.4			83.3			69.6	30.9
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.4	0.6	0.0	3.5	4.3			8.9			1.0	2.5
Delay (s)	42.0	12.4	9.7	90.1	54.7			92.2			70.6	33.4
Level of Service	D	B	A	F	D			F			E	C
Approach Delay (s)		23.4			54.9			92.2			35.0	
Approach LOS		C			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

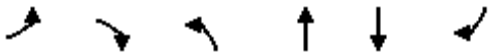
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	333	39	187	643	167	1915	0	0	1266	77
Future Volume (vph)	0	0	333	39	187	643	167	1915	0	0	1266	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1777	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1777	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	333	39	187	643	167	1915	0	0	1266	77
RTOR Reduction (vph)	0	0	210	0	0	46	0	0	0	0	0	35
Lane Group Flow (vph)	0	0	123	0	226	597	167	1915	0	0	1266	42
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			20.0		24.8	24.8	20.0	99.0			74.1	74.1
Effective Green, g (s)			20.0		24.8	24.8	20.0	99.0			74.1	74.1
Actuated g/C Ratio			0.15		0.18	0.18	0.15	0.73			0.55	0.55
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Grp Cap (vph)			236		326	492	489	3588			3384	836
v/s Ratio Prot			0.08		0.13		0.05	c0.39			0.21	
v/s Ratio Perm						c0.22						0.03
v/c Ratio			0.52		0.69	1.21	0.34	0.53			0.37	0.05
Uniform Delay, d1			53.1		51.5	55.1	51.6	7.9			17.3	14.1
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			8.1		11.5	113.9	1.9	0.6			0.3	0.1
Delay (s)			61.2		63.1	169.0	53.5	8.5			17.6	14.2
Level of Service			E		E	F	D	A			B	B
Approach Delay (s)		61.2			141.4			12.1			17.4	
Approach LOS		E			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	41.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

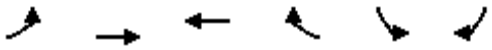
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1468	73	0	0	264	779
Future Volume (vph)	1468	73	0	0	264	779
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			4.7	4.0
Lane Util. Factor	0.97	0.91			0.95	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00
Satd. Flow (prot)	3310	1386			3406	1524
Flt Permitted	0.95	1.00			1.00	1.00
Satd. Flow (perm)	3310	1386			3406	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1468	73	0	0	264	779
RTOR Reduction (vph)	0	35	0	0	0	0
Lane Group Flow (vph)	1475	31	0	0	264	779
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%
Turn Type	Prot	Perm			NA	Free
Protected Phases	4				2	
Permitted Phases		4				Free
Actuated Green, G (s)	66.5	66.5			65.3	140.0
Effective Green, g (s)	66.5	66.5			65.3	140.0
Actuated g/C Ratio	0.48	0.48			0.47	1.00
Clearance Time (s)	3.5	3.5			4.7	
Lane Grp Cap (vph)	1572	658			1588	1524
v/s Ratio Prot	c0.45				0.08	
v/s Ratio Perm		0.02				c0.51
v/c Ratio	0.94	0.05			0.17	0.51
Uniform Delay, d1	34.8	19.7			21.6	0.0
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	12.1	0.1			0.2	1.2
Delay (s)	46.9	19.9			21.8	1.2
Level of Service	D	B			C	A
Approach Delay (s)	45.8			0.0	6.4	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.2
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

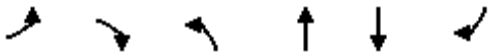
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	190	395	250	69	65	230
Future Volume (vph)	190	395	250	69	65	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	3343	3343	1495	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1671	3343	3343	1495	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	190	395	250	69	65	230
RTOR Reduction (vph)	0	0	0	51	0	157
Lane Group Flow (vph)	190	395	250	18	65	73
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	13.0	33.0	16.0	16.0	19.0	19.0
Effective Green, g (s)	13.0	33.0	16.0	16.0	19.0	19.0
Actuated g/C Ratio	0.22	0.55	0.27	0.27	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	362	1838	891	398	554	496
v/s Ratio Prot	c0.11	0.12	c0.07		0.04	
v/s Ratio Perm				0.01		c0.05
v/c Ratio	0.52	0.21	0.28	0.05	0.12	0.15
Uniform Delay, d1	20.8	6.9	17.4	16.3	14.5	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	0.3	0.8	0.2	0.4	0.6
Delay (s)	26.1	7.2	18.2	16.6	15.0	15.3
Level of Service	C	A	B	B	B	B
Approach Delay (s)		13.3	17.9		15.2	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

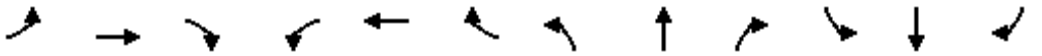
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	289	24	6	323	433	33
Future Volume (vph)	289	24	6	323	433	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3367	1553	1719	3438	3343	1495
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3367	1553	1719	3438	3343	1495
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	289	24	6	323	433	33
RTOR Reduction (vph)	0	22	0	0	0	22
Lane Group Flow (vph)	289	2	6	323	433	11
Heavy Vehicles (%)	4%	4%	5%	5%	8%	8%
Turn Type	Prot	Over	Prot	NA	NA	Over
Protected Phases	4	5	5	2	6	4
Permitted Phases						
Actuated Green, G (s)	16.0	4.0	4.0	26.0	18.0	16.0
Effective Green, g (s)	16.0	4.0	4.0	26.0	18.0	16.0
Actuated g/C Ratio	0.32	0.08	0.08	0.52	0.36	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1077	124	137	1787	1203	478
v/s Ratio Prot	c0.09	0.00	0.00	c0.09	c0.13	0.01
v/s Ratio Perm						
v/c Ratio	0.27	0.02	0.04	0.18	0.36	0.02
Uniform Delay, d1	12.6	21.2	21.2	6.4	11.8	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.6	0.2	0.8	0.1
Delay (s)	13.3	21.4	21.8	6.6	12.6	11.7
Level of Service	B	C	C	A	B	B
Approach Delay (s)	13.9			6.9	12.5	
Approach LOS	B			A	B	

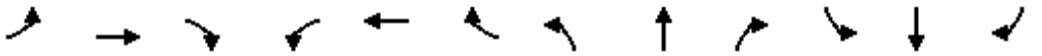
Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	943	0	691	0	0	0	0	2139	616	0	1888	1108
Future Volume (vph)	943	0	691	0	0	0	0	2139	616	0	1888	1108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.97	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4626	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4626	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	943	0	691	0	0	0	0	2139	616	0	1888	1108
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	56	0
Lane Group Flow (vph)	943	0	679	0	0	0	0	2139	616	0	2264	676
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	20.0		20.0					32.0	60.0		32.0	60.0
Effective Green, g (s)	20.0		20.0					32.0	60.0		32.0	60.0
Actuated g/C Ratio	0.33		0.33					0.53	1.00		0.53	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Lane Grp Cap (vph)	1133		920					3384	1568		2467	1348
v/s Ratio Prot	c0.28							0.34			c0.49	
v/s Ratio Perm			0.25						0.39			0.50
v/c Ratio	0.83		0.74					0.63	0.39		0.92	0.50
Uniform Delay, d1	18.5		17.7					9.9	0.0		12.8	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	7.2		5.3					0.9	0.7		6.9	1.3
Delay (s)	25.7		23.0					10.8	0.7		19.7	1.3
Level of Service	C		C					B	A		B	A
Approach Delay (s)		24.5			0.0			8.5			15.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



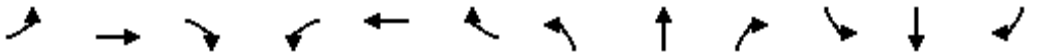
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	342	0	1317	0	2515	572	0	2715	750
Future Volume (vph)	0	0	0	342	0	1317	0	2515	572	0	2715	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		1.00	0.85		0.99	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4743	1348		5934	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4743	1348		5934	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	342	0	1317	0	2515	572	0	2715	750
RTOR Reduction (vph)	0	0	0	0	0	9	0	3	0	0	8	0
Lane Group Flow (vph)	0	0	0	342	0	1308	0	2569	515	0	2842	615
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				29.0		29.0		43.0	80.0		43.0	80.0
Effective Green, g (s)				29.0		29.0		43.0	80.0		43.0	80.0
Actuated g/C Ratio				0.36		0.36		0.54	1.00		0.54	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Lane Grp Cap (vph)				1232		1295		2549	1348		3189	1270
v/s Ratio Prot				0.10				c0.54			0.48	
v/s Ratio Perm						c0.37			0.38			0.48
v/c Ratio				0.28		1.01		1.01	0.38		0.89	0.48
Uniform Delay, d1				18.1		25.5		18.5	0.0		16.4	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.6		27.5		19.8	0.8		4.2	1.3
Delay (s)				18.6		53.0		38.3	0.8		20.7	1.3
Level of Service				B		D		D	A		C	A
Approach Delay (s)		0.0			45.9			32.0			17.2	
Approach LOS		A			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	662	216	163	920	387	262
Future Volume (vph)	662	216	163	920	387	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	662	216	163	920	387	262
RTOR Reduction (vph)	0	158	0	0	0	198
Lane Group Flow (vph)	662	58	163	920	387	64
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	17.0	17.0	15.0	36.0	16.0	16.0
Effective Green, g (s)	17.0	17.0	15.0	36.0	16.0	16.0
Actuated g/C Ratio	0.26	0.26	0.23	0.55	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	824	369	363	1746	753	347
v/s Ratio Prot	c0.21		0.10	c0.29	c0.13	
v/s Ratio Perm		0.04				0.05
v/c Ratio	0.80	0.16	0.45	0.53	0.51	0.19
Uniform Delay, d1	22.4	18.5	21.5	9.1	21.1	19.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	0.9	4.0	1.1	2.5	1.2
Delay (s)	30.6	19.4	25.4	10.3	23.6	20.5
Level of Service	C	B	C	B	C	C
Approach Delay (s)	27.8			12.6	22.4	
Approach LOS	C			B	C	

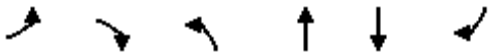
Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	235	1	0	335	23	0	0	0	21	0	247
Future Volume (vph)	309	235	1	0	335	23	0	0	0	21	0	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95					0.95	0.95	1.00
Frt	1.00	1.00			0.99					1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (prot)	1736	3469			3438					1665	1665	1568
Flt Permitted	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (perm)	1736	3469			3438					1665	1665	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	309	235	1	0	335	23	0	0	0	21	0	247
RTOR Reduction (vph)	0	1	0	0	6	0	0	0	0	0	0	198
Lane Group Flow (vph)	309	235	0	0	352	0	0	0	0	10	11	49
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA					Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	16.0	28.0			16.0					16.0	16.0	16.0
Effective Green, g (s)	16.0	28.0			16.0					16.0	16.0	16.0
Actuated g/C Ratio	0.20	0.35			0.20					0.20	0.20	0.20
Clearance Time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Lane Grp Cap (vph)	347	1214			687					333	333	313
v/s Ratio Prot	c0.18	0.07			c0.10					0.01	0.01	
v/s Ratio Perm												c0.03
v/c Ratio	0.89	0.19			0.51					0.03	0.03	0.16
Uniform Delay, d1	31.1	18.1			28.5					25.8	25.8	26.4
Progression Factor	1.00	1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2	27.2	0.4			2.7					0.2	0.2	1.1
Delay (s)	58.3	18.5			31.2					25.9	26.0	27.5
Level of Service	E	B			C					C	C	C
Approach Delay (s)		41.1			31.2			0.0			27.4	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	104	47	22	426	819	267
Future Volume (vph)	104	47	22	426	819	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.96		1.00	1.00	0.97	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1708		1752	1845	1783	
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1708		1752	1845	1783	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	104	47	22	426	819	267
RTOR Reduction (vph)	18	0	0	0	13	0
Lane Group Flow (vph)	133	0	22	426	1073	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	16.0		4.0	66.0	58.0	
Effective Green, g (s)	16.0		4.0	66.0	58.0	
Actuated g/C Ratio	0.18		0.04	0.73	0.64	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	303		77	1353	1149	
v/s Ratio Prot	c0.08		0.01	c0.23	c0.60	
v/s Ratio Perm						
v/c Ratio	0.44		0.29	0.31	0.93	
Uniform Delay, d1	33.0		41.6	4.2	14.3	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	4.6		9.1	0.6	14.8	
Delay (s)	37.6		50.7	4.8	29.0	
Level of Service	D		D	A	C	
Approach Delay (s)	37.6			7.0	29.0	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	0	508	567	249	603	0	1628	681	0	2030	359
Future Volume (veh/h)	230	0	508	567	249	603	0	1628	681	0	2030	359
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1827	1827	1827	0	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	230	0	508	454	327	657	0	1628	0	0	2030	359
Adj No. of Lanes	0	1	2	2	1	3	0	3	1	0	4	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	0	4	4	0	4	4
Cap, veh/h	366	0	575	1189	624	1592	0	1746	544	0	2200	544
Arrive On Green	0.21	0.00	0.21	0.34	0.34	0.34	0.00	0.35	0.00	0.00	0.35	0.35
Sat Flow, veh/h	1757	0	2760	3480	1827	4659	0	5152	1553	0	6540	1553
Grp Volume(v), veh/h	230	0	508	454	327	657	0	1628	0	0	2030	359
Grp Sat Flow(s),veh/h/ln	1757	0	1380	1740	1827	1553	0	1663	1553	0	1571	1553
Q Serve(g_s), s	14.3	0.0	21.4	11.9	17.2	13.0	0.0	37.8	0.0	0.0	37.2	23.5
Cycle Q Clear(g_c), s	14.3	0.0	21.4	11.9	17.2	13.0	0.0	37.8	0.0	0.0	37.2	23.5
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	366	0	575	1189	624	1592	0	1746	544	0	2200	544
V/C Ratio(X)	0.63	0.00	0.88	0.38	0.52	0.41	0.00	0.93	0.00	0.00	0.92	0.66
Avail Cap(c_a), veh/h	366	0	575	1189	624	1592	0	1746	544	0	2200	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	0.0	46.1	29.9	31.7	30.3	0.0	37.6	0.0	0.0	37.4	33.0
Incr Delay (d2), s/veh	7.9	0.0	17.8	0.9	3.1	0.8	0.0	10.6	0.0	0.0	8.0	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	9.6	5.8	9.3	5.7	0.0	19.0	0.0	0.0	17.3	11.0
LnGrp Delay(d),s/veh	51.2	0.0	63.8	30.8	34.8	31.1	0.0	48.2	0.0	0.0	45.4	39.2
LnGrp LOS	D		E	C	C	C		D			D	D
Approach Vol, veh/h		738			1438			1628			2389	
Approach Delay, s/veh		59.9			31.8			48.2			44.5	
Approach LOS		E			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		46.0		29.0		46.0		45.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		42.0		25.0		42.0		41.0
Max Q Clear Time (g_c+I1), s		39.8		23.4		39.2		19.2
Green Ext Time (p_c), s		2.2		0.6		2.7		7.2

Intersection Summary	
HCM 2010 Ctrl Delay	44.4
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	33	163	17	47	15	133	881	6	5	1418	402
Future Volume (veh/h)	191	33	163	17	47	15	133	881	6	5	1418	402
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	215	0	163	17	47	15	133	881	6	5	1418	402
Adj No. of Lanes	2	0	1	0	1	0	2	3	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	644	0	287	60	165	53	338	2385	16	101	1475	660
Arrive On Green	0.18	0.00	0.18	0.16	0.16	0.16	0.10	0.47	0.47	0.06	0.43	0.43
Sat Flow, veh/h	3514	0	1568	376	1041	332	3375	5111	35	1740	3471	1553
Grp Volume(v), veh/h	215	0	163	79	0	0	133	573	314	5	1418	402
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1749	0	0	1688	1663	1821	1740	1736	1553
Q Serve(g_s), s	6.4	0.0	11.4	4.8	0.0	0.0	4.4	13.3	13.3	0.3	47.7	24.1
Cycle Q Clear(g_c), s	6.4	0.0	11.4	4.8	0.0	0.0	4.4	13.3	13.3	0.3	47.7	24.1
Prop In Lane	1.00		1.00	0.22		0.19	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	644	0	287	277	0	0	338	1552	850	101	1475	660
V/C Ratio(X)	0.33	0.00	0.57	0.29	0.00	0.00	0.39	0.37	0.37	0.05	0.96	0.61
Avail Cap(c_a), veh/h	644	0	287	277	0	0	338	1552	850	101	1475	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	0.0	44.7	44.5	0.0	0.0	50.6	20.6	20.6	53.4	33.5	26.8
Incr Delay (d2), s/veh	1.4	0.0	7.9	2.6	0.0	0.0	3.4	0.7	1.2	0.9	15.8	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	5.6	2.5	0.0	0.0	2.2	6.3	7.0	0.2	25.9	11.0
LnGrp Delay(d),s/veh	44.0	0.0	52.5	47.1	0.0	0.0	54.0	21.3	21.9	54.3	49.4	30.9
LnGrp LOS	D		D	D			D	C	C	D	D	C
Approach Vol, veh/h		378			79			1020			1825	
Approach Delay, s/veh		47.7			47.1			25.7			45.3	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	60.0		26.0	16.0	55.0		23.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	56.0		22.0	12.0	51.0		19.0
Max Q Clear Time (g_c+I1), s	2.3	15.3		13.4	6.4	49.7		6.8
Green Ext Time (p_c), s	3.5	4.6		1.0	0.2	1.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	39.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	304	106	123	484	228	127	605	79	147	1158	269
Future Volume (veh/h)	144	304	106	123	484	228	127	605	79	147	1158	269
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	144	304	106	123	484	228	127	605	79	147	1158	269
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	273	570	195	195	623	279	188	1270	165	263	1504	673
Arrive On Green	0.16	0.22	0.22	0.11	0.18	0.18	0.06	0.41	0.41	0.08	0.43	0.43
Sat Flow, veh/h	1757	2565	877	1757	3505	1568	3375	3089	403	3375	3471	1553
Grp Volume(v), veh/h	144	206	204	123	484	228	127	339	345	147	1158	269
Grp Sat Flow(s),veh/h/ln	1757	1752	1690	1757	1752	1568	1688	1736	1756	1688	1736	1553
Q Serve(g_s), s	6.8	9.3	9.6	6.0	11.9	12.6	3.3	12.9	12.9	3.8	25.5	10.7
Cycle Q Clear(g_c), s	6.8	9.3	9.6	6.0	11.9	12.6	3.3	12.9	12.9	3.8	25.5	10.7
Prop In Lane	1.00		0.52	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	273	389	376	195	623	279	188	714	722	263	1504	673
V/C Ratio(X)	0.53	0.53	0.54	0.63	0.78	0.82	0.68	0.48	0.48	0.56	0.77	0.40
Avail Cap(c_a), veh/h	273	389	376	195	623	279	188	714	722	263	1504	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	30.8	31.0	38.2	35.3	35.6	41.7	19.4	19.4	40.0	21.7	17.5
Incr Delay (d2), s/veh	7.1	5.1	5.6	14.5	9.2	22.7	17.9	2.3	2.3	8.4	3.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.1	5.1	3.7	6.5	7.2	2.0	6.6	6.7	2.1	13.0	4.9
LnGrp Delay(d),s/veh	42.1	35.9	36.5	52.7	44.5	58.3	59.6	21.7	21.7	48.4	25.5	19.2
LnGrp LOS	D	D	D	D	D	E	E	C	C	D	C	B
Approach Vol, veh/h		554			835			811			1574	
Approach Delay, s/veh		37.7			49.5			27.6			26.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	41.0	14.0	24.0	9.0	43.0	18.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	37.0	10.0	20.0	5.0	39.0	14.0	16.0
Max Q Clear Time (g_c+I1), s	5.8	14.9	8.0	11.6	5.3	27.5	8.8	14.6
Green Ext Time (p_c), s	0.1	11.6	0.1	3.3	0.0	7.6	0.2	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	436	325	134	163	48	141	736	192	50	265	5
Future Volume (veh/h)	25	436	325	134	163	48	141	736	192	50	265	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	25	436	325	134	163	48	141	736	192	50	265	5
Adj No. of Lanes	1	1	2	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	66	677	1013	247	1264	361	254	1110	497	127	860	16
Arrive On Green	0.04	0.38	0.38	0.14	0.48	0.48	0.14	0.32	0.32	0.07	0.24	0.24
Sat Flow, veh/h	1707	1792	2682	1707	2616	748	1757	3505	1568	1757	3519	66
Grp Volume(v), veh/h	25	436	325	134	104	107	141	736	192	50	132	138
Grp Sat Flow(s),veh/h/ln	1707	1792	1341	1707	1703	1661	1757	1752	1568	1757	1752	1833
Q Serve(g_s), s	2.6	36.0	15.4	13.1	6.1	6.4	13.4	32.7	17.2	4.9	11.1	11.1
Cycle Q Clear(g_c), s	2.6	36.0	15.4	13.1	6.1	6.4	13.4	32.7	17.2	4.9	11.1	11.1
Prop In Lane	1.00		1.00	1.00		0.45	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	66	677	1013	247	823	803	254	1110	497	127	428	448
V/C Ratio(X)	0.38	0.64	0.32	0.54	0.13	0.13	0.56	0.66	0.39	0.39	0.31	0.31
Avail Cap(c_a), veh/h	66	677	1013	247	823	803	254	1110	497	127	428	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	84.4	46.0	39.7	71.5	25.6	25.7	71.6	53.2	47.9	79.7	55.6	55.6
Incr Delay (d2), s/veh	15.5	4.7	0.8	8.3	0.3	0.3	8.5	3.1	2.3	8.9	1.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	18.7	5.9	6.8	2.9	3.0	7.1	16.3	7.8	2.7	5.6	5.9
LnGrp Delay(d),s/veh	99.9	50.7	40.5	79.8	25.9	26.0	80.1	56.3	50.2	88.7	57.4	57.4
LnGrp LOS	F	D	D	E	C	C	F	E	D	F	E	E
Approach Vol, veh/h		786			345			1069			320	
Approach Delay, s/veh		48.0			46.9			58.4			62.3	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	61.0	30.0	72.0	30.0	48.0	11.0	91.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	57.0	26.0	68.0	26.0	44.0	7.0	87.0
Max Q Clear Time (g_c+I1), s	6.9	34.7	15.1	38.0	15.4	13.1	4.6	8.4
Green Ext Time (p_c), s	0.0	5.8	0.3	4.6	0.3	6.2	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	54.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	233	179	112	331	64	136	544	172	35	769	149
Future Volume (veh/h)	89	233	179	112	331	64	136	544	172	35	769	149
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	89	233	179	112	331	64	136	544	172	35	769	149
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	146	935	418	146	783	150	205	1110	497	117	935	418
Arrive On Green	0.08	0.27	0.27	0.08	0.27	0.27	0.12	0.32	0.32	0.07	0.27	0.27
Sat Flow, veh/h	1757	3505	1568	1757	2937	561	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	89	233	179	112	196	199	136	544	172	35	769	149
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1746	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	2.9	3.1	5.7	3.7	5.5	5.7	4.4	7.5	5.1	1.1	12.4	4.6
Cycle Q Clear(g_c), s	2.9	3.1	5.7	3.7	5.5	5.7	4.4	7.5	5.1	1.1	12.4	4.6
Prop In Lane	1.00		1.00	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	935	418	146	467	465	205	1110	497	117	935	418
V/C Ratio(X)	0.61	0.25	0.43	0.77	0.42	0.43	0.66	0.49	0.35	0.30	0.82	0.36
Avail Cap(c_a), veh/h	146	935	418	146	467	465	205	1110	497	117	935	418
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	17.3	18.2	26.9	18.2	18.2	25.4	16.6	15.7	26.7	20.7	17.8
Incr Delay (d2), s/veh	17.4	0.6	3.2	31.0	2.8	2.9	15.7	1.5	1.9	6.4	8.1	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.6	2.8	3.1	3.0	3.1	3.0	3.9	2.4	0.8	7.0	2.3
LnGrp Delay(d),s/veh	43.9	17.9	21.4	57.9	20.9	21.1	41.1	18.1	17.6	33.1	28.8	20.2
LnGrp LOS	D	B	C	E	C	C	D	B	B	C	C	C
Approach Vol, veh/h		501			507			852			953	
Approach Delay, s/veh		23.8			29.1			21.7			27.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	23.0	9.0	20.0	11.0	20.0	9.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	19.0	5.0	16.0	7.0	16.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	3.1	9.5	5.7	7.7	6.4	14.4	4.9	7.7
Green Ext Time (p_c), s	0.0	5.3	0.0	2.3	0.0	1.2	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	267	131	112	333	47	121	374	96	52	838	154
Future Volume (veh/h)	105	267	131	112	333	47	121	374	96	52	838	154
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	105	267	131	112	333	47	121	374	96	52	838	154
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	176	935	418	176	935	418	146	1051	470	117	993	444
Arrive On Green	0.10	0.27	0.27	0.10	0.27	0.27	0.08	0.30	0.30	0.07	0.28	0.28
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	105	267	131	112	333	47	121	374	96	52	838	154
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	3.4	3.6	4.0	3.7	4.6	1.4	4.1	5.0	2.7	1.7	13.5	4.7
Cycle Q Clear(g_c), s	3.4	3.6	4.0	3.7	4.6	1.4	4.1	5.0	2.7	1.7	13.5	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	935	418	176	935	418	146	1051	470	117	993	444
V/C Ratio(X)	0.60	0.29	0.31	0.64	0.36	0.11	0.83	0.36	0.20	0.44	0.84	0.35
Avail Cap(c_a), veh/h	176	935	418	176	935	418	146	1051	470	117	993	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	17.5	17.6	26.0	17.8	16.6	27.1	16.5	15.7	26.9	20.3	17.1
Incr Delay (d2), s/veh	14.1	0.8	2.0	16.4	1.1	0.5	39.0	0.9	1.0	11.7	8.7	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.8	1.9	2.6	2.4	0.7	3.5	2.5	1.3	1.2	7.7	2.3
LnGrp Delay(d),s/veh	40.0	18.2	19.6	42.3	18.9	17.2	66.1	17.4	16.6	38.7	29.0	19.2
LnGrp LOS	D	B	B	D	B	B	E	B	B	D	C	B
Approach Vol, veh/h		503			492			591			1044	
Approach Delay, s/veh		23.1			24.1			27.2			28.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	22.0	10.0	20.0	9.0	21.0	10.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	18.0	6.0	16.0	5.0	17.0	6.0	16.0
Max Q Clear Time (g_c+I1), s	3.7	7.0	5.7	6.0	6.1	15.5	5.4	6.6
Green Ext Time (p_c), s	0.0	5.4	0.0	2.6	0.0	1.0	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	461	410	107	219	391	765	80	1528	133	495	1684	401
Future Volume (veh/h)	461	410	107	219	391	765	80	1528	133	495	1684	401
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	461	410	107	219	391	765	80	1528	133	495	1684	401
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	430	865	387	348	781	731	168	1436	447	822	2402	748
Arrive On Green	0.13	0.25	0.25	0.10	0.22	0.22	0.05	0.29	0.29	0.24	0.48	0.48
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	461	410	107	219	391	765	80	1528	133	495	1684	401
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	21.5	17.0	9.4	10.5	16.6	38.0	3.9	49.1	11.4	22.2	45.1	30.8
Cycle Q Clear(g_c), s	21.5	17.0	9.4	10.5	16.6	38.0	3.9	49.1	11.4	22.2	45.1	30.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	430	865	387	348	781	731	168	1436	447	822	2402	748
V/C Ratio(X)	1.07	0.47	0.28	0.63	0.50	1.05	0.48	1.06	0.30	0.60	0.70	0.54
Avail Cap(c_a), veh/h	430	865	387	348	781	731	168	1436	447	822	2402	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.5	54.8	51.9	73.5	57.9	45.5	78.8	60.7	47.3	57.2	34.6	30.9
Incr Delay (d2), s/veh	64.2	1.9	1.8	8.4	2.3	46.0	9.3	42.8	1.7	3.3	1.7	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	8.5	4.3	5.4	8.3	43.7	2.1	28.2	5.1	10.7	21.1	13.8
LnGrp Delay(d),s/veh	138.7	56.6	53.7	81.8	60.2	91.5	88.2	103.5	49.0	60.4	36.3	33.6
LnGrp LOS	F	E	D	F	E	F	F	F	D	E	D	C
Approach Vol, veh/h		978			1375			1741			2580	
Approach Delay, s/veh		95.0			81.1			98.6			40.5	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	86.9	27.0	42.6	47.0	53.9	22.9	46.7
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	8.5	81.9	21.5	* 38	41.5	* 49	17.4	41.8
Max Q Clear Time (g_c+I1), s	5.9	47.1	23.5	40.0	24.2	51.1	12.5	19.0
Green Ext Time (p_c), s	0.0	8.3	0.0	0.0	1.4	0.0	0.1	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	72.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	51	0	102	0	1476	30	149	1737	4
Future Volume (veh/h)	1	0	1	51	0	102	0	1476	30	149	1737	4
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	1	0	1	51	0	102	0	1476	30	149	1737	4
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	143	0	143	304	0	543	2	1326	413	166	2220	5
Arrive On Green	0.17	0.00	0.17	0.17	0.00	0.17	0.00	0.27	0.27	0.10	0.43	0.43
Sat Flow, veh/h	828	0	828	1757	0	3136	1740	4988	1553	1740	5138	12
Grp Volume(v), veh/h	2	0	0	51	0	102	0	1476	30	149	1124	617
Grp Sat Flow(s),veh/h/ln	1657	0	0	1757	0	1568	1740	1663	1553	1740	1663	1825
Q Serve(g_s), s	0.1	0.0	0.0	1.8	0.0	2.0	0.0	19.2	1.0	6.1	20.9	20.9
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.8	0.0	2.0	0.0	19.2	1.0	6.1	20.9	20.9
Prop In Lane	0.50		0.50	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	287	0	0	304	0	543	2	1326	413	166	1437	789
V/C Ratio(X)	0.01	0.00	0.00	0.17	0.00	0.19	0.00	1.11	0.07	0.90	0.78	0.78
Avail Cap(c_a), veh/h	287	0	0	304	0	543	178	1326	413	166	1437	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	0.0	0.0	25.4	0.0	25.5	0.0	26.5	19.8	32.3	17.6	17.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.2	0.0	0.8	0.0	61.8	0.3	46.7	4.3	7.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.0	0.0	0.9	0.0	16.3	0.5	5.1	10.4	12.1
LnGrp Delay(d),s/veh	24.8	0.0	0.0	26.6	0.0	26.3	0.0	88.3	20.2	79.0	21.9	25.2
LnGrp LOS	C			C		C		F	C	E	C	C
Approach Vol, veh/h		2			153			1506			1890	
Approach Delay, s/veh		24.8			26.4			86.9			27.5	
Approach LOS		C			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	36.2		18.0	12.0	24.2		18.0
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 7.4	19.0		12.5	* 6.9	* 19		12.5
Max Q Clear Time (g_c+I1), s	0.0	22.9		2.1	8.1	21.2		4.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	52.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	229	23	160	130	355	9	1086	156	514	1237	38
Future Volume (veh/h)	101	229	23	160	130	355	9	1086	156	514	1237	38
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	101	229	23	160	130	355	9	1086	156	514	1237	38
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	97	959	429	326	1203	538	105	1720	247	367	2325	71
Arrive On Green	0.03	0.28	0.28	0.10	0.34	0.34	0.03	0.39	0.39	0.11	0.47	0.47
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4408	633	3375	4972	153
Grp Volume(v), veh/h	101	229	23	160	130	355	9	819	423	514	827	448
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1715	1688	1663	1800
Q Serve(g_s), s	4.9	8.7	1.9	7.6	4.3	32.7	0.4	33.9	34.0	18.5	30.0	30.0
Cycle Q Clear(g_c), s	4.9	8.7	1.9	7.6	4.3	32.7	0.4	33.9	34.0	18.5	30.0	30.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		0.08
Lane Grp Cap(c), veh/h	97	959	429	326	1203	538	105	1297	669	367	1555	842
V/C Ratio(X)	1.04	0.24	0.05	0.49	0.11	0.66	0.09	0.63	0.63	1.40	0.53	0.53
Avail Cap(c_a), veh/h	97	959	429	326	1203	538	105	1297	669	367	1555	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	82.7	47.7	45.3	73.0	38.1	47.5	80.1	42.0	42.0	75.8	32.1	32.1
Incr Delay (d2), s/veh	102.3	0.6	0.2	5.2	0.2	6.2	1.6	2.3	4.5	196.2	1.3	2.4
Initial Q Delay(d3),s/veh	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	4.2	0.8	3.8	2.1	15.1	0.2	16.0	16.9	18.6	14.1	15.5
LnGrp Delay(d),s/veh	185.7	48.3	45.5	78.2	38.3	53.7	81.7	44.3	46.5	272.0	33.4	34.5
LnGrp LOS	F	D	D	E	D	D	F	D	D	F	C	C
Approach Vol, veh/h		353			645			1251			1789	
Approach Delay, s/veh		87.4			56.7			45.3			102.2	
Approach LOS		F			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	84.9	10.4	64.1	24.0	71.7	21.8	52.7
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	5.3	79.5	4.9	* 58	18.5	* 66	16.3	* 47
Max Q Clear Time (g_c+I1), s	2.4	32.0	6.9	34.7	20.5	36.0	9.6	10.7
Green Ext Time (p_c), s	0.0	3.8	0.0	0.7	0.0	3.8	0.1	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	76.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	34	1200	23	79	1340
Future Volume (veh/h)	13	34	1200	23	79	1340
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	13	34	1200	23	79	1340
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	244	218	2258	43	235	2327
Arrive On Green	0.14	0.14	0.45	0.45	0.14	0.67
Sat Flow, veh/h	1757	1568	5203	97	1740	3563
Grp Volume(v), veh/h	13	34	792	431	79	1340
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1810	1740	1736
Q Serve(g_s), s	0.3	1.0	9.3	9.3	2.2	11.2
Cycle Q Clear(g_c), s	0.3	1.0	9.3	9.3	2.2	11.2
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	244	218	1490	811	235	2327
V/C Ratio(X)	0.05	0.16	0.53	0.53	0.34	0.58
Avail Cap(c_a), veh/h	244	218	1490	811	235	2327
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	20.5	10.8	10.8	21.2	4.8
Incr Delay (d2), s/veh	0.4	1.5	1.4	2.5	3.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	4.5	5.1	1.3	5.5
LnGrp Delay(d),s/veh	20.6	22.0	12.2	13.3	25.0	5.8
LnGrp LOS	C	C	B	B	C	A
Approach Vol, veh/h	47		1223			1419
Approach Delay, s/veh	21.6		12.6			6.9
Approach LOS	C		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		41.0			12.0	29.0		13.0
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		36.2			* 7.3	24.2		7.5
Max Q Clear Time (g_c+I1), s		13.2			4.2	11.3		3.0
Green Ext Time (p_c), s		4.3			0.0	3.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	519	56	43	194	270	39	922	85	343	863	97
Future Volume (veh/h)	130	519	56	43	194	270	39	922	85	343	863	97
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	130	519	56	43	194	270	39	922	85	343	863	97
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	211	568	61	56	483	411	96	962	430	373	1510	676
Arrive On Green	0.12	0.36	0.36	0.03	0.27	0.27	0.06	0.28	0.28	0.21	0.44	0.44
Sat Flow, veh/h	1707	1591	172	1707	1792	1524	1740	3471	1553	1740	3471	1553
Grp Volume(v), veh/h	130	0	575	43	194	270	39	922	85	343	863	97
Grp Sat Flow(s),veh/h/ln	1707	0	1762	1707	1792	1524	1740	1736	1553	1740	1736	1553
Q Serve(g_s), s	12.3	0.0	53.0	4.3	15.1	26.8	3.7	44.5	7.1	32.9	31.8	6.4
Cycle Q Clear(g_c), s	12.3	0.0	53.0	4.3	15.1	26.8	3.7	44.5	7.1	32.9	31.8	6.4
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	0	629	56	483	411	96	962	430	373	1510	676
V/C Ratio(X)	0.62	0.00	0.91	0.77	0.40	0.66	0.41	0.96	0.20	0.92	0.57	0.14
Avail Cap(c_a), veh/h	211	0	629	56	483	411	96	962	430	373	1510	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.8	0.0	52.3	81.7	50.9	55.2	77.8	60.6	47.1	65.5	36.2	29.0
Incr Delay (d2), s/veh	12.8	0.0	20.0	64.9	2.5	8.0	12.3	20.5	1.0	30.2	1.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	29.4	3.0	7.8	12.2	2.1	24.1	3.2	18.9	15.6	2.8
LnGrp Delay(d),s/veh	83.7	0.0	72.3	146.6	53.4	63.2	90.0	81.1	48.1	95.6	37.7	29.4
LnGrp LOS	F		E	F	D	E	F	F	D	F	D	C
Approach Vol, veh/h		705			507			1046			1303	
Approach Delay, s/veh		74.4			66.5			78.8			52.4	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	51.3	14.1	78.9	11.1	66.2	41.0	52.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.5	4.8
Max Green Setting (Gmax), s	21.0	* 46	* 9.4	74.1	5.6	* 61	36.5	47.2
Max Q Clear Time (g_c+I1), s	14.3	28.8	5.7	33.8	6.3	55.0	34.9	46.5
Green Ext Time (p_c), s	0.1	1.0	0.0	2.9	0.0	0.7	0.2	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	66.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	325	168	68	8	93	18	77	663	13	25	770	213
Future Volume (veh/h)	325	168	68	8	93	18	77	663	13	25	770	213
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	325	168	68	8	93	18	77	663	13	25	770	213
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	277	575	489	79	293	57	89	1002	20	81	1020	456
Arrive On Green	0.16	0.31	0.31	0.04	0.19	0.19	0.05	0.29	0.29	0.05	0.29	0.29
Sat Flow, veh/h	1757	1845	1568	1757	1503	291	1740	3482	68	1740	3471	1553
Grp Volume(v), veh/h	325	168	68	8	0	111	77	330	346	25	770	213
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1793	1740	1736	1815	1740	1736	1553
Q Serve(g_s), s	10.5	4.6	2.1	0.3	0.0	3.5	2.9	11.2	11.2	0.9	13.4	7.5
Cycle Q Clear(g_c), s	10.5	4.6	2.1	0.3	0.0	3.5	2.9	11.2	11.2	0.9	13.4	7.5
Prop In Lane	1.00		1.00	1.00		0.16	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	277	575	489	79	0	350	89	500	522	81	1020	456
V/C Ratio(X)	1.18	0.29	0.14	0.10	0.00	0.32	0.87	0.66	0.66	0.31	0.75	0.47
Avail Cap(c_a), veh/h	277	575	489	79	0	350	89	500	522	81	1020	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	17.4	16.5	30.6	0.0	23.0	31.4	20.9	20.9	30.8	21.4	19.3
Incr Delay (d2), s/veh	110.1	1.3	0.6	2.6	0.0	2.4	64.2	6.7	6.5	9.7	5.2	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	2.5	1.0	0.2	0.0	2.0	3.0	6.3	6.5	0.7	7.2	3.6
LnGrp Delay(d),s/veh	138.2	18.7	17.1	33.1	0.0	25.4	95.6	27.6	27.4	40.4	26.6	22.7
LnGrp LOS	F	B	B	C		C	F	C	C	D	C	C
Approach Vol, veh/h		561			119			753			1008	
Approach Delay, s/veh		87.7			25.9			34.5			26.1	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	24.4	16.0	18.3	8.4	24.0	8.2	26.1
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 3.4	19.6	10.5	* 13	* 3.1	19.2	* 3	* 20
Max Q Clear Time (g_c+I1), s	4.9	15.4	12.5	5.5	2.9	13.2	2.3	6.6
Green Ext Time (p_c), s	0.0	1.2	0.0	0.2	0.0	1.5	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	183	156	54	189	53	60	450	12	31	769	101
Future Volume (veh/h)	180	183	156	54	189	53	60	450	12	31	769	101
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	180	183	156	54	189	53	60	450	12	31	769	101
Adj No. of Lanes	0	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	188	191	331	291	306	260	73	793	674	87	815	693
Arrive On Green	0.21	0.21	0.21	0.17	0.17	0.17	0.04	0.43	0.43	0.05	0.45	0.45
Sat Flow, veh/h	893	907	1568	1757	1845	1568	1740	1827	1553	1740	1827	1553
Grp Volume(v), veh/h	363	0	156	54	189	53	60	450	12	31	769	101
Grp Sat Flow(s),veh/h/ln	1800	0	1568	1757	1845	1568	1740	1827	1553	1740	1827	1553
Q Serve(g_s), s	34.9	0.0	15.3	4.6	16.7	5.1	6.0	32.4	0.8	3.0	70.4	6.7
Cycle Q Clear(g_c), s	34.9	0.0	15.3	4.6	16.7	5.1	6.0	32.4	0.8	3.0	70.4	6.7
Prop In Lane	0.50		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	380	0	331	291	306	260	73	793	674	87	815	693
V/C Ratio(X)	0.96	0.00	0.47	0.19	0.62	0.20	0.83	0.57	0.02	0.35	0.94	0.15
Avail Cap(c_a), veh/h	380	0	331	291	306	260	73	793	674	87	815	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.3	0.0	60.5	62.8	67.9	63.0	83.2	37.2	28.2	80.4	46.3	28.7
Incr Delay (d2), s/veh	36.4	0.0	4.8	1.4	9.1	1.8	64.7	2.9	0.0	10.9	20.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.2	0.0	7.1	2.4	9.3	2.4	4.2	17.0	0.3	1.7	40.1	3.0
LnGrp Delay(d),s/veh	104.7	0.0	65.3	64.2	76.9	64.8	147.9	40.1	28.3	91.2	66.7	29.1
LnGrp LOS	F		E	E	E	E	F	D	C	F	E	C
Approach Vol, veh/h		519			296			522			901	
Approach Delay, s/veh		92.8			72.4			52.2			63.3	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	83.2		35.8	14.1	81.1		44.0
Change Period (Y+Rc), s	* 4.7	5.1		6.8	* 5.3	5.1		7.1
Max Green Setting (Gmax), s	* 7.3	78.1		29.0	* 8.8	76.0		36.9
Max Q Clear Time (g_c+I1), s	8.0	72.4		18.7	5.0	34.4		36.9
Green Ext Time (p_c), s	0.0	1.0		0.2	0.0	1.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	68.8
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	213	284	135	299	10	141	412	36	19	842	117
Future Volume (veh/h)	103	213	284	135	299	10	141	412	36	19	842	117
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	103	213	284	135	299	10	141	412	36	19	842	117
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	212	305	273	240	663	297	258	1553	135	79	1170	163
Arrive On Green	0.12	0.18	0.18	0.14	0.19	0.19	0.15	0.48	0.48	0.05	0.38	0.38
Sat Flow, veh/h	1740	1736	1553	1740	3471	1553	1740	3232	281	1740	3062	425
Grp Volume(v), veh/h	103	213	284	135	299	10	141	220	228	19	477	482
Grp Sat Flow(s),veh/h/ln	1740	1736	1553	1740	1736	1553	1740	1736	1777	1740	1736	1752
Q Serve(g_s), s	7.2	15.0	22.9	9.4	9.9	0.7	9.8	9.9	9.9	1.4	30.5	30.5
Cycle Q Clear(g_c), s	7.2	15.0	22.9	9.4	9.9	0.7	9.8	9.9	9.9	1.4	30.5	30.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.24
Lane Grp Cap(c), veh/h	212	305	273	240	663	297	258	834	854	79	663	670
V/C Ratio(X)	0.49	0.70	1.04	0.56	0.45	0.03	0.55	0.26	0.27	0.24	0.72	0.72
Avail Cap(c_a), veh/h	212	305	273	240	663	297	258	834	854	79	663	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	50.5	53.7	52.5	46.6	42.9	51.4	20.1	20.2	60.0	34.3	34.3
Incr Delay (d2), s/veh	7.7	12.5	65.5	9.2	2.2	0.2	8.1	0.8	0.8	7.1	6.6	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	8.3	14.7	5.1	5.0	0.3	5.3	4.9	5.0	0.8	15.8	15.9
LnGrp Delay(d),s/veh	61.1	63.0	119.2	61.6	48.9	43.1	59.6	20.9	20.9	67.2	40.9	40.9
LnGrp LOS	E	E	F	E	D	D	E	C	C	E	D	D
Approach Vol, veh/h		600			444			589			978	
Approach Delay, s/veh		89.2			52.6			30.2			41.4	
Approach LOS		F			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.2	55.0	21.0	30.1	11.4	67.8	23.0	28.1
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 19	* 50	* 16	* 25	5.9	* 63	18.0	* 23
Max Q Clear Time (g_c+I1), s	11.8	32.5	9.2	11.9	3.4	11.9	11.4	24.9
Green Ext Time (p_c), s	0.1	14.7	0.0	7.7	0.0	36.2	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.8
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	206	609	118	261	39	202	472	57	48	1089	101
Future Volume (veh/h)	64	206	609	118	261	39	202	472	57	48	1089	101
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	64	206	609	118	261	39	202	472	57	48	1089	101
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	138	1334	597	172	1369	612	271	1288	155	114	1271	568
Arrive On Green	0.04	0.38	0.38	0.05	0.39	0.39	0.08	0.41	0.41	0.03	0.37	0.37
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	3121	375	3375	3471	1553
Grp Volume(v), veh/h	64	206	609	118	261	39	202	262	267	48	1089	101
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1736	1761	1688	1736	1553
Q Serve(g_s), s	3.3	7.0	68.6	6.1	8.8	2.8	10.6	18.8	19.0	2.5	52.3	8.0
Cycle Q Clear(g_c), s	3.3	7.0	68.6	6.1	8.8	2.8	10.6	18.8	19.0	2.5	52.3	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	138	1334	597	172	1369	612	271	716	727	114	1271	568
V/C Ratio(X)	0.46	0.15	1.02	0.69	0.19	0.06	0.74	0.37	0.37	0.42	0.86	0.18
Avail Cap(c_a), veh/h	138	1334	597	172	1369	612	271	716	727	114	1271	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	84.6	36.8	55.8	84.2	36.2	34.3	81.1	36.6	36.7	85.4	52.8	38.8
Incr Delay (d2), s/veh	10.8	0.2	42.2	20.0	0.3	0.2	16.8	1.4	1.4	11.0	7.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.4	36.6	3.4	4.3	1.2	5.6	9.3	9.5	1.3	26.4	3.5
LnGrp Delay(d),s/veh	95.4	37.0	98.1	104.2	36.5	34.5	97.9	38.1	38.1	96.3	60.4	39.4
LnGrp LOS	F	D	F	F	D	C	F	D	D	F	E	D
Approach Vol, veh/h		879			418			731			1238	
Approach Delay, s/veh		83.6			55.4			54.6			60.1	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	71.5	12.8	76.0	11.6	79.9	14.6	74.2
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	14.5	* 66	7.3	70.2	6.1	* 74	9.1	* 69
Max Q Clear Time (g_c+I1), s	12.6	54.3	5.3	10.8	4.5	21.0	8.1	70.6
Green Ext Time (p_c), s	0.1	10.3	0.0	25.0	0.0	35.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	64.6
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	630	128	77	441	5	37	30	37	4	32	23
Future Volume (veh/h)	14	630	128	77	441	5	37	30	37	4	32	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	14	630	128	77	441	5	37	30	37	4	32	23
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	54	803	683	85	836	710	328	247	305	56	167	120
Arrive On Green	0.03	0.45	0.45	0.05	0.47	0.47	0.19	0.33	0.33	0.03	0.17	0.17
Sat Flow, veh/h	1707	1792	1524	1707	1792	1524	1757	753	928	1757	999	718
Grp Volume(v), veh/h	14	630	128	77	441	5	37	0	67	4	0	55
Grp Sat Flow(s),veh/h/ln	1707	1792	1524	1707	1792	1524	1757	0	1681	1757	0	1718
Q Serve(g_s), s	1.0	37.7	6.4	5.6	21.9	0.2	2.2	0.0	3.5	0.3	0.0	3.5
Cycle Q Clear(g_c), s	1.0	37.7	6.4	5.6	21.9	0.2	2.2	0.0	3.5	0.3	0.0	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.55	1.00		0.42
Lane Grp Cap(c), veh/h	54	803	683	85	836	710	328	0	553	56	0	287
V/C Ratio(X)	0.26	0.78	0.19	0.90	0.53	0.01	0.11	0.00	0.12	0.07	0.00	0.19
Avail Cap(c_a), veh/h	54	803	683	85	836	710	328	0	553	56	0	287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.5	29.6	20.9	59.5	23.8	18.0	42.5	0.0	29.5	59.1	0.0	45.1
Incr Delay (d2), s/veh	11.2	7.6	0.6	72.9	2.4	0.0	0.7	0.0	0.4	2.5	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	20.2	2.8	4.4	11.3	0.1	1.1	0.0	1.7	0.2	0.0	1.8
LnGrp Delay(d),s/veh	70.7	37.2	21.6	132.4	26.2	18.0	43.2	0.0	30.0	61.6	0.0	46.6
LnGrp LOS	E	D	C	F	C	B	D		C	E		D
Approach Vol, veh/h		772			523			104			59	
Approach Delay, s/veh		35.2			41.7			34.7			47.6	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	62.8	27.9	25.4	7.5	65.1	7.5	45.8
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	6.3	56.4	23.5	* 21	4.0	58.7	4.0	40.5
Max Q Clear Time (g_c+I1), s	7.6	39.7	4.2	5.5	3.0	23.9	2.3	5.5
Green Ext Time (p_c), s	0.0	8.8	0.1	0.3	0.0	12.6	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	38.0
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	59	161	77	68	95	131	254	44	64	342	58
Future Volume (veh/h)	144	59	161	77	68	95	131	254	44	64	342	58
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	144	59	161	77	68	95	131	254	44	64	342	58
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	305	398	356	263	354	317	269	779	662	137	641	545
Arrive On Green	0.17	0.23	0.23	0.15	0.20	0.20	0.15	0.42	0.42	0.08	0.35	0.35
Sat Flow, veh/h	1757	1752	1568	1757	1752	1568	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	144	59	161	77	68	95	131	254	44	64	342	58
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	11.8	4.3	14.2	6.2	5.2	8.2	10.9	14.8	2.7	5.6	23.8	4.0
Cycle Q Clear(g_c), s	11.8	4.3	14.2	6.2	5.2	8.2	10.9	14.8	2.7	5.6	23.8	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	398	356	263	354	317	269	779	662	137	641	545
V/C Ratio(X)	0.47	0.15	0.45	0.29	0.19	0.30	0.49	0.33	0.07	0.47	0.53	0.11
Avail Cap(c_a), veh/h	305	398	356	263	354	317	269	779	662	137	641	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.6	49.6	53.4	60.6	53.1	54.3	62.2	31.0	27.5	70.7	41.9	35.4
Incr Delay (d2), s/veh	5.2	0.8	4.1	2.8	1.2	2.4	6.2	1.1	0.2	11.0	3.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	2.2	6.6	3.2	2.6	3.8	5.8	7.8	1.2	3.1	12.7	1.8
LnGrp Delay(d),s/veh	64.8	50.3	57.5	63.4	54.3	56.7	68.4	32.1	27.7	81.7	45.1	35.8
LnGrp LOS	E	D	E	E	D	E	E	C	C	F	D	D
Approach Vol, veh/h		364			240			429			464	
Approach Delay, s/veh		59.2			58.2			42.7			49.0	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	37.2	30.0	60.1	29.0	41.2	18.0	72.1
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 28	32.2	24.5	* 56	24.0	* 36	12.5	* 68
Max Q Clear Time (g_c+I1), s	13.8	10.2	12.9	25.8	8.2	16.2	7.6	16.8
Green Ext Time (p_c), s	0.1	0.4	0.1	0.6	0.0	0.4	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	51.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	31	17	451	44	391	48	1096	164	382	1223	59
Future Volume (veh/h)	73	31	17	451	44	391	48	1096	164	382	1223	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	73	31	17	451	44	391	48	1096	164	382	1223	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	170	109	60	862	467	397	118	1648	513	622	2189	106
Arrive On Green	0.10	0.10	0.10	0.25	0.25	0.25	0.07	0.33	0.33	0.18	0.45	0.45
Sat Flow, veh/h	1757	1121	615	3408	1845	1568	1740	4988	1553	3375	4875	235
Grp Volume(v), veh/h	73	0	48	451	44	391	48	1096	164	382	834	448
Grp Sat Flow(s),veh/h/ln	1757	0	1736	1704	1845	1568	1740	1663	1553	1688	1663	1785
Q Serve(g_s), s	6.3	0.0	4.1	18.2	2.9	39.7	4.2	30.2	12.7	16.7	29.5	29.5
Cycle Q Clear(g_c), s	6.3	0.0	4.1	18.2	2.9	39.7	4.2	30.2	12.7	16.7	29.5	29.5
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	170	0	168	862	467	397	118	1648	513	622	1493	802
V/C Ratio(X)	0.43	0.00	0.29	0.52	0.09	0.99	0.41	0.67	0.32	0.61	0.56	0.56
Avail Cap(c_a), veh/h	170	0	168	862	467	397	118	1648	513	622	1493	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.1	0.0	67.2	51.5	45.8	59.5	71.5	46.0	40.1	60.1	32.4	32.4
Incr Delay (d2), s/veh	7.7	0.0	4.2	2.3	0.4	41.8	10.0	2.1	1.6	4.5	1.5	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	2.2	8.9	1.5	21.8	2.4	14.2	5.7	8.2	13.9	15.2
LnGrp Delay(d),s/veh	75.9	0.0	71.4	53.8	46.2	101.3	81.5	48.1	41.8	64.6	33.9	35.2
LnGrp LOS	E		E	D	D	F	F	D	D	E	C	D
Approach Vol, veh/h		121			886			1308			1664	
Approach Delay, s/veh		74.1			74.4			48.6			41.3	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	77.1		21.0	35.0	58.1		46.0
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 72		15.5	29.5	* 53		40.5
Max Q Clear Time (g_c+I1), s	6.2	31.5		8.3	18.7	32.2		41.7
Green Ext Time (p_c), s	0.0	4.1		0.1	0.5	4.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	52.1
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	81	197	264	101	15	89	717	94	3	1479	194
Future Volume (veh/h)	171	81	197	264	101	15	89	717	94	3	1479	194
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	171	81	197	264	101	15	89	717	94	3	1479	194
Adj No. of Lanes	2	2	0	2	2	0	2	3	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	414	379	339	414	663	97	410	2006	625	410	1396	625
Arrive On Green	0.12	0.22	0.22	0.12	0.22	0.22	0.12	0.40	0.40	0.12	0.40	0.40
Sat Flow, veh/h	3408	1752	1568	3408	3071	447	3375	4988	1553	3375	3471	1553
Grp Volume(v), veh/h	171	81	197	264	57	59	89	717	94	3	1479	194
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1766	1688	1663	1553	1688	1736	1553
Q Serve(g_s), s	7.5	6.1	18.1	11.8	4.2	4.4	3.8	16.1	6.2	0.1	64.6	13.7
Cycle Q Clear(g_c), s	7.5	6.1	18.1	11.8	4.2	4.4	3.8	16.1	6.2	0.1	64.6	13.7
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	414	379	339	414	379	382	410	2006	625	410	1396	625
V/C Ratio(X)	0.41	0.21	0.58	0.64	0.15	0.16	0.22	0.36	0.15	0.01	1.06	0.31
Avail Cap(c_a), veh/h	414	379	339	414	379	382	410	2006	625	410	1396	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.3	51.7	56.4	67.2	51.0	51.1	63.7	33.5	30.5	62.0	48.0	32.8
Incr Delay (d2), s/veh	3.0	1.3	7.1	7.3	0.8	0.9	1.2	0.5	0.5	0.0	41.5	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	3.1	8.5	6.0	2.1	2.2	1.8	7.5	2.8	0.1	38.9	6.1
LnGrp Delay(d),s/veh	68.3	53.0	63.6	74.5	51.8	51.9	64.9	34.0	31.1	62.1	89.5	34.1
LnGrp LOS	E	D	E	E	D	D	E	C	C	E	F	C
Approach Vol, veh/h		449			380			900			1676	
Approach Delay, s/veh		63.5			67.6			36.8			83.0	
Approach LOS		E			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	70.2	25.0	40.4	25.0	70.2	25.0	40.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	19.5	* 65	19.5	* 35	19.5	* 64	19.5	* 34
Max Q Clear Time (g_c+I1), s	5.8	66.6	9.5	6.4	2.1	18.1	13.8	20.1
Green Ext Time (p_c), s	0.1	0.0	0.2	0.4	0.0	4.3	0.2	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	66.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	481	141	36	244	101	76	614	42	165	1532	215
Future Volume (veh/h)	147	481	141	36	244	101	76	614	42	165	1532	215
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	147	481	141	36	244	101	76	614	42	165	1532	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	189	540	459	60	411	349	105	1313	90	258	1679	751
Arrive On Green	0.11	0.30	0.30	0.04	0.23	0.23	0.06	0.40	0.40	0.15	0.48	0.00
Sat Flow, veh/h	1707	1792	1524	1707	1792	1524	1740	3297	225	1740	3471	1553
Grp Volume(v), veh/h	147	481	141	36	244	101	76	323	333	165	1532	0
Grp Sat Flow(s),veh/h/ln	1707	1792	1524	1707	1792	1524	1740	1736	1787	1740	1736	1553
Q Serve(g_s), s	14.7	45.0	12.5	3.6	21.3	9.6	7.5	24.1	24.2	15.7	71.6	0.0
Cycle Q Clear(g_c), s	14.7	45.0	12.5	3.6	21.3	9.6	7.5	24.1	24.2	15.7	71.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	189	540	459	60	411	349	105	691	712	258	1679	751
V/C Ratio(X)	0.78	0.89	0.31	0.60	0.59	0.29	0.72	0.47	0.47	0.64	0.91	0.00
Avail Cap(c_a), veh/h	189	540	459	60	411	349	105	691	712	258	1679	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	76.0	58.5	47.2	83.4	60.4	55.9	81.0	39.0	39.1	70.3	41.9	0.0
Incr Delay (d2), s/veh	26.5	19.4	1.7	36.8	6.2	2.1	34.9	2.3	2.2	11.6	9.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	25.2	5.5	2.3	11.3	4.3	4.7	12.0	12.4	8.4	36.4	0.0
LnGrp Delay(d),s/veh	102.5	77.9	48.9	120.2	66.6	57.9	116.0	41.3	41.3	81.9	50.9	0.0
LnGrp LOS	F	E	D	F	E	E	F	D	D	F	D	
Approach Vol, veh/h		769			381			732			1697	
Approach Delay, s/veh		77.3			69.4			49.0			53.9	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	90.0	23.7	45.8	31.0	75.0	11.0	58.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 11	84.9	* 19	39.7	26.0	69.9	* 6.2	* 53
Max Q Clear Time (g_c+I1), s	9.5	73.6	16.7	23.3	17.7	26.2	5.6	47.0
Green Ext Time (p_c), s	0.0	3.1	0.0	0.8	0.1	3.5	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	59.6
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	88	81	13	46	11	40	640	9	7	1607	96
Future Volume (veh/h)	83	88	81	13	46	11	40	640	9	7	1607	96
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	83	88	81	13	46	11	40	640	9	7	1607	96
Adj No. of Lanes	2	1	0	2	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	160	194	179	75	280	67	92	2118	30	38	1908	113
Arrive On Green	0.05	0.22	0.22	0.02	0.19	0.19	0.05	0.60	0.60	0.02	0.57	0.57
Sat Flow, veh/h	3408	886	815	3408	1440	344	1740	3505	49	1740	3330	198
Grp Volume(v), veh/h	83	0	169	13	0	57	40	317	332	7	833	870
Grp Sat Flow(s),veh/h/ln	1704	0	1701	1704	0	1784	1740	1736	1818	1740	1736	1792
Q Serve(g_s), s	3.8	0.0	13.8	0.6	0.0	4.3	3.6	14.1	14.1	0.6	63.1	64.4
Cycle Q Clear(g_c), s	3.8	0.0	13.8	0.6	0.0	4.3	3.6	14.1	14.1	0.6	63.1	64.4
Prop In Lane	1.00		0.48	1.00		0.19	1.00		0.03	1.00		0.11
Lane Grp Cap(c), veh/h	160	0	373	75	0	347	92	1049	1099	38	995	1027
V/C Ratio(X)	0.52	0.00	0.45	0.17	0.00	0.16	0.43	0.30	0.30	0.18	0.84	0.85
Avail Cap(c_a), veh/h	160	0	373	75	0	347	92	1049	1099	38	995	1027
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.5	0.0	54.1	76.8	0.0	53.6	73.4	15.3	15.3	76.8	28.0	28.3
Incr Delay (d2), s/veh	11.6	0.0	3.9	5.0	0.0	1.0	14.1	0.7	0.7	10.4	8.4	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	6.9	0.3	0.0	2.2	2.1	7.0	7.3	0.4	32.4	34.1
LnGrp Delay(d),s/veh	86.1	0.0	58.1	81.9	0.0	54.7	87.5	16.1	16.0	87.2	36.4	36.9
LnGrp LOS	F		E	F		D	F	B	B	F	D	D
Approach Vol, veh/h		252			70			689			1710	
Approach Delay, s/veh		67.3			59.7			20.2			36.9	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	96.7	13.0	36.3	9.0	101.7	9.0	40.3
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	8.5	91.7	7.5	* 31	3.5	96.7	3.5	* 35
Max Q Clear Time (g_c+I1), s	5.6	66.4	5.8	6.3	2.6	16.1	2.6	15.8
Green Ext Time (p_c), s	0.0	2.9	0.0	0.2	0.0	2.9	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	36.1
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	102	126	50	133	31	34	512	21	6	1564	129
Future Volume (veh/h)	77	102	126	50	133	31	34	512	21	6	1564	129
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1792	1792	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	77	102	126	50	133	31	34	512	21	6	1564	129
Adj No. of Lanes	2	1	0	2	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	6	6	6	4	4	4	4	4	4
Cap, veh/h	116	151	186	85	273	64	236	2105	86	36	1639	134
Arrive On Green	0.03	0.20	0.20	0.03	0.19	0.19	0.14	0.62	0.62	0.02	0.50	0.50
Sat Flow, veh/h	3375	745	920	3312	1407	328	1740	3399	139	1740	3250	266
Grp Volume(v), veh/h	77	0	228	50	0	164	34	261	272	6	830	863
Grp Sat Flow(s),veh/h/ln	1688	0	1665	1656	0	1735	1740	1736	1802	1740	1736	1780
Q Serve(g_s), s	3.6	0.0	20.3	2.4	0.0	13.5	2.8	10.8	10.8	0.5	72.7	74.7
Cycle Q Clear(g_c), s	3.6	0.0	20.3	2.4	0.0	13.5	2.8	10.8	10.8	0.5	72.7	74.7
Prop In Lane	1.00		0.55	1.00		0.19	1.00		0.08	1.00		0.15
Lane Grp Cap(c), veh/h	116	0	337	85	0	336	236	1075	1116	36	875	898
V/C Ratio(X)	0.66	0.00	0.68	0.59	0.00	0.49	0.14	0.24	0.24	0.17	0.95	0.96
Avail Cap(c_a), veh/h	116	0	337	85	0	336	236	1075	1116	36	875	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.3	0.0	59.0	77.1	0.0	57.4	61.0	13.6	13.6	77.0	37.7	38.2
Incr Delay (d2), s/veh	26.1	0.0	10.4	26.6	0.0	5.0	1.3	0.5	0.5	9.8	20.1	22.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	10.3	1.4	0.0	6.9	1.4	5.3	5.5	0.4	39.7	42.2
LnGrp Delay(d),s/veh	102.4	0.0	69.4	103.7	0.0	62.4	62.2	14.2	14.2	86.8	57.8	60.2
LnGrp LOS	F		E	F		E	E	B	B	F	E	E
Approach Vol, veh/h		305			214			567			1699	
Approach Delay, s/veh		77.7			72.1			17.1			59.1	
Approach LOS		E			E			B			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.2	85.8	11.0	36.0	8.8	104.2	9.6	37.4
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	21.7	* 81	5.5	* 31	3.3	* 99	4.1	* 32
Max Q Clear Time (g_c+I1), s	4.8	76.7	5.6	15.5	2.5	12.8	4.4	22.3
Green Ext Time (p_c), s	0.0	1.6	0.0	0.4	0.0	2.7	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	53.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	97	82	38	116	79	48	382	16	206	1245	222
Future Volume (veh/h)	101	97	82	38	116	79	48	382	16	206	1245	222
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	101	97	82	38	116	79	48	382	16	206	1245	222
Adj No. of Lanes	2	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	213	175	148	101	189	128	121	1507	63	354	1706	302
Arrive On Green	0.06	0.19	0.19	0.06	0.18	0.18	0.07	0.44	0.44	0.20	0.58	0.58
Sat Flow, veh/h	3408	925	782	1757	1024	697	1740	3396	142	1740	2949	522
Grp Volume(v), veh/h	101	0	179	38	0	195	48	195	203	206	729	738
Grp Sat Flow(s),veh/h/ln	1704	0	1707	1757	0	1722	1740	1736	1802	1740	1736	1735
Q Serve(g_s), s	5.7	0.0	19.0	4.2	0.0	20.9	5.3	14.1	14.2	21.4	61.1	62.5
Cycle Q Clear(g_c), s	5.7	0.0	19.0	4.2	0.0	20.9	5.3	14.1	14.2	21.4	61.1	62.5
Prop In Lane	1.00		0.46	1.00		0.41	1.00		0.08	1.00		0.30
Lane Grp Cap(c), veh/h	213	0	323	101	0	317	121	770	800	354	1004	1004
V/C Ratio(X)	0.47	0.00	0.55	0.38	0.00	0.61	0.40	0.25	0.25	0.58	0.73	0.74
Avail Cap(c_a), veh/h	213	0	323	101	0	317	121	770	800	354	1004	1004
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	90.7	0.0	73.5	90.9	0.0	75.2	89.2	34.9	34.9	72.1	30.7	31.0
Incr Delay (d2), s/veh	7.4	0.0	6.7	10.4	0.0	8.6	9.5	0.8	0.8	6.9	4.6	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	9.6	2.3	0.0	10.7	2.9	6.9	7.2	11.0	30.4	31.3
LnGrp Delay(d),s/veh	98.1	0.0	80.3	101.3	0.0	83.8	98.7	35.7	35.7	79.0	35.2	35.7
LnGrp LOS	F		F	F		F	F	D	D	E	D	D
Approach Vol, veh/h		280			233			446			1673	
Approach Delay, s/veh		86.7			86.7			42.5			40.8	
Approach LOS		F			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	121.0	18.0	42.3	46.0	94.0	17.0	43.3
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 14	115.9	12.5	* 37	* 41	88.9	11.5	* 38
Max Q Clear Time (g_c+I1), s	7.3	64.5	7.7	22.9	23.4	16.2	6.2	21.0
Green Ext Time (p_c), s	0.0	2.2	0.0	0.4	0.2	2.2	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	50.1
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	511	76	59	247	5	30	61	58	4	262	57
Future Volume (veh/h)	62	511	76	59	247	5	30	61	58	4	262	57
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	62	511	76	59	247	5	30	61	58	4	262	57
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	116	766	113	172	992	20	223	379	360	46	485	106
Arrive On Green	0.07	0.26	0.26	0.10	0.29	0.29	0.13	0.43	0.43	0.03	0.33	0.33
Sat Flow, veh/h	1707	2977	441	1707	3414	69	1757	871	828	1757	1469	320
Grp Volume(v), veh/h	62	291	296	59	123	129	30	0	119	4	0	319
Grp Sat Flow(s),veh/h/ln	1707	1703	1715	1707	1703	1780	1757	0	1699	1757	0	1788
Q Serve(g_s), s	4.0	17.6	17.8	3.7	6.4	6.4	1.7	0.0	4.9	0.3	0.0	16.7
Cycle Q Clear(g_c), s	4.0	17.6	17.8	3.7	6.4	6.4	1.7	0.0	4.9	0.3	0.0	16.7
Prop In Lane	1.00		0.26	1.00		0.04	1.00		0.49	1.00		0.18
Lane Grp Cap(c), veh/h	116	438	441	172	495	517	223	0	739	46	0	591
V/C Ratio(X)	0.54	0.67	0.67	0.34	0.25	0.25	0.13	0.00	0.16	0.09	0.00	0.54
Avail Cap(c_a), veh/h	116	438	441	172	495	517	223	0	739	46	0	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.8	38.3	38.3	48.1	31.2	31.2	44.6	0.0	19.8	54.7	0.0	31.4
Incr Delay (d2), s/veh	16.6	7.8	7.9	5.4	1.2	1.2	1.3	0.0	0.5	3.7	0.0	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	9.2	9.3	2.0	3.1	3.3	0.9	0.0	2.4	0.2	0.0	8.8
LnGrp Delay(d),s/veh	68.4	46.0	46.2	53.5	32.4	32.4	45.8	0.0	20.2	58.4	0.0	34.9
LnGrp LOS	E	D	D	D	C	C	D		C	E		C
Approach Vol, veh/h		649			311			149			323	
Approach Delay, s/veh		48.2			36.4			25.4			35.2	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	36.0	19.0	44.0	12.2	39.8	7.0	56.0
Change Period (Y+Rc), s	4.4	6.4	4.4	6.0	4.4	6.4	* 4	6.0
Max Green Setting (Gmax), s	11.6	29.6	14.6	38.0	7.8	33.4	* 3	50.0
Max Q Clear Time (g_c+I1), s	5.7	19.8	3.7	18.7	6.0	8.4	2.3	6.9
Green Ext Time (p_c), s	0.0	3.7	0.0	7.0	0.0	5.8	0.0	10.1

Intersection Summary	
HCM 2010 Ctrl Delay	40.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	784	44	201	27	77	110	284	1365	17	146	560	333
Future Volume (veh/h)	784	44	201	27	77	110	284	1365	17	146	560	333
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	815	0	201	27	77	110	284	1365	17	146	560	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	1119	0	499	41	116	135	387	1693	21	211	1147	357
Arrive On Green	0.32	0.00	0.32	0.09	0.09	0.09	0.22	0.33	0.33	0.12	0.23	0.00
Sat Flow, veh/h	3480	0	1553	473	1348	1568	1740	5078	63	1740	4988	1553
Grp Volume(v), veh/h	815	0	201	104	0	110	284	894	488	146	560	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1821	0	1568	1740	1663	1816	1740	1663	1553
Q Serve(g_s), s	30.1	0.0	14.6	8.0	0.0	10.0	22.0	35.6	35.6	11.7	14.1	0.0
Cycle Q Clear(g_c), s	30.1	0.0	14.6	8.0	0.0	10.0	22.0	35.6	35.6	11.7	14.1	0.0
Prop In Lane	1.00		1.00	0.26		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	1119	0	499	157	0	135	387	1108	605	211	1147	357
V/C Ratio(X)	0.73	0.00	0.40	0.66	0.00	0.81	0.73	0.81	0.81	0.69	0.49	0.00
Avail Cap(c_a), veh/h	1119	0	499	157	0	135	387	1108	605	211	1147	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.6	0.0	38.4	64.3	0.0	65.2	52.5	44.1	44.1	61.2	48.5	0.0
Incr Delay (d2), s/veh	4.2	0.0	2.4	20.0	0.0	39.7	11.7	6.3	11.0	17.1	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.1	0.0	6.6	4.9	0.0	5.8	11.8	17.4	19.7	6.6	6.6	0.0
LnGrp Delay(d),s/veh	47.8	0.0	40.8	84.3	0.0	105.0	64.1	50.4	55.1	78.3	50.0	0.0
LnGrp LOS	D		D	F		F	E	D	E	E	D	
Approach Vol, veh/h		1016			214			1666			706	
Approach Delay, s/veh		46.4			94.9			54.2			55.8	
Approach LOS		D			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	37.0	38.2		18.0	22.0	53.2		52.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 32	33.2		12.5	* 18	* 48		46.7
Max Q Clear Time (g_c+I1), s	24.0	16.1		12.0	13.7	37.6		32.1
Green Ext Time (p_c), s	0.2	2.8		0.0	0.0	2.5		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	54.7
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	151	31	37	114	699	56	1248	15	309	795	258
Future Volume (veh/h)	408	151	31	37	114	699	56	1248	15	309	795	258
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	408	151	31	37	114	699	56	1248	15	309	795	258
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	584	1268	248	101	290	1094	131	1730	21	654	2615	814
Arrive On Green	0.17	0.30	0.30	0.03	0.16	0.16	0.04	0.37	0.37	0.19	0.52	0.52
Sat Flow, veh/h	3408	4230	827	3514	1845	3136	3408	4729	57	3408	5036	1568
Grp Volume(v), veh/h	408	118	64	37	114	699	56	779	484	309	795	258
Grp Sat Flow(s),veh/h/ln	1704	1679	1699	1757	1845	1568	1704	1476	1835	1704	1679	1568
Q Serve(g_s), s	22.0	5.0	5.3	2.0	10.9	30.7	3.1	44.5	44.5	15.8	17.6	18.5
Cycle Q Clear(g_c), s	22.0	5.0	5.3	2.0	10.9	30.7	3.1	44.5	44.5	15.8	17.6	18.5
Prop In Lane	1.00		0.49	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	584	1006	509	101	290	1094	131	1079	671	654	2615	814
V/C Ratio(X)	0.70	0.12	0.13	0.37	0.39	0.64	0.43	0.72	0.72	0.47	0.30	0.32
Avail Cap(c_a), veh/h	584	1006	509	101	290	1094	131	1079	671	654	2615	814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.2	49.7	49.8	93.2	74.0	53.3	91.9	53.4	53.4	70.2	26.8	27.0
Incr Delay (d2), s/veh	6.8	0.2	0.5	10.0	4.0	2.9	9.9	4.2	6.6	2.4	0.3	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	2.3	2.6	1.1	5.9	16.3	1.7	18.8	23.8	7.6	8.2	8.3
LnGrp Delay(d),s/veh	83.1	49.9	50.3	103.3	78.0	56.2	101.8	57.6	60.0	72.7	27.1	28.1
LnGrp LOS	F	D	D	F	E	E	F	E	E	E	C	C
Approach Vol, veh/h		590			850			1319			1362	
Approach Delay, s/veh		72.9			61.2			60.4			37.6	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	107.1	39.0	36.4	43.0	77.1	11.1	64.3
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	7.5	101.2	33.5	* 31	37.5	* 72	5.6	* 58
Max Q Clear Time (g_c+I1), s	5.1	20.5	24.0	32.7	17.8	46.5	4.0	7.3
Green Ext Time (p_c), s	0.0	3.3	0.5	0.0	0.4	3.3	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	54.8
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	103	44	69	49	159	17	706	31	71	717	51
Future Volume (veh/h)	311	103	44	69	49	159	17	706	31	71	717	51
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	229	218	44	59	63	159	17	706	31	71	717	51
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	346	294	59	346	364	309	203	1843	81	205	1789	127
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.12	0.37	0.37	0.12	0.37	0.37
Sat Flow, veh/h	1757	1491	301	1757	1845	1568	1757	4947	216	1757	4802	340
Grp Volume(v), veh/h	229	0	262	59	63	159	17	478	259	71	500	268
Grp Sat Flow(s),veh/h/ln	1757	0	1792	1757	1845	1568	1757	1679	1806	1757	1679	1785
Q Serve(g_s), s	21.1	0.0	24.1	4.9	5.0	15.9	1.5	18.2	18.4	6.5	19.2	19.4
Cycle Q Clear(g_c), s	21.1	0.0	24.1	4.9	5.0	15.9	1.5	18.2	18.4	6.5	19.2	19.4
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.12	1.00		0.19
Lane Grp Cap(c), veh/h	346	0	353	346	364	309	203	1251	673	205	1251	665
V/C Ratio(X)	0.66	0.00	0.74	0.17	0.17	0.51	0.08	0.38	0.38	0.35	0.40	0.40
Avail Cap(c_a), veh/h	346	0	353	346	364	309	203	1251	673	205	1251	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.9	0.0	66.1	58.4	58.4	62.8	69.1	40.2	40.2	71.2	40.5	40.5
Incr Delay (d2), s/veh	9.5	0.0	13.2	1.1	1.0	6.0	0.8	0.9	1.7	4.6	1.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	0.0	13.2	2.5	2.6	7.4	0.8	8.6	9.4	3.4	9.1	9.9
LnGrp Delay(d),s/veh	74.4	0.0	79.2	59.4	59.4	68.8	69.9	41.1	41.9	75.8	41.4	42.3
LnGrp LOS	E		E	E	E	E	E	D	D	E	D	D
Approach Vol, veh/h		491			281			754			839	
Approach Delay, s/veh		77.0			64.7			42.0			44.6	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.0	70.0		40.0	25.0	70.0		40.0
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 20	65.2		34.5	* 20	65.2		34.5
Max Q Clear Time (g_c+I1), s	3.5	21.4		17.9	8.5	20.4		26.1
Green Ext Time (p_c), s	0.0	1.9		0.2	0.0	1.9		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	52.9
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	285	178	135	393	142	143	314	38	150	511	150
Future Volume (veh/h)	188	285	178	135	393	142	143	314	38	150	511	150
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	188	285	178	135	393	142	143	314	38	150	511	150
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	170	1074	502	178	1623	505	133	1712	533	133	1324	378
Arrive On Green	0.05	0.32	0.32	0.05	0.32	0.32	0.04	0.34	0.34	0.04	0.34	0.34
Sat Flow, veh/h	3408	3357	1568	3408	5036	1568	3408	5036	1568	3408	3894	1112
Grp Volume(v), veh/h	188	285	178	135	393	142	143	314	38	150	439	222
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1648
Q Serve(g_s), s	4.5	5.7	7.8	3.5	5.2	6.1	3.5	4.0	1.5	3.5	8.9	9.3
Cycle Q Clear(g_c), s	4.5	5.7	7.8	3.5	5.2	6.1	3.5	4.0	1.5	3.5	8.9	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.67
Lane Grp Cap(c), veh/h	170	1074	502	178	1623	505	133	1712	533	133	1141	560
V/C Ratio(X)	1.10	0.27	0.35	0.76	0.24	0.28	1.08	0.18	0.07	1.13	0.38	0.40
Avail Cap(c_a), veh/h	170	1074	502	178	1623	505	133	1712	533	133	1141	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	22.7	23.5	42.1	22.4	22.7	43.3	20.9	20.1	43.3	22.5	22.7
Incr Delay (d2), s/veh	99.3	0.6	2.0	25.7	0.4	1.4	100.9	0.2	0.3	117.9	1.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	2.7	3.6	2.3	2.5	2.8	3.5	1.9	0.7	3.8	4.3	4.5
LnGrp Delay(d),s/veh	142.0	23.3	25.4	67.8	22.8	24.1	144.1	21.1	20.3	161.2	23.5	24.8
LnGrp LOS	F	C	C	E	C	C	F	C	C	F	C	C
Approach Vol, veh/h		651			670			495			811	
Approach Delay, s/veh		58.2			32.1			56.6			49.3	
Approach LOS		E			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	36.2	10.0	34.8	9.0	36.2	10.2	34.6
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	3.5	* 31	4.5	29.0	3.5	* 31	4.7	28.8
Max Q Clear Time (g_c+I1), s	5.5	11.3	6.5	8.1	5.5	6.0	5.5	9.8
Green Ext Time (p_c), s	0.0	1.3	0.0	1.3	0.0	1.3	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	48.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	191	17	55	199	100	4	37	40	246	101	266
Future Volume (veh/h)	67	191	17	55	199	100	4	37	40	246	101	266
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	67	191	17	55	199	100	4	37	40	246	101	266
Adj No. of Lanes	1	2	0	1	1	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	263	1065	94	230	564	479	88	188	204	689	709	603
Arrive On Green	0.15	0.33	0.33	0.13	0.31	0.31	0.05	0.23	0.23	0.20	0.38	0.38
Sat Flow, veh/h	1757	3259	287	1757	1845	1568	1757	812	878	3408	1845	1568
Grp Volume(v), veh/h	67	102	106	55	199	100	4	0	77	246	101	266
Grp Sat Flow(s),veh/h/ln	1757	1752	1794	1757	1845	1568	1757	0	1690	1704	1845	1568
Q Serve(g_s), s	6.4	7.9	8.1	5.3	16.0	9.0	0.4	0.0	7.0	11.8	6.8	23.9
Cycle Q Clear(g_c), s	6.4	7.9	8.1	5.3	16.0	9.0	0.4	0.0	7.0	11.8	6.8	23.9
Prop In Lane	1.00		0.16	1.00		1.00	1.00		0.52	1.00		1.00
Lane Grp Cap(c), veh/h	263	572	586	230	564	479	88	0	392	689	709	603
V/C Ratio(X)	0.25	0.18	0.18	0.24	0.35	0.21	0.05	0.00	0.20	0.36	0.14	0.44
Avail Cap(c_a), veh/h	263	572	586	230	564	479	88	0	392	689	709	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.6	45.8	45.9	74.3	51.4	49.0	86.1	0.0	58.8	65.3	38.2	43.4
Incr Delay (d2), s/veh	2.3	0.7	0.7	2.4	1.7	1.0	1.0	0.0	1.1	1.4	0.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	4.0	4.1	2.8	8.5	4.0	0.2	0.0	3.4	5.7	3.6	10.8
LnGrp Delay(d),s/veh	73.9	46.5	46.6	76.7	53.2	50.0	87.1	0.0	59.9	66.7	38.6	45.8
LnGrp LOS	E	D	D	E	D	D	F		E	E	D	D
Approach Vol, veh/h		275			354			81			613	
Approach Delay, s/veh		53.2			55.9			61.3			53.0	
Approach LOS		D			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.0	63.1	15.0	78.3	30.0	67.1	44.0	49.3
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	28.5	* 58	9.5	* 73	* 25	* 62	38.5	* 44
Max Q Clear Time (g_c+I1), s	8.4	18.0	2.4	25.9	7.3	10.1	13.8	9.0
Green Ext Time (p_c), s	0.0	0.4	0.0	0.3	0.0	0.4	0.3	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	54.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	510	97	171	210	366	46	1897	235	282	916	200
Future Volume (veh/h)	309	510	97	171	210	366	46	1897	235	282	916	200
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	309	510	97	171	210	366	46	1897	235	282	916	200
Adj No. of Lanes	2	2	1	2	1	2	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	415	751	336	428	395	1054	411	2536	627	411	2012	627
Arrive On Green	0.12	0.21	0.21	0.12	0.21	0.21	0.12	0.40	0.40	0.12	0.40	0.40
Sat Flow, veh/h	3408	3505	1568	3514	1845	3136	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	309	510	97	171	210	366	46	1897	235	282	916	200
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	14.0	21.4	8.3	7.2	16.2	14.0	1.9	41.3	17.0	12.8	21.5	14.1
Cycle Q Clear(g_c), s	14.0	21.4	8.3	7.2	16.2	14.0	1.9	41.3	17.0	12.8	21.5	14.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	751	336	428	395	1054	411	2536	627	411	2012	627
V/C Ratio(X)	0.74	0.68	0.29	0.40	0.53	0.35	0.11	0.75	0.38	0.69	0.46	0.32
Avail Cap(c_a), veh/h	415	751	336	428	395	1054	411	2536	627	411	2012	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.9	57.8	52.7	64.9	55.8	40.0	62.6	40.8	33.6	67.4	34.9	32.7
Incr Delay (d2), s/veh	11.5	4.9	2.2	2.8	5.0	0.9	0.6	2.1	1.7	9.0	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	10.9	3.8	3.7	8.8	6.2	0.9	18.3	7.6	6.5	10.0	6.3
LnGrp Delay(d),s/veh	79.4	62.7	54.8	67.7	60.8	40.9	63.1	42.9	35.3	76.4	35.6	34.0
LnGrp LOS	E	E	D	E	E	D	E	D	D	E	D	C
Approach Vol, veh/h		916			747			2178			1398	
Approach Delay, s/veh		67.5			52.6			42.5			43.6	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	70.0	25.0	40.1	25.0	70.0	25.0	40.1
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	19.5	* 65	19.5	34.2	19.5	* 65	19.5	* 34
Max Q Clear Time (g_c+I1), s	3.9	23.5	16.0	18.2	14.8	43.3	9.2	23.4
Green Ext Time (p_c), s	0.1	25.2	0.2	8.6	0.2	16.1	0.2	6.6

Intersection Summary	
HCM 2010 Ctrl Delay	48.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	415	244	179	288	224	193	945	99	184	1088	120
Future Volume (veh/h)	347	415	244	179	288	224	193	945	99	184	1088	120
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	347	415	244	179	288	224	193	945	99	184	1088	120
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	414	747	334	410	1063	331	410	2002	623	410	2002	623
Arrive On Green	0.12	0.21	0.21	0.12	0.21	0.21	0.12	0.40	0.40	0.12	0.40	0.40
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	347	415	244	179	288	224	193	945	99	184	1088	120
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	16.0	16.9	23.3	7.9	7.7	21.3	8.5	22.4	6.5	8.1	26.8	8.0
Cycle Q Clear(g_c), s	16.0	16.9	23.3	7.9	7.7	21.3	8.5	22.4	6.5	8.1	26.8	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	414	747	334	410	1063	331	410	2002	623	410	2002	623
V/C Ratio(X)	0.84	0.56	0.73	0.44	0.27	0.68	0.47	0.47	0.16	0.45	0.54	0.19
Avail Cap(c_a), veh/h	414	747	334	410	1063	331	410	2002	623	410	2002	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.9	56.3	58.8	65.4	52.7	58.0	65.6	35.4	30.7	65.5	36.7	31.1
Incr Delay (d2), s/veh	18.0	3.0	13.1	3.3	0.6	10.6	3.8	0.8	0.5	3.5	1.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	8.6	11.3	3.9	3.6	10.1	4.2	10.5	2.9	4.0	12.5	3.6
LnGrp Delay(d),s/veh	86.9	59.3	71.9	68.7	53.3	68.6	69.5	36.2	31.2	69.0	37.8	31.8
LnGrp LOS	F	E	E	E	D	E	E	D	C	E	D	C
Approach Vol, veh/h		1006			691			1237			1392	
Approach Delay, s/veh		71.9			62.3			41.0			41.4	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	70.2	25.0	40.2	25.0	70.2	25.0	40.2
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	19.5	* 64	19.5	* 34	19.5	* 64	19.5	34.0
Max Q Clear Time (g_c+I1), s	10.5	28.8	18.0	23.3	10.1	24.4	9.9	25.3
Green Ext Time (p_c), s	0.2	27.9	0.1	7.1	0.2	30.7	0.2	6.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	15	379	13	24	66	161	981	11	20	1261	132
Future Volume (veh/h)	233	15	379	13	24	66	161	981	11	20	1261	132
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	233	15	379	13	24	66	161	981	11	20	1261	132
Adj No. of Lanes	2	1	2	1	1	0	2	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	413	394	589	213	93	256	409	2039	23	211	2000	623
Arrive On Green	0.12	0.21	0.21	0.12	0.21	0.21	0.12	0.40	0.40	0.12	0.40	0.40
Sat Flow, veh/h	3408	1845	2760	1757	436	1198	3375	5085	57	1740	4988	1553
Grp Volume(v), veh/h	233	15	379	13	0	90	161	641	351	20	1261	132
Grp Sat Flow(s),veh/h/ln	1704	1845	1380	1757	0	1633	1688	1663	1817	1740	1663	1553
Q Serve(g_s), s	10.4	1.0	20.2	1.1	0.0	7.4	7.1	23.1	23.1	1.6	32.7	9.0
Cycle Q Clear(g_c), s	10.4	1.0	20.2	1.1	0.0	7.4	7.1	23.1	23.1	1.6	32.7	9.0
Prop In Lane	1.00		1.00	1.00		0.73	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	413	394	589	213	0	349	409	1333	729	211	2000	623
V/C Ratio(X)	0.56	0.04	0.64	0.06	0.00	0.26	0.39	0.48	0.48	0.09	0.63	0.21
Avail Cap(c_a), veh/h	413	394	589	213	0	349	409	1333	729	211	2000	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.8	50.2	57.8	62.7	0.0	52.7	65.3	35.8	35.8	63.0	38.7	31.6
Incr Delay (d2), s/veh	5.5	0.2	5.3	0.6	0.0	1.8	2.8	1.2	2.3	0.9	1.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.5	8.2	0.5	0.0	3.5	3.5	10.8	12.1	0.8	15.2	4.0
LnGrp Delay(d),s/veh	72.3	50.4	63.1	63.2	0.0	54.5	68.2	37.1	38.1	63.8	40.2	32.4
LnGrp LOS	E	D	E	E		D	E	D	D	E	D	C
Approach Vol, veh/h		627			103			1153			1413	
Approach Delay, s/veh		66.2			55.6			41.7			39.8	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	70.6	25.0	40.5	25.0	70.6	25.0	40.5
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	19.5	64.0	19.5	* 34	19.5	* 65	19.5	* 34
Max Q Clear Time (g_c+I1), s	9.1	34.7	12.4	9.4	3.6	25.1	3.1	22.2
Green Ext Time (p_c), s	0.1	3.8	0.2	0.5	0.0	3.8	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	46.0
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	140	261	39	46	100	109	611	47	133	1479	121
Future Volume (veh/h)	68	140	261	39	46	100	109	611	47	133	1479	121
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	68	140	261	39	46	100	109	611	47	133	1479	121
Adj No. of Lanes	2	2	0	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	415	378	338	396	721	322	411	2011	626	411	2011	626
Arrive On Green	0.12	0.22	0.22	0.12	0.22	0.22	0.12	0.40	0.40	0.12	0.40	0.40
Sat Flow, veh/h	3408	1752	1568	3250	3343	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	68	140	261	39	46	100	109	611	47	133	1479	121
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1625	1671	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	2.9	10.9	25.1	1.7	1.8	9.0	4.7	13.3	3.0	5.8	40.3	8.1
Cycle Q Clear(g_c), s	2.9	10.9	25.1	1.7	1.8	9.0	4.7	13.3	3.0	5.8	40.3	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	378	338	396	721	322	411	2011	626	411	2011	626
V/C Ratio(X)	0.16	0.37	0.77	0.10	0.06	0.31	0.26	0.30	0.08	0.32	0.74	0.19
Avail Cap(c_a), veh/h	415	378	338	396	721	322	411	2011	626	411	2011	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.9	53.5	59.0	62.4	49.9	52.7	63.7	32.5	29.4	64.2	40.5	30.9
Incr Delay (d2), s/veh	0.8	2.8	15.6	0.5	0.2	2.5	1.6	0.4	0.2	2.1	2.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	5.6	12.3	0.8	0.8	3.9	2.3	6.2	1.3	2.8	18.9	3.6
LnGrp Delay(d),s/veh	63.8	56.3	74.7	62.9	50.1	55.2	65.3	32.9	29.6	66.3	43.0	31.6
LnGrp LOS	E	E	E	E	D	E	E	C	C	E	D	C
Approach Vol, veh/h		469			185			767			1733	
Approach Delay, s/veh		67.6			55.6			37.3			44.0	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	70.0	25.0	40.0	25.0	70.0	25.0	40.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	19.5	64.5	19.5	34.5	19.5	64.5	19.5	34.5
Max Q Clear Time (g_c+I1), s	6.7	42.3	4.9	11.0	7.8	15.3	3.7	27.1
Green Ext Time (p_c), s	0.1	3.9	0.1	0.6	0.1	4.0	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	46.5
HCM 2010 LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	27	115	528	28	221	1365
Future Volume (veh/h)	27	115	528	28	221	1365
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1827	1827	1827
Adj Flow Rate, veh/h	27	115	528	28	221	1365
Adj No. of Lanes	2	1	3	1	2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	871	401	2364	736	513	2314
Arrive On Green	0.26	0.26	0.47	0.47	0.15	0.67
Sat Flow, veh/h	3408	1568	5152	1553	3375	3563
Grp Volume(v), veh/h	27	115	528	28	221	1365
Grp Sat Flow(s),veh/h/ln	1704	1568	1663	1553	1688	1736
Q Serve(g_s), s	0.8	8.0	8.4	1.3	8.0	29.2
Cycle Q Clear(g_c), s	0.8	8.0	8.4	1.3	8.0	29.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	871	401	2364	736	513	2314
V/C Ratio(X)	0.03	0.29	0.22	0.04	0.43	0.59
Avail Cap(c_a), veh/h	871	401	2364	736	513	2314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	40.4	20.9	19.0	52.0	12.4
Incr Delay (d2), s/veh	0.1	1.8	0.2	0.1	2.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	7.7	3.9	0.6	3.9	14.2
LnGrp Delay(d),s/veh	37.8	42.2	21.1	19.1	54.6	13.5
LnGrp LOS	D	D	C	B	D	B
Approach Vol, veh/h	142		556			1586
Approach Delay, s/veh	41.3		21.0			19.2
Approach LOS	D		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		95.0		40.0	26.0	69.0		
Change Period (Y+Rc), s		5.0		5.5	5.5	5.0		
Max Green Setting (Gmax), s		90.0		34.5	20.5	64.0		
Max Q Clear Time (g_c+I1), s		31.2		10.0	10.0	10.4		
Green Ext Time (p_c), s		3.3		0.1	0.2	3.3		

Intersection Summary	
HCM 2010 Ctrl Delay	21.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	2	1	8	5	56	2	459	42	99	1108	75
Future Volume (veh/h)	7	2	1	8	5	56	2	459	42	99	1108	75
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1900	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	7	2	1	8	5	56	2	459	42	99	1108	75
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	4	4	4	4	4	4
Cap, veh/h	130	37	19	142	89	202	64	1924	861	291	1999	135
Arrive On Green	0.11	0.11	0.11	0.13	0.13	0.13	0.04	0.55	0.55	0.09	0.61	0.61
Sat Flow, veh/h	1170	334	167	1101	688	1568	1740	3471	1553	3375	3300	223
Grp Volume(v), veh/h	10	0	0	13	0	56	2	459	42	99	582	601
Grp Sat Flow(s),veh/h/ln	1671	0	0	1790	0	1568	1740	1736	1553	1688	1736	1788
Q Serve(g_s), s	0.9	0.0	0.0	1.1	0.0	5.6	0.2	11.9	2.2	4.8	34.9	34.9
Cycle Q Clear(g_c), s	0.9	0.0	0.0	1.1	0.0	5.6	0.2	11.9	2.2	4.8	34.9	34.9
Prop In Lane	0.70		0.10	0.62		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	186	0	0	231	0	202	64	1924	861	291	1051	1083
V/C Ratio(X)	0.05	0.00	0.00	0.06	0.00	0.28	0.03	0.24	0.05	0.34	0.55	0.55
Avail Cap(c_a), veh/h	186	0	0	231	0	202	64	1924	861	291	1051	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.5	0.0	0.0	66.8	0.0	68.8	81.3	20.0	17.9	75.3	20.5	20.5
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	0.0	3.4	0.9	0.3	0.1	3.1	2.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.6	0.0	2.6	0.1	5.8	1.0	2.4	17.3	17.8
LnGrp Delay(d),s/veh	70.1	0.0	0.0	67.3	0.0	72.2	82.2	20.3	18.0	78.4	22.6	22.5
LnGrp LOS	E			E		E	F	C	B	E	C	C
Approach Vol, veh/h		10			69			503			1282	
Approach Delay, s/veh		70.1			71.3			20.4			26.9	
Approach LOS		E			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	111.0		28.0	20.0	102.0		25.0
Change Period (Y+Rc), s	* 4.6	5.0		* 5.4	* 4.9	5.0		5.5
Max Green Setting (Gmax), s	* 6.4	106.0		* 23	* 15	97.0		19.5
Max Q Clear Time (g_c+I1), s	2.2	36.9		7.6	6.8	13.9		2.9
Green Ext Time (p_c), s	0.0	11.2		0.1	0.2	11.3		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		27.0
HCM 2010 LOS		C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	480	21	23	210	131	7	275	51	267	751	84
Future Volume (veh/h)	99	480	21	23	210	131	7	275	51	267	751	84
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	99	480	21	23	210	131	7	275	51	267	751	84
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	197	579	492	53	427	668	40	438	81	348	857	908
Arrive On Green	0.12	0.32	0.32	0.03	0.24	0.24	0.02	0.29	0.29	0.20	0.47	0.47
Sat Flow, veh/h	1707	1792	1524	1707	1792	1524	1740	1500	278	1740	1827	1553
Grp Volume(v), veh/h	99	480	21	23	210	131	7	0	326	267	751	84
Grp Sat Flow(s),veh/h/ln	1707	1792	1524	1707	1792	1524	1740	0	1778	1740	1827	1553
Q Serve(g_s), s	7.1	32.2	1.2	1.7	13.1	6.9	0.5	0.0	20.7	18.9	48.2	3.1
Cycle Q Clear(g_c), s	7.1	32.2	1.2	1.7	13.1	6.9	0.5	0.0	20.7	18.9	48.2	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	197	579	492	53	427	668	40	0	520	348	857	908
V/C Ratio(X)	0.50	0.83	0.04	0.44	0.49	0.20	0.17	0.00	0.63	0.77	0.88	0.09
Avail Cap(c_a), veh/h	197	579	492	53	427	668	40	0	520	348	857	908
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	40.7	30.2	61.9	42.7	22.4	62.3	0.0	39.9	49.1	31.1	11.9
Incr Delay (d2), s/veh	8.9	12.9	0.2	24.4	4.0	0.7	9.2	0.0	5.6	14.9	12.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	17.9	0.5	1.2	7.0	3.0	0.3	0.0	11.0	10.5	27.1	1.4
LnGrp Delay(d),s/veh	62.9	53.6	30.4	86.2	46.7	23.1	71.5	0.0	45.5	64.1	43.3	12.1
LnGrp LOS	E	D	C	F	D	C	E		D	E	D	B
Approach Vol, veh/h		600			364			333			1102	
Approach Delay, s/veh		54.3			40.7			46.1			45.9	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	48.0	7.0	67.0	19.0	37.0	30.0	44.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	4.0	42.0	3.0	61.0	15.0	31.0	26.0	38.0
Max Q Clear Time (g_c+I1), s	3.7	34.2	2.5	50.2	9.1	15.1	20.9	22.7
Green Ext Time (p_c), s	0.0	1.5	0.0	2.6	0.1	1.9	0.3	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	47.2
HCM 2010 LOS	D

Notes

User approved changes to right turn type.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	118	15	11	207	611	188
Future Volume (veh/h)	118	15	11	207	611	188
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	118	15	11	207	611	188
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	237	30	208	1199	584	180
Arrive On Green	0.17	0.17	0.12	0.66	0.44	0.44
Sat Flow, veh/h	1430	182	1740	1827	1341	413
Grp Volume(v), veh/h	134	0	11	207	0	799
Grp Sat Flow(s),veh/h/ln	1624	0	1740	1827	0	1754
Q Serve(g_s), s	4.1	0.0	0.3	2.4	0.0	23.7
Cycle Q Clear(g_c), s	4.1	0.0	0.3	2.4	0.0	23.7
Prop In Lane	0.88	0.11	1.00			0.24
Lane Grp Cap(c), veh/h	269	0	208	1199	0	764
V/C Ratio(X)	0.50	0.00	0.05	0.17	0.00	1.05
Avail Cap(c_a), veh/h	269	0	208	1199	0	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.6	0.0	21.2	3.6	0.0	15.4
Incr Delay (d2), s/veh	6.5	0.0	0.5	0.3	0.0	45.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.2	1.3	0.0	20.8
LnGrp Delay(d),s/veh	27.1	0.0	21.7	3.9	0.0	60.4
LnGrp LOS	C		C	A		F
Approach Vol, veh/h	134			218	799	
Approach Delay, s/veh	27.1			4.8	60.4	
Approach LOS	C			A	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	12.0	29.4		13.0		41.4		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.5	* 23		9.0		* 36		
Max Q Clear Time (g_c+I1), s	2.3	25.7		6.1		4.4		
Green Ext Time (p_c), s	0.0	0.0		0.1		1.2		

Intersection Summary	
HCM 2010 Ctrl Delay	46.0
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Pedestrian Green has to be less than Phase Max Green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	702	4	58	300	13	4	205	69	42	286	25
Future Volume (veh/h)	40	702	4	58	300	13	4	205	69	42	286	25
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1900	1810	1900	1900	1810	1900
Adj Flow Rate, veh/h	40	702	4	58	300	13	4	205	69	42	286	25
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	91	813	5	82	770	33	4	216	73	44	303	26
Arrive On Green	0.05	0.46	0.46	0.05	0.45	0.45	0.17	0.17	0.17	0.21	0.21	0.21
Sat Flow, veh/h	1707	1781	10	1707	1706	74	25	1277	430	211	1440	126
Grp Volume(v), veh/h	40	0	706	58	0	313	278	0	0	353	0	0
Grp Sat Flow(s),veh/h/ln	1707	0	1791	1707	0	1779	1732	0	0	1777	0	0
Q Serve(g_s), s	4.4	0.0	69.0	6.5	0.0	22.8	31.0	0.0	0.0	38.2	0.0	0.0
Cycle Q Clear(g_c), s	4.4	0.0	69.0	6.5	0.0	22.8	31.0	0.0	0.0	38.2	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.04	0.01		0.25	0.12		0.07
Lane Grp Cap(c), veh/h	91	0	817	82	0	803	293	0	0	374	0	0
V/C Ratio(X)	0.44	0.00	0.86	0.70	0.00	0.39	0.95	0.00	0.00	0.94	0.00	0.00
Avail Cap(c_a), veh/h	91	0	817	82	0	803	293	0	0	374	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	89.5	0.0	47.6	91.4	0.0	35.6	80.2	0.0	0.0	75.9	0.0	0.0
Incr Delay (d2), s/veh	14.6	0.0	11.7	40.1	0.0	1.4	40.8	0.0	0.0	34.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	36.8	4.0	0.0	11.5	18.2	0.0	0.0	22.3	0.0	0.0
LnGrp Delay(d),s/veh	104.1	0.0	59.3	131.5	0.0	37.0	121.0	0.0	0.0	110.4	0.0	0.0
LnGrp LOS	F		E	F		D	F			F		
Approach Vol, veh/h		746			371			278			353	
Approach Delay, s/veh		61.7			51.8			121.0			110.4	
Approach LOS		E			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	94.0		47.0	14.0	95.0		39.0
Change Period (Y+Rc), s	4.6	6.0		6.0	4.6	6.0		6.0
Max Green Setting (Gmax), s	10.4	88.0		41.0	9.4	89.0		33.0
Max Q Clear Time (g_c+I1), s	6.4	24.8		40.2	8.5	71.0		33.0
Green Ext Time (p_c), s	0.0	15.1		0.1	0.0	9.2		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		78.9
HCM 2010 LOS		E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	473	105	161	651	157	82	403	97	153	836	224
Future Volume (veh/h)	131	473	105	161	651	157	82	403	97	153	836	224
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	131	473	105	161	651	157	82	403	97	153	836	224
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	189	703	155	189	863	386	216	1132	507	135	971	434
Arrive On Green	0.11	0.25	0.25	0.11	0.25	0.25	0.12	0.32	0.32	0.08	0.28	0.28
Sat Flow, veh/h	1757	2856	630	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	131	289	289	161	651	157	82	403	97	153	836	224
Grp Sat Flow(s),veh/h/ln	1757	1752	1733	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	4.7	9.7	9.8	5.9	11.2	5.5	2.8	5.7	2.9	5.0	14.7	7.8
Cycle Q Clear(g_c), s	4.7	9.7	9.8	5.9	11.2	5.5	2.8	5.7	2.9	5.0	14.7	7.8
Prop In Lane	1.00		0.36	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	431	427	189	863	386	216	1132	507	135	971	434
V/C Ratio(X)	0.69	0.67	0.68	0.85	0.75	0.41	0.38	0.36	0.19	1.13	0.86	0.52
Avail Cap(c_a), veh/h	189	431	427	189	863	386	216	1132	507	135	971	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	22.1	22.2	28.5	22.7	20.5	26.2	16.8	15.9	30.0	22.3	19.8
Incr Delay (d2), s/veh	18.8	8.0	8.4	35.5	6.1	3.2	5.0	0.9	0.8	117.3	9.9	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	5.6	5.6	4.7	6.1	2.7	1.6	2.9	1.4	6.8	8.4	3.9
LnGrp Delay(d),s/veh	46.8	30.2	30.5	64.0	28.8	23.7	31.2	17.7	16.7	147.3	32.3	24.2
LnGrp LOS	D	C	C	E	C	C	C	B	B	F	C	C
Approach Vol, veh/h		709			969			582			1213	
Approach Delay, s/veh		33.4			33.8			19.4			45.3	
Approach LOS		C			C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	25.0	11.0	20.0	12.0	22.0	11.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	21.0	7.0	16.0	8.0	18.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	7.0	7.7	7.9	11.8	4.8	16.7	6.7	13.2
Green Ext Time (p_c), s	0.0	6.3	0.0	2.5	0.1	0.9	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	35.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	291	143	115	462	73	108	530	61	113	1166	160
Future Volume (veh/h)	98	291	143	115	462	73	108	530	61	113	1166	160
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	98	291	143	115	462	73	108	530	61	113	1166	160
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	141	748	334	141	648	102	116	1130	130	232	1309	179
Arrive On Green	0.08	0.21	0.21	0.08	0.21	0.21	0.07	0.36	0.36	0.13	0.43	0.43
Sat Flow, veh/h	1757	3505	1568	1757	3036	477	1740	3139	360	1740	3069	420
Grp Volume(v), veh/h	98	291	143	115	266	269	108	292	299	113	658	668
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1760	1740	1736	1763	1740	1736	1753
Q Serve(g_s), s	4.1	5.3	5.9	4.8	10.5	10.7	4.6	9.7	9.8	4.5	26.3	26.5
Cycle Q Clear(g_c), s	4.1	5.3	5.9	4.8	10.5	10.7	4.6	9.7	9.8	4.5	26.3	26.5
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.20	1.00		0.24
Lane Grp Cap(c), veh/h	141	748	334	141	374	376	116	625	635	232	741	748
V/C Ratio(X)	0.70	0.39	0.43	0.82	0.71	0.72	0.93	0.47	0.47	0.49	0.89	0.89
Avail Cap(c_a), veh/h	141	748	334	141	374	376	116	625	635	232	741	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	25.3	25.5	34.0	27.4	27.4	34.8	18.5	18.5	30.1	19.9	19.9
Incr Delay (d2), s/veh	24.9	1.5	4.0	39.0	10.9	11.2	66.6	2.5	2.5	7.1	14.9	15.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.7	2.9	3.9	6.2	6.3	4.4	5.1	5.2	2.6	15.5	15.8
LnGrp Delay(d),s/veh	58.6	26.8	29.5	73.0	38.3	38.6	101.4	21.0	21.0	37.3	34.8	35.2
LnGrp LOS	E	C	C	E	D	D	F	C	C	D	C	D
Approach Vol, veh/h		532			650			699			1439	
Approach Delay, s/veh		33.4			44.5			33.4			35.2	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	31.0	10.0	20.0	9.0	36.0	10.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	27.0	6.0	16.0	5.0	32.0	6.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	11.8	6.8	7.9	6.6	28.5	6.1	12.7
Green Ext Time (p_c), s	0.1	8.4	0.0	2.8	0.0	2.7	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	36.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	611	197	201	763	115	176	504	91	143	1196	194
Future Volume (veh/h)	157	611	197	201	763	115	176	504	91	143	1196	194
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	157	611	197	201	763	115	176	504	91	143	1196	194
Adj No. of Lanes	1	3	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	174	751	237	217	781	349	196	919	165	283	1258	563
Arrive On Green	0.10	0.20	0.20	0.13	0.22	0.22	0.11	0.31	0.31	0.16	0.36	0.36
Sat Flow, veh/h	1740	3756	1187	1740	3471	1553	1740	2941	529	1740	3471	1553
Grp Volume(v), veh/h	157	539	269	201	763	115	176	297	298	143	1196	194
Grp Sat Flow(s),veh/h/ln	1740	1663	1618	1740	1736	1553	1740	1736	1734	1740	1736	1553
Q Serve(g_s), s	7.1	12.4	12.7	9.1	17.5	5.0	8.0	11.3	11.4	6.0	26.8	7.3
Cycle Q Clear(g_c), s	7.1	12.4	12.7	9.1	17.5	5.0	8.0	11.3	11.4	6.0	26.8	7.3
Prop In Lane	1.00		0.73	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	174	665	324	217	781	349	196	542	542	283	1258	563
V/C Ratio(X)	0.90	0.81	0.83	0.92	0.98	0.33	0.90	0.55	0.55	0.51	0.95	0.34
Avail Cap(c_a), veh/h	174	665	324	217	781	349	196	542	542	283	1258	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	30.6	30.7	34.6	30.8	25.9	35.1	22.8	22.8	30.6	24.8	18.6
Incr Delay (d2), s/veh	46.5	10.4	21.3	44.0	27.1	2.5	42.4	3.9	4.0	6.3	16.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	6.7	7.6	7.1	11.3	2.4	6.1	6.0	6.1	3.4	15.6	3.4
LnGrp Delay(d),s/veh	82.1	40.9	52.0	78.7	57.9	28.5	77.4	26.7	26.8	36.9	40.8	20.2
LnGrp LOS	F	D	D	E	E	C	E	C	C	D	D	C
Approach Vol, veh/h		965			1079			771			1533	
Approach Delay, s/veh		50.7			58.6			38.3			37.8	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	29.0	14.0	20.0	13.0	33.0	12.0	22.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	10.0	16.0	9.0	29.0	8.0	18.0
Max Q Clear Time (g_c+I1), s	8.0	13.4	11.1	14.7	10.0	28.8	9.1	19.5
Green Ext Time (p_c), s	0.2	7.4	0.0	1.0	0.0	0.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	473	141	87	489	64	143	198	61	155	821	291
Future Volume (veh/h)	122	473	141	87	489	64	143	198	61	155	821	291
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	122	473	141	87	489	64	143	198	61	155	821	291
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	145	705	209	145	824	107	146	993	444	176	1051	470
Arrive On Green	0.08	0.27	0.27	0.08	0.27	0.27	0.08	0.28	0.28	0.10	0.30	0.30
Sat Flow, veh/h	1740	2642	782	1740	3089	403	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	122	310	304	87	274	279	143	198	61	155	821	291
Grp Sat Flow(s),veh/h/ln	1740	1736	1689	1740	1736	1756	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	4.1	9.6	9.7	2.9	8.2	8.3	4.9	2.6	1.7	5.2	12.8	9.6
Cycle Q Clear(g_c), s	4.1	9.6	9.7	2.9	8.2	8.3	4.9	2.6	1.7	5.2	12.8	9.6
Prop In Lane	1.00		0.46	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	463	450	145	463	468	146	993	444	176	1051	470
V/C Ratio(X)	0.84	0.67	0.68	0.60	0.59	0.60	0.98	0.20	0.14	0.88	0.78	0.62
Avail Cap(c_a), veh/h	145	463	450	145	463	468	146	993	444	176	1051	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	19.6	19.7	26.5	19.2	19.2	27.4	16.3	16.0	26.7	19.2	18.0
Incr Delay (d2), s/veh	41.6	7.5	7.9	17.0	5.5	5.5	68.5	0.5	0.6	42.6	5.8	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.5	5.5	2.1	4.7	4.7	5.1	1.3	0.8	4.6	7.0	4.9
LnGrp Delay(d),s/veh	68.7	27.1	27.6	43.6	24.6	24.7	95.9	16.8	16.7	69.2	25.0	24.0
LnGrp LOS	E	C	C	D	C	C	F	B	B	E	C	C
Approach Vol, veh/h		736			640			402			1267	
Approach Delay, s/veh		34.2			27.2			44.9			30.2	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	21.0	9.0	20.0	9.0	22.0	9.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	17.0	5.0	16.0	5.0	18.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	7.2	4.6	4.9	11.7	6.9	14.8	6.1	10.3
Green Ext Time (p_c), s	0.0	5.3	0.0	2.2	0.0	1.9	0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	32.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	455	22	56	477	59	41	310	86	164	542	578
Future Volume (veh/h)	146	455	22	56	477	59	41	310	86	164	542	578
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	146	455	22	56	477	59	41	310	86	164	542	578
Adj No. of Lanes	2	2	1	2	2	0	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	225	926	414	225	830	102	225	809	221	338	1157	518
Arrive On Green	0.07	0.27	0.27	0.07	0.27	0.27	0.07	0.30	0.30	0.10	0.33	0.33
Sat Flow, veh/h	3375	3471	1553	3375	3112	383	3375	2697	736	3375	3471	1553
Grp Volume(v), veh/h	146	455	22	56	265	271	41	198	198	164	542	578
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1688	1736	1759	1688	1736	1697	1688	1736	1553
Q Serve(g_s), s	2.5	6.6	0.6	0.9	7.9	8.0	0.7	5.4	5.6	2.8	7.4	20.0
Cycle Q Clear(g_c), s	2.5	6.6	0.6	0.9	7.9	8.0	0.7	5.4	5.6	2.8	7.4	20.0
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	225	926	414	225	463	469	225	521	509	338	1157	518
V/C Ratio(X)	0.65	0.49	0.05	0.25	0.57	0.58	0.18	0.38	0.39	0.49	0.47	1.12
Avail Cap(c_a), veh/h	225	926	414	225	463	469	225	521	509	338	1157	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	18.6	16.4	26.6	19.0	19.1	26.5	16.6	16.6	25.5	15.8	20.0
Incr Delay (d2), s/veh	13.6	1.9	0.2	2.6	5.1	5.1	1.8	2.1	2.2	4.9	1.4	75.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	3.4	0.3	0.5	4.4	4.5	0.4	2.9	2.9	1.5	3.8	19.4
LnGrp Delay(d),s/veh	40.9	20.4	16.6	29.2	24.1	24.2	28.2	18.7	18.9	30.5	17.2	95.6
LnGrp LOS	D	C	B	C	C	C	C	B	B	C	B	F
Approach Vol, veh/h		623			592			437			1284	
Approach Delay, s/veh		25.1			24.6			19.7			54.2	
Approach LOS		C			C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	22.0	8.0	20.0	8.0	24.0	8.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	18.0	4.0	16.0	4.0	20.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	4.8	7.6	2.9	8.6	2.7	22.0	4.5	10.0
Green Ext Time (p_c), s	0.1	5.1	0.0	2.9	0.0	0.0	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	36.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	6	12	50	9	1	12	530	55	1	1005	0
Future Volume (veh/h)	1	6	12	50	9	1	12	530	55	1	1005	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	1	6	12	50	9	1	12	530	55	1	1005	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	12	74	149	262	243	27	19	970	824	19	970	0
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.01	0.54	0.54	0.01	0.54	0.00
Sat Flow, veh/h	83	499	997	1757	1631	181	1707	1792	1524	1707	1792	0
Grp Volume(v), veh/h	19	0	0	50	0	10	12	530	55	1	1005	0
Grp Sat Flow(s),veh/h/ln	1579	0	0	1757	0	1813	1707	1792	1524	1707	1792	0
Q Serve(g_s), s	1.1	0.0	0.0	2.7	0.0	0.5	0.8	20.7	1.8	0.1	58.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	2.7	0.0	0.5	0.8	20.7	1.8	0.1	58.0	0.0
Prop In Lane	0.05		0.63	1.00		0.10	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	236	0	0	262	0	271	19	970	824	19	970	0
V/C Ratio(X)	0.08	0.00	0.00	0.19	0.00	0.04	0.63	0.55	0.07	0.05	1.04	0.00
Avail Cap(c_a), veh/h	236	0	0	262	0	271	64	970	824	64	970	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.3	0.0	0.0	39.9	0.0	39.0	52.8	16.0	11.7	52.4	24.6	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	1.6	0.0	0.3	29.1	2.2	0.2	1.1	38.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	1.4	0.0	0.3	0.5	10.8	0.8	0.0	39.0	0.0
LnGrp Delay(d),s/veh	39.9	0.0	0.0	41.5	0.0	39.3	81.9	18.2	11.9	53.6	63.3	0.0
LnGrp LOS	D			D		D	F	B	B	D	F	
Approach Vol, veh/h		19			60			597			1006	
Approach Delay, s/veh		39.9			41.2			18.9			63.3	
Approach LOS		D			D			B			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	62.0		20.0	5.2	62.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	58.0		16.0	4.0	58.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	22.7		3.1	2.8	60.0		4.7
Green Ext Time (p_c), s	1.1	2.8		0.0	0.0	0.0		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		46.5
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	11	7	179	3	149	9	453	250	424	599	1
Future Volume (veh/h)	5	11	7	179	3	149	9	453	250	424	599	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	5	11	7	179	3	149	9	453	250	424	599	1
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	59	141	90	176	6	308	59	438	242	425	1105	2
Arrive On Green	0.03	0.13	0.13	0.10	0.20	0.20	0.03	0.39	0.39	0.24	0.60	0.60
Sat Flow, veh/h	1757	1055	671	1757	31	1542	1757	1118	617	1757	1841	3
Grp Volume(v), veh/h	5	0	18	179	0	152	9	0	703	424	0	600
Grp Sat Flow(s),veh/h/ln	1757	0	1726	1757	0	1573	1757	0	1736	1757	0	1844
Q Serve(g_s), s	0.3	0.0	1.1	12.0	0.0	10.3	0.6	0.0	47.0	28.9	0.0	23.1
Cycle Q Clear(g_c), s	0.3	0.0	1.1	12.0	0.0	10.3	0.6	0.0	47.0	28.9	0.0	23.1
Prop In Lane	1.00		0.39	1.00		0.98	1.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	59	0	230	176	0	315	59	0	680	425	0	1106
V/C Ratio(X)	0.09	0.00	0.08	1.02	0.00	0.48	0.15	0.00	1.03	1.00	0.00	0.54
Avail Cap(c_a), veh/h	59	0	230	176	0	315	59	0	680	425	0	1106
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.2	0.0	45.5	54.0	0.0	42.5	56.4	0.0	36.5	45.5	0.0	14.2
Incr Delay (d2), s/veh	2.8	0.0	0.7	72.9	0.0	5.2	5.5	0.0	43.6	43.4	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.6	9.4	0.0	4.9	0.4	0.0	30.7	19.1	0.0	12.3
LnGrp Delay(d),s/veh	59.1	0.0	46.2	127.1	0.0	47.7	61.9	0.0	80.1	88.8	0.0	16.1
LnGrp LOS	E		D	F		D	E		F	F		B
Approach Vol, veh/h		23			331			712			1024	
Approach Delay, s/veh		49.0			90.7			79.9			46.2	
Approach LOS		D			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	51.0	16.0	20.0	8.0	76.0	8.0	28.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	29.0	47.0	12.0	16.0	4.0	72.0	4.0	24.0
Max Q Clear Time (g_c+I1), s	30.9	49.0	14.0	3.1	2.6	25.1	2.3	12.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	8.1	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	64.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	12	14	1	6	4	10	370	0	3	563	286
Future Volume (veh/h)	266	12	14	1	6	4	10	370	0	3	563	286
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	266	12	14	1	6	4	10	370	0	3	563	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	359	16	334	33	201	134	94	566	0	94	566	481
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.05	0.31	0.00	0.05	0.31	0.00
Sat Flow, veh/h	1684	76	1568	157	941	628	1757	1845	0	1757	1845	1568
Grp Volume(v), veh/h	278	0	14	11	0	0	10	370	0	3	563	0
Grp Sat Flow(s),veh/h/ln	1760	0	1568	1726	0	0	1757	1845	0	1757	1845	1568
Q Serve(g_s), s	11.1	0.0	0.5	0.4	0.0	0.0	0.4	13.0	0.0	0.1	22.8	0.0
Cycle Q Clear(g_c), s	11.1	0.0	0.5	0.4	0.0	0.0	0.4	13.0	0.0	0.1	22.8	0.0
Prop In Lane	0.96		1.00	0.09		0.36	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	376	0	334	368	0	0	94	566	0	94	566	481
V/C Ratio(X)	0.74	0.00	0.04	0.03	0.00	0.00	0.11	0.65	0.00	0.03	1.00	0.00
Avail Cap(c_a), veh/h	376	0	334	368	0	0	94	566	0	94	566	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.6	0.0	23.4	23.4	0.0	0.0	33.8	22.5	0.0	33.7	25.9	0.0
Incr Delay (d2), s/veh	12.4	0.0	0.2	0.2	0.0	0.0	2.3	5.8	0.0	0.6	36.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	0.3	0.2	0.0	0.0	0.3	7.5	0.0	0.1	17.3	0.0
LnGrp Delay(d),s/veh	39.9	0.0	23.7	23.5	0.0	0.0	36.1	28.3	0.0	34.3	62.6	0.0
LnGrp LOS	D		C	C			D	C		C	E	
Approach Vol, veh/h		292			11			380			566	
Approach Delay, s/veh		39.1			23.5			28.6			62.5	
Approach LOS		D			C			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	27.0		20.0	8.0	27.0		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0	4.0	23.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	15.0		13.1	2.4	24.8		2.4
Green Ext Time (p_c), s	0.0	2.8		0.3	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.4
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	98	51	43	55	7	16	58	11	12	211	19
Future Vol, veh/h	32	98	51	43	55	7	16	58	11	12	211	19
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	32	98	51	43	55	7	16	58	11	12	211	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	8.9	8.6	10
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	18%	41%	5%
Vol Thru, %	68%	54%	52%	87%
Vol Right, %	13%	28%	7%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	181	105	242
LT Vol	16	32	43	12
Through Vol	58	98	55	211
RT Vol	11	51	7	19
Lane Flow Rate	85	181	105	242
Geometry Grp	1	1	1	1
Degree of Util (X)	0.116	0.238	0.146	0.317
Departure Headway (Hd)	4.906	4.74	5.009	4.713
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	726	753	712	760
Service Time	2.967	2.794	3.069	2.762
HCM Lane V/C Ratio	0.117	0.24	0.147	0.318
HCM Control Delay	8.6	9.3	8.9	10
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.9	0.5	1.4

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	178	11	26	217	34	13	33	8	62	210	29
Future Vol, veh/h	18	178	11	26	217	34	13	33	8	62	210	29
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	18	178	11	26	217	34	13	33	8	62	210	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	11.7	9.3	12.6
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	9%	9%	21%
Vol Thru, %	61%	86%	78%	70%
Vol Right, %	15%	5%	12%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	207	277	301
LT Vol	13	18	26	62
Through Vol	33	178	217	210
RT Vol	8	11	34	29
Lane Flow Rate	54	207	277	301
Geometry Grp	1	1	1	1
Degree of Util (X)	0.086	0.308	0.401	0.445
Departure Headway (Hd)	5.732	5.359	5.217	5.318
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	624	671	690	677
Service Time	3.776	3.393	3.25	3.348
HCM Lane V/C Ratio	0.087	0.308	0.401	0.445
HCM Control Delay	9.3	10.8	11.7	12.6
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.3	1.3	1.9	2.3

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	222	9	4	283	11	10	6	1	87	4	151
Future Vol, veh/h	37	222	9	4	283	11	10	6	1	87	4	151
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	3	3	3	3	3	3
Mvmt Flow	37	222	9	4	283	11	10	6	1	87	4	151
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.1	11.5	9.1	10.7
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	59%	14%	1%	36%
Vol Thru, %	35%	83%	95%	2%
Vol Right, %	6%	3%	4%	62%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	17	268	298	242
LT Vol	10	37	4	87
Through Vol	6	222	283	4
RT Vol	1	9	11	151
Lane Flow Rate	17	268	298	242
Geometry Grp	1	1	1	1
Degree of Util (X)	0.028	0.373	0.409	0.337
Departure Headway (Hd)	5.908	5.004	4.943	5.016
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	610	710	721	709
Service Time	3.908	3.095	3.031	3.109
HCM Lane V/C Ratio	0.028	0.377	0.413	0.341
HCM Control Delay	9.1	11.1	11.5	10.7
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.1	1.7	2	1.5

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	76	21	126	126	8	14	73	36	1	343	34
Future Vol, veh/h	9	76	21	126	126	8	14	73	36	1	343	34
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	6	6	6	8	8	8	3	3	3	3	3	3
Mvmt Flow	9	76	21	126	126	8	14	73	36	1	343	34
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.9	12.5	9.8	14.2
HCM LOS	A	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	8%	48%	0%
Vol Thru, %	59%	72%	48%	91%
Vol Right, %	29%	20%	3%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	106	260	378
LT Vol	14	9	126	1
Through Vol	73	76	126	343
RT Vol	36	21	8	34
Lane Flow Rate	123	106	260	378
Geometry Grp	1	1	1	1
Degree of Util (X)	0.186	0.168	0.408	0.542
Departure Headway (Hd)	5.455	5.719	5.646	5.159
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	657	626	637	699
Service Time	3.501	3.766	3.684	3.193
HCM Lane V/C Ratio	0.187	0.169	0.408	0.541
HCM Control Delay	9.8	9.9	12.5	14.2
HCM Lane LOS	A	A	B	B
HCM 95th-tile Q	0.7	0.6	2	3.3

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	3	23	0	1	1	13	78	1	1	302	171
Future Vol, veh/h	40	3	23	0	1	1	13	78	1	1	302	171
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	40	3	23	0	1	1	13	78	1	1	302	171
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	8	8.2	11.5
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	61%	0%	0%
Vol Thru, %	85%	5%	50%	64%
Vol Right, %	1%	35%	50%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	92	66	2	474
LT Vol	13	40	0	1
Through Vol	78	3	1	302
RT Vol	1	23	1	171
Lane Flow Rate	92	66	2	474
Geometry Grp	1	1	1	1
Degree of Util (X)	0.118	0.093	0.003	0.53
Departure Headway (Hd)	4.602	5.062	4.947	4.026
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	780	708	722	901
Service Time	2.625	3.093	2.984	2.026
HCM Lane V/C Ratio	0.118	0.093	0.003	0.526
HCM Control Delay	8.2	8.6	8	11.5
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0.4	0.3	0	3.2

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	383	0	70	0	40	131	171	205	0
Future Vol, veh/h	0	0	0	383	0	70	0	40	131	171	205	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	383	0	70	0	40	131	171	205	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	0	19.9	10.6	12.3
HCM LOS	-	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	85%	100%	0%
Vol Thru, %	23%	100%	0%	0%	100%
Vol Right, %	77%	0%	15%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	171	0	453	171	205
LT Vol	0	0	383	171	0
Through Vol	40	0	0	0	205
RT Vol	131	0	70	0	0
Lane Flow Rate	171	0	453	171	205
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.263	0	0.69	0.316	0.35
Departure Headway (Hd)	5.536	6.307	5.483	6.661	6.153
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	648	0	661	540	584
Service Time	3.581	4.369	3.515	4.403	3.894
HCM Lane V/C Ratio	0.264	0	0.685	0.317	0.351
HCM Control Delay	10.6	9.4	19.9	12.5	12.2
HCM Lane LOS	B	N	C	B	B
HCM 95th-tile Q	1.1	0	5.5	1.3	1.6

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	92	50	19	262	352	97
Future Vol, veh/h	92	50	19	262	352	97
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	8	8	6	6	5	5
Mvmt Flow	92	50	19	262	352	97
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	10.3	11	13.7
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	7%	65%	0%
Vol Thru, %	93%	0%	78%
Vol Right, %	0%	35%	22%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	281	142	449
LT Vol	19	92	0
Through Vol	262	0	352
RT Vol	0	50	97
Lane Flow Rate	281	142	449
Geometry Grp	1	1	1
Degree of Util (X)	0.383	0.22	0.572
Departure Headway (Hd)	4.912	5.578	4.586
Convergence, Y/N	Yes	Yes	Yes
Cap	728	638	781
Service Time	2.98	3.671	2.644
HCM Lane V/C Ratio	0.386	0.223	0.575
HCM Control Delay	11	10.3	13.7
HCM Lane LOS	B	B	B
HCM 95th-tile Q	1.8	0.8	3.7

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	20	0	18	1	262	2	51	326	0
Future Vol, veh/h	0	0	0	20	0	18	1	262	2	51	326	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	20	20	20	5	5	5	6	6	6
Mvmt Flow	0	0	0	20	0	18	1	262	2	51	326	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	8.8	9.7	11.2
HCM LOS	-	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	53%	14%
Vol Thru, %	99%	100%	0%	86%
Vol Right, %	1%	0%	47%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	0	38	377
LT Vol	1	0	20	51
Through Vol	262	0	0	326
RT Vol	2	0	18	0
Lane Flow Rate	265	0	38	377
Geometry Grp	1	1	1	1
Degree of Util (X)	0.329	0	0.058	0.462
Departure Headway (Hd)	4.473	5.43	5.467	4.409
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	806	0	655	818
Service Time	2.492	3.474	3.504	2.426
HCM Lane V/C Ratio	0.329	0	0.058	0.461
HCM Control Delay	9.7	8.5	8.8	11.2
HCM Lane LOS	A	N	A	B
HCM 95th-tile Q	1.4	0	0.2	2.5

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	138	68	17	213	15	46	77	14	18	244	87
Future Vol, veh/h	36	138	68	17	213	15	46	77	14	18	244	87
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	3	3	3
Mvmt Flow	36	138	68	17	213	15	46	77	14	18	244	87
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.2	12.5	10.9	14.6
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	34%	15%	7%	5%
Vol Thru, %	56%	57%	87%	70%
Vol Right, %	10%	28%	6%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	242	245	349
LT Vol	46	36	17	18
Through Vol	77	138	213	244
RT Vol	14	68	15	87
Lane Flow Rate	137	242	245	349
Geometry Grp	1	1	1	1
Degree of Util (X)	0.228	0.381	0.392	0.529
Departure Headway (Hd)	6.003	5.663	5.765	5.461
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	595	632	620	656
Service Time	4.082	3.73	3.834	3.522
HCM Lane V/C Ratio	0.23	0.383	0.395	0.532
HCM Control Delay	10.9	12.2	12.5	14.6
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	0.9	1.8	1.9	3.1

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	54	106	752	82	176	248
Future Vol, veh/h	54	106	752	82	176	248
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	54	106	752	82	176	248

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1269	417	0	0	834	0
Stage 1	793	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	157	579	-	-	789	-
Stage 1	401	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	122	579	-	-	789	-
Mov Cap-2 Maneuver	250	-	-	-	-	-
Stage 1	401	-	-	-	-	-
Stage 2	455	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	4.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	250	579	789	-
HCM Lane V/C Ratio	-	-	0.216	0.183	0.223	-
HCM Control Delay (s)	-	-	23.3	12.6	10.9	-
HCM Lane LOS	-	-	C	B	B	-
HCM 95th %tile Q(veh)	-	-	0.8	0.7	0.9	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	526	0	0	979
Future Vol, veh/h	0	0	526	0	0	979
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	0	0	526	0	0	979

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1505	526	0	0	526	0
Stage 1	526	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.14	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.236	-
Pot Cap-1 Maneuver	133	550	-	-	1031	-
Stage 1	591	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	133	550	-	-	1031	-
Mov Cap-2 Maneuver	133	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	363	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1031	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	794	452	25	14	30
Future Vol, veh/h	83	794	452	25	14	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	83	794	452	25	14	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	477	0	-	0	1425	465
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	960	-
Critical Hdwy	4.16	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.254	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1065	-	-	-	149	595
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	370	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1065	-	-	-	137	595
Mov Cap-2 Maneuver	-	-	-	-	137	-
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	341	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	19.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1065	-	-	-	288
HCM Lane V/C Ratio	0.078	-	-	-	0.153
HCM Control Delay (s)	8.7	-	-	-	19.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	2	0	2	0	51	6	1	240	4
Future Vol, veh/h	2	0	1	2	0	2	0	51	6	1	240	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	0	1	2	0	2	0	51	6	1	240	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	299	301	242	299	300	54	244	0	0	57	0	0
Stage 1	244	244	-	54	54	-	-	-	-	-	-	-
Stage 2	55	57	-	245	246	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	651	610	794	651	611	1010	1316	-	-	1541	-	-
Stage 1	757	702	-	956	848	-	-	-	-	-	-	-
Stage 2	955	845	-	756	701	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	649	609	794	650	610	1010	1316	-	-	1541	-	-
Mov Cap-2 Maneuver	649	609	-	650	610	-	-	-	-	-	-	-
Stage 1	757	701	-	956	848	-	-	-	-	-	-	-
Stage 2	953	845	-	754	700	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.6	0	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1316	-	-	691	791	1541	-	-
HCM Lane V/C Ratio	-	-	-	0.004	0.005	0.001	-	-
HCM Control Delay (s)	0	-	-	10.2	9.6	7.3	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	672	2	69	465	1	4	0	96	2	4	4
Future Vol, veh/h	4	672	2	69	465	1	4	0	96	2	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	90	200	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	6	6	3	3	3	3	3	3
Mvmt Flow	4	672	2	69	465	1	4	0	96	2	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	466	0	0	672	0	0	1288	1284	672	1284	1284	466
Stage 1	-	-	-	-	-	-	680	680	-	604	604	-
Stage 2	-	-	-	-	-	-	608	604	-	680	680	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1075	-	-	900	-	-	140	164	454	141	164	595
Stage 1	-	-	-	-	-	-	439	449	-	484	486	-
Stage 2	-	-	-	-	-	-	481	486	-	439	449	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1075	-	-	900	-	-	128	151	454	104	151	595
Mov Cap-2 Maneuver	-	-	-	-	-	-	128	151	-	104	151	-
Stage 1	-	-	-	-	-	-	437	447	-	482	449	-
Stage 2	-	-	-	-	-	-	437	449	-	345	447	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.2	15.8	24.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	128	454	1075	-	-	900	-	-	191
HCM Lane V/C Ratio	0.031	0.211	0.004	-	-	0.077	-	-	0.052
HCM Control Delay (s)	34	15	8.4	-	-	9.3	-	-	24.9
HCM Lane LOS	D	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.8	0	-	-	0.2	-	-	0.2

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	94	1	3	3	2	72
Future Vol, veh/h	94	1	3	3	2	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	94	1	3	3	2	72

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	47	38	74	0	-	0
Stage 1	38	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	960	1031	1519	-	-	-
Stage 1	982	-	-	-	-	-
Stage 2	1011	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	958	1031	1519	-	-	-
Mov Cap-2 Maneuver	958	-	-	-	-	-
Stage 1	982	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	3.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1519	-	959	-	-
HCM Lane V/C Ratio	0.002	-	0.099	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	248	0	0	182	1	6	0	1	1	0	2
Future Vol, veh/h	2	248	0	0	182	1	6	0	1	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	248	0	0	182	1	6	0	1	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	183	0	0	248	0	0	436	435	248	436	435	183
Stage 1	-	-	-	-	-	-	252	252	-	183	183	-
Stage 2	-	-	-	-	-	-	184	183	-	253	252	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1386	-	-	1312	-	-	529	513	788	529	513	857
Stage 1	-	-	-	-	-	-	750	697	-	816	746	-
Stage 2	-	-	-	-	-	-	815	746	-	749	697	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1386	-	-	1312	-	-	527	512	788	528	512	857
Mov Cap-2 Maneuver	-	-	-	-	-	-	527	512	-	528	512	-
Stage 1	-	-	-	-	-	-	749	696	-	814	746	-
Stage 2	-	-	-	-	-	-	813	746	-	747	696	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	11.6	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	553	1386	-	-	1312	-	-	710
HCM Lane V/C Ratio	0.013	0.001	-	-	-	-	-	0.004
HCM Control Delay (s)	11.6	7.6	0	-	0	-	-	10.1
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	81	0	0	0	0	173
Future Vol, veh/h	81	0	0	0	0	173
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	81	0	0	0	0	173

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	87	87	173	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	912	969	1398	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	912	969	1398	-	-	-
Mov Cap-2 Maneuver	912	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1398	-	912	-	-
HCM Lane V/C Ratio	-	-	0.089	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	494	13	358	669	13	228
Future Vol, veh/h	494	13	358	669	13	228
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	300	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	494	13	358	669	13	228

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	494	0	1879	494
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	1385	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1064	-	78	573
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	231	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1064	-	52	573
Mov Cap-2 Maneuver	-	-	-	-	52	-
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	153	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	19.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	52	573	-	-	1064	-
HCM Lane V/C Ratio	0.25	0.398	-	-	0.336	-
HCM Control Delay (s)	95.9	15.4	-	-	10.1	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	0.9	1.9	-	-	1.5	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	122	0	0	309
Future Vol, veh/h	0	0	122	0	0	309
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	122	0	0	309

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	431	122	0	0	122	0
Stage 1	122	-	-	-	-	-
Stage 2	309	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	579	926	-	-	1459	-
Stage 1	901	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	579	926	-	-	1459	-
Mov Cap-2 Maneuver	579	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	742	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1459	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	72	35	15	77	342	55
Future Vol, veh/h	72	35	15	77	342	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	-	-	90
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	72	35	15	77	342	55

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	449	342	342	0	-	0
Stage 1	342	-	-	-	-	-
Stage 2	107	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	566	698	1211	-	-	0
Stage 1	717	-	-	-	-	0
Stage 2	915	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	559	698	1211	-	-	-
Mov Cap-2 Maneuver	559	-	-	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	903	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1211	-	598	-
HCM Lane V/C Ratio	0.012	-	0.179	-
HCM Control Delay (s)	8	0	12.3	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0	-	0.6	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	573	3	16	272	1	3	4	0	0	89	61
Future Vol, veh/h	11	573	3	16	272	1	3	4	0	0	89	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	355	-	-	350	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	6	6	8	8	8	8	8	8
Mvmt Flow	11	573	3	16	272	1	3	4	0	0	89	61

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	273	0	0	576	0	0	977	902	575	904	903	273
Stage 1	-	-	-	-	-	-	597	597	-	305	305	-
Stage 2	-	-	-	-	-	-	380	305	-	599	598	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1267	-	-	978	-	-	224	271	506	252	271	752
Stage 1	-	-	-	-	-	-	479	482	-	692	652	-
Stage 2	-	-	-	-	-	-	630	652	-	478	481	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1267	-	-	978	-	-	149	264	506	244	264	752
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	264	-	244	264	-
Stage 1	-	-	-	-	-	-	475	478	-	686	641	-
Stage 2	-	-	-	-	-	-	490	641	-	470	477	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	23.8	22
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	198	1267	-	-	978	-	-	359
HCM Lane V/C Ratio	0.035	0.009	-	-	0.016	-	-	0.418
HCM Control Delay (s)	23.8	7.9	-	-	8.7	-	-	22
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	2

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	5	119	7	1	197	1	8	2	0	0	22	67
Future Vol, veh/h	5	119	7	1	197	1	8	2	0	0	22	67
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	5	119	7	1	197	1	8	2	0	0	22	67

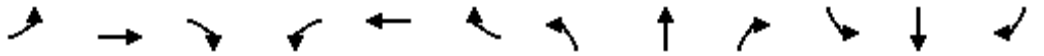
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	198	0	0	126	0	0	377	333	123	334	336	198
Stage 1	-	-	-	-	-	-	133	133	-	200	200	-
Stage 2	-	-	-	-	-	-	244	200	-	134	136	-
Critical Hdwy	4.18	-	-	4.2	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.29	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1339	-	-	1412	-	-	570	577	912	608	575	828
Stage 1	-	-	-	-	-	-	856	775	-	788	725	-
Stage 2	-	-	-	-	-	-	746	725	-	855	773	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1339	-	-	1412	-	-	507	574	912	604	572	828
Mov Cap-2 Maneuver	-	-	-	-	-	-	507	574	-	604	572	-
Stage 1	-	-	-	-	-	-	853	772	-	785	724	-
Stage 2	-	-	-	-	-	-	664	724	-	849	770	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	12.1	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	519	1339	-	-	1412	-	-	746
HCM Lane V/C Ratio	0.019	0.004	-	-	0.001	-	-	0.119
HCM Control Delay (s)	12.1	7.7	0	-	7.6	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

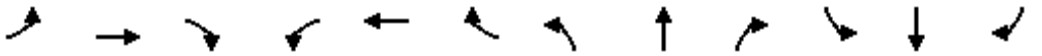
Existing Plus Jackson Township

Alternative 2 AM



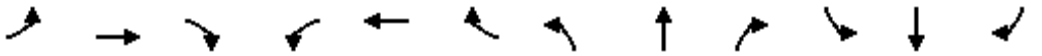
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	636	0	1060	0	0	0	0	1404	566	0	1120	383
Future Volume (vph)	636	0	1060	0	0	0	0	1404	566	0	1120	383
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	636	0	1060	0	0	0	0	1404	566	0	1120	383
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	636	0	1041	0	0	0	0	1404	566	0	1120	383
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	19.6		19.6					16.5	44.1		16.5	44.1
Effective Green, g (s)	19.6		19.6					16.5	44.1		16.5	44.1
Actuated g/C Ratio	0.44		0.44					0.37	1.00		0.37	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1496		1214					1866	1553		1866	1553
v/s Ratio Prot								c0.28			0.22	
v/s Ratio Perm	0.19		c0.38						0.36			0.25
v/c Ratio	0.43		0.86					0.75	0.36		0.60	0.25
Uniform Delay, d1	8.4		11.0					12.0	0.0		11.1	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2		6.2					1.8	0.7		0.5	0.4
Delay (s)	8.6		17.2					13.8	0.7		11.7	0.4
Level of Service	A		B					B	A		B	A
Approach Delay (s)		14.0			0.0			10.0			8.8	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	44.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



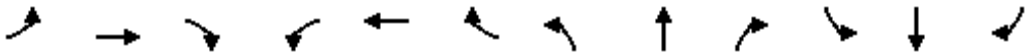
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	283	65	235	812	688	321	1146	175	728	1458	99
Future Volume (vph)	134	283	65	235	812	688	321	1146	175	728	1458	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3374		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3374		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	134	283	65	235	812	688	321	1146	175	728	1458	99
RTOR Reduction (vph)	0	26	0	0	0	507	0	0	131	0	0	63
Lane Group Flow (vph)	134	322	0	235	812	181	321	1146	44	728	1458	36
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	4.0	12.7		12.3	21.0	21.0	9.9	20.0	20.0	18.8	28.9	28.9
Effective Green, g (s)	4.0	12.7		12.3	21.0	21.0	9.9	20.0	20.0	18.8	28.9	28.9
Actuated g/C Ratio	0.05	0.16		0.15	0.26	0.26	0.12	0.25	0.25	0.24	0.36	0.36
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	168	536		518	913	719	417	1250	389	793	1806	562
v/s Ratio Prot	0.04	c0.10		0.07	c0.23		0.10	c0.23		c0.22	0.29	
v/s Ratio Perm						0.07			0.03			0.02
v/c Ratio	0.80	0.60		0.45	0.89	0.25	0.77	0.92	0.11	0.92	0.81	0.06
Uniform Delay, d1	37.5	31.2		30.7	28.3	23.2	33.8	29.1	23.1	29.7	22.9	16.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.5	1.9		0.6	10.6	0.2	8.3	10.6	0.1	15.4	2.8	0.0
Delay (s)	60.0	33.1		31.3	38.8	23.4	42.2	39.7	23.2	45.1	25.7	16.7
Level of Service	E	C		C	D	C	D	D	C	D	C	B
Approach Delay (s)		40.6			31.7			38.4			31.5	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	460	373	5	1038	27	368	12	2	20	13	219
Future Volume (vph)	132	460	373	5	1038	27	368	12	2	20	13	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1627	1524		1790	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1627	1524		1790	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	132	460	373	5	1038	27	368	12	2	20	13	219
RTOR Reduction (vph)	0	0	110	0	0	16	0	0	2	0	0	175
Lane Group Flow (vph)	132	460	263	5	1038	11	191	189	0	0	33	44
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.3	44.1	60.2	0.7	34.5	34.5	16.1	16.1	16.1		8.4	8.4
Effective Green, g (s)	10.3	44.1	60.2	0.7	34.5	34.5	16.1	16.1	16.1		8.4	8.4
Actuated g/C Ratio	0.12	0.52	0.71	0.01	0.40	0.40	0.19	0.19	0.19		0.10	0.10
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	209	1794	1168	14	1403	628	305	307	287		176	154
v/s Ratio Prot	c0.08	0.13	0.04	0.00	c0.30		c0.12	0.12			0.02	
v/s Ratio Perm			0.13			0.01			0.00			c0.03
v/c Ratio	0.63	0.26	0.23	0.36	0.74	0.02	0.63	0.62	0.00		0.19	0.29
Uniform Delay, d1	35.7	11.5	4.4	42.1	21.6	15.2	31.8	31.8	28.1		35.3	35.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.1	0.1	0.1	14.9	2.1	0.0	4.0	3.6	0.0		0.5	1.0
Delay (s)	41.8	11.5	4.5	57.0	23.7	15.2	35.8	35.4	28.1		35.8	36.7
Level of Service	D	B	A	E	C	B	D	D	C		D	D
Approach Delay (s)		13.0			23.6			35.6			36.6	
Approach LOS		B			C			D			D	

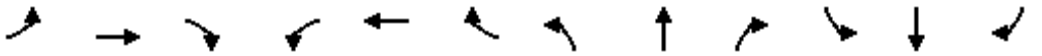
Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	85.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	219	194	213	473	59	627	57	344	91	114	34
Future Volume (vph)	26	219	194	213	473	59	627	57	344	91	114	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.98	
Satd. Flow (prot)	1752	3505	1568	1752	3447		1665	1682	1568		3366	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.98	
Satd. Flow (perm)	1752	3505	1568	1752	3447		1665	1682	1568		3366	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	26	219	194	213	473	59	627	57	344	91	114	34
RTOR Reduction (vph)	0	0	155	0	11	0	0	0	252	0	18	0
Lane Group Flow (vph)	26	219	39	213	521	0	339	345	92	0	221	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	1.8	13.1	13.1	9.1	20.4		17.3	17.3	17.3		9.5	
Effective Green, g (s)	1.8	13.1	13.1	9.1	20.4		17.3	17.3	17.3		9.5	
Actuated g/C Ratio	0.03	0.20	0.20	0.14	0.31		0.27	0.27	0.27		0.15	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	48	706	316	245	1081		443	447	417		491	
v/s Ratio Prot	0.01	0.06		c0.12	c0.15		0.20	c0.21			c0.07	
v/s Ratio Perm			0.02						0.06			
v/c Ratio	0.54	0.31	0.12	0.87	0.48		0.77	0.77	0.22		0.45	
Uniform Delay, d1	31.2	22.1	21.2	27.4	18.0		22.0	22.0	18.6		25.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	11.9	0.3	0.2	26.2	0.3		7.7	8.1	0.3		0.7	
Delay (s)	43.1	22.4	21.4	53.6	18.4		29.7	30.1	18.9		26.0	
Level of Service	D	C	C	D	B		C	C	B		C	
Approach Delay (s)		23.2			28.4			26.2			26.0	
Approach LOS		C			C			C			C	

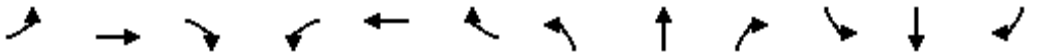
Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



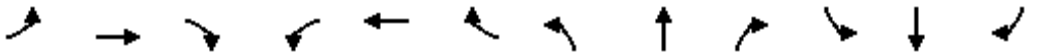
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	300	273	241	699	19	492	48	148	28	144	39
Future Volume (vph)	21	300	273	241	699	19	492	48	148	28	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3078		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3078		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	300	273	241	699	19	492	48	148	28	144	39
RTOR Reduction (vph)	0	0	190	0	0	12	0	116	0	0	0	35
Lane Group Flow (vph)	21	300	83	241	699	7	492	80	0	28	144	4
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	1.2	20.3	20.3	6.7	25.7	25.7	14.2	14.2		6.4	6.4	6.4
Effective Green, g (s)	1.2	20.3	20.3	6.7	25.7	25.7	14.2	14.2		6.4	6.4	6.4
Actuated g/C Ratio	0.02	0.31	0.31	0.10	0.39	0.39	0.21	0.21		0.10	0.10	0.10
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.1	4.1	2.0	2.0		1.0	1.0	1.0
Lane Grp Cap (vph)	31	1071	479	343	1356	606	720	658		168	337	151
v/s Ratio Prot	0.01	0.09		c0.07	c0.20		c0.15	0.03		0.02	c0.04	
v/s Ratio Perm			0.05			0.00						0.00
v/c Ratio	0.68	0.28	0.17	0.70	0.52	0.01	0.68	0.12		0.17	0.43	0.02
Uniform Delay, d1	32.4	17.5	16.9	28.9	15.6	12.5	24.0	21.1		27.6	28.3	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	37.4	0.3	0.4	5.2	0.5	0.0	2.1	0.0		0.2	0.3	0.0
Delay (s)	69.8	17.8	17.3	34.1	16.0	12.5	26.2	21.1		27.7	28.6	27.2
Level of Service	E	B	B	C	B	B	C	C		C	C	C
Approach Delay (s)		19.4			20.5			24.7			28.2	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	22.9
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	781	0	523	0	932	881	0	378	329
Future Volume (vph)	0	0	0	781	0	523	0	932	881	0	378	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.6		4.6		3.5	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3367		2733		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3367		2733		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	781	0	523	0	932	881	0	378	329
RTOR Reduction (vph)	0	0	0	0	0	106	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	781	0	417	0	932	881	0	378	329
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				4				6			2	
Permitted Phases						4			Free			Free
Actuated Green, G (s)				10.5		10.5		9.4	28.0		7.8	28.0
Effective Green, g (s)				10.5		10.5		9.4	28.0		7.8	28.0
Actuated g/C Ratio				0.38		0.38		0.34	1.00		0.28	1.00
Clearance Time (s)				4.6		4.6		3.5			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1262		1024		1674	1553		1389	1553
v/s Ratio Prot				0.23				0.19			0.08	
v/s Ratio Perm						0.15			c0.57			0.21
v/c Ratio				0.62		0.41		0.56	0.57		0.27	0.21
Uniform Delay, d1				7.1		6.5		7.6	0.0		7.9	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.6		0.1		0.2	1.5		0.0	0.3
Delay (s)				7.8		6.6		7.8	1.5		7.9	0.3
Level of Service				A		A		A	A		A	A
Approach Delay (s)		0.0			7.3			4.8			4.4	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	5.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	28.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	522	0	1067	0	0	0	0	1291	709	0	948	207
Future Volume (vph)	522	0	1067	0	0	0	0	1291	709	0	948	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	522	0	1067	0	0	0	0	1291	709	0	948	207
RTOR Reduction (vph)	0	0	34	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	522	0	1033	0	0	0	0	1291	709	0	948	207
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	22.4		22.4					17.3	51.2		17.8	51.2
Effective Green, g (s)	22.4		22.4					17.3	51.2		17.8	51.2
Actuated g/C Ratio	0.44		0.44					0.34	1.00		0.35	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1473		1195					1685	1553		1734	1553
v/s Ratio Prot								c0.26			0.19	
v/s Ratio Perm	0.16		c0.38						0.46			0.13
v/c Ratio	0.35		0.86					0.77	0.46		0.55	0.13
Uniform Delay, d1	9.6		13.0					15.1	0.0		13.5	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1		6.5					1.9	1.0		0.2	0.2
Delay (s)	9.6		19.5					17.1	1.0		13.6	0.2
Level of Service	A		B					B	A		B	A
Approach Delay (s)		16.3			0.0			11.4			11.2	
Approach LOS		B			A			B			B	

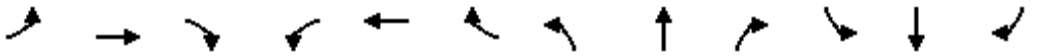
Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	11.5
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	250	644	4	279	57
Future Volume (vph)	0	250	644	4	279	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00
Frt		0.85	1.00	0.85	1.00	1.00
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1568	1845	1568	1752	1845
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1568	1845	1568	1752	1845
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	250	644	4	279	57
RTOR Reduction (vph)	0	230	0	2	0	0
Lane Group Flow (vph)	0	20	644	2	279	57
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)		4.1	22.4	22.4	12.1	38.5
Effective Green, g (s)		4.1	22.4	22.4	12.1	38.5
Actuated g/C Ratio		0.08	0.44	0.44	0.24	0.76
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		127	816	694	418	1403
v/s Ratio Prot			c0.35		c0.16	0.03
v/s Ratio Perm		c0.01		0.00		
v/c Ratio		0.16	0.79	0.00	0.67	0.04
Uniform Delay, d1		21.6	12.1	7.9	17.4	1.5
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.6	5.1	0.0	4.0	0.0
Delay (s)		22.2	17.2	7.9	21.4	1.5
Level of Service		C	B	A	C	A
Approach Delay (s)	22.2		17.1			18.1
Approach LOS	C		B			B

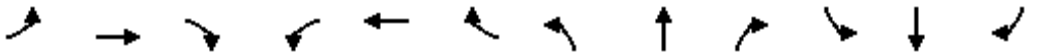
Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	50.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



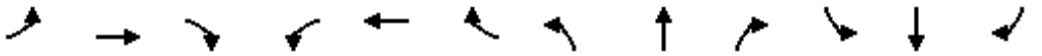
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	823	0	196	0	627	485	0	694	332
Future Volume (vph)	0	0	0	823	0	196	0	627	485	0	694	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.95	1.00		0.95	1.00
Frt				1.00	0.94			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.97			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1585			3471	1553		3471	1553
Flt Permitted				0.95	0.97			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1585			3471	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	823	0	196	0	627	485	0	694	332
RTOR Reduction (vph)	0	0	0	0	53	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	518	448	0	0	627	485	0	694	332
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Perm	NA			NA	Free		NA	Free
Protected Phases					8			2			6	
Permitted Phases				8					Free			Free
Actuated Green, G (s)				14.1	14.1			10.7	34.5		10.7	34.5
Effective Green, g (s)				14.1	14.1			10.7	34.5		10.7	34.5
Actuated g/C Ratio				0.41	0.41			0.31	1.00		0.31	1.00
Clearance Time (s)				4.9	4.9			4.8			4.8	
Vehicle Extension (s)				1.0	1.0			1.0			1.0	
Lane Grp Cap (vph)				673	647			1076	1553		1076	1553
v/s Ratio Prot								0.18			c0.20	
v/s Ratio Perm				c0.31	0.28				0.31			0.21
v/c Ratio				0.77	0.69			0.58	0.31		0.64	0.21
Uniform Delay, d1				8.8	8.4			10.0	0.0		10.3	0.0
Progression Factor				1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2				4.8	2.6			0.5	0.5		1.0	0.3
Delay (s)				13.6	11.0			10.5	0.5		11.3	0.3
Level of Service				B	B			B	A		B	A
Approach Delay (s)		0.0			12.3			6.2			7.7	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	34.5	Sum of lost time (s)	9.7
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



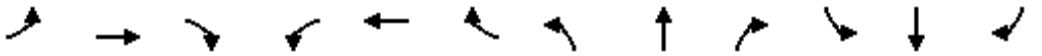
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	0	1009	0	0	0	0	931	297	0	1265	204
Future Volume (vph)	232	0	1009	0	0	0	0	931	297	0	1265	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.95	1.00
Frt	1.00	0.86	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1421	1475					4988	1553		3471	1553
Flt Permitted	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1421	1475					4988	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	232	0	1009	0	0	0	0	931	297	0	1265	204
RTOR Reduction (vph)	0	21	21	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	209	496	494	0	0	0	0	931	297	0	1265	204
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA	Perm					NA	Free		NA	Free
Protected Phases		4						2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	20.9	20.9	20.9					22.2	53.1		22.3	53.1
Effective Green, g (s)	20.9	20.9	20.9					22.2	53.1		22.3	53.1
Actuated g/C Ratio	0.39	0.39	0.39					0.42	1.00		0.42	1.00
Clearance Time (s)	5.1	5.1	5.1					4.9			4.8	
Vehicle Extension (s)	1.0	1.0	1.0					1.0			1.0	
Lane Grp Cap (vph)	649	559	580					2085	1553		1457	1553
v/s Ratio Prot								0.19			c0.36	
v/s Ratio Perm	0.13	0.35	0.33						0.19			0.13
v/c Ratio	0.32	0.89	0.85					0.45	0.19		0.87	0.13
Uniform Delay, d1	11.2	15.0	14.7					11.1	0.0		14.1	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	15.2	11.1					0.1	0.3		5.6	0.2
Delay (s)	11.3	30.2	25.8					11.1	0.3		19.6	0.2
Level of Service	B	C	C					B	A		B	A
Approach Delay (s)		25.2			0.0			8.5			16.9	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



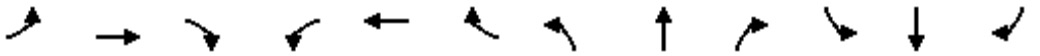
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	954	0	161	0	864	700	0	762	286
Future Volume (vph)	0	0	0	954	0	161	0	864	700	0	762	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.95	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		3505	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	954	0	161	0	864	700	0	762	286
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	954	0	132	0	864	700	0	762	286
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				14.1		14.1		12.1	37.6		12.1	37.6
Effective Green, g (s)				14.1		14.1		12.1	37.6		12.1	37.6
Actuated g/C Ratio				0.37		0.37		0.32	1.00		0.32	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1275		588		1620	1568		1127	1568
v/s Ratio Prot								0.17			c0.22	
v/s Ratio Perm				c0.28		0.08			0.45			0.18
v/c Ratio				0.75		0.22		0.53	0.45		0.68	0.18
Uniform Delay, d1				10.2		8.0		10.4	0.0		11.1	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				2.1		0.1		0.2	0.9		1.3	0.3
Delay (s)				12.3		8.1		10.6	0.9		12.3	0.3
Level of Service				B		A		B	A		B	A
Approach Delay (s)		0.0			11.7			6.3			9.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	37.6	Sum of lost time (s)	11.4
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



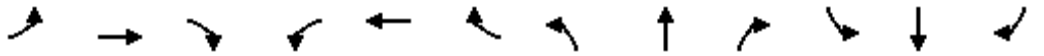
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	348	939	1242	0	0	198	0	1695	9	0	1552	175
Future Volume (vph)	348	939	1242	0	0	198	0	1695	9	0	1552	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		0.86			0.95	1.00
Frt	1.00	0.95	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	2998	1427			2733		6341			3505	1568
Flt Permitted	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (perm)	1595	2998	1427			2733		6341			3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	348	939	1242	0	0	198	0	1695	9	0	1552	175
RTOR Reduction (vph)	0	4	32	0	0	189	0	1	0	0	0	69
Lane Group Flow (vph)	313	1516	664	0	0	9	0	1703	0	0	1552	106
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA			NA	custom
Protected Phases	4	4				1		2			6	
Permitted Phases			4									2
Actuated Green, G (s)	43.0	43.0	43.0			4.0		31.0			39.0	31.0
Effective Green, g (s)	43.0	43.0	43.0			4.0		31.0			39.0	31.0
Actuated g/C Ratio	0.48	0.48	0.48			0.04		0.34			0.43	0.34
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	762	1432	681			121		2184			1518	540
v/s Ratio Prot	0.20	c0.51				0.00		0.27			c0.44	
v/s Ratio Perm			0.47									0.07
v/c Ratio	0.41	1.06	0.98			0.07		0.78			1.02	0.20
Uniform Delay, d1	15.3	23.5	23.0			41.2		26.4			25.5	20.7
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	1.00
Incremental Delay, d2	0.4	41.0	28.1			0.3		1.8			28.9	0.2
Delay (s)	15.6	64.5	51.1			41.5		28.3			54.4	20.9
Level of Service	B	E	D			D		C			D	C
Approach Delay (s)		54.7			41.5			28.3			51.0	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



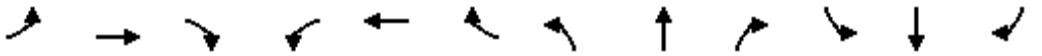
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	356	0	333	0	2036	264	0	1861	1798
Future Volume (vph)	0	0	0	356	0	333	0	2036	264	0	1861	1798
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	356	0	333	0	2036	264	0	1861	1798
RTOR Reduction (vph)	0	0	0	0	0	45	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	356	0	288	0	2036	264	0	1861	1798
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				6.8		6.8		18.5	33.6		18.2	33.6
Effective Green, g (s)				6.8		6.8		18.5	33.6		18.2	33.6
Actuated g/C Ratio				0.20		0.20		0.55	1.00		0.54	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				668		542		2746	1553		2701	1553
v/s Ratio Prot								0.41			0.37	
v/s Ratio Perm				0.11		0.11			0.17			c1.16
v/c Ratio				0.53		0.53		0.74	0.17		0.69	1.16
Uniform Delay, d1				12.0		12.0		5.7	0.0		5.6	16.8
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.4		0.5		1.0	0.2		0.6	78.7
Delay (s)				12.4		12.5		6.7	0.2		6.2	95.5
Level of Service				B		B		A	A		A	F
Approach Delay (s)		0.0			12.4			6.0			50.1	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.56		
Actuated Cycle Length (s)	33.6	Sum of lost time (s)	8.6
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



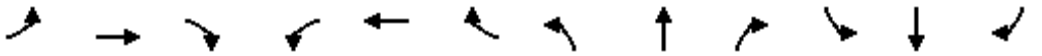
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1102	0	465	0	0	0	0	1206	493	0	2006	209
Future Volume (vph)	1102	0	465	0	0	0	0	1206	493	0	2006	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1102	0	465	0	0	0	0	1206	493	0	2006	209
RTOR Reduction (vph)	0	0	32	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1102	0	433	0	0	0	0	1206	493	0	2006	209
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	13.1		13.1					21.7	43.1		21.4	43.1
Effective Green, g (s)	13.1		13.1					21.7	43.1		21.4	43.1
Actuated g/C Ratio	0.30		0.30					0.50	1.00		0.50	1.00
Clearance Time (s)	3.5		3.5					4.8			5.1	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1487		830					3164	1553		2476	1553
v/s Ratio Prot								0.19			c0.40	
v/s Ratio Perm	c0.23		0.16						0.32			0.13
v/c Ratio	0.74		0.52					0.38	0.32		0.81	0.13
Uniform Delay, d1	13.5		12.4					6.6	0.0		9.1	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	1.8		0.3					0.0	0.5		2.0	0.2
Delay (s)	15.3		12.7					6.6	0.5		11.1	0.2
Level of Service	B		B					A	A		B	A
Approach Delay (s)		14.5			0.0			4.8			10.1	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	43.1	Sum of lost time (s)	8.6
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



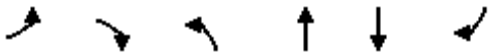
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	588	240	7	0	257	15	8	30	5	7	6	201
Future Volume (vph)	588	240	7	0	257	15	8	30	5	7	6	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Frt	1.00	1.00	0.85		0.99			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (prot)	1703	1792	1524		1795			1799			1779	1553
Flt Permitted	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (perm)	1703	1792	1524		1795			1799			1779	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	588	240	7	0	257	15	8	30	5	7	6	201
RTOR Reduction (vph)	0	0	2	0	2	0	0	4	0	0	0	105
Lane Group Flow (vph)	588	240	5	0	270	0	0	39	0	0	13	96
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	36.4	55.3	55.3		14.3			2.5			0.9	37.3
Effective Green, g (s)	36.4	55.3	55.3		14.3			2.5			0.9	37.3
Actuated g/C Ratio	0.47	0.71	0.71		0.18			0.03			0.01	0.48
Clearance Time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0		1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	795	1272	1081		329			57			20	743
v/s Ratio Prot	c0.35	0.13			c0.15			c0.02			c0.01	0.06
v/s Ratio Perm			0.00									0.00
v/c Ratio	0.74	0.19	0.00		0.82			0.69			0.65	0.13
Uniform Delay, d1	16.9	3.8	3.3		30.6			37.3			38.3	11.3
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	3.1	0.0	0.0		14.5			23.9			45.4	0.0
Delay (s)	20.0	3.8	3.3		45.0			61.2			83.8	11.3
Level of Service	C	A	A		D			E			F	B
Approach Delay (s)		15.2			45.0			61.2			15.7	
Approach LOS		B			D			E			B	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	24.7
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



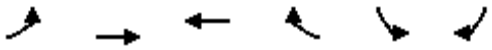
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	234	55	164	451	310	712	0	0	3004	157
Future Volume (vph)	0	0	234	55	164	451	310	712	0	0	3004	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1770	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1770	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	234	55	164	451	310	712	0	0	3004	157
RTOR Reduction (vph)	0	0	104	0	0	392	0	0	0	0	0	66
Lane Group Flow (vph)	0	0	130	0	219	59	310	712	0	0	3004	91
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			14.1		11.0	11.0	14.1	62.0			43.0	43.0
Effective Green, g (s)			14.1		11.0	11.0	14.1	62.0			43.0	43.0
Actuated g/C Ratio			0.17		0.13	0.13	0.17	0.74			0.51	0.51
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Vehicle Extension (s)			3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			267		231	350	553	3602			3148	778
v/s Ratio Prot			0.08		c0.12		c0.09	0.15			c0.49	
v/s Ratio Perm						0.02						0.06
v/c Ratio			0.49		0.95	0.17	0.56	0.20			0.95	0.12
Uniform Delay, d1			31.8		36.3	32.5	32.2	3.4			19.7	10.7
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			1.4		44.4	0.2	1.3	0.0			7.9	0.1
Delay (s)			33.2		80.7	32.8	33.5	3.5			27.6	10.8
Level of Service			C		F	C	C	A			C	B
Approach Delay (s)		33.2			48.4			12.6			26.8	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	84.2	Sum of lost time (s)	16.1
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



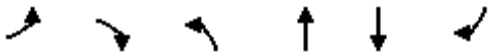
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	873	142	0	0	1044	708
Future Volume (vph)	873	142	0	0	1044	708
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			4.7	4.0
Lane Util. Factor	0.97	0.91			0.95	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00
Satd. Flow (prot)	3306	1386			3406	1524
Flt Permitted	0.95	1.00			1.00	1.00
Satd. Flow (perm)	3306	1386			3406	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	873	142	0	0	1044	708
RTOR Reduction (vph)	3	32	0	0	0	0
Lane Group Flow (vph)	884	96	0	0	1044	708
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%
Turn Type	Prot	Perm			NA	Free
Protected Phases	4				2	
Permitted Phases		4				Free
Actuated Green, G (s)	12.0	12.0			13.8	34.0
Effective Green, g (s)	12.0	12.0			13.8	34.0
Actuated g/C Ratio	0.35	0.35			0.41	1.00
Clearance Time (s)	3.5	3.5			4.7	
Vehicle Extension (s)	1.5	1.5			1.0	
Lane Grp Cap (vph)	1166	489			1382	1524
v/s Ratio Prot	c0.27				c0.31	
v/s Ratio Perm		0.07				0.46
v/c Ratio	0.76	0.20			0.76	0.46
Uniform Delay, d1	9.7	7.6			8.7	0.0
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	2.6	0.1			2.1	1.0
Delay (s)	12.3	7.7			10.8	1.0
Level of Service	B	A			B	A
Approach Delay (s)	11.7			0.0	6.8	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	34.0	Sum of lost time (s)	8.2
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



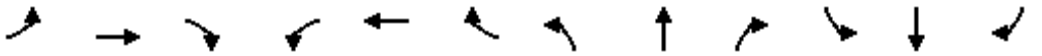
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	311	249	436	137	27	168
Future Volume (vph)	311	249	436	137	27	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	3343	3343	1495	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1671	3343	3343	1495	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	311	249	436	137	27	168
RTOR Reduction (vph)	0	0	0	101	0	141
Lane Group Flow (vph)	311	249	436	36	27	27
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	12.9	28.3	11.4	11.4	6.9	6.9
Effective Green, g (s)	12.9	28.3	11.4	11.4	6.9	6.9
Actuated g/C Ratio	0.30	0.66	0.26	0.26	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	498	2189	882	394	279	250
v/s Ratio Prot	c0.19	0.07	c0.13		0.02	
v/s Ratio Perm				0.02		c0.02
v/c Ratio	0.62	0.11	0.49	0.09	0.10	0.11
Uniform Delay, d1	13.1	2.8	13.5	12.0	15.5	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.0	0.4	0.1	0.2	0.2
Delay (s)	15.5	2.8	13.9	12.1	15.6	15.7
Level of Service	B	A	B	B	B	B
Approach Delay (s)		9.9	13.5		15.7	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	6	24	555	325	284
Future Volume (vph)	12	6	24	555	325	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3367	1553	1719	3438	3343	1495
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3367	1553	1719	3438	3343	1495
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	12	6	24	555	325	284
RTOR Reduction (vph)	0	6	0	0	0	222
Lane Group Flow (vph)	12	0	24	555	325	62
Heavy Vehicles (%)	4%	4%	5%	5%	8%	8%
Turn Type	Prot	Over	Prot	NA	NA	Over
Protected Phases	4	5	5	2	6	4
Permitted Phases						
Actuated Green, G (s)	7.0	0.6	0.6	17.3	12.7	7.0
Effective Green, g (s)	7.0	0.6	0.6	17.3	12.7	7.0
Actuated g/C Ratio	0.22	0.02	0.02	0.54	0.39	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	729	28	31	1841	1314	323
v/s Ratio Prot	0.00	0.00	0.01	c0.16	0.10	c0.04
v/s Ratio Perm						
v/c Ratio	0.02	0.00	0.77	0.30	0.25	0.19
Uniform Delay, d1	9.9	15.6	15.8	4.2	6.6	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1	73.6	0.1	0.1	0.3
Delay (s)	10.0	15.6	89.4	4.2	6.7	10.6
Level of Service	A	B	F	A	A	B
Approach Delay (s)	11.8			7.8	8.5	
Approach LOS	B			A	A	

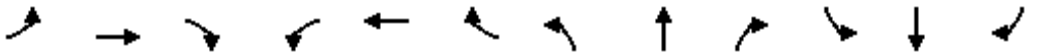
Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	32.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	691	0	645	0	0	0	0	2273	590	0	1790	1584
Future Volume (vph)	691	0	645	0	0	0	0	2273	590	0	1790	1584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.95	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4540	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4540	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	691	0	645	0	0	0	0	2273	590	0	1790	1584
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	0	0	132	0
Lane Group Flow (vph)	691	0	621	0	0	0	0	2273	590	0	2450	792
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	15.9		15.9					36.0	59.9		36.0	59.9
Effective Green, g (s)	15.9		15.9					36.0	59.9		36.0	59.9
Actuated g/C Ratio	0.27		0.27					0.60	1.00		0.60	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	902		732					3813	1568		2728	1348
v/s Ratio Prot	0.20							0.36			c0.54	
v/s Ratio Perm			c0.22						0.38			0.59
v/c Ratio	0.77		0.85					0.60	0.38		0.90	0.59
Uniform Delay, d1	20.3		20.9					7.4	0.0		10.4	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	3.9		9.0					0.3	0.7		4.4	1.9
Delay (s)	24.2		29.9					7.7	0.7		14.7	1.9
Level of Service	C		C					A	A		B	A
Approach Delay (s)		26.9			0.0			6.2			11.7	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	438	0	1254	0	2099	862	0	3010	1406
Future Volume (vph)	0	0	0	438	0	1254	0	2099	862	0	3010	1406
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		0.99	0.85		0.97	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4698	1348		5824	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4698	1348		5824	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	438	0	1254	0	2099	862	0	3010	1406
RTOR Reduction (vph)	0	0	0	0	0	13	0	9	0	0	34	0
Lane Group Flow (vph)	0	0	0	438	0	1241	0	2288	664	0	3595	787
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				36.0		36.0		66.0	110.0		66.0	110.0
Effective Green, g (s)				36.0		36.0		66.0	110.0		66.0	110.0
Actuated g/C Ratio				0.33		0.33		0.60	1.00		0.60	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Vehicle Extension (s)				3.0		3.0		3.0			3.0	
Lane Grp Cap (vph)				1112		1170		2818	1348		3494	1270
v/s Ratio Prot				0.13				0.49			c0.62	
v/s Ratio Perm						c0.35			0.49			0.62
v/c Ratio				0.39		1.06		0.81	0.49		1.03	0.62
Uniform Delay, d1				28.6		37.0		17.2	0.0		22.0	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.2		43.9		1.9	1.3		23.3	2.3
Delay (s)				28.8		80.9		19.0	1.3		45.3	2.3
Level of Service				C		F		B	A		D	A
Approach Delay (s)		0.0			67.4			15.1			37.6	
Approach LOS		A			E			B			D	

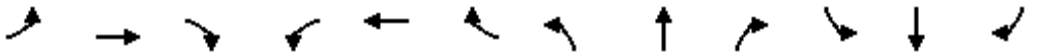
Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	637	384	229	726	275	184
Future Volume (vph)	637	384	229	726	275	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	637	384	229	726	275	184
RTOR Reduction (vph)	0	265	0	0	0	146
Lane Group Flow (vph)	637	119	229	726	275	38
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	14.5	14.5	10.5	29.0	9.7	9.7
Effective Green, g (s)	14.5	14.5	10.5	29.0	9.7	9.7
Actuated g/C Ratio	0.31	0.31	0.22	0.62	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	979	438	354	1958	635	293
v/s Ratio Prot	c0.20		c0.15	0.23	c0.09	
v/s Ratio Perm		0.08				0.03
v/c Ratio	0.65	0.27	0.65	0.37	0.43	0.13
Uniform Delay, d1	13.9	12.1	16.4	4.4	16.1	15.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.3	4.0	0.1	0.5	0.2
Delay (s)	15.5	12.5	20.5	4.5	16.6	15.3
Level of Service	B	B	C	A	B	B
Approach Delay (s)	14.3			8.3	16.1	
Approach LOS	B			A	B	

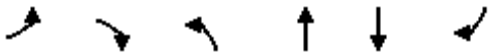
Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	46.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	375	0	1	271	33	1	1	0	45	2	455
Future Volume (vph)	219	375	0	1	271	33	1	1	0	45	2	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.98			1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (prot)	1736	3471		1736	3415			1800		1665	1676	1568
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (perm)	1736	3471		1736	3415			1800		1665	1676	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	219	375	0	1	271	33	1	1	0	45	2	455
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	385
Lane Group Flow (vph)	219	375	0	1	292	0	0	2	0	23	24	70
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	10.8	23.2		0.7	13.1			5.7		8.3	8.3	8.3
Effective Green, g (s)	10.8	23.2		0.7	13.1			5.7		8.3	8.3	8.3
Actuated g/C Ratio	0.20	0.43		0.01	0.24			0.11		0.15	0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	347	1494		22	829			190		256	258	241
v/s Ratio Prot	c0.13	0.11		0.00	c0.09			c0.00		0.01	0.01	
v/s Ratio Perm												c0.04
v/c Ratio	0.63	0.25		0.05	0.35			0.01		0.09	0.09	0.29
Uniform Delay, d1	19.7	9.8		26.3	16.9			21.6		19.6	19.6	20.2
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	3.7	0.1		0.9	0.3			0.0		0.2	0.2	0.7
Delay (s)	23.4	9.9		27.1	17.1			21.6		19.7	19.7	20.9
Level of Service	C	A		C	B			C		B	B	C
Approach Delay (s)		14.9			17.2			21.6			20.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	53.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	284	27	21	789	636	90
Future Volume (vph)	284	27	21	789	636	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.99		1.00	1.00	0.98	
Flt Protected	0.96		0.95	1.00	1.00	
Satd. Flow (prot)	1743		1752	1845	1814	
Flt Permitted	0.96		0.95	1.00	1.00	
Satd. Flow (perm)	1743		1752	1845	1814	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	284	27	21	789	636	90
RTOR Reduction (vph)	6	0	0	0	8	0
Lane Group Flow (vph)	305	0	21	789	718	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	13.1		0.7	31.0	26.3	
Effective Green, g (s)	13.1		0.7	31.0	26.3	
Actuated g/C Ratio	0.25		0.01	0.60	0.50	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	438		23	1097	915	
v/s Ratio Prot	c0.17		0.01	c0.43	0.40	
v/s Ratio Perm						
v/c Ratio	0.70		0.91	0.72	0.78	
Uniform Delay, d1	17.7		25.7	7.5	10.6	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	4.8		147.5	2.3	4.5	
Delay (s)	22.5		173.2	9.8	15.0	
Level of Service	C		F	A	B	
Approach Delay (s)	22.5			14.0	15.0	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	123	31	619	76	5	198
Future Volume (vph)	123	31	619	76	5	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	3447		1752	1845
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	3447		1752	1845
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	123	31	619	76	5	198
RTOR Reduction (vph)	0	27	15	0	0	0
Lane Group Flow (vph)	123	4	680	0	5	198
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	4.8	4.8	19.5		0.5	24.0
Effective Green, g (s)	4.8	4.8	19.5		0.5	24.0
Actuated g/C Ratio	0.13	0.13	0.53		0.01	0.65
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	228	204	1826		23	1203
v/s Ratio Prot	c0.07		c0.20		0.00	c0.11
v/s Ratio Perm		0.00				
v/c Ratio	0.54	0.02	0.37		0.22	0.16
Uniform Delay, d1	15.0	13.9	5.1		18.0	2.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.4	0.0	0.1		4.7	0.1
Delay (s)	17.4	14.0	5.2		22.7	2.6
Level of Service	B	B	A		C	A
Approach Delay (s)	16.7		5.2			3.1
Approach LOS	B		A			A

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	36.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		

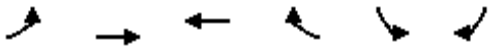
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	32	23	633	135	33	556
Future Volume (vph)	32	23	633	135	33	556
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	3412		1752	1845
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	3412		1752	1845
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	32	23	633	135	33	556
RTOR Reduction (vph)	0	22	21	0	0	0
Lane Group Flow (vph)	32	1	747	0	33	556
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	1.1	1.1	23.1		0.4	27.5
Effective Green, g (s)	1.1	1.1	23.1		0.4	27.5
Actuated g/C Ratio	0.03	0.03	0.63		0.01	0.75
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	52	47	2153		19	1386
v/s Ratio Prot	c0.02		0.22		0.02	c0.30
v/s Ratio Perm		0.00				
v/c Ratio	0.62	0.01	0.35		1.74	0.40
Uniform Delay, d1	17.5	17.2	3.2		18.1	1.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	19.7	0.1	0.1		484.4	0.2
Delay (s)	37.2	17.3	3.3		502.5	1.8
Level of Service	D	B	A		F	A
Approach Delay (s)	28.9		3.3			29.9
Approach LOS	C		A			C

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	36.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

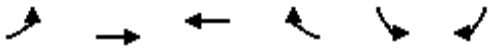
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	919	559	996	76	118	307
Future Volume (vph)	919	559	996	76	118	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	4982		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	4982		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	919	559	996	76	118	307
RTOR Reduction (vph)	0	0	14	0	0	254
Lane Group Flow (vph)	919	559	1058	0	118	53
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	17.1	35.8	14.7		9.1	9.1
Effective Green, g (s)	17.1	35.8	14.7		9.1	9.1
Actuated g/C Ratio	0.32	0.68	0.28		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	1099	2372	1384		301	269
v/s Ratio Prot	c0.27	0.16	c0.21		c0.07	
v/s Ratio Perm						0.03
v/c Ratio	0.84	0.24	0.76		0.39	0.20
Uniform Delay, d1	16.6	3.3	17.5		19.4	18.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.7	0.1	2.6		0.8	0.4
Delay (s)	22.3	3.3	20.1		20.3	19.1
Level of Service	C	A	C		C	B
Approach Delay (s)		15.1	20.1		19.4	
Approach LOS		B	C		B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	52.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

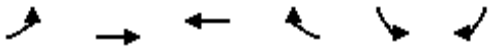
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	173	382	839	109	292	122
Future Volume (vph)	173	382	839	109	292	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	3505	3505	1568	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	3505	3505	1568	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	173	382	839	109	292	122
RTOR Reduction (vph)	0	0	0	69	0	93
Lane Group Flow (vph)	173	382	839	40	292	29
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.2	19.7	13.5	13.5	8.8	8.8
Effective Green, g (s)	2.2	19.7	13.5	13.5	8.8	8.8
Actuated g/C Ratio	0.06	0.54	0.37	0.37	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	204	1891	1296	579	819	378
v/s Ratio Prot	c0.05	0.11	c0.24		c0.09	
v/s Ratio Perm				0.03		0.02
v/c Ratio	0.85	0.20	0.65	0.07	0.36	0.08
Uniform Delay, d1	17.0	4.3	9.5	7.4	11.5	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.4	0.1	1.1	0.1	0.3	0.1
Delay (s)	43.4	4.4	10.7	7.5	11.8	10.8
Level of Service	D	A	B	A	B	B
Approach Delay (s)		16.6	10.3		11.5	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	36.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	23	651	768	14	79	96
Future Volume (vph)	23	651	768	14	79	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3495		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3495		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	23	651	768	14	79	96
RTOR Reduction (vph)	0	0	2	0	0	74
Lane Group Flow (vph)	23	651	780	0	79	22
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	0.4	16.1	11.7		7.0	7.0
Effective Green, g (s)	0.4	16.1	11.7		7.0	7.0
Actuated g/C Ratio	0.01	0.52	0.38		0.23	0.23
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	22	1814	1314		394	352
v/s Ratio Prot	0.01	c0.19	c0.22		c0.05	
v/s Ratio Perm						0.01
v/c Ratio	1.05	0.36	0.59		0.20	0.06
Uniform Delay, d1	15.4	4.4	7.8		9.8	9.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	206.7	0.1	0.7		0.3	0.1
Delay (s)	222.0	4.6	8.5		10.0	9.5
Level of Service	F	A	A		B	A
Approach Delay (s)		12.0	8.5		9.8	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	31.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	130	0	0	133	0
Future Volume (vph)	0	130	0	0	133	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	
Lane Util. Factor		1.00			0.97	
Frt		0.85			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		1568			3400	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		1568			3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	130	0	0	133	0
RTOR Reduction (vph)	0	114	0	0	0	0
Lane Group Flow (vph)	0	16	0	0	133	0
Turn Type		Perm	Prot		Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)		3.3			16.0	
Effective Green, g (s)		3.3			16.0	
Actuated g/C Ratio		0.12			0.59	
Clearance Time (s)		4.0			4.0	
Vehicle Extension (s)		3.0			3.0	
Lane Grp Cap (vph)		189			1992	
v/s Ratio Prot					c0.04	
v/s Ratio Perm		c0.01				
v/c Ratio		0.08			0.07	
Uniform Delay, d1		10.7			2.4	
Progression Factor		1.00			1.00	
Incremental Delay, d2		0.2			0.0	
Delay (s)		10.8			2.4	
Level of Service		B			A	
Approach Delay (s)	10.8			0.0	2.4	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.09		
Actuated Cycle Length (s)	27.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	11.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	0	218	466	542	575	0	1421	665	0	1291	313
Future Volume (veh/h)	58	0	218	466	542	575	0	1421	665	0	1291	313
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1827	1827	1827	0	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	58	0	218	466	830	383	0	1421	0	0	1291	313
Adj No. of Lanes	0	1	2	2	2	1	0	3	1	0	4	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	0	4	4	0	4	4
Cap, veh/h	206	0	324	1094	1149	488	0	1895	590	0	2388	590
Arrive On Green	0.12	0.00	0.12	0.31	0.31	0.31	0.00	0.38	0.00	0.00	0.38	0.38
Sat Flow, veh/h	1757	0	2760	3480	3654	1553	0	5152	1553	0	6540	1553
Grp Volume(v), veh/h	58	0	218	466	830	383	0	1421	0	0	1291	313
Grp Sat Flow(s),veh/h/ln	1757	0	1380	1740	1827	1553	0	1663	1553	0	1571	1553
Q Serve(g_s), s	1.9	0.0	4.8	6.8	12.9	14.3	0.0	15.8	0.0	0.0	10.2	10.0
Cycle Q Clear(g_c), s	1.9	0.0	4.8	6.8	12.9	14.3	0.0	15.8	0.0	0.0	10.2	10.0
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	206	0	324	1094	1149	488	0	1895	590	0	2388	590
V/C Ratio(X)	0.28	0.00	0.67	0.43	0.72	0.78	0.00	0.75	0.00	0.00	0.54	0.53
Avail Cap(c_a), veh/h	441	0	692	1200	1260	536	0	1955	609	0	2464	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	27.0	17.3	19.4	19.9	0.0	17.1	0.0	0.0	15.4	15.4
Incr Delay (d2), s/veh	0.7	0.0	2.4	0.3	1.9	6.9	0.0	1.6	0.0	0.0	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	2.0	3.3	6.8	7.0	0.0	7.4	0.0	0.0	4.4	4.4
LnGrp Delay(d),s/veh	26.4	0.0	29.4	17.6	21.3	26.8	0.0	18.7	0.0	0.0	15.7	16.2
LnGrp LOS	C		C	B	C	C		B			B	B
Approach Vol, veh/h		276			1679			1421			1604	
Approach Delay, s/veh		28.8			21.5			18.7			15.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.2		11.5		28.2		24.1
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		25.0		16.0		25.0		22.0
Max Q Clear Time (g_c+I1), s		17.8		6.8		12.2		16.3
Green Ext Time (p_c), s		6.5		0.7		10.8		3.7

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	34	138	10	82	38	149	1434	19	16	832	212
Future Volume (veh/h)	300	34	138	10	82	38	149	1434	19	16	832	212
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	324	0	138	10	82	38	149	1434	19	16	832	212
Adj No. of Lanes	2	0	1	0	1	0	2	3	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	557	0	248	13	109	50	250	1972	26	29	1151	515
Arrive On Green	0.16	0.00	0.16	0.10	0.10	0.10	0.07	0.39	0.39	0.02	0.33	0.33
Sat Flow, veh/h	3514	0	1568	133	1092	506	3375	5073	67	1740	3471	1553
Grp Volume(v), veh/h	324	0	138	130	0	0	149	940	513	16	832	212
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1731	0	0	1688	1663	1815	1740	1736	1553
Q Serve(g_s), s	4.1	0.0	3.9	3.5	0.0	0.0	2.0	11.5	11.5	0.4	10.0	5.0
Cycle Q Clear(g_c), s	4.1	0.0	3.9	3.5	0.0	0.0	2.0	11.5	11.5	0.4	10.0	5.0
Prop In Lane	1.00		1.00	0.08		0.29	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	557	0	248	173	0	0	250	1293	706	29	1151	515
V/C Ratio(X)	0.58	0.00	0.56	0.75	0.00	0.00	0.60	0.73	0.73	0.55	0.72	0.41
Avail Cap(c_a), veh/h	1181	0	527	582	0	0	355	1607	877	146	1605	718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	0.0	18.5	20.9	0.0	0.0	21.3	12.4	12.4	23.2	14.0	12.3
Incr Delay (d2), s/veh	1.0	0.0	1.9	6.5	0.0	0.0	2.3	1.3	2.3	14.8	1.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.8	2.0	0.0	0.0	1.0	5.5	6.2	0.3	4.9	2.2
LnGrp Delay(d),s/veh	19.5	0.0	20.4	27.4	0.0	0.0	23.6	13.7	14.7	38.0	15.0	12.8
LnGrp LOS	B		C	C			C	B	B	D	B	B
Approach Vol, veh/h		462			130			1602			1060	
Approach Delay, s/veh		19.8			27.4			14.9			14.9	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.8	22.5		11.5	7.5	19.8		8.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0	5.0	22.0		16.0
Max Q Clear Time (g_c+I1), s	2.4	13.5		6.1	4.0	12.0		5.5
Green Ext Time (p_c), s	0.9	5.0		1.5	0.1	3.8		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	394	43	107	253	258	72	1192	112	257	430	84
Future Volume (veh/h)	228	394	43	107	253	258	72	1192	112	257	430	84
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	228	394	43	107	253	258	72	1192	112	257	430	84
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	263	807	88	137	635	284	127	1276	120	306	1564	700
Arrive On Green	0.15	0.25	0.25	0.08	0.18	0.18	0.04	0.40	0.40	0.09	0.45	0.45
Sat Flow, veh/h	1757	3190	346	1757	3505	1568	3375	3208	301	3375	3471	1553
Grp Volume(v), veh/h	228	215	222	107	253	258	72	644	660	257	430	84
Grp Sat Flow(s),veh/h/ln	1757	1752	1784	1757	1752	1568	1688	1736	1774	1688	1736	1553
Q Serve(g_s), s	11.2	9.3	9.4	5.3	5.6	14.3	1.9	31.4	31.6	6.6	6.9	2.8
Cycle Q Clear(g_c), s	11.2	9.3	9.4	5.3	5.6	14.3	1.9	31.4	31.6	6.6	6.9	2.8
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	263	443	451	137	635	284	127	690	705	306	1564	700
V/C Ratio(X)	0.87	0.49	0.49	0.78	0.40	0.91	0.57	0.93	0.94	0.84	0.27	0.12
Avail Cap(c_a), veh/h	278	443	451	239	635	284	191	707	723	306	1564	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	28.1	28.2	40.0	31.9	35.5	41.8	25.5	25.5	39.6	15.2	14.1
Incr Delay (d2), s/veh	23.1	0.8	0.8	9.4	0.4	30.9	4.0	19.1	19.3	18.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	4.6	4.7	2.9	2.7	8.6	0.9	18.7	19.2	3.9	3.3	1.2
LnGrp Delay(d),s/veh	59.8	28.9	29.0	49.4	32.3	66.4	45.8	44.6	44.8	58.1	15.3	14.2
LnGrp LOS	E	C	C	D	C	E	D	D	D	E	B	B
Approach Vol, veh/h		665			618			1376			771	
Approach Delay, s/veh		39.5			49.5			44.8			29.5	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	39.1	10.9	26.4	7.3	43.8	17.2	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	36.0	12.0	18.0	5.0	39.0	14.0	16.0
Max Q Clear Time (g_c+I1), s	8.6	33.6	7.3	11.4	3.9	8.9	13.2	16.3
Green Ext Time (p_c), s	0.0	1.6	0.1	2.4	0.0	11.2	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	188	226	198	368	287	44	667	115	74	485	2
Future Volume (veh/h)	9	188	226	198	368	287	44	667	115	74	485	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	9	188	226	198	368	287	44	667	115	74	485	2
Adj No. of Lanes	1	1	2	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	16	367	549	245	622	479	65	952	426	92	1028	4
Arrive On Green	0.01	0.20	0.20	0.14	0.34	0.34	0.04	0.27	0.27	0.05	0.29	0.29
Sat Flow, veh/h	1707	1792	2682	1707	1835	1411	1757	3505	1568	1757	3580	15
Grp Volume(v), veh/h	9	188	226	198	341	314	44	667	115	74	237	250
Grp Sat Flow(s),veh/h/ln	1707	1792	1341	1707	1703	1543	1757	1752	1568	1757	1752	1842
Q Serve(g_s), s	0.3	4.6	3.6	5.5	8.1	8.2	1.2	8.4	2.8	2.0	5.5	5.5
Cycle Q Clear(g_c), s	0.3	4.6	3.6	5.5	8.1	8.2	1.2	8.4	2.8	2.0	5.5	5.5
Prop In Lane	1.00		1.00	1.00		0.91	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	16	367	549	245	577	523	65	952	426	92	503	529
V/C Ratio(X)	0.56	0.51	0.41	0.81	0.59	0.60	0.68	0.70	0.27	0.80	0.47	0.47
Avail Cap(c_a), veh/h	140	587	878	280	697	632	144	1148	514	144	574	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	17.2	16.9	20.3	13.3	13.4	23.2	16.0	14.0	22.9	14.4	14.4
Incr Delay (d2), s/veh	27.1	1.1	0.5	14.3	1.0	1.1	11.8	1.5	0.3	16.2	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.4	1.4	3.6	3.9	3.6	0.8	4.2	1.2	1.4	2.7	2.9
LnGrp Delay(d),s/veh	51.2	18.4	17.4	34.6	14.3	14.5	35.1	17.5	14.3	39.1	15.0	15.0
LnGrp LOS	D	B	B	C	B	B	D	B	B	D	B	B
Approach Vol, veh/h		423			853			826			561	
Approach Delay, s/veh		18.5			19.1			18.0			18.2	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	17.3	11.0	14.0	5.8	18.0	4.5	20.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	8.0	16.0	4.0	16.0	4.0	20.0
Max Q Clear Time (g_c+I1), s	4.0	10.4	7.5	6.6	3.2	7.5	2.3	10.2
Green Ext Time (p_c), s	0.0	2.9	0.0	3.5	0.0	3.9	0.0	3.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	266	128	101	297	118	233	721	154	29	427	126
Future Volume (veh/h)	103	266	128	101	297	118	233	721	154	29	427	126
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	103	266	128	101	297	118	233	721	154	29	427	126
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	130	721	322	128	504	196	257	1266	566	47	847	379
Arrive On Green	0.07	0.21	0.21	0.07	0.20	0.20	0.15	0.36	0.36	0.03	0.24	0.24
Sat Flow, veh/h	1757	3505	1568	1757	2468	960	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	103	266	128	101	209	206	233	721	154	29	427	126
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1675	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	2.8	3.1	3.4	2.7	5.2	5.3	6.3	7.9	3.3	0.8	5.0	3.2
Cycle Q Clear(g_c), s	2.8	3.1	3.4	2.7	5.2	5.3	6.3	7.9	3.3	0.8	5.0	3.2
Prop In Lane	1.00		1.00	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	130	721	322	128	358	342	257	1266	566	47	847	379
V/C Ratio(X)	0.79	0.37	0.40	0.79	0.58	0.60	0.91	0.57	0.27	0.62	0.50	0.33
Avail Cap(c_a), veh/h	183	1170	523	183	585	559	257	1389	622	147	1170	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	16.4	16.5	21.9	17.2	17.3	20.1	12.3	10.8	23.1	15.7	15.0
Incr Delay (d2), s/veh	14.1	0.3	0.8	13.7	1.5	1.7	33.0	0.5	0.3	12.5	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.5	1.5	1.8	2.6	2.6	5.4	3.9	1.5	0.5	2.5	1.4
LnGrp Delay(d),s/veh	35.9	16.7	17.3	35.5	18.8	19.0	53.2	12.8	11.1	35.6	16.2	15.5
LnGrp LOS	D	B	B	D	B	B	D	B	B	D	B	B
Approach Vol, veh/h		497			516			1108			582	
Approach Delay, s/veh		20.8			22.1			21.0			17.0	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	21.3	7.5	13.9	11.0	15.6	7.6	13.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	19.0	5.0	16.0	7.0	16.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	2.8	9.9	4.7	5.4	8.3	7.0	4.8	7.3
Green Ext Time (p_c), s	0.0	4.6	0.0	2.7	0.0	4.5	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	263	104	51	323	101	85	792	113	63	266	59
Future Volume (veh/h)	183	263	104	51	323	101	85	792	113	63	266	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	183	263	104	51	323	101	85	792	113	63	266	59
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	230	947	423	72	633	283	106	1066	477	84	1021	457
Arrive On Green	0.13	0.27	0.27	0.04	0.18	0.18	0.06	0.30	0.30	0.05	0.29	0.29
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	183	263	104	51	323	101	85	792	113	63	266	59
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	4.8	2.8	2.5	1.4	4.0	2.7	2.3	9.6	2.6	1.7	2.8	1.3
Cycle Q Clear(g_c), s	4.8	2.8	2.5	1.4	4.0	2.7	2.3	9.6	2.6	1.7	2.8	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	947	423	72	633	283	106	1066	477	84	1021	457
V/C Ratio(X)	0.80	0.28	0.25	0.70	0.51	0.36	0.80	0.74	0.24	0.75	0.26	0.13
Avail Cap(c_a), veh/h	259	1402	627	148	1181	528	148	1255	561	148	1255	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	13.7	13.6	22.5	17.6	17.0	22.0	14.9	12.4	22.3	12.9	12.4
Incr Delay (d2), s/veh	14.4	0.2	0.3	11.7	0.6	0.8	18.5	2.0	0.3	12.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	1.4	1.1	0.9	1.9	1.2	1.6	4.9	1.1	1.1	1.3	0.6
LnGrp Delay(d),s/veh	34.4	13.8	13.8	34.2	18.2	17.8	40.5	16.9	12.6	35.2	13.0	12.5
LnGrp LOS	C	B	B	C	B	B	D	B	B	D	B	B
Approach Vol, veh/h		550			475			990			388	
Approach Delay, s/veh		20.7			19.8			18.4			16.6	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	18.4	6.0	16.8	6.9	17.8	10.2	12.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	17.0	4.0	19.0	4.0	17.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.7	11.6	3.4	4.8	4.3	4.8	6.8	6.0
Green Ext Time (p_c), s	0.0	2.8	0.0	3.1	0.0	4.9	0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	414	372	84	142	393	531	83	1918	219	641	1356	503
Future Volume (veh/h)	414	372	84	142	393	531	83	1918	219	641	1356	503
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	414	372	84	142	393	531	83	1918	219	641	1356	503
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	351	1055	472	186	885	651	123	1727	538	549	2356	734
Arrive On Green	0.10	0.30	0.30	0.05	0.25	0.25	0.04	0.35	0.35	0.16	0.47	0.47
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	414	372	84	142	393	531	83	1918	219	641	1356	503
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	15.5	12.5	6.0	6.2	14.2	38.0	3.7	52.1	16.2	24.5	29.6	38.0
Cycle Q Clear(g_c), s	15.5	12.5	6.0	6.2	14.2	38.0	3.7	52.1	16.2	24.5	29.6	38.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	351	1055	472	186	885	651	123	1727	538	549	2356	734
V/C Ratio(X)	1.18	0.35	0.18	0.76	0.44	0.82	0.67	1.11	0.41	1.17	0.58	0.69
Avail Cap(c_a), veh/h	351	1055	472	256	885	651	170	1727	538	549	2356	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	41.1	38.9	70.2	47.4	38.9	71.6	49.2	37.4	63.0	28.8	31.0
Incr Delay (d2), s/veh	106.3	0.1	0.1	5.4	0.1	7.4	2.4	58.8	0.2	93.4	0.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	6.1	2.6	3.1	6.9	20.8	1.7	33.2	6.9	18.5	13.6	16.7
LnGrp Delay(d),s/veh	173.8	41.2	38.9	75.6	47.5	46.3	74.0	108.0	37.6	156.4	29.0	33.2
LnGrp LOS	F	D	D	E	D	D	E	F	D	F	C	C
Approach Vol, veh/h		870			1066			2220			2500	
Approach Delay, s/veh		104.1			50.6			99.8			62.5	
Approach LOS		F			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	75.9	21.0	42.6	30.0	56.9	13.7	49.9
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	7.6	68.8	15.5	* 38	24.5	* 52	11.3	41.9
Max Q Clear Time (g_c+I1), s	5.7	40.0	17.5	40.0	26.5	54.1	8.2	14.5
Green Ext Time (p_c), s	0.0	8.8	0.0	0.0	0.0	0.0	0.1	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	78.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	2	19	0	221	0	1902	52	58	1450	6
Future Volume (veh/h)	10	0	2	19	0	221	0	1902	52	58	1450	6
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	10	0	2	19	0	221	0	1902	52	58	1450	6
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	13	0	3	181	0	323	3	2391	744	71	3123	13
Arrive On Green	0.01	0.00	0.01	0.10	0.00	0.10	0.00	0.48	0.48	0.04	0.61	0.61
Sat Flow, veh/h	1435	0	287	1757	0	3136	1740	4988	1553	1740	5127	21
Grp Volume(v), veh/h	12	0	0	19	0	221	0	1902	52	58	940	516
Grp Sat Flow(s),veh/h/ln	1722	0	0	1757	0	1568	1740	1663	1553	1740	1663	1823
Q Serve(g_s), s	0.4	0.0	0.0	0.6	0.0	3.9	0.0	18.4	1.0	1.9	8.8	8.8
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.6	0.0	3.9	0.0	18.4	1.0	1.9	8.8	8.8
Prop In Lane	0.83		0.17	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	16	0	0	181	0	323	3	2391	744	71	2026	1111
V/C Ratio(X)	0.77	0.00	0.00	0.11	0.00	0.68	0.00	0.80	0.07	0.81	0.46	0.46
Avail Cap(c_a), veh/h	90	0	0	367	0	656	91	2624	817	118	2026	1111
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	0.0	23.3	0.0	24.8	0.0	12.6	8.0	27.3	6.1	6.1
Incr Delay (d2), s/veh	24.4	0.0	0.0	0.1	0.0	1.0	0.0	2.4	0.1	8.0	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.3	0.0	1.7	0.0	8.8	0.5	1.1	4.1	4.6
LnGrp Delay(d),s/veh	52.7	0.0	0.0	23.4	0.0	25.8	0.0	15.0	8.2	35.3	6.7	7.1
LnGrp LOS	D			C		C		B	A	D	A	A
Approach Vol, veh/h		12			240			1954			1514	
Approach Delay, s/veh		52.7			25.6			14.8			7.9	
Approach LOS		D			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	40.0		6.0	7.5	32.5		11.4
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 3	31.4		3.0	* 3.9	* 30		12.0
Max Q Clear Time (g_c+I1), s	0.0	10.8		2.4	3.9	20.4		5.9
Green Ext Time (p_c), s	0.0	20.4		0.0	0.0	7.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	109	23	169	158	702	34	1319	182	246	1080	89
Future Volume (veh/h)	44	109	23	169	158	702	34	1319	182	246	1080	89
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	44	109	23	169	158	702	34	1319	182	246	1080	89
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	78	1042	466	233	1211	542	62	1402	193	306	1825	150
Arrive On Green	0.02	0.30	0.30	0.07	0.35	0.35	0.02	0.32	0.32	0.09	0.39	0.39
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4432	612	3375	4697	387
Grp Volume(v), veh/h	44	109	23	169	158	702	34	989	512	246	764	405
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1719	1688	1663	1759
Q Serve(g_s), s	1.3	2.2	1.0	4.8	3.0	33.9	1.0	28.4	28.4	7.0	17.9	17.9
Cycle Q Clear(g_c), s	1.3	2.2	1.0	4.8	3.0	33.9	1.0	28.4	28.4	7.0	17.9	17.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		0.22
Lane Grp Cap(c), veh/h	78	1042	466	233	1211	542	62	1052	544	306	1292	683
V/C Ratio(X)	0.56	0.10	0.05	0.72	0.13	1.30	0.55	0.94	0.94	0.80	0.59	0.59
Avail Cap(c_a), veh/h	107	1058	473	250	1211	542	127	1091	564	306	1292	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	24.8	24.4	44.8	22.0	32.1	47.7	32.6	32.6	43.8	23.8	23.8
Incr Delay (d2), s/veh	2.3	0.0	0.0	7.7	0.0	146.4	2.7	14.5	23.2	13.3	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.1	0.4	2.5	1.5	36.7	0.5	15.2	17.0	3.8	8.3	8.8
LnGrp Delay(d),s/veh	49.7	24.8	24.4	52.5	22.0	178.5	50.5	47.2	55.9	57.1	24.3	24.8
LnGrp LOS	D	C	C	D	C	F	D	D	E	E	C	C
Approach Vol, veh/h		176			1029			1535			1415	
Approach Delay, s/veh		31.0			133.8			50.2			30.1	
Approach LOS		C			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	43.4	7.8	39.6	14.4	36.3	12.2	35.2
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.7	37.3	3.1	* 34	8.9	* 32	7.2	* 30
Max Q Clear Time (g_c+I1), s	3.0	19.9	3.3	35.9	9.0	30.4	6.8	4.2
Green Ext Time (p_c), s	0.0	4.0	0.0	0.0	0.0	0.6	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	63.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	46	103	1363	24	61	1260
Future Volume (veh/h)	46	103	1363	24	61	1260
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	46	103	1363	24	61	1260
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	163	146	1999	35	71	2028
Arrive On Green	0.09	0.09	0.40	0.40	0.04	0.58
Sat Flow, veh/h	1757	1568	5212	89	1740	3563
Grp Volume(v), veh/h	46	103	898	489	61	1260
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1811	1740	1736
Q Serve(g_s), s	0.8	2.0	7.1	7.1	1.1	7.6
Cycle Q Clear(g_c), s	0.8	2.0	7.1	7.1	1.1	7.6
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	163	146	1317	717	71	2028
V/C Ratio(X)	0.28	0.71	0.68	0.68	0.86	0.62
Avail Cap(c_a), veh/h	248	221	1929	1051	382	3287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	14.0	8.0	8.0	15.2	4.3
Incr Delay (d2), s/veh	0.3	2.4	0.2	0.4	10.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.0	3.3	3.6	0.7	3.5
LnGrp Delay(d),s/veh	13.8	16.4	8.2	8.4	25.7	4.4
LnGrp LOS	B	B	A	A	C	A
Approach Vol, veh/h	149		1387			1321
Approach Delay, s/veh	15.6		8.3			5.4
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		23.4			6.0	17.4		8.5
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		30.2			* 7	18.5		4.5
Max Q Clear Time (g_c+I1), s		9.6			3.1	9.1		4.0
Green Ext Time (p_c), s		4.3			0.0	3.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.3
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	337	1	73	609	366	89	1020	55	350	865	151
Future Volume (veh/h)	63	337	1	73	609	366	89	1020	55	350	865	151
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	63	337	1	73	609	366	89	1020	55	350	865	151
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	68	534	2	92	568	483	111	1005	450	341	1459	653
Arrive On Green	0.04	0.30	0.30	0.05	0.32	0.32	0.06	0.29	0.29	0.20	0.42	0.42
Sat Flow, veh/h	1707	1786	5	1707	1792	1524	1740	3471	1553	1740	3471	1553
Grp Volume(v), veh/h	63	0	338	73	609	366	89	1020	55	350	865	151
Grp Sat Flow(s),veh/h/ln	1707	0	1792	1707	1792	1524	1740	1736	1553	1740	1736	1553
Q Serve(g_s), s	4.6	0.0	20.4	5.3	39.6	27.0	6.3	36.2	3.3	24.5	24.0	7.8
Cycle Q Clear(g_c), s	4.6	0.0	20.4	5.3	39.6	27.0	6.3	36.2	3.3	24.5	24.0	7.8
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	0	536	92	568	483	111	1005	450	341	1459	653
V/C Ratio(X)	0.92	0.00	0.63	0.80	1.07	0.76	0.80	1.01	0.12	1.03	0.59	0.23
Avail Cap(c_a), veh/h	68	0	536	116	568	483	175	1005	450	341	1459	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.8	0.0	37.8	58.5	42.7	38.4	57.8	44.4	32.7	50.3	28.0	23.3
Incr Delay (d2), s/veh	81.0	0.0	1.8	20.0	58.7	6.1	5.9	32.1	0.0	55.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	10.3	3.0	28.8	12.2	3.2	21.8	1.4	17.0	11.6	3.3
LnGrp Delay(d),s/veh	140.8	0.0	39.7	78.5	101.4	44.5	63.6	76.5	32.7	105.9	28.4	23.3
LnGrp LOS	F		D	E	F	D	E	F	C	F	C	C
Approach Vol, veh/h		401			1048			1164			1366	
Approach Delay, s/veh		55.6			79.9			73.4			47.7	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	45.0	12.7	57.3	12.2	42.8	29.0	41.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.5	4.8
Max Green Setting (Gmax), s	5.0	* 40	* 13	47.9	8.5	* 36	24.5	36.2
Max Q Clear Time (g_c+I1), s	6.6	41.6	8.3	26.0	7.3	22.4	26.5	38.2
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.0	1.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	64.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	144	29	30	109	7	91	900	19	18	596	261
Future Volume (veh/h)	199	144	29	30	109	7	91	900	19	18	596	261
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1845	1827	1827
Adj Flow Rate, veh/h	199	144	29	30	109	7	91	900	19	18	596	261
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	3	4	4
Cap, veh/h	248	426	362	36	178	11	114	1090	23	23	956	428
Arrive On Green	0.14	0.23	0.23	0.02	0.10	0.10	0.07	0.31	0.31	0.01	0.28	0.28
Sat Flow, veh/h	1757	1845	1568	1757	1715	110	1740	3477	73	1757	3471	1553
Grp Volume(v), veh/h	199	144	29	30	0	116	91	449	470	18	596	261
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1825	1740	1736	1814	1757	1736	1553
Q Serve(g_s), s	5.4	3.2	0.7	0.8	0.0	3.0	2.5	11.7	11.7	0.5	7.3	7.1
Cycle Q Clear(g_c), s	5.4	3.2	0.7	0.8	0.0	3.0	2.5	11.7	11.7	0.5	7.3	7.1
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	248	426	362	36	0	190	114	544	569	23	956	428
V/C Ratio(X)	0.80	0.34	0.08	0.83	0.00	0.61	0.80	0.83	0.83	0.77	0.62	0.61
Avail Cap(c_a), veh/h	306	582	495	194	0	475	157	729	762	112	1415	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	15.7	14.7	23.8	0.0	20.9	22.5	15.5	15.5	24.0	15.5	15.4
Incr Delay (d2), s/veh	9.5	0.2	0.0	16.2	0.0	1.2	12.4	4.4	4.2	17.6	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.6	0.3	0.6	0.0	1.5	1.6	6.2	6.4	0.3	3.5	3.1
LnGrp Delay(d),s/veh	29.8	15.8	14.8	40.0	0.0	22.1	34.9	19.9	19.7	41.6	15.7	15.9
LnGrp LOS	C	B	B	D		C	C	B	B	D	B	B
Approach Vol, veh/h		372			146			1010			875	
Approach Delay, s/veh		23.2			25.8			21.2			16.3	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	18.2	12.4	10.4	5.9	20.1	6.2	16.6
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 4.4	19.9	8.5	* 13	* 3.1	20.5	* 5.4	* 15
Max Q Clear Time (g_c+I1), s	4.5	9.3	7.4	5.0	2.5	13.7	2.8	5.2
Green Ext Time (p_c), s	0.0	1.8	0.0	0.2	0.0	1.6	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	20.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

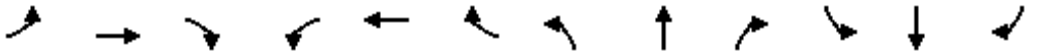
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	228	31	16	276	71	92	862	6	39	372	198
Future Volume (veh/h)	112	228	31	16	276	71	92	862	6	39	372	198
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	112	228	31	16	276	71	92	862	6	39	372	198
Adj No. of Lanes	0	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	119	242	312	253	265	226	112	849	729	48	789	670
Arrive On Green	0.20	0.20	0.20	0.14	0.14	0.14	0.06	0.46	0.46	0.03	0.43	0.43
Sat Flow, veh/h	598	1217	1568	1757	1845	1568	1740	1827	1568	1757	1827	1553
Grp Volume(v), veh/h	340	0	31	16	276	71	92	862	6	39	372	198
Grp Sat Flow(s),veh/h/ln	1815	0	1568	1757	1845	1568	1740	1827	1568	1757	1827	1553
Q Serve(g_s), s	27.2	0.0	2.4	1.2	21.2	6.0	7.7	68.5	0.3	3.3	21.4	12.2
Cycle Q Clear(g_c), s	27.2	0.0	2.4	1.2	21.2	6.0	7.7	68.5	0.3	3.3	21.4	12.2
Prop In Lane	0.33		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	361	0	312	253	265	226	112	849	729	48	789	670
V/C Ratio(X)	0.94	0.00	0.10	0.06	1.04	0.31	0.82	1.01	0.01	0.82	0.47	0.30
Avail Cap(c_a), veh/h	394	0	341	253	265	226	184	849	729	48	789	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.1	0.0	48.2	54.5	63.1	56.6	68.1	39.4	21.2	71.3	29.9	27.3
Incr Delay (d2), s/veh	28.5	0.0	0.1	0.1	66.0	0.8	5.5	34.6	0.0	66.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	0.0	1.0	0.6	15.6	2.6	3.9	42.6	0.1	2.5	10.8	5.2
LnGrp Delay(d),s/veh	86.7	0.0	48.3	54.6	129.1	57.3	73.5	74.1	21.2	138.0	30.0	27.4
LnGrp LOS	F		D	D	F	E	E	F	C	F	C	C
Approach Vol, veh/h		371			363			960			609	
Approach Delay, s/veh		83.5			111.8			73.7			36.1	
Approach LOS		F			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.2	68.7		28.0	9.3	73.6		36.4
Change Period (Y+Rc), s	* 4.7	5.1		6.8	* 5.3	5.1		7.1
Max Green Setting (Gmax), s	* 16	57.5		21.2	* 4	68.5		32.0
Max Q Clear Time (g_c+I1), s	9.7	23.4		23.2	5.3	70.5		29.2
Green Ext Time (p_c), s	0.0	1.5		0.0	0.0	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	71.3
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	332	126	29	317	7	345	862	188	10	311	97
Future Volume (veh/h)	80	332	126	29	317	7	345	862	188	10	311	97
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	80	332	126	29	317	7	345	862	188	10	311	97
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	102	516	192	34	583	261	387	1338	292	13	694	213
Arrive On Green	0.06	0.21	0.21	0.02	0.17	0.17	0.22	0.47	0.47	0.01	0.27	0.27
Sat Flow, veh/h	1740	2476	923	1740	3471	1553	1740	2835	618	1740	2618	803
Grp Volume(v), veh/h	80	231	227	29	317	7	345	528	522	10	204	204
Grp Sat Flow(s),veh/h/ln	1740	1736	1664	1740	1736	1553	1740	1736	1718	1740	1736	1685
Q Serve(g_s), s	3.2	8.7	8.9	1.2	6.0	0.3	13.7	16.5	16.5	0.4	7.0	7.2
Cycle Q Clear(g_c), s	3.2	8.7	8.9	1.2	6.0	0.3	13.7	16.5	16.5	0.4	7.0	7.2
Prop In Lane	1.00		0.55	1.00		1.00	1.00		0.36	1.00		0.48
Lane Grp Cap(c), veh/h	102	362	347	34	583	261	387	819	811	13	460	447
V/C Ratio(X)	0.79	0.64	0.65	0.85	0.54	0.03	0.89	0.64	0.64	0.76	0.44	0.46
Avail Cap(c_a), veh/h	144	411	394	73	680	304	490	882	873	76	479	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	25.8	25.9	34.9	27.2	24.8	26.9	14.3	14.3	35.4	21.9	21.9
Incr Delay (d2), s/veh	10.8	8.4	9.3	19.2	3.6	0.2	13.5	3.9	3.9	27.6	3.1	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	5.0	5.0	0.7	3.2	0.1	8.1	8.7	8.6	0.3	3.7	3.8
LnGrp Delay(d),s/veh	44.0	34.2	35.2	54.1	30.8	25.0	40.4	18.2	18.2	63.0	24.9	25.3
LnGrp LOS	D	C	D	D	C	C	D	B	B	E	C	C
Approach Vol, veh/h		538			353			1395			418	
Approach Delay, s/veh		36.1			32.6			23.7			26.0	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	24.1	9.3	17.2	6.0	38.9	6.4	20.1
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 20	* 20	* 5.9	* 14	3.1	* 36	3.0	* 17
Max Q Clear Time (g_c+I1), s	15.7	9.2	5.2	8.0	2.4	18.5	3.2	10.9
Green Ext Time (p_c), s	0.2	9.4	0.0	4.0	0.0	15.2	0.0	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	313	274	46	309	44	654	1233	185	26	382	39
Future Volume (veh/h)	96	313	274	46	309	44	654	1233	185	26	382	39
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	96	313	274	46	309	44	654	1233	185	26	382	39
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	138	915	409	82	858	384	717	1423	212	53	948	424
Arrive On Green	0.04	0.26	0.26	0.02	0.24	0.24	0.21	0.47	0.47	0.02	0.27	0.27
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	3030	452	3375	3471	1553
Grp Volume(v), veh/h	96	313	274	46	309	44	654	703	715	26	382	39
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1736	1747	1688	1736	1553
Q Serve(g_s), s	2.7	7.0	15.1	1.3	7.0	2.1	18.2	34.8	35.4	0.7	8.7	1.8
Cycle Q Clear(g_c), s	2.7	7.0	15.1	1.3	7.0	2.1	18.2	34.8	35.4	0.7	8.7	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	138	915	409	82	858	384	717	815	821	53	948	424
V/C Ratio(X)	0.70	0.34	0.67	0.56	0.36	0.11	0.91	0.86	0.87	0.49	0.40	0.09
Avail Cap(c_a), veh/h	138	1091	488	145	1091	488	753	827	832	109	994	445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	28.9	31.9	46.5	30.1	28.3	37.1	22.8	22.9	47.0	28.6	26.1
Incr Delay (d2), s/veh	12.1	1.0	8.4	2.2	0.8	0.4	14.5	10.8	11.3	2.6	0.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.5	7.4	0.6	3.5	1.0	9.9	19.0	19.5	0.4	4.3	0.8
LnGrp Delay(d),s/veh	57.7	29.9	40.3	48.7	31.0	28.7	51.6	33.6	34.3	49.7	29.5	26.4
LnGrp LOS	E	C	D	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		683			399			2072			447	
Approach Delay, s/veh		38.0			32.8			39.5			30.4	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	31.8	9.4	29.2	7.0	50.8	7.8	30.8
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	21.5	* 28	3.9	30.0	3.1	* 46	4.1	* 30
Max Q Clear Time (g_c+I1), s	20.2	10.7	4.7	9.0	2.7	37.4	3.3	17.1
Green Ext Time (p_c), s	0.2	15.0	0.0	11.4	0.0	7.9	0.0	8.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	708	32	19	687	8	188	42	138	7	16	55
Future Volume (veh/h)	14	708	32	19	687	8	188	42	138	7	16	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	14	708	32	19	687	8	188	42	138	7	16	55
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	23	876	744	30	883	751	231	84	275	13	31	105
Arrive On Green	0.01	0.49	0.49	0.02	0.49	0.49	0.13	0.22	0.22	0.01	0.08	0.08
Sat Flow, veh/h	1707	1792	1524	1707	1792	1524	1757	379	1246	1757	366	1257
Grp Volume(v), veh/h	14	708	32	19	687	8	188	0	180	7	0	71
Grp Sat Flow(s),veh/h/ln	1707	1792	1524	1707	1792	1524	1757	0	1625	1757	0	1623
Q Serve(g_s), s	0.5	22.4	0.7	0.7	21.2	0.2	7.0	0.0	6.5	0.3	0.0	2.8
Cycle Q Clear(g_c), s	0.5	22.4	0.7	0.7	21.2	0.2	7.0	0.0	6.5	0.3	0.0	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.77	1.00		0.77
Lane Grp Cap(c), veh/h	23	876	744	30	883	751	231	0	359	13	0	136
V/C Ratio(X)	0.60	0.81	0.04	0.63	0.78	0.01	0.82	0.00	0.50	0.55	0.00	0.52
Avail Cap(c_a), veh/h	102	972	826	102	972	826	283	0	673	105	0	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.9	14.5	9.0	32.7	14.0	8.7	28.4	0.0	22.9	33.2	0.0	29.5
Incr Delay (d2), s/veh	15.5	5.4	0.0	13.5	4.3	0.0	12.8	0.0	1.0	22.4	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	12.3	0.3	0.5	11.4	0.1	4.2	0.0	3.0	0.2	0.0	1.4
LnGrp Delay(d),s/veh	48.5	19.9	9.0	46.2	18.3	8.7	41.2	0.0	23.9	55.6	0.0	32.3
LnGrp LOS	D	B	A	D	B	A	D		C	E		C
Approach Vol, veh/h		754			714			368			78	
Approach Delay, s/veh		19.9			19.0			32.7			34.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	39.2	13.2	10.0	4.4	39.5	4.0	19.2
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	4.0	36.4	10.8	* 21	4.0	36.4	4.0	27.8
Max Q Clear Time (g_c+I1), s	2.7	24.4	9.0	4.8	2.5	23.2	2.3	8.5
Green Ext Time (p_c), s	0.0	8.4	0.1	0.9	0.0	9.1	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	22.6
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	184	101	114	328	137	110	437	105	70	250	52
Future Volume (veh/h)	145	184	101	114	328	137	110	437	105	70	250	52
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	145	184	101	114	328	137	110	437	105	70	250	52
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	184	467	245	145	446	183	140	511	435	87	455	387
Arrive On Green	0.10	0.21	0.21	0.08	0.18	0.18	0.08	0.28	0.28	0.05	0.25	0.25
Sat Flow, veh/h	1757	2224	1167	1757	2427	995	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	145	143	142	114	235	230	110	437	105	70	250	52
Grp Sat Flow(s),veh/h/ln	1757	1752	1639	1757	1752	1669	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.2	3.6	3.9	3.3	6.5	6.7	3.2	11.6	2.7	2.0	6.1	1.3
Cycle Q Clear(g_c), s	4.2	3.6	3.9	3.3	6.5	6.7	3.2	11.6	2.7	2.0	6.1	1.3
Prop In Lane	1.00		0.71	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	368	344	145	322	307	140	511	435	87	455	387
V/C Ratio(X)	0.79	0.39	0.41	0.79	0.73	0.75	0.78	0.85	0.24	0.80	0.55	0.13
Avail Cap(c_a), veh/h	299	1016	950	170	874	832	295	1105	939	153	959	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	17.6	17.7	23.3	19.9	20.0	23.4	17.7	14.5	24.3	17.0	15.2
Incr Delay (d2), s/veh	2.8	0.2	0.3	15.6	1.2	1.4	3.6	1.6	0.1	6.3	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	1.8	1.8	2.2	3.2	3.2	1.7	6.1	1.2	1.1	3.1	0.6
LnGrp Delay(d),s/veh	25.4	17.8	18.0	38.9	21.1	21.4	26.9	19.3	14.6	30.7	17.4	15.2
LnGrp LOS	C	B	B	D	C	C	C	B	B	C	B	B
Approach Vol, veh/h		430			579			652			372	
Approach Delay, s/veh		20.4			24.7			19.8			19.6	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	14.3	9.6	17.2	9.3	15.7	8.1	18.7
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 8.8	25.8	8.7	* 27	5.0	* 30	4.5	* 31
Max Q Clear Time (g_c+I1), s	6.2	8.7	5.2	8.1	5.3	5.9	4.0	13.6
Green Ext Time (p_c), s	0.0	0.8	0.0	0.7	0.0	0.8	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	21.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	40	32	326	30	231	57	1384	277	523	976	59
Future Volume (veh/h)	76	40	32	326	30	231	57	1384	277	523	976	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	76	40	32	326	30	231	57	1384	277	523	976	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	83	45	36	603	326	277	72	1640	511	523	2155	130
Arrive On Green	0.05	0.05	0.05	0.18	0.18	0.18	0.04	0.33	0.33	0.15	0.45	0.45
Sat Flow, veh/h	1757	950	760	3408	1845	1568	1740	4988	1553	3375	4810	290
Grp Volume(v), veh/h	76	0	72	326	30	231	57	1384	277	523	674	361
Grp Sat Flow(s),veh/h/ln	1757	0	1711	1704	1845	1568	1740	1663	1553	1688	1663	1776
Q Serve(g_s), s	3.2	0.0	3.1	6.5	1.0	10.6	2.4	19.1	10.8	11.5	10.4	10.5
Cycle Q Clear(g_c), s	3.2	0.0	3.1	6.5	1.0	10.6	2.4	19.1	10.8	11.5	10.4	10.5
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	83	0	81	603	326	277	72	1640	511	523	1490	795
V/C Ratio(X)	0.92	0.00	0.89	0.54	0.09	0.83	0.80	0.84	0.54	1.00	0.45	0.45
Avail Cap(c_a), veh/h	83	0	81	1102	596	507	171	1969	613	523	1523	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	0.0	35.2	27.8	25.6	29.5	35.3	23.1	20.4	31.4	14.2	14.2
Incr Delay (d2), s/veh	70.6	0.0	64.1	0.3	0.0	2.5	7.3	2.6	0.3	39.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	2.9	3.1	0.5	4.8	1.3	9.1	4.7	8.2	4.8	5.1
LnGrp Delay(d),s/veh	105.9	0.0	99.3	28.1	25.6	32.0	42.6	25.7	20.7	70.8	14.3	14.3
LnGrp LOS	F		F	C	C	C	D	C	C	F	B	B
Approach Vol, veh/h		148			587			1718			1558	
Approach Delay, s/veh		102.7			29.5			25.5			33.3	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	38.5		9.0	17.0	29.6		18.6
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 7.3	* 34		3.5	11.5	* 29		24.0
Max Q Clear Time (g_c+I1), s	4.4	12.5		5.2	13.5	21.1		12.6
Green Ext Time (p_c), s	0.0	4.3		0.0	0.0	3.3		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	31.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	242	180	153	111	108	7	351	1491	222	42	634	171
Future Volume (veh/h)	242	180	153	111	108	7	351	1491	222	42	634	171
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	242	180	153	111	108	7	351	1491	222	42	634	171
Adj No. of Lanes	2	2	0	2	2	0	2	3	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	348	263	211	191	321	21	471	1903	593	87	930	416
Arrive On Green	0.10	0.14	0.14	0.06	0.10	0.10	0.14	0.38	0.38	0.03	0.27	0.27
Sat Flow, veh/h	3408	1852	1483	3408	3344	215	3375	4988	1553	3375	3471	1553
Grp Volume(v), veh/h	242	170	163	111	56	59	351	1491	222	42	634	171
Grp Sat Flow(s),veh/h/ln	1704	1752	1583	1704	1752	1807	1688	1663	1553	1688	1736	1553
Q Serve(g_s), s	3.9	5.2	5.6	1.8	1.7	1.7	5.6	14.9	5.8	0.7	9.2	5.1
Cycle Q Clear(g_c), s	3.9	5.2	5.6	1.8	1.7	1.7	5.6	14.9	5.8	0.7	9.2	5.1
Prop In Lane	1.00		0.94	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	249	225	191	168	173	471	1903	593	87	930	416
V/C Ratio(X)	0.70	0.68	0.73	0.58	0.33	0.34	0.75	0.78	0.37	0.49	0.68	0.41
Avail Cap(c_a), veh/h	392	962	869	428	993	1023	747	3231	1006	179	1677	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	23.0	23.2	26.0	23.9	23.9	23.3	15.4	12.6	27.2	18.5	17.0
Incr Delay (d2), s/veh	3.4	1.2	1.7	1.0	0.4	0.4	0.9	0.3	0.1	1.6	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.6	2.5	0.9	0.8	0.9	2.7	6.8	2.5	0.3	4.4	2.2
LnGrp Delay(d),s/veh	27.9	24.2	24.9	27.1	24.3	24.3	24.2	15.7	12.7	28.7	18.9	17.3
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		575			226			2064			847	
Approach Delay, s/veh		26.0			25.7			16.8			19.0	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	20.7	11.3	11.1	6.9	27.2	8.7	13.7
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	12.5	* 27	6.5	* 32	3.0	* 37	7.1	* 31
Max Q Clear Time (g_c+I1), s	7.6	11.2	5.9	3.7	2.7	16.9	3.8	7.6
Green Ext Time (p_c), s	0.3	3.9	0.0	0.5	0.0	4.0	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	604	6	11	483	472	48	1559	26	328	457	180
Future Volume (veh/h)	198	604	6	11	483	472	48	1559	26	328	457	180
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1900	1827	1845	1827
Adj Flow Rate, veh/h	198	604	6	11	483	472	48	1559	26	328	457	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	156	591	517	13	447	380	61	1362	23	244	1712	758
Arrive On Green	0.09	0.33	0.33	0.01	0.25	0.25	0.03	0.39	0.39	0.14	0.49	0.00
Sat Flow, veh/h	1707	1792	1568	1757	1792	1524	1757	3528	59	1740	3505	1553
Grp Volume(v), veh/h	198	604	6	11	483	472	48	774	811	328	457	0
Grp Sat Flow(s),veh/h/ln	1707	1792	1568	1757	1792	1524	1757	1752	1834	1740	1752	1553
Q Serve(g_s), s	13.7	49.5	0.4	0.9	37.4	37.4	4.1	57.9	57.9	21.0	11.5	0.0
Cycle Q Clear(g_c), s	13.7	49.5	0.4	0.9	37.4	37.4	4.1	57.9	57.9	21.0	11.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	156	591	517	13	447	380	61	676	708	244	1712	758
V/C Ratio(X)	1.27	1.02	0.01	0.85	1.08	1.24	0.78	1.14	1.15	1.35	0.27	0.00
Avail Cap(c_a), veh/h	156	591	517	35	447	380	85	676	708	244	1712	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	68.2	50.3	33.8	74.4	56.3	56.3	71.8	46.1	46.1	64.5	22.6	0.0
Incr Delay (d2), s/veh	162.2	42.5	0.0	79.1	66.0	129.6	17.2	81.4	81.8	180.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	31.5	0.2	0.7	26.7	29.5	2.3	43.3	45.4	22.3	5.6	0.0
LnGrp Delay(d),s/veh	230.3	92.7	33.8	153.4	122.3	185.9	89.0	127.5	127.8	245.2	22.6	0.0
LnGrp LOS	F	F	C	F	F	F	F	F	F	F	C	
Approach Vol, veh/h		808			966			1633			785	
Approach Delay, s/veh		126.0			153.7			126.5			115.6	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	78.4	18.0	43.0	26.0	63.0	5.9	55.1
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 7.3	71.2	* 14	37.4	21.0	57.9	* 3	* 48
Max Q Clear Time (g_c+I1), s	6.1	13.5	15.7	39.4	23.0	59.9	2.9	51.5
Green Ext Time (p_c), s	0.0	12.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	130.6
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	216	49	54	387	34	177	1618	55	21	452	8
Future Volume (veh/h)	23	216	49	54	387	34	177	1618	55	21	452	8
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	23	216	49	54	387	34	177	1618	55	21	452	8
Adj No. of Lanes	2	1	0	2	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	48	363	82	95	439	39	213	1710	58	25	1363	24
Arrive On Green	0.01	0.25	0.25	0.03	0.26	0.26	0.12	0.49	0.49	0.01	0.39	0.39
Sat Flow, veh/h	3408	1456	330	3408	1672	147	1757	3459	117	1757	3524	62
Grp Volume(v), veh/h	23	0	265	54	0	421	177	817	856	21	225	235
Grp Sat Flow(s),veh/h/ln	1704	0	1786	1704	0	1819	1757	1752	1824	1757	1752	1834
Q Serve(g_s), s	0.7	0.0	12.9	1.5	0.0	21.9	9.7	43.6	44.1	1.2	8.9	8.9
Cycle Q Clear(g_c), s	0.7	0.0	12.9	1.5	0.0	21.9	9.7	43.6	44.1	1.2	8.9	8.9
Prop In Lane	1.00		0.18	1.00		0.08	1.00		0.06	1.00		0.03
Lane Grp Cap(c), veh/h	48	0	445	95	0	478	213	866	901	25	678	709
V/C Ratio(X)	0.47	0.00	0.60	0.57	0.00	0.88	0.83	0.94	0.95	0.85	0.33	0.33
Avail Cap(c_a), veh/h	107	0	570	128	0	591	345	896	933	55	678	709
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	0.0	32.7	47.4	0.0	34.9	42.4	23.7	23.8	48.6	21.3	21.3
Incr Delay (d2), s/veh	7.0	0.0	1.3	5.3	0.0	12.4	8.7	17.7	18.1	50.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	6.5	0.8	0.0	12.6	5.2	25.1	26.6	0.9	4.3	4.5
LnGrp Delay(d),s/veh	55.3	0.0	33.9	52.7	0.0	47.3	51.1	41.4	41.9	99.1	21.4	21.4
LnGrp LOS	E		C	D		D	D	D	D	F	C	C
Approach Vol, veh/h		288			475			1850			481	
Approach Delay, s/veh		35.7			47.9			42.5			24.8	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	43.2	8.2	29.8	6.9	53.8	6.9	31.1
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	19.4	34.2	3.7	* 32	3.1	50.5	3.1	* 32
Max Q Clear Time (g_c+I1), s	11.7	10.9	3.5	14.9	3.2	46.1	2.7	23.9
Green Ext Time (p_c), s	0.4	10.6	0.0	2.8	0.0	2.7	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.0
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	118	58	70	144	113	206	1736	69	14	397	106
Future Volume (veh/h)	90	118	58	70	144	113	206	1736	69	14	397	106
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1833	1900	1845	1815	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	90	118	58	70	144	113	206	1736	69	14	397	106
Adj No. of Lanes	2	1	0	2	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	6	3	3	3	3	3	3
Cap, veh/h	121	204	100	114	164	128	246	1949	77	17	1199	317
Arrive On Green	0.04	0.18	0.18	0.03	0.17	0.17	0.14	0.57	0.57	0.01	0.44	0.44
Sat Flow, veh/h	3408	1161	571	3408	944	741	1757	3437	136	1757	2744	725
Grp Volume(v), veh/h	90	0	176	70	0	257	206	881	924	14	252	251
Grp Sat Flow(s),veh/h/ln	1704	0	1732	1704	0	1684	1757	1752	1821	1757	1752	1717
Q Serve(g_s), s	2.6	0.0	9.2	2.0	0.0	14.7	11.3	43.1	43.9	0.8	9.3	9.5
Cycle Q Clear(g_c), s	2.6	0.0	9.2	2.0	0.0	14.7	11.3	43.1	43.9	0.8	9.3	9.5
Prop In Lane	1.00		0.33	1.00		0.44	1.00		0.07	1.00		0.42
Lane Grp Cap(c), veh/h	121	0	304	114	0	292	246	994	1033	17	766	750
V/C Ratio(X)	0.74	0.00	0.58	0.61	0.00	0.88	0.84	0.89	0.89	0.82	0.33	0.33
Avail Cap(c_a), veh/h	121	0	549	114	0	530	437	1090	1133	55	766	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	0.0	37.3	47.0	0.0	39.7	41.3	18.6	18.7	48.7	18.2	18.3
Incr Delay (d2), s/veh	21.7	0.0	0.6	9.3	0.0	3.4	7.4	8.5	8.9	60.3	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	4.5	1.1	0.0	7.1	5.9	22.9	24.4	0.7	4.5	4.5
LnGrp Delay(d),s/veh	68.7	0.0	37.9	56.3	0.0	43.1	48.7	27.0	27.6	108.9	18.5	18.6
LnGrp LOS	E		D	E		D	D	C	C	F	B	B
Approach Vol, veh/h		266			327			2011			517	
Approach Delay, s/veh		48.3			45.9			29.5			21.0	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	61.0	9.0	22.1	19.3	48.1	8.8	22.3
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	3.1	* 61	3.5	* 31	24.5	* 40	3.3	* 31
Max Q Clear Time (g_c+I1), s	2.8	45.9	4.6	16.7	13.3	11.5	4.0	11.2
Green Ext Time (p_c), s	0.0	9.9	0.0	0.4	0.6	15.9	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	217	130	33	130	323	76	1310	164	51	370	100
Future Volume (veh/h)	380	217	130	33	130	323	76	1310	164	51	370	100
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1843	1900	1845	1845	1900
Adj Flow Rate, veh/h	380	217	130	33	130	323	76	1310	164	51	370	100
Adj No. of Lanes	2	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	3	3	3	3	3
Cap, veh/h	406	356	213	41	110	273	96	1337	166	65	1113	297
Arrive On Green	0.12	0.33	0.33	0.02	0.23	0.23	0.06	0.43	0.43	0.04	0.41	0.41
Sat Flow, veh/h	3408	1082	648	1757	470	1168	1740	3134	390	1757	2737	731
Grp Volume(v), veh/h	380	0	347	33	0	453	76	728	746	51	235	235
Grp Sat Flow(s),veh/h/ln	1704	0	1730	1757	0	1638	1740	1751	1774	1757	1752	1716
Q Serve(g_s), s	12.7	0.0	19.4	2.2	0.0	26.9	5.0	47.0	47.8	3.3	10.6	10.8
Cycle Q Clear(g_c), s	12.7	0.0	19.4	2.2	0.0	26.9	5.0	47.0	47.8	3.3	10.6	10.8
Prop In Lane	1.00		0.37	1.00		0.71	1.00		0.22	1.00		0.43
Lane Grp Cap(c), veh/h	406	0	570	41	0	383	96	747	757	65	713	698
V/C Ratio(X)	0.94	0.00	0.61	0.80	0.00	1.18	0.79	0.98	0.99	0.78	0.33	0.34
Avail Cap(c_a), veh/h	406	0	570	69	0	383	162	747	757	69	713	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	0.0	32.4	55.9	0.0	44.1	53.7	32.4	32.6	54.9	23.4	23.5
Incr Delay (d2), s/veh	29.2	0.0	1.4	12.2	0.0	105.8	5.3	26.8	28.9	37.6	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	9.5	1.2	0.0	23.4	2.5	28.2	29.5	2.3	5.2	5.1
LnGrp Delay(d),s/veh	79.4	0.0	33.7	68.1	0.0	149.9	59.0	59.2	61.5	92.6	23.7	23.7
LnGrp LOS	E		C	E		F	E	E	E	F	C	C
Approach Vol, veh/h		727			486			1550			521	
Approach Delay, s/veh		57.6			144.4			60.3			30.4	
Approach LOS		E			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	54.2	19.2	32.3	11.7	51.9	8.2	43.3
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 4.5	49.1	13.7	* 27	* 11	42.7	4.5	* 36
Max Q Clear Time (g_c+I1), s	5.3	49.8	14.7	28.9	7.0	12.8	4.2	21.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	12.4	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	67.4
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	743	2	448	791	52	6	529	695	40	216	333
Future Volume (veh/h)	188	743	2	448	791	52	6	529	695	40	216	333
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1793	1900	1845	1792	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	188	743	2	448	791	52	6	529	695	40	216	333
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	6	3	6	3	3	3	3	3	3	3
Cap, veh/h	209	711	2	363	994	457	7	324	425	35	304	468
Arrive On Green	0.12	0.20	0.20	0.21	0.29	0.29	0.00	0.45	0.45	0.02	0.46	0.46
Sat Flow, veh/h	1757	3485	9	1757	3406	1568	1757	725	952	1757	656	1011
Grp Volume(v), veh/h	188	363	382	448	791	52	6	0	1224	40	0	549
Grp Sat Flow(s),veh/h/ln	1757	1703	1791	1757	1703	1568	1757	0	1677	1757	0	1666
Q Serve(g_s), s	15.8	30.6	30.6	31.0	32.1	3.6	0.5	0.0	67.0	3.0	0.0	39.6
Cycle Q Clear(g_c), s	15.8	30.6	30.6	31.0	32.1	3.6	0.5	0.0	67.0	3.0	0.0	39.6
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.57	1.00		0.61
Lane Grp Cap(c), veh/h	209	347	365	363	994	457	7	0	749	35	0	771
V/C Ratio(X)	0.90	1.05	1.05	1.23	0.80	0.11	0.92	0.00	1.63	1.14	0.00	0.71
Avail Cap(c_a), veh/h	211	347	365	363	994	457	23	0	749	35	0	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.2	59.7	59.7	59.5	49.0	38.9	74.7	0.0	41.5	73.5	0.0	32.3
Incr Delay (d2), s/veh	35.8	60.6	59.4	126.9	4.8	0.2	140.9	0.0	291.5	196.1	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	20.2	21.1	27.8	15.8	1.6	0.5	0.0	91.6	3.4	0.0	18.8
LnGrp Delay(d),s/veh	101.0	120.3	119.1	186.4	53.8	39.1	215.6	0.0	333.0	275.3	0.0	35.3
LnGrp LOS	F	F	F	F	D	D	F		F	F		D
Approach Vol, veh/h		933			1291			1230			589	
Approach Delay, s/veh		115.9			99.3			332.5			51.6	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	37.0	4.6	73.4	21.8	50.2	7.0	71.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	31.0	30.6	2.0	68.0	18.0	43.6	3.0	67.0
Max Q Clear Time (g_c+I1), s	33.0	32.6	2.5	41.6	17.8	34.1	5.0	69.0
Green Ext Time (p_c), s	0.0	0.0	0.0	14.3	0.0	6.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	167.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	47	320	25	63	161	205	643	13	105	1286	892
Future Volume (veh/h)	332	47	320	25	63	161	205	643	13	105	1286	892
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	366	0	320	25	63	161	205	643	13	105	1286	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	812	0	362	37	94	113	243	1793	36	133	1445	450
Arrive On Green	0.23	0.00	0.23	0.07	0.07	0.07	0.14	0.36	0.36	0.08	0.29	0.00
Sat Flow, veh/h	3480	0	1553	517	1302	1568	1740	5032	102	1740	4988	1553
Grp Volume(v), veh/h	366	0	320	88	0	161	205	424	232	105	1286	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1819	0	1568	1740	1663	1809	1740	1663	1553
Q Serve(g_s), s	6.9	0.0	15.2	3.6	0.0	5.5	8.8	7.2	7.2	4.5	18.9	0.0
Cycle Q Clear(g_c), s	6.9	0.0	15.2	3.6	0.0	5.5	8.8	7.2	7.2	4.5	18.9	0.0
Prop In Lane	1.00		1.00	0.28		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	812	0	362	131	0	113	243	1185	645	133	1445	450
V/C Ratio(X)	0.45	0.00	0.88	0.67	0.00	1.43	0.84	0.36	0.36	0.79	0.89	0.00
Avail Cap(c_a), veh/h	1229	0	548	131	0	113	257	1185	645	275	1690	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.1	0.0	28.3	34.6	0.0	35.5	32.1	18.2	18.2	34.7	26.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	7.6	10.5	0.0	235.8	19.7	0.1	0.1	3.8	5.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	7.2	2.2	0.0	9.8	5.5	3.3	3.6	2.3	9.3	0.0
LnGrp Delay(d),s/veh	25.2	0.0	35.9	45.1	0.0	271.3	51.8	18.2	18.3	38.5	31.1	0.0
LnGrp LOS	C		D	D		F	D	B	B	D	C	
Approach Vol, veh/h		686			249			861			1391	
Approach Delay, s/veh		30.2			191.3			26.2			31.7	
Approach LOS		C			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.4	26.9		11.0	10.3	32.0		23.1
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 11	25.9		5.5	* 12	* 26		27.0
Max Q Clear Time (g_c+I1), s	10.8	20.9		7.5	6.5	9.2		17.2
Green Ext Time (p_c), s	0.0	1.3		0.0	0.0	3.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	42.4
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	125	35	50	130	281	37	1205	58	695	1441	659
Future Volume (veh/h)	227	125	35	50	130	281	37	1205	58	695	1441	659
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	227	125	35	50	130	281	37	1205	58	695	1441	659
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	305	652	170	92	185	1036	72	1482	71	784	2568	800
Arrive On Green	0.09	0.16	0.16	0.03	0.10	0.10	0.02	0.30	0.30	0.23	0.51	0.51
Sat Flow, veh/h	3408	3979	1040	3514	1845	3136	3408	4923	237	3408	5036	1568
Grp Volume(v), veh/h	227	104	56	50	130	281	37	822	441	695	1441	659
Grp Sat Flow(s),veh/h/ln	1704	1679	1661	1757	1845	1568	1704	1679	1803	1704	1679	1568
Q Serve(g_s), s	5.2	2.1	2.3	1.1	5.5	5.3	0.9	18.1	18.1	15.8	15.7	28.4
Cycle Q Clear(g_c), s	5.2	2.1	2.3	1.1	5.5	5.3	0.9	18.1	18.1	15.8	15.7	28.4
Prop In Lane	1.00		0.63	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	305	550	272	92	185	1036	72	1010	543	784	2568	800
V/C Ratio(X)	0.74	0.19	0.21	0.54	0.70	0.27	0.52	0.81	0.81	0.89	0.56	0.82
Avail Cap(c_a), veh/h	324	1394	690	185	692	1898	128	1188	638	951	2980	928
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	28.8	28.9	38.4	34.8	19.7	38.7	25.9	25.9	29.8	13.4	16.6
Incr Delay (d2), s/veh	7.2	0.1	0.1	1.8	1.8	0.1	2.1	3.2	5.9	7.8	0.1	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	1.0	1.1	0.6	2.9	2.3	0.4	8.8	9.8	8.3	7.2	13.1
LnGrp Delay(d),s/veh	42.7	28.9	29.1	40.3	36.6	19.7	40.9	29.1	31.7	37.6	13.5	21.2
LnGrp LOS	D	C	C	D	D	B	D	C	C	D	B	C
Approach Vol, veh/h		387			461			1300			2795	
Approach Delay, s/veh		37.0			26.7			30.3			21.3	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	46.4	12.7	13.7	23.9	29.7	7.6	18.8
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	47.3	7.6	* 30	22.3	* 28	4.2	* 33
Max Q Clear Time (g_c+I1), s	2.9	30.4	7.2	7.5	17.8	20.1	3.1	4.3
Green Ext Time (p_c), s	0.0	5.3	0.0	0.6	0.6	3.9	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	64	13	38	46	66	37	1164	63	133	846	215
Future Volume (veh/h)	105	64	13	38	46	66	37	1164	63	133	846	215
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	91	84	13	38	46	66	37	1164	63	133	846	215
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	155	138	21	128	134	114	43	1546	84	199	1608	406
Arrive On Green	0.09	0.09	0.09	0.07	0.07	0.07	0.02	0.32	0.32	0.11	0.40	0.40
Sat Flow, veh/h	1757	1561	242	1757	1845	1568	1757	4891	265	1757	4010	1013
Grp Volume(v), veh/h	91	0	97	38	46	66	37	799	428	133	707	354
Grp Sat Flow(s),veh/h/ln	1757	0	1802	1757	1845	1568	1757	1679	1798	1757	1679	1666
Q Serve(g_s), s	2.5	0.0	2.6	1.0	1.2	2.0	1.0	10.6	10.6	3.6	8.0	8.0
Cycle Q Clear(g_c), s	2.5	0.0	2.6	1.0	1.2	2.0	1.0	10.6	10.6	3.6	8.0	8.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.15	1.00		0.61
Lane Grp Cap(c), veh/h	155	0	159	128	134	114	43	1061	568	199	1347	668
V/C Ratio(X)	0.59	0.00	0.61	0.30	0.34	0.58	0.86	0.75	0.75	0.67	0.53	0.53
Avail Cap(c_a), veh/h	987	0	1013	952	1000	850	127	1738	931	310	2075	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	21.9	21.9	22.0	22.4	24.2	15.3	15.3	21.2	11.3	11.3
Incr Delay (d2), s/veh	1.3	0.0	1.4	0.5	0.6	1.7	16.3	0.4	0.8	1.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.4	0.5	0.6	0.9	0.7	4.9	5.4	1.8	3.7	3.7
LnGrp Delay(d),s/veh	23.1	0.0	23.3	22.4	22.5	24.1	40.5	15.7	16.1	22.6	11.4	11.6
LnGrp LOS	C		C	C	C	C	D	B	B	C	B	B
Approach Vol, veh/h		188			150			1264			1194	
Approach Delay, s/veh		23.2			23.2			16.5			12.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	24.8		9.1	10.3	20.6		9.9
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 3.6	30.8		27.0	* 8.8	25.8		28.0
Max Q Clear Time (g_c+I1), s	3.0	10.0		4.0	5.6	12.6		4.6
Green Ext Time (p_c), s	0.0	3.3		0.1	0.0	3.1		0.2

Intersection Summary			
HCM 2010 Ctrl Delay		15.7	
HCM 2010 LOS		B	

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

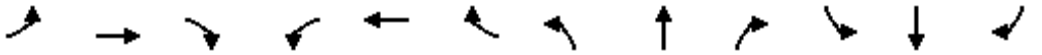
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	319	171	76	301	187	293	939	98	123	346	164
Future Volume (veh/h)	126	319	171	76	301	187	293	939	98	123	346	164
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	126	319	171	76	301	187	293	939	98	123	346	164
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	214	663	309	138	882	274	412	1285	400	210	669	298
Arrive On Green	0.06	0.20	0.20	0.04	0.18	0.18	0.12	0.26	0.26	0.06	0.20	0.20
Sat Flow, veh/h	3408	3357	1568	3408	5036	1568	3408	5036	1568	3408	3414	1520
Grp Volume(v), veh/h	126	319	171	76	301	187	293	939	98	123	340	170
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1576
Q Serve(g_s), s	1.8	4.2	4.9	1.1	2.6	5.6	4.2	8.6	2.5	1.8	4.6	4.9
Cycle Q Clear(g_c), s	1.8	4.2	4.9	1.1	2.6	5.6	4.2	8.6	2.5	1.8	4.6	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.96
Lane Grp Cap(c), veh/h	214	663	309	138	882	274	412	1285	400	210	658	309
V/C Ratio(X)	0.59	0.48	0.55	0.55	0.34	0.68	0.71	0.73	0.24	0.59	0.52	0.55
Avail Cap(c_a), veh/h	237	1909	892	264	2904	904	440	3084	960	291	1909	896
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	17.9	18.2	23.7	18.2	19.4	21.3	17.1	14.9	23.0	18.1	18.2
Incr Delay (d2), s/veh	1.6	0.2	0.6	1.3	0.1	1.1	4.0	0.3	0.1	1.0	0.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.0	2.2	0.5	1.2	2.5	2.2	3.9	1.1	0.8	2.1	2.2
LnGrp Delay(d),s/veh	24.6	18.1	18.8	25.0	18.3	20.5	25.3	17.4	15.0	23.9	18.3	18.8
LnGrp LOS	C	B	B	C	B	C	C	B	B	C	B	B
Approach Vol, veh/h		616			564			1330			633	
Approach Delay, s/veh		19.6			19.9			19.0			19.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	15.5	8.7	14.6	8.6	18.4	7.5	15.7
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	6.5	* 29	3.5	29.0	4.3	* 31	3.9	28.6
Max Q Clear Time (g_c+I1), s	6.2	6.9	3.8	7.6	3.8	10.6	3.1	6.9
Green Ext Time (p_c), s	0.0	2.3	0.0	1.2	0.0	2.3	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	178	12	50	264	247	14	372	69	58	153	101
Future Volume (veh/h)	349	178	12	50	264	247	14	372	69	58	153	101
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	349	178	12	50	264	247	14	372	69	58	153	101
Adj No. of Lanes	1	2	0	1	1	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	347	1192	80	62	349	297	18	416	77	105	545	463
Arrive On Green	0.20	0.36	0.36	0.04	0.19	0.19	0.01	0.27	0.27	0.03	0.30	0.30
Sat Flow, veh/h	1757	3335	223	1757	1845	1568	1757	1514	281	3408	1845	1568
Grp Volume(v), veh/h	349	93	97	50	264	247	14	0	441	58	153	101
Grp Sat Flow(s),veh/h/ln	1757	1752	1805	1757	1845	1568	1757	0	1795	1704	1845	1568
Q Serve(g_s), s	13.5	2.5	2.5	1.9	9.2	10.4	0.5	0.0	16.1	1.1	4.4	3.3
Cycle Q Clear(g_c), s	13.5	2.5	2.5	1.9	9.2	10.4	0.5	0.0	16.1	1.1	4.4	3.3
Prop In Lane	1.00		0.12	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	347	626	645	62	349	297	18	0	493	105	545	463
V/C Ratio(X)	1.00	0.15	0.15	0.81	0.76	0.83	0.78	0.00	0.89	0.55	0.28	0.22
Avail Cap(c_a), veh/h	347	1029	1060	188	908	772	77	0	902	150	919	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	14.9	14.9	32.7	26.2	26.6	33.7	0.0	23.8	32.6	18.5	18.1
Incr Delay (d2), s/veh	49.5	0.0	0.0	8.7	1.3	2.3	22.8	0.0	2.3	1.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	1.2	1.2	1.1	4.8	4.7	0.4	0.0	8.3	0.6	2.2	1.4
LnGrp Delay(d),s/veh	76.9	14.9	14.9	41.4	27.5	29.0	56.5	0.0	26.2	34.3	18.6	18.2
LnGrp LOS	F	B	B	D	C	C	E		C	C	B	B
Approach Vol, veh/h		539			561			455			312	
Approach Delay, s/veh		55.0			29.4			27.1			21.4	
Approach LOS		E			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	17.8	6.2	25.3	7.5	29.3	7.6	23.9
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	13.5	* 34	3.0	* 34	* 7.3	* 40	3.0	* 34
Max Q Clear Time (g_c+I1), s	15.5	12.4	2.5	6.4	3.9	4.5	3.1	18.1
Green Ext Time (p_c), s	0.0	0.6	0.0	0.6	0.0	0.6	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	97	60	417	297	172	77	1283	94	224	1922	375
Future Volume (veh/h)	184	97	60	417	297	172	77	1283	94	224	1922	375
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	184	97	60	417	320	156	77	1283	94	224	1922	375
Adj No. of Lanes	2	2	1	2	2	1	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	256	440	197	491	702	437	129	2493	616	299	2230	694
Arrive On Green	0.07	0.13	0.13	0.14	0.19	0.19	0.04	0.40	0.40	0.09	0.45	0.45
Sat Flow, veh/h	3408	3505	1568	3514	3689	1568	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	184	97	60	417	320	156	77	1283	94	224	1922	375
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	4.7	2.2	3.1	10.3	6.8	7.1	2.0	13.8	3.5	5.8	30.9	15.7
Cycle Q Clear(g_c), s	4.7	2.2	3.1	10.3	6.8	7.1	2.0	13.8	3.5	5.8	30.9	15.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	440	197	491	702	437	129	2493	616	299	2230	694
V/C Ratio(X)	0.72	0.22	0.30	0.85	0.46	0.36	0.60	0.51	0.15	0.75	0.86	0.54
Avail Cap(c_a), veh/h	325	1142	511	545	1417	741	129	2493	616	485	2336	727
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	35.0	35.4	37.4	31.9	25.7	42.1	20.4	17.2	39.6	22.1	17.9
Incr Delay (d2), s/veh	3.5	0.4	1.3	10.2	1.3	1.4	5.2	0.1	0.0	1.4	4.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.1	1.4	5.7	3.6	3.2	1.0	6.0	1.5	2.7	14.9	7.1
LnGrp Delay(d),s/veh	43.8	35.4	36.7	47.6	33.2	27.1	47.4	20.4	17.3	41.0	26.4	20.2
LnGrp LOS	D	D	D	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		341			893			1454			2521	
Approach Delay, s/veh		40.1			38.8			21.7			26.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	45.2	12.2	22.8	13.4	40.7	17.9	17.0
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	3.4	* 42	8.5	34.2	12.8	* 32	13.8	* 29
Max Q Clear Time (g_c+I1), s	4.0	32.9	6.7	9.1	7.8	15.8	12.3	5.1
Green Ext Time (p_c), s	0.0	6.9	0.0	6.2	0.1	16.0	0.1	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	28.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	233	118	111	331	135	316	1264	41	221	887	320
Future Volume (veh/h)	126	233	118	111	331	135	316	1264	41	221	887	320
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	126	233	118	111	331	135	316	1264	41	221	887	320
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	182	609	272	165	843	263	375	2496	777	280	2355	733
Arrive On Green	0.05	0.17	0.17	0.05	0.17	0.17	0.11	0.50	0.50	0.08	0.47	0.47
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	126	233	118	111	331	135	316	1264	41	221	887	320
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	4.3	6.9	7.9	3.8	6.9	9.3	10.8	19.9	1.6	7.6	13.4	16.1
Cycle Q Clear(g_c), s	4.3	6.9	7.9	3.8	6.9	9.3	10.8	19.9	1.6	7.6	13.4	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	609	272	165	843	263	375	2496	777	280	2355	733
V/C Ratio(X)	0.69	0.38	0.43	0.67	0.39	0.51	0.84	0.51	0.05	0.79	0.38	0.44
Avail Cap(c_a), veh/h	565	1013	453	560	1451	452	560	2732	851	560	2723	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	43.0	43.4	55.0	43.5	44.5	51.2	19.7	15.1	52.9	19.9	20.6
Incr Delay (d2), s/veh	1.7	0.8	2.2	1.8	1.0	5.3	4.7	0.3	0.1	1.9	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.4	3.6	1.8	3.3	4.4	5.3	9.2	0.7	3.6	6.2	7.0
LnGrp Delay(d),s/veh	56.4	43.8	45.6	56.8	44.5	49.7	56.0	20.0	15.1	54.8	20.1	21.5
LnGrp LOS	E	D	D	E	D	D	E	B	B	D	C	C
Approach Vol, veh/h		477			577			1621			1428	
Approach Delay, s/veh		47.6			48.1			26.9			25.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.6	61.3	11.8	25.9	15.3	64.6	11.2	26.4
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	19.5	* 64	19.5	* 34	19.5	* 64	19.5	34.0
Max Q Clear Time (g_c+I1), s	12.8	18.1	6.3	11.3	9.6	21.9	5.8	9.9
Green Ext Time (p_c), s	0.3	37.4	0.1	8.6	0.2	35.0	0.1	8.8

Intersection Summary	
HCM 2010 Ctrl Delay	31.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	70	174	12	30	14	468	1538	5	51	685	179
Future Volume (veh/h)	55	70	174	12	30	14	468	1538	5	51	685	179
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	55	70	174	12	30	14	468	1538	5	51	685	179
Adj No. of Lanes	2	1	2	1	1	0	2	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	110	194	291	16	98	46	606	1952	6	61	1176	366
Arrive On Green	0.03	0.11	0.11	0.01	0.08	0.08	0.18	0.38	0.38	0.04	0.24	0.24
Sat Flow, veh/h	3408	1845	2760	1757	1191	556	3375	5132	17	1740	4988	1553
Grp Volume(v), veh/h	55	70	174	12	0	44	468	996	547	51	685	179
Grp Sat Flow(s),veh/h/ln	1704	1845	1380	1757	0	1747	1688	1663	1824	1740	1663	1553
Q Serve(g_s), s	0.8	1.7	3.0	0.3	0.0	1.2	6.5	13.0	13.0	1.4	6.0	4.9
Cycle Q Clear(g_c), s	0.8	1.7	3.0	0.3	0.0	1.2	6.5	13.0	13.0	1.4	6.0	4.9
Prop In Lane	1.00		1.00	1.00		0.32	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	110	194	291	16	0	144	606	1264	694	61	1176	366
V/C Ratio(X)	0.50	0.36	0.60	0.74	0.00	0.31	0.77	0.79	0.79	0.84	0.58	0.49
Avail Cap(c_a), veh/h	208	1242	1859	122	0	1208	858	3051	1674	209	3846	1197
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	20.4	21.0	24.3	0.0	21.2	19.2	13.5	13.5	23.6	16.6	16.2
Incr Delay (d2), s/veh	1.3	0.4	0.7	21.4	0.0	0.4	1.6	0.4	0.8	10.5	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.9	1.1	0.3	0.0	0.6	3.1	6.0	6.7	0.9	2.7	2.1
LnGrp Delay(d),s/veh	24.7	20.9	21.7	45.7	0.0	21.7	20.8	13.9	14.2	34.1	16.8	16.6
LnGrp LOS	C	C	C	D		C	C	B	B	C	B	B
Approach Vol, veh/h		299			56			2011			915	
Approach Delay, s/veh		22.1			26.8			15.6			17.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	17.6	7.1	10.1	7.2	24.7	6.0	11.3
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	12.5	37.9	3.0	* 34	5.9	* 45	3.4	* 33
Max Q Clear Time (g_c+I1), s	8.5	8.0	2.8	3.2	3.4	15.0	2.3	5.0
Green Ext Time (p_c), s	0.3	3.6	0.0	0.3	0.0	3.6	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.0
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	38	66	37	161	203	409	1729	57	52	486	78
Future Volume (veh/h)	170	38	66	37	161	203	409	1729	57	52	486	78
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	170	38	66	37	161	203	409	1729	57	52	486	78
Adj No. of Lanes	2	2	0	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	189	353	316	74	564	252	503	1988	619	96	1386	432
Arrive On Green	0.06	0.20	0.20	0.02	0.17	0.17	0.15	0.40	0.40	0.03	0.28	0.28
Sat Flow, veh/h	3408	1752	1568	3250	3343	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	170	38	66	37	161	203	409	1729	57	52	486	78
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1625	1671	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	3.1	1.1	2.2	0.7	2.7	8.2	7.4	20.1	1.4	1.0	4.9	2.4
Cycle Q Clear(g_c), s	3.1	1.1	2.2	0.7	2.7	8.2	7.4	20.1	1.4	1.0	4.9	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	353	316	74	564	252	503	1988	619	96	1386	432
V/C Ratio(X)	0.90	0.11	0.21	0.50	0.29	0.80	0.81	0.87	0.09	0.54	0.35	0.18
Avail Cap(c_a), veh/h	189	625	559	155	1166	522	508	2333	726	161	1819	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	20.6	21.0	30.5	22.9	25.2	26.0	17.5	11.8	30.2	18.2	17.3
Incr Delay (d2), s/veh	37.7	0.0	0.1	1.9	0.1	2.3	9.0	3.0	0.0	1.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.5	1.0	0.3	1.2	3.6	4.0	9.7	0.6	0.5	2.3	1.0
LnGrp Delay(d),s/veh	67.3	20.6	21.1	32.4	23.0	27.5	35.0	20.5	11.9	32.0	18.3	17.4
LnGrp LOS	E	C	C	C	C	C	C	C	B	C	B	B
Approach Vol, veh/h		274			401			2195			616	
Approach Delay, s/veh		49.7			26.2			22.9			19.3	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	23.0	9.0	16.1	7.3	30.6	6.9	18.2
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	23.0	3.5	22.0	3.0	29.5	3.0	22.5
Max Q Clear Time (g_c+I1), s	9.4	6.9	5.1	10.2	3.0	22.1	2.7	4.2
Green Ext Time (p_c), s	0.0	4.0	0.0	0.4	0.0	3.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	24.8
HCM 2010 LOS	C



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	47	255	1657	43	53	518
Future Volume (veh/h)	47	255	1657	43	53	518
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1827	1827	1827
Adj Flow Rate, veh/h	47	255	1657	43	53	518
Adj No. of Lanes	2	1	3	1	2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	402	185	2140	666	114	2107
Arrive On Green	0.12	0.12	0.43	0.43	0.03	0.61
Sat Flow, veh/h	3408	1568	5152	1553	3375	3563
Grp Volume(v), veh/h	47	255	1657	43	53	518
Grp Sat Flow(s),veh/h/ln	1704	1568	1663	1553	1688	1736
Q Serve(g_s), s	0.5	4.5	10.8	0.6	0.6	2.6
Cycle Q Clear(g_c), s	0.5	4.5	10.8	0.6	0.6	2.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	402	185	2140	666	114	2107
V/C Ratio(X)	0.12	1.38	0.77	0.06	0.46	0.25
Avail Cap(c_a), veh/h	402	185	3332	1037	1680	4547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.1	16.8	9.3	6.4	18.1	3.5
Incr Delay (d2), s/veh	0.0	200.9	0.2	0.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	14.0	5.0	0.3	0.3	1.2
LnGrp Delay(d),s/veh	15.1	217.7	9.5	6.4	19.2	3.5
LnGrp LOS	B	F	A	A	B	A
Approach Vol, veh/h	302		1700			571
Approach Delay, s/veh	186.2		9.5			4.9
Approach LOS	F		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.2		10.0	6.8	21.4		
Change Period (Y+Rc), s		5.0		5.5	5.5	5.0		
Max Green Setting (Gmax), s		50.0		4.5	19.0	25.5		
Max Q Clear Time (g_c+I1), s		4.6		6.5	2.6	12.8		
Green Ext Time (p_c), s		4.0		0.0	0.0	3.5		

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	324	1	2	35	6	147	6	1115	28	57	459	59
Future Volume (veh/h)	324	1	2	35	6	147	6	1115	28	57	459	59
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1900	1845	1845	1845	1827	1827	1827	1829	1900
Adj Flow Rate, veh/h	324	1	2	35	6	147	6	1115	28	57	459	59
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	4
Cap, veh/h	371	1	2	185	32	193	8	1202	538	103	1195	153
Arrive On Green	0.21	0.21	0.21	0.12	0.12	0.12	0.00	0.35	0.35	0.03	0.39	0.39
Sat Flow, veh/h	1740	5	11	1510	259	1568	1757	3471	1553	3375	3100	397
Grp Volume(v), veh/h	327	0	0	41	0	147	6	1115	28	57	256	262
Grp Sat Flow(s),veh/h/ln	1756	0	0	1769	0	1568	1757	1736	1553	1688	1737	1759
Q Serve(g_s), s	12.1	0.0	0.0	1.4	0.0	6.1	0.2	20.8	0.8	1.1	7.2	7.2
Cycle Q Clear(g_c), s	12.1	0.0	0.0	1.4	0.0	6.1	0.2	20.8	0.8	1.1	7.2	7.2
Prop In Lane	0.99		0.01	0.85		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	375	0	0	217	0	193	8	1202	538	103	670	678
V/C Ratio(X)	0.87	0.00	0.00	0.19	0.00	0.76	0.72	0.93	0.05	0.56	0.38	0.39
Avail Cap(c_a), veh/h	418	0	0	474	0	420	78	1223	547	151	670	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	0.0	0.0	26.5	0.0	28.5	33.4	21.2	14.6	32.1	14.9	14.9
Incr Delay (d2), s/veh	16.8	0.0	0.0	0.4	0.0	6.2	75.7	12.0	0.0	4.6	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	0.0	0.7	0.0	2.9	0.3	11.9	0.3	0.6	3.5	3.6
LnGrp Delay(d),s/veh	42.3	0.0	0.0	26.9	0.0	34.7	109.1	33.2	14.7	36.8	15.3	15.3
LnGrp LOS	D			C		C	F	C	B	D	B	B
Approach Vol, veh/h		327			188			1149			575	
Approach Delay, s/veh		42.3			33.0			33.2			17.4	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.3	30.9		13.7	6.9	28.3		18.4
Change Period (Y+Rc), s	4.0	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	3.0	24.6		* 18	* 3	23.7		16.0
Max Q Clear Time (g_c+I1), s	2.2	9.2		8.1	3.1	22.8		14.1
Green Ext Time (p_c), s	0.0	7.6		0.4	0.0	0.5		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.4
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	331	1	39	511	321	6	675	15	106	276	139
Future Volume (veh/h)	80	331	1	39	511	321	6	675	15	106	276	139
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1900	1827	1845	1845
Adj Flow Rate, veh/h	80	331	1	39	511	321	6	675	15	106	276	139
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	100	630	536	50	577	590	8	725	16	129	872	830
Arrive On Green	0.06	0.34	0.34	0.03	0.31	0.31	0.00	0.40	0.40	0.07	0.47	0.47
Sat Flow, veh/h	1757	1845	1568	1757	1845	1524	1757	1798	40	1740	1845	1568
Grp Volume(v), veh/h	80	331	1	39	511	321	6	0	690	106	276	139
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1524	1757	0	1838	1740	1845	1568
Q Serve(g_s), s	5.9	18.8	0.1	2.9	34.4	21.4	0.4	0.0	47.0	7.9	12.1	6.0
Cycle Q Clear(g_c), s	5.9	18.8	0.1	2.9	34.4	21.4	0.4	0.0	47.0	7.9	12.1	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	100	630	536	50	577	590	8	0	741	129	872	830
V/C Ratio(X)	0.80	0.53	0.00	0.78	0.88	0.54	0.76	0.00	0.93	0.82	0.32	0.17
Avail Cap(c_a), veh/h	121	733	623	107	719	706	40	0	828	146	944	892
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	34.6	28.4	63.2	42.7	31.2	65.1	0.0	37.3	59.8	21.4	15.9
Incr Delay (d2), s/veh	25.8	0.7	0.0	22.7	10.8	0.8	86.6	0.0	16.0	24.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	9.7	0.0	1.7	19.3	9.2	0.4	0.0	27.1	4.7	6.3	2.6
LnGrp Delay(d),s/veh	86.8	35.2	28.4	85.9	53.6	31.9	151.7	0.0	53.4	84.5	21.6	16.0
LnGrp LOS	F	D	C	F	D	C	F		D	F	C	B
Approach Vol, veh/h		412			871			696			521	
Approach Delay, s/veh		45.2			47.0			54.2			32.9	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	50.7	4.6	67.8	11.5	47.0	13.7	58.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	8.0	52.0	3.0	67.0	9.0	51.0	11.0	59.0
Max Q Clear Time (g_c+I1), s	4.9	20.8	2.4	14.1	7.9	36.4	9.9	49.0
Green Ext Time (p_c), s	0.0	5.5	0.0	5.9	0.0	4.5	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	45.8
HCM 2010 LOS	D

Notes

User approved changes to right turn type.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	109	12	49	570	198	123
Future Volume (veh/h)	109	12	49	570	198	123
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	109	12	49	570	198	123
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	132	15	60	967	295	183
Arrive On Green	0.09	0.09	0.03	0.53	0.28	0.28
Sat Flow, veh/h	1453	160	1740	1827	1056	656
Grp Volume(v), veh/h	122	0	49	570	0	321
Grp Sat Flow(s),veh/h/ln	1626	0	1740	1827	0	1711
Q Serve(g_s), s	1.9	0.0	0.7	5.4	0.0	4.2
Cycle Q Clear(g_c), s	1.9	0.0	0.7	5.4	0.0	4.2
Prop In Lane	0.89	0.10	1.00			0.38
Lane Grp Cap(c), veh/h	148	0	60	967	0	478
V/C Ratio(X)	0.83	0.00	0.82	0.59	0.00	0.67
Avail Cap(c_a), veh/h	319	0	409	2197	0	1260
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.4	0.0	12.2	4.1	0.0	8.2
Incr Delay (d2), s/veh	11.0	0.0	9.6	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.5	2.7	0.0	2.0
LnGrp Delay(d),s/veh	22.4	0.0	21.8	4.3	0.0	8.8
LnGrp LOS	C		C	A		A
Approach Vol, veh/h	122			619	321	
Approach Delay, s/veh	22.4			5.7	8.8	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.4	12.8		6.3		19.2		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.0	* 19		5.0		* 31		
Max Q Clear Time (g_c+I1), s	2.7	6.2		3.9		7.4		
Green Ext Time (p_c), s	0.0	0.9		0.0		0.9		

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	120	16	16	491	298	8	20	6	304	213	680
Future Volume (veh/h)	132	120	16	16	491	298	8	20	6	304	213	680
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1792	1792	1900	1792	1792	1792
Adj Flow Rate, veh/h	132	120	16	16	491	298	8	20	6	203	311	709
Adj No. of Lanes	2	2	0	1	1	1	1	1	0	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	6	6	6	6	6	6
Cap, veh/h	213	1105	145	20	549	467	36	28	8	460	483	822
Arrive On Green	0.06	0.35	0.35	0.01	0.30	0.30	0.02	0.02	0.02	0.27	0.27	0.27
Sat Flow, veh/h	3408	3116	409	1757	1845	1568	1707	1325	397	1707	1792	3047
Grp Volume(v), veh/h	132	67	69	16	491	298	8	0	26	203	311	709
Grp Sat Flow(s),veh/h/ln	1704	1752	1773	1757	1845	1568	1707	0	1722	1707	1792	1524
Q Serve(g_s), s	2.4	1.6	1.7	0.6	16.4	10.6	0.3	0.0	1.0	6.3	9.8	14.2
Cycle Q Clear(g_c), s	2.4	1.6	1.7	0.6	16.4	10.6	0.3	0.0	1.0	6.3	9.8	14.2
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	213	622	629	20	549	467	36	0	37	460	483	822
V/C Ratio(X)	0.62	0.11	0.11	0.79	0.89	0.64	0.22	0.00	0.71	0.44	0.64	0.86
Avail Cap(c_a), veh/h	250	748	757	153	833	708	558	0	563	638	670	1139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	13.9	13.9	31.6	21.6	19.5	30.9	0.0	31.2	19.4	20.7	22.3
Incr Delay (d2), s/veh	1.8	0.0	0.0	21.2	6.0	0.5	1.1	0.0	9.0	0.2	0.5	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.8	0.8	0.4	9.2	4.6	0.2	0.0	0.5	3.0	4.9	6.3
LnGrp Delay(d),s/veh	31.2	13.9	13.9	52.8	27.6	20.1	32.0	0.0	40.2	19.7	21.2	26.2
LnGrp LOS	C	B	B	D	C	C	C		D	B	C	C
Approach Vol, veh/h		268			805			34			1223	
Approach Delay, s/veh		22.4			25.3			38.3			23.9	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	25.0		22.8	5.8	28.7		6.9
Change Period (Y+Rc), s	5.5	* 5.9		5.5	* 5.1	* 5.9		5.5
Max Green Setting (Gmax), s	4.7	* 29		24.0	* 5.6	* 27		21.0
Max Q Clear Time (g_c+I1), s	4.4	18.4		16.2	2.6	3.7		3.0
Green Ext Time (p_c), s	0.0	0.7		1.1	0.0	0.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	162	26	108	461	288	59
Future Volume (veh/h)	162	26	108	461	288	59
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1792	1792	1810	1810
Adj Flow Rate, veh/h	162	26	108	461	288	59
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	6	6	5	5
Cap, veh/h	231	206	134	941	503	427
Arrive On Green	0.14	0.14	0.08	0.52	0.28	0.28
Sat Flow, veh/h	1675	1495	1707	1792	1810	1538
Grp Volume(v), veh/h	162	26	108	461	288	59
Grp Sat Flow(s),veh/h/ln	1675	1495	1707	1792	1810	1538
Q Serve(g_s), s	3.0	0.5	2.0	5.4	4.5	0.9
Cycle Q Clear(g_c), s	3.0	0.5	2.0	5.4	4.5	0.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	231	206	134	941	503	427
V/C Ratio(X)	0.70	0.13	0.81	0.49	0.57	0.14
Avail Cap(c_a), veh/h	822	733	330	1538	899	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	12.3	14.8	5.0	10.1	8.8
Incr Delay (d2), s/veh	3.8	0.3	10.8	0.4	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.4	1.3	2.7	2.3	0.4
LnGrp Delay(d),s/veh	17.2	12.6	25.6	5.4	11.2	9.0
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	188			569	347	
Approach Delay, s/veh	16.6			9.2	10.8	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		22.6		10.0	8.1	14.6		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		28.0		16.0	6.3	16.2		
Max Q Clear Time (g_c+I1), s		7.4		5.0	4.0	6.5		
Green Ext Time (p_c), s		3.5		0.5	0.1	2.6		

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	252	5	64	689	40	2	190	36	13	200	102
Future Volume (veh/h)	173	252	5	64	689	40	2	190	36	13	200	102
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1900	1810	1900	1900	1810	1900
Adj Flow Rate, veh/h	173	252	5	64	689	40	2	190	36	13	200	102
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	105	775	15	81	719	42	2	217	41	12	189	96
Arrive On Green	0.06	0.44	0.44	0.05	0.43	0.43	0.15	0.15	0.15	0.17	0.17	0.17
Sat Flow, veh/h	1707	1752	35	1707	1678	97	15	1466	278	71	1085	553
Grp Volume(v), veh/h	173	0	257	64	0	729	228	0	0	315	0	0
Grp Sat Flow(s),veh/h/ln	1707	0	1786	1707	0	1775	1760	0	0	1708	0	0
Q Serve(g_s), s	7.4	0.0	11.3	4.5	0.0	48.0	15.3	0.0	0.0	21.0	0.0	0.0
Cycle Q Clear(g_c), s	7.4	0.0	11.3	4.5	0.0	48.0	15.3	0.0	0.0	21.0	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.05	0.01		0.16	0.04		0.32
Lane Grp Cap(c), veh/h	105	0	790	81	0	761	260	0	0	298	0	0
V/C Ratio(X)	1.65	0.00	0.33	0.79	0.00	0.96	0.88	0.00	0.00	1.06	0.00	0.00
Avail Cap(c_a), veh/h	105	0	790	130	0	781	380	0	0	298	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.5	0.0	21.9	56.8	0.0	33.4	50.2	0.0	0.0	49.7	0.0	0.0
Incr Delay (d2), s/veh	330.7	0.0	0.5	6.2	0.0	22.8	14.4	0.0	0.0	68.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	0.0	5.7	2.3	0.0	28.3	8.5	0.0	0.0	15.5	0.0	0.0
LnGrp Delay(d),s/veh	387.2	0.0	22.4	63.0	0.0	56.2	64.6	0.0	0.0	117.8	0.0	0.0
LnGrp LOS	F		C	E		E	E			F		
Approach Vol, veh/h		430			793			228			315	
Approach Delay, s/veh		169.1			56.7			64.6			117.8	
Approach LOS		F			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	57.6		27.0	10.3	59.3		23.8
Change Period (Y+Rc), s	4.6	6.0		6.0	4.6	6.0		6.0
Max Green Setting (Gmax), s	7.4	53.0		21.0	9.2	51.2		26.0
Max Q Clear Time (g_c+I1), s	9.4	50.0		23.0	6.5	13.3		17.3
Green Ext Time (p_c), s	0.0	1.6		0.0	0.0	13.0		0.6

Intersection Summary		
HCM 2010 Ctrl Delay		96.0
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	456	90	121	428	205	115	1030	161	115	539	148
Future Volume (veh/h)	190	456	90	121	428	205	115	1030	161	115	539	148
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	190	456	90	121	428	205	115	1030	161	115	539	148
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	230	686	134	154	670	300	149	1254	561	146	1250	559
Arrive On Green	0.13	0.23	0.23	0.09	0.19	0.19	0.08	0.36	0.36	0.08	0.36	0.36
Sat Flow, veh/h	1757	2923	573	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	190	272	274	121	428	205	115	1030	161	115	539	148
Grp Sat Flow(s),veh/h/ln	1757	1752	1744	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	7.1	9.5	9.6	4.6	7.6	8.2	4.3	18.1	5.0	4.3	7.9	4.5
Cycle Q Clear(g_c), s	7.1	9.5	9.6	4.6	7.6	8.2	4.3	18.1	5.0	4.3	7.9	4.5
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	411	409	154	670	300	149	1254	561	146	1250	559
V/C Ratio(X)	0.82	0.66	0.67	0.79	0.64	0.68	0.77	0.82	0.29	0.79	0.43	0.26
Avail Cap(c_a), veh/h	234	440	438	208	829	371	286	1399	626	182	1250	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	23.5	23.5	30.2	25.2	25.5	30.3	19.8	15.5	30.4	16.6	15.5
Incr Delay (d2), s/veh	20.6	3.4	3.6	13.0	1.1	3.8	8.3	3.7	0.3	16.4	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	5.0	5.0	2.8	3.8	3.9	2.4	9.4	2.2	2.8	3.9	2.0
LnGrp Delay(d),s/veh	49.2	26.8	27.1	43.2	26.3	29.2	38.6	23.4	15.8	46.8	16.8	15.7
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	B	B
Approach Vol, veh/h		736			754			1306			802	
Approach Delay, s/veh		32.7			29.8			23.8			20.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	28.2	9.9	19.9	9.7	28.1	12.9	16.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	27.0	8.0	17.0	11.0	23.0	9.0	16.0
Max Q Clear Time (g_c+I1), s	6.3	20.1	6.6	11.6	6.3	9.9	9.1	10.2
Green Ext Time (p_c), s	0.0	4.1	0.0	2.6	0.1	7.6	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	413	114	60	366	104	71	1079	111	81	491	109
Future Volume (veh/h)	179	413	114	60	366	104	71	1079	111	81	491	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	179	413	114	60	366	104	71	1079	111	81	491	109
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	219	949	425	76	512	144	91	1253	129	102	1133	250
Arrive On Green	0.12	0.27	0.27	0.04	0.19	0.19	0.05	0.39	0.39	0.06	0.40	0.40
Sat Flow, veh/h	1757	3505	1568	1757	2704	759	1740	3178	327	1740	2828	624
Grp Volume(v), veh/h	179	413	114	60	236	234	71	589	601	81	300	300
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1711	1740	1736	1769	1740	1736	1717
Q Serve(g_s), s	6.8	6.7	3.9	2.3	8.6	8.8	2.8	21.3	21.4	3.2	8.6	8.7
Cycle Q Clear(g_c), s	6.8	6.7	3.9	2.3	8.6	8.8	2.8	21.3	21.4	3.2	8.6	8.7
Prop In Lane	1.00		1.00	1.00		0.44	1.00		0.18	1.00		0.36
Lane Grp Cap(c), veh/h	219	949	425	76	332	324	91	685	698	102	695	688
V/C Ratio(X)	0.82	0.44	0.27	0.79	0.71	0.72	0.78	0.86	0.86	0.80	0.43	0.44
Avail Cap(c_a), veh/h	231	971	435	154	409	399	203	759	774	102	695	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	20.7	19.7	32.5	26.0	26.1	32.1	19.0	19.0	31.9	14.9	14.9
Incr Delay (d2), s/veh	19.5	0.3	0.3	16.6	4.3	4.9	13.7	9.2	9.1	34.6	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	3.3	1.7	1.5	4.6	4.6	1.7	11.9	12.1	2.5	4.2	4.2
LnGrp Delay(d),s/veh	48.8	21.0	20.0	49.1	30.3	31.0	45.8	28.2	28.1	66.5	15.3	15.4
LnGrp LOS	D	C	B	D	C	C	D	C	C	E	B	B
Approach Vol, veh/h		706			530			1261			681	
Approach Delay, s/veh		27.9			32.8			29.2			21.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	31.0	7.0	22.6	7.6	31.5	12.5	17.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	30.0	6.0	19.0	8.0	26.0	9.0	16.0
Max Q Clear Time (g_c+I1), s	5.2	23.4	4.3	8.7	4.8	10.7	8.8	10.8
Green Ext Time (p_c), s	0.0	3.7	0.0	3.4	0.0	7.8	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	27.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	537	156	50	790	133	181	996	190	95	444	124
Future Volume (veh/h)	164	537	156	50	790	133	181	996	190	95	444	124
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	164	537	156	50	790	133	181	996	190	95	444	124
Adj No. of Lanes	1	3	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	186	1244	352	62	870	389	223	1050	200	117	1040	465
Arrive On Green	0.11	0.32	0.32	0.04	0.25	0.25	0.13	0.36	0.36	0.07	0.30	0.30
Sat Flow, veh/h	1740	3864	1094	1740	3471	1553	1740	2910	554	1740	3471	1553
Grp Volume(v), veh/h	164	460	233	50	790	133	181	593	593	95	444	124
Grp Sat Flow(s),veh/h/ln	1740	1663	1634	1740	1736	1553	1740	1736	1729	1740	1736	1553
Q Serve(g_s), s	6.9	8.1	8.4	2.1	16.5	5.2	7.6	24.8	24.9	4.0	7.7	4.5
Cycle Q Clear(g_c), s	6.9	8.1	8.4	2.1	16.5	5.2	7.6	24.8	24.9	4.0	7.7	4.5
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	186	1070	526	62	870	389	223	626	624	117	1040	465
V/C Ratio(X)	0.88	0.43	0.44	0.80	0.91	0.34	0.81	0.95	0.95	0.82	0.43	0.27
Avail Cap(c_a), veh/h	186	1070	526	140	883	395	326	628	625	117	1040	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	19.9	20.0	35.7	27.1	22.9	31.7	23.2	23.2	34.4	21.0	19.9
Incr Delay (d2), s/veh	34.8	0.3	0.6	20.5	13.0	0.5	9.4	23.6	24.2	34.3	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	3.7	3.8	1.4	9.5	2.3	4.2	16.0	16.0	3.0	3.7	2.0
LnGrp Delay(d),s/veh	67.7	20.2	20.6	56.2	40.1	23.4	41.1	46.8	47.4	68.7	21.3	20.2
LnGrp LOS	E	C	C	E	D	C	D	D	D	E	C	C
Approach Vol, veh/h		857			973			1367			663	
Approach Delay, s/veh		29.4			38.7			46.3			27.9	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	30.9	6.7	28.0	13.6	26.4	12.0	22.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	27.0	6.0	21.0	14.0	18.0	8.0	19.0
Max Q Clear Time (g_c+I1), s	6.0	26.9	4.1	10.4	9.6	9.7	8.9	18.5
Green Ext Time (p_c), s	0.0	0.1	0.0	5.8	0.3	5.2	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	334	93	70	660	163	170	703	49	58	168	80
Future Volume (veh/h)	283	334	93	70	660	163	170	703	49	58	168	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	283	334	93	70	660	163	170	703	49	58	168	80
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	330	1113	306	89	760	188	209	913	409	73	641	287
Arrive On Green	0.19	0.41	0.41	0.05	0.28	0.28	0.12	0.26	0.26	0.04	0.18	0.18
Sat Flow, veh/h	1740	2693	739	1740	2761	681	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	283	214	213	70	415	408	170	703	49	58	168	80
Grp Sat Flow(s),veh/h/ln	1740	1736	1697	1740	1736	1707	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	10.8	5.6	5.8	2.7	15.6	15.6	6.5	12.7	1.6	2.2	2.8	3.0
Cycle Q Clear(g_c), s	10.8	5.6	5.8	2.7	15.6	15.6	6.5	12.7	1.6	2.2	2.8	3.0
Prop In Lane	1.00		0.44	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	718	701	89	478	470	209	913	409	73	641	287
V/C Ratio(X)	0.86	0.30	0.30	0.78	0.87	0.87	0.81	0.77	0.12	0.80	0.26	0.28
Avail Cap(c_a), veh/h	380	718	701	228	531	522	230	1175	525	128	970	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	13.5	13.5	32.2	23.7	23.7	29.5	23.5	19.4	32.6	24.1	24.1
Incr Delay (d2), s/veh	15.9	0.2	0.2	13.8	13.3	13.6	18.1	2.4	0.1	17.5	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	2.7	2.7	1.6	9.2	9.1	4.2	6.5	0.7	1.4	1.4	1.3
LnGrp Delay(d),s/veh	42.8	13.7	13.7	45.9	36.9	37.3	47.5	25.9	19.5	50.1	24.3	24.7
LnGrp LOS	D	B	B	D	D	D	D	C	B	D	C	C
Approach Vol, veh/h		710			893			922			306	
Approach Delay, s/veh		25.3			37.8			29.5			29.3	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	21.9	7.5	32.4	12.2	16.6	17.0	22.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	23.0	9.0	27.0	9.0	19.0	15.0	21.0
Max Q Clear Time (g_c+I1), s	4.2	14.7	4.7	7.8	8.5	5.0	12.8	17.6
Green Ext Time (p_c), s	0.0	3.2	0.1	5.7	0.0	4.2	0.3	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	31.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	381	413	23	74	494	291	43	463	38	119	240	297
Future Volume (veh/h)	381	413	23	74	494	291	43	463	38	119	240	297
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	381	413	23	74	494	291	43	463	38	119	240	297
Adj No. of Lanes	2	2	1	2	2	0	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	490	1294	579	167	584	342	119	724	59	207	864	387
Arrive On Green	0.15	0.37	0.37	0.05	0.28	0.28	0.04	0.22	0.22	0.06	0.25	0.25
Sat Flow, veh/h	3375	3471	1553	3375	2107	1237	3375	3250	266	3375	3471	1553
Grp Volume(v), veh/h	381	413	23	74	407	378	43	247	254	119	240	297
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1688	1736	1609	1688	1736	1780	1688	1736	1553
Q Serve(g_s), s	5.9	4.6	0.5	1.2	12.1	12.1	0.7	7.0	7.1	1.9	3.0	9.7
Cycle Q Clear(g_c), s	5.9	4.6	0.5	1.2	12.1	12.1	0.7	7.0	7.1	1.9	3.0	9.7
Prop In Lane	1.00		1.00	1.00		0.77	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	490	1294	579	167	481	445	119	387	397	207	864	387
V/C Ratio(X)	0.78	0.32	0.04	0.44	0.85	0.85	0.36	0.64	0.64	0.58	0.28	0.77
Avail Cap(c_a), veh/h	496	1294	579	248	510	472	248	510	523	248	1019	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	12.2	10.9	25.2	18.6	18.6	25.7	19.2	19.2	24.9	16.5	19.0
Incr Delay (d2), s/veh	7.6	0.1	0.0	1.8	12.0	13.2	1.9	1.7	1.7	2.5	0.2	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	2.2	0.2	0.6	7.4	7.0	0.3	3.5	3.7	0.9	1.5	4.8
LnGrp Delay(d),s/veh	30.0	12.3	10.9	27.0	30.6	31.8	27.5	20.9	20.9	27.4	16.7	25.6
LnGrp LOS	C	B	B	C	C	C	C	C	C	C	B	C
Approach Vol, veh/h		817			859			544			656	
Approach Delay, s/veh		20.5			30.8			21.5			22.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	16.1	6.7	24.3	5.9	17.6	11.9	19.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	4.0	20.0	4.0	16.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	3.9	9.1	3.2	6.6	2.7	11.7	7.9	14.1
Green Ext Time (p_c), s	0.0	2.7	0.0	5.0	0.0	1.9	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	26	110	3	1	102	875	37	0	433	0
Future Volume (veh/h)	0	1	26	110	3	1	102	875	37	0	433	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	0	1	26	110	3	1	102	875	37	0	433	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	0	5	119	187	141	47	132	1012	860	4	726	0
Arrive On Green	0.00	0.08	0.08	0.11	0.11	0.11	0.08	0.56	0.56	0.00	0.40	0.00
Sat Flow, veh/h	0	56	1448	1757	1325	442	1707	1792	1524	1707	1792	0
Grp Volume(v), veh/h	0	0	27	110	0	4	102	875	37	0	433	0
Grp Sat Flow(s),veh/h/ln	0	0	1504	1757	0	1767	1707	1792	1524	1707	1792	0
Q Serve(g_s), s	0.0	0.0	0.8	2.9	0.0	0.1	2.8	20.2	0.5	0.0	9.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.8	2.9	0.0	0.1	2.8	20.2	0.5	0.0	9.2	0.0
Prop In Lane	0.00		0.96	1.00		0.25	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	124	187	0	188	132	1012	860	4	726	0
V/C Ratio(X)	0.00	0.00	0.22	0.59	0.00	0.02	0.77	0.86	0.04	0.00	0.60	0.00
Avail Cap(c_a), veh/h	0	0	495	579	0	582	457	1771	1505	141	1439	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	20.8	20.7	0.0	19.5	22.0	9.0	4.7	0.0	11.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.9	2.9	0.0	0.0	9.2	2.4	0.0	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	1.6	0.0	0.1	1.7	10.4	0.2	0.0	4.6	0.0
LnGrp Delay(d),s/veh	0.0	0.0	21.7	23.7	0.0	19.5	31.2	11.4	4.7	0.0	12.1	0.0
LnGrp LOS			C	C		B	C	B	A		B	
Approach Vol, veh/h		27			114			1014			433	
Approach Delay, s/veh		21.7			23.5			13.1			12.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	31.4		8.0	7.8	23.7		9.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	13.0	39.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	22.2		2.8	4.8	11.2		4.9
Green Ext Time (p_c), s	0.0	5.2		0.0	0.2	1.9		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	1	3	254	4	399	2	827	131	188	573	1
Future Volume (veh/h)	2	1	3	254	4	399	2	827	131	188	573	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	2	1	3	254	4	399	2	827	131	188	573	1
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	40	119	250	4	369	4	813	129	195	1162	2
Arrive On Green	0.00	0.10	0.10	0.14	0.24	0.24	0.00	0.52	0.52	0.11	0.63	0.63
Sat Flow, veh/h	1757	407	1222	1757	16	1555	1757	1555	246	1757	1841	3
Grp Volume(v), veh/h	2	0	4	254	0	403	2	0	958	188	0	574
Grp Sat Flow(s),veh/h/ln	1757	0	1629	1757	0	1570	1757	0	1801	1757	0	1844
Q Serve(g_s), s	0.1	0.0	0.3	18.0	0.0	30.0	0.1	0.0	66.0	13.5	0.0	21.0
Cycle Q Clear(g_c), s	0.1	0.0	0.3	18.0	0.0	30.0	0.1	0.0	66.0	13.5	0.0	21.0
Prop In Lane	1.00		0.75	1.00		0.99	1.00		0.14	1.00		0.00
Lane Grp Cap(c), veh/h	4	0	158	250	0	373	4	0	941	195	0	1164
V/C Ratio(X)	0.53	0.00	0.03	1.01	0.00	1.08	0.53	0.00	1.02	0.97	0.00	0.49
Avail Cap(c_a), veh/h	56	0	206	250	0	373	56	0	941	195	0	1164
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.9	0.0	51.6	54.1	0.0	48.1	62.9	0.0	30.1	55.9	0.0	12.5
Incr Delay (d2), s/veh	83.5	0.0	0.1	60.6	0.0	69.7	83.5	0.0	33.8	54.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.1	12.9	0.0	20.2	0.2	0.0	41.5	9.5	0.0	10.8
LnGrp Delay(d),s/veh	146.5	0.0	51.7	114.8	0.0	117.9	146.5	0.0	63.9	110.2	0.0	12.8
LnGrp LOS	F		D	F		F	F		F	F		B
Approach Vol, veh/h		6			657			960			762	
Approach Delay, s/veh		83.3			116.7			64.1			36.8	
Approach LOS		F			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	70.0	22.0	16.3	4.3	83.7	4.3	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	66.0	18.0	16.0	4.0	76.0	4.0	30.0
Max Q Clear Time (g_c+I1), s	15.5	68.0	20.0	2.3	2.1	23.0	2.1	32.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	11.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	299	6	4	1	5	7	3	459	1	0	520	297
Future Volume (veh/h)	299	6	4	1	5	7	3	459	1	0	520	297
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	299	6	4	1	5	7	3	459	1	0	520	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	384	8	349	2	9	12	6	875	2	4	694	590
Arrive On Green	0.22	0.22	0.22	0.01	0.01	0.01	0.00	0.48	0.48	0.00	0.38	0.00
Sat Flow, veh/h	1724	35	1568	129	646	904	1757	1840	4	1757	1845	1568
Grp Volume(v), veh/h	305	0	4	13	0	0	3	0	460	0	520	0
Grp Sat Flow(s),veh/h/ln	1758	0	1568	1679	0	0	1757	0	1844	1757	1845	1568
Q Serve(g_s), s	6.8	0.0	0.1	0.3	0.0	0.0	0.1	0.0	7.3	0.0	10.2	0.0
Cycle Q Clear(g_c), s	6.8	0.0	0.1	0.3	0.0	0.0	0.1	0.0	7.3	0.0	10.2	0.0
Prop In Lane	0.98		1.00	0.08		0.54	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	392	0	349	23	0	0	6	0	877	4	694	590
V/C Ratio(X)	0.78	0.00	0.01	0.58	0.00	0.00	0.52	0.00	0.52	0.00	0.75	0.00
Avail Cap(c_a), veh/h	676	0	602	645	0	0	169	0	1018	169	1019	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	15.2	0.0	12.6	20.4	0.0	0.0	20.7	0.0	7.6	0.0	11.3	0.0
Incr Delay (d2), s/veh	3.4	0.0	0.0	21.2	0.0	0.0	58.0	0.0	0.5	0.0	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	0.0	0.3	0.0	0.0	0.1	0.0	3.7	0.0	5.4	0.0
LnGrp Delay(d),s/veh	18.6	0.0	12.6	41.7	0.0	0.0	78.7	0.0	8.1	0.0	13.0	0.0
LnGrp LOS	B		B	D			E		A		B	
Approach Vol, veh/h		309			13			463			520	
Approach Delay, s/veh		18.5			41.7			8.6			13.0	
Approach LOS		B			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	23.8		13.3	4.1	19.7		4.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0	4.0	23.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	9.3		8.8	2.1	12.2		2.3
Green Ext Time (p_c), s	0.0	3.9		0.8	0.0	3.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	3	62	68	5	32	5	267	24	10	218	21
Future Volume (veh/h)	6	3	62	68	5	32	5	267	24	10	218	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	6	3	62	68	5	32	5	267	24	10	218	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	9	123	105	80	198	168	7	723	64	14	731	70
Arrive On Green	0.00	0.07	0.07	0.05	0.11	0.11	0.00	0.22	0.22	0.01	0.23	0.23
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3255	290	1757	3234	309
Grp Volume(v), veh/h	6	3	62	68	5	32	5	143	148	10	117	122
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1793	1757	1752	1790
Q Serve(g_s), s	0.1	0.0	0.9	0.9	0.1	0.5	0.1	1.7	1.7	0.1	1.3	1.4
Cycle Q Clear(g_c), s	0.1	0.0	0.9	0.9	0.1	0.5	0.1	1.7	1.7	0.1	1.3	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.17
Lane Grp Cap(c), veh/h	9	123	105	80	198	168	7	389	398	14	396	405
V/C Ratio(X)	0.70	0.02	0.59	0.85	0.03	0.19	0.69	0.37	0.37	0.71	0.30	0.30
Avail Cap(c_a), veh/h	217	1138	967	433	1365	1160	217	1081	1106	217	1081	1104
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	10.6	11.0	11.5	9.7	9.9	12.1	8.0	8.0	12.0	7.8	7.8
Incr Delay (d2), s/veh	69.0	0.1	5.3	21.3	0.1	0.5	77.6	0.6	0.6	48.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.5	0.9	0.0	0.2	0.2	0.9	0.9	0.3	0.7	0.7
LnGrp Delay(d),s/veh	81.1	10.7	16.3	32.8	9.8	10.4	89.7	8.6	8.6	60.4	8.2	8.2
LnGrp LOS	F	B	B	C	A	B	F	A	A	E	A	A
Approach Vol, veh/h		71			105			296			249	
Approach Delay, s/veh		21.5			24.9			10.0			10.3	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.2	9.4	5.1	5.6	4.1	9.5	4.1	6.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	15.0	6.0	15.0	3.0	15.0	3.0	18.0
Max Q Clear Time (g_c+I1), s	2.1	3.7	2.9	2.9	2.1	3.4	2.1	2.5
Green Ext Time (p_c), s	0.0	1.7	0.0	0.2	0.0	1.7	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	11	5	363	125	4
Future Volume (veh/h)	11	11	5	363	125	4
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	11	11	5	363	125	4
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	31	27	11	1758	892	28
Arrive On Green	0.02	0.02	0.00	0.50	0.26	0.26
Sat Flow, veh/h	1757	1568	1757	3597	3559	111
Grp Volume(v), veh/h	11	11	5	363	63	66
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1825
Q Serve(g_s), s	0.1	0.1	0.0	1.0	0.5	0.5
Cycle Q Clear(g_c), s	0.1	0.1	0.0	1.0	0.5	0.5
Prop In Lane	1.00	1.00	1.00			0.06
Lane Grp Cap(c), veh/h	31	27	11	1758	451	469
V/C Ratio(X)	0.36	0.40	0.47	0.21	0.14	0.14
Avail Cap(c_a), veh/h	1584	1414	317	4635	1580	1646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.1	8.1	8.3	2.3	4.8	4.8
Incr Delay (d2), s/veh	7.0	9.3	29.5	0.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.5	0.2	0.2
LnGrp Delay(d),s/veh	15.0	17.4	37.7	2.4	4.9	4.9
LnGrp LOS	B	B	D	A	A	A
Approach Vol, veh/h	22			368	129	
Approach Delay, s/veh	16.2			2.8	4.9	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		12.3		4.3	4.1	8.3		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		22.0		15.0	3.0	15.0		
Max Q Clear Time (g_c+I1), s		3.0		2.1	2.0	2.5		
Green Ext Time (p_c), s		2.1		0.0	0.0	1.8		

Intersection Summary	
HCM 2010 Ctrl Delay	3.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	33	19	75	20	29	31	83	261	96	35	0
Future Volume (veh/h)	21	33	19	75	20	29	31	83	261	96	35	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	21	33	19	75	20	29	31	83	261	96	35	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	28	120	102	90	185	157	40	452	404	119	1060	0
Arrive On Green	0.02	0.07	0.07	0.05	0.10	0.10	0.02	0.26	0.26	0.07	0.30	0.00
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	1752	1568	1757	3597	0
Grp Volume(v), veh/h	21	33	19	75	20	29	31	83	261	96	35	0
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1568	1757	1752	0
Q Serve(g_s), s	0.3	0.5	0.3	1.2	0.3	0.5	0.5	1.1	4.2	1.5	0.2	0.0
Cycle Q Clear(g_c), s	0.3	0.5	0.3	1.2	0.3	0.5	0.5	1.1	4.2	1.5	0.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	28	120	102	90	185	157	40	452	404	119	1060	0
V/C Ratio(X)	0.74	0.28	0.19	0.83	0.11	0.18	0.77	0.18	0.65	0.81	0.03	0.00
Avail Cap(c_a), veh/h	184	966	821	429	1223	1040	184	917	821	429	2324	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.0	12.8	12.7	13.5	11.7	11.8	13.9	8.3	9.5	13.2	7.0	0.0
Incr Delay (d2), s/veh	31.1	1.2	0.9	17.4	0.3	0.6	26.0	0.2	1.7	12.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.3	0.2	1.0	0.2	0.2	0.5	0.5	2.0	1.1	0.1	0.0
LnGrp Delay(d),s/veh	45.2	14.0	13.5	30.9	12.0	12.4	39.9	8.5	11.2	25.3	7.1	0.0
LnGrp LOS	D	B	B	C	B	B	D	A	B	C	A	
Approach Vol, veh/h		73			124			375			131	
Approach Delay, s/veh		22.8			23.5			13.0			20.5	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	11.4	5.5	5.9	4.7	12.7	4.5	6.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	15.0	7.0	15.0	3.0	19.0	3.0	19.0
Max Q Clear Time (g_c+I1), s	3.5	6.2	3.2	2.5	2.5	2.2	2.3	2.5
Green Ext Time (p_c), s	0.1	1.1	0.1	0.2	0.0	1.5	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	17.2
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	16.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	107	10	68	5	20	155	272	140	9	28	14
Future Vol, veh/h	61	107	10	68	5	20	155	272	140	9	28	14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	61	107	10	68	5	20	155	272	140	9	28	14
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11	9.9	19.7	8.9
HCM LOS	B	A	C	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	34%	73%	18%
Vol Thru, %	48%	60%	5%	55%
Vol Right, %	25%	6%	22%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	567	178	93	51
LT Vol	155	61	68	9
Through Vol	272	107	5	28
RT Vol	140	10	20	14
Lane Flow Rate	567	178	93	51
Geometry Grp	1	1	1	1
Degree of Util (X)	0.734	0.283	0.151	0.077
Departure Headway (Hd)	4.663	5.718	5.86	5.401
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	765	632	615	665
Service Time	2.76	3.725	3.871	3.422
HCM Lane V/C Ratio	0.741	0.282	0.151	0.077
HCM Control Delay	19.7	11	9.9	8.9
HCM Lane LOS	C	B	A	A
HCM 95th-tile Q	6.6	1.2	0.5	0.2

Intersection	
Intersection Delay, s/veh	42.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	247	8	5	337	173	35	411	20	26	83	10
Future Vol, veh/h	15	247	8	5	337	173	35	411	20	26	83	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	15	247	8	5	337	173	35	411	20	26	83	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	20.1	56.7	48.1	14.6
HCM LOS	C	F	E	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	6%	1%	22%
Vol Thru, %	88%	91%	65%	70%
Vol Right, %	4%	3%	34%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	466	270	515	119
LT Vol	35	15	5	26
Through Vol	411	247	337	83
RT Vol	20	8	173	10
Lane Flow Rate	466	270	515	119
Geometry Grp	1	1	1	1
Degree of Util (X)	0.913	0.566	0.964	0.278
Departure Headway (Hd)	7.054	7.552	6.739	8.415
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	513	475	536	430
Service Time	5.126	5.643	4.81	6.415
HCM Lane V/C Ratio	0.908	0.568	0.961	0.277
HCM Control Delay	48.1	20.1	56.7	14.6
HCM Lane LOS	E	C	F	B
HCM 95th-tile Q	10.7	3.4	12.7	1.1

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	281	245	5	1	271	176	10	2	4	14	4	71
Future Vol, veh/h	281	245	5	1	271	176	10	2	4	14	4	71
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	3	3	3	3	3	3
Mvmt Flow	281	245	5	1	271	176	10	2	4	14	4	71
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19.3	13.9	9.6	9.8
HCM LOS	C	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	62%	53%	0%	16%
Vol Thru, %	12%	46%	60%	4%
Vol Right, %	25%	1%	39%	80%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	16	531	448	89
LT Vol	10	281	1	14
Through Vol	2	245	271	4
RT Vol	4	5	176	71
Lane Flow Rate	16	531	448	89
Geometry Grp	1	1	1	1
Degree of Util (X)	0.029	0.715	0.577	0.143
Departure Headway (Hd)	6.425	4.848	4.636	5.793
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	560	738	771	623
Service Time	4.43	2.93	2.717	3.795
HCM Lane V/C Ratio	0.029	0.72	0.581	0.143
HCM Control Delay	9.6	19.3	13.9	9.8
HCM Lane LOS	A	C	B	A
HCM 95th-tile Q	0.1	6.1	3.7	0.5

Intersection	
Intersection Delay, s/veh	173.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	83	125	6	39	122	1	95	784	96	1	127	105
Future Vol, veh/h	83	125	6	39	122	1	95	784	96	1	127	105
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	6	6	6	8	8	8	3	3	3	3	3	3
Mvmt Flow	83	125	6	39	122	1	95	784	96	1	127	105
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16.9	15.4	272.5	14.6
HCM LOS	C	C	F	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	39%	24%	0%
Vol Thru, %	80%	58%	75%	55%
Vol Right, %	10%	3%	1%	45%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	975	214	162	233
LT Vol	95	83	39	1
Through Vol	784	125	122	127
RT Vol	96	6	1	105
Lane Flow Rate	975	214	162	233
Geometry Grp	1	1	1	1
Degree of Util (X)	1.552	0.415	0.322	0.4
Departure Headway (Hd)	5.732	8.2	8.431	7.017
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	634	443	429	517
Service Time	3.777	6.2	6.431	5.017
HCM Lane V/C Ratio	1.538	0.483	0.378	0.451
HCM Control Delay	272.5	16.9	15.4	14.6
HCM Lane LOS	F	C	C	B
HCM 95th-tile Q	50.2	2	1.4	1.9

Intersection	
Intersection Delay, s/veh	45.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	443	2	14	8	1	1	45	575	2	0	108	55
Future Vol, veh/h	443	2	14	8	1	1	45	575	2	0	108	55
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	443	2	14	8	1	1	45	575	2	0	108	55
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	32.5	11	63.8	12.3
HCM LOS	D	B	F	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	97%	80%	0%
Vol Thru, %	92%	0%	10%	66%
Vol Right, %	0%	3%	10%	34%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	622	459	10	163
LT Vol	45	443	8	0
Through Vol	575	2	1	108
RT Vol	2	14	1	55
Lane Flow Rate	622	459	10	163
Geometry Grp	1	1	1	1
Degree of Util (X)	1.012	0.819	0.021	0.293
Departure Headway (Hd)	5.86	6.424	7.791	6.61
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	616	560	462	548
Service Time	3.956	4.519	5.791	4.61
HCM Lane V/C Ratio	1.01	0.82	0.022	0.297
HCM Control Delay	63.8	32.5	11	12.3
HCM Lane LOS	F	D	B	B
HCM 95th-tile Q	15.6	8.2	0.1	1.2

Intersection	
Intersection Delay, s/veh	84.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	141	0	239	0	360	484	52	72	0
Future Vol, veh/h	0	0	0	141	0	239	0	360	484	52	72	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	141	0	239	0	360	484	52	72	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	0	18.5	125.6	10.8
HCM LOS	-	C	F	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	37%	100%	0%
Vol Thru, %	43%	100%	0%	0%	100%
Vol Right, %	57%	0%	63%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	844	0	380	52	72
LT Vol	0	0	141	52	0
Through Vol	360	0	0	0	72
RT Vol	484	0	239	0	0
Lane Flow Rate	844	0	380	52	72
Geometry Grp	5	2	2	7	7
Degree of Util (X)	1.208	0	0.609	0.103	0.133
Departure Headway (Hd)	5.151	7.606	6.232	7.46	6.947
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	709	0	585	484	519
Service Time	3.156	5.606	4.232	5.16	4.647
HCM Lane V/C Ratio	1.19	0	0.65	0.107	0.139
HCM Control Delay	125.6	10.6	18.5	11	10.7
HCM Lane LOS	F	N	C	B	B
HCM 95th-tile Q	29	0	4.1	0.3	0.5

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1	0	0	0	102	0	451	33	18	293	0
Future Vol, veh/h	0	1	0	0	0	102	0	451	33	18	293	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	20	20	20	5	5	5	6	6	6
Mvmt Flow	0	1	0	0	0	102	0	451	33	18	293	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9	9.5	14.7	11.3
HCM LOS	A	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	6%
Vol Thru, %	93%	100%	0%	94%
Vol Right, %	7%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	484	1	102	311
LT Vol	0	0	0	18
Through Vol	451	1	0	293
RT Vol	33	0	102	0
Lane Flow Rate	484	1	102	311
Geometry Grp	1	1	1	1
Degree of Util (X)	0.615	0.002	0.153	0.416
Departure Headway (Hd)	4.574	6.03	5.402	4.816
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	784	597	658	743
Service Time	2.623	4.03	3.483	2.872
HCM Lane V/C Ratio	0.617	0.002	0.155	0.419
HCM Control Delay	14.7	9	9.5	11.3
HCM Lane LOS	B	A	A	B
HCM 95th-tile Q	4.3	0	0.5	2.1

Intersection	
Intersection Delay, s/veh	36.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	158	206	65	5	140	23	73	434	24	20	105	28
Future Vol, veh/h	158	206	65	5	140	23	73	434	24	20	105	28
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	3	3	3
Mvmt Flow	158	206	65	5	140	23	73	434	24	20	105	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	32.8	14.5	52.2	13.9
HCM LOS	D	B	F	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	37%	3%	13%
Vol Thru, %	82%	48%	83%	69%
Vol Right, %	5%	15%	14%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	531	429	168	153
LT Vol	73	158	5	20
Through Vol	434	206	140	105
RT Vol	24	65	23	28
Lane Flow Rate	531	429	168	153
Geometry Grp	1	1	1	1
Degree of Util (X)	0.949	0.811	0.349	0.316
Departure Headway (Hd)	6.557	6.808	7.488	7.43
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	558	536	480	483
Service Time	4.557	4.808	5.52	5.472
HCM Lane V/C Ratio	0.952	0.8	0.35	0.317
HCM Control Delay	52.2	32.8	14.5	13.9
HCM Lane LOS	F	D	B	B
HCM 95th-tile Q	12.3	7.9	1.5	1.3

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	124	903	53	75	447
Future Vol, veh/h	67	124	903	53	75	447
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	67	124	903	53	75	447

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1304	478	0	0	956	0
Stage 1	930	-	-	-	-	-
Stage 2	374	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	149	528	-	-	709	-
Stage 1	340	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	133	528	-	-	709	-
Mov Cap-2 Maneuver	251	-	-	-	-	-
Stage 1	340	-	-	-	-	-
Stage 2	590	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	251	528	709	-
HCM Lane V/C Ratio	-	-	0.267	0.235	0.106	-
HCM Control Delay (s)	-	-	24.5	13.9	10.7	-
HCM Lane LOS	-	-	C	B	B	-
HCM 95th %tile Q(veh)	-	-	1	0.9	0.4	-

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	165	28	67	289	61	89
Future Vol, veh/h	165	28	67	289	61	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	165	28	67	289	61	89

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	423	212	0	0	356	0
Stage 1	212	-	-	-	-	-
Stage 2	211	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.14	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.236	-
Pot Cap-1 Maneuver	586	826	-	-	1192	-
Stage 1	821	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	554	826	-	-	1192	-
Mov Cap-2 Maneuver	554	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	3.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	582	1192	-
HCM Lane V/C Ratio	-	-	0.332	0.051	-
HCM Control Delay (s)	-	-	14.2	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0.2	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	683	912	34	10	93
Future Vol, veh/h	27	683	912	34	10	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	27	683	912	34	10	93

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	946	0	-	0	1666	929
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	737	-
Critical Hdwy	4.16	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.254	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	709	-	-	-	106	323
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	472	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	709	-	-	-	102	323
Mov Cap-2 Maneuver	-	-	-	-	102	-
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	454	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	26.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	709	-	-	-	267
HCM Lane V/C Ratio	0.038	-	-	-	0.386
HCM Control Delay (s)	10.3	-	-	-	26.7
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	1.7

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	0	3	1	6	0	457	1	1	90	1
Future Vol, veh/h	3	1	0	3	1	6	0	457	1	1	90	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	1	0	3	1	6	0	457	1	1	90	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	554	551	91	551	551	458	91	0	0	458	0	0
Stage 1	93	93	-	458	458	-	-	-	-	-	-	-
Stage 2	461	458	-	93	93	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	441	441	964	444	441	601	1498	-	-	1098	-	-
Stage 1	912	816	-	581	565	-	-	-	-	-	-	-
Stage 2	579	565	-	912	816	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	436	441	964	443	441	601	1498	-	-	1098	-	-
Mov Cap-2 Maneuver	436	441	-	443	441	-	-	-	-	-	-	-
Stage 1	912	815	-	581	565	-	-	-	-	-	-	-
Stage 2	572	565	-	910	815	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.3	12	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1498	-	-	437	526	1098	-	-
HCM Lane V/C Ratio	-	-	-	0.009	0.019	0.001	-	-
HCM Control Delay (s)	0	-	-	13.3	12	8.3	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	732	3	33	700	3	1	0	126	2	0	5
Future Vol, veh/h	11	732	3	33	700	3	1	0	126	2	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	90	200	-	-	-	-	200	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	6	3	3	6	3	3	3	3	3	3	3
Mvmt Flow	11	732	3	33	700	3	1	0	126	2	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	703	0	0	732	0	0	1524	1523	732	1522	1522	702
Stage 1	-	-	-	-	-	-	754	754	-	768	768	-
Stage 2	-	-	-	-	-	-	770	769	-	754	754	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	890	-	-	868	-	-	96	118	420	96	118	436
Stage 1	-	-	-	-	-	-	400	416	-	393	409	-
Stage 2	-	-	-	-	-	-	392	409	-	400	416	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	890	-	-	868	-	-	91	112	420	65	112	436
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	112	-	65	112	-
Stage 1	-	-	-	-	-	-	395	411	-	388	393	-
Stage 2	-	-	-	-	-	-	373	393	-	277	411	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	17.4	27.6
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	91	420	890	-	-	868	-	-	166
HCM Lane V/C Ratio	0.011	0.3	0.012	-	-	0.038	-	-	0.042
HCM Control Delay (s)	45	17.2	9.1	-	-	9.3	-	-	27.6
HCM Lane LOS	E	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0	1.2	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	123	1	0	2	3	32
Future Vol, veh/h	123	1	0	2	3	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	123	1	0	2	3	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	21	19	35	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	2	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	993	1056	1570	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	993	1056	1570	-	-	-
Mov Cap-2 Maneuver	993	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	1019	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1570	-	993	-	-
HCM Lane V/C Ratio	-	-	0.125	-	-
HCM Control Delay (s)	0	-	9.1	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	246	6	1	586	0	4	0	1	0	0	5
Future Vol, veh/h	1	246	6	1	586	0	4	0	1	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	246	6	1	586	0	4	0	1	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	586	0	0	252	0	0	842	839	249	840	842	586
Stage 1	-	-	-	-	-	-	251	251	-	588	588	-
Stage 2	-	-	-	-	-	-	591	588	-	252	254	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	984	-	-	1307	-	-	283	301	787	284	300	508
Stage 1	-	-	-	-	-	-	751	697	-	493	494	-
Stage 2	-	-	-	-	-	-	492	494	-	750	695	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	984	-	-	1307	-	-	280	300	787	283	299	508
Mov Cap-2 Maneuver	-	-	-	-	-	-	280	300	-	283	299	-
Stage 1	-	-	-	-	-	-	750	696	-	493	494	-
Stage 2	-	-	-	-	-	-	487	494	-	748	694	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	16.4	12.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	321	984	-	-	1307	-	-	508
HCM Lane V/C Ratio	0.016	0.001	-	-	0.001	-	-	0.01
HCM Control Delay (s)	16.4	8.7	0	-	7.8	0	-	12.2
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	9.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	456	2	1	0	0	214
Future Vol, veh/h	456	2	1	0	0	214
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	456	2	1	0	0	214

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	109	107	214	0	-	0
Stage 1	107	-	-	-	-	-
Stage 2	2	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	886	944	1350	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	885	944	1350	-	-	-
Mov Cap-2 Maneuver	885	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	1018	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	7.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1350	-	885	-	-
HCM Lane V/C Ratio	0.001	-	0.518	-	-
HCM Control Delay (s)	7.7	0	13.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	3	-	-

Intersection	
Int Delay, s/veh	11.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	638	71	331	634	36	375
Future Vol, veh/h	638	71	331	634	36	375
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	300	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	638	71	331	634	36	375

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	638	0	1934	638
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	1296	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	941	-	72	475
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	255	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	941	-	47	475
Mov Cap-2 Maneuver	-	-	-	-	47	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	165	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	49.9
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	47	475	-	-	941	-
HCM Lane V/C Ratio	0.766	0.789	-	-	0.352	-
HCM Control Delay (s)	199.7	35.5	-	-	10.9	-
HCM Lane LOS	F	E	-	-	B	-
HCM 95th %tile Q(veh)	3.1	7.2	-	-	1.6	-

Intersection	
Int Delay, s/veh	56.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	305	7	33	832	224	426
Future Vol, veh/h	305	7	33	832	224	426
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	-	-	90
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	305	7	33	832	224	426

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1122	224	224	0	-	0
Stage 1	224	-	-	-	-	-
Stage 2	898	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	~ 227	813	1339	-	-	0
Stage 1	811	-	-	-	-	0
Stage 2	396	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 217	813	1339	-	-	-
Mov Cap-2 Maneuver	~ 217	-	-	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	378	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	251.5	0.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1339	-	221	-
HCM Lane V/C Ratio	0.025	-	1.412	-
HCM Control Delay (s)	7.8	0	251.5	-
HCM Lane LOS	A	A	F	-
HCM 95th %tile Q(veh)	0.1	-	17.9	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	96.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	267	411	31	9	632	0	95	58	19	0	2	55
Future Vol, veh/h	267	411	31	9	632	0	95	58	19	0	2	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	350	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	8	3	3	8	3
Mvmt Flow	267	411	31	9	632	0	95	58	19	0	2	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	632	0	0	442	0	0	1640	1611	427	1649	1626	632
Stage 1	-	-	-	-	-	-	961	961	-	650	650	-
Stage 2	-	-	-	-	-	-	679	650	-	999	976	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.58	6.23	7.13	6.58	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.58	-	6.13	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.58	-	6.13	5.58	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.072	3.327	3.527	4.072	3.327
Pot Cap-1 Maneuver	946	-	-	1113	-	-	~ 80	101	625	79	99	479
Stage 1	-	-	-	-	-	-	307	327	-	456	456	-
Stage 2	-	-	-	-	-	-	440	456	-	292	322	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	946	-	-	1113	-	-	~ 54	72	625	21	70	479
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 54	72	-	21	70	-
Stage 1	-	-	-	-	-	-	220	235	-	327	452	-
Stage 2	-	-	-	-	-	-	385	452	-	153	231	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.9	0.1	$ 862	15.6
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	66	946	-	-	1113	-	-	398
HCM Lane V/C Ratio	2.606	0.282	-	-	0.008	-	-	0.143
HCM Control Delay (s)	$ 862	10.3	-	-	8.3	-	-	15.6
HCM Lane LOS	F	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	17	1.2	-	-	0	-	-	0.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	76	126	0	0	166	7	6	95	0	0	28	16
Future Vol, veh/h	76	126	0	0	166	7	6	95	0	0	28	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	76	126	0	0	166	7	6	95	0	0	28	16

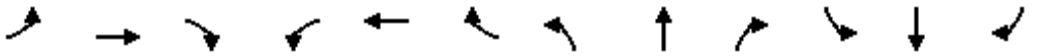
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	173	0	0	126	0	0	470	451	126	496	448	170
Stage 1	-	-	-	-	-	-	278	278	-	170	170	-
Stage 2	-	-	-	-	-	-	192	173	-	326	278	-
Critical Hdwy	4.18	-	-	4.2	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.29	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1368	-	-	1412	-	-	494	495	909	475	497	859
Stage 1	-	-	-	-	-	-	716	670	-	818	747	-
Stage 2	-	-	-	-	-	-	796	744	-	674	670	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1368	-	-	1412	-	-	442	465	909	383	467	859
Mov Cap-2 Maneuver	-	-	-	-	-	-	442	465	-	383	467	-
Stage 1	-	-	-	-	-	-	673	630	-	769	747	-
Stage 2	-	-	-	-	-	-	752	744	-	538	630	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.9	0	14.9	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	464	1368	-	-	1412	-	-	560
HCM Lane V/C Ratio	0.218	0.056	-	-	-	-	-	0.079
HCM Control Delay (s)	14.9	7.8	0	-	0	-	-	12
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0	-	-	0.3

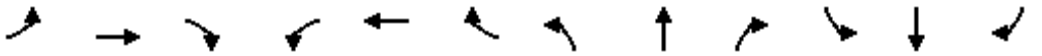
Existing Plus Jackson Township

Alternative 2 PM



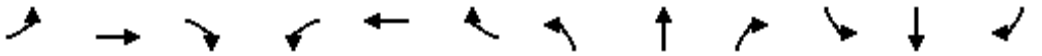
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	718	0	685	0	0	0	0	1596	498	0	1705	784
Future Volume (vph)	718	0	685	0	0	0	0	1596	498	0	1705	784
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	718	0	685	0	0	0	0	1596	498	0	1705	784
RTOR Reduction (vph)	0	0	16	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	718	0	669	0	0	0	0	1596	498	0	1705	784
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	14.9		14.9					20.1	43.0		20.1	43.0
Effective Green, g (s)	14.9		14.9					20.1	43.0		20.1	43.0
Actuated g/C Ratio	0.35		0.35					0.47	1.00		0.47	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1166		947					2331	1553		2331	1553
v/s Ratio Prot								0.32			c0.34	
v/s Ratio Perm	0.21		c0.24						0.32			0.50
v/c Ratio	0.62		0.71					0.68	0.32		0.73	0.50
Uniform Delay, d1	11.7		12.2					9.0	0.0		9.3	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0		2.4					0.8	0.5		1.2	1.2
Delay (s)	12.6		14.6					9.8	0.5		10.5	1.2
Level of Service	B		B					A	A		B	A
Approach Delay (s)		13.6			0.0			7.6			7.5	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	43.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



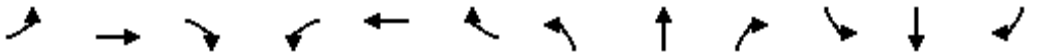
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	662	121	284	518	782	248	1059	170	887	1469	150
Future Volume (vph)	250	662	121	284	518	782	248	1059	170	887	1469	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3391		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3391		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	250	662	121	284	518	782	248	1059	170	887	1469	150
RTOR Reduction (vph)	0	19	0	0	0	616	0	0	132	0	0	92
Lane Group Flow (vph)	250	764	0	284	518	166	248	1059	38	887	1469	58
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	8.0	18.0		7.0	17.0	17.0	8.0	18.0	18.0	21.0	31.0	31.0
Effective Green, g (s)	8.0	18.0		7.0	17.0	17.0	8.0	18.0	18.0	21.0	31.0	31.0
Actuated g/C Ratio	0.10	0.22		0.09	0.21	0.21	0.10	0.22	0.22	0.26	0.39	0.39
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	336	762		294	737	580	336	1122	349	883	1932	601
v/s Ratio Prot	0.07	c0.23		c0.08	0.15		0.07	c0.21		c0.26	0.29	
v/s Ratio Perm						0.06			0.02			0.04
v/c Ratio	0.74	1.00		0.97	0.70	0.29	0.74	0.94	0.11	1.00	0.76	0.10
Uniform Delay, d1	35.0	31.0		36.4	29.2	26.4	35.0	30.5	24.6	29.5	21.3	15.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.6	33.4		42.8	3.0	0.3	8.2	15.2	0.1	31.4	1.8	0.1
Delay (s)	43.6	64.4		79.2	32.2	26.7	43.2	45.7	24.8	60.9	23.1	15.7
Level of Service	D	E		E	C	C	D	D	C	E	C	B
Approach Delay (s)		59.4			37.9			42.9			36.0	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	842	704	12	973	19	322	3	3	14	11	86
Future Volume (vph)	97	842	704	12	973	19	322	3	3	14	11	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1794	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1794	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	97	842	704	12	973	19	322	3	3	14	11	86
RTOR Reduction (vph)	0	0	223	0	0	11	0	0	2	0	0	80
Lane Group Flow (vph)	97	842	481	12	973	8	161	164	1	0	25	6
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.7	32.0	46.5	0.7	27.0	27.0	14.5	14.5	14.5		4.8	4.8
Effective Green, g (s)	5.7	32.0	46.5	0.7	27.0	27.0	14.5	14.5	14.5		4.8	4.8
Actuated g/C Ratio	0.08	0.47	0.68	0.01	0.40	0.40	0.21	0.21	0.21		0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	145	1633	1153	17	1378	616	345	346	324		126	110
v/s Ratio Prot	c0.06	0.24	c0.09	0.01	c0.28		0.10	0.10			c0.01	
v/s Ratio Perm			0.22			0.00			0.00			0.00
v/c Ratio	0.67	0.52	0.42	0.71	0.71	0.01	0.47	0.47	0.00		0.20	0.06
Uniform Delay, d1	30.2	12.6	4.8	33.5	17.2	12.4	23.4	23.4	21.1		29.8	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	11.1	0.3	0.2	84.0	1.7	0.0	1.0	1.0	0.0		0.8	0.2
Delay (s)	41.3	12.9	5.0	117.5	18.8	12.4	24.4	24.4	21.1		30.6	29.7
Level of Service	D	B	A	F	B	B	C	C	C		C	C
Approach Delay (s)		11.2			19.9			24.4			29.9	
Approach LOS		B			B			C			C	

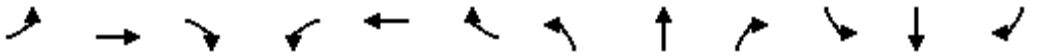
Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	451	229	167	530	94	435	161	362	125	87	37
Future Volume (vph)	38	451	229	167	530	94	435	161	362	125	87	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98	1.00		0.98	
Satd. Flow (prot)	1752	3505	1568	1752	3426		1665	1713	1568		3343	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.98	1.00		0.98	
Satd. Flow (perm)	1752	3505	1568	1752	3426		1665	1713	1568		3343	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	451	229	167	530	94	435	161	362	125	87	37
RTOR Reduction (vph)	0	0	176	0	16	0	0	0	275	0	19	0
Lane Group Flow (vph)	38	451	53	167	608	0	296	300	87	0	230	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	2.8	15.3	15.3	9.1	21.6		16.0	16.0	16.0		9.8	
Effective Green, g (s)	2.8	15.3	15.3	9.1	21.6		16.0	16.0	16.0		9.8	
Actuated g/C Ratio	0.04	0.23	0.23	0.14	0.33		0.24	0.24	0.24		0.15	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	74	810	362	240	1117		402	414	378		494	
v/s Ratio Prot	0.02	0.13		c0.10	c0.18		c0.18	0.18			c0.07	
v/s Ratio Perm			0.03						0.06			
v/c Ratio	0.51	0.56	0.15	0.70	0.54		0.74	0.72	0.23		0.47	
Uniform Delay, d1	31.0	22.5	20.3	27.2	18.3		23.2	23.1	20.2		25.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	5.9	0.8	0.2	8.5	0.5		6.9	6.2	0.3		0.7	
Delay (s)	36.9	23.3	20.4	35.7	18.8		30.0	29.3	20.5		26.5	
Level of Service	D	C	C	D	B		C	C	C		C	
Approach Delay (s)		23.1			22.4			26.2			26.5	
Approach LOS		C			C			C			C	

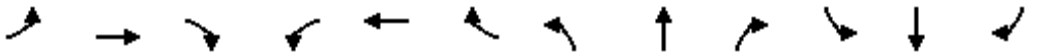
Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	66.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



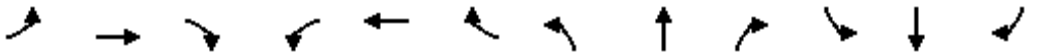
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	642	773	218	546	40	309	160	312	36	80	31
Future Volume (vph)	34	642	773	218	546	40	309	160	312	36	80	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3127		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3127		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	34	642	773	218	546	40	309	160	312	36	80	31
RTOR Reduction (vph)	0	0	462	0	0	21	0	263	0	0	0	29
Lane Group Flow (vph)	34	642	311	218	546	19	309	209	0	36	80	2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	2.2	27.7	27.7	7.3	32.7	32.7	10.9	10.9		4.1	4.1	4.1
Effective Green, g (s)	2.2	27.7	27.7	7.3	32.7	32.7	10.9	10.9		4.1	4.1	4.1
Actuated g/C Ratio	0.03	0.40	0.40	0.11	0.48	0.48	0.16	0.16		0.06	0.06	0.06
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.1	4.1	2.0	2.0		1.0	1.0	1.0
Lane Grp Cap (vph)	56	1411	631	360	1665	745	533	495		104	208	93
v/s Ratio Prot	0.02	0.18		c0.06	c0.16		c0.09	0.07		0.02	c0.02	
v/s Ratio Perm			c0.20			0.01						0.00
v/c Ratio	0.61	0.45	0.49	0.61	0.33	0.03	0.58	0.42		0.35	0.38	0.02
Uniform Delay, d1	32.9	15.0	15.3	29.4	11.2	9.6	26.8	26.1		31.1	31.1	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	12.1	0.5	1.2	2.0	0.2	0.0	1.0	0.2		0.7	0.4	0.0
Delay (s)	45.0	15.5	16.5	31.3	11.4	9.6	27.8	26.3		31.8	31.6	30.5
Level of Service	D	B	B	C	B	A	C	C		C	C	C
Approach Delay (s)		16.7			16.7			26.9			31.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	22.9
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	863	0	208	0	656	963	0	941	598
Future Volume (vph)	0	0	0	863	0	208	0	656	963	0	941	598
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.6		4.6		3.5	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3367		2733		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3367		2733		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	863	0	208	0	656	963	0	941	598
RTOR Reduction (vph)	0	0	0	0	0	130	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	863	0	78	0	656	963	0	941	598
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				4				6			2	
Permitted Phases						4			Free			Free
Actuated Green, G (s)				11.8		11.8		11.7	31.6		10.1	31.6
Effective Green, g (s)				11.8		11.8		11.7	31.6		10.1	31.6
Actuated g/C Ratio				0.37		0.37		0.37	1.00		0.32	1.00
Clearance Time (s)				4.6		4.6		3.5			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1257		1020		1846	1553		1594	1553
v/s Ratio Prot				0.26				0.13			0.19	
v/s Ratio Perm						0.03			c0.62			0.39
v/c Ratio				0.69		0.08		0.36	0.62		0.59	0.39
Uniform Delay, d1				8.3		6.4		7.2	0.0		9.0	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				1.3		0.0		0.0	1.9		0.4	0.7
Delay (s)				9.6		6.4		7.3	1.9		9.4	0.7
Level of Service				A		A		A	A		A	A
Approach Delay (s)		0.0			9.0			4.1			6.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	31.6	Sum of lost time (s)	9.7
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	480	0	800	0	0	0	0	1138	806	0	1388	413
Future Volume (vph)	480	0	800	0	0	0	0	1138	806	0	1388	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	480	0	800	0	0	0	0	1138	806	0	1388	413
RTOR Reduction (vph)	0	0	30	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	480	0	770	0	0	0	0	1138	806	0	1388	413
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	14.6		14.6					15.1	41.2		15.6	41.2
Effective Green, g (s)	14.6		14.6					15.1	41.2		15.6	41.2
Actuated g/C Ratio	0.35		0.35					0.37	1.00		0.38	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1193		968					1828	1553		1888	1553
v/s Ratio Prot								0.23			c0.28	
v/s Ratio Perm	0.14		c0.28						0.52			0.27
v/c Ratio	0.40		0.80					0.62	0.52		0.74	0.27
Uniform Delay, d1	10.0		12.0					10.7	0.0		11.0	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1		4.3					0.5	1.2		1.3	0.4
Delay (s)	10.1		16.3					11.2	1.2		12.3	0.4
Level of Service	B		B					B	A		B	A
Approach Delay (s)		13.9			0.0			7.1			9.6	
Approach LOS		B			A			A			A	

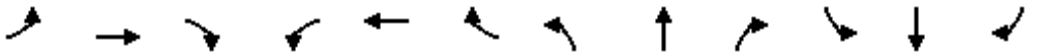
Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	11.5
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	171	189	15	326	342
Future Volume (vph)	1	171	189	15	326	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1568	1845	1568	1752	1845
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1568	1845	1568	1752	1845
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	171	189	15	326	342
RTOR Reduction (vph)	0	160	0	10	0	0
Lane Group Flow (vph)	1	11	189	5	326	342
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	2.4	2.4	11.4	11.4	10.8	26.2
Effective Green, g (s)	2.4	2.4	11.4	11.4	10.8	26.2
Actuated g/C Ratio	0.07	0.07	0.31	0.31	0.30	0.72
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	102	574	488	516	1320
v/s Ratio Prot	0.00		c0.10		c0.19	0.19
v/s Ratio Perm		c0.01		0.00		
v/c Ratio	0.01	0.11	0.33	0.01	0.63	0.26
Uniform Delay, d1	16.0	16.1	9.7	8.7	11.2	1.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.5	0.3	0.0	2.5	0.1
Delay (s)	16.0	16.6	10.0	8.7	13.7	1.9
Level of Service	B	B	B	A	B	A
Approach Delay (s)	16.6		9.9			7.7
Approach LOS	B		A			A

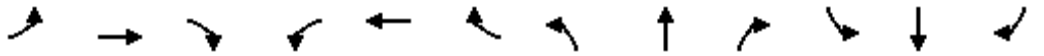
Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	36.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



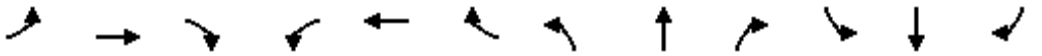
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	280	0	193	0	856	1030	0	611	411
Future Volume (vph)	0	0	0	280	0	193	0	856	1030	0	611	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.95	1.00		0.95	1.00
Frt				1.00	0.87			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.99			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1501			3471	1553		3471	1553
Flt Permitted				0.95	0.99			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1501			3471	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	280	0	193	0	856	1030	0	611	411
RTOR Reduction (vph)	0	0	0	0	118	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	249	106	0	0	856	1030	0	611	411
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Perm	NA			NA	Free		NA	Free
Protected Phases					8			2			6	
Permitted Phases				8					Free			Free
Actuated Green, G (s)				9.2	9.2			13.7	32.6		13.7	32.6
Effective Green, g (s)				9.2	9.2			13.7	32.6		13.7	32.6
Actuated g/C Ratio				0.28	0.28			0.42	1.00		0.42	1.00
Clearance Time (s)				4.9	4.9			4.8			4.8	
Vehicle Extension (s)				1.0	1.0			1.0			1.0	
Lane Grp Cap (vph)				465	423			1458	1553		1458	1553
v/s Ratio Prot								0.25			0.18	
v/s Ratio Perm				0.15	0.07				c0.66			0.26
v/c Ratio				0.54	0.25			0.59	0.66		0.42	0.26
Uniform Delay, d1				9.9	9.0			7.3	0.0		6.6	0.0
Progression Factor				1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2				0.6	0.1			0.4	2.2		0.1	0.4
Delay (s)				10.5	9.2			7.7	2.2		6.7	0.4
Level of Service				B	A			A	A		A	A
Approach Delay (s)		0.0			9.9			4.7			4.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	32.6	Sum of lost time (s)	9.7
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



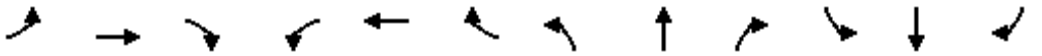
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	411	0	470	0	0	0	0	1476	855	0	656	236
Future Volume (vph)	411	0	470	0	0	0	0	1476	855	0	656	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.95	1.00
Frt	1.00	0.90	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	0.98	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1477	1475					4988	1553		3471	1553
Flt Permitted	0.95	0.98	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1477	1475					4988	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	411	0	470	0	0	0	0	1476	855	0	656	236
RTOR Reduction (vph)	0	105	105	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	304	190	177	0	0	0	0	1476	855	0	656	236
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA	Perm					NA	Free		NA	Free
Protected Phases		4						2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	9.3	9.3	9.3					13.5	32.8		13.6	32.8
Effective Green, g (s)	9.3	9.3	9.3					13.5	32.8		13.6	32.8
Actuated g/C Ratio	0.28	0.28	0.28					0.41	1.00		0.41	1.00
Clearance Time (s)	5.1	5.1	5.1					4.9			4.8	
Vehicle Extension (s)	1.0	1.0	1.0					1.0			1.0	
Lane Grp Cap (vph)	467	418	418					2052	1553		1439	1553
v/s Ratio Prot								0.30			0.19	
v/s Ratio Perm	0.18	0.13	0.12						c0.55			0.15
v/c Ratio	0.65	0.46	0.42					0.72	0.55		0.46	0.15
Uniform Delay, d1	10.3	9.7	9.6					8.1	0.0		6.9	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	2.5	0.3	0.3					1.0	1.4		0.1	0.2
Delay (s)	12.8	10.0	9.8					9.1	1.4		7.0	0.2
Level of Service	B	A	A					A	A		A	A
Approach Delay (s)		10.9			0.0			6.3			5.2	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	32.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



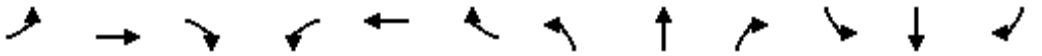
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	538	0	272	0	1461	1843	0	752	506
Future Volume (vph)	0	0	0	538	0	272	0	1461	1843	0	752	506
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.95	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		3505	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	538	0	272	0	1461	1843	0	752	506
RTOR Reduction (vph)	0	0	0	0	0	33	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	538	0	239	0	1461	1843	0	752	506
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				8.2		8.2		13.7	33.3		13.7	33.3
Effective Green, g (s)				8.2		8.2		13.7	33.3		13.7	33.3
Actuated g/C Ratio				0.25		0.25		0.41	1.00		0.41	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				837		386		2071	1568		1441	1568
v/s Ratio Prot								0.29			0.21	
v/s Ratio Perm				0.16		0.15			c1.18			0.32
v/c Ratio				0.64		0.62		0.71	1.18		0.52	0.32
Uniform Delay, d1				11.2		11.2		8.1	16.6		7.3	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				1.3		2.1		0.9	86.0		0.2	0.5
Delay (s)				12.5		13.2		9.0	102.6		7.5	0.5
Level of Service				B		B		A	F		A	A
Approach Delay (s)		0.0			12.8			61.2			4.7	
Approach LOS		A			B			E			A	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.79		
Actuated Cycle Length (s)	33.3	Sum of lost time (s)	11.4
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



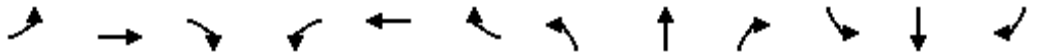
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	570	121	453	0	0	943	0	2450	8	0	1152	136
Future Volume (vph)	570	121	453	0	0	943	0	2450	8	0	1152	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		*0.75			0.95	1.00
Frt	1.00	0.95	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	0.98	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	2951	1427			2733		5531			3505	1568
Flt Permitted	0.95	0.98	1.00			1.00		1.00			1.00	1.00
Satd. Flow (perm)	1595	2951	1427			2733		5531			3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	570	121	453	0	0	943	0	2450	8	0	1152	136
RTOR Reduction (vph)	0	36	122	0	0	32	0	1	0	0	0	33
Lane Group Flow (vph)	296	545	145	0	0	911	0	2457	0	0	1152	103
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA			NA	Perm
Protected Phases	4	4				1		2			6	
Permitted Phases			4									6
Actuated Green, G (s)	21.0	21.0	21.0			35.0		52.0			91.0	91.0
Effective Green, g (s)	21.0	21.0	21.0			35.0		52.0			91.0	91.0
Actuated g/C Ratio	0.18	0.18	0.18			0.29		0.43			0.76	0.76
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	279	516	249			797		2396			2657	1189
v/s Ratio Prot	c0.19	0.18				c0.33		c0.44			0.33	
v/s Ratio Perm			0.10									0.07
v/c Ratio	1.06	1.06	0.58			1.14		1.03			0.43	0.09
Uniform Delay, d1	49.5	49.5	45.5			42.5		34.0			5.2	3.8
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	1.00
Incremental Delay, d2	70.9	55.1	3.4			79.1		25.3			0.1	0.0
Delay (s)	120.4	104.6	48.9			121.6		59.3			5.3	3.8
Level of Service	F	F	D			F		E			A	A
Approach Delay (s)		95.7			121.6			59.3			5.2	
Approach LOS		F			F			E			A	

Intersection Summary			
HCM 2000 Control Delay	64.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



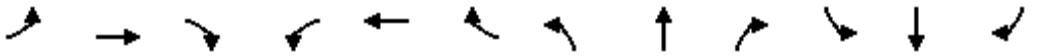
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	408	0	396	0	3014	544	0	1260	1094
Future Volume (vph)	0	0	0	408	0	396	0	3014	544	0	1260	1094
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	408	0	396	0	3014	544	0	1260	1094
RTOR Reduction (vph)	0	0	0	0	0	35	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	408	0	361	0	3014	544	0	1260	1094
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				8.8		8.8		34.4	51.5		34.1	51.5
Effective Green, g (s)				8.8		8.8		34.4	51.5		34.1	51.5
Actuated g/C Ratio				0.17		0.17		0.67	1.00		0.66	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				564		458		3331	1553		3302	1553
v/s Ratio Prot								c0.60			0.25	
v/s Ratio Perm				0.12		0.13			0.35			c0.70
v/c Ratio				0.72		0.79		0.90	0.35		0.38	0.70
Uniform Delay, d1				20.2		20.5		7.2	0.0		3.9	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				3.9		8.1		3.9	0.6		0.0	2.7
Delay (s)				24.1		28.6		11.0	0.6		4.0	2.7
Level of Service				C		C		B	A		A	A
Approach Delay (s)		0.0			26.3			9.4			3.4	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	8.6
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



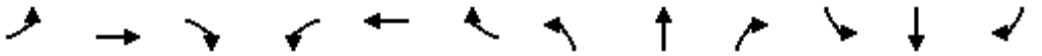
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1289	0	314	0	0	0	0	2268	369	0	1238	429
Future Volume (vph)	1289	0	314	0	0	0	0	2268	369	0	1238	429
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1289	0	314	0	0	0	0	2268	369	0	1238	429
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1289	0	266	0	0	0	0	2268	369	0	1238	429
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	14.2		14.2					20.8	43.3		20.5	43.3
Effective Green, g (s)	14.2		14.2					20.8	43.3		20.5	43.3
Actuated g/C Ratio	0.33		0.33					0.48	1.00		0.47	1.00
Clearance Time (s)	3.5		3.5					4.8			5.1	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1604		896					3019	1553		2361	1553
v/s Ratio Prot								c0.36			0.25	
v/s Ratio Perm	c0.26		0.10						0.24			0.28
v/c Ratio	0.80		0.30					0.75	0.24		0.52	0.28
Uniform Delay, d1	13.3		10.8					9.1	0.0		8.0	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	2.8		0.1					1.0	0.4		0.1	0.4
Delay (s)	16.1		10.9					10.1	0.4		8.1	0.4
Level of Service	B		B					B	A		A	A
Approach Delay (s)		15.1			0.0			8.7			6.1	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	43.3	Sum of lost time (s)	8.6
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



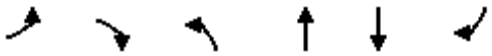
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	299	9	2	300	6	7	15	2	5	21	559
Future Volume (vph)	185	299	9	2	300	6	7	15	2	5	21	559
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1703	1792	1524	1719	1804			1798			1810	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)	1703	1792	1524	1719	1804			1798			1810	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	185	299	9	2	300	6	7	15	2	5	21	559
RTOR Reduction (vph)	0	0	5	0	1	0	0	2	0	0	0	325
Lane Group Flow (vph)	185	299	4	2	305	0	0	22	0	0	26	234
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	6.2	20.2	20.2	0.3	15.2			0.3			0.7	6.9
Effective Green, g (s)	6.2	20.2	20.2	0.3	15.2			0.3			0.7	6.9
Actuated g/C Ratio	0.13	0.44	0.44	0.01	0.33			0.01			0.02	0.15
Clearance Time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	228	783	666	11	593			11			27	231
v/s Ratio Prot	0.11	0.17		0.00	c0.17			c0.01			0.01	c0.14
v/s Ratio Perm			0.00									0.02
v/c Ratio	0.81	0.38	0.01	0.18	0.51			2.00			0.96	1.01
Uniform Delay, d1	19.4	8.8	7.3	22.8	12.5			23.0			22.7	19.7
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	18.4	0.1	0.0	2.9	0.3			670.4			155.6	62.7
Delay (s)	37.8	8.9	7.3	25.7	12.8			693.3			178.3	82.3
Level of Service	D	A	A	C	B			F			F	F
Approach Delay (s)		19.7			12.9			693.3			86.6	
Approach LOS		B			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	57.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	46.2	Sum of lost time (s)	24.7
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



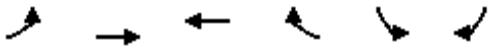
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	309	39	189	598	166	1985	0	0	1373	68
Future Volume (vph)	0	0	309	39	189	598	166	1985	0	0	1373	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1777	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1777	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	309	39	189	598	166	1985	0	0	1373	68
RTOR Reduction (vph)	0	0	255	0	0	84	0	0	0	0	0	44
Lane Group Flow (vph)	0	0	54	0	228	514	166	1985	0	0	1373	24
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			11.3		14.6	14.6	11.3	38.7			22.5	22.5
Effective Green, g (s)			11.3		14.6	14.6	11.3	38.7			22.5	22.5
Actuated g/C Ratio			0.18		0.23	0.23	0.18	0.60			0.35	0.35
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Vehicle Extension (s)			3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			279		402	607	578	2935			2150	531
v/s Ratio Prot			0.03		0.13		0.05	c0.41			0.22	
v/s Ratio Perm						c0.19						0.02
v/c Ratio			0.19		0.57	0.85	0.29	0.68			0.64	0.04
Uniform Delay, d1			22.7		22.1	23.9	23.1	8.7			17.6	13.9
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			0.3		1.8	10.6	0.3	0.6			0.6	0.0
Delay (s)			23.1		24.0	34.5	23.4	9.3			18.2	13.9
Level of Service			C		C	C	C	A			B	B
Approach Delay (s)		23.1			31.6			10.4			18.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	16.1
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



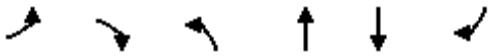
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1519	62	0	0	226	808
Future Volume (vph)	1519	62	0	0	226	808
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			4.7	4.0
Lane Util. Factor	0.97	0.91			0.95	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00
Satd. Flow (prot)	3310	1386			3406	1524
Flt Permitted	0.95	1.00			1.00	1.00
Satd. Flow (perm)	3310	1386			3406	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1519	62	0	0	226	808
RTOR Reduction (vph)	1	24	0	0	0	0
Lane Group Flow (vph)	1524	32	0	0	226	808
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%
Turn Type	Prot	Perm			NA	Free
Protected Phases	4				2	
Permitted Phases		4				Free
Actuated Green, G (s)	19.2	19.2			5.7	33.1
Effective Green, g (s)	19.2	19.2			5.7	33.1
Actuated g/C Ratio	0.58	0.58			0.17	1.00
Clearance Time (s)	3.5	3.5			4.7	
Vehicle Extension (s)	1.5	1.5			1.0	
Lane Grp Cap (vph)	1920	803			586	1524
v/s Ratio Prot	c0.46				0.07	
v/s Ratio Perm		0.02				c0.53
v/c Ratio	0.79	0.04			0.39	0.53
Uniform Delay, d1	5.4	3.0			12.1	0.0
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	2.2	0.0			0.2	1.3
Delay (s)	7.6	3.0			12.3	1.3
Level of Service	A	A			B	A
Approach Delay (s)	7.4			0.0	3.7	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	8.2
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



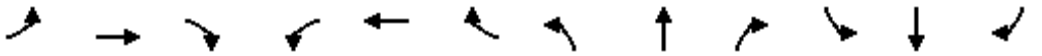
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	211	411	302	79	93	229
Future Volume (vph)	211	411	302	79	93	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	3343	3343	1495	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1671	3343	3343	1495	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	211	411	302	79	93	229
RTOR Reduction (vph)	0	0	0	59	0	180
Lane Group Flow (vph)	211	411	302	20	93	49
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.4	20.7	9.3	9.3	7.9	7.9
Effective Green, g (s)	7.4	20.7	9.3	9.3	7.9	7.9
Actuated g/C Ratio	0.20	0.57	0.25	0.25	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	337	1890	849	379	378	338
v/s Ratio Prot	c0.13	0.12	c0.09		c0.05	
v/s Ratio Perm				0.01		0.03
v/c Ratio	0.63	0.22	0.36	0.05	0.25	0.15
Uniform Delay, d1	13.3	3.9	11.2	10.3	11.9	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.1	0.3	0.1	0.3	0.2
Delay (s)	16.9	4.0	11.5	10.4	12.2	11.8
Level of Service	B	A	B	B	B	B
Approach Delay (s)		8.4	11.2		11.9	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	36.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	281	27	3	367	479	38
Future Volume (vph)	281	27	3	367	479	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3367	1553	1719	3438	3343	1495
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3367	1553	1719	3438	3343	1495
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	281	27	3	367	479	38
RTOR Reduction (vph)	0	27	0	0	0	29
Lane Group Flow (vph)	281	0	3	367	479	9
Heavy Vehicles (%)	4%	4%	5%	5%	8%	8%
Turn Type	Prot	Over	Prot	NA	NA	Over
Protected Phases	4	5	5	2	6	4
Permitted Phases						
Actuated Green, G (s)	8.4	0.6	0.6	17.7	13.1	8.4
Effective Green, g (s)	8.4	0.6	0.6	17.7	13.1	8.4
Actuated g/C Ratio	0.25	0.02	0.02	0.52	0.38	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	829	27	30	1784	1284	368
v/s Ratio Prot	c0.08	0.00	0.00	c0.11	c0.14	0.01
v/s Ratio Perm						
v/c Ratio	0.34	0.02	0.10	0.21	0.37	0.03
Uniform Delay, d1	10.6	16.5	16.5	4.4	7.5	9.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	1.5	0.1	0.2	0.0
Delay (s)	10.8	16.7	17.9	4.5	7.7	9.8
Level of Service	B	B	B	A	A	A
Approach Delay (s)	11.3			4.6	7.9	
Approach LOS	B			A	A	

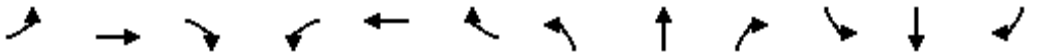
Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	34.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	925	0	731	0	0	0	0	2165	627	0	1888	1108
Future Volume (vph)	925	0	731	0	0	0	0	2165	627	0	1888	1108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.97	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4626	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4626	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	925	0	731	0	0	0	0	2165	627	0	1888	1108
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	60	0
Lane Group Flow (vph)	925	0	717	0	0	0	0	2165	627	0	2260	676
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	17.0		17.0					30.0	55.0		30.0	55.0
Effective Green, g (s)	17.0		17.0					30.0	55.0		30.0	55.0
Actuated g/C Ratio	0.31		0.31					0.55	1.00		0.55	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1050		853					3461	1568		2523	1348
v/s Ratio Prot	c0.27							0.34			c0.49	
v/s Ratio Perm			0.26						0.40			0.50
v/c Ratio	0.88		0.84					0.63	0.40		0.90	0.50
Uniform Delay, d1	18.0		17.7					8.6	0.0		11.1	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	8.8		7.5					0.4	0.8		4.6	1.3
Delay (s)	26.8		25.2					9.0	0.8		15.7	1.3
Level of Service	C		C					A	A		B	A
Approach Delay (s)		26.1			0.0			7.1			12.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	342	0	1365	0	2499	596	0	2731	762
Future Volume (vph)	0	0	0	342	0	1365	0	2499	596	0	2731	762
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		1.00	0.85		0.99	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4742	1348		5931	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4742	1348		5931	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	342	0	1365	0	2499	596	0	2731	762
RTOR Reduction (vph)	0	0	0	0	0	9	0	3	0	0	9	0
Lane Group Flow (vph)	0	0	0	342	0	1356	0	2556	536	0	2867	617
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				29.0		29.0		43.0	80.0		43.0	80.0
Effective Green, g (s)				29.0		29.0		43.0	80.0		43.0	80.0
Actuated g/C Ratio				0.36		0.36		0.54	1.00		0.54	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Vehicle Extension (s)				3.0		3.0		3.0			3.0	
Lane Grp Cap (vph)				1232		1295		2548	1348		3187	1270
v/s Ratio Prot				0.10				c0.54			0.48	
v/s Ratio Perm						c0.38			0.40			0.49
v/c Ratio				0.28		1.05		1.00	0.40		0.90	0.49
Uniform Delay, d1				18.1		25.5		18.5	0.0		16.6	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.1		38.3		18.6	0.9		3.8	1.3
Delay (s)				18.2		63.8		37.1	0.9		20.4	1.3
Level of Service				B		E		D	A		C	A
Approach Delay (s)		0.0			54.7			30.8			17.0	
Approach LOS		A			D			C			B	

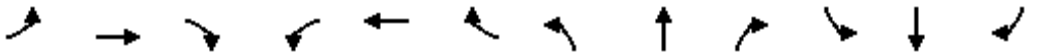
Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	704	226	192	937	428	267
Future Volume (vph)	704	226	192	937	428	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	704	226	192	937	428	267
RTOR Reduction (vph)	0	157	0	0	0	198
Lane Group Flow (vph)	704	69	192	937	428	69
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	15.0	15.0	9.5	28.5	12.7	12.7
Effective Green, g (s)	15.0	15.0	9.5	28.5	12.7	12.7
Actuated g/C Ratio	0.30	0.30	0.19	0.58	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	961	430	304	1827	789	364
v/s Ratio Prot	c0.22		c0.12	0.30	c0.14	
v/s Ratio Perm		0.05				0.05
v/c Ratio	0.73	0.16	0.63	0.51	0.54	0.19
Uniform Delay, d1	15.3	12.5	18.2	6.2	15.7	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.2	4.2	0.2	0.8	0.3
Delay (s)	18.2	12.7	22.5	6.4	16.5	14.5
Level of Service	B	B	C	A	B	B
Approach Delay (s)	16.9			9.2	15.7	
Approach LOS	B			A	B	

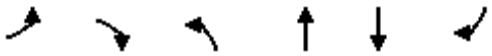
Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	274	1	0	395	24	0	0	0	26	0	247
Future Volume (vph)	309	274	1	0	395	24	0	0	0	26	0	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95					0.95	0.95	1.00
Frt	1.00	1.00			0.99					1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (prot)	1736	3469			3441					1665	1665	1568
Flt Permitted	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (perm)	1736	3469			3441					1665	1665	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	309	274	1	0	395	24	0	0	0	26	0	247
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	0	0	0	215
Lane Group Flow (vph)	309	275	0	0	413	0	0	0	0	13	13	32
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA					Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	15.1	31.0			11.9					7.2	7.2	7.2
Effective Green, g (s)	15.1	31.0			11.9					7.2	7.2	7.2
Actuated g/C Ratio	0.27	0.56			0.21					0.13	0.13	0.13
Clearance Time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	469	1927			733					214	214	202
v/s Ratio Prot	c0.18	0.08			c0.12					0.01	0.01	
v/s Ratio Perm												c0.02
v/c Ratio	0.66	0.14			0.56					0.06	0.06	0.16
Uniform Delay, d1	18.1	6.0			19.6					21.3	21.3	21.6
Progression Factor	1.00	1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2	3.3	0.0			1.0					0.1	0.1	0.4
Delay (s)	21.4	6.0			20.6					21.5	21.5	22.0
Level of Service	C	A			C					C	C	C
Approach Delay (s)		14.2			20.6			0.0			21.9	
Approach LOS		B			C			A			C	

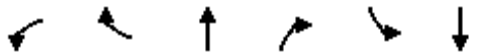
Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	103	47	22	424	809	285
Future Volume (vph)	103	47	22	424	809	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.96		1.00	1.00	0.96	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1708		1752	1845	1780	
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1708		1752	1845	1780	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	103	47	22	424	809	285
RTOR Reduction (vph)	19	0	0	0	12	0
Lane Group Flow (vph)	131	0	22	424	1082	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	11.4		1.4	60.6	55.2	
Effective Green, g (s)	11.4		1.4	60.6	55.2	
Actuated g/C Ratio	0.14		0.02	0.76	0.69	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	243		30	1397	1228	
v/s Ratio Prot	c0.08		c0.01	0.23	c0.61	
v/s Ratio Perm						
v/c Ratio	0.54		0.73	0.30	0.88	
Uniform Delay, d1	31.9		39.1	3.1	9.8	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.3		63.0	0.1	7.7	
Delay (s)	34.2		102.1	3.2	17.5	
Level of Service	C		F	A	B	
Approach Delay (s)	34.2			8.1	17.5	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	85	20	288	82	18	439
Future Volume (vph)	85	20	288	82	18	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	3388		1752	1845
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	3388		1752	1845
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	85	20	288	82	18	439
RTOR Reduction (vph)	0	18	38	0	0	0
Lane Group Flow (vph)	85	2	332	0	18	439
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	4.4	4.4	19.9		0.5	24.4
Effective Green, g (s)	4.4	4.4	19.9		0.5	24.4
Actuated g/C Ratio	0.12	0.12	0.54		0.01	0.66
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	209	187	1832		23	1223
v/s Ratio Prot	c0.05		0.10		0.01	c0.24
v/s Ratio Perm		0.00				
v/c Ratio	0.41	0.01	0.18		0.78	0.36
Uniform Delay, d1	15.0	14.3	4.3		18.1	2.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.0	0.0		93.8	0.2
Delay (s)	16.3	14.3	4.4		111.9	2.9
Level of Service	B	B	A		F	A
Approach Delay (s)	15.9		4.4			7.2
Approach LOS	B		A			A

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	36.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

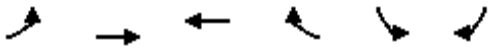
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	143	35	561	74	37	567
Future Volume (vph)	143	35	561	74	37	567
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	3444		1752	1845
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	3444		1752	1845
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	143	35	561	74	37	567
RTOR Reduction (vph)	0	29	16	0	0	0
Lane Group Flow (vph)	143	6	619	0	37	567
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	7.0	7.0	21.6		0.5	26.1
Effective Green, g (s)	7.0	7.0	21.6		0.5	26.1
Actuated g/C Ratio	0.17	0.17	0.53		0.01	0.64
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	298	267	1809		21	1171
v/s Ratio Prot	c0.08		0.18		0.02	c0.31
v/s Ratio Perm		0.00				
v/c Ratio	0.48	0.02	0.34		1.76	0.48
Uniform Delay, d1	15.4	14.2	5.6		20.3	4.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.0	0.1		483.4	0.3
Delay (s)	16.6	14.2	5.8		503.7	4.3
Level of Service	B	B	A		F	A
Approach Delay (s)	16.2		5.8			34.9
Approach LOS	B		A			C

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

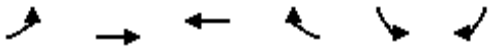
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	609	622	770	64	150	624
Future Volume (vph)	609	622	770	64	150	624
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	4978		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	4978		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	609	622	770	64	150	624
RTOR Reduction (vph)	0	0	12	0	0	443
Lane Group Flow (vph)	609	622	822	0	150	181
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	14.9	33.5	14.6		12.9	12.9
Effective Green, g (s)	14.9	33.5	14.6		12.9	12.9
Actuated g/C Ratio	0.27	0.62	0.27		0.24	0.24
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	931	2158	1336		415	371
v/s Ratio Prot	c0.18	0.18	c0.17		0.09	
v/s Ratio Perm						c0.12
v/c Ratio	0.65	0.29	0.62		0.36	0.49
Uniform Delay, d1	17.5	4.9	17.4		17.3	17.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.7	0.1	0.8		0.5	1.0
Delay (s)	19.1	5.0	18.3		17.9	18.9
Level of Service	B	A	B		B	B
Approach Delay (s)		12.0	18.3		18.7	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

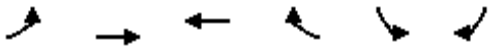
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	196	504	450	125	240	140
Future Volume (vph)	196	504	450	125	240	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	3505	3505	1568	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	3505	3505	1568	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	196	504	450	125	240	140
RTOR Reduction (vph)	0	0	0	88	0	107
Lane Group Flow (vph)	196	504	450	37	240	33
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	6.1	21.4	11.3	11.3	8.9	8.9
Effective Green, g (s)	6.1	21.4	11.3	11.3	8.9	8.9
Actuated g/C Ratio	0.16	0.56	0.30	0.30	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	541	1958	1034	462	790	364
v/s Ratio Prot	c0.06	0.14	c0.13		c0.07	
v/s Ratio Perm				0.02		0.02
v/c Ratio	0.36	0.26	0.44	0.08	0.30	0.09
Uniform Delay, d1	14.4	4.4	10.9	9.7	12.1	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.3	0.1	0.2	0.1
Delay (s)	14.8	4.4	11.2	9.8	12.4	11.6
Level of Service	B	A	B	A	B	B
Approach Delay (s)		7.3	10.9		12.1	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	76	670	540	59	19	42
Future Volume (vph)	76	670	540	59	19	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3453		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3453		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	76	670	540	59	19	42
RTOR Reduction (vph)	0	0	18	0	0	33
Lane Group Flow (vph)	76	670	581	0	19	9
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	1.5	16.3	10.8		6.2	6.2
Effective Green, g (s)	1.5	16.3	10.8		6.2	6.2
Actuated g/C Ratio	0.05	0.53	0.35		0.20	0.20
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	86	1873	1222		356	318
v/s Ratio Prot	c0.04	0.19	c0.17		c0.01	
v/s Ratio Perm						0.01
v/c Ratio	0.88	0.36	0.48		0.05	0.03
Uniform Delay, d1	14.4	4.1	7.6		9.8	9.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	59.9	0.1	0.3		0.1	0.0
Delay (s)	74.3	4.2	7.9		9.8	9.8
Level of Service	E	A	A		A	A
Approach Delay (s)		11.3	7.9		9.8	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	30.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

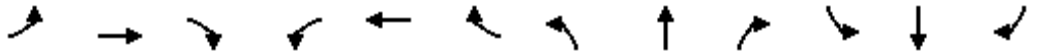
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	132	0	0	130	0
Future Volume (vph)	0	132	0	0	130	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	
Lane Util. Factor		1.00			0.97	
Frt		0.85			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		1568			3400	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		1568			3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	132	0	0	130	0
RTOR Reduction (vph)	0	116	0	0	0	0
Lane Group Flow (vph)	0	16	0	0	130	0
Turn Type		Perm	Prot		Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)		3.3			15.9	
Effective Green, g (s)		3.3			15.9	
Actuated g/C Ratio		0.12			0.58	
Clearance Time (s)		4.0			4.0	
Vehicle Extension (s)		3.0			3.0	
Lane Grp Cap (vph)		190			1987	
v/s Ratio Prot					c0.04	
v/s Ratio Perm		c0.01				
v/c Ratio		0.08			0.07	
Uniform Delay, d1		10.6			2.4	
Progression Factor		1.00			1.00	
Incremental Delay, d2		0.2			0.0	
Delay (s)		10.8			2.5	
Level of Service		B			A	
Approach Delay (s)	10.8			0.0	2.5	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.09		
Actuated Cycle Length (s)	27.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	11.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	0	484	592	252	648	0	1644	669	0	2049	358
Future Volume (veh/h)	200	0	484	592	252	648	0	1644	669	0	2049	358
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1827	1827	1827	0	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	200	0	484	474	341	699	0	1644	0	0	2049	358
Adj No. of Lanes	0	1	2	2	1	3	0	3	1	0	4	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	0	4	4	0	4	4
Cap, veh/h	383	0	602	844	443	1130	0	1712	533	0	2157	533
Arrive On Green	0.22	0.00	0.22	0.24	0.24	0.24	0.00	0.34	0.00	0.00	0.34	0.34
Sat Flow, veh/h	1757	0	2760	3480	1827	4659	0	5152	1553	0	6540	1553
Grp Volume(v), veh/h	200	0	484	474	341	699	0	1644	0	0	2049	358
Grp Sat Flow(s),veh/h/ln	1757	0	1380	1740	1827	1553	0	1663	1553	0	1571	1553
Q Serve(g_s), s	6.1	0.0	10.2	7.3	10.6	8.2	0.0	19.8	0.0	0.0	19.4	12.0
Cycle Q Clear(g_c), s	6.1	0.0	10.2	7.3	10.6	8.2	0.0	19.8	0.0	0.0	19.4	12.0
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	383	0	602	844	443	1130	0	1712	533	0	2157	533
V/C Ratio(X)	0.52	0.00	0.80	0.56	0.77	0.62	0.00	0.96	0.00	0.00	0.95	0.67
Avail Cap(c_a), veh/h	459	0	722	910	478	1218	0	1712	533	0	2157	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	22.7	20.3	21.6	20.6	0.0	19.7	0.0	0.0	19.6	17.1
Incr Delay (d2), s/veh	1.1	0.0	5.6	0.7	7.0	0.9	0.0	13.5	0.0	0.0	10.1	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	4.3	3.6	6.2	3.6	0.0	11.1	0.0	0.0	9.9	5.6
LnGrp Delay(d),s/veh	22.2	0.0	28.3	21.0	28.6	21.5	0.0	33.2	0.0	0.0	29.6	20.4
LnGrp LOS	C		C	C	C	C		C			C	C
Approach Vol, veh/h		684			1514			1644			2407	
Approach Delay, s/veh		26.5			22.9			33.2			28.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.0		17.3		25.0		18.8
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		21.0		16.0		21.0		16.0
Max Q Clear Time (g_c+I1), s		21.8		12.2		21.4		12.6
Green Ext Time (p_c), s		0.0		1.2		0.0		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	28.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	28	167	17	42	24	139	872	6	14	1422	391
Future Volume (veh/h)	204	28	167	17	42	24	139	872	6	14	1422	391
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	224	0	167	17	42	24	139	872	6	14	1422	391
Adj No. of Lanes	2	0	1	0	1	0	2	3	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	513	0	229	22	55	31	201	1273	9	528	1711	766
Arrive On Green	0.15	0.00	0.15	0.06	0.06	0.06	0.06	0.25	0.25	0.30	0.49	0.49
Sat Flow, veh/h	3514	0	1568	353	871	498	3375	5111	35	1740	3471	1553
Grp Volume(v), veh/h	224	0	167	83	0	0	139	567	311	14	1422	391
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1721	0	0	1688	1663	1821	1740	1736	1553
Q Serve(g_s), s	3.9	0.0	6.8	3.2	0.0	0.0	2.7	10.4	10.4	0.4	23.6	11.4
Cycle Q Clear(g_c), s	3.9	0.0	6.8	3.2	0.0	0.0	2.7	10.4	10.4	0.4	23.6	11.4
Prop In Lane	1.00		1.00	0.20		0.29	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	513	0	229	108	0	0	201	828	454	528	1711	766
V/C Ratio(X)	0.44	0.00	0.73	0.77	0.00	0.00	0.69	0.68	0.69	0.03	0.83	0.51
Avail Cap(c_a), veh/h	838	0	374	411	0	0	201	1884	1032	528	1967	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	27.4	30.9	0.0	0.0	30.9	22.8	22.8	16.4	14.6	11.5
Incr Delay (d2), s/veh	0.6	0.0	4.4	10.8	0.0	0.0	9.6	1.0	1.8	0.0	2.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	3.2	1.8	0.0	0.0	1.5	4.8	5.4	0.2	11.7	5.0
LnGrp Delay(d),s/veh	26.7	0.0	31.8	41.8	0.0	0.0	40.5	23.8	24.6	16.4	17.4	12.0
LnGrp LOS	C		C	D			D	C	C	B	B	B
Approach Vol, veh/h		391			83			1017			1827	
Approach Delay, s/veh		28.9			41.8			26.3			16.3	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.3	20.7		13.8	8.0	37.1		8.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	38.0		16.0	4.0	38.0		16.0
Max Q Clear Time (g_c+I1), s	2.4	12.4		8.8	4.7	25.6		5.2
Green Ext Time (p_c), s	1.3	4.3		1.0	0.0	7.5		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	307	110	132	549	226	120	601	111	148	1163	269
Future Volume (veh/h)	154	307	110	132	549	226	120	601	111	148	1163	269
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	154	307	110	132	549	226	120	601	111	148	1163	269
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	171	563	198	167	766	343	198	1035	191	237	1267	567
Arrive On Green	0.10	0.22	0.22	0.09	0.22	0.22	0.06	0.35	0.35	0.07	0.37	0.37
Sat Flow, veh/h	1757	2545	894	1757	3505	1568	3375	2928	540	3375	3471	1553
Grp Volume(v), veh/h	154	210	207	132	549	226	120	356	356	148	1163	269
Grp Sat Flow(s),veh/h/ln	1757	1752	1687	1757	1752	1568	1688	1736	1732	1688	1736	1553
Q Serve(g_s), s	5.3	6.5	6.7	4.5	8.9	8.1	2.1	10.2	10.3	2.6	19.7	8.2
Cycle Q Clear(g_c), s	5.3	6.5	6.7	4.5	8.9	8.1	2.1	10.2	10.3	2.6	19.7	8.2
Prop In Lane	1.00		0.53	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	171	388	373	167	766	343	198	613	612	237	1267	567
V/C Ratio(X)	0.90	0.54	0.56	0.79	0.72	0.66	0.61	0.58	0.58	0.62	0.92	0.47
Avail Cap(c_a), veh/h	171	456	439	171	912	408	220	613	612	329	1299	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	21.2	21.3	27.2	22.3	21.9	28.2	16.2	16.2	27.8	18.6	15.0
Incr Delay (d2), s/veh	41.1	1.2	1.3	21.3	2.2	3.0	4.0	1.4	1.4	2.7	10.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	3.3	3.2	3.2	4.5	3.7	1.1	5.1	5.1	1.3	11.2	3.5
LnGrp Delay(d),s/veh	68.5	22.4	22.6	48.6	24.5	24.9	32.2	17.5	17.6	30.5	29.0	15.6
LnGrp LOS	E	C	C	D	C	C	C	B	B	C	C	B
Approach Vol, veh/h		571			907			832			1580	
Approach Delay, s/veh		34.9			28.1			19.7			26.8	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	25.7	9.8	17.6	7.6	26.4	10.0	17.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	21.0	6.0	16.0	4.0	23.0	6.0	16.0
Max Q Clear Time (g_c+I1), s	4.6	12.3	6.5	8.7	4.1	21.7	7.3	10.9
Green Ext Time (p_c), s	0.1	6.2	0.0	3.3	0.0	0.8	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	486	286	148	220	89	94	803	193	49	299	3
Future Volume (veh/h)	26	486	286	148	220	89	94	803	193	49	299	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	26	486	286	148	220	89	94	803	193	49	299	3
Adj No. of Lanes	1	1	2	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	40	533	797	180	906	355	119	977	437	67	884	9
Arrive On Green	0.02	0.30	0.30	0.11	0.38	0.38	0.07	0.28	0.28	0.04	0.25	0.25
Sat Flow, veh/h	1707	1792	2682	1707	2392	938	1757	3505	1568	1757	3555	36
Grp Volume(v), veh/h	26	486	286	148	155	154	94	803	193	49	147	155
Grp Sat Flow(s),veh/h/ln	1707	1792	1341	1707	1703	1627	1757	1752	1568	1757	1752	1838
Q Serve(g_s), s	0.9	14.9	4.8	4.8	3.5	3.7	3.0	12.2	5.8	1.6	3.9	3.9
Cycle Q Clear(g_c), s	0.9	14.9	4.8	4.8	3.5	3.7	3.0	12.2	5.8	1.6	3.9	3.9
Prop In Lane	1.00		1.00	1.00		0.58	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	40	533	797	180	645	616	119	977	437	67	436	457
V/C Ratio(X)	0.64	0.91	0.36	0.82	0.24	0.25	0.79	0.82	0.44	0.74	0.34	0.34
Avail Cap(c_a), veh/h	120	535	800	180	645	616	123	1046	468	123	523	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	19.3	15.7	25.0	12.1	12.1	26.1	19.2	16.9	27.1	17.6	17.6
Incr Delay (d2), s/veh	15.8	20.0	0.3	25.5	0.2	0.2	27.2	5.1	0.7	14.5	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	10.2	1.8	3.5	1.7	1.7	2.4	6.6	2.6	1.0	1.9	2.0
LnGrp Delay(d),s/veh	43.4	39.3	16.0	50.5	12.3	12.4	53.4	24.3	17.6	41.7	18.0	18.0
LnGrp LOS	D	D	B	D	B	B	D	C	B	D	B	B
Approach Vol, veh/h		798			457			1090			351	
Approach Delay, s/veh		31.1			24.7			25.6			21.3	
Approach LOS		C			C			C			C	

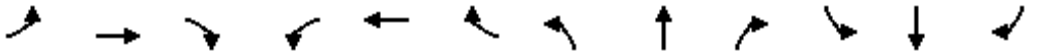
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	19.9	10.0	20.9	7.9	18.2	5.3	25.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	17.0	6.0	17.0	4.0	17.0	4.0	19.0
Max Q Clear Time (g_c+I1), s	3.6	14.2	6.8	16.9	5.0	5.9	2.9	5.7
Green Ext Time (p_c), s	0.0	1.7	0.0	0.0	0.0	4.7	0.0	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	250	195	99	320	64	158	579	156	43	796	150
Future Volume (veh/h)	97	250	195	99	320	64	158	579	156	43	796	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	97	250	195	99	320	64	158	579	156	43	796	150
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	123	706	316	125	593	117	200	1297	580	63	1024	458
Arrive On Green	0.07	0.20	0.20	0.07	0.20	0.20	0.11	0.37	0.37	0.04	0.29	0.29
Sat Flow, veh/h	1757	3505	1568	1757	2919	577	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	97	250	195	99	191	193	158	579	156	43	796	150
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1743	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	2.7	3.1	5.7	2.8	4.8	5.0	4.4	6.2	3.5	1.2	10.4	3.7
Cycle Q Clear(g_c), s	2.7	3.1	5.7	2.8	4.8	5.0	4.4	6.2	3.5	1.2	10.4	3.7
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	123	706	316	125	356	354	200	1297	580	63	1024	458
V/C Ratio(X)	0.79	0.35	0.62	0.79	0.54	0.55	0.79	0.45	0.27	0.68	0.78	0.33
Avail Cap(c_a), veh/h	176	1125	503	176	562	559	247	1297	580	176	1125	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	17.1	18.1	22.8	17.8	17.8	21.5	11.8	11.0	23.7	16.2	13.8
Incr Delay (d2), s/veh	14.1	0.3	2.0	14.6	1.3	1.3	12.9	0.2	0.2	12.1	3.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.5	2.6	1.8	2.5	2.5	2.8	3.0	1.5	0.8	5.4	1.6
LnGrp Delay(d),s/veh	37.0	17.4	20.1	37.4	19.0	19.1	34.4	12.1	11.2	35.8	19.4	14.2
LnGrp LOS	D	B	C	D	B	B	C	B	B	D	B	B
Approach Vol, veh/h		542			483			893			989	
Approach Delay, s/veh		21.9			22.8			15.9			19.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	22.5	7.6	14.1	9.7	18.6	7.5	14.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	18.0	5.0	16.0	7.0	16.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	3.2	8.2	4.8	7.7	6.4	12.4	4.7	7.0
Green Ext Time (p_c), s	0.0	5.6	0.0	2.4	0.0	2.2	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	344	116	124	410	67	123	368	95	87	842	133
Future Volume (veh/h)	81	344	116	124	410	67	123	368	95	87	842	133
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	81	344	116	124	410	67	123	368	95	87	842	133
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	102	669	299	157	780	349	157	1178	527	110	1085	485
Arrive On Green	0.06	0.19	0.19	0.09	0.22	0.22	0.09	0.34	0.34	0.06	0.31	0.31
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	81	344	116	124	410	67	123	368	95	87	842	133
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	2.3	4.4	3.2	3.4	5.1	1.7	3.4	3.9	2.1	2.4	10.9	3.2
Cycle Q Clear(g_c), s	2.3	4.4	3.2	3.4	5.1	1.7	3.4	3.9	2.1	2.4	10.9	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	669	299	157	780	349	157	1178	527	110	1085	485
V/C Ratio(X)	0.80	0.51	0.39	0.79	0.53	0.19	0.78	0.31	0.18	0.79	0.78	0.27
Avail Cap(c_a), veh/h	176	1124	503	176	1124	503	211	1194	534	211	1194	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	18.1	17.6	22.2	17.1	15.8	22.2	12.3	11.7	23.1	15.6	13.0
Incr Delay (d2), s/veh	13.0	0.6	0.8	18.9	0.6	0.3	12.7	0.1	0.2	11.8	3.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.2	1.5	2.5	2.5	0.8	2.2	1.9	1.0	1.5	5.7	1.4
LnGrp Delay(d),s/veh	36.2	18.7	18.5	41.2	17.6	16.0	35.0	12.4	11.9	34.8	18.6	13.3
LnGrp LOS	D	B	B	D	B	B	C	B	B	C	B	B
Approach Vol, veh/h		541			601			586			1062	
Approach Delay, s/veh		21.3			22.3			17.1			19.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	20.8	8.5	13.5	8.5	19.4	6.9	15.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	17.0	5.0	16.0	6.0	17.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	4.4	5.9	5.4	6.4	5.4	12.9	4.3	7.1
Green Ext Time (p_c), s	0.0	5.3	0.0	3.1	0.0	2.6	0.0	3.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	422	490	108	220	417	773	85	1596	135	449	1791	401
Future Volume (veh/h)	422	490	108	220	417	773	85	1596	135	449	1791	401
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	422	490	108	220	417	773	85	1596	135	449	1791	401
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	417	1075	481	267	920	647	126	1617	503	506	2178	678
Arrive On Green	0.12	0.31	0.31	0.08	0.26	0.26	0.04	0.32	0.32	0.15	0.44	0.44
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	422	490	108	220	417	773	85	1596	135	449	1791	401
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	17.7	16.3	7.4	9.2	14.4	38.0	3.6	46.0	9.3	18.9	45.7	28.4
Cycle Q Clear(g_c), s	17.7	16.3	7.4	9.2	14.4	38.0	3.6	46.0	9.3	18.9	45.7	28.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	417	1075	481	267	920	647	126	1617	503	506	2178	678
V/C Ratio(X)	1.01	0.46	0.22	0.82	0.45	1.19	0.67	0.99	0.27	0.89	0.82	0.59
Avail Cap(c_a), veh/h	417	1075	481	372	920	647	145	1617	503	642	2344	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.5	40.4	37.4	65.7	44.6	42.5	68.8	48.6	36.2	60.3	35.8	31.0
Incr Delay (d2), s/veh	47.2	0.1	0.1	7.2	0.1	102.4	6.7	19.3	0.1	10.4	2.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	7.9	3.2	4.6	7.0	44.1	1.8	24.0	4.0	9.5	21.3	12.3
LnGrp Delay(d),s/veh	110.7	40.5	37.4	72.9	44.8	144.9	75.5	67.9	36.3	70.7	37.9	31.6
LnGrp LOS	F	D	D	E	D	F	E	E	D	E	D	C
Approach Vol, veh/h		1020			1410			1816			2641	
Approach Delay, s/veh		69.2			104.0			65.9			42.5	
Approach LOS		E			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	68.0	23.2	42.6	27.2	51.7	16.8	49.0
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	6.2	68.0	17.7	* 38	27.5	* 47	15.8	39.6
Max Q Clear Time (g_c+I1), s	5.6	47.7	19.7	40.0	20.9	48.0	11.2	18.3
Green Ext Time (p_c), s	0.0	8.1	0.0	0.0	0.8	0.0	0.1	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	65.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	51	0	94	0	1559	19	132	1863	4
Future Volume (veh/h)	1	0	1	51	0	94	0	1559	19	132	1863	4
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	1	0	1	51	0	94	0	1559	19	132	1863	4
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	0	2	106	0	190	3	2188	681	168	3251	7
Arrive On Green	0.00	0.00	0.00	0.06	0.00	0.06	0.00	0.44	0.44	0.10	0.63	0.63
Sat Flow, veh/h	828	0	828	1757	0	3136	1740	4988	1553	1740	5139	11
Grp Volume(v), veh/h	2	0	0	51	0	94	0	1559	19	132	1205	662
Grp Sat Flow(s),veh/h/ln	1657	0	0	1757	0	1568	1740	1663	1553	1740	1663	1825
Q Serve(g_s), s	0.1	0.0	0.0	1.5	0.0	1.5	0.0	13.4	0.4	3.9	10.9	10.9
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.5	0.0	1.5	0.0	13.4	0.4	3.9	10.9	10.9
Prop In Lane	0.50		0.50	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	3	0	0	106	0	190	3	2188	681	168	2103	1154
V/C Ratio(X)	0.63	0.00	0.00	0.48	0.00	0.50	0.00	0.71	0.03	0.79	0.57	0.57
Avail Cap(c_a), veh/h	95	0	0	402	0	718	100	2399	747	296	2103	1154
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	0.0	23.8	0.0	23.8	0.0	12.0	8.4	23.1	5.5	5.5
Incr Delay (d2), s/veh	58.0	0.0	0.0	1.2	0.0	0.7	0.0	1.6	0.1	3.1	0.9	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.7	0.0	0.7	0.0	6.4	0.2	2.0	5.1	5.8
LnGrp Delay(d),s/veh	84.1	0.0	0.0	25.1	0.0	24.6	0.0	13.6	8.4	26.2	6.4	7.1
LnGrp LOS	F			C		C		B	A	C	A	A
Approach Vol, veh/h		2			145			1578			1999	
Approach Delay, s/veh		84.1			24.8			13.5			7.9	
Approach LOS		F			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	38.1		5.6	10.2	28.0		8.7
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 3	31.4		3.0	* 8.9	* 25		12.0
Max Q Clear Time (g_c+I1), s	0.0	12.9		2.1	5.9	15.4		3.5
Green Ext Time (p_c), s	0.0	18.3		0.0	0.0	7.6		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	260	23	187	125	343	9	1183	143	660	1217	39
Future Volume (veh/h)	88	260	23	187	125	343	9	1183	143	660	1217	39
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	88	260	23	187	125	343	9	1183	143	660	1217	39
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	141	729	326	242	838	375	22	1295	157	716	2446	78
Arrive On Green	0.04	0.21	0.21	0.07	0.24	0.24	0.01	0.29	0.29	0.21	0.49	0.49
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4511	545	3375	4965	159
Grp Volume(v), veh/h	88	260	23	187	125	343	9	872	454	660	815	441
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1731	1688	1663	1799
Q Serve(g_s), s	2.6	6.4	1.2	5.4	2.8	21.3	0.3	25.4	25.4	19.2	16.5	16.5
Cycle Q Clear(g_c), s	2.6	6.4	1.2	5.4	2.8	21.3	0.3	25.4	25.4	19.2	16.5	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.09
Lane Grp Cap(c), veh/h	141	729	326	242	838	375	22	955	497	716	1638	886
V/C Ratio(X)	0.63	0.36	0.07	0.77	0.15	0.91	0.40	0.91	0.91	0.92	0.50	0.50
Avail Cap(c_a), veh/h	158	1006	450	242	1096	490	101	1013	527	728	1638	886
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	33.8	31.7	45.7	30.0	37.1	49.5	34.5	34.5	38.6	17.1	17.1
Incr Delay (d2), s/veh	3.8	0.1	0.0	13.1	0.0	16.2	4.3	11.4	19.1	16.6	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.1	0.5	3.0	1.4	10.9	0.1	13.1	14.7	10.5	7.5	8.1
LnGrp Delay(d),s/veh	51.0	33.9	31.7	58.9	30.1	53.3	53.8	45.9	53.6	55.2	17.1	17.2
LnGrp LOS	D	C	C	E	C	D	D	D	D	E	B	B
Approach Vol, veh/h		371			655			1335			1916	
Approach Delay, s/veh		37.8			50.4			48.6			30.3	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	54.6	9.7	29.6	26.7	34.0	12.6	26.7
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	49.0	4.7	* 31	21.6	* 31	7.1	* 29
Max Q Clear Time (g_c+I1), s	2.3	18.5	4.6	23.3	21.2	27.4	7.4	8.4
Green Ext Time (p_c), s	0.0	4.0	0.0	0.6	0.1	1.4	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	39.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	34	1284	23	79	1347
Future Volume (veh/h)	13	34	1284	23	79	1347
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	13	34	1284	23	79	1347
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	57	51	2028	36	94	2139
Arrive On Green	0.03	0.03	0.40	0.40	0.05	0.62
Sat Flow, veh/h	1757	1568	5210	90	1740	3563
Grp Volume(v), veh/h	13	34	846	461	79	1347
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1811	1740	1736
Q Serve(g_s), s	0.2	0.6	6.0	6.0	1.3	7.1
Cycle Q Clear(g_c), s	0.2	0.6	6.0	6.0	1.3	7.1
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	57	51	1337	728	94	2139
V/C Ratio(X)	0.23	0.67	0.63	0.63	0.84	0.63
Avail Cap(c_a), veh/h	210	187	2177	1185	433	3692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.8	14.0	7.0	7.0	13.7	3.5
Incr Delay (d2), s/veh	0.7	5.4	0.2	0.3	7.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	2.7	3.0	0.8	3.2
LnGrp Delay(d),s/veh	14.6	19.5	7.2	7.4	21.1	3.6
LnGrp LOS	B	B	A	A	C	A
Approach Vol, veh/h	47		1307			1426
Approach Delay, s/veh	18.1		7.3			4.6
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		22.9			6.3	16.6		6.5
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		31.2			* 7.3	19.2		3.5
Max Q Clear Time (g_c+I1), s		9.1			3.3	8.0		2.6
Green Ext Time (p_c), s		4.4			0.0	3.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	587	55	43	307	394	33	940	85	343	865	93
Future Volume (veh/h)	130	587	55	43	307	394	33	940	85	343	865	93
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	130	587	55	43	307	394	33	940	85	343	865	93
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	154	565	53	54	529	450	41	922	413	333	1498	670
Arrive On Green	0.09	0.35	0.35	0.03	0.30	0.30	0.02	0.27	0.27	0.19	0.43	0.43
Sat Flow, veh/h	1707	1614	151	1707	1792	1524	1740	3471	1553	1740	3471	1553
Grp Volume(v), veh/h	130	0	642	43	307	394	33	940	85	343	865	93
Grp Sat Flow(s),veh/h/ln	1707	0	1766	1707	1792	1524	1740	1736	1553	1740	1736	1553
Q Serve(g_s), s	9.4	0.0	43.7	3.1	18.2	30.7	2.4	33.2	5.3	23.9	23.6	4.5
Cycle Q Clear(g_c), s	9.4	0.0	43.7	3.1	18.2	30.7	2.4	33.2	5.3	23.9	23.6	4.5
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	0	617	54	529	450	41	922	413	333	1498	670
V/C Ratio(X)	0.84	0.00	1.04	0.79	0.58	0.88	0.80	1.02	0.21	1.03	0.58	0.14
Avail Cap(c_a), veh/h	205	0	617	59	529	450	93	922	413	333	1498	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	0.0	40.6	60.1	37.5	41.9	60.7	45.9	35.6	50.5	26.9	21.5
Incr Delay (d2), s/veh	16.6	0.0	47.0	43.7	1.1	16.8	12.1	34.6	0.1	57.5	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	29.3	2.1	9.2	15.0	1.3	20.3	2.3	16.8	11.4	1.9
LnGrp Delay(d),s/veh	72.6	0.0	87.6	103.8	38.5	58.7	72.8	80.5	35.7	108.0	27.3	21.5
LnGrp LOS	E		F	F	D	E	E	F	D	F	C	C
Approach Vol, veh/h		772			744			1058			1301	
Approach Delay, s/veh		85.1			53.0			76.7			48.2	
Approach LOS		F			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	42.3	7.7	58.7	9.5	49.1	28.4	38.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.5	4.8
Max Green Setting (Gmax), s	15.0	* 33	* 6.7	50.2	4.3	* 44	23.9	33.2
Max Q Clear Time (g_c+I1), s	11.4	32.7	4.4	25.6	5.1	45.7	25.9	35.2
Green Ext Time (p_c), s	0.0	0.2	0.0	3.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	64.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	132	69	1	31	18	120	648	6	30	761	219
Future Volume (veh/h)	351	132	69	1	31	18	120	648	6	30	761	219
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1845	1827	1827
Adj Flow Rate, veh/h	351	132	69	1	31	18	120	648	6	30	761	219
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	3	4	4
Cap, veh/h	404	549	467	3	70	40	152	1141	11	35	931	417
Arrive On Green	0.23	0.30	0.30	0.00	0.06	0.06	0.09	0.32	0.32	0.02	0.27	0.27
Sat Flow, veh/h	1757	1845	1568	1757	1096	636	1740	3524	33	1757	3471	1553
Grp Volume(v), veh/h	351	132	69	1	0	49	120	319	335	30	761	219
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1732	1740	1736	1821	1757	1736	1553
Q Serve(g_s), s	11.1	3.1	1.9	0.0	0.0	1.6	3.9	8.8	8.8	1.0	11.8	6.9
Cycle Q Clear(g_c), s	11.1	3.1	1.9	0.0	0.0	1.6	3.9	8.8	8.8	1.0	11.8	6.9
Prop In Lane	1.00		1.00	1.00		0.37	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	404	549	467	3	0	110	152	562	590	35	931	417
V/C Ratio(X)	0.87	0.24	0.15	0.33	0.00	0.45	0.79	0.57	0.57	0.86	0.82	0.53
Avail Cap(c_a), veh/h	564	881	749	101	0	382	224	750	787	113	1320	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.3	15.3	14.9	28.7	0.0	26.0	25.8	16.1	16.1	28.1	19.8	18.0
Incr Delay (d2), s/veh	7.9	0.1	0.1	21.5	0.0	1.0	6.1	0.3	0.3	19.4	1.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	1.6	0.8	0.0	0.0	0.8	2.1	4.2	4.4	0.7	5.8	3.0
LnGrp Delay(d),s/veh	29.3	15.4	14.9	50.2	0.0	27.0	31.8	16.5	16.5	47.5	21.6	18.3
LnGrp LOS	C	B	B	D		C	C	B	B	D	C	B
Approach Vol, veh/h		552			50			774			1010	
Approach Delay, s/veh		24.1			27.5			18.8			21.7	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	20.3	18.7	9.0	6.4	23.5	5.2	22.5
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 7.4	21.9	18.5	* 13	* 3.7	24.9	* 3.3	* 28
Max Q Clear Time (g_c+I1), s	5.9	13.8	13.1	3.6	3.0	10.8	2.0	5.1
Green Ext Time (p_c), s	0.0	1.6	0.2	0.2	0.0	1.8	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	291	153	42	286	102	61	484	1	44	788	75
Future Volume (veh/h)	116	291	153	42	286	102	61	484	1	44	788	75
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	116	291	153	42	286	102	61	484	1	44	788	75
Adj No. of Lanes	0	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	114	287	346	272	285	243	68	786	675	57	781	664
Arrive On Green	0.22	0.22	0.22	0.15	0.15	0.15	0.04	0.43	0.43	0.03	0.43	0.43
Sat Flow, veh/h	518	1300	1568	1757	1845	1568	1740	1827	1568	1757	1827	1553
Grp Volume(v), veh/h	407	0	153	42	286	102	61	484	1	44	788	75
Grp Sat Flow(s),veh/h/ln	1819	0	1568	1757	1845	1568	1740	1827	1568	1757	1827	1553
Q Serve(g_s), s	33.1	0.0	12.6	3.1	23.2	8.8	5.2	30.8	0.1	3.7	64.1	4.4
Cycle Q Clear(g_c), s	33.1	0.0	12.6	3.1	23.2	8.8	5.2	30.8	0.1	3.7	64.1	4.4
Prop In Lane	0.29		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	401	0	346	272	285	243	68	786	675	57	781	664
V/C Ratio(X)	1.01	0.00	0.44	0.15	1.00	0.42	0.89	0.62	0.00	0.78	1.01	0.11
Avail Cap(c_a), veh/h	401	0	346	272	285	243	68	786	675	102	781	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	0.0	50.5	54.9	63.4	57.3	71.7	33.1	24.3	72.1	43.0	25.8
Incr Delay (d2), s/veh	48.5	0.0	0.3	0.3	53.9	1.2	70.6	1.1	0.0	20.1	34.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.0	0.0	5.5	1.5	16.1	3.9	3.9	15.7	0.0	2.1	39.8	1.9
LnGrp Delay(d),s/veh	107.0	0.0	50.8	55.2	117.3	58.5	142.3	34.2	24.3	92.1	77.5	25.9
LnGrp LOS	F		D	E	F	E	F	C	C	F	F	C
Approach Vol, veh/h		560			430			546			907	
Approach Delay, s/veh		91.7			97.3			46.2			73.9	
Approach LOS		F			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.6	69.2		30.0	10.1	69.7		40.2
Change Period (Y+Rc), s	* 4.7	5.1		6.8	* 5.3	5.1		7.1
Max Green Setting (Gmax), s	* 5.9	64.1		23.2	* 8.7	60.7		33.1
Max Q Clear Time (g_c+I1), s	7.2	66.1		25.2	5.7	32.8		35.1
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	1.4		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		75.9
HCM 2010 LOS		E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	249	296	125	419	10	107	449	40	19	842	122
Future Volume (veh/h)	90	249	296	125	419	10	107	449	40	19	842	122
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	90	249	296	125	419	10	107	449	40	19	842	122
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	115	361	323	145	777	348	136	1309	116	23	1064	154
Arrive On Green	0.07	0.21	0.21	0.08	0.22	0.22	0.08	0.41	0.41	0.01	0.35	0.35
Sat Flow, veh/h	1740	1736	1553	1740	3471	1553	1740	3226	286	1740	3044	441
Grp Volume(v), veh/h	90	249	296	125	419	10	107	241	248	19	480	484
Grp Sat Flow(s),veh/h/ln	1740	1736	1553	1740	1736	1553	1740	1736	1776	1740	1736	1749
Q Serve(g_s), s	3.7	9.6	13.5	5.1	7.7	0.4	4.4	6.9	7.0	0.8	17.9	17.9
Cycle Q Clear(g_c), s	3.7	9.6	13.5	5.1	7.7	0.4	4.4	6.9	7.0	0.8	17.9	17.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.25
Lane Grp Cap(c), veh/h	115	361	323	145	777	348	136	705	721	23	606	611
V/C Ratio(X)	0.79	0.69	0.92	0.86	0.54	0.03	0.79	0.34	0.34	0.83	0.79	0.79
Avail Cap(c_a), veh/h	166	361	323	145	777	348	195	729	746	72	616	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	26.4	28.0	32.7	24.7	21.9	32.7	14.8	14.8	35.5	21.1	21.1
Incr Delay (d2), s/veh	8.2	10.3	32.7	36.9	2.7	0.2	7.7	1.3	1.3	23.4	10.2	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	5.6	8.7	3.9	4.0	0.2	2.4	3.5	3.6	0.5	10.2	10.3
LnGrp Delay(d),s/veh	41.4	36.7	60.7	69.5	27.4	22.0	40.3	16.1	16.1	58.9	31.3	31.2
LnGrp LOS	D	D	E	E	C	C	D	B	B	E	C	C
Approach Vol, veh/h		635			554			596			983	
Approach Delay, s/veh		48.6			36.8			20.5			31.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	30.4	9.8	21.4	6.4	34.5	11.0	20.2
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 8.1	* 26	* 6.9	* 14	3.0	* 30	6.0	* 15
Max Q Clear Time (g_c+I1), s	6.4	19.9	5.7	9.7	2.8	9.0	7.1	15.5
Green Ext Time (p_c), s	0.0	5.3	0.0	3.5	0.0	18.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	235	646	118	303	27	254	492	58	53	1089	100
Future Volume (veh/h)	64	235	646	118	303	27	254	492	58	53	1089	100
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	64	235	646	118	303	27	254	492	58	53	1089	100
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	110	1133	507	147	1170	524	273	1172	138	93	1115	499
Arrive On Green	0.03	0.32	0.32	0.04	0.33	0.33	0.08	0.37	0.37	0.03	0.32	0.32
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	3130	368	3375	3471	1553
Grp Volume(v), veh/h	64	235	646	118	303	27	254	272	278	53	1089	100
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1736	1762	1688	1736	1553
Q Serve(g_s), s	1.8	4.6	30.8	3.3	6.0	1.1	7.1	11.1	11.2	1.5	29.6	4.5
Cycle Q Clear(g_c), s	1.8	4.6	30.8	3.3	6.0	1.1	7.1	11.1	11.2	1.5	29.6	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	110	1133	507	147	1170	524	273	650	660	93	1115	499
V/C Ratio(X)	0.58	0.21	1.27	0.80	0.26	0.05	0.93	0.42	0.42	0.57	0.98	0.20
Avail Cap(c_a), veh/h	154	1133	507	147	1170	524	273	650	660	149	1115	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	23.4	32.2	45.2	23.1	21.5	43.5	22.1	22.1	45.8	32.0	23.5
Incr Delay (d2), s/veh	1.8	0.4	138.4	25.2	0.4	0.1	36.1	1.4	1.4	2.0	21.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.3	32.8	2.1	3.0	0.5	4.7	5.5	5.7	0.7	17.4	2.0
LnGrp Delay(d),s/veh	47.3	23.8	170.6	70.4	23.5	21.6	79.6	23.5	23.5	47.8	53.8	24.1
LnGrp LOS	D	C	F	E	C	C	E	C	C	D	D	C
Approach Vol, veh/h		945			448			804			1242	
Approach Delay, s/veh		125.8			35.8			41.2			51.2	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	36.1	8.6	37.4	8.1	41.2	9.6	36.4
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	7.7	* 31	4.3	30.4	4.2	* 34	4.1	* 31
Max Q Clear Time (g_c+I1), s	9.1	31.6	3.8	8.0	3.5	13.2	5.3	32.8
Green Ext Time (p_c), s	0.0	0.0	0.0	15.5	0.0	17.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.3
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	688	134	70	703	5	32	30	29	4	32	23
Future Volume (veh/h)	14	688	134	70	703	5	32	30	29	4	32	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	14	688	134	70	703	5	32	30	29	4	32	23
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	24	978	832	87	1045	888	49	85	82	8	60	43
Arrive On Green	0.01	0.55	0.55	0.05	0.58	0.58	0.03	0.10	0.10	0.00	0.06	0.06
Sat Flow, veh/h	1707	1792	1524	1707	1792	1524	1757	863	834	1757	999	718
Grp Volume(v), veh/h	14	688	134	70	703	5	32	0	59	4	0	55
Grp Sat Flow(s),veh/h/ln	1707	1792	1524	1707	1792	1524	1757	0	1697	1757	0	1718
Q Serve(g_s), s	0.5	16.8	2.6	2.4	16.0	0.1	1.1	0.0	1.9	0.1	0.0	1.8
Cycle Q Clear(g_c), s	0.5	16.8	2.6	2.4	16.0	0.1	1.1	0.0	1.9	0.1	0.0	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.49	1.00		0.42
Lane Grp Cap(c), veh/h	24	978	832	87	1045	888	49	0	167	8	0	103
V/C Ratio(X)	0.59	0.70	0.16	0.80	0.67	0.01	0.66	0.00	0.35	0.53	0.00	0.53
Avail Cap(c_a), veh/h	115	1231	1046	187	1306	1110	119	0	601	119	0	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.1	9.9	6.7	27.8	8.5	5.2	28.5	0.0	25.0	29.5	0.0	27.1
Incr Delay (d2), s/veh	14.8	1.9	0.2	10.9	1.5	0.0	9.9	0.0	1.1	33.9	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	8.7	1.1	1.4	8.2	0.0	0.6	0.0	1.0	0.1	0.0	1.0
LnGrp Delay(d),s/veh	43.9	11.8	6.9	38.8	9.9	5.2	38.4	0.0	26.1	63.3	0.0	30.9
LnGrp LOS	D	B	A	D	A	A	D		C	E		C
Approach Vol, veh/h		836			778			91			59	
Approach Delay, s/veh		11.6			12.5			30.4			33.1	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	38.8	6.0	8.0	4.3	41.0	3.8	10.2
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	6.5	40.7	4.0	* 21	4.0	43.2	4.0	21.0
Max Q Clear Time (g_c+I1), s	4.4	18.8	3.1	3.8	2.5	18.0	2.1	3.9
Green Ext Time (p_c), s	0.0	13.6	0.0	0.3	0.0	14.9	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	257	161	78	137	130	131	273	45	102	354	36
Future Volume (veh/h)	35	257	161	78	137	130	131	273	45	102	354	36
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	35	257	161	78	137	130	131	273	45	102	354	36
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	41	375	227	97	365	319	168	480	408	129	440	374
Arrive On Green	0.02	0.18	0.18	0.06	0.21	0.21	0.10	0.26	0.26	0.07	0.24	0.24
Sat Flow, veh/h	1757	2100	1272	1757	1772	1551	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	35	213	205	78	135	132	131	273	45	102	354	36
Grp Sat Flow(s),veh/h/ln	1757	1752	1620	1757	1752	1571	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.9	5.2	5.4	2.0	3.0	3.3	3.3	5.9	1.0	2.6	8.2	0.8
Cycle Q Clear(g_c), s	0.9	5.2	5.4	2.0	3.0	3.3	3.3	5.9	1.0	2.6	8.2	0.8
Prop In Lane	1.00		0.79	1.00		0.99	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	41	313	290	97	361	323	168	480	408	129	440	374
V/C Ratio(X)	0.85	0.68	0.71	0.81	0.38	0.41	0.78	0.57	0.11	0.79	0.80	0.10
Avail Cap(c_a), veh/h	255	1154	1067	154	1039	931	378	1255	1067	212	1085	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	17.5	17.6	21.3	15.6	15.7	20.1	14.6	12.8	20.8	16.3	13.5
Incr Delay (d2), s/veh	15.5	1.0	1.2	6.5	0.2	0.3	3.0	0.4	0.0	4.1	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.6	2.5	1.1	1.5	1.5	1.7	3.0	0.4	1.4	4.3	0.4
LnGrp Delay(d),s/veh	37.7	18.5	18.8	27.8	15.8	16.0	23.1	15.0	12.9	24.8	17.7	13.6
LnGrp LOS	D	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		453			345			449			492	
Approach Delay, s/veh		20.1			18.6			17.2			18.9	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	14.2	9.8	15.3	7.5	12.9	8.8	16.3
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 6.6	27.0	9.8	* 27	4.0	* 30	5.5	* 31
Max Q Clear Time (g_c+I1), s	2.9	5.3	5.3	10.2	4.0	7.4	4.6	7.9
Green Ext Time (p_c), s	0.0	0.7	0.0	0.6	0.0	0.7	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	31	17	460	44	424	48	1133	206	404	1245	59
Future Volume (veh/h)	73	31	17	460	44	424	48	1133	206	404	1245	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	73	31	17	460	44	424	48	1133	206	404	1245	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	95	61	33	961	520	442	60	1367	426	456	1851	88
Arrive On Green	0.05	0.05	0.05	0.28	0.28	0.28	0.03	0.27	0.27	0.14	0.38	0.38
Sat Flow, veh/h	1757	1121	615	3408	1845	1568	1740	4988	1553	3375	4880	231
Grp Volume(v), veh/h	73	0	48	460	44	424	48	1133	206	404	848	456
Grp Sat Flow(s),veh/h/ln	1757	0	1736	1704	1845	1568	1740	1663	1553	1688	1663	1786
Q Serve(g_s), s	3.5	0.0	2.3	9.5	1.5	22.7	2.3	18.2	9.5	10.0	18.1	18.1
Cycle Q Clear(g_c), s	3.5	0.0	2.3	9.5	1.5	22.7	2.3	18.2	9.5	10.0	18.1	18.1
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	95	0	94	961	520	442	60	1367	426	456	1261	677
V/C Ratio(X)	0.77	0.00	0.51	0.48	0.08	0.96	0.80	0.83	0.48	0.89	0.67	0.67
Avail Cap(c_a), veh/h	95	0	94	961	520	442	139	1652	514	456	1305	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	0.0	39.2	25.4	22.5	30.1	40.8	29.0	25.9	36.2	22.0	22.0
Incr Delay (d2), s/veh	28.5	0.0	2.0	0.1	0.0	32.2	8.6	2.6	0.3	18.0	1.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	1.1	4.5	0.8	13.7	1.3	8.6	4.1	5.8	8.4	9.2
LnGrp Delay(d),s/veh	68.2	0.0	41.2	25.5	22.5	62.2	49.4	31.6	26.2	54.1	23.1	23.9
LnGrp LOS	E		D	C	C	E	D	C	C	D	C	C
Approach Vol, veh/h		121			928			1387			1708	
Approach Delay, s/veh		57.5			42.1			31.4			30.6	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	37.5		10.1	17.0	28.5		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 6.8	* 33		4.6	11.5	* 28		24.0
Max Q Clear Time (g_c+I1), s	4.3	20.1		5.5	12.0	20.2		24.7
Green Ext Time (p_c), s	0.0	3.8		0.0	0.0	3.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

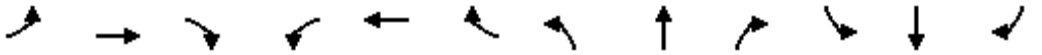
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	94	411	289	124	16	224	757	110	3	1487	199
Future Volume (veh/h)	156	94	411	289	124	16	224	757	110	3	1487	199
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	156	94	411	289	124	16	224	757	110	3	1487	199
Adj No. of Lanes	2	2	0	2	2	0	2	3	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	206	404	361	301	809	103	254	2532	788	8	1509	675
Arrive On Green	0.06	0.23	0.23	0.09	0.26	0.26	0.08	0.51	0.51	0.00	0.43	0.43
Sat Flow, veh/h	3408	1752	1568	3408	3129	397	3375	4988	1553	3375	3471	1553
Grp Volume(v), veh/h	156	94	411	289	69	71	224	757	110	3	1487	199
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1775	1688	1663	1553	1688	1736	1553
Q Serve(g_s), s	5.9	5.7	30.0	11.0	3.9	4.0	8.6	11.5	4.9	0.1	55.2	10.8
Cycle Q Clear(g_c), s	5.9	5.7	30.0	11.0	3.9	4.0	8.6	11.5	4.9	0.1	55.2	10.8
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	206	404	361	301	453	459	254	2532	788	8	1509	675
V/C Ratio(X)	0.76	0.23	1.14	0.96	0.15	0.16	0.88	0.30	0.14	0.38	0.99	0.29
Avail Cap(c_a), veh/h	223	404	361	301	453	459	254	2532	788	78	1509	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.2	40.7	50.1	59.1	37.3	37.3	59.6	18.6	17.0	64.8	36.4	23.9
Incr Delay (d2), s/veh	11.2	0.1	90.2	40.7	0.1	0.1	27.3	0.0	0.0	10.4	19.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	2.8	22.0	6.9	1.9	2.0	4.9	5.3	2.1	0.1	30.6	4.6
LnGrp Delay(d),s/veh	71.5	40.8	140.3	99.9	37.3	37.4	86.9	18.6	17.0	75.3	56.0	23.9
LnGrp LOS	E	D	F	F	D	D	F	B	B	E	E	C
Approach Vol, veh/h		661			429			1091			1689	
Approach Delay, s/veh		109.9			79.5			32.5			52.3	
Approach LOS		F			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	62.2	13.4	39.3	5.8	71.7	17.0	35.7
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	9.8	* 57	8.5	* 33	3.0	* 63	11.5	* 30
Max Q Clear Time (g_c+I1), s	10.6	57.2	7.9	6.0	2.1	13.5	13.0	32.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	4.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.6
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	561	69	41	535	324	42	567	38	400	1582	175
Future Volume (veh/h)	156	561	69	41	535	324	42	567	38	400	1582	175
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1900	1827	1845	1827
Adj Flow Rate, veh/h	156	561	69	41	535	324	42	567	38	400	1582	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	154	603	527	52	502	427	51	793	53	415	1556	689
Arrive On Green	0.09	0.34	0.34	0.03	0.28	0.28	0.03	0.24	0.24	0.24	0.44	0.00
Sat Flow, veh/h	1707	1792	1568	1757	1792	1524	1757	3335	223	1740	3505	1553
Grp Volume(v), veh/h	156	561	69	41	535	324	42	298	307	400	1582	0
Grp Sat Flow(s),veh/h/ln	1707	1792	1568	1757	1792	1524	1757	1752	1805	1740	1752	1553
Q Serve(g_s), s	11.7	39.3	4.0	3.0	36.4	25.3	3.1	20.3	20.3	29.6	57.7	0.0
Cycle Q Clear(g_c), s	11.7	39.3	4.0	3.0	36.4	25.3	3.1	20.3	20.3	29.6	57.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	154	603	527	52	502	427	51	417	429	415	1556	689
V/C Ratio(X)	1.02	0.93	0.13	0.78	1.07	0.76	0.82	0.71	0.72	0.96	1.02	0.00
Avail Cap(c_a), veh/h	154	608	532	54	502	427	51	417	429	415	1556	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	59.2	41.7	29.9	62.6	46.8	42.8	62.8	45.5	45.5	48.9	36.2	0.0
Incr Delay (d2), s/veh	76.7	20.6	0.0	50.8	58.9	7.0	60.3	5.7	5.6	34.6	27.1	0.0
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	22.9	1.7	2.2	26.2	11.5	2.4	10.5	10.8	18.2	33.7	0.0
LnGrp Delay(d),s/veh	136.0	62.3	30.0	113.4	105.7	49.8	123.0	51.2	51.2	83.6	63.3	0.0
LnGrp LOS	F	E	C	F	F	D	F	D	D	F	F	
Approach Vol, veh/h		786			900			647			1982	
Approach Delay, s/veh		74.1			85.9			55.9			67.4	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	62.8	16.0	42.0	36.0	36.0	8.7	49.3
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 3.8	57.7	* 12	36.4	31.0	30.9	* 4	* 44
Max Q Clear Time (g_c+I1), s	5.1	59.7	13.7	38.4	31.6	22.3	5.0	41.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	70.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

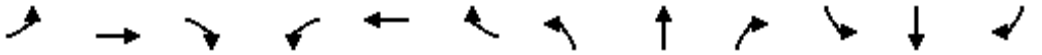
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	318	33	32	274	12	30	626	42	9	1635	49
Future Volume (veh/h)	14	318	33	32	274	12	30	626	42	9	1635	49
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	14	318	33	32	274	12	30	626	42	9	1635	49
Adj No. of Lanes	2	1	0	2	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	33	380	39	62	420	18	36	1720	115	12	1744	52
Arrive On Green	0.01	0.23	0.23	0.02	0.24	0.24	0.02	0.52	0.52	0.01	0.50	0.50
Sat Flow, veh/h	3408	1644	171	3408	1754	77	1757	3334	223	1757	3475	104
Grp Volume(v), veh/h	14	0	351	32	0	286	30	329	339	9	822	862
Grp Sat Flow(s),veh/h/ln	1704	0	1815	1704	0	1831	1757	1752	1805	1757	1752	1826
Q Serve(g_s), s	0.4	0.0	17.1	0.9	0.0	13.1	1.6	10.4	10.4	0.5	40.9	41.3
Cycle Q Clear(g_c), s	0.4	0.0	17.1	0.9	0.0	13.1	1.6	10.4	10.4	0.5	40.9	41.3
Prop In Lane	1.00		0.09	1.00		0.04	1.00		0.12	1.00		0.06
Lane Grp Cap(c), veh/h	33	0	419	62	0	438	36	904	931	12	879	916
V/C Ratio(X)	0.42	0.00	0.84	0.52	0.00	0.65	0.82	0.36	0.36	0.77	0.94	0.94
Avail Cap(c_a), veh/h	114	0	629	114	0	635	62	948	976	62	948	988
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	0.0	34.0	45.2	0.0	31.8	45.3	13.4	13.4	46.0	21.7	21.8
Incr Delay (d2), s/veh	8.2	0.0	6.3	6.5	0.0	1.7	34.5	0.2	0.2	66.3	14.8	15.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	9.3	0.5	0.0	6.8	1.1	5.1	5.2	0.4	23.3	24.4
LnGrp Delay(d),s/veh	53.9	0.0	40.3	51.7	0.0	33.5	79.7	13.6	13.6	112.3	36.5	37.0
LnGrp LOS	D		D	D		C	E	B	B	F	D	D
Approach Vol, veh/h		365			318			698			1693	
Approach Delay, s/veh		40.8			35.3			16.5			37.2	
Approach LOS		D			D			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	51.6	7.2	26.6	6.1	52.9	6.4	27.4
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	3.3	50.2	3.1	* 32	3.3	50.2	3.1	* 32
Max Q Clear Time (g_c+I1), s	3.6	43.3	2.9	19.1	2.5	12.4	2.4	15.1
Green Ext Time (p_c), s	0.0	3.3	0.0	2.3	0.0	5.3	0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	134	212	50	244	37	42	484	46	93	1480	131
Future Volume (veh/h)	108	134	212	50	244	37	42	484	46	93	1480	131
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1838	1900	1845	1799	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	108	134	212	50	244	37	42	484	46	93	1480	131
Adj No. of Lanes	2	1	0	2	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	6	3	3	3	3	3	3
Cap, veh/h	160	148	234	89	320	48	53	1474	140	119	1609	141
Arrive On Green	0.05	0.23	0.23	0.03	0.21	0.21	0.03	0.46	0.46	0.07	0.49	0.49
Sat Flow, veh/h	3408	642	1016	3408	1527	232	1757	3236	307	1757	3260	287
Grp Volume(v), veh/h	108	0	346	50	0	281	42	261	269	93	791	820
Grp Sat Flow(s),veh/h/ln	1704	0	1658	1704	0	1758	1757	1752	1791	1757	1752	1794
Q Serve(g_s), s	3.0	0.0	19.4	1.4	0.0	14.4	2.3	9.1	9.2	5.0	39.9	40.8
Cycle Q Clear(g_c), s	3.0	0.0	19.4	1.4	0.0	14.4	2.3	9.1	9.2	5.0	39.9	40.8
Prop In Lane	1.00		0.61	1.00		0.13	1.00		0.17	1.00		0.16
Lane Grp Cap(c), veh/h	160	0	382	89	0	368	53	798	816	119	865	885
V/C Ratio(X)	0.67	0.00	0.91	0.56	0.00	0.76	0.80	0.33	0.33	0.78	0.92	0.93
Avail Cap(c_a), veh/h	160	0	552	128	0	569	68	798	816	229	909	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	35.9	46.1	0.0	35.6	46.2	16.7	16.7	43.9	22.4	22.6
Incr Delay (d2), s/veh	10.6	0.0	11.3	5.5	0.0	1.2	37.9	0.2	0.2	10.4	13.3	14.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	10.0	0.7	0.0	7.2	1.7	4.5	4.6	2.8	22.3	23.6
LnGrp Delay(d),s/veh	55.6	0.0	47.1	51.6	0.0	36.9	84.1	16.9	16.9	54.4	35.7	37.1
LnGrp LOS	E		D	D		D	F	B	B	D	D	D
Approach Vol, veh/h		454			331			572			1704	
Approach Delay, s/veh		49.1			39.1			21.9			37.4	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	48.7	10.0	25.0	8.4	52.4	8.0	27.1
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	12.5	* 41	4.5	* 31	3.7	* 50	3.6	* 32
Max Q Clear Time (g_c+I1), s	7.0	11.2	5.0	16.4	4.3	42.8	3.4	21.4
Green Ext Time (p_c), s	0.1	14.2	0.0	0.7	0.0	4.4	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	36.4
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	118	84	122	167	80	41	372	36	223	1228	223
Future Volume (veh/h)	114	118	84	122	167	80	41	372	36	223	1228	223
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1843	1900	1845	1845	1900
Adj Flow Rate, veh/h	114	118	84	122	167	80	41	372	36	223	1228	223
Adj No. of Lanes	2	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	3	3	3	3	3
Cap, veh/h	185	145	103	153	209	100	50	1148	111	262	1405	253
Arrive On Green	0.05	0.14	0.14	0.09	0.18	0.18	0.03	0.36	0.36	0.15	0.47	0.47
Sat Flow, veh/h	3408	1004	715	1757	1180	565	1740	3228	311	1757	2968	535
Grp Volume(v), veh/h	114	0	202	122	0	247	41	201	207	223	721	730
Grp Sat Flow(s),veh/h/ln	1704	0	1719	1757	0	1745	1740	1751	1788	1757	1752	1750
Q Serve(g_s), s	2.6	0.0	9.1	5.5	0.0	10.9	1.9	6.7	6.8	9.9	29.5	30.1
Cycle Q Clear(g_c), s	2.6	0.0	9.1	5.5	0.0	10.9	1.9	6.7	6.8	9.9	29.5	30.1
Prop In Lane	1.00		0.42	1.00		0.32	1.00		0.17	1.00		0.31
Lane Grp Cap(c), veh/h	185	0	249	153	0	310	50	623	636	262	830	828
V/C Ratio(X)	0.62	0.00	0.81	0.80	0.00	0.80	0.81	0.32	0.33	0.85	0.87	0.88
Avail Cap(c_a), veh/h	315	0	665	171	0	691	76	623	636	384	906	905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	0.0	33.2	35.9	0.0	31.6	38.7	18.8	18.8	33.2	18.9	19.0
Incr Delay (d2), s/veh	3.3	0.0	2.4	18.3	0.0	1.8	19.2	0.3	0.3	8.0	8.6	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	4.5	3.4	0.0	5.4	1.2	3.3	3.4	5.4	16.2	16.6
LnGrp Delay(d),s/veh	40.4	0.0	35.6	54.1	0.0	33.4	57.9	19.1	19.1	41.2	27.5	28.5
LnGrp LOS	D		D	D		C	E	B	B	D	C	C
Approach Vol, veh/h		316			369			449			1674	
Approach Delay, s/veh		37.3			40.2			22.6			29.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	33.6	9.8	19.6	7.6	43.0	12.5	17.0
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 18	27.6	7.4	* 32	* 3.5	41.4	7.8	* 31
Max Q Clear Time (g_c+I1), s	11.9	8.8	4.6	12.9	3.9	32.1	7.5	11.1
Green Ext Time (p_c), s	0.1	9.5	0.1	0.5	0.0	5.8	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	329	710	3	620	683	89	2	217	411	110	386	213
Future Volume (veh/h)	329	710	3	620	683	89	2	217	411	110	386	213
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1793	1900	1845	1792	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	329	710	3	620	683	89	2	217	411	110	386	213
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	6	3	6	3	3	3	3	3	3	3
Cap, veh/h	354	764	3	544	1115	513	2	165	312	89	377	208
Arrive On Green	0.20	0.22	0.22	0.31	0.33	0.33	0.00	0.29	0.29	0.05	0.34	0.34
Sat Flow, veh/h	1757	3478	15	1757	3406	1568	1757	571	1082	1757	1119	617
Grp Volume(v), veh/h	329	348	365	620	683	89	2	0	628	110	0	599
Grp Sat Flow(s),veh/h/ln	1757	1703	1790	1757	1703	1568	1757	0	1654	1757	0	1736
Q Serve(g_s), s	25.5	27.8	27.8	43.0	23.4	5.6	0.2	0.0	40.0	7.0	0.0	46.8
Cycle Q Clear(g_c), s	25.5	27.8	27.8	43.0	23.4	5.6	0.2	0.0	40.0	7.0	0.0	46.8
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.65	1.00		0.36
Lane Grp Cap(c), veh/h	354	374	393	544	1115	513	2	0	476	89	0	585
V/C Ratio(X)	0.93	0.93	0.93	1.14	0.61	0.17	0.99	0.00	1.32	1.24	0.00	1.02
Avail Cap(c_a), veh/h	392	387	407	544	1115	513	25	0	476	89	0	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.5	53.1	53.2	47.9	39.3	33.3	69.4	0.0	49.4	65.9	0.0	46.0
Incr Delay (d2), s/veh	26.8	28.6	27.7	83.3	1.2	0.2	288.8	0.0	157.6	174.3	0.0	43.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.1	16.1	16.8	33.3	11.2	2.5	0.2	0.0	39.0	7.7	0.0	29.3
LnGrp Delay(d),s/veh	81.3	81.8	80.9	131.3	40.5	33.5	358.2	0.0	207.1	240.2	0.0	89.3
LnGrp LOS	F	F	F	F	D	C	F		F	F		F
Approach Vol, veh/h		1042			1392			630			709	
Approach Delay, s/veh		81.3			80.5			207.6			112.7	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	47.0	36.9	4.2	50.8	32.0	51.9	11.0	44.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	43.0	31.6	2.0	45.0	31.0	43.6	7.0	40.0
Max Q Clear Time (g_c+I1), s	45.0	29.8	2.2	48.8	27.5	25.4	9.0	42.0
Green Ext Time (p_c), s	0.0	0.7	0.0	0.0	0.5	9.8	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		108.0
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	826	44	259	27	77	110	294	1379	17	146	594	391
Future Volume (veh/h)	826	44	259	27	77	110	294	1379	17	146	594	391
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	857	0	259	27	77	110	294	1379	17	146	594	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	955	0	426	35	100	116	329	1550	19	179	1072	334
Arrive On Green	0.27	0.00	0.27	0.07	0.07	0.07	0.19	0.31	0.31	0.10	0.21	0.00
Sat Flow, veh/h	3480	0	1553	473	1348	1568	1740	5078	63	1740	4988	1553
Grp Volume(v), veh/h	857	0	259	104	0	110	294	903	493	146	594	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1821	0	1568	1740	1663	1816	1740	1663	1553
Q Serve(g_s), s	19.5	0.0	11.9	4.6	0.0	5.7	13.5	21.3	21.3	6.8	8.7	0.0
Cycle Q Clear(g_c), s	19.5	0.0	11.9	4.6	0.0	5.7	13.5	21.3	21.3	6.8	8.7	0.0
Prop In Lane	1.00		1.00	0.26		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	955	0	426	135	0	116	329	1015	554	179	1072	334
V/C Ratio(X)	0.90	0.00	0.61	0.77	0.00	0.94	0.89	0.89	0.89	0.82	0.55	0.00
Avail Cap(c_a), veh/h	1144	0	510	135	0	116	345	1133	619	193	1232	384
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.7	0.0	26.0	37.3	0.0	37.9	32.5	27.2	27.2	36.1	28.7	0.0
Incr Delay (d2), s/veh	7.6	0.0	0.6	21.2	0.0	65.4	22.5	7.8	13.0	20.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	0.0	5.2	3.1	0.0	4.6	8.5	10.9	12.7	4.2	4.0	0.0
LnGrp Delay(d),s/veh	36.3	0.0	26.6	58.5	0.0	103.3	55.0	35.0	40.2	56.1	28.9	0.0
LnGrp LOS	D		C	E		F	D	C	D	E	C	
Approach Vol, veh/h		1116			214			1690			740	
Approach Delay, s/veh		34.1			81.5			40.0			34.3	
Approach LOS		C			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.3	22.5		11.6	12.8	29.9		27.8
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 16	20.3		6.1	* 9.1	* 28		27.0
Max Q Clear Time (g_c+I1), s	15.5	10.7		7.7	8.8	23.3		21.5
Green Ext Time (p_c), s	0.0	2.5		0.0	0.0	1.8		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	39.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	434	145	31	65	102	715	56	1316	25	310	1037	260
Future Volume (veh/h)	434	145	31	65	102	715	56	1316	25	310	1037	260
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	434	145	31	65	102	715	56	1316	25	310	1037	260
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	470	1394	283	112	417	1042	97	1450	28	361	1946	606
Arrive On Green	0.14	0.33	0.33	0.03	0.23	0.23	0.03	0.31	0.31	0.11	0.39	0.39
Sat Flow, veh/h	3408	4199	852	3514	1845	3136	3408	4691	89	3408	5036	1568
Grp Volume(v), veh/h	434	114	62	65	102	715	56	828	513	310	1037	260
Grp Sat Flow(s),veh/h/ln	1704	1679	1694	1757	1845	1568	1704	1476	1829	1704	1679	1568
Q Serve(g_s), s	12.7	2.4	2.5	1.8	4.6	19.9	1.6	27.2	27.2	9.0	16.1	12.3
Cycle Q Clear(g_c), s	12.7	2.4	2.5	1.8	4.6	19.9	1.6	27.2	27.2	9.0	16.1	12.3
Prop In Lane	1.00		0.50	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	470	1114	562	112	417	1042	97	912	565	361	1946	606
V/C Ratio(X)	0.92	0.10	0.11	0.58	0.24	0.69	0.57	0.91	0.91	0.86	0.53	0.43
Avail Cap(c_a), veh/h	470	1274	643	188	548	1265	176	983	609	361	1946	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	23.3	23.4	48.2	32.0	29.1	48.4	33.5	33.5	44.3	23.9	22.8
Incr Delay (d2), s/veh	23.7	0.0	0.0	1.7	0.1	0.8	2.0	10.9	16.0	17.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	1.1	1.2	0.9	2.3	8.7	0.8	12.4	16.2	5.1	7.4	5.4
LnGrp Delay(d),s/veh	66.7	23.3	23.4	49.9	32.1	29.9	50.4	44.4	49.5	61.8	24.1	22.9
LnGrp LOS	E	C	C	D	C	C	D	D	D	E	C	C
Approach Vol, veh/h		610			882			1397			1607	
Approach Delay, s/veh		54.2			31.6			46.5			31.2	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	44.6	19.4	28.5	16.2	36.8	8.7	39.2
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	5.2	38.8	13.9	* 30	10.7	* 34	5.4	* 38
Max Q Clear Time (g_c+I1), s	3.6	18.1	14.7	21.9	11.0	29.2	3.8	4.5
Green Ext Time (p_c), s	0.0	4.0	0.0	0.9	0.0	2.0	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	39.1
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	103	44	69	49	159	17	784	31	71	986	51
Future Volume (veh/h)	311	103	44	69	49	159	17	784	31	71	986	51
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	229	218	44	59	63	159	17	784	31	71	986	51
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	326	276	56	240	251	214	22	1109	44	134	1388	72
Arrive On Green	0.19	0.19	0.19	0.14	0.14	0.14	0.01	0.22	0.22	0.08	0.28	0.28
Sat Flow, veh/h	1757	1491	301	1757	1845	1568	1757	4971	196	1757	4904	253
Grp Volume(v), veh/h	229	0	262	59	63	159	17	529	286	71	675	362
Grp Sat Flow(s),veh/h/ln	1757	0	1792	1757	1845	1568	1757	1679	1810	1757	1679	1800
Q Serve(g_s), s	6.6	0.0	7.5	1.6	1.6	5.2	0.5	7.8	7.9	2.1	9.7	9.7
Cycle Q Clear(g_c), s	6.6	0.0	7.5	1.6	1.6	5.2	0.5	7.8	7.9	2.1	9.7	9.7
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.11	1.00		0.14
Lane Grp Cap(c), veh/h	326	0	332	240	251	214	22	749	404	134	950	509
V/C Ratio(X)	0.70	0.00	0.79	0.25	0.25	0.74	0.77	0.71	0.71	0.53	0.71	0.71
Avail Cap(c_a), veh/h	914	0	932	881	926	787	98	1210	653	170	1335	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	20.9	20.8	20.8	22.3	26.5	19.3	19.3	23.9	17.3	17.3
Incr Delay (d2), s/veh	1.0	0.0	1.6	0.2	0.2	1.9	18.9	0.5	0.9	1.2	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	3.9	0.8	0.9	2.4	0.4	3.6	4.0	1.1	4.6	4.9
LnGrp Delay(d),s/veh	21.6	0.0	22.5	21.0	21.0	24.3	45.4	19.7	20.2	25.1	17.7	18.1
LnGrp LOS	C		C	C	C	C	D	B	C	C	B	B
Approach Vol, veh/h		491			281			832			1108	
Approach Delay, s/veh		22.1			22.8			20.4			18.3	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	20.0		12.8	8.7	16.8		15.5
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 3	21.4		27.0	* 5.2	19.4		28.0
Max Q Clear Time (g_c+I1), s	2.5	11.7		7.2	4.1	9.9		9.5
Green Ext Time (p_c), s	0.0	2.2		0.2	0.0	2.1		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	396	225	149	463	146	181	412	41	206	741	134
Future Volume (veh/h)	165	396	225	149	463	146	181	412	41	206	741	134
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	165	396	225	149	463	146	181	412	41	206	741	134
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	258	673	314	243	987	307	283	1125	350	311	995	178
Arrive On Green	0.08	0.20	0.20	0.07	0.20	0.20	0.08	0.22	0.22	0.09	0.23	0.23
Sat Flow, veh/h	3408	3357	1568	3408	5036	1568	3408	5036	1568	3408	4296	770
Grp Volume(v), veh/h	165	396	225	149	463	146	181	412	41	206	578	297
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1709
Q Serve(g_s), s	2.5	5.8	7.3	2.3	4.4	4.5	2.8	3.7	1.1	3.2	8.6	8.8
Cycle Q Clear(g_c), s	2.5	5.8	7.3	2.3	4.4	4.5	2.8	3.7	1.1	3.2	8.6	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	258	673	314	243	987	307	283	1125	350	311	777	396
V/C Ratio(X)	0.64	0.59	0.72	0.61	0.47	0.48	0.64	0.37	0.12	0.66	0.74	0.75
Avail Cap(c_a), veh/h	258	1736	811	321	2696	840	384	2696	840	346	1760	896
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	19.6	20.2	24.4	19.3	19.3	24.0	17.8	16.8	23.8	19.3	19.4
Incr Delay (d2), s/veh	4.1	0.3	1.1	0.9	0.1	0.4	0.9	0.1	0.1	2.8	0.5	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.7	3.2	1.1	2.0	2.0	1.3	1.7	0.5	1.6	4.1	4.3
LnGrp Delay(d),s/veh	28.4	19.9	21.4	25.4	19.4	19.7	24.9	17.9	16.8	26.6	19.8	20.5
LnGrp LOS	C	B	C	C	B	B	C	B	B	C	B	C
Approach Vol, veh/h		786			758			634			1081	
Approach Delay, s/veh		22.1			20.6			19.8			21.3	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	18.1	9.6	16.4	10.4	17.7	9.4	16.7
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	6.1	* 28	4.1	29.0	5.5	* 29	5.1	28.0
Max Q Clear Time (g_c+I1), s	4.8	10.8	4.5	6.5	5.2	5.7	4.3	9.3
Green Ext Time (p_c), s	0.0	1.8	0.0	1.6	0.0	1.8	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	21.1
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	187	17	88	198	98	3	179	61	284	338	294
Future Volume (veh/h)	94	187	17	88	198	98	3	179	61	284	338	294
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	94	187	17	88	198	98	3	179	61	284	338	294
Adj No. of Lanes	1	2	0	1	1	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	120	551	50	111	286	243	4	248	85	418	569	484
Arrive On Green	0.07	0.17	0.17	0.06	0.16	0.16	0.00	0.19	0.19	0.12	0.31	0.31
Sat Flow, veh/h	1757	3253	293	1757	1845	1568	1757	1317	449	3408	1845	1568
Grp Volume(v), veh/h	94	100	104	88	198	98	3	0	240	284	338	294
Grp Sat Flow(s),veh/h/ln	1757	1752	1793	1757	1845	1568	1757	0	1765	1704	1845	1568
Q Serve(g_s), s	2.4	2.3	2.3	2.2	4.6	2.5	0.1	0.0	5.8	3.6	7.0	7.2
Cycle Q Clear(g_c), s	2.4	2.3	2.3	2.2	4.6	2.5	0.1	0.0	5.8	3.6	7.0	7.2
Prop In Lane	1.00		0.16	1.00		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	120	297	303	111	286	243	4	0	333	418	569	484
V/C Ratio(X)	0.79	0.34	0.34	0.79	0.69	0.40	0.70	0.00	0.72	0.68	0.59	0.61
Avail Cap(c_a), veh/h	759	1709	1748	358	1366	1161	117	0	1330	567	1562	1328
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	16.5	16.5	20.8	18.0	17.2	22.5	0.0	17.2	18.9	13.2	13.3
Incr Delay (d2), s/veh	4.2	0.2	0.2	4.8	1.1	0.4	54.6	0.0	1.1	0.7	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.1	1.1	1.2	2.4	1.1	0.1	0.0	2.9	1.7	3.5	3.1
LnGrp Delay(d),s/veh	24.9	16.8	16.8	25.6	19.1	17.6	77.1	0.0	18.3	19.7	13.6	13.7
LnGrp LOS	C	B	B	C	B	B	E		B	B	B	B
Approach Vol, veh/h		298			384			243			916	
Approach Delay, s/veh		19.3			20.2			19.0			15.5	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	11.9	5.6	19.0	7.9	12.5	11.0	13.6
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	19.5	* 33	3.0	* 38	* 9.2	* 44	7.5	* 34
Max Q Clear Time (g_c+I1), s	4.4	6.6	2.1	9.2	4.2	4.3	5.6	7.8
Green Ext Time (p_c), s	0.1	0.4	0.0	0.7	0.0	0.4	0.1	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	527	90	182	200	383	46	1922	260	302	1042	207
Future Volume (veh/h)	332	527	90	182	200	383	46	1922	260	302	1042	207
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	332	527	90	182	200	383	46	1922	260	302	1042	207
Adj No. of Lanes	2	2	1	2	1	2	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	395	924	413	251	404	1007	82	2119	524	344	2068	644
Arrive On Green	0.12	0.26	0.26	0.07	0.22	0.22	0.02	0.34	0.34	0.10	0.41	0.41
Sat Flow, veh/h	3408	3505	1568	3514	1845	3136	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	332	527	90	182	200	383	46	1922	260	302	1042	207
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	9.4	12.8	4.4	5.0	9.3	9.3	1.3	28.7	13.1	8.7	15.2	8.8
Cycle Q Clear(g_c), s	9.4	12.8	4.4	5.0	9.3	9.3	1.3	28.7	13.1	8.7	15.2	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	395	924	413	251	404	1007	82	2119	524	344	2068	644
V/C Ratio(X)	0.84	0.57	0.22	0.72	0.49	0.38	0.56	0.91	0.50	0.88	0.50	0.32
Avail Cap(c_a), veh/h	399	1159	519	397	601	1341	182	2194	542	344	2068	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	31.4	28.3	44.7	33.6	25.8	47.4	31.1	25.9	43.5	21.3	19.4
Incr Delay (d2), s/veh	13.9	0.8	0.4	1.5	2.6	0.7	2.2	5.6	0.3	21.3	0.7	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	6.3	2.0	2.5	5.1	4.1	0.6	13.2	5.6	5.0	7.1	3.9
LnGrp Delay(d),s/veh	56.5	32.2	28.7	46.1	36.2	26.5	49.6	36.7	26.2	64.8	21.9	20.4
LnGrp LOS	E	C	C	D	D	C	D	D	C	E	C	C
Approach Vol, veh/h		949			765			2228			1551	
Approach Delay, s/veh		40.3			33.7			35.8			30.1	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	46.1	16.9	27.3	15.5	38.5	12.5	31.7
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	5.3	* 39	11.5	32.0	10.0	* 34	11.1	* 33
Max Q Clear Time (g_c+I1), s	3.3	17.2	11.4	11.3	10.7	30.7	7.0	14.8
Green Ext Time (p_c), s	0.0	17.5	0.0	10.2	0.0	2.4	0.1	9.3

Intersection Summary	
HCM 2010 Ctrl Delay	34.7
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	369	457	244	179	277	236	193	1003	74	184	1198	138
Future Volume (veh/h)	369	457	244	179	277	236	193	1003	74	184	1198	138
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	369	457	244	179	277	236	193	1003	74	184	1198	138
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	400	1052	471	248	1277	398	230	1594	496	216	1572	490
Arrive On Green	0.12	0.30	0.30	0.07	0.26	0.26	0.07	0.32	0.32	0.06	0.32	0.32
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	369	457	244	179	277	236	193	1003	74	184	1198	138
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	10.1	9.8	12.1	4.9	4.1	12.5	5.3	16.1	3.2	5.1	20.3	6.3
Cycle Q Clear(g_c), s	10.1	9.8	12.1	4.9	4.1	12.5	5.3	16.1	3.2	5.1	20.3	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	400	1052	471	248	1277	398	230	1594	496	216	1572	490
V/C Ratio(X)	0.92	0.43	0.52	0.72	0.22	0.59	0.84	0.63	0.15	0.85	0.76	0.28
Avail Cap(c_a), veh/h	400	1147	513	364	1595	497	230	1627	507	216	1595	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	26.4	27.2	42.5	27.5	30.6	43.2	27.2	22.8	43.5	28.9	24.1
Incr Delay (d2), s/veh	26.3	0.6	1.8	1.5	0.3	4.8	21.8	1.1	0.3	25.3	2.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	4.8	5.4	2.3	1.9	5.9	3.2	7.5	1.4	3.1	9.7	2.8
LnGrp Delay(d),s/veh	67.3	27.0	29.0	44.0	27.8	35.4	65.0	28.3	23.1	68.8	31.5	24.8
LnGrp LOS	E	C	C	D	C	D	E	C	C	E	C	C
Approach Vol, veh/h		1070			692			1270			1520	
Approach Delay, s/veh		41.4			34.6			33.5			35.4	
Approach LOS		D			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	35.4	16.5	30.0	11.5	35.8	12.4	34.1
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	6.4	* 30	11.0	* 30	6.0	* 31	10.1	30.7
Max Q Clear Time (g_c+I1), s	7.3	22.3	12.1	14.5	7.1	18.1	6.9	14.1
Green Ext Time (p_c), s	0.0	7.3	0.0	9.5	0.0	11.6	0.1	10.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	15	519	13	24	66	229	1048	11	20	1365	137
Future Volume (veh/h)	199	15	519	13	24	66	229	1048	11	20	1365	137
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	199	15	519	13	24	66	229	1048	11	20	1365	137
Adj No. of Lanes	2	1	2	1	1	0	2	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	296	404	604	17	62	170	328	2153	23	24	1694	527
Arrive On Green	0.09	0.22	0.22	0.01	0.14	0.14	0.10	0.42	0.42	0.01	0.34	0.34
Sat Flow, veh/h	3408	1845	2760	1757	436	1198	3375	5089	53	1740	4988	1553
Grp Volume(v), veh/h	199	15	519	13	0	90	229	685	374	20	1365	137
Grp Sat Flow(s),veh/h/ln	1704	1845	1380	1757	0	1633	1688	1663	1817	1740	1663	1553
Q Serve(g_s), s	3.9	0.4	12.5	0.5	0.0	3.5	4.5	10.3	10.3	0.8	17.2	4.4
Cycle Q Clear(g_c), s	3.9	0.4	12.5	0.5	0.0	3.5	4.5	10.3	10.3	0.8	17.2	4.4
Prop In Lane	1.00		1.00	1.00		0.73	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	296	404	604	17	0	232	328	1407	769	24	1694	527
V/C Ratio(X)	0.67	0.04	0.86	0.77	0.00	0.39	0.70	0.49	0.49	0.83	0.81	0.26
Avail Cap(c_a), veh/h	962	906	1355	496	0	814	953	3110	1700	491	4622	1439
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	21.2	25.9	34.1	0.0	26.9	30.2	14.5	14.5	34.0	20.7	16.5
Incr Delay (d2), s/veh	1.0	0.0	1.4	23.5	0.0	0.4	1.0	0.1	0.2	22.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.2	4.9	0.4	0.0	1.6	2.1	4.7	5.1	0.5	7.9	1.9
LnGrp Delay(d),s/veh	31.6	21.2	27.4	57.6	0.0	27.3	31.2	14.6	14.7	56.6	21.1	16.6
LnGrp LOS	C	C	C	E		C	C	B	B	E	C	B
Approach Vol, veh/h		733			103			1288			1522	
Approach Delay, s/veh		28.4			31.1			17.6			21.1	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	29.5	11.5	15.9	6.5	35.2	6.2	21.2
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	19.5	64.0	19.5	* 34	19.5	* 65	19.5	* 34
Max Q Clear Time (g_c+I1), s	6.5	19.2	5.9	5.5	2.8	12.3	2.5	14.5
Green Ext Time (p_c), s	0.3	4.3	0.2	0.6	0.0	4.3	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	21.6
HCM 2010 LOS	C

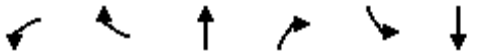
Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	161	282	44	47	115	111	700	51	284	1554	147
Future Volume (veh/h)	82	161	282	44	47	115	111	700	51	284	1554	147
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	82	161	282	44	47	115	111	700	51	284	1554	147
Adj No. of Lanes	2	2	0	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	143	372	333	82	654	292	184	1543	480	381	1834	571
Arrive On Green	0.04	0.21	0.21	0.03	0.20	0.20	0.05	0.31	0.31	0.11	0.37	0.37
Sat Flow, veh/h	3408	1752	1568	3250	3343	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	82	161	282	44	47	115	111	700	51	284	1554	147
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1625	1671	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	1.5	5.2	11.2	0.9	0.7	4.3	2.1	7.3	1.5	5.3	18.5	4.3
Cycle Q Clear(g_c), s	1.5	5.2	11.2	0.9	0.7	4.3	2.1	7.3	1.5	5.3	18.5	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	372	333	82	654	292	184	1543	480	381	1834	571
V/C Ratio(X)	0.57	0.43	0.85	0.53	0.07	0.39	0.60	0.45	0.11	0.75	0.85	0.26
Avail Cap(c_a), veh/h	184	610	546	151	1137	509	188	1851	576	444	2229	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	22.1	24.5	31.1	21.2	22.7	29.9	17.9	15.9	27.8	18.8	14.3
Incr Delay (d2), s/veh	1.3	0.3	3.2	2.0	0.0	0.3	3.6	0.1	0.0	4.5	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.5	5.1	0.4	0.3	1.8	1.1	3.3	0.7	2.7	8.7	1.8
LnGrp Delay(d),s/veh	31.7	22.4	27.6	33.1	21.2	23.0	33.5	18.0	16.0	32.3	21.1	14.4
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		525			206			862			1985	
Approach Delay, s/veh		26.7			24.7			19.9			22.2	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	29.3	8.2	18.1	12.8	25.5	7.1	19.2
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	3.6	28.9	3.5	22.0	8.5	24.0	3.0	22.5
Max Q Clear Time (g_c+I1), s	4.1	20.5	3.5	6.3	7.3	9.3	2.9	13.2
Green Ext Time (p_c), s	0.0	3.3	0.0	0.6	0.1	4.0	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	27	120	638	41	223	1606
Future Volume (veh/h)	27	120	638	41	223	1606
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1827	1827	1827
Adj Flow Rate, veh/h	27	120	638	41	223	1606
Adj No. of Lanes	2	1	3	1	2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	341	157	1453	452	387	1999
Arrive On Green	0.10	0.10	0.29	0.29	0.11	0.58
Sat Flow, veh/h	3408	1568	5152	1553	3375	3563
Grp Volume(v), veh/h	27	120	638	41	223	1606
Grp Sat Flow(s),veh/h/ln	1704	1568	1663	1553	1688	1736
Q Serve(g_s), s	0.2	2.4	3.4	0.6	2.0	11.8
Cycle Q Clear(g_c), s	0.2	2.4	3.4	0.6	2.0	11.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	341	157	1453	452	387	1999
V/C Ratio(X)	0.08	0.76	0.44	0.09	0.58	0.80
Avail Cap(c_a), veh/h	515	237	3863	1203	1979	5313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	14.2	9.3	8.4	13.6	5.4
Incr Delay (d2), s/veh	0.0	3.3	0.1	0.0	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.2	1.5	0.3	1.0	5.4
LnGrp Delay(d),s/veh	13.3	17.5	9.4	8.4	14.1	5.7
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	147		679			1829
Approach Delay, s/veh	16.7		9.3			6.7
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		23.7		8.7	9.2	14.4		
Change Period (Y+Rc), s		5.0		5.5	5.5	5.0		
Max Green Setting (Gmax), s		49.6		4.9	19.0	25.1		
Max Q Clear Time (g_c+I1), s		13.8		4.4	4.0	5.4		
Green Ext Time (p_c), s		4.2		0.0	0.3	4.1		

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	4	0	10	5	57	1	526	43	101	1159	263
Future Volume (veh/h)	62	4	0	10	5	57	1	526	43	101	1159	263
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1900	1845	1845	1845	1827	1827	1827	1830	1900
Adj Flow Rate, veh/h	62	4	0	10	5	57	1	526	43	101	1159	263
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	4
Cap, veh/h	79	5	0	59	30	78	3	1645	736	180	1534	345
Arrive On Green	0.05	0.05	0.00	0.05	0.05	0.05	0.00	0.47	0.47	0.05	0.54	0.54
Sat Flow, veh/h	1655	107	0	1190	595	1568	1757	3471	1553	3375	2822	635
Grp Volume(v), veh/h	66	0	0	15	0	57	1	526	43	101	711	711
Grp Sat Flow(s),veh/h/ln	1762	0	0	1785	0	1568	1757	1736	1553	1688	1739	1718
Q Serve(g_s), s	1.9	0.0	0.0	0.4	0.0	1.8	0.0	4.8	0.8	1.5	16.2	16.6
Cycle Q Clear(g_c), s	1.9	0.0	0.0	0.4	0.0	1.8	0.0	4.8	0.8	1.5	16.2	16.6
Prop In Lane	0.94		0.00	0.67		1.00	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	84	0	0	89	0	78	3	1645	736	180	945	934
V/C Ratio(X)	0.78	0.00	0.00	0.17	0.00	0.73	0.29	0.32	0.06	0.56	0.75	0.76
Avail Cap(c_a), veh/h	548	0	0	625	0	549	102	2025	906	440	1170	1156
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	0.0	0.0	23.4	0.0	24.1	25.7	8.4	7.3	23.8	9.0	9.1
Incr Delay (d2), s/veh	14.5	0.0	0.0	0.9	0.0	12.3	41.7	0.1	0.0	2.7	2.2	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.2	0.0	1.1	0.1	2.3	0.3	0.8	8.3	8.3
LnGrp Delay(d),s/veh	38.7	0.0	0.0	24.3	0.0	36.4	67.3	8.5	7.4	26.5	11.2	11.5
LnGrp LOS	D			C		D	E	A	A	C	B	B
Approach Vol, veh/h		66			72			570			1523	
Approach Delay, s/veh		38.7			33.9			8.5			12.4	
Approach LOS		D			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.0	33.0		8.0	7.6	29.4		6.5
Change Period (Y+Rc), s	4.0	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	3.0	34.6		* 18	* 6.7	30.0		16.0
Max Q Clear Time (g_c+I1), s	2.0	18.6		3.8	3.5	6.8		3.9
Green Ext Time (p_c), s	0.0	9.4		0.1	0.1	11.6		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	411	9	68	283	124	5	266	66	356	710	79
Future Volume (veh/h)	166	411	9	68	283	124	5	266	66	356	710	79
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1900	1827	1845	1845
Adj Flow Rate, veh/h	166	411	9	68	283	124	5	266	66	356	710	79
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	204	507	431	73	369	651	7	356	88	396	872	923
Arrive On Green	0.12	0.27	0.27	0.04	0.20	0.20	0.00	0.25	0.25	0.23	0.47	0.47
Sat Flow, veh/h	1757	1845	1568	1757	1845	1524	1757	1428	354	1740	1845	1568
Grp Volume(v), veh/h	166	411	9	68	283	124	5	0	332	356	710	79
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1524	1757	0	1782	1740	1845	1568
Q Serve(g_s), s	8.9	20.1	0.4	3.7	14.0	4.9	0.3	0.0	16.6	19.2	31.8	2.1
Cycle Q Clear(g_c), s	8.9	20.1	0.4	3.7	14.0	4.9	0.3	0.0	16.6	19.2	31.8	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	204	507	431	73	369	651	7	0	444	396	872	923
V/C Ratio(X)	0.82	0.81	0.02	0.93	0.77	0.19	0.73	0.00	0.75	0.90	0.81	0.09
Avail Cap(c_a), veh/h	382	975	829	73	650	883	55	0	739	631	1376	1351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	32.7	25.5	46.1	36.5	17.2	48.0	0.0	33.4	36.2	21.8	8.6
Incr Delay (d2), s/veh	7.7	3.2	0.0	82.8	3.3	0.1	88.7	0.0	2.5	7.0	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	10.6	0.2	3.5	7.5	2.1	0.3	0.0	8.4	10.0	16.7	0.9
LnGrp Delay(d),s/veh	49.4	35.9	25.6	128.9	39.8	17.4	136.7	0.0	35.9	43.2	23.9	8.6
LnGrp LOS	D	D	C	F	D	B	F		D	D	C	A
Approach Vol, veh/h		586			475			337			1145	
Approach Delay, s/veh		39.5			46.7			37.4			28.9	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	32.5	4.4	51.6	15.2	25.3	25.9	30.1
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	4.0	51.0	3.0	72.0	21.0	34.0	35.0	40.0
Max Q Clear Time (g_c+I1), s	5.7	22.1	2.3	33.8	10.9	16.0	21.2	18.6
Green Ext Time (p_c), s	0.0	3.6	0.0	6.1	0.4	3.3	0.8	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	35.8
HCM 2010 LOS	D

Notes

User approved changes to right turn type.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	135	35	14	186	568	222
Future Volume (veh/h)	135	35	14	186	568	222
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	135	35	14	186	568	222
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	169	44	19	1155	612	239
Arrive On Green	0.13	0.13	0.01	0.63	0.49	0.49
Sat Flow, veh/h	1268	329	1740	1827	1251	489
Grp Volume(v), veh/h	171	0	14	186	0	790
Grp Sat Flow(s),veh/h/ln	1606	0	1740	1827	0	1741
Q Serve(g_s), s	4.3	0.0	0.3	1.7	0.0	17.6
Cycle Q Clear(g_c), s	4.3	0.0	0.3	1.7	0.0	17.6
Prop In Lane	0.79	0.20	1.00			0.28
Lane Grp Cap(c), veh/h	215	0	19	1155	0	851
V/C Ratio(X)	0.80	0.00	0.75	0.16	0.00	0.93
Avail Cap(c_a), veh/h	349	0	273	1574	0	978
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	20.4	3.1	0.0	9.9
Incr Delay (d2), s/veh	6.6	0.0	19.4	0.0	0.0	12.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.3	0.8	0.0	11.1
LnGrp Delay(d),s/veh	24.0	0.0	39.8	3.1	0.0	22.6
LnGrp LOS	C		D	A		C
Approach Vol, veh/h	171			200	790	
Approach Delay, s/veh	24.0			5.7	22.6	
Approach LOS	C			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	5.9	26.0		9.5		31.9		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.5	* 23		9.0		* 36		
Max Q Clear Time (g_c+I1), s	2.3	19.6		6.3		3.7		
Green Ext Time (p_c), s	0.0	0.7		0.2		1.1		

Intersection Summary	
HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	642	1	2	269	466	22	216	16	114	1	177
Future Volume (veh/h)	695	642	1	2	269	466	22	216	16	114	1	177
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1792	1792	1900	1792	1792	1792
Adj Flow Rate, veh/h	695	642	1	2	269	466	22	216	16	122	0	177
Adj No. of Lanes	2	2	0	1	1	1	1	1	0	2	0	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	6	6	6	6	6	6
Cap, veh/h	772	1951	3	3	579	492	258	249	18	216	0	289
Arrive On Green	0.23	0.54	0.54	0.00	0.31	0.31	0.15	0.15	0.15	0.06	0.00	0.06
Sat Flow, veh/h	3408	3591	6	1757	1845	1568	1707	1649	122	3414	0	4571
Grp Volume(v), veh/h	695	313	330	2	269	466	22	0	232	122	0	177
Grp Sat Flow(s),veh/h/ln	1704	1752	1844	1757	1845	1568	1707	0	1771	1707	0	1524
Q Serve(g_s), s	18.1	9.1	9.1	0.1	10.7	26.6	1.0	0.0	11.7	3.2	0.0	3.5
Cycle Q Clear(g_c), s	18.1	9.1	9.1	0.1	10.7	26.6	1.0	0.0	11.7	3.2	0.0	3.5
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	772	952	1002	3	579	492	258	0	268	216	0	289
V/C Ratio(X)	0.90	0.33	0.33	0.70	0.46	0.95	0.09	0.00	0.87	0.56	0.00	0.61
Avail Cap(c_a), veh/h	912	957	1007	58	588	500	392	0	406	895	0	1198
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.4	11.6	11.6	45.7	25.2	30.6	33.4	0.0	37.9	41.6	0.0	41.8
Incr Delay (d2), s/veh	9.7	0.1	0.1	75.6	0.2	26.7	0.1	0.0	8.1	0.9	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	4.4	4.6	0.1	5.5	15.0	0.5	0.0	6.3	1.5	0.0	1.5
LnGrp Delay(d),s/veh	44.1	11.7	11.7	121.3	25.4	57.4	33.4	0.0	46.0	42.5	0.0	42.6
LnGrp LOS	D	B	B	F	C	E	C		D	D		D
Approach Vol, veh/h		1338			737			254			299	
Approach Delay, s/veh		28.5			45.9			44.9			42.5	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.2	34.6		11.3	5.2	55.6		19.3
Change Period (Y+Rc), s	5.5	* 5.9		5.5	* 5.1	* 5.9		5.5
Max Green Setting (Gmax), s	24.5	* 29		24.0	* 3	* 50		21.0
Max Q Clear Time (g_c+I1), s	20.1	28.6		5.5	2.1	11.1		13.7
Green Ext Time (p_c), s	0.6	0.2		0.3	0.0	1.2		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	36.6
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	87	97	21	309	406	97
Future Volume (veh/h)	87	97	21	309	406	97
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1792	1792	1810	1810
Adj Flow Rate, veh/h	87	97	21	309	406	97
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	6	6	5	5
Cap, veh/h	188	168	36	962	615	523
Arrive On Green	0.11	0.11	0.02	0.54	0.34	0.34
Sat Flow, veh/h	1675	1495	1707	1792	1810	1538
Grp Volume(v), veh/h	87	97	21	309	406	97
Grp Sat Flow(s),veh/h/ln	1675	1495	1707	1792	1810	1538
Q Serve(g_s), s	1.5	1.9	0.4	3.0	6.0	1.4
Cycle Q Clear(g_c), s	1.5	1.9	0.4	3.0	6.0	1.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	188	168	36	962	615	523
V/C Ratio(X)	0.46	0.58	0.58	0.32	0.66	0.19
Avail Cap(c_a), veh/h	855	763	218	1601	1068	908
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.0	13.2	15.2	4.1	8.8	7.3
Incr Delay (d2), s/veh	1.8	3.1	13.6	0.2	1.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.7	0.3	1.5	3.1	0.6
LnGrp Delay(d),s/veh	14.8	16.3	28.8	4.3	10.0	7.5
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	184			330	503	
Approach Delay, s/veh	15.6			5.8	9.5	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		22.3		9.0	6.2	16.2		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		28.0		16.0	4.0	18.5		
Max Q Clear Time (g_c+I1), s		5.0		3.9	2.4	8.0		
Green Ext Time (p_c), s		3.5		0.5	0.0	2.7		

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	659	4	58	302	13	4	176	70	42	242	134
Future Volume (veh/h)	117	659	4	58	302	13	4	176	70	42	242	134
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1900	1810	1900	1900	1810	1900
Adj Flow Rate, veh/h	117	659	4	58	302	13	4	176	70	42	242	134
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	142	692	4	69	591	25	4	195	78	41	237	131
Arrive On Green	0.08	0.39	0.39	0.04	0.35	0.35	0.16	0.16	0.16	0.24	0.24	0.24
Sat Flow, veh/h	1707	1780	11	1707	1706	73	28	1213	482	171	987	546
Grp Volume(v), veh/h	117	0	663	58	0	315	250	0	0	418	0	0
Grp Sat Flow(s),veh/h/ln	1707	0	1791	1707	0	1779	1723	0	0	1705	0	0
Q Serve(g_s), s	9.0	0.0	47.9	4.5	0.0	18.7	19.0	0.0	0.0	32.0	0.0	0.0
Cycle Q Clear(g_c), s	9.0	0.0	47.9	4.5	0.0	18.7	19.0	0.0	0.0	32.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.04	0.02		0.28	0.10		0.32
Lane Grp Cap(c), veh/h	142	0	696	69	0	616	277	0	0	409	0	0
V/C Ratio(X)	0.82	0.00	0.95	0.84	0.00	0.51	0.90	0.00	0.00	1.02	0.00	0.00
Avail Cap(c_a), veh/h	231	0	726	69	0	616	336	0	0	409	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	60.1	0.0	39.5	63.5	0.0	34.6	54.9	0.0	0.0	50.6	0.0	0.0
Incr Delay (d2), s/veh	5.2	0.0	22.7	54.3	0.0	1.4	23.5	0.0	0.0	49.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	28.0	3.2	0.0	9.4	10.8	0.0	0.0	20.7	0.0	0.0
LnGrp Delay(d),s/veh	65.3	0.0	62.2	117.8	0.0	36.1	78.4	0.0	0.0	100.5	0.0	0.0
LnGrp LOS	E		E	F		D	E			F		
Approach Vol, veh/h		780			373			250			418	
Approach Delay, s/veh		62.6			48.8			78.4			100.5	
Approach LOS		E			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.7	52.1		38.0	10.0	57.8		27.4
Change Period (Y+Rc), s	4.6	6.0		6.0	4.6	6.0		6.0
Max Green Setting (Gmax), s	18.0	41.4		32.0	5.4	54.0		26.0
Max Q Clear Time (g_c+I1), s	11.0	20.7		34.0	6.5	49.9		21.0
Green Ext Time (p_c), s	0.1	9.5		0.0	0.0	1.9		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	70.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	453	125	171	663	179	84	399	83	187	817	227
Future Volume (veh/h)	129	453	125	171	663	179	84	399	83	187	817	227
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	129	453	125	171	663	179	84	399	83	187	817	227
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	164	672	184	192	923	413	106	848	379	192	1020	456
Arrive On Green	0.09	0.25	0.25	0.11	0.26	0.26	0.06	0.24	0.24	0.11	0.29	0.29
Sat Flow, veh/h	1757	2721	745	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	129	291	287	171	663	179	84	399	83	187	817	227
Grp Sat Flow(s),veh/h/ln	1757	1752	1713	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	3.9	8.2	8.3	5.3	9.4	5.2	2.6	5.3	2.3	5.8	11.8	6.6
Cycle Q Clear(g_c), s	3.9	8.2	8.3	5.3	9.4	5.2	2.6	5.3	2.3	5.8	11.8	6.6
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	164	433	423	192	923	413	106	848	379	192	1020	456
V/C Ratio(X)	0.79	0.67	0.68	0.89	0.72	0.43	0.79	0.47	0.22	0.97	0.80	0.50
Avail Cap(c_a), veh/h	192	512	500	192	1024	458	160	1024	458	192	1088	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	18.6	18.7	24.1	18.3	16.8	25.4	17.8	16.6	24.3	18.0	16.1
Incr Delay (d2), s/veh	16.8	2.7	2.9	35.9	2.2	0.7	14.1	0.4	0.3	56.5	4.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.3	4.3	4.4	4.8	2.3	1.7	2.6	1.0	5.8	6.3	2.9
LnGrp Delay(d),s/veh	41.1	21.3	21.6	59.9	20.5	17.5	39.5	18.2	16.9	80.8	22.1	16.9
LnGrp LOS	D	C	C	E	C	B	D	B	B	F	C	B
Approach Vol, veh/h		707			1013			566			1231	
Approach Delay, s/veh		25.0			26.6			21.1			30.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	17.2	10.0	17.5	7.3	19.9	9.1	18.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	16.0	6.0	16.0	5.0	17.0	6.0	16.0
Max Q Clear Time (g_c+I1), s	7.8	7.3	7.3	10.3	4.6	13.8	5.9	11.4
Green Ext Time (p_c), s	0.0	4.7	0.0	3.2	0.0	2.1	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	329	156	111	504	94	104	532	57	117	1142	193
Future Volume (veh/h)	125	329	156	111	504	94	104	532	57	117	1142	193
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	125	329	156	111	504	94	104	532	57	117	1142	193
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	157	736	329	140	593	110	132	1311	140	150	1263	213
Arrive On Green	0.09	0.21	0.21	0.08	0.20	0.20	0.08	0.41	0.41	0.09	0.42	0.42
Sat Flow, veh/h	1757	3505	1568	1757	2952	548	1740	3165	338	1740	2974	501
Grp Volume(v), veh/h	125	329	156	111	298	300	104	291	298	117	665	670
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1748	1740	1736	1767	1740	1736	1739
Q Serve(g_s), s	5.3	6.2	6.7	4.7	12.5	12.6	4.5	9.0	9.1	5.0	27.3	27.6
Cycle Q Clear(g_c), s	5.3	6.2	6.7	4.7	12.5	12.6	4.5	9.0	9.1	5.0	27.3	27.6
Prop In Lane	1.00		1.00	1.00		0.31	1.00		0.19	1.00		0.29
Lane Grp Cap(c), veh/h	157	736	329	140	352	351	132	719	732	150	737	739
V/C Ratio(X)	0.80	0.45	0.47	0.79	0.85	0.85	0.79	0.40	0.41	0.78	0.90	0.91
Avail Cap(c_a), veh/h	161	736	329	161	367	366	137	719	732	273	795	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	26.3	26.5	34.5	29.4	29.4	34.7	15.7	15.8	34.2	20.5	20.6
Incr Delay (d2), s/veh	23.4	0.4	1.1	20.4	16.2	17.0	25.4	0.4	0.4	8.5	12.9	13.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.1	3.0	3.1	7.6	7.7	3.1	4.4	4.5	2.8	15.6	15.8
LnGrp Delay(d),s/veh	57.5	26.7	27.5	54.9	45.6	46.5	60.1	16.1	16.1	42.7	33.3	34.1
LnGrp LOS	E	C	C	D	D	D	E	B	B	D	C	C
Approach Vol, veh/h		610			709			693			1452	
Approach Delay, s/veh		33.2			47.4			22.7			34.4	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	35.6	10.1	20.0	9.8	36.4	10.8	19.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	29.0	7.0	16.0	6.0	35.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	7.0	11.1	6.7	8.7	6.5	29.6	7.3	14.6
Green Ext Time (p_c), s	0.1	9.3	0.0	3.0	0.0	2.9	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	34.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	661	195	242	851	125	165	476	91	176	1146	203
Future Volume (veh/h)	155	661	195	242	851	125	165	476	91	176	1146	203
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	155	661	195	242	851	125	165	476	91	176	1146	203
Adj No. of Lanes	1	3	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	174	770	223	261	869	389	174	945	180	216	1211	542
Arrive On Green	0.10	0.20	0.20	0.15	0.25	0.25	0.10	0.32	0.32	0.12	0.35	0.35
Sat Flow, veh/h	1740	3840	1115	1740	3471	1553	1740	2911	553	1740	3471	1553
Grp Volume(v), veh/h	155	571	285	242	851	125	165	283	284	176	1146	203
Grp Sat Flow(s),veh/h/ln	1740	1663	1630	1740	1736	1553	1740	1736	1729	1740	1736	1553
Q Serve(g_s), s	7.0	13.2	13.5	11.0	19.4	5.2	7.5	10.5	10.6	7.9	25.6	7.8
Cycle Q Clear(g_c), s	7.0	13.2	13.5	11.0	19.4	5.2	7.5	10.5	10.6	7.9	25.6	7.8
Prop In Lane	1.00		0.68	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	174	666	327	261	869	389	174	563	561	216	1211	542
V/C Ratio(X)	0.89	0.86	0.87	0.93	0.98	0.32	0.95	0.50	0.51	0.81	0.95	0.37
Avail Cap(c_a), veh/h	174	666	327	261	869	389	174	563	561	327	1217	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	30.8	30.9	33.5	29.7	24.4	35.7	21.8	21.8	34.1	25.3	19.5
Incr Delay (d2), s/veh	38.6	10.7	21.9	36.3	25.3	0.5	52.6	0.7	0.7	9.0	14.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	7.0	8.1	7.9	12.3	2.3	6.1	5.1	5.2	4.3	14.7	3.4
LnGrp Delay(d),s/veh	74.1	41.6	52.9	69.8	55.0	24.9	88.3	22.5	22.5	43.1	40.1	19.9
LnGrp LOS	E	D	D	E	E	C	F	C	C	D	D	B
Approach Vol, veh/h		1011			1218			732			1525	
Approach Delay, s/veh		49.7			54.9			37.3			37.7	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	29.9	16.0	20.0	12.0	31.9	12.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	21.0	12.0	16.0	8.0	28.0	8.0	20.0
Max Q Clear Time (g_c+I1), s	9.9	12.6	13.0	15.5	9.5	27.6	9.0	21.4
Green Ext Time (p_c), s	0.3	5.6	0.0	0.4	0.0	0.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	518	145	84	591	49	157	224	33	143	829	313
Future Volume (veh/h)	134	518	145	84	591	49	157	224	33	143	829	313
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	134	518	145	84	591	49	157	224	33	143	829	313
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	152	729	203	106	796	66	184	997	446	181	990	443
Arrive On Green	0.09	0.27	0.27	0.06	0.25	0.25	0.10	0.28	0.28	0.10	0.28	0.28
Sat Flow, veh/h	1740	2683	747	1740	3246	269	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	134	334	329	84	316	324	157	224	33	143	829	313
Grp Sat Flow(s),veh/h/ln	1740	1736	1695	1740	1736	1780	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	4.4	9.9	10.0	2.7	9.6	9.6	5.0	2.8	0.9	4.5	12.7	10.2
Cycle Q Clear(g_c), s	4.4	9.9	10.0	2.7	9.6	9.6	5.0	2.8	0.9	4.5	12.7	10.2
Prop In Lane	1.00		0.44	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	472	461	106	425	436	184	997	446	181	990	443
V/C Ratio(X)	0.88	0.71	0.71	0.79	0.74	0.74	0.85	0.22	0.07	0.79	0.84	0.71
Avail Cap(c_a), veh/h	152	486	475	152	486	498	184	997	446	215	1043	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	18.8	18.8	26.5	19.9	19.9	25.1	15.6	14.9	25.0	19.3	18.4
Incr Delay (d2), s/veh	40.4	4.6	4.9	16.4	5.2	5.2	29.7	0.1	0.1	15.3	5.9	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.3	5.3	1.8	5.2	5.3	4.0	1.4	0.4	3.0	6.9	4.9
LnGrp Delay(d),s/veh	66.2	23.4	23.7	42.9	25.1	25.1	54.8	15.7	15.0	40.3	25.2	23.0
LnGrp LOS	E	C	C	D	C	C	D	B	B	D	C	C
Approach Vol, veh/h		797			724			414			1285	
Approach Delay, s/veh		30.7			27.2			30.5			26.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	20.3	7.5	19.5	10.0	20.1	9.0	18.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	5.0	16.0	6.0	17.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	4.8	4.7	12.0	7.0	14.7	6.4	11.6
Green Ext Time (p_c), s	0.0	5.2	0.0	2.2	0.0	1.4	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	28.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	430	19	61	488	100	45	279	85	225	534	579
Future Volume (veh/h)	157	430	19	61	488	100	45	279	85	225	534	579
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	157	430	19	61	488	100	45	279	85	225	534	579
Adj No. of Lanes	2	2	1	2	2	0	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	253	934	418	150	686	140	123	761	227	339	1225	548
Arrive On Green	0.07	0.27	0.27	0.04	0.24	0.24	0.04	0.29	0.29	0.10	0.35	0.35
Sat Flow, veh/h	3375	3471	1553	3375	2873	586	3375	2636	787	3375	3471	1553
Grp Volume(v), veh/h	157	430	19	61	294	294	45	182	182	225	534	579
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1688	1736	1724	1688	1736	1688	1688	1736	1553
Q Serve(g_s), s	2.4	5.6	0.5	0.9	8.4	8.4	0.7	4.5	4.6	3.5	6.3	19.0
Cycle Q Clear(g_c), s	2.4	5.6	0.5	0.9	8.4	8.4	0.7	4.5	4.6	3.5	6.3	19.0
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	253	934	418	150	414	411	123	501	487	339	1225	548
V/C Ratio(X)	0.62	0.46	0.05	0.41	0.71	0.72	0.37	0.36	0.37	0.66	0.44	1.06
Avail Cap(c_a), veh/h	313	1096	490	251	516	512	251	516	502	439	1225	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	16.4	14.6	25.0	18.8	18.8	25.3	15.2	15.3	23.3	13.3	17.4
Incr Delay (d2), s/veh	2.5	0.4	0.0	1.8	3.4	3.6	1.8	0.4	0.5	2.4	0.2	54.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.7	0.2	0.5	4.4	4.4	0.4	2.2	2.2	1.7	3.1	16.3
LnGrp Delay(d),s/veh	26.7	16.8	14.6	26.8	22.1	22.4	27.2	15.7	15.7	25.8	13.6	71.7
LnGrp LOS	C	B	B	C	C	C	C	B	B	C	B	F
Approach Vol, veh/h		606			649			409			1338	
Approach Delay, s/veh		19.3			22.7			17.0			40.8	
Approach LOS		B			C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	19.5	6.4	18.5	6.0	23.0	8.0	16.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	4.0	17.0	4.0	19.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	5.5	6.6	2.9	7.6	2.7	21.0	4.4	10.4
Green Ext Time (p_c), s	0.2	4.6	0.0	3.4	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	29.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	6	80	50	9	1	53	488	55	1	944	0
Future Volume (veh/h)	1	6	80	50	9	1	53	488	55	1	944	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	1	6	80	50	9	1	53	488	55	1	944	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	2	9	123	105	98	11	65	575	489	497	1029	0
Arrive On Green	0.09	0.09	0.09	0.06	0.06	0.06	0.04	0.32	0.32	0.29	0.57	0.00
Sat Flow, veh/h	17	104	1391	1757	1631	181	1707	1792	1524	1707	1792	0
Grp Volume(v), veh/h	87	0	0	50	0	10	53	488	55	1	944	0
Grp Sat Flow(s),veh/h/ln	1513	0	0	1757	0	1813	1707	1792	1524	1707	1792	0
Q Serve(g_s), s	3.7	0.0	0.0	1.8	0.0	0.3	2.1	17.0	1.7	0.0	31.6	0.0
Cycle Q Clear(g_c), s	3.7	0.0	0.0	1.8	0.0	0.3	2.1	17.0	1.7	0.0	31.6	0.0
Prop In Lane	0.01		0.92	1.00		0.10	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	134	0	0	105	0	109	65	575	489	497	1029	0
V/C Ratio(X)	0.65	0.00	0.00	0.48	0.00	0.09	0.82	0.85	0.11	0.00	0.92	0.00
Avail Cap(c_a), veh/h	363	0	0	421	0	434	102	1289	1095	497	1289	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.4	0.0	0.0	30.4	0.0	29.7	31.9	21.2	16.0	16.8	12.8	0.0
Incr Delay (d2), s/veh	5.3	0.0	0.0	3.3	0.0	0.4	23.5	3.6	0.1	0.0	9.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	1.0	0.0	0.2	1.4	9.0	0.7	0.0	18.1	0.0
LnGrp Delay(d),s/veh	34.7	0.0	0.0	33.7	0.0	30.0	55.3	24.8	16.1	16.8	21.9	0.0
LnGrp LOS	C			C		C	E	C	B	B	C	
Approach Vol, veh/h		87			60			596			945	
Approach Delay, s/veh		34.7			33.1			26.7			21.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.4	25.4		9.9	6.5	42.3		8.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	4.0	48.0		16.0
Max Q Clear Time (g_c+I1), s	2.0	19.0		5.7	4.1	33.6		3.8
Green Ext Time (p_c), s	1.1	2.5		0.2	0.0	4.7		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	24.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	12	2	173	3	138	10	544	247	443	691	1
Future Volume (veh/h)	15	12	2	173	3	138	10	544	247	443	691	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	15	12	2	173	3	138	10	544	247	443	691	1
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	23	49	8	195	4	200	16	559	254	466	1328	2
Arrive On Green	0.01	0.03	0.03	0.11	0.13	0.13	0.01	0.47	0.47	0.27	0.72	0.72
Sat Flow, veh/h	1757	1542	257	1757	33	1540	1757	1202	546	1757	1842	3
Grp Volume(v), veh/h	15	0	14	173	0	141	10	0	791	443	0	692
Grp Sat Flow(s),veh/h/ln	1757	0	1799	1757	0	1573	1757	0	1748	1757	0	1844
Q Serve(g_s), s	1.1	0.0	1.0	12.2	0.0	10.8	0.7	0.0	55.7	31.2	0.0	21.1
Cycle Q Clear(g_c), s	1.1	0.0	1.0	12.2	0.0	10.8	0.7	0.0	55.7	31.2	0.0	21.1
Prop In Lane	1.00		0.14	1.00		0.98	1.00		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	23	0	57	195	0	204	16	0	813	466	0	1329
V/C Ratio(X)	0.66	0.00	0.25	0.89	0.00	0.69	0.61	0.00	0.97	0.95	0.00	0.52
Avail Cap(c_a), veh/h	56	0	228	195	0	325	56	0	832	474	0	1329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	61.9	0.0	59.5	55.2	0.0	52.4	62.2	0.0	32.9	45.5	0.0	7.9
Incr Delay (d2), s/veh	27.9	0.0	2.2	35.1	0.0	4.1	31.0	0.0	24.4	29.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.5	7.9	0.0	4.9	0.5	0.0	32.3	18.9	0.0	10.7
LnGrp Delay(d),s/veh	89.8	0.0	61.8	90.3	0.0	56.5	93.2	0.0	57.3	74.6	0.0	8.2
LnGrp LOS	F		E	F		E	F		E	E		A
Approach Vol, veh/h		29			314			801			1135	
Approach Delay, s/veh		76.2			75.1			57.7			34.1	
Approach LOS		E			E			E			C	

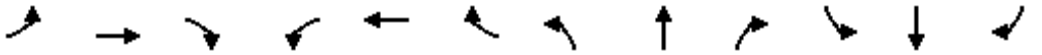
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.4	62.6	18.0	8.0	5.2	94.8	5.6	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	34.0	60.0	14.0	16.0	4.0	90.0	4.0	26.0
Max Q Clear Time (g_c+I1), s	33.2	57.7	14.2	3.0	2.7	23.1	3.1	12.8
Green Ext Time (p_c), s	0.2	0.9	0.0	0.5	0.0	10.5	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	48.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	296	12	14	1	6	4	10	430	0	3	610	320
Future Volume (veh/h)	296	12	14	1	6	4	10	430	0	3	610	320
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	296	12	14	1	6	4	10	430	0	3	610	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	372	15	345	2	11	7	18	782	0	6	769	654
Arrive On Green	0.22	0.22	0.22	0.01	0.01	0.01	0.01	0.42	0.00	0.00	0.42	0.00
Sat Flow, veh/h	1692	69	1568	157	941	628	1757	1845	0	1757	1845	1568
Grp Volume(v), veh/h	308	0	14	11	0	0	10	430	0	3	610	0
Grp Sat Flow(s),veh/h/ln	1760	0	1568	1726	0	0	1757	1845	0	1757	1845	1568
Q Serve(g_s), s	7.8	0.0	0.3	0.3	0.0	0.0	0.3	8.2	0.0	0.1	13.5	0.0
Cycle Q Clear(g_c), s	7.8	0.0	0.3	0.3	0.0	0.0	0.3	8.2	0.0	0.1	13.5	0.0
Prop In Lane	0.96		1.00	0.09		0.36	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	387	0	345	20	0	0	18	782	0	6	769	654
V/C Ratio(X)	0.80	0.00	0.04	0.56	0.00	0.00	0.55	0.55	0.00	0.52	0.79	0.00
Avail Cap(c_a), veh/h	601	0	535	589	0	0	150	1102	0	150	1102	937
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.3	0.0	14.4	23.1	0.0	0.0	23.1	10.1	0.0	23.3	11.9	0.0
Incr Delay (d2), s/veh	4.1	0.0	0.0	22.6	0.0	0.0	23.0	0.6	0.0	58.3	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	0.1	0.3	0.0	0.0	0.2	4.2	0.0	0.1	7.3	0.0
LnGrp Delay(d),s/veh	21.4	0.0	14.4	45.6	0.0	0.0	46.1	10.7	0.0	81.6	14.5	0.0
LnGrp LOS	C		B	D			D	B		F	B	
Approach Vol, veh/h		322			11			440			613	
Approach Delay, s/veh		21.1			45.6			11.5			14.9	
Approach LOS		C			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.2	23.9		14.3	4.5	23.5		4.5
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	10.2		9.8	2.3	15.5		2.3
Green Ext Time (p_c), s	0.0	4.7		0.7	0.0	4.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	15	50	25	3	12	20	192	86	18	259	21
Future Volume (veh/h)	16	15	50	25	3	12	20	192	86	18	259	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	16	15	50	25	3	12	20	192	86	18	259	21
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	22	109	93	34	121	103	27	567	245	25	776	62
Arrive On Green	0.01	0.06	0.06	0.02	0.07	0.07	0.02	0.24	0.24	0.01	0.24	0.24
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	2386	1029	1757	3286	265
Grp Volume(v), veh/h	16	15	50	25	3	12	20	139	139	18	137	143
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1663	1757	1752	1798
Q Serve(g_s), s	0.2	0.2	0.7	0.3	0.0	0.2	0.3	1.6	1.7	0.2	1.6	1.6
Cycle Q Clear(g_c), s	0.2	0.2	0.7	0.3	0.0	0.2	0.3	1.6	1.7	0.2	1.6	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.62	1.00		0.15
Lane Grp Cap(c), veh/h	22	109	93	34	121	103	27	416	395	25	414	425
V/C Ratio(X)	0.72	0.14	0.54	0.74	0.02	0.12	0.73	0.33	0.35	0.72	0.33	0.34
Avail Cap(c_a), veh/h	221	1158	985	221	1158	985	221	1321	1253	221	1321	1355
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.7	10.7	10.9	11.7	10.4	10.5	11.7	7.5	7.6	11.7	7.6	7.6
Incr Delay (d2), s/veh	35.2	0.6	4.8	26.8	0.1	0.5	30.6	0.5	0.5	32.6	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.4	0.4	0.0	0.1	0.4	0.8	0.8	0.3	0.8	0.8
LnGrp Delay(d),s/veh	46.9	11.2	15.7	38.5	10.5	11.0	42.3	8.0	8.1	44.3	8.0	8.0
LnGrp LOS	D	B	B	D	B	B	D	A	A	D	A	A
Approach Vol, veh/h		81			40			298			298	
Approach Delay, s/veh		21.0			28.2			10.4			10.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	9.7	4.5	5.4	4.4	9.6	4.3	5.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	18.0	3.0	15.0	3.0	18.0	3.0	15.0
Max Q Clear Time (g_c+I1), s	2.2	3.7	2.3	2.7	2.3	3.6	2.2	2.2
Green Ext Time (p_c), s	0.0	2.0	0.0	0.1	0.0	2.0	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	6	11	176	322	5
Future Volume (veh/h)	1	6	11	176	322	5
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	1	6	11	176	322	5
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	10	9	16	1853	1014	16
Arrive On Green	0.01	0.01	0.01	0.53	0.29	0.29
Sat Flow, veh/h	1757	1568	1757	3597	3625	55
Grp Volume(v), veh/h	1	6	11	176	160	167
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1835
Q Serve(g_s), s	0.0	0.1	0.1	0.4	1.2	1.2
Cycle Q Clear(g_c), s	0.0	0.1	0.1	0.4	1.2	1.2
Prop In Lane	1.00	1.00	1.00			0.03
Lane Grp Cap(c), veh/h	10	9	16	1853	503	527
V/C Ratio(X)	0.10	0.66	0.70	0.09	0.32	0.32
Avail Cap(c_a), veh/h	1534	1369	307	4487	1530	1602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.5	8.5	8.5	2.0	4.8	4.8
Incr Delay (d2), s/veh	4.1	59.1	43.9	0.0	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.2	0.2	0.6	0.7
LnGrp Delay(d),s/veh	12.6	67.7	52.3	2.0	5.2	5.2
LnGrp LOS	B	E	D	A	A	A
Approach Vol, veh/h	7			187	327	
Approach Delay, s/veh	59.8			5.0	5.2	
Approach LOS	E			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		13.1		4.1	4.2	8.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		22.0		15.0	3.0	15.0		
Max Q Clear Time (g_c+I1), s		2.4		2.1	2.1	3.2		
Green Ext Time (p_c), s		2.0		0.0	0.0	1.7		

Intersection Summary	
HCM 2010 Ctrl Delay	5.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	16	26	208	32	68	21	57	99	39	93	0
Future Volume (veh/h)	5	16	26	208	32	68	21	57	99	39	93	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	5	16	26	208	32	68	21	57	99	39	93	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	7	136	115	277	419	356	28	278	249	49	599	0
Arrive On Green	0.00	0.07	0.07	0.16	0.23	0.23	0.02	0.16	0.16	0.03	0.17	0.00
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	1752	1568	1757	3597	0
Grp Volume(v), veh/h	5	16	26	208	32	68	21	57	99	39	93	0
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1568	1757	1752	0
Q Serve(g_s), s	0.1	0.2	0.4	3.1	0.4	1.0	0.3	0.8	1.6	0.6	0.6	0.0
Cycle Q Clear(g_c), s	0.1	0.2	0.4	3.1	0.4	1.0	0.3	0.8	1.6	0.6	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	7	136	115	277	419	356	28	278	249	49	599	0
V/C Ratio(X)	0.70	0.12	0.23	0.75	0.08	0.19	0.74	0.20	0.40	0.79	0.16	0.00
Avail Cap(c_a), veh/h	192	1006	855	639	1476	1255	192	1020	912	192	2040	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.7	11.9	12.0	11.1	8.4	8.6	13.5	10.1	10.4	13.3	9.7	0.0
Incr Delay (d2), s/veh	78.7	0.4	1.0	4.1	0.1	0.3	30.8	0.4	1.0	23.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.2	1.8	0.2	0.4	0.4	0.4	0.7	0.6	0.3	0.0
LnGrp Delay(d),s/veh	92.4	12.3	13.0	15.2	8.4	8.8	44.2	10.4	11.4	37.0	9.8	0.0
LnGrp LOS	F	B	B	B	A	A	D	B	B	D	A	
Approach Vol, veh/h		47			308			177			132	
Approach Delay, s/veh		21.2			13.1			15.0			17.8	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.8	8.4	8.3	6.0	4.4	8.7	4.1	10.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	16.0	10.0	15.0	3.0	16.0	3.0	22.0
Max Q Clear Time (g_c+I1), s	2.6	3.6	5.1	2.4	2.3	2.6	2.1	3.0
Green Ext Time (p_c), s	0.0	0.8	0.3	0.3	0.0	0.8	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	40	133	37	10	9	16	47	14	13	213	12
Future Vol, veh/h	22	40	133	37	10	9	16	47	14	13	213	12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	22	40	133	37	10	9	16	47	14	13	213	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.8	8.4	8.3	9.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	11%	66%	5%
Vol Thru, %	61%	21%	18%	89%
Vol Right, %	18%	68%	16%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	77	195	56	238
LT Vol	16	22	37	13
Through Vol	47	40	10	213
RT Vol	14	133	9	12
Lane Flow Rate	77	195	56	238
Geometry Grp	1	1	1	1
Degree of Util (X)	0.101	0.237	0.077	0.304
Departure Headway (Hd)	4.743	4.382	4.964	4.599
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	753	819	720	781
Service Time	2.786	2.414	3.006	2.634
HCM Lane V/C Ratio	0.102	0.238	0.078	0.305
HCM Control Delay	8.3	8.8	8.4	9.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.9	0.2	1.3

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	273	23	25	370	35	4	29	8	76	288	19
Future Vol, veh/h	21	273	23	25	370	35	4	29	8	76	288	19
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	21	273	23	25	370	35	4	29	8	76	288	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16.4	22.6	10.9	21.1
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	7%	6%	20%
Vol Thru, %	71%	86%	86%	75%
Vol Right, %	20%	7%	8%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	317	430	383
LT Vol	4	21	25	76
Through Vol	29	273	370	288
RT Vol	8	23	35	19
Lane Flow Rate	41	317	430	383
Geometry Grp	1	1	1	1
Degree of Util (X)	0.081	0.543	0.714	0.668
Departure Headway (Hd)	7.147	6.168	5.977	6.277
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	499	583	606	578
Service Time	5.219	4.217	4.003	4.3
HCM Lane V/C Ratio	0.082	0.544	0.71	0.663
HCM Control Delay	10.9	16.4	22.6	21.1
HCM Lane LOS	B	C	C	C
HCM 95th-tile Q	0.3	3.2	5.9	5

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	265	9	1	408	5	10	4	1	189	8	136
Future Vol, veh/h	34	265	9	1	408	5	10	4	1	189	8	136
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	3	3	3	3	3	3
Mvmt Flow	34	265	9	1	408	5	10	4	1	189	8	136
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.1	17.8	10.1	15.4
HCM LOS	B	C	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	67%	11%	0%	57%
Vol Thru, %	27%	86%	99%	2%
Vol Right, %	7%	3%	1%	41%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	308	414	333
LT Vol	10	34	1	189
Through Vol	4	265	408	8
RT Vol	1	9	5	136
Lane Flow Rate	15	308	414	333
Geometry Grp	1	1	1	1
Degree of Util (X)	0.029	0.488	0.636	0.536
Departure Headway (Hd)	6.906	5.702	5.534	5.791
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	522	628	650	619
Service Time	4.906	3.767	3.593	3.854
HCM Lane V/C Ratio	0.029	0.49	0.637	0.538
HCM Control Delay	10.1	14.1	17.8	15.4
HCM Lane LOS	B	B	C	C
HCM 95th-tile Q	0.1	2.7	4.5	3.2

Intersection	
Intersection Delay, s/veh	67.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	118	62	114	189	4	14	148	49	1	558	91
Future Vol, veh/h	72	118	62	114	189	4	14	148	49	1	558	91
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	6	6	6	8	8	8	3	3	3	3	3	3
Mvmt Flow	72	118	62	114	189	4	14	148	49	1	558	91
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19.4	23.7	16.6	123.7
HCM LOS	C	C	C	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	29%	37%	0%
Vol Thru, %	70%	47%	62%	86%
Vol Right, %	23%	25%	1%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	211	252	307	650
LT Vol	14	72	114	1
Through Vol	148	118	189	558
RT Vol	49	62	4	91
Lane Flow Rate	211	252	307	650
Geometry Grp	1	1	1	1
Degree of Util (X)	0.43	0.52	0.633	1.185
Departure Headway (Hd)	7.811	8.008	7.976	6.562
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	464	454	457	553
Service Time	5.811	6.008	5.976	4.609
HCM Lane V/C Ratio	0.455	0.555	0.672	1.175
HCM Control Delay	16.6	19.4	23.7	123.7
HCM Lane LOS	C	C	C	F
HCM 95th-tile Q	2.1	2.9	4.3	23.1

Intersection	
Intersection Delay, s/veh	20.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	3	31	0	1	1	18	122	1	1	396	320
Future Vol, veh/h	84	3	31	0	1	1	18	122	1	1	396	320
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	84	3	31	0	1	1	18	122	1	1	396	320
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.2	8.9	9.4	24.8
HCM LOS	B	A	A	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	71%	0%	0%
Vol Thru, %	87%	3%	50%	55%
Vol Right, %	1%	26%	50%	45%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	141	118	2	717
LT Vol	18	84	0	1
Through Vol	122	3	1	396
RT Vol	1	31	1	320
Lane Flow Rate	141	118	2	717
Geometry Grp	1	1	1	1
Degree of Util (X)	0.198	0.189	0.003	0.837
Departure Headway (Hd)	5.05	5.765	5.833	4.202
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	706	617	617	860
Service Time	3.116	3.855	3.833	2.24
HCM Lane V/C Ratio	0.2	0.191	0.003	0.834
HCM Control Delay	9.4	10.2	8.9	24.8
HCM Lane LOS	A	B	A	C
HCM 95th-tile Q	0.7	0.7	0	9.8

Intersection	
Intersection Delay, s/veh	18.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	406	0	73	0	90	156	169	252	0
Future Vol, veh/h	0	0	0	406	0	73	0	90	156	169	252	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	406	0	73	0	90	156	169	252	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	0	26	12.9	13.9
HCM LOS	-	D	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	85%	100%	0%
Vol Thru, %	37%	100%	0%	0%	100%
Vol Right, %	63%	0%	15%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	246	0	479	169	252
LT Vol	0	0	406	169	0
Through Vol	90	0	0	0	252
RT Vol	156	0	73	0	0
Lane Flow Rate	246	0	479	169	252
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.401	0	0.773	0.327	0.452
Departure Headway (Hd)	5.866	6.978	5.808	6.969	6.46
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	610	0	623	514	554
Service Time	3.935	4.978	3.861	4.737	4.227
HCM Lane V/C Ratio	0.403	0	0.769	0.329	0.455
HCM Control Delay	12.9	10	26	13.1	14.5
HCM Lane LOS	B	N	D	B	B
HCM 95th-tile Q	1.9	0	7.2	1.4	2.3

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	21	0	16	1	311	0	87	391	0
Future Vol, veh/h	0	0	0	21	0	16	1	311	0	87	391	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	20	20	20	5	5	5	6	6	6
Mvmt Flow	0	0	0	21	0	16	1	311	0	87	391	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	9.2	10.6	13.9
HCM LOS	-	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	57%	18%
Vol Thru, %	100%	100%	0%	82%
Vol Right, %	0%	0%	43%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	312	0	37	478
LT Vol	1	0	21	87
Through Vol	311	0	0	391
RT Vol	0	0	16	0
Lane Flow Rate	312	0	37	478
Geometry Grp	1	1	1	1
Degree of Util (X)	0.398	0	0.06	0.594
Departure Headway (Hd)	4.588	5.758	5.818	4.474
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	786	0	613	808
Service Time	2.614	3.823	3.873	2.499
HCM Lane V/C Ratio	0.397	0	0.06	0.592
HCM Control Delay	10.6	8.8	9.2	13.9
HCM Lane LOS	B	N	A	B
HCM 95th-tile Q	1.9	0	0.2	4

Intersection	
Intersection Delay, s/veh	20.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	141	114	15	229	17	86	117	12	18	347	87
Future Vol, veh/h	36	141	114	15	229	17	86	117	12	18	347	87
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	3	3	3
Mvmt Flow	36	141	114	15	229	17	86	117	12	18	347	87
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17.2	16.7	15	28.5
HCM LOS	C	C	B	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	40%	12%	6%	4%
Vol Thru, %	54%	48%	88%	77%
Vol Right, %	6%	39%	7%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	215	291	261	452
LT Vol	86	36	15	18
Through Vol	117	141	229	347
RT Vol	12	114	17	87
Lane Flow Rate	215	291	261	452
Geometry Grp	1	1	1	1
Degree of Util (X)	0.416	0.535	0.498	0.784
Departure Headway (Hd)	6.967	6.621	6.867	6.246
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	514	541	522	574
Service Time	5.065	4.712	4.961	4.323
HCM Lane V/C Ratio	0.418	0.538	0.5	0.787
HCM Control Delay	15	17.2	16.7	28.5
HCM Lane LOS	B	C	C	D
HCM 95th-tile Q	2	3.1	2.7	7.4

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	98	857	87	203	279
Future Vol, veh/h	55	98	857	87	203	279
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	55	98	857	87	203	279

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1447	472	0	0	944	0
Stage 1	901	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	120	533	-	-	716	-
Stage 1	352	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	86	533	-	-	716	-
Mov Cap-2 Maneuver	207	-	-	-	-	-
Stage 1	352	-	-	-	-	-
Stage 2	386	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.8	0	5.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	207	533	716	-
HCM Lane V/C Ratio	-	-	0.266	0.184	0.284	-
HCM Control Delay (s)	-	-	28.6	13.3	12	-
HCM Lane LOS	-	-	D	B	B	-
HCM 95th %tile Q(veh)	-	-	1	0.7	1.2	-

Intersection	
Int Delay, s/veh	8.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	299	72	94	158	20	64
Future Vol, veh/h	299	72	94	158	20	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	299	72	94	158	20	64

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	277	173	0	0	252	0
Stage 1	173	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.14	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.236	-
Pot Cap-1 Maneuver	711	868	-	-	1302	-
Stage 1	855	-	-	-	-	-
Stage 2	918	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	700	868	-	-	1302	-
Mov Cap-2 Maneuver	700	-	-	-	-	-
Stage 1	855	-	-	-	-	-
Stage 2	903	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	727	1302	-
HCM Lane V/C Ratio	-	-	0.51	0.015	-
HCM Control Delay (s)	-	-	15	7.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.9	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	858	655	25	14	30
Future Vol, veh/h	83	858	655	25	14	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	83	858	655	25	14	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	680	0	-	0	1692	668
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	1024	-
Critical Hdwy	4.16	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.254	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	894	-	-	-	102	456
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	345	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	894	-	-	-	93	456
Mov Cap-2 Maneuver	-	-	-	-	93	-
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	313	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	27.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	894	-	-	-	203
HCM Lane V/C Ratio	0.093	-	-	-	0.217
HCM Control Delay (s)	9.4	-	-	-	27.6
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	0.8

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	2	0	2	0	38	6	1	328	4
Future Vol, veh/h	2	0	1	2	0	2	0	38	6	1	328	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	0	1	2	0	2	0	38	6	1	328	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	374	376	330	374	375	41	332	0	0	44	0	0
Stage 1	332	332	-	41	41	-	-	-	-	-	-	-
Stage 2	42	44	-	333	334	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	581	554	709	581	554	1027	1222	-	-	1558	-	-
Stage 1	679	643	-	971	859	-	-	-	-	-	-	-
Stage 2	970	856	-	679	641	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	579	553	709	580	553	1027	1222	-	-	1558	-	-
Mov Cap-2 Maneuver	579	553	-	580	553	-	-	-	-	-	-	-
Stage 1	679	642	-	971	859	-	-	-	-	-	-	-
Stage 2	968	856	-	677	640	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.9	9.9	0	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1222	-	-	617	741	1558	-	-
HCM Lane V/C Ratio	-	-	-	0.005	0.005	0.001	-	-
HCM Control Delay (s)	0	-	-	10.9	9.9	7.3	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	744	2	7	745	1	5	0	42	2	4	4
Future Vol, veh/h	4	744	2	7	745	1	5	0	42	2	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	90	200	-	-	-	-	200	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	6	3	3	6	3	3	3	3	3	3	3
Mvmt Flow	4	744	2	7	745	1	5	0	42	2	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	746	0	0	744	0	0	1516	1512	744	1512	1512	746
Stage 1	-	-	-	-	-	-	752	752	-	760	760	-
Stage 2	-	-	-	-	-	-	764	760	-	752	752	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	858	-	-	859	-	-	97	119	413	98	119	412
Stage 1	-	-	-	-	-	-	401	416	-	397	413	-
Stage 2	-	-	-	-	-	-	395	413	-	401	416	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	858	-	-	859	-	-	93	117	413	87	117	412
Mov Cap-2 Maneuver	-	-	-	-	-	-	93	117	-	87	117	-
Stage 1	-	-	-	-	-	-	399	414	-	395	410	-
Stage 2	-	-	-	-	-	-	384	410	-	359	414	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	18	30.7
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	93	413	858	-	-	859	-	-	150
HCM Lane V/C Ratio	0.054	0.102	0.005	-	-	0.008	-	-	0.067
HCM Control Delay (s)	45.9	14.7	9.2	-	-	9.2	-	-	30.7
HCM Lane LOS	E	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.2	0.3	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	41	1	3	3	2	11
Future Vol, veh/h	41	1	3	3	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	41	1	3	3	2	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	17	8	13	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	998	1071	1599	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	1011	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	996	1071	1599	-	-	-
Mov Cap-2 Maneuver	996	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	3.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1599	-	998	-	-
HCM Lane V/C Ratio	0.002	-	0.042	-	-
HCM Control Delay (s)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	368	0	0	358	1	6	0	1	1	0	2
Future Vol, veh/h	2	368	0	0	358	1	6	0	1	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	368	0	0	358	1	6	0	1	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	359	0	0	368	0	0	732	731	368	732	731	359
Stage 1	-	-	-	-	-	-	372	372	-	359	359	-
Stage 2	-	-	-	-	-	-	360	359	-	373	372	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1194	-	-	1185	-	-	336	348	675	336	348	683
Stage 1	-	-	-	-	-	-	646	617	-	657	625	-
Stage 2	-	-	-	-	-	-	656	625	-	646	617	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1194	-	-	1185	-	-	335	347	675	335	347	683
Mov Cap-2 Maneuver	-	-	-	-	-	-	449	441	-	449	442	-
Stage 1	-	-	-	-	-	-	645	616	-	656	625	-
Stage 2	-	-	-	-	-	-	654	625	-	644	616	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.7	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	472	1194	-	-	1185	-	-	582
HCM Lane V/C Ratio	0.015	0.002	-	-	-	-	-	0.005
HCM Control Delay (s)	12.7	8	0	-	0	-	-	11.2
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	243	0	0	1	1	443
Future Vol, veh/h	243	0	0	1	1	443
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	243	0	0	1	1	443

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	224	223	444	0	-	0
Stage 1	223	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	762	814	1111	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	762	814	1111	-	-	-
Mov Cap-2 Maneuver	762	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	1020	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1111	-	762	-	-
HCM Lane V/C Ratio	-	-	0.319	-	-
HCM Control Delay (s)	0	-	11.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

Intersection	
Int Delay, s/veh	14.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	525	40	381	659	55	312
Future Vol, veh/h	525	40	381	659	55	312
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	300	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	525	40	381	659	55	312

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	525	0	1946	525
Stage 1	-	-	-	-	525	-
Stage 2	-	-	-	-	1421	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1037	-	71	551
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	222	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1037	-	~ 45	551
Mov Cap-2 Maneuver	-	-	-	-	~ 45	-
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	140	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.8	69.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	45	551	-	-	1037	-
HCM Lane V/C Ratio	1.222	0.566	-	-	0.367	-
HCM Control Delay (s)	$ 350.6	19.7	-	-	10.5	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	5.2	3.5	-	-	1.7	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	44.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	370	2	15	211	635	287
Future Vol, veh/h	370	2	15	211	635	287
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	-	-	90
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	370	2	15	211	635	287

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	876	635	635	0	-	0
Stage 1	635	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	~ 318	477	943	-	-	0
Stage 1	526	-	-	-	-	0
Stage 2	797	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 312	477	943	-	-	-
Mov Cap-2 Maneuver	~ 312	-	-	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	783	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	148.1	0.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	943	-	313	-
HCM Lane V/C Ratio	0.016	-	1.188	-
HCM Control Delay (s)	8.9	0	148.1	-
HCM Lane LOS	A	A	F	-
HCM 95th %tile Q(veh)	0	-	16.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	20

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	559	76	16	330	1	51	5	0	0	92	243
Future Vol, veh/h	68	559	76	16	330	1	51	5	0	0	92	243
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	350	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	8	3	3	8	3
Mvmt Flow	68	559	76	16	330	1	51	5	0	0	92	243

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	331	0	0	635	0	0	1263	1096	597	1099	1134	331
Stage 1	-	-	-	-	-	-	733	733	-	363	363	-
Stage 2	-	-	-	-	-	-	530	363	-	736	771	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.58	6.23	7.13	6.58	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.58	-	6.13	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.58	-	6.13	5.58	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.072	3.327	3.527	4.072	3.327
Pot Cap-1 Maneuver	1223	-	-	943	-	-	146	208	501	189	197	708
Stage 1	-	-	-	-	-	-	411	418	-	654	614	-
Stage 2	-	-	-	-	-	-	531	614	-	409	401	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1223	-	-	943	-	-	55	193	501	175	183	708
Mov Cap-2 Maneuver	-	-	-	-	-	-	55	193	-	175	183	-
Stage 1	-	-	-	-	-	-	388	395	-	618	604	-
Stage 2	-	-	-	-	-	-	291	604	-	381	379	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.4	216.4	47.7
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	59	1223	-	-	943	-	-	396
HCM Lane V/C Ratio	0.949	0.056	-	-	0.017	-	-	0.846
HCM Control Delay (s)	216.4	8.1	-	-	8.9	-	-	47.7
HCM Lane LOS	F	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	4.4	0.2	-	-	0.1	-	-	8

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	159	8	0	236	1	9	46	0	0	92	75
Future Vol, veh/h	11	159	8	0	236	1	9	46	0	0	92	75
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	11	159	8	0	236	1	9	46	0	0	92	75

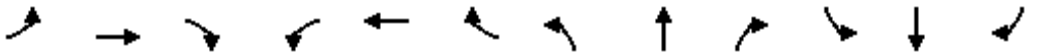
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	237	0	0	-	-	0	505	422	163	445	426	237
Stage 1	-	-	-	-	-	-	185	185	-	237	237	-
Stage 2	-	-	-	-	-	-	320	237	-	208	189	-
Critical Hdwy	4.18	-	-	-	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	-	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1296	-	-	0	-	-	468	514	866	513	511	787
Stage 1	-	-	-	0	-	-	803	736	-	753	698	-
Stage 2	-	-	-	0	-	-	679	698	-	780	733	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1296	-	-	-	-	-	362	509	866	474	506	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	362	509	-	474	506	-
Stage 1	-	-	-	-	-	-	796	729	-	746	698	-
Stage 2	-	-	-	-	-	-	533	698	-	724	726	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	13.5	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	477	1296	-	-	-	-	603
HCM Lane V/C Ratio	0.115	0.008	-	-	-	-	0.277
HCM Control Delay (s)	13.5	7.8	0	-	-	-	13.2
HCM Lane LOS	B	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	-	-	1.1

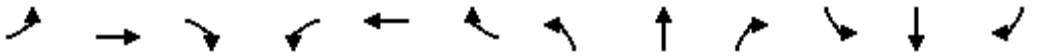
Existing Plus All Projects

AM



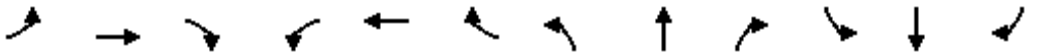
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	644	0	1526	0	0	0	0	1662	522	0	1162	449
Future Volume (vph)	644	0	1526	0	0	0	0	1662	522	0	1162	449
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	644	0	1526	0	0	0	0	1662	522	0	1162	449
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	644	0	1517	0	0	0	0	1662	522	0	1162	449
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	44.0		44.0					28.0	80.0		28.0	80.0
Effective Green, g (s)	44.0		44.0					28.0	80.0		28.0	80.0
Actuated g/C Ratio	0.55		0.55					0.35	1.00		0.35	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1851		1503					1745	1553		1745	1553
v/s Ratio Prot	0.19							c0.33			0.23	
v/s Ratio Perm			c0.56						0.34			0.29
v/c Ratio	0.35		1.01					0.95	0.34		0.67	0.29
Uniform Delay, d1	10.0		18.0					25.4	0.0		22.0	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1		25.5					12.1	0.6		1.0	0.5
Delay (s)	10.1		43.5					37.5	0.6		23.0	0.5
Level of Service	B		D					D	A		C	A
Approach Delay (s)		33.6			0.0			28.7			16.7	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



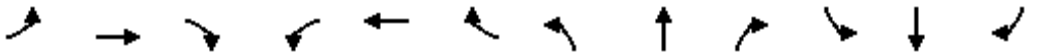
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	472	15	198	1041	880	399	1166	167	1306	1393	95
Future Volume (vph)	136	472	15	198	1041	880	399	1166	167	1306	1393	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3455		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3455		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	136	472	15	198	1041	880	399	1166	167	1306	1393	95
RTOR Reduction (vph)	0	2	0	0	0	645	0	0	92	0	0	56
Lane Group Flow (vph)	136	485	0	198	1041	235	399	1166	75	1306	1393	39
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	4.0	21.3		14.7	32.0	32.0	18.7	26.0	26.0	42.0	49.3	49.3
Effective Green, g (s)	4.0	21.3		14.7	32.0	32.0	18.7	26.0	26.0	42.0	49.3	49.3
Actuated g/C Ratio	0.03	0.18		0.12	0.27	0.27	0.16	0.22	0.22	0.35	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	112	613		412	925	728	524	1080	336	1178	2049	638
v/s Ratio Prot	c0.04	0.14		0.06	c0.30		0.12	c0.23		c0.39	0.28	
v/s Ratio Perm						0.09			0.05			0.03
v/c Ratio	1.21	0.79		0.48	1.13	0.32	0.76	1.08	0.22	1.11	0.68	0.06
Uniform Delay, d1	58.0	47.2		49.1	44.0	35.3	48.5	47.0	38.7	39.0	28.9	21.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	153.6	6.9		0.9	70.4	0.3	6.5	51.5	0.3	61.3	0.9	0.0
Delay (s)	211.6	54.2		50.0	114.4	35.6	55.0	98.5	39.0	100.3	29.8	21.4
Level of Service	F	D		D	F	D	D	F	D	F	C	C
Approach Delay (s)		88.5			75.7			82.8			62.5	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	73.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	284	1367	5	634	27	1263	12	2	20	15	113
Future Volume (vph)	71	284	1367	5	634	27	1263	12	2	20	15	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1793	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1793	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	71	284	1367	5	634	27	1263	12	2	20	15	113
RTOR Reduction (vph)	0	0	210	0	0	21	0	0	1	0	0	105
Lane Group Flow (vph)	71	284	1157	5	634	6	631	644	1	0	35	8
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	28.5	85.5	0.8	24.3	24.3	57.0	57.0	57.0		7.7	7.7
Effective Green, g (s)	5.0	28.5	85.5	0.8	24.3	24.3	57.0	57.0	57.0		7.7	7.7
Actuated g/C Ratio	0.05	0.26	0.78	0.01	0.22	0.22	0.52	0.52	0.52		0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	78	899	1263	12	766	343	838	841	789		125	109
v/s Ratio Prot	c0.04	0.08	c0.47	0.00	0.18		0.39	0.40			c0.02	
v/s Ratio Perm			0.27			0.00			0.00			0.01
v/c Ratio	0.91	0.32	0.92	0.42	0.83	0.02	0.75	0.77	0.00		0.28	0.07
Uniform Delay, d1	52.3	32.9	9.5	54.4	40.9	33.5	20.9	21.2	12.8		48.5	47.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	72.0	0.2	10.4	21.8	7.3	0.0	3.9	4.2	0.0		1.2	0.3
Delay (s)	124.3	33.1	19.9	76.1	48.2	33.5	24.8	25.4	12.8		49.7	48.1
Level of Service	F	C	B	E	D	C	C	C	B		D	D
Approach Delay (s)		26.4			47.8			25.1			48.5	
Approach LOS		C			D			C			D	

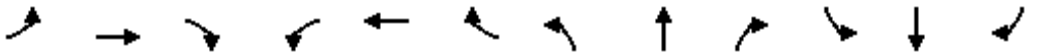
Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	206	32	252	412	55	283	102	291	86	220	34
Future Volume (vph)	26	206	32	252	412	55	283	102	291	86	220	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98	1.00		0.99	
Satd. Flow (prot)	1752	3505	1568	1752	3443		1665	1712	1568		3409	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.98	1.00		0.99	
Satd. Flow (perm)	1752	3505	1568	1752	3443		1665	1712	1568		3409	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	26	206	32	252	412	55	283	102	291	86	220	34
RTOR Reduction (vph)	0	0	26	0	12	0	0	0	234	0	11	0
Lane Group Flow (vph)	26	206	6	252	455	0	190	195	57	0	329	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	1.8	12.0	12.0	11.2	21.4		12.3	12.3	12.3		11.2	
Effective Green, g (s)	1.8	12.0	12.0	11.2	21.4		12.3	12.3	12.3		11.2	
Actuated g/C Ratio	0.03	0.19	0.19	0.18	0.34		0.20	0.20	0.20		0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	50	670	300	312	1175		326	335	307		608	
v/s Ratio Prot	0.01	0.06		c0.14	c0.13		c0.11	0.11			c0.10	
v/s Ratio Perm			0.00						0.04			
v/c Ratio	0.52	0.31	0.02	0.81	0.39		0.58	0.58	0.19		0.54	
Uniform Delay, d1	30.0	21.8	20.6	24.7	15.7		22.9	22.9	21.0		23.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	9.4	0.3	0.0	14.2	0.2		2.6	2.6	0.3		1.0	
Delay (s)	39.4	22.0	20.6	38.9	15.9		25.5	25.4	21.3		24.4	
Level of Service	D	C	C	D	B		C	C	C		C	
Approach Delay (s)		23.6			23.9			23.7			24.4	
Approach LOS		C			C			C			C	

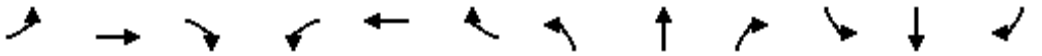
Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



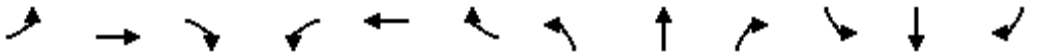
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	346	218	42	684	19	509	48	41	28	144	39
Future Volume (vph)	21	346	218	42	684	19	509	48	41	28	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3231		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3231		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	346	218	42	684	19	509	48	41	28	144	39
RTOR Reduction (vph)	0	0	146	0	0	13	0	32	0	0	0	35
Lane Group Flow (vph)	21	346	72	42	684	6	509	57	0	28	144	4
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	1.4	20.5	20.5	2.1	21.1	21.1	14.4	14.4		6.4	6.4	6.4
Effective Green, g (s)	1.4	20.5	20.5	2.1	21.1	21.1	14.4	14.4		6.4	6.4	6.4
Actuated g/C Ratio	0.02	0.33	0.33	0.03	0.34	0.34	0.23	0.23		0.10	0.10	0.10
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.1	4.1	2.0	2.0		1.0	1.0	1.0
Lane Grp Cap (vph)	39	1155	516	114	1188	531	779	748		180	360	161
v/s Ratio Prot	0.01	0.10		c0.01	c0.20		c0.15	0.02		0.02	c0.04	
v/s Ratio Perm			0.05			0.00						0.00
v/c Ratio	0.54	0.30	0.14	0.37	0.58	0.01	0.65	0.08		0.16	0.40	0.02
Uniform Delay, d1	30.1	15.5	14.7	29.4	16.9	13.6	21.6	18.7		25.4	26.1	25.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.0	0.3	0.3	0.7	0.8	0.0	1.5	0.0		0.1	0.3	0.0
Delay (s)	37.1	15.8	14.9	30.1	17.7	13.6	23.2	18.7		25.6	26.4	25.1
Level of Service	D	B	B	C	B	B	C	B		C	C	C
Approach Delay (s)		16.2			18.3			22.5			26.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	22.9
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



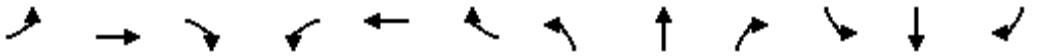
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1308	0	359	0	811	1227	0	353	363
Future Volume (vph)	0	0	0	1308	0	359	0	811	1227	0	353	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.6		4.6		3.5	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3367		2733		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3367		2733		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1308	0	359	0	811	1227	0	353	363
RTOR Reduction (vph)	0	0	0	0	0	68	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1308	0	291	0	811	1227	0	353	363
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				4				6			2	
Permitted Phases						4			Free			Free
Actuated Green, G (s)				19.4		19.4		10.5	38.0		8.9	38.0
Effective Green, g (s)				19.4		19.4		10.5	38.0		8.9	38.0
Actuated g/C Ratio				0.51		0.51		0.28	1.00		0.23	1.00
Clearance Time (s)				4.6		4.6		3.5			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1718		1395		1378	1553		1168	1553
v/s Ratio Prot				0.39				0.16			0.07	
v/s Ratio Perm						0.11			c0.79			0.23
v/c Ratio				0.76		0.21		0.59	0.79		0.30	0.23
Uniform Delay, d1				7.4		5.1		11.9	0.0		12.0	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				1.8		0.0		0.4	4.2		0.1	0.4
Delay (s)				9.3		5.1		12.3	4.2		12.0	0.4
Level of Service				A		A		B	A		B	A
Approach Delay (s)		0.0			8.4			7.4			6.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	38.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	479	0	1505	0	0	0	0	1844	1180	0	1536	121
Future Volume (vph)	479	0	1505	0	0	0	0	1844	1180	0	1536	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	479	0	1505	0	0	0	0	1844	1180	0	1536	121
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	479	0	1494	0	0	0	0	1844	1180	0	1536	121
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	50.6		50.6					37.8	99.9		38.3	99.9
Effective Green, g (s)	50.6		50.6					37.8	99.9		38.3	99.9
Actuated g/C Ratio	0.51		0.51					0.38	1.00		0.38	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1705		1384					1887	1553		1912	1553
v/s Ratio Prot	0.14							c0.37			0.31	
v/s Ratio Perm			c0.55						0.76			0.08
v/c Ratio	0.28		1.08					0.98	0.76		0.80	0.08
Uniform Delay, d1	14.2		24.7					30.6	0.0		27.4	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0		48.6					15.4	3.6		2.4	0.1
Delay (s)	14.2		73.3					46.1	3.6		29.8	0.1
Level of Service	B		E					D	A		C	A
Approach Delay (s)		59.0			0.0			29.5			27.7	
Approach LOS		E			A			C			C	

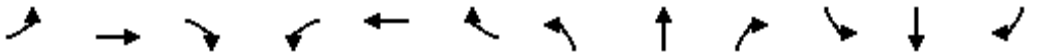
Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	11.5
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	676	13	79	1017	34	3	352	34	114	45	237
Future Volume (vph)	81	676	13	79	1017	34	3	352	34	114	45	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3495		1752	3488		1752	1845	1568	1752	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	3495		1752	3488		1752	1845	1568	1752	1845	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	81	676	13	79	1017	34	3	352	34	114	45	237
RTOR Reduction (vph)	0	2	0	0	4	0	0	0	25	0	0	159
Lane Group Flow (vph)	81	687	0	79	1047	0	3	352	9	114	45	78
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	2.9	19.6		3.2	19.9		0.5	16.1	16.1	3.6	19.2	19.2
Effective Green, g (s)	2.9	19.6		3.2	19.9		0.5	16.1	16.1	3.6	19.2	19.2
Actuated g/C Ratio	0.05	0.34		0.05	0.34		0.01	0.28	0.28	0.06	0.33	0.33
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	86	1170		95	1186		14	507	431	107	605	514
v/s Ratio Prot	c0.05	0.20		0.05	c0.30		0.00	c0.19		c0.07	0.02	
v/s Ratio Perm									0.01			c0.05
v/c Ratio	0.94	0.59		0.83	0.88		0.21	0.69	0.02	1.07	0.07	0.15
Uniform Delay, d1	27.7	16.1		27.4	18.2		28.8	19.0	15.5	27.4	13.5	13.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	77.4	0.8		43.3	8.0		7.6	4.1	0.0	105.7	0.1	0.1
Delay (s)	105.1	16.9		70.7	26.2		36.4	23.1	15.5	133.2	13.6	14.0
Level of Service	F	B		E	C		D	C	B	F	B	B
Approach Delay (s)		26.1			29.3			22.5			48.3	
Approach LOS		C			C			C			D	

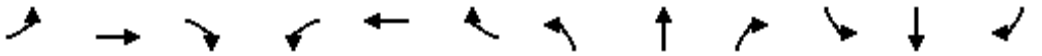
Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



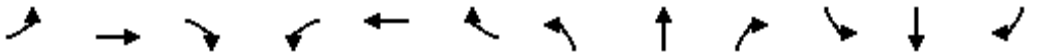
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1162	0	311	0	679	342	0	701	477
Future Volume (vph)	0	0	0	1162	0	311	0	679	342	0	701	477
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.95	1.00		0.95	1.00
Frt				1.00	0.94			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.97			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1578			3471	1553		3471	1553
Flt Permitted				0.95	0.97			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1578			3471	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1162	0	311	0	679	342	0	701	477
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	755	697	0	0	679	342	0	701	477
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Prot	NA			NA	Free		NA	Free
Protected Phases				3	8			2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				30.1	30.1			13.4	52.3		13.4	52.3
Effective Green, g (s)				30.1	30.1			13.4	52.3		13.4	52.3
Actuated g/C Ratio				0.58	0.58			0.26	1.00		0.26	1.00
Clearance Time (s)				4.0	4.9			4.8			4.8	
Vehicle Extension (s)				3.0	1.0			1.0			1.0	
Lane Grp Cap (vph)				949	908			889	1553		889	1553
v/s Ratio Prot				c0.46	0.44			0.20			c0.20	
v/s Ratio Perm									0.22			0.31
v/c Ratio				0.80	0.77			0.76	0.22		0.79	0.31
Uniform Delay, d1				8.7	8.4			18.0	0.0		18.1	0.0
Progression Factor				1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2				4.7	3.6			3.5	0.3		4.3	0.5
Delay (s)				13.4	12.0			21.5	0.3		22.5	0.5
Level of Service				B	B			C	A		C	A
Approach Delay (s)		0.0			12.7			14.4			13.6	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	52.3	Sum of lost time (s)	9.7
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



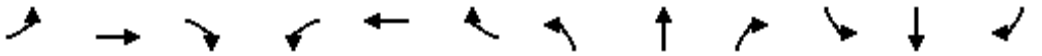
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	276	0	850	0	0	0	0	796	716	0	1626	189
Future Volume (vph)	276	0	850	0	0	0	0	796	716	0	1626	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.95	1.00
Frt	1.00	0.86	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1424	1475					4988	1553		3471	1553
Flt Permitted	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1424	1475					4988	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	276	0	850	0	0	0	0	796	716	0	1626	189
RTOR Reduction (vph)	0	18	18	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	248	427	415	0	0	0	0	796	716	0	1626	189
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA	Perm					NA	Free		NA	Free
Protected Phases	7	4						2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	26.1	26.1	25.0					35.6	70.6		35.7	70.6
Effective Green, g (s)	26.1	26.1	25.0					35.6	70.6		35.7	70.6
Actuated g/C Ratio	0.37	0.37	0.35					0.50	1.00		0.51	1.00
Clearance Time (s)	4.0	5.1	5.1					4.9			4.8	
Vehicle Extension (s)	3.0	1.0	1.0					1.0			1.0	
Lane Grp Cap (vph)	609	526	522					2515	1553		1755	1553
v/s Ratio Prot	0.15	c0.30						0.16			c0.47	
v/s Ratio Perm			0.28						0.46			0.12
v/c Ratio	0.41	0.81	0.79					0.32	0.46		0.93	0.12
Uniform Delay, d1	16.5	20.0	20.5					10.3	0.0		16.2	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	8.8	7.6					0.0	1.0		8.8	0.2
Delay (s)	17.0	28.9	28.1					10.3	1.0		25.0	0.2
Level of Service	B	C	C					B	A		C	A
Approach Delay (s)		26.0			0.0			5.9			22.4	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



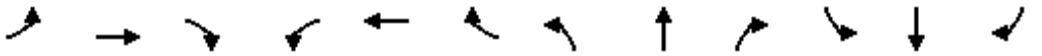
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	777	47	658	25	63	161	545	482	13	105	1229	1151
Future Volume (vph)	777	47	658	25	63	161	545	482	13	105	1229	1151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3		5.5	5.5	4.7	4.6		4.4	4.8	4.8
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1649	1662	1553		1819	1568	1736	4968		1736	4988	1553
Flt Permitted	0.95	0.96	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1649	1662	1553		1819	1568	1736	4968		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	777	47	658	25	63	161	545	482	13	105	1229	1151
RTOR Reduction (vph)	0	0	274	0	0	155	0	2	0	0	0	459
Lane Group Flow (vph)	412	412	384	0	88	6	545	493	0	105	1229	692
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8			4						2
Actuated Green, G (s)	25.9	25.9	25.9		3.5	3.5	19.3	42.5		8.1	30.8	30.8
Effective Green, g (s)	25.9	25.9	25.9		3.5	3.5	19.3	42.5		8.1	30.8	30.8
Actuated g/C Ratio	0.26	0.26	0.26		0.04	0.04	0.19	0.43		0.08	0.31	0.31
Clearance Time (s)	5.3	5.3	5.3		5.5	5.5	4.7	4.6		4.4	4.8	4.8
Vehicle Extension (s)	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lane Grp Cap (vph)	427	431	403		63	54	335	2115		140	1539	479
v/s Ratio Prot	c0.25	0.25			c0.05		c0.31	0.10		0.06	0.25	
v/s Ratio Perm			0.25			0.00						c0.45
v/c Ratio	0.96	0.96	0.95		1.40	0.10	1.63	0.23		0.75	0.80	1.44
Uniform Delay, d1	36.5	36.4	36.4		48.1	46.6	40.2	18.3		44.9	31.7	34.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	34.1	31.7	32.5		250.3	0.3	295.4	0.0		18.0	2.8	211.6
Delay (s)	70.6	68.1	68.8		298.5	46.9	335.7	18.3		62.8	34.4	246.1
Level of Service	E	E	E		F	D	F	B		E	C	F
Approach Delay (s)		69.1			135.8			184.6			133.7	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	125.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	99.8	Sum of lost time (s)	20.3
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



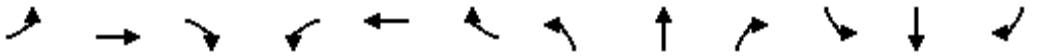
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1034	0	122	0	862	627	0	867	250
Future Volume (vph)	0	0	0	1034	0	122	0	862	627	0	867	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.95	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		3505	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1034	0	122	0	862	627	0	867	250
RTOR Reduction (vph)	0	0	0	0	0	35	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1034	0	87	0	862	627	0	867	250
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				15.5		15.5		13.7	40.6		13.7	40.6
Effective Green, g (s)				15.5		15.5		13.7	40.6		13.7	40.6
Actuated g/C Ratio				0.38		0.38		0.34	1.00		0.34	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1298		598		1699	1568		1182	1568
v/s Ratio Prot								0.17			c0.25	
v/s Ratio Perm				c0.30		0.06			0.40			0.16
v/c Ratio				0.80		0.15		0.51	0.40		0.73	0.16
Uniform Delay, d1				11.1		8.2		10.8	0.0		11.8	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				3.3		0.0		0.1	0.8		2.1	0.2
Delay (s)				14.4		8.3		10.8	0.8		13.9	0.2
Level of Service				B		A		B	A		B	A
Approach Delay (s)		0.0			13.8			6.6			10.8	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	40.6	Sum of lost time (s)	11.4
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



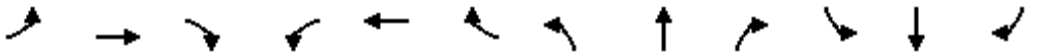
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	360	932	1195	0	0	146	0	1569	9	0	1740	173
Future Volume (vph)	360	932	1195	0	0	146	0	1569	9	0	1740	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		0.86			0.95	1.00
Frt	1.00	0.95	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	3002	1427			2733		6340			3505	1568
Flt Permitted	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (perm)	1595	3002	1427			2733		6340			3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	360	932	1195	0	0	146	0	1569	9	0	1740	173
RTOR Reduction (vph)	0	3	30	0	0	143	0	1	0	0	0	55
Lane Group Flow (vph)	324	1491	639	0	0	3	0	1577	0	0	1740	118
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA			NA	Perm
Protected Phases	4	4				1		2			6	
Permitted Phases			4									6
Actuated Green, G (s)	46.0	46.0	46.0			2.0		40.0			46.0	46.0
Effective Green, g (s)	46.0	46.0	46.0			2.0		40.0			46.0	46.0
Actuated g/C Ratio	0.46	0.46	0.46			0.02		0.40			0.46	0.46
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	733	1380	656			54		2536			1612	721
v/s Ratio Prot	0.20	c0.50				0.00		0.25			c0.50	
v/s Ratio Perm			0.45									0.08
v/c Ratio	0.44	1.08	0.97			0.05		0.62			1.08	0.16
Uniform Delay, d1	18.3	27.0	26.4			48.1		24.0			27.0	15.8
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	1.00
Incremental Delay, d2	0.4	49.0	28.6			0.4		0.5			47.2	0.1
Delay (s)	18.7	76.0	55.0			48.5		24.4			74.2	15.9
Level of Service	B	E	E			D		C			E	B
Approach Delay (s)		62.9			48.5			24.4			68.9	
Approach LOS		E			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	54.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



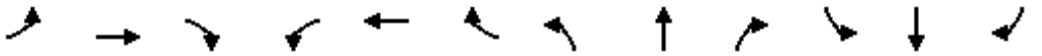
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	355	0	252	0	2154	221	0	1874	1856
Future Volume (vph)	0	0	0	355	0	252	0	2154	221	0	1874	1856
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	355	0	252	0	2154	221	0	1874	1856
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	355	0	206	0	2154	221	0	1874	1856
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				6			2	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				6.5		6.5		20.3	35.1		20.0	35.1
Effective Green, g (s)				6.5		6.5		20.3	35.1		20.0	35.1
Actuated g/C Ratio				0.19		0.19		0.58	1.00		0.57	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				611		496		2884	1553		2842	1553
v/s Ratio Prot				0.11				0.43			0.38	
v/s Ratio Perm						0.08			0.14			c1.20
v/c Ratio				0.58		0.41		0.75	0.14		0.66	1.20
Uniform Delay, d1				13.1		12.6		5.5	0.0		5.2	17.6
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.9		0.2		0.9	0.2		0.4	94.4
Delay (s)				14.0		12.8		6.4	0.2		5.6	112.0
Level of Service				B		B		A	A		A	F
Approach Delay (s)		0.0			13.5			5.9			58.5	
Approach LOS		A			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.58		
Actuated Cycle Length (s)	35.1	Sum of lost time (s)	8.6
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



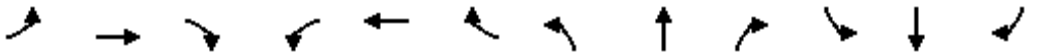
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1310	0	434	0	0	0	0	1072	535	0	2056	172
Future Volume (vph)	1310	0	434	0	0	0	0	1072	535	0	2056	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1310	0	434	0	0	0	0	1072	535	0	2056	172
RTOR Reduction (vph)	0	0	16	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1310	0	418	0	0	0	0	1072	535	0	2056	172
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	7				8			6			2	
Permitted Phases			4	8					Free			Free
Actuated Green, G (s)	23.1		23.6					34.1	66.0		33.8	66.0
Effective Green, g (s)	23.1		23.6					34.1	66.0		33.8	66.0
Actuated g/C Ratio	0.35		0.36					0.52	1.00		0.51	1.00
Clearance Time (s)	4.0		3.5					4.8			5.1	
Vehicle Extension (s)	3.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1712		977					3247	1553		2554	1553
v/s Ratio Prot	c0.27							0.17			c0.41	
v/s Ratio Perm			0.15						0.34			0.11
v/c Ratio	0.77		0.43					0.33	0.34		0.81	0.11
Uniform Delay, d1	19.0		16.1					9.3	0.0		13.4	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	2.1		0.1					0.0	0.6		1.8	0.1
Delay (s)	21.1		16.2					9.3	0.6		15.2	0.1
Level of Service	C		B					A	A		B	A
Approach Delay (s)		19.9			0.0			6.4			14.0	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	13.1
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



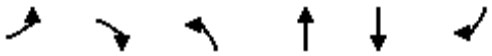
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	724	131	7	0	182	15	8	30	5	7	6	257
Future Volume (vph)	724	131	7	0	182	15	8	30	5	7	6	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Frt	1.00	1.00	0.85		0.99			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (prot)	1703	1792	1524		1789			1799			1779	1553
Flt Permitted	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (perm)	1703	1792	1524		1789			1799			1779	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	724	131	7	0	182	15	8	30	5	7	6	257
RTOR Reduction (vph)	0	0	2	0	3	0	0	4	0	0	0	114
Lane Group Flow (vph)	724	131	5	0	194	0	0	39	0	0	13	143
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	49.7	68.2	68.2		13.9			2.9			0.9	50.6
Effective Green, g (s)	49.7	68.2	68.2		13.9			2.9			0.9	50.6
Actuated g/C Ratio	0.54	0.75	0.75		0.15			0.03			0.01	0.55
Clearance Time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0		1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	928	1340	1139		272			57			17	861
v/s Ratio Prot	c0.43	0.07			c0.11			c0.02			c0.01	0.09
v/s Ratio Perm			0.00									0.00
v/c Ratio	0.78	0.10	0.00		0.71			0.69			0.76	0.17
Uniform Delay, d1	16.4	3.1	2.9		36.8			43.7			45.0	10.0
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	4.0	0.0	0.0		7.2			23.9			99.4	0.0
Delay (s)	20.4	3.1	2.9		44.0			67.6			144.4	10.0
Level of Service	C	A	A		D			E			F	A
Approach Delay (s)		17.6			44.0			67.6			16.5	
Approach LOS		B			D			E			B	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	91.2	Sum of lost time (s)	24.7
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



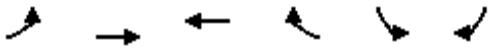
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	228	55	156	380	336	827	0	0	3095	151
Future Volume (vph)	0	0	228	55	156	380	336	827	0	0	3095	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1769	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1769	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	228	55	156	380	336	827	0	0	3095	151
RTOR Reduction (vph)	0	0	162	0	0	321	0	0	0	0	0	40
Lane Group Flow (vph)	0	0	66	0	211	59	336	827	0	0	3095	111
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			17.3		19.8	19.8	17.3	96.6			74.4	74.4
Effective Green, g (s)			17.3		19.8	19.8	17.3	96.6			74.4	74.4
Actuated g/C Ratio			0.14		0.16	0.16	0.14	0.76			0.58	0.58
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Vehicle Extension (s)			3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			216		274	416	447	3704			3595	888
v/s Ratio Prot			0.04		c0.12		c0.10	0.17			c0.50	
v/s Ratio Perm						0.02						0.07
v/c Ratio			0.31		0.77	0.14	0.75	0.22			0.86	0.12
Uniform Delay, d1			49.7		51.7	46.6	53.1	4.5			22.3	12.0
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			0.8		12.5	0.2	7.0	0.0			2.3	0.1
Delay (s)			50.6		64.2	46.7	60.1	4.6			24.6	12.0
Level of Service			D		E	D	E	A			C	B
Approach Delay (s)		50.6			53.0			20.6			24.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	127.6	Sum of lost time (s)	16.1
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



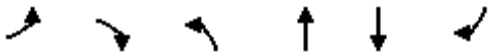
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	977	171	0	0	1085	599
Future Volume (vph)	977	171	0	0	1085	599
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			4.7	4.0
Lane Util. Factor	0.97	0.91			0.95	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00
Satd. Flow (prot)	3306	1386			3406	1524
Flt Permitted	0.95	1.00			1.00	1.00
Satd. Flow (perm)	3306	1386			3406	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	977	171	0	0	1085	599
RTOR Reduction (vph)	3	21	0	0	0	0
Lane Group Flow (vph)	991	133	0	0	1085	599
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%
Turn Type	Prot	Perm			NA	Free
Protected Phases	4				2	
Permitted Phases		4				Free
Actuated Green, G (s)	13.5	13.5			14.1	35.8
Effective Green, g (s)	13.5	13.5			14.1	35.8
Actuated g/C Ratio	0.38	0.38			0.39	1.00
Clearance Time (s)	3.5	3.5			4.7	
Vehicle Extension (s)	1.5	1.5			1.0	
Lane Grp Cap (vph)	1246	522			1341	1524
v/s Ratio Prot	c0.30				c0.32	
v/s Ratio Perm		0.10				0.39
v/c Ratio	0.80	0.25			0.81	0.39
Uniform Delay, d1	9.9	7.7			9.7	0.0
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	3.4	0.1			3.5	0.8
Delay (s)	13.3	7.8			13.2	0.8
Level of Service	B	A			B	A
Approach Delay (s)	12.5			0.0	8.7	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	35.8	Sum of lost time (s)	8.2
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



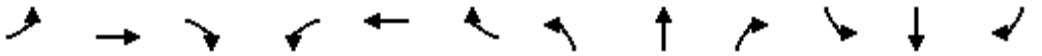
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	293	219	475	106	37	159
Future Volume (vph)	293	219	475	106	37	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	3343	3343	1495	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1671	3343	3343	1495	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	293	219	475	106	37	159
RTOR Reduction (vph)	0	0	0	77	0	134
Lane Group Flow (vph)	293	219	475	29	37	25
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	12.5	28.3	11.8	11.8	6.9	6.9
Effective Green, g (s)	12.5	28.3	11.8	11.8	6.9	6.9
Actuated g/C Ratio	0.29	0.66	0.27	0.27	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	483	2189	913	408	279	250
v/s Ratio Prot	c0.18	0.07	c0.14		c0.02	
v/s Ratio Perm				0.02		0.02
v/c Ratio	0.61	0.10	0.52	0.07	0.13	0.10
Uniform Delay, d1	13.2	2.7	13.3	11.6	15.6	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.0	0.5	0.1	0.2	0.2
Delay (s)	15.4	2.8	13.8	11.7	15.8	15.7
Level of Service	B	A	B	B	B	B
Approach Delay (s)		10.0	13.5		15.7	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	3	20	506	424	215
Future Volume (vph)	13	3	20	506	424	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3367	1553	1719	3438	3343	1495
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3367	1553	1719	3438	3343	1495
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	13	3	20	506	424	215
RTOR Reduction (vph)	0	3	0	0	0	179
Lane Group Flow (vph)	13	0	20	506	424	36
Heavy Vehicles (%)	4%	4%	5%	5%	8%	8%
Turn Type	Prot	Perm	Prot	NA	NA	Over
Protected Phases	4		5	2	6	4
Permitted Phases		4				
Actuated Green, G (s)	5.4	5.4	0.6	19.1	14.5	5.4
Effective Green, g (s)	5.4	5.4	0.6	19.1	14.5	5.4
Actuated g/C Ratio	0.17	0.17	0.02	0.59	0.45	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	559	258	31	2020	1491	248
v/s Ratio Prot	0.00		0.01	c0.15	0.13	c0.02
v/s Ratio Perm		0.00				
v/c Ratio	0.02	0.00	0.65	0.25	0.28	0.14
Uniform Delay, d1	11.3	11.3	15.8	3.2	5.7	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	37.9	0.1	0.1	0.3
Delay (s)	11.4	11.3	53.7	3.3	5.8	11.8
Level of Service	B	B	D	A	A	B
Approach Delay (s)	11.3			5.2	7.8	
Approach LOS	B			A	A	

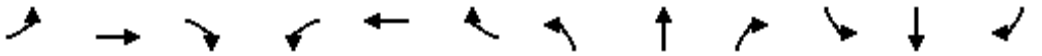
Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	32.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	455	0	661	0	0	0	0	2740	521	0	1790	1584
Future Volume (vph)	455	0	661	0	0	0	0	2740	521	0	1790	1584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.95	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4540	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4540	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	455	0	661	0	0	0	0	2740	521	0	1790	1584
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	0	0	132	0
Lane Group Flow (vph)	455	0	637	0	0	0	0	2740	521	0	2450	792
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	15.8		15.8					36.0	59.8		36.0	59.8
Effective Green, g (s)	15.8		15.8					36.0	59.8		36.0	59.8
Actuated g/C Ratio	0.26		0.26					0.60	1.00		0.60	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	898		729					3820	1568		2733	1348
v/s Ratio Prot	0.13							0.43			c0.54	
v/s Ratio Perm			c0.23						0.33			0.59
v/c Ratio	0.51		0.87					0.72	0.33		0.90	0.59
Uniform Delay, d1	18.7		21.0					8.3	0.0		10.3	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.5		11.3					0.7	0.6		4.3	1.9
Delay (s)	19.1		32.3					9.0	0.6		14.6	1.9
Level of Service	B		C					A	A		B	A
Approach Delay (s)		26.9			0.0			7.6			11.6	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	438	0	1136	0	2071	1120	0	3373	1268
Future Volume (vph)	0	0	0	438	0	1136	0	2071	1120	0	3373	1268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		0.98	0.85		0.98	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4643	1348		5872	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4643	1348		5872	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	438	0	1136	0	2071	1120	0	3373	1268
RTOR Reduction (vph)	0	0	0	0	0	22	0	20	0	0	17	0
Lane Group Flow (vph)	0	0	0	438	0	1114	0	2454	717	0	3800	824
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				38.0		38.0		84.0	130.0		84.0	130.0
Effective Green, g (s)				38.0		38.0		84.0	130.0		84.0	130.0
Actuated g/C Ratio				0.29		0.29		0.65	1.00		0.65	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Vehicle Extension (s)				3.0		3.0		3.0			3.0	
Lane Grp Cap (vph)				993		1045		3000	1348		3794	1270
v/s Ratio Prot				0.13				0.53			c0.65	
v/s Ratio Perm						c0.31			0.53			0.65
v/c Ratio				0.44		1.07		0.82	0.53		1.00	0.65
Uniform Delay, d1				37.4		46.0		17.3	0.0		23.0	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.3		47.2		1.8	1.5		15.0	2.6
Delay (s)				37.7		93.2		19.1	1.5		38.0	2.6
Level of Service				D		F		B	A		D	A
Approach Delay (s)		0.0			77.8			15.1			31.7	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

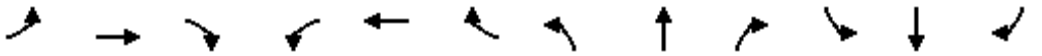
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	570	535	334	709	358	306
Future Volume (vph)	570	535	334	709	358	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	570	535	334	709	358	306
RTOR Reduction (vph)	0	388	0	0	0	238
Lane Group Flow (vph)	570	147	334	709	358	68
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	14.8	14.8	15.1	33.9	12.0	12.0
Effective Green, g (s)	14.8	14.8	15.1	33.9	12.0	12.0
Actuated g/C Ratio	0.27	0.27	0.28	0.63	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	866	387	441	1983	681	314
v/s Ratio Prot	c0.18		c0.21	0.22	c0.12	
v/s Ratio Perm		0.10				0.05
v/c Ratio	0.66	0.38	0.76	0.36	0.53	0.22
Uniform Delay, d1	17.3	15.8	17.7	4.8	18.4	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.6	7.3	0.1	0.7	0.3
Delay (s)	19.1	16.5	25.0	4.9	19.2	17.5
Level of Service	B	B	C	A	B	B
Approach Delay (s)	17.8			11.3	18.4	
Approach LOS	B			B	B	

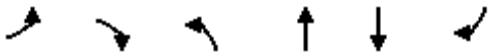
Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	53.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	481	0	1	225	33	1	1	0	45	2	455
Future Volume (vph)	219	481	0	1	225	33	1	1	0	45	2	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.98			1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (prot)	1736	3471		1736	3405			1800		1665	1676	1568
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (perm)	1736	3471		1736	3405			1800		1665	1676	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	219	481	0	1	225	33	1	1	0	45	2	455
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	378
Lane Group Flow (vph)	219	481	0	1	243	0	0	2	0	23	24	77
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	10.8	22.4		0.5	12.1			0.8		8.1	8.1	8.1
Effective Green, g (s)	10.8	22.4		0.5	12.1			0.8		8.1	8.1	8.1
Actuated g/C Ratio	0.23	0.47		0.01	0.25			0.02		0.17	0.17	0.17
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	392	1626		18	861			30		282	284	265
v/s Ratio Prot	c0.13	c0.14		0.00	0.07			c0.00		0.01	0.01	
v/s Ratio Perm												c0.05
v/c Ratio	0.56	0.30		0.06	0.28			0.07		0.08	0.08	0.29
Uniform Delay, d1	16.4	7.8		23.4	14.4			23.1		16.7	16.7	17.3
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.1		1.3	0.2			0.9		0.1	0.1	0.6
Delay (s)	18.1	7.9		24.7	14.5			24.1		16.8	16.9	18.0
Level of Service	B	A		C	B			C		B	B	B
Approach Delay (s)		11.1			14.6			24.1			17.8	
Approach LOS		B			B			C			B	

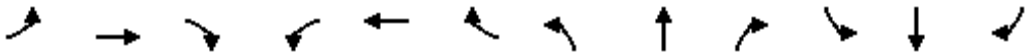
Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	392	27	21	881	655	98
Future Volume (vph)	392	27	21	881	655	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.99		1.00	1.00	0.98	
Flt Protected	0.96		0.95	1.00	1.00	
Satd. Flow (prot)	1747		1752	1845	1812	
Flt Permitted	0.96		0.95	1.00	1.00	
Satd. Flow (perm)	1747		1752	1845	1812	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	392	27	21	881	655	98
RTOR Reduction (vph)	4	0	0	0	8	0
Lane Group Flow (vph)	415	0	21	881	745	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	16.5		0.7	35.1	30.4	
Effective Green, g (s)	16.5		0.7	35.1	30.4	
Actuated g/C Ratio	0.28		0.01	0.59	0.51	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	483		20	1086	924	
v/s Ratio Prot	c0.24		0.01	c0.48	0.41	
v/s Ratio Perm						
v/c Ratio	0.86		1.05	0.81	0.81	
Uniform Delay, d1	20.5		29.4	9.6	12.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	14.5		217.8	4.7	5.2	
Delay (s)	34.9		247.2	14.3	17.4	
Level of Service	C		F	B	B	
Approach Delay (s)	34.9			19.8	17.4	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

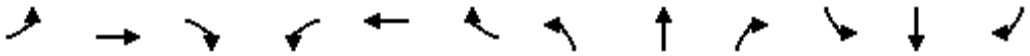
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	13	42	107	8	68	20	1384	49	45	547	30
Future Volume (vph)	178	13	42	107	8	68	20	1384	49	45	547	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1752	1845	1568	1752	3487		1752	3478	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1568	1752	1845	1568	1752	3487		1752	3478	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	178	13	42	107	8	68	20	1384	49	45	547	30
RTOR Reduction (vph)	0	0	39	0	0	64	0	3	0	0	4	0
Lane Group Flow (vph)	178	13	3	107	8	4	20	1430	0	45	573	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	9.2	5.6	5.6	7.5	3.9	3.9	1.1	36.3		2.1	37.3	
Effective Green, g (s)	9.2	5.6	5.6	7.5	3.9	3.9	1.1	36.3		2.1	37.3	
Actuated g/C Ratio	0.14	0.08	0.08	0.11	0.06	0.06	0.02	0.54		0.03	0.55	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	238	153	130	194	106	90	28	1875		54	1921	
v/s Ratio Prot	c0.10	c0.01		0.06	0.00		0.01	c0.41		c0.03	0.16	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.75	0.08	0.03	0.55	0.08	0.04	0.71	0.76		0.83	0.30	
Uniform Delay, d1	28.0	28.6	28.4	28.4	30.1	30.0	33.0	12.2		32.5	8.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.1	0.2	0.1	3.4	0.3	0.2	60.5	1.9		65.0	0.1	
Delay (s)	40.1	28.8	28.5	31.8	30.4	30.2	93.6	14.1		97.5	8.2	
Level of Service	D	C	C	C	C	C	F	B		F	A	
Approach Delay (s)		37.4			31.1			15.2			14.6	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	67.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	3	41	0	4	33	15	1108	0	60	631	65
Future Volume (vph)	47	3	41	0	4	33	15	1108	0	60	631	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1568		1845	1568	1752	3505		1752	3456	
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1568		1845	1568	1752	3505		1752	3456	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	47	3	41	0	4	33	15	1108	0	60	631	65
RTOR Reduction (vph)	0	0	35	0	0	32	0	0	0	0	8	0
Lane Group Flow (vph)	47	3	6	0	4	1	15	1108	0	60	688	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	1.0	6.9	6.9		1.9	1.9	0.5	26.6		2.2	28.3	
Effective Green, g (s)	1.0	6.9	6.9		1.9	1.9	0.5	26.6		2.2	28.3	
Actuated g/C Ratio	0.02	0.14	0.14		0.04	0.04	0.01	0.56		0.05	0.59	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	36	266	226		73	62	18	1954		80	2050	
v/s Ratio Prot	c0.03	0.00			0.00		0.01	c0.32		c0.03	0.20	
v/s Ratio Perm			c0.00			0.00						
v/c Ratio	1.31	0.01	0.03		0.05	0.02	0.83	0.57		0.75	0.34	
Uniform Delay, d1	23.4	17.5	17.5		22.0	22.0	23.6	6.8		22.5	4.9	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	253.4	0.0	0.0		0.3	0.1	131.9	0.4		32.0	0.1	
Delay (s)	276.8	17.5	17.6		22.4	22.1	155.5	7.2		54.5	5.0	
Level of Service	F	B	B		C	C	F	A		D	A	
Approach Delay (s)		151.4			22.2			9.2			9.0	
Approach LOS		F			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

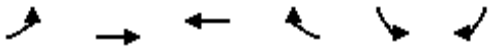
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	635	23	33	552	99	124
Future Volume (vph)	635	23	33	552	99	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3486		1752	3505	1752	1568
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3486		1752	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	635	23	33	552	99	124
RTOR Reduction (vph)	4	0	0	0	0	102
Lane Group Flow (vph)	654	0	33	552	99	22
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	16.9		0.6	21.5	6.2	6.2
Effective Green, g (s)	16.9		0.6	21.5	6.2	6.2
Actuated g/C Ratio	0.47		0.02	0.60	0.17	0.17
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1650		29	2110	304	272
v/s Ratio Prot	c0.19		c0.02	0.16	c0.06	
v/s Ratio Perm						0.01
v/c Ratio	0.40		1.14	0.26	0.33	0.08
Uniform Delay, d1	6.1		17.6	3.4	12.9	12.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		212.0	0.1	0.6	0.1
Delay (s)	6.3		229.5	3.4	13.5	12.5
Level of Service	A		F	A	B	B
Approach Delay (s)	6.3			16.2	13.0	
Approach LOS	A			B	B	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	35.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	264	511	423	432	161	77
Future Volume (vph)	264	511	423	432	161	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1845	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1845	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	264	511	423	432	161	77
RTOR Reduction (vph)	0	0	0	314	0	60
Lane Group Flow (vph)	264	511	423	118	161	17
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	10.3	26.3	12.0	12.0	9.5	9.5
Effective Green, g (s)	10.3	26.3	12.0	12.0	9.5	9.5
Actuated g/C Ratio	0.24	0.60	0.27	0.27	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	412	1107	960	429	380	340
v/s Ratio Prot	c0.15	c0.28	0.12		c0.09	
v/s Ratio Perm				0.08		0.01
v/c Ratio	0.64	0.46	0.44	0.28	0.42	0.05
Uniform Delay, d1	15.1	4.8	13.1	12.5	14.8	13.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.3	0.3	0.4	0.8	0.1
Delay (s)	18.5	5.1	13.5	12.8	15.6	13.6
Level of Service	B	A	B	B	B	B
Approach Delay (s)		9.7	13.1		14.9	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	43.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

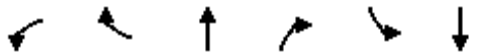
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2435	24	19	2049	105	58
Future Volume (vph)	2435	24	19	2049	105	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3500		1752	3505	1752	1568
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3500		1752	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2435	24	19	2049	105	58
RTOR Reduction (vph)	1	0	0	0	0	48
Lane Group Flow (vph)	2458	0	19	2049	105	10
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	69.3		1.1	74.4	10.7	10.7
Effective Green, g (s)	69.3		1.1	74.4	10.7	10.7
Actuated g/C Ratio	0.74		0.01	0.80	0.11	0.11
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2605		20	2800	201	180
v/s Ratio Prot	c0.70		0.01	c0.58	c0.06	
v/s Ratio Perm						0.01
v/c Ratio	0.94		0.95	0.73	0.52	0.06
Uniform Delay, d1	10.2		46.0	4.5	38.8	36.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0		175.6	1.0	2.4	0.1
Delay (s)	18.2		221.6	5.5	41.2	36.8
Level of Service	B		F	A	D	D
Approach Delay (s)	18.2			7.5	39.7	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

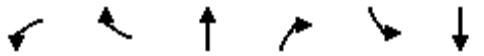
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	70	1297	37	54	1038
Future Volume (vph)	49	70	1297	37	54	1038
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		0.97	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	3490		3400	3505
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	3490		3400	3505
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	49	70	1297	37	54	1038
RTOR Reduction (vph)	0	64	2	0	0	0
Lane Group Flow (vph)	49	6	1332	0	54	1038
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	4.4	4.4	32.5		1.1	37.6
Effective Green, g (s)	4.4	4.4	32.5		1.1	37.6
Actuated g/C Ratio	0.09	0.09	0.65		0.02	0.75
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	154	137	2268		74	2635
v/s Ratio Prot	c0.03		c0.38		0.02	c0.30
v/s Ratio Perm		0.00				
v/c Ratio	0.32	0.04	0.59		0.73	0.39
Uniform Delay, d1	21.4	20.9	5.0		24.3	2.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.1	0.4		29.9	0.4
Delay (s)	22.6	21.0	5.3		54.2	2.6
Level of Service	C	C	A		D	A
Approach Delay (s)	21.7		5.3			5.2
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	50	0	2335	102	0	1492
Future Volume (vph)	50	0	2335	102	0	1492
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.91			0.95
Frt	1.00		0.99			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	1752		5004			3505
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	1752		5004			3505
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	0	2335	102	0	1492
RTOR Reduction (vph)	0	0	3	0	0	0
Lane Group Flow (vph)	50	0	2434	0	0	1492
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	3.1		45.7			45.7
Effective Green, g (s)	3.1		45.7			45.7
Actuated g/C Ratio	0.05		0.80			0.80
Clearance Time (s)	4.0		4.0			4.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	95		4026			2820
v/s Ratio Prot	c0.03		c0.49			0.43
v/s Ratio Perm						
v/c Ratio	0.53		0.60			0.53
Uniform Delay, d1	26.1		2.1			1.9
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	5.2		0.3			0.2
Delay (s)	31.3		2.4			2.1
Level of Service	C		A			A
Approach Delay (s)	31.3		2.4			2.1
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	2.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

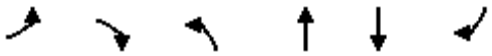
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	186	342	1781	370	865	255
Future Volume (vph)	186	342	1781	370	865	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	4906		1752	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	4906		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	186	342	1781	370	865	255
RTOR Reduction (vph)	0	265	32	0	0	0
Lane Group Flow (vph)	186	77	2119	0	865	255
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3				
Actuated Green, G (s)	8.0	8.0	39.0		41.0	84.0
Effective Green, g (s)	8.0	8.0	39.0		41.0	84.0
Actuated g/C Ratio	0.08	0.08	0.39		0.41	0.84
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	140	125	1913		718	4230
v/s Ratio Prot	c0.11		c0.43		c0.49	0.05
v/s Ratio Perm		0.05				
v/c Ratio	1.33	0.62	1.11		1.20	0.06
Uniform Delay, d1	46.0	44.5	30.5		29.5	1.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	188.6	8.7	56.8		105.1	0.0
Delay (s)	234.6	53.2	87.3		134.6	1.4
Level of Service	F	D	F		F	A
Approach Delay (s)	117.1		87.3			104.2
Approach LOS	F		F			F

Intersection Summary			
HCM 2000 Control Delay	96.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		

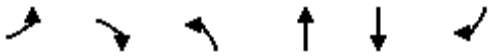
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	141	63	63	1735	240	82
Future Volume (vph)	141	63	63	1735	240	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	0.96	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	5036	4844	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	5036	4844	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	141	63	63	1735	240	82
RTOR Reduction (vph)	0	52	0	0	41	0
Lane Group Flow (vph)	141	11	63	1735	281	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	7.1	7.1	1.8	26.8	21.0	
Effective Green, g (s)	7.1	7.1	1.8	26.8	21.0	
Actuated g/C Ratio	0.17	0.17	0.04	0.64	0.50	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	296	265	75	3221	2427	
v/s Ratio Prot	c0.08		0.04	c0.34	0.06	
v/s Ratio Perm		0.01				
v/c Ratio	0.48	0.04	0.84	0.54	0.12	
Uniform Delay, d1	15.7	14.6	19.9	4.2	5.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.1	52.9	0.2	0.0	
Delay (s)	16.9	14.6	72.8	4.3	5.6	
Level of Service	B	B	E	A	A	
Approach Delay (s)	16.2			6.7	5.6	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	41.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

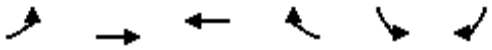
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	109	128	384	784	498	369
Future Volume (vph)	109	128	384	784	498	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.94	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3281	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3281	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	109	128	384	784	498	369
RTOR Reduction (vph)	0	110	0	0	211	0
Lane Group Flow (vph)	109	18	384	784	656	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	6.8	6.8	14.9	34.0	15.1	
Effective Green, g (s)	6.8	6.8	14.9	34.0	15.1	
Actuated g/C Ratio	0.14	0.14	0.31	0.70	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	244	218	534	2442	1015	
v/s Ratio Prot	c0.06		c0.22	0.22	c0.20	
v/s Ratio Perm		0.01				
v/c Ratio	0.45	0.08	0.72	0.32	0.65	
Uniform Delay, d1	19.3	18.3	15.1	2.9	14.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.2	4.6	0.1	1.4	
Delay (s)	20.6	18.4	19.7	3.0	16.0	
Level of Service	C	B	B	A	B	
Approach Delay (s)	19.4			8.5	16.0	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

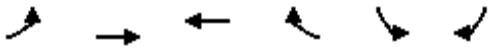
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	357	470	310	100	7	0
Future Volume (vph)	357	470	310	100	7	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1752	1845	1845	1568	1752	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1752	1845	1845	1568	1752	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	357	470	310	100	7	0
RTOR Reduction (vph)	0	0	0	72	0	0
Lane Group Flow (vph)	357	470	310	28	7	0
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	13.9	30.2	12.3	12.3	5.8	
Effective Green, g (s)	13.9	30.2	12.3	12.3	5.8	
Actuated g/C Ratio	0.32	0.69	0.28	0.28	0.13	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	553	1266	515	438	230	
v/s Ratio Prot	c0.20	0.25	c0.17		c0.00	
v/s Ratio Perm				0.02		
v/c Ratio	0.65	0.37	0.60	0.06	0.03	
Uniform Delay, d1	12.9	2.9	13.7	11.6	16.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	0.2	2.0	0.1	0.1	
Delay (s)	15.5	3.1	15.7	11.7	16.7	
Level of Service	B	A	B	B	B	
Approach Delay (s)		8.5	14.7		16.7	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	44.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

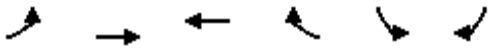
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	801	1052	1727	102	37	391
Future Volume (vph)	801	1052	1727	102	37	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	4994		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	4994		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	801	1052	1727	102	37	391
RTOR Reduction (vph)	0	0	7	0	0	343
Lane Group Flow (vph)	801	1052	1822	0	37	48
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	20.2	54.4	30.2		8.8	8.8
Effective Green, g (s)	20.2	54.4	30.2		8.8	8.8
Actuated g/C Ratio	0.28	0.76	0.42		0.12	0.12
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	964	2677	2118		216	193
v/s Ratio Prot	c0.24	0.30	c0.36		0.02	
v/s Ratio Perm						c0.03
v/c Ratio	0.83	0.39	0.86		0.17	0.25
Uniform Delay, d1	23.9	2.8	18.6		27.9	28.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.2	0.1	3.8		0.4	0.7
Delay (s)	30.1	2.9	22.4		28.3	28.9
Level of Service	C	A	C		C	C
Approach Delay (s)		14.7	22.4		28.9	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

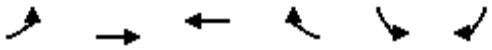
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	140	683	1606	40	47	149
Future Volume (vph)	140	683	1606	40	47	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	3505	3505	1568	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	3505	3505	1568	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	140	683	1606	40	47	149
RTOR Reduction (vph)	0	0	0	16	0	129
Lane Group Flow (vph)	140	683	1606	24	47	20
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.1	37.3	30.2	30.2	5.5	5.5
Effective Green, g (s)	3.1	37.3	30.2	30.2	5.5	5.5
Actuated g/C Ratio	0.06	0.73	0.59	0.59	0.11	0.11
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	2573	2083	932	368	169
v/s Ratio Prot	c0.04	0.19	c0.46		c0.01	
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.68	0.27	0.77	0.03	0.13	0.12
Uniform Delay, d1	23.4	2.2	7.7	4.2	20.5	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.4	0.1	1.8	0.0	0.2	0.3
Delay (s)	31.8	2.3	9.5	4.3	20.6	20.8
Level of Service	C	A	A	A	C	C
Approach Delay (s)		7.3	9.4		20.7	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	105	652	1350	9	29	211
Future Volume (vph)	105	652	1350	9	29	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3501		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3501		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	105	652	1350	9	29	211
RTOR Reduction (vph)	0	0	0	0	0	181
Lane Group Flow (vph)	105	652	1359	0	29	30
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	4.7	35.6	26.9		7.1	7.1
Effective Green, g (s)	4.7	35.6	26.9		7.1	7.1
Actuated g/C Ratio	0.09	0.70	0.53		0.14	0.14
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	162	2461	1857		245	219
v/s Ratio Prot	c0.06	0.19	c0.39		0.02	
v/s Ratio Perm						c0.02
v/c Ratio	0.65	0.26	0.73		0.12	0.13
Uniform Delay, d1	22.2	2.8	9.1		19.1	19.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	8.6	0.1	1.5		0.2	0.3
Delay (s)	30.8	2.8	10.6		19.3	19.4
Level of Service	C	A	B		B	B
Approach Delay (s)		6.7	10.6		19.4	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	50.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	562	161	243	767	187	370
Future Volume (vph)	562	161	243	767	187	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	3400	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	562	161	243	767	187	370
RTOR Reduction (vph)	0	109	0	0	0	209
Lane Group Flow (vph)	562	52	243	767	187	161
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	11.4	11.4	3.1	18.5	9.0	9.0
Effective Green, g (s)	11.4	11.4	3.1	18.5	9.0	9.0
Actuated g/C Ratio	0.32	0.32	0.09	0.52	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1125	503	296	1826	861	397
v/s Ratio Prot	0.16		c0.07	c0.22	0.06	
v/s Ratio Perm		0.03				c0.10
v/c Ratio	0.50	0.10	0.82	0.42	0.22	0.41
Uniform Delay, d1	9.7	8.5	15.9	5.2	10.5	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	16.5	0.2	0.1	0.7
Delay (s)	10.1	8.5	32.4	5.4	10.6	11.7
Level of Service	B	A	C	A	B	B
Approach Delay (s)	9.8			11.9	11.3	
Approach LOS	A			B	B	

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	35.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	932	0	215	1010	0	60
Future Volume (vph)	932	0	215	1010	0	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.95		1.00	0.95		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	3505		1752	3505		1568
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	3505		1752	3505		1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	932	0	215	1010	0	60
RTOR Reduction (vph)	0	0	0	0	0	56
Lane Group Flow (vph)	932	0	215	1010	0	4
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	21.1		10.3	35.4		3.0
Effective Green, g (s)	21.1		10.3	35.4		3.0
Actuated g/C Ratio	0.45		0.22	0.76		0.06
Clearance Time (s)	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1593		388	2674		101
v/s Ratio Prot	c0.27		c0.12	0.29		
v/s Ratio Perm						c0.00
v/c Ratio	0.59		0.55	0.38		0.04
Uniform Delay, d1	9.4		16.0	1.8		20.3
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.6		1.7	0.1		0.2
Delay (s)	10.0		17.7	1.9		20.5
Level of Service	A		B	A		C
Approach Delay (s)	10.0			4.7	20.5	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	0	223	311	478	552	0	1372	980	0	1550	278
Future Volume (veh/h)	96	0	223	311	478	552	0	1372	980	0	1550	278
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1827	1827	1827	0	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	96	0	223	311	754	368	0	1372	0	0	1550	278
Adj No. of Lanes	0	1	2	2	2	1	0	3	1	0	4	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	0	4	4	0	4	4
Cap, veh/h	225	0	354	977	1025	436	0	1861	580	0	2346	580
Arrive On Green	0.13	0.00	0.13	0.28	0.28	0.28	0.00	0.37	0.00	0.00	0.37	0.37
Sat Flow, veh/h	1757	0	2760	3480	3654	1553	0	5152	1553	0	6540	1553
Grp Volume(v), veh/h	96	0	223	311	754	368	0	1372	0	0	1550	278
Grp Sat Flow(s),veh/h/ln	1757	0	1380	1740	1827	1553	0	1663	1553	0	1571	1553
Q Serve(g_s), s	2.8	0.0	4.2	3.9	10.3	12.3	0.0	13.1	0.0	0.0	11.3	7.5
Cycle Q Clear(g_c), s	2.8	0.0	4.2	3.9	10.3	12.3	0.0	13.1	0.0	0.0	11.3	7.5
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	225	0	354	977	1025	436	0	1861	580	0	2346	580
V/C Ratio(X)	0.43	0.00	0.63	0.32	0.74	0.84	0.00	0.74	0.00	0.00	0.66	0.48
Avail Cap(c_a), veh/h	510	0	802	1011	1062	451	0	1902	592	0	2397	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	0.0	22.8	15.6	18.0	18.7	0.0	14.9	0.0	0.0	14.4	13.2
Incr Delay (d2), s/veh	1.3	0.0	1.9	0.2	2.6	13.4	0.0	1.5	0.0	0.0	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	1.7	1.9	5.5	6.8	0.0	6.2	0.0	0.0	5.0	3.3
LnGrp Delay(d),s/veh	23.4	0.0	24.6	15.8	20.6	32.0	0.0	16.4	0.0	0.0	15.0	13.8
LnGrp LOS	C		C	B	C	C		B			B	B
Approach Vol, veh/h		319			1433			1372			1828	
Approach Delay, s/veh		24.3			22.5			16.4			14.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		24.6		11.1		24.6		19.5
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		21.0		16.0		21.0		16.0
Max Q Clear Time (g_c+I1), s		15.1		6.2		13.3		14.3
Green Ext Time (p_c), s		5.5		0.9		7.0		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	355	31	142	10	84	26	152	1470	19	16	812	131
Future Volume (veh/h)	355	31	142	10	84	26	152	1470	19	16	812	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	377	0	142	10	84	26	152	1470	19	16	812	131
Adj No. of Lanes	2	0	1	0	1	0	2	3	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	611	0	273	13	112	35	252	1982	26	28	1152	515
Arrive On Green	0.17	0.00	0.17	0.09	0.09	0.09	0.07	0.39	0.39	0.02	0.33	0.33
Sat Flow, veh/h	3514	0	1568	146	1227	380	3375	5075	66	1740	3471	1553
Grp Volume(v), veh/h	377	0	142	120	0	0	152	963	526	16	812	131
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1753	0	0	1688	1663	1815	1740	1736	1553
Q Serve(g_s), s	4.8	0.0	4.0	3.3	0.0	0.0	2.1	12.1	12.1	0.4	9.9	3.0
Cycle Q Clear(g_c), s	4.8	0.0	4.0	3.3	0.0	0.0	2.1	12.1	12.1	0.4	9.9	3.0
Prop In Lane	1.00		1.00	0.08		0.22	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	611	0	273	160	0	0	252	1298	709	28	1152	515
V/C Ratio(X)	0.62	0.00	0.52	0.75	0.00	0.00	0.60	0.74	0.74	0.58	0.71	0.25
Avail Cap(c_a), veh/h	1154	0	515	576	0	0	347	1570	857	143	1568	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	0.0	18.3	21.6	0.0	0.0	21.8	12.7	12.7	23.8	14.2	11.9
Incr Delay (d2), s/veh	1.0	0.0	1.5	7.0	0.0	0.0	2.3	1.5	2.8	17.4	0.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	1.9	1.9	0.0	0.0	1.1	5.8	6.5	0.3	4.9	1.3
LnGrp Delay(d),s/veh	19.6	0.0	19.8	28.6	0.0	0.0	24.1	14.3	15.5	41.2	15.1	12.1
LnGrp LOS	B		B	C			C	B	B	D	B	B
Approach Vol, veh/h		519			120			1641			959	
Approach Delay, s/veh		19.7			28.6			15.6			15.1	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.8	23.0		12.5	7.6	20.2		8.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0	5.0	22.0		16.0
Max Q Clear Time (g_c+I1), s	2.4	14.1		6.8	4.1	11.9		5.3
Green Ext Time (p_c), s	0.8	4.9		1.6	0.0	3.5		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	16.6
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	726	37	67	632	425	100	1120	148	248	469	68
Future Volume (veh/h)	216	726	37	67	632	425	100	1120	148	248	469	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	216	726	37	67	632	425	100	1120	148	248	469	68
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	242	981	50	85	701	314	163	1157	153	295	1437	643
Arrive On Green	0.14	0.29	0.29	0.05	0.20	0.20	0.05	0.38	0.38	0.09	0.41	0.41
Sat Flow, veh/h	1757	3394	173	1757	3505	1568	3375	3084	407	3375	3471	1553
Grp Volume(v), veh/h	216	375	388	67	632	425	100	629	639	248	469	68
Grp Sat Flow(s),veh/h/ln	1757	1752	1814	1757	1752	1568	1688	1736	1755	1688	1736	1553
Q Serve(g_s), s	9.7	15.5	15.5	3.0	14.1	16.0	2.3	28.4	28.6	5.8	7.3	2.1
Cycle Q Clear(g_c), s	9.7	15.5	15.5	3.0	14.1	16.0	2.3	28.4	28.6	5.8	7.3	2.1
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	242	506	524	85	701	314	163	651	658	295	1437	643
V/C Ratio(X)	0.89	0.74	0.74	0.79	0.90	1.36	0.61	0.97	0.97	0.84	0.33	0.11
Avail Cap(c_a), veh/h	242	506	524	110	701	314	211	651	658	295	1437	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	25.7	25.7	37.6	31.2	32.0	37.3	24.5	24.6	35.9	15.9	14.4
Incr Delay (d2), s/veh	31.6	5.7	5.6	24.0	14.9	179.4	3.7	27.1	27.7	18.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	8.3	8.6	2.0	8.2	22.5	1.2	18.4	18.9	3.5	3.5	0.9
LnGrp Delay(d),s/veh	65.5	31.4	31.3	61.7	46.1	211.4	41.0	51.7	52.3	54.9	16.0	14.4
LnGrp LOS	E	C	C	E	D	F	D	D	D	D	B	B
Approach Vol, veh/h		979			1124			1368			785	
Approach Delay, s/veh		38.9			109.5			51.2			28.2	
Approach LOS		D			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	34.0	7.9	27.1	7.9	37.1	15.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	30.0	5.0	22.0	5.0	32.0	11.0	16.0
Max Q Clear Time (g_c+I1), s	7.8	30.6	5.0	17.5	4.3	9.3	11.7	18.0
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.0	9.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1279	136	190	1628	88	14	536	111	58	474	2
Future Volume (veh/h)	10	1279	136	190	1628	88	14	536	111	58	474	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	10	1279	136	190	1628	88	14	536	111	58	474	2
Adj No. of Lanes	1	1	2	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	16	1111	1663	159	2315	124	21	537	240	47	602	3
Arrive On Green	0.01	0.62	0.62	0.09	0.70	0.70	0.01	0.15	0.15	0.03	0.17	0.17
Sat Flow, veh/h	1707	1792	2682	1707	3287	177	1757	3505	1568	1757	3579	15
Grp Volume(v), veh/h	10	1279	136	190	839	877	14	536	111	58	232	244
Grp Sat Flow(s),veh/h/ln	1707	1792	1341	1707	1703	1761	1757	1752	1568	1757	1752	1842
Q Serve(g_s), s	0.9	93.0	3.0	14.0	43.1	44.0	1.2	22.9	9.7	4.0	19.0	19.0
Cycle Q Clear(g_c), s	0.9	93.0	3.0	14.0	43.1	44.0	1.2	22.9	9.7	4.0	19.0	19.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	16	1111	1663	159	1199	1240	21	537	240	47	295	310
V/C Ratio(X)	0.64	1.15	0.08	1.19	0.70	0.71	0.68	1.00	0.46	1.24	0.79	0.79
Avail Cap(c_a), veh/h	46	1111	1663	159	1199	1240	47	537	240	47	295	310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.1	28.5	11.4	68.0	12.9	13.1	73.8	63.5	57.9	73.0	59.8	59.8
Incr Delay (d2), s/veh	36.9	78.6	0.0	132.4	1.8	1.9	32.1	38.1	1.4	209.4	13.2	12.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	69.9	1.1	12.5	20.7	21.8	0.8	13.9	4.3	4.7	10.3	10.8
LnGrp Delay(d),s/veh	111.0	107.1	11.4	200.4	14.8	14.9	106.0	101.6	59.2	282.4	73.0	72.5
LnGrp LOS	F	F	B	F	B	B	F	F	E	F	E	E
Approach Vol, veh/h		1425			1906			661			534	
Approach Delay, s/veh		98.0			33.3			94.6			95.5	
Approach LOS		F			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	27.0	18.0	97.0	5.8	29.2	5.4	109.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	23.0	14.0	93.0	4.0	23.0	4.0	103.0
Max Q Clear Time (g_c+I1), s	6.0	24.9	16.0	95.0	3.2	21.0	2.9	46.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.1	0.0	39.5

Intersection Summary	
HCM 2010 Ctrl Delay	70.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	778	165	151	768	62	370	377	284	7	316	65
Future Volume (veh/h)	81	778	165	151	768	62	370	377	284	7	316	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	81	778	165	151	768	62	370	377	284	7	316	65
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	103	903	404	183	996	80	416	1374	615	13	570	255
Arrive On Green	0.06	0.26	0.26	0.10	0.30	0.30	0.24	0.39	0.39	0.01	0.16	0.16
Sat Flow, veh/h	1757	3505	1568	1757	3285	265	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	81	778	165	151	410	420	370	377	284	7	316	65
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1798	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	3.1	14.2	5.9	5.6	14.2	14.3	13.7	4.9	9.0	0.3	5.6	2.4
Cycle Q Clear(g_c), s	3.1	14.2	5.9	5.6	14.2	14.3	13.7	4.9	9.0	0.3	5.6	2.4
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	103	903	404	183	531	545	416	1374	615	13	570	255
V/C Ratio(X)	0.79	0.86	0.41	0.82	0.77	0.77	0.89	0.27	0.46	0.55	0.55	0.25
Avail Cap(c_a), veh/h	131	941	421	183	531	545	445	1568	702	105	889	398
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	23.8	20.7	29.4	21.2	21.2	24.7	13.9	15.1	33.2	25.8	24.5
Incr Delay (d2), s/veh	21.1	8.0	0.7	25.1	6.8	6.7	18.6	0.1	0.5	31.7	0.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.8	2.6	4.0	7.8	8.0	8.7	2.4	3.9	0.2	2.7	1.1
LnGrp Delay(d),s/veh	52.3	31.8	21.3	54.5	28.1	27.9	43.3	14.0	15.7	64.8	26.7	25.0
LnGrp LOS	D	C	C	D	C	C	D	B	B	E	C	C
Approach Vol, veh/h		1024			981			1031			388	
Approach Delay, s/veh		31.7			32.1			25.0			27.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.5	30.3	11.0	21.3	19.9	14.9	7.9	24.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	30.0	7.0	18.0	17.0	17.0	5.0	20.0
Max Q Clear Time (g_c+I1), s	2.3	11.0	7.6	16.2	15.7	7.6	5.1	16.3
Green Ext Time (p_c), s	0.0	4.6	0.0	1.1	0.2	3.3	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	29.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	508	108	47	445	94	132	787	150	0	248	108
Future Volume (veh/h)	237	508	108	47	445	94	132	787	150	0	248	108
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	237	508	108	47	445	94	132	787	150	0	248	108
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	290	1254	561	69	812	363	149	1223	547	4	628	281
Arrive On Green	0.16	0.36	0.36	0.04	0.23	0.23	0.08	0.35	0.35	0.00	0.18	0.18
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	237	508	108	47	445	94	132	787	150	0	248	108
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	6.1	5.1	2.2	1.2	5.3	2.3	3.5	8.9	3.2	0.0	2.9	2.9
Cycle Q Clear(g_c), s	6.1	5.1	2.2	1.2	5.3	2.3	3.5	8.9	3.2	0.0	2.9	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	1254	561	69	812	363	149	1223	547	4	628	281
V/C Ratio(X)	0.82	0.41	0.19	0.69	0.55	0.26	0.89	0.64	0.27	0.00	0.39	0.38
Avail Cap(c_a), veh/h	298	1412	632	186	1189	532	149	1223	547	149	1189	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	11.4	10.4	22.4	15.9	14.8	21.4	12.9	11.1	0.0	17.1	17.1
Incr Delay (d2), s/veh	15.9	0.2	0.2	11.5	0.6	0.4	42.2	1.2	0.3	0.0	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	2.5	1.0	0.8	2.6	1.0	3.4	4.5	1.4	0.0	1.4	1.3
LnGrp Delay(d),s/veh	34.9	11.6	10.6	33.9	16.5	15.2	63.6	14.1	11.3	0.0	17.5	17.9
LnGrp LOS	C	B	B	C	B	B	E	B	B		B	B
Approach Vol, veh/h		853			586			1069			356	
Approach Delay, s/veh		17.9			17.7			19.8			17.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	20.5	5.8	20.9	8.0	12.5	11.8	14.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	5.0	19.0	4.0	16.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	0.0	10.9	3.2	7.1	5.5	4.9	8.1	7.3
Green Ext Time (p_c), s	0.0	2.8	0.0	4.4	0.0	3.5	0.0	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	18.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	336	379	117	220	383	440	95	2486	290	561	2004	498
Future Volume (veh/h)	336	379	117	220	383	440	95	2486	290	561	2004	498
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	336	379	117	220	383	440	95	2486	290	561	2004	498
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	313	760	340	254	699	547	129	2254	702	505	2810	875
Arrive On Green	0.09	0.22	0.22	0.07	0.20	0.20	0.04	0.45	0.45	0.15	0.56	0.56
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	336	379	117	220	383	440	95	2486	290	561	2004	498
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	17.5	18.1	12.0	12.2	18.7	38.0	5.3	86.1	24.0	28.5	55.9	39.3
Cycle Q Clear(g_c), s	17.5	18.1	12.0	12.2	18.7	38.0	5.3	86.1	24.0	28.5	55.9	39.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	760	340	254	699	547	129	2254	702	505	2810	875
V/C Ratio(X)	1.07	0.50	0.34	0.87	0.55	0.80	0.74	1.10	0.41	1.11	0.71	0.57
Avail Cap(c_a), veh/h	313	760	340	277	699	547	179	2254	702	505	2810	875
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	86.5	65.5	63.1	87.2	68.5	56.1	90.7	52.2	35.2	81.0	30.4	26.7
Incr Delay (d2), s/veh	71.7	0.2	0.2	20.9	0.5	7.9	5.1	53.7	0.1	74.0	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	8.8	5.2	6.5	9.1	22.1	2.6	50.6	10.3	18.4	25.8	16.9
LnGrp Delay(d),s/veh	158.2	65.7	63.4	108.1	69.1	64.0	95.8	105.9	35.3	155.0	31.1	27.3
LnGrp LOS	F	E	E	F	E	E	F	F	D	F	C	C
Approach Vol, veh/h		832			1043			2871			3063	
Approach Delay, s/veh		102.7			75.2			98.4			53.2	
Approach LOS		F			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	112.1	23.0	42.6	34.0	90.9	19.7	45.9
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	10.1	104.3	17.5	* 38	28.5	* 86	15.5	39.7
Max Q Clear Time (g_c+I1), s	7.3	57.9	19.5	40.0	30.5	88.1	14.2	20.1
Green Ext Time (p_c), s	0.0	18.5	0.0	0.0	0.0	0.0	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	78.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	2	44	0	58	0	2716	103	30	2238	6
Future Volume (veh/h)	10	0	2	44	0	58	0	2716	103	30	2238	6
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	10	0	2	44	0	58	0	2716	103	30	2238	6
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	13	0	3	80	0	143	2	3211	1000	35	3761	10
Arrive On Green	0.01	0.00	0.01	0.05	0.00	0.05	0.00	0.64	0.64	0.02	0.73	0.73
Sat Flow, veh/h	1435	0	287	1757	0	3136	1740	4988	1553	1740	5136	14
Grp Volume(v), veh/h	12	0	0	44	0	58	0	2716	103	30	1449	795
Grp Sat Flow(s),veh/h/ln	1722	0	0	1757	0	1568	1740	1663	1553	1740	1663	1824
Q Serve(g_s), s	0.5	0.0	0.0	1.8	0.0	1.3	0.0	31.9	1.9	1.3	15.5	15.5
Cycle Q Clear(g_c), s	0.5	0.0	0.0	1.8	0.0	1.3	0.0	31.9	1.9	1.3	15.5	15.5
Prop In Lane	0.83		0.17	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	15	0	0	80	0	143	2	3211	1000	35	2435	1336
V/C Ratio(X)	0.79	0.00	0.00	0.55	0.00	0.41	0.00	0.85	0.10	0.85	0.60	0.60
Avail Cap(c_a), veh/h	69	0	0	281	0	502	70	3397	1058	70	2435	1336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	0.0	0.0	35.0	0.0	34.8	0.0	10.4	5.1	36.6	4.8	4.8
Incr Delay (d2), s/veh	27.3	0.0	0.0	2.2	0.0	0.7	0.0	2.6	0.1	17.8	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.9	0.0	0.6	0.0	15.1	0.8	0.8	7.1	8.1
LnGrp Delay(d),s/veh	64.4	0.0	0.0	37.2	0.0	35.5	0.0	13.1	5.2	54.4	5.6	6.3
LnGrp LOS	E			D		D		B	A	D	A	A
Approach Vol, veh/h		12			102			2819			2274	
Approach Delay, s/veh		64.4			36.2			12.8			6.5	
Approach LOS		E			D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	59.9		6.2	6.6	53.3		8.9
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 3	51.4		3.0	* 3	* 51		12.0
Max Q Clear Time (g_c+I1), s	0.0	17.5		2.5	3.3	33.9		3.8
Green Ext Time (p_c), s	0.0	33.8		0.0	0.0	14.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	142	23	148	179	777	34	2115	149	553	1610	65
Future Volume (veh/h)	37	142	23	148	179	777	34	2115	149	553	1610	65
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	37	142	23	148	179	777	34	2115	149	553	1610	65
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	64	735	329	192	872	390	60	2103	147	484	2792	113
Arrive On Green	0.02	0.21	0.21	0.06	0.25	0.25	0.02	0.44	0.44	0.14	0.57	0.57
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4760	333	3375	4918	199
Grp Volume(v), veh/h	37	142	23	148	179	777	34	1473	791	553	1088	587
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1768	1688	1663	1792
Q Serve(g_s), s	1.6	5.0	1.8	6.4	6.1	37.3	1.5	66.2	66.2	21.5	31.5	31.5
Cycle Q Clear(g_c), s	1.6	5.0	1.8	6.4	6.1	37.3	1.5	66.2	66.2	21.5	31.5	31.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.11
Lane Grp Cap(c), veh/h	64	735	329	192	872	390	60	1469	781	484	1887	1017
V/C Ratio(X)	0.58	0.19	0.07	0.77	0.21	1.99	0.57	1.00	1.01	1.14	0.58	0.58
Avail Cap(c_a), veh/h	70	735	329	225	872	390	97	1469	781	484	1887	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.9	48.5	47.3	69.8	44.5	56.3	73.0	41.8	41.8	64.2	20.8	20.8
Incr Delay (d2), s/veh	5.0	0.0	0.0	10.6	0.0	455.0	3.1	24.1	35.4	86.0	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.4	0.8	3.3	2.9	65.4	0.7	35.1	39.8	15.7	14.4	15.8
LnGrp Delay(d),s/veh	77.9	48.6	47.3	80.4	44.6	511.2	76.2	66.0	77.2	150.2	21.1	21.4
LnGrp LOS	E	D	D	F	D	F	E	F	F	F	C	C
Approach Vol, veh/h		202			1104			2298			2228	
Approach Delay, s/veh		53.8			377.8			70.0			53.2	
Approach LOS		D			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	90.4	8.4	43.0	27.0	71.5	13.9	37.4
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	4.3	83.3	3.1	* 37	21.5	* 66	9.9	* 31
Max Q Clear Time (g_c+I1), s	3.5	33.5	3.6	39.3	23.5	68.2	8.4	7.0
Green Ext Time (p_c), s	0.0	8.6	0.0	0.0	0.0	0.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	121.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	46	103	2126	24	61	1770
Future Volume (veh/h)	46	103	2126	24	61	1770
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	46	103	2126	24	61	1770
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	161	144	2729	31	74	2369
Arrive On Green	0.09	0.09	0.54	0.54	0.04	0.68
Sat Flow, veh/h	1757	1568	5249	57	1740	3563
Grp Volume(v), veh/h	46	103	1390	760	61	1770
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1817	1740	1736
Q Serve(g_s), s	1.1	2.9	15.2	15.2	1.6	15.1
Cycle Q Clear(g_c), s	1.1	2.9	15.2	15.2	1.6	15.1
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	161	144	1785	975	74	2369
V/C Ratio(X)	0.29	0.72	0.78	0.78	0.83	0.75
Avail Cap(c_a), veh/h	212	189	2364	1292	271	3367
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.3	20.1	8.4	8.4	21.6	4.7
Incr Delay (d2), s/veh	0.4	4.9	0.8	1.6	8.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.5	7.0	7.8	0.9	7.0
LnGrp Delay(d),s/veh	19.7	25.1	9.2	10.0	30.0	5.0
LnGrp LOS	B	C	A	A	C	A
Approach Vol, veh/h	149		2150			1831
Approach Delay, s/veh	23.4		9.5			5.8
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		35.9			6.6	29.3		9.7
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		44.2			* 7.1	32.4		5.5
Max Q Clear Time (g_c+I1), s		17.1			3.6	17.2		4.9
Green Ext Time (p_c), s		8.9			0.0	7.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1322	106	283	1410	1114	407	1062	55	938	766	111
Future Volume (veh/h)	60	1322	106	283	1410	1114	407	1062	55	938	766	111
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	60	1322	106	283	1410	1114	407	1062	55	938	766	111
Adj No. of Lanes	1	1	0	2	2	1	2	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	35	687	55	125	1498	670	450	745	333	329	935	418
Arrive On Green	0.02	0.42	0.42	0.04	0.44	0.44	0.13	0.21	0.21	0.19	0.27	0.27
Sat Flow, veh/h	1707	1638	131	3312	3406	1524	3375	3471	1553	1740	3471	1553
Grp Volume(v), veh/h	60	0	1428	283	1410	1114	407	1062	55	938	766	111
Grp Sat Flow(s),veh/h/ln	1707	0	1769	1656	1703	1524	1688	1736	1553	1740	1736	1553
Q Serve(g_s), s	3.0	0.0	60.9	5.5	57.5	63.9	17.3	31.2	4.2	27.5	30.1	8.2
Cycle Q Clear(g_c), s	3.0	0.0	60.9	5.5	57.5	63.9	17.3	31.2	4.2	27.5	30.1	8.2
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	35	0	742	125	1498	670	450	745	333	329	935	418
V/C Ratio(X)	1.70	0.00	1.93	2.26	0.94	1.66	0.91	1.42	0.16	2.85	0.82	0.27
Avail Cap(c_a), veh/h	35	0	742	125	1498	670	469	745	333	329	935	418
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.1	0.0	42.2	69.9	38.9	40.7	62.1	57.1	46.4	58.9	49.8	41.8
Incr Delay (d2), s/veh	411.2	0.0	421.5	590.6	11.9	304.8	19.8	199.0	0.1	840.1	5.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	116.5	12.8	29.5	83.6	9.3	35.5	1.8	90.0	15.1	3.5
LnGrp Delay(d),s/veh	482.3	0.0	463.7	660.5	50.8	345.5	81.8	256.0	46.5	899.0	55.2	41.9
LnGrp LOS	F		F	F	D	F	F	F	D	F	E	D
Approach Vol, veh/h		1488			2807			1524			1815	
Approach Delay, s/veh		464.5			229.2			201.9			490.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	69.3	24.1	43.9	11.0	66.3	32.0	36.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.5	4.8
Max Green Setting (Gmax), s	3.0	* 64	* 20	38.3	5.5	* 61	27.5	31.2
Max Q Clear Time (g_c+I1), s	5.0	65.9	19.3	32.1	7.5	62.9	29.5	33.2
Green Ext Time (p_c), s	0.0	0.0	0.1	2.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	331.7
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	738	43	60	439	249	134	803	52	160	688	247
Future Volume (veh/h)	161	738	43	60	439	249	134	803	52	160	688	247
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1828	1900	1845	1827	1827
Adj Flow Rate, veh/h	161	738	43	60	439	249	134	803	52	160	688	247
Adj No. of Lanes	1	1	1	1	2	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	3	4	4
Cap, veh/h	192	733	623	77	711	400	163	842	54	174	926	414
Arrive On Green	0.11	0.40	0.40	0.04	0.33	0.33	0.09	0.25	0.25	0.10	0.27	0.27
Sat Flow, veh/h	1757	1845	1568	1757	2164	1218	1740	3312	214	1757	3471	1553
Grp Volume(v), veh/h	161	738	43	60	355	333	134	421	434	160	688	247
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1752	1630	1740	1737	1790	1757	1736	1553
Q Serve(g_s), s	9.0	39.7	1.7	3.4	17.0	17.3	7.6	23.9	23.9	9.0	18.1	13.9
Cycle Q Clear(g_c), s	9.0	39.7	1.7	3.4	17.0	17.3	7.6	23.9	23.9	9.0	18.1	13.9
Prop In Lane	1.00		1.00	1.00		0.75	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	192	733	623	77	576	535	163	441	455	174	926	414
V/C Ratio(X)	0.84	1.01	0.07	0.78	0.62	0.62	0.82	0.95	0.95	0.92	0.74	0.60
Avail Cap(c_a), veh/h	283	733	623	77	576	535	190	441	455	174	926	414
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	30.1	18.7	47.3	28.3	28.3	44.5	36.7	36.7	44.6	33.5	32.0
Incr Delay (d2), s/veh	9.0	35.1	0.0	36.2	1.5	1.7	19.1	31.0	30.5	45.0	2.9	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	27.3	0.7	2.4	8.5	8.0	4.5	15.3	15.7	6.6	9.1	6.1
LnGrp Delay(d),s/veh	52.6	65.2	18.7	83.5	29.7	30.0	63.6	67.7	67.2	89.6	36.4	33.6
LnGrp LOS	D	F	B	F	C	C	E	E	E	F	D	C
Approach Vol, veh/h		942			748			989			1095	
Approach Delay, s/veh		60.9			34.2			66.9			43.6	
Approach LOS		E			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	31.5	16.4	38.1	15.2	30.2	9.6	45.0
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 11	25.1	16.1	* 28	* 9.9	25.4	* 4.4	* 40
Max Q Clear Time (g_c+I1), s	9.6	20.1	11.0	19.3	11.0	25.9	5.4	41.7
Green Ext Time (p_c), s	0.0	1.4	0.1	1.4	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	52.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	642	28	225	434	191	70	693	310	78	430	206
Future Volume (veh/h)	49	642	28	225	434	191	70	693	310	78	430	206
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	49	642	28	225	434	191	70	693	310	78	430	206
Adj No. of Lanes	0	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	39	506	465	343	360	306	86	615	528	57	590	502
Arrive On Green	0.30	0.30	0.30	0.20	0.20	0.20	0.05	0.34	0.34	0.03	0.32	0.32
Sat Flow, veh/h	130	1708	1568	1757	1845	1568	1740	1827	1568	1757	1827	1553
Grp Volume(v), veh/h	691	0	28	225	434	191	70	693	310	78	430	206
Grp Sat Flow(s),veh/h/ln	1838	0	1568	1757	1845	1568	1740	1827	1568	1757	1827	1553
Q Serve(g_s), s	51.9	0.0	2.2	20.7	34.2	19.5	7.0	58.9	28.6	5.7	36.5	18.1
Cycle Q Clear(g_c), s	51.9	0.0	2.2	20.7	34.2	19.5	7.0	58.9	28.6	5.7	36.5	18.1
Prop In Lane	0.07		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	545	0	465	343	360	306	86	615	528	57	590	502
V/C Ratio(X)	1.27	0.00	0.06	0.66	1.20	0.62	0.81	1.13	0.59	1.36	0.73	0.41
Avail Cap(c_a), veh/h	545	0	465	343	360	306	101	615	528	57	590	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.6	0.0	44.1	65.0	70.4	64.5	82.3	58.0	48.0	84.6	52.5	46.2
Incr Delay (d2), s/veh	134.4	0.0	0.0	4.5	115.2	3.9	28.8	76.6	1.2	242.9	4.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	46.7	0.0	1.0	10.5	29.0	8.8	4.1	42.8	12.6	6.6	19.0	7.8
LnGrp Delay(d),s/veh	196.0	0.0	44.1	69.4	185.6	68.4	111.1	134.6	49.2	327.5	56.4	46.4
LnGrp LOS	F		D	E	F	E	F	F	D	F	E	D
Approach Vol, veh/h		719			850			1073			714	
Approach Delay, s/veh		190.1			128.5			108.4			83.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.4	61.6		41.0	11.0	64.0		59.0
Change Period (Y+Rc), s	* 4.7	5.1		6.8	* 5.3	5.1		7.1
Max Green Setting (Gmax), s	* 10	55.0		34.2	* 5.7	58.9		51.9
Max Q Clear Time (g_c+I1), s	9.0	38.5		36.2	7.7	60.9		53.9
Green Ext Time (p_c), s	0.0	1.5		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		125.6
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	881	72	39	361	7	331	818	299	9	330	343
Future Volume (veh/h)	237	881	72	39	361	7	331	818	299	9	330	343
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	237	881	72	39	361	7	331	818	299	9	330	343
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	271	955	78	48	571	255	365	1078	394	12	411	368
Arrive On Green	0.16	0.29	0.29	0.03	0.16	0.16	0.21	0.43	0.43	0.01	0.24	0.24
Sat Flow, veh/h	1740	3250	266	1740	3471	1553	1740	2492	910	1740	1736	1553
Grp Volume(v), veh/h	237	470	483	39	361	7	331	569	548	9	330	343
Grp Sat Flow(s),veh/h/ln	1740	1736	1780	1740	1736	1553	1740	1736	1666	1740	1736	1553
Q Serve(g_s), s	11.6	23.0	23.0	1.9	8.5	0.3	16.2	24.2	24.3	0.5	15.7	18.9
Cycle Q Clear(g_c), s	11.6	23.0	23.0	1.9	8.5	0.3	16.2	24.2	24.3	0.5	15.7	18.9
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.55	1.00		1.00
Lane Grp Cap(c), veh/h	271	510	523	48	571	255	365	751	721	12	411	368
V/C Ratio(X)	0.87	0.92	0.92	0.81	0.63	0.03	0.91	0.76	0.76	0.77	0.80	0.93
Avail Cap(c_a), veh/h	297	514	527	60	571	255	400	751	721	62	411	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	29.9	29.9	42.3	34.1	30.7	33.7	20.9	21.0	43.4	31.4	32.7
Incr Delay (d2), s/veh	21.1	24.6	24.2	39.6	5.3	0.2	21.8	7.1	7.4	31.3	15.2	32.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	14.5	14.8	1.5	4.5	0.2	10.0	13.0	12.6	0.3	9.3	11.4
LnGrp Delay(d),s/veh	57.1	54.5	54.1	81.9	39.3	30.9	55.5	28.0	28.3	74.6	46.7	65.4
LnGrp LOS	E	D	D	F	D	C	E	C	C	E	D	E
Approach Vol, veh/h		1190			407			1448			682	
Approach Delay, s/veh		54.9			43.3			34.4			56.5	
Approach LOS		D			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.2	25.9	18.7	19.6	6.1	43.0	7.4	30.9
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 20	* 21	* 15	* 14	3.1	* 37	3.0	* 26
Max Q Clear Time (g_c+I1), s	18.2	20.9	13.6	10.5	2.5	26.3	3.9	25.0
Green Ext Time (p_c), s	0.1	0.0	0.0	3.2	0.0	10.5	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	45.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	297	311	43	301	52	667	1279	276	19	348	57
Future Volume (veh/h)	100	297	311	43	301	52	667	1279	276	19	348	57
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	100	297	311	43	301	52	667	1279	276	19	348	57
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	135	951	425	77	891	399	719	1334	284	42	929	416
Arrive On Green	0.04	0.27	0.27	0.02	0.25	0.25	0.21	0.47	0.47	0.01	0.27	0.27
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	2849	607	3375	3471	1553
Grp Volume(v), veh/h	100	297	311	43	301	52	667	773	782	19	348	57
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1736	1720	1688	1736	1553
Q Serve(g_s), s	2.8	6.6	17.7	1.2	6.9	2.5	19.0	41.9	43.5	0.5	8.0	2.7
Cycle Q Clear(g_c), s	2.8	6.6	17.7	1.2	6.9	2.5	19.0	41.9	43.5	0.5	8.0	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	135	951	425	77	891	399	719	813	806	42	929	416
V/C Ratio(X)	0.74	0.31	0.73	0.56	0.34	0.13	0.93	0.95	0.97	0.46	0.37	0.14
Avail Cap(c_a), veh/h	135	1075	481	139	1072	479	719	813	806	107	998	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	28.5	32.5	47.4	29.8	28.2	37.9	25.0	25.4	48.1	29.2	27.3
Incr Delay (d2), s/veh	17.0	0.9	10.6	2.3	0.7	0.5	17.9	21.2	25.1	2.9	0.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.3	8.9	0.6	3.4	1.1	10.7	24.7	26.0	0.3	3.9	1.2
LnGrp Delay(d),s/veh	63.5	29.3	43.1	49.7	30.6	28.7	55.8	46.2	50.5	51.0	30.0	27.8
LnGrp LOS	E	C	D	D	C	C	E	D	D	D	C	C
Approach Vol, veh/h		708			396			2222			424	
Approach Delay, s/veh		40.2			32.4			50.6			30.7	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.4	31.8	9.4	30.5	6.7	51.5	7.7	32.2
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	20.9	* 28	3.9	30.0	3.1	* 46	4.0	* 30
Max Q Clear Time (g_c+I1), s	21.0	10.0	4.8	8.9	2.5	45.5	3.2	19.7
Green Ext Time (p_c), s	0.0	16.3	0.0	11.7	0.0	0.4	0.0	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	44.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	2173	33	24	2041	8	397	42	172	7	16	55
Future Volume (veh/h)	14	2173	33	24	2041	8	397	42	172	7	16	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	14	2173	33	24	2041	8	397	42	172	7	16	55
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	21	1994	30	30	2039	8	354	84	344	12	23	81
Arrive On Green	0.01	0.58	0.58	0.02	0.59	0.59	0.20	0.27	0.27	0.01	0.06	0.06
Sat Flow, veh/h	1707	3434	52	1707	3479	14	1757	317	1298	1757	366	1257
Grp Volume(v), veh/h	14	1075	1131	24	998	1051	397	0	214	7	0	71
Grp Sat Flow(s),veh/h/ln	1707	1703	1783	1707	1703	1790	1757	0	1616	1757	0	1623
Q Serve(g_s), s	1.1	79.6	79.6	1.9	80.3	80.3	27.6	0.0	15.4	0.5	0.0	5.9
Cycle Q Clear(g_c), s	1.1	79.6	79.6	1.9	80.3	80.3	27.6	0.0	15.4	0.5	0.0	5.9
Prop In Lane	1.00		0.03	1.00		0.01	1.00		0.80	1.00		0.77
Lane Grp Cap(c), veh/h	21	989	1035	30	998	1049	354	0	428	12	0	104
V/C Ratio(X)	0.68	1.09	1.09	0.80	1.00	1.00	1.12	0.00	0.50	0.58	0.00	0.68
Avail Cap(c_a), veh/h	50	989	1035	50	998	1049	354	0	526	51	0	249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.5	28.7	28.7	67.1	28.4	28.4	54.7	0.0	42.7	67.9	0.0	62.8
Incr Delay (d2), s/veh	23.5	55.2	56.7	27.7	28.5	28.2	85.2	0.0	0.8	27.0	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	52.3	55.1	1.1	45.3	47.5	21.7	0.0	7.0	0.4	0.0	2.8
LnGrp Delay(d),s/veh	90.9	84.0	85.5	94.8	56.9	56.5	140.0	0.0	43.5	94.8	0.0	69.7
LnGrp LOS	F	F	F	F	F	F	F		D	F		E
Approach Vol, veh/h		2220			2073			611			78	
Approach Delay, s/veh		84.8			57.2			106.2			72.0	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	86.0	32.0	13.2	5.2	86.7	4.4	40.8
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	4.0	79.6	27.6	* 21	4.0	79.6	4.0	44.6
Max Q Clear Time (g_c+I1), s	3.9	81.6	29.6	7.9	3.1	82.3	2.5	17.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	0.0	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	75.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	701	13	155	722	78	20	65	218	24	26	8
Future Volume (veh/h)	61	701	13	155	722	78	20	65	218	24	26	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	61	701	13	155	722	78	20	65	218	24	26	8
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	74	1111	21	196	1229	133	26	358	304	30	362	308
Arrive On Green	0.04	0.32	0.32	0.11	0.38	0.38	0.01	0.19	0.19	0.02	0.20	0.20
Sat Flow, veh/h	1757	3520	65	1757	3192	345	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	61	349	365	155	396	404	20	65	218	24	26	8
Grp Sat Flow(s),veh/h/ln	1757	1752	1833	1757	1752	1784	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.5	7.5	7.5	3.8	7.9	8.0	0.5	1.3	5.8	0.6	0.5	0.2
Cycle Q Clear(g_c), s	1.5	7.5	7.5	3.8	7.9	8.0	0.5	1.3	5.8	0.6	0.5	0.2
Prop In Lane	1.00		0.04	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	74	553	578	196	675	687	26	358	304	30	362	308
V/C Ratio(X)	0.82	0.63	0.63	0.79	0.59	0.59	0.77	0.18	0.72	0.79	0.07	0.03
Avail Cap(c_a), veh/h	199	713	746	199	713	726	119	751	638	119	751	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	12.9	12.9	19.1	10.8	10.8	21.7	14.9	16.7	21.7	14.5	14.4
Incr Delay (d2), s/veh	19.5	1.2	1.1	18.9	1.1	1.1	37.0	0.2	3.2	34.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.8	3.9	2.9	4.0	4.0	0.5	0.7	2.7	0.6	0.3	0.1
LnGrp Delay(d),s/veh	40.5	14.1	14.1	38.0	12.0	11.9	58.7	15.1	19.9	56.6	14.6	14.4
LnGrp LOS	D	B	B	D	B	B	E	B	B	E	B	B
Approach Vol, veh/h		775			955			303			58	
Approach Delay, s/veh		16.2			16.2			21.4			31.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.8	12.6	8.9	18.0	4.7	12.7	5.9	21.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	18.0	5.0	18.0	3.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.6	7.8	5.8	9.5	2.5	2.5	3.5	10.0
Green Ext Time (p_c), s	0.0	0.8	0.0	4.4	0.0	1.0	0.0	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	954	2	8	856	32	58	220	297	44	72	9
Future Volume (veh/h)	46	954	2	8	856	32	58	220	297	44	72	9
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	46	954	2	8	856	32	58	220	297	44	72	9
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	54	1350	3	11	1211	45	70	460	391	52	441	375
Arrive On Green	0.03	0.38	0.38	0.01	0.35	0.35	0.04	0.25	0.25	0.03	0.24	0.24
Sat Flow, veh/h	1757	3588	8	1757	3446	129	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	46	466	490	8	435	453	58	220	297	44	72	9
Grp Sat Flow(s),veh/h/ln	1757	1752	1843	1757	1752	1822	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.2	10.7	10.7	0.2	10.1	10.1	1.6	4.8	8.3	1.2	1.5	0.2
Cycle Q Clear(g_c), s	1.2	10.7	10.7	0.2	10.1	10.1	1.6	4.8	8.3	1.2	1.5	0.2
Prop In Lane	1.00		0.00	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	659	694	11	616	641	70	460	391	52	441	375
V/C Ratio(X)	0.84	0.71	0.71	0.72	0.71	0.71	0.82	0.48	0.76	0.85	0.16	0.02
Avail Cap(c_a), veh/h	111	704	741	111	704	732	149	702	597	149	702	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	12.5	12.5	23.5	13.2	13.2	22.5	15.1	16.4	22.8	14.2	13.8
Incr Delay (d2), s/veh	27.8	3.0	2.9	60.6	2.8	2.7	20.5	0.8	3.0	29.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.6	5.9	0.3	5.3	5.5	1.1	2.5	3.9	1.0	0.8	0.1
LnGrp Delay(d),s/veh	50.6	15.6	15.4	84.1	16.0	15.9	43.0	15.9	19.5	52.0	14.4	13.8
LnGrp LOS	D	B	B	F	B	B	D	B	B	D	B	B
Approach Vol, veh/h		1002			896			575			125	
Approach Delay, s/veh		17.1			16.6			20.5			27.6	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	15.8	4.3	21.8	5.9	15.3	5.5	20.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	18.0	3.0	19.0	4.0	18.0	3.0	19.0
Max Q Clear Time (g_c+I1), s	3.2	10.3	2.2	12.7	3.6	3.5	3.2	12.1
Green Ext Time (p_c), s	0.0	1.5	0.0	4.2	0.0	2.0	0.0	4.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	908	101	168	756	351	110	558	190	331	352	27
Future Volume (veh/h)	25	908	101	168	756	351	110	558	190	331	352	27
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	25	908	101	168	756	351	110	558	190	331	352	27
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	31	905	101	161	831	385	135	519	441	314	707	601
Arrive On Green	0.02	0.28	0.28	0.09	0.36	0.36	0.08	0.28	0.28	0.18	0.38	0.38
Sat Flow, veh/h	1757	3181	354	1757	2328	1079	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	25	500	509	168	569	538	110	558	190	331	352	27
Grp Sat Flow(s),veh/h/ln	1757	1752	1782	1757	1752	1654	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.7	34.2	34.2	11.0	37.2	37.3	7.4	33.8	11.9	21.5	17.5	1.3
Cycle Q Clear(g_c), s	1.7	34.2	34.2	11.0	37.2	37.3	7.4	33.8	11.9	21.5	17.5	1.3
Prop In Lane	1.00		0.20	1.00		0.65	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	31	499	507	161	625	590	135	519	441	314	707	601
V/C Ratio(X)	0.82	1.00	1.00	1.04	0.91	0.91	0.82	1.08	0.43	1.05	0.50	0.04
Avail Cap(c_a), veh/h	47	499	507	161	625	590	221	519	441	314	707	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.9	43.0	43.0	54.6	36.8	36.8	54.7	43.2	35.3	49.3	28.2	23.3
Incr Delay (d2), s/veh	27.9	41.1	40.8	83.4	17.0	18.1	4.5	61.4	0.2	65.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	22.2	22.5	9.0	20.8	20.0	3.8	26.0	5.2	16.1	8.9	0.6
LnGrp Delay(d),s/veh	86.8	84.1	83.8	138.1	53.8	54.9	59.2	104.6	35.6	114.8	28.4	23.3
LnGrp LOS	F	F	F	F	D	D	E	F	D	F	C	C
Approach Vol, veh/h		1034			1275			858			710	
Approach Delay, s/veh		84.0			65.4			83.5			68.5	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	47.7	14.7	50.5	16.0	39.0	27.0	38.2
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 3.2	41.6	15.1	* 40	11.0	* 34	21.5	* 34
Max Q Clear Time (g_c+I1), s	3.7	39.3	9.4	19.5	13.0	36.2	23.5	35.8
Green Ext Time (p_c), s	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	74.9
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	1831	231	197	1786	3	161	1198	322	2	1098	96
Future Volume (veh/h)	256	1831	231	197	1786	3	161	1198	322	2	1098	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	256	1831	231	197	1786	3	161	1198	322	2	1098	96
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	266	1802	577	228	1747	560	190	1348	603	6	1159	518
Arrive On Green	0.08	0.37	0.37	0.07	0.36	0.36	0.06	0.38	0.38	0.00	0.33	0.33
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	256	1831	231	197	1786	3	161	1198	322	2	1098	96
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	6.7	33.0	9.8	5.1	32.0	0.1	4.2	28.6	14.3	0.1	27.4	3.9
Cycle Q Clear(g_c), s	6.7	33.0	9.8	5.1	32.0	0.1	4.2	28.6	14.3	0.1	27.4	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	1802	577	228	1747	560	190	1348	603	6	1159	518
V/C Ratio(X)	0.96	1.02	0.40	0.86	1.02	0.01	0.85	0.89	0.53	0.36	0.95	0.19
Avail Cap(c_a), veh/h	266	1802	577	228	1747	560	190	1348	603	152	1173	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	28.3	21.0	41.4	28.8	18.6	41.9	25.8	21.3	44.7	29.2	21.4
Incr Delay (d2), s/veh	44.5	25.4	0.4	27.2	27.4	0.0	28.2	7.6	0.9	35.3	15.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	18.9	4.3	3.3	18.7	0.0	2.7	15.2	6.2	0.1	15.6	1.7
LnGrp Delay(d),s/veh	85.7	53.7	21.4	68.6	56.2	18.6	70.1	33.4	22.3	80.0	44.6	21.6
LnGrp LOS	F	F	C	E	F	B	E	C	C	E	D	C
Approach Vol, veh/h		2318			1986			1681			1196	
Approach Delay, s/veh		54.0			57.3			34.8			42.8	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	38.5	10.0	37.0	9.0	33.6	11.0	36.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	31.0	6.0	33.0	5.0	30.0	7.0	32.0
Max Q Clear Time (g_c+I1), s	2.1	30.6	7.1	35.0	6.2	29.4	8.7	34.0
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.6
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	788	74	47	830	779	552
Future Volume (veh/h)	788	74	47	830	779	552
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	788	74	47	830	779	552
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1043	480	100	1840	1442	645
Arrive On Green	0.31	0.31	0.03	0.53	0.41	0.41
Sat Flow, veh/h	3408	1568	3408	3597	3597	1568
Grp Volume(v), veh/h	788	74	47	830	779	552
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1752	1752	1568
Q Serve(g_s), s	9.9	1.6	0.6	7.0	8.0	15.2
Cycle Q Clear(g_c), s	9.9	1.6	0.6	7.0	8.0	15.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1043	480	100	1840	1442	645
V/C Ratio(X)	0.76	0.15	0.47	0.45	0.54	0.86
Avail Cap(c_a), veh/h	1366	629	288	2071	1479	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	12.0	22.6	7.0	10.6	12.7
Incr Delay (d2), s/veh	1.8	0.1	3.4	0.2	0.4	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	1.7	0.3	3.4	3.9	8.3
LnGrp Delay(d),s/veh	16.6	12.1	26.1	7.2	10.9	23.2
LnGrp LOS	B	B	C	A	B	C
Approach Vol, veh/h	862			877	1331	
Approach Delay, s/veh	16.2			8.2	16.0	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.9		18.5	5.4	23.5		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		28.0		19.0	4.0	20.0		
Max Q Clear Time (g_c+I1), s		9.0		11.9	2.6	17.2		
Green Ext Time (p_c), s		10.9		2.6	0.0	2.3		

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	895	412	6	1	465	274	4	0	1	106	0	526
Future Volume (veh/h)	895	412	6	1	465	274	4	0	1	106	0	526
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1900	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	895	412	6	1	465	274	4	0	1	106	0	526
Adj No. of Lanes	0	1	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	589	271	4	348	365	310	5	0	1	55	0	272
Arrive On Green	0.48	0.48	0.48	0.20	0.20	0.20	0.00	0.00	0.00	0.20	0.00	0.20
Sat Flow, veh/h	1215	559	8	1757	1845	1568	1372	0	343	268	0	1329
Grp Volume(v), veh/h	1313	0	0	1	465	274	5	0	0	632	0	0
Grp Sat Flow(s),veh/h/ln	1782	0	0	1757	1845	1568	1715	0	0	1597	0	0
Q Serve(g_s), s	71.0	0.0	0.0	0.1	29.0	24.9	0.4	0.0	0.0	30.0	0.0	0.0
Cycle Q Clear(g_c), s	71.0	0.0	0.0	0.1	29.0	24.9	0.4	0.0	0.0	30.0	0.0	0.0
Prop In Lane	0.68		0.00	1.00		1.00	0.80		0.20	0.17		0.83
Lane Grp Cap(c), veh/h	864	0	0	348	365	310	6	0	0	327	0	0
V/C Ratio(X)	1.52	0.00	0.00	0.00	1.27	0.88	0.77	0.00	0.00	1.93	0.00	0.00
Avail Cap(c_a), veh/h	864	0	0	348	365	310	47	0	0	327	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.8	0.0	0.0	47.2	58.8	57.1	72.9	0.0	0.0	58.3	0.0	0.0
Incr Delay (d2), s/veh	240.1	0.0	0.0	0.0	143.0	24.4	102.3	0.0	0.0	431.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	92.4	0.0	0.0	0.0	29.2	12.9	0.4	0.0	0.0	52.3	0.0	0.0
LnGrp Delay(d),s/veh	277.9	0.0	0.0	47.2	201.8	81.6	175.3	0.0	0.0	489.5	0.0	0.0
LnGrp LOS	F			D	F	F	F			F		
Approach Vol, veh/h		1313			740			5			632	
Approach Delay, s/veh		277.9			157.1			175.3			489.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		4.6		75.0		34.0		33.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		4.0		71.0		30.0		29.0
Max Q Clear Time (g_c+I1), s		2.4		73.0		32.0		31.0
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	294.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	40	32	9	30	234	57	2633	72	543	2091	59
Future Volume (veh/h)	76	40	32	9	30	234	57	2633	72	543	2091	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	76	40	32	9	30	234	57	2633	72	543	2091	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	81	44	35	545	295	251	72	2480	772	513	3044	86
Arrive On Green	0.05	0.05	0.05	0.16	0.16	0.16	0.04	0.50	0.50	0.15	0.61	0.61
Sat Flow, veh/h	1757	950	760	3408	1845	1568	1740	4988	1553	3375	4987	140
Grp Volume(v), veh/h	76	0	72	9	30	234	57	2633	72	543	1393	757
Grp Sat Flow(s),veh/h/ln	1757	0	1711	1704	1845	1568	1740	1663	1553	1688	1663	1802
Q Serve(g_s), s	6.5	0.0	6.3	0.3	2.1	22.1	4.9	74.6	3.7	22.8	42.1	42.3
Cycle Q Clear(g_c), s	6.5	0.0	6.3	0.3	2.1	22.1	4.9	74.6	3.7	22.8	42.1	42.3
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	81	0	79	545	295	251	72	2480	772	513	2030	1100
V/C Ratio(X)	0.94	0.00	0.92	0.02	0.10	0.93	0.79	1.06	0.09	1.06	0.69	0.69
Avail Cap(c_a), veh/h	81	0	79	545	295	251	123	2480	772	513	2030	1100
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.3	0.0	71.3	53.1	53.8	62.2	71.2	37.7	19.9	63.6	19.6	19.6
Incr Delay (d2), s/veh	79.2	0.0	72.1	0.0	0.1	38.4	6.9	37.0	0.0	56.1	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	4.6	0.2	1.1	12.2	2.5	42.7	1.6	14.6	19.4	21.5
LnGrp Delay(d),s/veh	150.5	0.0	143.3	53.1	53.9	100.6	78.1	74.7	19.9	119.7	20.4	21.2
LnGrp LOS	F		F	D	D	F	E	F	B	F	C	C
Approach Vol, veh/h		148			273			2762			2693	
Approach Delay, s/veh		147.0			93.9			73.4			40.6	
Approach LOS		F			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	96.8		12.4	28.3	79.8		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 87		6.9	22.8	* 75		24.0
Max Q Clear Time (g_c+I1), s	6.9	44.3		8.5	24.8	76.6		24.1
Green Ext Time (p_c), s	0.0	16.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	1166	473	188	1092	942	350	1491	300	484	873	139
Future Volume (veh/h)	204	1166	473	188	1092	942	350	1491	300	484	873	139
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	204	1166	473	188	1092	942	350	1491	300	484	873	139
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	182	1316	589	231	1365	611	377	1400	436	397	994	445
Arrive On Green	0.05	0.38	0.38	0.07	0.39	0.39	0.11	0.28	0.28	0.12	0.29	0.29
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	3471	1553
Grp Volume(v), veh/h	204	1166	473	188	1092	942	350	1491	300	484	873	139
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1736	1553
Q Serve(g_s), s	7.5	43.7	37.9	7.6	38.8	54.7	14.4	39.4	24.2	16.5	33.7	9.9
Cycle Q Clear(g_c), s	7.5	43.7	37.9	7.6	38.8	54.7	14.4	39.4	24.2	16.5	33.7	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	1316	589	231	1365	611	377	1400	436	397	994	445
V/C Ratio(X)	1.12	0.89	0.80	0.82	0.80	1.54	0.93	1.07	0.69	1.22	0.88	0.31
Avail Cap(c_a), veh/h	182	1316	589	231	1365	611	377	1400	436	397	999	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.5	41.0	39.2	64.6	38.0	42.9	61.8	50.5	45.0	62.0	47.8	39.3
Incr Delay (d2), s/veh	102.7	7.4	7.4	18.6	3.2	252.0	28.3	43.5	3.8	119.8	8.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	22.6	17.6	4.2	19.4	66.5	8.2	23.7	10.8	14.3	17.3	4.2
LnGrp Delay(d),s/veh	169.2	48.4	46.6	83.2	41.2	294.9	90.0	94.0	48.8	181.8	56.4	39.4
LnGrp LOS	F	D	D	F	D	F	F	F	D	F	E	D
Approach Vol, veh/h		1843			2222			2141			1496	
Approach Delay, s/veh		61.3			152.3			87.0			95.4	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.2	45.8	13.0	60.4	22.0	45.0	15.0	58.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	15.7	* 40	7.5	* 55	16.5	* 39	9.5	* 52
Max Q Clear Time (g_c+I1), s	16.4	35.7	9.5	56.7	18.5	41.4	9.6	45.7
Green Ext Time (p_c), s	0.0	2.5	0.0	0.0	0.0	0.0	0.0	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	101.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	335	1406	450	120	1570	664	370	1436	107	674	648	90
Future Volume (veh/h)	335	1406	450	120	1570	664	370	1436	107	674	648	90
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	335	1406	450	120	1570	664	370	1436	107	674	648	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	329	1674	536	169	1449	451	424	1340	417	623	1628	502
Arrive On Green	0.10	0.34	0.34	0.05	0.30	0.30	0.12	0.27	0.27	0.18	0.32	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	335	1406	450	120	1570	664	370	1436	107	674	648	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	12.9	34.5	34.4	4.5	38.5	38.5	13.9	34.6	7.0	24.0	13.0	0.0
Cycle Q Clear(g_c), s	12.9	34.5	34.4	4.5	38.5	38.5	13.9	34.6	7.0	24.0	13.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	1674	536	169	1449	451	424	1340	417	623	1628	502
V/C Ratio(X)	1.02	0.84	0.84	0.71	1.08	1.47	0.87	1.07	0.26	1.08	0.40	0.00
Avail Cap(c_a), veh/h	329	1675	537	181	1449	451	558	1340	417	623	1628	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.6	39.5	39.5	60.9	45.8	45.8	55.9	47.7	37.6	53.0	34.2	0.0
Incr Delay (d2), s/veh	54.7	3.8	10.7	11.4	49.7	224.0	9.5	46.1	0.3	60.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	16.1	16.5	2.4	24.0	44.3	7.1	21.7	3.1	16.4	6.0	0.0
LnGrp Delay(d),s/veh	113.3	43.3	50.2	72.2	95.4	269.8	65.4	93.8	37.9	113.1	34.2	0.0
LnGrp LOS	F	D	D	E	F	F	E	F	D	F	C	
Approach Vol, veh/h		2191			2354			1913			1322	
Approach Delay, s/veh		55.4			143.4			85.2			74.4	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.6	47.1	17.2	44.1	29.0	39.7	11.2	50.1
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 21	36.9	* 13	38.5	24.0	34.6	* 6.9	* 45
Max Q Clear Time (g_c+I1), s	15.9	15.0	14.9	40.5	26.0	36.6	6.5	36.5
Green Ext Time (p_c), s	0.3	10.2	0.0	0.0	0.0	0.0	0.0	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	92.6
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	410	96	287	560	123	231	1668	202	37	357	57
Future Volume (veh/h)	9	410	96	287	560	123	231	1668	202	37	357	57
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	9	410	96	287	560	123	231	1668	202	37	357	57
Adj No. of Lanes	2	1	0	2	2	1	1	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	21	310	73	310	1048	469	253	1682	200	65	1429	639
Arrive On Green	0.01	0.21	0.21	0.09	0.30	0.30	0.14	0.53	0.53	0.02	0.41	0.41
Sat Flow, veh/h	3408	1446	339	3408	3505	1568	1757	3155	376	3408	3505	1568
Grp Volume(v), veh/h	9	0	506	287	560	123	231	914	956	37	357	57
Grp Sat Flow(s),veh/h/ln	1704	0	1785	1704	1752	1568	1757	1752	1778	1704	1752	1568
Q Serve(g_s), s	0.4	0.0	31.8	12.4	19.8	8.9	19.2	75.5	79.1	1.6	10.0	3.3
Cycle Q Clear(g_c), s	0.4	0.0	31.8	12.4	19.8	8.9	19.2	75.5	79.1	1.6	10.0	3.3
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	21	0	382	310	1048	469	253	934	948	65	1429	639
V/C Ratio(X)	0.42	0.00	1.32	0.93	0.53	0.26	0.91	0.98	1.01	0.57	0.25	0.09
Avail Cap(c_a), veh/h	239	0	382	310	1048	469	273	934	948	101	1429	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.5	0.0	58.3	67.0	43.4	39.6	62.6	33.8	34.7	72.2	29.0	27.0
Incr Delay (d2), s/veh	12.7	0.0	162.6	32.5	0.5	0.3	31.2	24.1	31.5	7.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	32.9	7.3	9.6	3.9	11.6	42.6	47.0	0.8	4.8	1.4
LnGrp Delay(d),s/veh	86.1	0.0	220.9	99.4	43.9	39.9	93.8	58.0	66.1	79.9	29.0	27.0
LnGrp LOS	F		F	F	D	D	F	E	F	E	C	C
Approach Vol, veh/h		515			970			2101			451	
Approach Delay, s/veh		218.6			59.8			65.6			32.9	
Approach LOS		F			E			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.9	65.5	19.0	37.0	8.3	84.1	6.4	49.6
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	23.1	60.4	13.5	* 32	4.4	79.1	10.4	* 35
Max Q Clear Time (g_c+I1), s	21.2	12.0	14.4	33.8	3.6	81.1	2.4	21.8
Green Ext Time (p_c), s	0.2	17.4	0.0	0.0	0.0	0.0	0.0	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	80.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	427	34	96	247	19	9	1987	465	20	492	186
Future Volume (veh/h)	170	427	34	96	247	19	9	1987	465	20	492	186
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1828	1900	1845	1796	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	170	427	34	96	247	19	9	1987	465	20	492	186
Adj No. of Lanes	2	1	0	2	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	6	3	3	3	3	3	3
Cap, veh/h	149	370	29	103	342	26	11	1686	380	25	1498	563
Arrive On Green	0.04	0.22	0.22	0.03	0.21	0.21	0.01	0.59	0.59	0.01	0.60	0.60
Sat Flow, veh/h	3408	1672	133	3408	1647	127	1757	2844	640	1757	2494	937
Grp Volume(v), veh/h	170	0	461	96	0	266	9	1195	1257	20	345	333
Grp Sat Flow(s),veh/h/ln	1704	0	1805	1704	0	1774	1757	1752	1732	1757	1752	1679
Q Serve(g_s), s	6.5	0.0	33.0	4.2	0.0	20.8	0.8	88.4	88.4	1.7	14.6	14.7
Cycle Q Clear(g_c), s	6.5	0.0	33.0	4.2	0.0	20.8	0.8	88.4	88.4	1.7	14.6	14.7
Prop In Lane	1.00		0.07	1.00		0.07	1.00		0.37	1.00		0.56
Lane Grp Cap(c), veh/h	149	0	399	103	0	369	11	1039	1027	25	1053	1009
V/C Ratio(X)	1.14	0.00	1.15	0.93	0.00	0.72	0.82	1.15	1.22	0.82	0.33	0.33
Avail Cap(c_a), veh/h	149	0	399	103	0	369	41	1039	1027	35	1053	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.3	0.0	58.0	72.1	0.0	55.0	74.0	30.3	30.3	73.3	14.8	14.8
Incr Delay (d2), s/veh	117.8	0.0	94.1	67.4	0.0	5.9	80.3	78.7	109.9	60.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	26.9	2.9	0.0	10.8	0.6	65.1	73.3	1.2	7.0	6.9
LnGrp Delay(d),s/veh	189.0	0.0	152.2	139.6	0.0	60.9	154.3	109.0	140.2	133.5	15.0	15.0
LnGrp LOS	F		F	F		E	F	F	F	F	B	B
Approach Vol, veh/h		631			362			2461			698	
Approach Delay, s/veh		162.1			81.8			125.1			18.4	
Approach LOS		F			F			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	93.5	12.0	36.0	6.4	94.6	10.0	38.0
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	3.0	* 88	6.5	* 31	3.5	* 88	4.5	* 33
Max Q Clear Time (g_c+I1), s	3.7	90.4	8.5	22.8	2.8	16.7	6.2	35.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.6	0.0	48.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	109.0
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

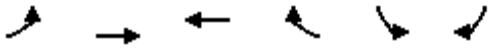
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	498	250	135	22	211	173	110	1665	89	35	486	92
Future Volume (veh/h)	498	250	135	22	211	173	110	1665	89	35	486	92
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1844	1900	1845	1845	1900
Adj Flow Rate, veh/h	498	250	135	22	211	173	110	1665	89	35	486	92
Adj No. of Lanes	2	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	3	3	3	3	3
Cap, veh/h	491	370	200	27	187	153	131	1644	87	45	1279	241
Arrive On Green	0.14	0.33	0.33	0.02	0.20	0.20	0.08	0.49	0.49	0.03	0.43	0.43
Sat Flow, veh/h	3408	1128	609	1757	939	770	1740	3384	180	1757	2945	555
Grp Volume(v), veh/h	498	0	385	22	0	384	110	857	897	35	288	290
Grp Sat Flow(s),veh/h/ln	1704	0	1737	1757	0	1709	1740	1752	1812	1757	1752	1747
Q Serve(g_s), s	20.9	0.0	27.8	1.8	0.0	28.9	9.1	70.5	70.5	2.9	16.2	16.3
Cycle Q Clear(g_c), s	20.9	0.0	27.8	1.8	0.0	28.9	9.1	70.5	70.5	2.9	16.2	16.3
Prop In Lane	1.00		0.35	1.00		0.45	1.00		0.10	1.00		0.32
Lane Grp Cap(c), veh/h	491	0	569	27	0	340	131	851	880	45	761	759
V/C Ratio(X)	1.01	0.00	0.68	0.81	0.00	1.13	0.84	1.01	1.02	0.78	0.38	0.38
Avail Cap(c_a), veh/h	491	0	569	52	0	340	203	851	880	47	761	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.1	0.0	42.1	71.2	0.0	58.1	66.2	37.3	37.3	70.3	27.8	27.8
Incr Delay (d2), s/veh	44.3	0.0	2.6	18.6	0.0	88.1	9.8	32.6	35.0	50.5	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	0.0	13.8	1.0	0.0	21.9	4.7	41.8	43.8	2.0	7.9	8.0
LnGrp Delay(d),s/veh	106.4	0.0	44.7	89.9	0.0	146.2	76.0	69.9	72.3	120.8	28.1	28.1
LnGrp LOS	F		D	F		F	E	F	F	F	C	C
Approach Vol, veh/h		883			406			1864			613	
Approach Delay, s/veh		79.5			143.2			71.4			33.4	
Approach LOS		E			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	75.6	26.4	34.3	16.3	68.1	7.7	53.0
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 3.9	70.5	20.9	* 29	* 17	57.3	4.3	* 45
Max Q Clear Time (g_c+I1), s	4.9	72.5	22.9	30.9	11.1	18.3	3.8	29.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	18.5	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	74.9
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	309	1079	1981	876	708	197
Future Volume (veh/h)	309	1079	1981	876	708	197
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	309	1079	1981	876	708	197
Adj No. of Lanes	2	3	3	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	358	3001	2118	660	899	414
Arrive On Green	0.11	0.60	0.42	0.42	0.26	0.26
Sat Flow, veh/h	3408	5202	5202	1568	3408	1568
Grp Volume(v), veh/h	309	1079	1981	876	708	197
Grp Sat Flow(s),veh/h/ln	1704	1679	1679	1568	1704	1568
Q Serve(g_s), s	5.1	6.3	21.4	24.0	11.0	6.0
Cycle Q Clear(g_c), s	5.1	6.3	21.4	24.0	11.0	6.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	358	3001	2118	660	899	414
V/C Ratio(X)	0.86	0.36	0.94	1.33	0.79	0.48
Avail Cap(c_a), veh/h	358	3001	2118	660	1075	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	5.9	15.8	16.5	19.5	17.7
Incr Delay (d2), s/veh	18.9	0.1	8.5	158.0	3.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	2.9	11.4	45.4	5.5	5.5
LnGrp Delay(d),s/veh	44.0	6.0	24.3	174.5	22.8	18.5
LnGrp LOS	D	A	C	F	C	B
Approach Vol, veh/h		1388	2857		905	
Approach Delay, s/veh		14.5	70.4		21.9	
Approach LOS		B	E		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				38.0		19.1	10.0	28.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				34.0		18.0	6.0	24.0
Max Q Clear Time (g_c+I1), s				8.3		13.0	7.1	26.0
Green Ext Time (p_c), s				23.0		2.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	833	133	562	1244	311	177	695	784	339	283	49
Future Volume (veh/h)	117	833	133	562	1244	311	177	695	784	339	283	49
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	117	833	133	562	1244	311	177	695	784	339	283	49
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	70	695	320	281	1103	508	202	365	411	182	1397	625
Arrive On Green	0.04	0.20	0.20	0.16	0.32	0.32	0.11	0.46	0.46	0.05	0.40	0.40
Sat Flow, veh/h	1757	3406	1568	1757	3406	1568	1757	793	894	3408	3505	1568
Grp Volume(v), veh/h	117	833	133	562	1244	311	177	0	1479	339	283	49
Grp Sat Flow(s),veh/h/ln	1757	1703	1568	1757	1703	1568	1757	0	1687	1704	1752	1568
Q Serve(g_s), s	6.0	30.6	11.1	24.0	48.6	25.1	14.9	0.0	69.0	8.0	7.9	2.9
Cycle Q Clear(g_c), s	6.0	30.6	11.1	24.0	48.6	25.1	14.9	0.0	69.0	8.0	7.9	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	70	695	320	281	1103	508	202	0	776	182	1397	625
V/C Ratio(X)	1.66	1.20	0.42	2.00	1.13	0.61	0.88	0.00	1.91	1.86	0.20	0.08
Avail Cap(c_a), veh/h	70	695	320	281	1103	508	281	0	776	182	1397	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.0	59.7	51.9	63.0	50.7	42.8	65.4	0.0	40.5	71.0	29.5	28.0
Incr Delay (d2), s/veh	353.5	103.1	1.2	462.2	69.3	2.6	19.8	0.0	412.5	409.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	24.3	4.9	47.7	33.5	11.2	8.3	0.0	121.0	14.1	3.9	1.3
LnGrp Delay(d),s/veh	425.5	162.8	53.2	525.2	120.0	45.3	85.1	0.0	453.0	480.5	29.6	28.1
LnGrp LOS	F	F	D	F	F	D	F		F	F	C	C
Approach Vol, veh/h		1083			2117			1656			671	
Approach Delay, s/veh		177.7			216.6			413.7			257.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	37.0	21.2	63.8	10.0	55.0	12.0	73.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	24.0	30.6	24.0	53.0	6.0	48.6	8.0	69.0
Max Q Clear Time (g_c+I1), s	26.0	32.6	16.9	9.9	8.0	50.6	10.0	71.0
Green Ext Time (p_c), s	0.0	0.0	0.4	24.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	273.0
HCM 2010 LOS	F



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	664	22	69	981	259	554
Future Volume (veh/h)	664	22	69	981	259	554
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	664	22	69	981	259	554
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	664	592	89	984	809	687
Arrive On Green	0.38	0.38	0.05	0.53	0.44	0.44
Sat Flow, veh/h	1757	1568	1757	1845	1845	1568
Grp Volume(v), veh/h	664	22	69	981	259	554
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1845	1845	1568
Q Serve(g_s), s	34.0	0.8	3.5	47.7	8.3	27.6
Cycle Q Clear(g_c), s	34.0	0.8	3.5	47.7	8.3	27.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	664	592	89	984	809	687
V/C Ratio(X)	1.00	0.04	0.78	1.00	0.32	0.81
Avail Cap(c_a), veh/h	664	592	176	984	809	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	17.7	42.2	20.9	16.5	22.0
Incr Delay (d2), s/veh	35.0	0.0	13.4	28.0	0.2	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.9	0.9	2.0	31.6	4.2	13.2
LnGrp Delay(d),s/veh	63.0	17.7	55.6	48.9	16.7	29.0
LnGrp LOS	F	B	E	D	B	C
Approach Vol, veh/h	686			1050	813	
Approach Delay, s/veh	61.6			49.3	25.1	
Approach LOS	E			D	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		52.0		38.0	8.6	43.4		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		48.0		34.0	9.0	35.0		
Max Q Clear Time (g_c+I1), s		49.7		36.0	5.5	29.6		
Green Ext Time (p_c), s		0.0		0.0	0.0	3.8		

Intersection Summary	
HCM 2010 Ctrl Delay	44.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	221	21	46	193	8	125	956	171	7	161	14
Future Volume (veh/h)	55	221	21	46	193	8	125	956	171	7	161	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1759	1759	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	55	221	21	46	193	8	125	956	171	7	161	14
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	8	8	8	3	3	3	3	3	3
Cap, veh/h	82	241	23	72	243	10	154	990	177	55	993	86
Arrive On Green	0.05	0.15	0.15	0.04	0.14	0.14	0.09	0.65	0.65	0.03	0.59	0.59
Sat Flow, veh/h	1707	1612	153	1675	1677	70	1757	1524	273	1757	1673	146
Grp Volume(v), veh/h	55	0	242	46	0	201	125	0	1127	7	0	175
Grp Sat Flow(s),veh/h/ln	1707	0	1765	1675	0	1747	1757	0	1797	1757	0	1819
Q Serve(g_s), s	4.0	0.0	17.1	3.4	0.0	14.1	8.9	0.0	74.9	0.5	0.0	5.5
Cycle Q Clear(g_c), s	4.0	0.0	17.1	3.4	0.0	14.1	8.9	0.0	74.9	0.5	0.0	5.5
Prop In Lane	1.00		0.09	1.00		0.04	1.00		0.15	1.00		0.08
Lane Grp Cap(c), veh/h	82	0	264	72	0	253	154	0	1167	55	0	1079
V/C Ratio(X)	0.67	0.00	0.92	0.64	0.00	0.79	0.81	0.00	0.97	0.13	0.00	0.16
Avail Cap(c_a), veh/h	188	0	264	185	0	262	263	0	1232	194	0	1175
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.4	0.0	53.2	59.7	0.0	52.4	56.9	0.0	20.9	59.7	0.0	11.6
Incr Delay (d2), s/veh	9.1	0.0	33.8	8.9	0.0	15.0	9.8	0.0	17.6	1.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	10.8	1.8	0.0	7.9	4.7	0.0	42.3	0.3	0.0	2.7
LnGrp Delay(d),s/veh	68.5	0.0	87.0	68.6	0.0	67.4	66.7	0.0	38.6	60.8	0.0	11.7
LnGrp LOS	E		F	E		E	E		D	E		B
Approach Vol, veh/h		297			247			1252			182	
Approach Delay, s/veh		83.6			67.6			41.4			13.6	
Approach LOS		F			E			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	86.4	9.5	23.0	15.1	79.3	10.1	22.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	87.0	14.0	19.0	19.0	82.0	14.0	19.0
Max Q Clear Time (g_c+I1), s	2.5	76.9	5.4	19.1	10.9	7.5	6.0	16.1
Green Ext Time (p_c), s	0.0	5.5	0.1	0.0	0.2	11.1	0.1	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	48.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	154	35	128	118	199	37	1215	61	600	1708	628
Future Volume (veh/h)	173	154	35	128	118	199	37	1215	61	600	1708	628
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	173	154	35	128	118	199	37	1215	61	600	1708	628
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	217	424	91	206	179	933	75	1591	80	682	2528	787
Arrive On Green	0.06	0.10	0.10	0.06	0.10	0.10	0.02	0.32	0.32	0.20	0.50	0.50
Sat Flow, veh/h	3408	4150	894	3514	1845	3136	3408	4912	247	3408	5036	1568
Grp Volume(v), veh/h	173	123	66	128	118	199	37	830	446	600	1708	628
Grp Sat Flow(s),veh/h/ln	1704	1679	1687	1757	1845	1568	1704	1679	1801	1704	1679	1568
Q Serve(g_s), s	3.5	2.4	2.6	2.5	4.4	3.4	0.8	15.7	15.7	12.1	18.1	23.5
Cycle Q Clear(g_c), s	3.5	2.4	2.6	2.5	4.4	3.4	0.8	15.7	15.7	12.1	18.1	23.5
Prop In Lane	1.00		0.53	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	217	343	172	206	179	933	75	1087	583	682	2528	787
V/C Ratio(X)	0.80	0.36	0.38	0.62	0.66	0.21	0.50	0.76	0.76	0.88	0.68	0.80
Avail Cap(c_a), veh/h	217	1400	703	238	782	1957	145	1385	743	698	2875	895
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	29.6	29.7	32.5	30.8	18.6	34.2	21.5	21.5	27.5	13.3	14.6
Incr Delay (d2), s/veh	17.3	0.2	0.5	2.1	1.5	0.0	1.9	1.4	2.6	11.7	0.4	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	1.1	1.2	1.3	2.3	1.5	0.4	7.5	8.2	6.8	8.3	10.8
LnGrp Delay(d),s/veh	50.0	29.8	30.2	34.6	32.3	18.7	36.1	22.9	24.1	39.2	13.6	18.5
LnGrp LOS	D	C	C	C	C	B	D	C	C	D	B	B
Approach Vol, veh/h		362			445			1313			2936	
Approach Delay, s/veh		39.5			26.9			23.7			19.9	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	41.1	10.0	12.6	19.7	28.5	9.7	12.9
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	40.4	4.5	* 30	14.5	* 29	4.8	* 30
Max Q Clear Time (g_c+I1), s	2.8	25.5	5.5	6.4	14.1	17.7	4.5	4.6
Green Ext Time (p_c), s	0.0	5.8	0.0	0.5	0.1	5.2	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	22.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	64	13	38	46	66	37	1177	63	133	1191	215
Future Volume (veh/h)	105	64	13	38	46	66	37	1177	63	133	1191	215
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	91	84	13	38	46	66	37	1177	63	133	1191	215
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	154	137	21	127	133	113	43	1595	85	198	1760	318
Arrive On Green	0.09	0.09	0.09	0.07	0.07	0.07	0.02	0.33	0.33	0.11	0.41	0.41
Sat Flow, veh/h	1757	1561	242	1757	1845	1568	1757	4894	262	1757	4291	775
Grp Volume(v), veh/h	91	0	97	38	46	66	37	807	433	133	932	474
Grp Sat Flow(s),veh/h/ln	1757	0	1802	1757	1845	1568	1757	1679	1798	1757	1679	1708
Q Serve(g_s), s	2.5	0.0	2.6	1.0	1.2	2.1	1.1	10.9	10.9	3.7	11.5	11.5
Cycle Q Clear(g_c), s	2.5	0.0	2.6	1.0	1.2	2.1	1.1	10.9	10.9	3.7	11.5	11.5
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.15	1.00		0.45
Lane Grp Cap(c), veh/h	154	0	158	127	133	113	43	1094	586	198	1377	700
V/C Ratio(X)	0.59	0.00	0.61	0.30	0.34	0.58	0.86	0.74	0.74	0.67	0.68	0.68
Avail Cap(c_a), veh/h	967	0	992	933	979	833	117	1703	913	304	2047	1041
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	0.0	22.4	22.4	22.4	22.8	24.7	15.2	15.2	21.7	12.2	12.2
Incr Delay (d2), s/veh	1.3	0.0	1.4	0.5	0.6	1.8	16.1	0.4	0.7	1.5	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.4	0.5	0.6	1.0	0.7	5.0	5.4	1.9	5.3	5.5
LnGrp Delay(d),s/veh	23.6	0.0	23.8	22.8	23.0	24.6	40.8	15.6	15.9	23.1	12.5	12.7
LnGrp LOS	C		C	C	C	C	D	B	B	C	B	B
Approach Vol, veh/h		188			150			1277			1539	
Approach Delay, s/veh		23.7			23.7			16.4			13.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	25.7		9.2	10.3	21.4		10.0
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 3.4	31.0		27.0	* 8.8	25.8		28.0
Max Q Clear Time (g_c+I1), s	3.1	13.5		4.1	5.7	12.9		4.6
Green Ext Time (p_c), s	0.0	4.0		0.1	0.0	3.7		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	390	272	87	372	71	330	1105	136	123	614	241
Future Volume (veh/h)	89	390	272	87	372	71	330	1105	136	123	614	241
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	89	390	272	87	372	71	330	1105	136	123	614	241
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	155	744	347	152	1112	346	373	1493	465	205	885	340
Arrive On Green	0.05	0.22	0.22	0.04	0.22	0.22	0.11	0.30	0.30	0.06	0.25	0.25
Sat Flow, veh/h	3408	3357	1568	3408	5036	1568	3408	5036	1568	3408	3583	1376
Grp Volume(v), veh/h	89	390	272	87	372	71	330	1105	136	123	575	280
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1602
Q Serve(g_s), s	1.5	6.1	9.7	1.5	3.7	2.2	5.7	11.7	4.0	2.1	9.2	9.5
Cycle Q Clear(g_c), s	1.5	6.1	9.7	1.5	3.7	2.2	5.7	11.7	4.0	2.1	9.2	9.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.86
Lane Grp Cap(c), veh/h	155	744	347	152	1112	346	373	1493	465	205	829	396
V/C Ratio(X)	0.57	0.52	0.78	0.57	0.33	0.21	0.88	0.74	0.29	0.60	0.69	0.71
Avail Cap(c_a), veh/h	172	1623	758	189	2459	766	373	2569	800	304	1645	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	20.4	21.8	27.8	19.5	18.9	26.1	18.8	16.1	27.2	20.3	20.4
Incr Delay (d2), s/veh	1.7	0.2	1.5	1.2	0.1	0.1	20.8	0.3	0.1	1.1	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.8	4.3	0.7	1.7	1.0	3.7	5.5	1.7	1.0	4.3	4.3
LnGrp Delay(d),s/veh	29.5	20.6	23.2	29.1	19.5	19.0	46.9	19.1	16.2	28.3	20.7	21.3
LnGrp LOS	C	C	C	C	B	B	D	B	B	C	C	C
Approach Vol, veh/h		751			530			1571			978	
Approach Delay, s/veh		22.6			21.0			24.7			21.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	20.3	8.2	18.9	9.1	23.2	8.2	19.0
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	6.5	* 29	3.0	29.0	5.3	* 30	3.3	28.7
Max Q Clear Time (g_c+I1), s	7.7	11.5	3.5	5.7	4.1	13.7	3.5	11.7
Green Ext Time (p_c), s	0.0	3.2	0.0	1.5	0.0	3.2	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	23.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	167	33	94	223	205	48	800	102	44	648	26
Future Volume (veh/h)	157	167	33	94	223	205	48	800	102	44	648	26
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	157	167	33	94	223	205	48	800	102	44	648	26
Adj No. of Lanes	1	2	0	1	1	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	186	569	110	118	280	238	61	829	106	79	932	792
Arrive On Green	0.11	0.19	0.19	0.07	0.15	0.15	0.03	0.52	0.52	0.02	0.51	0.51
Sat Flow, veh/h	1757	2930	567	1757	1845	1568	1757	1604	205	3408	1845	1568
Grp Volume(v), veh/h	157	98	102	94	223	205	48	0	902	44	648	26
Grp Sat Flow(s),veh/h/ln	1757	1752	1745	1757	1845	1568	1757	0	1809	1704	1845	1568
Q Serve(g_s), s	9.1	5.0	5.2	5.5	12.1	13.2	2.8	0.0	49.9	1.3	27.8	0.9
Cycle Q Clear(g_c), s	9.1	5.0	5.2	5.5	12.1	13.2	2.8	0.0	49.9	1.3	27.8	0.9
Prop In Lane	1.00		0.33	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	186	341	339	118	280	238	61	0	935	79	932	792
V/C Ratio(X)	0.84	0.29	0.30	0.79	0.80	0.86	0.79	0.00	0.96	0.56	0.70	0.03
Avail Cap(c_a), veh/h	215	613	610	184	608	516	110	0	1122	102	1078	917
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	35.7	35.8	47.7	42.5	43.0	49.7	0.0	24.2	50.2	19.6	12.9
Incr Delay (d2), s/veh	20.3	0.2	0.2	5.4	2.0	3.6	8.0	0.0	16.6	2.3	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	2.4	2.5	2.8	6.3	6.0	1.5	0.0	29.1	0.6	14.3	0.4
LnGrp Delay(d),s/veh	65.8	35.9	36.0	53.1	44.5	46.5	57.7	0.0	40.7	52.5	20.8	12.9
LnGrp LOS	E	D	D	D	D	D	E		D	D	C	B
Approach Vol, veh/h		357			522			950			718	
Approach Delay, s/veh		49.1			46.8			41.6			22.4	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	20.7	9.1	57.5	12.1	25.1	7.9	58.8
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	12.7	* 34	6.5	* 61	* 11	* 36	3.1	* 64
Max Q Clear Time (g_c+I1), s	11.1	15.2	4.8	29.8	7.5	7.2	3.3	51.9
Green Ext Time (p_c), s	0.0	0.5	0.0	1.8	0.0	0.5	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	38.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	607	53	39	638	47	148	262	230	84	144	440
Future Volume (veh/h)	332	607	53	39	638	47	148	262	230	84	144	440
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	332	607	53	39	638	47	148	262	230	84	144	440
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	442	1206	539	110	864	387	236	1035	463	175	972	435
Arrive On Green	0.13	0.34	0.34	0.03	0.25	0.25	0.07	0.30	0.30	0.05	0.28	0.28
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	332	607	53	39	638	47	148	262	230	84	144	440
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	5.4	7.9	1.3	0.6	9.7	1.3	2.4	3.3	7.0	1.4	1.8	16.0
Cycle Q Clear(g_c), s	5.4	7.9	1.3	0.6	9.7	1.3	2.4	3.3	7.0	1.4	1.8	16.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	442	1206	539	110	864	387	236	1035	463	175	972	435
V/C Ratio(X)	0.75	0.50	0.10	0.36	0.74	0.12	0.63	0.25	0.50	0.48	0.15	1.01
Avail Cap(c_a), veh/h	472	1214	543	236	972	435	236	1035	463	236	972	435
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	15.0	12.9	27.3	20.0	16.9	26.1	15.5	16.8	26.6	15.7	20.9
Incr Delay (d2), s/veh	6.2	0.3	0.1	1.9	2.7	0.1	5.1	0.1	0.8	2.0	0.1	46.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.8	0.6	0.3	4.9	0.6	1.3	1.6	3.1	0.7	0.9	12.4
LnGrp Delay(d),s/veh	30.4	15.3	12.9	29.3	22.7	17.0	31.3	15.6	17.6	28.7	15.8	67.2
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	F
Approach Vol, veh/h		992			724			640			668	
Approach Delay, s/veh		20.3			22.7			20.0			51.3	
Approach LOS		C			C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	21.0	5.9	23.9	8.0	20.0	11.5	18.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	4.0	20.0	4.0	16.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	3.4	9.0	2.6	9.9	4.4	18.0	7.4	11.7
Green Ext Time (p_c), s	0.0	2.7	0.0	4.8	0.0	0.0	0.1	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	531	28	29	1070	103	112	378	39	59	144	178
Future Volume (veh/h)	102	531	28	29	1070	103	112	378	39	59	144	178
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	102	531	28	29	1070	103	112	378	39	59	144	178
Adj No. of Lanes	2	2	0	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	198	1265	67	46	1197	536	130	479	407	148	423	359
Arrive On Green	0.06	0.37	0.37	0.03	0.34	0.34	0.07	0.26	0.26	0.04	0.23	0.23
Sat Flow, veh/h	3408	3387	178	1757	3505	1568	1757	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	102	274	285	29	1070	103	112	378	39	59	144	178
Grp Sat Flow(s),veh/h/ln	1704	1752	1813	1757	1752	1568	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	1.6	6.3	6.3	0.9	15.6	2.5	3.4	10.3	1.0	0.9	3.5	5.3
Cycle Q Clear(g_c), s	1.6	6.3	6.3	0.9	15.6	2.5	3.4	10.3	1.0	0.9	3.5	5.3
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	655	677	46	1197	536	130	479	407	148	423	359
V/C Ratio(X)	0.52	0.42	0.42	0.63	0.89	0.19	0.86	0.79	0.10	0.40	0.34	0.50
Avail Cap(c_a), veh/h	253	655	677	130	1236	553	130	582	495	253	582	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	12.5	12.5	26.0	16.8	12.5	24.7	18.6	15.1	25.1	17.4	18.1
Incr Delay (d2), s/veh	2.1	0.4	0.4	13.4	8.5	0.2	40.1	5.9	0.1	1.7	0.5	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.0	3.2	0.6	8.8	1.1	3.1	5.9	0.4	0.5	1.9	2.4
LnGrp Delay(d),s/veh	26.7	13.0	13.0	39.4	25.3	12.7	64.8	24.5	15.2	26.8	17.8	19.1
LnGrp LOS	C	B	B	D	C	B	E	C	B	C	B	B
Approach Vol, veh/h		661			1202			529			381	
Approach Delay, s/veh		15.1			24.5			32.3			19.8	
Approach LOS		B			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	18.0	5.4	24.1	8.0	16.3	7.1	22.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	17.0	4.0	19.0	4.0	17.0	4.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	12.3	2.9	8.3	5.4	7.3	3.6	17.6
Green Ext Time (p_c), s	0.0	1.7	0.0	7.5	0.0	2.8	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	99	71	481	396	162	101	1269	113	210	1966	364
Future Volume (veh/h)	117	99	71	481	396	162	101	1269	113	210	1966	364
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	117	99	71	481	396	162	101	1269	113	210	1966	364
Adj No. of Lanes	2	2	1	2	2	1	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	177	458	205	546	864	495	147	2594	641	276	2250	700
Arrive On Green	0.05	0.13	0.13	0.16	0.23	0.23	0.04	0.41	0.41	0.08	0.45	0.45
Sat Flow, veh/h	3408	3505	1568	3514	3689	1568	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	117	99	71	481	396	162	101	1269	113	210	1966	364
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	3.4	2.6	4.2	13.5	9.3	8.0	3.0	15.0	4.7	6.2	36.1	17.0
Cycle Q Clear(g_c), s	3.4	2.6	4.2	13.5	9.3	8.0	3.0	15.0	4.7	6.2	36.1	17.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	458	205	546	864	495	147	2594	641	276	2250	700
V/C Ratio(X)	0.66	0.22	0.35	0.88	0.46	0.33	0.69	0.49	0.18	0.76	0.87	0.52
Avail Cap(c_a), veh/h	286	1005	450	594	1368	709	147	2594	641	430	2337	728
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	39.3	40.0	41.8	33.2	26.4	47.7	21.8	18.8	45.5	25.2	19.9
Incr Delay (d2), s/veh	1.6	0.3	1.5	12.8	1.0	1.1	10.7	0.1	0.0	1.6	4.7	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.3	1.9	7.5	4.9	3.6	1.6	6.5	2.0	2.9	17.5	7.6
LnGrp Delay(d),s/veh	48.7	39.7	41.5	54.6	34.3	27.4	58.4	21.9	18.9	47.1	29.9	22.0
LnGrp LOS	D	D	D	D	C	C	E	C	B	D	C	C
Approach Vol, veh/h		287			1039			1483			2540	
Approach Delay, s/veh		43.8			42.6			24.2			30.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	51.0	10.7	29.5	13.8	47.2	21.2	19.0
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	4.4	* 47	8.5	37.5	12.9	* 39	17.1	* 29
Max Q Clear Time (g_c+I1), s	5.0	38.1	5.4	11.3	8.2	17.0	15.5	6.2
Green Ext Time (p_c), s	0.0	7.5	0.0	7.4	0.1	21.1	0.2	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	273	118	88	345	130	316	1371	45	246	1132	335
Future Volume (veh/h)	138	273	118	88	345	130	316	1371	45	246	1132	335
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	138	273	118	88	345	130	316	1371	45	246	1132	335
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	193	638	286	136	828	258	372	2509	781	303	2406	749
Arrive On Green	0.06	0.18	0.18	0.04	0.17	0.17	0.11	0.50	0.50	0.09	0.48	0.48
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	138	273	118	88	345	130	316	1371	45	246	1132	335
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	4.9	8.5	8.2	3.2	7.7	9.4	11.3	23.3	1.8	8.8	18.8	17.6
Cycle Q Clear(g_c), s	4.9	8.5	8.2	3.2	7.7	9.4	11.3	23.3	1.8	8.8	18.8	17.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	638	286	136	828	258	372	2509	781	303	2406	749
V/C Ratio(X)	0.72	0.43	0.41	0.64	0.42	0.50	0.85	0.55	0.06	0.81	0.47	0.45
Avail Cap(c_a), veh/h	538	965	432	533	1382	430	533	2602	810	533	2594	808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.3	44.8	44.6	58.4	46.1	46.9	53.9	21.0	15.7	55.2	21.4	21.1
Incr Delay (d2), s/veh	1.9	0.9	1.9	1.9	1.2	5.2	6.2	0.4	0.1	2.0	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	4.2	3.7	1.5	3.6	4.4	5.6	10.8	0.8	4.2	8.7	7.7
LnGrp Delay(d),s/veh	59.1	45.7	46.6	60.2	47.3	52.0	60.1	21.4	15.8	57.2	21.7	21.9
LnGrp LOS	E	D	D	E	D	D	E	C	B	E	C	C
Approach Vol, veh/h		529			563			1732			1713	
Approach Delay, s/veh		49.4			50.4			28.3			26.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.1	65.4	12.5	26.5	16.6	67.9	10.5	28.5
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	19.5	* 64	19.5	* 34	19.5	* 64	19.5	34.0
Max Q Clear Time (g_c+I1), s	13.3	20.8	6.9	11.4	10.8	25.3	5.2	10.5
Green Ext Time (p_c), s	0.3	38.8	0.1	9.1	0.2	35.3	0.1	9.2

Intersection Summary	
HCM 2010 Ctrl Delay	33.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	70	143	12	30	14	336	1682	5	51	934	153
Future Volume (veh/h)	22	70	143	12	30	14	336	1682	5	51	934	153
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	22	70	143	12	30	14	336	1682	5	51	934	153
Adj No. of Lanes	2	1	2	1	1	0	2	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	54	169	252	16	101	47	475	2126	6	62	1540	480
Arrive On Green	0.02	0.09	0.09	0.01	0.08	0.08	0.14	0.41	0.41	0.04	0.31	0.31
Sat Flow, veh/h	3408	1845	2760	1757	1191	556	3375	5134	15	1740	4988	1553
Grp Volume(v), veh/h	22	70	143	12	0	44	336	1089	598	51	934	153
Grp Sat Flow(s),veh/h/ln	1704	1845	1380	1757	0	1747	1688	1663	1824	1740	1663	1553
Q Serve(g_s), s	0.3	1.8	2.6	0.4	0.0	1.2	4.9	14.7	14.7	1.5	8.2	3.9
Cycle Q Clear(g_c), s	0.3	1.8	2.6	0.4	0.0	1.2	4.9	14.7	14.7	1.5	8.2	3.9
Prop In Lane	1.00		1.00	1.00		0.32	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	54	169	252	16	0	148	475	1377	755	62	1540	480
V/C Ratio(X)	0.41	0.41	0.57	0.74	0.00	0.30	0.71	0.79	0.79	0.83	0.61	0.32
Avail Cap(c_a), veh/h	1294	1217	1821	667	0	1170	1281	4182	2294	661	6214	1935
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	22.0	22.4	25.4	0.0	22.1	21.1	13.1	13.1	24.6	15.1	13.6
Incr Delay (d2), s/veh	1.9	0.6	0.7	21.7	0.0	0.4	0.7	0.4	0.7	9.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.0	1.0	0.3	0.0	0.6	2.3	6.7	7.5	0.9	3.7	1.7
LnGrp Delay(d),s/veh	26.9	22.6	23.1	47.1	0.0	22.5	21.8	13.5	13.8	34.5	15.2	13.8
LnGrp LOS	C	C	C	D		C	C	B	B	C	B	B
Approach Vol, veh/h		235			56			2023			1138	
Approach Delay, s/veh		23.3			27.7			15.0			15.9	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	21.9	6.3	10.5	7.3	27.3	6.0	10.8
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	19.5	64.0	19.5	* 34	19.5	* 65	19.5	* 34
Max Q Clear Time (g_c+I1), s	6.9	10.2	2.3	3.2	3.5	16.7	2.4	4.6
Green Ext Time (p_c), s	0.4	4.6	0.0	0.2	0.0	4.6	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

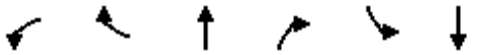
Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	41	50	126	194	329	331	1676	81	50	723	84
Future Volume (veh/h)	192	41	50	126	194	329	331	1676	81	50	723	84
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	192	41	50	126	194	329	331	1676	81	50	723	84
Adj No. of Lanes	2	2	0	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	242	448	400	195	817	366	384	1812	564	90	1377	429
Arrive On Green	0.07	0.26	0.26	0.06	0.24	0.24	0.11	0.36	0.36	0.03	0.28	0.28
Sat Flow, veh/h	3408	1752	1568	3250	3343	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	192	41	50	126	194	329	331	1676	81	50	723	84
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1625	1671	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	4.1	1.3	1.8	2.8	3.5	15.9	7.2	24.1	2.6	1.1	9.2	3.1
Cycle Q Clear(g_c), s	4.1	1.3	1.8	2.8	3.5	15.9	7.2	24.1	2.6	1.1	9.2	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	242	448	400	195	817	366	384	1812	564	90	1377	429
V/C Ratio(X)	0.79	0.09	0.12	0.65	0.24	0.90	0.86	0.93	0.14	0.55	0.53	0.20
Avail Cap(c_a), veh/h	242	519	464	226	985	441	384	1850	576	136	1483	462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	21.2	21.4	34.3	22.6	27.3	32.5	22.8	16.0	35.9	22.9	20.7
Incr Delay (d2), s/veh	15.2	0.0	0.1	3.0	0.1	17.1	17.0	8.2	0.0	2.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.6	0.8	1.3	1.6	8.3	4.3	12.4	1.1	0.5	4.2	1.3
LnGrp Delay(d),s/veh	49.4	21.2	21.4	37.4	22.7	44.5	49.5	31.0	16.0	37.9	23.0	20.8
LnGrp LOS	D	C	C	D	C	D	D	C	B	D	C	C
Approach Vol, veh/h		283			649			2088			857	
Approach Delay, s/veh		40.4			36.6			33.3			23.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	26.1	10.8	23.8	7.5	32.6	10.0	24.6
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	8.5	22.2	5.3	22.0	3.0	27.7	5.2	22.1
Max Q Clear Time (g_c+I1), s	9.2	11.2	6.1	17.9	3.1	26.1	4.8	3.8
Green Ext Time (p_c), s	0.0	3.9	0.0	0.3	0.0	1.1	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	32.3
HCM 2010 LOS	C



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	294	179	1681	77	41	774
Future Volume (veh/h)	294	179	1681	77	41	774
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1827	1827	1827
Adj Flow Rate, veh/h	294	179	1681	77	41	774
Adj No. of Lanes	2	1	3	1	2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	537	247	2166	674	92	2056
Arrive On Green	0.16	0.16	0.43	0.43	0.03	0.59
Sat Flow, veh/h	3408	1568	5152	1553	3375	3563
Grp Volume(v), veh/h	294	179	1681	77	41	774
Grp Sat Flow(s),veh/h/ln	1704	1568	1663	1553	1688	1736
Q Serve(g_s), s	3.3	4.6	12.1	1.2	0.5	4.9
Cycle Q Clear(g_c), s	3.3	4.6	12.1	1.2	0.5	4.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	537	247	2166	674	92	2056
V/C Ratio(X)	0.55	0.72	0.78	0.11	0.45	0.38
Avail Cap(c_a), veh/h	609	280	3266	1017	1527	4298
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	16.8	10.1	7.1	20.1	4.5
Incr Delay (d2), s/veh	0.3	6.1	0.3	0.0	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.4	5.5	0.5	0.2	2.3
LnGrp Delay(d),s/veh	16.6	23.0	10.4	7.1	21.4	4.5
LnGrp LOS	B	C	B	A	C	A
Approach Vol, veh/h	473		1758			815
Approach Delay, s/veh	19.0		10.3			5.4
Approach LOS	B		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		29.9		12.1	6.6	23.2		
Change Period (Y+Rc), s		5.0		5.5	5.5	5.0		
Max Green Setting (Gmax), s		52.0		7.5	19.0	27.5		
Max Q Clear Time (g_c+I1), s		6.9		6.6	2.5	14.1		
Green Ext Time (p_c), s		4.8		0.1	0.0	4.2		

Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	644	3	92	34	33	123	224	877	29	55	450	574
Future Volume (veh/h)	644	3	92	34	33	123	224	877	29	55	450	574
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845	1845	1827	1827	1827	1837	1900
Adj Flow Rate, veh/h	644	3	92	34	33	123	224	877	29	55	450	574
Adj No. of Lanes	2	2	1	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	4
Cap, veh/h	739	760	340	96	93	165	263	1397	625	98	499	446
Arrive On Green	0.22	0.22	0.22	0.11	0.11	0.11	0.15	0.40	0.40	0.03	0.29	0.29
Sat Flow, veh/h	3408	3505	1568	913	886	1568	1757	3471	1553	3375	1745	1561
Grp Volume(v), veh/h	644	3	92	67	0	123	224	877	29	55	450	574
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1799	0	1568	1757	1736	1553	1688	1745	1561
Q Serve(g_s), s	14.3	0.1	3.8	2.7	0.0	6.0	9.7	15.8	0.9	1.3	19.5	22.4
Cycle Q Clear(g_c), s	14.3	0.1	3.8	2.7	0.0	6.0	9.7	15.8	0.9	1.3	19.5	22.4
Prop In Lane	1.00		1.00	0.51		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	739	760	340	190	0	165	263	1397	625	98	499	446
V/C Ratio(X)	0.87	0.00	0.27	0.35	0.00	0.74	0.85	0.63	0.05	0.56	0.90	1.29
Avail Cap(c_a), veh/h	783	805	360	413	0	360	282	1397	625	142	499	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	24.1	25.5	32.6	0.0	34.0	32.5	18.7	14.3	37.6	26.9	28.0
Incr Delay (d2), s/veh	10.2	0.0	0.4	1.1	0.0	6.5	20.4	0.9	0.0	4.9	19.5	145.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	1.7	1.4	0.0	2.9	6.2	7.7	0.4	0.7	12.1	27.5
LnGrp Delay(d),s/veh	39.8	24.1	26.0	33.7	0.0	40.5	52.9	19.6	14.3	42.5	46.5	173.0
LnGrp LOS	D	C	C	C		D	D	B	B	D	D	F
Approach Vol, veh/h		739			190			1130			1079	
Approach Delay, s/veh		38.0			38.1			26.1			113.6	
Approach LOS		D			D			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.3	27.4		13.7	7.2	36.6		21.0
Change Period (Y+Rc), s	* 4.6	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	* 13	22.4		* 18	* 3.3	31.4		18.0
Max Q Clear Time (g_c+I1), s	11.7	24.4		8.0	3.3	17.8		16.3
Green Ext Time (p_c), s	0.1	0.0		0.4	0.0	8.2		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	59.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	386	38	45	870	120	88	753	31	106	298	214
Future Volume (veh/h)	193	386	38	45	870	120	88	753	31	106	298	214
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1900	1827	1845	1845
Adj Flow Rate, veh/h	193	386	38	45	870	120	88	753	31	106	298	214
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	145	830	705	58	738	683	109	582	24	84	585	627
Arrive On Green	0.08	0.45	0.45	0.03	0.40	0.40	0.06	0.33	0.33	0.05	0.32	0.32
Sat Flow, veh/h	1757	1845	1568	1757	1845	1524	1757	1759	72	1740	1845	1568
Grp Volume(v), veh/h	193	386	38	45	870	120	88	0	784	106	298	214
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1524	1757	0	1832	1740	1845	1568
Q Serve(g_s), s	12.0	21.1	2.0	3.7	58.0	6.8	7.2	0.0	48.0	7.0	19.1	13.7
Cycle Q Clear(g_c), s	12.0	21.1	2.0	3.7	58.0	6.8	7.2	0.0	48.0	7.0	19.1	13.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	145	830	705	58	738	683	109	0	606	84	585	627
V/C Ratio(X)	1.33	0.47	0.05	0.78	1.18	0.18	0.81	0.00	1.29	1.26	0.51	0.34
Avail Cap(c_a), veh/h	145	830	705	109	738	683	158	0	606	84	585	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.5	27.8	22.5	69.6	43.5	24.0	67.2	0.0	48.5	69.0	40.3	30.2
Incr Delay (d2), s/veh	186.9	0.4	0.0	19.6	94.3	0.1	17.9	0.0	143.8	184.0	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	10.8	0.9	2.1	48.8	2.9	4.0	0.0	48.5	7.7	9.8	6.0
LnGrp Delay(d),s/veh	253.4	28.2	22.5	89.2	137.8	24.1	85.0	0.0	192.3	253.0	41.0	30.5
LnGrp LOS	F	C	C	F	F	C	F		F	F	D	C
Approach Vol, veh/h		617			1035			872			618	
Approach Delay, s/veh		98.3			122.5			181.5			73.8	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	71.2	13.0	52.0	16.0	64.0	11.0	54.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	9.0	61.0	13.0	42.0	12.0	58.0	7.0	48.0
Max Q Clear Time (g_c+I1), s	5.7	23.1	9.2	21.1	14.0	60.0	9.0	50.0
Green Ext Time (p_c), s	0.0	8.6	0.1	6.4	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	124.5
HCM 2010 LOS	F

Notes

User approved changes to right turn type.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	143	8	36	720	258	128
Future Volume (veh/h)	143	8	36	720	258	128
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	143	8	36	720	258	128
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	174	10	46	980	359	178
Arrive On Green	0.11	0.11	0.03	0.54	0.31	0.31
Sat Flow, veh/h	1538	86	1740	1827	1154	572
Grp Volume(v), veh/h	152	0	36	720	0	386
Grp Sat Flow(s),veh/h/ln	1635	0	1740	1827	0	1726
Q Serve(g_s), s	2.5	0.0	0.6	8.3	0.0	5.5
Cycle Q Clear(g_c), s	2.5	0.0	0.6	8.3	0.0	5.5
Prop In Lane	0.94	0.05	1.00			0.33
Lane Grp Cap(c), veh/h	185	0	46	980	0	537
V/C Ratio(X)	0.82	0.00	0.79	0.73	0.00	0.72
Avail Cap(c_a), veh/h	296	0	377	2027	0	1173
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.0	0.0	13.4	4.9	0.0	8.5
Incr Delay (d2), s/veh	9.6	0.0	10.6	0.4	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.4	4.1	0.0	2.7
LnGrp Delay(d),s/veh	21.6	0.0	24.0	5.3	0.0	9.1
LnGrp LOS	C		C	A		A
Approach Vol, veh/h	152			756	386	
Approach Delay, s/veh	21.6			6.2	9.1	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.2	14.3		7.1		20.5		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.0	* 19		5.0		* 31		
Max Q Clear Time (g_c+I1), s	2.6	7.5		4.5		10.3		
Green Ext Time (p_c), s	0.0	1.1		0.0		1.2		

Intersection Summary	
HCM 2010 Ctrl Delay	8.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	112	15	21	569	331	12	27	3	312	225	717
Future Volume (veh/h)	135	112	15	21	569	331	12	27	3	312	225	717
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1792	1792	1900	1792	1792	1792
Adj Flow Rate, veh/h	135	112	15	21	569	331	12	27	3	208	326	747
Adj No. of Lanes	2	2	0	1	1	1	1	1	0	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	6	6	6	6	6	6
Cap, veh/h	210	1202	158	25	614	522	44	41	5	470	493	839
Arrive On Green	0.06	0.39	0.39	0.01	0.33	0.33	0.03	0.03	0.03	0.28	0.28	0.28
Sat Flow, veh/h	3408	3115	410	1757	1845	1568	1707	1585	176	1707	1792	3047
Grp Volume(v), veh/h	135	62	65	21	569	331	12	0	30	208	326	747
Grp Sat Flow(s),veh/h/ln	1704	1752	1772	1757	1845	1568	1707	0	1761	1707	1792	1524
Q Serve(g_s), s	2.8	1.7	1.7	0.9	21.9	13.1	0.5	0.0	1.2	7.4	11.9	17.3
Cycle Q Clear(g_c), s	2.8	1.7	1.7	0.9	21.9	13.1	0.5	0.0	1.2	7.4	11.9	17.3
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	210	676	684	25	614	522	44	0	45	470	493	839
V/C Ratio(X)	0.64	0.09	0.09	0.84	0.93	0.63	0.28	0.00	0.67	0.44	0.66	0.89
Avail Cap(c_a), veh/h	213	676	684	131	730	620	487	0	503	557	585	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	14.4	14.4	36.2	23.7	20.7	35.2	0.0	35.5	22.0	23.6	25.6
Incr Delay (d2), s/veh	4.8	0.0	0.0	22.9	15.1	0.8	1.2	0.0	6.1	0.2	1.3	8.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.8	0.8	0.6	13.6	5.7	0.3	0.0	0.7	3.5	6.1	8.1
LnGrp Delay(d),s/veh	38.6	14.4	14.4	59.1	38.8	21.6	36.4	0.0	41.7	22.2	24.9	33.7
LnGrp LOS	D	B	B	E	D	C	D		D	C	C	C
Approach Vol, veh/h		262			921			42			1281	
Approach Delay, s/veh		26.9			33.1			40.2			29.6	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	30.4		25.7	6.1	34.3		7.4
Change Period (Y+Rc), s	5.5	* 5.9		5.5	* 5.1	* 5.9		5.5
Max Green Setting (Gmax), s	4.6	* 29		24.0	* 5.5	* 28		21.0
Max Q Clear Time (g_c+I1), s	4.8	23.9		19.3	2.9	3.7		3.2
Green Ext Time (p_c), s	0.0	0.6		0.9	0.0	0.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	169	14	248	401	305	138
Future Volume (veh/h)	169	14	248	401	305	138
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1792	1792	1810	1810
Adj Flow Rate, veh/h	169	14	248	401	305	138
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	6	6	5	5
Cap, veh/h	233	208	200	966	551	468
Arrive On Green	0.14	0.14	0.12	0.54	0.30	0.30
Sat Flow, veh/h	1675	1495	1707	1792	1810	1538
Grp Volume(v), veh/h	169	14	248	401	305	138
Grp Sat Flow(s),veh/h/ln	1675	1495	1707	1792	1810	1538
Q Serve(g_s), s	3.3	0.3	4.0	4.5	4.8	2.3
Cycle Q Clear(g_c), s	3.3	0.3	4.0	4.5	4.8	2.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	233	208	200	966	551	468
V/C Ratio(X)	0.73	0.07	1.24	0.42	0.55	0.29
Avail Cap(c_a), veh/h	761	679	200	1496	1511	1284
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.1	12.8	15.1	4.7	9.9	9.1
Incr Delay (d2), s/veh	4.3	0.1	143.0	0.3	0.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.3	9.8	2.3	2.5	1.0
LnGrp Delay(d),s/veh	18.3	12.9	158.1	5.0	10.8	9.4
LnGrp LOS	B	B	F	A	B	A
Approach Vol, veh/h	183			649	443	
Approach Delay, s/veh	17.9			63.5	10.4	
Approach LOS	B			E	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		23.9		10.2	8.0	15.9		
Change Period (Y+Rc), s		5.5		5.5	4.0	5.5		
Max Green Setting (Gmax), s		28.5		15.5	4.0	28.5		
Max Q Clear Time (g_c+I1), s		6.5		5.3	6.0	6.8		
Green Ext Time (p_c), s		3.6		0.5	0.0	3.6		

Intersection Summary	
HCM 2010 Ctrl Delay	38.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	291	5	39	768	40	2	107	9	13	150	187
Future Volume (veh/h)	203	291	5	39	768	40	2	107	9	13	150	187
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1900	1810	1900	1900	1810	1900
Adj Flow Rate, veh/h	203	291	5	39	768	40	2	107	9	13	150	187
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	207	957	16	49	763	40	2	131	11	11	126	157
Arrive On Green	0.12	0.54	0.54	0.03	0.45	0.45	0.08	0.08	0.08	0.18	0.18	0.18
Sat Flow, veh/h	1707	1757	30	1707	1689	88	30	1618	136	61	707	882
Grp Volume(v), veh/h	203	0	296	39	0	808	118	0	0	350	0	0
Grp Sat Flow(s),veh/h/ln	1707	0	1787	1707	0	1777	1784	0	0	1651	0	0
Q Serve(g_s), s	16.0	0.0	12.2	3.1	0.0	61.0	8.8	0.0	0.0	24.0	0.0	0.0
Cycle Q Clear(g_c), s	16.0	0.0	12.2	3.1	0.0	61.0	8.8	0.0	0.0	24.0	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.05	0.02		0.08	0.04		0.53
Lane Grp Cap(c), veh/h	207	0	973	49	0	803	145	0	0	294	0	0
V/C Ratio(X)	0.98	0.00	0.30	0.79	0.00	1.01	0.81	0.00	0.00	1.19	0.00	0.00
Avail Cap(c_a), veh/h	207	0	973	116	0	803	344	0	0	294	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.1	0.0	16.8	65.1	0.0	37.0	61.0	0.0	0.0	55.5	0.0	0.0
Incr Delay (d2), s/veh	56.0	0.0	0.4	10.0	0.0	33.3	10.4	0.0	0.0	115.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	0.0	6.1	1.6	0.0	37.3	4.7	0.0	0.0	20.3	0.0	0.0
LnGrp Delay(d),s/veh	115.1	0.0	17.2	75.1	0.0	70.3	71.4	0.0	0.0	170.6	0.0	0.0
LnGrp LOS	F		B	E		F	E			F		
Approach Vol, veh/h		499			847			118			350	
Approach Delay, s/veh		57.0			70.5			71.4			170.6	
Approach LOS		E			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.0	67.0		30.0	8.5	79.5		17.0
Change Period (Y+Rc), s	4.6	6.0		6.0	4.6	6.0		6.0
Max Green Setting (Gmax), s	16.4	61.0		24.0	9.2	68.2		26.0
Max Q Clear Time (g_c+I1), s	18.0	63.0		26.0	5.1	14.2		10.8
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	17.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	86.2
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	698	91	140	680	239	31	1081	190	125	593	80
Future Volume (veh/h)	153	698	91	140	680	239	31	1081	190	125	593	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	153	698	91	140	680	239	31	1081	190	125	593	80
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	163	772	101	163	868	388	46	1173	525	136	1352	605
Arrive On Green	0.09	0.25	0.25	0.09	0.25	0.25	0.03	0.33	0.33	0.08	0.39	0.39
Sat Flow, veh/h	1757	3119	406	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	153	392	397	140	680	239	31	1081	190	125	593	80
Grp Sat Flow(s),veh/h/ln	1757	1752	1773	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	5.6	14.0	14.0	5.1	11.7	8.7	1.1	19.2	5.9	4.6	8.1	2.1
Cycle Q Clear(g_c), s	5.6	14.0	14.0	5.1	11.7	8.7	1.1	19.2	5.9	4.6	8.1	2.1
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	163	434	439	163	868	388	46	1173	525	136	1352	605
V/C Ratio(X)	0.94	0.90	0.90	0.86	0.78	0.62	0.67	0.92	0.36	0.92	0.44	0.13
Avail Cap(c_a), veh/h	163	434	439	163	868	388	136	1193	534	136	1352	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	23.6	23.6	28.9	22.7	21.6	31.2	20.7	16.3	29.6	14.7	12.9
Incr Delay (d2), s/veh	52.4	21.9	21.9	34.0	4.7	2.9	15.3	11.6	0.4	53.5	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	9.4	9.5	4.0	6.2	4.1	0.7	11.0	2.6	4.2	3.9	0.9
LnGrp Delay(d),s/veh	81.6	45.5	45.5	62.9	27.4	24.5	46.5	32.3	16.7	83.1	14.9	13.0
LnGrp LOS	F	D	D	E	C	C	D	C	B	F	B	B
Approach Vol, veh/h		942			1059			1302			798	
Approach Delay, s/veh		51.3			31.5			30.3			25.4	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	25.6	10.0	20.0	5.7	28.9	10.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	22.0	6.0	16.0	5.0	22.0	6.0	16.0
Max Q Clear Time (g_c+I1), s	6.6	21.2	7.1	16.0	3.1	10.1	7.6	13.7
Green Ext Time (p_c), s	0.0	0.5	0.0	0.0	0.0	7.4	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	34.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	637	131	12	519	216	88	1055	123	147	411	32
Future Volume (veh/h)	90	637	131	12	519	216	88	1055	123	147	411	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	90	637	131	12	519	216	88	1055	123	147	411	32
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	103	982	439	21	565	234	113	1166	136	178	1336	104
Arrive On Green	0.06	0.28	0.28	0.01	0.23	0.23	0.07	0.37	0.37	0.10	0.41	0.41
Sat Flow, veh/h	1757	3505	1568	1757	2418	1002	1740	3133	365	1740	3265	253
Grp Volume(v), veh/h	90	637	131	12	376	359	88	584	594	147	218	225
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1668	1740	1736	1763	1740	1736	1782
Q Serve(g_s), s	3.5	10.9	4.5	0.5	14.3	14.4	3.4	21.8	21.9	5.7	5.8	5.9
Cycle Q Clear(g_c), s	3.5	10.9	4.5	0.5	14.3	14.4	3.4	21.8	21.9	5.7	5.8	5.9
Prop In Lane	1.00		1.00	1.00		0.60	1.00		0.21	1.00		0.14
Lane Grp Cap(c), veh/h	103	982	439	21	409	390	113	646	656	178	710	729
V/C Ratio(X)	0.88	0.65	0.30	0.57	0.92	0.92	0.78	0.90	0.91	0.83	0.31	0.31
Avail Cap(c_a), veh/h	103	982	439	103	409	390	229	684	695	178	710	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	21.7	19.4	33.7	25.6	25.6	31.5	20.3	20.4	30.1	13.7	13.7
Incr Delay (d2), s/veh	52.0	1.5	0.4	22.3	25.2	27.1	10.8	15.1	15.1	26.3	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	5.5	2.0	0.4	9.8	9.5	2.0	13.1	13.3	4.0	2.8	2.9
LnGrp Delay(d),s/veh	84.0	23.2	19.7	56.0	50.8	52.8	42.4	35.4	35.4	56.4	13.9	13.9
LnGrp LOS	F	C	B	E	D	D	D	D	D	E	B	B
Approach Vol, veh/h		858			747			1266			590	
Approach Delay, s/veh		29.0			51.8			35.9			24.5	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	29.5	4.8	23.2	8.5	32.0	8.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	27.0	4.0	16.0	9.0	25.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	7.7	23.9	2.5	12.9	5.4	7.9	5.5	16.4
Green Ext Time (p_c), s	0.0	1.6	0.0	2.0	0.1	7.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	872	159	218	891	125	51	1005	543	92	351	114
Future Volume (veh/h)	160	872	159	218	891	125	51	1005	543	92	351	114
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	160	872	159	218	891	125	51	1005	543	92	351	114
Adj No. of Lanes	1	3	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	158	926	168	221	884	395	65	1002	525	95	1637	732
Arrive On Green	0.09	0.22	0.22	0.13	0.25	0.25	0.04	0.45	0.45	0.05	0.47	0.47
Sat Flow, veh/h	1740	4246	770	1740	3471	1553	1740	2204	1154	1740	3471	1553
Grp Volume(v), veh/h	160	682	349	218	891	125	51	785	763	92	351	114
Grp Sat Flow(s),veh/h/ln	1740	1663	1691	1740	1736	1553	1740	1736	1623	1740	1736	1553
Q Serve(g_s), s	10.0	22.2	22.4	13.8	28.0	7.2	3.2	49.5	50.0	5.8	6.5	4.6
Cycle Q Clear(g_c), s	10.0	22.2	22.4	13.8	28.0	7.2	3.2	49.5	50.0	5.8	6.5	4.6
Prop In Lane	1.00		0.46	1.00		1.00	1.00		0.71	1.00		1.00
Lane Grp Cap(c), veh/h	158	725	369	221	884	395	65	789	738	95	1637	732
V/C Ratio(X)	1.01	0.94	0.95	0.98	1.01	0.32	0.78	0.99	1.03	0.97	0.21	0.16
Avail Cap(c_a), veh/h	158	725	369	221	884	395	127	789	738	95	1637	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	42.3	42.4	47.9	41.0	33.2	52.5	29.9	30.0	51.9	17.1	16.6
Incr Delay (d2), s/veh	74.6	20.2	33.1	55.9	32.4	0.5	18.1	30.6	42.4	82.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	12.2	13.9	10.0	17.3	3.1	1.9	30.2	31.0	5.0	3.1	2.0
LnGrp Delay(d),s/veh	124.7	62.5	75.5	103.8	73.4	33.7	70.6	60.5	72.4	134.0	17.1	16.7
LnGrp LOS	F	E	E	F	F	C	E	E	F	F	B	B
Approach Vol, veh/h		1191			1234			1599			557	
Approach Delay, s/veh		74.6			74.7			66.5			36.4	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	54.0	18.0	28.0	8.1	55.9	14.0	32.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	50.0	14.0	24.0	8.0	48.0	10.0	28.0
Max Q Clear Time (g_c+I1), s	7.8	52.0	15.8	24.4	5.2	8.5	12.0	30.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	15.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.2
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	352	966	106	89	933	136	175	722	125	19	178	123
Future Volume (veh/h)	352	966	106	89	933	136	175	722	125	19	178	123
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	352	966	106	89	933	136	175	722	125	19	178	123
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	386	1522	167	114	991	144	208	862	386	30	507	227
Arrive On Green	0.22	0.48	0.48	0.07	0.33	0.33	0.12	0.25	0.25	0.02	0.14	0.14
Sat Flow, veh/h	1740	3155	346	1740	3041	443	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	352	531	541	89	532	537	175	722	125	19	178	123
Grp Sat Flow(s),veh/h/ln	1740	1736	1766	1740	1736	1749	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	16.7	19.3	19.3	4.3	25.2	25.2	8.2	16.5	5.5	0.9	3.9	6.2
Cycle Q Clear(g_c), s	16.7	19.3	19.3	4.3	25.2	25.2	8.2	16.5	5.5	0.9	3.9	6.2
Prop In Lane	1.00		0.20	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	386	837	852	114	566	570	208	862	386	30	507	227
V/C Ratio(X)	0.91	0.63	0.64	0.78	0.94	0.94	0.84	0.84	0.32	0.64	0.35	0.54
Avail Cap(c_a), veh/h	391	837	852	185	575	579	208	954	427	83	705	315
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	16.3	16.3	38.9	27.7	27.7	36.5	30.3	26.1	41.3	32.6	33.5
Incr Delay (d2), s/veh	25.1	1.6	1.6	11.0	23.7	23.6	25.5	6.1	0.5	20.1	0.4	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	9.5	9.7	2.4	15.7	15.8	5.5	8.8	2.4	0.6	1.9	2.8
LnGrp Delay(d),s/veh	57.2	17.9	17.9	49.9	51.4	51.3	62.0	36.4	26.6	61.4	33.0	35.6
LnGrp LOS	E	B	B	D	D	D	E	D	C	E	C	D
Approach Vol, veh/h		1424			1158			1022			320	
Approach Delay, s/veh		27.6			51.2			39.6			35.7	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	24.8	9.5	44.8	14.0	16.2	22.7	31.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	23.0	9.0	38.0	10.0	17.0	19.0	28.0
Max Q Clear Time (g_c+I1), s	2.9	18.5	6.3	21.3	10.2	8.2	18.7	27.2
Green Ext Time (p_c), s	0.0	2.3	0.1	9.8	0.0	3.7	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	38.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	656	504	17	65	494	254	40	542	43	116	269	368
Future Volume (veh/h)	656	504	17	65	494	254	40	542	43	116	269	368
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	656	504	17	65	494	254	40	542	43	116	269	368
Adj No. of Lanes	2	2	1	2	2	0	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	700	1439	644	146	557	285	108	751	59	192	886	396
Arrive On Green	0.21	0.41	0.41	0.04	0.25	0.25	0.03	0.23	0.23	0.06	0.26	0.26
Sat Flow, veh/h	3375	3471	1553	3375	2224	1138	3375	3259	258	3375	3471	1553
Grp Volume(v), veh/h	656	504	17	65	385	363	40	288	297	116	269	368
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1688	1736	1626	1688	1736	1781	1688	1736	1553
Q Serve(g_s), s	12.0	6.2	0.4	1.2	13.4	13.5	0.7	9.6	9.7	2.1	3.9	14.5
Cycle Q Clear(g_c), s	12.0	6.2	0.4	1.2	13.4	13.5	0.7	9.6	9.7	2.1	3.9	14.5
Prop In Lane	1.00		1.00	1.00		0.70	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	700	1439	644	146	435	407	108	400	410	192	886	396
V/C Ratio(X)	0.94	0.35	0.03	0.45	0.89	0.89	0.37	0.72	0.72	0.61	0.30	0.93
Avail Cap(c_a), veh/h	700	1439	644	215	443	415	215	443	455	215	886	396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	12.6	10.9	29.3	22.6	22.7	29.7	22.3	22.3	28.9	18.9	22.8
Incr Delay (d2), s/veh	20.2	0.1	0.0	2.1	18.8	20.5	2.1	5.0	5.0	3.9	0.2	28.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	3.0	0.2	0.6	8.7	8.4	0.4	5.1	5.3	1.1	1.9	9.3
LnGrp Delay(d),s/veh	44.7	12.7	10.9	31.4	41.4	43.2	31.8	27.3	27.3	32.8	19.0	50.9
LnGrp LOS	D	B	B	C	D	D	C	C	C	C	B	D
Approach Vol, veh/h		1177			813			625			753	
Approach Delay, s/veh		30.5			41.4			27.6			36.7	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	18.4	6.7	30.0	6.0	20.0	17.0	19.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	4.0	25.0	4.0	16.0	13.0	16.0
Max Q Clear Time (g_c+I1), s	4.1	11.7	3.2	8.2	2.7	16.5	14.0	15.5
Green Ext Time (p_c), s	0.0	2.2	0.0	5.8	0.0	0.0	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1	88	110	3	1	281	879	37	0	397	0
Future Volume (veh/h)	11	1	88	110	3	1	281	879	37	0	397	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	11	1	88	110	3	1	281	879	37	0	397	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	14	1	109	149	112	37	361	1021	868	4	504	0
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.21	0.57	0.57	0.00	0.28	0.00
Sat Flow, veh/h	167	15	1334	1757	1325	442	1707	1792	1524	1707	1792	0
Grp Volume(v), veh/h	100	0	0	110	0	4	281	879	37	0	397	0
Grp Sat Flow(s),veh/h/ln	1516	0	0	1757	0	1767	1707	1792	1524	1707	1792	0
Q Serve(g_s), s	3.0	0.0	0.0	2.9	0.0	0.1	7.3	19.4	0.5	0.0	9.6	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	2.9	0.0	0.1	7.3	19.4	0.5	0.0	9.6	0.0
Prop In Lane	0.11		0.88	1.00		0.25	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	124	0	0	149	0	149	361	1021	868	4	504	0
V/C Ratio(X)	0.81	0.00	0.00	0.74	0.00	0.03	0.78	0.86	0.04	0.00	0.79	0.00
Avail Cap(c_a), veh/h	516	0	0	599	0	602	763	1832	1557	145	1183	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	21.2	0.0	0.0	21.0	0.0	19.7	17.5	8.5	4.5	0.0	15.6	0.0
Incr Delay (d2), s/veh	11.5	0.0	0.0	7.0	0.0	0.1	3.7	2.3	0.0	0.0	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	1.7	0.0	0.1	3.8	9.9	0.2	0.0	5.1	0.0
LnGrp Delay(d),s/veh	32.6	0.0	0.0	28.0	0.0	19.8	21.1	10.8	4.5	0.0	18.3	0.0
LnGrp LOS	C			C		B	C	B	A		B	
Approach Vol, veh/h		100			114			1197			397	
Approach Delay, s/veh		32.6			27.8			13.0			18.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.4	30.8		7.8	13.9	17.2		8.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	48.0		16.0	21.0	31.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	21.4		5.0	9.3	11.6		4.9
Green Ext Time (p_c), s	0.0	5.3		0.2	0.9	1.6		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	1	260	0	432	2	882	131	181	568	5
Future Volume (veh/h)	5	1	1	260	0	432	2	882	131	181	568	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	5	1	1	260	0	432	2	882	131	181	568	5
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	9	74	74	275	0	374	4	845	126	192	1178	10
Arrive On Green	0.01	0.09	0.09	0.16	0.00	0.24	0.00	0.54	0.54	0.11	0.65	0.65
Sat Flow, veh/h	1757	848	848	1757	0	1568	1757	1570	233	1757	1826	16
Grp Volume(v), veh/h	5	0	2	260	0	432	2	0	1013	181	0	573
Grp Sat Flow(s),veh/h/ln	1757	0	1695	1757	0	1568	1757	0	1804	1757	0	1842
Q Serve(g_s), s	0.4	0.0	0.2	21.5	0.0	35.0	0.2	0.0	79.0	15.0	0.0	23.5
Cycle Q Clear(g_c), s	0.4	0.0	0.2	21.5	0.0	35.0	0.2	0.0	79.0	15.0	0.0	23.5
Prop In Lane	1.00		0.50	1.00		1.00	1.00		0.13	1.00		0.01
Lane Grp Cap(c), veh/h	9	0	147	275	0	374	4	0	971	192	0	1188
V/C Ratio(X)	0.57	0.00	0.01	0.94	0.00	1.16	0.53	0.00	1.04	0.94	0.00	0.48
Avail Cap(c_a), veh/h	48	0	185	275	0	374	48	0	971	192	0	1188
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.8	0.0	61.3	61.2	0.0	55.9	73.1	0.0	33.9	64.9	0.0	13.4
Incr Delay (d2), s/veh	46.4	0.0	0.0	39.3	0.0	95.9	84.6	0.0	40.8	49.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	13.5	0.0	25.0	0.2	0.0	50.1	9.9	0.0	12.0
LnGrp Delay(d),s/veh	119.3	0.0	61.3	100.6	0.0	151.8	157.7	0.0	74.7	114.2	0.0	13.7
LnGrp LOS	F		E	F		F	F		F	F		B
Approach Vol, veh/h		7			692			1015			754	
Approach Delay, s/veh		102.7			132.5			74.8			37.8	
Approach LOS		F			F			E			D	

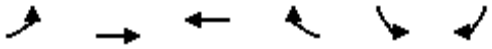
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	83.0	27.0	16.7	4.3	98.7	4.7	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	79.0	23.0	16.0	4.0	91.0	4.0	35.0
Max Q Clear Time (g_c+I1), s	17.0	81.0	23.5	2.2	2.2	25.5	2.4	37.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.8	0.0	12.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	6	4	1	5	7	3	516	1	0	547	269
Future Volume (veh/h)	315	6	4	1	5	7	3	516	1	0	547	269
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	315	6	4	1	5	7	3	516	1	0	547	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	397	8	361	2	9	12	6	886	2	4	713	606
Arrive On Green	0.23	0.23	0.23	0.01	0.01	0.01	0.00	0.48	0.48	0.00	0.39	0.00
Sat Flow, veh/h	1726	33	1568	129	646	904	1757	1840	4	1757	1845	1568
Grp Volume(v), veh/h	321	0	4	13	0	0	3	0	517	0	547	0
Grp Sat Flow(s),veh/h/ln	1758	0	1568	1679	0	0	1757	0	1844	1757	1845	1568
Q Serve(g_s), s	7.5	0.0	0.1	0.3	0.0	0.0	0.1	0.0	8.8	0.0	11.3	0.0
Cycle Q Clear(g_c), s	7.5	0.0	0.1	0.3	0.0	0.0	0.1	0.0	8.8	0.0	11.3	0.0
Prop In Lane	0.98		1.00	0.08		0.54	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	405	0	361	22	0	0	6	0	888	4	713	606
V/C Ratio(X)	0.79	0.00	0.01	0.58	0.00	0.00	0.52	0.00	0.58	0.00	0.77	0.00
Avail Cap(c_a), veh/h	644	0	574	615	0	0	161	0	971	161	971	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	15.8	0.0	13.0	21.4	0.0	0.0	21.7	0.0	8.2	0.0	11.7	0.0
Incr Delay (d2), s/veh	3.5	0.0	0.0	21.5	0.0	0.0	58.1	0.0	0.8	0.0	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	0.0	0.3	0.0	0.0	0.1	0.0	4.6	0.0	6.1	0.0
LnGrp Delay(d),s/veh	19.4	0.0	13.0	42.9	0.0	0.0	79.8	0.0	8.9	0.0	14.2	0.0
LnGrp LOS	B		B	D			E		A		B	
Approach Vol, veh/h		325			13			520			547	
Approach Delay, s/veh		19.3			42.9			9.3			14.2	
Approach LOS		B			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	25.0		14.1	4.1	20.9		4.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0	4.0	23.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	10.8		9.5	2.1	13.3		2.3
Green Ext Time (p_c), s	0.0	4.1		0.7	0.0	3.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	251	643	551	87	15	116
Future Volume (veh/h)	251	643	551	87	15	116
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	251	643	551	87	15	116
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	238	2208	1088	171	174	155
Arrive On Green	0.14	0.63	0.36	0.36	0.10	0.10
Sat Flow, veh/h	1757	3597	3127	478	1757	1568
Grp Volume(v), veh/h	251	643	317	321	15	116
Grp Sat Flow(s),veh/h/ln	1757	1752	1752	1760	1757	1568
Q Serve(g_s), s	4.0	2.5	4.2	4.2	0.2	2.1
Cycle Q Clear(g_c), s	4.0	2.5	4.2	4.2	0.2	2.1
Prop In Lane	1.00			0.27	1.00	1.00
Lane Grp Cap(c), veh/h	238	2208	628	631	174	155
V/C Ratio(X)	1.05	0.29	0.51	0.51	0.09	0.75
Avail Cap(c_a), veh/h	238	2852	951	955	1072	957
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.7	2.5	7.4	7.4	12.1	12.9
Incr Delay (d2), s/veh	73.0	0.1	0.6	0.6	0.2	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	1.2	2.0	2.2	0.1	2.1
LnGrp Delay(d),s/veh	85.8	2.5	8.0	8.0	12.3	20.0
LnGrp LOS	F	A	A	A	B	B
Approach Vol, veh/h		894	638		131	
Approach Delay, s/veh		25.9	8.0		19.1	
Approach LOS		C	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				22.6		6.9	8.0	14.6
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				24.0		18.0	4.0	16.0
Max Q Clear Time (g_c+I1), s				4.5		4.1	6.0	6.2
Green Ext Time (p_c), s				6.1		0.3	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	264	1924	0	58	2372	0	1	2	29	52	0	0
Future Volume (veh/h)	264	1924	0	58	2372	0	1	2	29	52	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	264	1924	0	58	2372	0	1	2	29	52	0	0
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	303	3343	0	74	2686	0	2	83	71	65	150	127
Arrive On Green	0.17	0.66	0.00	0.04	0.53	0.00	0.00	0.04	0.04	0.04	0.00	0.00
Sat Flow, veh/h	1757	5202	0	1757	5202	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	264	1924	0	58	2372	0	1	2	29	52	0	0
Grp Sat Flow(s),veh/h/ln	1757	1679	0	1757	1679	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	11.0	15.7	0.0	2.5	31.3	0.0	0.0	0.1	1.4	2.2	0.0	0.0
Cycle Q Clear(g_c), s	11.0	15.7	0.0	2.5	31.3	0.0	0.0	0.1	1.4	2.2	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	3343	0	74	2686	0	2	83	71	65	150	127
V/C Ratio(X)	0.87	0.58	0.00	0.79	0.88	0.00	0.43	0.02	0.41	0.80	0.00	0.00
Avail Cap(c_a), veh/h	303	3343	0	163	2806	0	70	392	333	70	392	333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.4	6.9	0.0	35.8	15.5	0.0	37.6	34.4	35.0	36.0	0.0	0.0
Incr Delay (d2), s/veh	23.2	0.2	0.0	16.7	3.6	0.0	92.3	0.1	3.8	44.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	7.2	0.0	1.5	15.2	0.0	0.1	0.0	0.7	1.9	0.0	0.0
LnGrp Delay(d),s/veh	53.5	7.1	0.0	52.5	19.1	0.0	129.9	34.5	38.8	80.0	0.0	0.0
LnGrp LOS	D	A		D	B		F	C	D	F		
Approach Vol, veh/h		2188			2430			32			52	
Approach Delay, s/veh		12.7			19.9			41.4			80.0	
Approach LOS		B			B			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	7.4	7.2	54.0	4.1	10.1	17.0	44.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	16.0	7.0	48.0	3.0	16.0	13.0	42.0
Max Q Clear Time (g_c+I1), s	4.2	3.4	4.5	17.7	2.0	0.0	13.0	33.3
Green Ext Time (p_c), s	0.0	0.0	0.0	28.4	0.0	0.0	0.0	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	1026	501	127	1364	0	824	266	117	42	225	227
Future Volume (veh/h)	387	1026	501	127	1364	0	824	266	117	42	225	227
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	387	1026	501	127	1364	0	824	266	117	42	225	227
Adj No. of Lanes	1	3	1	2	3	1	2	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	368	2068	644	185	1286	400	777	662	562	53	297	253
Arrive On Green	0.21	0.41	0.41	0.05	0.26	0.00	0.23	0.36	0.36	0.03	0.16	0.16
Sat Flow, veh/h	1757	5036	1568	3408	5036	1568	3408	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	387	1026	501	127	1364	0	824	266	117	42	225	227
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1679	1568	1704	1845	1568	1757	1845	1568
Q Serve(g_s), s	23.0	16.5	30.4	4.0	28.0	0.0	25.0	11.9	5.7	2.6	12.8	15.6
Cycle Q Clear(g_c), s	23.0	16.5	30.4	4.0	28.0	0.0	25.0	11.9	5.7	2.6	12.8	15.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	2068	644	185	1286	400	777	662	562	53	297	253
V/C Ratio(X)	1.05	0.50	0.78	0.68	1.06	0.00	1.06	0.40	0.21	0.79	0.76	0.90
Avail Cap(c_a), veh/h	368	2068	644	249	1286	400	777	662	562	96	303	257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	23.9	28.0	50.9	40.8	0.0	42.3	26.3	24.4	52.8	43.9	45.1
Incr Delay (d2), s/veh	60.7	0.2	6.0	4.8	43.0	0.0	49.6	0.4	0.2	22.0	10.3	30.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.3	7.6	14.1	2.0	18.0	0.0	17.0	6.1	2.5	1.6	7.4	8.9
LnGrp Delay(d),s/veh	104.1	24.1	34.0	55.7	83.8	0.0	91.9	26.7	24.6	74.8	54.2	75.8
LnGrp LOS	F	C	C	E	F		F	C	C	E	D	E
Approach Vol, veh/h		1914			1491			1207			494	
Approach Delay, s/veh		42.9			81.4			71.0			65.9	
Approach LOS		D			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	43.3	10.0	49.0	29.0	21.7	27.0	32.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	37.0	8.0	43.0	25.0	18.0	23.0	28.0
Max Q Clear Time (g_c+I1), s	4.6	13.9	6.0	32.4	27.0	17.6	25.0	30.0
Green Ext Time (p_c), s	0.0	3.3	0.1	8.9	0.0	0.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	63.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	991	18	47	1339	2	150	0	0	4	1	61
Future Volume (veh/h)	12	991	18	47	1339	2	150	0	0	4	1	61
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	12	991	18	47	1339	2	150	0	0	4	1	61
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	16	1927	35	55	2080	3	192	359	305	6	163	139
Arrive On Green	0.01	0.38	0.38	0.03	0.40	0.40	0.11	0.00	0.00	0.00	0.09	0.09
Sat Flow, veh/h	1757	5093	92	1757	5193	8	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	12	653	356	47	866	475	150	0	0	4	1	61
Grp Sat Flow(s),veh/h/ln	1757	1679	1828	1757	1679	1843	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.3	6.1	6.1	1.1	8.5	8.5	3.4	0.0	0.0	0.1	0.0	1.5
Cycle Q Clear(g_c), s	0.3	6.1	6.1	1.1	8.5	8.5	3.4	0.0	0.0	0.1	0.0	1.5
Prop In Lane	1.00		0.05	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	16	1270	692	55	1344	738	192	359	305	6	163	139
V/C Ratio(X)	0.73	0.51	0.51	0.85	0.64	0.64	0.78	0.00	0.00	0.70	0.01	0.44
Avail Cap(c_a), veh/h	129	1317	717	215	1482	814	302	905	769	129	724	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	9.8	9.8	19.7	9.9	9.9	17.7	0.0	0.0	20.3	17.0	17.6
Incr Delay (d2), s/veh	46.4	0.3	0.6	28.5	0.8	1.5	6.7	0.0	0.0	93.3	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.9	3.2	0.9	4.0	4.5	2.0	0.0	0.0	0.2	0.0	0.7
LnGrp Delay(d),s/veh	66.6	10.1	10.4	48.2	10.7	11.4	24.4	0.0	0.0	113.6	17.0	19.8
LnGrp LOS	E	B	B	D	B	B	C			F	B	B
Approach Vol, veh/h		1021			1388			150			66	
Approach Delay, s/veh		10.9			12.2			24.4			25.5	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	11.9	5.3	19.4	8.5	7.6	4.4	20.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	20.0	5.0	16.0	7.0	16.0	3.0	18.0
Max Q Clear Time (g_c+I1), s	2.1	0.0	3.1	8.1	5.4	3.5	2.3	10.5
Green Ext Time (p_c), s	0.0	0.0	0.0	6.1	0.1	0.1	0.0	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	917	29	82	1233	32	88	6	61	51	7	67
Future Volume (veh/h)	49	917	29	82	1233	32	88	6	61	51	7	67
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	49	917	29	82	1233	32	88	6	61	51	7	67
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	57	1881	59	102	2021	52	109	235	199	60	183	155
Arrive On Green	0.03	0.37	0.37	0.06	0.40	0.40	0.06	0.13	0.13	0.03	0.10	0.10
Sat Flow, veh/h	1757	5016	158	1757	5048	131	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	49	613	333	82	820	445	88	6	61	51	7	67
Grp Sat Flow(s),veh/h/ln	1757	1679	1817	1757	1679	1822	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.1	5.5	5.5	1.8	7.6	7.6	2.0	0.1	1.4	1.1	0.1	1.6
Cycle Q Clear(g_c), s	1.1	5.5	5.5	1.8	7.6	7.6	2.0	0.1	1.4	1.1	0.1	1.6
Prop In Lane	1.00		0.09	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	1259	681	102	1344	729	109	235	199	60	183	155
V/C Ratio(X)	0.85	0.49	0.49	0.80	0.61	0.61	0.80	0.03	0.31	0.85	0.04	0.43
Avail Cap(c_a), veh/h	178	1362	737	267	1532	831	223	795	676	223	795	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	9.4	9.4	18.4	9.4	9.4	18.3	15.1	15.6	18.9	16.1	16.7
Incr Delay (d2), s/veh	27.8	0.3	0.5	13.6	0.6	1.0	12.7	0.0	0.9	26.1	0.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.5	2.9	1.3	3.6	4.0	1.3	0.1	0.6	1.0	0.1	0.8
LnGrp Delay(d),s/veh	46.8	9.7	10.0	32.0	10.0	10.4	31.0	15.1	16.5	45.0	16.2	18.6
LnGrp LOS	D	A	A	C	A	B	C	B	B	D	B	B
Approach Vol, veh/h		995			1347			155			125	
Approach Delay, s/veh		11.6			11.5			24.7			29.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	9.0	6.3	18.8	6.5	7.9	5.3	19.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	17.0	6.0	16.0	5.0	17.0	4.0	18.0
Max Q Clear Time (g_c+I1), s	3.1	3.4	3.8	7.5	4.0	3.6	3.1	9.6
Green Ext Time (p_c), s	0.0	0.3	0.0	6.2	0.0	0.3	0.0	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	109	25	74	1546	883	95
Future Volume (veh/h)	109	25	74	1546	883	95
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	109	25	74	1546	883	95
Adj No. of Lanes	1	1	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	137	122	95	1579	2457	264
Arrive On Green	0.08	0.08	0.05	0.86	0.77	0.77
Sat Flow, veh/h	1757	1568	1757	1845	3285	344
Grp Volume(v), veh/h	109	25	74	1546	485	493
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1845	1752	1784
Q Serve(g_s), s	7.4	1.8	5.1	90.6	10.7	10.7
Cycle Q Clear(g_c), s	7.4	1.8	5.1	90.6	10.7	10.7
Prop In Lane	1.00	1.00	1.00			0.19
Lane Grp Cap(c), veh/h	137	122	95	1579	1348	1373
V/C Ratio(X)	0.79	0.20	0.78	0.98	0.36	0.36
Avail Cap(c_a), veh/h	217	193	173	1622	1348	1373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	52.5	56.9	7.8	4.5	4.5
Incr Delay (d2), s/veh	10.1	0.8	13.1	17.3	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	1.6	2.8	51.8	5.2	5.3
LnGrp Delay(d),s/veh	65.2	53.4	69.9	25.1	4.6	4.6
LnGrp LOS	E	D	E	C	A	A
Approach Vol, veh/h	134			1620	978	
Approach Delay, s/veh	63.0			27.2	4.6	
Approach LOS	E			C	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		108.2		13.5	10.5	97.6		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		107.0		15.0	12.0	91.0		
Max Q Clear Time (g_c+I1), s		92.6		9.4	7.1	12.7		
Green Ext Time (p_c), s		11.6		0.2	0.1	44.6		

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	124	204	1912	975	20
Future Volume (veh/h)	28	124	204	1912	975	20
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	28	124	204	1912	975	20
Adj No. of Lanes	1	1	1	3	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	193	173	262	3341	2035	42
Arrive On Green	0.11	0.11	0.15	0.66	0.40	0.40
Sat Flow, veh/h	1757	1568	1757	5202	5245	104
Grp Volume(v), veh/h	28	124	204	1912	644	351
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1679	1679	1826
Q Serve(g_s), s	0.5	2.7	3.9	7.3	5.0	5.0
Cycle Q Clear(g_c), s	0.5	2.7	3.9	7.3	5.0	5.0
Prop In Lane	1.00	1.00	1.00			0.06
Lane Grp Cap(c), veh/h	193	173	262	3341	1345	732
V/C Ratio(X)	0.14	0.72	0.78	0.57	0.48	0.48
Avail Cap(c_a), veh/h	746	666	398	3851	1426	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.2	15.2	14.5	3.2	7.8	7.8
Incr Delay (d2), s/veh	0.3	5.5	5.4	0.2	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.6	2.3	3.2	2.3	2.6
LnGrp Delay(d),s/veh	14.5	20.7	19.8	3.4	8.1	8.3
LnGrp LOS	B	C	B	A	A	A
Approach Vol, veh/h	152			2116	995	
Approach Delay, s/veh	19.6			5.0	8.2	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		27.4		7.9	9.3	18.1		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		27.0		15.0	8.0	15.0		
Max Q Clear Time (g_c+I1), s		9.3		4.7	5.9	7.0		
Green Ext Time (p_c), s		14.1		0.3	0.2	7.0		

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	14	80	1106	625	219
Future Volume (veh/h)	90	14	80	1106	625	219
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	90	14	80	1106	625	219
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	120	107	97	2307	1189	416
Arrive On Green	0.07	0.07	0.05	0.66	0.47	0.47
Sat Flow, veh/h	1757	1568	1757	3597	2640	892
Grp Volume(v), veh/h	90	14	80	1106	430	414
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1687
Q Serve(g_s), s	1.5	0.2	1.3	4.6	5.1	5.1
Cycle Q Clear(g_c), s	1.5	0.2	1.3	4.6	5.1	5.1
Prop In Lane	1.00	1.00	1.00			0.53
Lane Grp Cap(c), veh/h	120	107	97	2307	818	787
V/C Ratio(X)	0.75	0.13	0.83	0.48	0.53	0.53
Avail Cap(c_a), veh/h	300	268	360	3233	1018	980
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	12.8	13.7	2.5	5.5	5.5
Incr Delay (d2), s/veh	8.9	0.5	16.0	0.2	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.2	1.1	2.2	2.5	2.4
LnGrp Delay(d),s/veh	22.3	13.4	29.7	2.7	6.0	6.1
LnGrp LOS	C	B	C	A	A	A
Approach Vol, veh/h	104			1186	844	
Approach Delay, s/veh	21.1			4.5	6.1	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		23.3		6.0	5.6	17.7		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		27.0		5.0	6.0	17.0		
Max Q Clear Time (g_c+I1), s		6.6		3.5	3.3	7.1		
Green Ext Time (p_c), s		10.6		0.0	0.0	6.6		

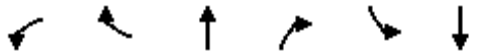
Intersection Summary	
HCM 2010 Ctrl Delay	5.9
HCM 2010 LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	230	9	214	1393	701	136
Future Volume (veh/h)	230	9	214	1393	701	136
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	230	9	214	1393	701	136
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	303	271	279	2265	1163	226
Arrive On Green	0.17	0.17	0.16	0.65	0.40	0.40
Sat Flow, veh/h	1757	1568	1757	3597	3021	568
Grp Volume(v), veh/h	230	9	214	1393	419	418
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1744
Q Serve(g_s), s	5.5	0.2	5.2	10.3	8.4	8.4
Cycle Q Clear(g_c), s	5.5	0.2	5.2	10.3	8.4	8.4
Prop In Lane	1.00	1.00	1.00			0.33
Lane Grp Cap(c), veh/h	303	271	279	2265	696	693
V/C Ratio(X)	0.76	0.03	0.77	0.61	0.60	0.60
Avail Cap(c_a), veh/h	597	533	517	2936	794	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.4	15.2	17.8	4.6	10.5	10.6
Incr Delay (d2), s/veh	3.9	0.0	4.4	0.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.2	2.8	4.9	4.2	4.1
LnGrp Delay(d),s/veh	21.3	15.3	22.2	4.9	11.6	11.6
LnGrp LOS	C	B	C	A	B	B
Approach Vol, veh/h	239			1607	837	
Approach Delay, s/veh	21.1			7.2	11.6	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		32.5		11.6	11.0	21.5		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		37.0		15.0	13.0	20.0		
Max Q Clear Time (g_c+I1), s		12.3		7.5	7.2	10.4		
Green Ext Time (p_c), s		13.9		0.5	0.4	7.2		

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	140	2579	0	144	1223
Future Volume (veh/h)	0	140	2579	0	144	1223
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	0	140	2579	0	144	1223
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	196	175	3035	0	180	2686
Arrive On Green	0.00	0.11	0.60	0.00	0.10	0.77
Sat Flow, veh/h	1757	1568	5368	0	1757	3597
Grp Volume(v), veh/h	0	140	2579	0	144	1223
Grp Sat Flow(s),veh/h/ln	1757	1568	1679	0	1757	1752
Q Serve(g_s), s	0.0	5.7	27.4	0.0	5.3	8.2
Cycle Q Clear(g_c), s	0.0	5.7	27.4	0.0	5.3	8.2
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	196	175	3035	0	180	2686
V/C Ratio(X)	0.00	0.80	0.85	0.00	0.80	0.46
Avail Cap(c_a), veh/h	429	382	3071	0	187	2725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	28.4	10.6	0.0	28.8	2.8
Incr Delay (d2), s/veh	0.0	8.1	2.4	0.0	20.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	13.1	0.0	3.6	4.0
LnGrp Delay(d),s/veh	0.0	36.5	13.0	0.0	49.3	2.9
LnGrp LOS		D	B		D	A
Approach Vol, veh/h	140		2579			1367
Approach Delay, s/veh	36.5		13.0			7.8
Approach LOS	D		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		54.3			10.7	43.5		11.3
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		51.0			7.0	40.0		16.0
Max Q Clear Time (g_c+I1), s		10.2			7.3	29.4		7.7
Green Ext Time (p_c), s		35.4			0.0	10.2		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	716	534	40	544	522	0	131	1640	583	31	871	565
Future Volume (veh/h)	716	534	40	544	522	0	131	1640	583	31	871	565
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	716	534	40	544	522	0	131	1640	583	31	871	565
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	780	770	344	637	623	279	203	1870	582	64	1665	518
Arrive On Green	0.23	0.22	0.22	0.19	0.18	0.00	0.06	0.37	0.37	0.02	0.33	0.33
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	716	534	40	544	522	0	131	1640	583	31	871	565
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	16.1	11.0	1.6	12.1	11.3	0.0	3.0	23.9	29.2	0.7	11.0	26.0
Cycle Q Clear(g_c), s	16.1	11.0	1.6	12.1	11.3	0.0	3.0	23.9	29.2	0.7	11.0	26.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	780	770	344	637	623	279	203	1870	582	64	1665	518
V/C Ratio(X)	0.92	0.69	0.12	0.85	0.84	0.00	0.65	0.88	1.00	0.48	0.52	1.09
Avail Cap(c_a), veh/h	780	770	344	693	668	299	217	1870	582	130	1665	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	28.3	24.6	30.9	31.2	0.0	36.2	23.1	24.7	38.2	21.3	26.3
Incr Delay (d2), s/veh	15.8	2.7	0.1	9.6	8.8	0.0	6.0	5.1	37.7	5.6	0.3	66.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	5.6	0.7	6.5	6.2	0.0	1.6	11.8	18.6	0.4	5.1	20.7
LnGrp Delay(d),s/veh	45.4	31.0	24.7	40.5	40.0	0.0	42.1	28.1	62.4	43.8	21.6	92.5
LnGrp LOS	D	C	C	D	D		D	C	F	D	C	F
Approach Vol, veh/h		1290			1066			2354			1467	
Approach Delay, s/veh		38.8			40.3			37.4			49.4	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	33.2	18.7	21.3	8.7	30.0	22.0	18.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	28.0	16.0	17.0	5.0	26.0	18.0	15.0
Max Q Clear Time (g_c+I1), s	2.7	31.2	14.1	13.0	5.0	28.0	18.1	13.3
Green Ext Time (p_c), s	0.0	0.0	0.6	2.0	0.0	0.0	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	733	19	23	666	13	117	2	73	22	2	69
Future Volume (veh/h)	67	733	19	23	666	13	117	2	73	22	2	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	67	733	19	23	666	13	117	2	73	22	2	69
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	80	1235	32	30	1143	22	149	321	273	29	194	165
Arrive On Green	0.05	0.35	0.35	0.02	0.33	0.33	0.08	0.17	0.17	0.02	0.11	0.11
Sat Flow, veh/h	1757	3491	90	1757	3516	69	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	67	368	384	23	332	347	117	2	73	22	2	69
Grp Sat Flow(s),veh/h/ln	1757	1752	1829	1757	1752	1833	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.4	6.3	6.3	0.5	5.7	5.8	2.4	0.0	1.5	0.5	0.0	1.5
Cycle Q Clear(g_c), s	1.4	6.3	6.3	0.5	5.7	5.8	2.4	0.0	1.5	0.5	0.0	1.5
Prop In Lane	1.00		0.05	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	620	647	30	570	596	149	321	273	29	194	165
V/C Ratio(X)	0.83	0.59	0.59	0.77	0.58	0.58	0.78	0.01	0.27	0.76	0.01	0.42
Avail Cap(c_a), veh/h	193	817	853	145	769	804	337	1062	903	145	860	731
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.3	9.6	9.6	17.8	10.2	10.2	16.4	12.5	13.1	17.9	14.6	15.3
Incr Delay (d2), s/veh	19.2	0.9	0.9	32.4	0.9	0.9	8.7	0.0	0.5	33.0	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.1	3.3	0.5	2.9	3.0	1.5	0.0	0.7	0.5	0.0	0.7
LnGrp Delay(d),s/veh	36.5	10.5	10.5	50.2	11.2	11.2	25.0	12.5	13.6	50.8	14.6	16.9
LnGrp LOS	D	B	B	D	B	B	C	B	B	D	B	B
Approach Vol, veh/h		819			702			192			93	
Approach Delay, s/veh		12.7			12.4			20.5			24.9	
Approach LOS		B			B			C			C	

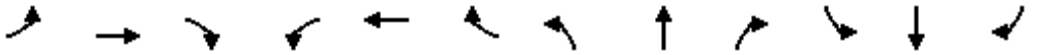
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	10.3	4.6	16.9	7.1	7.8	5.7	15.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	21.0	3.0	17.0	7.0	17.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	2.5	3.5	2.5	8.3	4.4	3.5	3.4	7.8
Green Ext Time (p_c), s	0.0	0.4	0.0	4.3	0.1	0.3	0.0	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	1539	180	71	2023	59	69	5	0	54	3	54
Future Volume (veh/h)	232	1539	180	71	2023	59	69	5	0	54	3	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	232	1539	180	71	2023	59	69	5	0	54	3	54
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	278	2821	330	91	2569	75	88	93	0	99	105	89
Arrive On Green	0.16	0.62	0.62	0.05	0.51	0.51	0.05	0.05	0.00	0.06	0.06	0.06
Sat Flow, veh/h	1757	4573	534	1757	5030	146	1757	1845	0	1757	1845	1568
Grp Volume(v), veh/h	232	1129	590	71	1349	733	69	5	0	54	3	54
Grp Sat Flow(s),veh/h/ln	1757	1679	1750	1757	1679	1819	1757	1845	0	1757	1845	1568
Q Serve(g_s), s	9.1	13.8	13.9	2.8	23.4	23.5	2.8	0.2	0.0	2.1	0.1	2.4
Cycle Q Clear(g_c), s	9.1	13.8	13.9	2.8	23.4	23.5	2.8	0.2	0.0	2.1	0.1	2.4
Prop In Lane	1.00		0.31	1.00		0.08	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	2071	1080	91	1715	929	88	93	0	99	105	89
V/C Ratio(X)	0.84	0.55	0.55	0.78	0.79	0.79	0.79	0.05	0.00	0.55	0.03	0.61
Avail Cap(c_a), veh/h	345	2071	1080	222	1791	970	99	466	0	99	466	396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	7.9	7.9	33.4	14.3	14.3	33.5	32.2	0.0	32.7	31.7	32.8
Incr Delay (d2), s/veh	13.5	0.3	0.6	13.2	2.3	4.3	30.6	0.2	0.0	6.2	0.1	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	6.4	6.7	1.7	11.2	12.7	2.1	0.1	0.0	1.2	0.1	1.2
LnGrp Delay(d),s/veh	42.6	8.2	8.5	46.6	16.6	18.6	64.1	32.4	0.0	39.0	31.8	39.3
LnGrp LOS	D	A	A	D	B	B	E	C		D	C	D
Approach Vol, veh/h		1951			2153			74			111	
Approach Delay, s/veh		12.4			18.2			61.9			38.9	
Approach LOS		B			B			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	7.6	7.7	47.9	7.6	8.0	15.3	40.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	18.0	9.0	43.0	4.0	18.0	14.0	38.0
Max Q Clear Time (g_c+I1), s	4.1	2.2	4.8	15.9	4.8	4.4	11.1	25.5
Green Ext Time (p_c), s	0.0	0.1	0.1	23.6	0.0	0.1	0.2	10.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	263	752	772	20	1276	24	1484	124	38	18	45	96
Future Volume (veh/h)	263	752	772	20	1276	24	1484	124	38	18	45	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	263	752	772	20	1276	24	1484	124	38	18	45	96
Adj No. of Lanes	1	3	1	2	2	1	2	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	230	2196	684	39	1110	497	1244	793	674	22	143	121
Arrive On Green	0.13	0.44	0.44	0.01	0.32	0.32	0.36	0.43	0.43	0.01	0.08	0.08
Sat Flow, veh/h	1757	5036	1568	3408	3505	1568	3408	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	263	752	772	20	1276	24	1484	124	38	18	45	96
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1752	1568	1704	1845	1568	1757	1845	1568
Q Serve(g_s), s	19.0	14.4	63.3	0.8	46.0	1.5	53.0	6.0	2.1	1.5	3.4	8.7
Cycle Q Clear(g_c), s	19.0	14.4	63.3	0.8	46.0	1.5	53.0	6.0	2.1	1.5	3.4	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	2196	684	39	1110	497	1244	793	674	22	143	121
V/C Ratio(X)	1.14	0.34	1.13	0.51	1.15	0.05	1.19	0.16	0.06	0.83	0.31	0.79
Avail Cap(c_a), veh/h	230	2196	684	70	1110	497	1244	813	691	60	203	173
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	27.2	41.0	71.4	49.6	34.4	46.1	25.3	24.2	71.6	63.4	65.8
Incr Delay (d2), s/veh	103.8	0.1	75.8	10.1	78.1	0.0	95.2	0.1	0.0	51.3	1.2	14.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.8	6.7	41.7	0.5	34.2	0.7	41.3	3.1	0.9	1.0	1.8	4.3
LnGrp Delay(d),s/veh	167.0	27.2	116.7	81.4	127.7	34.5	141.3	25.4	24.2	122.9	64.6	80.5
LnGrp LOS	F	C	F	F	F	C	F	C	C	F	E	F
Approach Vol, veh/h		1787			1320			1646			159	
Approach Delay, s/veh		86.5			125.3			129.8			80.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	66.5	5.7	67.3	57.0	15.3	23.0	50.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	64.0	3.0	62.0	53.0	16.0	19.0	46.0
Max Q Clear Time (g_c+I1), s	3.5	8.0	2.8	65.3	55.0	10.7	21.0	48.0
Green Ext Time (p_c), s	0.0	1.2	0.0	0.0	0.0	0.5	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		111.2
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	401	32	20	560	276	119	572	92	109	245	201
Future Volume (veh/h)	144	401	32	20	560	276	119	572	92	109	245	201
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	144	401	32	20	560	276	119	572	92	109	245	201
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	243	1130	505	50	932	417	207	899	402	192	884	395
Arrive On Green	0.07	0.32	0.32	0.01	0.27	0.27	0.06	0.26	0.26	0.06	0.25	0.25
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	144	401	32	20	560	276	119	572	92	109	245	201
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	1.9	4.0	0.6	0.3	6.4	7.2	1.6	6.6	2.1	1.4	2.6	5.0
Cycle Q Clear(g_c), s	1.9	4.0	0.6	0.3	6.4	7.2	1.6	6.6	2.1	1.4	2.6	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1130	505	50	932	417	207	899	402	192	884	395
V/C Ratio(X)	0.59	0.35	0.06	0.40	0.60	0.66	0.57	0.64	0.23	0.57	0.28	0.51
Avail Cap(c_a), veh/h	298	1226	548	224	1149	514	298	1226	548	298	1226	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	11.9	10.7	22.3	14.7	15.0	20.9	15.1	13.4	21.0	13.7	14.7
Incr Delay (d2), s/veh	2.3	0.2	0.1	5.0	0.6	2.3	2.5	0.8	0.3	2.6	0.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.9	0.3	0.2	3.1	3.3	0.8	3.3	1.0	0.7	1.2	2.2
LnGrp Delay(d),s/veh	22.9	12.0	10.8	27.4	15.3	17.2	23.4	15.9	13.7	23.6	13.9	15.7
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		577			856			783			555	
Approach Delay, s/veh		14.7			16.2			16.7			16.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	15.7	4.7	18.7	6.8	15.5	7.3	16.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	3.0	16.0	4.0	16.0	4.0	15.0
Max Q Clear Time (g_c+I1), s	3.4	8.6	2.3	6.0	3.6	7.0	3.9	9.2
Green Ext Time (p_c), s	0.0	3.1	0.0	4.3	0.0	3.5	0.0	3.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1304	99	182	1974	6	12	848	115	13	1009	160
Future Volume (veh/h)	220	1304	99	182	1974	6	12	848	115	13	1009	160
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	220	1304	99	182	1974	6	12	848	115	13	1009	160
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	238	2040	635	260	2074	646	40	1122	502	42	1125	503
Arrive On Green	0.07	0.41	0.41	0.08	0.41	0.41	0.01	0.32	0.32	0.01	0.32	0.32
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	220	1304	99	182	1974	6	12	848	115	13	1009	160
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	5.5	17.9	3.4	4.5	32.6	0.2	0.3	18.7	4.6	0.3	23.6	6.6
Cycle Q Clear(g_c), s	5.5	17.9	3.4	4.5	32.6	0.2	0.3	18.7	4.6	0.3	23.6	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	2040	635	260	2074	646	40	1122	502	42	1125	503
V/C Ratio(X)	0.93	0.64	0.16	0.70	0.95	0.01	0.30	0.76	0.23	0.31	0.90	0.32
Avail Cap(c_a), veh/h	238	2040	635	357	2107	656	158	1141	510	158	1141	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	20.5	16.2	38.8	24.5	14.9	42.2	26.2	21.5	42.1	27.9	22.1
Incr Delay (d2), s/veh	38.6	0.7	0.1	3.6	10.5	0.0	4.2	2.9	0.2	4.0	9.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	8.3	1.5	2.2	17.0	0.1	0.2	9.4	2.0	0.2	12.8	2.9
LnGrp Delay(d),s/veh	78.4	21.2	16.4	42.4	34.9	14.9	46.4	29.1	21.7	46.1	37.3	22.4
LnGrp LOS	E	C	B	D	C	B	D	C	C	D	D	C
Approach Vol, veh/h		1623			2162			975			1182	
Approach Delay, s/veh		28.7			35.5			28.5			35.4	
Approach LOS		C			D			C			D	

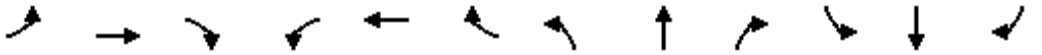
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	31.5	10.6	38.9	5.0	31.6	10.0	39.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	28.0	9.0	33.0	4.0	28.0	6.0	36.0
Max Q Clear Time (g_c+I1), s	2.3	20.7	6.5	19.9	2.3	25.6	7.5	34.6
Green Ext Time (p_c), s	0.0	5.5	0.2	11.8	0.0	2.0	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	32.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	829	0	600	1185	0	0	107	763	0	117	120
Future Volume (veh/h)	224	829	0	600	1185	0	0	107	763	0	117	120
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	224	829	0	600	1185	0	0	107	763	0	117	120
Adj No. of Lanes	2	2	0	2	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	288	969	0	691	1385	0	2	1233	551	2	1233	551
Arrive On Green	0.08	0.28	0.00	0.20	0.40	0.00	0.00	0.35	0.35	0.00	0.35	0.35
Sat Flow, veh/h	3408	3597	0	3408	3597	0	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	224	829	0	600	1185	0	0	107	763	0	117	120
Grp Sat Flow(s),veh/h/ln	1704	1752	0	1704	1752	0	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	4.6	15.9	0.0	12.1	22.0	0.0	0.0	1.5	25.0	0.0	1.6	3.8
Cycle Q Clear(g_c), s	4.6	15.9	0.0	12.1	22.0	0.0	0.0	1.5	25.0	0.0	1.6	3.8
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	288	969	0	691	1385	0	2	1233	551	2	1233	551
V/C Ratio(X)	0.78	0.86	0.00	0.87	0.86	0.00	0.00	0.09	1.38	0.00	0.09	0.22
Avail Cap(c_a), veh/h	288	986	0	719	1430	0	99	1233	551	99	1233	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	24.4	0.0	27.4	19.7	0.0	0.0	15.4	23.0	0.0	15.5	16.2
Incr Delay (d2), s/veh	12.7	7.4	0.0	10.7	5.2	0.0	0.0	0.0	183.7	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	8.7	0.0	6.7	11.5	0.0	0.0	0.7	38.9	0.0	0.8	1.7
LnGrp Delay(d),s/veh	44.6	31.7	0.0	38.1	24.9	0.0	0.0	15.4	206.7	0.0	15.5	16.4
LnGrp LOS	D	C		D	C			B	F		B	B
Approach Vol, veh/h		1053			1785			870			237	
Approach Delay, s/veh		34.5			29.3			183.2			15.9	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	29.0	18.4	23.7	0.0	29.0	10.0	32.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	25.0	15.0	20.0	4.0	25.0	6.0	29.0
Max Q Clear Time (g_c+I1), s	0.0	27.0	14.1	17.9	0.0	5.8	6.6	24.0
Green Ext Time (p_c), s	0.0	0.0	0.3	1.7	0.0	4.9	0.0	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	63.8
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	140	0	1326	199	125	0	305	1328	147	561	88
Future Volume (veh/h)	18	140	0	1326	199	125	0	305	1328	147	561	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	18	140	0	1326	199	125	0	305	1328	147	561	88
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	25	174	148	1245	821	698	1	1331	596	149	1587	710
Arrive On Green	0.01	0.09	0.00	0.37	0.44	0.44	0.00	0.38	0.38	0.04	0.45	0.45
Sat Flow, veh/h	1757	1845	1568	3408	1845	1568	1757	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	18	140	0	1326	199	125	0	305	1328	147	561	88
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	1845	1568	1757	1752	1568	1704	1752	1568
Q Serve(g_s), s	1.4	10.2	0.0	50.0	9.2	6.6	0.0	8.1	52.0	5.9	14.3	4.5
Cycle Q Clear(g_c), s	1.4	10.2	0.0	50.0	9.2	6.6	0.0	8.1	52.0	5.9	14.3	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	25	174	148	1245	821	698	1	1331	596	149	1587	710
V/C Ratio(X)	0.71	0.81	0.00	1.07	0.24	0.18	0.00	0.23	2.23	0.98	0.35	0.12
Avail Cap(c_a), veh/h	64	216	183	1245	822	699	51	1331	596	149	1587	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.2	60.8	0.0	43.4	23.6	22.9	0.0	28.8	42.4	65.4	24.4	21.7
Incr Delay (d2), s/veh	30.1	16.4	0.0	44.8	0.2	0.1	0.0	0.1	558.7	68.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	6.0	0.0	31.1	4.7	2.9	0.0	3.9	114.9	4.2	6.9	1.9
LnGrp Delay(d),s/veh	97.2	77.1	0.0	88.2	23.8	23.0	0.0	28.9	601.2	134.0	24.5	21.8
LnGrp LOS	F	E		F	C	C		C	F	F	C	C
Approach Vol, veh/h		158			1650			1633			796	
Approach Delay, s/veh		79.4			75.5			494.3			44.4	
Approach LOS		E			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	56.0	54.0	16.9	0.0	66.0	6.0	64.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	52.0	50.0	16.0	4.0	54.0	5.0	61.0
Max Q Clear Time (g_c+I1), s	7.9	54.0	52.0	12.2	0.0	16.3	3.4	11.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.0	19.9	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	231.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	1	9	10	2	42	6	207	2	12	172	81
Future Volume (veh/h)	56	1	9	10	2	42	6	207	2	12	172	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	56	1	9	10	2	42	6	207	2	12	172	81
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	69	137	117	14	80	68	9	821	8	17	553	250
Arrive On Green	0.04	0.07	0.07	0.01	0.04	0.04	0.00	0.23	0.23	0.01	0.24	0.24
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3557	34	1757	2349	1061
Grp Volume(v), veh/h	56	1	9	10	2	42	6	102	107	12	126	127
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1839	1757	1752	1658
Q Serve(g_s), s	0.7	0.0	0.1	0.1	0.0	0.6	0.1	1.1	1.1	0.2	1.4	1.5
Cycle Q Clear(g_c), s	0.7	0.0	0.1	0.1	0.0	0.6	0.1	1.1	1.1	0.2	1.4	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.64
Lane Grp Cap(c), veh/h	69	137	117	14	80	68	9	404	424	17	413	390
V/C Ratio(X)	0.82	0.01	0.08	0.71	0.02	0.62	0.70	0.25	0.25	0.71	0.31	0.32
Avail Cap(c_a), veh/h	446	1405	1194	223	1171	995	223	1112	1167	223	1112	1052
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	10.1	10.2	11.7	10.8	11.1	11.7	7.4	7.4	11.7	7.4	7.5
Incr Delay (d2), s/veh	20.2	0.0	0.3	48.2	0.1	8.7	68.9	0.3	0.3	42.6	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.1	0.3	0.0	0.4	0.2	0.6	0.6	0.3	0.7	0.7
LnGrp Delay(d),s/veh	31.5	10.1	10.5	59.9	10.9	19.8	80.6	7.7	7.7	54.2	7.9	8.0
LnGrp LOS	C	B	B	E	B	B	F	A	A	D	A	A
Approach Vol, veh/h		66			54			215			265	
Approach Delay, s/veh		28.3			26.9			9.8			10.0	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.2	9.5	4.2	5.8	4.1	9.6	4.9	5.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	15.0	3.0	18.0	3.0	15.0	6.0	15.0
Max Q Clear Time (g_c+I1), s	2.2	3.1	2.1	2.1	2.1	3.5	2.7	2.6
Green Ext Time (p_c), s	0.0	2.1	0.0	0.1	0.0	2.1	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	0	10	0	0	0	4	567	0	0	304	5
Future Volume (veh/h)	25	0	10	0	0	0	4	567	0	0	304	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	25	0	10	0	0	0	4	567	0	0	304	5
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	34	49	41	9	9	8	9	2040	0	9	1351	22
Arrive On Green	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.38	0.38
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3597	0	1757	3529	58
Grp Volume(v), veh/h	25	0	10	0	0	0	4	567	0	0	151	158
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	0	1757	1752	1834
Q Serve(g_s), s	0.3	0.0	0.1	0.0	0.0	0.0	0.0	1.6	0.0	0.0	1.2	1.2
Cycle Q Clear(g_c), s	0.3	0.0	0.1	0.0	0.0	0.0	0.0	1.6	0.0	0.0	1.2	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.03
Lane Grp Cap(c), veh/h	34	49	41	9	9	8	9	2040	0	9	671	702
V/C Ratio(X)	0.73	0.00	0.24	0.00	0.00	0.00	0.47	0.28	0.00	0.00	0.22	0.23
Avail Cap(c_a), veh/h	430	1535	1305	258	1354	1151	258	2745	0	258	1373	1437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	10.0	0.0	9.7	0.0	0.0	0.0	10.2	2.1	0.0	0.0	4.3	4.3
Incr Delay (d2), s/veh	25.7	0.0	3.0	0.0	0.0	0.0	34.4	0.1	0.0	0.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.1	0.0	0.0	0.0	0.1	0.8	0.0	0.0	0.6	0.6
LnGrp Delay(d),s/veh	35.7	0.0	12.7	0.0	0.0	0.0	44.6	2.2	0.0	0.0	4.4	4.4
LnGrp LOS	D		B				D	A			A	A
Approach Vol, veh/h		35			0			571			309	
Approach Delay, s/veh		29.1			0.0			2.5			4.4	
Approach LOS		C						A			A	

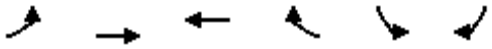
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	15.9	0.0	4.5	4.1	11.8	4.4	0.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	16.0	3.0	17.0	3.0	16.0	5.0	15.0
Max Q Clear Time (g_c+I1), s	0.0	3.6	0.0	2.1	2.0	3.2	2.3	0.0
Green Ext Time (p_c), s	0.0	4.5	0.0	0.0	0.0	4.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	4.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	38	15	46	12	47	21	451	120	133	247	24
Future Volume (veh/h)	59	38	15	46	12	47	21	451	120	133	247	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	59	38	15	46	12	47	21	451	120	133	247	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	69	153	130	55	138	117	28	826	218	168	1230	119
Arrive On Green	0.04	0.08	0.08	0.03	0.07	0.07	0.02	0.30	0.30	0.10	0.38	0.38
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	2744	725	1757	3231	311
Grp Volume(v), veh/h	59	38	15	46	12	47	21	287	284	133	133	138
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1717	1757	1752	1790
Q Serve(g_s), s	1.1	0.6	0.3	0.9	0.2	0.9	0.4	4.5	4.5	2.4	1.7	1.7
Cycle Q Clear(g_c), s	1.1	0.6	0.3	0.9	0.2	0.9	0.4	4.5	4.5	2.4	1.7	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.42	1.00		0.17
Lane Grp Cap(c), veh/h	69	153	130	55	138	117	28	527	517	168	667	682
V/C Ratio(X)	0.86	0.25	0.12	0.84	0.09	0.40	0.75	0.54	0.55	0.79	0.20	0.20
Avail Cap(c_a), veh/h	161	846	719	161	846	719	161	804	787	322	964	985
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	14.0	13.9	15.8	14.1	14.4	16.0	9.6	9.6	14.5	6.8	6.8
Incr Delay (d2), s/veh	24.4	0.8	0.4	26.5	0.3	2.2	32.4	0.9	0.9	8.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.4	0.1	0.8	0.1	0.5	0.4	2.3	2.3	1.5	0.8	0.8
LnGrp Delay(d),s/veh	40.0	14.9	14.3	42.2	14.4	16.6	48.4	10.4	10.5	22.5	6.9	6.9
LnGrp LOS	D	B	B	D	B	B	D	B	B	C	A	A
Approach Vol, veh/h		112			105			592			404	
Approach Delay, s/veh		28.0			27.6			11.8			12.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	13.8	5.0	6.7	4.5	16.5	5.3	6.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	15.0	3.0	15.0	3.0	18.0	3.0	15.0
Max Q Clear Time (g_c+I1), s	4.4	6.5	2.9	2.6	2.4	3.7	3.1	2.9
Green Ext Time (p_c), s	0.0	3.3	0.0	0.3	0.0	4.5	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	116	503	1029	24	66	176
Future Volume (veh/h)	116	503	1029	24	66	176
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	116	503	1029	24	66	176
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	148	2207	1543	36	284	253
Arrive On Green	0.08	0.63	0.44	0.44	0.16	0.16
Sat Flow, veh/h	1757	3597	3593	82	1757	1568
Grp Volume(v), veh/h	116	503	515	538	66	176
Grp Sat Flow(s),veh/h/ln	1757	1752	1752	1830	1757	1568
Q Serve(g_s), s	2.5	2.4	8.9	8.9	1.3	4.1
Cycle Q Clear(g_c), s	2.5	2.4	8.9	8.9	1.3	4.1
Prop In Lane	1.00			0.04	1.00	1.00
Lane Grp Cap(c), veh/h	148	2207	772	807	284	253
V/C Ratio(X)	0.78	0.23	0.67	0.67	0.23	0.69
Avail Cap(c_a), veh/h	321	3111	1052	1099	825	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	3.1	8.5	8.5	14.0	15.2
Incr Delay (d2), s/veh	8.7	0.1	1.0	1.0	0.4	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.1	4.5	4.7	0.6	3.7
LnGrp Delay(d),s/veh	25.9	3.1	9.5	9.4	14.4	18.6
LnGrp LOS	C	A	A	A	B	B
Approach Vol, veh/h		619	1053		242	
Approach Delay, s/veh		7.4	9.5		17.4	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				28.1		10.2	7.2	20.9
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				34.0		18.0	7.0	23.0
Max Q Clear Time (g_c+I1), s				4.4		6.1	4.5	10.9
Green Ext Time (p_c), s				8.8		0.6	0.1	6.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	37	601	16	9	226
Future Volume (veh/h)	30	37	601	16	9	226
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	30	37	601	16	9	226
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	108	96	1296	34	17	1987
Arrive On Green	0.06	0.06	0.37	0.37	0.01	0.57
Sat Flow, veh/h	1757	1568	3580	93	1757	3597
Grp Volume(v), veh/h	30	37	302	315	9	226
Grp Sat Flow(s),veh/h/ln	1757	1568	1752	1828	1757	1752
Q Serve(g_s), s	0.4	0.5	2.8	2.8	0.1	0.6
Cycle Q Clear(g_c), s	0.4	0.5	2.8	2.8	0.1	0.6
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	108	96	651	679	17	1987
V/C Ratio(X)	0.28	0.38	0.46	0.46	0.53	0.11
Avail Cap(c_a), veh/h	1306	1165	1465	1529	326	4233
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.6	9.7	5.1	5.1	10.6	2.2
Incr Delay (d2), s/veh	1.4	2.5	0.5	0.5	22.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.3	1.4	1.5	0.2	0.3
LnGrp Delay(d),s/veh	11.0	12.2	5.7	5.6	33.4	2.2
LnGrp LOS	B	B	A	A	C	A
Approach Vol, veh/h	67		617			235
Approach Delay, s/veh	11.7		5.6			3.4
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	4.2	12.0				16.2		5.3
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	4.0	18.0				26.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	4.8				2.6		2.5
Green Ext Time (p_c), s	0.0	3.2				3.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	5.5
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	9	49	129	18	66	64	413	49	19	147	90
Future Volume (veh/h)	139	9	49	129	18	66	64	413	49	19	147	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	139	9	49	129	18	66	64	413	49	19	147	90
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	178	227	193	165	213	181	96	799	94	34	466	270
Arrive On Green	0.10	0.12	0.12	0.09	0.12	0.12	0.05	0.25	0.25	0.02	0.22	0.22
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3159	373	1757	2141	1238
Grp Volume(v), veh/h	139	9	49	129	18	66	64	228	234	19	119	118
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1779	1757	1752	1626
Q Serve(g_s), s	2.4	0.1	0.9	2.3	0.3	1.2	1.1	3.5	3.5	0.3	1.8	1.9
Cycle Q Clear(g_c), s	2.4	0.1	0.9	2.3	0.3	1.2	1.1	3.5	3.5	0.3	1.8	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.76
Lane Grp Cap(c), veh/h	178	227	193	165	213	181	96	443	450	34	382	354
V/C Ratio(X)	0.78	0.04	0.25	0.78	0.08	0.36	0.67	0.51	0.52	0.56	0.31	0.33
Avail Cap(c_a), veh/h	393	942	801	393	942	801	224	951	965	224	951	882
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	12.1	12.4	13.9	12.4	12.8	14.5	10.1	10.1	15.2	10.3	10.3
Incr Delay (d2), s/veh	7.2	0.1	0.7	7.9	0.2	1.2	7.8	0.9	0.9	13.3	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.1	0.4	1.4	0.1	0.6	0.7	1.8	1.8	0.3	0.9	0.9
LnGrp Delay(d),s/veh	21.0	12.2	13.1	21.8	12.5	14.0	22.3	11.0	11.0	28.6	10.7	10.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		197			213			526			256	
Approach Delay, s/veh		18.6			18.6			12.4			12.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	11.9	6.9	7.9	5.7	10.8	7.2	7.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	17.0	7.0	16.0	4.0	17.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	2.3	5.5	4.3	2.9	3.1	3.9	4.4	3.2
Green Ext Time (p_c), s	0.0	2.4	0.1	0.3	0.0	2.5	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	0	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	346	266	78
Demand Flow Rate, veh/h	0	357	274	80
Vehicles Circulating, veh/h	88	274	0	68
Vehicles Exiting, veh/h	60	0	88	563
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	9.4	5.5	4.2
Approach LOS	-	A	A	A

Lane	Left	Left	Left
Designated Moves	LTR	LT	TR
Assumed Moves	LTR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	357	274	80
Cap Entry Lane, veh/h	859	1130	1056
Entry HV Adj Factor	0.969	0.972	0.975
Flow Entry, veh/h	346	266	78
Cap Entry, veh/h	832	1098	1030
V/C Ratio	0.416	0.242	0.076
Control Delay, s/veh	9.4	5.5	4.2
LOS	A	A	A
95th %tile Queue, veh	2	1	0

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	0	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	44	0	291	265
Demand Flow Rate, veh/h	45	0	300	273
Vehicles Circulating, veh/h	273	274	276	0
Vehicles Exiting, veh/h	0	302	42	274
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.8	0.0	8.4	5.5
Approach LOS	A	-	A	A

Lane	Left	Left	Left
Designated Moves	LTR	TR	LT
Assumed Moves	LTR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	45	300	273
Cap Entry Lane, veh/h	860	857	1130
Entry HV Adj Factor	0.975	0.970	0.970
Flow Entry, veh/h	44	291	265
Cap Entry, veh/h	839	832	1097
V/C Ratio	0.052	0.350	0.242
Control Delay, s/veh	4.8	8.4	5.5
LOS	A	A	A
95th %tile Queue, veh	0	2	1

Intersection	
Intersection Delay, s/veh	21.6
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	0	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	0	130	1778	1537
Demand Flow Rate, veh/h	0	134	1831	1583
Vehicles Circulating, veh/h	1506	1831	0	209
Vehicles Exiting, veh/h	286	0	1506	1756
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	22.5	20.3	22.9
Approach LOS	-	C	C	C

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	134	861	970	744	839
Cap Entry Lane, veh/h	314	1130	1130	966	976
Entry HV Adj Factor	0.972	0.970	0.971	0.971	0.971
Flow Entry, veh/h	130	836	942	723	815
Cap Entry, veh/h	305	1097	1098	938	948
V/C Ratio	0.427	0.762	0.858	0.770	0.859
Control Delay, s/veh	22.5	16.7	23.5	19.3	26.2
LOS	C	C	C	C	D
95th %tile Queue, veh	2	8	11	8	11

Intersection	
Intersection Delay, s/veh	24.5
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	2	0	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	381	0	1703	1462
Demand Flow Rate, veh/h	392	0	1754	1506
Vehicles Circulating, veh/h	1506	1831	223	0
Vehicles Exiting, veh/h	0	146	1675	1831
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	22.3	0.0	34.7	13.1
Approach LOS	C	-	D	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR
Assumed Moves	LT	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.469	0.531	0.470	0.530	0.470	0.530
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	184	208	824	930	708	798
Cap Entry Lane, veh/h	365	394	956	967	1130	1130
Entry HV Adj Factor	0.973	0.970	0.971	0.970	0.971	0.971
Flow Entry, veh/h	179	202	800	903	687	775
Cap Entry, veh/h	355	382	929	938	1097	1097
V/C Ratio	0.504	0.528	0.862	0.962	0.627	0.706
Control Delay, s/veh	22.5	22.1	26.8	41.8	11.8	14.3
LOS	C	C	D	E	B	B
95th %tile Queue, veh	3	3	11	16	5	6

Intersection	
Intersection Delay, s/veh	16.8
Intersection LOS	C

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	465	574	754
Demand Flow Rate, veh/h	479	592	777
Vehicles Circulating, veh/h	502	162	90
Vehicles Exiting, veh/h	252	705	891
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	20.6	12.9	17.4
Approach LOS	C	B	C

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	479	592	777
Cap Entry Lane, veh/h	684	961	1033
Entry HV Adj Factor	0.971	0.970	0.971
Flow Entry, veh/h	465	574	754
Cap Entry, veh/h	664	932	1002
V/C Ratio	0.700	0.616	0.752
Control Delay, s/veh	20.6	12.9	17.4
LOS	C	B	C
95th %tile Queue, veh	6	4	7

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	208	642	684
Demand Flow Rate, veh/h	214	661	704
Vehicles Circulating, veh/h	462	151	85
Vehicles Exiting, veh/h	350	638	591
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.9	14.9	14.1
Approach LOS	A	B	B

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	214	661	704
Cap Entry Lane, veh/h	712	972	1038
Entry HV Adj Factor	0.972	0.971	0.971
Flow Entry, veh/h	208	642	684
Cap Entry, veh/h	692	943	1008
V/C Ratio	0.301	0.680	0.678
Control Delay, s/veh	8.9	14.9	14.1
LOS	A	B	B
95th %tile Queue, veh	1	6	6

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	299	643	620
Demand Flow Rate, veh/h	308	663	638
Vehicles Circulating, veh/h	570	144	216
Vehicles Exiting, veh/h	237	710	662
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	13.5	14.8	16.5
Approach LOS	B	B	C

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	308	663	638
Cap Entry Lane, veh/h	639	978	910
Entry HV Adj Factor	0.971	0.970	0.971
Flow Entry, veh/h	299	643	620
Cap Entry, veh/h	620	949	884
V/C Ratio	0.482	0.678	0.701
Control Delay, s/veh	13.5	14.8	16.5
LOS	B	B	C
95th %tile Queue, veh	3	6	6

Intersection	
Intersection Delay, s/veh	217.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	586	599	5	1	317	6	20	5	3	14	8	70
Future Vol, veh/h	586	599	5	1	317	6	20	5	3	14	8	70
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	3	3	3	3	3	3
Mvmt Flow	586	599	5	1	317	6	20	5	3	14	8	70
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	293.9	13.9	11.4	11.5
HCM LOS	F	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	71%	49%	0%	15%
Vol Thru, %	18%	50%	98%	9%
Vol Right, %	11%	0%	2%	76%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	1190	324	92
LT Vol	20	586	1	14
Through Vol	5	599	317	8
RT Vol	3	5	6	70
Lane Flow Rate	28	1190	324	92
Geometry Grp	1	1	1	1
Degree of Util (X)	0.052	1.608	0.469	0.155
Departure Headway (Hd)	7.966	4.865	5.855	7.19
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	452	750	619	502
Service Time	5.966	2.902	3.855	5.19
HCM Lane V/C Ratio	0.062	1.587	0.523	0.183
HCM Control Delay	11.4	293.9	13.9	11.5
HCM Lane LOS	B	F	B	B
HCM 95th-tile Q	0.2	62.9	2.5	0.5

Intersection	
Intersection Delay, s/veh	151.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	417	2	9	8	1	1	26	872	2	0	167	50
Future Vol, veh/h	417	2	9	8	1	1	26	872	2	0	167	50
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	417	2	9	8	1	1	26	872	2	0	167	50
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	30.9	12.2	244.1	14.5
HCM LOS	D	B	F	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	97%	80%	0%
Vol Thru, %	97%	0%	10%	77%
Vol Right, %	0%	2%	10%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	900	428	10	217
LT Vol	26	417	8	0
Through Vol	872	2	1	167
RT Vol	2	9	1	50
Lane Flow Rate	900	428	10	217
Geometry Grp	1	1	1	1
Degree of Util (X)	1.485	0.766	0.021	0.388
Departure Headway (Hd)	5.941	7.46	9.018	7.112
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	621	488	399	510
Service Time	3.95	5.46	7.018	5.112
HCM Lane V/C Ratio	1.449	0.877	0.025	0.425
HCM Control Delay	244.1	30.9	12.2	14.5
HCM Lane LOS	F	D	B	B
HCM 95th-tile Q	44.3	6.7	0.1	1.8

Intersection	
Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	54	0	244	0	247	292	64	33	0
Future Vol, veh/h	0	0	0	54	0	244	0	247	292	64	33	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	54	0	244	0	247	292	64	33	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	0	11.7	17.6	9.7
HCM LOS	-	B	C	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	18%	100%	0%
Vol Thru, %	46%	100%	0%	0%	100%
Vol Right, %	54%	0%	82%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	539	0	298	64	33
LT Vol	0	0	54	64	0
Through Vol	247	0	0	0	33
RT Vol	292	0	244	0	0
Lane Flow Rate	539	0	298	64	33
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.692	0	0.42	0.115	0.055
Departure Headway (Hd)	4.723	6.075	5.07	6.454	5.947
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	771	0	715	557	604
Service Time	2.723	4.094	3.07	4.177	3.669
HCM Lane V/C Ratio	0.699	0	0.417	0.115	0.055
HCM Control Delay	17.6	9.1	11.7	10	9
HCM Lane LOS	C	N	B	A	A
HCM 95th-tile Q	5.7	0	2.1	0.4	0.2

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1	0	8	0	237	0	397	32	10	318	0
Future Vol, veh/h	0	1	0	8	0	237	0	397	32	10	318	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	20	20	20	5	5	5	6	6	6
Mvmt Flow	0	1	0	8	0	237	0	397	32	10	318	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.5	12	16	13.3
HCM LOS	A	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	3%	3%
Vol Thru, %	93%	100%	0%	97%
Vol Right, %	7%	0%	97%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	429	1	245	328
LT Vol	0	0	8	10
Through Vol	397	1	0	318
RT Vol	32	0	237	0
Lane Flow Rate	429	1	245	328
Geometry Grp	1	1	1	1
Degree of Util (X)	0.613	0.002	0.379	0.486
Departure Headway (Hd)	5.142	6.443	5.574	5.335
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	704	553	644	676
Service Time	3.173	4.506	3.613	3.369
HCM Lane V/C Ratio	0.609	0.002	0.38	0.485
HCM Control Delay	16	9.5	12	13.3
HCM Lane LOS	C	A	B	B
HCM 95th-tile Q	4.2	0	1.8	2.7

Intersection	
Intersection Delay, s/veh	106.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	189	310	40	3	155	23	32	620	26	20	129	28
Future Vol, veh/h	189	310	40	3	155	23	32	620	26	20	129	28
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	3	3	3
Mvmt Flow	189	310	40	3	155	23	32	620	26	20	129	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	81.7	17.9	173.5	17.4
HCM LOS	F	C	F	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	35%	2%	11%
Vol Thru, %	91%	58%	86%	73%
Vol Right, %	4%	7%	13%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	678	539	181	177
LT Vol	32	189	3	20
Through Vol	620	310	155	129
RT Vol	26	40	23	28
Lane Flow Rate	678	539	181	177
Geometry Grp	1	1	1	1
Degree of Util (X)	1.305	1.043	0.399	0.391
Departure Headway (Hd)	7.223	7.791	9.017	8.845
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	509	469	402	409
Service Time	5.223	5.791	7.017	6.845
HCM Lane V/C Ratio	1.332	1.149	0.45	0.433
HCM Control Delay	173.5	81.7	17.9	17.4
HCM Lane LOS	F	F	C	C
HCM 95th-tile Q	27.8	14.7	1.9	1.8

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	102	575	52	105	399
Future Vol, veh/h	88	102	575	52	105	399
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	88	102	575	52	105	399

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1011	314	0	0	627	0
Stage 1	601	-	-	-	-	-
Stage 2	410	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	232	676	-	-	944	-
Stage 1	505	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	206	676	-	-	944	-
Mov Cap-2 Maneuver	337	-	-	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	563	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.1	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	337	676	944	-
HCM Lane V/C Ratio	-	-	0.261	0.151	0.111	-
HCM Control Delay (s)	-	-	19.4	11.3	9.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1	0.5	0.4	-

Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	165	10	179	289	36	353
Future Vol, veh/h	165	10	179	289	36	353
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	165	10	179	289	36	353

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	749	324	0	0	468	0
Stage 1	324	-	-	-	-	-
Stage 2	425	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.14	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.236	-
Pot Cap-1 Maneuver	378	715	-	-	1083	-
Stage 1	731	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	363	715	-	-	1083	-
Mov Cap-2 Maneuver	363	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	630	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.8	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	374	1083	-
HCM Lane V/C Ratio	-	-	0.468	0.033	-
HCM Control Delay (s)	-	-	22.8	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.4	0.1	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	2157	2474	34	10	93
Future Vol, veh/h	27	2157	2474	34	10	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	27	2157	2474	34	10	93

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2508	0	-	0	3624	1254
Stage 1	-	-	-	-	2491	-
Stage 2	-	-	-	-	1133	-
Critical Hdwy	4.22	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.26	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	167	-	-	-	~ 4	162
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	267	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	167	-	-	-	~ 3	162
Mov Cap-2 Maneuver	-	-	-	-	36	-
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	224	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	113.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	167	-	-	-	121
HCM Lane V/C Ratio	0.162	-	-	-	0.851
HCM Control Delay (s)	30.7	-	-	-	113.2
HCM Lane LOS	D	-	-	-	F
HCM 95th %tile Q(veh)	0.6	-	-	-	5.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	0	3	1	6	0	565	1	1	76	1
Future Vol, veh/h	3	1	0	3	1	6	0	565	1	1	76	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	1	0	3	1	6	0	565	1	1	76	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	648	645	77	645	645	566	77	0	0	566	0	0
Stage 1	79	79	-	566	566	-	-	-	-	-	-	-
Stage 2	569	566	-	79	79	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	382	390	981	384	390	522	1515	-	-	1001	-	-
Stage 1	927	827	-	507	506	-	-	-	-	-	-	-
Stage 2	505	506	-	927	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	377	390	981	383	390	522	1515	-	-	1001	-	-
Mov Cap-2 Maneuver	377	390	-	383	390	-	-	-	-	-	-	-
Stage 1	927	826	-	507	506	-	-	-	-	-	-	-
Stage 2	498	506	-	925	826	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.6	13.1	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1515	-	-	380	457	1001	-	-
HCM Lane V/C Ratio	-	-	-	0.011	0.022	0.001	-	-
HCM Control Delay (s)	0	-	-	14.6	13.1	8.6	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	75	42	19	845	700	68
Future Vol, veh/h	75	42	19	845	700	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	75	42	19	845	700	68

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1617	734	768	0	-	0
Stage 1	734	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	113	418	841	-	-	-
Stage 1	473	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	110	418	841	-	-	-
Mov Cap-2 Maneuver	110	-	-	-	-	-
Stage 1	473	-	-	-	-	-
Stage 2	394	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	83.8	0.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	841	-	150	-	-
HCM Lane V/C Ratio	0.023	-	0.78	-	-
HCM Control Delay (s)	9.4	-	83.8	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0.1	-	4.9	-	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	343	195	313	264	42	380
Future Vol, veh/h	343	195	313	264	42	380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	300	250	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	343	195	313	264	42	380

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	343	0	1233	343
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	890	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1210	-	194	697
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	400	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1210	-	144	697
Mov Cap-2 Maneuver	-	-	-	-	144	-
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	297	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.9	18.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	144	697	-	-	1210	-
HCM Lane V/C Ratio	0.292	0.545	-	-	0.259	-
HCM Control Delay (s)	40	16.2	-	-	9	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	1.1	3.3	-	-	1	-

Intersection	
Int Delay, s/veh	44.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	225	156	0	0	156	7	5	302	0	0	93	109
Future Vol, veh/h	225	156	0	0	156	7	5	302	0	0	93	109
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	225	156	0	0	156	7	5	302	0	0	93	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	163	0	0	156	0	0	867	769	156	917	766	160
Stage 1	-	-	-	-	-	-	606	606	-	160	160	-
Stage 2	-	-	-	-	-	-	261	163	-	757	606	-
Critical Hdwy	4.18	-	-	4.2	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.29	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1380	-	-	1377	-	-	267	325	874	246	326	870
Stage 1	-	-	-	-	-	-	474	477	-	828	754	-
Stage 2	-	-	-	-	-	-	731	752	-	391	477	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1380	-	-	1377	-	-	149	~ 267	874	-	268	870
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	~ 267	-	-	268	-
Stage 1	-	-	-	-	-	-	389	392	-	680	754	-
Stage 2	-	-	-	-	-	-	561	752	-	74	392	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.8	0	147.4	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	264	1380	-	-	1377	-	-	-
HCM Lane V/C Ratio	1.163	0.163	-	-	-	-	-	-
HCM Control Delay (s)	147.4	8.1	0	-	0	-	-	-
HCM Lane LOS	F	A	A	-	A	-	-	-
HCM 95th %tile Q(veh)	13.7	0.6	-	-	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	42	43	25	137	103
Future Vol, veh/h	19	42	43	25	137	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	19	42	43	25	137	103

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	300	189	240	0	-	0
Stage 1	189	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	689	850	1321	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	666	850	1321	-	-	-
Mov Cap-2 Maneuver	666	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	881	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	4.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1321	-	783	-	-
HCM Lane V/C Ratio	0.033	-	0.078	-	-
HCM Control Delay (s)	7.8	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	3	12	63	176	7
Future Vol, veh/h	3	3	12	63	176	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	3	12	63	176	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	267	180	183	0	-	0
Stage 1	180	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	720	860	1386	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	714	860	1386	-	-	-
Mov Cap-2 Maneuver	714	-	-	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	926	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1386	-	780	-	-
HCM Lane V/C Ratio	0.009	-	0.008	-	-
HCM Control Delay (s)	7.6	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	86	145	68	47	162	210
Future Vol, veh/h	86	145	68	47	162	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	86	145	68	47	162	210

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	450	267	372	0	-	0
Stage 1	267	-	-	-	-	-
Stage 2	183	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	565	769	1181	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	532	769	1181	-	-	-
Mov Cap-2 Maneuver	532	-	-	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	796	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	4.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1181	-	660	-	-
HCM Lane V/C Ratio	0.058	-	0.35	-	-
HCM Control Delay (s)	8.2	0	13.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.6	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	6	1	104	100	82
Future Vol, veh/h	26	6	1	104	100	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	26	6	1	104	100	82

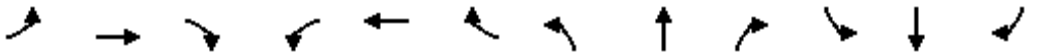
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	206	100	100	0	-	0
Stage 1	100	-	-	-	-	-
Stage 2	106	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	780	953	1486	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	779	953	1486	-	-	-
Mov Cap-2 Maneuver	779	-	-	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	915	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1486	-	779	953	-	-
HCM Lane V/C Ratio	0.001	-	0.033	0.006	-	-
HCM Control Delay (s)	7.4	-	9.8	8.8	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

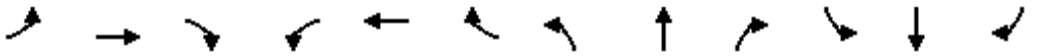
Existing Plus All Projects

PM



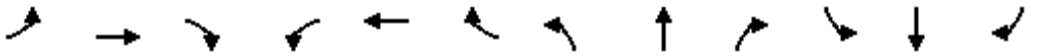
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	724	0	947	0	0	0	0	1745	470	0	1684	841
Future Volume (vph)	724	0	947	0	0	0	0	1745	470	0	1684	841
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	724	0	947	0	0	0	0	1745	470	0	1684	841
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	724	0	934	0	0	0	0	1745	470	0	1684	841
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	19.7		19.7					21.7	49.4		21.7	49.4
Effective Green, g (s)	19.7		19.7					21.7	49.4		21.7	49.4
Actuated g/C Ratio	0.40		0.40					0.44	1.00		0.44	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1342		1089					2191	1553		2191	1553
v/s Ratio Prot	0.22							c0.35			0.34	
v/s Ratio Perm			c0.34						0.30			0.54
v/c Ratio	0.54		0.86					0.80	0.30		0.77	0.54
Uniform Delay, d1	11.4		13.6					11.9	0.0		11.7	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4		6.8					2.1	0.5		1.7	1.4
Delay (s)	11.8		20.4					14.0	0.5		13.4	1.4
Level of Service	B		C					B	A		B	A
Approach Delay (s)		16.7			0.0			11.2			9.4	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



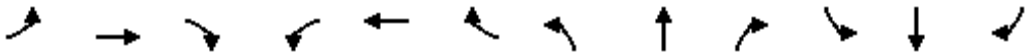
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	673	126	271	791	1057	327	900	166	1129	1467	150
Future Volume (vph)	256	673	126	271	791	1057	327	900	166	1129	1467	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3389		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3389		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	256	673	126	271	791	1057	327	900	166	1129	1467	150
RTOR Reduction (vph)	0	17	0	0	0	822	0	0	133	0	0	90
Lane Group Flow (vph)	256	782	0	271	791	235	327	900	33	1129	1467	60
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	7.0	19.0		8.0	20.0	20.0	10.9	18.0	18.0	29.0	36.1	36.1
Effective Green, g (s)	7.0	19.0		8.0	20.0	20.0	10.9	18.0	18.0	29.0	36.1	36.1
Actuated g/C Ratio	0.08	0.21		0.09	0.22	0.22	0.12	0.20	0.20	0.32	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	261	715		299	771	607	407	997	310	1084	2000	622
v/s Ratio Prot	0.08	c0.23		0.08	c0.23		0.10	c0.18		c0.34	0.29	
v/s Ratio Perm						0.09			0.02			0.04
v/c Ratio	0.98	1.09		0.91	1.03	0.39	0.80	0.90	0.11	1.04	0.73	0.10
Uniform Delay, d1	41.4	35.5		40.6	35.0	29.8	38.5	35.1	29.4	30.5	22.9	16.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	50.1	61.9		29.0	39.2	0.4	10.9	11.2	0.2	38.8	1.4	0.1
Delay (s)	91.6	97.4		69.6	74.2	30.2	49.4	46.3	29.6	69.3	24.3	16.9
Level of Service	F	F		E	E	C	D	D	C	E	C	B
Approach Delay (s)		96.0			51.7			45.1			42.4	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	434	1521	12	844	19	1045	2	3	14	10	27
Future Volume (vph)	80	434	1521	12	844	19	1045	2	3	14	10	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1622	1524		1792	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1622	1524		1792	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	434	1521	12	844	19	1045	2	3	14	10	27
RTOR Reduction (vph)	0	0	185	0	0	14	0	0	2	0	0	26
Lane Group Flow (vph)	80	434	1336	12	844	5	522	525	1	0	24	1
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	36.0	94.1	1.6	31.6	31.6	58.1	58.1	58.1		5.9	5.9
Effective Green, g (s)	6.0	36.0	94.1	1.6	31.6	31.6	58.1	58.1	58.1		5.9	5.9
Actuated g/C Ratio	0.05	0.31	0.80	0.01	0.27	0.27	0.49	0.49	0.49		0.05	0.05
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	88	1062	1295	23	932	417	799	801	752		89	78
v/s Ratio Prot	c0.05	0.13	c0.51	0.01	0.24		0.32	0.32			c0.01	
v/s Ratio Perm			0.35			0.00			0.00			0.00
v/c Ratio	0.91	0.41	1.03	0.52	0.91	0.01	0.65	0.66	0.00		0.27	0.02
Uniform Delay, d1	55.5	32.4	11.8	57.6	41.6	31.5	22.2	22.3	15.1		53.8	53.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	65.8	0.3	33.5	19.7	12.1	0.0	1.9	1.9	0.0		1.6	0.1
Delay (s)	121.4	32.6	45.2	77.3	53.7	31.6	24.2	24.2	15.1		55.4	53.2
Level of Service	F	C	D	E	D	C	C	C	B		E	D
Approach Delay (s)		45.5			53.5			24.2			54.2	
Approach LOS		D			D			C			D	

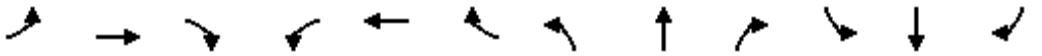
Intersection Summary			
HCM 2000 Control Delay	41.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	117.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	384	83	262	500	93	337	231	387	122	208	37
Future Volume (vph)	38	384	83	262	500	93	337	231	387	122	208	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00		0.98	
Satd. Flow (prot)	1752	3505	1568	1752	3422		1665	1735	1568		3395	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00		0.98	
Satd. Flow (perm)	1752	3505	1568	1752	3422		1665	1735	1568		3395	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	384	83	262	500	93	337	231	387	122	208	37
RTOR Reduction (vph)	0	0	65	0	17	0	0	0	303	0	11	0
Lane Group Flow (vph)	38	384	18	262	576	0	280	288	84	0	356	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	2.2	15.1	15.1	11.1	24.0		15.1	15.1	15.1		12.2	
Effective Green, g (s)	2.2	15.1	15.1	11.1	24.0		15.1	15.1	15.1		12.2	
Actuated g/C Ratio	0.03	0.22	0.22	0.16	0.35		0.22	0.22	0.22		0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	55	761	340	279	1181		361	376	340		595	
v/s Ratio Prot	0.02	0.11		c0.15	c0.17		c0.17	0.17			c0.10	
v/s Ratio Perm			0.01						0.05			
v/c Ratio	0.69	0.50	0.05	0.94	0.49		0.78	0.77	0.25		0.60	
Uniform Delay, d1	33.3	23.9	21.5	28.9	17.9		25.6	25.5	22.5		26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	31.3	0.5	0.1	37.4	0.3		10.0	9.0	0.4		1.6	
Delay (s)	64.6	24.4	21.6	66.2	18.2		35.6	34.5	22.9		28.0	
Level of Service	E	C	C	E	B		D	C	C		C	
Approach Delay (s)		27.0			32.9			30.1			28.0	
Approach LOS		C			C			C			C	

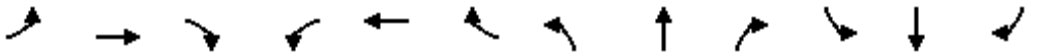
Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



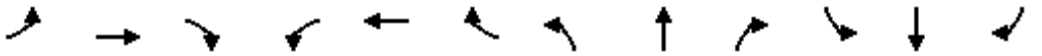
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	1383	322	161	1116	1075	157	1101	85	1011	705	79
Future Volume (vph)	105	1383	322	161	1116	1075	157	1101	85	1011	705	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.1		5.5	5.4	4.0	4.7	4.8	4.8	4.8	4.8	4.8
Lane Util. Factor	1.00	1.00		0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1703	1742		3303	3406	1524	3367	3471	1553	1736	3471	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00
Satd. Flow (perm)	1703	1742		3303	3406	1524	3367	3471	1553	258	3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	105	1383	322	161	1116	1075	157	1101	85	1011	705	79
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	36	0	0	48
Lane Group Flow (vph)	105	1699	0	161	1116	1075	157	1101	49	1011	705	31
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Free	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases						Free			8	4		4
Actuated Green, G (s)	9.0	61.9		3.5	56.6	145.0	3.3	64.2	64.2	56.2	56.2	56.2
Effective Green, g (s)	9.0	61.9		3.5	56.6	145.0	3.3	64.2	64.2	56.2	56.2	56.2
Actuated g/C Ratio	0.06	0.43		0.02	0.39	1.00	0.02	0.44	0.44	0.39	0.39	0.39
Clearance Time (s)	5.0	5.1		5.5	5.4		4.7	4.8	4.8	4.8	4.8	4.8
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	105	743		79	1329	1524	76	1536	687	99	1345	601
v/s Ratio Prot	0.06	c0.98		c0.05	0.33		c0.05	0.32			0.20	
v/s Ratio Perm						0.71			0.03	c3.92		0.02
v/c Ratio	1.00	2.29		2.04	0.84	0.71	2.07	0.72	0.07	10.21	0.52	0.05
Uniform Delay, d1	68.0	41.5		70.8	40.1	0.0	70.8	33.0	23.3	44.4	34.1	27.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	87.8	583.4		508.2	4.6	2.8	521.8	1.4	0.0	4165.5	0.2	0.0
Delay (s)	155.8	625.0		579.0	44.7	2.8	592.6	34.3	23.3	4209.9	34.3	27.8
Level of Service	F	F		F	D	A	F	C	C	F	C	C
Approach Delay (s)		597.8			62.1			98.9			2385.8	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	773.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	5.79		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.1
Intersection Capacity Utilization	191.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



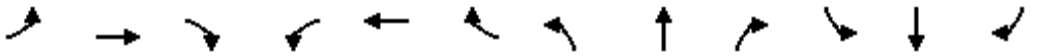
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	670	776	154	592	40	315	160	181	36	80	31
Future Volume (vph)	34	670	776	154	592	40	315	160	181	36	80	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3195		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3195		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	34	670	776	154	592	40	315	160	181	36	80	31
RTOR Reduction (vph)	0	0	447	0	0	21	0	153	0	0	0	29
Lane Group Flow (vph)	34	670	329	154	592	19	315	188	0	36	80	2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	2.1	28.9	28.9	5.7	32.4	32.4	10.6	10.6		4.1	4.1	4.1
Effective Green, g (s)	2.1	28.9	28.9	5.7	32.4	32.4	10.6	10.6		4.1	4.1	4.1
Actuated g/C Ratio	0.03	0.42	0.42	0.08	0.48	0.48	0.16	0.16		0.06	0.06	0.06
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.1	4.1	2.0	2.0		1.0	1.0	1.0
Lane Grp Cap (vph)	54	1487	665	284	1667	746	524	497		105	211	94
v/s Ratio Prot	0.02	0.19		c0.05	c0.17		c0.09	0.06		0.02	c0.02	
v/s Ratio Perm			c0.21			0.01						0.00
v/c Ratio	0.63	0.45	0.50	0.54	0.36	0.03	0.60	0.38		0.34	0.38	0.02
Uniform Delay, d1	32.6	13.9	14.3	29.9	11.3	9.5	26.8	25.8		30.7	30.8	30.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.4	0.4	1.2	1.1	0.2	0.0	1.3	0.2		0.7	0.4	0.0
Delay (s)	48.0	14.4	15.5	31.1	11.4	9.5	28.1	26.0		31.4	31.2	30.1
Level of Service	D	B	B	C	B	A	C	C		C	C	C
Approach Delay (s)		15.7			15.2			27.0			31.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	22.9
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



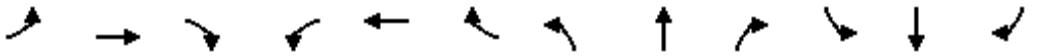
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1174	0	211	0	503	1603	0	881	626
Future Volume (vph)	0	0	0	1174	0	211	0	503	1603	0	881	626
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.6		4.6		3.5	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3367		2733		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3367		2733		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1174	0	211	0	503	1603	0	881	626
RTOR Reduction (vph)	0	0	0	0	0	115	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1174	0	96	0	503	1603	0	881	626
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				4				6			2	
Permitted Phases						4			Free			Free
Actuated Green, G (s)				17.7		17.7		13.0	38.8		11.4	38.8
Effective Green, g (s)				17.7		17.7		13.0	38.8		11.4	38.8
Actuated g/C Ratio				0.46		0.46		0.34	1.00		0.29	1.00
Clearance Time (s)				4.6		4.6		3.5			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1535		1246		1671	1553		1465	1553
v/s Ratio Prot				0.35				0.10			0.18	
v/s Ratio Perm						0.04			c1.03			0.40
v/c Ratio				0.76		0.08		0.30	1.03		0.60	0.40
Uniform Delay, d1				8.8		5.9		9.5	19.4		11.8	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				2.1		0.0		0.0	31.6		0.5	0.8
Delay (s)				10.9		6.0		9.6	51.0		12.2	0.8
Level of Service				B		A		A	D		B	A
Approach Delay (s)		0.0			10.2			41.1			7.5	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	38.8	Sum of lost time (s)	9.7
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	0	1351	0	0	0	0	1835	1030	0	1631	421
Future Volume (vph)	280	0	1351	0	0	0	0	1835	1030	0	1631	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	280	0	1351	0	0	0	0	1835	1030	0	1631	421
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	280	0	1338	0	0	0	0	1835	1030	0	1631	421
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	43.6		43.6					34.2	89.3		34.7	89.3
Effective Green, g (s)	43.6		43.6					34.2	89.3		34.7	89.3
Actuated g/C Ratio	0.49		0.49					0.38	1.00		0.39	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1643		1334					1910	1553		1938	1553
v/s Ratio Prot	0.08							c0.37			0.33	
v/s Ratio Perm			c0.49						0.66			0.27
v/c Ratio	0.17		1.00					0.96	0.66		0.84	0.27
Uniform Delay, d1	12.8		22.8					26.9	0.0		24.8	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0		25.4					12.5	2.2		3.4	0.4
Delay (s)	12.8		48.2					39.4	2.2		28.2	0.4
Level of Service	B		D					D	A		C	A
Approach Delay (s)		42.2			0.0			26.1			22.5	
Approach LOS		D			A			C			C	

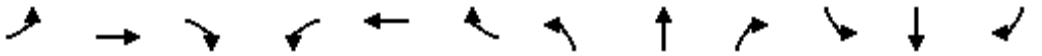
Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	11.5
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	938	49	60	729	66	4	26	35	79	181	95
Future Volume (vph)	205	938	49	60	729	66	4	26	35	79	181	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3479		1752	3461		1752	1845	1568	1752	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	3479		1752	3461		1752	1845	1568	1752	1845	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	205	938	49	60	729	66	4	26	35	79	181	95
RTOR Reduction (vph)	0	6	0	0	10	0	0	0	29	0	0	75
Lane Group Flow (vph)	205	981	0	60	785	0	4	26	6	79	181	20
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	9.5	24.5		2.2	17.2		0.5	9.6	9.6	2.7	11.8	11.8
Effective Green, g (s)	9.5	24.5		2.2	17.2		0.5	9.6	9.6	2.7	11.8	11.8
Actuated g/C Ratio	0.17	0.45		0.04	0.31		0.01	0.17	0.17	0.05	0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	302	1549		70	1082		15	322	273	86	395	336
v/s Ratio Prot	c0.12	c0.28		0.03	0.23		0.00	0.01		c0.05	c0.10	
v/s Ratio Perm									0.00			0.01
v/c Ratio	0.68	0.63		0.86	0.73		0.27	0.08	0.02	0.92	0.46	0.06
Uniform Delay, d1	21.3	11.8		26.2	16.8		27.1	19.0	18.8	26.0	18.8	17.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	0.9		60.4	2.4		9.3	0.1	0.0	69.7	0.8	0.1
Delay (s)	27.3	12.6		86.7	19.2		36.4	19.1	18.8	95.7	19.7	17.3
Level of Service	C	B		F	B		D	B	B	F	B	B
Approach Delay (s)		15.2			24.0			20.0			35.9	
Approach LOS		B			C			C			D	

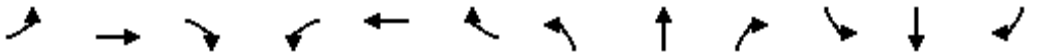
Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



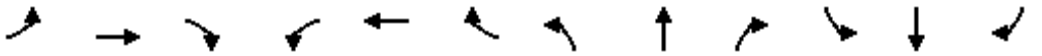
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	452	0	211	0	857	975	0	630	400
Future Volume (vph)	0	0	0	452	0	211	0	857	975	0	630	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.95	1.00		0.95	1.00
Frt				1.00	0.90			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.98			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1537			3471	1553		3471	1553
Flt Permitted				0.95	0.98			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1537			3471	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	452	0	211	0	857	975	0	630	400
RTOR Reduction (vph)	0	0	0	0	44	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	344	275	0	0	857	975	0	630	400
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Prot	NA			NA	Free		NA	Free
Protected Phases				3	8			2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				11.2	11.2			14.5	34.5		14.5	34.5
Effective Green, g (s)				11.2	11.2			14.5	34.5		14.5	34.5
Actuated g/C Ratio				0.32	0.32			0.42	1.00		0.42	1.00
Clearance Time (s)				4.0	4.9			4.8			4.8	
Vehicle Extension (s)				3.0	1.0			1.0			1.0	
Lane Grp Cap (vph)				535	498			1458	1553		1458	1553
v/s Ratio Prot				0.21	0.18			0.25			0.18	
v/s Ratio Perm									c0.63			0.26
v/c Ratio				0.64	0.55			0.59	0.63		0.43	0.26
Uniform Delay, d1				9.9	9.6			7.7	0.0		7.1	0.0
Progression Factor				1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2				2.6	0.8			0.4	1.9		0.1	0.4
Delay (s)				12.6	10.3			8.1	1.9		7.2	0.4
Level of Service				B	B			A	A		A	A
Approach Delay (s)		0.0			11.5			4.8			4.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	34.5	Sum of lost time (s)	9.7
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



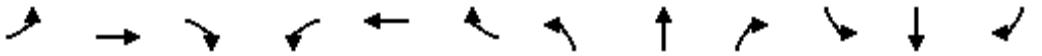
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	511	0	241	0	0	0	0	1321	1275	0	848	234
Future Volume (vph)	511	0	241	0	0	0	0	1321	1275	0	848	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.95	1.00
Frt	1.00	0.99	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	0.96	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1569	1475					4988	1553		3471	1553
Flt Permitted	0.95	0.96	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1569	1475					4988	1553		3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	511	0	241	0	0	0	0	1321	1275	0	848	234
RTOR Reduction (vph)	0	37	69	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	271	227	148	0	0	0	0	1321	1275	0	848	234
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA	Perm					NA	Free		NA	Free
Protected Phases	7	4						2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	10.0	10.0	8.9					16.1	35.0		16.2	35.0
Effective Green, g (s)	10.0	10.0	8.9					16.1	35.0		16.2	35.0
Actuated g/C Ratio	0.29	0.29	0.25					0.46	1.00		0.46	1.00
Clearance Time (s)	4.0	5.1	5.1					4.9			4.8	
Vehicle Extension (s)	3.0	1.0	1.0					1.0			1.0	
Lane Grp Cap (vph)	471	448	375					2294	1553		1606	1553
v/s Ratio Prot	0.16	0.14						0.26			0.24	
v/s Ratio Perm			0.10						c0.82			0.15
v/c Ratio	0.58	0.51	0.40					0.58	0.82		0.53	0.15
Uniform Delay, d1	10.7	10.4	10.8					6.9	0.0		6.7	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	1.7	0.3	0.3					0.2	5.0		0.1	0.2
Delay (s)	12.4	10.8	11.1					7.2	5.0		6.8	0.2
Level of Service	B	B	B					A	A		A	A
Approach Delay (s)		11.4			0.0			6.1			5.4	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	35.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



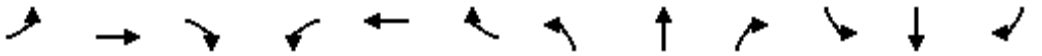
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1040	44	624	27	77	110	598	1430	17	146	362	586
Future Volume (vph)	1040	44	624	27	77	110	598	1430	17	146	362	586
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3		5.5	5.5	4.7	4.6		4.4	4.8	4.8
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1649	1659	1553		1821	1568	1736	4979		1736	4988	1553
Flt Permitted	0.95	0.96	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1649	1659	1553		1821	1568	1736	4979		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1040	44	624	27	77	110	598	1430	17	146	362	586
RTOR Reduction (vph)	0	0	185	0	0	103	0	1	0	0	0	514
Lane Group Flow (vph)	541	543	439	0	104	7	598	1446	0	146	362	72
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8			4						2
Actuated Green, G (s)	44.5	44.5	44.5		8.5	8.5	46.7	47.3		13.7	13.8	13.8
Effective Green, g (s)	44.5	44.5	44.5		8.5	8.5	46.7	47.3		13.7	13.8	13.8
Actuated g/C Ratio	0.33	0.33	0.33		0.06	0.06	0.35	0.35		0.10	0.10	0.10
Clearance Time (s)	5.3	5.3	5.3		5.5	5.5	4.7	4.6		4.4	4.8	4.8
Vehicle Extension (s)	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lane Grp Cap (vph)	548	551	516		115	99	605	1760		177	514	160
v/s Ratio Prot	c0.33	0.33			c0.06		c0.34	c0.29		0.08	0.07	
v/s Ratio Perm			0.28			0.00						0.05
v/c Ratio	0.99	0.99	0.85		0.90	0.07	0.99	0.82		0.82	0.70	0.45
Uniform Delay, d1	44.4	44.3	41.6		62.2	58.9	43.3	39.4		58.9	58.0	56.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	34.7	34.2	12.3		53.9	0.1	33.2	3.1		24.7	3.6	0.7
Delay (s)	79.1	78.6	53.9		116.1	59.0	76.5	42.5		83.5	61.6	57.2
Level of Service	E	E	D		F	E	E	D		F	E	E
Approach Delay (s)		69.7			86.8			52.4			62.2	
Approach LOS		E			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	61.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	133.8	Sum of lost time (s)	20.3
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	561	0	242	0	1626	1720	0	743	512
Future Volume (vph)	0	0	0	561	0	242	0	1626	1720	0	743	512
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.95	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		3505	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	561	0	242	0	1626	1720	0	743	512
RTOR Reduction (vph)	0	0	0	0	0	33	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	561	0	209	0	1626	1720	0	743	512
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				8.5		8.5		15.1	35.0		15.1	35.0
Effective Green, g (s)				8.5		8.5		15.1	35.0		15.1	35.0
Actuated g/C Ratio				0.24		0.24		0.43	1.00		0.43	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				825		380		2172	1568		1512	1568
v/s Ratio Prot								0.32			0.21	
v/s Ratio Perm				0.17		0.13			c1.10			0.33
v/c Ratio				0.68		0.55		0.75	1.10		0.49	0.33
Uniform Delay, d1				12.0		11.6		8.4	17.5		7.2	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				1.8		0.9		1.3	54.1		0.1	0.6
Delay (s)				13.9		12.4		9.6	71.6		7.3	0.6
Level of Service				B		B		A	E		A	A
Approach Delay (s)		0.0			13.4			41.5			4.5	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.63		
Actuated Cycle Length (s)	35.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

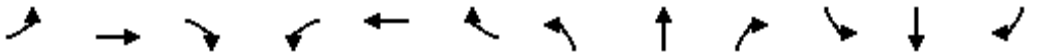


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	612	124	352	0	0	861	0	2598	8	0	1193	109
Future Volume (vph)	612	124	352	0	0	861	0	2598	8	0	1193	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		0.86			0.95	1.00
Frt	1.00	0.97	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	0.97	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	2992	1427			2733		6343			3505	1568
Flt Permitted	0.95	0.97	1.00			1.00		1.00			1.00	1.00
Satd. Flow (perm)	1595	2992	1427			2733		6343			3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	612	124	352	0	0	861	0	2598	8	0	1193	109
RTOR Reduction (vph)	0	18	104	0	0	36	0	1	0	0	0	29
Lane Group Flow (vph)	306	521	139	0	0	825	0	2605	0	0	1193	80
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA			NA	Perm
Protected Phases	4	4				1		2			6	
Permitted Phases			4									6
Actuated Green, G (s)	21.0	21.0	21.0			31.0		46.0			81.0	81.0
Effective Green, g (s)	21.0	21.0	21.0			31.0		46.0			81.0	81.0
Actuated g/C Ratio	0.19	0.19	0.19			0.28		0.42			0.74	0.74
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	304	571	272			770		2652			2580	1154
v/s Ratio Prot	c0.19	0.17				c0.30		c0.41			0.34	
v/s Ratio Perm			0.10									0.05
v/c Ratio	1.01	0.95dl	0.51			1.07		0.98			0.46	0.07
Uniform Delay, d1	44.5	43.6	39.9			39.5		31.6			5.8	4.0
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	1.00
Incremental Delay, d2	53.3	19.0	1.6			53.3		13.5			0.1	0.0
Delay (s)	97.8	62.6	41.5			92.8		45.1			5.9	4.1
Level of Service	F	E	D			F		D			A	A
Approach Delay (s)		67.8			92.8			45.1			5.8	
Approach LOS		E			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	47.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		

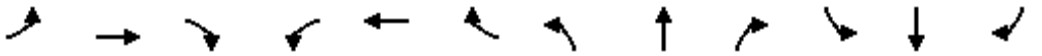
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



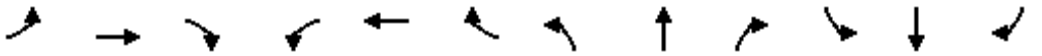
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	425	0	355	0	3085	515	0	1264	1121
Future Volume (vph)	0	0	0	425	0	355	0	3085	515	0	1264	1121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	425	0	355	0	3085	515	0	1264	1121
RTOR Reduction (vph)	0	0	0	0	0	35	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	425	0	320	0	3085	515	0	1264	1121
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				6			2	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				8.2		8.2		35.3	51.8		35.0	51.8
Effective Green, g (s)				8.2		8.2		35.3	51.8		35.0	51.8
Actuated g/C Ratio				0.16		0.16		0.68	1.00		0.68	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				522		424		3399	1553		3370	1553
v/s Ratio Prot				0.13				c0.62			0.25	
v/s Ratio Perm						0.12			0.33			c0.72
v/c Ratio				0.81		0.75		0.91	0.33		0.38	0.72
Uniform Delay, d1				21.1		20.8		6.9	0.0		3.6	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				9.0		6.6		3.9	0.6		0.0	2.9
Delay (s)				30.0		27.5		10.8	0.6		3.7	2.9
Level of Service				C		C		B	A		A	A
Approach Delay (s)		0.0			28.9			9.3			3.3	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	8.6
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



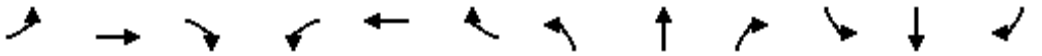
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1415	0	320	0	0	0	0	2184	363	0	1293	395
Future Volume (vph)	1415	0	320	0	0	0	0	2184	363	0	1293	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1415	0	320	0	0	0	0	2184	363	0	1293	395
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1415	0	303	0	0	0	0	2184	363	0	1293	395
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	7				8			6			2	
Permitted Phases			4	8					Free			Free
Actuated Green, G (s)	23.1		23.6					24.6	56.5		24.3	56.5
Effective Green, g (s)	23.1		23.6					24.6	56.5		24.3	56.5
Actuated g/C Ratio	0.41		0.42					0.44	1.00		0.43	1.00
Clearance Time (s)	4.0		3.5					4.8			5.1	
Vehicle Extension (s)	3.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	2000		1141					2736	1553		2145	1553
v/s Ratio Prot	c0.29							c0.35			0.26	
v/s Ratio Perm			0.11						0.23			0.25
v/c Ratio	0.71		0.27					0.80	0.23		0.60	0.25
Uniform Delay, d1	13.9		10.8					13.8	0.0		12.4	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2		0.0					1.6	0.4		0.3	0.4
Delay (s)	15.1		10.8					15.4	0.4		12.7	0.4
Level of Service	B		B					B	A		B	A
Approach Delay (s)		14.3			0.0			13.2			9.8	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	13.1
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



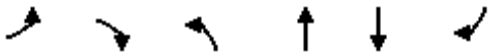
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	277	244	9	2	211	6	7	15	2	5	21	701
Future Volume (vph)	277	244	9	2	211	6	7	15	2	5	21	701
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1703	1792	1524	1719	1802			1798			1810	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)	1703	1792	1524	1719	1802			1798			1810	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	277	244	9	2	211	6	7	15	2	5	21	701
RTOR Reduction (vph)	0	0	4	0	2	0	0	2	0	0	0	311
Lane Group Flow (vph)	277	244	5	2	215	0	0	22	0	0	26	390
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	17.7	30.8	30.8	0.4	14.4			0.9			1.6	19.3
Effective Green, g (s)	17.7	30.8	30.8	0.4	14.4			0.9			1.6	19.3
Actuated g/C Ratio	0.30	0.53	0.53	0.01	0.25			0.02			0.03	0.33
Clearance Time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	516	945	803	11	444			27			49	513
v/s Ratio Prot	0.16	0.14		0.00	c0.12			c0.01			0.01	c0.23
v/s Ratio Perm			0.00									0.02
v/c Ratio	0.54	0.26	0.01	0.18	0.49			0.82			0.53	0.76
Uniform Delay, d1	16.9	7.6	6.5	28.8	18.8			28.7			28.0	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.5	0.1	0.0	2.9	0.3			92.1			5.4	5.7
Delay (s)	17.5	7.6	6.5	31.7	19.1			120.8			33.5	23.2
Level of Service	B	A	A	C	B			F			C	C
Approach Delay (s)		12.7			19.2			120.8			23.5	
Approach LOS		B			B			F			C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	24.7
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



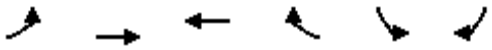
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	305	39	191	571	170	2118	0	0	1399	69
Future Volume (vph)	0	0	305	39	191	571	170	2118	0	0	1399	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1777	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1777	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	305	39	191	571	170	2118	0	0	1399	69
RTOR Reduction (vph)	0	0	252	0	0	85	0	0	0	0	0	44
Lane Group Flow (vph)	0	0	53	0	230	486	170	2118	0	0	1399	25
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			11.4		13.7	13.7	11.4	40.2			23.9	23.9
Effective Green, g (s)			11.4		13.7	13.7	11.4	40.2			23.9	23.9
Actuated g/C Ratio			0.18		0.21	0.21	0.18	0.62			0.37	0.37
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Vehicle Extension (s)			3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			279		373	564	578	3021			2263	559
v/s Ratio Prot			0.03		0.13		0.05	c0.43			0.23	
v/s Ratio Perm						c0.18						0.02
v/c Ratio			0.19		0.62	0.86	0.29	0.70			0.62	0.05
Uniform Delay, d1			22.9		23.3	24.8	23.4	8.4			16.9	13.3
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			0.3		3.0	12.8	0.3	0.8			0.5	0.0
Delay (s)			23.3		26.3	37.5	23.6	9.1			17.4	13.3
Level of Service			C		C	D	C	A			B	B
Approach Delay (s)		23.3			34.3			10.2			17.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	16.1
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



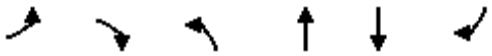
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1640	71	0	0	154	789
Future Volume (vph)	1640	71	0	0	154	789
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5			4.7	4.0
Lane Util. Factor	0.97	0.91			0.95	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00
Satd. Flow (prot)	3310	1386			3406	1524
Flt Permitted	0.95	1.00			1.00	1.00
Satd. Flow (perm)	3310	1386			3406	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1640	71	0	0	154	789
RTOR Reduction (vph)	0	17	0	0	0	0
Lane Group Flow (vph)	1647	47	0	0	154	789
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%
Turn Type	Prot	Perm			NA	Free
Protected Phases	4				2	
Permitted Phases		4				Free
Actuated Green, G (s)	42.1	42.1			7.4	57.7
Effective Green, g (s)	42.1	42.1			7.4	57.7
Actuated g/C Ratio	0.73	0.73			0.13	1.00
Clearance Time (s)	3.5	3.5			4.7	
Vehicle Extension (s)	1.5	1.5			1.0	
Lane Grp Cap (vph)	2415	1011			436	1524
v/s Ratio Prot	c0.50				0.05	
v/s Ratio Perm		0.03				c0.52
v/c Ratio	0.68	0.05			0.35	0.52
Uniform Delay, d1	4.2	2.2			23.0	0.0
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.6	0.0			0.2	1.3
Delay (s)	4.8	2.2			23.1	1.3
Level of Service	A	A			C	A
Approach Delay (s)	4.7			0.0	4.8	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	8.2
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



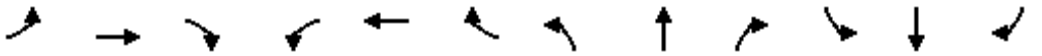
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	218	448	297	83	67	231
Future Volume (vph)	218	448	297	83	67	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	3343	3343	1495	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1671	3343	3343	1495	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	218	448	297	83	67	231
RTOR Reduction (vph)	0	0	0	62	0	183
Lane Group Flow (vph)	218	448	297	21	67	48
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.5	20.7	9.2	9.2	7.5	7.5
Effective Green, g (s)	7.5	20.7	9.2	9.2	7.5	7.5
Actuated g/C Ratio	0.21	0.57	0.25	0.25	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	346	1911	849	379	362	324
v/s Ratio Prot	c0.13	0.13	c0.09		c0.04	
v/s Ratio Perm				0.01		0.03
v/c Ratio	0.63	0.23	0.35	0.06	0.19	0.15
Uniform Delay, d1	13.1	3.8	11.1	10.2	11.8	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.1	0.3	0.1	0.2	0.2
Delay (s)	16.8	3.9	11.3	10.3	12.1	11.9
Level of Service	B	A	B	B	B	B
Approach Delay (s)		8.1	11.1		12.0	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	36.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	255	25	5	438	475	39
Future Volume (vph)	255	25	5	438	475	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3367	1553	1719	3438	3343	1495
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3367	1553	1719	3438	3343	1495
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	255	25	5	438	475	39
RTOR Reduction (vph)	0	19	0	0	0	30
Lane Group Flow (vph)	255	6	5	438	475	9
Heavy Vehicles (%)	4%	4%	5%	5%	8%	8%
Turn Type	Prot	Perm	Prot	NA	NA	Over
Protected Phases	4		5	2	6	4
Permitted Phases		4				
Actuated Green, G (s)	8.1	8.1	0.6	17.6	13.0	8.1
Effective Green, g (s)	8.1	8.1	0.6	17.6	13.0	8.1
Actuated g/C Ratio	0.24	0.24	0.02	0.52	0.39	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	809	373	30	1795	1289	359
v/s Ratio Prot	c0.08		0.00	c0.13	c0.14	0.01
v/s Ratio Perm		0.00				
v/c Ratio	0.32	0.02	0.17	0.24	0.37	0.03
Uniform Delay, d1	10.5	9.8	16.3	4.4	7.4	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	2.6	0.1	0.2	0.0
Delay (s)	10.7	9.8	18.9	4.5	7.6	9.8
Level of Service	B	A	B	A	A	A
Approach Delay (s)	10.7			4.6	7.8	
Approach LOS	B			A	A	

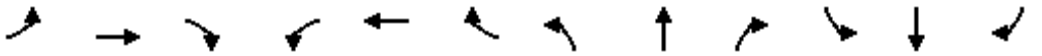
Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	33.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	706	0	755	0	0	0	0	2665	619	0	1888	1108
Future Volume (vph)	706	0	755	0	0	0	0	2665	619	0	1888	1108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.97	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4626	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4626	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	706	0	755	0	0	0	0	2665	619	0	1888	1108
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	55	0
Lane Group Flow (vph)	706	0	743	0	0	0	0	2665	619	0	2265	676
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	18.7		18.7					33.0	59.7		33.0	59.7
Effective Green, g (s)	18.7		18.7					33.0	59.7		33.0	59.7
Actuated g/C Ratio	0.31		0.31					0.55	1.00		0.55	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1064		864					3507	1568		2557	1348
v/s Ratio Prot	0.21							0.42			c0.49	
v/s Ratio Perm			c0.27						0.39			0.50
v/c Ratio	0.66		0.86					0.76	0.39		0.89	0.50
Uniform Delay, d1	17.8		19.3					10.3	0.0		11.7	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	1.6		8.5					1.0	0.7		4.1	1.3
Delay (s)	19.3		27.8					11.3	0.7		15.8	1.3
Level of Service	B		C					B	A		B	A
Approach Delay (s)		23.7			0.0			9.3			12.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	342	0	1309	0	2454	921	0	2903	643
Future Volume (vph)	0	0	0	342	0	1309	0	2454	921	0	2903	643
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		0.99	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4714	1348		5957	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4714	1348		5957	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	342	0	1309	0	2454	921	0	2903	643
RTOR Reduction (vph)	0	0	0	0	0	8	0	8	0	0	3	0
Lane Group Flow (vph)	0	0	0	342	0	1301	0	2612	755	0	2964	579
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				32.0		32.0		50.0	90.0		50.0	90.0
Effective Green, g (s)				32.0		32.0		50.0	90.0		50.0	90.0
Actuated g/C Ratio				0.36		0.36		0.56	1.00		0.56	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Vehicle Extension (s)				3.0		3.0		3.0			3.0	
Lane Grp Cap (vph)				1208		1271		2618	1348		3309	1270
v/s Ratio Prot				0.10				c0.55			0.50	
v/s Ratio Perm						c0.36			0.56			0.46
v/c Ratio				0.28		1.02		1.00	0.56		0.90	0.46
Uniform Delay, d1				20.8		29.0		19.9	0.0		17.7	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.1		31.5		16.9	1.7		3.6	1.2
Delay (s)				20.9		60.5		36.9	1.7		21.3	1.2
Level of Service				C		E		D	A		C	A
Approach Delay (s)		0.0			52.3			29.0			18.0	
Approach LOS		A			D			C			B	

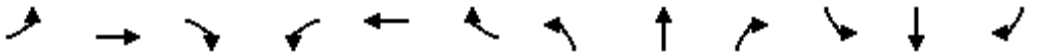
Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	663	275	314	887	488	402
Future Volume (vph)	663	275	314	887	488	402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	663	275	314	887	488	402
RTOR Reduction (vph)	0	195	0	0	0	301
Lane Group Flow (vph)	663	80	314	887	488	101
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	15.9	15.9	14.3	34.2	14.1	14.1
Effective Green, g (s)	15.9	15.9	14.3	34.2	14.1	14.1
Actuated g/C Ratio	0.28	0.28	0.25	0.61	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	890	398	400	1915	766	353
v/s Ratio Prot	c0.21		c0.20	0.28	c0.16	
v/s Ratio Perm		0.06				0.07
v/c Ratio	0.74	0.20	0.79	0.46	0.64	0.29
Uniform Delay, d1	18.4	15.4	19.6	6.0	18.8	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.2	9.7	0.2	1.7	0.4
Delay (s)	21.8	15.6	29.3	6.2	20.6	17.5
Level of Service	C	B	C	A	C	B
Approach Delay (s)	20.0			12.3	19.2	
Approach LOS	B			B	B	

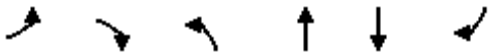
Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	226	1	0	443	26	0	0	0	23	0	247
Future Volume (vph)	309	226	1	0	443	26	0	0	0	23	0	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95					0.95	0.95	1.00
Frt	1.00	1.00			0.99					1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (prot)	1736	3469			3442					1665	1665	1568
Flt Permitted	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (perm)	1736	3469			3442					1665	1665	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	309	226	1	0	443	26	0	0	0	23	0	247
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	0	209
Lane Group Flow (vph)	309	227	0	0	464	0	0	0	0	11	12	38
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA					Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	14.5	30.1			11.6					6.9	6.9	6.9
Effective Green, g (s)	14.5	30.1			11.6					6.9	6.9	6.9
Actuated g/C Ratio	0.32	0.67			0.26					0.15	0.15	0.15
Clearance Time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	559	2320			887					255	255	240
v/s Ratio Prot	c0.18	0.07			c0.13					0.01	0.01	
v/s Ratio Perm												c0.02
v/c Ratio	0.55	0.10			0.52					0.04	0.05	0.16
Uniform Delay, d1	12.6	2.6			14.3					16.2	16.2	16.5
Progression Factor	1.00	1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0			0.6					0.1	0.1	0.3
Delay (s)	13.8	2.7			14.9					16.3	16.3	16.8
Level of Service	B	A			B					B	B	B
Approach Delay (s)		9.1			14.9			0.0			16.8	
Approach LOS		A			B			A			B	

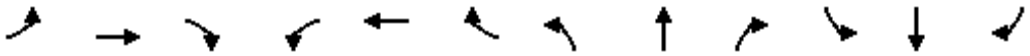
Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	109	47	22	493	962	336
Future Volume (vph)	109	47	22	493	962	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.96		1.00	1.00	0.97	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1710		1752	1845	1780	
Flt Permitted	0.97		0.95	1.00	1.00	
Satd. Flow (perm)	1710		1752	1845	1780	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	109	47	22	493	962	336
RTOR Reduction (vph)	15	0	0	0	9	0
Lane Group Flow (vph)	141	0	22	493	1289	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	13.2		1.6	89.8	84.2	
Effective Green, g (s)	13.2		1.6	89.8	84.2	
Actuated g/C Ratio	0.12		0.01	0.81	0.76	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	203		25	1492	1350	
v/s Ratio Prot	c0.08		c0.01	0.27	c0.72	
v/s Ratio Perm						
v/c Ratio	0.69		0.88	0.33	0.95	
Uniform Delay, d1	47.0		54.6	2.8	11.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	9.9		127.2	0.1	14.9	
Delay (s)	56.8		181.8	2.9	26.6	
Level of Service	E		F	A	C	
Approach Delay (s)	56.8			10.5	26.6	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	111.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

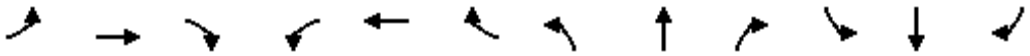
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	4	32	121	22	46	46	865	32	85	1069	115
Future Volume (vph)	58	4	32	121	22	46	46	865	32	85	1069	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1752	1845	1568	1752	3486		1752	3454	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1568	1752	1845	1568	1752	3486		1752	3454	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	58	4	32	121	22	46	46	865	32	85	1069	115
RTOR Reduction (vph)	0	0	31	0	0	40	0	3	0	0	11	0
Lane Group Flow (vph)	58	4	1	121	22	6	46	894	0	85	1173	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	2.2	2.2	2.2	7.0	7.0	7.0	1.7	23.4		2.8	24.5	
Effective Green, g (s)	2.2	2.2	2.2	7.0	7.0	7.0	1.7	23.4		2.8	24.5	
Actuated g/C Ratio	0.04	0.04	0.04	0.14	0.14	0.14	0.03	0.46		0.05	0.48	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	74	78	67	238	251	213	57	1587		95	1646	
v/s Ratio Prot	0.03	0.00		c0.07	c0.01		0.03	0.26		c0.05	c0.34	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.78	0.05	0.02	0.51	0.09	0.03	0.81	0.56		0.89	0.71	
Uniform Delay, d1	24.4	23.6	23.6	20.6	19.4	19.3	24.7	10.3		24.2	10.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	40.6	0.3	0.1	1.7	0.2	0.1	55.0	0.5		59.1	1.5	
Delay (s)	64.9	23.9	23.7	22.3	19.6	19.3	79.7	10.7		83.2	12.1	
Level of Service	E	C	C	C	B	B	E	B		F	B	
Approach Delay (s)		49.1			21.3			14.1			16.9	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	4	67	0	5	67	28	819	0	44	962	51
Future Volume (vph)	77	4	67	0	5	67	28	819	0	44	962	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1845	1568		1845	1568	1752	3505		1752	3478	
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1845	1568		1845	1568	1752	3505		1752	3478	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	77	4	67	0	5	67	28	819	0	44	962	51
RTOR Reduction (vph)	0	0	52	0	0	63	0	0	0	0	5	0
Lane Group Flow (vph)	77	4	15	0	5	4	28	819	0	44	1008	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.3	10.4	10.4		3.1	3.1	0.5	23.6		1.3	24.4	
Effective Green, g (s)	3.3	10.4	10.4		3.1	3.1	0.5	23.6		1.3	24.4	
Actuated g/C Ratio	0.07	0.22	0.22		0.07	0.07	0.01	0.50		0.03	0.52	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	122	405	344		120	102	18	1748		48	1794	
v/s Ratio Prot	c0.04	0.00			0.00		0.02	0.23		c0.03	c0.29	
v/s Ratio Perm			c0.01			0.00						
v/c Ratio	0.63	0.01	0.04		0.04	0.04	1.56	0.47		0.92	0.56	
Uniform Delay, d1	21.4	14.4	14.5		20.7	20.7	23.4	7.7		22.9	7.8	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.2	0.0	0.1		0.1	0.2	417.6	0.2		97.8	0.4	
Delay (s)	31.6	14.4	14.6		20.9	20.9	441.0	7.9		120.8	8.2	
Level of Service	C	B	B		C	C	F	A		F	A	
Approach Delay (s)		23.4			20.9			22.3			12.9	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

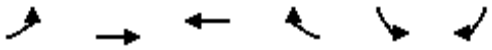
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	543	81	103	659	34	50
Future Volume (vph)	543	81	103	659	34	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3437		1752	3505	1752	1568
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3437		1752	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	543	81	103	659	34	50
RTOR Reduction (vph)	18	0	0	0	0	45
Lane Group Flow (vph)	606	0	103	659	34	5
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	18.6		3.1	25.7	3.6	3.6
Effective Green, g (s)	18.6		3.1	25.7	3.6	3.6
Actuated g/C Ratio	0.50		0.08	0.69	0.10	0.10
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1713		145	2414	169	151
v/s Ratio Prot	c0.18		c0.06	0.19	c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.35		0.71	0.27	0.20	0.03
Uniform Delay, d1	5.7		16.7	2.2	15.5	15.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1		15.1	0.1	0.6	0.1
Delay (s)	5.8		31.8	2.3	16.1	15.4
Level of Service	A		C	A	B	B
Approach Delay (s)	5.8			6.3	15.7	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	37.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	141	391	515	212	361	241
Future Volume (vph)	141	391	515	212	361	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1845	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1845	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	141	391	515	212	361	241
RTOR Reduction (vph)	0	0	0	150	0	165
Lane Group Flow (vph)	141	391	515	62	361	76
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.4	20.7	12.3	12.3	13.1	13.1
Effective Green, g (s)	4.4	20.7	12.3	12.3	13.1	13.1
Actuated g/C Ratio	0.11	0.50	0.29	0.29	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	184	913	1031	461	549	491
v/s Ratio Prot	c0.08	c0.21	0.15		c0.21	
v/s Ratio Perm				0.04		0.05
v/c Ratio	0.77	0.43	0.50	0.14	0.66	0.15
Uniform Delay, d1	18.2	6.8	12.2	10.8	12.4	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.2	0.3	0.4	0.1	2.8	0.1
Delay (s)	35.4	7.1	12.6	11.0	15.3	10.5
Level of Service	D	A	B	B	B	B
Approach Delay (s)		14.6	12.1		13.4	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	41.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2077	79	50	2210	30	24
Future Volume (vph)	2077	79	50	2210	30	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3486		1752	3505	1752	1568
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3486		1752	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2077	79	50	2210	30	24
RTOR Reduction (vph)	2	0	0	0	0	22
Lane Group Flow (vph)	2154	0	50	2210	30	2
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	69.6		5.2	78.8	7.9	7.9
Effective Green, g (s)	69.6		5.2	78.8	7.9	7.9
Actuated g/C Ratio	0.73		0.05	0.83	0.08	0.08
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2562		96	2916	146	130
v/s Ratio Prot	c0.62		0.03	c0.63	c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.84		0.52	0.76	0.21	0.02
Uniform Delay, d1	8.7		43.5	3.6	40.5	39.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7		5.0	1.2	0.7	0.0
Delay (s)	11.4		48.6	4.8	41.2	39.9
Level of Service	B		D	A	D	D
Approach Delay (s)	11.4			5.7	40.6	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

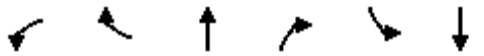
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	63	52	1238	27	162	1073
Future Volume (vph)	63	52	1238	27	162	1073
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		0.97	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	3494		3400	3505
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	3494		3400	3505
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	63	52	1238	27	162	1073
RTOR Reduction (vph)	0	46	2	0	0	0
Lane Group Flow (vph)	63	6	1263	0	162	1073
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	6.3	6.3	32.6		4.1	40.7
Effective Green, g (s)	6.3	6.3	32.6		4.1	40.7
Actuated g/C Ratio	0.11	0.11	0.59		0.07	0.74
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	200	179	2070		253	2593
v/s Ratio Prot	c0.04		c0.36		c0.05	0.31
v/s Ratio Perm		0.00				
v/c Ratio	0.32	0.03	0.61		0.64	0.41
Uniform Delay, d1	22.4	21.6	7.1		24.7	2.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	0.1	0.5		5.4	0.5
Delay (s)	23.3	21.7	7.7		30.2	3.2
Level of Service	C	C	A		C	A
Approach Delay (s)	22.6		7.7			6.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	0	1561	44	0	2145
Future Volume (vph)	48	0	1561	44	0	2145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.91			0.95
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	1752		5015			3505
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	1752		5015			3505
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	48	0	1561	44	0	2145
RTOR Reduction (vph)	0	0	1	0	0	0
Lane Group Flow (vph)	48	0	1604	0	0	2145
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	4.6		64.0			64.0
Effective Green, g (s)	4.6		64.0			64.0
Actuated g/C Ratio	0.06		0.84			0.84
Clearance Time (s)	4.0		4.0			4.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	105		4190			2928
v/s Ratio Prot	c0.03		0.32			c0.61
v/s Ratio Perm						
v/c Ratio	0.46		0.38			0.73
Uniform Delay, d1	34.8		1.5			2.7
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	3.1		0.1			1.0
Delay (s)	37.9		1.6			3.6
Level of Service	D		A			A
Approach Delay (s)	37.9		1.6			3.6
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	3.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

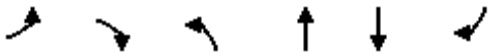
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	304	797	617	169	425	1874
Future Volume (vph)	304	797	617	169	425	1874
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	4874		1752	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	4874		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	304	797	617	169	425	1874
RTOR Reduction (vph)	0	470	99	0	0	0
Lane Group Flow (vph)	304	327	687	0	425	1874
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3				
Actuated Green, G (s)	13.0	13.0	9.7		13.6	27.3
Effective Green, g (s)	13.0	13.0	9.7		13.6	27.3
Actuated g/C Ratio	0.27	0.27	0.20		0.28	0.57
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	471	422	978		493	2846
v/s Ratio Prot	0.17		0.14		c0.24	c0.37
v/s Ratio Perm		c0.21				
v/c Ratio	0.65	0.78	0.70		0.86	0.66
Uniform Delay, d1	15.6	16.3	18.0		16.5	7.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.0	8.6	2.3		14.4	0.6
Delay (s)	18.6	24.9	20.3		30.8	7.8
Level of Service	B	C	C		C	A
Approach Delay (s)	23.2		20.3			12.1
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

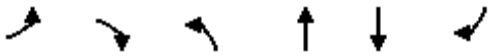
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	118	80	82	486	1767	162
Future Volume (vph)	118	80	82	486	1767	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	5036	4972	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	5036	4972	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	118	80	82	486	1767	162
RTOR Reduction (vph)	0	69	0	0	14	0
Lane Group Flow (vph)	118	11	82	486	1915	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	7.2	7.2	3.7	37.5	29.8	
Effective Green, g (s)	7.2	7.2	3.7	37.5	29.8	
Actuated g/C Ratio	0.14	0.14	0.07	0.71	0.57	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	239	214	123	3583	2811	
v/s Ratio Prot	c0.07		c0.05	0.10	c0.39	
v/s Ratio Perm		0.01				
v/c Ratio	0.49	0.05	0.67	0.14	0.68	
Uniform Delay, d1	21.1	19.8	23.9	2.4	8.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.1	12.8	0.0	0.7	
Delay (s)	22.7	19.9	36.7	2.4	8.8	
Level of Service	C	B	D	A	A	
Approach Delay (s)	21.5			7.4	8.8	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

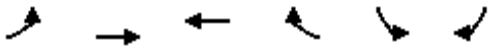
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	296	302	158	482	640	158
Future Volume (vph)	296	302	158	482	640	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3401	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3401	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	296	302	158	482	640	158
RTOR Reduction (vph)	0	218	0	0	43	0
Lane Group Flow (vph)	296	84	158	482	755	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.2	12.2	5.1	23.9	14.8	
Effective Green, g (s)	12.2	12.2	5.1	23.9	14.8	
Actuated g/C Ratio	0.28	0.28	0.12	0.54	0.34	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	484	433	202	1899	1141	
v/s Ratio Prot	c0.17		c0.09	0.14	c0.22	
v/s Ratio Perm		0.05				
v/c Ratio	0.61	0.19	0.78	0.25	0.66	
Uniform Delay, d1	13.9	12.2	19.0	5.4	12.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.3	0.2	17.7	0.1	1.5	
Delay (s)	16.2	12.4	36.6	5.4	14.0	
Level of Service	B	B	D	A	B	
Approach Delay (s)	14.3			13.1	14.0	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	44.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

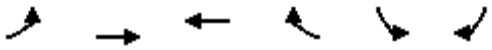
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	329	489	18	75	231
Future Volume (vph)	0	329	489	18	75	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1845	1845	1568	1752	1568
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1845	1845	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	329	489	18	75	231
RTOR Reduction (vph)	0	0	0	9	0	178
Lane Group Flow (vph)	0	329	489	9	75	53
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)		14.8	14.8	14.8	6.8	6.8
Effective Green, g (s)		14.8	14.8	14.8	6.8	6.8
Actuated g/C Ratio		0.50	0.50	0.50	0.23	0.23
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		922	922	784	402	360
v/s Ratio Prot		0.18	c0.27		c0.04	
v/s Ratio Perm				0.01		0.03
v/c Ratio		0.36	0.53	0.01	0.19	0.15
Uniform Delay, d1		4.5	5.0	3.7	9.2	9.1
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	0.6	0.0	0.2	0.2
Delay (s)		4.7	5.6	3.7	9.4	9.3
Level of Service		A	A	A	A	A
Approach Delay (s)		4.7	5.6		9.3	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	29.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

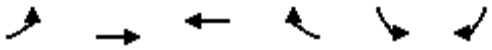
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	505	1585	1152	52	88	745
Future Volume (vph)	505	1585	1152	52	88	745
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	5003		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	5003		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	505	1585	1152	52	88	745
RTOR Reduction (vph)	0	0	8	0	0	269
Lane Group Flow (vph)	505	1585	1196	0	88	476
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	9.0	28.9	15.9		17.4	17.4
Effective Green, g (s)	9.0	28.9	15.9		17.4	17.4
Actuated g/C Ratio	0.17	0.53	0.29		0.32	0.32
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	563	1865	1464		561	502
v/s Ratio Prot	0.15	c0.45	0.24		0.05	
v/s Ratio Perm						c0.30
v/c Ratio	0.90	0.85	0.82		0.16	0.95
Uniform Delay, d1	22.2	10.8	17.8		13.2	18.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	16.8	3.8	3.6		0.1	27.3
Delay (s)	39.0	14.7	21.5		13.3	45.3
Level of Service	D	B	C		B	D
Approach Delay (s)		20.6	21.5		41.9	
Approach LOS		C	C		D	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

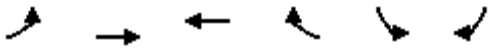
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	153	1380	757	51	51	175
Future Volume (vph)	153	1380	757	51	51	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	3505	3505	1568	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	3505	3505	1568	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	153	1380	757	51	51	175
RTOR Reduction (vph)	0	0	0	27	0	151
Lane Group Flow (vph)	153	1380	757	24	51	24
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.1	24.6	17.5	17.5	5.3	5.3
Effective Green, g (s)	3.1	24.6	17.5	17.5	5.3	5.3
Actuated g/C Ratio	0.08	0.65	0.46	0.46	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	278	2275	1618	724	475	219
v/s Ratio Prot	0.05	c0.39	0.22		0.02	
v/s Ratio Perm				0.02		c0.02
v/c Ratio	0.55	0.61	0.47	0.03	0.11	0.11
Uniform Delay, d1	16.7	3.8	7.0	5.6	14.2	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.5	0.2	0.0	0.1	0.2
Delay (s)	19.1	4.3	7.2	5.6	14.3	14.5
Level of Service	B	A	A	A	B	B
Approach Delay (s)		5.8	7.1		14.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	37.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	197	1195	699	17	8	123
Future Volume (vph)	197	1195	699	17	8	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3492		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3492		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	197	1195	699	17	8	123
RTOR Reduction (vph)	0	0	3	0	0	111
Lane Group Flow (vph)	197	1195	713	0	8	12
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	6.2	26.5	16.3		3.8	3.8
Effective Green, g (s)	6.2	26.5	16.3		3.8	3.8
Actuated g/C Ratio	0.16	0.69	0.43		0.10	0.10
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	283	2425	1486		173	155
v/s Ratio Prot	c0.11	c0.34	0.20		0.00	
v/s Ratio Perm						c0.01
v/c Ratio	0.70	0.49	0.48		0.05	0.08
Uniform Delay, d1	15.2	2.8	7.9		15.6	15.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.3	0.2	0.2		0.1	0.2
Delay (s)	22.4	2.9	8.2		15.7	15.9
Level of Service	C	A	A		B	B
Approach Delay (s)		5.7	8.2		15.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	705	181	338	580	171	270
Future Volume (vph)	705	181	338	580	171	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	3400	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	705	181	338	580	171	270
RTOR Reduction (vph)	0	117	0	0	0	183
Lane Group Flow (vph)	705	64	338	580	171	87
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	12.6	12.6	3.1	19.7	8.0	8.0
Effective Green, g (s)	12.6	12.6	3.1	19.7	8.0	8.0
Actuated g/C Ratio	0.35	0.35	0.09	0.55	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1237	553	295	1934	761	351
v/s Ratio Prot	c0.20		c0.10	0.17	0.05	
v/s Ratio Perm		0.04				c0.06
v/c Ratio	0.57	0.12	1.15	0.30	0.22	0.25
Uniform Delay, d1	9.4	7.8	16.3	4.3	11.3	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	97.8	0.1	0.2	0.4
Delay (s)	10.0	7.9	114.1	4.4	11.5	11.7
Level of Service	A	A	F	A	B	B
Approach Delay (s)	9.5			44.8	11.6	
Approach LOS	A			D	B	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	35.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	975	0	79	918	0	163
Future Volume (vph)	975	0	79	918	0	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.95		1.00	0.95		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	3505		1752	3505		1568
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	3505		1752	3505		1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	975	0	79	918	0	163
RTOR Reduction (vph)	0	0	0	0	0	144
Lane Group Flow (vph)	975	0	79	918	0	19
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	20.7		2.2	26.9		4.5
Effective Green, g (s)	20.7		2.2	26.9		4.5
Actuated g/C Ratio	0.53		0.06	0.68		0.11
Clearance Time (s)	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1841		97	2393		179
v/s Ratio Prot	c0.28		c0.05	0.26		
v/s Ratio Perm						c0.01
v/c Ratio	0.53		0.81	0.38		0.10
Uniform Delay, d1	6.1		18.4	2.7		15.6
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.3		38.7	0.1		0.3
Delay (s)	6.4		57.1	2.8		15.9
Level of Service	A		E	A		B
Approach Delay (s)	6.4			7.1	15.9	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	39.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	0	494	476	228	596	0	1765	703	0	2192	360
Future Volume (veh/h)	179	0	494	476	228	596	0	1765	703	0	2192	360
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1827	1827	1827	0	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	179	0	494	381	299	638	0	1765	0	0	2192	360
Adj No. of Lanes	0	1	2	2	1	3	0	3	1	0	4	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	0	4	4	0	4	4
Cap, veh/h	376	0	590	752	395	1007	0	1945	605	0	2450	605
Arrive On Green	0.21	0.00	0.21	0.22	0.22	0.22	0.00	0.39	0.00	0.00	0.39	0.39
Sat Flow, veh/h	1757	0	2760	3480	1827	4659	0	5152	1553	0	6540	1553
Grp Volume(v), veh/h	179	0	494	381	299	638	0	1765	0	0	2192	360
Grp Sat Flow(s),veh/h/ln	1757	0	1380	1740	1827	1553	0	1663	1553	0	1571	1553
Q Serve(g_s), s	5.9	0.0	11.4	6.4	10.2	8.3	0.0	22.3	0.0	0.0	21.8	12.3
Cycle Q Clear(g_c), s	5.9	0.0	11.4	6.4	10.2	8.3	0.0	22.3	0.0	0.0	21.8	12.3
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	376	0	590	752	395	1007	0	1945	605	0	2450	605
V/C Ratio(X)	0.48	0.00	0.84	0.51	0.76	0.63	0.00	0.91	0.00	0.00	0.89	0.59
Avail Cap(c_a), veh/h	422	0	663	835	439	1119	0	1946	606	0	2452	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	0.0	25.1	23.0	24.5	23.7	0.0	19.2	0.0	0.0	19.0	16.1
Incr Delay (d2), s/veh	0.9	0.0	8.5	0.5	6.7	1.0	0.0	6.7	0.0	0.0	4.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	5.0	3.1	5.9	3.6	0.0	11.3	0.0	0.0	10.1	5.5
LnGrp Delay(d),s/veh	23.9	0.0	33.5	23.5	31.2	24.7	0.0	25.9	0.0	0.0	23.8	17.7
LnGrp LOS	C		C	C	C	C		C			C	B
Approach Vol, veh/h		673			1318			1765			2552	
Approach Delay, s/veh		31.0			25.8			25.9			22.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		30.0		18.2		30.0		18.4
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		26.0		16.0		26.0		16.0
Max Q Clear Time (g_c+I1), s		24.3		13.4		23.8		12.2
Green Ext Time (p_c), s		1.7		0.8		2.2		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	25.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	27	163	17	40	16	136	839	6	17	1419	389
Future Volume (veh/h)	154	27	163	17	40	16	136	839	6	17	1419	389
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	173	0	163	17	40	16	136	839	6	17	1419	389
Adj No. of Lanes	2	0	1	0	1	0	2	3	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	500	0	223	22	52	21	207	1242	9	549	1726	772
Arrive On Green	0.14	0.00	0.14	0.05	0.05	0.05	0.06	0.24	0.24	0.32	0.50	0.50
Sat Flow, veh/h	3514	0	1568	405	953	381	3375	5109	37	1740	3471	1553
Grp Volume(v), veh/h	173	0	163	73	0	0	136	546	299	17	1419	389
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1739	0	0	1688	1663	1820	1740	1736	1553
Q Serve(g_s), s	2.9	0.0	6.5	2.7	0.0	0.0	2.6	9.7	9.7	0.4	22.7	11.0
Cycle Q Clear(g_c), s	2.9	0.0	6.5	2.7	0.0	0.0	2.6	9.7	9.7	0.4	22.7	11.0
Prop In Lane	1.00		1.00	0.23		0.22	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	500	0	223	95	0	0	207	808	443	549	1726	772
V/C Ratio(X)	0.35	0.00	0.73	0.77	0.00	0.00	0.66	0.68	0.68	0.03	0.82	0.50
Avail Cap(c_a), veh/h	860	0	384	426	0	0	207	1933	1058	549	2018	903
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	26.8	30.5	0.0	0.0	30.0	22.4	22.4	15.5	14.0	11.0
Incr Delay (d2), s/veh	0.4	0.0	4.6	12.4	0.0	0.0	7.4	1.0	1.8	0.0	2.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	3.1	1.6	0.0	0.0	1.4	4.6	5.1	0.2	11.2	4.8
LnGrp Delay(d),s/veh	25.7	0.0	31.4	42.9	0.0	0.0	37.5	23.4	24.2	15.5	16.5	11.5
LnGrp LOS	C		C	D			D	C	C	B	B	B
Approach Vol, veh/h		336			73			981			1825	
Approach Delay, s/veh		28.5			42.9			25.6			15.4	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.6	19.9		13.3	8.0	36.5		7.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	38.0		16.0	4.0	38.0		16.0
Max Q Clear Time (g_c+I1), s	2.4	11.7		8.5	4.6	24.7		4.7
Green Ext Time (p_c), s	1.3	4.2		0.8	0.0	7.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	636	124	158	855	204	132	616	15	225	1165	231
Future Volume (veh/h)	149	636	124	158	855	204	132	616	15	225	1165	231
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	149	636	124	158	855	204	132	616	15	225	1165	231
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	180	755	147	193	931	416	173	1159	28	314	1307	585
Arrive On Green	0.10	0.26	0.26	0.11	0.27	0.27	0.05	0.33	0.33	0.09	0.38	0.38
Sat Flow, veh/h	1757	2927	570	1757	3505	1568	3375	3463	84	3375	3471	1553
Grp Volume(v), veh/h	149	380	380	158	855	204	132	309	322	225	1165	231
Grp Sat Flow(s),veh/h/ln	1757	1752	1744	1757	1752	1568	1688	1736	1812	1688	1736	1553
Q Serve(g_s), s	6.5	16.1	16.2	6.9	18.5	8.6	3.0	11.3	11.3	5.1	24.6	8.5
Cycle Q Clear(g_c), s	6.5	16.1	16.2	6.9	18.5	8.6	3.0	11.3	11.3	5.1	24.6	8.5
Prop In Lane	1.00		0.33	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	180	452	450	193	931	416	173	581	606	314	1307	585
V/C Ratio(X)	0.83	0.84	0.84	0.82	0.92	0.49	0.77	0.53	0.53	0.72	0.89	0.39
Avail Cap(c_a), veh/h	180	452	450	202	941	421	173	581	606	431	1375	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	27.5	27.5	34.1	27.9	24.3	36.7	21.1	21.1	34.5	22.9	17.9
Incr Delay (d2), s/veh	26.6	13.4	13.7	21.8	13.6	0.9	18.3	0.9	0.9	3.5	7.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	9.4	9.4	4.5	10.7	3.8	1.9	5.5	5.8	2.5	13.0	3.7
LnGrp Delay(d),s/veh	61.0	40.9	41.2	55.8	41.5	25.2	55.0	22.0	22.0	38.0	30.3	18.3
LnGrp LOS	E	D	D	E	D	C	D	C	C	D	C	B
Approach Vol, veh/h		909			1217			763			1621	
Approach Delay, s/veh		44.4			40.7			27.7			29.7	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	30.2	12.6	24.2	8.0	33.5	12.0	24.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	25.0	9.0	20.0	4.0	31.0	8.0	21.0
Max Q Clear Time (g_c+I1), s	7.1	13.3	8.9	18.2	5.0	26.6	8.5	20.5
Green Ext Time (p_c), s	0.3	7.5	0.0	1.4	0.0	2.8	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	35.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1629	67	160	1087	105	88	802	185	27	236	2
Future Volume (veh/h)	23	1629	67	160	1087	105	88	802	185	27	236	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	23	1629	67	160	1087	105	88	802	185	27	236	2
Adj No. of Lanes	1	1	2	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	28	1108	1657	103	2078	201	108	683	305	34	543	5
Arrive On Green	0.02	0.62	0.62	0.06	0.66	0.66	0.06	0.19	0.19	0.02	0.15	0.15
Sat Flow, veh/h	1707	1792	2682	1707	3139	303	1757	3505	1568	1757	3562	30
Grp Volume(v), veh/h	23	1629	67	160	589	603	88	802	185	27	116	122
Grp Sat Flow(s),veh/h/ln	1707	1792	1341	1707	1703	1739	1757	1752	1568	1757	1752	1839
Q Serve(g_s), s	2.0	92.0	1.5	9.0	26.6	26.7	7.4	29.0	16.0	2.3	8.9	9.0
Cycle Q Clear(g_c), s	2.0	92.0	1.5	9.0	26.6	26.7	7.4	29.0	16.0	2.3	8.9	9.0
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	28	1108	1657	103	1127	1151	108	683	305	34	267	281
V/C Ratio(X)	0.82	1.47	0.04	1.55	0.52	0.52	0.81	1.17	0.61	0.80	0.43	0.43
Avail Cap(c_a), veh/h	69	1108	1657	103	1127	1151	142	683	305	47	267	281
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.0	28.4	11.1	69.9	13.0	13.0	69.0	59.9	54.7	72.7	57.3	57.3
Incr Delay (d2), s/veh	41.0	216.8	0.0	289.7	0.4	0.4	23.1	93.5	3.4	45.3	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	111.9	0.5	12.5	12.6	12.9	4.3	22.8	7.2	1.5	4.4	4.7
LnGrp Delay(d),s/veh	114.0	245.2	11.2	359.6	13.5	13.5	92.1	153.5	58.1	118.0	58.4	58.3
LnGrp LOS	F	F	B	F	B	B	F	F	E	F	E	E
Approach Vol, veh/h		1719			1352			1075			265	
Approach Delay, s/veh		234.3			54.4			132.0			64.4	
Approach LOS		F			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	33.0	13.0	96.0	13.2	26.7	6.5	102.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	29.0	9.0	92.0	12.0	21.0	6.0	95.0
Max Q Clear Time (g_c+I1), s	4.3	31.0	11.0	94.0	9.4	11.0	4.0	28.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	4.2	0.0	50.2

Intersection Summary	
HCM 2010 Ctrl Delay	144.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	640	276	253	807	41	115	554	231	16	512	163
Future Volume (veh/h)	34	640	276	253	807	41	115	554	231	16	512	163
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	34	640	276	253	807	41	115	554	231	16	512	163
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	51	845	378	302	1303	66	146	1050	470	27	813	364
Arrive On Green	0.03	0.24	0.24	0.17	0.38	0.38	0.08	0.30	0.30	0.02	0.23	0.23
Sat Flow, veh/h	1757	3505	1568	1757	3394	172	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	34	640	276	253	417	431	115	554	231	16	512	163
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1814	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	1.1	10.0	9.5	8.2	11.3	11.3	3.8	7.7	7.1	0.5	7.7	5.2
Cycle Q Clear(g_c), s	1.1	10.0	9.5	8.2	11.3	11.3	3.8	7.7	7.1	0.5	7.7	5.2
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	51	845	378	302	673	697	146	1050	470	27	813	364
V/C Ratio(X)	0.67	0.76	0.73	0.84	0.62	0.62	0.79	0.53	0.49	0.58	0.63	0.45
Avail Cap(c_a), veh/h	149	952	426	328	673	697	149	1071	479	119	1012	453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	20.7	20.6	23.6	14.7	14.7	26.5	17.2	16.9	28.8	20.3	19.4
Incr Delay (d2), s/veh	14.0	3.1	5.5	16.1	1.7	1.7	23.4	0.5	0.8	18.0	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.2	4.7	5.3	5.8	6.0	2.8	3.8	3.1	0.4	3.8	2.4
LnGrp Delay(d),s/veh	42.4	23.9	26.1	39.7	16.4	16.3	49.9	17.6	17.7	46.8	21.2	20.2
LnGrp LOS	D	C	C	D	B	B	D	B	B	D	C	C
Approach Vol, veh/h		950			1101			900			691	
Approach Delay, s/veh		25.2			21.7			21.8			21.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	21.6	14.1	18.2	8.9	17.7	5.7	26.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	18.0	11.0	16.0	5.0	17.0	5.0	22.0
Max Q Clear Time (g_c+I1), s	2.5	9.7	10.2	12.0	5.8	9.7	3.1	13.3
Green Ext Time (p_c), s	0.0	4.3	0.1	2.2	0.0	3.9	0.0	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	22.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	465	63	178	510	45	119	240	99	74	793	219
Future Volume (veh/h)	222	465	63	178	510	45	119	240	99	74	793	219
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	222	465	63	178	510	45	119	240	99	74	793	219
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	254	839	375	222	776	347	127	1025	458	93	957	428
Arrive On Green	0.14	0.24	0.24	0.13	0.22	0.22	0.07	0.29	0.29	0.05	0.27	0.27
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	222	465	63	178	510	45	119	240	99	74	793	219
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	6.9	6.4	1.8	5.5	7.3	1.3	3.7	2.9	2.6	2.3	11.8	6.5
Cycle Q Clear(g_c), s	6.9	6.4	1.8	5.5	7.3	1.3	3.7	2.9	2.6	2.3	11.8	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	839	375	222	776	347	127	1025	458	93	957	428
V/C Ratio(X)	0.87	0.55	0.17	0.80	0.66	0.13	0.94	0.23	0.22	0.80	0.83	0.51
Avail Cap(c_a), veh/h	254	1012	453	254	1012	453	127	1025	458	127	1012	453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	18.5	16.7	23.5	19.6	17.3	25.6	14.9	14.8	25.9	18.9	17.0
Incr Delay (d2), s/veh	27.0	0.6	0.2	14.9	1.0	0.2	60.9	0.1	0.2	21.4	5.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	3.2	0.8	3.5	3.6	0.6	3.9	1.4	1.2	1.7	6.4	2.9
LnGrp Delay(d),s/veh	50.2	19.0	16.9	38.4	20.6	17.4	86.5	15.0	15.0	47.3	24.5	18.0
LnGrp LOS	D	B	B	D	C	B	F	B	B	D	C	B
Approach Vol, veh/h		750			733			458			1086	
Approach Delay, s/veh		28.1			24.7			33.6			24.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	20.2	11.0	17.3	8.0	19.1	12.0	16.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	8.0	16.0	4.0	16.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	4.3	4.9	7.5	8.4	5.7	13.8	8.9	9.3
Green Ext Time (p_c), s	0.0	4.9	0.0	3.2	0.0	1.3	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	344	422	137	251	455	589	132	2350	233	340	2324	402
Future Volume (veh/h)	344	422	137	251	455	589	132	2350	233	340	2324	402
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	344	422	137	251	455	589	132	2350	233	340	2324	402
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	283	892	399	276	885	537	150	2191	682	303	2416	752
Arrive On Green	0.08	0.25	0.25	0.08	0.25	0.25	0.04	0.44	0.44	0.09	0.48	0.48
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	344	422	137	251	455	589	132	2350	233	340	2324	402
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	12.5	15.4	10.7	11.0	16.8	38.0	5.9	66.1	14.9	13.5	67.7	27.1
Cycle Q Clear(g_c), s	12.5	15.4	10.7	11.0	16.8	38.0	5.9	66.1	14.9	13.5	67.7	27.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	892	399	276	885	537	150	2191	682	303	2416	752
V/C Ratio(X)	1.22	0.47	0.34	0.91	0.51	1.10	0.88	1.07	0.34	1.12	0.96	0.53
Avail Cap(c_a), veh/h	283	892	399	276	885	537	150	2191	682	303	2416	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.0	47.5	45.8	68.6	48.3	49.5	71.5	42.2	27.8	68.5	37.5	27.0
Incr Delay (d2), s/veh	124.7	0.1	0.2	30.8	0.2	68.3	39.2	42.2	0.1	89.0	10.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	7.5	4.7	6.4	8.2	32.4	3.5	38.8	6.4	10.0	33.4	11.7
LnGrp Delay(d),s/veh	193.7	47.7	46.0	99.4	48.5	117.8	110.7	84.4	28.0	157.5	48.2	27.4
LnGrp LOS	F	D	D	F	D	F	F	F	C	F	D	C
Approach Vol, veh/h		903			1295			2715			3066	
Approach Delay, s/veh		103.1			89.9			80.8			57.6	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	77.7	18.0	42.6	19.0	70.9	17.7	42.9
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	6.7	72.7	12.5	* 38	13.5	* 66	12.2	38.0
Max Q Clear Time (g_c+I1), s	7.9	69.7	14.5	40.0	15.5	68.1	13.0	17.4
Green Ext Time (p_c), s	0.0	2.7	0.0	0.0	0.0	0.0	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	75.9
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	69	0	26	0	2526	59	113	2593	4
Future Volume (veh/h)	1	0	1	69	0	26	0	2526	59	113	2593	4
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	1	0	1	69	0	26	0	2526	59	113	2593	4
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	1	0	1	100	0	178	2	2890	900	142	3749	6
Arrive On Green	0.00	0.00	0.00	0.06	0.00	0.06	0.00	0.58	0.58	0.08	0.73	0.73
Sat Flow, veh/h	828	0	828	1757	0	3136	1740	4988	1553	1740	5143	8
Grp Volume(v), veh/h	2	0	0	69	0	26	0	2526	59	113	1676	921
Grp Sat Flow(s),veh/h/ln	1657	0	0	1757	0	1568	1740	1663	1553	1740	1663	1826
Q Serve(g_s), s	0.1	0.0	0.0	2.9	0.0	0.6	0.0	32.5	1.2	4.8	20.7	20.7
Cycle Q Clear(g_c), s	0.1	0.0	0.0	2.9	0.0	0.6	0.0	32.5	1.2	4.8	20.7	20.7
Prop In Lane	0.50		0.50	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	3	0	0	100	0	178	2	2890	900	142	2424	1331
V/C Ratio(X)	0.74	0.00	0.00	0.69	0.00	0.15	0.00	0.87	0.07	0.79	0.69	0.69
Avail Cap(c_a), veh/h	66	0	0	280	0	500	69	3129	974	160	2424	1331
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	0.0	0.0	34.8	0.0	33.8	0.0	13.5	6.9	33.9	5.6	5.6
Incr Delay (d2), s/veh	86.8	0.0	0.0	3.2	0.0	0.1	0.0	3.6	0.1	18.7	1.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	1.5	0.0	0.3	0.0	15.7	0.5	3.0	9.8	11.1
LnGrp Delay(d),s/veh	124.3	0.0	0.0	38.0	0.0	33.9	0.0	17.1	7.0	52.6	6.9	8.0
LnGrp LOS	F			D		C		B	A	D	A	A
Approach Vol, veh/h		2			95			2585			2710	
Approach Delay, s/veh		124.3			36.9			16.9			9.2	
Approach LOS		F			D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	59.8		5.6	11.3	48.6		9.8
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 3	51.4		3.0	* 6.9	* 47		12.0
Max Q Clear Time (g_c+I1), s	0.0	22.7		2.1	6.8	34.5		4.9
Green Ext Time (p_c), s	0.0	28.6		0.0	0.0	9.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	333	23	115	149	648	9	1900	129	789	1879	23
Future Volume (veh/h)	74	333	23	115	149	648	9	1900	129	789	1879	23
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	74	333	23	115	149	648	9	1900	129	789	1879	23
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	92	705	316	143	764	342	21	1838	124	753	3057	37
Arrive On Green	0.03	0.20	0.20	0.04	0.22	0.22	0.01	0.39	0.39	0.22	0.60	0.60
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4772	323	3375	5079	62
Grp Volume(v), veh/h	74	333	23	115	149	648	9	1322	707	789	1230	672
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1770	1688	1663	1816
Q Serve(g_s), s	3.3	12.7	1.8	5.0	5.2	32.7	0.4	57.8	57.8	33.5	35.1	35.1
Cycle Q Clear(g_c), s	3.3	12.7	1.8	5.0	5.2	32.7	0.4	57.8	57.8	33.5	35.1	35.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.03
Lane Grp Cap(c), veh/h	92	705	316	143	764	342	21	1280	682	753	2002	1093
V/C Ratio(X)	0.80	0.47	0.07	0.80	0.20	1.90	0.43	1.03	1.04	1.05	0.61	0.61
Avail Cap(c_a), veh/h	92	708	317	143	764	342	67	1280	682	753	2002	1093
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.6	52.7	48.4	71.3	48.0	58.7	74.3	46.2	46.2	58.3	18.9	18.9
Incr Delay (d2), s/veh	36.0	0.2	0.0	25.6	0.0	414.5	5.0	33.9	44.5	45.9	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	6.1	0.8	2.9	2.5	53.5	0.2	32.5	36.6	20.4	16.2	17.8
LnGrp Delay(d),s/veh	108.6	52.9	48.4	96.9	48.0	473.2	79.3	80.0	90.7	104.2	19.3	19.6
LnGrp LOS	F	D	D	F	D	F	E	F	F	F	B	B
Approach Vol, veh/h		430			912			2038			2691	
Approach Delay, s/veh		62.2			356.3			83.7			44.3	
Approach LOS		E			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	95.7	9.6	38.4	39.0	63.1	11.8	36.2
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	88.2	4.1	* 33	33.5	* 58	6.3	* 31
Max Q Clear Time (g_c+I1), s	2.4	37.1	5.3	34.7	35.5	59.8	7.0	14.7
Green Ext Time (p_c), s	0.0	8.4	0.0	0.0	0.0	0.0	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	105.7
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	34	1987	23	79	1936
Future Volume (veh/h)	13	34	1987	23	79	1936
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	13	34	1987	23	79	1936
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	54	48	2735	32	97	2470
Arrive On Green	0.03	0.03	0.54	0.54	0.06	0.71
Sat Flow, veh/h	1757	1568	5247	59	1740	3563
Grp Volume(v), veh/h	13	34	1299	711	79	1936
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1817	1740	1736
Q Serve(g_s), s	0.3	0.9	11.8	11.8	1.8	14.5
Cycle Q Clear(g_c), s	0.3	0.9	11.8	11.8	1.8	14.5
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	54	48	1789	977	97	2470
V/C Ratio(X)	0.24	0.71	0.73	0.73	0.82	0.78
Avail Cap(c_a), veh/h	136	122	2490	1361	305	3617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	19.2	7.0	7.0	18.6	3.8
Incr Delay (d2), s/veh	0.9	7.0	0.3	0.6	6.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	5.3	5.9	1.0	6.6
LnGrp Delay(d),s/veh	19.8	26.2	7.3	7.6	24.8	4.1
LnGrp LOS	B	C	A	A	C	A
Approach Vol, veh/h	47		2010			2015
Approach Delay, s/veh	24.4		7.4			4.9
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		33.2			6.9	26.3		6.7
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		41.6			* 7	29.9		3.1
Max Q Clear Time (g_c+I1), s		16.5			3.8	13.8		2.9
Green Ext Time (p_c), s		9.0			0.0	7.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	369	444	99	57	692	152	35	747	54	227	626	199
Future Volume (veh/h)	369	444	99	57	692	152	35	747	54	227	626	199
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1828	1900	1845	1827	1827
Adj Flow Rate, veh/h	369	444	99	57	692	152	35	747	54	227	626	199
Adj No. of Lanes	1	1	1	1	2	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	3	4	4
Cap, veh/h	375	758	644	73	675	148	44	792	57	238	1239	554
Arrive On Green	0.21	0.41	0.41	0.04	0.24	0.24	0.03	0.24	0.24	0.14	0.36	0.36
Sat Flow, veh/h	1757	1845	1568	1757	2859	628	1740	3285	237	1757	3471	1553
Grp Volume(v), veh/h	369	444	99	57	424	420	35	395	406	227	626	199
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1752	1734	1740	1737	1786	1757	1736	1553
Q Serve(g_s), s	25.1	22.5	4.8	3.9	28.4	28.4	2.4	26.9	26.9	15.4	17.0	11.4
Cycle Q Clear(g_c), s	25.1	22.5	4.8	3.9	28.4	28.4	2.4	26.9	26.9	15.4	17.0	11.4
Prop In Lane	1.00		1.00	1.00		0.36	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	375	758	644	73	414	409	44	419	430	238	1239	554
V/C Ratio(X)	0.98	0.59	0.15	0.78	1.02	1.03	0.80	0.94	0.94	0.95	0.51	0.36
Avail Cap(c_a), veh/h	375	758	644	139	414	409	97	424	437	238	1239	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	27.5	22.3	57.1	45.9	45.9	58.3	44.8	44.8	51.6	30.3	28.5
Incr Delay (d2), s/veh	41.7	0.8	0.0	6.6	50.7	51.3	11.4	29.1	28.7	45.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.5	11.6	2.1	2.0	19.5	19.4	1.3	16.2	16.6	10.5	8.2	4.9
LnGrp Delay(d),s/veh	88.8	28.3	22.3	63.7	96.7	97.2	69.7	73.9	73.5	96.6	30.5	28.7
LnGrp LOS	F	C	C	E	F	F	E	E	E	F	C	C
Approach Vol, veh/h		912			901			836			1052	
Approach Delay, s/veh		52.1			94.8			73.6			44.4	
Approach LOS		D			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	47.7	31.2	33.7	21.6	33.8	10.2	54.7
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 6.7	39.7	25.7	* 28	* 16	29.4	* 9.5	* 44
Max Q Clear Time (g_c+I1), s	4.4	19.0	27.1	30.4	17.4	28.9	5.9	24.5
Green Ext Time (p_c), s	0.0	1.8	0.0	0.0	0.0	0.1	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	65.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	454	134	376	604	52	44	513	212	180	589	20
Future Volume (veh/h)	136	454	134	376	604	52	44	513	212	180	589	20
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	136	454	134	376	604	52	44	513	212	180	589	20
Adj No. of Lanes	0	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	115	383	428	424	445	378	38	462	396	125	559	475
Arrive On Green	0.27	0.27	0.27	0.24	0.24	0.24	0.02	0.25	0.25	0.07	0.31	0.31
Sat Flow, veh/h	420	1403	1568	1757	1845	1568	1740	1827	1568	1757	1827	1553
Grp Volume(v), veh/h	590	0	134	376	604	52	44	513	212	180	589	20
Grp Sat Flow(s),veh/h/ln	1824	0	1568	1757	1845	1568	1740	1827	1568	1757	1827	1553
Q Serve(g_s), s	40.9	0.0	10.2	31.0	36.2	3.9	3.3	37.9	17.5	10.7	45.9	1.4
Cycle Q Clear(g_c), s	40.9	0.0	10.2	31.0	36.2	3.9	3.3	37.9	17.5	10.7	45.9	1.4
Prop In Lane	0.23		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	497	0	428	424	445	378	38	462	396	125	559	475
V/C Ratio(X)	1.19	0.00	0.31	0.89	1.36	0.14	1.15	1.11	0.54	1.44	1.05	0.04
Avail Cap(c_a), veh/h	497	0	428	424	445	378	38	462	396	125	559	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.6	0.0	43.4	54.9	56.9	44.6	73.3	56.0	48.4	69.7	52.1	36.6
Incr Delay (d2), s/veh	102.8	0.0	0.2	19.7	174.7	0.2	193.2	75.8	0.8	235.7	52.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.8	0.0	4.5	17.4	40.0	1.7	3.6	28.8	7.7	13.4	31.4	0.6
LnGrp Delay(d),s/veh	157.3	0.0	43.5	74.6	231.6	44.8	270.7	131.9	49.2	305.4	105.0	36.6
LnGrp LOS	F		D	E	F	D	F	F	D	F	F	D
Approach Vol, veh/h		724			1032			769			789	
Approach Delay, s/veh		136.2			165.0			117.0			149.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	51.0		43.0	16.0	43.0		48.0
Change Period (Y+Rc), s	* 4.7	5.1		6.8	* 5.3	5.1		7.1
Max Green Setting (Gmax), s	* 3.3	45.9		36.2	* 11	37.9		40.9
Max Q Clear Time (g_c+I1), s	5.3	47.9		38.2	12.7	39.9		42.9
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		143.8
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	284	370	267	238	786	9	73	479	46	19	803	275
Future Volume (veh/h)	284	370	267	238	786	9	73	479	46	19	803	275
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	284	370	267	238	786	9	73	479	46	19	803	275
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	292	474	337	273	806	361	93	1134	109	22	813	278
Arrive On Green	0.17	0.24	0.24	0.16	0.23	0.23	0.05	0.35	0.35	0.01	0.32	0.32
Sat Flow, veh/h	1740	1939	1380	1740	3471	1553	1740	3202	306	1740	2540	869
Grp Volume(v), veh/h	284	331	306	238	786	9	73	259	266	19	549	529
Grp Sat Flow(s),veh/h/ln	1740	1736	1583	1740	1736	1553	1740	1736	1773	1740	1736	1674
Q Serve(g_s), s	14.6	16.0	16.3	12.0	20.2	0.4	3.7	10.2	10.3	1.0	28.3	28.3
Cycle Q Clear(g_c), s	14.6	16.0	16.3	12.0	20.2	0.4	3.7	10.2	10.3	1.0	28.3	28.3
Prop In Lane	1.00		0.87	1.00		1.00	1.00		0.17	1.00		0.52
Lane Grp Cap(c), veh/h	292	424	387	273	806	361	93	615	628	22	555	535
V/C Ratio(X)	0.97	0.78	0.79	0.87	0.98	0.02	0.79	0.42	0.42	0.87	0.99	0.99
Avail Cap(c_a), veh/h	292	424	387	309	806	361	95	615	628	68	555	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	31.7	31.9	37.1	34.3	26.7	42.1	22.1	22.1	44.4	30.4	30.4
Incr Delay (d2), s/veh	44.9	13.2	15.2	19.5	26.2	0.1	31.0	2.1	2.1	28.8	35.3	36.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	9.2	8.8	7.2	12.7	0.2	2.6	5.3	5.4	0.6	19.0	18.5
LnGrp Delay(d),s/veh	82.2	45.0	47.1	56.5	60.5	26.8	73.1	24.2	24.2	73.2	65.7	66.7
LnGrp LOS	F	D	D	E	E	C	E	C	C	E	E	E
Approach Vol, veh/h		921			1033			598			1097	
Approach Delay, s/veh		57.2			59.3			30.2			66.3	
Approach LOS		E			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	34.0	20.2	26.1	6.6	37.1	19.1	27.2
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 4.9	* 29	* 15	* 21	3.5	* 30	16.0	* 20
Max Q Clear Time (g_c+I1), s	5.7	30.3	16.6	22.2	3.0	12.3	14.0	18.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	15.9	0.1	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	56.1
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	280	653	175	306	13	283	492	59	46	1137	108
Future Volume (veh/h)	74	280	653	175	306	13	283	492	59	46	1137	108
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	74	280	653	175	306	13	283	492	59	46	1137	108
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	120	1115	499	198	1196	535	302	1274	152	80	1187	531
Arrive On Green	0.04	0.32	0.32	0.06	0.34	0.34	0.09	0.41	0.41	0.02	0.34	0.34
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	3123	373	3375	3471	1553
Grp Volume(v), veh/h	74	280	653	175	306	13	283	273	278	46	1137	108
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1736	1761	1688	1736	1553
Q Serve(g_s), s	2.5	6.8	36.6	5.9	7.3	0.6	9.6	12.7	12.8	1.6	36.9	5.7
Cycle Q Clear(g_c), s	2.5	6.8	36.6	5.9	7.3	0.6	9.6	12.7	12.8	1.6	36.9	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	120	1115	499	198	1196	535	302	708	718	80	1187	531
V/C Ratio(X)	0.62	0.25	1.31	0.88	0.26	0.02	0.94	0.39	0.39	0.57	0.96	0.20
Avail Cap(c_a), veh/h	175	1115	499	198	1196	535	302	708	718	126	1195	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	29.1	39.2	53.8	27.4	25.2	52.1	23.9	24.0	55.6	37.0	26.8
Incr Delay (d2), s/veh	1.9	0.5	153.1	32.8	0.4	0.1	34.9	1.1	1.1	2.4	17.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.4	37.1	3.7	3.6	0.3	5.9	6.3	6.4	0.7	20.6	2.5
LnGrp Delay(d),s/veh	56.6	29.6	192.3	86.5	27.7	25.2	87.0	25.0	25.1	58.0	54.4	27.4
LnGrp LOS	E	C	F	F	C	C	F	C	C	E	D	C
Approach Vol, veh/h		1007			494			834			1291	
Approach Delay, s/veh		137.1			48.5			46.1			52.3	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	44.9	9.6	44.8	8.2	52.4	12.2	42.2
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	10.3	* 40	5.9	37.2	4.3	* 46	6.7	* 37
Max Q Clear Time (g_c+I1), s	11.6	38.9	4.5	9.3	3.6	14.8	7.9	38.6
Green Ext Time (p_c), s	0.0	0.5	0.0	18.8	0.0	24.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	73.9
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	2021	245	95	2036	5	96	30	44	4	32	23
Future Volume (veh/h)	14	2021	245	95	2036	5	96	30	44	4	32	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	14	2021	245	95	2036	5	96	30	44	4	32	23
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	21	2096	249	113	2571	6	112	77	114	7	48	35
Arrive On Green	0.01	0.68	0.68	0.07	0.74	0.74	0.06	0.11	0.11	0.00	0.05	0.05
Sat Flow, veh/h	1707	3067	364	1707	3485	9	1757	677	993	1757	999	718
Grp Volume(v), veh/h	14	1104	1162	95	994	1047	96	0	74	4	0	55
Grp Sat Flow(s),veh/h/ln	1707	1703	1728	1707	1703	1791	1757	0	1669	1757	0	1718
Q Serve(g_s), s	1.1	79.0	88.0	7.4	49.8	49.9	7.3	0.0	5.6	0.3	0.0	4.3
Cycle Q Clear(g_c), s	1.1	79.0	88.0	7.4	49.8	49.9	7.3	0.0	5.6	0.3	0.0	4.3
Prop In Lane	1.00		0.21	1.00		0.00	1.00		0.59	1.00		0.42
Lane Grp Cap(c), veh/h	21	1164	1181	113	1256	1321	112	0	191	7	0	83
V/C Ratio(X)	0.68	0.95	0.98	0.84	0.79	0.79	0.86	0.00	0.39	0.55	0.00	0.66
Avail Cap(c_a), veh/h	50	1177	1195	113	1256	1321	112	0	316	52	0	267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	66.6	19.3	20.7	62.5	11.2	11.2	62.8	0.0	55.5	67.3	0.0	63.3
Incr Delay (d2), s/veh	23.2	15.7	22.2	38.5	3.9	3.7	44.3	0.0	1.2	37.8	0.0	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	41.9	48.6	4.7	24.3	25.8	4.9	0.0	2.6	0.2	0.0	2.2
LnGrp Delay(d),s/veh	89.8	35.0	42.9	101.0	15.0	14.9	107.1	0.0	56.7	105.0	0.0	71.2
LnGrp LOS	F	C	D	F	B	B	F		E	F		E
Approach Vol, veh/h		2280			2136			170			59	
Approach Delay, s/veh		39.3			18.8			85.2			73.5	
Approach LOS		D			B			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	98.9	13.0	11.0	5.1	106.3	4.1	19.9
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	9.0	93.6	8.6	* 21	4.0	98.6	4.0	25.6
Max Q Clear Time (g_c+I1), s	9.4	90.0	9.3	6.3	3.1	51.9	2.3	7.6
Green Ext Time (p_c), s	0.0	2.5	0.0	0.3	0.0	46.4	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	32.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	652	11	136	645	72	59	35	91	64	29	13
Future Volume (veh/h)	13	652	11	136	645	72	59	35	91	64	29	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	13	652	11	136	645	72	59	35	91	64	29	13
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	18	1141	19	172	1308	146	70	217	185	77	224	190
Arrive On Green	0.01	0.32	0.32	0.10	0.41	0.41	0.04	0.12	0.12	0.04	0.12	0.12
Sat Flow, veh/h	1757	3527	59	1757	3180	355	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	13	324	339	136	355	362	59	35	91	64	29	13
Grp Sat Flow(s),veh/h/ln	1757	1752	1834	1757	1752	1782	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.3	5.9	5.9	2.9	5.7	5.8	1.3	0.7	2.1	1.4	0.5	0.3
Cycle Q Clear(g_c), s	0.3	5.9	5.9	2.9	5.7	5.8	1.3	0.7	2.1	1.4	0.5	0.3
Prop In Lane	1.00		0.03	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	18	567	594	172	721	733	70	217	185	77	224	190
V/C Ratio(X)	0.73	0.57	0.57	0.79	0.49	0.49	0.84	0.16	0.49	0.83	0.13	0.07
Avail Cap(c_a), veh/h	137	822	861	229	914	929	137	866	736	137	866	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	10.8	10.8	16.9	8.3	8.3	18.3	15.2	15.8	18.2	15.0	14.9
Incr Delay (d2), s/veh	43.8	0.9	0.9	12.7	0.5	0.5	22.4	0.3	2.0	20.1	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.9	3.1	2.0	2.9	2.9	1.0	0.4	1.0	1.1	0.3	0.1
LnGrp Delay(d),s/veh	62.7	11.7	11.6	29.6	8.9	8.9	40.7	15.6	17.9	38.3	15.3	15.1
LnGrp LOS	E	B	B	C	A	A	D	B	B	D	B	B
Approach Vol, veh/h		676			853			185			106	
Approach Delay, s/veh		12.6			12.2			24.7			29.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	8.5	7.8	16.4	5.5	8.7	4.4	19.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	18.0	5.0	18.0	3.0	18.0	3.0	20.0
Max Q Clear Time (g_c+I1), s	3.4	4.1	4.9	7.9	3.3	2.5	2.3	7.8
Green Ext Time (p_c), s	0.0	0.4	0.0	4.5	0.0	0.5	0.0	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	775	58	222	942	82	10	38	33	19	193	53
Future Volume (veh/h)	16	775	58	222	942	82	10	38	33	19	193	53
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	16	775	58	222	942	82	10	38	33	19	193	53
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	21	1162	87	199	1478	129	14	291	247	25	302	257
Arrive On Green	0.01	0.35	0.35	0.11	0.45	0.45	0.01	0.16	0.16	0.01	0.16	0.16
Sat Flow, veh/h	1757	3306	247	1757	3263	284	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	16	411	422	222	506	518	10	38	33	19	193	53
Grp Sat Flow(s),veh/h/ln	1757	1752	1801	1757	1752	1795	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.4	8.7	8.7	5.0	9.8	9.8	0.3	0.8	0.8	0.5	4.3	1.3
Cycle Q Clear(g_c), s	0.4	8.7	8.7	5.0	9.8	9.8	0.3	0.8	0.8	0.5	4.3	1.3
Prop In Lane	1.00		0.14	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	21	616	633	199	794	813	14	291	247	25	302	257
V/C Ratio(X)	0.75	0.67	0.67	1.11	0.64	0.64	0.73	0.13	0.13	0.77	0.64	0.21
Avail Cap(c_a), veh/h	120	716	736	199	796	815	120	754	641	120	754	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	12.1	12.1	19.5	9.3	9.3	21.8	16.0	16.0	21.6	17.2	15.9
Incr Delay (d2), s/veh	40.7	1.9	1.9	97.5	1.7	1.7	52.4	0.2	0.2	37.7	2.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	4.5	4.7	7.8	5.0	5.1	0.3	0.4	0.4	0.5	2.4	0.6
LnGrp Delay(d),s/veh	62.3	14.0	14.0	117.0	11.0	10.9	74.2	16.2	16.2	59.3	19.4	16.3
LnGrp LOS	E	B	B	F	B	B	E	B	B	E	B	B
Approach Vol, veh/h		849			1246			81			265	
Approach Delay, s/veh		14.9			29.8			23.3			21.7	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	10.9	9.0	19.5	4.3	11.2	4.5	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	18.0	5.0	18.0	3.0	18.0	3.0	20.0
Max Q Clear Time (g_c+I1), s	2.5	2.8	7.0	10.7	2.3	6.3	2.4	11.8
Green Ext Time (p_c), s	0.0	1.0	0.0	4.7	0.0	0.9	0.0	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.5
HCM 2010 LOS	C

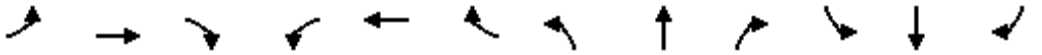
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	734	161	172	716	392	131	367	124	308	454	15
Future Volume (veh/h)	28	734	161	172	716	392	131	367	124	308	454	15
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	28	734	161	172	716	392	131	367	124	308	454	15
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	34	808	177	179	795	435	160	409	348	338	596	506
Arrive On Green	0.02	0.28	0.28	0.10	0.36	0.36	0.09	0.22	0.22	0.19	0.32	0.32
Sat Flow, veh/h	1757	2859	627	1757	2189	1197	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	28	450	445	172	573	535	131	367	124	308	454	15
Grp Sat Flow(s),veh/h/ln	1757	1752	1734	1757	1752	1634	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.6	24.3	24.3	9.5	30.3	30.4	7.2	18.9	6.5	16.8	21.7	0.6
Cycle Q Clear(g_c), s	1.6	24.3	24.3	9.5	30.3	30.4	7.2	18.9	6.5	16.8	21.7	0.6
Prop In Lane	1.00		0.36	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	34	495	490	179	637	593	160	409	348	338	596	506
V/C Ratio(X)	0.82	0.91	0.91	0.96	0.90	0.90	0.82	0.90	0.36	0.91	0.76	0.03
Avail Cap(c_a), veh/h	57	540	535	179	655	610	210	584	496	346	729	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	33.9	33.9	43.8	29.5	29.5	43.7	37.0	32.2	38.7	29.8	22.7
Incr Delay (d2), s/veh	16.4	17.5	17.7	54.8	14.7	15.9	13.3	9.9	0.2	26.4	2.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	14.2	14.0	7.4	17.2	16.3	4.1	10.8	2.9	10.6	11.4	0.3
LnGrp Delay(d),s/veh	64.2	51.4	51.6	98.5	44.2	45.4	57.0	47.0	32.4	65.1	32.7	22.7
LnGrp LOS	E	D	D	F	D	D	E	D	C	E	C	C
Approach Vol, veh/h		923			1280			622			777	
Approach Delay, s/veh		51.9			52.0			46.2			45.3	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	40.4	14.4	36.0	15.0	32.5	24.3	26.1
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 3.2	36.6	11.7	* 39	10.0	* 30	19.3	* 31
Max Q Clear Time (g_c+I1), s	3.6	32.4	9.2	23.7	11.5	26.3	18.8	20.9
Green Ext Time (p_c), s	0.0	1.5	0.0	0.9	0.0	1.4	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	49.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	1830	92	280	1756	1	244	1058	191	2	1094	208
Future Volume (veh/h)	151	1830	92	280	1756	1	244	1058	191	2	1094	208
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	151	1830	92	280	1756	1	244	1058	191	2	1094	208
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	189	1740	557	265	1849	592	227	1357	607	6	1129	505
Arrive On Green	0.06	0.36	0.36	0.08	0.38	0.38	0.07	0.39	0.39	0.00	0.32	0.32
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	151	1830	92	280	1756	1	244	1058	191	2	1094	208
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.9	32.0	3.6	7.0	31.3	0.0	6.0	23.8	7.6	0.1	27.7	9.3
Cycle Q Clear(g_c), s	3.9	32.0	3.6	7.0	31.3	0.0	6.0	23.8	7.6	0.1	27.7	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	1740	557	265	1849	592	227	1357	607	6	1129	505
V/C Ratio(X)	0.80	1.05	0.17	1.06	0.95	0.00	1.07	0.78	0.31	0.36	0.97	0.41
Avail Cap(c_a), veh/h	189	1740	557	265	1849	592	227	1357	607	151	1129	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	29.0	19.9	41.5	27.2	17.4	42.0	24.2	19.2	44.9	30.1	23.8
Incr Delay (d2), s/veh	20.8	36.7	0.1	70.9	11.3	0.0	80.7	3.0	0.3	35.3	19.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	20.2	1.6	5.9	15.9	0.0	5.4	12.0	3.3	0.1	16.4	4.1
LnGrp Delay(d),s/veh	62.8	65.7	20.0	112.4	38.5	17.4	122.7	27.2	19.5	80.2	49.7	24.4
LnGrp LOS	E	F	B	F	D	B	F	C	B	F	D	C
Approach Vol, veh/h		2073			2037			1493			1304	
Approach Delay, s/veh		63.4			48.6			41.8			45.7	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	38.9	11.0	36.0	10.0	33.0	9.0	38.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	31.0	7.0	32.0	6.0	29.0	5.0	34.0
Max Q Clear Time (g_c+I1), s	2.1	25.8	9.0	34.0	8.0	29.7	5.9	33.3
Green Ext Time (p_c), s	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	51.0
HCM 2010 LOS	D



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	610	35	73	695	748	708
Future Volume (veh/h)	610	35	73	695	748	708
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	610	35	73	695	748	708
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	859	395	134	2019	1580	707
Arrive On Green	0.25	0.25	0.04	0.58	0.45	0.45
Sat Flow, veh/h	3408	1568	3408	3597	3597	1568
Grp Volume(v), veh/h	610	35	73	695	748	708
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1752	1752	1568
Q Serve(g_s), s	7.6	0.8	1.0	4.9	6.9	21.0
Cycle Q Clear(g_c), s	7.6	0.8	1.0	4.9	6.9	21.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	859	395	134	2019	1580	707
V/C Ratio(X)	0.71	0.09	0.54	0.34	0.47	1.00
Avail Cap(c_a), veh/h	1317	606	293	2182	1580	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	13.3	22.0	5.2	8.9	12.8
Incr Delay (d2), s/veh	1.1	0.1	3.4	0.1	0.2	34.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.8	0.5	2.3	3.4	15.6
LnGrp Delay(d),s/veh	17.0	13.4	25.4	5.3	9.1	47.0
LnGrp LOS	B	B	C	A	A	F
Approach Vol, veh/h	645			768	1456	
Approach Delay, s/veh	16.8			7.2	27.5	
Approach LOS	B			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		30.8		15.7	5.8	25.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		29.0		18.0	4.0	21.0		
Max Q Clear Time (g_c+I1), s		6.9		9.6	3.0	23.0		
Green Ext Time (p_c), s		11.8		2.2	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	19.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	515	296	0	0	484	129	6	0	1	197	0	748
Future Volume (veh/h)	515	296	0	0	484	129	6	0	1	197	0	748
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1900	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	515	296	0	0	484	129	6	0	1	197	0	748
Adj No. of Lanes	0	1	0	1	1	1	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	376	216	0	361	379	322	8	0	1	111	0	421
Arrive On Green	0.33	0.33	0.00	0.00	0.21	0.21	0.01	0.00	0.01	0.33	0.00	0.33
Sat Flow, veh/h	1135	653	0	1757	1845	1568	1480	0	247	334	0	1270
Grp Volume(v), veh/h	811	0	0	0	484	129	7	0	0	945	0	0
Grp Sat Flow(s),veh/h/ln	1788	0	0	1757	1845	1568	1727	0	0	1604	0	0
Q Serve(g_s), s	42.0	0.0	0.0	0.0	26.0	9.0	0.5	0.0	0.0	42.0	0.0	0.0
Cycle Q Clear(g_c), s	42.0	0.0	0.0	0.0	26.0	9.0	0.5	0.0	0.0	42.0	0.0	0.0
Prop In Lane	0.64		0.00	1.00		1.00	0.86		0.14	0.21		0.79
Lane Grp Cap(c), veh/h	593	0	0	361	379	322	9	0	0	532	0	0
V/C Ratio(X)	1.37	0.00	0.00	0.00	1.28	0.40	0.78	0.00	0.00	1.78	0.00	0.00
Avail Cap(c_a), veh/h	593	0	0	361	379	322	55	0	0	532	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.3	0.0	0.0	0.0	50.3	43.6	62.9	0.0	0.0	42.3	0.0	0.0
Incr Delay (d2), s/veh	176.2	0.0	0.0	0.0	144.1	0.8	84.5	0.0	0.0	357.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	49.6	0.0	0.0	0.0	28.3	4.0	0.5	0.0	0.0	71.2	0.0	0.0
LnGrp Delay(d),s/veh	218.5	0.0	0.0	0.0	194.5	44.4	147.4	0.0	0.0	399.4	0.0	0.0
LnGrp LOS	F				F	D	F			F		
Approach Vol, veh/h		811			613			7			945	
Approach Delay, s/veh		218.5			162.9			147.4			399.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		4.7		46.0		46.0		30.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		4.0		42.0		42.0		26.0
Max Q Clear Time (g_c+I1), s		2.5		44.0		44.0		28.0
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	275.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	31	17	128	44	479	48	2159	37	419	2225	59
Future Volume (veh/h)	73	31	17	128	44	479	48	2159	37	419	2225	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	73	31	17	128	44	479	48	2159	37	419	2225	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	83	53	29	712	385	327	61	2232	695	432	2715	72
Arrive On Green	0.05	0.05	0.05	0.21	0.21	0.21	0.04	0.45	0.45	0.13	0.54	0.54
Sat Flow, veh/h	1757	1121	615	3408	1845	1568	1740	4988	1553	3375	4996	132
Grp Volume(v), veh/h	73	0	48	128	44	479	48	2159	37	419	1479	805
Grp Sat Flow(s),veh/h/ln	1757	0	1736	1704	1845	1568	1740	1663	1553	1688	1663	1804
Q Serve(g_s), s	5.3	0.0	3.5	4.0	2.5	26.9	3.5	54.3	1.7	15.9	47.1	47.5
Cycle Q Clear(g_c), s	5.3	0.0	3.5	4.0	2.5	26.9	3.5	54.3	1.7	15.9	47.1	47.5
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	83	0	82	712	385	327	61	2232	695	432	1807	980
V/C Ratio(X)	0.88	0.00	0.58	0.18	0.11	1.46	0.78	0.97	0.05	0.97	0.82	0.82
Avail Cap(c_a), veh/h	83	0	82	712	385	327	88	2276	709	432	1807	980
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	0.0	60.1	41.9	41.3	51.0	61.7	34.7	20.2	55.9	24.2	24.3
Incr Delay (d2), s/veh	58.4	0.0	7.0	0.0	0.0	224.6	15.3	12.0	0.0	35.1	2.9	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	1.8	1.9	1.3	32.1	2.0	27.3	0.8	9.5	22.3	24.9
LnGrp Delay(d),s/veh	119.4	0.0	67.1	42.0	41.4	275.6	77.0	46.6	20.2	91.0	27.1	29.6
LnGrp LOS	F		E	D	D	F	E	D	C	F	C	C
Approach Vol, veh/h		121			651			2244			2703	
Approach Delay, s/veh		98.7			213.8			46.9			37.7	
Approach LOS		F			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	75.2		11.6	22.0	62.9		32.4
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 6.5	* 69		6.1	16.5	* 59		26.9
Max Q Clear Time (g_c+I1), s	5.5	49.5		7.3	17.9	56.3		28.9
Green Ext Time (p_c), s	0.0	10.1		0.0	0.0	1.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	1075	457	395	987	603	500	1023	148	728	1370	169
Future Volume (veh/h)	179	1075	457	395	987	603	500	1023	148	728	1370	169
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	179	1075	457	395	987	603	500	1023	148	728	1370	169
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	223	964	431	352	1097	491	438	1226	382	768	1192	533
Arrive On Green	0.07	0.27	0.27	0.10	0.31	0.31	0.13	0.25	0.25	0.23	0.34	0.34
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	3471	1553
Grp Volume(v), veh/h	179	1075	457	395	987	603	500	1023	148	728	1370	169
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1736	1553
Q Serve(g_s), s	7.8	41.3	41.3	15.5	40.5	47.0	19.5	29.2	11.9	31.9	51.6	12.0
Cycle Q Clear(g_c), s	7.8	41.3	41.3	15.5	40.5	47.0	19.5	29.2	11.9	31.9	51.6	12.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	964	431	352	1097	491	438	1226	382	768	1192	533
V/C Ratio(X)	0.80	1.12	1.06	1.12	0.90	1.23	1.14	0.83	0.39	0.95	1.15	0.32
Avail Cap(c_a), veh/h	247	964	431	352	1097	491	438	1226	382	793	1192	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.3	54.5	54.4	67.3	49.4	51.6	65.3	53.7	47.2	57.1	49.3	36.3
Incr Delay (d2), s/veh	14.1	66.1	60.1	85.6	9.9	120.0	87.5	4.8	0.2	19.7	77.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	28.8	25.0	11.5	21.1	36.7	14.4	14.0	5.1	17.0	37.4	5.2
LnGrp Delay(d),s/veh	83.4	120.6	114.6	152.9	59.2	171.6	152.9	58.6	47.5	76.8	126.4	36.4
LnGrp LOS	F	F	F	F	E	F	F	E	D	E	F	D
Approach Vol, veh/h		1711			1985			1671			2267	
Approach Delay, s/veh		115.1			112.0			85.8			103.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	57.2	15.3	52.7	39.7	42.5	21.0	47.0
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	19.5	* 52	10.9	* 46	35.3	* 36	15.5	* 41
Max Q Clear Time (g_c+I1), s	21.5	53.6	9.8	49.0	33.9	31.2	17.5	43.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.3	2.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	104.5
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	276	1576	354	240	1322	594	493	694	78	596	1666	161
Future Volume (veh/h)	276	1576	354	240	1322	594	493	694	78	596	1666	161
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	276	1576	354	240	1322	594	493	694	78	596	1666	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	302	1496	479	243	1417	441	486	1372	427	653	1613	497
Arrive On Green	0.09	0.31	0.31	0.07	0.29	0.29	0.14	0.27	0.27	0.19	0.32	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	276	1576	354	240	1322	594	493	694	78	596	1666	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	10.8	39.9	26.4	9.2	34.3	37.8	18.6	15.2	5.0	22.6	41.8	0.0
Cycle Q Clear(g_c), s	10.8	39.9	26.4	9.2	34.3	37.8	18.6	15.2	5.0	22.6	41.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	302	1496	479	243	1417	441	486	1372	427	653	1613	497
V/C Ratio(X)	0.91	1.05	0.74	0.99	0.93	1.35	1.01	0.51	0.18	0.91	1.03	0.00
Avail Cap(c_a), veh/h	302	1496	479	243	1417	441	486	1372	427	828	1613	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.8	45.3	40.6	60.5	45.1	46.4	56.0	40.1	36.3	51.5	44.4	0.0
Incr Delay (d2), s/veh	30.0	38.7	5.3	54.3	11.2	170.2	44.6	0.3	0.2	10.9	31.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	23.2	12.2	6.1	16.9	36.8	11.7	7.1	2.2	11.5	23.9	0.0
LnGrp Delay(d),s/veh	88.8	84.0	45.9	114.8	56.4	216.6	100.6	40.4	36.5	62.5	75.7	0.0
LnGrp LOS	F	F	D	F	E	F	F	D	D	E	F	
Approach Vol, veh/h		2206			2156			1265			2262	
Approach Delay, s/veh		78.5			107.0			63.6			72.2	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	46.9	16.2	43.4	30.2	40.7	14.1	45.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 19	41.8	* 12	37.3	32.0	28.8	* 9.3	* 40
Max Q Clear Time (g_c+I1), s	20.6	43.8	12.8	39.8	24.6	17.2	11.2	41.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.7	5.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	82.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	535	43	190	493	63	73	612	311	91	1725	40
Future Volume (veh/h)	34	535	43	190	493	63	73	612	311	91	1725	40
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	34	535	43	190	493	63	73	612	311	91	1725	40
Adj No. of Lanes	2	1	0	2	2	1	1	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	60	492	40	195	1163	520	78	1058	538	134	1629	729
Arrive On Green	0.02	0.29	0.29	0.06	0.33	0.33	0.04	0.47	0.47	0.04	0.46	0.46
Sat Flow, veh/h	3408	1685	135	3408	3505	1568	1757	2251	1144	3408	3505	1568
Grp Volume(v), veh/h	34	0	578	190	493	63	73	476	447	91	1725	40
Grp Sat Flow(s),veh/h/ln	1704	0	1821	1704	1752	1568	1757	1752	1643	1704	1752	1568
Q Serve(g_s), s	1.5	0.0	43.8	8.3	16.4	4.2	6.2	29.7	29.7	4.0	69.7	2.1
Cycle Q Clear(g_c), s	1.5	0.0	43.8	8.3	16.4	4.2	6.2	29.7	29.7	4.0	69.7	2.1
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.70	1.00		1.00
Lane Grp Cap(c), veh/h	60	0	532	195	1163	520	78	824	772	134	1629	729
V/C Ratio(X)	0.57	0.00	1.09	0.97	0.42	0.12	0.93	0.58	0.58	0.68	1.06	0.05
Avail Cap(c_a), veh/h	95	0	532	195	1163	520	78	824	772	191	1629	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.1	0.0	53.1	70.6	39.0	34.9	71.4	28.9	28.9	71.1	40.2	22.1
Incr Delay (d2), s/veh	8.1	0.0	64.8	56.2	0.2	0.1	78.1	1.0	1.1	6.0	39.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	31.6	5.5	8.0	1.8	4.7	14.5	13.6	2.0	42.7	0.9
LnGrp Delay(d),s/veh	81.2	0.0	117.9	126.8	39.2	35.0	149.5	29.9	30.0	77.1	80.0	22.1
LnGrp LOS	F		F	F	D	D	F	C	C	E	F	C
Approach Vol, veh/h		612			746			996			1856	
Approach Delay, s/veh		115.9			61.2			38.7			78.6	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	74.7	14.1	49.0	11.4	75.5	8.1	55.0
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	6.7	69.7	8.6	* 44	8.4	68.0	4.2	* 48
Max Q Clear Time (g_c+I1), s	8.2	71.7	10.3	45.8	6.0	31.7	3.5	18.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	9.7	0.0	6.0

Intersection Summary	
HCM 2010 Ctrl Delay	71.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	253	14	355	459	31	4	670	130	13	1752	188
Future Volume (veh/h)	220	253	14	355	459	31	4	670	130	13	1752	188
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1828	1900	1845	1796	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	220	253	14	355	459	31	4	670	130	13	1752	188
Adj No. of Lanes	2	1	0	2	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	6	3	3	3	3	3	3
Cap, veh/h	238	363	20	397	429	29	5	1524	295	15	1683	177
Arrive On Green	0.07	0.21	0.21	0.12	0.26	0.26	0.00	0.52	0.52	0.01	0.53	0.53
Sat Flow, veh/h	3408	1716	95	3408	1663	112	1757	2929	568	1757	3200	337
Grp Volume(v), veh/h	220	0	267	355	0	490	4	401	399	13	945	995
Grp Sat Flow(s),veh/h/ln	1704	0	1811	1704	0	1776	1757	1752	1744	1757	1752	1785
Q Serve(g_s), s	9.5	0.0	20.1	15.1	0.0	38.0	0.3	20.9	21.0	1.1	77.5	77.5
Cycle Q Clear(g_c), s	9.5	0.0	20.1	15.1	0.0	38.0	0.3	20.9	21.0	1.1	77.5	77.5
Prop In Lane	1.00		0.05	1.00		0.06	1.00		0.33	1.00		0.19
Lane Grp Cap(c), veh/h	238	0	383	397	0	458	5	912	908	15	922	939
V/C Ratio(X)	0.92	0.00	0.70	0.89	0.00	1.07	0.74	0.44	0.44	0.85	1.03	1.06
Avail Cap(c_a), veh/h	238	0	383	398	0	458	37	912	908	66	922	939
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.1	0.0	53.7	64.2	0.0	54.7	73.4	22.0	22.0	72.9	34.9	34.9
Incr Delay (d2), s/veh	38.1	0.0	4.6	21.9	0.0	62.0	107.1	0.3	0.3	71.8	36.3	46.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	10.6	8.4	0.0	26.5	0.3	10.2	10.2	0.8	46.7	50.2
LnGrp Delay(d),s/veh	106.2	0.0	58.4	86.2	0.0	116.7	180.5	22.3	22.3	144.7	71.3	81.4
LnGrp LOS	F		E	F		F	F	C	C	F	F	F
Approach Vol, veh/h		487			845			804			1953	
Approach Delay, s/veh		80.0			103.9			23.1			76.9	
Approach LOS		E			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	81.8	15.8	43.0	6.0	82.6	22.7	36.1
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	5.5	* 75	10.3	* 38	3.1	* 78	17.2	* 31
Max Q Clear Time (g_c+I1), s	3.1	23.0	11.5	40.0	2.3	79.5	17.1	22.1
Green Ext Time (p_c), s	0.0	28.0	0.0	0.0	0.0	0.0	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	72.3
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

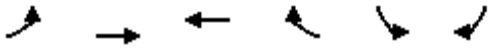
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	172	121	63	216	56	41	611	35	108	1562	314
Future Volume (veh/h)	117	172	121	63	216	56	41	611	35	108	1562	314
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1844	1900	1845	1845	1900
Adj Flow Rate, veh/h	117	172	121	63	216	56	41	611	35	108	1562	314
Adj No. of Lanes	2	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	3	3	3	3	3
Cap, veh/h	168	189	133	80	259	67	52	1762	101	132	1657	324
Arrive On Green	0.05	0.19	0.19	0.05	0.18	0.18	0.03	0.52	0.52	0.08	0.57	0.57
Sat Flow, veh/h	3408	1009	710	1757	1414	366	1740	3368	193	1757	2925	571
Grp Volume(v), veh/h	117	0	293	63	0	272	41	317	329	108	918	958
Grp Sat Flow(s),veh/h/ln	1704	0	1719	1757	0	1780	1740	1752	1810	1757	1752	1744
Q Serve(g_s), s	4.2	0.0	20.8	4.4	0.0	18.4	2.9	13.2	13.2	7.6	59.4	65.9
Cycle Q Clear(g_c), s	4.2	0.0	20.8	4.4	0.0	18.4	2.9	13.2	13.2	7.6	59.4	65.9
Prop In Lane	1.00		0.41	1.00		0.21	1.00		0.11	1.00		0.33
Lane Grp Cap(c), veh/h	168	0	321	80	0	327	52	916	946	132	993	988
V/C Ratio(X)	0.70	0.00	0.91	0.78	0.00	0.83	0.79	0.35	0.35	0.82	0.92	0.97
Avail Cap(c_a), veh/h	194	0	430	86	0	435	63	916	946	227	1010	1005
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	0.0	49.7	58.9	0.0	49.1	60.1	17.3	17.3	56.8	24.6	26.0
Incr Delay (d2), s/veh	8.8	0.0	16.8	31.4	0.0	7.7	34.2	0.2	0.2	4.6	13.5	21.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	11.4	2.9	0.0	9.8	1.9	6.4	6.6	3.8	32.3	37.2
LnGrp Delay(d),s/veh	67.1	0.0	66.5	90.3	0.0	56.8	94.3	17.6	17.6	61.5	38.1	47.2
LnGrp LOS	E		E	F		E	F	B	B	E	D	D
Approach Vol, veh/h		410			335			687			1984	
Approach Delay, s/veh		66.7			63.1			22.1			43.8	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	70.3	11.6	28.3	9.0	75.8	11.2	28.7
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 16	60.5	7.1	* 31	* 4.5	71.9	6.1	* 31
Max Q Clear Time (g_c+I1), s	9.6	15.2	6.2	20.4	4.9	67.9	6.4	22.8
Green Ext Time (p_c), s	0.0	23.1	0.0	0.5	0.0	2.7	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	44.1
HCM 2010 LOS	D

Notes

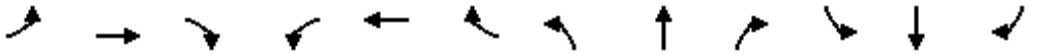
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	1703	1282	717	773	322
Future Volume (veh/h)	141	1703	1282	717	773	322
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	141	1703	1282	717	773	322
Adj No. of Lanes	2	3	3	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	234	2722	1980	616	1030	474
Arrive On Green	0.07	0.54	0.39	0.39	0.30	0.30
Sat Flow, veh/h	3408	5202	5202	1568	3408	1568
Grp Volume(v), veh/h	141	1703	1282	717	773	322
Grp Sat Flow(s),veh/h/ln	1704	1679	1679	1568	1704	1568
Q Serve(g_s), s	2.0	11.9	10.5	20.0	10.4	9.2
Cycle Q Clear(g_c), s	2.0	11.9	10.5	20.0	10.4	9.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	234	2722	1980	616	1030	474
V/C Ratio(X)	0.60	0.63	0.65	1.16	0.75	0.68
Avail Cap(c_a), veh/h	268	2772	1980	616	1273	586
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	8.1	12.6	15.4	16.0	15.6
Incr Delay (d2), s/veh	2.9	0.4	0.7	90.3	2.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.5	5.0	29.3	5.1	8.0
LnGrp Delay(d),s/veh	26.0	8.6	13.3	105.8	18.0	17.9
LnGrp LOS	C	A	B	F	B	B
Approach Vol, veh/h		1844	1999		1095	
Approach Delay, s/veh		9.9	46.5		18.0	
Approach LOS		A	D		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				31.5		19.4	7.5	24.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				28.0		19.0	4.0	20.0
Max Q Clear Time (g_c+I1), s				13.9		12.4	4.0	22.0
Green Ext Time (p_c), s				12.8		3.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	1167	153	766	844	374	107	347	597	363	626	39
Future Volume (veh/h)	126	1167	153	766	844	374	107	347	597	363	626	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	126	1167	153	766	844	374	107	347	597	363	626	39
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	149	876	403	422	1405	647	129	195	336	204	1075	481
Arrive On Green	0.08	0.26	0.26	0.24	0.41	0.41	0.07	0.32	0.32	0.06	0.31	0.31
Sat Flow, veh/h	1757	3406	1568	1757	3406	1568	1757	610	1049	3408	3505	1568
Grp Volume(v), veh/h	126	1167	153	766	844	374	107	0	944	363	626	39
Grp Sat Flow(s),veh/h/ln	1757	1703	1568	1757	1703	1568	1757	0	1659	1704	1752	1568
Q Serve(g_s), s	10.6	38.6	12.0	36.0	29.0	27.6	9.0	0.0	48.0	9.0	22.6	2.7
Cycle Q Clear(g_c), s	10.6	38.6	12.0	36.0	29.0	27.6	9.0	0.0	48.0	9.0	22.6	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.63	1.00		1.00
Lane Grp Cap(c), veh/h	149	876	403	422	1405	647	129	0	531	204	1075	481
V/C Ratio(X)	0.84	1.33	0.38	1.82	0.60	0.58	0.83	0.00	1.78	1.78	0.58	0.08
Avail Cap(c_a), veh/h	223	876	403	422	1405	647	176	0	531	204	1075	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.7	55.7	45.8	57.0	34.4	34.0	68.6	0.0	51.0	70.5	43.9	37.0
Incr Delay (d2), s/veh	16.9	157.1	0.8	376.8	0.9	1.6	20.9	0.0	357.5	367.9	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	37.3	5.3	61.6	13.8	12.2	5.1	0.0	74.7	14.7	11.1	1.2
LnGrp Delay(d),s/veh	84.6	212.8	46.7	433.8	35.3	35.6	89.5	0.0	408.5	438.4	44.7	37.0
LnGrp LOS	F	F	D	F	D	D	F		F	F	D	D
Approach Vol, veh/h		1446			1984			1051			1028	
Approach Delay, s/veh		184.0			189.2			376.1			183.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.0	45.0	15.0	50.0	16.7	68.3	13.0	52.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	36.0	38.6	15.0	42.0	19.0	55.6	9.0	48.0
Max Q Clear Time (g_c+I1), s	38.0	40.6	11.0	24.6	12.6	31.0	11.0	50.0
Green Ext Time (p_c), s	0.0	0.0	0.1	8.8	0.2	19.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	222.4
HCM 2010 LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	702	37	27	345	804	536
Future Volume (veh/h)	702	37	27	345	804	536
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	702	37	27	345	804	536
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	714	637	32	929	812	690
Arrive On Green	0.41	0.41	0.02	0.50	0.44	0.44
Sat Flow, veh/h	1757	1568	1757	1845	1845	1568
Grp Volume(v), veh/h	702	37	27	345	804	536
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1845	1845	1568
Q Serve(g_s), s	35.0	1.3	1.4	10.1	38.3	25.8
Cycle Q Clear(g_c), s	35.0	1.3	1.4	10.1	38.3	25.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	714	637	32	929	812	690
V/C Ratio(X)	0.98	0.06	0.84	0.37	0.99	0.78
Avail Cap(c_a), veh/h	714	637	59	957	812	690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	16.0	43.4	13.4	24.6	21.1
Incr Delay (d2), s/veh	29.5	0.0	39.7	0.2	29.1	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.8	1.5	1.0	5.1	26.0	12.1
LnGrp Delay(d),s/veh	55.6	16.0	83.1	13.7	53.8	26.7
LnGrp LOS	E	B	F	B	D	C
Approach Vol, veh/h	739			372	1340	
Approach Delay, s/veh	53.6			18.7	42.9	
Approach LOS	D			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.6		40.0	5.6	43.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		46.0		36.0	3.0	39.0		
Max Q Clear Time (g_c+I1), s		12.1		37.0	3.4	40.3		
Green Ext Time (p_c), s		9.9		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	42.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	196	109	159	257	12	53	273	65	1	757	30
Future Volume (veh/h)	10	196	109	159	257	12	53	273	65	1	757	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1759	1759	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	10	196	109	159	257	12	53	273	65	1	757	30
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	8	8	8	3	3	3	3	3	3
Cap, veh/h	80	203	113	198	431	20	94	663	158	82	799	32
Arrive On Green	0.05	0.19	0.19	0.12	0.26	0.26	0.05	0.46	0.46	0.05	0.45	0.45
Sat Flow, veh/h	1707	1084	603	1675	1668	78	1757	1441	343	1757	1762	70
Grp Volume(v), veh/h	10	0	305	159	0	269	53	0	338	1	0	787
Grp Sat Flow(s),veh/h/ln	1707	0	1686	1675	0	1746	1757	0	1784	1757	0	1832
Q Serve(g_s), s	0.5	0.0	15.3	7.9	0.0	11.5	2.5	0.0	10.8	0.0	0.0	35.1
Cycle Q Clear(g_c), s	0.5	0.0	15.3	7.9	0.0	11.5	2.5	0.0	10.8	0.0	0.0	35.1
Prop In Lane	1.00		0.36	1.00		0.04	1.00		0.19	1.00		0.04
Lane Grp Cap(c), veh/h	80	0	316	198	0	452	94	0	821	82	0	831
V/C Ratio(X)	0.13	0.00	0.97	0.80	0.00	0.60	0.56	0.00	0.41	0.01	0.00	0.95
Avail Cap(c_a), veh/h	280	0	316	275	0	452	288	0	836	288	0	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	34.4	36.7	0.0	27.7	39.4	0.0	15.3	38.8	0.0	22.4
Incr Delay (d2), s/veh	0.7	0.0	41.3	11.2	0.0	2.1	5.1	0.0	0.3	0.1	0.0	18.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	10.7	4.3	0.0	5.8	1.4	0.0	5.3	0.0	0.0	22.1
LnGrp Delay(d),s/veh	39.7	0.0	75.7	47.9	0.0	29.9	44.6	0.0	15.7	38.9	0.0	41.2
LnGrp LOS	D		E	D		C	D		B	D		D
Approach Vol, veh/h		315			428			391			788	
Approach Delay, s/veh		74.6			36.6			19.6			41.2	
Approach LOS		E			D			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	43.3	14.1	20.0	8.6	42.7	8.0	26.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	40.0	14.0	16.0	14.0	40.0	14.0	16.0
Max Q Clear Time (g_c+I1), s	2.0	12.8	9.9	17.3	4.5	37.1	2.5	13.5
Green Ext Time (p_c), s	0.0	6.2	0.2	0.0	0.1	1.6	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	41.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	421	148	31	118	140	668	56	1525	85	266	1053	227
Future Volume (veh/h)	421	148	31	118	140	668	56	1525	85	266	1053	227
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	421	148	31	118	140	668	56	1525	85	266	1053	227
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	469	1274	254	180	398	972	97	1618	90	321	1999	622
Arrive On Green	0.14	0.30	0.30	0.05	0.22	0.22	0.03	0.33	0.33	0.09	0.40	0.40
Sat Flow, veh/h	3408	4215	839	3514	1845	3136	3408	4882	272	3408	5036	1568
Grp Volume(v), veh/h	421	116	63	118	140	668	56	1049	561	266	1053	227
Grp Sat Flow(s),veh/h/ln	1704	1679	1697	1757	1845	1568	1704	1679	1797	1704	1679	1568
Q Serve(g_s), s	12.3	2.5	2.7	3.3	6.5	18.9	1.6	30.7	30.7	7.7	16.1	10.3
Cycle Q Clear(g_c), s	12.3	2.5	2.7	3.3	6.5	18.9	1.6	30.7	30.7	7.7	16.1	10.3
Prop In Lane	1.00		0.49	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	469	1015	513	180	398	972	97	1113	595	321	1999	622
V/C Ratio(X)	0.90	0.11	0.12	0.66	0.35	0.69	0.57	0.94	0.94	0.83	0.53	0.36
Avail Cap(c_a), veh/h	469	1181	597	285	548	1227	176	1158	619	321	1999	622
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	25.4	25.5	47.0	33.6	30.5	48.4	32.8	32.8	44.9	23.2	21.5
Incr Delay (d2), s/veh	19.1	0.0	0.0	1.5	0.2	0.7	2.0	14.2	22.2	15.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	1.2	1.3	1.7	3.3	8.2	0.8	16.3	18.8	4.3	7.4	4.5
LnGrp Delay(d),s/veh	62.0	25.5	25.5	48.5	33.8	31.2	50.4	47.0	55.0	60.5	23.3	21.6
LnGrp LOS	E	C	C	D	C	C	D	D	D	E	C	C
Approach Vol, veh/h		600			926			1666			1546	
Approach Delay, s/veh		51.1			33.8			49.8			29.5	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	45.7	19.4	27.5	15.0	39.0	10.7	36.2
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	5.2	38.8	13.9	* 30	9.5	* 35	8.2	* 36
Max Q Clear Time (g_c+I1), s	3.6	18.1	14.3	20.9	9.7	32.7	5.3	4.7
Green Ext Time (p_c), s	0.0	4.7	0.0	0.9	0.0	0.8	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.2
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	103	44	69	49	159	17	1053	31	71	1056	51
Future Volume (veh/h)	311	103	44	69	49	159	17	1053	31	71	1056	51
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	229	218	44	59	63	159	17	1053	31	71	1056	51
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	320	271	55	235	247	210	22	1340	39	128	1593	77
Arrive On Green	0.18	0.18	0.18	0.13	0.13	0.13	0.01	0.27	0.27	0.07	0.32	0.32
Sat Flow, veh/h	1757	1491	301	1757	1845	1568	1757	5028	148	1757	4923	238
Grp Volume(v), veh/h	229	0	262	59	63	159	17	703	381	71	720	387
Grp Sat Flow(s),veh/h/ln	1757	0	1792	1757	1845	1568	1757	1679	1819	1757	1679	1803
Q Serve(g_s), s	7.3	0.0	8.3	1.8	1.8	5.8	0.6	11.5	11.5	2.3	10.9	10.9
Cycle Q Clear(g_c), s	7.3	0.0	8.3	1.8	1.8	5.8	0.6	11.5	11.5	2.3	10.9	10.9
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.08	1.00		0.13
Lane Grp Cap(c), veh/h	320	0	326	235	247	210	22	895	485	128	1087	583
V/C Ratio(X)	0.72	0.00	0.80	0.25	0.26	0.76	0.78	0.79	0.79	0.55	0.66	0.66
Avail Cap(c_a), veh/h	832	0	848	802	842	716	89	1147	621	131	1215	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	23.2	23.0	23.0	24.7	29.1	20.1	20.1	26.5	17.2	17.2
Incr Delay (d2), s/veh	1.1	0.0	1.8	0.2	0.2	2.1	19.9	2.1	3.8	2.7	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	4.2	0.9	0.9	2.6	0.4	5.5	6.2	1.2	5.1	5.6
LnGrp Delay(d),s/veh	23.9	0.0	25.0	23.2	23.2	26.8	49.0	22.2	23.9	29.2	18.0	18.7
LnGrp LOS	C		C	C	C	C	D	C	C	C	B	B
Approach Vol, veh/h		491			281			1101			1178	
Approach Delay, s/veh		24.5			25.2			23.2			18.9	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	23.9		13.4	8.9	20.6		16.3
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 3	21.4		27.0	* 4.4	20.2		28.0
Max Q Clear Time (g_c+I1), s	2.6	12.9		7.8	4.3	13.5		10.3
Green Ext Time (p_c), s	0.0	2.5		0.2	0.0	2.3		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	21.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	389	280	180	530	148	278	673	65	172	828	150
Future Volume (veh/h)	170	389	280	180	530	148	278	673	65	172	828	150
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	170	389	280	180	530	148	278	673	65	172	828	150
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	165	767	358	187	1183	368	357	1403	437	263	1078	194
Arrive On Green	0.05	0.23	0.23	0.05	0.23	0.23	0.10	0.28	0.28	0.08	0.25	0.25
Sat Flow, veh/h	3408	3357	1568	3408	5036	1568	3408	5036	1568	3408	4293	773
Grp Volume(v), veh/h	170	389	280	180	530	148	278	673	65	172	646	332
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1708
Q Serve(g_s), s	3.0	6.3	10.4	3.3	5.6	4.9	4.9	6.9	1.9	3.0	11.1	11.2
Cycle Q Clear(g_c), s	3.0	6.3	10.4	3.3	5.6	4.9	4.9	6.9	1.9	3.0	11.1	11.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	165	767	358	187	1183	368	357	1403	437	263	843	429
V/C Ratio(X)	1.03	0.51	0.78	0.96	0.45	0.40	0.78	0.48	0.15	0.65	0.77	0.77
Avail Cap(c_a), veh/h	165	1547	723	187	2353	733	357	2475	771	280	1574	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	20.9	22.5	29.3	20.3	20.1	27.1	18.6	16.8	27.8	21.6	21.6
Incr Delay (d2), s/veh	78.7	0.2	1.4	54.9	0.1	0.3	9.6	0.1	0.1	3.7	0.6	1.1
Initial Q Delay(d3),s/veh	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	2.9	4.7	2.9	2.6	2.1	2.8	3.2	0.8	1.6	5.2	5.4
LnGrp Delay(d),s/veh	108.5	21.1	23.9	84.2	20.4	20.3	36.7	18.7	16.9	31.5	22.1	22.7
LnGrp LOS	F	C	C	F	C	C	D	B	B	C	C	C
Approach Vol, veh/h		839			858			1016			1150	
Approach Delay, s/veh		39.7			33.8			23.5			23.7	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	21.2	8.5	20.4	10.3	22.9	8.9	20.0
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	6.5	* 29	3.0	29.0	5.1	* 31	3.4	28.6
Max Q Clear Time (g_c+I1), s	6.9	13.2	5.0	7.6	5.0	8.9	5.3	12.4
Green Ext Time (p_c), s	0.0	2.4	0.0	1.8	0.0	2.4	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

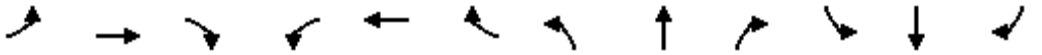
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	164	58	129	176	100	43	638	102	178	760	188
Future Volume (veh/h)	23	164	58	129	176	100	43	638	102	178	760	188
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	23	164	58	129	176	100	43	638	102	178	760	188
Adj No. of Lanes	1	2	0	1	1	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	27	252	86	163	313	266	53	687	110	263	903	768
Arrive On Green	0.02	0.10	0.10	0.09	0.17	0.17	0.03	0.44	0.44	0.08	0.49	0.49
Sat Flow, veh/h	1757	2566	876	1757	1845	1568	1757	1553	248	3408	1845	1568
Grp Volume(v), veh/h	23	110	112	129	176	100	43	0	740	178	760	188
Grp Sat Flow(s),veh/h/ln	1757	1752	1690	1757	1845	1568	1757	0	1801	1704	1845	1568
Q Serve(g_s), s	0.9	4.3	4.5	5.1	6.2	4.0	1.7	0.0	27.6	3.6	25.4	4.9
Cycle Q Clear(g_c), s	0.9	4.3	4.5	5.1	6.2	4.0	1.7	0.0	27.6	3.6	25.4	4.9
Prop In Lane	1.00		0.52	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	27	172	166	163	313	266	53	0	797	263	903	768
V/C Ratio(X)	0.85	0.64	0.67	0.79	0.56	0.38	0.82	0.00	0.93	0.68	0.84	0.24
Avail Cap(c_a), veh/h	143	826	796	222	944	803	91	0	1145	336	1251	1063
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.9	30.9	31.0	31.6	27.1	26.2	34.3	0.0	18.8	31.9	15.8	10.5
Incr Delay (d2), s/veh	22.6	1.5	1.8	8.8	0.6	0.3	10.7	0.0	8.2	1.9	2.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.2	2.2	2.9	3.2	1.7	1.0	0.0	15.4	1.8	13.6	2.1
LnGrp Delay(d),s/veh	57.5	32.3	32.7	40.4	27.7	26.5	45.0	0.0	26.9	33.9	18.6	10.6
LnGrp LOS	E	C	C	D	C	C	D		C	C	B	B
Approach Vol, veh/h		245			405			783			1126	
Approach Delay, s/veh		34.9			31.5			27.9			19.7	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	17.0	7.6	39.9	11.7	11.9	11.0	36.6
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	5.8	* 36	3.7	* 48	* 9	* 34	7.0	* 45
Max Q Clear Time (g_c+I1), s	2.9	8.2	3.7	27.4	7.1	6.5	5.6	29.6
Green Ext Time (p_c), s	0.0	0.4	0.0	1.8	0.0	0.4	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Notes

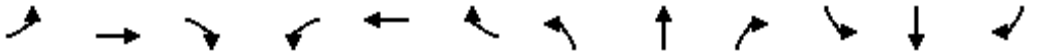
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	606	123	219	575	66	74	162	83	57	230	348
Future Volume (veh/h)	408	606	123	219	575	66	74	162	83	57	230	348
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	408	606	123	219	575	66	74	162	83	57	230	348
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	501	1030	461	335	860	385	169	952	426	145	928	415
Arrive On Green	0.15	0.29	0.29	0.10	0.25	0.25	0.05	0.27	0.27	0.04	0.26	0.26
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	408	606	123	219	575	66	74	162	83	57	230	348
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	6.3	8.0	3.3	3.4	8.1	1.8	1.1	1.9	2.2	0.9	2.8	11.4
Cycle Q Clear(g_c), s	6.3	8.0	3.3	3.4	8.1	1.8	1.1	1.9	2.2	0.9	2.8	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	501	1030	461	335	860	385	169	952	426	145	928	415
V/C Ratio(X)	0.82	0.59	0.27	0.65	0.67	0.17	0.44	0.17	0.19	0.39	0.25	0.84
Avail Cap(c_a), veh/h	501	1030	461	501	1030	461	250	1030	461	250	1030	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	16.4	14.7	23.7	18.6	16.2	25.2	15.1	15.3	25.4	15.8	18.9
Incr Delay (d2), s/veh	10.0	0.9	0.3	2.2	1.3	0.2	1.8	0.1	0.2	1.7	0.1	11.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	4.0	1.5	1.7	4.1	0.8	0.6	0.9	1.0	0.5	1.4	6.3
LnGrp Delay(d),s/veh	32.6	17.3	15.0	25.8	19.9	16.4	26.9	15.2	15.5	27.1	15.9	30.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	C
Approach Vol, veh/h		1137			860			319			635	
Approach Delay, s/veh		22.5			21.1			18.0			25.1	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	18.8	9.4	20.0	6.7	18.4	12.0	17.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	8.0	16.0	4.0	16.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	2.9	4.2	5.4	10.0	3.1	13.4	8.3	10.1
Green Ext Time (p_c), s	0.0	2.8	0.2	3.3	0.0	1.0	0.0	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	22.2
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	977	86	42	561	63	33	172	18	87	370	148
Future Volume (veh/h)	154	977	86	42	561	63	33	172	18	87	370	148
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	154	977	86	42	561	63	33	172	18	87	370	148
Adj No. of Lanes	2	2	0	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	252	1207	106	62	1161	520	51	424	361	188	472	401
Arrive On Green	0.07	0.37	0.37	0.04	0.33	0.33	0.03	0.23	0.23	0.06	0.26	0.26
Sat Flow, veh/h	3408	3260	287	1757	3505	1568	1757	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	154	525	538	42	561	63	33	172	18	87	370	148
Grp Sat Flow(s),veh/h/ln	1704	1752	1794	1757	1752	1568	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	2.3	13.9	13.9	1.2	6.6	1.4	1.0	4.1	0.5	1.3	9.7	4.0
Cycle Q Clear(g_c), s	2.3	13.9	13.9	1.2	6.6	1.4	1.0	4.1	0.5	1.3	9.7	4.0
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	252	649	664	62	1161	520	51	424	361	188	472	401
V/C Ratio(X)	0.61	0.81	0.81	0.68	0.48	0.12	0.64	0.41	0.05	0.46	0.78	0.37
Avail Cap(c_a), veh/h	330	678	694	136	1288	576	136	571	485	264	571	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	14.6	14.6	24.7	13.8	12.0	24.8	16.9	15.5	23.7	17.9	15.8
Incr Delay (d2), s/veh	2.4	7.0	6.9	12.5	0.3	0.1	12.7	0.6	0.1	1.8	5.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	8.0	8.1	0.8	3.2	0.6	0.6	2.1	0.2	0.7	5.6	1.8
LnGrp Delay(d),s/veh	25.6	21.7	21.5	37.1	14.1	12.1	37.5	17.5	15.6	25.4	23.7	16.4
LnGrp LOS	C	C	C	D	B	B	D	B	B	C	C	B
Approach Vol, veh/h		1217			666			223			605	
Approach Delay, s/veh		22.1			15.3			20.3			22.2	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	15.9	5.8	23.1	5.5	17.2	7.8	21.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	4.0	20.0	4.0	16.0	5.0	19.0
Max Q Clear Time (g_c+I1), s	3.3	6.1	3.2	15.9	3.0	11.7	4.3	8.6
Green Ext Time (p_c), s	0.0	2.8	0.0	3.2	0.0	1.6	0.0	7.2

Intersection Summary	
HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	325	573	92	212	207	365	83	1858	339	294	1134	183
Future Volume (veh/h)	325	573	92	212	207	365	83	1858	339	294	1134	183
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	325	573	92	212	207	365	83	1858	339	294	1134	183
Adj No. of Lanes	2	2	1	2	1	2	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	322	908	406	288	455	1070	137	1993	493	319	1851	576
Arrive On Green	0.09	0.26	0.26	0.08	0.25	0.25	0.04	0.32	0.32	0.09	0.37	0.37
Sat Flow, veh/h	3408	3505	1568	3514	1845	3136	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	325	573	92	212	207	365	83	1858	339	294	1134	183
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	8.5	13.0	4.2	5.3	8.6	7.8	2.2	25.8	17.1	7.8	16.6	7.5
Cycle Q Clear(g_c), s	8.5	13.0	4.2	5.3	8.6	7.8	2.2	25.8	17.1	7.8	16.6	7.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	322	908	406	288	455	1070	137	1993	493	319	1851	576
V/C Ratio(X)	1.01	0.63	0.23	0.74	0.45	0.34	0.61	0.93	0.69	0.92	0.61	0.32
Avail Cap(c_a), veh/h	322	1143	511	442	657	1413	165	2014	498	319	1851	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	29.5	26.2	40.3	28.7	22.1	42.4	29.7	26.8	40.4	23.0	20.1
Incr Delay (d2), s/veh	52.2	1.1	0.4	1.4	2.0	0.5	1.7	8.3	3.3	30.3	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	6.4	1.9	2.6	4.6	3.4	1.0	12.3	7.7	4.9	7.8	3.4
LnGrp Delay(d),s/veh	92.9	30.6	26.6	41.7	30.7	22.6	44.1	38.1	30.1	70.7	24.2	21.2
LnGrp LOS	F	C	C	D	C	C	D	D	C	E	C	C
Approach Vol, veh/h		990			784			2280			1611	
Approach Delay, s/veh		50.7			29.9			37.1			32.4	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	38.8	14.0	28.0	14.0	33.9	12.9	29.1
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	4.4	* 33	8.5	32.0	8.5	* 29	11.3	* 29
Max Q Clear Time (g_c+I1), s	4.2	18.6	10.5	10.6	9.8	27.8	7.3	15.0
Green Ext Time (p_c), s	0.0	12.4	0.0	10.7	0.0	0.7	0.1	8.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	371	498	244	152	321	233	193	1147	75	199	1366	162
Future Volume (veh/h)	371	498	244	152	321	233	193	1147	75	199	1366	162
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	371	498	244	152	321	233	193	1147	75	199	1366	162
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	389	1081	484	218	1292	402	221	1592	496	225	1598	497
Arrive On Green	0.11	0.31	0.31	0.06	0.26	0.26	0.07	0.32	0.32	0.07	0.32	0.32
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	371	498	244	152	321	233	193	1147	75	199	1366	162
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	10.2	10.8	12.1	4.2	4.8	12.4	5.4	19.2	3.3	5.5	24.3	7.5
Cycle Q Clear(g_c), s	10.2	10.8	12.1	4.2	4.8	12.4	5.4	19.2	3.3	5.5	24.3	7.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	389	1081	484	218	1292	402	221	1592	496	225	1598	497
V/C Ratio(X)	0.95	0.46	0.50	0.70	0.25	0.58	0.87	0.72	0.15	0.89	0.86	0.33
Avail Cap(c_a), veh/h	389	1174	525	318	1582	492	221	1608	501	225	1603	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	26.4	26.8	43.3	27.8	30.6	43.8	28.5	23.0	43.8	30.1	24.4
Incr Delay (d2), s/veh	33.4	0.6	1.7	1.5	0.3	4.5	28.5	1.9	0.3	30.6	5.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	5.4	5.4	2.0	2.2	5.8	3.4	9.1	1.4	3.5	11.9	3.3
LnGrp Delay(d),s/veh	75.1	27.0	28.4	44.8	28.1	35.0	72.3	30.4	23.3	74.4	35.2	25.2
LnGrp LOS	E	C	C	D	C	D	E	C	C	E	D	C
Approach Vol, veh/h		1113			706			1415			1727	
Approach Delay, s/veh		43.3			34.0			35.8			38.8	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	36.1	16.3	30.5	11.8	36.0	11.6	35.2
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	6.2	* 30	10.8	* 30	6.3	* 31	8.9	31.7
Max Q Clear Time (g_c+I1), s	7.4	26.3	12.2	14.4	7.5	21.2	6.2	14.1
Green Ext Time (p_c), s	0.0	4.1	0.0	10.1	0.0	8.9	0.1	11.1

Intersection Summary	
HCM 2010 Ctrl Delay	38.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	15	446	13	24	66	296	1214	11	20	1563	81
Future Volume (veh/h)	178	15	446	13	24	66	296	1214	11	20	1563	81
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	178	15	446	13	24	66	296	1214	11	20	1563	81
Adj No. of Lanes	2	1	2	1	1	0	2	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	259	352	526	17	54	149	382	2416	22	24	1867	581
Arrive On Green	0.08	0.19	0.19	0.01	0.12	0.12	0.11	0.47	0.47	0.01	0.37	0.37
Sat Flow, veh/h	3408	1845	2760	1757	436	1198	3375	5098	46	1740	4988	1553
Grp Volume(v), veh/h	178	15	446	13	0	90	296	792	433	20	1563	81
Grp Sat Flow(s),veh/h/ln	1704	1845	1380	1757	0	1633	1688	1663	1819	1740	1663	1553
Q Serve(g_s), s	3.8	0.5	11.5	0.5	0.0	3.8	6.3	12.2	12.2	0.8	21.1	2.5
Cycle Q Clear(g_c), s	3.8	0.5	11.5	0.5	0.0	3.8	6.3	12.2	12.2	0.8	21.1	2.5
Prop In Lane	1.00		1.00	1.00		0.73	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	259	352	526	17	0	203	382	1576	862	24	1867	581
V/C Ratio(X)	0.69	0.04	0.85	0.78	0.00	0.44	0.77	0.50	0.50	0.84	0.84	0.14
Avail Cap(c_a), veh/h	290	908	1358	81	0	751	452	1892	1035	132	2508	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	24.4	28.9	36.6	0.0	30.0	31.9	13.4	13.4	36.4	21.1	15.3
Incr Delay (d2), s/veh	4.2	0.0	1.5	24.3	0.0	0.6	5.6	0.1	0.2	24.0	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.3	4.5	0.4	0.0	1.7	3.2	5.5	6.1	0.6	9.8	1.1
LnGrp Delay(d),s/veh	37.6	24.4	30.4	60.9	0.0	30.6	37.5	13.5	13.6	60.4	22.6	15.3
LnGrp LOS	D	C	C	E		C	D	B	B	E	C	B
Approach Vol, veh/h		639			103			1521			1664	
Approach Delay, s/veh		32.2			34.4			18.2			22.7	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	33.7	11.1	15.3	6.5	41.1	6.2	20.2
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	9.9	37.2	6.3	* 34	5.6	* 42	3.4	* 36
Max Q Clear Time (g_c+I1), s	8.3	23.1	5.8	5.8	2.8	14.2	2.5	13.5
Green Ext Time (p_c), s	0.1	4.6	0.0	0.6	0.0	5.2	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	22.8
HCM 2010 LOS	C

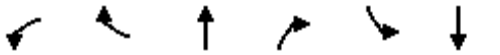
Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	160	172	83	55	104	104	931	135	379	1635	168
Future Volume (veh/h)	104	160	172	83	55	104	104	931	135	379	1635	168
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	104	160	172	83	55	104	104	931	135	379	1635	168
Adj No. of Lanes	2	2	0	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	177	256	229	142	460	206	176	1513	471	483	1966	612
Arrive On Green	0.05	0.15	0.15	0.04	0.14	0.14	0.05	0.30	0.30	0.14	0.39	0.39
Sat Flow, veh/h	3408	1752	1568	3250	3343	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	104	160	172	83	55	104	104	931	135	379	1635	168
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1625	1671	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	1.8	5.2	6.4	1.5	0.9	3.9	1.8	9.7	4.0	6.6	17.9	4.4
Cycle Q Clear(g_c), s	1.8	5.2	6.4	1.5	0.9	3.9	1.8	9.7	4.0	6.6	17.9	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	256	229	142	460	206	176	1513	471	483	1966	612
V/C Ratio(X)	0.59	0.63	0.75	0.58	0.12	0.50	0.59	0.62	0.29	0.78	0.83	0.27
Avail Cap(c_a), veh/h	197	652	584	161	1216	544	195	1856	578	558	2393	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	24.3	24.8	28.4	22.8	24.2	28.0	18.0	16.1	25.0	16.5	12.4
Incr Delay (d2), s/veh	1.9	0.9	1.9	1.9	0.0	0.7	2.0	0.2	0.1	5.3	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.6	2.8	0.7	0.4	1.6	0.9	4.4	1.7	3.4	8.5	1.9
LnGrp Delay(d),s/veh	29.9	25.2	26.6	30.2	22.9	24.9	30.0	18.2	16.2	30.3	18.3	12.5
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		436			242			1170			2182	
Approach Delay, s/veh		26.9			26.3			19.0			20.0	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	29.3	8.6	13.8	14.2	23.8	8.1	14.3
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	3.5	29.0	3.5	22.0	10.0	22.5	3.0	22.5
Max Q Clear Time (g_c+I1), s	3.8	19.9	3.8	5.9	8.6	11.7	3.5	8.4
Green Ext Time (p_c), s	0.0	4.0	0.0	0.5	0.1	4.3	0.0	0.5

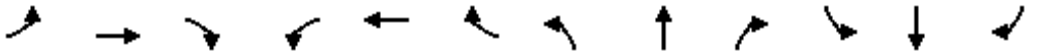
Intersection Summary	
HCM 2010 Ctrl Delay	20.8
HCM 2010 LOS	C



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	92	98	910	214	173	1674
Future Volume (veh/h)	92	98	910	214	173	1674
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1827	1827	1827
Adj Flow Rate, veh/h	92	98	910	214	173	1674
Adj No. of Lanes	2	1	3	1	2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	338	155	1738	541	308	2077
Arrive On Green	0.10	0.10	0.35	0.35	0.09	0.60
Sat Flow, veh/h	3408	1568	5152	1553	3375	3563
Grp Volume(v), veh/h	92	98	910	214	173	1674
Grp Sat Flow(s),veh/h/ln	1704	1568	1663	1553	1688	1736
Q Serve(g_s), s	0.9	2.1	5.0	3.6	1.7	13.0
Cycle Q Clear(g_c), s	0.9	2.1	5.0	3.6	1.7	13.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	338	155	1738	541	308	2077
V/C Ratio(X)	0.27	0.63	0.52	0.40	0.56	0.81
Avail Cap(c_a), veh/h	442	203	3666	1141	1849	5003
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	15.0	9.0	8.5	15.1	5.4
Incr Delay (d2), s/veh	0.2	1.6	0.1	0.2	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.8	2.3	1.6	0.8	6.1
LnGrp Delay(d),s/veh	14.6	16.6	9.1	8.7	15.7	5.7
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	190		1124			1847
Approach Delay, s/veh	15.6		9.0			6.6
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		25.8		8.9	8.7	17.1		
Change Period (Y+Rc), s		5.0		5.5	5.5	5.0		
Max Green Setting (Gmax), s		50.0		4.5	19.0	25.5		
Max Q Clear Time (g_c+I1), s		15.0		4.1	3.7	7.0		
Green Ext Time (p_c), s		5.4		0.0	0.2	5.0		

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	542	20	182	9	16	51	109	498	42	84	952	621
Future Volume (veh/h)	542	20	182	9	16	51	109	498	42	84	952	621
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845	1845	1827	1827	1827	1834	1900
Adj Flow Rate, veh/h	542	20	182	9	16	51	109	498	42	84	952	621
Adj No. of Lanes	2	2	1	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	4
Cap, veh/h	604	621	278	31	55	74	136	1847	826	138	1027	643
Arrive On Green	0.18	0.18	0.18	0.05	0.05	0.05	0.08	0.53	0.53	0.04	0.50	0.50
Sat Flow, veh/h	3408	3505	1568	652	1160	1568	1757	3471	1553	3375	2059	1289
Grp Volume(v), veh/h	542	20	182	25	0	51	109	498	42	84	799	774
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1812	0	1568	1757	1736	1553	1688	1742	1606
Q Serve(g_s), s	14.8	0.5	10.3	1.3	0.0	3.1	5.8	7.5	1.2	2.3	40.5	44.4
Cycle Q Clear(g_c), s	14.8	0.5	10.3	1.3	0.0	3.1	5.8	7.5	1.2	2.3	40.5	44.4
Prop In Lane	1.00		1.00	0.36		1.00	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	604	621	278	86	0	74	136	1847	826	138	869	801
V/C Ratio(X)	0.90	0.03	0.65	0.29	0.00	0.69	0.80	0.27	0.05	0.61	0.92	0.97
Avail Cap(c_a), veh/h	607	625	279	342	0	296	144	1847	826	237	880	812
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	32.5	36.5	43.9	0.0	44.8	43.3	12.2	10.7	45.0	22.1	23.1
Incr Delay (d2), s/veh	16.0	0.0	5.4	1.9	0.0	10.8	25.8	0.1	0.0	4.2	14.5	23.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.2	4.9	0.7	0.0	1.6	3.8	3.6	0.5	1.2	22.8	24.7
LnGrp Delay(d),s/veh	54.4	32.5	41.9	45.8	0.0	55.6	69.0	12.3	10.8	49.2	36.6	46.3
LnGrp LOS	D	C	D	D		E	E	B	B	D	D	D
Approach Vol, veh/h		744			76			649			1657	
Approach Delay, s/veh		50.8			52.3			21.7			41.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	52.6		9.9	8.8	55.8		20.9
Change Period (Y+Rc), s	* 4.6	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	* 7.8	48.2		* 18	* 6.7	49.0		17.0
Max Q Clear Time (g_c+I1), s	7.8	46.4		5.1	4.3	9.5		16.8
Green Ext Time (p_c), s	0.0	1.2		0.1	0.1	16.7		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		40.0
HCM 2010 LOS		D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	217	747	88	46	404	119	41	323	61	134	795	209
Future Volume (veh/h)	217	747	88	46	404	119	41	323	61	134	795	209
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1900	1827	1845	1845
Adj Flow Rate, veh/h	217	747	88	46	404	119	41	323	61	134	795	209
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	241	724	616	52	526	573	39	511	97	158	752	854
Arrive On Green	0.14	0.39	0.39	0.03	0.28	0.28	0.02	0.34	0.34	0.09	0.41	0.41
Sat Flow, veh/h	1757	1845	1568	1757	1845	1524	1757	1509	285	1740	1845	1568
Grp Volume(v), veh/h	217	747	88	46	404	119	41	0	384	134	795	209
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1524	1757	0	1794	1740	1845	1568
Q Serve(g_s), s	16.4	53.0	4.9	3.5	27.1	7.1	3.0	0.0	24.3	10.2	55.0	9.5
Cycle Q Clear(g_c), s	16.4	53.0	4.9	3.5	27.1	7.1	3.0	0.0	24.3	10.2	55.0	9.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	241	724	616	52	526	573	39	0	608	158	752	854
V/C Ratio(X)	0.90	1.03	0.14	0.88	0.77	0.21	1.05	0.00	0.63	0.85	1.06	0.24
Avail Cap(c_a), veh/h	260	724	616	52	526	573	39	0	608	232	752	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.3	41.0	26.4	65.3	44.2	28.5	66.0	0.0	37.6	60.4	40.0	16.1
Incr Delay (d2), s/veh	29.8	41.8	0.1	83.0	6.8	0.2	159.3	0.0	2.1	11.9	49.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	35.4	2.1	2.9	14.8	3.0	3.2	0.0	12.4	5.4	38.2	4.1
LnGrp Delay(d),s/veh	87.1	82.8	26.5	148.3	51.0	28.7	226.6	0.0	39.7	72.4	89.2	16.3
LnGrp LOS	F	F	C	F	D	C	F		D	E	F	B
Approach Vol, veh/h		1052			569			425			1138	
Approach Delay, s/veh		79.0			54.2			57.7			73.8	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	59.0	7.0	61.0	22.5	44.5	16.3	51.7
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	4.0	53.0	3.0	55.0	20.0	37.0	18.0	40.0
Max Q Clear Time (g_c+I1), s	5.5	55.0	5.0	57.0	18.4	29.1	12.2	26.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	4.0	0.1	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	69.9
HCM 2010 LOS	E

Notes

User approved changes to right turn type.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	139	16	14	278	730	204
Future Volume (veh/h)	139	16	14	278	730	204
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	139	16	14	278	730	204
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	173	20	18	1252	775	217
Arrive On Green	0.12	0.12	0.01	0.69	0.56	0.56
Sat Flow, veh/h	1448	167	1740	1827	1375	384
Grp Volume(v), veh/h	156	0	14	278	0	934
Grp Sat Flow(s),veh/h/ln	1625	0	1740	1827	0	1759
Q Serve(g_s), s	4.6	0.0	0.4	2.8	0.0	24.5
Cycle Q Clear(g_c), s	4.6	0.0	0.4	2.8	0.0	24.5
Prop In Lane	0.89	0.10	1.00			0.22
Lane Grp Cap(c), veh/h	194	0	18	1252	0	992
V/C Ratio(X)	0.80	0.00	0.76	0.22	0.00	0.94
Avail Cap(c_a), veh/h	262	0	214	2124	0	1620
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	24.5	2.9	0.0	10.1
Incr Delay (d2), s/veh	12.2	0.0	20.6	0.0	0.0	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.3	1.4	0.0	13.2
LnGrp Delay(d),s/veh	33.4	0.0	45.1	2.9	0.0	15.5
LnGrp LOS	C		D	A		B
Approach Vol, veh/h	156			292	934	
Approach Delay, s/veh	33.4			5.0	15.5	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.0	33.7		9.9		39.7		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.1	* 46		8.0		* 58		
Max Q Clear Time (g_c+I1), s	2.4	26.5		6.6		4.8		
Green Ext Time (p_c), s	0.0	1.5		0.1		1.5		

Intersection Summary	
HCM 2010 Ctrl Delay	15.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	759	708	1	2	269	458	16	205	7	54	3	189
Future Volume (veh/h)	759	708	1	2	269	458	16	205	7	54	3	189
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1792	1792	1900	1792	1792	1792
Adj Flow Rate, veh/h	759	708	1	2	269	458	16	205	7	36	49	189
Adj No. of Lanes	2	2	0	1	1	1	1	1	0	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	6	6	6	6	6	6
Cap, veh/h	823	1966	3	3	560	476	236	238	8	143	150	255
Arrive On Green	0.24	0.55	0.55	0.00	0.30	0.30	0.14	0.14	0.14	0.08	0.08	0.08
Sat Flow, veh/h	3408	3591	5	1757	1845	1568	1707	1723	59	1707	1792	3047
Grp Volume(v), veh/h	759	345	364	2	269	458	16	0	212	36	49	189
Grp Sat Flow(s),veh/h/ln	1704	1752	1844	1757	1845	1568	1707	0	1782	1707	1792	1524
Q Serve(g_s), s	20.9	10.7	10.7	0.1	11.4	27.6	0.8	0.0	11.2	1.9	2.5	5.8
Cycle Q Clear(g_c), s	20.9	10.7	10.7	0.1	11.4	27.6	0.8	0.0	11.2	1.9	2.5	5.8
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	823	960	1010	3	560	476	236	0	246	143	150	255
V/C Ratio(X)	0.92	0.36	0.36	0.70	0.48	0.96	0.07	0.00	0.86	0.25	0.33	0.74
Avail Cap(c_a), veh/h	868	960	1010	55	560	476	373	0	389	426	447	760
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	12.3	12.3	48.0	27.3	33.0	36.0	0.0	40.5	41.2	41.5	43.0
Incr Delay (d2), s/veh	14.2	0.1	0.1	75.8	0.2	31.4	0.0	0.0	6.6	0.3	0.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	5.2	5.5	0.1	5.9	16.1	0.4	0.0	5.9	0.9	1.2	2.5
LnGrp Delay(d),s/veh	49.8	12.3	12.3	123.8	27.5	64.4	36.1	0.0	47.1	41.6	42.0	44.6
LnGrp LOS	D	B	B	F	C	E	D		D	D	D	D
Approach Vol, veh/h		1468			729			228			274	
Approach Delay, s/veh		31.7			51.0			46.4			43.7	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.7	35.1		13.6	5.3	58.6		18.8
Change Period (Y+Rc), s	5.5	* 5.9		5.5	* 5.1	* 5.9		5.5
Max Green Setting (Gmax), s	24.5	* 29		24.0	* 3	* 50		21.0
Max Q Clear Time (g_c+I1), s	22.9	29.6		7.8	2.1	12.7		13.2
Green Ext Time (p_c), s	0.3	0.0		0.2	0.0	1.3		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	39.4
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	153	194	14	318	377	121
Future Volume (veh/h)	153	194	14	318	377	121
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1792	1792	1810	1810
Adj Flow Rate, veh/h	153	194	14	318	377	121
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	6	6	5	5
Cap, veh/h	328	292	25	876	572	487
Arrive On Green	0.20	0.20	0.01	0.49	0.32	0.32
Sat Flow, veh/h	1675	1495	1707	1792	1810	1538
Grp Volume(v), veh/h	153	194	14	318	377	121
Grp Sat Flow(s),veh/h/ln	1675	1495	1707	1792	1810	1538
Q Serve(g_s), s	2.8	4.2	0.3	3.8	6.3	2.0
Cycle Q Clear(g_c), s	2.8	4.2	0.3	3.8	6.3	2.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	328	292	25	876	572	487
V/C Ratio(X)	0.47	0.66	0.56	0.36	0.66	0.25
Avail Cap(c_a), veh/h	721	644	196	1492	1013	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.4	13.0	17.1	5.5	10.3	8.8
Incr Delay (d2), s/veh	1.0	2.6	18.5	0.3	1.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.6	0.3	1.9	3.2	0.9
LnGrp Delay(d),s/veh	13.4	15.5	35.6	5.8	11.6	9.1
LnGrp LOS	B	B	D	A	B	A
Approach Vol, veh/h	347			332	498	
Approach Delay, s/veh	14.6			7.0	11.0	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		22.5		12.3	6.0	16.5		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		29.0		15.0	4.0	19.5		
Max Q Clear Time (g_c+I1), s		5.8		6.2	2.3	8.3		
Green Ext Time (p_c), s		3.5		0.9	0.0	2.8		

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	710	4	46	352	13	4	142	48	42	165	179
Future Volume (veh/h)	176	710	4	46	352	13	4	142	48	42	165	179
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1900	1810	1900	1900	1810	1900
Adj Flow Rate, veh/h	176	710	4	46	352	13	4	142	48	42	165	179
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	204	748	4	58	575	21	5	166	56	40	158	171
Arrive On Green	0.12	0.42	0.42	0.03	0.33	0.33	0.13	0.13	0.13	0.22	0.22	0.22
Sat Flow, veh/h	1707	1781	10	1707	1718	63	36	1268	429	181	711	772
Grp Volume(v), veh/h	176	0	714	46	0	365	194	0	0	386	0	0
Grp Sat Flow(s),veh/h/ln	1707	0	1791	1707	0	1781	1732	0	0	1664	0	0
Q Serve(g_s), s	11.9	0.0	45.0	3.1	0.0	20.1	12.8	0.0	0.0	26.0	0.0	0.0
Cycle Q Clear(g_c), s	11.9	0.0	45.0	3.1	0.0	20.1	12.8	0.0	0.0	26.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.04	0.02		0.25	0.11		0.46
Lane Grp Cap(c), veh/h	204	0	752	58	0	596	227	0	0	369	0	0
V/C Ratio(X)	0.86	0.00	0.95	0.79	0.00	0.61	0.85	0.00	0.00	1.04	0.00	0.00
Avail Cap(c_a), veh/h	259	0	780	64	0	596	385	0	0	369	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.6	0.0	32.8	56.2	0.0	32.6	49.8	0.0	0.0	45.6	0.0	0.0
Incr Delay (d2), s/veh	17.7	0.0	21.2	39.8	0.0	2.7	9.1	0.0	0.0	59.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	26.6	2.1	0.0	10.3	6.7	0.0	0.0	18.0	0.0	0.0
LnGrp Delay(d),s/veh	68.3	0.0	53.9	95.9	0.0	35.4	58.9	0.0	0.0	104.5	0.0	0.0
LnGrp LOS	E		D	F		D	E			F		
Approach Vol, veh/h		890			411			194			386	
Approach Delay, s/veh		56.8			42.1			58.9			104.5	
Approach LOS		E			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.6	45.2		32.0	8.6	55.2		21.3
Change Period (Y+Rc), s	4.6	6.0		6.0	4.6	6.0		6.0
Max Green Setting (Gmax), s	17.8	37.6		26.0	4.4	51.0		26.0
Max Q Clear Time (g_c+I1), s	13.9	22.1		28.0	5.1	47.0		14.8
Green Ext Time (p_c), s	0.1	8.8		0.0	0.0	2.1		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	63.6
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	673	70	175	857	244	84	334	97	257	837	198
Future Volume (veh/h)	119	673	70	175	857	244	84	334	97	257	837	198
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	119	673	70	175	857	244	84	334	97	257	837	198
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	144	819	85	202	1011	452	107	710	318	288	1073	480
Arrive On Green	0.08	0.26	0.26	0.11	0.29	0.29	0.06	0.20	0.20	0.16	0.31	0.31
Sat Flow, veh/h	1757	3205	333	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	119	368	375	175	857	244	84	334	97	257	837	198
Grp Sat Flow(s),veh/h/ln	1757	1752	1786	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	4.1	12.0	12.1	6.0	14.0	8.0	2.9	5.1	3.2	8.7	13.3	6.1
Cycle Q Clear(g_c), s	4.1	12.0	12.1	6.0	14.0	8.0	2.9	5.1	3.2	8.7	13.3	6.1
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	448	456	202	1011	452	107	710	318	288	1073	480
V/C Ratio(X)	0.83	0.82	0.82	0.87	0.85	0.54	0.79	0.47	0.31	0.89	0.78	0.41
Avail Cap(c_a), veh/h	144	460	469	202	1036	463	144	921	412	288	1209	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	21.4	21.4	26.5	20.4	18.3	28.2	21.4	20.6	24.9	19.3	16.8
Incr Delay (d2), s/veh	30.7	11.1	11.0	30.4	6.6	1.2	18.1	0.5	0.5	27.2	3.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	7.2	7.3	4.6	7.7	3.6	1.9	2.5	1.4	6.4	6.8	2.7
LnGrp Delay(d),s/veh	58.2	32.4	32.4	56.9	27.0	19.5	46.4	21.9	21.2	52.1	22.3	17.4
LnGrp LOS	E	C	C	E	C	B	D	C	C	D	C	B
Approach Vol, veh/h		862			1276			515			1292	
Approach Delay, s/veh		36.0			29.7			25.7			27.4	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	16.3	11.0	19.6	7.7	22.6	9.0	21.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	16.0	7.0	16.0	5.0	21.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	10.7	7.1	8.0	14.1	4.9	15.3	6.1	16.0
Green Ext Time (p_c), s	0.0	4.7	0.0	1.5	0.0	3.4	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	29.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	534	142	126	642	123	102	558	69	109	1172	204
Future Volume (veh/h)	31	534	142	126	642	123	102	558	69	109	1172	204
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	31	534	142	126	642	123	102	558	69	109	1172	204
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	44	667	299	158	749	143	114	1335	165	139	1312	227
Arrive On Green	0.03	0.19	0.19	0.09	0.26	0.26	0.07	0.43	0.43	0.08	0.44	0.44
Sat Flow, veh/h	1757	3505	1568	1757	2936	562	1740	3111	384	1740	2959	513
Grp Volume(v), veh/h	31	534	142	126	383	382	102	311	316	109	685	691
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1746	1740	1736	1759	1740	1736	1736
Q Serve(g_s), s	1.3	11.1	6.1	5.3	15.8	15.9	4.4	9.5	9.5	4.7	27.6	28.0
Cycle Q Clear(g_c), s	1.3	11.1	6.1	5.3	15.8	15.9	4.4	9.5	9.5	4.7	27.6	28.0
Prop In Lane	1.00		1.00	1.00		0.32	1.00		0.22	1.00		0.30
Lane Grp Cap(c), veh/h	44	667	299	158	447	445	114	745	755	139	770	770
V/C Ratio(X)	0.70	0.80	0.48	0.80	0.86	0.86	0.89	0.42	0.42	0.78	0.89	0.90
Avail Cap(c_a), veh/h	92	738	330	162	447	445	114	745	755	229	822	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	29.4	27.4	33.9	27.0	27.0	35.2	15.1	15.1	34.3	19.4	19.6
Incr Delay (d2), s/veh	17.9	5.8	1.2	23.4	15.1	15.4	51.9	0.4	0.4	9.2	11.4	12.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.9	2.8	3.6	9.5	9.5	3.8	4.6	4.6	2.6	15.6	15.8
LnGrp Delay(d),s/veh	54.7	35.1	28.6	57.3	42.1	42.4	87.2	15.5	15.5	43.5	30.8	31.7
LnGrp LOS	D	D	C	E	D	D	F	B	B	D	C	C
Approach Vol, veh/h		707			891			729			1485	
Approach Delay, s/veh		34.7			44.4			25.5			32.1	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	36.6	10.8	18.5	9.0	37.7	5.9	23.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	31.0	7.0	16.0	5.0	36.0	4.0	19.0
Max Q Clear Time (g_c+I1), s	6.7	11.5	7.3	13.1	6.4	30.0	3.3	17.9
Green Ext Time (p_c), s	0.1	10.3	0.0	1.4	0.0	3.7	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	34.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	819	182	337	1168	140	169	541	195	161	1214	165
Future Volume (veh/h)	145	819	182	337	1168	140	169	541	195	161	1214	165
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	145	819	182	337	1168	140	169	541	195	161	1214	165
Adj No. of Lanes	1	3	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	142	855	189	348	1136	508	174	842	302	190	1199	536
Arrive On Green	0.08	0.21	0.21	0.20	0.33	0.33	0.10	0.34	0.34	0.11	0.35	0.35
Sat Flow, veh/h	1740	4090	903	1740	3471	1553	1740	2504	899	1740	3471	1553
Grp Volume(v), veh/h	145	665	336	337	1168	140	169	374	362	161	1214	165
Grp Sat Flow(s),veh/h/ln	1740	1663	1668	1740	1736	1553	1740	1736	1668	1740	1736	1553
Q Serve(g_s), s	9.0	21.7	22.0	21.1	36.0	7.3	10.7	20.1	20.2	10.0	38.0	8.6
Cycle Q Clear(g_c), s	9.0	21.7	22.0	21.1	36.0	7.3	10.7	20.1	20.2	10.0	38.0	8.6
Prop In Lane	1.00		0.54	1.00		1.00	1.00		0.54	1.00		1.00
Lane Grp Cap(c), veh/h	142	695	349	348	1136	508	174	584	561	190	1199	536
V/C Ratio(X)	1.02	0.96	0.96	0.97	1.03	0.28	0.97	0.64	0.64	0.85	1.01	0.31
Avail Cap(c_a), veh/h	142	695	349	348	1136	508	174	584	561	221	1199	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	43.0	43.1	43.7	37.0	27.4	49.3	30.9	30.9	48.1	36.0	26.4
Incr Delay (d2), s/veh	80.4	23.8	38.7	39.7	34.1	0.3	59.6	2.4	2.5	22.7	29.1	0.3
Initial Q Delay(d3),s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	12.3	13.8	14.0	22.6	3.2	8.0	10.0	9.7	6.0	23.0	3.7
LnGrp Delay(d),s/veh	131.1	66.8	81.8	83.4	71.1	27.6	108.9	33.3	33.5	70.8	65.1	26.7
LnGrp LOS	F	E	F	F	F	C	F	C	C	E	F	C
Approach Vol, veh/h		1146			1645			905			1540	
Approach Delay, s/veh		79.3			69.9			47.5			61.6	
Approach LOS		E			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	41.0	26.0	27.0	15.0	42.0	13.0	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	35.0	22.0	23.0	11.0	38.0	9.0	36.0
Max Q Clear Time (g_c+I1), s	12.0	22.2	23.1	24.0	12.7	40.0	11.0	38.0
Green Ext Time (p_c), s	0.1	8.4	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	801	148	210	1020	6	174	141	79	111	764	338
Future Volume (veh/h)	141	801	148	210	1020	6	174	141	79	111	764	338
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	141	801	148	210	1020	6	174	141	79	111	764	338
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	174	855	158	243	1174	7	201	997	446	142	879	393
Arrive On Green	0.10	0.29	0.29	0.14	0.33	0.33	0.11	0.28	0.28	0.08	0.25	0.25
Sat Flow, veh/h	1740	2926	541	1740	3538	21	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	141	475	474	210	500	526	174	141	79	111	764	338
Grp Sat Flow(s),veh/h/ln	1740	1736	1732	1740	1736	1823	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	6.3	21.0	21.0	9.3	21.3	21.3	7.7	2.4	3.0	4.9	16.4	16.2
Cycle Q Clear(g_c), s	6.3	21.0	21.0	9.3	21.3	21.3	7.7	2.4	3.0	4.9	16.4	16.2
Prop In Lane	1.00		0.31	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	174	507	506	243	576	605	201	997	446	142	879	393
V/C Ratio(X)	0.81	0.94	0.94	0.86	0.87	0.87	0.87	0.14	0.18	0.78	0.87	0.86
Avail Cap(c_a), veh/h	177	507	506	243	576	605	201	997	446	223	935	418
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	27.2	27.2	33.1	24.7	24.7	34.3	21.0	21.2	35.5	28.3	28.2
Incr Delay (d2), s/veh	23.7	25.2	25.3	26.0	13.4	12.9	30.6	0.1	0.2	9.0	8.5	15.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	13.6	13.6	6.2	12.3	12.8	5.4	1.1	1.3	2.7	9.0	8.7
LnGrp Delay(d),s/veh	58.4	52.4	52.5	59.2	38.1	37.6	64.8	21.1	21.4	44.6	36.7	43.8
LnGrp LOS	E	D	D	E	D	D	E	C	C	D	D	D
Approach Vol, veh/h		1090			1236			394			1213	
Approach Delay, s/veh		53.2			41.5			40.5			39.4	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	26.4	15.0	27.0	13.0	23.8	11.9	30.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	20.0	11.0	23.0	9.0	21.0	8.0	26.0
Max Q Clear Time (g_c+I1), s	6.9	5.0	11.3	23.0	9.7	18.4	8.3	23.3
Green Ext Time (p_c), s	0.1	5.6	0.0	0.0	0.0	1.3	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	44.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	456	19	63	560	70	41	334	78	159	634	823
Future Volume (veh/h)	280	456	19	63	560	70	41	334	78	159	634	823
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	280	456	19	63	560	70	41	334	78	159	634	823
Adj No. of Lanes	2	2	1	2	2	0	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	326	925	414	134	651	81	105	1124	259	242	1534	686
Arrive On Green	0.10	0.27	0.27	0.04	0.21	0.21	0.03	0.40	0.40	0.07	0.44	0.44
Sat Flow, veh/h	3375	3471	1553	3375	3107	387	3375	2802	646	3375	3471	1553
Grp Volume(v), veh/h	280	456	19	63	312	318	41	205	207	159	634	823
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1688	1736	1759	1688	1736	1713	1688	1736	1553
Q Serve(g_s), s	5.9	8.0	0.7	1.3	12.6	12.6	0.9	5.8	6.0	3.3	9.0	32.0
Cycle Q Clear(g_c), s	5.9	8.0	0.7	1.3	12.6	12.6	0.9	5.8	6.0	3.3	9.0	32.0
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	326	925	414	134	364	369	105	696	687	242	1534	686
V/C Ratio(X)	0.86	0.49	0.05	0.47	0.86	0.86	0.39	0.29	0.30	0.66	0.41	1.20
Avail Cap(c_a), veh/h	326	925	414	186	383	389	186	696	687	326	1534	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	22.4	19.7	34.0	27.6	27.6	34.4	14.7	14.8	32.7	13.8	20.2
Incr Delay (d2), s/veh	19.8	0.4	0.0	2.6	16.8	17.1	2.4	0.2	0.2	3.0	0.2	103.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	3.9	0.3	0.7	7.7	7.8	0.4	2.8	2.9	1.6	4.4	33.3
LnGrp Delay(d),s/veh	52.0	22.8	19.8	36.6	44.4	44.8	36.8	15.0	15.0	35.7	14.0	123.7
LnGrp LOS	D	C	B	D	D	D	D	B	B	D	B	F
Approach Vol, veh/h		755			693			453			1616	
Approach Delay, s/veh		33.6			43.9			17.0			72.0	
Approach LOS		C			D			B			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	33.0	6.9	23.3	6.2	36.0	11.0	19.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	4.0	19.0	4.0	32.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.3	8.0	3.3	10.0	2.9	34.0	7.9	14.6
Green Ext Time (p_c), s	0.1	9.6	0.0	3.5	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	51.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	6	241	50	9	1	104	510	55	1	978	9
Future Volume (veh/h)	1	6	241	50	9	1	104	510	55	1	978	9
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	1	6	241	50	9	1	104	510	55	1	978	9
Adj No. of Lanes	0	1	0	1	1	0	1	1	1	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	1	6	226	70	65	7	129	568	482	571	1021	9
Arrive On Green	0.15	0.15	0.15	0.04	0.04	0.04	0.08	0.32	0.32	0.33	0.58	0.58
Sat Flow, veh/h	6	36	1459	1757	1631	181	1707	1792	1524	1707	1773	16
Grp Volume(v), veh/h	248	0	0	50	0	10	104	510	55	1	0	987
Grp Sat Flow(s),veh/h/ln	1501	0	0	1757	0	1813	1707	1792	1524	1707	0	1790
Q Serve(g_s), s	16.0	0.0	0.0	2.9	0.0	0.6	6.2	28.1	2.6	0.0	0.0	54.0
Cycle Q Clear(g_c), s	16.0	0.0	0.0	2.9	0.0	0.6	6.2	28.1	2.6	0.0	0.0	54.0
Prop In Lane	0.00		0.97	1.00		0.10	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	232	0	0	70	0	72	129	568	482	571	0	1030
V/C Ratio(X)	1.07	0.00	0.00	0.72	0.00	0.14	0.81	0.90	0.11	0.00	0.00	0.96
Avail Cap(c_a), veh/h	232	0	0	272	0	280	132	1178	1001	571	0	1107
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.7	0.0	0.0	49.1	0.0	48.0	47.1	33.8	25.1	22.9	0.0	20.8
Incr Delay (d2), s/veh	78.2	0.0	0.0	12.7	0.0	0.9	29.4	5.4	0.1	0.0	0.0	17.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	0.0	0.0	1.7	0.0	0.3	4.0	14.7	1.1	0.0	0.0	31.3
LnGrp Delay(d),s/veh	121.9	0.0	0.0	61.8	0.0	48.8	76.5	39.2	25.2	22.9	0.0	38.1
LnGrp LOS	F			E		D	E	D	C	C		D
Approach Vol, veh/h		248			60			669			988	
Approach Delay, s/veh		121.9			59.6			43.8			38.1	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	38.6	36.8		20.0	11.8	63.5		8.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	68.0		16.0	8.0	64.0		16.0
Max Q Clear Time (g_c+I1), s	2.0	30.1		18.0	8.2	56.0		4.9
Green Ext Time (p_c), s	1.1	2.6		0.0	0.0	3.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	51.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	13	21	168	3	165	4	636	219	545	697	1
Future Volume (veh/h)	7	13	21	168	3	165	4	636	219	545	697	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	7	13	21	168	3	165	4	636	219	545	697	1
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	12	28	45	150	3	189	7	609	210	514	1385	2
Arrive On Green	0.01	0.04	0.04	0.09	0.12	0.12	0.00	0.46	0.46	0.29	0.75	0.75
Sat Flow, veh/h	1757	636	1027	1757	28	1544	1757	1313	452	1757	1842	3
Grp Volume(v), veh/h	7	0	34	168	0	168	4	0	855	545	0	698
Grp Sat Flow(s),veh/h/ln	1757	0	1663	1757	0	1572	1757	0	1765	1757	0	1844
Q Serve(g_s), s	0.6	0.0	2.8	12.0	0.0	14.7	0.3	0.0	65.0	41.0	0.0	21.1
Cycle Q Clear(g_c), s	0.6	0.0	2.8	12.0	0.0	14.7	0.3	0.0	65.0	41.0	0.0	21.1
Prop In Lane	1.00		0.62	1.00		0.98	1.00		0.26	1.00		0.00
Lane Grp Cap(c), veh/h	12	0	73	150	0	193	7	0	819	514	0	1387
V/C Ratio(X)	0.59	0.00	0.47	1.12	0.00	0.87	0.55	0.00	1.04	1.06	0.00	0.50
Avail Cap(c_a), veh/h	50	0	190	150	0	269	50	0	819	514	0	1387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	69.4	0.0	65.4	64.1	0.0	60.4	69.6	0.0	37.6	49.6	0.0	6.9
Incr Delay (d2), s/veh	38.1	0.0	4.6	108.1	0.0	19.5	52.8	0.0	43.6	56.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.4	10.3	0.0	7.4	0.3	0.0	41.5	27.9	0.0	10.8
LnGrp Delay(d),s/veh	107.5	0.0	70.0	172.2	0.0	79.9	122.4	0.0	81.2	106.2	0.0	7.2
LnGrp LOS	F		E	F		E	F		F	F		A
Approach Vol, veh/h		41			336			859			1243	
Approach Delay, s/veh		76.4			126.0			81.4			50.6	
Approach LOS		E			F			F			D	

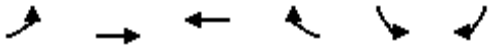
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	45.0	69.0	16.0	10.1	4.6	109.4	5.0	21.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	41.0	65.0	12.0	16.0	4.0	102.0	4.0	24.0
Max Q Clear Time (g_c+I1), s	43.0	67.0	14.0	4.8	2.3	23.1	2.6	16.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.6	0.0	11.6	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	71.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	279	12	14	1	6	4	10	503	0	3	645	305
Future Volume (veh/h)	279	12	14	1	6	4	10	503	0	3	645	305
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	279	12	14	1	6	4	10	503	0	3	645	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	353	15	328	2	11	7	18	817	0	6	803	683
Arrive On Green	0.21	0.21	0.21	0.01	0.01	0.01	0.01	0.44	0.00	0.00	0.44	0.00
Sat Flow, veh/h	1688	73	1568	157	941	628	1757	1845	0	1757	1845	1568
Grp Volume(v), veh/h	291	0	14	11	0	0	10	503	0	3	645	0
Grp Sat Flow(s),veh/h/ln	1760	0	1568	1726	0	0	1757	1845	0	1757	1845	1568
Q Serve(g_s), s	7.5	0.0	0.3	0.3	0.0	0.0	0.3	10.0	0.0	0.1	14.5	0.0
Cycle Q Clear(g_c), s	7.5	0.0	0.3	0.3	0.0	0.0	0.3	10.0	0.0	0.1	14.5	0.0
Prop In Lane	0.96		1.00	0.09		0.36	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	0	328	20	0	0	18	817	0	6	803	683
V/C Ratio(X)	0.79	0.00	0.04	0.56	0.00	0.00	0.55	0.62	0.00	0.52	0.80	0.00
Avail Cap(c_a), veh/h	587	0	523	576	0	0	147	1077	0	147	1077	916
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.0	0.0	15.1	23.6	0.0	0.0	23.6	10.2	0.0	23.9	11.7	0.0
Incr Delay (d2), s/veh	3.9	0.0	0.1	22.7	0.0	0.0	23.1	0.8	0.0	58.3	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	0.2	0.3	0.0	0.0	0.2	5.2	0.0	0.1	8.1	0.0
LnGrp Delay(d),s/veh	21.8	0.0	15.2	46.3	0.0	0.0	46.7	11.0	0.0	82.2	15.0	0.0
LnGrp LOS	C		B	D			D	B		F	B	
Approach Vol, veh/h		305			11			513			648	
Approach Delay, s/veh		21.5			46.3			11.7			15.3	
Approach LOS		C			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.2	25.2		14.0	4.5	24.9		4.5
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	12.0		9.5	2.3	16.5		2.3
Green Ext Time (p_c), s	0.0	5.1		0.7	0.0	4.3		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		15.6
HCM 2010 LOS		B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	6	91	528	522	0
Future Volume (veh/h)	0	6	91	528	522	0
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	0	6	91	528	522	0
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	5	1395	698	624	644	575
Arrive On Green	0.00	0.40	0.40	0.40	0.37	0.00
Sat Flow, veh/h	1757	3597	1845	1568	1757	1568
Grp Volume(v), veh/h	0	6	91	528	522	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1752	1568	1757	1568
Q Serve(g_s), s	0.0	0.0	1.1	10.4	9.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	1.1	10.4	9.1	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	5	1395	698	624	644	575
V/C Ratio(X)	0.00	0.00	0.13	0.85	0.81	0.00
Avail Cap(c_a), veh/h	207	2475	825	738	930	830
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	6.2	6.5	9.3	9.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	7.9	3.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.5	5.8	5.0	0.0
LnGrp Delay(d),s/veh	0.0	6.2	6.6	17.1	13.3	0.0
LnGrp LOS		A	A	B	B	
Approach Vol, veh/h		6	619		522	
Approach Delay, s/veh		6.2	15.6		13.3	
Approach LOS		A	B		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				17.5		16.5	0.0	17.5
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				24.0		18.0	4.0	16.0
Max Q Clear Time (g_c+I1), s				2.0		11.1	0.0	12.4
Green Ext Time (p_c), s				3.2		1.4	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	2118	0	64	2112	0	4	3	73	106	4	0
Future Volume (veh/h)	134	2118	0	64	2112	0	4	3	73	106	4	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	134	2118	0	64	2112	0	4	3	73	106	4	0
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	165	2760	0	80	2516	0	6	145	123	135	280	238
Arrive On Green	0.09	0.55	0.00	0.05	0.50	0.00	0.00	0.08	0.08	0.08	0.15	0.00
Sat Flow, veh/h	1757	5202	0	1757	5202	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	134	2118	0	64	2112	0	4	3	73	106	4	0
Grp Sat Flow(s),veh/h/ln	1757	1679	0	1757	1679	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.8	20.9	0.0	2.3	23.0	0.0	0.1	0.1	2.9	3.8	0.1	0.0
Cycle Q Clear(g_c), s	4.8	20.9	0.0	2.3	23.0	0.0	0.1	0.1	2.9	3.8	0.1	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	2760	0	80	2516	0	6	145	123	135	280	238
V/C Ratio(X)	0.81	0.77	0.00	0.80	0.84	0.00	0.71	0.02	0.59	0.79	0.01	0.00
Avail Cap(c_a), veh/h	165	2765	0	83	2528	0	83	463	394	138	521	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.3	11.2	0.0	30.1	13.7	0.0	31.7	27.1	28.4	28.9	23.0	0.0
Incr Delay (d2), s/veh	25.2	1.3	0.0	39.6	2.7	0.0	96.2	0.1	4.5	24.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	10.0	0.0	2.0	11.2	0.0	0.2	0.1	1.4	2.8	0.1	0.0
LnGrp Delay(d),s/veh	53.5	12.6	0.0	69.7	16.4	0.0	127.9	27.2	32.9	53.8	23.0	0.0
LnGrp LOS	D	B		E	B		F	C	C	D	C	
Approach Vol, veh/h		2252			2176			80			110	
Approach Delay, s/veh		15.0			18.0			37.4			52.6	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	9.0	6.9	38.9	4.2	13.7	10.0	35.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	16.0	3.0	35.0	3.0	18.0	6.0	32.0
Max Q Clear Time (g_c+I1), s	5.8	4.9	4.3	22.9	2.1	2.1	6.8	25.0
Green Ext Time (p_c), s	0.0	0.1	0.0	11.7	0.0	0.2	0.0	6.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	1331	682	141	982	0	635	158	155	85	267	357
Future Volume (veh/h)	295	1331	682	141	982	0	635	158	155	85	267	357
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	295	1331	682	141	982	0	635	158	155	85	267	357
Adj No. of Lanes	1	3	1	2	3	1	2	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	329	1637	510	213	1007	314	682	646	549	109	392	333
Arrive On Green	0.19	0.32	0.32	0.06	0.20	0.00	0.20	0.35	0.35	0.06	0.21	0.21
Sat Flow, veh/h	1757	5036	1568	3408	5036	1568	3408	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	295	1331	682	141	982	0	635	158	155	85	267	357
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1679	1568	1704	1845	1568	1757	1845	1568
Q Serve(g_s), s	13.1	19.4	26.0	3.2	15.5	0.0	14.7	4.9	5.7	3.8	10.7	17.0
Cycle Q Clear(g_c), s	13.1	19.4	26.0	3.2	15.5	0.0	14.7	4.9	5.7	3.8	10.7	17.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	1637	510	213	1007	314	682	646	549	109	392	333
V/C Ratio(X)	0.90	0.81	1.34	0.66	0.97	0.00	0.93	0.24	0.28	0.78	0.68	1.07
Avail Cap(c_a), veh/h	329	1637	510	213	1007	314	682	646	549	198	392	333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	24.8	27.0	36.7	31.8	0.0	31.5	18.5	18.7	37.0	29.0	31.5
Incr Delay (d2), s/veh	25.4	3.3	165.1	7.4	22.4	0.0	19.6	0.2	0.3	11.1	4.7	69.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	9.5	34.6	1.7	9.3	0.0	8.7	2.5	2.5	2.2	5.9	13.8
LnGrp Delay(d),s/veh	57.2	28.0	192.1	44.1	54.2	0.0	51.1	18.7	19.0	48.1	33.8	101.1
LnGrp LOS	E	C	F	D	D		D	B	B	D	C	F
Approach Vol, veh/h		2308			1123			948			709	
Approach Delay, s/veh		80.2			52.9			40.4			69.4	
Approach LOS		F			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	32.0	9.0	30.0	20.0	21.0	19.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	24.0	5.0	26.0	16.0	17.0	15.0	16.0
Max Q Clear Time (g_c+I1), s	5.8	7.7	5.2	28.0	16.7	19.0	15.1	17.5
Green Ext Time (p_c), s	0.1	3.4	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	1434	59	33	940	3	184	0	0	4	0	23
Future Volume (veh/h)	44	1434	59	33	940	3	184	0	0	4	0	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	44	1434	59	33	940	3	184	0	0	4	0	23
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	51	1932	79	40	1985	6	233	371	316	6	133	113
Arrive On Green	0.03	0.39	0.39	0.02	0.38	0.38	0.13	0.00	0.00	0.00	0.00	0.07
Sat Flow, veh/h	1757	4962	204	1757	5182	17	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	44	970	523	33	609	334	184	0	0	4	0	23
Grp Sat Flow(s),veh/h/ln	1757	1679	1809	1757	1679	1842	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.0	10.4	10.4	0.8	5.7	5.7	4.2	0.0	0.0	0.1	0.0	0.6
Cycle Q Clear(g_c), s	1.0	10.4	10.4	0.8	5.7	5.7	4.2	0.0	0.0	0.1	0.0	0.6
Prop In Lane	1.00		0.11	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	51	1307	704	40	1286	705	233	371	316	6	133	113
V/C Ratio(X)	0.86	0.74	0.74	0.82	0.47	0.47	0.79	0.00	0.00	0.70	0.00	0.20
Avail Cap(c_a), veh/h	168	1367	736	126	1286	706	294	928	789	126	751	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.2	10.9	10.9	20.3	9.7	9.7	17.5	0.0	0.0	20.8	0.0	18.3
Incr Delay (d2), s/veh	31.0	2.1	3.9	32.0	0.3	0.5	10.7	0.0	0.0	93.4	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.1	5.8	0.7	2.7	3.0	2.7	0.0	0.0	0.2	0.0	0.3
LnGrp Delay(d),s/veh	51.1	13.1	14.8	52.3	10.0	10.2	28.2	0.0	0.0	114.2	0.0	19.1
LnGrp LOS	D	B	B	D	A	B	C			F		B
Approach Vol, veh/h		1537			976			184			27	
Approach Delay, s/veh		14.8			11.5			28.2			33.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	12.4	5.0	20.3	9.5	7.0	5.2	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	21.0	3.0	17.0	7.0	17.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	2.1	0.0	2.8	12.4	6.2	2.6	3.0	7.7
Green Ext Time (p_c), s	0.0	0.0	0.0	3.9	0.1	0.0	0.0	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	1269	92	64	876	19	50	8	82	92	6	49
Future Volume (veh/h)	75	1269	92	64	876	19	50	8	82	92	6	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	75	1269	92	64	876	19	50	8	82	92	6	49
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	93	1902	138	77	1968	43	59	195	165	116	254	216
Arrive On Green	0.05	0.40	0.40	0.04	0.39	0.39	0.03	0.11	0.11	0.07	0.14	0.14
Sat Flow, veh/h	1757	4793	347	1757	5073	110	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	75	889	472	64	579	316	50	8	82	92	6	49
Grp Sat Flow(s),veh/h/ln	1757	1679	1783	1757	1679	1825	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.7	9.0	9.0	1.5	5.3	5.3	1.2	0.2	2.0	2.1	0.1	1.1
Cycle Q Clear(g_c), s	1.7	9.0	9.0	1.5	5.3	5.3	1.2	0.2	2.0	2.1	0.1	1.1
Prop In Lane	1.00		0.19	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	1332	708	77	1303	708	59	195	165	116	254	216
V/C Ratio(X)	0.81	0.67	0.67	0.83	0.44	0.45	0.84	0.04	0.50	0.79	0.02	0.23
Avail Cap(c_a), veh/h	255	1465	778	170	1303	708	255	715	608	255	715	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.3	10.2	10.2	19.6	9.3	9.3	19.8	16.6	17.4	19.0	15.4	15.8
Incr Delay (d2), s/veh	15.1	1.0	1.9	19.2	0.2	0.4	25.9	0.1	2.3	11.6	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.3	4.7	1.1	2.5	2.7	1.0	0.1	1.0	1.4	0.1	0.5
LnGrp Delay(d),s/veh	34.4	11.2	12.1	38.8	9.6	9.8	45.7	16.7	19.7	30.6	15.4	16.4
LnGrp LOS	C	B	B	D	A	A	D	B	B	C	B	B
Approach Vol, veh/h		1436			959			140			147	
Approach Delay, s/veh		12.7			11.6			28.8			25.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	8.4	5.8	20.4	5.4	9.7	6.2	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	16.0	4.0	18.0	6.0	16.0	6.0	16.0
Max Q Clear Time (g_c+I1), s	4.1	4.0	3.5	11.0	3.2	3.1	3.7	7.3
Green Ext Time (p_c), s	0.0	0.3	0.0	5.4	0.0	0.3	0.0	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	25	58	989	1441	104
Future Volume (veh/h)	62	25	58	989	1441	104
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	62	25	58	989	1441	104
Adj No. of Lanes	1	1	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	96	86	71	1433	2163	155
Arrive On Green	0.05	0.05	0.04	0.78	0.65	0.65
Sat Flow, veh/h	1757	1568	1757	1845	3409	238
Grp Volume(v), veh/h	62	25	58	989	759	786
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1845	1752	1803
Q Serve(g_s), s	1.6	0.7	1.6	12.3	12.6	12.8
Cycle Q Clear(g_c), s	1.6	0.7	1.6	12.3	12.6	12.8
Prop In Lane	1.00	1.00	1.00			0.13
Lane Grp Cap(c), veh/h	96	86	71	1433	1143	1176
V/C Ratio(X)	0.64	0.29	0.81	0.69	0.66	0.67
Avail Cap(c_a), veh/h	554	495	333	2018	1438	1479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	21.6	22.6	2.5	5.1	5.1
Incr Delay (d2), s/veh	7.0	1.8	19.2	0.6	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.7	1.1	6.0	6.2	6.4
LnGrp Delay(d),s/veh	29.0	23.4	41.8	3.2	5.9	5.9
LnGrp LOS	C	C	D	A	A	A
Approach Vol, veh/h	87			1047	1545	
Approach Delay, s/veh	27.4			5.3	5.9	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		40.9		6.6	5.9	35.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		52.0		15.0	9.0	39.0		
Max Q Clear Time (g_c+I1), s		14.3		3.6	3.6	14.8		
Green Ext Time (p_c), s		21.3		0.2	0.1	16.2		

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	134	225	1167	2150	39
Future Volume (veh/h)	36	134	225	1167	2150	39
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	36	134	225	1167	2150	39
Adj No. of Lanes	1	1	1	3	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	200	179	271	3793	2711	49
Arrive On Green	0.11	0.11	0.15	0.75	0.53	0.53
Sat Flow, veh/h	1757	1568	1757	5202	5259	92
Grp Volume(v), veh/h	36	134	225	1167	1416	773
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1679	1679	1828
Q Serve(g_s), s	1.1	5.0	7.5	4.5	20.6	20.6
Cycle Q Clear(g_c), s	1.1	5.0	7.5	4.5	20.6	20.6
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	200	179	271	3793	1787	973
V/C Ratio(X)	0.18	0.75	0.83	0.31	0.79	0.79
Avail Cap(c_a), veh/h	437	390	292	3928	1839	1001
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	25.9	24.7	2.4	11.4	11.4
Incr Delay (d2), s/veh	0.4	6.1	16.9	0.0	2.4	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.5	4.9	2.1	10.0	11.5
LnGrp Delay(d),s/veh	24.6	32.0	41.6	2.4	13.8	15.8
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	170			1392	2189	
Approach Delay, s/veh	30.4			8.8	14.5	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		49.4		10.9	13.3	36.1		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		47.0		15.0	10.0	33.0		
Max Q Clear Time (g_c+I1), s		6.5		7.0	9.5	22.6		
Green Ext Time (p_c), s		30.2		0.3	0.0	9.4		

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	170	47	52	717	988	125
Future Volume (veh/h)	170	47	52	717	988	125
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	170	47	52	717	988	125
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	239	214	61	2176	1455	184
Arrive On Green	0.14	0.14	0.03	0.62	0.46	0.46
Sat Flow, veh/h	1757	1568	1757	3597	3223	396
Grp Volume(v), veh/h	170	47	52	717	553	560
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1775
Q Serve(g_s), s	3.0	0.9	1.0	3.2	8.1	8.1
Cycle Q Clear(g_c), s	3.0	0.9	1.0	3.2	8.1	8.1
Prop In Lane	1.00	1.00	1.00			0.22
Lane Grp Cap(c), veh/h	239	214	61	2176	814	825
V/C Ratio(X)	0.71	0.22	0.86	0.33	0.68	0.68
Avail Cap(c_a), veh/h	374	333	160	2662	958	970
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.6	12.7	15.8	3.0	6.9	6.9
Incr Delay (d2), s/veh	3.9	0.5	27.2	0.1	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.8	0.9	1.5	4.2	4.2
LnGrp Delay(d),s/veh	17.5	13.2	43.0	3.1	8.4	8.4
LnGrp LOS	B	B	D	A	A	A
Approach Vol, veh/h	217			769	1113	
Approach Delay, s/veh	16.5			5.8	8.4	
Approach LOS	B			A	A	

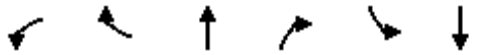
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		24.4		8.5	5.1	19.3		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		25.0		7.0	3.0	18.0		
Max Q Clear Time (g_c+I1), s		5.2		5.0	3.0	10.1		
Green Ext Time (p_c), s		9.4		0.2	0.0	5.2		

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	248	28	118	873	1106	155
Future Volume (veh/h)	248	28	118	873	1106	155
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	248	28	118	873	1106	155
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	321	287	151	2288	1498	209
Arrive On Green	0.18	0.18	0.09	0.65	0.48	0.48
Sat Flow, veh/h	1757	1568	1757	3597	3181	432
Grp Volume(v), veh/h	248	28	118	873	626	635
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1768
Q Serve(g_s), s	6.5	0.7	3.2	5.6	14.0	14.0
Cycle Q Clear(g_c), s	6.5	0.7	3.2	5.6	14.0	14.0
Prop In Lane	1.00	1.00	1.00			0.24
Lane Grp Cap(c), veh/h	321	287	151	2288	850	857
V/C Ratio(X)	0.77	0.10	0.78	0.38	0.74	0.74
Avail Cap(c_a), veh/h	541	483	217	2664	972	981
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	16.5	21.8	3.9	10.1	10.1
Incr Delay (d2), s/veh	3.9	0.1	11.1	0.1	2.6	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.7	2.0	2.7	7.2	7.3
LnGrp Delay(d),s/veh	22.9	16.7	33.0	4.0	12.6	12.7
LnGrp LOS	C	B	C	A	B	B
Approach Vol, veh/h	276			991	1261	
Approach Delay, s/veh	22.2			7.5	12.7	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		35.8		12.9	8.2	27.6		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		37.0		15.0	6.0	27.0		
Max Q Clear Time (g_c+I1), s		7.6		8.5	5.2	16.0		
Green Ext Time (p_c), s		14.0		0.6	0.0	7.6		

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	105	1579	0	138	2206
Future Volume (veh/h)	0	105	1579	0	138	2206
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	0	105	1579	0	138	2206
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	148	132	3271	0	179	2826
Arrive On Green	0.00	0.08	0.65	0.00	0.10	0.81
Sat Flow, veh/h	1757	1568	5368	0	1757	3597
Grp Volume(v), veh/h	0	105	1579	0	138	2206
Grp Sat Flow(s),veh/h/ln	1757	1568	1679	0	1757	1752
Q Serve(g_s), s	0.0	4.8	11.7	0.0	5.6	24.0
Cycle Q Clear(g_c), s	0.0	4.8	11.7	0.0	5.6	24.0
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	148	132	3271	0	179	2826
V/C Ratio(X)	0.00	0.80	0.48	0.00	0.77	0.78
Avail Cap(c_a), veh/h	386	344	3271	0	434	3173
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	32.8	6.5	0.0	31.9	3.7
Incr Delay (d2), s/veh	0.0	10.4	0.1	0.0	6.9	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	5.3	0.0	3.0	11.5
LnGrp Delay(d),s/veh	0.0	43.1	6.6	0.0	38.8	4.9
LnGrp LOS		D	A		D	A
Approach Vol, veh/h	105		1579			2344
Approach Delay, s/veh	43.1		6.6			6.9
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		62.8			11.4	51.4		10.1
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		66.0			18.0	44.0		16.0
Max Q Clear Time (g_c+I1), s		26.0			7.6	13.7		6.8
Green Ext Time (p_c), s		32.8			0.3	27.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	665	519	76	706	547	0	156	839	591	51	1606	514
Future Volume (veh/h)	665	519	76	706	547	0	156	839	591	51	1606	514
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	665	519	76	706	547	0	156	839	591	51	1606	514
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	731	645	289	731	645	289	172	1876	584	92	1757	547
Arrive On Green	0.21	0.18	0.18	0.21	0.18	0.00	0.05	0.37	0.37	0.03	0.35	0.35
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	665	519	76	706	547	0	156	839	591	51	1606	514
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	15.1	11.2	3.3	16.3	12.0	0.0	3.6	9.9	29.5	1.2	24.2	25.2
Cycle Q Clear(g_c), s	15.1	11.2	3.3	16.3	12.0	0.0	3.6	9.9	29.5	1.2	24.2	25.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	731	645	289	731	645	289	172	1876	584	92	1757	547
V/C Ratio(X)	0.91	0.80	0.26	0.97	0.85	0.00	0.91	0.45	1.01	0.55	0.91	0.94
Avail Cap(c_a), veh/h	731	664	297	731	664	297	172	1876	584	129	1780	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	31.0	27.7	30.8	31.3	0.0	37.4	18.7	24.9	38.1	24.7	25.0
Incr Delay (d2), s/veh	15.4	7.0	0.5	25.0	9.9	0.0	42.9	0.2	40.3	5.1	7.7	24.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	6.0	1.5	10.2	6.7	0.0	2.7	4.6	19.1	0.6	12.4	14.4
LnGrp Delay(d),s/veh	45.7	38.0	28.2	55.8	41.1	0.0	80.3	18.9	65.1	43.2	32.3	49.0
LnGrp LOS	D	D	C	E	D		F	B	F	D	C	D
Approach Vol, veh/h		1260			1253			1586			2171	
Approach Delay, s/veh		41.5			49.4			42.2			36.5	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	33.5	21.0	18.6	8.0	31.6	21.0	18.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	29.0	17.0	15.0	4.0	28.0	17.0	15.0
Max Q Clear Time (g_c+I1), s	3.2	31.5	18.3	13.2	5.6	27.2	17.1	14.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.0	0.5	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	608	102	54	705	24	42	3	30	20	2	81
Future Volume (veh/h)	74	608	102	54	705	24	42	3	30	20	2	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	74	608	102	54	705	24	42	3	30	20	2	81
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	89	1062	178	63	1171	40	51	236	200	27	210	179
Arrive On Green	0.05	0.35	0.35	0.04	0.34	0.34	0.03	0.13	0.13	0.02	0.11	0.11
Sat Flow, veh/h	1757	3005	503	1757	3459	118	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	74	354	356	54	357	372	42	3	30	20	2	81
Grp Sat Flow(s),veh/h/ln	1757	1752	1756	1757	1752	1824	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.4	5.6	5.6	1.0	5.8	5.8	0.8	0.0	0.6	0.4	0.0	1.7
Cycle Q Clear(g_c), s	1.4	5.6	5.6	1.0	5.8	5.8	0.8	0.0	0.6	0.4	0.0	1.7
Prop In Lane	1.00		0.29	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	89	619	621	63	593	617	51	236	200	27	210	179
V/C Ratio(X)	0.83	0.57	0.57	0.86	0.60	0.60	0.83	0.01	0.15	0.75	0.01	0.45
Avail Cap(c_a), veh/h	205	769	770	205	769	800	154	917	779	154	917	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.1	9.0	9.0	16.4	9.4	9.4	16.5	13.0	13.3	16.8	13.4	14.2
Incr Delay (d2), s/veh	17.4	0.8	0.8	26.3	1.0	0.9	27.3	0.0	0.3	33.7	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.8	2.8	1.0	2.9	3.1	0.8	0.0	0.3	0.4	0.0	0.8
LnGrp Delay(d),s/veh	33.5	9.8	9.8	42.7	10.4	10.3	43.9	13.1	13.6	50.4	13.5	15.9
LnGrp LOS	C	A	A	D	B	B	D	B	B	D	B	B
Approach Vol, veh/h		784			783			75			103	
Approach Delay, s/veh		12.0			12.6			30.5			22.6	
Approach LOS		B			B			C			C	

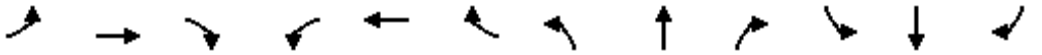
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.5	8.4	5.2	16.1	5.0	7.9	5.7	15.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	17.0	4.0	15.0	3.0	17.0	4.0	15.0
Max Q Clear Time (g_c+I1), s	2.4	2.6	3.0	7.6	2.8	3.7	3.4	7.8
Green Ext Time (p_c), s	0.0	0.3	0.0	3.8	0.0	0.2	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	1796	72	45	1577	67	149	8	0	94	10	80
Future Volume (veh/h)	84	1796	72	45	1577	67	149	8	0	94	10	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	84	1796	72	45	1577	67	149	8	0	94	10	80
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	106	2316	93	54	2162	92	188	190	0	158	158	134
Arrive On Green	0.06	0.47	0.47	0.03	0.44	0.44	0.11	0.10	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1757	4968	199	1757	4954	210	1757	1845	0	1757	1845	1568
Grp Volume(v), veh/h	84	1213	655	45	1069	575	149	8	0	94	10	80
Grp Sat Flow(s),veh/h/ln	1757	1679	1810	1757	1679	1808	1757	1845	0	1757	1845	1568
Q Serve(g_s), s	2.4	15.6	15.6	1.3	13.6	13.6	4.3	0.2	0.0	2.7	0.3	2.5
Cycle Q Clear(g_c), s	2.4	15.6	15.6	1.3	13.6	13.6	4.3	0.2	0.0	2.7	0.3	2.5
Prop In Lane	1.00		0.11	1.00		0.12	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	1565	843	54	1465	789	188	190	0	158	158	134
V/C Ratio(X)	0.79	0.78	0.78	0.84	0.73	0.73	0.79	0.04	0.00	0.60	0.06	0.60
Avail Cap(c_a), veh/h	136	1565	843	102	1499	807	205	609	0	171	573	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	11.5	11.5	24.8	12.0	12.0	22.4	20.8	0.0	22.6	21.7	22.7
Incr Delay (d2), s/veh	21.3	2.5	4.6	27.4	1.8	3.3	17.6	0.1	0.0	4.9	0.2	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	7.6	8.7	1.0	6.6	7.4	3.0	0.1	0.0	1.5	0.1	1.2
LnGrp Delay(d),s/veh	45.2	14.0	16.1	52.2	13.8	15.3	40.0	20.9	0.0	27.4	21.8	26.9
LnGrp LOS	D	B	B	D	B	B	D	C		C	C	C
Approach Vol, veh/h		1952			1689			157			184	
Approach Delay, s/veh		16.1			15.3			39.0			26.9	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	9.3	5.6	28.0	9.5	8.4	7.1	26.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	17.0	3.0	24.0	6.0	16.0	4.0	23.0
Max Q Clear Time (g_c+I1), s	4.7	2.2	3.3	17.6	6.3	4.5	4.4	15.6
Green Ext Time (p_c), s	0.0	0.2	0.0	6.0	0.0	0.2	0.0	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.2
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	1209	1135	30	816	20	977	75	75	40	97	206
Future Volume (veh/h)	132	1209	1135	30	816	20	977	75	75	40	97	206
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	132	1209	1135	30	816	20	977	75	75	40	97	206
Adj No. of Lanes	1	3	1	2	2	1	2	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	162	1945	606	58	1090	488	970	748	636	50	276	234
Arrive On Green	0.09	0.39	0.39	0.02	0.31	0.31	0.28	0.41	0.41	0.03	0.15	0.15
Sat Flow, veh/h	1757	5036	1568	3408	3505	1568	3408	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	132	1209	1135	30	816	20	977	75	75	40	97	206
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1752	1568	1704	1845	1568	1757	1845	1568
Q Serve(g_s), s	7.3	19.1	38.0	0.9	20.6	0.9	28.0	2.5	2.9	2.2	4.6	12.7
Cycle Q Clear(g_c), s	7.3	19.1	38.0	0.9	20.6	0.9	28.0	2.5	2.9	2.2	4.6	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	162	1945	606	58	1090	488	970	748	636	50	276	234
V/C Ratio(X)	0.81	0.62	1.87	0.52	0.75	0.04	1.01	0.10	0.12	0.80	0.35	0.88
Avail Cap(c_a), veh/h	196	1945	606	104	1090	488	970	748	636	107	281	239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	24.4	30.2	47.9	30.4	23.6	35.2	18.1	18.3	47.5	37.6	41.0
Incr Delay (d2), s/veh	19.3	0.6	399.6	6.9	2.9	0.0	30.7	0.1	0.1	23.9	0.8	28.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	9.0	83.6	0.5	10.4	0.4	17.2	1.3	1.3	1.4	2.4	7.3
LnGrp Delay(d),s/veh	63.1	25.0	429.8	54.9	33.3	23.7	65.9	18.2	18.3	71.4	38.3	69.6
LnGrp LOS	E	C	F	D	C	C	F	B	B	E	D	E
Approach Vol, veh/h		2476			866			1127			343	
Approach Delay, s/veh		212.6			33.9			59.5			61.0	
Approach LOS		F			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	43.9	5.7	42.0	32.0	18.7	13.1	34.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	37.0	3.0	38.0	28.0	15.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	4.2	4.9	2.9	40.0	30.0	14.7	9.3	22.6
Green Ext Time (p_c), s	0.0	1.7	0.0	0.0	0.0	0.0	0.1	6.8

Intersection Summary		
HCM 2010 Ctrl Delay		133.8
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	540	96	69	394	190	63	232	24	262	453	215
Future Volume (veh/h)	241	540	96	69	394	190	63	232	24	262	453	215
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	241	540	96	69	394	190	63	232	24	262	453	215
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	373	1067	477	132	819	367	124	625	280	403	912	408
Arrive On Green	0.11	0.30	0.30	0.04	0.23	0.23	0.04	0.18	0.18	0.12	0.26	0.26
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	241	540	96	69	394	190	63	232	24	262	453	215
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.0	5.6	2.0	0.9	4.3	4.7	0.8	2.6	0.6	3.3	4.9	5.2
Cycle Q Clear(g_c), s	3.0	5.6	2.0	0.9	4.3	4.7	0.8	2.6	0.6	3.3	4.9	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	373	1067	477	132	819	367	124	625	280	403	912	408
V/C Ratio(X)	0.65	0.51	0.20	0.52	0.48	0.52	0.51	0.37	0.09	0.65	0.50	0.53
Avail Cap(c_a), veh/h	460	1421	635	230	1184	530	230	1263	565	537	1578	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	12.7	11.4	20.9	14.7	14.8	21.0	16.1	15.2	18.7	14.0	14.1
Incr Delay (d2), s/veh	2.2	0.4	0.2	3.2	0.4	1.1	3.2	0.4	0.1	1.8	0.4	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.8	0.9	0.5	2.1	2.1	0.4	1.3	0.3	1.6	2.4	2.4
LnGrp Delay(d),s/veh	21.2	13.1	11.6	24.1	15.1	16.0	24.2	16.4	15.4	20.5	14.4	15.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		877			653			319			930	
Approach Delay, s/veh		15.1			16.3			17.9			16.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	11.9	5.7	17.5	5.6	15.6	8.9	14.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	3.0	18.0	3.0	20.0	6.0	15.0
Max Q Clear Time (g_c+I1), s	5.3	4.6	2.9	7.6	2.8	7.2	5.0	6.7
Green Ext Time (p_c), s	0.2	3.3	0.0	4.2	0.0	3.5	0.1	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	1690	85	144	1471	5	25	962	166	10	949	190
Future Volume (veh/h)	192	1690	85	144	1471	5	25	962	166	10	949	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	192	1690	85	144	1471	5	25	962	166	10	949	190
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	255	1808	563	204	1732	539	76	1162	520	35	1120	501
Arrive On Green	0.07	0.36	0.36	0.06	0.34	0.34	0.02	0.33	0.33	0.01	0.32	0.32
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	192	1690	85	144	1471	5	25	962	166	10	949	190
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.7	21.6	2.5	2.8	18.1	0.1	0.5	16.9	5.3	0.2	16.9	6.3
Cycle Q Clear(g_c), s	3.7	21.6	2.5	2.8	18.1	0.1	0.5	16.9	5.3	0.2	16.9	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	255	1808	563	204	1732	539	76	1162	520	35	1120	501
V/C Ratio(X)	0.75	0.93	0.15	0.71	0.85	0.01	0.33	0.83	0.32	0.29	0.85	0.38
Avail Cap(c_a), veh/h	255	1809	563	204	1733	540	204	1162	520	204	1154	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	20.7	14.5	30.8	20.3	14.4	32.2	20.6	16.7	32.8	21.2	17.6
Incr Delay (d2), s/veh	11.9	9.6	0.1	10.6	4.2	0.0	2.5	5.1	0.4	4.5	5.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	11.6	1.1	1.6	9.0	0.1	0.3	9.0	2.3	0.1	9.1	2.8
LnGrp Delay(d),s/veh	42.2	30.3	14.6	41.4	24.5	14.4	34.7	25.7	17.0	37.4	27.2	18.1
LnGrp LOS	D	C	B	D	C	B	C	C	B	D	C	B
Approach Vol, veh/h		1967			1620			1153			1149	
Approach Delay, s/veh		30.8			26.0			24.6			25.7	
Approach LOS		C			C			C			C	

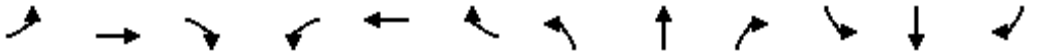
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	26.2	8.0	28.0	5.5	25.4	9.0	27.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	22.0	4.0	24.0	4.0	22.0	5.0	23.0
Max Q Clear Time (g_c+I1), s	2.2	18.9	4.8	23.6	2.5	18.9	5.7	20.1
Green Ext Time (p_c), s	0.0	2.6	0.0	0.4	0.0	2.5	0.0	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	27.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	1077	0	613	981	0	0	155	558	0	166	206
Future Volume (veh/h)	158	1077	0	613	981	0	0	155	558	0	166	206
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	158	1077	0	613	981	0	0	155	558	0	166	206
Adj No. of Lanes	2	2	0	2	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	249	1224	0	708	1696	0	3	910	407	3	910	407
Arrive On Green	0.07	0.35	0.00	0.21	0.48	0.00	0.00	0.26	0.26	0.00	0.26	0.26
Sat Flow, veh/h	3408	3597	0	3408	3597	0	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	158	1077	0	613	981	0	0	155	558	0	166	206
Grp Sat Flow(s),veh/h/ln	1704	1752	0	1704	1752	0	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	2.9	18.9	0.0	11.4	13.1	0.0	0.0	2.2	17.0	0.0	2.4	7.3
Cycle Q Clear(g_c), s	2.9	18.9	0.0	11.4	13.1	0.0	0.0	2.2	17.0	0.0	2.4	7.3
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	1224	0	708	1696	0	3	910	407	3	910	407
V/C Ratio(X)	0.63	0.88	0.00	0.87	0.58	0.00	0.00	0.17	1.37	0.00	0.18	0.51
Avail Cap(c_a), veh/h	365	1285	0	729	1696	0	107	910	407	107	910	407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	20.0	0.0	25.0	12.1	0.0	0.0	18.8	24.2	0.0	18.8	20.6
Incr Delay (d2), s/veh	2.7	7.1	0.0	10.5	0.5	0.0	0.0	0.1	181.5	0.0	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	10.3	0.0	6.4	6.4	0.0	0.0	1.1	27.8	0.0	1.2	3.3
LnGrp Delay(d),s/veh	32.2	27.1	0.0	35.5	12.6	0.0	0.0	18.8	205.8	0.0	18.9	21.7
LnGrp LOS	C	C		D	B			B	F		B	C
Approach Vol, veh/h		1235			1594			713			372	
Approach Delay, s/veh		27.8			21.4			165.1			20.4	
Approach LOS		C			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	21.0	17.6	26.8	0.0	21.0	8.8	35.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	17.0	14.0	24.0	4.0	17.0	7.0	31.0
Max Q Clear Time (g_c+I1), s	0.0	19.0	13.4	20.9	0.0	9.3	4.9	15.1
Green Ext Time (p_c), s	0.0	0.0	0.2	2.0	0.0	2.9	0.1	9.9

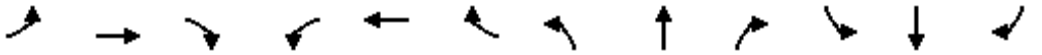
Intersection Summary	
HCM 2010 Ctrl Delay	49.5
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	240	0	1216	162	186	0	565	1167	121	425	36
Future Volume (veh/h)	99	240	0	1216	162	186	0	565	1167	121	425	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	99	240	0	1216	162	186	0	565	1167	121	425	36
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	63	211	179	1217	804	683	1	1302	582	146	1552	694
Arrive On Green	0.04	0.11	0.00	0.36	0.44	0.44	0.00	0.37	0.37	0.04	0.44	0.44
Sat Flow, veh/h	1757	1845	1568	3408	1845	1568	1757	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	99	240	0	1216	162	186	0	565	1167	121	425	36
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	1845	1568	1757	1752	1568	1704	1752	1568
Q Serve(g_s), s	5.0	16.0	0.0	49.9	7.6	10.6	0.0	16.9	52.0	4.9	10.8	1.8
Cycle Q Clear(g_c), s	5.0	16.0	0.0	49.9	7.6	10.6	0.0	16.9	52.0	4.9	10.8	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	63	211	179	1217	804	683	1	1302	582	146	1552	694
V/C Ratio(X)	1.58	1.14	0.00	1.00	0.20	0.27	0.00	0.43	2.00	0.83	0.27	0.05
Avail Cap(c_a), veh/h	63	211	179	1217	804	683	50	1302	582	146	1552	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	62.0	0.0	45.0	24.4	25.3	0.0	33.0	44.0	66.5	24.7	22.2
Incr Delay (d2), s/veh	323.1	104.2	0.0	25.5	0.1	0.2	0.0	0.2	457.8	31.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	14.2	0.0	27.8	3.9	4.6	0.0	8.2	96.5	2.9	5.2	0.8
LnGrp Delay(d),s/veh	390.6	166.2	0.0	70.5	24.6	25.5	0.0	33.2	501.8	97.5	24.8	22.3
LnGrp LOS	F	F		E	C	C		C	F	F	C	C
Approach Vol, veh/h		339			1564			1732			582	
Approach Delay, s/veh		231.8			60.4			348.9			39.8	
Approach LOS		F			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	56.0	54.0	20.0	0.0	66.0	9.0	65.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	52.0	50.0	16.0	4.0	54.0	5.0	61.0
Max Q Clear Time (g_c+I1), s	6.9	54.0	51.9	18.0	0.0	12.8	7.0	12.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	17.8	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	189.8
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	1	6	4	1	15	7	197	7	38	249	73
Future Volume (veh/h)	99	1	6	4	1	15	7	197	7	38	249	73
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	99	1	6	4	1	15	7	197	7	38	249	73
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	119	157	134	7	38	32	10	814	29	49	694	199
Arrive On Green	0.07	0.09	0.09	0.00	0.02	0.02	0.01	0.24	0.24	0.03	0.26	0.26
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3453	122	1757	2689	771
Grp Volume(v), veh/h	99	1	6	4	1	15	7	100	104	38	160	162
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1823	1757	1752	1709
Q Serve(g_s), s	1.4	0.0	0.1	0.1	0.0	0.2	0.1	1.1	1.1	0.5	1.8	1.9
Cycle Q Clear(g_c), s	1.4	0.0	0.1	0.1	0.0	0.2	0.1	1.1	1.1	0.5	1.8	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.45
Lane Grp Cap(c), veh/h	119	157	134	7	38	32	10	413	430	49	452	441
V/C Ratio(X)	0.83	0.01	0.04	0.56	0.03	0.47	0.70	0.24	0.24	0.78	0.35	0.37
Avail Cap(c_a), veh/h	356	1270	1079	213	1120	952	213	1135	1181	213	1135	1107
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	10.3	10.4	12.3	11.9	12.0	12.3	7.6	7.7	11.9	7.5	7.5
Incr Delay (d2), s/veh	13.5	0.0	0.1	54.9	0.3	10.1	62.0	0.3	0.3	22.5	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.1	0.0	0.2	0.2	0.6	0.6	0.5	1.0	1.0
LnGrp Delay(d),s/veh	24.8	10.4	10.5	67.2	12.1	22.1	74.3	7.9	7.9	34.4	8.0	8.0
LnGrp LOS	C	B	B	E	B	C	E	A	A	C	A	A
Approach Vol, veh/h		106			20			211			360	
Approach Delay, s/veh		23.9			30.6			10.1			10.8	
Approach LOS		C			C			B			B	

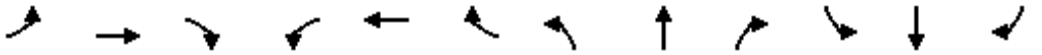
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	9.8	4.1	6.1	4.1	10.4	5.7	4.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	16.0	3.0	17.0	3.0	16.0	5.0	15.0
Max Q Clear Time (g_c+I1), s	2.5	3.1	2.1	2.1	2.1	3.9	3.4	2.2
Green Ext Time (p_c), s	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	7	0	0	0	8	372	0	0	525	17
Future Volume (veh/h)	5	0	7	0	0	0	8	372	0	0	525	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	5	0	7	0	0	0	8	372	0	0	525	17
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	8	18	15	8	9	7	11	2139	0	8	1434	46
Arrive On Green	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.61	0.00	0.00	0.41	0.41
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3597	0	1757	3465	112
Grp Volume(v), veh/h	5	0	7	0	0	0	8	372	0	0	265	277
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	0	1757	1752	1825
Q Serve(g_s), s	0.1	0.0	0.1	0.0	0.0	0.0	0.1	1.0	0.0	0.0	2.2	2.2
Cycle Q Clear(g_c), s	0.1	0.0	0.1	0.0	0.0	0.0	0.1	1.0	0.0	0.0	2.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.06
Lane Grp Cap(c), veh/h	8	18	15	8	9	7	11	2139	0	8	725	755
V/C Ratio(X)	0.60	0.00	0.46	0.00	0.00	0.00	0.70	0.17	0.00	0.00	0.37	0.37
Avail Cap(c_a), veh/h	417	1490	1266	250	1314	1117	250	2664	0	250	1332	1387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	10.5	0.0	10.4	0.0	0.0	0.0	10.4	1.8	0.0	0.0	4.3	4.3
Incr Delay (d2), s/veh	53.7	0.0	20.4	0.0	0.0	0.0	55.9	0.0	0.0	0.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.1	0.0	0.0	0.0	0.2	0.5	0.0	0.0	1.1	1.1
LnGrp Delay(d),s/veh	64.1	0.0	30.7	0.0	0.0	0.0	66.3	1.8	0.0	0.0	4.6	4.6
LnGrp LOS	E		C				E	A			A	A
Approach Vol, veh/h		12			0			380			542	
Approach Delay, s/veh		44.7			0.0			3.2			4.6	
Approach LOS		D						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	16.8	0.0	4.2	4.1	12.7	4.1	0.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	16.0	3.0	17.0	3.0	16.0	5.0	15.0
Max Q Clear Time (g_c+I1), s	0.0	3.0	0.0	2.1	2.1	4.2	2.1	0.0
Green Ext Time (p_c), s	0.0	4.8	0.0	0.0	0.0	4.5	0.0	0.0

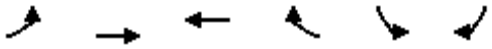
Intersection Summary	
HCM 2010 Ctrl Delay	4.5
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	11	28	102	25	117	15	299	63	62	412	45
Future Volume (veh/h)	25	11	28	102	25	117	15	299	63	62	412	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	25	11	28	102	25	117	15	299	63	62	412	45
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	33	157	133	126	254	216	21	786	163	72	961	104
Arrive On Green	0.02	0.08	0.08	0.07	0.14	0.14	0.01	0.27	0.27	0.04	0.30	0.30
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	2890	601	1757	3189	347
Grp Volume(v), veh/h	25	11	28	102	25	117	15	180	182	62	225	232
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1739	1757	1752	1784
Q Serve(g_s), s	0.4	0.2	0.5	1.7	0.4	2.1	0.3	2.5	2.6	1.1	3.1	3.1
Cycle Q Clear(g_c), s	0.4	0.2	0.5	1.7	0.4	2.1	0.3	2.5	2.6	1.1	3.1	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.35	1.00		0.19
Lane Grp Cap(c), veh/h	33	157	133	126	254	216	21	477	473	72	528	538
V/C Ratio(X)	0.76	0.07	0.21	0.81	0.10	0.54	0.73	0.38	0.39	0.86	0.43	0.43
Avail Cap(c_a), veh/h	175	917	780	291	1040	884	175	872	865	233	930	946
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	12.7	12.9	13.8	11.4	12.1	14.9	8.9	8.9	14.4	8.4	8.5
Incr Delay (d2), s/veh	29.0	0.2	0.8	11.8	0.2	2.1	38.2	0.5	0.5	23.6	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.2	1.2	0.2	1.0	0.3	1.3	1.3	1.0	1.6	1.6
LnGrp Delay(d),s/veh	43.7	12.9	13.6	25.6	11.5	14.2	53.1	9.4	9.4	37.9	9.0	9.0
LnGrp LOS	D	B	B	C	B	B	D	A	A	D	A	A
Approach Vol, veh/h		64			244			377			519	
Approach Delay, s/veh		25.3			18.7			11.2			12.5	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.2	12.2	6.2	6.6	4.4	13.1	4.6	8.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	15.0	5.0	15.0	3.0	16.0	3.0	17.0
Max Q Clear Time (g_c+I1), s	3.1	4.6	3.7	2.5	2.3	5.1	2.4	4.1
Green Ext Time (p_c), s	0.0	3.6	0.0	0.5	0.0	3.7	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	160	918	518	53	27	138
Future Volume (veh/h)	160	918	518	53	27	138
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	160	918	518	53	27	138
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	204	2147	1170	119	215	192
Arrive On Green	0.12	0.61	0.36	0.36	0.12	0.12
Sat Flow, veh/h	1757	3597	3304	328	1757	1568
Grp Volume(v), veh/h	160	918	282	289	27	138
Grp Sat Flow(s),veh/h/ln	1757	1752	1752	1787	1757	1568
Q Serve(g_s), s	2.7	4.2	3.7	3.7	0.4	2.6
Cycle Q Clear(g_c), s	2.7	4.2	3.7	3.7	0.4	2.6
Prop In Lane	1.00			0.18	1.00	1.00
Lane Grp Cap(c), veh/h	204	2147	638	651	215	192
V/C Ratio(X)	0.78	0.43	0.44	0.44	0.13	0.72
Avail Cap(c_a), veh/h	349	3017	928	947	931	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.0	3.1	7.3	7.3	11.8	12.8
Incr Delay (d2), s/veh	6.5	0.1	0.5	0.5	0.3	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.0	1.8	1.9	0.2	2.4
LnGrp Delay(d),s/veh	19.5	3.2	7.8	7.8	12.1	17.7
LnGrp LOS	B	A	A	A	B	B
Approach Vol, veh/h		1078	571		165	
Approach Delay, s/veh		5.6	7.8		16.8	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				22.5		7.7	7.5	15.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				26.0		16.0	6.0	16.0
Max Q Clear Time (g_c+I1), s				6.2		4.6	4.7	5.7
Green Ext Time (p_c), s				7.5		0.4	0.1	5.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.3
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	10	308	32	20	550
Future Volume (veh/h)	21	10	308	32	20	550
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	21	10	308	32	20	550
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	56	50	1127	116	37	2002
Arrive On Green	0.03	0.03	0.35	0.35	0.02	0.57
Sat Flow, veh/h	1757	1568	3300	331	1757	3597
Grp Volume(v), veh/h	21	10	167	173	20	550
Grp Sat Flow(s),veh/h/ln	1757	1568	1752	1786	1757	1752
Q Serve(g_s), s	0.2	0.1	1.4	1.4	0.2	1.6
Cycle Q Clear(g_c), s	0.2	0.1	1.4	1.4	0.2	1.6
Prop In Lane	1.00	1.00		0.19	1.00	
Lane Grp Cap(c), veh/h	56	50	616	628	37	2002
V/C Ratio(X)	0.38	0.20	0.27	0.28	0.54	0.27
Avail Cap(c_a), veh/h	1396	1246	1566	1597	349	4525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.6	9.5	4.7	4.7	9.8	2.2
Incr Delay (d2), s/veh	4.2	2.0	0.2	0.2	11.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.7	0.7	0.2	0.8
LnGrp Delay(d),s/veh	13.7	11.5	4.9	4.9	21.5	2.3
LnGrp LOS	B	B	A	A	C	A
Approach Vol, veh/h	31		340			570
Approach Delay, s/veh	13.0		4.9			2.9
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	4.4	11.1				15.5		4.6
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	4.0	18.0				26.0		16.0
Max Q Clear Time (g_c+I1), s	2.2	3.4				3.6		2.2
Green Ext Time (p_c), s	0.0	3.7				4.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	4.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	14	65	57	12	32	52	193	96	55	389	127
Future Volume (veh/h)	115	14	65	57	12	32	52	193	96	55	389	127
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	115	14	65	57	12	32	52	193	96	55	389	127
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	146	245	208	87	183	156	81	630	301	85	719	232
Arrive On Green	0.08	0.13	0.13	0.05	0.10	0.10	0.05	0.27	0.27	0.05	0.28	0.28
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	2303	1100	1757	2608	841
Grp Volume(v), veh/h	115	14	65	57	12	32	52	145	144	55	260	256
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1651	1757	1752	1696
Q Serve(g_s), s	2.1	0.2	1.2	1.0	0.2	0.6	0.9	2.1	2.2	1.0	4.1	4.2
Cycle Q Clear(g_c), s	2.1	0.2	1.2	1.0	0.2	0.6	0.9	2.1	2.2	1.0	4.1	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.67	1.00		0.50
Lane Grp Cap(c), veh/h	146	245	208	87	183	156	81	479	451	85	483	467
V/C Ratio(X)	0.79	0.06	0.31	0.65	0.07	0.21	0.64	0.30	0.32	0.65	0.54	0.55
Avail Cap(c_a), veh/h	381	972	826	327	915	778	218	923	870	218	923	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	12.2	12.7	15.1	13.2	13.4	15.1	9.3	9.3	15.1	9.9	10.0
Incr Delay (d2), s/veh	9.1	0.1	0.8	8.0	0.1	0.6	8.1	0.4	0.4	8.1	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.1	0.6	0.7	0.1	0.3	0.6	1.1	1.1	0.7	2.1	2.1
LnGrp Delay(d),s/veh	23.6	12.3	13.5	23.1	13.3	14.0	23.3	9.6	9.7	23.2	10.9	11.0
LnGrp LOS	C	B	B	C	B	B	C	A	A	C	B	B
Approach Vol, veh/h		194			101			341			571	
Approach Delay, s/veh		19.4			19.1			11.8			12.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.6	12.8	5.6	8.3	5.5	12.9	6.7	7.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	17.0	6.0	17.0	4.0	17.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	3.0	4.2	3.0	3.2	2.9	6.2	4.1	2.6
Green Ext Time (p_c), s	0.0	2.9	0.0	0.3	0.0	2.7	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	6.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	0	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	307	65	310
Demand Flow Rate, veh/h	0	316	67	319
Vehicles Circulating, veh/h	333	67	0	70
Vehicles Exiting, veh/h	56	0	333	313
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	6.5	3.8	6.5
Approach LOS	-	A	A	A

Lane	Left	Left	Left
Designated Moves	LTR	LT	TR
Assumed Moves	LTR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	316	67	319
Cap Entry Lane, veh/h	1057	1130	1054
Entry HV Adj Factor	0.971	0.973	0.972
Flow Entry, veh/h	307	65	310
Cap Entry, veh/h	1026	1099	1024
V/C Ratio	0.299	0.059	0.303
Control Delay, s/veh	6.5	3.8	6.5
LOS	A	A	A
95th %tile Queue, veh	1	0	1

Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	0	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	156	0	77	322
Demand Flow Rate, veh/h	160	0	80	332
Vehicles Circulating, veh/h	332	69	370	0
Vehicles Exiting, veh/h	0	381	122	69
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.7	0.0	5.8	6.1
Approach LOS	A	-	A	A

Lane	Left	Left	Left
Designated Moves	LTR	TR	LT
Assumed Moves	LTR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	160	80	332
Cap Entry Lane, veh/h	811	780	1130
Entry HV Adj Factor	0.975	0.965	0.969
Flow Entry, veh/h	156	77	322
Cap Entry, veh/h	790	753	1095
V/C Ratio	0.197	0.102	0.294
Control Delay, s/veh	6.7	5.8	6.1
LOS	A	A	A
95th %tile Queue, veh	1	0	1

Intersection	
Intersection Delay, s/veh	24.2
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	0	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	0	201	1586	1486
Demand Flow Rate, veh/h	0	207	1634	1531
Vehicles Circulating, veh/h	1464	1634	0	376
Vehicles Exiting, veh/h	443	0	1464	1465
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	26.2	15.3	33.5
Approach LOS	-	D	C	D

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	207	768	866	720	811
Cap Entry Lane, veh/h	360	1130	1130	852	868
Entry HV Adj Factor	0.971	0.971	0.971	0.970	0.971
Flow Entry, veh/h	201	746	841	699	788
Cap Entry, veh/h	349	1097	1097	827	844
V/C Ratio	0.575	0.680	0.766	0.845	0.934
Control Delay, s/veh	26.2	13.3	17.0	27.3	38.9
LOS	D	B	C	D	E
95th %tile Queue, veh	3	6	8	10	14

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	2	0	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	352	0	1503	1422
Demand Flow Rate, veh/h	363	0	1548	1465
Vehicles Circulating, veh/h	1465	1633	238	0
Vehicles Exiting, veh/h	0	153	1590	1633
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	19.8	0.0	23.1	12.5
Approach LOS	C	-	C	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR
Assumed Moves	LT	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.471	0.529	0.470	0.530	0.470	0.530
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	171	192	728	820	689	776
Cap Entry Lane, veh/h	377	405	945	957	1130	1130
Entry HV Adj Factor	0.968	0.972	0.971	0.972	0.970	0.971
Flow Entry, veh/h	165	187	707	797	668	754
Cap Entry, veh/h	364	394	917	929	1096	1098
V/C Ratio	0.454	0.474	0.770	0.857	0.610	0.687
Control Delay, s/veh	20.1	19.5	19.6	26.3	11.3	13.6
LOS	C	C	C	D	B	B
95th %tile Queue, veh	2	2	8	11	4	6

Intersection	
Intersection Delay, s/veh	21.8
Intersection LOS	C

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	290	634	825
Demand Flow Rate, veh/h	299	653	850
Vehicles Circulating, veh/h	569	338	94
Vehicles Exiting, veh/h	422	606	774
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	13.1	25.1	22.2
Approach LOS	B	D	C

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	299	653	850
Cap Entry Lane, veh/h	640	806	1029
Entry HV Adj Factor	0.970	0.972	0.971
Flow Entry, veh/h	290	634	825
Cap Entry, veh/h	620	783	998
V/C Ratio	0.467	0.810	0.826
Control Delay, s/veh	13.1	25.1	22.2
LOS	B	D	C
95th %tile Queue, veh	2	9	10

Intersection	
Intersection Delay, s/veh	13.7
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	335	596	588
Demand Flow Rate, veh/h	345	614	605
Vehicles Circulating, veh/h	501	155	193
Vehicles Exiting, veh/h	268	644	653
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	13.3	13.4	14.3
Approach LOS	B	B	B

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	345	614	605
Cap Entry Lane, veh/h	685	968	932
Entry HV Adj Factor	0.971	0.971	0.972
Flow Entry, veh/h	335	596	588
Cap Entry, veh/h	665	940	905
V/C Ratio	0.504	0.634	0.649
Control Delay, s/veh	13.3	13.4	14.3
LOS	B	B	B
95th %tile Queue, veh	3	5	5

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	252	652	625
Demand Flow Rate, veh/h	260	672	643
Vehicles Circulating, veh/h	481	112	127
Vehicles Exiting, veh/h	303	658	614
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.3	14.0	13.5
Approach LOS	B	B	B

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	260	672	643
Cap Entry Lane, veh/h	698	1010	995
Entry HV Adj Factor	0.969	0.970	0.971
Flow Entry, veh/h	252	652	625
Cap Entry, veh/h	677	980	967
V/C Ratio	0.372	0.665	0.646
Control Delay, s/veh	10.3	14.0	13.5
LOS	B	B	B
95th %tile Queue, veh	2	5	5

Intersection	
Intersection Delay, s/veh	68.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	356	17	2	621	4	10	8	2	61	11	402
Future Vol, veh/h	62	356	17	2	621	4	10	8	2	61	11	402
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	3	3	3	3	3	3
Mvmt Flow	62	356	17	2	621	4	10	8	2	61	11	402
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	34.8	118.7	12.9	36.4
HCM LOS	D	F	B	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	14%	0%	13%
Vol Thru, %	40%	82%	99%	2%
Vol Right, %	10%	4%	1%	85%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	435	627	474
LT Vol	10	62	2	61
Through Vol	8	356	621	11
RT Vol	2	17	4	402
Lane Flow Rate	20	435	627	474
Geometry Grp	1	1	1	1
Degree of Util (X)	0.049	0.817	1.17	0.843
Departure Headway (Hd)	9.433	7.172	6.715	6.817
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	382	509	545	536
Service Time	7.433	5.172	4.718	4.817
HCM Lane V/C Ratio	0.052	0.855	1.15	0.884
HCM Control Delay	12.9	34.8	118.7	36.4
HCM Lane LOS	B	D	F	E
HCM 95th-tile Q	0.2	7.9	22.1	8.7

Intersection	
Intersection Delay, s/veh	108
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	3	22	0	1	1	14	285	1	1	680	325
Future Vol, veh/h	97	3	22	0	1	1	14	285	1	1	680	325
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	97	3	22	0	1	1	14	285	1	1	680	325
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.9	10.1	12.8	148.2
HCM LOS	B	B	B	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	80%	0%	0%
Vol Thru, %	95%	2%	50%	68%
Vol Right, %	0%	18%	50%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	300	122	2	1006
LT Vol	14	97	0	1
Through Vol	285	3	1	680
RT Vol	1	22	1	325
Lane Flow Rate	300	122	2	1006
Geometry Grp	1	1	1	1
Degree of Util (X)	0.437	0.217	0.004	1.271
Departure Headway (Hd)	5.574	6.978	7.065	4.55
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	651	517	510	795
Service Time	3.574	4.978	5.065	2.595
HCM Lane V/C Ratio	0.461	0.236	0.004	1.265
HCM Control Delay	12.8	11.9	10.1	148.2
HCM Lane LOS	B	B	B	F
HCM 95th-tile Q	2.2	0.8	0	36.7

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	288	0	103	0	19	77	195	136	0
Future Vol, veh/h	0	0	0	288	0	103	0	19	77	195	136	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	288	0	103	0	19	77	195	136	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	0	14	9	11.2
HCM LOS	-	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	74%	100%	0%
Vol Thru, %	20%	100%	0%	0%	100%
Vol Right, %	80%	0%	26%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	0	391	195	136
LT Vol	0	0	288	195	0
Through Vol	19	0	0	0	136
RT Vol	77	0	103	0	0
Lane Flow Rate	96	0	391	195	136
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.137	0	0.544	0.339	0.217
Departure Headway (Hd)	5.151	5.73	5.012	6.262	5.756
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	700	0	712	577	627
Service Time	3.157	3.749	3.093	3.965	3.459
HCM Lane V/C Ratio	0.137	0	0.549	0.338	0.217
HCM Control Delay	9	8.7	14	12.1	10
HCM Lane LOS	A	N	B	B	A
HCM 95th-tile Q	0.5	0	3.3	1.5	0.8

Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	25	0	12	1	333	6	190	355	0
Future Vol, veh/h	0	0	0	25	0	12	1	333	6	190	355	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	20	20	20	5	5	5	6	6	6
Mvmt Flow	0	0	0	25	0	12	1	333	6	190	355	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	9.6	11.3	17
HCM LOS	-	A	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	68%	35%
Vol Thru, %	98%	100%	0%	65%
Vol Right, %	2%	0%	32%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	340	0	37	545
LT Vol	1	0	25	190
Through Vol	333	0	0	355
RT Vol	6	0	12	0
Lane Flow Rate	340	0	37	545
Geometry Grp	1	1	1	1
Degree of Util (X)	0.44	0	0.063	0.688
Departure Headway (Hd)	4.66	5.977	6.113	4.547
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	772	0	583	796
Service Time	2.691	4.056	4.182	2.575
HCM Lane V/C Ratio	0.44	0	0.063	0.685
HCM Control Delay	11.3	9.1	9.6	17
HCM Lane LOS	B	N	A	C
HCM 95th-tile Q	2.3	0	0.2	5.6

Intersection	
Intersection Delay, s/veh	82.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	151	52	19	288	3	68	214	9	18	512	135
Future Vol, veh/h	36	151	52	19	288	3	68	214	9	18	512	135
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	3	3	3
Mvmt Flow	36	151	52	19	288	3	68	214	9	18	512	135
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	20.4	26	23.2	156.5
HCM LOS	C	D	C	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	15%	6%	3%
Vol Thru, %	74%	63%	93%	77%
Vol Right, %	3%	22%	1%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	291	239	310	665
LT Vol	68	36	19	18
Through Vol	214	151	288	512
RT Vol	9	52	3	135
Lane Flow Rate	291	239	310	665
Geometry Grp	1	1	1	1
Degree of Util (X)	0.611	0.518	0.657	1.266
Departure Headway (Hd)	8.184	8.583	8.361	6.853
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	445	423	434	532
Service Time	6.184	6.583	6.361	4.922
HCM Lane V/C Ratio	0.654	0.565	0.714	1.25
HCM Control Delay	23.2	20.4	26	156.5
HCM Lane LOS	C	C	D	F
HCM 95th-tile Q	4	2.9	4.6	26.6

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	93	859	95	255	102
Future Vol, veh/h	66	93	859	95	255	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	66	93	859	95	255	102

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1468	477	0	0	954	0
Stage 1	907	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	116	529	-	-	710	-
Stage 1	349	-	-	-	-	-
Stage 2	529	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	74	529	-	-	710	-
Mov Cap-2 Maneuver	191	-	-	-	-	-
Stage 1	349	-	-	-	-	-
Stage 2	339	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.7	0	9.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	191	529	710	-
HCM Lane V/C Ratio	-	-	0.346	0.176	0.359	-
HCM Control Delay (s)	-	-	33.5	13.3	12.9	-
HCM Lane LOS	-	-	D	B	B	-
HCM 95th %tile Q(veh)	-	-	1.4	0.6	1.6	-

Intersection	
Int Delay, s/veh	10.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	299	32	317	158	22	179
Future Vol, veh/h	299	32	317	158	22	179
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	299	32	317	158	22	179

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	619	396	0	0	475	0
Stage 1	396	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.14	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.236	-
Pot Cap-1 Maneuver	451	651	-	-	1077	-
Stage 1	678	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	441	651	-	-	1077	-
Mov Cap-2 Maneuver	441	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	793	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.3	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	455	1077	-
HCM Lane V/C Ratio	-	-	0.727	0.02	-
HCM Control Delay (s)	-	-	31.3	8.4	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	5.8	0.1	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	2302	2106	25	14	30
Future Vol, veh/h	83	2302	2106	25	14	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	83	2302	2106	25	14	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2131	0	-	0	3436	1066
Stage 1	-	-	-	-	2119	-
Stage 2	-	-	-	-	1317	-
Critical Hdwy	4.22	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.26	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	238	-	-	-	~ 5	217
Stage 1	-	-	-	-	77	-
Stage 2	-	-	-	-	213	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	238	-	-	-	~ 3	217
Mov Cap-2 Maneuver	-	-	-	-	46	-
Stage 1	-	-	-	-	77	-
Stage 2	-	-	-	-	139	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	67.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	238	-	-	-	99
HCM Lane V/C Ratio	0.349	-	-	-	0.444
HCM Control Delay (s)	28	-	-	-	67.7
HCM Lane LOS	D	-	-	-	F
HCM 95th %tile Q(veh)	1.5	-	-	-	1.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	2	0	2	0	69	6	1	466	4
Future Vol, veh/h	2	0	1	2	0	2	0	69	6	1	466	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	0	1	2	0	2	0	69	6	1	466	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	543	545	468	543	544	72	470	0	0	75	0	0
Stage 1	470	470	-	72	72	-	-	-	-	-	-	-
Stage 2	73	75	-	471	472	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	449	444	593	449	445	987	1086	-	-	1518	-	-
Stage 1	572	558	-	935	833	-	-	-	-	-	-	-
Stage 2	934	831	-	571	557	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	448	444	593	448	445	987	1086	-	-	1518	-	-
Mov Cap-2 Maneuver	448	444	-	448	445	-	-	-	-	-	-	-
Stage 1	572	557	-	935	833	-	-	-	-	-	-	-
Stage 2	932	831	-	569	556	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	10.9	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1086	-	-	488	616	1518	-	-
HCM Lane V/C Ratio	-	-	-	0.006	0.006	0.001	-	-
HCM Control Delay (s)	0	-	-	12.4	10.9	7.4	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	67	34	33	707	789	132
Future Vol, veh/h	67	34	33	707	789	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	67	34	33	707	789	132

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1628	855	921	0	-	0
Stage 1	855	-	-	-	-	-
Stage 2	773	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	112	356	737	-	-	-
Stage 1	415	-	-	-	-	-
Stage 2	454	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	107	356	737	-	-	-
Mov Cap-2 Maneuver	107	-	-	-	-	-
Stage 1	415	-	-	-	-	-
Stage 2	434	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	78.8	0.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	737	-	140	-	-
HCM Lane V/C Ratio	0.045	-	0.721	-	-
HCM Control Delay (s)	10.1	-	78.8	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.1	-	4.2	-	-

Intersection	
Int Delay, s/veh	41.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	322	119	381	288	168	303
Future Vol, veh/h	322	119	381	288	168	303
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	300	250	-	150	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	322	119	381	288	168	303

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	322	0	1372	322
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	1050	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1232	-	~ 160	717
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	335	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1232	-	~ 111	717
Mov Cap-2 Maneuver	-	-	-	-	~ 111	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	231	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.3	130.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	111	717	-	-	1232	-
HCM Lane V/C Ratio	1.514	0.423	-	-	0.309	-
HCM Control Delay (s)	$ 341.2	13.6	-	-	9.2	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	12.3	2.1	-	-	1.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	35.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	125	140	7	0	216	1	8	98	0	1	262	216
Future Vol, veh/h	125	140	7	0	216	1	8	98	0	1	262	216
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	125	140	7	0	216	1	8	98	0	1	262	216

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	217	0	0	147	0	0	850	611	144	660	614	217
Stage 1	-	-	-	-	-	-	394	394	-	217	217	-
Stage 2	-	-	-	-	-	-	456	217	-	443	397	-
Critical Hdwy	4.18	-	-	4.2	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.29	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1318	-	-	1387	-	-	274	401	888	368	399	808
Stage 1	-	-	-	-	-	-	619	595	-	772	712	-
Stage 2	-	-	-	-	-	-	573	712	-	582	593	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1318	-	-	1387	-	-	76	360	888	269	358	808
Mov Cap-2 Maneuver	-	-	-	-	-	-	76	360	-	269	358	-
Stage 1	-	-	-	-	-	-	555	534	-	692	712	-
Stage 2	-	-	-	-	-	-	265	712	-	426	532	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.7	0	25.4	71.3
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	281	1318	-	-	1387	-	-	478
HCM Lane V/C Ratio	0.377	0.095	-	-	-	-	-	1.002
HCM Control Delay (s)	25.4	8	0	-	0	-	-	71.3
HCM Lane LOS	D	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	1.7	0.3	-	-	0	-	-	13.5

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	84	47	41	110	55	24
Future Vol, veh/h	84	47	41	110	55	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	84	47	41	110	55	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	259	67	79	0	-	0
Stage 1	67	-	-	-	-	-
Stage 2	192	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	728	994	1513	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	838	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	707	994	1513	-	-	-
Mov Cap-2 Maneuver	707	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1513	-	789	-	-
HCM Lane V/C Ratio	0.027	-	0.166	-	-
HCM Control Delay (s)	7.4	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	15	8	142	92	4
Future Vol, veh/h	8	15	8	142	92	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	8	15	8	142	92	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	252	94	96	0	-	0
Stage 1	94	-	-	-	-	-
Stage 2	158	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	734	960	1491	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	868	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	730	960	1491	-	-	-
Mov Cap-2 Maneuver	730	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	863	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1491	-	865	-	-
HCM Lane V/C Ratio	0.005	-	0.027	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	187	92	129	130	79	119
Future Vol, veh/h	187	92	129	130	79	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	187	92	129	130	79	119

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	527	139	198	0	-	0
Stage 1	139	-	-	-	-	-
Stage 2	388	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	510	907	1369	-	-	-
Stage 1	885	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	458	907	1369	-	-	-
Mov Cap-2 Maneuver	458	-	-	-	-	-
Stage 1	885	-	-	-	-	-
Stage 2	613	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.2	3.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1369	-	547	-	-
HCM Lane V/C Ratio	0.094	-	0.51	-	-
HCM Control Delay (s)	7.9	0	18.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	2.9	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	57	2	5	106	98	40
Future Vol, veh/h	57	2	5	106	98	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	57	2	5	106	98	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	214	98	98	0	-	0
Stage 1	98	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	772	955	1489	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	906	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	769	955	1489	-	-	-
Mov Cap-2 Maneuver	769	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	903	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.3	0
HCM LOS	B		

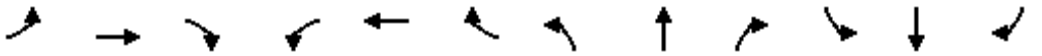
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1489	-	769	955	-	-
HCM Lane V/C Ratio	0.003	-	0.074	0.002	-	-
HCM Control Delay (s)	7.4	-	10.1	8.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0	-	-

Appendix B

Cumulative Synchro Reports

Cumulative No Project

AM

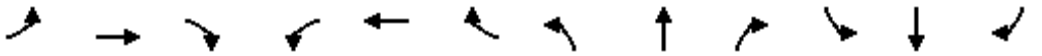


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	0	313	213	485	1251	0	1831	600	0	1693	485
Future Volume (vph)	161	0	313	213	485	1251	0	1831	600	0	1693	485
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		0.88	0.86	0.81	0.91		0.91	1.00		0.86	1.00
Frt	1.00		0.85	1.00	0.92	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1752		2760	2985	2712	1413		4988	1553		6285	1553
Flt Permitted	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1752		2760	2985	2712	1413		4988	1553		6285	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	161	0	313	213	485	1251	0	1831	600	0	1693	485
RTOR Reduction (vph)	0	0	275	0	36	36	0	0	0	0	0	176
Lane Group Flow (vph)	161	0	38	192	1096	589	0	1831	600	0	1693	309
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm	Split	NA	Perm		NA	Free		NA	Perm
Protected Phases	4			8	8			2			6	
Permitted Phases			4			8			Free			6
Actuated Green, G (s)	14.4		14.4	47.0	47.0	47.0		45.0	118.4		45.0	45.0
Effective Green, g (s)	14.4		14.4	47.0	47.0	47.0		45.0	118.4		45.0	45.0
Actuated g/C Ratio	0.12		0.12	0.40	0.40	0.40		0.38	1.00		0.38	0.38
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	213		335	1184	1076	560		1895	1553		2388	590
v/s Ratio Prot	c0.09			0.06	0.40			c0.37			0.27	
v/s Ratio Perm			0.01			c0.42			0.39			0.20
v/c Ratio	0.76		0.11	0.16	1.11dr	1.05		0.97	0.39		0.71	0.52
Uniform Delay, d1	50.3		46.3	23.0	35.7	35.7		36.0	0.0		31.1	28.4
Progression Factor	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	14.1		0.2	0.1	32.1	52.3		13.5	0.7		1.0	0.8
Delay (s)	64.4		46.5	23.1	67.8	88.0		49.4	0.7		32.1	29.2
Level of Service	E		D	C	E	F		D	A		C	C
Approach Delay (s)		52.6			69.9			37.4			31.5	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	118.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	105.9%	ICU Level of Service	G
Analysis Period (min)	15		

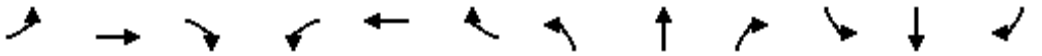
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



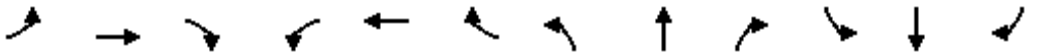
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	613	0	1630	0	0	0	0	1772	785	0	1090	656
Future Volume (vph)	613	0	1630	0	0	0	0	1772	785	0	1090	656
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	613	0	1630	0	0	0	0	1772	785	0	1090	656
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	613	0	1616	0	0	0	0	1772	785	0	1090	656
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	56.0		56.0					36.0	100.0		36.0	100.0
Effective Green, g (s)	56.0		56.0					36.0	100.0		36.0	100.0
Actuated g/C Ratio	0.56		0.56					0.36	1.00		0.36	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1885		1530					1795	1553		1795	1553
v/s Ratio Prot								c0.36			0.22	
v/s Ratio Perm	0.18		c0.59						0.51			0.42
v/c Ratio	0.33		1.06					0.99	0.51		0.61	0.42
Uniform Delay, d1	11.8		22.0					31.8	0.0		26.2	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1		39.5					18.1	1.2		0.6	0.8
Delay (s)	11.9		61.5					49.9	1.2		26.8	0.8
Level of Service	B		E					D	A		C	A
Approach Delay (s)		48.0			0.0			34.9			17.0	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



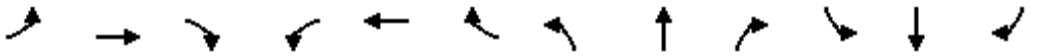
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	470	100	104	1046	722	489	1681	87	1131	1601	95
Future Volume (vph)	152	470	100	104	1046	722	489	1681	87	1131	1601	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3380		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3380		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	152	470	100	104	1046	722	489	1681	87	1131	1601	95
RTOR Reduction (vph)	0	16	0	0	0	542	0	0	60	0	0	56
Lane Group Flow (vph)	152	554	0	104	1046	181	489	1681	27	1131	1601	39
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	4.0	24.7		9.3	30.0	30.0	20.3	37.0	37.0	33.0	49.7	49.7
Effective Green, g (s)	4.0	24.7		9.3	30.0	30.0	20.3	37.0	37.0	33.0	49.7	49.7
Actuated g/C Ratio	0.03	0.21		0.08	0.25	0.25	0.17	0.31	0.31	0.28	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	112	695		260	867	683	569	1537	478	925	2065	643
v/s Ratio Prot	c0.05	0.16		0.03	c0.30		0.15	c0.34		c0.34	0.32	
v/s Ratio Perm						0.07			0.02			0.03
v/c Ratio	1.36	0.80		0.40	1.21	0.26	0.86	1.09	0.06	1.22	0.78	0.06
Uniform Delay, d1	58.0	45.3		52.7	45.0	36.1	48.5	41.5	29.2	43.5	30.3	21.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	207.9	6.3		1.0	103.8	0.2	12.3	53.0	0.0	110.0	1.9	0.0
Delay (s)	265.9	51.6		53.7	148.8	36.3	60.8	94.5	29.3	153.5	32.2	21.2
Level of Service	F	D		D	F	D	E	F	C	F	C	C
Approach Delay (s)		96.7			100.1			84.7			80.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	88.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	111.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	230	1093	5	499	27	1053	12	2	20	14	210
Future Volume (vph)	142	230	1093	5	499	27	1053	12	2	20	14	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1624	1524		1792	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1624	1524		1792	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	142	230	1093	5	499	27	1053	12	2	20	14	210
RTOR Reduction (vph)	0	0	315	0	0	21	0	0	1	0	0	140
Lane Group Flow (vph)	142	230	778	5	499	6	537	528	1	0	34	70
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	24.5	54.6	0.7	18.2	18.2	30.1	30.1	30.1		9.0	9.0
Effective Green, g (s)	7.0	24.5	54.6	0.7	18.2	18.2	30.1	30.1	30.1		9.0	9.0
Actuated g/C Ratio	0.09	0.31	0.68	0.01	0.23	0.23	0.37	0.37	0.37		0.11	0.11
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	151	1059	1133	15	786	351	606	608	571		200	175
v/s Ratio Prot	c0.08	0.07	c0.26	0.00	0.14		c0.33	0.33			0.02	
v/s Ratio Perm			0.24			0.00			0.00			c0.04
v/c Ratio	0.94	0.22	0.69	0.33	0.63	0.02	0.89	0.87	0.00		0.17	0.40
Uniform Delay, d1	36.4	20.8	7.7	39.6	28.0	24.1	23.5	23.3	15.7		32.3	33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	55.4	0.1	1.7	12.7	1.7	0.0	14.5	12.5	0.0		0.4	1.5
Delay (s)	91.9	20.9	9.5	52.2	29.7	24.1	38.0	35.8	15.7		32.7	34.6
Level of Service	F	C	A	D	C	C	D	D	B		C	C
Approach Delay (s)		19.2			29.7			36.9			34.4	
Approach LOS		B			C			D			C	

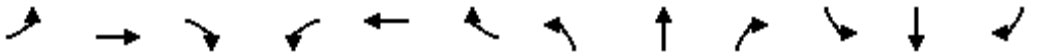
Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	80.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	196	32	192	353	66	208	105	368	110	127	34
Future Volume (vph)	26	196	32	192	353	66	208	105	368	110	127	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98	1.00		0.98	
Satd. Flow (prot)	1752	3505	1568	1752	3422		1665	1723	1568		3370	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.98	1.00		0.98	
Satd. Flow (perm)	1752	3505	1568	1752	3422		1665	1723	1568		3370	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	26	196	32	192	353	66	208	105	368	110	127	34
RTOR Reduction (vph)	0	0	26	0	17	0	0	0	295	0	15	0
Lane Group Flow (vph)	26	196	6	192	402	0	154	159	73	0	256	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	1.7	11.4	11.4	10.5	20.2		11.9	11.9	11.9		9.8	
Effective Green, g (s)	1.7	11.4	11.4	10.5	20.2		11.9	11.9	11.9		9.8	
Actuated g/C Ratio	0.03	0.19	0.19	0.18	0.34		0.20	0.20	0.20		0.16	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	49	670	299	308	1159		332	344	313		554	
v/s Ratio Prot	0.01	0.06		c0.11	c0.12		c0.09	0.09			c0.08	
v/s Ratio Perm			0.00						0.05			
v/c Ratio	0.53	0.29	0.02	0.62	0.35		0.46	0.46	0.23		0.46	
Uniform Delay, d1	28.6	20.6	19.6	22.7	14.8		21.0	21.0	20.0		22.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	10.6	0.2	0.0	3.9	0.2		1.0	1.0	0.4		0.6	
Delay (s)	39.2	20.9	19.6	26.6	14.9		22.1	22.0	20.4		23.1	
Level of Service	D	C	B	C	B		C	C	C		C	
Approach Delay (s)		22.6			18.6			21.2			23.1	
Approach LOS		C			B			C			C	

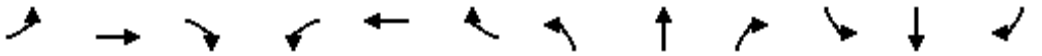
Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



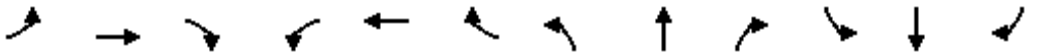
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	718	314	468	773	19	698	48	329	28	144	39
Future Volume (vph)	21	718	314	468	773	19	698	48	329	28	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3017		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3017		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	718	314	468	773	19	698	48	329	28	144	39
RTOR Reduction (vph)	0	0	218	0	0	10	0	245	0	0	0	36
Lane Group Flow (vph)	21	718	96	468	773	9	698	132	0	28	144	3
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	2.1	28.7	28.7	16.1	42.6	42.6	24.2	24.2		7.2	7.2	7.2
Effective Green, g (s)	2.1	28.7	28.7	16.1	42.6	42.6	24.2	24.2		7.2	7.2	7.2
Actuated g/C Ratio	0.02	0.30	0.30	0.17	0.45	0.45	0.25	0.25		0.08	0.08	0.08
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.1	4.1	2.0	2.0		1.0	1.0	1.0
Lane Grp Cap (vph)	38	1058	473	576	1571	703	857	768		132	265	118
v/s Ratio Prot	0.01	c0.20		c0.14	0.22		c0.21	0.04		0.02	c0.04	
v/s Ratio Perm			0.06			0.01						0.00
v/c Ratio	0.55	0.68	0.20	0.81	0.49	0.01	0.81	0.17		0.21	0.54	0.03
Uniform Delay, d1	46.0	29.1	24.6	38.0	18.5	14.5	33.3	27.6		41.2	42.3	40.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.5	2.2	0.4	8.1	0.4	0.0	5.7	0.0		0.3	1.2	0.0
Delay (s)	55.5	31.3	25.1	46.1	18.9	14.5	39.0	27.6		41.5	43.5	40.7
Level of Service	E	C	C	D	B	B	D	C		D	D	D
Approach Delay (s)		29.9			28.9			35.0			42.7	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	22.9
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



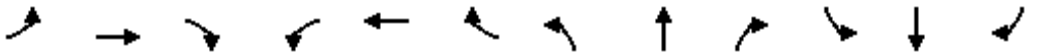
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	956	0	642	0	1270	970	0	604	389
Future Volume (vph)	0	0	0	956	0	642	0	1270	970	0	604	389
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.6		4.6		3.5	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3367		2733		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3367		2733		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	956	0	642	0	1270	970	0	604	389
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	956	0	613	0	1270	970	0	604	389
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				4				6			2	
Permitted Phases						4			Free			Free
Actuated Green, G (s)				14.7		14.7		15.7	38.5		14.1	38.5
Effective Green, g (s)				14.7		14.7		15.7	38.5		14.1	38.5
Actuated g/C Ratio				0.38		0.38		0.41	1.00		0.37	1.00
Clearance Time (s)				4.6		4.6		3.5			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1285		1043		2034	1553		1826	1553
v/s Ratio Prot				0.28				0.25			0.12	
v/s Ratio Perm						0.22			c0.62			0.25
v/c Ratio				0.74		0.59		0.62	0.62		0.33	0.25
Uniform Delay, d1				10.3		9.5		9.1	0.0		8.8	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				2.1		0.5		0.4	1.9		0.0	0.4
Delay (s)				12.4		10.0		9.5	1.9		8.8	0.4
Level of Service				B		B		A	A		A	A
Approach Delay (s)		0.0			11.4			6.2			5.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	38.5	Sum of lost time (s)	9.7
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	756	0	1447	0	0	0	0	1484	1387	0	1309	247
Future Volume (vph)	756	0	1447	0	0	0	0	1484	1387	0	1309	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	756	0	1447	0	0	0	0	1484	1387	0	1309	247
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	756	0	1433	0	0	0	0	1484	1387	0	1309	247
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	42.3		42.3					25.5	79.3		26.0	79.3
Effective Green, g (s)	42.3		42.3					25.5	79.3		26.0	79.3
Actuated g/C Ratio	0.53		0.53					0.32	1.00		0.33	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1796		1457					1603	1553		1635	1553
v/s Ratio Prot								0.30			0.26	
v/s Ratio Perm	0.22		0.52						c0.89			0.16
v/c Ratio	0.42		0.98					0.93	0.89		0.80	0.16
Uniform Delay, d1	11.1		18.2					26.0	0.0		24.3	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1		19.6					9.4	8.3		2.7	0.2
Delay (s)	11.2		37.8					35.3	8.3		27.0	0.2
Level of Service	B		D					D	A		C	A
Approach Delay (s)		28.7			0.0			22.3			22.8	
Approach LOS		C			A			C			C	

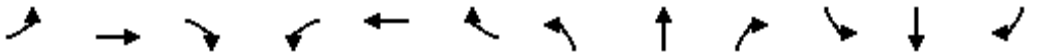
Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	11.5
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	457	2	16	8	1	1	118	151	2	0	41	217
Future Volume (vph)	457	2	16	8	1	1	118	151	2	0	41	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95			0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1665	1670	1568	1752	1706		1752	3498			3505	1568
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)	1665	1670	1568	1752	1706		1752	3498			3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	457	2	16	8	1	1	118	151	2	0	41	217
RTOR Reduction (vph)	0	0	12	0	1	0	0	1	0	0	0	174
Lane Group Flow (vph)	228	231	4	8	1	0	118	152	0	0	41	43
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	10.9	10.9	10.9	0.9	0.9		4.6	16.7			8.1	8.1
Effective Green, g (s)	10.9	10.9	10.9	0.9	0.9		4.6	16.7			8.1	8.1
Actuated g/C Ratio	0.27	0.27	0.27	0.02	0.02		0.11	0.41			0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	448	449	422	38	37		198	1442			701	313
v/s Ratio Prot	0.14	c0.14		c0.00	0.00		c0.07	0.04			0.01	
v/s Ratio Perm			0.00									c0.03
v/c Ratio	0.51	0.51	0.01	0.21	0.03		0.60	0.11			0.06	0.14
Uniform Delay, d1	12.5	12.6	10.8	19.5	19.4		17.1	7.3			13.1	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.9	1.0	0.0	2.8	0.3		4.8	0.0			0.0	0.2
Delay (s)	13.4	13.6	10.9	22.2	19.7		21.8	7.3			13.1	13.5
Level of Service	B	B	B	C	B		C	A			B	B
Approach Delay (s)		13.4			21.7			13.6			13.5	
Approach LOS		B			C			B			B	

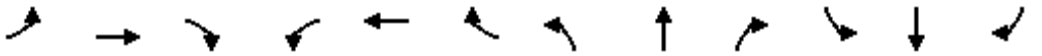
Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	40.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



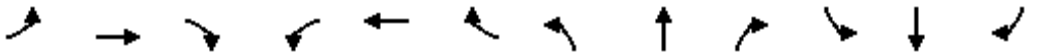
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	928	0	379	0	1283	639	0	1108	218
Future Volume (vph)	0	0	0	928	0	379	0	1283	639	0	1108	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.91	1.00		0.91	1.00
Frt				1.00	0.91			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.98			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1548			4988	1553		4988	1553
Flt Permitted				0.95	0.98			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1548			4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	928	0	379	0	1283	639	0	1108	218
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	677	609	0	0	1283	639	0	1108	218
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Perm	NA			NA	Free		NA	Free
Protected Phases					8			2			6	
Permitted Phases				8					Free			Free
Actuated Green, G (s)				21.5	21.5			14.9	46.1		14.9	46.1
Effective Green, g (s)				21.5	21.5			14.9	46.1		14.9	46.1
Actuated g/C Ratio				0.47	0.47			0.32	1.00		0.32	1.00
Clearance Time (s)				4.9	4.9			4.8			4.8	
Vehicle Extension (s)				1.0	1.0			1.0			1.0	
Lane Grp Cap (vph)				769	721			1612	1553		1612	1553
v/s Ratio Prot								c0.26			0.22	
v/s Ratio Perm				c0.41	0.39				0.41			0.14
v/c Ratio				0.88	0.84			0.80	0.41		0.69	0.14
Uniform Delay, d1				11.1	10.8			14.2	0.0		13.6	0.0
Progression Factor				1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2				11.2	8.6			2.6	0.8		1.0	0.2
Delay (s)				22.3	19.5			16.8	0.8		14.6	0.2
Level of Service				C	B			B	A		B	A
Approach Delay (s)		0.0			20.9			11.5			12.2	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	46.1	Sum of lost time (s)	9.7
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



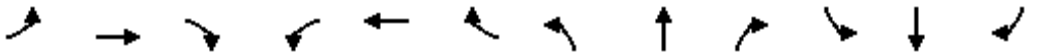
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	339	0	1162	0	0	0	0	1636	427	0	1643	345
Future Volume (vph)	339	0	1162	0	0	0	0	1636	427	0	1643	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.91	1.00
Frt	1.00	0.86	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1423	1475					4988	1553		4988	1553
Flt Permitted	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1423	1475					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	339	0	1162	0	0	0	0	1636	427	0	1643	345
RTOR Reduction (vph)	0	19	19	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	305	584	574	0	0	0	0	1636	427	0	1643	345
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA	Perm					NA	Free		NA	Free
Protected Phases		4						2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	25.3	25.3	25.3					21.8	57.1		21.9	57.1
Effective Green, g (s)	25.3	25.3	25.3					21.8	57.1		21.9	57.1
Actuated g/C Ratio	0.44	0.44	0.44					0.38	1.00		0.38	1.00
Clearance Time (s)	5.1	5.1	5.1					4.9			4.8	
Vehicle Extension (s)	1.0	1.0	1.0					1.0			1.0	
Lane Grp Cap (vph)	730	630	653					1904	1553		1913	1553
v/s Ratio Prot								0.33			c0.33	
v/s Ratio Perm	0.18	0.41	0.39						0.27			0.22
v/c Ratio	0.42	0.93	0.88					0.86	0.27		0.86	0.22
Uniform Delay, d1	10.9	15.0	14.5					16.2	0.0		16.2	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	19.4	12.4					4.0	0.4		3.9	0.3
Delay (s)	11.0	34.4	26.9					20.2	0.4		20.1	0.3
Level of Service	B	C	C					C	A		C	A
Approach Delay (s)		26.7			0.0			16.1			16.7	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1277	0	230	0	720	1105	0	897	1590
Future Volume (vph)	0	0	0	1277	0	230	0	720	1105	0	897	1590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		5036	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1277	0	230	0	720	1105	0	897	1590
RTOR Reduction (vph)	0	0	0	0	0	25	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1277	0	205	0	720	1105	0	897	1590
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				20.6		20.6		12.5	44.5		12.5	44.5
Effective Green, g (s)				20.6		20.6		12.5	44.5		12.5	44.5
Actuated g/C Ratio				0.46		0.46		0.28	1.00		0.28	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1573		725		1414	1568		1414	1568
v/s Ratio Prot								0.14			0.18	
v/s Ratio Perm				0.38		0.13			0.70			c1.01
v/c Ratio				0.81		0.28		0.51	0.70		0.63	1.01
Uniform Delay, d1				10.3		7.4		13.4	0.0		14.0	22.2
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				3.1		0.1		0.1	2.7		0.7	26.3
Delay (s)				13.4		7.5		13.5	2.7		14.7	48.5
Level of Service				B		A		B	A		B	D
Approach Delay (s)		0.0			12.5			7.0			36.3	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	44.5	Sum of lost time (s)	11.4
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

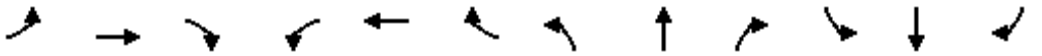


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	917	1602	0	0	134	0	3409	9	0	2003	182
Future Volume (vph)	182	917	1602	0	0	134	0	3409	9	0	2003	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		0.86			0.91	1.00
Frt	1.00	0.93	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	2952	1427			2733		6343			5036	1568
Flt Permitted	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (perm)	1595	2952	1427			2733		6343			5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	182	917	1602	0	0	134	0	3409	9	0	2003	182
RTOR Reduction (vph)	0	2	20	0	0	130	0	0	0	0	0	48
Lane Group Flow (vph)	164	1734	781	0	0	4	0	3418	0	0	2003	134
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA			NA	custom
Protected Phases	4	4				1		2			6	
Permitted Phases			4									2
Actuated Green, G (s)	68.0	68.0	68.0			4.0		66.0			74.0	66.0
Effective Green, g (s)	68.0	68.0	68.0			4.0		66.0			74.0	66.0
Actuated g/C Ratio	0.45	0.45	0.45			0.03		0.44			0.49	0.44
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	723	1338	646			72		2790			2484	689
v/s Ratio Prot	0.10	c0.59				0.00		c0.54			c0.40	
v/s Ratio Perm			0.55									0.09
v/c Ratio	0.23	1.30	1.21			0.05		1.23			0.81	0.20
Uniform Delay, d1	25.0	41.0	41.0			71.1		42.0			32.0	25.7
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	1.00
Incremental Delay, d2	0.2	138.8	108.3			0.3		104.7			2.0	0.1
Delay (s)	25.1	179.8	149.3			71.4		146.7			34.0	25.9
Level of Service	C	F	F			E		F			C	C
Approach Delay (s)		161.3			71.4			146.7			33.3	
Approach LOS		F			E			F			C	

Intersection Summary			
HCM 2000 Control Delay	120.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

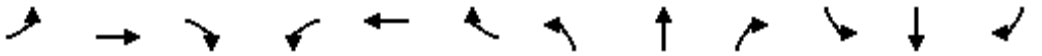
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	664	0	9	914	0	6	316	19	24	98	126
Future Volume (vph)	23	664	0	9	914	0	6	316	19	24	98	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.99			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1703	1792		1703	1792			1744			1631	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.92	
Satd. Flow (perm)	1703	1792		1703	1792			1736			1514	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	23	664	0	9	914	0	6	316	19	24	98	126
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	49	0
Lane Group Flow (vph)	23	664	0	9	914	0	0	338	0	0	199	0
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	8%	8%	8%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	1.4	39.2		0.7	38.5			16.4			16.4	
Effective Green, g (s)	1.4	39.2		0.7	38.5			16.4			16.4	
Actuated g/C Ratio	0.02	0.57		0.01	0.56			0.24			0.24	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	34	1028		17	1010			416			363	
v/s Ratio Prot	c0.01	0.37		0.01	c0.51							
v/s Ratio Perm								c0.19			0.13	
v/c Ratio	0.68	0.65		0.53	0.90			0.81			0.55	
Uniform Delay, d1	33.2	9.9		33.6	13.3			24.5			22.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	42.2	1.4		26.7	11.3			11.5			1.7	
Delay (s)	75.4	11.3		60.3	24.5			36.0			24.4	
Level of Service	E	B		E	C			D			C	
Approach Delay (s)		13.4			24.9			36.0			24.4	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	169	0	516	0	2866	251	0	1928	2178
Future Volume (vph)	0	0	0	169	0	516	0	2866	251	0	1928	2178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	169	0	516	0	2866	251	0	1928	2178
RTOR Reduction (vph)	0	0	0	0	0	28	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	169	0	488	0	2866	251	0	1928	2178
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				12.8		12.8		41.2	62.3		40.9	62.3
Effective Green, g (s)				12.8		12.8		41.2	62.3		40.9	62.3
Actuated g/C Ratio				0.21		0.21		0.66	1.00		0.66	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				678		551		3298	1553		3274	1553
v/s Ratio Prot								0.57			0.39	
v/s Ratio Perm				0.05		0.18			0.16			c1.40
v/c Ratio				0.25		0.89		0.87	0.16		0.59	1.40
Uniform Delay, d1				20.7		24.0		8.4	0.0		6.0	31.1
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.1		15.3		2.6	0.2		0.2	185.1
Delay (s)				20.8		39.4		11.0	0.2		6.2	216.2
Level of Service				C		D		B	A		A	F
Approach Delay (s)		0.0			34.8			10.1			117.6	
Approach LOS		A			C			B			F	

Intersection Summary			
HCM 2000 Control Delay	68.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.63		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	8.6
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



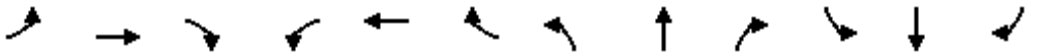
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	890	0	748	0	0	0	0	2234	421	0	1698	397
Future Volume (vph)	890	0	748	0	0	0	0	2234	421	0	1698	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	890	0	748	0	0	0	0	2234	421	0	1698	397
RTOR Reduction (vph)	0	0	32	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	890	0	716	0	0	0	0	2234	421	0	1698	397
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	14.1		14.1					23.1	45.5		22.8	45.5
Effective Green, g (s)	14.1		14.1					23.1	45.5		22.8	45.5
Actuated g/C Ratio	0.31		0.31					0.51	1.00		0.50	1.00
Clearance Time (s)	3.5		3.5					4.8			5.1	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1516		846					3190	1553		2499	1553
v/s Ratio Prot								c0.36			0.34	
v/s Ratio Perm	0.18		c0.26						0.27			0.26
v/c Ratio	0.59		0.85					0.70	0.27		0.68	0.26
Uniform Delay, d1	13.2		14.7					8.6	0.0		8.6	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4		7.5					0.6	0.4		0.6	0.4
Delay (s)	13.6		22.2					9.1	0.4		9.2	0.4
Level of Service	B		C					A	A		A	A
Approach Delay (s)		17.6			0.0			7.8			7.5	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	8.6
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



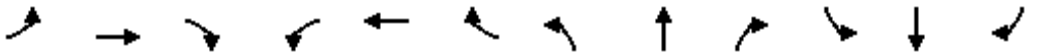
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	156	575	2158	119	98	634
Future Volume (vph)	156	575	2158	119	98	634
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	4988	1553	3367	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	4988	1553	3367	3471
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	156	575	2158	119	98	634
RTOR Reduction (vph)	0	282	0	39	0	0
Lane Group Flow (vph)	156	293	2158	80	98	634
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA	Perm	Prot	NA
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Actuated Green, G (s)	16.6	16.6	38.6	38.6	4.8	48.9
Effective Green, g (s)	16.6	16.6	38.6	38.6	4.8	48.9
Actuated g/C Ratio	0.22	0.22	0.51	0.51	0.06	0.64
Clearance Time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	742	342	2533	788	212	2233
v/s Ratio Prot	0.05	c0.19	c0.43		0.03	c0.18
v/s Ratio Perm				0.05		
v/c Ratio	0.21	0.86	0.85	0.10	0.46	0.28
Uniform Delay, d1	24.3	28.6	16.2	9.7	34.4	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	17.9	2.9	0.0	0.6	0.0
Delay (s)	24.4	46.5	19.1	9.7	34.9	5.9
Level of Service	C	D	B	A	C	A
Approach Delay (s)	41.8		18.6			9.8
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



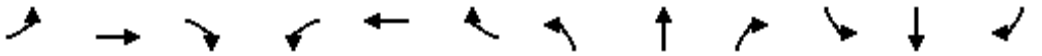
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1015	779	7	0	1192	15	8	30	5	7	6	572
Future Volume (vph)	1015	779	7	0	1192	15	8	30	5	7	6	572
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Lane Util. Factor	1.00	0.95	1.00		0.95			1.00			1.00	1.00
Frt	1.00	1.00	0.85		1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (prot)	1703	3406	1524		3432			1799			1779	1553
Flt Permitted	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (perm)	1703	3406	1524		3432			1799			1779	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1015	779	7	0	1192	15	8	30	5	7	6	572
RTOR Reduction (vph)	0	0	1	0	1	0	0	3	0	0	0	215
Lane Group Flow (vph)	1015	779	6	0	1206	0	0	40	0	0	13	357
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	Over
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									
Actuated Green, G (s)	58.6	106.0	106.0		42.8			3.0			2.1	58.6
Effective Green, g (s)	58.6	106.0	106.0		42.8			3.0			2.1	58.6
Actuated g/C Ratio	0.45	0.81	0.81		0.33			0.02			0.02	0.45
Clearance Time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0		1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	765	2770	1239		1127			41			28	698
v/s Ratio Prot	c0.60	0.23			c0.35			c0.02			c0.01	0.23
v/s Ratio Perm			0.00									
v/c Ratio	1.33	0.28	0.00		1.07			0.98			0.46	0.51
Uniform Delay, d1	35.9	2.9	2.3		43.8			63.6			63.5	25.6
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	156.1	0.0	0.0		47.8			130.1			4.4	0.3
Delay (s)	191.9	3.0	2.3		91.5			193.8			67.9	25.9
Level of Service	F	A	A		F			F			E	C
Approach Delay (s)		109.4			91.5			193.8			26.8	
Approach LOS		F			F			F			C	

Intersection Summary			
HCM 2000 Control Delay	91.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	130.3	Sum of lost time (s)	24.7
Intersection Capacity Utilization	113.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	296	55	176	932	426	3321	0	0	4734	133
Future Volume (vph)	0	0	296	55	176	932	426	3321	0	0	4734	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1771	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1771	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	296	55	176	932	426	3321	0	0	4734	133
RTOR Reduction (vph)	0	0	190	0	0	39	0	0	0	0	0	26
Lane Group Flow (vph)	0	0	106	0	231	893	426	3321	0	0	4734	107
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			20.0		31.8	31.8	20.0	107.0			82.1	82.1
Effective Green, g (s)			20.0		31.8	31.8	20.0	107.0			82.1	82.1
Actuated g/C Ratio			0.13		0.21	0.21	0.13	0.71			0.55	0.55
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Vehicle Extension (s)			3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			212		375	568	440	3490			3374	834
v/s Ratio Prot			0.07		0.13		0.13	c0.68			c0.77	
v/s Ratio Perm						c0.33						0.07
v/c Ratio			0.50		0.62	1.57	0.97	0.95			1.40	0.13
Uniform Delay, d1			60.4		53.6	59.1	64.7	19.2			34.0	16.5
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			1.9		3.0	265.6	34.3	7.0			183.2	0.1
Delay (s)			62.2		56.6	324.7	99.0	26.2			217.2	16.6
Level of Service			E		E	F	F	C			F	B
Approach Delay (s)		62.2			271.4			34.5			211.7	
Approach LOS		E			F			C			F	

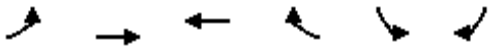
Intersection Summary			
HCM 2000 Control Delay	148.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	112.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1960	0	117	0	0	0	0	1893	39	0	1521	1198
Future Volume (vph)	1960	0	117	0	0	0	0	1893	39	0	1521	1198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0			4.0	4.0
Lane Util. Factor	0.94		0.88					0.91			0.91	1.00
Frt	1.00		0.85					1.00			1.00	0.85
Flt Protected	0.95		1.00					1.00			1.00	1.00
Satd. Flow (prot)	4942		2760					5021			5036	1568
Flt Permitted	0.95		1.00					1.00			1.00	1.00
Satd. Flow (perm)	4942		2760					5021			5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1960	0	117	0	0	0	0	1893	39	0	1521	1198
RTOR Reduction (vph)	0	0	11	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	1960	0	106	0	0	0	0	1928	0	0	1521	1198
Turn Type	Prot		Perm					NA			NA	Free
Protected Phases	4							2			6	
Permitted Phases			4									Free
Actuated Green, G (s)	24.0		24.0					23.0			23.0	55.0
Effective Green, g (s)	24.0		24.0					23.0			23.0	55.0
Actuated g/C Ratio	0.44		0.44					0.42			0.42	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	2156		1204					2099			2105	1568
v/s Ratio Prot	c0.40							c0.38			0.30	
v/s Ratio Perm			0.04									0.76
v/c Ratio	0.91		0.09					0.92			0.72	0.76
Uniform Delay, d1	14.5		9.1					15.1			13.3	0.0
Progression Factor	1.00		1.00					1.00			1.00	1.00
Incremental Delay, d2	6.1		0.0					7.0			1.3	3.6
Delay (s)	20.6		9.1					22.1			14.6	3.6
Level of Service	C		A					C			B	A
Approach Delay (s)		19.9			0.0			22.1			9.7	
Approach LOS		B			A			C			A	

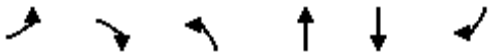
Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1103	1565	1451	230	20	762
Future Volume (vph)	1103	1565	1451	230	20	762
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3242	3343	3343	1495	3400	2760
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3242	3343	3343	1495	3400	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1103	1565	1451	230	20	762
RTOR Reduction (vph)	0	0	0	48	0	703
Lane Group Flow (vph)	1103	1565	1451	182	20	59
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	43.1	102.2	55.1	55.1	9.3	9.3
Effective Green, g (s)	43.1	102.2	55.1	55.1	9.3	9.3
Actuated g/C Ratio	0.36	0.86	0.46	0.46	0.08	0.08
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1169	2859	1541	689	264	214
v/s Ratio Prot	c0.34	0.47	c0.43		0.01	
v/s Ratio Perm				0.12		c0.02
v/c Ratio	0.94	0.55	0.94	0.26	0.08	0.28
Uniform Delay, d1	37.0	2.4	30.7	19.8	51.1	51.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.7	0.2	11.8	0.2	0.1	0.7
Delay (s)	51.7	2.6	42.4	20.0	51.2	52.6
Level of Service	D	A	D	B	D	D
Approach Delay (s)		22.9	39.4		52.6	
Approach LOS		C	D		D	

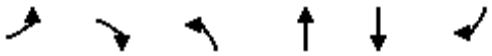
Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	598	11	67	2116	1249	953
Future Volume (vph)	598	11	67	2116	1249	953
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	598	11	67	2116	1249	953
RTOR Reduction (vph)	0	11	0	0	0	618
Lane Group Flow (vph)	598	0	67	2116	1249	335
Turn Type	Prot	Over	Prot	NA	NA	Over
Protected Phases	4	5	5	2	6	4
Permitted Phases						
Actuated Green, G (s)	15.7	2.4	2.4	37.6	31.2	15.7
Effective Green, g (s)	15.7	2.4	2.4	37.6	31.2	15.7
Actuated g/C Ratio	0.26	0.04	0.04	0.61	0.51	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	870	61	68	2149	1783	401
v/s Ratio Prot	0.18	0.00	0.04	c0.60	0.36	c0.21
v/s Ratio Perm						
v/c Ratio	0.69	0.01	0.99	0.98	0.70	0.83
Uniform Delay, d1	20.6	28.3	29.4	11.6	11.5	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.0	103.3	15.8	1.3	13.9
Delay (s)	22.9	28.4	132.8	27.4	12.7	35.5
Level of Service	C	C	F	C	B	D
Approach Delay (s)	23.0			30.6	22.6	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

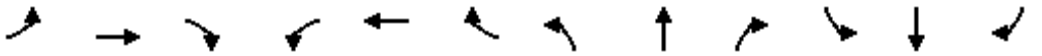
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	432	633	1071	1743	1168	92
Future Volume (vph)	432	633	1071	1743	1168	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1752	1568	3400	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1752	1568	3400	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	432	633	1071	1743	1168	92
RTOR Reduction (vph)	0	392	0	0	0	61
Lane Group Flow (vph)	432	241	1071	1743	1168	31
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	24.0	24.0	30.0	68.0	34.0	34.0
Effective Green, g (s)	24.0	24.0	30.0	68.0	34.0	34.0
Actuated g/C Ratio	0.24	0.24	0.30	0.68	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	420	376	1020	2383	1191	533
v/s Ratio Prot	c0.25		c0.32	0.50	c0.33	
v/s Ratio Perm		0.15				0.02
v/c Ratio	1.03	0.64	1.05	0.73	0.98	0.06
Uniform Delay, d1	38.0	34.1	35.0	10.2	32.7	22.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	51.4	3.7	42.2	1.2	21.4	0.0
Delay (s)	89.4	37.8	77.2	11.4	54.1	22.3
Level of Service	F	D	E	B	D	C
Approach Delay (s)	58.8			36.4	51.8	
Approach LOS	E			D	D	

Intersection Summary			
HCM 2000 Control Delay	44.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		

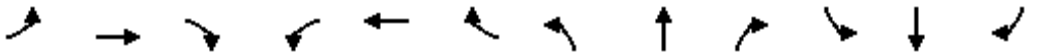
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	696	0	909	0	0	0	0	3557	710	0	1790	1584
Future Volume (vph)	696	0	909	0	0	0	0	3557	710	0	1790	1584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.95	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4540	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4540	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	696	0	909	0	0	0	0	3557	710	0	1790	1584
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	0	0	99	0
Lane Group Flow (vph)	696	0	888	0	0	0	0	3557	710	0	2483	792
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	25.0		25.0					47.0	80.0		47.0	80.0
Effective Green, g (s)	25.0		25.0					47.0	80.0		47.0	80.0
Actuated g/C Ratio	0.31		0.31					0.59	1.00		0.59	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1062		862					3728	1568		2667	1348
v/s Ratio Prot	0.20							c0.56			0.55	
v/s Ratio Perm			c0.32						0.45			0.59
v/c Ratio	0.66		1.03					0.95	0.45		0.93	0.59
Uniform Delay, d1	23.8		27.5					15.5	0.0		15.0	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5		38.8					6.9	0.9		6.6	1.9
Delay (s)	25.2		66.3					22.4	0.9		21.7	1.9
Level of Service	C		E					C	A		C	A
Approach Delay (s)		48.5			0.0			18.8			17.0	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	513	0	1449	0	2059	2190	0	3836	1304
Future Volume (vph)	0	0	0	513	0	1449	0	2059	2190	0	3836	1304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		0.95	0.85		0.99	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4511	1348		5894	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4511	1348		5894	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	513	0	1449	0	2059	2190	0	3836	1304
RTOR Reduction (vph)	0	0	0	0	0	17	0	74	0	0	12	0
Lane Group Flow (vph)	0	0	0	513	0	1432	0	3080	1095	0	4215	913
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				42.0		42.0		80.0	130.0		80.0	130.0
Effective Green, g (s)				42.0		42.0		80.0	130.0		80.0	130.0
Actuated g/C Ratio				0.32		0.32		0.62	1.00		0.62	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Vehicle Extension (s)				3.0		3.0		3.0			3.0	
Lane Grp Cap (vph)				1098		1155		2776	1348		3627	1270
v/s Ratio Prot				0.15				0.68			c0.72	
v/s Ratio Perm						c0.40			0.81			0.72
v/c Ratio				0.47		1.24		1.11	0.81		1.16	0.72
Uniform Delay, d1				35.1		44.0		25.0	0.0		25.0	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.3		115.5		55.2	5.4		76.4	3.5
Delay (s)				35.4		159.5		80.2	5.4		101.4	3.5
Level of Service				D		F		F	A		F	A
Approach Delay (s)		0.0			127.0			60.9			84.0	
Approach LOS		A			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	82.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		

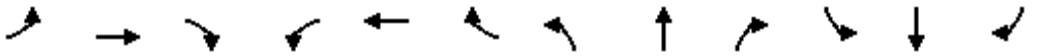
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	812	276	255	1155	234	243
Future Volume (vph)	812	276	255	1155	234	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	812	276	255	1155	234	243
RTOR Reduction (vph)	0	151	0	0	0	199
Lane Group Flow (vph)	812	125	255	1155	234	44
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	18.3	18.3	12.3	34.6	9.5	9.5
Effective Green, g (s)	18.3	18.3	12.3	34.6	9.5	9.5
Actuated g/C Ratio	0.35	0.35	0.24	0.66	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1107	495	372	2094	557	257
v/s Ratio Prot	c0.26		c0.16	0.37	c0.08	
v/s Ratio Perm		0.09				0.03
v/c Ratio	0.73	0.25	0.69	0.55	0.42	0.17
Uniform Delay, d1	14.8	12.0	18.1	4.6	18.9	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.3	5.2	0.3	0.5	0.3
Delay (s)	17.3	12.3	23.3	5.0	19.4	18.3
Level of Service	B	B	C	A	B	B
Approach Delay (s)	16.0			8.3	18.8	
Approach LOS	B			A	B	

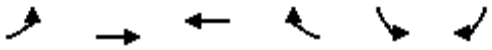
Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	407	0	1	467	57	1	1	0	56	2	455
Future Volume (vph)	219	407	0	1	467	57	1	1	0	56	2	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.98			1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (prot)	1736	3471		1736	3415			1800		1665	1674	1568
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (perm)	1736	3471		1736	3415			1800		1665	1674	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	219	407	0	1	467	57	1	1	0	56	2	455
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	387
Lane Group Flow (vph)	219	407	0	1	513	0	0	2	0	29	29	68
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	10.8	26.7		0.7	16.6			5.7		8.7	8.7	8.7
Effective Green, g (s)	10.8	26.7		0.7	16.6			5.7		8.7	8.7	8.7
Actuated g/C Ratio	0.19	0.46		0.01	0.29			0.10		0.15	0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	324	1603		21	980			177		250	251	236
v/s Ratio Prot	c0.13	0.12		0.00	c0.15			c0.00		0.02	0.02	
v/s Ratio Perm												c0.04
v/c Ratio	0.68	0.25		0.05	0.52			0.01		0.12	0.12	0.29
Uniform Delay, d1	21.9	9.5		28.2	17.3			23.5		21.2	21.2	21.8
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	5.5	0.1		0.9	0.5			0.0		0.2	0.2	0.7
Delay (s)	27.4	9.6		29.2	17.8			23.5		21.4	21.4	22.5
Level of Service	C	A		C	B			C		C	C	C
Approach Delay (s)		15.8			17.8			23.5			22.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	268	706	1874	1043	0
Future Volume (vph)	0	268	706	1874	1043	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	1.00	0.97	
Frt		1.00	1.00	0.85	1.00	
Flt Protected		1.00	1.00	1.00	0.95	
Satd. Flow (prot)		3505	3505	1568	3400	
Flt Permitted		1.00	1.00	1.00	0.95	
Satd. Flow (perm)		3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	268	706	1874	1043	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	268	706	1874	1043	0
Turn Type	Prot	NA	NA	custom	Prot	
Protected Phases	4	5	5	2	6	
Permitted Phases						
Actuated Green, G (s)		33.4	33.4	130.0	88.6	
Effective Green, g (s)		33.4	33.4	130.0	88.6	
Actuated g/C Ratio		0.26	0.26	1.00	0.68	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		900	900	1568	2317	
v/s Ratio Prot		0.08	0.20	c1.20	0.31	
v/s Ratio Perm						
v/c Ratio		0.30	0.78	1.20	0.45	
Uniform Delay, d1		38.9	44.9	65.0	9.5	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2	4.5	94.4	0.1	
Delay (s)		39.1	49.5	159.4	9.6	
Level of Service		D	D	F	A	
Approach Delay (s)		39.1	129.3		9.6	
Approach LOS		D	F		A	

Intersection Summary			
HCM 2000 Control Delay	91.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	119.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0
Turn Type			Prot		Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)						
Effective Green, g (s)						
Actuated g/C Ratio						
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)						
v/s Ratio Prot						
v/s Ratio Perm						
v/c Ratio						
Uniform Delay, d1						
Progression Factor						
Incremental Delay, d2						
Delay (s)						
Level of Service						
Approach Delay (s)	0.0			0.0	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	0.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	24.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

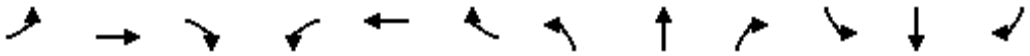
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	2164	0	1718	0
Future Volume (vph)	0	0	2164	0	1718	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	
Lane Util. Factor			0.95	0.95	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	0.95	0.95	
Satd. Flow (prot)			1665	1665	3400	
Flt Permitted			0.95	0.95	0.95	
Satd. Flow (perm)			1665	1665	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	2164	0	1718	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1082	1082	1718	0
Turn Type			Split	NA	Prot	
Protected Phases			4	4	2	
Permitted Phases						
Actuated Green, G (s)			79.0	79.0	63.0	
Effective Green, g (s)			79.0	79.0	63.0	
Actuated g/C Ratio			0.53	0.53	0.42	
Clearance Time (s)			4.0	4.0	4.0	
Vehicle Extension (s)			3.0	3.0	3.0	
Lane Grp Cap (vph)			876	876	1428	
v/s Ratio Prot			c0.65	0.65	c0.51	
v/s Ratio Perm						
v/c Ratio			1.24	1.24	1.20	
Uniform Delay, d1			35.5	35.5	43.5	
Progression Factor			1.00	1.00	1.00	
Incremental Delay, d2			115.7	115.7	98.3	
Delay (s)			151.2	151.2	141.8	
Level of Service			F	F	F	
Approach Delay (s)	0.0			151.2	141.8	
Approach LOS	A			F	F	

Intersection Summary			
HCM 2000 Control Delay	147.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	461	0	0	0	0	1718	2145	0	2164	0
Future Volume (vph)	0	0	461	0	0	0	0	1718	2145	0	2164	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95					0.91	0.91		0.95	
Frt		0.85	0.85					0.95	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		1490	1490					3179	1427		3505	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		1490	1490					3179	1427		3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	461	0	0	0	0	1718	2145	0	2164	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	37	204	0	0	0
Lane Group Flow (vph)	0	197	230	0	0	0	0	2625	997	0	2164	0
Turn Type		NA	Free					NA	Perm	Prot	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			Free						2			
Actuated Green, G (s)		17.0	133.6					108.6	108.6		108.6	
Effective Green, g (s)		17.0	133.6					108.6	108.6		108.6	
Actuated g/C Ratio		0.13	1.00					0.81	0.81		0.81	
Clearance Time (s)		4.0						4.0	4.0		4.0	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		189	1490					2584	1159		2849	
v/s Ratio Prot		c0.13						c0.83			0.62	
v/s Ratio Perm			0.15						0.70			
v/c Ratio		1.04	0.15					1.02	0.86		0.76	
Uniform Delay, d1		58.3	0.0					12.5	7.8		6.1	
Progression Factor		1.00	1.00					1.00	1.00		1.00	
Incremental Delay, d2		77.0	0.2					21.8	6.7		1.2	
Delay (s)		135.3	0.2					34.3	14.5		7.3	
Level of Service		F	A					C	B		A	
Approach Delay (s)		67.9			0.0			28.1			7.3	
Approach LOS		E			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	133.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	115.6%	ICU Level of Service	H
Analysis Period (min)	15		

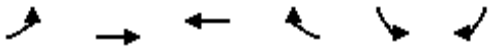
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	266	259	3832	128	11	2639
Future Volume (vph)	266	259	3832	128	11	2639
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5036	1568	3400	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5036	1568	3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	266	259	3832	128	11	2639
RTOR Reduction (vph)	0	42	0	22	0	0
Lane Group Flow (vph)	266	217	3832	106	11	2639
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	16.0	16.0	91.7	91.7	0.8	96.5
Effective Green, g (s)	16.0	16.0	91.7	91.7	0.8	96.5
Actuated g/C Ratio	0.13	0.13	0.76	0.76	0.01	0.80
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	451	208	3832	1193	22	4032
v/s Ratio Prot	0.08		c0.76		0.00	c0.52
v/s Ratio Perm		c0.14		0.07		
v/c Ratio	0.59	1.05	1.00	0.09	0.50	0.65
Uniform Delay, d1	49.2	52.2	14.4	3.7	59.7	5.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	74.7	14.5	0.0	16.8	0.4
Delay (s)	51.1	127.0	28.9	3.7	76.4	5.4
Level of Service	D	F	C	A	E	A
Approach Delay (s)	88.6		28.1			5.7
Approach LOS	F		C			A

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	364	1243	1822	138	197	705
Future Volume (vph)	364	1243	1822	138	197	705
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	364	1243	1822	138	197	705
RTOR Reduction (vph)	0	0	0	36	0	242
Lane Group Flow (vph)	364	1243	1822	102	197	463
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	25.0	90.0	61.0	61.0	32.0	32.0
Effective Green, g (s)	25.0	90.0	61.0	61.0	32.0	32.0
Actuated g/C Ratio	0.19	0.69	0.47	0.47	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	336	2426	1644	735	431	385
v/s Ratio Prot	c0.21	0.35	c0.52		0.11	
v/s Ratio Perm				0.06		c0.30
v/c Ratio	1.08	0.51	1.11	0.14	0.46	1.20
Uniform Delay, d1	52.5	9.5	34.5	19.6	41.6	49.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	73.2	0.2	58.1	0.1	0.8	113.5
Delay (s)	125.7	9.7	92.6	19.7	42.4	162.5
Level of Service	F	A	F	B	D	F
Approach Delay (s)		36.0	87.5		136.3	
Approach LOS		D	F		F	

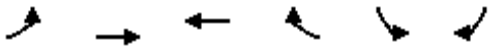
Intersection Summary			
HCM 2000 Control Delay	78.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	592	87	273	1290	161	54
Future Volume (vph)	592	87	273	1290	161	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	1752	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	592	87	273	1290	161	54
RTOR Reduction (vph)	0	59	0	0	0	42
Lane Group Flow (vph)	592	28	273	1290	161	12
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	13.1	13.1	6.1	23.2	9.1	9.1
Effective Green, g (s)	13.1	13.1	6.1	23.2	9.1	9.1
Actuated g/C Ratio	0.33	0.33	0.15	0.58	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1139	509	514	2017	395	354
v/s Ratio Prot	0.17		0.08	c0.37	c0.09	
v/s Ratio Perm		0.02				0.01
v/c Ratio	0.52	0.06	0.53	0.64	0.41	0.03
Uniform Delay, d1	11.0	9.3	15.8	5.7	13.3	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	1.1	0.7	0.7	0.0
Delay (s)	11.4	9.4	16.8	6.4	14.0	12.2
Level of Service	B	A	B	A	B	B
Approach Delay (s)	11.2			8.2	13.5	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

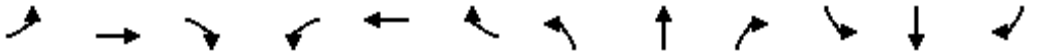
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	85	90	133	31	42	249
Future Volume (vph)	85	90	133	31	42	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	0.97		0.88	
Flt Protected		0.98	1.00		0.99	
Satd. Flow (prot)		1801	1798		1620	
Flt Permitted		0.76	1.00		0.99	
Satd. Flow (perm)		1409	1798		1620	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	85	90	133	31	42	249
RTOR Reduction (vph)	0	0	25	0	132	0
Lane Group Flow (vph)	0	175	139	0	159	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		5.2	5.2		11.7	
Effective Green, g (s)		5.2	5.2		11.7	
Actuated g/C Ratio		0.21	0.21		0.47	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		294	375		761	
v/s Ratio Prot			0.08		c0.10	
v/s Ratio Perm		c0.12				
v/c Ratio		0.60	0.37		0.21	
Uniform Delay, d1		8.9	8.4		3.9	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		3.2	0.6		0.1	
Delay (s)		12.1	9.1		4.0	
Level of Service		B	A		A	
Approach Delay (s)		12.1	9.1		4.0	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	24.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	320	136	89	642	483	182	1918	79	138	968	82
Future Volume (veh/h)	99	320	136	89	642	483	182	1918	79	138	968	82
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	99	320	136	89	642	483	182	1918	79	138	968	82
Adj No. of Lanes	1	2	0	1	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	125	808	337	115	602	512	208	1951	80	143	1794	558
Arrive On Green	0.07	0.33	0.33	0.07	0.33	0.33	0.12	0.40	0.40	0.08	0.36	0.36
Sat Flow, veh/h	1757	2414	1006	1740	1827	1553	1740	4914	202	1740	4988	1553
Grp Volume(v), veh/h	99	231	225	89	642	483	182	1297	700	138	968	82
Grp Sat Flow(s),veh/h/ln	1757	1752	1667	1740	1827	1553	1740	1663	1791	1740	1663	1553
Q Serve(g_s), s	7.4	13.5	13.9	6.7	44.0	40.4	13.7	51.5	51.7	10.6	20.6	4.8
Cycle Q Clear(g_c), s	7.4	13.5	13.9	6.7	44.0	40.4	13.7	51.5	51.7	10.6	20.6	4.8
Prop In Lane	1.00		0.60	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	125	586	558	115	602	512	208	1320	711	143	1794	558
V/C Ratio(X)	0.79	0.39	0.40	0.77	1.07	0.94	0.87	0.98	0.98	0.96	0.54	0.15
Avail Cap(c_a), veh/h	211	586	558	235	602	512	300	1320	711	143	1794	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	34.0	34.2	61.3	44.8	43.6	57.8	39.8	39.9	61.1	34.0	28.9
Incr Delay (d2), s/veh	10.6	0.4	0.5	10.4	55.6	26.4	17.5	20.6	29.9	63.6	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	6.6	6.5	3.6	31.4	21.1	7.6	27.4	31.4	7.6	9.5	2.1
LnGrp Delay(d),s/veh	71.6	34.5	34.7	71.8	100.4	69.9	75.3	60.4	69.7	124.7	34.3	29.0
LnGrp LOS	E	C	C	E	F	E	E	E	E	F	C	C
Approach Vol, veh/h		555			1214			2179			1188	
Approach Delay, s/veh		41.2			86.2			64.6			44.4	
Approach LOS		D			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	57.0	12.8	48.7	20.0	52.0	13.5	48.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	53.0	18.0	42.0	23.0	41.0	16.0	44.0
Max Q Clear Time (g_c+I1), s	12.6	53.7	8.7	15.9	15.7	22.6	9.4	46.0
Green Ext Time (p_c), s	0.0	0.0	0.1	10.8	0.3	7.4	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	440	502	24	40	398	427	69	1477	47	373	466	190
Future Volume (veh/h)	440	502	24	40	398	427	69	1477	47	373	466	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	440	502	24	40	398	427	69	1477	47	373	466	190
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	383	1140	54	51	510	228	114	1374	44	307	1587	710
Arrive On Green	0.22	0.33	0.33	0.03	0.15	0.15	0.03	0.40	0.40	0.09	0.46	0.46
Sat Flow, veh/h	1757	3406	163	1757	3505	1568	3375	3434	109	3375	3471	1553
Grp Volume(v), veh/h	440	258	268	40	398	427	69	745	779	373	466	190
Grp Sat Flow(s),veh/h/ln	1757	1752	1816	1757	1752	1568	1688	1736	1808	1688	1736	1553
Q Serve(g_s), s	24.0	12.6	12.7	2.5	12.0	16.0	2.2	44.0	44.0	10.0	9.3	8.3
Cycle Q Clear(g_c), s	24.0	12.6	12.7	2.5	12.0	16.0	2.2	44.0	44.0	10.0	9.3	8.3
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	383	587	608	51	510	228	114	694	723	307	1587	710
V/C Ratio(X)	1.15	0.44	0.44	0.79	0.78	1.87	0.61	1.07	1.08	1.22	0.29	0.27
Avail Cap(c_a), veh/h	383	587	608	96	510	228	153	694	723	307	1587	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	28.5	28.6	53.1	45.3	47.0	52.4	33.0	33.0	50.0	18.7	18.5
Incr Delay (d2), s/veh	92.7	0.5	0.5	23.2	7.7	408.8	5.1	55.6	56.2	123.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.5	6.2	6.4	1.5	6.3	32.8	1.1	31.7	33.2	9.9	4.4	3.6
LnGrp Delay(d),s/veh	135.7	29.1	29.1	76.3	53.0	455.8	57.5	88.6	89.2	173.1	18.8	18.7
LnGrp LOS	F	C	C	E	D	F	E	F	F	F	B	B
Approach Vol, veh/h		966			865			1593			1029	
Approach Delay, s/veh		77.6			252.9			87.5			74.7	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	48.0	7.2	40.8	7.7	54.3	28.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	44.0	6.0	34.0	5.0	49.0	24.0	16.0
Max Q Clear Time (g_c+I1), s	12.0	46.0	4.5	14.7	4.2	11.3	26.0	18.0
Green Ext Time (p_c), s	0.0	0.0	0.0	7.6	0.0	22.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	114.5
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	851	284	270	1426	126	11	562	185	25	314	7
Future Volume (veh/h)	12	851	284	270	1426	126	11	562	185	25	314	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	12	851	284	270	1426	126	11	562	185	25	314	7
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	20	1175	525	315	1640	144	19	742	332	39	782	17
Arrive On Green	0.01	0.34	0.34	0.18	0.52	0.52	0.01	0.21	0.21	0.02	0.22	0.22
Sat Flow, veh/h	1707	3406	1524	1707	3168	278	1757	3505	1568	1757	3505	78
Grp Volume(v), veh/h	12	851	284	270	763	789	11	562	185	25	157	164
Grp Sat Flow(s),veh/h/ln	1707	1703	1524	1707	1703	1743	1757	1752	1568	1757	1752	1831
Q Serve(g_s), s	0.5	14.8	10.2	10.4	26.5	27.0	0.4	10.2	7.1	1.0	5.2	5.2
Cycle Q Clear(g_c), s	0.5	14.8	10.2	10.4	26.5	27.0	0.4	10.2	7.1	1.0	5.2	5.2
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	20	1175	525	315	882	903	19	742	332	39	391	408
V/C Ratio(X)	0.59	0.72	0.54	0.86	0.87	0.87	0.57	0.76	0.56	0.64	0.40	0.40
Avail Cap(c_a), veh/h	101	1207	540	378	882	903	104	828	371	104	414	433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	19.4	17.9	26.7	14.3	14.4	33.3	25.0	23.8	32.8	22.4	22.5
Incr Delay (d2), s/veh	24.2	2.1	1.0	15.2	9.0	9.5	23.4	3.6	1.5	16.3	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	7.2	4.4	6.2	14.5	15.1	0.3	5.3	3.2	0.6	2.6	2.7
LnGrp Delay(d),s/veh	57.5	21.5	18.9	41.9	23.3	23.9	56.8	28.7	25.3	49.1	23.1	23.1
LnGrp LOS	E	C	B	D	C	C	E	C	C	D	C	C
Approach Vol, veh/h		1147			1822			758			346	
Approach Delay, s/veh		21.2			26.3			28.3			25.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	18.3	16.5	27.3	4.7	19.1	4.8	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	15.0	24.0	4.0	16.0	4.0	35.0
Max Q Clear Time (g_c+I1), s	3.0	12.2	12.4	16.8	2.4	7.2	2.5	29.0
Green Ext Time (p_c), s	0.0	2.2	0.2	6.6	0.0	4.1	0.0	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	262	361	89	317	81	433	550	122	7	209	59
Future Volume (veh/h)	43	262	361	89	317	81	433	550	122	7	209	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	43	262	361	89	317	81	433	550	122	7	209	59
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	59	883	395	113	785	198	487	1487	665	13	542	243
Arrive On Green	0.03	0.25	0.25	0.06	0.28	0.28	0.28	0.42	0.42	0.01	0.15	0.15
Sat Flow, veh/h	1757	3505	1568	1757	2775	699	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	43	262	361	89	198	200	433	550	122	7	209	59
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1721	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	1.5	3.8	14.2	3.2	5.8	6.0	15.0	6.8	3.1	0.3	3.4	2.1
Cycle Q Clear(g_c), s	1.5	3.8	14.2	3.2	5.8	6.0	15.0	6.8	3.1	0.3	3.4	2.1
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	883	395	113	496	487	487	1487	665	13	542	243
V/C Ratio(X)	0.73	0.30	0.91	0.79	0.40	0.41	0.89	0.37	0.18	0.54	0.39	0.24
Avail Cap(c_a), veh/h	138	883	395	138	496	487	581	1876	839	111	938	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	19.2	23.1	29.3	18.4	18.5	22.0	12.5	11.4	31.4	24.1	23.6
Incr Delay (d2), s/veh	15.9	0.2	25.3	21.1	0.5	0.6	14.0	0.2	0.1	31.4	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.9	8.8	2.2	2.9	2.9	9.1	3.3	1.4	0.2	1.7	0.9
LnGrp Delay(d),s/veh	46.3	19.4	48.4	50.4	18.9	19.0	36.0	12.6	11.5	62.8	24.6	24.1
LnGrp LOS	D	B	D	D	B	B	D	B	B	E	C	C
Approach Vol, veh/h		666			487			1105			275	
Approach Delay, s/veh		36.9			24.7			21.7			25.4	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.5	31.0	8.1	20.0	21.6	13.8	6.1	22.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	34.0	5.0	16.0	21.0	17.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	2.3	8.8	5.2	16.2	17.0	5.4	3.5	8.0
Green Ext Time (p_c), s	0.0	6.2	0.0	0.0	0.6	4.4	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	481	113	75	700	352	66	828	168	200	345	35
Future Volume (veh/h)	167	481	113	75	700	352	66	828	168	200	345	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	167	481	113	75	700	352	66	828	168	200	345	35
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	191	1062	475	96	871	390	83	945	423	218	1214	543
Arrive On Green	0.11	0.30	0.30	0.05	0.25	0.25	0.05	0.27	0.27	0.12	0.35	0.35
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	167	481	113	75	700	352	66	828	168	200	345	35
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	6.0	7.1	3.5	2.7	12.1	14.0	2.4	14.5	5.6	7.2	4.6	1.0
Cycle Q Clear(g_c), s	6.0	7.1	3.5	2.7	12.1	14.0	2.4	14.5	5.6	7.2	4.6	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	1062	475	96	871	390	83	945	423	218	1214	543
V/C Ratio(X)	0.87	0.45	0.24	0.78	0.80	0.90	0.79	0.88	0.40	0.92	0.28	0.06
Avail Cap(c_a), veh/h	191	1062	475	191	872	390	164	981	439	218	1214	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	18.1	16.8	30.0	22.7	23.4	30.3	22.5	19.2	27.8	15.2	14.1
Incr Delay (d2), s/veh	33.0	0.3	0.3	13.1	5.5	23.6	15.3	8.8	0.6	38.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	3.5	1.5	1.7	6.5	8.6	1.5	8.2	2.5	5.8	2.2	0.4
LnGrp Delay(d),s/veh	61.3	18.4	17.1	43.1	28.2	47.0	45.6	31.3	19.8	66.3	15.4	14.1
LnGrp LOS	E	B	B	D	C	D	D	C	B	E	B	B
Approach Vol, veh/h		761			1127			1062			580	
Approach Delay, s/veh		27.6			35.1			30.4			32.9	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	21.3	7.5	23.5	7.1	26.3	11.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	18.0	7.0	16.0	6.0	20.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	9.2	16.5	4.7	9.1	4.4	6.6	8.0	16.0
Green Ext Time (p_c), s	0.0	0.8	0.0	4.8	0.0	7.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	450	99	356	432	664	42	3223	447	620	2418	552
Future Volume (veh/h)	380	450	99	356	432	664	42	3223	447	620	2418	552
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	380	450	99	356	432	664	42	3223	447	620	2418	552
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	215	885	396	215	885	557	67	2224	692	348	2638	821
Arrive On Green	0.06	0.25	0.25	0.06	0.25	0.25	0.02	0.45	0.45	0.10	0.53	0.53
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	380	450	99	356	432	664	42	3223	447	620	2418	552
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	9.5	16.6	7.6	9.5	15.8	38.0	1.9	67.1	33.7	15.5	66.7	39.1
Cycle Q Clear(g_c), s	9.5	16.6	7.6	9.5	15.8	38.0	1.9	67.1	33.7	15.5	66.7	39.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	215	885	396	215	885	557	67	2224	692	348	2638	821
V/C Ratio(X)	1.77	0.51	0.25	1.65	0.49	1.19	0.62	1.45	0.65	1.78	0.92	0.67
Avail Cap(c_a), veh/h	215	885	396	215	885	557	67	2224	692	348	2638	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.5	48.2	44.9	70.5	48.0	48.5	73.2	41.7	32.4	67.5	32.4	25.9
Incr Delay (d2), s/veh	363.2	0.2	0.1	314.5	0.2	102.9	12.7	204.8	1.6	364.0	5.5	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.3	8.0	3.3	13.8	7.7	39.0	1.0	72.8	14.8	24.8	31.8	17.1
LnGrp Delay(d),s/veh	433.7	48.4	45.0	385.0	48.1	151.4	85.9	246.5	34.1	431.5	38.0	27.7
LnGrp LOS	F	D	D	F	D	F	F	F	C	F	D	C
Approach Vol, veh/h		929			1452			3712			3590	
Approach Delay, s/veh		205.6			177.9			219.1			104.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	84.4	15.0	42.6	21.0	71.9	15.0	42.6
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	3.0	79.4	9.5	* 38	15.5	* 67	9.5	37.7
Max Q Clear Time (g_c+I1), s	3.9	68.7	11.5	40.0	17.5	69.1	11.5	18.6
Green Ext Time (p_c), s	0.0	10.5	0.0	0.0	0.0	0.0	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	169.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	2	10	0	114	0	3123	87	76	2270	6
Future Volume (veh/h)	10	0	2	10	0	114	0	3123	87	76	2270	6
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	10	0	2	10	0	114	0	3123	87	76	2270	6
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	12	0	2	96	0	171	2	3353	1044	87	3975	11
Arrive On Green	0.01	0.00	0.01	0.05	0.00	0.05	0.00	0.67	0.67	0.05	0.77	0.77
Sat Flow, veh/h	1435	0	287	1757	0	3136	1740	4988	1553	1740	5136	14
Grp Volume(v), veh/h	12	0	0	10	0	114	0	3123	87	76	1469	807
Grp Sat Flow(s),veh/h/ln	1722	0	0	1757	0	1568	1740	1663	1553	1740	1663	1825
Q Serve(g_s), s	0.7	0.0	0.0	0.5	0.0	3.5	0.0	53.9	1.9	4.3	17.6	17.6
Cycle Q Clear(g_c), s	0.7	0.0	0.0	0.5	0.0	3.5	0.0	53.9	1.9	4.3	17.6	17.6
Prop In Lane	0.83		0.17	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	15	0	0	96	0	171	2	3353	1044	87	2574	1412
V/C Ratio(X)	0.82	0.00	0.00	0.10	0.00	0.67	0.00	0.93	0.08	0.88	0.57	0.57
Avail Cap(c_a), veh/h	53	0	0	215	0	383	53	3512	1093	87	2574	1412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.6	0.0	0.0	44.2	0.0	45.6	0.0	14.1	5.6	46.4	4.5	4.5
Incr Delay (d2), s/veh	31.6	0.0	0.0	0.2	0.0	1.7	0.0	5.7	0.1	56.3	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.3	0.0	1.6	0.0	26.1	0.9	3.4	8.2	9.2
LnGrp Delay(d),s/veh	80.3	0.0	0.0	44.3	0.0	47.2	0.0	19.9	5.7	102.7	5.2	5.8
LnGrp LOS	F			D		D		B	A	F	A	A
Approach Vol, veh/h		12			124			3210			2352	
Approach Delay, s/veh		80.3			47.0			19.5			8.5	
Approach LOS		F			D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	81.1		6.3	10.0	71.1		10.9
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 3	71.4		3.0	* 4.9	* 69		12.0
Max Q Clear Time (g_c+I1), s	0.0	19.6		2.7	6.3	55.9		5.5
Green Ext Time (p_c), s	0.0	51.6		0.0	0.0	10.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	161	23	219	256	484	34	2872	286	181	2207	0
Future Volume (veh/h)	0	161	23	219	256	484	34	2872	286	181	2207	0
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	0	161	23	219	256	484	34	2872	286	181	2207	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	508	227	208	864	492	60	2627	253	227	3079	0
Arrive On Green	0.00	0.15	0.15	0.06	0.25	0.25	0.02	0.57	0.57	0.07	0.62	0.00
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4627	446	3375	5152	0
Grp Volume(v), veh/h	0	161	23	219	256	484	34	2038	1120	181	2207	0
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1748	1688	1663	0
Q Serve(g_s), s	0.0	5.8	1.8	8.5	8.3	34.4	1.4	79.2	79.2	7.4	42.4	0.0
Cycle Q Clear(g_c), s	0.0	5.8	1.8	8.5	8.3	34.4	1.4	79.2	79.2	7.4	42.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.26	1.00		0.00
Lane Grp Cap(c), veh/h	2	508	227	208	864	492	60	1888	993	227	3079	0
V/C Ratio(X)	0.00	0.32	0.10	1.05	0.30	0.98	0.57	1.08	1.13	0.80	0.72	0.00
Avail Cap(c_a), veh/h	73	722	323	208	864	492	102	1888	993	278	3089	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	53.3	51.6	65.5	42.7	47.5	68.0	30.1	30.1	64.1	18.3	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	77.6	0.1	36.0	3.1	45.9	70.7	10.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	0.8	6.2	4.0	23.4	0.7	48.2	57.6	3.8	19.4	0.0
LnGrp Delay(d),s/veh	0.0	53.4	51.7	143.1	42.8	83.5	71.0	76.1	100.9	74.1	19.0	0.0
LnGrp LOS		D	D	F	D	F	E	F	F	E	B	
Approach Vol, veh/h		184			959			3192			2388	
Approach Delay, s/veh		53.2			86.2			84.7			23.2	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	91.4	0.0	40.1	14.9	84.5	14.0	26.1
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	4.2	86.4	3.0	* 34	11.5	* 79	8.5	* 29
Max Q Clear Time (g_c+I1), s	3.4	44.4	0.0	36.4	9.4	81.2	10.5	7.8
Green Ext Time (p_c), s	0.0	35.6	0.0	0.0	0.0	0.0	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	62.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	46	103	3020	24	61	2438
Future Volume (veh/h)	46	103	3020	24	61	2438
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	46	103	3020	24	61	2438
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	103	92	3583	28	77	2802
Arrive On Green	0.06	0.06	0.70	0.70	0.04	0.81
Sat Flow, veh/h	1757	1568	5269	40	1740	3563
Grp Volume(v), veh/h	46	103	1965	1079	61	2438
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1820	1740	1736
Q Serve(g_s), s	1.9	4.5	33.1	33.4	2.7	34.9
Cycle Q Clear(g_c), s	1.9	4.5	33.1	33.4	2.7	34.9
Prop In Lane	1.00	1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	103	92	2334	1277	77	2802
V/C Ratio(X)	0.45	1.12	0.84	0.85	0.79	0.87
Avail Cap(c_a), veh/h	103	92	2334	1277	161	2946
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	36.2	8.3	8.4	36.4	4.8
Incr Delay (d2), s/veh	1.1	130.4	2.8	5.1	6.6	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.2	15.6	18.0	1.4	17.0
LnGrp Delay(d),s/veh	36.1	166.6	11.1	13.5	43.0	7.6
LnGrp LOS	D	F	B	B	D	A
Approach Vol, veh/h	149		3044			2499
Approach Delay, s/veh	126.3		12.0			8.5
Approach LOS	F		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		66.8			8.1	58.7		10.0
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		65.2			* 7.1	53.4		4.5
Max Q Clear Time (g_c+I1), s		36.9			4.7	35.4		6.5
Green Ext Time (p_c), s		25.1			0.0	16.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	636	391	83	1099	844	511	2223	86	531	2041	205
Future Volume (veh/h)	77	636	391	83	1099	844	511	2223	86	531	2041	205
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	77	636	391	83	1099	844	511	2223	86	531	2041	205
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	69	1167	522	123	1235	553	403	1796	559	407	1796	559
Arrive On Green	0.02	0.34	0.34	0.04	0.36	0.36	0.12	0.36	0.36	0.12	0.36	0.36
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	77	636	391	83	1099	844	511	2223	86	531	2041	205
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	3.0	21.9	32.9	3.6	44.0	52.6	17.3	52.2	5.4	17.5	52.2	14.1
Cycle Q Clear(g_c), s	3.0	21.9	32.9	3.6	44.0	52.6	17.3	52.2	5.4	17.5	52.2	14.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	1167	522	123	1235	553	403	1796	559	407	1796	559
V/C Ratio(X)	1.12	0.54	0.75	0.67	0.89	1.53	1.27	1.24	0.15	1.30	1.14	0.37
Avail Cap(c_a), veh/h	69	1167	522	174	1235	553	403	1796	559	407	1796	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	38.5	42.1	68.9	43.5	46.2	63.8	46.4	31.4	63.8	46.4	34.2
Incr Delay (d2), s/veh	146.4	0.3	5.3	2.4	8.0	246.3	139.3	112.1	0.0	153.4	69.0	0.1
Initial Q Delay(d3),s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	10.3	14.6	1.7	22.0	60.0	15.8	42.6	2.3	16.8	35.4	6.0
LnGrp Delay(d),s/veh	217.6	38.8	47.4	71.3	51.5	292.5	203.2	158.5	31.5	217.2	115.4	34.4
LnGrp LOS	F	D	D	E	D	F	F	F	C	F	F	C
Approach Vol, veh/h		1104			2026			2820			2777	
Approach Delay, s/veh		54.3			152.7			162.7			128.9	
Approach LOS		D			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	58.0	22.0	57.0	10.9	55.1	22.0	57.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.5	4.8
Max Green Setting (Gmax), s	3.0	* 53	* 17	52.2	7.6	* 48	17.5	52.2
Max Q Clear Time (g_c+I1), s	5.0	54.6	19.3	54.2	5.6	34.9	19.5	54.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	135.9
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	119	64	94	37	244	257	2717	201	18	2135	416
Future Volume (veh/h)	128	119	64	94	37	244	257	2717	201	18	2135	416
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	128	119	64	94	37	244	257	2717	201	18	2135	416
Adj No. of Lanes	1	1	1	1	1	0	1	3	1	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	139	288	245	118	30	196	266	2878	896	21	2207	687
Arrive On Green	0.08	0.16	0.16	0.07	0.14	0.14	0.15	0.58	0.58	0.01	0.44	0.44
Sat Flow, veh/h	1757	1845	1568	1757	211	1389	1740	4988	1553	1740	4988	1553
Grp Volume(v), veh/h	128	119	64	94	0	281	257	2717	201	18	2135	416
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1600	1740	1663	1553	1740	1663	1553
Q Serve(g_s), s	7.9	6.4	3.9	5.8	0.0	15.5	16.1	55.6	6.9	1.1	45.8	22.4
Cycle Q Clear(g_c), s	7.9	6.4	3.9	5.8	0.0	15.5	16.1	55.6	6.9	1.1	45.8	22.4
Prop In Lane	1.00		1.00	1.00		0.87	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	288	245	118	0	226	266	2878	896	21	2207	687
V/C Ratio(X)	0.92	0.41	0.26	0.80	0.00	1.24	0.97	0.94	0.22	0.86	0.97	0.61
Avail Cap(c_a), veh/h	139	288	245	144	0	226	266	2878	896	48	2249	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	41.8	40.7	50.5	0.0	47.1	46.2	21.6	11.3	54.1	29.8	23.3
Incr Delay (d2), s/veh	51.7	0.4	0.2	18.3	0.0	141.4	45.1	7.3	0.0	28.6	12.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	3.3	1.7	3.4	0.0	15.6	11.0	27.1	2.9	0.7	23.4	9.8
LnGrp Delay(d),s/veh	101.9	42.1	40.9	68.7	0.0	188.5	91.3	28.9	11.3	82.8	41.9	24.3
LnGrp LOS	F	D	D	E		F	F	C	B	F	D	C
Approach Vol, veh/h		311			375			3175			2569	
Approach Delay, s/veh		66.5			158.5			32.8			39.3	
Approach LOS		E			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	53.4	14.2	20.8	6.6	68.1	12.6	22.4
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 17	49.5	8.7	* 16	* 3	62.6	* 9	* 15
Max Q Clear Time (g_c+I1), s	18.1	47.8	9.9	17.5	3.1	57.6	7.8	8.4
Green Ext Time (p_c), s	0.0	0.8	0.0	0.0	0.0	4.9	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	44.4
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	552	82	3	972	790	294	2416	28	835	882	558
Future Volume (veh/h)	181	552	82	3	972	790	294	2416	28	835	882	558
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	181	552	82	3	972	790	294	2416	28	835	882	558
Adj No. of Lanes	2	1	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	237	601	511	43	984	440	346	1753	546	324	1746	544
Arrive On Green	0.07	0.33	0.33	0.02	0.28	0.28	0.10	0.35	0.35	0.10	0.35	0.35
Sat Flow, veh/h	3408	1845	1568	1757	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	181	552	82	3	972	790	294	2416	28	835	882	558
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1757	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	6.4	35.1	4.5	0.2	33.6	34.2	10.4	42.8	1.5	11.7	17.0	42.6
Cycle Q Clear(g_c), s	6.4	35.1	4.5	0.2	33.6	34.2	10.4	42.8	1.5	11.7	17.0	42.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	601	511	43	984	440	346	1753	546	324	1746	544
V/C Ratio(X)	0.76	0.92	0.16	0.07	0.99	1.79	0.85	1.38	0.05	2.57	0.51	1.03
Avail Cap(c_a), veh/h	896	601	511	462	984	440	385	1753	546	324	1746	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	39.5	29.2	58.0	43.6	43.8	53.7	39.5	26.1	55.0	31.2	39.6
Incr Delay (d2), s/veh	1.9	18.9	0.1	0.2	25.5	366.3	13.8	173.9	0.0	717.6	0.1	45.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	20.9	2.0	0.1	19.7	59.6	5.5	47.7	0.6	37.7	7.9	25.2
LnGrp Delay(d),s/veh	57.6	58.4	29.3	58.3	69.1	410.1	67.6	213.4	26.1	772.6	31.3	85.1
LnGrp LOS	E	E	C	E	E	F	E	F	C	F	C	F
Approach Vol, veh/h		815			1765			2738			2275	
Approach Delay, s/veh		55.3			221.7			195.8			316.6	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.2	47.7	15.6	41.3	17.0	47.9	10.1	46.8
Change Period (Y+Rc), s	* 4.7	5.1	7.1	* 7.1	* 5.3	5.1	7.1	7.1
Max Green Setting (Gmax), s	* 14	41.2	32.0	* 34	* 12	42.8	32.0	33.9
Max Q Clear Time (g_c+I1), s	12.4	44.6	8.4	36.2	13.7	44.8	2.2	37.1
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		222.9
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	942	280	138	13	452	10	896	2252	129	9	810	643
Future Volume (veh/h)	942	280	138	13	452	10	896	2252	129	9	810	643
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	942	280	138	13	452	10	896	2252	129	9	810	643
Adj No. of Lanes	1	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	636	1633	730	15	391	175	609	1873	583	21	1023	319
Arrive On Green	0.37	0.47	0.47	0.01	0.11	0.11	0.18	0.38	0.38	0.01	0.21	0.21
Sat Flow, veh/h	1740	3471	1553	1740	3471	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	942	280	138	13	452	10	896	2252	129	9	810	643
Grp Sat Flow(s),veh/h/ln	1740	1736	1553	1740	1736	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	54.9	7.0	7.8	1.1	16.9	0.9	27.1	56.4	8.5	0.4	23.1	30.8
Cycle Q Clear(g_c), s	54.9	7.0	7.8	1.1	16.9	0.9	27.1	56.4	8.5	0.4	23.1	30.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	636	1633	730	15	391	175	609	1873	583	21	1023	319
V/C Ratio(X)	1.48	0.17	0.19	0.86	1.16	0.06	1.47	1.20	0.22	0.43	0.79	2.02
Avail Cap(c_a), veh/h	636	1633	730	58	391	175	609	1873	583	67	1023	319
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	22.9	23.1	74.3	66.6	59.5	61.5	46.9	31.9	74.3	56.6	59.7
Incr Delay (d2), s/veh	224.5	0.2	0.6	36.8	95.5	0.6	220.5	96.5	0.9	5.0	6.3	469.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	66.0	3.4	3.4	0.7	13.3	0.4	31.3	42.6	3.8	0.2	11.2	54.7
LnGrp Delay(d),s/veh	272.1	23.1	23.7	111.1	162.1	60.1	282.0	143.4	32.8	79.3	62.9	528.6
LnGrp LOS	F	C	C	F	F	E	F	F	C	E	E	F
Approach Vol, veh/h		1360			475			3277			1462	
Approach Delay, s/veh		195.6			158.6			176.9			267.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.0	36.0	60.0	22.1	6.4	61.6	6.3	75.8
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 27	* 31	* 55	* 17	3.0	* 55	5.0	* 67
Max Q Clear Time (g_c+I1), s	29.1	32.8	56.9	18.9	2.4	58.4	3.1	9.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.4

Intersection Summary	
HCM 2010 Ctrl Delay	199.7
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	470	369	116	884	333	513	2624	203	76	965	88
Future Volume (veh/h)	95	470	369	116	884	333	513	2624	203	76	965	88
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	95	470	369	116	884	333	513	2624	203	76	965	88
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	109	811	363	163	867	388	562	2642	822	93	1948	606
Arrive On Green	0.03	0.23	0.23	0.05	0.25	0.25	0.17	0.53	0.53	0.03	0.39	0.39
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	95	470	369	116	884	333	513	2624	203	76	965	88
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	3.7	16.1	31.2	4.5	33.4	27.4	20.2	70.5	9.5	3.0	19.7	4.9
Cycle Q Clear(g_c), s	3.7	16.1	31.2	4.5	33.4	27.4	20.2	70.5	9.5	3.0	19.7	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	109	811	363	163	867	388	562	2642	822	93	1948	606
V/C Ratio(X)	0.88	0.58	1.02	0.71	1.02	0.86	0.91	0.99	0.25	0.82	0.50	0.15
Avail Cap(c_a), veh/h	109	811	363	227	867	388	758	2642	822	93	1948	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.1	46.1	51.9	63.3	50.8	48.5	55.3	31.5	17.2	65.3	31.1	26.6
Incr Delay (d2), s/veh	48.2	3.0	51.6	2.6	35.5	19.7	10.7	16.0	0.5	40.1	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	8.1	18.7	2.2	20.4	14.0	10.2	36.0	4.2	1.9	9.1	2.2
LnGrp Delay(d),s/veh	113.3	49.1	103.6	66.0	86.3	68.2	66.0	47.5	17.7	105.4	31.7	26.9
LnGrp LOS	F	D	F	E	F	E	E	D	B	F	C	C
Approach Vol, veh/h		934			1333			3340			1129	
Approach Delay, s/veh		77.1			80.0			48.5			36.3	
Approach LOS		E			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	58.2	9.8	39.0	9.2	77.0	12.0	36.8
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	30.3	* 45	4.3	33.4	3.7	* 72	9.0	* 29
Max Q Clear Time (g_c+I1), s	22.2	21.7	5.7	35.4	5.0	72.5	6.5	33.2
Green Ext Time (p_c), s	0.3	23.2	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	56.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	943	33	15	1389	8	466	42	186	7	16	55
Future Volume (veh/h)	14	943	33	15	1389	8	466	42	186	7	16	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	14	943	33	15	1389	8	466	42	186	7	16	55
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	22	1581	707	23	1583	708	494	106	468	12	27	92
Arrive On Green	0.01	0.46	0.46	0.01	0.46	0.46	0.28	0.36	0.36	0.01	0.07	0.07
Sat Flow, veh/h	1707	3406	1524	1707	3406	1524	1757	297	1315	1757	366	1257
Grp Volume(v), veh/h	14	943	33	15	1389	8	466	0	228	7	0	71
Grp Sat Flow(s),veh/h/ln	1707	1703	1524	1707	1703	1524	1757	0	1613	1757	0	1623
Q Serve(g_s), s	0.9	22.9	1.3	1.0	41.1	0.3	28.9	0.0	11.8	0.4	0.0	4.7
Cycle Q Clear(g_c), s	0.9	22.9	1.3	1.0	41.1	0.3	28.9	0.0	11.8	0.4	0.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.82	1.00		0.77
Lane Grp Cap(c), veh/h	22	1581	707	23	1583	708	494	0	574	12	0	119
V/C Ratio(X)	0.65	0.60	0.05	0.66	0.88	0.01	0.94	0.00	0.40	0.57	0.00	0.60
Avail Cap(c_a), veh/h	61	1581	707	84	1608	719	546	0	747	63	0	306
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.8	22.1	16.4	54.7	26.9	16.0	39.2	0.0	26.9	55.2	0.0	50.0
Incr Delay (d2), s/veh	20.1	0.8	0.0	19.9	6.1	0.0	23.5	0.0	0.4	25.2	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	10.9	0.6	0.6	20.6	0.1	17.2	0.0	5.3	0.3	0.0	2.3
LnGrp Delay(d),s/veh	74.9	22.9	16.4	74.6	33.0	16.0	62.7	0.0	27.3	80.3	0.0	54.3
LnGrp LOS	E	C	B	E	C	B	E		C	F		D
Approach Vol, veh/h		990			1412			694			78	
Approach Delay, s/veh		23.5			33.4			51.1			56.6	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	58.1	35.7	12.6	4.9	58.2	4.3	44.0
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	5.5	51.1	34.6	* 21	4.0	52.6	4.0	51.6
Max Q Clear Time (g_c+I1), s	3.0	24.9	30.9	6.7	2.9	43.1	2.4	13.8
Green Ext Time (p_c), s	0.0	23.9	0.4	1.4	0.0	8.7	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	34.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	778	662	5	1191	560	640	485	25	176	236	1
Future Volume (veh/h)	1	778	662	5	1191	560	640	485	25	176	236	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	1	778	662	5	1191	560	640	485	25	176	236	1
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1	799	658	7	1038	465	541	627	533	192	261	222
Arrive On Green	0.00	0.44	0.44	0.00	0.44	0.44	0.31	0.34	0.34	0.11	0.14	0.14
Sat Flow, veh/h	1757	1827	1505	1757	2356	1055	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	1	745	695	5	870	881	640	485	25	176	236	1
Grp Sat Flow(s),veh/h/ln	1757	1752	1579	1757	1752	1659	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.1	60.9	64.0	0.4	64.4	64.4	45.0	34.4	1.6	14.5	18.4	0.1
Cycle Q Clear(g_c), s	0.1	60.9	64.0	0.4	64.4	64.4	45.0	34.4	1.6	14.5	18.4	0.1
Prop In Lane	1.00		0.95	1.00		0.64	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1	767	691	7	772	731	541	627	533	192	261	222
V/C Ratio(X)	0.70	0.97	1.01	0.75	1.13	1.21	1.18	0.77	0.05	0.92	0.90	0.00
Avail Cap(c_a), veh/h	48	767	691	48	772	731	541	631	536	192	265	225
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.1	40.3	41.1	72.8	40.9	40.9	50.6	43.2	32.4	64.5	61.8	53.9
Incr Delay (d2), s/veh	231.3	25.7	35.5	96.4	73.5	105.1	100.5	5.9	0.0	41.9	31.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	34.9	34.7	0.4	46.8	50.8	36.9	18.5	0.7	9.3	11.6	0.0
LnGrp Delay(d),s/veh	304.3	65.9	76.7	169.2	114.4	146.0	151.1	49.2	32.4	106.4	93.0	53.9
LnGrp LOS	F	E	F	F	F	F	F	D	C	F	F	D
Approach Vol, veh/h		1441			1756			1150			413	
Approach Delay, s/veh		71.3			130.4			105.5			98.6	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	53.7	4.6	68.0	49.0	24.7	4.1	68.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	50.0	4.0	64.0	45.0	21.0	4.0	64.0
Max Q Clear Time (g_c+I1), s	16.5	36.4	2.4	66.0	47.0	20.4	2.1	66.4
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.0	0.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	103.7
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	238	5	36	435	6	10	54	48	11	30	30
Future Volume (veh/h)	176	238	5	36	435	6	10	54	48	11	30	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1900	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	176	238	5	36	435	6	10	54	48	11	30	30
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	222	1176	25	58	855	12	19	105	93	15	41	41
Arrive On Green	0.13	0.34	0.34	0.03	0.24	0.24	0.13	0.13	0.13	0.06	0.06	0.06
Sat Flow, veh/h	1740	3477	73	1740	3506	48	152	823	732	264	720	720
Grp Volume(v), veh/h	176	119	124	36	215	226	112	0	0	71	0	0
Grp Sat Flow(s),veh/h/ln	1740	1736	1814	1740	1736	1818	1708	0	0	1704	0	0
Q Serve(g_s), s	3.5	1.7	1.8	0.7	3.9	3.9	2.2	0.0	0.0	1.5	0.0	0.0
Cycle Q Clear(g_c), s	3.5	1.7	1.8	0.7	3.9	3.9	2.2	0.0	0.0	1.5	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.03	0.09		0.43	0.15		0.42
Lane Grp Cap(c), veh/h	222	587	614	58	423	444	217	0	0	96	0	0
V/C Ratio(X)	0.79	0.20	0.20	0.62	0.51	0.51	0.51	0.00	0.00	0.74	0.00	0.00
Avail Cap(c_a), veh/h	290	819	857	242	771	808	759	0	0	757	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.2	8.5	8.5	17.2	11.7	11.7	14.7	0.0	0.0	16.7	0.0	0.0
Incr Delay (d2), s/veh	10.6	0.2	0.2	10.1	0.9	0.9	1.9	0.0	0.0	10.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.9	0.9	0.5	2.0	2.1	1.1	0.0	0.0	1.0	0.0	0.0
LnGrp Delay(d),s/veh	25.8	8.6	8.6	27.3	12.7	12.7	16.6	0.0	0.0	27.2	0.0	0.0
LnGrp LOS	C	A	A	C	B	B	B			C		
Approach Vol, veh/h		419			477			112			71	
Approach Delay, s/veh		15.9			13.8			16.6			27.2	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		8.6	5.2	16.2		6.0	8.6	12.8
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	5.0	17.0		16.0	6.0	16.0
Max Q Clear Time (g_c+I1), s		4.2	2.7	3.8		3.5	5.5	5.9
Green Ext Time (p_c), s		0.4	0.0	3.4		0.2	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	288	101	114	136	134	110	656	119	77	275	293
Future Volume (veh/h)	96	288	101	114	136	134	110	656	119	77	275	293
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	96	288	101	114	136	134	110	656	119	77	275	293
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	122	421	145	114	274	245	140	731	622	97	687	584
Arrive On Green	0.07	0.16	0.16	0.06	0.16	0.16	0.08	0.40	0.40	0.06	0.37	0.37
Sat Flow, veh/h	1757	2562	880	1757	1752	1568	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	96	195	194	114	136	134	110	656	119	77	275	293
Grp Sat Flow(s),veh/h/ln	1757	1752	1689	1757	1752	1568	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	3.3	6.5	6.7	4.0	4.4	4.9	3.8	20.6	3.1	2.7	6.8	8.9
Cycle Q Clear(g_c), s	3.3	6.5	6.7	4.0	4.4	4.9	3.8	20.6	3.1	2.7	6.8	8.9
Prop In Lane	1.00		0.52	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	288	278	114	274	245	140	731	622	97	687	584
V/C Ratio(X)	0.78	0.68	0.70	1.00	0.50	0.55	0.78	0.90	0.19	0.79	0.40	0.50
Avail Cap(c_a), veh/h	191	880	848	114	792	708	250	926	787	128	800	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	24.3	24.4	28.9	23.8	24.0	27.9	17.5	12.2	28.8	14.3	15.0
Incr Delay (d2), s/veh	4.5	1.0	1.2	84.9	0.5	0.7	3.6	8.4	0.1	15.9	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.2	3.2	4.6	2.2	2.1	2.0	12.1	1.3	1.7	3.5	3.8
LnGrp Delay(d),s/veh	32.7	25.3	25.6	113.8	24.4	24.8	31.5	25.9	12.2	44.7	14.4	15.2
LnGrp LOS	C	C	C	F	C	C	C	C	B	D	B	B
Approach Vol, veh/h		485			384			885			645	
Approach Delay, s/veh		26.9			51.0			24.7			18.4	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	14.4	10.4	27.4	9.0	14.9	8.9	28.9
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 6.7	27.9	8.8	* 27	4.0	* 31	4.5	* 31
Max Q Clear Time (g_c+I1), s	5.3	6.9	5.8	10.9	6.0	8.7	4.7	22.6
Green Ext Time (p_c), s	0.0	1.4	0.0	2.3	0.0	1.5	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	771	6	1	1093	0	4	0	1	0	0	5
Future Volume (veh/h)	1	771	6	1	1093	0	4	0	1	0	0	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	1	771	6	1	1093	0	4	0	1	0	0	5
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1877	15	4	1846	0	102	0	25	0	0	6
Arrive On Green	0.00	0.53	0.53	0.00	0.53	0.00	0.07	0.00	0.07	0.00	0.00	0.00
Sat Flow, veh/h	1757	3564	28	1757	3597	0	1372	0	343	0	0	1568
Grp Volume(v), veh/h	1	379	398	1	1093	0	5	0	0	0	0	5
Grp Sat Flow(s),veh/h/ln	1757	1752	1840	1757	1752	0	1715	0	0	0	0	1568
Q Serve(g_s), s	0.0	5.3	5.3	0.0	8.7	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.0	5.3	5.3	0.0	8.7	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Prop In Lane	1.00		0.02	1.00		0.00	0.80		0.20	0.00		1.00
Lane Grp Cap(c), veh/h	4	923	969	4	1846	0	127	0	0	0	0	6
V/C Ratio(X)	0.23	0.41	0.41	0.23	0.59	0.00	0.04	0.00	0.00	0.00	0.00	0.79
Avail Cap(c_a), veh/h	173	1123	1179	173	2247	0	677	0	0	0	0	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	20.2	5.8	5.8	20.2	6.6	0.0	17.4	0.0	0.0	0.0	0.0	20.2
Incr Delay (d2), s/veh	25.1	0.3	0.3	25.1	0.3	0.0	0.1	0.0	0.0	0.0	0.0	106.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	2.7	0.0	4.2	0.0	0.1	0.0	0.0	0.0	0.0	0.2
LnGrp Delay(d),s/veh	45.4	6.1	6.1	45.4	6.9	0.0	17.6	0.0	0.0	0.0	0.0	127.1
LnGrp LOS	D	A	A	D	A		B					F
Approach Vol, veh/h		778			1094			5			5	
Approach Delay, s/veh		6.1			6.9			17.6			127.1	
Approach LOS		A			A			B			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		7.0	4.0	25.4		4.2	4.0	25.4
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	4.0	26.0		18.0	4.0	26.0
Max Q Clear Time (g_c+I1), s		2.1	2.0	7.3		2.1	2.0	10.7
Green Ext Time (p_c), s		0.0	0.0	12.3		0.0	0.0	10.7

Intersection Summary	
HCM 2010 Ctrl Delay	7.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	40	32	686	30	296	57	2041	983	480	1138	59
Future Volume (veh/h)	76	40	32	686	30	296	57	2041	983	480	1138	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	76	40	32	686	30	296	57	2041	983	480	1138	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	82	45	36	653	353	300	73	2283	711	462	2700	140
Arrive On Green	0.05	0.05	0.05	0.19	0.19	0.19	0.04	0.46	0.46	0.14	0.56	0.56
Sat Flow, veh/h	1757	950	760	3408	1845	1568	1740	4988	1553	3375	4856	252
Grp Volume(v), veh/h	76	0	72	686	30	296	57	2041	983	480	779	418
Grp Sat Flow(s),veh/h/ln	1757	0	1711	1704	1845	1568	1740	1663	1553	1688	1663	1783
Q Serve(g_s), s	5.6	0.0	5.4	24.9	1.7	24.5	4.2	48.8	59.5	17.8	17.7	17.7
Cycle Q Clear(g_c), s	5.6	0.0	5.4	24.9	1.7	24.5	4.2	48.8	59.5	17.8	17.7	17.7
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	82	0	80	653	353	300	73	2283	711	462	1848	991
V/C Ratio(X)	0.92	0.00	0.90	1.05	0.08	0.99	0.78	0.89	1.38	1.04	0.42	0.42
Avail Cap(c_a), veh/h	82	0	80	653	353	300	133	2283	711	462	1848	991
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.7	0.0	61.6	52.5	43.2	52.4	61.7	32.4	35.3	56.1	16.7	16.7
Incr Delay (d2), s/veh	72.2	0.0	65.6	49.3	0.0	47.7	6.7	4.9	181.1	52.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	4.0	16.2	0.9	14.6	2.2	23.3	61.2	11.6	8.1	8.7
LnGrp Delay(d),s/veh	134.0	0.0	127.2	101.9	43.2	100.1	68.4	37.2	216.3	108.3	16.8	16.9
LnGrp LOS	F		F	F	D	F	E	D	F	F	B	B
Approach Vol, veh/h		148			1012			3081			1677	
Approach Delay, s/veh		130.7			99.6			94.9			43.0	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	77.5		11.6	23.3	64.7		30.4
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 9.9	* 68		6.1	17.8	* 60		24.9
Max Q Clear Time (g_c+I1), s	6.2	19.7		7.6	19.8	61.5		26.9
Green Ext Time (p_c), s	0.0	20.7		0.0	0.0	0.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		81.9	
HCM 2010 LOS		F	

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	180	195	110	111	9	283	2552	228	50	917	169
Future Volume (veh/h)	215	180	195	110	111	9	283	2552	228	50	917	169
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	215	180	195	110	111	9	283	2552	228	50	917	169
Adj No. of Lanes	2	2	1	2	2	0	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	275	515	230	166	378	30	345	2835	883	87	2453	764
Arrive On Green	0.08	0.15	0.15	0.05	0.11	0.11	0.10	0.57	0.57	0.03	0.49	0.49
Sat Flow, veh/h	3408	3505	1568	3408	3287	264	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	215	180	195	110	59	61	283	2552	228	50	917	169
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1798	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	6.6	4.9	12.9	3.4	3.3	3.3	8.7	48.0	7.9	1.6	12.1	6.6
Cycle Q Clear(g_c), s	6.6	4.9	12.9	3.4	3.3	3.3	8.7	48.0	7.9	1.6	12.1	6.6
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	275	515	230	166	201	207	345	2835	883	87	2453	764
V/C Ratio(X)	0.78	0.35	0.85	0.66	0.29	0.30	0.82	0.90	0.26	0.57	0.37	0.22
Avail Cap(c_a), veh/h	283	1051	470	276	529	542	554	3023	941	95	2453	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.8	40.7	44.1	49.6	43.0	43.0	46.7	20.2	11.6	51.1	16.8	15.4
Incr Delay (d2), s/veh	11.7	0.2	3.3	1.7	0.3	0.3	2.3	3.8	0.1	3.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	2.4	5.8	1.6	1.6	1.7	4.2	22.7	3.4	0.8	5.5	2.8
LnGrp Delay(d),s/veh	59.6	40.8	47.4	51.3	43.3	43.3	49.0	24.0	11.6	54.5	16.8	15.4
LnGrp LOS	E	D	D	D	D	D	D	C	B	D	B	B
Approach Vol, veh/h		590			230			3063			1136	
Approach Delay, s/veh		49.8			47.1			25.4			18.3	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	57.8	14.1	17.9	8.2	65.9	10.7	21.3
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	17.4	* 50	8.8	* 32	3.0	* 64	8.6	* 32
Max Q Clear Time (g_c+I1), s	10.7	14.1	8.6	5.3	3.6	50.0	5.4	14.9
Green Ext Time (p_c), s	0.1	20.6	0.0	0.7	0.0	10.3	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	296	508	320	8	785	191	575	2774	28	137	968	226
Future Volume (veh/h)	296	508	320	8	785	191	575	2774	28	137	968	226
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	296	508	320	8	785	191	575	2774	28	137	968	0
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	190	700	595	34	543	461	343	2067	21	81	1260	392
Arrive On Green	0.11	0.39	0.39	0.02	0.30	0.30	0.20	0.41	0.41	0.05	0.25	0.00
Sat Flow, veh/h	1707	1792	1524	1707	1792	1524	1740	5092	51	1740	4988	1553
Grp Volume(v), veh/h	296	508	320	8	785	191	575	1809	993	137	968	0
Grp Sat Flow(s),veh/h/ln	1707	1792	1524	1707	1792	1524	1740	1663	1818	1740	1663	1553
Q Serve(g_s), s	16.7	36.1	24.3	0.7	45.4	15.0	29.6	60.9	60.9	7.0	27.0	0.0
Cycle Q Clear(g_c), s	16.7	36.1	24.3	0.7	45.4	15.0	29.6	60.9	60.9	7.0	27.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	190	700	595	34	543	461	343	1350	738	81	1260	392
V/C Ratio(X)	1.56	0.73	0.54	0.23	1.45	0.41	1.67	1.34	1.35	1.69	0.77	0.00
Avail Cap(c_a), veh/h	190	701	596	39	543	461	343	1350	738	81	1260	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.51	0.51	0.51	0.09	0.09	0.09	0.92	0.92	0.00
Uniform Delay (d), s/veh	66.7	38.9	35.3	72.4	52.3	41.7	60.2	44.5	44.6	71.5	52.0	0.0
Incr Delay (d2), s/veh	275.0	3.3	0.5	0.7	206.5	0.1	304.8	153.5	156.4	353.0	4.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.4	18.6	10.3	0.3	53.6	6.3	43.3	56.7	62.6	11.3	12.9	0.0
LnGrp Delay(d),s/veh	341.6	42.1	35.8	73.0	258.8	41.8	365.0	198.0	200.9	424.5	56.1	0.0
LnGrp LOS	F	D	D	E	F	D	F	F	F	F	E	
Approach Vol, veh/h		1124			984			3377			1105	
Approach Delay, s/veh		119.2			215.2			227.3			101.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	43.0	21.0	51.0	12.0	66.0	7.8	64.2
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 30	37.9	* 17	45.4	7.0	60.9	* 3.4	* 59
Max Q Clear Time (g_c+I1), s	31.6	29.0	18.7	47.4	9.0	62.9	2.7	38.1
Green Ext Time (p_c), s	0.0	7.4	0.0	0.0	0.0	0.0	0.0	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	186.0
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	433	249	86	10	573	68	154	2888	110	7	957	353
Future Volume (veh/h)	433	249	86	10	573	68	154	2888	110	7	957	353
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	433	249	86	10	573	68	154	2888	110	7	957	353
Adj No. of Lanes	2	1	0	2	1	0	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	311	464	160	23	436	52	176	2421	91	9	1419	523
Arrive On Green	0.09	0.35	0.35	0.01	0.27	0.27	0.10	0.49	0.49	0.01	0.39	0.39
Sat Flow, veh/h	3408	1312	453	3408	1619	192	1740	4934	186	1740	3594	1324
Grp Volume(v), veh/h	433	0	335	10	0	641	154	1935	1063	7	885	425
Grp Sat Flow(s),veh/h/ln	1704	0	1765	1704	0	1811	1740	1663	1794	1740	1663	1593
Q Serve(g_s), s	13.5	0.0	22.4	0.4	0.0	39.8	12.9	72.5	72.5	0.6	32.4	32.5
Cycle Q Clear(g_c), s	13.5	0.0	22.4	0.4	0.0	39.8	12.9	72.5	72.5	0.6	32.4	32.5
Prop In Lane	1.00		0.26	1.00		0.11	1.00		0.10	1.00		0.83
Lane Grp Cap(c), veh/h	311	0	625	23	0	488	176	1632	880	9	1313	629
V/C Ratio(X)	1.39	0.00	0.54	0.43	0.00	1.31	0.88	1.19	1.21	0.79	0.67	0.68
Avail Cap(c_a), veh/h	311	0	625	136	0	488	279	1632	880	35	1313	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.1	0.0	38.1	73.1	0.0	54.0	65.5	37.6	37.6	73.4	36.9	36.9
Incr Delay (d2), s/veh	194.3	0.0	0.5	4.6	0.0	155.4	10.7	90.2	104.1	42.9	1.1	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.7	0.0	11.0	0.2	0.0	40.8	6.7	53.5	61.2	0.4	15.1	14.7
LnGrp Delay(d),s/veh	261.4	0.0	38.6	77.7	0.0	209.4	76.2	127.8	141.7	116.3	38.0	39.2
LnGrp LOS	F		D	E		F	E	F	F	F	D	D
Approach Vol, veh/h		768			651			3152			1317	
Approach Delay, s/veh		164.2			207.4			130.0			38.8	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	63.3	19.0	45.0	6.2	77.5	6.5	57.5
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	23.7	51.8	13.5	* 40	3.0	72.5	5.9	* 47
Max Q Clear Time (g_c+I1), s	14.9	34.5	15.5	41.8	2.6	74.5	2.4	24.4
Green Ext Time (p_c), s	0.0	14.1	0.0	0.0	0.0	0.0	0.0	2.4

Intersection Summary		
HCM 2010 Ctrl Delay		122.6
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	572	293	184	17	884	460	432	2227	69	103	577	83
Future Volume (veh/h)	572	293	184	17	884	460	432	2227	69	103	577	83
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1792	1792	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	572	293	184	17	884	460	432	2227	69	103	577	83
Adj No. of Lanes	2	2	0	2	2	0	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	6	6	6	4	4	4	4	4	4
Cap, veh/h	439	898	549	34	683	351	475	1925	599	101	1372	427
Arrive On Green	0.13	0.43	0.43	0.01	0.31	0.31	0.14	0.39	0.39	0.03	0.28	0.28
Sat Flow, veh/h	3375	2072	1267	3312	2178	1119	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	572	244	233	17	689	655	432	2227	69	103	577	83
Grp Sat Flow(s),veh/h/ln	1688	1736	1603	1656	1703	1595	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	19.5	13.9	14.4	0.8	47.0	47.0	18.9	57.9	4.3	4.5	14.2	6.1
Cycle Q Clear(g_c), s	19.5	13.9	14.4	0.8	47.0	47.0	18.9	57.9	4.3	4.5	14.2	6.1
Prop In Lane	1.00		0.79	1.00		0.70	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	439	752	695	34	534	500	475	1925	599	101	1372	427
V/C Ratio(X)	1.30	0.32	0.34	0.51	1.29	1.31	0.91	1.16	0.12	1.02	0.42	0.19
Avail Cap(c_a), veh/h	439	752	695	77	534	500	596	1925	599	101	1372	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.3	28.0	28.2	73.9	51.5	51.5	63.5	46.0	29.6	72.8	44.6	41.6
Incr Delay (d2), s/veh	152.4	0.1	0.1	4.3	144.3	154.0	13.9	76.9	0.0	94.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	6.7	6.4	0.4	43.5	42.1	9.7	40.3	1.8	3.4	6.5	2.7
LnGrp Delay(d),s/veh	217.6	28.1	28.3	78.2	195.8	205.5	77.4	122.9	29.6	167.0	44.6	41.7
LnGrp LOS	F	C	C	E	F	F	E	F	C	F	D	D
Approach Vol, veh/h		1049			1361			2728			763	
Approach Delay, s/veh		131.5			199.0			113.4			60.8	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.6	46.4	25.0	52.0	10.0	63.0	7.0	70.0
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	26.5	* 36	19.5	* 47	4.5	* 58	3.5	* 63
Max Q Clear Time (g_c+I1), s	20.9	16.2	21.5	49.0	6.5	59.9	2.8	16.4
Green Ext Time (p_c), s	0.2	10.9	0.0	0.0	0.0	0.0	0.0	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	129.5
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	293	246	174	84	445	636	143	2030	106	261	632	236
Future Volume (veh/h)	293	246	174	84	445	636	143	2030	106	261	632	236
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	293	246	174	84	445	636	143	2030	106	261	632	236
Adj No. of Lanes	2	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	289	1127	504	104	1037	464	188	1974	615	260	2088	650
Arrive On Green	0.08	0.32	0.32	0.06	0.30	0.30	0.06	0.40	0.40	0.08	0.42	0.42
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	293	246	174	84	445	636	143	2030	106	261	632	236
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	12.3	7.4	12.3	6.9	14.9	43.0	6.1	57.5	6.4	11.2	12.3	15.1
Cycle Q Clear(g_c), s	12.3	7.4	12.3	6.9	14.9	43.0	6.1	57.5	6.4	11.2	12.3	15.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	289	1127	504	104	1037	464	188	1974	615	260	2088	650
V/C Ratio(X)	1.02	0.22	0.35	0.81	0.43	1.37	0.76	1.03	0.17	1.00	0.30	0.36
Avail Cap(c_a), veh/h	289	1127	504	164	1037	464	260	1974	615	260	2088	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.5	36.0	37.6	67.6	41.3	51.1	67.7	43.9	28.5	67.0	28.1	29.0
Incr Delay (d2), s/veh	57.0	0.0	0.2	6.8	0.1	180.1	5.0	27.9	0.0	56.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	3.6	5.4	3.5	7.2	41.8	3.0	31.4	2.8	7.2	5.6	6.5
LnGrp Delay(d),s/veh	123.6	36.0	37.8	74.4	41.4	231.2	72.7	71.8	28.5	123.6	28.1	29.1
LnGrp LOS	F	D	D	E	D	F	E	F	C	F	C	C
Approach Vol, veh/h		713			1165			2279			1129	
Approach Delay, s/veh		72.4			147.4			69.9			50.4	
Approach LOS		E			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	65.9	17.8	48.4	16.5	62.6	14.1	52.1
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 11	57.7	12.3	* 43	* 11	57.5	13.6	* 41
Max Q Clear Time (g_c+I1), s	8.1	17.1	14.3	45.0	13.2	59.5	8.9	14.3
Green Ext Time (p_c), s	0.0	13.4	0.0	0.0	0.0	0.0	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	83.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	552	3	88	950	4	2	803	148	8	530	187
Future Volume (veh/h)	64	552	3	88	950	4	2	803	148	8	530	187
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	64	552	3	88	950	4	2	803	148	8	530	187
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	72	958	5	109	1034	4	2	747	138	9	910	774
Arrive On Green	0.04	0.28	0.28	0.06	0.30	0.30	0.00	0.49	0.49	0.00	0.49	0.49
Sat Flow, veh/h	1707	3473	19	1707	3478	15	1757	1516	279	1757	1845	1568
Grp Volume(v), veh/h	64	271	284	88	465	489	2	0	951	8	530	187
Grp Sat Flow(s),veh/h/ln	1707	1703	1789	1707	1703	1790	1757	0	1795	1757	1845	1568
Q Serve(g_s), s	4.8	17.5	17.5	6.5	33.8	33.8	0.1	0.0	63.0	0.6	26.1	8.8
Cycle Q Clear(g_c), s	4.8	17.5	17.5	6.5	33.8	33.8	0.1	0.0	63.0	0.6	26.1	8.8
Prop In Lane	1.00		0.01	1.00		0.01	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	72	470	494	109	506	532	2	0	885	9	910	774
V/C Ratio(X)	0.89	0.58	0.58	0.81	0.92	0.92	0.99	0.00	1.07	0.91	0.58	0.24
Avail Cap(c_a), veh/h	72	470	494	127	517	543	41	0	885	27	910	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	39.9	39.9	59.1	43.4	43.4	63.8	0.0	32.4	63.6	23.0	18.6
Incr Delay (d2), s/veh	67.2	2.1	2.0	24.0	21.7	21.0	175.7	0.0	52.5	64.6	2.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	8.5	8.9	3.8	18.9	19.8	0.2	0.0	43.9	0.4	13.9	3.9
LnGrp Delay(d),s/veh	128.1	42.0	41.9	83.1	65.2	64.4	239.6	0.0	84.9	128.1	25.7	19.4
LnGrp LOS	F	D	D	F	E	E	F		F	F	C	B
Approach Vol, veh/h		619			1042			953			725	
Approach Delay, s/veh		50.8			66.3			85.2			25.2	
Approach LOS		D			E			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	41.7	4.5	69.1	9.8	44.4	4.6	69.0
Change Period (Y+Rc), s	4.4	6.4	4.4	6.0	4.4	6.4	* 4	6.0
Max Green Setting (Gmax), s	9.5	34.7	3.0	61.6	5.4	38.8	* 2	63.0
Max Q Clear Time (g_c+I1), s	8.5	19.5	2.1	28.1	6.8	35.8	2.6	65.0
Green Ext Time (p_c), s	0.0	10.5	0.0	32.0	0.0	2.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.9
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

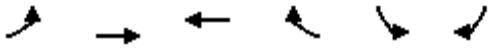
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	348	47	584	25	63	161	644	1462	13	105	1841	868
Future Volume (veh/h)	348	47	584	25	63	161	644	1462	13	105	1841	868
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	382	0	584	25	63	161	644	1462	13	105	1841	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	626	0	280	22	56	68	537	2912	26	126	1659	517
Arrive On Green	0.18	0.00	0.18	0.04	0.04	0.04	0.31	0.57	0.57	0.07	0.33	0.00
Sat Flow, veh/h	3480	0	1553	517	1302	1568	1740	5099	45	1740	4988	1553
Grp Volume(v), veh/h	382	0	584	88	0	161	644	953	522	105	1841	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1819	0	1568	1740	1663	1819	1740	1663	1553
Q Serve(g_s), s	15.2	0.0	27.0	6.5	0.0	6.5	46.3	25.9	25.9	8.9	49.9	0.0
Cycle Q Clear(g_c), s	15.2	0.0	27.0	6.5	0.0	6.5	46.3	25.9	25.9	8.9	49.9	0.0
Prop In Lane	1.00		1.00	0.28		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	626	0	280	79	0	68	537	1899	1039	126	1659	517
V/C Ratio(X)	0.61	0.00	2.09	1.12	0.00	2.37	1.20	0.50	0.50	0.84	1.11	0.00
Avail Cap(c_a), veh/h	626	0	280	79	0	68	537	1899	1039	194	1659	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.6	0.0	61.5	71.8	0.0	71.8	51.9	19.3	19.3	68.7	50.1	0.0
Incr Delay (d2), s/veh	1.3	0.0	502.2	136.5	0.0	659.2	106.6	0.1	0.1	10.2	58.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.0	50.6	6.3	0.0	15.3	38.1	11.8	12.9	4.7	31.9	0.0
LnGrp Delay(d),s/veh	57.9	0.0	563.7	208.3	0.0	730.9	158.4	19.4	19.5	78.9	108.6	0.0
LnGrp LOS	E		F	F		F	F	B	B	E	F	
Approach Vol, veh/h		966			249			2119			1946	
Approach Delay, s/veh		363.7			546.2			61.7			107.0	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	51.0	54.7		12.0	15.2	90.5		32.3
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 46	49.9		6.5	* 17	* 80		27.0
Max Q Clear Time (g_c+I1), s	48.3	51.9		8.5	10.9	27.9		29.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	18.2		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		156.5	
HCM 2010 LOS		F	

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	402	769	664	838	142	46
Future Volume (veh/h)	402	769	664	838	142	46
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	402	769	664	838	142	46
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	453	2646	751	672	189	169
Arrive On Green	0.26	0.76	0.43	0.43	0.11	0.11
Sat Flow, veh/h	1757	3597	1845	1568	1757	1568
Grp Volume(v), veh/h	402	769	664	838	142	46
Grp Sat Flow(s),veh/h/ln	1757	1752	1752	1568	1757	1568
Q Serve(g_s), s	12.8	4.0	20.3	25.0	4.6	1.6
Cycle Q Clear(g_c), s	12.8	4.0	20.3	25.0	4.6	1.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	453	2646	751	672	189	169
V/C Ratio(X)	0.89	0.29	0.88	1.25	0.75	0.27
Avail Cap(c_a), veh/h	482	2705	751	672	211	188
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	2.2	15.3	16.7	25.2	23.9
Incr Delay (d2), s/veh	17.3	0.1	12.1	123.1	12.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	1.9	12.3	33.6	2.9	1.4
LnGrp Delay(d),s/veh	38.2	2.3	27.4	139.8	37.8	24.8
LnGrp LOS	D	A	C	F	D	C
Approach Vol, veh/h		1171	1502		188	
Approach Delay, s/veh		14.6	90.1		34.6	
Approach LOS		B	F		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.0		10.3	19.0	29.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		45.0		7.0	16.0	25.0		
Max Q Clear Time (g_c+I1), s		6.0		6.6	14.8	27.0		
Green Ext Time (p_c), s		26.1		0.0	0.2	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	55.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	218	35	34	279	804	37	2251	47	606	2109	891
Future Volume (veh/h)	372	218	35	34	279	804	37	2251	47	606	2109	891
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	372	218	35	34	279	804	37	2251	47	606	2109	891
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	306	1195	185	61	368	1094	65	2098	44	510	2739	853
Arrive On Green	0.09	0.27	0.27	0.02	0.20	0.20	0.02	0.41	0.41	0.15	0.54	0.54
Sat Flow, veh/h	3408	4399	682	3514	1845	3136	3408	5077	106	3408	5036	1568
Grp Volume(v), veh/h	372	165	88	34	279	804	37	1487	811	606	2109	891
Grp Sat Flow(s),veh/h/ln	1704	1679	1724	1757	1845	1568	1704	1679	1826	1704	1679	1568
Q Serve(g_s), s	13.5	5.6	5.9	1.4	21.5	30.0	1.6	62.2	62.2	22.5	49.5	81.9
Cycle Q Clear(g_c), s	13.5	5.6	5.9	1.4	21.5	30.0	1.6	62.2	62.2	22.5	49.5	81.9
Prop In Lane	1.00		0.40	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	306	912	468	61	368	1094	65	1388	755	510	2739	853
V/C Ratio(X)	1.22	0.18	0.19	0.56	0.76	0.73	0.57	1.07	1.08	1.19	0.77	1.04
Avail Cap(c_a), veh/h	306	912	468	126	368	1094	72	1388	755	510	2739	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	42.0	42.1	73.4	56.8	42.9	73.2	44.1	44.2	64.0	26.9	34.3
Incr Delay (d2), s/veh	123.6	0.0	0.1	2.9	8.0	2.3	3.7	45.8	54.8	103.5	1.3	43.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	2.6	2.8	0.7	11.7	15.0	0.8	37.5	42.7	17.9	23.2	45.4
LnGrp Delay(d),s/veh	192.1	42.0	42.1	76.3	64.8	45.2	76.9	90.0	99.0	167.5	28.2	77.5
LnGrp LOS	F	D	D	E	E	D	E	F	F	F	C	F
Approach Vol, veh/h		625			1117			2335			3606	
Approach Delay, s/veh		131.4			51.0			92.9			63.8	
Approach LOS		F			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	87.5	19.0	35.7	28.0	67.8	8.1	46.6
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	3.2	81.2	13.5	* 30	22.5	* 62	5.4	* 38
Max Q Clear Time (g_c+I1), s	3.6	83.9	15.5	32.0	24.5	64.2	3.4	7.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	76.3
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	64	13	38	46	66	37	2199	63	133	1497	215
Future Volume (veh/h)	105	64	13	38	46	66	37	2199	63	133	1497	215
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	91	84	13	38	46	66	37	2199	63	133	1497	215
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	132	117	18	109	115	98	46	2784	80	167	2760	396
Arrive On Green	0.08	0.08	0.08	0.06	0.06	0.06	0.03	0.55	0.55	0.10	0.62	0.62
Sat Flow, veh/h	1757	1561	242	1757	1845	1568	1757	5033	144	1757	4451	638
Grp Volume(v), veh/h	91	0	97	38	46	66	37	1465	797	133	1129	583
Grp Sat Flow(s),veh/h/ln	1757	0	1802	1757	1845	1568	1757	1679	1819	1757	1679	1732
Q Serve(g_s), s	4.8	0.0	5.0	2.0	2.3	3.9	2.0	32.9	33.2	7.1	18.3	18.4
Cycle Q Clear(g_c), s	4.8	0.0	5.0	2.0	2.3	3.9	2.0	32.9	33.2	7.1	18.3	18.4
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.08	1.00		0.37
Lane Grp Cap(c), veh/h	132	0	135	109	115	98	46	1857	1006	167	2082	1074
V/C Ratio(X)	0.69	0.00	0.72	0.35	0.40	0.68	0.80	0.79	0.79	0.79	0.54	0.54
Avail Cap(c_a), veh/h	519	0	532	500	525	446	164	2204	1194	220	2303	1188
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	0.0	43.0	42.8	42.9	43.7	46.1	16.9	16.9	42.2	10.4	10.4
Incr Delay (d2), s/veh	2.4	0.0	2.6	0.7	0.8	3.0	11.3	1.4	2.6	10.3	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	2.6	1.0	1.2	1.8	1.1	15.4	17.3	3.9	8.5	8.8
LnGrp Delay(d),s/veh	45.3	0.0	45.7	43.5	43.8	46.7	57.5	18.2	19.5	52.4	10.4	10.5
LnGrp LOS	D		D	D	D	D	E	B	B	D	B	B
Approach Vol, veh/h		188			150			2299			1845	
Approach Delay, s/veh		45.5			45.0			19.3			13.5	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	63.8		11.4	13.7	57.5		12.7
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 8.9	65.3		27.1	* 12	62.5		28.1
Max Q Clear Time (g_c+I1), s	4.0	20.4		5.9	9.1	35.2		7.0
Green Ext Time (p_c), s	0.0	22.9		0.1	0.0	17.5		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	748	564	103	1278	848	700	1392	149	175	994	115
Future Volume (veh/h)	47	748	564	103	1278	848	700	1392	149	175	994	115
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	47	748	564	103	1278	848	700	1392	149	175	994	115
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	79	1226	573	151	1945	606	643	1774	552	225	1052	121
Arrive On Green	0.02	0.37	0.37	0.04	0.39	0.39	0.19	0.35	0.35	0.07	0.23	0.23
Sat Flow, veh/h	3408	3357	1568	3408	5036	1568	3408	5036	1568	3408	4580	529
Grp Volume(v), veh/h	47	748	564	103	1278	848	700	1392	149	175	728	381
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1751
Q Serve(g_s), s	1.8	23.6	46.3	3.9	27.1	50.2	24.5	32.2	8.8	6.6	27.7	27.8
Cycle Q Clear(g_c), s	1.8	23.6	46.3	3.9	27.1	50.2	24.5	32.2	8.8	6.6	27.7	27.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	79	1226	573	151	1945	606	643	1774	552	225	771	402
V/C Ratio(X)	0.60	0.61	0.98	0.68	0.66	1.40	1.09	0.78	0.27	0.78	0.94	0.95
Avail Cap(c_a), veh/h	79	1226	573	220	1945	606	643	1774	552	254	772	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.9	33.7	40.9	61.2	32.8	39.9	52.7	37.7	30.1	59.8	49.2	49.3
Incr Delay (d2), s/veh	8.4	0.6	33.6	2.0	0.7	189.9	62.3	2.2	0.1	10.8	19.7	31.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	11.0	25.4	1.9	12.7	53.6	17.1	15.2	3.8	3.4	15.0	16.9
LnGrp Delay(d),s/veh	71.3	34.3	74.5	63.2	33.4	229.7	115.0	39.9	30.2	70.6	69.0	80.4
LnGrp LOS	E	C	E	E	C	F	F	D	C	E	E	F
Approach Vol, veh/h		1359			2229			2241			1284	
Approach Delay, s/veh		52.3			109.5			62.7			72.6	
Approach LOS		D			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	35.5	8.5	56.0	14.1	51.4	11.2	53.3
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	24.5	* 30	3.0	50.2	9.7	* 45	8.4	44.8
Max Q Clear Time (g_c+I1), s	26.5	29.8	3.8	52.2	8.6	34.2	5.9	48.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	77.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	659	48	45	1212	872	243	684	66	485	228	47
Future Volume (veh/h)	205	659	48	45	1212	872	243	684	66	485	228	47
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	205	659	48	45	1212	872	243	684	66	485	228	47
Adj No. of Lanes	1	2	0	2	2	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	139	1387	101	79	1234	552	267	538	52	340	521	443
Arrive On Green	0.08	0.42	0.42	0.02	0.35	0.35	0.15	0.32	0.32	0.10	0.28	0.28
Sat Flow, veh/h	1757	3313	241	3408	3505	1568	1757	1657	160	3408	1845	1568
Grp Volume(v), veh/h	205	348	359	45	1212	872	243	0	750	485	228	47
Grp Sat Flow(s),veh/h/ln	1757	1752	1802	1704	1752	1568	1757	0	1816	1704	1845	1568
Q Serve(g_s), s	11.5	21.0	21.0	1.9	49.8	51.2	19.8	0.0	47.2	14.5	14.7	3.2
Cycle Q Clear(g_c), s	11.5	21.0	21.0	1.9	49.8	51.2	19.8	0.0	47.2	14.5	14.7	3.2
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	139	733	754	79	1234	552	267	0	590	340	521	443
V/C Ratio(X)	1.48	0.47	0.48	0.57	0.98	1.58	0.91	0.00	1.27	1.43	0.44	0.11
Avail Cap(c_a), veh/h	139	733	754	117	1234	552	326	0	590	340	521	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.0	30.7	30.7	70.3	46.6	47.1	60.7	0.0	49.1	65.5	42.7	38.6
Incr Delay (d2), s/veh	248.5	0.2	0.2	6.4	21.2	269.3	25.1	0.0	135.3	208.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.1	10.2	10.5	1.0	27.7	63.4	11.5	0.0	45.7	16.6	7.5	1.4
LnGrp Delay(d),s/veh	315.5	30.9	30.9	76.7	67.9	316.4	85.8	0.0	184.4	273.9	42.9	38.6
LnGrp LOS	F	C	C	E	E	F	F		F	F	D	D
Approach Vol, veh/h		912			2129			993			760	
Approach Delay, s/veh		94.8			169.9			160.3			190.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	56.1	26.1	46.2	7.4	65.7	20.0	52.3
Change Period (Y+Rc), s	5.5	* 4.9	4.0	* 5.1	4.0	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	11.5	* 51	27.0	* 36	5.0	* 59	14.5	* 47
Max Q Clear Time (g_c+I1), s	13.5	53.2	21.8	16.7	3.9	23.0	16.5	49.2
Green Ext Time (p_c), s	0.0	0.0	0.3	2.4	0.0	7.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	156.8
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	318	210	196	103	397	181	376	2097	155	224	1972	299
Future Volume (veh/h)	318	210	196	103	397	181	376	2097	155	224	1972	299
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	318	210	196	103	397	181	376	2097	155	224	1972	299
Adj No. of Lanes	2	2	1	2	2	1	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	352	842	377	152	665	409	411	2928	724	273	2120	660
Arrive On Green	0.10	0.24	0.24	0.04	0.18	0.18	0.12	0.47	0.47	0.08	0.43	0.43
Sat Flow, veh/h	3408	3505	1568	3514	3689	1568	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	318	210	196	103	397	181	376	2097	155	224	1972	299
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	12.1	6.3	14.2	3.8	12.9	12.6	14.4	35.0	7.7	8.5	49.1	17.9
Cycle Q Clear(g_c), s	12.1	6.3	14.2	3.8	12.9	12.6	14.4	35.0	7.7	8.5	49.1	17.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	842	377	152	665	409	411	2928	724	273	2120	660
V/C Ratio(X)	0.90	0.25	0.52	0.68	0.60	0.44	0.92	0.72	0.21	0.82	0.93	0.45
Avail Cap(c_a), veh/h	352	992	444	231	903	511	411	2928	724	315	2152	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	40.1	43.1	61.6	49.2	40.4	56.8	28.0	20.7	59.1	35.7	26.7
Incr Delay (d2), s/veh	25.0	0.2	1.6	2.0	2.4	2.1	24.5	0.7	0.1	12.3	8.5	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	3.1	6.3	1.9	6.8	5.7	8.1	15.3	3.3	4.4	24.1	8.0
LnGrp Delay(d),s/veh	83.0	40.4	44.8	63.6	51.6	42.4	81.2	28.7	20.8	71.4	44.2	28.4
LnGrp LOS	F	D	D	E	D	D	F	C	C	E	D	C
Approach Vol, veh/h		724			681			2628			2495	
Approach Delay, s/veh		60.3			51.0			35.8			44.8	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	61.0	19.0	29.3	16.1	66.3	11.2	37.2
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	15.9	* 56	13.5	32.0	12.2	* 60	8.6	* 37
Max Q Clear Time (g_c+I1), s	16.4	51.1	14.1	14.9	10.5	37.0	5.8	16.2
Green Ext Time (p_c), s	0.0	4.4	0.0	8.6	0.0	22.9	0.0	9.7

Intersection Summary	
HCM 2010 Ctrl Delay	43.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	495	306	572	1276	41	891	2154	192	121	626	334
Future Volume (veh/h)	179	495	306	572	1276	41	891	2154	192	121	626	334
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	179	495	306	572	1276	41	891	2154	192	121	626	334
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	222	700	313	596	1551	483	910	2148	669	139	1009	314
Arrive On Green	0.07	0.20	0.20	0.18	0.31	0.31	0.27	0.43	0.43	0.04	0.20	0.20
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	179	495	306	572	1276	41	891	2154	192	121	626	334
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	7.8	19.8	29.1	25.2	35.6	2.8	39.3	64.7	12.1	5.4	17.2	30.4
Cycle Q Clear(g_c), s	7.8	19.8	29.1	25.2	35.6	2.8	39.3	64.7	12.1	5.4	17.2	30.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	222	700	313	596	1551	483	910	2148	669	139	1009	314
V/C Ratio(X)	0.80	0.71	0.98	0.96	0.82	0.08	0.98	1.00	0.29	0.87	0.62	1.06
Avail Cap(c_a), veh/h	259	700	313	596	1551	483	910	2148	669	139	1009	314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.3	56.0	59.8	61.3	47.9	36.6	54.4	42.7	27.8	71.6	54.6	59.9
Incr Delay (d2), s/veh	12.6	4.1	44.7	27.0	4.6	0.3	24.6	20.0	0.5	39.0	1.7	68.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	10.0	16.5	14.0	17.0	1.2	21.4	33.6	5.2	3.3	8.0	19.0
LnGrp Delay(d),s/veh	81.9	60.1	104.5	88.4	52.6	36.9	79.0	62.8	28.2	110.6	56.3	128.2
LnGrp LOS	F	E	F	F	D	D	E	F	C	F	E	F
Approach Vol, veh/h		980			1889			3237			1081	
Approach Delay, s/veh		77.9			63.1			65.2			84.6	
Approach LOS		E			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	46.0	36.2	15.3	52.7	11.7	70.5	32.0	36.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	40.5	* 30	11.4	* 45	6.2	* 65	26.5	30.0
Max Q Clear Time (g_c+I1), s	41.3	32.4	9.8	37.6	7.4	66.7	27.2	31.1
Green Ext Time (p_c), s	0.0	0.0	0.0	7.4	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.3
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	570	216	48	1928	830	435	2189	22	84	683	536
Future Volume (veh/h)	204	570	216	48	1928	830	435	2189	22	84	683	536
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	204	570	216	48	1928	830	435	2189	22	84	683	536
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	181	2018	628	81	1870	582	347	1930	601	84	1541	480
Arrive On Green	0.05	0.40	0.40	0.02	0.37	0.37	0.10	0.39	0.39	0.02	0.31	0.31
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	204	570	216	48	1928	830	435	2189	22	84	683	536
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	7.5	10.8	13.5	2.0	52.4	52.4	14.5	54.6	1.2	3.5	15.5	43.6
Cycle Q Clear(g_c), s	7.5	10.8	13.5	2.0	52.4	52.4	14.5	54.6	1.2	3.5	15.5	43.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	2018	628	81	1870	582	347	1930	601	84	1541	480
V/C Ratio(X)	1.13	0.28	0.34	0.59	1.03	1.43	1.25	1.13	0.04	1.00	0.44	1.12
Avail Cap(c_a), veh/h	181	2018	628	130	1870	582	347	1930	601	84	1541	480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.8	28.6	29.4	68.2	44.4	44.4	63.3	43.3	26.9	68.8	39.0	48.8
Incr Delay (d2), s/veh	104.8	0.0	0.1	2.5	29.2	201.3	135.9	67.5	0.0	99.2	0.1	77.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	5.0	5.9	1.0	29.3	55.2	13.3	37.1	0.5	2.8	7.1	29.0
LnGrp Delay(d),s/veh	171.6	28.6	29.5	70.7	73.6	245.6	199.2	110.7	26.9	168.1	39.1	125.9
LnGrp LOS	F	C	C	E	F	F	F	F	C	F	D	F
Approach Vol, veh/h		990			2806			2646			1303	
Approach Delay, s/veh		58.3			124.4			124.6			83.1	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	49.6	13.0	58.5	9.0	60.6	8.9	62.6
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	14.5	43.0	7.5	* 52	3.5	* 55	5.4	* 54
Max Q Clear Time (g_c+I1), s	16.5	45.6	9.5	54.4	5.5	56.6	4.0	15.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4

Intersection Summary	
HCM 2010 Ctrl Delay	109.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	447	616	117	69	1277	916	671	2214	98	185	609	268
Future Volume (veh/h)	447	616	117	69	1277	916	671	2214	98	185	609	268
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	447	616	117	69	1277	916	671	2214	98	185	609	268
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	304	1717	321	107	1664	518	710	1835	571	133	982	306
Arrive On Green	0.09	0.40	0.40	0.03	0.35	0.35	0.21	0.37	0.37	0.04	0.20	0.20
Sat Flow, veh/h	3408	4263	798	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	447	483	250	69	1277	916	671	2214	98	185	609	268
Grp Sat Flow(s),veh/h/ln	1704	1679	1704	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	12.5	14.1	14.4	2.9	33.1	48.5	27.4	51.5	6.0	5.5	15.6	23.5
Cycle Q Clear(g_c), s	12.5	14.1	14.4	2.9	33.1	48.5	27.4	51.5	6.0	5.5	15.6	23.5
Prop In Lane	1.00		0.47	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	304	1352	686	107	1664	518	710	1835	571	133	982	306
V/C Ratio(X)	1.47	0.36	0.36	0.65	0.77	1.77	0.95	1.21	0.17	1.40	0.62	0.88
Avail Cap(c_a), veh/h	304	1352	686	144	1664	518	711	1835	571	133	982	306
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	29.2	29.3	66.9	40.7	45.7	54.5	44.3	29.9	67.3	51.4	54.6
Incr Delay (d2), s/veh	228.1	0.1	0.1	2.4	2.0	353.5	21.1	98.4	0.1	217.1	0.9	22.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	6.5	6.8	1.4	15.0	70.8	14.9	40.3	2.6	6.6	7.3	12.0
LnGrp Delay(d),s/veh	291.9	29.2	29.4	69.3	42.7	399.3	75.6	142.7	29.9	284.3	52.3	77.5
LnGrp LOS	F	C	C	E	D	F	E	F	C	F	D	E
Approach Vol, veh/h		1180			2262			2983			1062	
Approach Delay, s/veh		128.8			187.9			123.9			99.1	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.9	33.1	18.0	54.0	11.0	57.0	10.1	61.9
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	29.5	27.5	12.5	48.5	5.5	51.5	6.2	54.8
Max Q Clear Time (g_c+I1), s	29.4	25.5	14.5	50.5	7.5	53.5	4.9	16.4
Green Ext Time (p_c), s	0.0	1.8	0.0	0.0	0.0	0.0	0.0	8.6

Intersection Summary	
HCM 2010 Ctrl Delay	140.5
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	109	17	315	650	639	126	1463	215	131	665	6
Future Volume (veh/h)	62	109	17	315	650	639	126	1463	215	131	665	6
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1900	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	62	109	17	315	650	639	126	1463	215	131	665	6
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	4	4	4	4	4	4
Cap, veh/h	67	119	18	220	453	581	148	1169	523	115	1014	9
Arrive On Green	0.12	0.12	0.12	0.37	0.37	0.37	0.09	0.34	0.34	0.03	0.29	0.29
Sat Flow, veh/h	562	988	154	592	1223	1568	1740	3471	1553	3375	3525	32
Grp Volume(v), veh/h	188	0	0	965	0	639	126	1463	215	131	327	344
Grp Sat Flow(s),veh/h/ln	1704	0	0	1815	0	1568	1740	1736	1553	1688	1736	1821
Q Serve(g_s), s	16.4	0.0	0.0	55.6	0.0	55.6	10.7	50.5	16.0	5.1	24.8	24.9
Cycle Q Clear(g_c), s	16.4	0.0	0.0	55.6	0.0	55.6	10.7	50.5	16.0	5.1	24.8	24.9
Prop In Lane	0.33		0.09	0.33		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	204	0	0	673	0	581	148	1169	523	115	499	524
V/C Ratio(X)	0.92	0.00	0.00	1.43	0.00	1.10	0.85	1.25	0.41	1.14	0.66	0.66
Avail Cap(c_a), veh/h	204	0	0	673	0	581	206	1169	523	115	499	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.3	0.0	0.0	47.2	0.0	47.2	67.7	49.7	38.3	72.4	46.9	46.9
Incr Delay (d2), s/veh	41.1	0.0	0.0	203.9	0.0	67.5	20.6	120.6	0.5	127.1	3.1	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	0.0	0.0	66.0	0.0	35.0	6.0	43.8	6.9	4.4	12.3	12.9
LnGrp Delay(d),s/veh	106.4	0.0	0.0	251.1	0.0	114.7	88.3	170.3	38.8	199.5	50.0	49.9
LnGrp LOS	F			F		F	F	F	D	F	D	D
Approach Vol, veh/h		188			1604			1804			802	
Approach Delay, s/veh		106.4			196.8			148.9			74.4	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.4	48.1		61.0	10.0	55.5		23.5
Change Period (Y+Rc), s	* 4.6	5.0		* 5.4	* 4.9	5.0		5.5
Max Green Setting (Gmax), s	* 18	38.1		* 56	* 5.1	50.5		18.0
Max Q Clear Time (g_c+I1), s	12.7	26.9		57.6	7.1	52.5		18.4
Green Ext Time (p_c), s	0.1	9.5		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		151.0
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	514	3	562	878	357	4	1182	242	132	814	90
Future Volume (veh/h)	185	514	3	562	878	357	4	1182	242	132	814	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	185	514	3	562	878	357	4	1182	242	132	814	90
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	247	728	326	596	1087	562	11	1237	553	169	1400	742
Arrive On Green	0.07	0.21	0.21	0.18	0.32	0.32	0.00	0.36	0.36	0.05	0.40	0.40
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3375	3471	1553	3375	3471	1553
Grp Volume(v), veh/h	185	514	3	562	878	357	4	1182	242	132	814	90
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1688	1736	1553	1688	1736	1553
Q Serve(g_s), s	5.5	14.0	0.2	16.8	23.7	19.3	0.1	33.2	11.9	3.9	18.3	3.2
Cycle Q Clear(g_c), s	5.5	14.0	0.2	16.8	23.7	19.3	0.1	33.2	11.9	3.9	18.3	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	247	728	326	596	1087	562	11	1237	553	169	1400	742
V/C Ratio(X)	0.75	0.71	0.01	0.94	0.81	0.63	0.38	0.96	0.44	0.78	0.58	0.12
Avail Cap(c_a), veh/h	265	885	396	596	1226	624	101	1249	559	169	1400	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	36.4	31.0	40.5	31.2	26.0	49.8	31.4	24.5	47.0	23.3	14.5
Incr Delay (d2), s/veh	9.0	1.3	0.0	23.4	3.2	1.2	7.9	15.7	0.2	19.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	6.7	0.1	9.6	11.6	8.3	0.1	18.6	5.1	2.2	8.8	1.4
LnGrp Delay(d),s/veh	54.4	37.8	31.0	63.9	34.4	27.2	57.7	47.2	24.7	66.2	23.7	14.5
LnGrp LOS	D	D	C	E	C	C	E	D	C	E	C	B
Approach Vol, veh/h		702			1797			1428			1036	
Approach Delay, s/veh		42.1			42.2			43.4			28.3	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	27.4	4.3	46.3	11.5	37.9	9.0	41.7
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	18.0	26.0	3.0	38.0	8.0	36.0	5.0	36.0
Max Q Clear Time (g_c+I1), s	18.8	16.0	2.1	20.3	7.5	25.7	5.9	35.2
Green Ext Time (p_c), s	0.0	5.4	0.0	10.6	0.0	5.5	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	39.6
HCM 2010 LOS	D

Notes

User approved changes to right turn type.

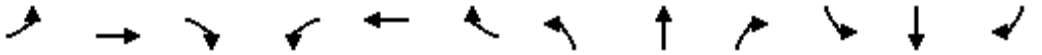
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	382	15	19	1027	566	818
Future Volume (veh/h)	382	15	19	1027	566	818
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	382	15	19	1027	566	818
Adj No. of Lanes	0	0	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	431	17	24	1886	740	662
Arrive On Green	0.27	0.27	0.01	0.54	0.43	0.43
Sat Flow, veh/h	1572	62	1740	3563	1827	1553
Grp Volume(v), veh/h	398	0	19	1027	566	818
Grp Sat Flow(s),veh/h/ln	1638	0	1740	1736	1736	1553
Q Serve(g_s), s	12.4	0.0	0.6	10.2	14.8	22.7
Cycle Q Clear(g_c), s	12.4	0.0	0.6	10.2	14.8	22.7
Prop In Lane	0.96	0.04	1.00			1.00
Lane Grp Cap(c), veh/h	449	0	24	1886	740	662
V/C Ratio(X)	0.89	0.00	0.79	0.54	0.76	1.24
Avail Cap(c_a), veh/h	492	0	199	2262	740	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	26.2	7.9	13.0	15.3
Incr Delay (d2), s/veh	16.5	0.0	18.9	0.1	4.3	118.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	0.4	4.9	7.8	31.4
LnGrp Delay(d),s/veh	35.0	0.0	45.1	8.0	17.3	134.0
LnGrp LOS	C		D	A	B	F
Approach Vol, veh/h	398			1046	1384	
Approach Delay, s/veh	35.0			8.6	86.3	
Approach LOS	C			A	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.2	28.4		18.6		34.6		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.1	* 23		16.0		* 35		
Max Q Clear Time (g_c+I1), s	2.6	24.7		14.4		12.2		
Green Ext Time (p_c), s	0.0	0.0		0.2		8.6		

Intersection Summary	
HCM 2010 Ctrl Delay	50.3
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	24	37	4	27	3	17	1185	32	32	1663	106
Future Volume (veh/h)	183	24	37	4	27	3	17	1185	32	32	1663	106
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1583	1845	1845	1845	1845	1810	1845	1845	1845
Adj Flow Rate, veh/h	183	24	37	4	27	3	17	1185	32	32	1663	106
Adj No. of Lanes	2	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	20	3	3	3	3	5	3	3	3
Cap, veh/h	269	233	198	6	95	80	56	2066	907	48	2104	941
Arrive On Green	0.08	0.13	0.13	0.00	0.05	0.05	0.02	0.59	0.59	0.03	0.60	0.60
Sat Flow, veh/h	3408	1845	1568	1508	1845	1568	3408	3505	1538	1757	3505	1568
Grp Volume(v), veh/h	183	24	37	4	27	3	17	1185	32	32	1663	106
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1508	1845	1568	1704	1752	1538	1757	1752	1568
Q Serve(g_s), s	3.3	0.7	1.3	0.2	0.9	0.1	0.3	13.3	0.6	1.1	22.8	1.8
Cycle Q Clear(g_c), s	3.3	0.7	1.3	0.2	0.9	0.1	0.3	13.3	0.6	1.1	22.8	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	233	198	6	95	80	56	2066	907	48	2104	941
V/C Ratio(X)	0.68	0.10	0.19	0.62	0.29	0.04	0.31	0.57	0.04	0.67	0.79	0.11
Avail Cap(c_a), veh/h	269	496	421	95	467	397	216	2105	924	139	2161	967
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	24.5	24.7	31.4	28.9	28.5	30.8	8.1	5.4	30.5	9.6	5.4
Incr Delay (d2), s/veh	6.7	0.2	0.5	69.3	1.6	0.2	3.0	0.4	0.0	15.0	2.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.4	0.6	0.2	0.5	0.1	0.2	6.4	0.2	0.8	11.4	0.8
LnGrp Delay(d),s/veh	35.1	24.7	25.2	100.7	30.5	28.7	33.8	8.4	5.5	45.5	11.6	5.5
LnGrp LOS	D	C	C	F	C	C	C	A	A	D	B	A
Approach Vol, veh/h		244			34			1234			1801	
Approach Delay, s/veh		32.6			38.6			8.7			11.9	
Approach LOS		C			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	41.3	4.3	12.0	5.0	42.0	9.0	7.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	38.0	4.0	17.0	4.0	39.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	3.1	15.3	2.2	3.3	2.3	24.8	5.3	2.9
Green Ext Time (p_c), s	0.0	20.4	0.0	0.2	0.0	13.2	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	516	344	5	70	676	85	2	718	46	110	1129	1041
Future Volume (veh/h)	516	344	5	70	676	85	2	718	46	110	1129	1041
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	516	344	5	70	676	85	2	718	46	110	1129	1041
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	526	1123	503	110	695	311	5	1461	654	159	1654	740
Arrive On Green	0.16	0.33	0.33	0.03	0.20	0.20	0.00	0.42	0.42	0.05	0.48	0.48
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3343	3438	1538	3343	3438	1538
Grp Volume(v), veh/h	516	344	5	70	676	85	2	718	46	110	1129	1041
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1672	1719	1538	1672	1719	1538
Q Serve(g_s), s	21.3	10.3	0.3	2.9	27.0	6.5	0.1	20.8	2.4	4.4	34.8	66.0
Cycle Q Clear(g_c), s	21.3	10.3	0.3	2.9	27.0	6.5	0.1	20.8	2.4	4.4	34.8	66.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	526	1123	503	110	695	311	5	1461	654	159	1654	740
V/C Ratio(X)	0.98	0.31	0.01	0.64	0.97	0.27	0.37	0.49	0.07	0.69	0.68	1.41
Avail Cap(c_a), veh/h	526	1123	503	164	695	311	73	1468	657	219	1654	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	34.3	30.9	65.5	54.2	46.0	68.4	28.7	23.4	64.4	27.5	35.6
Incr Delay (d2), s/veh	34.1	0.3	0.0	2.3	27.6	1.0	15.2	0.3	0.0	5.4	1.2	191.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	4.9	0.1	1.3	15.4	2.8	0.0	9.9	1.0	2.2	16.7	67.3
LnGrp Delay(d),s/veh	91.6	34.6	30.9	67.8	81.8	47.0	83.6	28.9	23.4	69.8	28.7	226.9
LnGrp LOS	F	C	C	E	F	D	F	C	C	E	C	F
Approach Vol, veh/h		865			831			766			2280	
Approach Delay, s/veh		68.6			77.1			28.7			121.2	
Approach LOS		E			E			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.4	34.0	4.8	72.0	9.1	51.3	12.5	64.3
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	6.0	6.0
Max Green Setting (Gmax), s	21.8	28.0	3.0	66.0	6.8	43.0	9.0	58.6
Max Q Clear Time (g_c+I1), s	23.3	29.0	2.1	68.0	4.9	12.3	6.4	22.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	15.6	0.1	27.4

Intersection Summary	
HCM 2010 Ctrl Delay	88.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	675	92	350	505	138	75	1095	374	63	730	137
Future Volume (veh/h)	185	675	92	350	505	138	75	1095	374	63	730	137
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	185	675	92	350	505	138	75	1095	374	63	730	137
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	225	662	90	375	1047	469	96	1144	512	80	1113	498
Arrive On Green	0.13	0.21	0.21	0.21	0.30	0.30	0.05	0.33	0.33	0.05	0.32	0.32
Sat Flow, veh/h	1757	3100	422	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	185	381	386	350	505	138	75	1095	374	63	730	137
Grp Sat Flow(s),veh/h/ln	1757	1752	1770	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	8.2	17.0	17.0	15.6	9.4	5.4	3.4	24.4	16.8	2.8	14.3	5.2
Cycle Q Clear(g_c), s	8.2	17.0	17.0	15.6	9.4	5.4	3.4	24.4	16.8	2.8	14.3	5.2
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	374	378	375	1047	469	96	1144	512	80	1113	498
V/C Ratio(X)	0.82	1.02	1.02	0.93	0.48	0.29	0.78	0.96	0.73	0.79	0.66	0.28
Avail Cap(c_a), veh/h	331	374	378	375	1047	469	132	1144	512	88	1113	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	31.3	31.3	30.8	22.9	21.5	37.2	26.3	23.7	37.6	23.4	20.3
Incr Delay (d2), s/veh	10.1	51.4	51.7	30.0	0.3	0.3	18.3	17.2	5.3	33.8	1.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	13.5	13.6	10.7	4.6	2.4	2.1	14.4	8.0	2.1	7.1	2.3
LnGrp Delay(d),s/veh	43.9	82.8	83.0	60.8	23.2	21.8	55.4	43.5	29.0	71.5	24.8	20.6
LnGrp LOS	D	F	F	E	C	C	E	D	C	E	C	C
Approach Vol, veh/h		952			993			1544			930	
Approach Delay, s/veh		75.3			36.3			40.6			27.4	
Approach LOS		E			D			D			C	

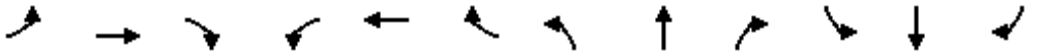
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	30.0	21.0	21.0	8.3	29.3	14.2	27.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	26.0	17.0	17.0	6.0	24.0	15.0	19.0
Max Q Clear Time (g_c+I1), s	4.8	26.4	17.6	19.0	5.4	16.3	10.2	11.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	6.6	0.2	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	44.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	511	234	30	689	110	172	1724	167	137	456	25
Future Volume (veh/h)	75	511	234	30	689	110	172	1724	167	137	456	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	75	511	234	30	689	110	172	1724	167	137	456	25
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	81	841	376	38	652	104	199	1725	165	134	1678	92
Arrive On Green	0.05	0.24	0.24	0.02	0.22	0.22	0.11	0.54	0.54	0.08	0.50	0.50
Sat Flow, veh/h	1757	3505	1568	1757	3029	483	1740	3203	306	1740	3347	183
Grp Volume(v), veh/h	75	511	234	30	398	401	172	923	968	137	236	245
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1759	1740	1736	1773	1740	1736	1795
Q Serve(g_s), s	5.5	16.9	17.3	2.2	28.0	28.0	12.6	68.1	70.0	10.0	10.2	10.3
Cycle Q Clear(g_c), s	5.5	16.9	17.3	2.2	28.0	28.0	12.6	68.1	70.0	10.0	10.2	10.3
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.17	1.00		0.10
Lane Grp Cap(c), veh/h	81	841	376	38	377	379	199	935	955	134	870	900
V/C Ratio(X)	0.92	0.61	0.62	0.80	1.06	1.06	0.87	0.99	1.01	1.02	0.27	0.27
Avail Cap(c_a), veh/h	81	841	376	81	377	379	281	935	955	134	870	900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.8	43.9	44.1	63.3	51.0	51.0	56.6	29.6	30.0	60.0	18.7	18.7
Incr Delay (d2), s/veh	75.0	1.3	3.1	30.3	61.7	62.1	17.8	26.3	32.7	84.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	8.3	7.9	1.4	20.0	20.1	7.0	39.1	42.6	7.9	4.9	5.1
LnGrp Delay(d),s/veh	136.8	45.2	47.3	93.6	112.7	113.1	74.4	55.9	62.7	144.5	18.9	18.9
LnGrp LOS	F	D	D	F	F	F	E	E	F	F	B	B
Approach Vol, veh/h		820			829			2063			618	
Approach Delay, s/veh		54.2			112.2			60.6			46.7	
Approach LOS		D			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	74.0	6.8	35.2	18.8	69.2	10.0	32.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	70.0	6.0	28.0	21.0	59.0	6.0	28.0
Max Q Clear Time (g_c+I1), s	12.0	72.0	4.2	19.3	14.6	12.3	7.5	30.0
Green Ext Time (p_c), s	0.0	0.0	0.0	5.6	0.2	31.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.3
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	331	955	174	231	1335	134	171	1645	66	104	386	132
Future Volume (veh/h)	331	955	174	231	1335	134	171	1645	66	104	386	132
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	331	955	174	231	1335	134	171	1645	66	104	386	132
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	273	1061	193	249	1176	366	195	1531	61	75	1321	591
Arrive On Green	0.16	0.25	0.25	0.14	0.24	0.24	0.11	0.45	0.45	0.04	0.38	0.38
Sat Flow, veh/h	1740	4245	771	1740	4988	1553	1740	3403	136	1740	3471	1553
Grp Volume(v), veh/h	331	747	382	231	1335	134	171	836	875	104	386	132
Grp Sat Flow(s),veh/h/ln	1740	1663	1691	1740	1663	1553	1740	1736	1803	1740	1736	1553
Q Serve(g_s), s	22.0	30.4	30.6	18.4	33.0	10.1	13.5	63.0	63.0	6.0	10.9	8.1
Cycle Q Clear(g_c), s	22.0	30.4	30.6	18.4	33.0	10.1	13.5	63.0	63.0	6.0	10.9	8.1
Prop In Lane	1.00		0.46	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	273	831	423	249	1176	366	195	781	811	75	1321	591
V/C Ratio(X)	1.21	0.90	0.90	0.93	1.14	0.37	0.87	1.07	1.08	1.39	0.29	0.22
Avail Cap(c_a), veh/h	273	831	423	249	1176	366	261	781	811	75	1321	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.0	50.8	50.8	59.3	53.5	44.8	61.2	38.5	38.5	67.0	30.2	29.4
Incr Delay (d2), s/veh	123.8	12.7	22.2	38.4	71.9	0.6	21.4	52.7	54.9	240.6	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.0	15.5	16.9	11.5	23.0	4.4	7.7	41.6	43.7	7.9	5.2	3.5
LnGrp Delay(d),s/veh	182.8	63.5	73.0	97.7	125.4	45.4	82.6	91.2	93.4	307.6	30.3	29.5
LnGrp LOS	F	E	E	F	F	D	F	F	F	F	C	C
Approach Vol, veh/h		1460			1700			1882			622	
Approach Delay, s/veh		93.0			115.3			91.5			76.5	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	67.0	24.0	39.0	19.7	57.3	26.0	37.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	63.0	20.0	35.0	21.0	48.0	22.0	33.0
Max Q Clear Time (g_c+I1), s	8.0	65.0	20.4	32.6	15.5	12.9	24.0	35.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.3	0.2	23.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	97.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	805	168	42	1625	403	125	1007	296	33	258	227
Future Volume (veh/h)	85	805	168	42	1625	403	125	1007	296	33	258	227
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	85	805	168	42	1625	403	125	1007	296	33	258	227
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	99	1373	287	52	1574	704	155	993	444	44	771	345
Arrive On Green	0.06	0.48	0.48	0.03	0.45	0.45	0.09	0.28	0.28	0.03	0.22	0.22
Sat Flow, veh/h	1740	2860	597	1740	3471	1553	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	85	488	485	42	1625	403	125	1007	296	33	258	227
Grp Sat Flow(s),veh/h/ln	1740	1736	1722	1740	1736	1553	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	4.3	18.0	18.0	2.1	40.0	16.9	6.2	25.0	14.7	1.6	5.5	11.6
Cycle Q Clear(g_c), s	4.3	18.0	18.0	2.1	40.0	16.9	6.2	25.0	14.7	1.6	5.5	11.6
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	99	833	826	52	1574	704	155	993	444	44	771	345
V/C Ratio(X)	0.86	0.59	0.59	0.80	1.03	0.57	0.80	1.01	0.67	0.75	0.33	0.66
Avail Cap(c_a), veh/h	99	833	826	118	1574	704	179	993	444	80	795	355
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	16.6	16.6	42.5	24.1	17.8	39.5	31.6	27.9	42.7	29.0	31.4
Incr Delay (d2), s/veh	49.6	1.1	1.1	23.9	31.5	1.1	20.4	32.0	3.8	21.8	0.3	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	8.8	8.7	1.4	25.9	7.4	3.9	16.4	6.8	1.1	2.7	5.4
LnGrp Delay(d),s/veh	90.9	17.7	17.7	66.4	55.6	18.9	59.8	63.7	31.7	64.5	29.2	35.6
LnGrp LOS	F	B	B	E	F	B	E	F	C	E	C	D
Approach Vol, veh/h		1058			2070			1428			518	
Approach Delay, s/veh		23.6			48.7			56.7			34.3	
Approach LOS		C			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	29.0	6.7	46.3	11.8	23.4	9.0	44.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	25.0	6.0	39.0	9.0	20.0	5.0	40.0
Max Q Clear Time (g_c+I1), s	3.6	27.0	4.1	20.0	8.2	13.6	6.3	42.0
Green Ext Time (p_c), s	0.0	0.0	0.0	16.9	0.0	4.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	438	33	85	696	264	55	1464	62	92	776	22
Future Volume (veh/h)	63	438	33	85	696	264	55	1464	62	92	776	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	63	438	33	85	696	264	55	1464	62	92	776	22
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	134	1035	322	153	1063	331	125	1624	69	158	1695	758
Arrive On Green	0.04	0.21	0.21	0.05	0.21	0.21	0.04	0.48	0.48	0.05	0.49	0.49
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	3394	143	3375	3471	1553
Grp Volume(v), veh/h	63	438	33	85	696	264	55	747	779	92	776	22
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1736	1802	1688	1736	1553
Q Serve(g_s), s	1.3	5.5	1.2	1.8	9.2	11.6	1.2	28.4	28.6	1.9	10.6	0.5
Cycle Q Clear(g_c), s	1.3	5.5	1.2	1.8	9.2	11.6	1.2	28.4	28.6	1.9	10.6	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	134	1035	322	153	1063	331	125	831	862	158	1695	758
V/C Ratio(X)	0.47	0.42	0.10	0.56	0.65	0.80	0.44	0.90	0.90	0.58	0.46	0.03
Avail Cap(c_a), veh/h	187	1106	344	187	1106	344	187	842	874	187	1695	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	24.8	23.1	33.7	25.9	26.9	34.0	17.2	17.3	33.7	12.2	9.6
Incr Delay (d2), s/veh	2.5	0.3	0.1	3.1	1.3	12.0	2.4	12.5	12.6	3.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.5	0.5	0.9	4.3	6.1	0.6	16.4	17.1	1.0	5.1	0.2
LnGrp Delay(d),s/veh	36.4	25.1	23.3	36.8	27.3	38.9	36.4	29.7	29.8	37.1	12.4	9.6
LnGrp LOS	D	C	C	D	C	D	D	C	C	D	B	A
Approach Vol, veh/h		534			1045			1581			890	
Approach Delay, s/veh		26.3			31.0			30.0			14.8	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	38.5	7.3	19.0	6.7	39.2	6.9	19.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	35.0	4.0	16.0	4.0	35.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	3.9	30.6	3.8	7.5	3.2	12.6	3.3	13.6
Green Ext Time (p_c), s	0.0	3.9	0.0	5.3	0.0	17.2	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	26.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	348	64	7	464	23	13	148	43	8	25	28
Future Volume (veh/h)	142	348	64	7	464	23	13	148	43	8	25	28
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1827	1827	1827	1845	1845	1845
Adj Flow Rate, veh/h	142	348	64	7	464	23	13	148	43	8	25	28
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	3	3	3
Cap, veh/h	182	1108	202	13	945	47	24	283	240	15	276	235
Arrive On Green	0.10	0.38	0.38	0.01	0.28	0.28	0.01	0.15	0.15	0.01	0.15	0.15
Sat Flow, veh/h	1740	2934	534	1740	3367	167	1740	1827	1553	1757	1845	1568
Grp Volume(v), veh/h	142	204	208	7	239	248	13	148	43	8	25	28
Grp Sat Flow(s),veh/h/ln	1740	1736	1733	1740	1736	1798	1740	1827	1553	1757	1845	1568
Q Serve(g_s), s	2.8	2.9	3.0	0.1	4.1	4.1	0.3	2.6	0.9	0.2	0.4	0.5
Cycle Q Clear(g_c), s	2.8	2.9	3.0	0.1	4.1	4.1	0.3	2.6	0.9	0.2	0.4	0.5
Prop In Lane	1.00		0.31	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	655	654	13	487	504	24	283	240	15	276	235
V/C Ratio(X)	0.78	0.31	0.32	0.54	0.49	0.49	0.55	0.52	0.18	0.53	0.09	0.12
Avail Cap(c_a), veh/h	393	980	978	196	784	812	196	825	701	198	833	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	7.8	7.8	17.5	10.6	10.6	17.4	13.8	13.0	17.5	13.0	13.0
Incr Delay (d2), s/veh	7.1	0.3	0.3	30.0	0.8	0.7	18.5	1.5	0.4	26.2	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.4	1.4	0.2	2.0	2.1	0.2	1.4	0.4	0.2	0.2	0.2
LnGrp Delay(d),s/veh	22.6	8.0	8.1	47.5	11.4	11.4	35.9	15.3	13.4	43.7	13.1	13.3
LnGrp LOS	C	A	A	D	B	B	D	B	B	D	B	B
Approach Vol, veh/h		554			494			204			61	
Approach Delay, s/veh		11.8			11.9			16.2			17.2	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	9.5	4.3	17.4	4.5	9.3	7.7	13.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	4.0	20.0	4.0	16.0	8.0	16.0
Max Q Clear Time (g_c+I1), s	2.2	4.6	2.1	5.0	2.3	2.5	4.8	6.1
Green Ext Time (p_c), s	0.0	0.8	0.0	4.9	0.0	0.9	0.1	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	90	110	3	1	258	1861	37	0	1720	26
Future Volume (veh/h)	0	1	90	110	3	1	258	1861	37	0	1720	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	0	1	90	110	3	1	258	1861	37	0	1720	26
Adj No. of Lanes	0	1	0	1	1	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	0	1	115	138	104	35	282	2137	956	148	1884	28
Arrive On Green	0.00	0.08	0.08	0.08	0.08	0.08	0.17	0.63	0.63	0.00	0.55	0.55
Sat Flow, veh/h	0	16	1481	1757	1325	442	1707	3406	1524	1707	3434	52
Grp Volume(v), veh/h	0	0	91	110	0	4	258	1861	37	0	851	895
Grp Sat Flow(s),veh/h/ln	0	0	1498	1757	0	1767	1707	1703	1524	1707	1703	1783
Q Serve(g_s), s	0.0	0.0	7.4	7.6	0.0	0.3	18.3	55.3	1.1	0.0	55.6	56.0
Cycle Q Clear(g_c), s	0.0	0.0	7.4	7.6	0.0	0.3	18.3	55.3	1.1	0.0	55.6	56.0
Prop In Lane	0.00		0.99	1.00		0.25	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	0	0	116	138	0	139	282	2137	956	148	934	978
V/C Ratio(X)	0.00	0.00	0.78	0.79	0.00	0.03	0.91	0.87	0.04	0.00	0.91	0.91
Avail Cap(c_a), veh/h	0	0	194	228	0	229	291	2432	1088	148	981	1027
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	55.8	55.8	0.0	52.4	50.6	18.9	8.8	0.0	25.1	25.2
Incr Delay (d2), s/veh	0.0	0.0	10.9	9.8	0.0	0.1	31.0	3.4	0.0	0.0	12.1	12.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	3.4	4.1	0.0	0.1	11.1	26.9	0.5	0.0	29.1	30.6
LnGrp Delay(d),s/veh	0.0	0.0	66.8	65.6	0.0	52.5	81.6	22.3	8.8	0.0	37.2	37.2
LnGrp LOS			E	E		D	F	C	A		D	D
Approach Vol, veh/h		91			114			2156			1746	
Approach Delay, s/veh		66.8			65.1			29.1			37.2	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.7	81.3		13.5	24.4	71.6		13.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	88.0		16.0	21.0	71.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	57.3		9.4	20.3	58.0		9.6
Green Ext Time (p_c), s	0.0	20.0		0.2	0.1	9.6		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		34.4
HCM 2010 LOS		C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	430	27	21	1784	1660	416
Future Volume (veh/h)	430	27	21	1784	1660	416
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	430	27	21	1784	1660	416
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	429	383	31	2364	1727	415
Arrive On Green	0.24	0.24	0.02	0.67	0.62	0.62
Sat Flow, veh/h	1757	1568	1757	3597	2896	674
Grp Volume(v), veh/h	430	27	21	1784	1011	1065
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1726
Q Serve(g_s), s	24.0	1.3	1.2	33.2	51.5	60.5
Cycle Q Clear(g_c), s	24.0	1.3	1.2	33.2	51.5	60.5
Prop In Lane	1.00	1.00	1.00			0.39
Lane Grp Cap(c), veh/h	429	383	31	2364	1079	1063
V/C Ratio(X)	1.00	0.07	0.67	0.75	0.94	1.00
Avail Cap(c_a), veh/h	429	383	72	2425	1079	1063
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	28.6	48.0	10.6	17.1	18.9
Incr Delay (d2), s/veh	44.0	0.1	22.3	1.4	14.7	28.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.8	1.3	0.8	16.3	29.1	36.6
LnGrp Delay(d),s/veh	81.1	28.6	70.3	12.0	31.9	46.9
LnGrp LOS	F	C	E	B	C	F
Approach Vol, veh/h	457			1805	2076	
Approach Delay, s/veh	78.0			12.6	39.6	
Approach LOS	E			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		70.3		28.0	5.7	64.5		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		68.0		24.0	4.0	60.0		
Max Q Clear Time (g_c+I1), s		35.2		26.0	3.2	62.5		
Green Ext Time (p_c), s		31.1		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	32.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1	42	201	0	569	16	1590	115	212	1461	0
Future Volume (veh/h)	21	1	42	201	0	569	16	1590	115	212	1461	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	21	1	42	201	0	569	16	1590	115	212	1461	0
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	28	5	197	226	0	377	23	1643	118	231	2149	0
Arrive On Green	0.02	0.13	0.13	0.13	0.00	0.24	0.01	0.50	0.50	0.13	0.61	0.00
Sat Flow, veh/h	1757	37	1537	1757	0	1568	1757	3317	238	1757	3597	0
Grp Volume(v), veh/h	21	0	43	201	0	569	16	835	870	212	1461	0
Grp Sat Flow(s),veh/h/ln	1757	0	1573	1757	0	1568	1757	1752	1803	1757	1752	0
Q Serve(g_s), s	1.6	0.0	3.4	15.4	0.0	33.0	1.2	63.0	64.6	16.3	37.9	0.0
Cycle Q Clear(g_c), s	1.6	0.0	3.4	15.4	0.0	33.0	1.2	63.0	64.6	16.3	37.9	0.0
Prop In Lane	1.00		0.98	1.00		1.00	1.00		0.13	1.00		0.00
Lane Grp Cap(c), veh/h	28	0	202	226	0	377	23	868	893	231	2149	0
V/C Ratio(X)	0.74	0.00	0.21	0.89	0.00	1.51	0.68	0.96	0.97	0.92	0.68	0.00
Avail Cap(c_a), veh/h	51	0	202	269	0	377	77	882	907	231	2149	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.2	0.0	53.6	58.8	0.0	52.1	67.4	33.4	33.8	58.8	17.6	0.0
Incr Delay (d2), s/veh	31.5	0.0	0.5	25.7	0.0	241.9	29.8	21.4	23.6	37.9	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.5	9.1	0.0	39.6	0.8	35.5	38.0	10.4	18.5	0.0
LnGrp Delay(d),s/veh	98.7	0.0	54.1	84.5	0.0	294.0	97.1	54.7	57.4	96.8	18.5	0.0
LnGrp LOS	F		D	F		F	F	D	E	F	B	
Approach Vol, veh/h		64			770			1721			1673	
Approach Delay, s/veh		68.7			239.3			56.4			28.4	
Approach LOS		E			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	71.9	21.6	21.6	5.8	88.1	6.2	37.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	69.0	21.0	16.0	6.0	81.0	4.0	33.0
Max Q Clear Time (g_c+I1), s	18.3	66.6	17.4	5.4	3.2	39.9	3.6	35.0
Green Ext Time (p_c), s	0.0	1.3	0.2	3.3	0.0	35.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	78.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	325	6	4	1	5	7	3	1213	1	0	1342	349
Future Volume (veh/h)	325	6	4	1	5	7	3	1213	1	0	1342	349
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	325	6	4	1	5	7	3	1213	1	0	1342	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	380	7	345	2	8	12	6	2095	2	3	1817	813
Arrive On Green	0.22	0.22	0.22	0.01	0.01	0.01	0.00	0.58	0.58	0.00	0.52	0.00
Sat Flow, veh/h	1726	32	1568	129	646	904	1757	3594	3	1757	3505	1568
Grp Volume(v), veh/h	331	0	4	13	0	0	3	592	622	0	1342	0
Grp Sat Flow(s),veh/h/ln	1758	0	1568	1679	0	0	1757	1752	1844	1757	1752	1568
Q Serve(g_s), s	11.8	0.0	0.1	0.5	0.0	0.0	0.1	13.9	13.9	0.0	19.5	0.0
Cycle Q Clear(g_c), s	11.8	0.0	0.1	0.5	0.0	0.0	0.1	13.9	13.9	0.0	19.5	0.0
Prop In Lane	0.98		1.00	0.08		0.54	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	387	0	345	22	0	0	6	1022	1075	3	1817	813
V/C Ratio(X)	0.85	0.00	0.01	0.60	0.00	0.00	0.53	0.58	0.58	0.00	0.74	0.00
Avail Cap(c_a), veh/h	458	0	408	412	0	0	108	1022	1075	108	1987	889
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	24.4	0.0	19.9	32.0	0.0	0.0	32.5	8.6	8.6	0.0	12.3	0.0
Incr Delay (d2), s/veh	12.9	0.0	0.0	24.0	0.0	0.0	59.3	0.8	0.8	0.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	0.1	0.4	0.0	0.0	0.1	6.8	7.1	0.0	9.7	0.0
LnGrp Delay(d),s/veh	37.4	0.0	19.9	56.0	0.0	0.0	91.8	9.4	9.3	0.0	13.6	0.0
LnGrp LOS	D		B	E			F	A	A		B	
Approach Vol, veh/h		335			13			1217			1342	
Approach Delay, s/veh		37.2			56.0			9.6			13.6	
Approach LOS		D			E			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	42.1		18.4	4.2	37.8		4.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	37.0		17.0	4.0	37.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	15.9		13.8	2.1	21.5		2.5
Green Ext Time (p_c), s	0.0	17.4		0.6	0.0	12.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	214	137	119	585	2	391	987	53	1	1696	248
Future Volume (veh/h)	181	214	137	119	585	2	391	987	53	1	1696	248
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	181	214	137	119	585	2	391	987	53	1	1696	248
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	189	630	282	183	623	279	379	2060	922	4	1675	749
Arrive On Green	0.06	0.18	0.18	0.05	0.18	0.18	0.11	0.59	0.59	0.00	0.48	0.48
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	181	214	137	119	585	2	391	987	53	1	1696	248
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	4.8	4.8	7.1	3.1	14.8	0.1	10.0	14.5	1.3	0.0	43.0	8.8
Cycle Q Clear(g_c), s	4.8	4.8	7.1	3.1	14.8	0.1	10.0	14.5	1.3	0.0	43.0	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	630	282	183	623	279	379	2060	922	4	1675	749
V/C Ratio(X)	0.96	0.34	0.49	0.65	0.94	0.01	1.03	0.48	0.06	0.26	1.01	0.33
Avail Cap(c_a), veh/h	189	630	282	189	623	279	379	2060	922	151	1675	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	32.2	33.2	41.8	36.5	30.5	40.0	10.6	7.9	44.9	23.5	14.6
Incr Delay (d2), s/veh	52.6	0.3	1.3	7.4	22.2	0.0	54.9	0.2	0.0	33.5	25.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	2.3	3.1	1.6	9.1	0.0	7.6	7.0	0.6	0.0	26.6	3.8
LnGrp Delay(d),s/veh	95.0	32.6	34.5	49.1	58.7	30.5	94.9	10.8	7.9	78.4	48.7	14.8
LnGrp LOS	F	C	C	D	E	C	F	B	A	E	F	B
Approach Vol, veh/h		532			706			1431			1945	
Approach Delay, s/veh		54.3			57.0			33.7			44.4	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	56.9	8.8	20.2	14.0	47.0	9.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	49.0	5.0	16.0	10.0	43.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	2.0	16.5	5.1	9.1	12.0	45.0	6.8	16.8
Green Ext Time (p_c), s	0.0	27.5	0.0	3.2	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	1161	56	13	1897	47	399	191	20	57	71	284
Future Volume (veh/h)	93	1161	56	13	1897	47	399	191	20	57	71	284
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	93	1161	56	13	1897	47	399	191	20	57	71	284
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	95	1820	88	20	1721	42	365	533	453	73	227	193
Arrive On Green	0.05	0.53	0.53	0.01	0.49	0.49	0.21	0.29	0.29	0.04	0.12	0.12
Sat Flow, veh/h	1757	3404	164	1757	3496	86	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	93	597	620	13	947	997	399	191	20	57	71	284
Grp Sat Flow(s),veh/h/ln	1757	1752	1816	1757	1752	1829	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	6.9	31.3	31.3	1.0	64.0	64.0	27.0	10.7	1.2	4.2	4.6	16.0
Cycle Q Clear(g_c), s	6.9	31.3	31.3	1.0	64.0	64.0	27.0	10.7	1.2	4.2	4.6	16.0
Prop In Lane	1.00		0.09	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	937	971	20	863	901	365	533	453	73	227	193
V/C Ratio(X)	0.98	0.64	0.64	0.64	1.10	1.11	1.09	0.36	0.04	0.78	0.31	1.47
Avail Cap(c_a), veh/h	95	937	971	54	863	901	365	533	453	122	227	193
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.4	21.4	21.4	64.0	33.0	33.0	51.5	36.6	33.3	61.7	52.0	57.0
Incr Delay (d2), s/veh	86.8	1.4	1.4	29.2	60.9	63.7	74.6	0.4	0.0	16.2	0.8	238.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	15.5	16.0	0.6	45.5	48.2	20.6	5.5	0.5	2.4	2.4	19.7
LnGrp Delay(d),s/veh	148.2	22.8	22.8	93.1	93.9	96.7	126.1	37.0	33.3	77.9	52.8	295.2
LnGrp LOS	F	C	C	F	F	F	F	D	C	E	D	F
Approach Vol, veh/h		1310			1957			610			412	
Approach Delay, s/veh		31.7			95.3			95.2			223.3	
Approach LOS		C			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	41.6	5.5	73.5	31.0	20.0	11.0	68.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	34.0	4.0	67.0	27.0	16.0	7.0	64.0
Max Q Clear Time (g_c+I1), s	6.2	12.7	3.0	33.3	29.0	18.0	8.9	66.0
Green Ext Time (p_c), s	0.0	2.5	0.0	30.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	88.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	477	617	530	10	1311	426	714	1833	5	274	906	1420
Future Volume (veh/h)	477	617	530	10	1311	426	714	1833	5	274	906	1420
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	477	617	530	10	1311	426	714	1833	5	274	906	1420
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	273	1066	477	31	818	366	409	2445	761	322	2317	721
Arrive On Green	0.08	0.30	0.30	0.01	0.23	0.23	0.12	0.49	0.49	0.09	0.46	0.46
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	477	617	530	10	1311	426	714	1833	5	274	906	1420
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	12.0	22.3	45.6	0.4	35.0	35.0	18.0	44.2	0.2	11.9	17.8	69.0
Cycle Q Clear(g_c), s	12.0	22.3	45.6	0.4	35.0	35.0	18.0	44.2	0.2	11.9	17.8	69.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	1066	477	31	818	366	409	2445	761	322	2317	721
V/C Ratio(X)	1.75	0.58	1.11	0.32	1.60	1.16	1.75	0.75	0.01	0.85	0.39	1.97
Avail Cap(c_a), veh/h	273	1066	477	91	818	366	409	2445	761	386	2317	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.0	44.1	52.2	73.9	57.5	57.5	66.0	31.2	19.9	66.9	26.7	40.5
Incr Delay (d2), s/veh	352.0	0.8	75.1	5.9	277.1	99.8	345.6	1.3	0.0	14.4	0.1	441.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.0	10.9	29.7	0.2	48.4	25.3	28.1	20.7	0.1	6.2	8.2	118.2
LnGrp Delay(d),s/veh	421.0	44.8	127.3	79.7	334.6	157.3	411.6	32.5	19.9	81.2	26.8	481.5
LnGrp LOS	F	D	F	E	F	F	F	C	B	F	C	F
Approach Vol, veh/h		1624			1747			2552			2600	
Approach Delay, s/veh		182.2			289.9			138.6			280.8	
Approach LOS		F			F			F			F	

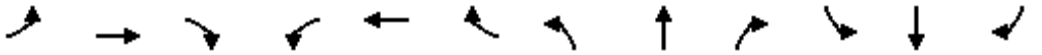
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.2	76.8	5.4	49.6	22.0	73.0	16.0	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	70.0	4.0	43.0	18.0	69.0	12.0	35.0
Max Q Clear Time (g_c+I1), s	13.9	46.2	2.4	47.6	20.0	71.0	14.0	37.0
Green Ext Time (p_c), s	0.3	23.2	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	221.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	544	304	172	1226	865	524	1226	234	375	387	0
Future Volume (veh/h)	0	544	304	172	1226	865	524	1226	234	375	387	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	544	304	172	1226	865	524	1226	234	375	387	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1233	384	249	1842	574	634	1296	580	410	1065	477
Arrive On Green	0.00	0.24	0.24	0.07	0.37	0.37	0.19	0.37	0.37	0.12	0.30	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	544	304	172	1226	865	524	1226	234	375	387	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	7.6	15.1	4.1	17.0	30.4	12.3	28.2	9.2	9.1	7.2	0.0
Cycle Q Clear(g_c), s	0.0	7.6	15.1	4.1	17.0	30.4	12.3	28.2	9.2	9.1	7.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1233	384	249	1842	574	634	1296	580	410	1065	477
V/C Ratio(X)	0.00	0.44	0.79	0.69	0.67	1.51	0.83	0.95	0.40	0.92	0.36	0.00
Avail Cap(c_a), veh/h	164	1513	471	328	1842	574	860	1306	584	410	1065	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	26.6	29.4	37.7	22.1	26.4	32.6	25.4	19.4	36.2	22.7	0.0
Incr Delay (d2), s/veh	0.0	0.2	7.4	4.0	0.9	237.5	4.9	14.0	0.5	25.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	7.3	2.1	8.0	50.9	6.2	16.1	4.1	5.7	3.5	0.0
LnGrp Delay(d),s/veh	0.0	26.9	36.8	41.7	23.0	263.9	37.5	39.4	19.9	61.2	22.9	0.0
LnGrp LOS		C	D	D	C	F	D	D	B	E	C	
Approach Vol, veh/h		848			2263			1984			762	
Approach Delay, s/veh		30.4			116.5			36.6			41.7	
Approach LOS		C			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	34.8	10.1	24.4	19.5	29.3	0.0	34.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	31.0	8.0	25.0	21.0	20.0	4.0	29.0
Max Q Clear Time (g_c+I1), s	11.1	30.2	6.1	17.1	14.3	9.2	0.0	32.4
Green Ext Time (p_c), s	0.0	0.6	0.1	3.3	1.2	8.0	0.0	0.0

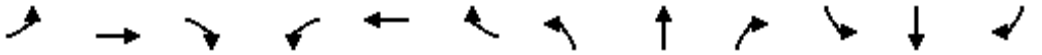
Intersection Summary	
HCM 2010 Ctrl Delay	67.2
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	58	20	101	339	1067	89	914	93	378	467	37
Future Volume (veh/h)	18	58	20	101	339	1067	89	914	93	378	467	37
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	18	58	20	101	339	1067	89	914	93	378	467	37
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	48	1723	771	144	1822	815	131	876	392	368	1119	501
Arrive On Green	0.01	0.49	0.49	0.04	0.52	0.52	0.04	0.25	0.25	0.11	0.32	0.32
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	18	58	20	101	339	1067	89	914	93	378	467	37
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.8	1.3	1.0	4.3	7.6	77.0	3.8	37.0	7.0	16.0	15.5	2.4
Cycle Q Clear(g_c), s	0.8	1.3	1.0	4.3	7.6	77.0	3.8	37.0	7.0	16.0	15.5	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	48	1723	771	144	1822	815	131	876	392	368	1119	501
V/C Ratio(X)	0.37	0.03	0.03	0.70	0.19	1.31	0.68	1.04	0.24	1.03	0.42	0.07
Avail Cap(c_a), veh/h	92	1728	773	184	1822	815	184	876	392	368	1119	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.4	19.4	19.4	70.0	18.9	35.5	70.3	55.5	44.3	66.0	39.6	35.1
Incr Delay (d2), s/veh	4.7	0.0	0.0	8.0	0.0	147.8	6.0	42.4	0.3	53.9	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.6	0.4	2.2	3.7	66.5	1.9	23.0	3.1	10.3	7.6	1.1
LnGrp Delay(d),s/veh	77.1	19.5	19.4	78.0	18.9	183.3	76.3	98.0	44.6	119.9	39.8	35.2
LnGrp LOS	E	B	B	E	B	F	E	F	D	F	D	D
Approach Vol, veh/h		96			1507			1096			882	
Approach Delay, s/veh		30.2			139.3			91.7			74.0	
Approach LOS		C			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	41.0	10.3	76.8	9.7	51.3	6.1	81.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	37.0	8.0	73.0	8.0	45.0	4.0	77.0
Max Q Clear Time (g_c+I1), s	18.0	39.0	6.3	3.3	5.8	17.5	2.8	79.0
Green Ext Time (p_c), s	0.0	0.0	0.0	11.5	0.0	12.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	105.7
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	141	81	65	418	199	464	456	32	95	322	98
Future Volume (veh/h)	68	141	81	65	418	199	464	456	32	95	322	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	68	141	81	65	418	199	464	456	32	95	322	98
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	171	786	352	167	781	349	587	1127	504	207	737	330
Arrive On Green	0.05	0.22	0.22	0.05	0.22	0.22	0.17	0.32	0.32	0.06	0.21	0.21
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	68	141	81	65	418	199	464	456	32	95	322	98
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.9	1.5	2.0	0.9	4.9	5.2	6.1	4.7	0.7	1.3	3.7	2.4
Cycle Q Clear(g_c), s	0.9	1.5	2.0	0.9	4.9	5.2	6.1	4.7	0.7	1.3	3.7	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	786	352	167	781	349	587	1127	504	207	737	330
V/C Ratio(X)	0.40	0.18	0.23	0.39	0.54	0.57	0.79	0.40	0.06	0.46	0.44	0.30
Avail Cap(c_a), veh/h	294	1207	540	294	1207	540	587	1434	641	367	1207	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	14.6	14.7	21.4	15.9	16.1	18.4	12.3	10.9	21.1	16.0	15.5
Incr Delay (d2), s/veh	1.5	0.1	0.3	1.5	0.6	1.5	7.2	0.2	0.1	1.6	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.9	0.4	2.4	2.4	3.4	2.3	0.3	0.6	1.8	1.1
LnGrp Delay(d),s/veh	22.9	14.7	15.1	22.9	16.5	17.5	25.6	12.5	11.0	22.6	16.4	16.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		290			682			952			515	
Approach Delay, s/veh		16.7			17.4			18.9			17.4	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	18.9	6.3	14.4	12.0	13.8	6.3	14.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	19.0	4.0	16.0	8.0	16.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	3.3	6.7	2.9	4.0	8.1	5.7	2.9	7.2
Green Ext Time (p_c), s	0.0	4.5	0.0	3.7	0.0	4.0	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	771	125	31	1209	237	551	248	59	109	55	60
Future Volume (veh/h)	52	771	125	31	1209	237	551	248	59	109	55	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	52	771	125	31	1209	237	551	248	59	109	55	60
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	66	1338	599	43	1292	578	583	612	520	139	145	124
Arrive On Green	0.04	0.38	0.38	0.02	0.37	0.37	0.33	0.33	0.33	0.08	0.08	0.08
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	52	771	125	31	1209	237	551	248	59	109	55	60
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	2.6	15.2	4.7	1.5	29.0	9.8	26.6	9.1	2.3	5.3	2.5	3.2
Cycle Q Clear(g_c), s	2.6	15.2	4.7	1.5	29.0	9.8	26.6	9.1	2.3	5.3	2.5	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1338	599	43	1292	578	583	612	520	139	145	124
V/C Ratio(X)	0.79	0.58	0.21	0.73	0.94	0.41	0.94	0.41	0.11	0.79	0.38	0.49
Avail Cap(c_a), veh/h	81	1338	599	121	1325	593	604	740	629	242	359	305
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	21.4	18.1	42.3	26.6	20.5	28.4	22.5	20.2	39.5	38.2	38.5
Incr Delay (d2), s/veh	33.8	0.6	0.2	21.0	12.3	0.5	23.5	0.4	0.1	9.4	1.6	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	7.4	2.0	1.0	16.1	4.3	16.7	4.7	1.0	2.9	1.3	1.5
LnGrp Delay(d),s/veh	75.4	22.0	18.3	63.3	38.9	21.0	51.9	22.9	20.3	48.9	39.8	41.4
LnGrp LOS	E	C	B	E	D	C	D	C	C	D	D	D
Approach Vol, veh/h		948			1477			858			224	
Approach Delay, s/veh		24.4			36.5			41.3			44.7	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	33.0	6.1	37.3	33.0	10.9	7.3	36.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	35.0	6.0	31.0	30.0	17.0	4.0	33.0
Max Q Clear Time (g_c+I1), s	7.3	11.1	3.5	17.2	28.6	5.2	4.6	31.0
Green Ext Time (p_c), s	0.1	2.2	0.0	11.1	0.3	1.7	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	218	208	33	461	215	218	206	90	44	81	43
Future Volume (veh/h)	25	218	208	33	461	215	218	206	90	44	81	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	25	218	208	33	461	215	218	206	90	44	81	43
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	39	813	691	49	531	248	264	298	130	60	146	77
Arrive On Green	0.02	0.44	0.44	0.03	0.45	0.45	0.15	0.24	0.24	0.03	0.13	0.13
Sat Flow, veh/h	1757	1845	1568	1757	1191	556	1757	1218	532	1757	1135	603
Grp Volume(v), veh/h	25	218	208	33	0	676	218	0	296	44	0	124
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1747	1757	0	1751	1757	0	1738
Q Serve(g_s), s	0.9	4.7	5.4	1.2	0.0	22.1	7.6	0.0	9.7	1.6	0.0	4.2
Cycle Q Clear(g_c), s	0.9	4.7	5.4	1.2	0.0	22.1	7.6	0.0	9.7	1.6	0.0	4.2
Prop In Lane	1.00		1.00	1.00		0.32	1.00		0.30	1.00		0.35
Lane Grp Cap(c), veh/h	39	813	691	49	0	779	264	0	428	60	0	223
V/C Ratio(X)	0.63	0.27	0.30	0.68	0.00	0.87	0.83	0.00	0.69	0.74	0.00	0.56
Avail Cap(c_a), veh/h	111	904	769	139	0	884	306	0	637	139	0	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	11.2	11.4	30.5	0.0	15.8	26.1	0.0	21.7	30.3	0.0	25.9
Incr Delay (d2), s/veh	15.5	0.2	0.2	15.0	0.0	8.4	15.0	0.0	2.0	15.9	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.5	2.4	0.8	0.0	12.3	4.8	0.0	4.9	1.0	0.0	2.2
LnGrp Delay(d),s/veh	46.2	11.4	11.6	45.4	0.0	24.2	41.1	0.0	23.7	46.2	0.0	28.0
LnGrp LOS	D	B	B	D		C	D		C	D		C
Approach Vol, veh/h		451			709			514			168	
Approach Delay, s/veh		13.4			25.2			31.1			32.8	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	19.5	5.8	31.9	13.5	12.1	5.4	32.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	23.0	5.0	31.0	11.0	17.0	4.0	32.0
Max Q Clear Time (g_c+I1), s	3.6	11.7	3.2	7.4	9.6	6.2	2.9	24.1
Green Ext Time (p_c), s	0.0	1.9	0.0	7.5	0.1	1.9	0.0	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	381	68	244	64	96	102	677	1630	155	268	1588	273
Future Volume (veh/h)	381	68	244	64	96	102	677	1630	155	268	1588	273
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	381	68	244	64	96	102	677	1630	155	268	1588	273
Adj No. of Lanes	1	1	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	348	466	396	102	295	132	629	1811	810	312	1485	664
Arrive On Green	0.20	0.25	0.25	0.03	0.08	0.08	0.18	0.52	0.52	0.09	0.42	0.42
Sat Flow, veh/h	1757	1845	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	381	68	244	64	96	102	677	1630	155	268	1588	273
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	29.0	4.2	20.2	2.7	3.8	9.3	27.0	61.5	7.8	11.3	62.0	17.8
Cycle Q Clear(g_c), s	29.0	4.2	20.2	2.7	3.8	9.3	27.0	61.5	7.8	11.3	62.0	17.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	466	396	102	295	132	629	1811	810	312	1485	664
V/C Ratio(X)	1.09	0.15	0.62	0.63	0.33	0.77	1.08	0.90	0.19	0.86	1.07	0.41
Avail Cap(c_a), veh/h	348	492	418	140	383	171	629	1811	810	326	1485	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.7	42.5	48.4	70.2	63.1	65.6	59.7	31.9	19.0	65.5	42.2	29.4
Incr Delay (d2), s/veh	75.9	0.1	2.5	6.2	0.6	14.8	58.2	6.6	0.1	19.3	44.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.4	2.2	9.0	1.4	1.9	4.6	17.8	31.3	3.4	6.2	39.0	7.8
LnGrp Delay(d),s/veh	134.5	42.6	50.9	76.3	63.7	80.5	117.8	38.5	19.1	84.8	86.5	29.8
LnGrp LOS	F	D	D	E	E	F	F	D	B	F	F	C
Approach Vol, veh/h		693			262			2462			2129	
Approach Delay, s/veh		96.1			73.3			59.1			79.0	
Approach LOS		F			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	79.6	8.4	40.9	31.0	66.0	33.0	16.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	75.0	6.0	39.0	27.0	62.0	29.0	16.0
Max Q Clear Time (g_c+I1), s	13.3	63.5	4.7	22.2	29.0	64.0	31.0	11.3
Green Ext Time (p_c), s	0.1	11.2	0.0	2.0	0.0	0.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	72.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	73	0	0	502	789	0	0	0	295	0	0
Future Volume (veh/h)	0	73	0	0	502	789	0	0	0	295	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	73	0	0	502	789	0	0	0	295	0	0
Adj No. of Lanes	2	2	1	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	12	2002	896	6	2002	896	6	6	5	541	293	249
Arrive On Green	0.00	0.57	0.00	0.00	0.57	0.57	0.00	0.00	0.00	0.16	0.00	0.00
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	1757	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	0	73	0	0	502	789	0	0	0	295	0	0
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	0.0	0.3	0.0	0.0	2.1	12.9	0.0	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.3	0.0	0.0	2.1	12.9	0.0	0.0	0.0	2.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	12	2002	896	6	2002	896	6	6	5	541	293	249
V/C Ratio(X)	0.00	0.04	0.00	0.00	0.25	0.88	0.00	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	460	2130	953	237	2130	953	237	996	847	1841	1744	1482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	2.8	0.0	0.0	3.2	5.5	0.0	0.0	0.0	11.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	9.2	0.0	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	1.0	7.5	0.0	0.0	0.0	1.2	0.0	0.0
LnGrp Delay(d),s/veh	0.0	2.8	0.0	0.0	3.2	14.7	0.0	0.0	0.0	12.3	0.0	0.0
LnGrp LOS		A			A	B				B		
Approach Vol, veh/h		73			1291			0			295	
Approach Delay, s/veh		2.8			10.3			0.0			12.3	
Approach LOS		A			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	0.0	0.0	20.9	0.0	8.7	0.0	20.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	16.0	4.0	18.0	4.0	28.0	4.0	18.0
Max Q Clear Time (g_c+I1), s	4.4	0.0	0.0	2.3	0.0	0.0	0.0	14.9
Green Ext Time (p_c), s	0.8	0.0	0.0	6.8	0.0	0.0	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	403	4	0	554	331	0
Future Volume (veh/h)	403	4	0	554	331	0
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	403	4	0	554	331	0
Adj No. of Lanes	1	1	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	940	799	6	940	662	305
Arrive On Green	0.51	0.51	0.00	0.51	0.19	0.00
Sat Flow, veh/h	1845	1568	1757	1845	3408	1568
Grp Volume(v), veh/h	403	4	0	554	331	0
Grp Sat Flow(s),veh/h/ln	1845	1568	1757	1845	1704	1568
Q Serve(g_s), s	3.7	0.0	0.0	5.7	2.3	0.0
Cycle Q Clear(g_c), s	3.7	0.0	0.0	5.7	2.3	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	940	799	6	940	662	305
V/C Ratio(X)	0.43	0.01	0.00	0.59	0.50	0.00
Avail Cap(c_a), veh/h	1228	1044	260	1774	2017	928
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.2	3.3	0.0	4.6	9.7	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.6	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	2.9	1.2	0.0
LnGrp Delay(d),s/veh	4.5	3.3	0.0	5.2	10.3	0.0
LnGrp LOS	A	A		A	B	
Approach Vol, veh/h	407			554	331	
Approach Delay, s/veh	4.5			5.2	10.3	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		9.3	0.0	17.8				17.8
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	4.0	18.0				26.0
Max Q Clear Time (g_c+I1), s		4.3	0.0	5.7				7.7
Green Ext Time (p_c), s		0.9	0.0	5.0				6.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.3
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	209.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	137	190	11	70	119	13	315	536	134	4	142	11
Future Vol, veh/h	137	190	11	70	119	13	315	536	134	4	142	11
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	137	190	11	70	119	13	315	536	134	4	142	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	25.9	18.1	342.5	15.2
HCM LOS	D	C	F	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	32%	41%	35%	3%
Vol Thru, %	54%	56%	59%	90%
Vol Right, %	14%	3%	6%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	985	338	202	157
LT Vol	315	137	70	4
Through Vol	536	190	119	142
RT Vol	134	11	13	11
Lane Flow Rate	985	338	202	157
Geometry Grp	1	1	1	1
Degree of Util (X)	1.708	0.649	0.408	0.313
Departure Headway (Hd)	6.243	8.518	9.023	8.447
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	581	429	402	429
Service Time	4.307	6.518	7.023	6.447
HCM Lane V/C Ratio	1.695	0.788	0.502	0.366
HCM Control Delay	342.5	25.9	18.1	15.2
HCM Lane LOS	F	D	C	C
HCM 95th-tile Q	56.9	4.5	1.9	1.3

Intersection	
Intersection Delay, s/veh	239.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	92	305	7	160	561	129	1	416	190	0	121	26
Future Vol, veh/h	92	305	7	160	561	129	1	416	190	0	121	26
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	6	6	6	8	8	8	3	3	3	3	3	3
Mvmt Flow	92	305	7	160	561	129	1	416	190	0	121	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	61.6	409.3	171.7	23.2
HCM LOS	F	F	F	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	23%	19%	0%
Vol Thru, %	69%	75%	66%	82%
Vol Right, %	31%	2%	15%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	607	404	850	147
LT Vol	1	92	160	0
Through Vol	416	305	561	121
RT Vol	190	7	129	26
Lane Flow Rate	607	404	850	147
Geometry Grp	1	1	1	1
Degree of Util (X)	1.279	0.905	1.843	0.377
Departure Headway (Hd)	9.359	10.676	8.725	12.714
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	395	343	425	285
Service Time	7.359	8.676	6.725	10.714
HCM Lane V/C Ratio	1.537	1.178	2	0.516
HCM Control Delay	171.7	61.6	409.3	23.2
HCM Lane LOS	F	F	F	C
HCM 95th-tile Q	21.9	8.9	49.3	1.7

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	31	650	44	56	251
Future Vol, veh/h	47	31	650	44	56	251
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	47	31	650	44	56	251

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	910	347	0	0	694	0
Stage 1	672	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	270	643	-	-	891	-
Stage 1	464	-	-	-	-	-
Stage 2	773	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	253	643	-	-	891	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	464	-	-	-	-	-
Stage 2	724	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	364	643	891	-
HCM Lane V/C Ratio	-	-	0.129	0.048	0.063	-
HCM Control Delay (s)	-	-	16.4	10.9	9.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	0.2	-

Intersection	
Int Delay, s/veh	171.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	165	148	1845	289	343	504
Future Vol, veh/h	165	148	1845	289	343	504
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	165	148	1845	289	343	504

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2878	1067	0	0	2134	0
Stage 1	1990	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Critical Hdwy	5.76	7.16	-	-	5.38	-
Critical Hdwy Stg 1	6.66	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	3.83	3.93	-	-	3.14	-
Pot Cap-1 Maneuver	~ 30	186	-	-	~ 104	-
Stage 1	~ 57	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	186	-	-	~ 104	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	~ 57	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 373.6	0	$ 527.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	186	~ 104	-
HCM Lane V/C Ratio	-	-	1.683	3.298	-
HCM Control Delay (s)	-	-	$ 373.6	$ 1121.2	122.9
HCM Lane LOS	-	-	F	F	F
HCM 95th %tile Q(veh)	-	-	21.4	33.7	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	967	1891	34	10	93
Future Vol, veh/h	27	967	1891	34	10	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	27	967	1891	34	10	93

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1925	0	-	0	2446	963
Stage 1	-	-	-	-	1908	-
Stage 2	-	-	-	-	538	-
Critical Hdwy	4.22	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.26	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	287	-	-	-	25	254
Stage 1	-	-	-	-	101	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	287	-	-	-	23	254
Mov Cap-2 Maneuver	-	-	-	-	23	-
Stage 1	-	-	-	-	101	-
Stage 2	-	-	-	-	496	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	97.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	287	-	-	-	129
HCM Lane V/C Ratio	0.094	-	-	-	0.798
HCM Control Delay (s)	18.8	-	-	-	97.5
HCM Lane LOS	C	-	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	4.8

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	0	3	1	6	0	1140	1	1	897	1
Future Vol, veh/h	3	1	0	3	1	6	0	1140	1	1	897	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	1	0	3	1	6	0	1140	1	1	897	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2044	2041	898	2041	2041	1141	898	0	0	1141	0	0
Stage 1	900	900	-	1141	1141	-	-	-	-	-	-	-
Stage 2	1144	1141	-	900	900	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	41	56	337	41	56	243	752	-	-	609	-	-
Stage 1	332	356	-	243	274	-	-	-	-	-	-	-
Stage 2	242	274	-	332	356	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	39	56	337	40	56	243	752	-	-	609	-	-
Mov Cap-2 Maneuver	39	56	-	40	56	-	-	-	-	-	-	-
Stage 1	332	355	-	243	274	-	-	-	-	-	-	-
Stage 2	235	274	-	330	355	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	99.5	52.9	0	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	752	-	-	42	85	609	-	-
HCM Lane V/C Ratio	-	-	-	0.095	0.118	0.002	-	-
HCM Control Delay (s)	0	-	-	99.5	52.9	10.9	0	-
HCM Lane LOS	A	-	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.4	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	969	0	99	1463	3	1	0	203	2	0	5
Future Vol, veh/h	11	969	0	99	1463	3	1	0	203	2	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	90	200	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	6	6	3	3	3	3	3	3
Mvmt Flow	11	969	0	99	1463	3	1	0	203	2	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1466	0	0	969	0	0	1921	2655	485	2170	2654	733
Stage 1	-	-	-	-	-	-	991	991	-	1663	1663	-
Stage 2	-	-	-	-	-	-	930	1664	-	507	991	-
Critical Hdwy	4.22	-	-	4.22	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.26	-	-	2.26	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	437	-	-	683	-	-	40	22	525	26	22	361
Stage 1	-	-	-	-	-	-	262	320	-	100	151	-
Stage 2	-	-	-	-	-	-	286	151	-	514	320	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	437	-	-	683	-	-	34	18	525	14	18	361
Mov Cap-2 Maneuver	-	-	-	-	-	-	34	18	-	14	18	-
Stage 1	-	-	-	-	-	-	255	312	-	97	129	-
Stage 2	-	-	-	-	-	-	241	129	-	307	312	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.7	16.6	99.2
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	34	525	437	-	-	683	-	-	45
HCM Lane V/C Ratio	0.029	0.387	0.025	-	-	0.145	-	-	0.156
HCM Control Delay (s)	114.1	16.1	13.5	-	-	11.2	-	-	99.2
HCM Lane LOS	F	C	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.1	1.8	0.1	-	-	0.5	-	-	0.5

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	201	1	0	2	3	92
Future Vol, veh/h	201	1	0	2	3	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	201	1	0	2	3	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	51	49	95	0	-	0
Stage 1	49	-	-	-	-	-
Stage 2	2	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	955	1017	1493	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	955	1017	1493	-	-	-
Mov Cap-2 Maneuver	955	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	1019	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1493	-	955	-	-
HCM Lane V/C Ratio	-	-	0.212	-	-
HCM Control Delay (s)	0	-	9.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	101	14	23	893	242	79
Future Vol, veh/h	101	14	23	893	242	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	101	14	23	893	242	79

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	775	161	321	0	-	0
Stage 1	282	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	332	852	1228	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	576	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	326	852	1228	-	-	-
Mov Cap-2 Maneuver	326	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	565	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.1	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1228	-	352	-	-
HCM Lane V/C Ratio	0.019	-	0.327	-	-
HCM Control Delay (s)	8	-	20.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	-	-

Intersection	
Int Delay, s/veh	9.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1235	39	210	1093	24	337
Future Vol, veh/h	1235	39	210	1093	24	337
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1235	39	210	1093	24	337

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1274	0	2222	637
Stage 1	-	-	-	-	1255	-
Stage 2	-	-	-	-	967	-
Critical Hdwy	-	-	4.16	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.23	-	3.53	3.33
Pot Cap-1 Maneuver	-	-	536	-	36	418
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	327	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	536	-	~ 22	418
Mov Cap-2 Maneuver	-	-	-	-	~ 22	-
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	199	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	69.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	22	418	-	-	536	-
HCM Lane V/C Ratio	1.091	0.806	-	-	0.392	-
HCM Control Delay (s)	$ 473.3	40.9	-	-	16	-
HCM Lane LOS	F	E	-	-	C	-
HCM 95th %tile Q(veh)	3.1	7.3	-	-	1.8	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	415	0	0	159
Future Vol, veh/h	0	0	415	0	0	159
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	415	0	0	159

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	574	415	0	0	415	0
Stage 1	415	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	479	635	-	-	1139	-
Stage 1	664	-	-	-	-	-
Stage 2	867	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	479	635	-	-	1139	-
Mov Cap-2 Maneuver	479	-	-	-	-	-
Stage 1	664	-	-	-	-	-
Stage 2	867	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1139	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	113.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	389	7	173	465	141	489
Future Vol, veh/h	389	7	173	465	141	489
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	-	-	90
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	389	7	173	465	141	489

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	952	141	141	0	-	0
Stage 1	141	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	~ 287	904	1436	-	-	0
Stage 1	883	-	-	-	-	0
Stage 2	435	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 241	904	1436	-	-	-
Mov Cap-2 Maneuver	~ 241	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	~ 365	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 334.3	2.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1436	-	244	-
HCM Lane V/C Ratio	0.12	-	1.623	-
HCM Control Delay (s)	7.9	0	$ 334.3	-
HCM Lane LOS	A	A	F	-
HCM 95th %tile Q(veh)	0.4	-	25	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	62.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	121	654	263	74	127	132
Future Vol, veh/h	121	654	263	74	127	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	150	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	121	654	263	74	127	132

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	649	263	0	0	263	0
Stage 1	263	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	433	773	-	-	1295	-
Stage 1	779	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	391	773	-	-	1295	-
Mov Cap-2 Maneuver	391	-	-	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	618	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	108.5	0	4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	671	1295	-
HCM Lane V/C Ratio	-	-	1.155	0.098	-
HCM Control Delay (s)	-	-	108.5	8.1	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	24.7	0.3	-

Intersection	
Int Delay, s/veh	184.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	81	403	0	0	831	7	33	257	1	0	93	15
Future Vol, veh/h	81	403	0	0	831	7	33	257	1	0	93	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	81	403	0	0	831	7	33	257	1	0	93	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	838	0	0	403	0	0	1454	1403	403	1529	1400	835
Stage 1	-	-	-	-	-	-	565	565	-	835	835	-
Stage 2	-	-	-	-	-	-	889	838	-	694	565	-
Critical Hdwy	4.18	-	-	4.2	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.29	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	771	-	-	1114	-	-	105	~ 136	635	93	136	359
Stage 1	-	-	-	-	-	-	499	498	-	354	375	-
Stage 2	-	-	-	-	-	-	330	373	-	424	498	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	771	-	-	1114	-	-	~ 32	~ 118	635	-	118	359
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 32	~ 118	-	-	118	-
Stage 1	-	-	-	-	-	-	432	431	-	306	375	-
Stage 2	-	-	-	-	-	-	238	373	-	148	431	-

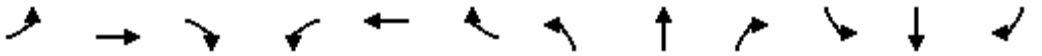
Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	0	$ 1088.1	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	91	771	-	-	1114	-	-	-
HCM Lane V/C Ratio	3.198	0.105	-	-	-	-	-	-
HCM Control Delay (s)	$ 1088.1	10.2	0	-	0	-	-	-
HCM Lane LOS	F	B	A	-	A	-	-	-
HCM 95th %tile Q(veh)	28.8	0.4	-	-	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Cumulative No Project

PM

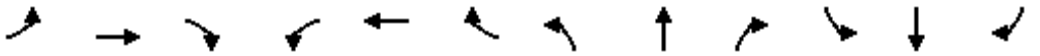


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	447	0	551	449	293	994	7	1910	555	0	2830	505
Future Volume (vph)	447	0	551	449	293	994	7	1910	555	0	2830	505
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		0.88	0.86	0.81	0.91		0.91	1.00		0.86	1.00
Frt	1.00		0.85	1.00	0.91	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1752		2760	2985	2688	1413		4987	1553		6285	1553
Flt Permitted	0.95		1.00	0.95	1.00	1.00		0.83	1.00		1.00	1.00
Satd. Flow (perm)	1752		2760	2985	2688	1413		4129	1553		6285	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	447	0	551	449	293	994	7	1910	555	0	2830	505
RTOR Reduction (vph)	0	0	54	0	14	37	0	0	0	0	0	121
Lane Group Flow (vph)	447	0	497	404	821	460	0	1917	555	0	2830	384
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm	Split	NA	Perm	Perm	NA	Free		NA	Perm
Protected Phases	4			8	8			2			6	
Permitted Phases			4			8	2		Free			6
Actuated Green, G (s)	22.0		22.0	28.0	28.0	28.0		48.0	110.0		48.0	48.0
Effective Green, g (s)	22.0		22.0	28.0	28.0	28.0		48.0	110.0		48.0	48.0
Actuated g/C Ratio	0.20		0.20	0.25	0.25	0.25		0.44	1.00		0.44	0.44
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	350		552	759	684	359		1801	1553		2742	677
v/s Ratio Prot	c0.26			0.14	0.31						0.45	
v/s Ratio Perm			0.18			c0.33		c0.46	0.36			0.25
v/c Ratio	1.28		0.90	0.53	1.41dr	1.28		1.06	0.36		1.03	0.57
Uniform Delay, d1	44.0		42.9	35.4	41.0	41.0		31.0	0.0		31.0	23.2
Progression Factor	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	145.1		17.4	0.7	103.7	146.0		40.7	0.6		26.1	1.1
Delay (s)	189.1		60.3	36.1	144.7	187.0		71.7	0.6		57.1	24.3
Level of Service	F		E	D	F	F		E	A		E	C
Approach Delay (s)		118.0			131.6			55.8			52.2	
Approach LOS		F			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	77.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	112.8%	ICU Level of Service	H
Analysis Period (min)	15		

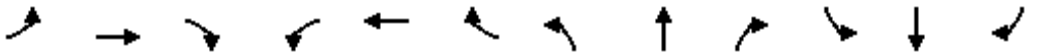
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



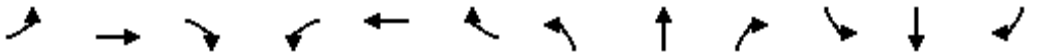
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	796	0	1165	0	0	0	0	1677	633	0	1875	1318
Future Volume (vph)	796	0	1165	0	0	0	0	1677	633	0	1875	1318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	796	0	1165	0	0	0	0	1677	633	0	1875	1318
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	796	0	1154	0	0	0	0	1677	633	0	1875	1318
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	24.0		24.0					23.0	55.0		23.0	55.0
Effective Green, g (s)	24.0		24.0					23.0	55.0		23.0	55.0
Actuated g/C Ratio	0.44		0.44					0.42	1.00		0.42	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1469		1192					2085	1553		2085	1553
v/s Ratio Prot								0.34			0.38	
v/s Ratio Perm	0.24		0.42						0.41			c0.85
v/c Ratio	0.54		0.97					0.80	0.41		0.90	0.85
Uniform Delay, d1	11.4		15.1					14.0	0.0		14.9	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4		18.6					2.4	0.8		5.6	6.0
Delay (s)	11.9		33.7					16.4	0.8		20.6	6.0
Level of Service	B		C					B	A		C	A
Approach Delay (s)		24.9			0.0			12.1			14.5	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



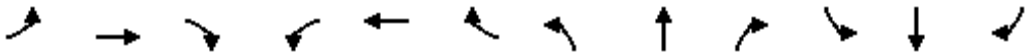
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	618	251	148	868	864	419	1181	36	1168	1837	150
Future Volume (vph)	264	618	251	148	868	864	419	1181	36	1168	1837	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3321		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3321		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	264	618	251	148	868	864	419	1181	36	1168	1837	150
RTOR Reduction (vph)	0	36	0	0	0	662	0	0	28	0	0	69
Lane Group Flow (vph)	264	833	0	148	868	202	419	1181	8	1168	1837	81
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	9.0	31.0		6.0	28.0	28.0	17.5	28.0	28.0	39.0	49.5	49.5
Effective Green, g (s)	9.0	31.0		6.0	28.0	28.0	17.5	28.0	28.0	39.0	49.5	49.5
Actuated g/C Ratio	0.08	0.26		0.05	0.23	0.23	0.15	0.23	0.23	0.32	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	857		168	809	637	491	1163	362	1094	2057	640
v/s Ratio Prot	0.08	c0.25		0.04	c0.25		0.12	c0.24		c0.35	0.37	
v/s Ratio Perm						0.07			0.01			0.05
v/c Ratio	1.05	0.97		0.88	1.07	0.32	0.85	1.02	0.02	1.07	0.89	0.13
Uniform Delay, d1	55.5	44.1		56.6	46.0	38.1	50.0	46.0	35.5	40.5	32.8	21.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	69.7	23.9		37.6	53.1	0.3	13.5	30.3	0.0	47.2	5.4	0.1
Delay (s)	125.2	67.9		94.3	99.1	38.4	63.5	76.3	35.5	87.7	38.2	21.9
Level of Service	F	E		F	F	D	E	E	D	F	D	C
Approach Delay (s)		81.3			70.8			72.1			55.7	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	66.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	325	1374	12	585	19	1008	4	3	14	14	83
Future Volume (vph)	47	325	1374	12	585	19	1008	4	3	14	14	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.98	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1622	1524		1800	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.98	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1622	1524		1800	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	47	325	1374	12	585	19	1008	4	3	14	14	83
RTOR Reduction (vph)	0	0	287	0	0	15	0	0	2	0	0	77
Lane Group Flow (vph)	47	325	1087	12	585	4	504	508	1	0	28	6
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.8	20.2	51.0	0.7	17.1	17.1	30.8	30.8	30.8		5.3	5.3
Effective Green, g (s)	3.8	20.2	51.0	0.7	17.1	17.1	30.8	30.8	30.8		5.3	5.3
Actuated g/C Ratio	0.05	0.28	0.70	0.01	0.23	0.23	0.42	0.42	0.42		0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	90	960	1170	16	813	363	682	684	643		130	113
v/s Ratio Prot	c0.03	0.09	c0.39	0.01	0.17		0.31	0.31			c0.02	
v/s Ratio Perm			0.31			0.00			0.00			0.00
v/c Ratio	0.52	0.34	0.93	0.75	0.72	0.01	0.74	0.74	0.00		0.22	0.05
Uniform Delay, d1	33.7	21.1	9.5	36.1	25.7	21.5	17.7	17.8	12.2		31.9	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.4	0.2	12.6	106.0	3.1	0.0	4.2	4.4	0.0		0.8	0.2
Delay (s)	39.1	21.3	22.1	142.1	28.8	21.5	21.9	22.1	12.2		32.7	31.7
Level of Service	D	C	C	F	C	C	C	C	B		C	C
Approach Delay (s)		22.4			30.8			22.0			32.0	
Approach LOS		C			C			C			C	

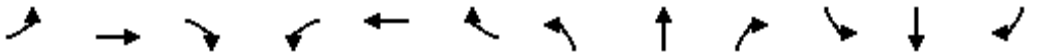
Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	346	58	339	429	105	149	220	217	133	224	37
Future Volume (vph)	38	346	58	339	429	105	149	220	217	133	224	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85		0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1752	3505	1568	1752	3401		1665	1747	1568		3398	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.98	
Satd. Flow (perm)	1752	3505	1568	1752	3401		1665	1747	1568		3398	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	346	58	339	429	105	149	220	217	133	224	37
RTOR Reduction (vph)	0	0	45	0	24	0	0	0	174	0	10	0
Lane Group Flow (vph)	38	346	13	339	510	0	134	235	43	0	384	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	1.8	14.7	14.7	11.2	24.1		13.4	13.4	13.4		12.5	
Effective Green, g (s)	1.8	14.7	14.7	11.2	24.1		13.4	13.4	13.4		12.5	
Actuated g/C Ratio	0.03	0.22	0.22	0.17	0.36		0.20	0.20	0.20		0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	46	759	339	289	1208		329	345	309		626	
v/s Ratio Prot	0.02	0.10		c0.19	c0.15		0.08	c0.13			c0.11	
v/s Ratio Perm			0.01						0.03			
v/c Ratio	0.83	0.46	0.04	1.17	0.42		0.41	0.68	0.14		0.61	
Uniform Delay, d1	32.8	23.1	21.0	28.3	16.6		23.7	25.2	22.4		25.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	69.9	0.4	0.0	108.2	0.2		0.8	5.5	0.2		1.8	
Delay (s)	102.7	23.5	21.0	136.5	16.8		24.6	30.7	22.6		27.2	
Level of Service	F	C	C	F	B		C	C	C		C	
Approach Delay (s)		30.0			63.3			26.3			27.2	
Approach LOS		C			E			C			C	

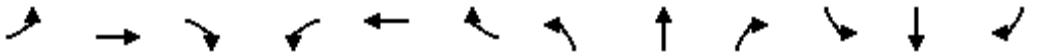
Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



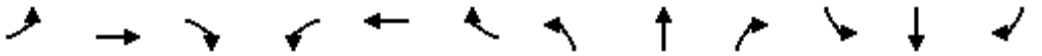
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	860	785	328	958	40	448	160	496	36	80	31
Future Volume (vph)	34	860	785	328	958	40	448	160	496	36	80	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3077		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3077		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	34	860	785	328	958	40	448	160	496	36	80	31
RTOR Reduction (vph)	0	0	413	0	0	21	0	391	0	0	0	29
Lane Group Flow (vph)	34	860	372	328	958	19	448	265	0	36	80	2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	3.0	30.3	30.3	11.3	38.5	38.5	17.5	17.5		4.4	4.4	4.4
Effective Green, g (s)	3.0	30.3	30.3	11.3	38.5	38.5	17.5	17.5		4.4	4.4	4.4
Actuated g/C Ratio	0.04	0.37	0.37	0.14	0.47	0.47	0.21	0.21		0.05	0.05	0.05
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.1	4.1	2.0	2.0		1.0	1.0	1.0
Lane Grp Cap (vph)	63	1290	577	466	1639	733	715	654		93	187	83
v/s Ratio Prot	0.02	c0.25		c0.10	0.27		c0.13	0.09		0.02	c0.02	
v/s Ratio Perm			0.24			0.01						0.00
v/c Ratio	0.54	0.67	0.64	0.70	0.58	0.03	0.63	0.41		0.39	0.43	0.02
Uniform Delay, d1	39.0	21.8	21.5	33.9	16.0	11.8	29.4	27.9		37.6	37.7	36.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.4	1.7	3.3	3.9	0.7	0.0	1.2	0.2		1.0	0.6	0.0
Delay (s)	43.4	23.5	24.8	37.8	16.7	11.8	30.7	28.1		38.6	38.3	36.9
Level of Service	D	C	C	D	B	B	C	C		D	D	D
Approach Delay (s)		24.5			21.8			29.1			38.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	82.3	Sum of lost time (s)	22.9
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



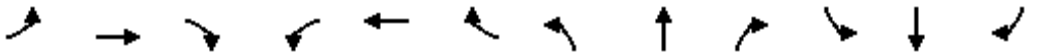
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1263	0	367	0	1031	888	0	1085	850
Future Volume (vph)	0	0	0	1263	0	367	0	1031	888	0	1085	850
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.6		4.6		3.5	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3367		2733		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3367		2733		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1263	0	367	0	1031	888	0	1085	850
RTOR Reduction (vph)	0	0	0	0	0	52	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1263	0	315	0	1031	888	0	1085	850
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				4				6			2	
Permitted Phases						4			Free			Free
Actuated Green, G (s)				19.9		19.9		14.4	42.4		12.8	42.4
Effective Green, g (s)				19.9		19.9		14.4	42.4		12.8	42.4
Actuated g/C Ratio				0.47		0.47		0.34	1.00		0.30	1.00
Clearance Time (s)				4.6		4.6		3.5			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1580		1282		1694	1553		1505	1553
v/s Ratio Prot				c0.38				0.21			0.22	
v/s Ratio Perm						0.12			c0.57			0.55
v/c Ratio				0.80		0.25		0.61	0.57		0.72	0.55
Uniform Delay, d1				9.6		6.7		11.7	0.0		13.2	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				2.7		0.0		0.4	1.5		1.5	1.4
Delay (s)				12.3		6.8		12.1	1.5		14.7	1.4
Level of Service				B		A		B	A		B	A
Approach Delay (s)		0.0			11.0			7.2			8.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	42.4	Sum of lost time (s)	9.7
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	713	0	950	0	0	0	0	1205	934	0	1919	426
Future Volume (vph)	713	0	950	0	0	0	0	1205	934	0	1919	426
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	713	0	950	0	0	0	0	1205	934	0	1919	426
RTOR Reduction (vph)	0	0	22	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	713	0	928	0	0	0	0	1205	934	0	1919	426
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	22.7		22.7					27.0	61.2		27.5	61.2
Effective Green, g (s)	22.7		22.7					27.0	61.2		27.5	61.2
Actuated g/C Ratio	0.37		0.37					0.44	1.00		0.45	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1248		1013					2200	1553		2241	1553
v/s Ratio Prot								0.24			c0.38	
v/s Ratio Perm	0.21		c0.34						0.60			0.27
v/c Ratio	0.57		0.92					0.55	0.60		0.86	0.27
Uniform Delay, d1	15.4		18.3					12.6	0.0		15.1	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4		12.3					0.2	1.7		3.3	0.4
Delay (s)	15.8		30.6					12.8	1.7		18.4	0.4
Level of Service	B		C					B	A		B	A
Approach Delay (s)		24.2			0.0			7.9			15.1	
Approach LOS		C			A			A			B	

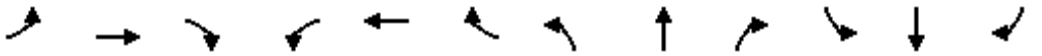
Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	11.5
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	3	103	0	1	1	21	22	1	1	61	330
Future Volume (vph)	168	3	103	0	1	1	21	22	1	1	61	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1665	1672	1568		1706		1752	3482		1752	3505	1568
Flt Permitted	0.95	0.95	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1665	1672	1568		1706		1752	3482		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	168	3	103	0	1	1	21	22	1	1	61	330
RTOR Reduction (vph)	0	0	85	0	1	0	0	1	0	0	0	216
Lane Group Flow (vph)	86	85	18	0	1	0	21	22	0	1	61	114
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	6.4	6.4	6.4		0.7		0.5	12.5		0.5	12.5	12.5
Effective Green, g (s)	6.4	6.4	6.4		0.7		0.5	12.5		0.5	12.5	12.5
Actuated g/C Ratio	0.18	0.18	0.18		0.02		0.01	0.35		0.01	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	295	296	277		33		24	1205		24	1213	542
v/s Ratio Prot	c0.05	0.05			c0.00		c0.01	0.01		0.00	0.02	
v/s Ratio Perm			0.01									c0.07
v/c Ratio	0.29	0.29	0.07		0.03		0.88	0.02		0.04	0.05	0.21
Uniform Delay, d1	12.9	12.9	12.4		17.4		17.8	7.8		17.6	7.9	8.3
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.5	0.1		0.4		127.4	0.0		0.7	0.0	0.2
Delay (s)	13.4	13.4	12.5		17.7		145.1	7.8		18.3	7.9	8.5
Level of Service	B	B	B		B		F	A		B	A	A
Approach Delay (s)		13.1			17.7			73.3			8.4	
Approach LOS		B			B			E			A	

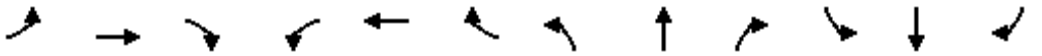
Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	36.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



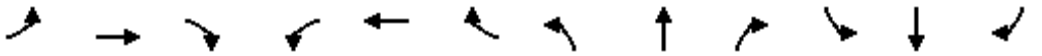
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	432	0	356	0	1210	1381	0	1146	586
Future Volume (vph)	0	0	0	432	0	356	0	1210	1381	0	1146	586
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.91	1.00		0.91	1.00
Frt				1.00	0.87			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.99			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1495			4988	1553		4988	1553
Flt Permitted				0.95	0.99			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1495			4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	432	0	356	0	1210	1381	0	1146	586
RTOR Reduction (vph)	0	0	0	0	33	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	389	366	0	0	1210	1381	0	1146	586
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Perm	NA			NA	Free		NA	Free
Protected Phases					8			2			6	
Permitted Phases				8					Free			Free
Actuated Green, G (s)				11.1	11.1			12.8	33.6		12.8	33.6
Effective Green, g (s)				11.1	11.1			12.8	33.6		12.8	33.6
Actuated g/C Ratio				0.33	0.33			0.38	1.00		0.38	1.00
Clearance Time (s)				4.9	4.9			4.8			4.8	
Vehicle Extension (s)				1.0	1.0			1.0			1.0	
Lane Grp Cap (vph)				544	493			1900	1553		1900	1553
v/s Ratio Prot								0.24			0.23	
v/s Ratio Perm				0.24	0.24				c0.89			0.38
v/c Ratio				0.72	0.74			0.64	0.89		0.60	0.38
Uniform Delay, d1				9.9	10.0			8.5	0.0		8.4	0.0
Progression Factor				1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2				3.7	5.2			0.5	8.0		0.4	0.7
Delay (s)				13.6	15.2			9.0	8.0		8.7	0.7
Level of Service				B	B			A	A		A	A
Approach Delay (s)		0.0			14.4			8.5			6.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	33.6	Sum of lost time (s)	9.7
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



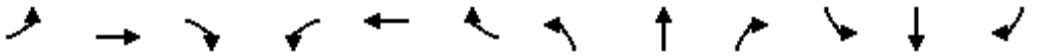
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	0	1009	0	0	0	0	2339	936	0	1220	360
Future Volume (vph)	393	0	1009	0	0	0	0	2339	936	0	1220	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.91	1.00
Frt	1.00	0.86	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1426	1475					4988	1553		4988	1553
Flt Permitted	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1426	1475					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	393	0	1009	0	0	0	0	2339	936	0	1220	360
RTOR Reduction (vph)	0	29	29	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	354	494	496	0	0	0	0	2339	936	0	1220	360
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA	Perm					NA	Free		NA	Free
Protected Phases		4						2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	28.2	28.2	28.2					39.9	78.1		40.0	78.1
Effective Green, g (s)	28.2	28.2	28.2					39.9	78.1		40.0	78.1
Actuated g/C Ratio	0.36	0.36	0.36					0.51	1.00		0.51	1.00
Clearance Time (s)	5.1	5.1	5.1					4.9			4.8	
Vehicle Extension (s)	1.0	1.0	1.0					1.0			1.0	
Lane Grp Cap (vph)	595	514	532					2548	1553		2554	1553
v/s Ratio Prot								c0.47			0.24	
v/s Ratio Perm	0.21	0.35	0.34						0.60			0.23
v/c Ratio	0.59	0.96	0.93					0.92	0.60		0.48	0.23
Uniform Delay, d1	20.3	24.4	24.0					17.6	0.0		12.3	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	29.8	23.2					5.7	1.7		0.1	0.3
Delay (s)	21.4	54.3	47.3					23.3	1.7		12.4	0.3
Level of Service	C	D	D					C	A		B	A
Approach Delay (s)		43.3			0.0			17.2			9.6	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	826	0	407	0	1469	2122	0	1283	656
Future Volume (vph)	0	0	0	826	0	407	0	1469	2122	0	1283	656
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		5036	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	826	0	407	0	1469	2122	0	1283	656
RTOR Reduction (vph)	0	0	0	0	0	27	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	826	0	380	0	1469	2122	0	1283	656
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				12.6		12.6		15.8	39.8		15.8	39.8
Effective Green, g (s)				12.6		12.6		15.8	39.8		15.8	39.8
Actuated g/C Ratio				0.32		0.32		0.40	1.00		0.40	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1076		496		1999	1568		1999	1568
v/s Ratio Prot								0.29			0.25	
v/s Ratio Perm				0.24		0.24			c1.35			0.42
v/c Ratio				0.77		0.77		0.73	1.35		0.64	0.42
Uniform Delay, d1				12.3		12.3		10.2	19.9		9.7	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				3.0		6.3		1.2	163.3		0.5	0.8
Delay (s)				15.3		18.6		11.5	183.2		10.2	0.8
Level of Service				B		B		B	F		B	A
Approach Delay (s)		0.0			16.4			112.9			7.1	
Approach LOS		A			B			F			A	

Intersection Summary			
HCM 2000 Control Delay	65.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.90		
Actuated Cycle Length (s)	39.8	Sum of lost time (s)	11.4
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	20	1197	0	0	641	0	3364	8	50	1868	190
Future Volume (vph)	375	20	1197	0	0	641	0	3364	8	50	1868	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		0.86			0.91	1.00
Frt	1.00	0.86	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	2731	1427			2733		6343			5029	1568
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.68	1.00
Satd. Flow (perm)	1595	2731	1427			2733		6343			3410	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	375	20	1197	0	0	641	0	3364	8	50	1868	190
RTOR Reduction (vph)	0	13	29	0	0	134	0	0	0	0	0	60
Lane Group Flow (vph)	337	644	569	0	0	507	0	3372	0	0	1918	130
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA		Perm	NA	custom
Protected Phases	4	4				1		2			6	
Permitted Phases			4							6		2
Actuated Green, G (s)	40.0	40.0	40.0			19.0		59.0			82.0	59.0
Effective Green, g (s)	40.0	40.0	40.0			19.0		59.0			82.0	59.0
Actuated g/C Ratio	0.31	0.31	0.31			0.15		0.45			0.63	0.45
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	490	840	439			399		2878			2150	711
v/s Ratio Prot	0.21	0.24				c0.19		c0.53				
v/s Ratio Perm			c0.40								0.56	0.08
v/c Ratio	0.69	1.33dr	1.30			1.27		1.17			0.89	0.18
Uniform Delay, d1	39.5	40.8	45.0			55.5		35.5			20.3	21.1
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	1.00
Incremental Delay, d2	4.0	4.2	149.2			140.1		81.3			5.2	0.1
Delay (s)	43.5	45.0	194.2			195.6		116.8			25.4	21.3
Level of Service	D	D	F			F		F			C	C
Approach Delay (s)		100.7			195.6			116.8			25.0	
Approach LOS		F			F			F			C	

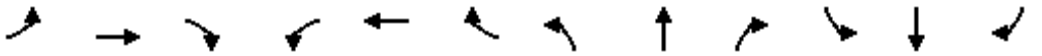
Intersection Summary			
HCM 2000 Control Delay	95.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

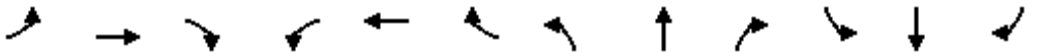
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	873	0	16	708	3	1	119	0	1	348	84
Future Volume (vph)	118	873	0	16	708	3	1	119	0	1	348	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			1.00			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1703	1792		1703	1791			1759			1713	
Flt Permitted	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (perm)	1703	1792		1703	1791			1755			1713	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	118	873	0	16	708	3	1	119	0	1	348	84
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	10	0
Lane Group Flow (vph)	118	873	0	16	711	0	0	120	0	0	423	0
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	8%	8%	8%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	8.7	46.4		1.4	39.1			23.2			23.2	
Effective Green, g (s)	8.7	46.4		1.4	39.1			23.2			23.2	
Actuated g/C Ratio	0.10	0.56		0.02	0.47			0.28			0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	178	1001		28	843			490			478	
v/s Ratio Prot	c0.07	c0.49		0.01	0.40							
v/s Ratio Perm								0.07			0.25	
v/c Ratio	0.66	0.87		0.57	0.84			0.24			0.88	
Uniform Delay, d1	35.7	15.7		40.5	19.3			23.1			28.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	8.9	8.5		25.2	7.7			0.3			17.5	
Delay (s)	44.7	24.2		65.7	27.0			23.4			46.1	
Level of Service	D	C		E	C			C			D	
Approach Delay (s)		26.7			27.8			23.4			46.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	83.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	36	0	733	0	3233	737	0	2062	1021
Future Volume (vph)	0	0	0	36	0	733	0	3233	737	0	2062	1021
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	36	0	733	0	3233	737	0	2062	1021
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	36	0	717	0	3233	737	0	2062	1021
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				28.5		28.5		73.2	110.0		72.9	110.0
Effective Green, g (s)				28.5		28.5		73.2	110.0		72.9	110.0
Actuated g/C Ratio				0.26		0.26		0.67	1.00		0.66	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				855		694		3319	1553		3305	1553
v/s Ratio Prot								c0.65			0.41	
v/s Ratio Perm				0.01		c0.27			0.47			0.66
v/c Ratio				0.04		1.03		0.97	0.47		0.62	0.66
Uniform Delay, d1				30.5		40.8		17.5	0.0		10.7	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.0		43.2		10.3	1.0		0.3	2.2
Delay (s)				30.5		83.9		27.8	1.0		10.9	2.2
Level of Service				C		F		C	A		B	A
Approach Delay (s)		0.0			81.4			22.8			8.0	
Approach LOS		A			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



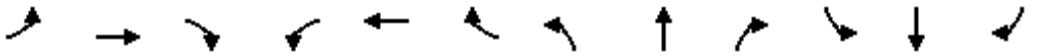
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1468	0	554	0	0	0	0	2502	216	0	1603	494
Future Volume (vph)	1468	0	554	0	0	0	0	2502	216	0	1603	494
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1468	0	554	0	0	0	0	2502	216	0	1603	494
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1468	0	527	0	0	0	0	2502	216	0	1603	494
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	18.5		18.5					25.4	52.2		25.1	52.2
Effective Green, g (s)	18.5		18.5					25.4	52.2		25.1	52.2
Actuated g/C Ratio	0.35		0.35					0.49	1.00		0.48	1.00
Clearance Time (s)	3.5		3.5					4.8			5.1	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1734		968					3058	1553		2398	1553
v/s Ratio Prot								c0.40			0.32	
v/s Ratio Perm	c0.30		0.19						0.14			0.32
v/c Ratio	0.85		0.54					0.82	0.14		0.67	0.32
Uniform Delay, d1	15.5		13.5					11.4	0.0		10.4	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	3.9		0.3					1.7	0.2		0.6	0.5
Delay (s)	19.4		13.8					13.1	0.2		10.9	0.5
Level of Service	B		B					B	A		B	A
Approach Delay (s)		17.9			0.0			12.1			8.5	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	52.2	Sum of lost time (s)	8.6
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



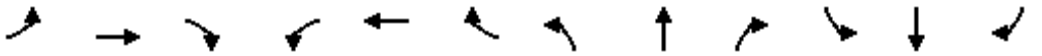
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	100	181	761	152	359	1811
Future Volume (vph)	100	181	761	152	359	1811
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	4988	1553	3367	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	4988	1553	3367	3471
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	100	181	761	152	359	1811
RTOR Reduction (vph)	0	167	0	97	0	0
Lane Group Flow (vph)	100	14	761	55	359	1811
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA	Perm	Prot	NA
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Actuated Green, G (s)	3.4	3.4	15.7	15.7	8.4	29.6
Effective Green, g (s)	3.4	3.4	15.7	15.7	8.4	29.6
Actuated g/C Ratio	0.08	0.08	0.36	0.36	0.19	0.68
Clearance Time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	265	122	1800	560	650	2361
v/s Ratio Prot	c0.03	0.01	0.15		0.11	c0.52
v/s Ratio Perm				0.04		
v/c Ratio	0.38	0.12	0.42	0.10	0.55	0.77
Uniform Delay, d1	19.0	18.7	10.5	9.2	15.9	4.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.2	0.1	0.0	0.6	1.4
Delay (s)	19.4	18.8	10.5	9.2	16.4	6.0
Level of Service	B	B	B	A	B	A
Approach Delay (s)	19.0		10.3			7.8
Approach LOS	B		B			A

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	43.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



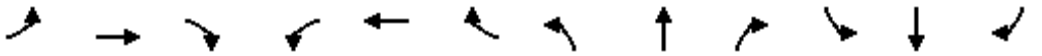
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	502	1065	9	2	925	6	7	15	2	5	21	864
Future Volume (vph)	502	1065	9	2	925	6	7	15	2	5	21	864
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1703	3406	1524	1719	3435			1798			1810	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)	1703	3406	1524	1719	3435			1798			1810	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	502	1065	9	2	925	6	7	15	2	5	21	864
RTOR Reduction (vph)	0	0	2	0	0	0	0	2	0	0	0	217
Lane Group Flow (vph)	502	1065	7	2	931	0	0	22	0	0	26	647
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	Over
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									
Actuated Green, G (s)	59.8	100.3	100.3	0.5	41.9			1.7			3.5	59.8
Effective Green, g (s)	59.8	100.3	100.3	0.5	41.9			1.7			3.5	59.8
Actuated g/C Ratio	0.46	0.77	0.77	0.00	0.32			0.01			0.03	0.46
Clearance Time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	779	2613	1169	6	1101			23			48	710
v/s Ratio Prot	0.29	0.31		0.00	c0.27			c0.01			c0.01	c0.42
v/s Ratio Perm			0.00									
v/c Ratio	0.64	0.41	0.01	0.33	0.85			0.96			0.54	0.91
Uniform Delay, d1	27.3	5.1	3.6	64.9	41.4			64.5			62.8	33.0
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.4	0.0	0.0	11.6	5.9			165.9			6.5	15.7
Delay (s)	28.6	5.2	3.6	76.5	47.3			230.4			69.3	48.7
Level of Service	C	A	A	E	D			F			E	D
Approach Delay (s)		12.6			47.3			230.4			49.3	
Approach LOS		B			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.7	Sum of lost time (s)	24.7
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	413	39	187	760	255	3666	0	0	4216	79
Future Volume (vph)	0	0	413	39	187	760	255	3666	0	0	4216	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1777	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1777	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	413	39	187	760	255	3666	0	0	4216	79
RTOR Reduction (vph)	0	0	192	0	0	40	0	0	0	0	0	25
Lane Group Flow (vph)	0	0	221	0	226	720	255	3666	0	0	4216	54
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			20.0		29.8	29.8	20.0	109.0			84.1	84.1
Effective Green, g (s)			20.0		29.8	29.8	20.0	109.0			84.1	84.1
Actuated g/C Ratio			0.13		0.20	0.20	0.13	0.73			0.56	0.56
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Vehicle Extension (s)			3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			212		353	532	440	3555			3457	854
v/s Ratio Prot			0.14		0.13		0.08	c0.75			c0.68	
v/s Ratio Perm						c0.27						0.04
v/c Ratio			1.04		0.64	1.35	0.58	1.03			1.22	0.06
Uniform Delay, d1			65.0		55.2	60.1	61.1	20.5			33.0	15.0
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			72.8		3.9	171.0	1.9	23.9			101.6	0.0
Delay (s)			137.8		59.1	231.1	62.9	44.4			134.6	15.0
Level of Service			F		E	F	E	D			F	B
Approach Delay (s)		137.8			191.7			45.6			132.4	
Approach LOS		F			F			D			F	

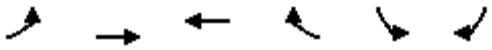
Intersection Summary			
HCM 2000 Control Delay	103.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	112.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2622	0	160	0	0	0	0	1700	267	0	332	2016
Future Volume (vph)	2622	0	160	0	0	0	0	1700	267	0	332	2016
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0			4.0	4.0
Lane Util. Factor	0.94		0.88					0.91			0.91	1.00
Frt	1.00		0.85					0.98			1.00	0.85
Flt Protected	0.95		1.00					1.00			1.00	1.00
Satd. Flow (prot)	4942		2760					4933			5036	1568
Flt Permitted	0.95		1.00					1.00			1.00	1.00
Satd. Flow (perm)	4942		2760					4933			5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2622	0	160	0	0	0	0	1700	267	0	332	2016
RTOR Reduction (vph)	0	0	68	0	0	0	0	21	0	0	0	0
Lane Group Flow (vph)	2622	0	92	0	0	0	0	1946	0	0	332	2016
Turn Type	Prot		Perm					NA			NA	Free
Protected Phases	4							2			6	
Permitted Phases			4									Free
Actuated Green, G (s)	53.0		53.0					39.0			39.0	100.0
Effective Green, g (s)	53.0		53.0					39.0			39.0	100.0
Actuated g/C Ratio	0.53		0.53					0.39			0.39	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	2619		1462					1923			1964	1568
v/s Ratio Prot	0.53							0.39			0.07	
v/s Ratio Perm			0.03									c1.29
v/c Ratio	1.00		0.06					1.01			0.17	1.29
Uniform Delay, d1	23.5		11.4					30.5			19.9	50.0
Progression Factor	1.00		1.00					1.00			1.00	1.00
Incremental Delay, d2	17.9		0.0					23.5			0.0	133.5
Delay (s)	41.4		11.4					54.0			20.0	183.5
Level of Service	D		B					D			B	F
Approach Delay (s)		39.6			0.0			54.0			160.4	
Approach LOS		D			A			D			F	

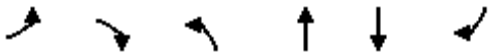
Intersection Summary			
HCM 2000 Control Delay	83.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	805	1291	1314	45	56	1076
Future Volume (vph)	805	1291	1314	45	56	1076
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3242	3343	3343	1495	3400	2760
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3242	3343	3343	1495	3400	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	805	1291	1314	45	56	1076
RTOR Reduction (vph)	0	0	0	10	0	712
Lane Group Flow (vph)	805	1291	1314	35	56	364
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	35.3	94.2	54.9	54.9	20.3	20.3
Effective Green, g (s)	35.3	94.2	54.9	54.9	20.3	20.3
Actuated g/C Ratio	0.29	0.77	0.45	0.45	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	934	2570	1498	670	563	457
v/s Ratio Prot	c0.25	0.39	c0.39		0.02	
v/s Ratio Perm				0.02		c0.13
v/c Ratio	0.86	0.50	0.88	0.05	0.10	0.80
Uniform Delay, d1	41.3	5.3	30.7	19.1	43.3	49.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	0.2	6.1	0.0	0.1	9.4
Delay (s)	49.5	5.5	36.9	19.1	43.4	58.5
Level of Service	D	A	D	B	D	E
Approach Delay (s)		22.4	36.3		57.7	
Approach LOS		C	D		E	

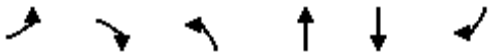
Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	122.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	823	136	14	1295	1792	581
Future Volume (vph)	823	136	14	1295	1792	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	823	136	14	1295	1792	581
RTOR Reduction (vph)	0	129	0	0	0	194
Lane Group Flow (vph)	823	7	14	1295	1792	387
Turn Type	Prot	Over	Prot	NA	NA	Over
Protected Phases	4	5	5	2	6	4
Permitted Phases						
Actuated Green, G (s)	21.0	4.0	4.0	51.0	43.0	21.0
Effective Green, g (s)	21.0	4.0	4.0	51.0	43.0	21.0
Actuated g/C Ratio	0.26	0.05	0.05	0.64	0.54	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	892	78	87	2234	1883	411
v/s Ratio Prot	0.24	0.00	0.01	c0.37	c0.51	c0.25
v/s Ratio Perm						
v/c Ratio	0.92	0.09	0.16	0.58	0.95	0.94
Uniform Delay, d1	28.7	36.3	36.4	8.3	17.5	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.7	0.5	0.9	0.4	11.4	29.9
Delay (s)	43.5	36.7	37.3	8.7	28.9	58.8
Level of Service	D	D	D	A	C	E
Approach Delay (s)	42.5			9.0	36.2	
Approach LOS	D			A	D	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

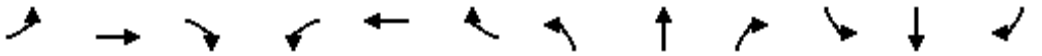
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	157	908	881	1157	1583	298
Future Volume (vph)	157	908	881	1157	1583	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1752	1568	3400	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1752	1568	3400	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	157	908	881	1157	1583	298
RTOR Reduction (vph)	0	387	0	0	0	166
Lane Group Flow (vph)	157	521	881	1157	1583	132
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	24.0	24.0	28.5	66.5	34.0	34.0
Effective Green, g (s)	24.0	24.0	28.5	66.5	34.0	34.0
Actuated g/C Ratio	0.24	0.24	0.29	0.68	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	426	382	983	2366	1209	541
v/s Ratio Prot	0.09		c0.26	0.33	c0.45	
v/s Ratio Perm		c0.33				0.08
v/c Ratio	0.37	1.36	0.90	0.49	1.31	0.24
Uniform Delay, d1	31.0	37.2	33.6	7.8	32.2	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	179.5	10.6	0.2	145.2	0.2
Delay (s)	31.5	216.8	44.2	7.9	177.5	23.3
Level of Service	C	F	D	A	F	C
Approach Delay (s)	189.5			23.6	153.1	
Approach LOS	F			C	F	

Intersection Summary			
HCM 2000 Control Delay	107.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.6%	ICU Level of Service	G
Analysis Period (min)	15		

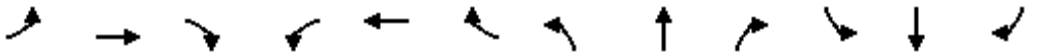
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	923	0	779	0	0	0	0	3108	616	0	1888	1108
Future Volume (vph)	923	0	779	0	0	0	0	3108	616	0	1888	1108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.97	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4626	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4626	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	923	0	779	0	0	0	0	3108	616	0	1888	1108
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	60	0
Lane Group Flow (vph)	923	0	765	0	0	0	0	3108	616	0	2260	676
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	17.0		17.0					30.0	55.0		30.0	55.0
Effective Green, g (s)	17.0		17.0					30.0	55.0		30.0	55.0
Actuated g/C Ratio	0.31		0.31					0.55	1.00		0.55	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1050		853					3461	1568		2523	1348
v/s Ratio Prot	0.27							c0.49			0.49	
v/s Ratio Perm			c0.28						0.39			0.50
v/c Ratio	0.88		0.90					0.90	0.39		0.90	0.50
Uniform Delay, d1	18.0		18.2					11.1	0.0		11.1	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	8.5		12.0					3.5	0.7		4.6	1.3
Delay (s)	26.6		30.2					14.6	0.7		15.7	1.3
Level of Service	C		C					B	A		B	A
Approach Delay (s)		28.2			0.0			12.3			12.5	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	382	0	1180	0	2709	1326	0	4058	468
Future Volume (vph)	0	0	0	382	0	1180	0	2709	1326	0	4058	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		0.98	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4663	1348		5966	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4663	1348		5966	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	382	0	1180	0	2709	1326	0	4058	468
RTOR Reduction (vph)	0	0	0	0	0	6	0	16	0	0	1	0
Lane Group Flow (vph)	0	0	0	382	0	1174	0	3117	902	0	4104	421
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				36.0		36.0		76.0	120.0		76.0	120.0
Effective Green, g (s)				36.0		36.0		76.0	120.0		76.0	120.0
Actuated g/C Ratio				0.30		0.30		0.63	1.00		0.63	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Vehicle Extension (s)				3.0		3.0		3.0			3.0	
Lane Grp Cap (vph)				1020		1072		2953	1348		3778	1270
v/s Ratio Prot				0.11				0.67			c0.69	
v/s Ratio Perm						c0.33			0.67			0.33
v/c Ratio				0.37		1.09		1.06	0.67		1.09	0.33
Uniform Delay, d1				33.1		42.0		22.0	0.0		22.0	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.2		57.2		33.6	2.7		44.1	0.7
Delay (s)				33.4		99.2		55.6	2.7		66.1	0.7
Level of Service				C		F		E	A		E	A
Approach Delay (s)		0.0			83.1			43.8			60.0	
Approach LOS		A			F			D			E	

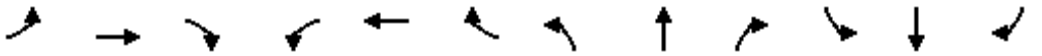
Intersection Summary			
HCM 2000 Control Delay	57.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	880	150	285	1159	346	304
Future Volume (vph)	880	150	285	1159	346	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	880	150	285	1159	346	304
RTOR Reduction (vph)	0	71	0	0	0	241
Lane Group Flow (vph)	880	79	285	1159	346	63
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	20.7	20.7	14.2	38.9	12.2	12.2
Effective Green, g (s)	20.7	20.7	14.2	38.9	12.2	12.2
Actuated g/C Ratio	0.35	0.35	0.24	0.66	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1104	494	378	2075	631	291
v/s Ratio Prot	c0.28		c0.18	0.37	c0.11	
v/s Ratio Perm		0.06				0.04
v/c Ratio	0.80	0.16	0.75	0.56	0.55	0.22
Uniform Delay, d1	17.3	13.2	20.8	5.5	21.0	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.2	8.3	0.3	1.0	0.4
Delay (s)	21.4	13.4	29.1	5.8	22.0	19.8
Level of Service	C	B	C	A	C	B
Approach Delay (s)	20.2			10.4	21.0	
Approach LOS	C			B	C	

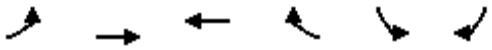
Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	406	1	0	437	40	0	0	0	43	0	247
Future Volume (vph)	309	406	1	0	437	40	0	0	0	43	0	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95					0.95	0.95	1.00
Frt	1.00	1.00			0.99					1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (prot)	1736	3470			3427					1665	1665	1568
Flt Permitted	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (perm)	1736	3470			3427					1665	1665	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	309	406	1	0	437	40	0	0	0	43	0	247
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	0	215
Lane Group Flow (vph)	309	407	0	0	469	0	0	0	0	21	22	32
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA					Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	15.1	32.3			13.2					7.4	7.4	7.4
Effective Green, g (s)	15.1	32.3			13.2					7.4	7.4	7.4
Actuated g/C Ratio	0.26	0.56			0.23					0.13	0.13	0.13
Clearance Time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	457	1956			789					215	215	202
v/s Ratio Prot	c0.18	0.12			c0.14					0.01	0.01	
v/s Ratio Perm												c0.02
v/c Ratio	0.68	0.21			0.59					0.10	0.10	0.16
Uniform Delay, d1	18.9	6.2			19.7					22.0	22.0	22.2
Progression Factor	1.00	1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2	3.9	0.1			1.2					0.2	0.2	0.4
Delay (s)	22.8	6.2			20.9					22.2	22.2	22.5
Level of Service	C	A			C					C	C	C
Approach Delay (s)		13.4			20.9			0.0			22.5	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	590	478	1169	1688	0
Future Volume (vph)	2	590	478	1169	1688	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1752	3505	3505	1568	3400	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1752	3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	590	478	1169	1688	0
RTOR Reduction (vph)	0	0	0	137	0	0
Lane Group Flow (vph)	2	590	478	1032	1688	0
Turn Type	Prot	NA	NA	custom	Prot	
Protected Phases	4	5	5	2	6	
Permitted Phases						
Actuated Green, G (s)	1.0	16.2	16.2	61.8	41.6	
Effective Green, g (s)	1.0	16.2	16.2	61.8	41.6	
Actuated g/C Ratio	0.01	0.23	0.23	0.87	0.59	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	24	801	801	1368	1997	
v/s Ratio Prot	c0.00	0.17	0.14	c0.66	c0.50	
v/s Ratio Perm						
v/c Ratio	0.08	0.74	0.60	0.75	0.85	
Uniform Delay, d1	34.4	25.3	24.4	1.7	12.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.5	3.6	1.2	2.4	3.5	
Delay (s)	35.9	28.9	25.6	4.1	15.5	
Level of Service	D	C	C	A	B	
Approach Delay (s)		28.9	10.3		15.5	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1642	116	0	1343	129	0
Future Volume (vph)	1642	116	0	1343	129	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	0.95			0.95	1.00	
Frt	0.99			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	3470			3505	1752	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	3470			3505	1752	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1642	116	0	1343	129	0
RTOR Reduction (vph)	5	0	0	0	0	0
Lane Group Flow (vph)	1753	0	0	1343	129	0
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	37.5			37.5	9.5	
Effective Green, g (s)	37.5			37.5	9.5	
Actuated g/C Ratio	0.68			0.68	0.17	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	2365			2389	302	
v/s Ratio Prot	c0.51			0.38	c0.07	
v/s Ratio Perm						
v/c Ratio	0.74			0.56	0.43	
Uniform Delay, d1	5.6			4.5	20.3	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	1.3			0.3	1.0	
Delay (s)	6.9			4.8	21.3	
Level of Service	A			A	C	
Approach Delay (s)	6.9			4.8	21.3	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

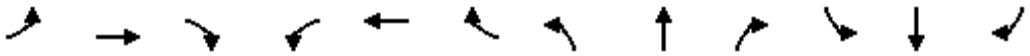
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	2384	0	1285	0
Future Volume (vph)	0	0	2384	0	1285	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	
Lane Util. Factor			0.95	0.95	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	0.95	0.95	
Satd. Flow (prot)			1665	1665	3400	
Flt Permitted			0.95	0.95	0.95	
Satd. Flow (perm)			1665	1665	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	2384	0	1285	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1192	1192	1285	0
Turn Type			Split	NA	Prot	
Protected Phases			4	4	2	
Permitted Phases						
Actuated Green, G (s)			91.0	91.0	51.0	
Effective Green, g (s)			91.0	91.0	51.0	
Actuated g/C Ratio			0.61	0.61	0.34	
Clearance Time (s)			4.0	4.0	4.0	
Vehicle Extension (s)			3.0	3.0	3.0	
Lane Grp Cap (vph)			1010	1010	1156	
v/s Ratio Prot			c0.72	0.72	c0.38	
v/s Ratio Perm						
v/c Ratio			1.18	1.18	1.11	
Uniform Delay, d1			29.5	29.5	49.5	
Progression Factor			1.00	1.00	1.00	
Incremental Delay, d2			91.4	91.4	62.6	
Delay (s)			120.9	120.9	112.1	
Level of Service			F	F	F	
Approach Delay (s)	0.0			120.9	112.1	
Approach LOS	A			F	F	

Intersection Summary			
HCM 2000 Control Delay	117.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	192.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	829	0	0	0	0	1285	1837	0	2384	0
Future Volume (vph)	0	0	829	0	0	0	0	1285	1837	0	2384	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95					0.91	0.91		0.95	
Frt		0.85	0.85					0.94	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		1490	1490					3155	1427		3505	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		1490	1490					3155	1427		3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	829	0	0	0	0	1285	1837	0	2384	0
RTOR Reduction (vph)	0	39	0	0	0	0	0	72	292	0	0	0
Lane Group Flow (vph)	0	376	414	0	0	0	0	2076	682	0	2384	0
Turn Type		NA	Free					NA	Perm	Prot	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			Free						2			
Actuated Green, G (s)		25.0	110.0					77.0	77.0		77.0	
Effective Green, g (s)		25.0	110.0					77.0	77.0		77.0	
Actuated g/C Ratio		0.23	1.00					0.70	0.70		0.70	
Clearance Time (s)		4.0						4.0	4.0		4.0	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		338	1490					2208	998		2453	
v/s Ratio Prot		c0.25						0.66			c0.68	
v/s Ratio Perm			0.28						0.48			
v/c Ratio		1.11	0.28					0.94	0.68		0.97	
Uniform Delay, d1		42.5	0.0					14.5	9.5		15.5	
Progression Factor		1.00	1.00					1.00	1.00		1.00	
Incremental Delay, d2		83.2	0.5					8.8	1.9		12.3	
Delay (s)		125.7	0.5					23.2	11.4		27.7	
Level of Service		F	A					C	B		C	
Approach Delay (s)		63.1			0.0			19.6			27.7	
Approach LOS		E			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	148.5%	ICU Level of Service	H
Analysis Period (min)	15		

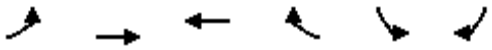
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	274	144	2826	152	49	3300
Future Volume (vph)	274	144	2826	152	49	3300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5036	1568	3400	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5036	1568	3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	274	144	2826	152	49	3300
RTOR Reduction (vph)	0	46	0	37	0	0
Lane Group Flow (vph)	274	98	2826	115	49	3300
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	14.1	14.1	90.2	90.2	3.2	97.4
Effective Green, g (s)	14.1	14.1	90.2	90.2	3.2	97.4
Actuated g/C Ratio	0.12	0.12	0.75	0.75	0.03	0.82
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	401	185	3801	1183	91	4104
v/s Ratio Prot	c0.08		0.56		0.01	c0.66
v/s Ratio Perm		0.06		0.07		
v/c Ratio	0.68	0.53	0.74	0.10	0.54	0.80
Uniform Delay, d1	50.6	49.6	8.2	3.9	57.4	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	2.9	0.8	0.0	6.0	1.2
Delay (s)	55.3	52.5	9.0	3.9	63.4	7.1
Level of Service	E	D	A	A	E	A
Approach Delay (s)	54.3		8.7			8.0
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	626	1472	1190	156	137	454
Future Volume (vph)	626	1472	1190	156	137	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	626	1472	1190	156	137	454
RTOR Reduction (vph)	0	0	0	88	0	392
Lane Group Flow (vph)	626	1472	1190	68	137	62
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	32.0	66.1	30.1	30.1	11.7	11.7
Effective Green, g (s)	32.0	66.1	30.1	30.1	11.7	11.7
Actuated g/C Ratio	0.37	0.77	0.35	0.35	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	653	2700	1229	550	238	213
v/s Ratio Prot	c0.36	0.42	c0.34		c0.08	
v/s Ratio Perm				0.04		0.04
v/c Ratio	0.96	0.55	0.97	0.12	0.58	0.29
Uniform Delay, d1	26.3	3.9	27.4	18.9	34.7	33.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.1	0.2	18.3	0.1	3.3	0.8
Delay (s)	51.3	4.1	45.7	19.0	38.1	34.1
Level of Service	D	A	D	B	D	C
Approach Delay (s)		18.2	42.6		35.0	
Approach LOS		B	D		D	

Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	85.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

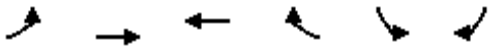
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1197	128	83	693	104	166
Future Volume (vph)	1197	128	83	693	104	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	1752	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1197	128	83	693	104	166
RTOR Reduction (vph)	0	66	0	0	0	135
Lane Group Flow (vph)	1197	62	83	693	104	31
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	20.7	20.7	2.0	26.7	8.1	8.1
Effective Green, g (s)	20.7	20.7	2.0	26.7	8.1	8.1
Actuated g/C Ratio	0.48	0.48	0.05	0.62	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1695	758	158	2186	331	296
v/s Ratio Prot	c0.34		0.02	c0.20	c0.06	
v/s Ratio Perm		0.04				0.02
v/c Ratio	0.71	0.08	0.53	0.32	0.31	0.11
Uniform Delay, d1	8.7	5.9	19.9	3.8	15.0	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0	3.1	0.1	0.5	0.2
Delay (s)	10.0	6.0	23.1	3.9	15.5	14.5
Level of Service	B	A	C	A	B	B
Approach Delay (s)	9.6			5.9	14.9	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	42.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	199	109	78	31	37	114
Future Volume (vph)	199	109	78	31	37	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	0.96		0.90	
Flt Protected		0.97	1.00		0.99	
Satd. Flow (prot)		1787	1774		1637	
Flt Permitted		0.74	1.00		0.99	
Satd. Flow (perm)		1365	1774		1637	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	199	109	78	31	37	114
RTOR Reduction (vph)	0	0	19	0	77	0
Lane Group Flow (vph)	0	308	90	0	74	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		11.3	11.3		9.2	
Effective Green, g (s)		11.3	11.3		9.2	
Actuated g/C Ratio		0.40	0.40		0.32	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		541	703		528	
v/s Ratio Prot			0.05		c0.05	
v/s Ratio Perm		c0.23				
v/c Ratio		0.57	0.13		0.14	
Uniform Delay, d1		6.7	5.5		6.8	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		1.4	0.1		0.1	
Delay (s)		8.1	5.6		7.0	
Level of Service		A	A		A	
Approach Delay (s)		8.1	5.6		7.0	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	28.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	506	188	249	506	253	169	1041	182	546	1696	129
Future Volume (veh/h)	86	506	188	249	506	253	169	1041	182	546	1696	129
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	86	506	188	249	506	253	169	1041	182	546	1696	129
Adj No. of Lanes	1	2	0	1	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	109	535	198	255	544	462	190	1054	184	499	2115	659
Arrive On Green	0.06	0.21	0.21	0.15	0.30	0.30	0.11	0.25	0.25	0.29	0.42	0.42
Sat Flow, veh/h	1757	2507	927	1740	1827	1553	1740	4274	746	1740	4988	1553
Grp Volume(v), veh/h	86	353	341	249	506	253	169	809	414	546	1696	129
Grp Sat Flow(s),veh/h/ln	1757	1752	1681	1740	1827	1553	1740	1663	1695	1740	1663	1553
Q Serve(g_s), s	7.2	29.8	30.0	21.4	40.3	20.5	14.4	36.4	36.5	43.0	44.5	7.8
Cycle Q Clear(g_c), s	7.2	29.8	30.0	21.4	40.3	20.5	14.4	36.4	36.5	43.0	44.5	7.8
Prop In Lane	1.00		0.55	1.00		1.00	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	109	374	359	255	544	462	190	820	418	499	2115	659
V/C Ratio(X)	0.79	0.94	0.95	0.98	0.93	0.55	0.89	0.99	0.99	1.09	0.80	0.20
Avail Cap(c_a), veh/h	187	374	359	255	544	462	197	820	418	499	2115	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.4	58.1	58.2	63.7	51.1	44.2	65.9	56.3	56.3	53.5	37.7	27.1
Incr Delay (d2), s/veh	11.7	32.4	34.8	49.4	22.7	1.4	34.7	28.1	40.9	68.5	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	17.8	17.4	13.8	23.8	9.0	8.7	20.0	21.9	30.1	20.9	3.4
LnGrp Delay(d),s/veh	81.1	90.5	93.1	113.1	73.9	45.5	100.6	84.4	97.2	122.0	40.0	27.3
LnGrp LOS	F	F	F	F	E	D	F	F	F	F	D	C
Approach Vol, veh/h		780			1008			1392			2371	
Approach Delay, s/veh		90.6			76.5			90.2			58.2	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	47.0	41.0	26.0	36.0	20.4	67.6	13.3	48.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	43.0	37.0	22.0	32.0	17.0	63.0	16.0	38.0
Max Q Clear Time (g_c+I1), s	45.0	38.5	23.4	32.0	16.4	46.5	9.2	42.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	12.7	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	74.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	385	92	177	633	197	91	876	3	480	1227	521
Future Volume (veh/h)	332	385	92	177	633	197	91	876	3	480	1227	521
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	332	385	92	177	633	197	91	876	3	480	1227	521
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	365	777	184	214	666	298	148	987	3	490	1318	590
Arrive On Green	0.21	0.28	0.28	0.12	0.19	0.19	0.04	0.28	0.28	0.15	0.38	0.38
Sat Flow, veh/h	1757	2814	666	1757	3505	1568	3375	3548	12	3375	3471	1553
Grp Volume(v), veh/h	332	238	239	177	633	197	91	428	451	480	1227	521
Grp Sat Flow(s),veh/h/ln	1757	1752	1727	1757	1752	1568	1688	1736	1825	1688	1736	1553
Q Serve(g_s), s	16.5	10.2	10.4	8.8	16.0	10.4	2.4	21.2	21.2	12.7	30.3	28.0
Cycle Q Clear(g_c), s	16.5	10.2	10.4	8.8	16.0	10.4	2.4	21.2	21.2	12.7	30.3	28.0
Prop In Lane	1.00		0.39	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	365	484	477	214	666	298	148	483	508	490	1318	590
V/C Ratio(X)	0.91	0.49	0.50	0.83	0.95	0.66	0.62	0.89	0.89	0.98	0.93	0.88
Avail Cap(c_a), veh/h	373	484	477	314	666	298	151	485	510	490	1319	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	27.1	27.2	38.4	35.8	33.6	42.0	30.9	30.9	38.1	26.6	25.9
Incr Delay (d2), s/veh	25.4	0.8	0.8	11.2	23.4	5.3	7.1	17.8	17.1	35.0	11.8	14.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	5.0	5.1	4.9	9.9	4.9	1.2	12.5	13.0	8.3	16.7	14.4
LnGrp Delay(d),s/veh	60.1	27.9	28.0	49.6	59.2	38.9	49.1	48.7	48.0	73.1	38.5	40.6
LnGrp LOS	E	C	C	D	E	D	D	D	D	E	D	D
Approach Vol, veh/h		809			1007			970			2228	
Approach Delay, s/veh		41.1			53.5			48.4			46.4	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	28.9	14.9	28.7	7.9	38.0	22.6	21.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	25.0	16.0	20.0	4.0	34.0	19.0	17.0
Max Q Clear Time (g_c+I1), s	14.7	23.2	10.8	12.4	4.4	32.3	18.5	18.0
Green Ext Time (p_c), s	0.0	1.7	0.2	4.5	0.0	1.6	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1485	59	232	864	91	136	605	263	22	329	1
Future Volume (veh/h)	23	1485	59	232	864	91	136	605	263	22	329	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	23	1485	59	232	864	91	136	605	263	22	329	1
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	33	1525	682	235	1760	185	141	742	332	33	539	2
Arrive On Green	0.02	0.45	0.45	0.14	0.57	0.57	0.08	0.21	0.21	0.02	0.15	0.15
Sat Flow, veh/h	1707	3406	1524	1707	3110	328	1757	3505	1568	1757	3584	11
Grp Volume(v), veh/h	23	1485	59	232	473	482	136	605	263	22	161	169
Grp Sat Flow(s),veh/h/ln	1707	1703	1524	1707	1703	1735	1757	1752	1568	1757	1752	1843
Q Serve(g_s), s	1.2	37.2	1.9	11.8	14.5	14.5	6.7	14.3	13.8	1.1	7.5	7.5
Cycle Q Clear(g_c), s	1.2	37.2	1.9	11.8	14.5	14.5	6.7	14.3	13.8	1.1	7.5	7.5
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	33	1525	682	235	964	982	141	742	332	33	263	277
V/C Ratio(X)	0.69	0.97	0.09	0.99	0.49	0.49	0.96	0.82	0.79	0.66	0.61	0.61
Avail Cap(c_a), veh/h	98	1525	682	235	964	982	141	765	342	81	322	339
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	23.5	13.8	37.5	11.4	11.4	39.9	32.7	32.5	42.4	34.6	34.6
Incr Delay (d2), s/veh	22.1	17.1	0.1	54.7	0.4	0.4	64.3	6.7	11.7	20.1	2.3	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	21.0	0.8	9.1	6.8	6.9	5.8	7.6	7.0	0.7	3.8	4.0
LnGrp Delay(d),s/veh	64.5	40.7	13.9	92.1	11.7	11.7	104.2	39.4	44.2	62.5	36.9	36.8
LnGrp LOS	E	D	B	F	B	B	F	D	D	E	D	D
Approach Vol, veh/h		1567			1187			1004			352	
Approach Delay, s/veh		40.0			27.5			49.4			38.5	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	22.4	16.0	43.0	11.0	17.1	5.7	53.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	19.0	12.0	39.0	7.0	16.0	5.0	46.0
Max Q Clear Time (g_c+I1), s	3.1	16.3	13.8	39.2	8.7	9.5	3.2	16.5
Green Ext Time (p_c), s	0.0	1.7	0.0	0.0	0.0	3.6	0.0	22.5

Intersection Summary	
HCM 2010 Ctrl Delay	38.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	243	561	83	310	101	197	561	166	15	613	96
Future Volume (veh/h)	46	243	561	83	310	101	197	561	166	15	613	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	46	243	561	83	310	101	197	561	166	15	613	96
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	63	948	424	105	770	246	252	1347	603	26	897	401
Arrive On Green	0.04	0.27	0.27	0.06	0.29	0.29	0.14	0.38	0.38	0.01	0.26	0.26
Sat Flow, veh/h	1757	3505	1568	1757	2613	836	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	46	243	561	83	206	205	197	561	166	15	613	96
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1697	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	1.5	3.2	16.0	2.8	5.6	5.7	6.4	6.9	4.3	0.5	9.3	2.9
Cycle Q Clear(g_c), s	1.5	3.2	16.0	2.8	5.6	5.7	6.4	6.9	4.3	0.5	9.3	2.9
Prop In Lane	1.00		1.00	1.00		0.49	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	63	948	424	105	516	500	252	1347	603	26	897	401
V/C Ratio(X)	0.73	0.26	1.32	0.79	0.40	0.41	0.78	0.42	0.28	0.58	0.68	0.24
Avail Cap(c_a), veh/h	148	948	424	148	516	500	624	2014	901	119	1007	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	16.9	21.6	27.4	16.7	16.7	24.5	13.3	12.5	29.0	19.9	17.4
Incr Delay (d2), s/veh	14.9	0.1	161.1	16.7	0.5	0.5	5.3	0.2	0.2	18.7	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.6	25.8	1.8	2.8	2.8	3.4	3.4	1.9	0.4	4.7	1.3
LnGrp Delay(d),s/veh	43.1	17.1	182.6	44.2	17.2	17.3	29.7	13.6	12.8	47.7	21.5	17.8
LnGrp LOS	D	B	F	D	B	B	C	B	B	D	C	B
Approach Vol, veh/h		850			494			924			724	
Approach Delay, s/veh		127.7			21.8			16.9			21.6	
Approach LOS		F			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	26.7	7.5	20.0	12.5	19.1	6.1	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	34.0	5.0	16.0	21.0	17.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	2.5	8.9	4.8	18.0	8.4	11.3	3.5	7.7
Green Ext Time (p_c), s	0.0	10.2	0.0	0.0	0.4	3.8	0.0	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	50.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	679	97	159	727	282	109	303	105	338	987	60
Future Volume (veh/h)	79	679	97	159	727	282	109	303	105	338	987	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	79	679	97	159	727	282	109	303	105	338	987	60
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	100	806	361	186	978	437	139	733	328	373	1199	536
Arrive On Green	0.06	0.23	0.23	0.11	0.28	0.28	0.08	0.21	0.21	0.21	0.34	0.34
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	79	679	97	159	727	282	109	303	105	338	987	60
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	2.9	12.2	3.3	5.9	12.4	10.4	4.0	4.9	3.7	12.4	17.0	1.7
Cycle Q Clear(g_c), s	2.9	12.2	3.3	5.9	12.4	10.4	4.0	4.9	3.7	12.4	17.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	806	361	186	978	437	139	733	328	373	1199	536
V/C Ratio(X)	0.79	0.84	0.27	0.85	0.74	0.64	0.78	0.41	0.32	0.91	0.82	0.11
Avail Cap(c_a), veh/h	133	850	380	186	978	437	186	903	404	373	1275	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.7	24.3	20.8	29.0	21.6	20.9	29.8	22.6	22.1	25.3	19.9	14.8
Incr Delay (d2), s/veh	19.9	7.4	0.4	29.7	3.1	3.2	14.3	0.4	0.6	25.0	4.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	6.7	1.5	4.4	6.4	4.9	2.5	2.4	1.7	8.6	8.9	0.8
LnGrp Delay(d),s/veh	50.6	31.6	21.2	58.7	24.7	24.1	44.1	23.0	22.7	50.4	24.1	14.9
LnGrp LOS	D	C	C	E	C	C	D	C	C	D	C	B
Approach Vol, veh/h		855			1168			517			1385	
Approach Delay, s/veh		32.2			29.2			27.4			30.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	17.8	11.0	19.2	9.2	26.6	7.8	22.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	17.0	7.0	16.0	7.0	24.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	14.4	6.9	7.9	14.2	6.0	19.0	4.9	14.4
Green Ext Time (p_c), s	0.0	6.3	0.0	1.0	0.0	3.6	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	445	121	427	506	788	97	2693	294	505	2883	426
Future Volume (veh/h)	241	445	121	427	506	788	97	2693	294	505	2883	426
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	241	445	121	427	506	788	97	2693	294	505	2883	426
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	260	869	389	283	892	561	78	2147	669	348	2545	792
Arrive On Green	0.08	0.25	0.25	0.08	0.25	0.25	0.02	0.43	0.43	0.10	0.51	0.51
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	241	445	121	427	506	788	97	2693	294	505	2883	426
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	10.6	16.5	9.5	12.5	18.9	38.3	3.5	64.8	20.0	15.5	76.8	27.9
Cycle Q Clear(g_c), s	10.6	16.5	9.5	12.5	18.9	38.3	3.5	64.8	20.0	15.5	76.8	27.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	260	869	389	283	892	561	78	2147	669	348	2545	792
V/C Ratio(X)	0.93	0.51	0.31	1.51	0.57	1.41	1.24	1.25	0.44	1.45	1.13	0.54
Avail Cap(c_a), veh/h	260	869	389	283	892	561	78	2147	669	348	2545	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.1	48.8	46.1	69.0	48.9	48.4	73.5	42.8	30.1	67.5	36.8	24.9
Incr Delay (d2), s/veh	35.8	0.2	0.2	246.3	0.5	193.2	177.8	118.3	0.2	219.1	65.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	8.0	4.1	15.5	9.3	53.4	3.6	53.2	8.6	17.8	50.5	12.0
LnGrp Delay(d),s/veh	104.9	49.0	46.3	315.3	49.4	241.5	251.3	161.2	30.3	286.6	102.1	25.3
LnGrp LOS	F	D	D	F	D	F	F	F	C	F	F	C
Approach Vol, veh/h		807			1721			3084			3814	
Approach Delay, s/veh		65.3			203.3			151.5			118.0	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	81.6	17.0	42.9	21.0	69.6	18.0	41.9
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	3.5	76.6	11.5	* 38	15.5	* 65	12.5	37.0
Max Q Clear Time (g_c+I1), s	5.5	78.8	12.6	40.3	17.5	66.8	14.5	18.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	140.0
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	29	0	109	0	2383	7	44	2903	4
Future Volume (veh/h)	1	0	1	29	0	109	0	2383	7	44	2903	4
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	1	0	1	29	0	109	0	2383	7	44	2903	4
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	1	0	1	95	0	170	2	3446	1073	55	3992	5
Arrive On Green	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.69	0.69	0.03	0.78	0.78
Sat Flow, veh/h	828	0	828	1757	0	3136	1740	4988	1553	1740	5144	7
Grp Volume(v), veh/h	2	0	0	29	0	109	0	2383	7	44	1876	1031
Grp Sat Flow(s),veh/h/ln	1657	0	0	1757	0	1568	1740	1663	1553	1740	1663	1826
Q Serve(g_s), s	0.1	0.0	0.0	1.5	0.0	3.2	0.0	26.9	0.1	2.4	27.6	27.6
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.5	0.0	3.2	0.0	26.9	0.1	2.4	27.6	27.6
Prop In Lane	0.50		0.50	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	3	0	0	95	0	170	2	3446	1073	55	2581	1417
V/C Ratio(X)	0.74	0.00	0.00	0.30	0.00	0.64	0.00	0.69	0.01	0.80	0.73	0.73
Avail Cap(c_a), veh/h	52	0	0	221	0	395	55	3625	1129	90	2581	1417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	0.0	0.0	43.3	0.0	44.1	0.0	8.7	4.6	45.8	5.5	5.5
Incr Delay (d2), s/veh	88.0	0.0	0.0	0.7	0.0	1.5	0.0	0.9	0.0	9.3	1.5	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.8	0.0	1.4	0.0	12.4	0.1	1.3	12.8	14.6
LnGrp Delay(d),s/veh	135.5	0.0	0.0	44.0	0.0	45.6	0.0	9.6	4.6	55.1	7.0	8.3
LnGrp LOS	F			D		D		A	A	E	A	A
Approach Vol, veh/h		2			138			2390			2951	
Approach Delay, s/veh		135.5			45.3			9.6			8.2	
Approach LOS		F			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	78.9		5.7	8.1	70.8		10.7
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 3	71.4		3.0	* 4.9	* 69		12.0
Max Q Clear Time (g_c+I1), s	0.0	29.6		2.1	4.4	28.9		5.2
Green Ext Time (p_c), s	0.0	41.6		0.0	0.0	36.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	404	23	209	47	440	9	2129	189	463	2541	0
Future Volume (veh/h)	0	404	23	209	47	440	9	2129	189	463	2541	0
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	0	404	23	209	47	440	9	2129	189	463	2541	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	486	217	242	878	628	21	2247	198	506	3115	0
Arrive On Green	0.00	0.14	0.14	0.07	0.25	0.25	0.01	0.48	0.48	0.15	0.62	0.00
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4669	410	3375	5152	0
Grp Volume(v), veh/h	0	404	23	209	47	440	9	1510	808	463	2541	0
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1754	1688	1663	0
Q Serve(g_s), s	0.0	15.8	1.8	8.4	1.4	32.6	0.4	60.1	61.6	18.8	54.3	0.0
Cycle Q Clear(g_c), s	0.0	15.8	1.8	8.4	1.4	32.6	0.4	60.1	61.6	18.8	54.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	2	486	217	242	878	628	21	1600	844	506	3115	0
V/C Ratio(X)	0.00	0.83	0.11	0.86	0.05	0.70	0.42	0.94	0.96	0.92	0.82	0.00
Avail Cap(c_a), veh/h	73	723	323	242	901	638	73	1624	857	516	3115	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	58.3	52.3	64.0	39.6	34.8	68.9	34.3	34.7	58.3	20.0	0.0
Incr Delay (d2), s/veh	0.0	3.3	0.1	24.8	0.0	2.8	4.8	11.4	20.6	20.4	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.8	0.8	4.8	0.7	14.6	0.2	30.0	34.7	10.2	25.2	0.0
LnGrp Delay(d),s/veh	0.0	61.6	52.3	88.8	39.6	37.6	73.7	45.7	55.3	78.7	21.7	0.0
LnGrp LOS		E	D	F	D	D	E	D	E	E	C	
Approach Vol, veh/h		427			696			2327			3004	
Approach Delay, s/veh		61.1			53.1			49.1			30.4	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	92.3	0.0	40.6	26.4	72.3	15.4	25.2
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	86.2	3.0	* 36	21.3	* 68	9.9	* 29
Max Q Clear Time (g_c+I1), s	2.4	56.3	0.0	34.6	20.8	63.6	10.4	17.8
Green Ext Time (p_c), s	0.0	24.5	0.0	0.3	0.0	3.3	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	34	2276	23	79	2692
Future Volume (veh/h)	13	34	2276	23	79	2692
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	13	34	2276	23	79	2692
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	53	47	3638	37	101	2896
Arrive On Green	0.03	0.03	0.71	0.71	0.06	0.83
Sat Flow, veh/h	1757	1568	5256	51	1740	3563
Grp Volume(v), veh/h	13	34	1486	813	79	2692
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1818	1740	1736
Q Serve(g_s), s	0.5	1.6	17.5	17.6	3.4	43.5
Cycle Q Clear(g_c), s	0.5	1.6	17.5	17.6	3.4	43.5
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	53	47	2376	1299	101	2896
V/C Ratio(X)	0.25	0.72	0.63	0.63	0.79	0.93
Avail Cap(c_a), veh/h	69	62	2376	1299	213	3049
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	36.5	5.6	5.6	35.3	4.6
Incr Delay (d2), s/veh	0.9	14.9	0.4	0.7	5.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.9	8.0	8.8	1.8	21.6
LnGrp Delay(d),s/veh	36.9	51.5	6.0	6.3	40.3	10.1
LnGrp LOS	D	D	A	A	D	B
Approach Vol, veh/h	47		2299			2771
Approach Delay, s/veh	47.4		6.1			11.0
Approach LOS	D		A			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		68.1			9.1	59.1		7.8
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		66.7			* 9.3	52.7		3.0
Max Q Clear Time (g_c+I1), s		45.5			5.4	19.6		3.6
Green Ext Time (p_c), s		17.9			0.0	28.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	1019	516	57	772	533	401	1959	100	776	1846	147
Future Volume (veh/h)	169	1019	516	57	772	533	401	1959	100	776	1846	147
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	169	1019	516	57	772	533	401	1959	100	776	1846	147
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	182	970	434	68	865	387	444	1757	547	685	2107	656
Arrive On Green	0.06	0.28	0.28	0.02	0.25	0.25	0.13	0.35	0.35	0.20	0.42	0.42
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	169	1019	516	57	772	533	401	1959	100	776	1846	147
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	7.4	41.4	41.4	2.5	31.8	36.9	17.0	51.2	6.5	29.5	49.3	8.8
Cycle Q Clear(g_c), s	7.4	41.4	41.4	2.5	31.8	36.9	17.0	51.2	6.5	29.5	49.3	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	970	434	68	865	387	444	1757	547	685	2107	656
V/C Ratio(X)	0.93	1.05	1.19	0.83	0.89	1.38	0.90	1.11	0.18	1.13	0.88	0.22
Avail Cap(c_a), veh/h	182	970	434	68	865	387	486	1757	547	685	2107	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.4	51.9	52.0	70.9	52.3	54.2	62.2	47.1	32.6	57.9	38.5	26.8
Incr Delay (d2), s/veh	45.5	43.0	105.8	53.4	11.3	185.4	18.2	60.1	0.1	76.9	4.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	25.2	30.2	1.6	16.3	35.5	9.1	33.2	2.8	21.0	23.4	3.8
LnGrp Delay(d),s/veh	113.8	94.9	157.8	124.3	63.5	239.6	80.4	107.2	32.6	134.8	42.8	26.8
LnGrp LOS	F	F	F	F	E	F	F	F	C	F	D	C
Approach Vol, veh/h		1704			1362			2460			2769	
Approach Delay, s/veh		115.8			135.0			99.8			67.7	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	42.3	23.8	66.2	8.5	46.8	34.0	56.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.5	4.8
Max Green Setting (Gmax), s	8.0	* 37	* 21	59.6	3.0	* 41	29.5	51.2
Max Q Clear Time (g_c+I1), s	9.4	38.9	19.0	51.3	4.5	43.4	31.5	53.2
Green Ext Time (p_c), s	0.0	0.0	0.1	7.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	98.2
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	466	78	224	143	122	18	116	2066	105	236	2408	180
Future Volume (veh/h)	466	78	224	143	122	18	116	2066	105	236	2408	180
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	466	78	224	143	122	18	116	2066	105	236	2408	180
Adj No. of Lanes	1	1	1	1	1	0	1	3	1	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	437	449	382	164	136	20	115	1972	614	227	2317	721
Arrive On Green	0.25	0.24	0.24	0.09	0.09	0.09	0.07	0.40	0.40	0.13	0.46	0.46
Sat Flow, veh/h	1757	1845	1568	1757	1572	232	1740	4988	1553	1740	4988	1553
Grp Volume(v), veh/h	466	78	224	143	0	140	116	2066	105	236	2408	180
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1804	1740	1663	1553	1740	1663	1553
Q Serve(g_s), s	37.5	5.0	19.0	12.1	0.0	11.6	10.0	59.6	6.6	19.7	70.0	10.6
Cycle Q Clear(g_c), s	37.5	5.0	19.0	12.1	0.0	11.6	10.0	59.6	6.6	19.7	70.0	10.6
Prop In Lane	1.00		1.00	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	437	449	382	164	0	156	115	1972	614	227	2317	721
V/C Ratio(X)	1.07	0.17	0.59	0.87	0.00	0.90	1.00	1.05	0.17	1.04	1.04	0.25
Avail Cap(c_a), veh/h	437	449	382	246	0	156	115	1972	614	227	2317	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	45.0	50.3	67.4	0.0	68.2	70.3	45.5	29.5	65.5	40.4	24.4
Incr Delay (d2), s/veh	61.7	0.1	1.6	13.6	0.0	43.2	85.0	34.0	0.0	69.8	29.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.6	2.6	8.4	6.5	0.0	7.7	7.5	33.4	2.8	13.8	38.4	4.5
LnGrp Delay(d),s/veh	118.3	45.1	51.9	81.0	0.0	111.4	155.4	79.5	29.6	135.4	70.2	24.5
LnGrp LOS	F	D	D	F		F	F	F	C	F	F	C
Approach Vol, veh/h		768			283			2287			2824	
Approach Delay, s/veh		91.5			96.1			81.1			72.8	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	74.8	43.0	18.3	25.0	64.4	19.3	42.0
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 10	70.0	37.5	* 13	* 20	59.6	* 21	* 29
Max Q Clear Time (g_c+I1), s	12.0	72.0	39.5	13.6	21.7	61.6	14.1	21.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	79.3
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	484	847	339	30	776	726	144	1081	5	728	2072	190
Future Volume (veh/h)	484	847	339	30	776	726	144	1081	5	728	2072	190
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	484	847	339	30	776	726	144	1081	5	728	2072	190
Adj No. of Lanes	2	1	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	534	824	700	56	1127	504	108	1217	379	319	1551	483
Arrive On Green	0.16	0.45	0.45	0.03	0.32	0.32	0.03	0.24	0.24	0.09	0.31	0.31
Sat Flow, veh/h	3408	1845	1568	1757	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	484	847	339	30	776	726	144	1081	5	728	2072	190
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1757	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	18.8	60.0	20.5	2.3	25.9	43.2	4.3	28.1	0.3	12.7	41.8	12.9
Cycle Q Clear(g_c), s	18.8	60.0	20.5	2.3	25.9	43.2	4.3	28.1	0.3	12.7	41.8	12.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	534	824	700	56	1127	504	108	1217	379	319	1551	483
V/C Ratio(X)	0.91	1.03	0.48	0.54	0.69	1.44	1.33	0.89	0.01	2.28	1.34	0.39
Avail Cap(c_a), veh/h	812	824	700	418	1127	504	108	1217	379	319	1551	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	37.2	26.3	64.1	39.7	45.6	65.0	49.0	38.5	60.8	46.3	36.3
Incr Delay (d2), s/veh	7.1	38.8	0.2	3.0	1.5	209.2	199.9	8.0	0.0	586.8	155.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	39.3	8.9	1.1	12.7	47.9	5.0	13.8	0.1	31.9	41.4	5.5
LnGrp Delay(d),s/veh	62.8	76.0	26.4	67.0	41.2	254.8	265.0	57.0	38.5	647.6	201.7	36.5
LnGrp LOS	E	F	C	E	D	F	F	E	D	F	F	D
Approach Vol, veh/h		1670			1532			1230			2990	
Approach Delay, s/veh		62.1			142.9			81.3			299.8	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	46.9	28.2	50.3	18.0	37.9	11.4	67.1
Change Period (Y+Rc), s	* 4.7	5.1	7.1	* 7.1	* 5.3	5.1	7.1	7.1
Max Green Setting (Gmax), s	* 4.3	41.8	32.0	* 43	* 13	32.8	32.0	42.9
Max Q Clear Time (g_c+I1), s	6.3	43.8	20.8	45.2	14.7	30.1	4.3	62.0
Green Ext Time (p_c), s	0.0	0.0	0.3	0.0	0.0	2.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	177.7
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	746	311	705	91	347	9	220	1029	11	20	2075	900
Future Volume (veh/h)	746	311	705	91	347	9	220	1029	11	20	2075	900
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	746	311	705	91	347	9	220	1029	11	20	2075	900
Adj No. of Lanes	1	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	602	1341	600	93	324	145	182	2044	636	38	1851	576
Arrive On Green	0.35	0.39	0.39	0.05	0.09	0.09	0.05	0.41	0.41	0.01	0.37	0.37
Sat Flow, veh/h	1740	3471	1553	1740	3471	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	746	311	705	91	347	9	220	1029	11	20	2075	900
Grp Sat Flow(s),veh/h/ln	1740	1736	1553	1740	1736	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	51.9	9.1	58.0	7.8	14.0	0.8	8.1	23.0	0.6	0.9	55.7	55.7
Cycle Q Clear(g_c), s	51.9	9.1	58.0	7.8	14.0	0.8	8.1	23.0	0.6	0.9	55.7	55.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	602	1341	600	93	324	145	182	2044	636	38	1851	576
V/C Ratio(X)	1.24	0.23	1.17	0.98	1.07	0.06	1.21	0.50	0.02	0.52	1.12	1.56
Avail Cap(c_a), veh/h	602	1341	600	93	324	145	182	2044	636	81	1851	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	31.0	46.1	71.0	68.1	62.1	71.0	32.9	26.3	73.8	47.2	47.2
Incr Delay (d2), s/veh	121.7	0.4	95.3	86.9	70.4	0.8	133.7	0.9	0.0	4.1	62.4	261.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	45.2	4.4	40.7	6.0	9.9	0.4	7.2	10.7	0.3	0.4	36.2	65.7
LnGrp Delay(d),s/veh	170.8	31.4	141.4	157.8	138.4	62.9	204.7	33.8	26.4	77.9	109.6	308.4
LnGrp LOS	F	C	F	F	F	E	F	C	C	E	F	F
Approach Vol, veh/h		1762			447			1260			2995	
Approach Delay, s/veh		134.4			140.9			63.6			169.1	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	60.9	57.0	19.2	7.2	66.7	13.0	63.2
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 8.1	* 56	* 52	* 14	3.6	* 60	8.0	* 58
Max Q Clear Time (g_c+I1), s	10.1	57.7	53.9	16.0	2.9	25.0	9.8	60.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	34.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	137.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	679	542	149	616	90	341	1170	106	358	2285	112
Future Volume (veh/h)	109	679	542	149	616	90	341	1170	106	358	2285	112
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	109	679	542	149	616	90	341	1170	106	358	2285	112
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	125	808	362	160	845	378	337	2117	659	410	2225	693
Arrive On Green	0.04	0.23	0.23	0.05	0.24	0.24	0.10	0.42	0.42	0.12	0.45	0.45
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	109	679	542	149	616	90	341	1170	106	358	2285	112
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	4.0	23.2	28.9	5.5	20.3	5.8	12.5	22.1	5.3	13.1	55.9	5.4
Cycle Q Clear(g_c), s	4.0	23.2	28.9	5.5	20.3	5.8	12.5	22.1	5.3	13.1	55.9	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	125	808	362	160	845	378	337	2117	659	410	2225	693
V/C Ratio(X)	0.87	0.84	1.50	0.93	0.73	0.24	1.01	0.55	0.16	0.87	1.03	0.16
Avail Cap(c_a), veh/h	125	808	362	160	845	378	337	2117	659	547	2225	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.1	46.0	48.2	59.5	43.8	38.3	56.4	27.1	22.3	54.1	34.7	20.7
Incr Delay (d2), s/veh	42.7	10.2	238.5	49.7	4.6	1.0	52.3	0.8	0.4	9.4	26.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	12.4	36.5	3.7	10.4	2.6	8.2	10.3	2.3	6.7	31.0	2.4
LnGrp Delay(d),s/veh	102.8	56.2	286.7	109.2	48.4	39.3	108.8	27.9	22.6	63.5	61.0	21.1
LnGrp LOS	F	E	F	F	D	D	F	C	C	E	F	C
Approach Vol, veh/h		1330			855			1617			2755	
Approach Delay, s/veh		154.0			58.1			44.6			59.7	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	61.4	10.1	35.8	20.7	58.7	11.4	34.5
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	12.5	* 56	4.6	30.0	20.3	* 48	5.9	* 29
Max Q Clear Time (g_c+I1), s	14.5	57.9	6.0	22.3	15.1	24.1	7.5	30.9
Green Ext Time (p_c), s	0.0	0.0	0.0	7.4	0.2	23.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	74.9
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	1374	322	121	1083	5	85	30	75	4	32	23
Future Volume (veh/h)	14	1374	322	121	1083	5	85	30	75	4	32	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	14	1374	322	121	1083	5	85	30	75	4	32	23
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	23	1774	794	152	2031	908	108	64	159	8	66	48
Arrive On Green	0.01	0.52	0.52	0.09	0.60	0.60	0.06	0.14	0.14	0.00	0.07	0.07
Sat Flow, veh/h	1707	3406	1524	1707	3406	1524	1757	468	1170	1757	999	718
Grp Volume(v), veh/h	14	1374	322	121	1083	5	85	0	105	4	0	55
Grp Sat Flow(s),veh/h/ln	1707	1703	1524	1707	1703	1524	1757	0	1638	1757	0	1718
Q Serve(g_s), s	0.6	23.1	9.2	5.0	13.4	0.1	3.4	0.0	4.2	0.2	0.0	2.2
Cycle Q Clear(g_c), s	0.6	23.1	9.2	5.0	13.4	0.1	3.4	0.0	4.2	0.2	0.0	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.71	1.00		0.42
Lane Grp Cap(c), veh/h	23	1774	794	152	2031	908	108	0	223	8	0	114
V/C Ratio(X)	0.60	0.77	0.41	0.80	0.53	0.01	0.78	0.00	0.47	0.53	0.00	0.48
Avail Cap(c_a), veh/h	96	1820	814	180	2031	908	138	0	519	99	0	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.0	13.7	10.4	31.9	8.5	5.8	33.0	0.0	28.4	35.4	0.0	32.1
Incr Delay (d2), s/veh	15.9	2.4	0.6	17.4	0.4	0.0	17.6	0.0	1.4	34.5	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	11.3	3.9	3.1	6.3	0.0	2.2	0.0	2.0	0.1	0.0	1.1
LnGrp Delay(d),s/veh	50.9	16.1	10.9	49.3	8.9	5.8	50.6	0.0	29.8	69.9	0.0	35.0
LnGrp LOS	D	B	B	D	A	A	D		C	E		C
Approach Vol, veh/h		1710			1209			190			59	
Approach Delay, s/veh		15.4			13.0			39.1			37.4	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	43.5	8.8	9.1	4.5	48.9	3.8	14.1
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	7.5	38.1	5.6	* 21	4.0	41.6	4.0	22.6
Max Q Clear Time (g_c+I1), s	7.0	25.1	5.4	4.2	2.6	15.4	2.2	6.2
Green Ext Time (p_c), s	0.0	12.1	0.0	0.7	0.0	24.8	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1043	577	26	1028	179	536	229	8	400	395	1
Future Volume (veh/h)	1	1043	577	26	1028	179	536	229	8	400	395	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	1	1043	577	26	1028	179	536	229	8	400	395	1
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1	893	474	33	1257	219	472	423	360	424	372	316
Arrive On Green	0.00	0.40	0.40	0.02	0.42	0.42	0.27	0.23	0.23	0.24	0.20	0.20
Sat Flow, veh/h	1757	2213	1176	1757	2986	519	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	1	817	803	26	603	604	536	229	8	400	395	1
Grp Sat Flow(s),veh/h/ln	1757	1752	1637	1757	1752	1753	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.1	60.0	60.0	2.2	45.1	45.3	40.0	16.2	0.6	33.3	30.0	0.1
Cycle Q Clear(g_c), s	0.1	60.0	60.0	2.2	45.1	45.3	40.0	16.2	0.6	33.3	30.0	0.1
Prop In Lane	1.00		0.72	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1	707	660	33	738	738	472	423	360	424	372	316
V/C Ratio(X)	0.70	1.16	1.22	0.80	0.82	0.82	1.13	0.54	0.02	0.94	1.06	0.00
Avail Cap(c_a), veh/h	47	707	660	47	738	738	472	423	360	472	372	316
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.3	44.4	44.4	72.7	38.0	38.0	54.4	50.4	44.4	55.5	59.4	47.4
Incr Delay (d2), s/veh	231.4	85.6	110.8	43.4	7.1	7.2	83.8	1.4	0.0	26.5	64.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	45.7	47.3	1.5	23.2	23.5	30.3	8.4	0.3	19.2	21.8	0.0
LnGrp Delay(d),s/veh	305.7	130.0	155.2	116.1	45.1	45.3	138.2	51.8	44.4	82.0	123.3	47.4
LnGrp LOS	F	F	F	F	D	D	F	D	D	F	F	D
Approach Vol, veh/h		1621			1233			773			796	
Approach Delay, s/veh		142.6			46.7			111.6			102.5	
Approach LOS		F			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.9	38.1	6.8	64.0	44.0	34.0	4.1	66.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	40.0	30.0	4.0	60.0	40.0	30.0	4.0	60.0
Max Q Clear Time (g_c+I1), s	35.3	18.2	4.2	62.0	42.0	32.0	2.1	47.3
Green Ext Time (p_c), s	0.6	3.0	0.0	0.0	0.0	0.0	0.0	11.6

Intersection Summary		
HCM 2010 Ctrl Delay		103.2
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	359	9	61	371	3	10	39	37	56	56	66
Future Volume (veh/h)	0	359	9	61	371	3	10	39	37	56	56	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1900	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	0	359	9	61	371	3	10	39	37	56	56	66
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	5	837	21	89	1431	12	22	87	83	78	78	91
Arrive On Green	0.00	0.24	0.24	0.05	0.41	0.41	0.11	0.11	0.11	0.14	0.14	0.14
Sat Flow, veh/h	1740	3461	87	1740	3529	29	198	773	734	537	537	633
Grp Volume(v), veh/h	0	180	188	61	182	192	86	0	0	178	0	0
Grp Sat Flow(s),veh/h/ln	1740	1736	1812	1740	1736	1822	1705	0	0	1706	0	0
Q Serve(g_s), s	0.0	3.1	3.1	1.2	2.5	2.5	1.7	0.0	0.0	3.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.1	3.1	1.2	2.5	2.5	1.7	0.0	0.0	3.5	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.02	0.12		0.43	0.31		0.37
Lane Grp Cap(c), veh/h	5	420	438	89	704	739	192	0	0	246	0	0
V/C Ratio(X)	0.00	0.43	0.43	0.69	0.26	0.26	0.45	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	294	830	867	245	781	820	768	0	0	768	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.4	11.4	16.6	7.0	7.0	14.7	0.0	0.0	14.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	9.1	0.2	0.2	1.6	0.0	0.0	4.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	1.6	0.8	1.2	1.3	0.9	0.0	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	0.0	12.1	12.1	25.7	7.2	7.2	16.4	0.0	0.0	18.5	0.0	0.0
LnGrp LOS		B	B	C	A	A	B			B		
Approach Vol, veh/h		368			435			86			178	
Approach Delay, s/veh		12.1			9.8			16.4			18.5	
Approach LOS		B			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		8.0	5.8	12.6		9.1	0.0	18.4
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	5.0	17.0		16.0	6.0	16.0
Max Q Clear Time (g_c+I1), s		3.7	3.2	5.1		5.5	0.0	4.5
Green Ext Time (p_c), s		0.3	0.0	3.5		0.7	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	120	161	129	251	141	131	371	50	109	529	46
Future Volume (veh/h)	203	120	161	129	251	141	131	371	50	109	529	46
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	203	120	161	129	251	141	131	371	50	109	529	46
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	185	372	333	109	364	198	165	648	551	122	603	513
Arrive On Green	0.11	0.21	0.21	0.06	0.17	0.17	0.09	0.35	0.35	0.07	0.33	0.33
Sat Flow, veh/h	1757	1752	1568	1757	2194	1193	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	203	120	161	129	199	193	131	371	50	109	529	46
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1634	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	6.8	3.7	5.8	4.0	6.9	7.2	4.7	10.6	1.4	4.0	17.5	1.3
Cycle Q Clear(g_c), s	6.8	3.7	5.8	4.0	6.9	7.2	4.7	10.6	1.4	4.0	17.5	1.3
Prop In Lane	1.00		1.00	1.00		0.73	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	372	333	109	291	271	165	648	551	122	603	513
V/C Ratio(X)	1.10	0.32	0.48	1.19	0.68	0.71	0.79	0.57	0.09	0.89	0.88	0.09
Avail Cap(c_a), veh/h	185	841	752	109	754	703	209	885	752	122	796	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.9	21.5	22.3	30.3	25.4	25.5	28.7	17.0	14.0	29.8	20.5	15.1
Incr Delay (d2), s/veh	94.9	0.2	0.4	144.8	1.1	1.3	11.5	0.3	0.0	48.4	7.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	1.8	2.5	6.3	3.4	3.4	2.8	5.4	0.6	3.6	10.0	0.6
LnGrp Delay(d),s/veh	123.8	21.7	22.7	175.1	26.4	26.8	40.2	17.3	14.1	78.2	27.7	15.1
LnGrp LOS	F	C	C	F	C	C	D	B	B	E	C	B
Approach Vol, veh/h		484			521			552			684	
Approach Delay, s/veh		64.9			63.4			22.4			34.9	
Approach LOS		E			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	15.5	11.6	25.5	9.0	18.5	10.0	27.1
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 6.8	27.8	7.7	* 28	4.0	* 31	4.5	* 31
Max Q Clear Time (g_c+I1), s	8.8	9.2	6.7	19.5	6.0	7.8	6.0	12.6
Green Ext Time (p_c), s	0.0	1.5	0.0	1.6	0.0	1.5	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	800	0	0	739	1	6	0	1	1	0	2
Future Volume (veh/h)	2	800	0	0	739	1	6	0	1	1	0	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	2	800	0	0	739	1	6	0	1	1	0	2
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	5	1973	0	5	1599	2	129	0	21	2	0	3
Arrive On Green	0.00	0.56	0.00	0.00	0.45	0.45	0.09	0.00	0.09	0.00	0.00	0.00
Sat Flow, veh/h	1757	3597	0	1757	3591	5	1480	0	247	542	0	1084
Grp Volume(v), veh/h	2	800	0	0	361	379	7	0	0	3	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	0	1757	1752	1844	1727	0	0	1626	0	0
Q Serve(g_s), s	0.0	4.5	0.0	0.0	5.0	5.0	0.1	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.5	0.0	0.0	5.0	5.0	0.1	0.0	0.0	0.1	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.00	0.86		0.14	0.33		0.67
Lane Grp Cap(c), veh/h	5	1973	0	5	780	821	150	0	0	5	0	0
V/C Ratio(X)	0.39	0.41	0.00	0.00	0.46	0.46	0.05	0.00	0.00	0.64	0.00	0.00
Avail Cap(c_a), veh/h	204	2133	0	204	1066	1122	801	0	0	848	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.2	4.3	0.0	0.0	6.7	6.7	14.4	0.0	0.0	17.2	0.0	0.0
Incr Delay (d2), s/veh	42.7	0.1	0.0	0.0	0.4	0.4	0.1	0.0	0.0	92.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.1	0.0	0.0	2.4	2.5	0.1	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	59.9	4.4	0.0	0.0	7.1	7.1	14.6	0.0	0.0	109.6	0.0	0.0
LnGrp LOS	E	A			A	A	B			F		
Approach Vol, veh/h		802			740			7			3	
Approach Delay, s/veh		4.5			7.1			14.6			109.6	
Approach LOS		A			A			B			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		7.0	0.0	23.4		4.1	4.1	19.4
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	4.0	21.0		18.0	4.0	21.0
Max Q Clear Time (g_c+I1), s		2.1	0.0	6.5		2.1	2.0	7.0
Green Ext Time (p_c), s		0.0	0.0	8.6		0.0	0.0	8.4

Intersection Summary	
HCM 2010 Ctrl Delay	6.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	31	17	943	44	385	48	1271	687	387	1873	59
Future Volume (veh/h)	73	31	17	943	44	385	48	1271	687	387	1873	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	73	31	17	943	44	385	48	1271	687	387	1873	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	90	57	31	935	506	430	60	1563	487	405	2003	63
Arrive On Green	0.05	0.05	0.05	0.27	0.27	0.27	0.03	0.31	0.31	0.12	0.40	0.40
Sat Flow, veh/h	1757	1121	615	3408	1845	1568	1740	4988	1553	3375	4968	156
Grp Volume(v), veh/h	73	0	48	943	44	385	48	1271	687	387	1253	679
Grp Sat Flow(s),veh/h/ln	1757	0	1736	1704	1845	1568	1740	1663	1553	1688	1663	1799
Q Serve(g_s), s	3.7	0.0	2.4	24.7	1.6	21.3	2.5	21.1	28.2	10.3	32.5	32.6
Cycle Q Clear(g_c), s	3.7	0.0	2.4	24.7	1.6	21.3	2.5	21.1	28.2	10.3	32.5	32.6
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	90	0	89	935	506	430	60	1563	487	405	1340	725
V/C Ratio(X)	0.81	0.00	0.54	1.01	0.09	0.89	0.80	0.81	1.41	0.96	0.93	0.94
Avail Cap(c_a), veh/h	90	0	89	935	506	430	72	1563	487	405	1340	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	0.0	41.7	32.6	24.3	31.4	43.1	28.5	30.9	39.4	25.7	25.8
Incr Delay (d2), s/veh	39.0	0.0	3.6	31.4	0.0	20.1	33.6	3.2	197.3	33.0	12.0	19.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	1.2	15.6	0.8	11.5	1.7	10.1	38.7	6.6	17.0	19.9
LnGrp Delay(d),s/veh	81.3	0.0	45.3	64.1	24.3	51.5	76.7	31.6	228.2	72.4	37.7	45.0
LnGrp LOS	F		D	F	C	D	E	C	F	E	D	D
Approach Vol, veh/h		121			1372			2006			2319	
Approach Delay, s/veh		67.0			59.3			100.0			45.7	
Approach LOS		E			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	41.5		10.1	16.3	33.4		30.2
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 3.7	* 36		4.6	10.8	* 28		24.7
Max Q Clear Time (g_c+I1), s	4.5	34.6		5.7	12.3	30.2		26.7
Green Ext Time (p_c), s	0.0	1.1		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	68.1
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	110	373	286	128	24	191	1153	121	8	2359	286
Future Volume (veh/h)	161	110	373	286	128	24	191	1153	121	8	2359	286
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	161	110	373	286	128	24	191	1153	121	8	2359	286
Adj No. of Lanes	2	2	1	2	2	0	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	207	750	336	304	717	132	205	2654	826	19	2380	741
Arrive On Green	0.06	0.21	0.21	0.09	0.24	0.24	0.06	0.53	0.53	0.01	0.48	0.48
Sat Flow, veh/h	3408	3505	1568	3408	2959	543	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	161	110	373	286	75	77	191	1153	121	8	2359	286
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1749	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	6.5	3.6	30.0	11.7	4.7	4.9	7.9	19.7	5.5	0.3	65.8	16.5
Cycle Q Clear(g_c), s	6.5	3.6	30.0	11.7	4.7	4.9	7.9	19.7	5.5	0.3	65.8	16.5
Prop In Lane	1.00		1.00	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	207	750	336	304	425	424	205	2654	826	19	2380	741
V/C Ratio(X)	0.78	0.15	1.11	0.94	0.18	0.18	0.93	0.43	0.15	0.41	0.99	0.39
Avail Cap(c_a), veh/h	224	750	336	304	425	424	205	2654	826	72	2380	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.9	44.7	55.1	63.5	42.0	42.1	65.6	20.0	16.6	69.5	36.4	23.5
Incr Delay (d2), s/veh	13.0	0.0	82.7	35.9	0.1	0.1	43.9	0.0	0.0	5.2	16.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	1.7	20.7	7.0	2.3	2.4	4.9	9.1	2.4	0.2	33.7	7.1
LnGrp Delay(d),s/veh	77.9	44.7	137.8	99.4	42.1	42.2	109.4	20.0	16.7	74.6	52.7	23.6
LnGrp LOS	E	D	F	F	D	D	F	C	B	E	D	C
Approach Vol, veh/h		644			438			1465			2653	
Approach Delay, s/veh		106.9			79.5			31.4			49.6	
Approach LOS		F			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	72.5	14.0	39.7	6.3	80.2	18.0	35.7
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	8.5	* 67	9.2	* 34	3.0	* 72	12.5	* 30
Max Q Clear Time (g_c+I1), s	9.9	67.8	8.5	6.9	2.3	21.7	13.7	32.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.0	23.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.1
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	818	562	31	587	136	382	1141	39	148	2593	282
Future Volume (veh/h)	199	818	562	31	587	136	382	1141	39	148	2593	282
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	199	818	562	31	587	136	382	1141	39	148	2593	0
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	133	596	507	36	501	426	239	2601	89	170	2407	750
Arrive On Green	0.08	0.33	0.33	0.02	0.28	0.28	0.14	0.53	0.53	0.10	0.48	0.00
Sat Flow, veh/h	1707	1792	1524	1707	1792	1524	1740	4953	169	1740	4988	1553
Grp Volume(v), veh/h	199	818	562	31	587	136	382	766	414	148	2593	0
Grp Sat Flow(s),veh/h/ln	1707	1792	1524	1707	1792	1524	1740	1663	1797	1740	1663	1553
Q Serve(g_s), s	11.7	49.9	49.9	2.7	41.9	10.6	20.6	21.3	21.3	12.6	72.4	0.0
Cycle Q Clear(g_c), s	11.7	49.9	49.9	2.7	41.9	10.6	20.6	21.3	21.3	12.6	72.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	133	596	507	36	501	426	239	1746	944	170	2407	750
V/C Ratio(X)	1.49	1.37	1.11	0.85	1.17	0.32	1.60	0.44	0.44	0.87	1.08	0.00
Avail Cap(c_a), veh/h	133	596	507	36	501	426	239	1746	944	244	2407	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	0.73	0.73	0.73	0.18	0.18	0.00
Uniform Delay (d), s/veh	69.2	50.1	50.1	73.2	54.0	42.8	64.7	22.0	22.0	66.8	38.8	0.0
Incr Delay (d2), s/veh	257.8	177.8	73.2	81.1	95.0	0.1	283.4	0.6	1.1	3.5	36.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.0	54.1	31.3	2.1	33.9	4.5	28.7	9.9	10.9	6.2	41.4	0.0
LnGrp Delay(d),s/veh	326.9	227.8	123.2	154.3	149.1	42.9	348.1	22.6	23.1	70.2	75.3	0.0
LnGrp LOS	F	F	F	F	F	D	F	C	C	E	F	
Approach Vol, veh/h		1579			754			1562			2741	
Approach Delay, s/veh		203.1			130.1			102.3			75.0	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	78.0	16.0	47.5	19.6	84.4	8.0	55.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 21	55.9	* 12	41.4	21.0	55.9	* 3.2	* 50
Max Q Clear Time (g_c+I1), s	22.6	74.4	13.7	43.9	14.6	23.3	4.7	51.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	20.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	118.2
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	394	420	30	93	256	5	53	1178	23	50	2727	424
Future Volume (veh/h)	394	420	30	93	256	5	53	1178	23	50	2727	424
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	394	420	30	93	256	5	53	1178	23	50	2727	424
Adj No. of Lanes	2	1	0	2	1	0	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	333	442	32	122	356	7	53	2645	52	64	2332	345
Arrive On Green	0.10	0.26	0.26	0.04	0.20	0.20	0.03	0.53	0.53	0.04	0.53	0.53
Sat Flow, veh/h	3408	1702	122	3408	1803	35	1740	5036	98	1740	4388	650
Grp Volume(v), veh/h	394	0	450	93	0	261	53	778	423	50	2034	1117
Grp Sat Flow(s),veh/h/ln	1704	0	1823	1704	0	1838	1740	1663	1810	1740	1663	1712
Q Serve(g_s), s	14.5	0.0	36.0	4.0	0.0	19.7	4.5	21.5	21.5	4.2	78.8	78.8
Cycle Q Clear(g_c), s	14.5	0.0	36.0	4.0	0.0	19.7	4.5	21.5	21.5	4.2	78.8	78.8
Prop In Lane	1.00		0.07	1.00		0.02	1.00		0.05	1.00		0.38
Lane Grp Cap(c), veh/h	333	0	473	122	0	363	53	1746	950	64	1767	910
V/C Ratio(X)	1.18	0.00	0.95	0.76	0.00	0.72	1.00	0.45	0.45	0.78	1.15	1.23
Avail Cap(c_a), veh/h	333	0	494	122	0	384	53	1746	950	119	1767	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.9	0.0	54.0	70.9	0.0	55.7	71.9	21.8	21.8	70.8	34.7	34.7
Incr Delay (d2), s/veh	108.5	0.0	27.5	22.3	0.0	5.0	124.9	0.1	0.1	7.6	74.9	112.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	0.0	21.7	2.3	0.0	10.5	4.0	9.8	10.7	2.2	54.5	65.5
LnGrp Delay(d),s/veh	175.4	0.0	81.5	93.1	0.0	60.6	196.8	21.9	21.9	78.4	109.7	147.1
LnGrp LOS	F		F	F		E	F	C	C	E	F	F
Approach Vol, veh/h		844			354			1254			3201	
Approach Delay, s/veh		125.3			69.2			29.3			122.2	
Approach LOS		F			E			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	83.8	20.0	34.5	10.9	82.9	10.8	43.7
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	4.5	78.8	14.5	* 31	10.1	73.2	5.3	* 40
Max Q Clear Time (g_c+I1), s	6.5	80.8	16.5	21.7	6.2	23.5	6.0	38.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	31.1	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	98.8
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	773	426	50	443	156	214	727	14	356	1886	565
Future Volume (veh/h)	120	773	426	50	443	156	214	727	14	356	1886	565
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1792	1792	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	120	773	426	50	443	156	214	727	14	356	1886	565
Adj No. of Lanes	2	2	0	2	2	0	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	6	6	6	4	4	4	4	4	4
Cap, veh/h	175	692	379	86	727	254	237	1694	527	413	1954	608
Arrive On Green	0.05	0.32	0.32	0.03	0.29	0.29	0.07	0.34	0.34	0.12	0.39	0.39
Sat Flow, veh/h	3375	2165	1187	3312	2478	865	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	120	619	580	50	303	296	214	727	14	356	1886	565
Grp Sat Flow(s),veh/h/ln	1688	1736	1617	1656	1703	1640	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	3.8	35.0	35.0	1.6	16.8	17.0	6.9	12.3	0.7	11.3	40.5	38.1
Cycle Q Clear(g_c), s	3.8	35.0	35.0	1.6	16.8	17.0	6.9	12.3	0.7	11.3	40.5	38.1
Prop In Lane	1.00		0.73	1.00		0.53	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	554	517	86	500	481	237	1694	527	413	1954	608
V/C Ratio(X)	0.69	1.12	1.12	0.58	0.61	0.61	0.90	0.43	0.03	0.86	0.97	0.93
Avail Cap(c_a), veh/h	194	554	517	94	500	481	237	1694	527	465	1962	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	37.3	37.3	52.8	33.3	33.4	50.6	28.0	24.1	47.2	32.6	31.9
Incr Delay (d2), s/veh	6.4	74.2	77.9	4.1	1.5	1.7	32.8	0.1	0.0	12.8	13.0	20.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	28.1	26.7	0.8	8.1	8.0	4.3	5.7	0.3	6.0	20.9	19.7
LnGrp Delay(d),s/veh	57.4	111.5	115.2	56.8	34.8	35.1	83.4	28.0	24.1	60.0	45.6	52.2
LnGrp LOS	E	F	F	E	C	D	F	C	C	E	D	D
Approach Vol, veh/h		1319			649			955			2807	
Approach Delay, s/veh		108.2			36.6			40.4			48.7	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	48.0	11.2	37.2	18.9	42.3	8.3	40.0
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	7.7	* 43	6.3	* 32	15.1	* 36	3.1	* 35
Max Q Clear Time (g_c+I1), s	8.9	42.5	5.8	19.0	13.3	14.3	3.6	37.0
Green Ext Time (p_c), s	0.0	0.4	0.0	4.3	0.1	10.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	335	145	66	257	338	91	745	56	519	1872	159
Future Volume (veh/h)	171	335	145	66	257	338	91	745	56	519	1872	159
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	171	335	145	66	257	338	91	745	56	519	1872	159
Adj No. of Lanes	2	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	243	963	431	70	853	382	127	1536	478	452	2026	631
Arrive On Green	0.07	0.27	0.27	0.04	0.24	0.24	0.04	0.31	0.31	0.13	0.41	0.41
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	171	335	145	66	257	338	91	745	56	519	1872	159
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	4.3	6.7	6.5	3.3	5.2	18.2	2.3	10.6	2.3	11.7	31.2	5.9
Cycle Q Clear(g_c), s	4.3	6.7	6.5	3.3	5.2	18.2	2.3	10.6	2.3	11.7	31.2	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	963	431	70	853	382	127	1536	478	452	2026	631
V/C Ratio(X)	0.70	0.35	0.34	0.94	0.30	0.89	0.71	0.49	0.12	1.15	0.92	0.25
Avail Cap(c_a), veh/h	370	1242	556	70	1014	454	127	1568	488	452	2059	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	25.4	25.3	41.9	27.0	31.9	41.6	24.6	21.7	37.9	24.7	17.2
Incr Delay (d2), s/veh	1.4	0.1	0.2	85.1	0.1	15.0	15.0	0.1	0.0	90.1	7.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.3	2.8	3.2	2.5	9.4	1.4	4.9	1.0	11.0	15.6	2.5
LnGrp Delay(d),s/veh	41.1	25.5	25.5	127.0	27.1	46.9	56.6	24.7	21.8	128.0	32.1	17.2
LnGrp LOS	D	C	C	F	C	D	E	C	C	F	C	B
Approach Vol, veh/h		651			661			892			2550	
Approach Delay, s/veh		29.6			47.2			27.8			50.7	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	40.6	11.7	26.7	17.0	32.0	9.0	29.4
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 3.3	36.1	9.5	* 25	* 12	27.5	3.5	* 31
Max Q Clear Time (g_c+I1), s	4.3	33.2	6.3	20.2	13.7	12.6	5.3	8.7
Green Ext Time (p_c), s	0.0	2.3	0.0	1.1	0.0	8.4	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	43.0
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	936	2	126	638	5	12	400	38	3	599	87
Future Volume (veh/h)	104	936	2	126	638	5	12	400	38	3	599	87
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	104	936	2	126	638	5	12	400	38	3	599	87
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	130	1107	2	151	1142	9	13	586	56	3	632	537
Arrive On Green	0.08	0.32	0.32	0.09	0.33	0.33	0.01	0.35	0.35	0.00	0.34	0.34
Sat Flow, veh/h	1707	3487	7	1707	3463	27	1757	1659	158	1757	1845	1568
Grp Volume(v), veh/h	104	457	481	126	314	329	12	0	438	3	599	87
Grp Sat Flow(s),veh/h/ln	1707	1703	1791	1707	1703	1788	1757	0	1817	1757	1845	1568
Q Serve(g_s), s	5.2	21.8	21.8	6.3	13.2	13.2	0.6	0.0	17.9	0.1	27.5	3.4
Cycle Q Clear(g_c), s	5.2	21.8	21.8	6.3	13.2	13.2	0.6	0.0	17.9	0.1	27.5	3.4
Prop In Lane	1.00		0.00	1.00		0.02	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	130	541	569	151	561	589	13	0	641	3	632	537
V/C Ratio(X)	0.80	0.85	0.85	0.83	0.56	0.56	0.91	0.00	0.68	0.99	0.95	0.16
Avail Cap(c_a), veh/h	177	570	599	151	561	589	40	0	641	40	636	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	27.7	27.7	39.0	23.9	23.9	43.1	0.0	24.0	43.4	27.8	19.9
Incr Delay (d2), s/veh	11.7	11.4	10.9	29.6	1.6	1.5	49.6	0.0	5.8	142.8	25.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	11.9	12.4	4.2	6.4	6.7	0.5	0.0	9.9	0.2	18.4	1.6
LnGrp Delay(d),s/veh	51.2	39.1	38.6	68.6	25.5	25.4	92.8	0.0	29.8	186.2	52.8	20.5
LnGrp LOS	D	D	D	E	C	C	F		C	F	D	C
Approach Vol, veh/h		1042			769			450			689	
Approach Delay, s/veh		40.0			32.5			31.5			49.3	
Approach LOS		D			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	34.0	5.1	35.8	11.0	35.1	4.2	36.7
Change Period (Y+Rc), s	4.4	6.4	4.4	6.0	4.4	6.4	* 4	6.0
Max Green Setting (Gmax), s	7.7	29.1	2.0	30.0	9.0	27.8	* 2	30.4
Max Q Clear Time (g_c+I1), s	8.3	23.8	2.6	29.5	7.2	15.2	2.1	19.9
Green Ext Time (p_c), s	0.0	3.8	0.0	0.3	0.0	9.4	0.0	9.4

Intersection Summary	
HCM 2010 Ctrl Delay	39.0
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

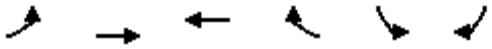
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1008	44	729	27	77	110	535	2141	17	146	1251	837
Future Volume (veh/h)	1008	44	729	27	77	110	535	2141	17	146	1251	837
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	1039	0	729	27	77	110	535	2141	17	146	1251	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	981	0	438	24	67	78	445	2184	17	151	1279	398
Arrive On Green	0.28	0.00	0.28	0.05	0.05	0.05	0.26	0.43	0.43	0.09	0.26	0.00
Sat Flow, veh/h	3480	0	1553	473	1348	1568	1740	5104	41	1740	4988	1553
Grp Volume(v), veh/h	1039	0	729	104	0	110	535	1394	764	146	1251	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1821	0	1568	1740	1663	1820	1740	1663	1553
Q Serve(g_s), s	36.7	0.0	36.7	6.5	0.0	6.5	33.3	53.8	53.9	10.9	32.4	0.0
Cycle Q Clear(g_c), s	36.7	0.0	36.7	6.5	0.0	6.5	33.3	53.8	53.9	10.9	32.4	0.0
Prop In Lane	1.00		1.00	0.26		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	981	0	438	91	0	78	445	1422	779	151	1279	398
V/C Ratio(X)	1.06	0.00	1.67	1.14	0.00	1.41	1.20	0.98	0.98	0.97	0.98	0.00
Avail Cap(c_a), veh/h	981	0	438	91	0	78	445	1422	779	151	1279	398
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.8	0.0	46.8	61.9	0.0	61.9	48.4	36.7	36.7	59.3	48.0	0.0
Incr Delay (d2), s/veh	45.8	0.0	309.4	138.4	0.0	242.4	110.8	19.2	27.4	62.7	19.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.8	0.0	53.4	6.8	0.0	8.1	29.6	28.4	32.9	7.9	17.2	0.0
LnGrp Delay(d),s/veh	92.5	0.0	356.2	200.3	0.0	304.2	159.2	55.9	64.1	122.0	67.9	0.0
LnGrp LOS	F		F	F		F	F	E	E	F	E	
Approach Vol, veh/h		1768			214			2693			1397	
Approach Delay, s/veh		201.2			253.7			78.7			73.6	
Approach LOS		F			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	38.0	38.2		12.0	15.7	60.5		42.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 33	33.2		6.5	* 11	* 56		36.7
Max Q Clear Time (g_c+I1), s	35.3	34.4		8.5	12.9	55.9		38.7
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		119.4
HCM 2010 LOS		F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	620	811	277	638	348
Future Volume (veh/h)	86	620	811	277	638	348
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	86	620	811	277	638	348
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	133	1748	950	324	694	620
Arrive On Green	0.08	0.50	0.37	0.37	0.40	0.40
Sat Flow, veh/h	1757	3597	2659	876	1757	1568
Grp Volume(v), veh/h	86	620	554	534	638	348
Grp Sat Flow(s),veh/h/ln	1757	1752	1752	1690	1757	1568
Q Serve(g_s), s	3.6	8.1	22.0	22.0	26.0	13.0
Cycle Q Clear(g_c), s	3.6	8.1	22.0	22.0	26.0	13.0
Prop In Lane	1.00			0.52	1.00	1.00
Lane Grp Cap(c), veh/h	133	1748	649	626	694	620
V/C Ratio(X)	0.65	0.35	0.85	0.85	0.92	0.56
Avail Cap(c_a), veh/h	372	2274	673	649	768	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	11.5	21.9	21.9	21.7	17.7
Incr Delay (d2), s/veh	5.2	0.1	10.1	10.5	15.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.9	12.4	12.1	15.5	11.8
LnGrp Delay(d),s/veh	39.1	11.6	32.0	32.4	36.9	18.6
LnGrp LOS	D	B	C	C	D	B
Approach Vol, veh/h		706	1088		986	
Approach Delay, s/veh		15.0	32.2		30.4	
Approach LOS		B	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		41.7		33.9	9.7	32.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		49.0		33.0	16.0	29.0		
Max Q Clear Time (g_c+I1), s		10.1		28.0	5.6	24.0		
Green Ext Time (p_c), s		16.9		1.8	0.1	4.0		

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	533	370	31	66	260	723	56	2124	10	996	1659	411
Future Volume (veh/h)	533	370	31	66	260	723	56	2124	10	996	1659	411
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	533	370	31	66	260	723	56	2124	10	996	1659	411
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	375	1307	108	105	361	1251	91	1769	8	694	2612	813
Arrive On Green	0.11	0.28	0.28	0.03	0.20	0.20	0.03	0.34	0.34	0.20	0.52	0.52
Sat Flow, veh/h	3408	4741	392	3514	1845	3136	3408	5173	24	3408	5036	1568
Grp Volume(v), veh/h	533	260	141	66	260	723	56	1378	756	996	1659	411
Grp Sat Flow(s),veh/h/ln	1704	1679	1776	1757	1845	1568	1704	1679	1840	1704	1679	1568
Q Serve(g_s), s	16.5	9.1	9.3	2.8	19.8	27.0	2.4	51.2	51.2	30.5	35.4	25.6
Cycle Q Clear(g_c), s	16.5	9.1	9.3	2.8	19.8	27.0	2.4	51.2	51.2	30.5	35.4	25.6
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	375	926	490	105	361	1251	91	1148	629	694	2612	813
V/C Ratio(X)	1.42	0.28	0.29	0.63	0.72	0.58	0.61	1.20	1.20	1.44	0.64	0.51
Avail Cap(c_a), veh/h	375	926	490	160	369	1267	134	1148	629	694	2612	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.6	42.6	42.7	71.8	56.4	35.1	72.1	49.3	49.3	59.6	25.9	23.5
Incr Delay (d2), s/veh	203.8	0.1	0.1	2.3	5.6	0.4	2.5	98.9	105.3	204.0	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.3	4.2	4.6	1.4	10.7	11.7	1.2	39.4	44.3	33.9	16.5	11.1
LnGrp Delay(d),s/veh	270.4	42.7	42.8	74.1	62.0	35.6	74.6	148.2	154.6	263.6	26.3	23.7
LnGrp LOS	F	D	D	E	E	D	E	F	F	F	C	C
Approach Vol, veh/h		934			1049			2190			3066	
Approach Delay, s/veh		172.7			44.5			148.5			103.0	
Approach LOS		F			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	83.3	22.0	35.0	36.0	56.8	10.0	47.0
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	5.9	75.5	16.5	* 30	30.5	* 51	6.8	* 40
Max Q Clear Time (g_c+I1), s	4.4	37.4	18.5	29.0	32.5	53.2	4.8	11.3
Green Ext Time (p_c), s	0.0	21.4	0.0	0.3	0.0	0.0	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	117.3
HCM 2010 LOS	F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	103	44	69	49	159	17	1577	31	71	1610	51
Future Volume (veh/h)	311	103	44	69	49	159	17	1577	31	71	1610	51
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	229	218	44	59	63	159	17	1577	31	71	1610	51
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	302	256	52	219	230	196	21	2024	40	111	2243	71
Arrive On Green	0.17	0.17	0.17	0.12	0.12	0.12	0.01	0.40	0.40	0.06	0.45	0.45
Sat Flow, veh/h	1757	1491	301	1757	1845	1568	1757	5084	100	1757	5015	159
Grp Volume(v), veh/h	229	0	262	59	63	159	17	1041	567	71	1078	583
Grp Sat Flow(s),veh/h/ln	1757	0	1792	1757	1845	1568	1757	1679	1827	1757	1679	1817
Q Serve(g_s), s	10.5	0.0	12.0	2.6	2.6	8.3	0.8	22.8	22.8	3.3	22.0	22.0
Cycle Q Clear(g_c), s	10.5	0.0	12.0	2.6	2.6	8.3	0.8	22.8	22.8	3.3	22.0	22.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.05	1.00		0.09
Lane Grp Cap(c), veh/h	302	0	308	219	230	196	21	1337	727	111	1501	812
V/C Ratio(X)	0.76	0.00	0.85	0.27	0.27	0.81	0.83	0.78	0.78	0.64	0.72	0.72
Avail Cap(c_a), veh/h	585	0	597	565	593	504	67	1529	832	125	1632	883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	0.0	33.9	33.4	33.4	35.9	41.6	22.1	22.1	38.6	19.0	19.0
Incr Delay (d2), s/veh	1.5	0.0	2.6	0.2	0.2	3.1	25.4	1.9	3.5	5.7	1.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	6.1	1.3	1.3	3.8	0.5	10.9	12.2	1.8	10.4	11.5
LnGrp Delay(d),s/veh	34.7	0.0	36.4	33.7	33.7	39.0	67.0	24.1	25.6	44.3	20.1	21.1
LnGrp LOS	C		D	C	C	D	E	C	C	D	C	C
Approach Vol, veh/h		491			281			1625			1732	
Approach Delay, s/veh		35.6			36.7			25.1			21.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	42.5		16.0	9.9	38.4		20.0
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 3.2	41.0		27.1	* 6	38.4		28.1
Max Q Clear Time (g_c+I1), s	2.8	24.0		10.3	5.3	24.8		14.0
Green Ext Time (p_c), s	0.0	10.1		0.2	0.0	8.7		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	1511	678	231	1030	288	665	1161	110	416	1228	60
Future Volume (veh/h)	66	1511	678	231	1030	288	665	1161	110	416	1228	60
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	66	1511	678	231	1030	288	665	1161	110	416	1228	60
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	104	1291	559	216	2052	639	557	1417	441	448	1227	60
Arrive On Green	0.03	0.37	0.37	0.06	0.41	0.41	0.16	0.28	0.28	0.13	0.25	0.25
Sat Flow, veh/h	3408	3446	1493	3408	5036	1568	3408	5036	1568	3408	4919	240
Grp Volume(v), veh/h	66	1471	718	231	1030	288	665	1161	110	416	838	450
Grp Sat Flow(s),veh/h/ln	1704	1679	1581	1704	1679	1568	1704	1679	1568	1704	1679	1802
Q Serve(g_s), s	2.9	56.2	56.2	9.5	22.8	20.0	24.5	32.3	8.1	18.1	37.4	37.4
Cycle Q Clear(g_c), s	2.9	56.2	56.2	9.5	22.8	20.0	24.5	32.3	8.1	18.1	37.4	37.4
Prop In Lane	1.00		0.94	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	104	1258	592	216	2052	639	557	1417	441	448	837	449
V/C Ratio(X)	0.64	1.17	1.21	1.07	0.50	0.45	1.19	0.82	0.25	0.93	1.00	1.00
Avail Cap(c_a), veh/h	155	1258	592	216	2052	639	557	1417	441	448	837	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.9	46.9	46.9	70.3	33.1	32.2	62.8	50.3	41.7	64.5	56.3	56.3
Incr Delay (d2), s/veh	2.4	85.0	110.6	81.1	0.1	0.2	104.2	3.7	0.1	25.5	31.4	42.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	40.9	42.7	6.9	10.6	8.7	19.6	15.4	3.6	10.1	21.0	23.9
LnGrp Delay(d),s/veh	74.3	131.9	157.5	151.3	33.2	32.4	167.0	54.0	41.8	90.0	87.7	99.1
LnGrp LOS	E	F	F	F	C	C	F	D	D	F	F	F
Approach Vol, veh/h		2255			1549			1936			1704	
Approach Delay, s/veh		138.4			50.7			92.1			91.3	
Approach LOS		F			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	43.0	10.1	66.9	25.2	47.8	15.0	62.0
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	24.5	* 37	6.8	58.9	19.7	* 42	9.5	56.2
Max Q Clear Time (g_c+I1), s	26.5	39.4	4.9	24.8	20.1	34.3	11.5	58.2
Green Ext Time (p_c), s	0.0	0.0	0.0	16.2	0.0	4.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	97.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	958	207	54	771	680	88	302	38	724	694	244
Future Volume (veh/h)	67	958	207	54	771	680	88	302	38	724	694	244
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	67	958	207	54	771	680	88	302	38	724	694	244
Adj No. of Lanes	1	2	0	2	2	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	85	1022	221	97	1133	507	106	353	44	772	736	625
Arrive On Green	0.05	0.36	0.36	0.03	0.32	0.32	0.06	0.22	0.22	0.23	0.40	0.40
Sat Flow, veh/h	1757	2869	619	3408	3505	1568	1757	1607	202	3408	1845	1568
Grp Volume(v), veh/h	67	585	580	54	771	680	88	0	340	724	694	244
Grp Sat Flow(s),veh/h/ln	1757	1752	1735	1704	1752	1568	1757	0	1809	1704	1845	1568
Q Serve(g_s), s	4.4	37.2	37.4	1.8	22.1	37.4	5.7	0.0	20.9	24.1	41.9	12.8
Cycle Q Clear(g_c), s	4.4	37.2	37.4	1.8	22.1	37.4	5.7	0.0	20.9	24.1	41.9	12.8
Prop In Lane	1.00		0.36	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	85	625	618	97	1133	507	106	0	398	772	736	625
V/C Ratio(X)	0.78	0.94	0.94	0.56	0.68	1.34	0.83	0.00	0.85	0.94	0.94	0.39
Avail Cap(c_a), veh/h	114	640	634	118	1133	507	106	0	516	784	859	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.4	35.9	36.0	55.4	33.9	39.1	53.7	0.0	43.3	43.9	33.5	24.7
Incr Delay (d2), s/veh	15.9	20.7	21.2	4.9	1.4	166.6	39.2	0.0	8.7	18.3	16.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	21.6	21.5	0.9	10.9	39.5	3.9	0.0	11.4	13.3	24.5	5.5
LnGrp Delay(d),s/veh	70.3	56.6	57.2	60.3	35.3	205.7	92.9	0.0	52.0	62.2	49.6	24.9
LnGrp LOS	E	E	E	E	D	F	F		D	E	D	C
Approach Vol, veh/h		1232			1505			428			1662	
Approach Delay, s/veh		57.6			113.2			60.4			51.5	
Approach LOS		E			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	42.3	11.0	51.2	7.3	46.1	31.7	30.5
Change Period (Y+Rc), s	5.5	* 4.9	4.0	* 5.1	4.0	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	7.5	* 37	7.0	* 54	4.0	* 42	26.6	* 33
Max Q Clear Time (g_c+I1), s	6.4	39.4	7.7	43.9	3.8	39.4	26.1	22.9
Green Ext Time (p_c), s	0.0	0.0	0.0	2.2	0.0	1.8	0.1	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	73.1
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	242	542	247	185	278	354	86	2122	93	341	1435	380
Future Volume (veh/h)	242	542	247	185	278	354	86	2122	93	341	1435	380
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	242	542	247	185	278	354	86	2122	93	341	1435	380
Adj No. of Lanes	2	2	1	2	1	2	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	260	915	409	249	471	1131	137	2205	545	355	2072	645
Arrive On Green	0.08	0.26	0.26	0.07	0.26	0.26	0.04	0.35	0.35	0.11	0.42	0.42
Sat Flow, veh/h	3408	3505	1568	3514	1845	3136	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	242	542	247	185	278	354	86	2122	93	341	1435	380
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	7.4	14.1	14.5	5.4	13.8	8.5	2.6	34.6	4.3	10.5	24.7	19.8
Cycle Q Clear(g_c), s	7.4	14.1	14.5	5.4	13.8	8.5	2.6	34.6	4.3	10.5	24.7	19.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	260	915	409	249	471	1131	137	2205	545	355	2072	645
V/C Ratio(X)	0.93	0.59	0.60	0.74	0.59	0.31	0.63	0.96	0.17	0.96	0.69	0.59
Avail Cap(c_a), veh/h	260	971	434	373	564	1288	158	2209	546	355	2072	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	33.8	33.9	47.7	34.2	24.1	49.4	33.3	23.5	46.6	25.1	23.7
Incr Delay (d2), s/veh	36.6	1.1	2.7	1.6	3.2	0.4	3.5	11.5	0.1	37.3	1.6	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	7.0	6.6	2.7	7.4	3.8	1.3	16.8	1.9	6.7	11.6	9.0
LnGrp Delay(d),s/veh	84.7	34.9	36.6	49.3	37.4	24.6	52.9	44.8	23.5	83.9	26.7	26.8
LnGrp LOS	F	C	D	D	D	C	D	D	C	F	C	C
Approach Vol, veh/h		1031			817			2301			2156	
Approach Delay, s/veh		47.0			34.5			44.2			35.8	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	48.9	13.5	32.5	16.5	42.1	12.9	33.1
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	4.9	* 43	8.0	32.0	11.0	* 37	11.1	* 29
Max Q Clear Time (g_c+I1), s	4.6	26.7	9.4	15.8	12.5	36.6	7.4	16.5
Green Ext Time (p_c), s	0.0	15.8	0.0	10.9	0.0	0.1	0.0	9.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	522	1197	887	404	703	121	522	1020	544	42	1727	167
Future Volume (veh/h)	522	1197	887	404	703	121	522	1020	544	42	1727	167
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	522	1197	887	404	703	121	522	1020	544	42	1727	167
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	566	1238	554	281	1349	420	371	1946	606	72	1503	468
Arrive On Green	0.17	0.35	0.35	0.08	0.27	0.27	0.11	0.39	0.39	0.02	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	522	1197	887	404	703	121	522	1020	544	42	1727	167
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	22.6	50.3	53.0	12.5	18.0	9.2	16.5	23.5	49.3	1.8	45.2	12.6
Cycle Q Clear(g_c), s	22.6	50.3	53.0	12.5	18.0	9.2	16.5	23.5	49.3	1.8	45.2	12.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	566	1238	554	281	1349	420	371	1946	606	72	1503	468
V/C Ratio(X)	0.92	0.97	1.60	1.44	0.52	0.29	1.41	0.52	0.90	0.59	1.15	0.36
Avail Cap(c_a), veh/h	720	1238	554	281	1349	420	371	1946	606	88	1503	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.6	47.6	48.5	68.8	46.5	43.3	66.8	35.1	42.9	72.8	52.4	41.0
Incr Delay (d2), s/veh	13.4	18.3	278.9	215.5	1.1	1.3	198.1	0.5	16.9	2.8	75.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	27.4	65.8	14.2	8.4	4.1	17.9	10.9	23.9	0.9	31.2	5.5
LnGrp Delay(d),s/veh	75.0	65.9	327.4	284.3	47.6	44.6	264.9	35.5	59.9	75.6	127.7	42.0
LnGrp LOS	E	E	F	F	D	D	F	D	E	E	F	D
Approach Vol, veh/h		2606			1228			2086			1936	
Approach Delay, s/veh		156.7			125.1			99.3			119.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	51.0	30.4	46.6	8.7	64.3	18.0	59.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	16.5	* 45	31.7	* 34	3.9	* 58	12.5	53.0
Max Q Clear Time (g_c+I1), s	18.5	47.2	24.6	20.0	3.8	51.3	14.5	55.0
Green Ext Time (p_c), s	0.0	0.0	0.3	13.8	0.0	6.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	127.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	598	1565	562	33	777	261	352	1270	47	815	1870	234
Future Volume (veh/h)	598	1565	562	33	777	261	352	1270	47	815	1870	234
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	598	1565	562	33	777	261	352	1270	47	815	1870	234
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	561	1849	576	58	1106	344	340	1183	368	758	1801	561
Arrive On Green	0.16	0.37	0.37	0.02	0.22	0.22	0.10	0.24	0.24	0.22	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	598	1565	562	33	777	261	352	1270	47	815	1870	234
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	24.7	42.8	53.1	1.4	21.4	23.4	15.1	35.6	3.6	33.7	54.2	17.0
Cycle Q Clear(g_c), s	24.7	42.8	53.1	1.4	21.4	23.4	15.1	35.6	3.6	33.7	54.2	17.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	561	1849	576	58	1106	344	340	1183	368	758	1801	561
V/C Ratio(X)	1.07	0.85	0.98	0.56	0.70	0.76	1.04	1.07	0.13	1.08	1.04	0.42
Avail Cap(c_a), veh/h	561	1849	576	70	1141	355	340	1183	368	758	1801	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.7	43.6	46.8	73.2	54.0	54.8	67.5	57.2	45.0	58.2	47.9	36.1
Incr Delay (d2), s/veh	56.8	3.7	31.3	3.1	1.6	7.8	58.6	48.3	0.1	54.8	31.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	20.5	27.9	0.7	10.1	10.9	9.8	21.6	1.5	21.5	30.2	7.3
LnGrp Delay(d),s/veh	119.5	47.3	78.1	76.3	55.6	62.6	126.1	105.5	45.1	113.0	79.8	36.2
LnGrp LOS	F	D	E	E	E	E	F	F	D	F	F	D
Approach Vol, veh/h		2725			1071			1669			2919	
Approach Delay, s/veh		69.5			57.9			108.1			85.5	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	60.2	30.2	39.1	39.2	41.6	8.1	61.2
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	15.1	53.6	24.7	* 34	33.7	* 36	3.1	* 55
Max Q Clear Time (g_c+I1), s	17.1	56.2	26.7	25.4	35.7	37.6	3.4	55.1
Green Ext Time (p_c), s	0.0	0.0	0.0	6.2	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	81.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	1105	333	79	816	520	202	836	78	960	1850	409
Future Volume (veh/h)	274	1105	333	79	816	520	202	836	78	960	1850	409
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	274	1105	333	79	816	520	202	836	78	960	1850	409
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	332	1071	323	110	1034	322	238	1016	316	954	2074	646
Arrive On Green	0.10	0.28	0.28	0.03	0.22	0.22	0.07	0.20	0.20	0.28	0.42	0.42
Sat Flow, veh/h	3408	3840	1157	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	274	966	472	79	816	520	202	836	78	960	1850	409
Grp Sat Flow(s),veh/h/ln	1704	1679	1640	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.6	30.5	30.5	2.6	17.6	23.5	6.5	17.5	4.6	30.9	37.7	22.8
Cycle Q Clear(g_c), s	8.6	30.5	30.5	2.6	17.6	23.5	6.5	17.5	4.6	30.9	37.7	22.8
Prop In Lane	1.00		0.71	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	332	936	457	110	1034	322	238	1016	316	954	2074	646
V/C Ratio(X)	0.83	1.03	1.03	0.72	0.79	1.62	0.85	0.82	0.25	1.01	0.89	0.63
Avail Cap(c_a), veh/h	358	936	457	110	1034	322	238	1044	325	954	2102	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	39.4	39.4	52.3	40.6	42.9	50.3	41.7	36.5	39.2	29.7	25.3
Incr Delay (d2), s/veh	12.5	37.9	50.5	17.7	3.8	290.9	23.2	4.9	0.1	30.8	5.1	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	19.0	20.1	1.5	8.1	35.7	3.8	8.5	2.0	18.4	18.1	10.0
LnGrp Delay(d),s/veh	61.0	77.3	90.0	70.0	44.4	333.8	73.4	46.6	36.7	70.0	34.7	26.8
LnGrp LOS	E	F	F	E	D	F	E	D	D	F	C	C
Approach Vol, veh/h		1712			1415			1116			3219	
Approach Delay, s/veh		78.2			152.2			50.7			44.3	
Approach LOS		E			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	51.0	16.2	29.0	36.4	27.8	9.2	36.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	7.7	46.1	11.5	22.7	30.9	22.9	3.7	30.5
Max Q Clear Time (g_c+I1), s	8.5	39.7	10.6	25.5	32.9	19.5	4.6	32.5
Green Ext Time (p_c), s	0.0	4.8	0.0	0.0	0.0	2.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	73.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	568	118	210	214	196	66	683	266	383	1356	62
Future Volume (veh/h)	0	568	118	210	214	196	66	683	266	383	1356	62
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1900	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	0	568	118	210	214	196	66	683	266	383	1356	62
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	4	4	4	4	4	4
Cap, veh/h	0	419	87	176	179	309	55	821	367	410	1111	51
Arrive On Green	0.00	0.30	0.30	0.20	0.20	0.20	0.03	0.24	0.24	0.12	0.33	0.33
Sat Flow, veh/h	0	1414	294	892	909	1568	1740	3471	1553	3375	3381	154
Grp Volume(v), veh/h	0	0	686	424	0	196	66	683	266	383	695	723
Grp Sat Flow(s),veh/h/ln	0	0	1707	1800	0	1568	1740	1736	1553	1688	1736	1800
Q Serve(g_s), s	0.0	0.0	41.5	27.6	0.0	16.1	4.4	26.2	22.1	15.7	46.0	46.0
Cycle Q Clear(g_c), s	0.0	0.0	41.5	27.6	0.0	16.1	4.4	26.2	22.1	15.7	46.0	46.0
Prop In Lane	0.00		0.17	0.50		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	0	0	506	355	0	309	55	821	367	410	570	591
V/C Ratio(X)	0.00	0.00	1.36	1.19	0.00	0.63	1.21	0.83	0.72	0.93	1.22	1.22
Avail Cap(c_a), veh/h	0	0	506	355	0	309	55	821	367	410	570	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	49.3	56.2	0.0	51.6	67.8	50.8	49.2	60.9	47.0	47.0
Incr Delay (d2), s/veh	0.0	0.0	172.5	112.0	0.0	4.2	188.1	7.3	6.9	28.5	113.7	114.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	43.8	24.7	0.0	7.3	5.0	13.4	10.2	9.0	40.0	41.7
LnGrp Delay(d),s/veh	0.0	0.0	221.7	168.2	0.0	55.8	256.0	58.1	56.2	89.5	160.7	161.8
LnGrp LOS			F	F		E	F	E	E	F	F	F
Approach Vol, veh/h		686			620			1015			1801	
Approach Delay, s/veh		221.7			132.7			70.5			146.0	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	51.0		33.0	21.9	38.1		47.0
Change Period (Y+Rc), s	* 4.6	5.0		* 5.4	* 4.9	5.0		5.5
Max Green Setting (Gmax), s	* 4.4	46.0		* 28	* 17	33.1		41.5
Max Q Clear Time (g_c+I1), s	6.4	48.0		29.6	17.7	28.2		43.5
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	4.4		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		138.0
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	826	6	259	563	173	1	747	493	343	1116	204
Future Volume (veh/h)	103	826	6	259	563	173	1	747	493	343	1116	204
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	103	826	6	259	563	173	1	747	493	343	1116	204
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	158	963	431	238	1044	595	4	1120	501	282	1408	704
Arrive On Green	0.05	0.28	0.28	0.07	0.31	0.31	0.00	0.32	0.32	0.08	0.41	0.41
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3375	3471	1553	3375	3471	1553
Grp Volume(v), veh/h	103	826	6	259	563	173	1	747	493	343	1116	204
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1688	1736	1553	1688	1736	1553
Q Serve(g_s), s	2.6	19.2	0.2	6.0	11.5	6.5	0.0	15.5	26.4	7.0	23.6	6.9
Cycle Q Clear(g_c), s	2.6	19.2	0.2	6.0	11.5	6.5	0.0	15.5	26.4	7.0	23.6	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	963	431	238	1044	595	4	1120	501	282	1408	704
V/C Ratio(X)	0.65	0.86	0.01	1.09	0.54	0.29	0.25	0.67	0.98	1.21	0.79	0.29
Avail Cap(c_a), veh/h	158	1018	455	238	1099	619	121	1120	501	282	1408	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	28.4	21.6	38.8	24.1	17.5	41.8	24.4	28.1	38.3	21.8	14.4
Incr Delay (d2), s/veh	7.2	6.7	0.0	84.6	0.2	0.1	11.4	1.2	35.7	124.4	2.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	9.8	0.1	5.5	5.4	2.8	0.0	7.6	16.2	8.1	11.7	2.9
LnGrp Delay(d),s/veh	46.4	35.1	21.6	123.4	24.3	17.6	53.2	25.7	63.9	162.8	24.7	14.5
LnGrp LOS	D	D	C	F	C	B	D	C	E	F	C	B
Approach Vol, veh/h		935			995			1241			1663	
Approach Delay, s/veh		36.2			48.9			40.9			51.9	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	29.7	4.1	39.9	8.0	31.7	11.0	33.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	25.0	3.0	31.0	4.0	27.0	7.0	27.0
Max Q Clear Time (g_c+I1), s	8.0	21.2	2.0	25.6	4.6	13.5	9.0	28.4
Green Ext Time (p_c), s	0.0	2.4	0.0	4.3	0.0	6.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.4
HCM 2010 LOS	D

Notes

User approved changes to right turn type.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	729	3	15	503	910	476
Future Volume (veh/h)	729	3	15	503	910	476
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	729	3	15	503	910	476
Adj No. of Lanes	0	0	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	745	3	18	1640	935	482
Arrive On Green	0.46	0.46	0.01	0.47	0.42	0.42
Sat Flow, veh/h	1635	7	1740	3563	2310	1142
Grp Volume(v), veh/h	733	0	15	503	709	677
Grp Sat Flow(s),veh/h/ln	1644	0	1740	1736	1736	1625
Q Serve(g_s), s	59.0	0.0	1.2	12.0	53.8	55.7
Cycle Q Clear(g_c), s	59.0	0.0	1.2	12.0	53.8	55.7
Prop In Lane	0.99	0.00	1.00			0.70
Lane Grp Cap(c), veh/h	749	0	18	1640	732	685
V/C Ratio(X)	0.98	0.00	0.86	0.31	0.97	0.99
Avail Cap(c_a), veh/h	757	0	77	1770	732	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	66.6	21.9	38.1	38.6
Incr Delay (d2), s/veh	27.3	0.0	32.5	0.0	25.5	31.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.4	0.0	0.7	5.7	31.0	31.0
LnGrp Delay(d),s/veh	63.3	0.0	99.0	22.0	63.6	69.9
LnGrp LOS	E		F	C	E	E
Approach Vol, veh/h	733			518	1386	
Approach Delay, s/veh	63.3			24.2	66.7	
Approach LOS	E			C	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.9	62.5		65.4		69.4		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.0	* 57		62.0		* 69		
Max Q Clear Time (g_c+I1), s	3.2	57.7		61.0		14.0		
Green Ext Time (p_c), s	0.0	0.0		0.4		6.3		

Intersection Summary	
HCM 2010 Ctrl Delay	57.4
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	30	26	23	24	28	30	1442	2	32	1162	128
Future Volume (veh/h)	92	30	26	23	24	28	30	1442	2	32	1162	128
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1583	1845	1845	1845	1845	1810	1845	1845	1845
Adj Flow Rate, veh/h	92	30	26	23	24	28	30	1442	2	32	1162	128
Adj No. of Lanes	2	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	20	3	3	3	3	5	3	3	3
Cap, veh/h	178	167	142	32	109	93	89	2081	913	48	2086	933
Arrive On Green	0.05	0.09	0.09	0.02	0.06	0.06	0.03	0.59	0.59	0.03	0.60	0.60
Sat Flow, veh/h	3408	1845	1568	1508	1845	1568	3408	3505	1538	1757	3505	1568
Grp Volume(v), veh/h	92	30	26	23	24	28	30	1442	2	32	1162	128
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1508	1845	1568	1704	1752	1538	1757	1752	1568
Q Serve(g_s), s	1.6	0.9	0.9	0.9	0.7	1.0	0.5	17.0	0.0	1.1	12.0	2.2
Cycle Q Clear(g_c), s	1.6	0.9	0.9	0.9	0.7	1.0	0.5	17.0	0.0	1.1	12.0	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	167	142	32	109	93	89	2081	913	48	2086	933
V/C Ratio(X)	0.52	0.18	0.18	0.72	0.22	0.30	0.34	0.69	0.00	0.66	0.56	0.14
Avail Cap(c_a), veh/h	285	524	445	101	493	419	228	2224	976	147	2282	1021
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	25.2	25.2	29.1	26.9	27.0	28.6	8.4	4.9	28.8	7.3	5.3
Incr Delay (d2), s/veh	2.3	0.5	0.6	25.7	1.0	1.8	2.2	0.9	0.0	14.3	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.5	0.4	0.6	0.4	0.5	0.3	8.3	0.0	0.7	5.7	1.0
LnGrp Delay(d),s/veh	29.9	25.7	25.8	54.9	27.9	28.8	30.8	9.3	5.0	43.1	7.6	5.4
LnGrp LOS	C	C	C	D	C	C	C	A	A	D	A	A
Approach Vol, veh/h		148			75			1474			1322	
Approach Delay, s/veh		28.4			36.5			9.7			8.2	
Approach LOS		C			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	39.6	5.3	9.4	5.6	39.6	7.1	7.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	38.0	4.0	17.0	4.0	39.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	3.1	19.0	2.9	2.9	2.5	14.0	3.6	3.0
Green Ext Time (p_c), s	0.0	16.6	0.0	0.3	0.0	21.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	918	688	4	76	370	108	4	922	88	78	849	586
Future Volume (veh/h)	918	688	4	76	370	108	4	922	88	78	849	586
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	918	688	4	76	370	108	4	922	88	78	849	586
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	931	1566	701	123	736	329	11	888	397	96	1021	457
Arrive On Green	0.28	0.46	0.46	0.04	0.22	0.22	0.00	0.26	0.26	0.03	0.30	0.30
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3343	3438	1538	3343	3438	1538
Grp Volume(v), veh/h	918	688	4	76	370	108	4	922	88	78	849	586
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1672	1719	1538	1672	1719	1538
Q Serve(g_s), s	28.8	14.3	0.1	2.4	10.0	6.3	0.1	27.0	4.7	2.4	24.1	31.1
Cycle Q Clear(g_c), s	28.8	14.3	0.1	2.4	10.0	6.3	0.1	27.0	4.7	2.4	24.1	31.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	931	1566	701	123	736	329	11	888	397	96	1021	457
V/C Ratio(X)	0.99	0.44	0.01	0.62	0.50	0.33	0.38	1.04	0.22	0.81	0.83	1.28
Avail Cap(c_a), veh/h	931	1674	749	190	912	408	96	888	397	96	1021	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	19.1	15.3	49.6	36.1	34.6	52.0	38.8	30.5	50.5	34.3	36.8
Incr Delay (d2), s/veh	26.0	0.4	0.0	1.9	1.1	1.2	8.2	40.7	0.3	39.4	5.9	143.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.5	6.8	0.1	1.1	4.8	2.8	0.1	17.7	2.0	1.6	12.3	31.3
LnGrp Delay(d),s/veh	63.4	19.5	15.3	51.5	37.2	35.8	60.2	79.5	30.8	89.9	40.2	179.8
LnGrp LOS	E	B	B	D	D	D	E	F	C	F	D	F
Approach Vol, veh/h		1610			554			1014			1513	
Approach Delay, s/veh		44.5			38.9			75.2			96.8	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.0	28.6	4.9	37.1	8.5	54.1	9.0	33.0
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	6.0	6.0
Max Green Setting (Gmax), s	29.4	28.0	3.0	28.4	6.0	51.4	3.0	27.0
Max Q Clear Time (g_c+I1), s	30.8	12.0	2.1	33.1	4.4	16.3	4.4	29.0
Green Ext Time (p_c), s	0.0	10.6	0.0	0.0	0.0	17.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.4
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	560	41	467	760	92	89	543	273	123	905	217
Future Volume (veh/h)	134	560	41	467	760	92	89	543	273	123	905	217
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	134	560	41	467	760	92	89	543	273	123	905	217
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	167	601	44	499	1299	581	100	931	417	153	1038	464
Arrive On Green	0.10	0.18	0.18	0.28	0.37	0.37	0.06	0.27	0.27	0.09	0.30	0.30
Sat Flow, veh/h	1757	3312	242	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	134	296	305	467	760	92	89	543	273	123	905	217
Grp Sat Flow(s),veh/h/ln	1757	1752	1802	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	6.6	14.7	14.7	22.9	15.4	3.5	4.4	11.9	13.7	6.1	21.6	10.0
Cycle Q Clear(g_c), s	6.6	14.7	14.7	22.9	15.4	3.5	4.4	11.9	13.7	6.1	21.6	10.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	318	327	499	1299	581	100	931	417	153	1038	464
V/C Ratio(X)	0.80	0.93	0.93	0.93	0.59	0.16	0.89	0.58	0.66	0.80	0.87	0.47
Avail Cap(c_a), veh/h	259	318	327	518	1299	581	100	931	417	179	1073	480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	35.6	35.6	30.8	22.3	18.6	41.3	28.1	28.8	39.5	29.4	25.4
Incr Delay (d2), s/veh	9.6	32.9	33.0	24.1	0.7	0.1	57.5	0.9	3.7	19.9	7.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	10.0	10.3	14.4	7.5	1.5	3.7	5.9	6.3	3.8	11.6	4.4
LnGrp Delay(d),s/veh	48.7	68.5	68.6	54.8	23.0	18.7	98.8	29.1	32.5	59.4	37.3	26.1
LnGrp LOS	D	E	E	D	C	B	F	C	C	E	D	C
Approach Vol, veh/h		735			1319			905			1245	
Approach Delay, s/veh		64.9			34.0			37.0			37.5	
Approach LOS		E			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	27.4	29.1	20.0	9.0	30.1	12.4	36.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	23.0	26.0	16.0	5.0	27.0	13.0	29.0
Max Q Clear Time (g_c+I1), s	8.1	15.7	24.9	16.7	6.4	23.6	8.6	17.4
Green Ext Time (p_c), s	0.0	5.7	0.2	0.0	0.0	2.5	0.1	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	41.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	578	173	105	572	143	243	821	82	157	1218	209
Future Volume (veh/h)	2	578	173	105	572	143	243	821	82	157	1218	209
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	2	578	173	105	572	143	243	821	82	157	1218	209
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	4	651	291	118	697	174	252	1462	146	192	1258	214
Arrive On Green	0.00	0.19	0.19	0.07	0.25	0.25	0.15	0.46	0.46	0.11	0.42	0.42
Sat Flow, veh/h	1757	3505	1568	1757	2781	693	1740	3188	318	1740	2967	506
Grp Volume(v), veh/h	2	578	173	105	360	355	243	447	456	157	709	718
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1722	1740	1736	1771	1740	1736	1738
Q Serve(g_s), s	0.1	14.4	9.1	5.3	17.4	17.5	12.4	16.8	16.8	7.9	35.7	36.3
Cycle Q Clear(g_c), s	0.1	14.4	9.1	5.3	17.4	17.5	12.4	16.8	16.8	7.9	35.7	36.3
Prop In Lane	1.00		1.00	1.00		0.40	1.00		0.18	1.00		0.29
Lane Grp Cap(c), veh/h	4	651	291	118	439	431	252	796	812	192	736	737
V/C Ratio(X)	0.53	0.89	0.59	0.89	0.82	0.82	0.96	0.56	0.56	0.82	0.96	0.97
Avail Cap(c_a), veh/h	78	665	297	118	439	431	252	796	812	291	736	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	35.6	33.4	41.5	31.7	31.7	38.1	17.7	17.7	39.0	25.2	25.3
Incr Delay (d2), s/veh	81.7	13.7	3.1	51.4	11.7	12.2	46.3	0.9	0.9	10.4	24.6	26.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	8.2	4.1	4.2	9.8	9.8	9.2	8.3	8.4	4.4	22.0	22.8
LnGrp Delay(d),s/veh	126.4	49.3	36.5	92.9	43.4	43.9	84.4	18.6	18.6	49.5	49.7	52.2
LnGrp LOS	F	D	D	F	D	D	F	B	B	D	D	D
Approach Vol, veh/h		753			820			1146			1584	
Approach Delay, s/veh		46.6			50.0			32.5			50.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	45.1	10.0	20.6	17.0	42.0	4.2	26.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	36.0	6.0	17.0	13.0	38.0	4.0	19.0
Max Q Clear Time (g_c+I1), s	9.9	18.8	7.3	16.4	14.4	38.3	2.1	19.5
Green Ext Time (p_c), s	0.2	13.6	0.0	0.2	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	1120	374	118	1287	152	183	784	74	63	1357	163
Future Volume (veh/h)	202	1120	374	118	1287	152	183	784	74	63	1357	163
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	202	1120	374	118	1287	152	183	784	74	63	1357	163
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	206	1110	371	127	1270	395	190	1396	132	81	1294	579
Arrive On Green	0.12	0.30	0.30	0.07	0.25	0.25	0.11	0.44	0.44	0.05	0.37	0.37
Sat Flow, veh/h	1740	3699	1235	1740	4988	1553	1740	3207	303	1740	3471	1553
Grp Volume(v), veh/h	202	1007	487	118	1287	152	183	424	434	63	1357	163
Grp Sat Flow(s),veh/h/ln	1740	1663	1609	1740	1663	1553	1740	1736	1774	1740	1736	1553
Q Serve(g_s), s	12.7	33.0	33.0	7.4	28.0	8.9	11.5	20.1	20.1	3.9	41.0	8.1
Cycle Q Clear(g_c), s	12.7	33.0	33.0	7.4	28.0	8.9	11.5	20.1	20.1	3.9	41.0	8.1
Prop In Lane	1.00		0.77	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	206	998	483	127	1270	395	190	756	772	81	1294	579
V/C Ratio(X)	0.98	1.01	1.01	0.93	1.01	0.38	0.96	0.56	0.56	0.78	1.05	0.28
Avail Cap(c_a), veh/h	206	998	483	127	1270	395	190	756	772	142	1294	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	38.5	38.5	50.7	41.0	33.9	48.8	23.2	23.2	51.9	34.5	24.2
Incr Delay (d2), s/veh	57.5	30.8	43.3	59.4	28.7	0.6	54.8	0.9	0.9	15.0	38.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	19.4	20.4	5.7	16.2	3.9	8.4	9.7	10.0	2.2	26.6	3.5
LnGrp Delay(d),s/veh	105.9	69.3	81.9	110.2	69.7	34.5	103.5	24.1	24.1	66.9	73.4	24.4
LnGrp LOS	F	F	F	F	F	C	F	C	C	E	F	C
Approach Vol, veh/h		1696			1557			1041			1583	
Approach Delay, s/veh		77.3			69.3			38.1			68.1	
Approach LOS		E			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	51.9	12.0	37.0	16.0	45.0	17.0	32.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	44.0	8.0	33.0	12.0	41.0	13.0	28.0
Max Q Clear Time (g_c+I1), s	5.9	22.1	9.4	35.0	13.5	43.0	14.7	30.0
Green Ext Time (p_c), s	0.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	1238	143	284	1064	19	285	275	101	262	1091	89
Future Volume (veh/h)	169	1238	143	284	1064	19	285	275	101	262	1091	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	169	1238	143	284	1064	19	285	275	101	262	1091	89
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	192	1031	119	236	1229	550	238	900	403	289	1001	448
Arrive On Green	0.11	0.33	0.33	0.14	0.35	0.35	0.14	0.26	0.26	0.16	0.29	0.29
Sat Flow, veh/h	1740	3138	361	1740	3471	1553	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	169	683	698	284	1064	19	285	275	101	262	1091	89
Grp Sat Flow(s),veh/h/ln	1740	1736	1763	1740	1736	1553	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	13.4	46.0	46.0	19.0	40.0	1.1	19.0	8.9	7.2	20.5	40.0	6.0
Cycle Q Clear(g_c), s	13.4	46.0	46.0	19.0	40.0	1.1	19.0	8.9	7.2	20.5	40.0	6.0
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	570	579	236	1229	550	238	900	403	289	1001	448
V/C Ratio(X)	0.88	1.20	1.20	1.20	0.87	0.03	1.20	0.31	0.25	0.91	1.09	0.20
Avail Cap(c_a), veh/h	211	570	579	236	1229	550	238	900	403	402	1001	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.4	47.0	47.0	60.5	42.1	29.6	60.5	41.9	41.3	57.4	50.0	37.9
Incr Delay (d2), s/veh	30.3	105.1	107.9	124.4	6.7	0.0	121.4	0.2	0.3	19.0	56.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	38.7	39.7	17.3	20.4	0.5	17.2	4.3	3.2	11.5	27.1	2.6
LnGrp Delay(d),s/veh	91.7	152.1	154.9	184.9	48.9	29.6	181.9	42.1	41.6	76.4	106.0	38.1
LnGrp LOS	F	F	F	F	D	C	F	D	D	E	F	D
Approach Vol, veh/h		1550			1367			661			1442	
Approach Delay, s/veh		146.7			76.9			102.3			96.4	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	40.0	23.0	50.0	23.0	44.0	19.4	53.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	32.0	27.0	19.0	46.0	19.0	40.0	17.0	48.0
Max Q Clear Time (g_c+I1), s	22.5	10.9	21.0	48.0	21.0	42.0	15.4	42.0
Green Ext Time (p_c), s	0.5	9.3	0.0	0.0	0.0	0.0	0.1	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	107.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	593	39	82	546	52	56	879	103	169	1385	340
Future Volume (veh/h)	42	593	39	82	546	52	56	879	103	169	1385	340
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	42	593	39	82	546	52	56	879	103	169	1385	340
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	111	1020	317	161	1094	341	133	1321	155	261	1596	714
Arrive On Green	0.03	0.20	0.20	0.05	0.22	0.22	0.04	0.42	0.42	0.08	0.46	0.46
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	3131	367	3375	3471	1553
Grp Volume(v), veh/h	42	593	39	82	546	52	56	487	495	169	1385	340
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1736	1762	1688	1736	1553
Q Serve(g_s), s	0.8	6.9	1.3	1.5	6.2	1.7	1.0	14.5	14.5	3.1	23.1	9.7
Cycle Q Clear(g_c), s	0.8	6.9	1.3	1.5	6.2	1.7	1.0	14.5	14.5	3.1	23.1	9.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	111	1020	317	161	1094	341	133	732	743	261	1596	714
V/C Ratio(X)	0.38	0.58	0.12	0.51	0.50	0.15	0.42	0.67	0.67	0.65	0.87	0.48
Avail Cap(c_a), veh/h	210	1240	386	210	1240	386	210	732	743	367	1618	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	23.1	20.9	29.9	22.0	20.3	30.2	14.9	14.9	28.8	15.6	12.0
Incr Delay (d2), s/veh	2.1	0.5	0.2	2.5	0.4	0.2	2.1	2.3	2.3	2.7	5.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.2	0.6	0.8	2.9	0.8	0.5	7.4	7.5	1.6	12.1	4.2
LnGrp Delay(d),s/veh	32.6	23.6	21.1	32.4	22.4	20.5	32.3	17.2	17.2	31.6	20.9	12.5
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		674			680			1038			1894	
Approach Delay, s/veh		24.0			23.4			18.0			20.3	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	31.1	7.1	17.2	6.5	33.6	6.1	18.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	27.0	4.0	16.0	4.0	30.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	5.1	16.5	3.5	8.9	3.0	25.1	2.8	8.2
Green Ext Time (p_c), s	0.1	9.4	0.0	4.2	0.0	4.5	0.0	4.6

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	392	56	35	373	3	72	12	14	20	119	87
Future Volume (veh/h)	36	392	56	35	373	3	72	12	14	20	119	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1827	1827	1827	1845	1845	1845
Adj Flow Rate, veh/h	36	392	56	35	373	3	72	12	14	20	119	87
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	3	3	3
Cap, veh/h	59	850	121	58	980	8	102	333	283	36	266	226
Arrive On Green	0.03	0.28	0.28	0.03	0.28	0.28	0.06	0.18	0.18	0.02	0.14	0.14
Sat Flow, veh/h	1740	3053	433	1740	3529	28	1740	1827	1553	1757	1845	1568
Grp Volume(v), veh/h	36	222	226	35	183	193	72	12	14	20	119	87
Grp Sat Flow(s),veh/h/ln	1740	1736	1750	1740	1736	1822	1740	1827	1553	1757	1845	1568
Q Serve(g_s), s	0.7	3.5	3.5	0.7	2.8	2.8	1.3	0.2	0.2	0.4	1.9	1.7
Cycle Q Clear(g_c), s	0.7	3.5	3.5	0.7	2.8	2.8	1.3	0.2	0.2	0.4	1.9	1.7
Prop In Lane	1.00		0.25	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	483	487	58	482	506	102	333	283	36	266	226
V/C Ratio(X)	0.61	0.46	0.46	0.60	0.38	0.38	0.71	0.04	0.05	0.56	0.45	0.39
Avail Cap(c_a), veh/h	264	843	850	264	843	885	317	1054	896	213	952	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.7	9.8	9.8	15.7	9.6	9.6	15.2	11.1	11.1	16.0	12.9	12.8
Incr Delay (d2), s/veh	9.6	0.7	0.7	9.7	0.5	0.5	8.6	0.0	0.1	13.0	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.8	1.8	0.5	1.4	1.5	0.9	0.1	0.1	0.3	1.1	0.8
LnGrp Delay(d),s/veh	25.3	10.5	10.5	25.4	10.1	10.1	23.8	11.1	11.2	29.0	14.1	13.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		484			411			98			226	
Approach Delay, s/veh		11.6			11.4			20.5			15.3	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	10.0	5.1	13.2	5.9	8.7	5.1	13.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	19.0	5.0	16.0	6.0	17.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	2.4	2.2	2.7	5.5	3.3	3.9	2.7	4.8
Green Ext Time (p_c), s	0.0	0.9	0.0	3.6	0.0	0.8	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	6	255	50	9	1	117	1552	55	1	1893	0
Future Volume (veh/h)	32	6	255	50	9	1	117	1552	55	1	1893	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	32	6	255	50	9	1	117	1552	55	1	1893	0
Adj No. of Lanes	0	1	0	1	1	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	24	5	195	83	77	9	126	1822	815	209	1989	0
Arrive On Green	0.15	0.15	0.15	0.05	0.05	0.05	0.07	0.54	0.54	0.12	0.58	0.00
Sat Flow, veh/h	166	31	1321	1757	1631	181	1707	3406	1524	1707	3495	0
Grp Volume(v), veh/h	293	0	0	50	0	10	117	1552	55	1	1893	0
Grp Sat Flow(s),veh/h/ln	1518	0	0	1757	0	1813	1707	1703	1524	1707	1703	0
Q Serve(g_s), s	16.0	0.0	0.0	3.0	0.0	0.6	7.4	42.2	1.9	0.1	56.5	0.0
Cycle Q Clear(g_c), s	16.0	0.0	0.0	3.0	0.0	0.6	7.4	42.2	1.9	0.1	56.5	0.0
Prop In Lane	0.11		0.87	1.00		0.10	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	224	0	0	83	0	85	126	1822	815	209	1989	0
V/C Ratio(X)	1.31	0.00	0.00	0.60	0.00	0.12	0.93	0.85	0.07	0.00	0.95	0.00
Avail Cap(c_a), veh/h	224	0	0	259	0	268	126	2136	956	209	2011	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.2	0.0	0.0	50.7	0.0	49.5	49.9	21.5	12.2	41.7	21.1	0.0
Incr Delay (d2), s/veh	166.9	0.0	0.0	6.9	0.0	0.6	58.5	3.1	0.0	0.0	10.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.0	0.0	0.0	1.6	0.0	0.3	5.5	20.4	0.8	0.0	29.3	0.0
LnGrp Delay(d),s/veh	213.1	0.0	0.0	57.6	0.0	50.1	108.5	24.6	12.2	41.8	32.0	0.0
LnGrp LOS	F			E		D	F	C	B	D	C	
Approach Vol, veh/h		293			60			1724			1894	
Approach Delay, s/veh		213.1			56.3			29.9			32.0	
Approach LOS		F			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.3	62.0		20.0	12.0	67.3		9.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	68.0		16.0	8.0	64.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	44.2		18.0	9.4	58.5		5.0
Green Ext Time (p_c), s	1.8	13.8		0.0	0.0	4.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	44.8
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	358	47	22	1294	1774	432
Future Volume (veh/h)	358	47	22	1294	1774	432
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	358	47	22	1294	1774	432
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	361	322	33	2465	1802	422
Arrive On Green	0.21	0.21	0.02	0.70	0.64	0.64
Sat Flow, veh/h	1757	1568	1757	3597	2913	660
Grp Volume(v), veh/h	358	47	22	1294	1075	1131
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1728
Q Serve(g_s), s	17.8	2.2	1.1	15.2	50.2	56.0
Cycle Q Clear(g_c), s	17.8	2.2	1.1	15.2	50.2	56.0
Prop In Lane	1.00	1.00	1.00			0.38
Lane Grp Cap(c), veh/h	361	322	33	2465	1120	1104
V/C Ratio(X)	0.99	0.15	0.66	0.52	0.96	1.02
Avail Cap(c_a), veh/h	361	322	80	2559	1120	1104
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	28.5	42.7	6.1	14.8	15.8
Incr Delay (d2), s/veh	45.2	0.2	20.2	0.2	18.1	33.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	2.1	0.7	7.3	29.5	36.7
LnGrp Delay(d),s/veh	80.0	28.7	62.9	6.3	32.8	49.4
LnGrp LOS	F	C	E	A	C	F
Approach Vol, veh/h	405			1316	2206	
Approach Delay, s/veh	74.1			7.2	41.3	
Approach LOS	E			A	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		65.7		22.0	5.7	60.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		64.0		18.0	4.0	56.0		
Max Q Clear Time (g_c+I1), s		17.2		19.8	3.1	58.0		
Green Ext Time (p_c), s		43.6		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	33.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	16	40	140	4	221	50	1256	191	641	1341	9
Future Volume (veh/h)	4	16	40	140	4	221	50	1256	191	641	1341	9
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	4	16	40	140	4	221	50	1256	191	641	1341	9
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	7	39	98	132	4	240	64	1190	180	600	2480	17
Arrive On Green	0.00	0.08	0.08	0.08	0.16	0.16	0.04	0.39	0.39	0.34	0.69	0.69
Sat Flow, veh/h	1757	468	1170	1757	28	1544	1757	3054	462	1757	3569	24
Grp Volume(v), veh/h	4	0	56	140	0	225	50	717	730	641	658	692
Grp Sat Flow(s),veh/h/ln	1757	0	1638	1757	0	1572	1757	1752	1763	1757	1752	1840
Q Serve(g_s), s	0.3	0.0	4.7	11.0	0.0	20.6	4.1	57.0	57.0	50.0	26.9	26.9
Cycle Q Clear(g_c), s	0.3	0.0	4.7	11.0	0.0	20.6	4.1	57.0	57.0	50.0	26.9	26.9
Prop In Lane	1.00		0.71	1.00		0.98	1.00		0.26	1.00		0.01
Lane Grp Cap(c), veh/h	7	0	138	132	0	244	64	683	687	600	1218	1279
V/C Ratio(X)	0.56	0.00	0.41	1.06	0.00	0.92	0.78	1.05	1.06	1.07	0.54	0.54
Avail Cap(c_a), veh/h	48	0	179	132	0	247	108	683	687	600	1218	1279
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.7	0.0	63.5	67.7	0.0	60.9	69.9	44.7	44.7	48.2	10.9	10.9
Incr Delay (d2), s/veh	53.2	0.0	1.9	95.2	0.0	36.7	18.1	48.6	52.0	56.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.2	8.8	0.0	11.5	2.3	36.7	37.6	33.5	13.0	13.8
LnGrp Delay(d),s/veh	125.9	0.0	65.5	163.0	0.0	97.6	88.0	93.2	96.6	104.3	11.4	11.4
LnGrp LOS	F		E	F		F	F	F	F	F	B	B
Approach Vol, veh/h		60			365			1497			1991	
Approach Delay, s/veh		69.5			122.7			94.7			41.3	
Approach LOS		E			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	54.0	61.0	15.0	16.3	9.3	105.7	4.6	26.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	50.0	57.0	11.0	16.0	9.0	98.0	4.0	23.0
Max Q Clear Time (g_c+I1), s	52.0	59.0	13.0	6.7	6.1	28.9	2.3	22.6
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	45.8	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	69.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	314	12	14	1	6	4	10	1107	0	3	1239	346
Future Volume (veh/h)	314	12	14	1	6	4	10	1107	0	3	1239	346
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	314	12	14	1	6	4	10	1107	0	3	1239	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	369	14	341	2	10	7	18	1834	0	6	1809	809
Arrive On Green	0.22	0.22	0.22	0.01	0.01	0.01	0.01	0.52	0.00	0.00	0.52	0.00
Sat Flow, veh/h	1695	65	1568	157	941	628	1757	3597	0	1757	3505	1568
Grp Volume(v), veh/h	326	0	14	11	0	0	10	1107	0	3	1239	0
Grp Sat Flow(s),veh/h/ln	1760	0	1568	1726	0	0	1757	1752	0	1757	1752	1568
Q Serve(g_s), s	11.6	0.0	0.5	0.4	0.0	0.0	0.4	14.4	0.0	0.1	17.3	0.0
Cycle Q Clear(g_c), s	11.6	0.0	0.5	0.4	0.0	0.0	0.4	14.4	0.0	0.1	17.3	0.0
Prop In Lane	0.96		1.00	0.09		0.36	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	383	0	341	19	0	0	18	1834	0	6	1809	809
V/C Ratio(X)	0.85	0.00	0.04	0.58	0.00	0.00	0.56	0.60	0.00	0.53	0.68	0.00
Avail Cap(c_a), veh/h	458	0	408	423	0	0	108	1984	0	108	1984	888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.5	0.0	20.2	32.2	0.0	0.0	32.2	10.9	0.0	32.5	11.8	0.0
Incr Delay (d2), s/veh	12.4	0.0	0.0	24.4	0.0	0.0	24.7	0.5	0.0	59.3	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	0.2	0.3	0.0	0.0	0.3	7.0	0.0	0.1	8.5	0.0
LnGrp Delay(d),s/veh	37.0	0.0	20.2	56.6	0.0	0.0	56.9	11.3	0.0	91.8	12.7	0.0
LnGrp LOS	D		C	E			E	B		F	B	
Approach Vol, veh/h		340			11			1117			1242	
Approach Delay, s/veh		36.3			56.6			11.7			12.9	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.2	38.2		18.2	4.7	37.7		4.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	37.0		17.0	4.0	37.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	16.4		13.6	2.4	19.3		2.4
Green Ext Time (p_c), s	0.0	16.4		0.6	0.0	14.5		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		15.5
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	361	504	422	76	400	3	315	1385	86	2	977	394
Future Volume (veh/h)	361	504	422	76	400	3	315	1385	86	2	977	394
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	361	504	422	76	400	3	315	1385	86	2	977	394
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	401	963	431	143	697	312	401	1654	740	7	1249	559
Arrive On Green	0.12	0.27	0.27	0.04	0.20	0.20	0.12	0.47	0.47	0.00	0.36	0.36
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	361	504	422	76	400	3	315	1385	86	2	977	394
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	8.0	9.3	20.4	1.7	7.9	0.1	6.9	26.4	2.3	0.0	19.0	16.5
Cycle Q Clear(g_c), s	8.0	9.3	20.4	1.7	7.9	0.1	6.9	26.4	2.3	0.0	19.0	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	401	963	431	143	697	312	401	1654	740	7	1249	559
V/C Ratio(X)	0.90	0.52	0.98	0.53	0.57	0.01	0.79	0.84	0.12	0.27	0.78	0.71
Avail Cap(c_a), veh/h	401	963	431	178	734	328	446	1654	740	178	1330	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	23.5	27.5	35.9	27.7	24.6	32.8	17.6	11.3	38.1	22.0	21.2
Incr Delay (d2), s/veh	22.6	0.5	37.9	3.1	1.0	0.0	8.2	4.0	0.1	18.3	2.9	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	4.5	13.4	0.8	3.9	0.1	3.7	13.6	1.0	0.0	9.6	7.7
LnGrp Delay(d),s/veh	55.8	24.0	65.4	38.9	28.7	24.6	40.9	21.6	11.3	56.4	24.9	24.7
LnGrp LOS	E	C	E	D	C	C	D	C	B	E	C	C
Approach Vol, veh/h		1287			479			1786			1373	
Approach Delay, s/veh		46.5			30.3			24.5			24.9	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.2	40.1	7.2	25.0	13.0	31.2	13.0	19.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	35.0	4.0	21.0	10.0	29.0	9.0	16.0
Max Q Clear Time (g_c+I1), s	2.0	28.4	3.7	22.4	8.9	21.0	10.0	9.9
Green Ext Time (p_c), s	0.0	6.2	0.0	0.0	0.1	6.2	0.0	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	1675	381	23	1389	59	95	69	14	68	149	164
Future Volume (veh/h)	222	1675	381	23	1389	59	95	69	14	68	149	164
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	222	1675	381	23	1389	59	95	69	14	68	149	164
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	256	1762	386	34	1677	71	112	268	227	87	241	205
Arrive On Green	0.15	0.62	0.62	0.02	0.49	0.49	0.06	0.15	0.15	0.05	0.13	0.13
Sat Flow, veh/h	1757	2860	627	1757	3426	145	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	222	1002	1054	23	709	739	95	69	14	68	149	164
Grp Sat Flow(s),veh/h/ln	1757	1752	1734	1757	1752	1819	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	11.6	48.2	56.0	1.2	32.7	32.9	5.0	3.1	0.7	3.6	7.2	9.6
Cycle Q Clear(g_c), s	11.6	48.2	56.0	1.2	32.7	32.9	5.0	3.1	0.7	3.6	7.2	9.6
Prop In Lane	1.00		0.36	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	1080	1069	34	858	890	112	268	227	87	241	205
V/C Ratio(X)	0.87	0.93	0.99	0.68	0.83	0.83	0.85	0.26	0.06	0.78	0.62	0.80
Avail Cap(c_a), veh/h	299	1080	1069	75	858	890	112	314	267	112	314	267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	16.2	17.7	45.9	20.6	20.6	43.6	35.7	34.7	44.2	38.7	39.7
Incr Delay (d2), s/veh	20.3	13.4	24.2	21.5	6.7	6.6	42.3	0.5	0.1	23.1	2.6	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	27.1	33.6	0.8	17.4	18.1	3.8	1.6	0.3	2.3	3.9	4.8
LnGrp Delay(d),s/veh	59.6	29.6	41.9	67.3	27.3	27.3	85.9	36.2	34.8	67.3	41.2	51.9
LnGrp LOS	E	C	D	E	C	C	F	D	C	E	D	D
Approach Vol, veh/h		2278			1471			178			381	
Approach Delay, s/veh		38.2			27.9			62.6			50.5	
Approach LOS		D			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	17.7	5.8	62.0	10.0	16.3	17.7	50.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	16.0	4.0	58.0	6.0	16.0	16.0	46.0
Max Q Clear Time (g_c+I1), s	5.6	5.1	3.2	58.0	7.0	11.6	13.6	34.9
Green Ext Time (p_c), s	0.0	1.4	0.0	0.0	0.0	0.8	0.1	10.9

Intersection Summary	
HCM 2010 Ctrl Delay	36.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1260	1178	667	8	719	277	576	994	10	390	1446	815
Future Volume (veh/h)	1260	1178	667	8	719	277	576	994	10	390	1446	815
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	1260	1178	667	8	719	277	576	994	10	390	1446	815
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1022	1644	736	26	620	277	472	1362	424	442	1317	410
Arrive On Green	0.30	0.47	0.47	0.01	0.18	0.18	0.14	0.27	0.27	0.13	0.26	0.26
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	1260	1178	667	8	719	277	576	994	10	390	1446	815
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	39.0	34.9	51.1	0.3	23.0	23.0	18.0	23.3	0.6	14.6	34.0	34.0
Cycle Q Clear(g_c), s	39.0	34.9	51.1	0.3	23.0	23.0	18.0	23.3	0.6	14.6	34.0	34.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1022	1644	736	26	620	277	472	1362	424	442	1317	410
V/C Ratio(X)	1.23	0.72	0.91	0.30	1.16	1.00	1.22	0.73	0.02	0.88	1.10	1.99
Avail Cap(c_a), veh/h	1022	1644	736	105	620	277	472	1362	424	472	1317	410
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	27.6	31.9	64.2	53.5	53.5	56.0	43.1	34.8	55.6	48.0	48.0
Incr Delay (d2), s/veh	113.2	1.5	15.0	6.3	88.8	53.6	117.1	2.0	0.0	16.9	56.1	453.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.4	17.2	25.1	0.2	18.8	14.1	16.1	11.0	0.3	7.9	22.6	66.3
LnGrp Delay(d),s/veh	158.7	29.1	46.8	70.5	142.3	107.1	173.1	45.1	34.8	72.5	104.1	501.0
LnGrp LOS	F	C	D	E	F	F	F	D	C	E	F	F
Approach Vol, veh/h		3105			1004			1580			2651	
Approach Delay, s/veh		85.5			132.0			91.7			221.5	
Approach LOS		F			F			F			F	

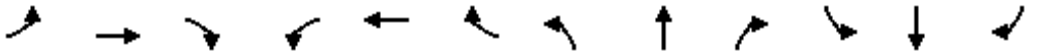
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	39.2	5.0	65.0	22.0	38.0	43.0	27.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	34.0	4.0	58.0	18.0	34.0	39.0	23.0
Max Q Clear Time (g_c+I1), s	16.6	25.3	2.3	53.1	20.0	36.0	41.0	25.0
Green Ext Time (p_c), s	0.2	8.2	0.0	4.6	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		135.5
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1080	596	213	855	522	428	501	185	807	1017	0
Future Volume (veh/h)	0	1080	596	213	855	522	428	501	185	807	1017	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	1080	596	213	855	522	428	501	185	807	1017	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1269	395	258	1904	593	472	767	343	859	1164	521
Arrive On Green	0.00	0.25	0.25	0.08	0.38	0.38	0.14	0.22	0.22	0.25	0.33	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	1080	596	213	855	522	428	501	185	807	1017	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	16.2	20.0	4.9	10.1	24.6	9.8	10.3	8.3	18.4	21.7	0.0
Cycle Q Clear(g_c), s	0.0	16.2	20.0	4.9	10.1	24.6	9.8	10.3	8.3	18.4	21.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1269	395	258	1904	593	472	767	343	859	1164	521
V/C Ratio(X)	0.00	0.85	1.51	0.83	0.45	0.88	0.91	0.65	0.54	0.94	0.87	0.00
Avail Cap(c_a), veh/h	172	1269	395	258	1904	593	472	795	356	859	1192	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	28.3	29.7	36.2	18.5	23.0	33.7	28.3	27.5	29.1	24.9	0.0
Incr Delay (d2), s/veh	0.0	5.7	241.6	19.4	0.2	14.4	21.0	1.8	1.5	17.8	7.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.2	35.1	3.0	4.7	13.0	6.0	5.2	3.7	10.8	11.6	0.0
LnGrp Delay(d),s/veh	0.0	34.0	271.3	55.6	18.7	37.4	54.6	30.1	29.0	46.9	32.2	0.0
LnGrp LOS		C	F	E	B	D	D	C	C	D	C	
Approach Vol, veh/h		1676			1590			1114			1824	
Approach Delay, s/veh		118.4			29.8			39.3			38.7	
Approach LOS		F			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	21.4	10.0	24.0	15.0	30.4	0.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	18.0	6.0	20.0	11.0	27.0	4.0	22.0
Max Q Clear Time (g_c+I1), s	20.4	12.3	6.9	22.0	11.8	23.7	0.0	26.6
Green Ext Time (p_c), s	0.0	4.4	0.0	0.0	0.0	2.7	0.0	0.0

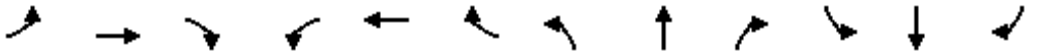
Intersection Summary	
HCM 2010 Ctrl Delay	58.0
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	178	46	117	68	515	22	578	96	920	903	7
Future Volume (veh/h)	31	178	46	117	68	515	22	578	96	920	903	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	31	178	46	117	68	515	22	578	96	920	903	7
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	90	746	334	192	852	381	69	750	336	932	1638	733
Arrive On Green	0.03	0.21	0.21	0.06	0.24	0.24	0.02	0.21	0.21	0.27	0.47	0.47
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	31	178	46	117	68	515	22	578	96	920	903	7
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.6	2.8	1.6	2.2	1.0	16.0	0.4	10.2	3.4	17.7	12.2	0.2
Cycle Q Clear(g_c), s	0.6	2.8	1.6	2.2	1.0	16.0	0.4	10.2	3.4	17.7	12.2	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	746	334	192	852	381	69	750	336	932	1638	733
V/C Ratio(X)	0.35	0.24	0.14	0.61	0.08	1.35	0.32	0.77	0.29	0.99	0.55	0.01
Avail Cap(c_a), veh/h	207	852	381	207	852	381	207	852	381	932	1638	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	21.5	21.0	30.3	19.2	24.9	31.8	24.3	21.7	23.8	12.6	9.4
Incr Delay (d2), s/veh	2.3	0.2	0.2	4.5	0.0	174.5	2.7	3.8	0.5	26.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	0.7	1.2	0.5	25.3	0.2	5.3	1.5	11.6	5.9	0.1
LnGrp Delay(d),s/veh	33.8	21.6	21.2	34.9	19.3	199.4	34.5	28.2	22.1	50.0	13.0	9.4
LnGrp LOS	C	C	C	C	B	F	C	C	C	D	B	A
Approach Vol, veh/h		255			700			696			1830	
Approach Delay, s/veh		23.0			154.4			27.6			31.6	
Approach LOS		C			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	18.1	7.7	18.0	5.3	34.8	5.7	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	16.0	4.0	16.0	4.0	30.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	19.7	12.2	4.2	4.8	2.4	14.2	2.6	18.0
Green Ext Time (p_c), s	0.0	1.9	0.0	3.0	0.0	9.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.9
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	315	322	28	175	116	144	334	48	190	481	69
Future Volume (veh/h)	85	315	322	28	175	116	144	334	48	190	481	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	85	315	322	28	175	116	144	334	48	190	481	69
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	198	990	443	89	879	393	253	857	383	313	919	411
Arrive On Green	0.06	0.28	0.28	0.03	0.25	0.25	0.07	0.24	0.24	0.09	0.26	0.26
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	85	315	322	28	175	116	144	334	48	190	481	69
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	1.1	3.2	8.4	0.4	1.8	2.7	1.8	3.6	1.1	2.4	5.3	1.5
Cycle Q Clear(g_c), s	1.1	3.2	8.4	0.4	1.8	2.7	1.8	3.6	1.1	2.4	5.3	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	990	443	89	879	393	253	857	383	313	919	411
V/C Ratio(X)	0.43	0.32	0.73	0.31	0.20	0.30	0.57	0.39	0.13	0.61	0.52	0.17
Avail Cap(c_a), veh/h	302	1244	556	302	1244	556	378	1322	591	529	1477	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	12.7	14.6	21.6	13.3	13.7	20.2	14.2	13.3	19.7	14.2	12.8
Incr Delay (d2), s/veh	1.5	0.2	3.6	2.0	0.1	0.4	2.0	0.3	0.1	1.9	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.6	4.0	0.2	0.9	1.2	0.9	1.8	0.5	1.2	2.6	0.7
LnGrp Delay(d),s/veh	22.0	12.9	18.2	23.5	13.4	14.1	22.2	14.5	13.4	21.6	14.7	13.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		722			319			526			740	
Approach Delay, s/veh		16.3			14.6			16.5			16.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	15.0	5.2	16.7	7.3	15.8	6.6	15.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	4.0	16.0	5.0	19.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	4.4	5.6	2.4	10.4	3.8	7.3	3.1	4.7
Green Ext Time (p_c), s	0.1	4.5	0.0	2.4	0.0	4.5	0.0	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	1096	530	55	1041	85	196	47	31	202	181	51
Future Volume (veh/h)	52	1096	530	55	1041	85	196	47	31	202	181	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	52	1096	530	55	1041	85	196	47	31	202	181	51
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	69	1390	622	71	1395	624	242	263	223	249	271	230
Arrive On Green	0.04	0.40	0.40	0.04	0.40	0.40	0.14	0.14	0.14	0.14	0.15	0.15
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	52	1096	530	55	1041	85	196	47	31	202	181	51
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.7	15.8	17.7	1.8	14.6	2.0	6.2	1.3	1.0	6.4	5.3	1.6
Cycle Q Clear(g_c), s	1.7	15.8	17.7	1.8	14.6	2.0	6.2	1.3	1.0	6.4	5.3	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	1390	622	71	1395	624	242	263	223	249	271	230
V/C Ratio(X)	0.75	0.79	0.85	0.77	0.75	0.14	0.81	0.18	0.14	0.81	0.67	0.22
Avail Cap(c_a), veh/h	122	1402	627	122	1402	627	275	545	464	306	577	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	15.2	15.8	27.3	14.8	11.0	24.1	21.7	21.6	23.9	23.2	21.6
Incr Delay (d2), s/veh	15.2	3.1	10.9	15.8	2.2	0.1	15.0	0.3	0.3	12.6	2.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	8.2	9.5	1.2	7.4	0.9	4.0	0.7	0.4	4.0	2.9	0.7
LnGrp Delay(d),s/veh	42.6	18.3	26.7	43.1	17.0	11.1	39.0	22.0	21.9	36.5	26.0	22.1
LnGrp LOS	D	B	C	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1678			1181			274			434	
Approach Delay, s/veh		21.7			17.8			34.2			30.4	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	12.2	6.3	26.8	11.9	12.4	6.3	26.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	17.0	4.0	23.0	9.0	18.0	4.0	23.0
Max Q Clear Time (g_c+I1), s	8.4	3.3	3.8	19.7	8.2	7.3	3.7	16.6
Green Ext Time (p_c), s	0.1	1.3	0.0	3.1	0.0	1.1	0.0	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	348	185	69	242	37	227	72	37	212	196	20
Future Volume (veh/h)	35	348	185	69	242	37	227	72	37	212	196	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	35	348	185	69	242	37	227	72	37	212	196	20
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	55	488	415	89	444	68	280	217	112	264	296	30
Arrive On Green	0.03	0.26	0.26	0.05	0.28	0.28	0.16	0.19	0.19	0.15	0.18	0.18
Sat Flow, veh/h	1757	1845	1568	1757	1563	239	1757	1150	591	1757	1647	168
Grp Volume(v), veh/h	35	348	185	69	0	279	227	0	109	212	0	216
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1802	1757	0	1740	1757	0	1815
Q Serve(g_s), s	0.9	7.9	4.6	1.8	0.0	6.1	5.8	0.0	2.5	5.4	0.0	5.1
Cycle Q Clear(g_c), s	0.9	7.9	4.6	1.8	0.0	6.1	5.8	0.0	2.5	5.4	0.0	5.1
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.34	1.00		0.09
Lane Grp Cap(c), veh/h	55	488	415	89	0	512	280	0	329	264	0	327
V/C Ratio(X)	0.64	0.71	0.45	0.77	0.00	0.54	0.81	0.00	0.33	0.80	0.00	0.66
Avail Cap(c_a), veh/h	152	637	541	152	0	622	303	0	601	303	0	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.2	15.4	14.2	21.7	0.0	14.0	18.8	0.0	16.3	19.0	0.0	17.7
Incr Delay (d2), s/veh	11.6	2.6	0.8	13.2	0.0	0.9	14.4	0.0	0.6	12.9	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.3	2.0	1.2	0.0	3.2	3.9	0.0	1.3	3.5	0.0	2.8
LnGrp Delay(d),s/veh	33.7	18.0	15.0	34.9	0.0	14.9	33.2	0.0	16.8	31.9	0.0	20.0
LnGrp LOS	C	B	B	C		B	C		B	C		B
Approach Vol, veh/h		568			348			336			428	
Approach Delay, s/veh		18.0			18.9			27.9			25.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	12.8	6.4	16.3	11.4	12.3	5.5	17.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	16.0	4.0	16.0	8.0	16.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	7.4	4.5	3.8	9.9	7.8	7.1	2.9	8.1
Green Ext Time (p_c), s	0.0	1.4	0.0	2.3	0.0	1.2	0.0	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	110	559	113	97	221	260	1473	61	98	1511	328
Future Volume (veh/h)	262	110	559	113	97	221	260	1473	61	98	1511	328
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	262	110	559	113	97	221	260	1473	61	98	1511	328
Adj No. of Lanes	1	1	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	291	553	470	124	598	267	279	1661	743	150	1529	684
Arrive On Green	0.17	0.30	0.30	0.04	0.17	0.17	0.08	0.47	0.47	0.04	0.44	0.44
Sat Flow, veh/h	1757	1845	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	262	110	559	113	97	221	260	1473	61	98	1511	328
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	16.1	4.9	33.0	3.6	2.6	15.0	8.3	41.9	2.3	3.1	47.0	16.4
Cycle Q Clear(g_c), s	16.1	4.9	33.0	3.6	2.6	15.0	8.3	41.9	2.3	3.1	47.0	16.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	553	470	124	598	267	279	1661	743	150	1529	684
V/C Ratio(X)	0.90	0.20	1.19	0.91	0.16	0.83	0.93	0.89	0.08	0.65	0.99	0.48
Avail Cap(c_a), veh/h	319	553	470	124	598	267	279	1661	743	155	1529	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	28.7	38.5	52.8	38.9	44.0	50.2	26.2	15.8	51.7	30.7	22.1
Incr Delay (d2), s/veh	25.4	0.2	104.4	54.5	0.1	18.8	36.3	6.2	0.0	9.0	20.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	2.5	27.9	2.6	1.3	7.9	5.3	21.7	1.0	1.7	26.9	7.2
LnGrp Delay(d),s/veh	70.4	28.8	142.9	107.3	39.0	62.8	86.5	32.5	15.9	60.7	50.8	22.6
LnGrp LOS	E	C	F	F	D	E	F	C	B	E	D	C
Approach Vol, veh/h		931			431			1794			1937	
Approach Delay, s/veh		109.0			69.2			39.7			46.5	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	56.1	8.0	37.0	13.0	52.0	22.2	22.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	52.0	4.0	33.0	9.0	48.0	20.0	17.0
Max Q Clear Time (g_c+I1), s	5.1	43.9	5.6	35.0	10.3	49.0	18.1	17.0
Green Ext Time (p_c), s	0.0	7.8	0.0	0.0	0.0	0.0	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	154	0	0	350	195	0	0	0	516	0	0
Future Volume (veh/h)	0	154	0	0	350	195	0	0	0	516	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	154	0	0	350	195	0	0	0	516	0	0
Adj No. of Lanes	2	2	1	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	16	1201	537	8	1201	537	8	9	7	956	517	440
Arrive On Green	0.00	0.34	0.00	0.00	0.34	0.34	0.00	0.00	0.00	0.28	0.00	0.00
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	1757	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	0	154	0	0	350	195	0	0	0	516	0	0
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	0.0	0.6	0.0	0.0	1.5	2.0	0.0	0.0	0.0	2.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.6	0.0	0.0	1.5	2.0	0.0	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	16	1201	537	8	1201	537	8	9	7	956	517	440
V/C Ratio(X)	0.00	0.13	0.00	0.00	0.29	0.36	0.00	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	642	2972	1329	331	2972	1329	331	1390	1182	2569	2433	2068
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.8	0.0	0.0	5.1	5.2	0.0	0.0	0.0	6.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	0.8	0.9	0.0	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	4.8	0.0	0.0	5.2	5.6	0.0	0.0	0.0	7.0	0.0	0.0
LnGrp LOS		A			A	A				A		
Approach Vol, veh/h		154			545			0			516	
Approach Delay, s/veh		4.8			5.4			0.0			7.0	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	0.0	0.0	11.3	0.0	10.0	0.0	11.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	16.0	4.0	18.0	4.0	28.0	4.0	18.0
Max Q Clear Time (g_c+I1), s	4.7	0.0	0.0	2.6	0.0	0.0	0.0	4.0
Green Ext Time (p_c), s	1.5	0.0	0.0	3.6	0.0	0.0	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	6.0
HCM 2010 LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	449	264	0	434	11	0
Future Volume (veh/h)	449	264	0	434	11	0
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	449	264	0	434	11	0
Adj No. of Lanes	1	1	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	939	798	7	939	558	256
Arrive On Green	0.51	0.51	0.00	0.51	0.16	0.00
Sat Flow, veh/h	1845	1568	1757	1845	3408	1568
Grp Volume(v), veh/h	449	264	0	434	11	0
Grp Sat Flow(s),veh/h/ln	1845	1568	1757	1845	1704	1568
Q Serve(g_s), s	3.9	2.4	0.0	3.7	0.1	0.0
Cycle Q Clear(g_c), s	3.9	2.4	0.0	3.7	0.1	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	939	798	7	939	558	256
V/C Ratio(X)	0.48	0.33	0.00	0.46	0.02	0.00
Avail Cap(c_a), veh/h	1358	1154	287	1961	2230	1026
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	3.9	3.5	0.0	3.9	8.6	0.0
Incr Delay (d2), s/veh	0.4	0.2	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.1	0.0	1.9	0.0	0.0
LnGrp Delay(d),s/veh	4.3	3.8	0.0	4.2	8.6	0.0
LnGrp LOS	A	A		A	A	
Approach Vol, veh/h	713			434	11	
Approach Delay, s/veh	4.1			4.2	8.6	
Approach LOS	A			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		8.0	0.0	16.5				16.5
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	4.0	18.0				26.0
Max Q Clear Time (g_c+I1), s		2.1	0.0	5.9				5.7
Green Ext Time (p_c), s		0.0	0.0	5.3				6.8

Intersection Summary	
HCM 2010 Ctrl Delay	4.2
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	30.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	94	292	36	136	2	17	211	10	8	390	107
Future Vol, veh/h	18	94	292	36	136	2	17	211	10	8	390	107
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	18	94	292	36	136	2	17	211	10	8	390	107
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	26.2	15.4	17.1	45.9
HCM LOS	D	C	C	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	4%	21%	2%
Vol Thru, %	89%	23%	78%	77%
Vol Right, %	4%	72%	1%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	404	174	505
LT Vol	17	18	36	8
Through Vol	211	94	136	390
RT Vol	10	292	2	107
Lane Flow Rate	238	404	174	505
Geometry Grp	1	1	1	1
Degree of Util (X)	0.483	0.74	0.373	0.915
Departure Headway (Hd)	7.31	6.59	7.727	6.525
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	490	549	465	556
Service Time	5.381	4.646	5.804	4.581
HCM Lane V/C Ratio	0.486	0.736	0.374	0.908
HCM Control Delay	17.1	26.2	15.4	45.9
HCM Lane LOS	C	D	C	E
HCM 95th-tile Q	2.6	6.3	1.7	11.1

Intersection	
Intersection Delay, s/veh	131.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	465	0	196	354	7	15	64	137	142	263	65
Future Vol, veh/h	21	465	0	196	354	7	15	64	137	142	263	65
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	6	6	6	8	8	8	3	3	3	3	3	3
Mvmt Flow	21	465	0	196	354	7	15	64	137	142	263	65
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	126.4	194.6	27.1	109.4
HCM LOS	F	F	D	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	4%	35%	30%
Vol Thru, %	30%	96%	64%	56%
Vol Right, %	63%	0%	1%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	216	486	557	470
LT Vol	15	21	196	142
Through Vol	64	465	354	263
RT Vol	137	0	7	65
Lane Flow Rate	216	486	557	470
Geometry Grp	1	1	1	1
Degree of Util (X)	0.554	1.154	1.336	1.105
Departure Headway (Hd)	11.132	9.707	9.409	9.626
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	326	379	390	381
Service Time	9.132	7.707	7.409	7.626
HCM Lane V/C Ratio	0.663	1.282	1.428	1.234
HCM Control Delay	27.1	126.4	194.6	109.4
HCM Lane LOS	D	F	F	F
HCM 95th-tile Q	3.2	16.7	24	15.1

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	42	684	59	186	194
Future Vol, veh/h	41	42	684	59	186	194
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	41	42	684	59	186	194

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1183	372	0	0	743	0
Stage 1	714	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	179	620	-	-	854	-
Stage 1	441	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	140	620	-	-	854	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	441	-	-	-	-	-
Stage 2	461	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.9	0	5.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	270	620	854	-
HCM Lane V/C Ratio	-	-	0.152	0.068	0.218	-
HCM Control Delay (s)	-	-	20.7	11.2	10.4	-
HCM Lane LOS	-	-	C	B	B	-
HCM 95th %tile Q(veh)	-	-	0.5	0.2	0.8	-

Intersection	
Int Delay, s/veh	85.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	576	237	682	214	275	1521
Future Vol, veh/h	576	237	682	214	275	1521
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	576	237	682	214	275	1521

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1947	448	0	0	896	0
Stage 1	789	-	-	-	-	-
Stage 2	1158	-	-	-	-	-
Critical Hdwy	5.76	7.16	-	-	5.38	-
Critical Hdwy Stg 1	6.66	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	3.83	3.93	-	-	3.14	-
Pot Cap-1 Maneuver	~ 99	475	-	-	433	-
Stage 1	~ 323	-	-	-	-	-
Stage 2	~ 233	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	475	-	-	433	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	~ 323	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 350.1	0	9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	475	433	-
HCM Lane V/C Ratio	-	-	1.712	0.635	-
HCM Control Delay (s)	-	-	$ 350.1	26.7	5.8
HCM Lane LOS	-	-	F	D	A
HCM 95th %tile Q(veh)	-	-	48.5	4.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	1732	1141	25	14	30
Future Vol, veh/h	83	1732	1141	25	14	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	83	1732	1141	25	14	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1166	0	-	0	2186	583
Stage 1	-	-	-	-	1154	-
Stage 2	-	-	-	-	1032	-
Critical Hdwy	4.22	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.26	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	573	-	-	-	38	453
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	302	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	573	-	-	-	32	453
Mov Cap-2 Maneuver	-	-	-	-	32	-
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	258	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	82.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	573	-	-	-	87
HCM Lane V/C Ratio	0.145	-	-	-	0.506
HCM Control Delay (s)	12.3	-	-	-	82.8
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	0.5	-	-	-	2.2

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	2	0	2	0	769	6	1	990	4
Future Vol, veh/h	2	0	1	2	0	2	0	769	6	1	990	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	0	1	2	0	2	0	769	6	1	990	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1767	1769	992	1767	1768	772	994	0	0	775	0	0
Stage 1	994	994	-	772	772	-	-	-	-	-	-	-
Stage 2	773	775	-	995	996	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	65	83	297	65	83	398	692	-	-	836	-	-
Stage 1	294	322	-	391	408	-	-	-	-	-	-	-
Stage 2	390	406	-	294	321	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	65	83	297	65	83	398	692	-	-	836	-	-
Mov Cap-2 Maneuver	65	83	-	65	83	-	-	-	-	-	-	-
Stage 1	294	321	-	391	408	-	-	-	-	-	-	-
Stage 2	388	406	-	292	320	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.3	38.3	0	0
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	692	-	-	88	112	836	-	-
HCM Lane V/C Ratio	-	-	-	0.034	0.036	0.001	-	-
HCM Control Delay (s)	0	-	-	47.3	38.3	9.3	0	-
HCM Lane LOS	A	-	-	E	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	1492	0	143	1107	1	2	0	88	2	4	4
Future Vol, veh/h	4	1492	0	143	1107	1	2	0	88	2	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	90	200	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	6	6	3	3	3	3	3	3
Mvmt Flow	4	1492	0	143	1107	1	2	0	88	2	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1108	0	0	1492	0	0	2342	2894	746	2148	2894	554
Stage 1	-	-	-	-	-	-	1500	1500	-	1394	1394	-
Stage 2	-	-	-	-	-	-	842	1394	-	754	1500	-
Critical Hdwy	4.22	-	-	4.22	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.26	-	-	2.26	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	603	-	-	427	-	-	19	15	354	27	15	473
Stage 1	-	-	-	-	-	-	127	182	-	148	205	-
Stage 2	-	-	-	-	-	-	323	205	-	365	182	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	603	-	-	427	-	-	10	10	354	15	10	473
Mov Cap-2 Maneuver	-	-	-	-	-	-	10	10	-	15	10	-
Stage 1	-	-	-	-	-	-	126	181	-	147	136	-
Stage 2	-	-	-	-	-	-	207	136	-	272	181	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2	27.9	$ 349.9
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	10	354	603	-	-	427	-	-	18
HCM Lane V/C Ratio	0.2	0.249	0.007	-	-	0.335	-	-	0.556
HCM Control Delay (s)	$ 439.6	18.5	11	-	-	17.6	-	-	$ 349.9
HCM Lane LOS	F	C	B	-	-	C	-	-	F
HCM 95th %tile Q(veh)	0.5	1	0	-	-	1.5	-	-	1.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	84	1	3	3	2	142
Future Vol, veh/h	84	1	3	3	2	142
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	84	1	3	3	2	142

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	82	73	144	0	-	0
Stage 1	73	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	918	986	1432	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	1011	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	916	986	1432	-	-	-
Mov Cap-2 Maneuver	916	-	-	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	3.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1432	-	917	-	-
HCM Lane V/C Ratio	0.002	-	0.093	-	-
HCM Control Delay (s)	7.5	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	49	0	0	0	0	100
Future Vol, veh/h	49	0	0	0	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	49	0	0	0	0	100

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	50	50	100	0	-	0
Stage 1	50	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	950	1004	1483	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	950	1004	1483	-	-	-
Mov Cap-2 Maneuver	950	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1483	-	950	-	-
HCM Lane V/C Ratio	-	-	0.052	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1000	13	328	1096	8	208
Future Vol, veh/h	1000	13	328	1096	8	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1000	13	328	1096	8	208

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1013	0	2211	507
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	1204	-
Critical Hdwy	-	-	4.16	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.23	-	3.53	3.33
Pot Cap-1 Maneuver	-	-	674	-	37	508
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	245	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	674	-	19	508
Mov Cap-2 Maneuver	-	-	-	-	19	-
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	126	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	27.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	19	508	-	-	674	-
HCM Lane V/C Ratio	0.421	0.409	-	-	0.487	-
HCM Control Delay (s)	294.1	16.9	-	-	15.3	-
HCM Lane LOS	F	C	-	-	C	-
HCM 95th %tile Q(veh)	1.2	2	-	-	2.7	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	148
Future Vol, veh/h	0	0	0	0	0	148
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	0	0	0	148

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	148	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	842	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	842	-	-	-	-	-
Mov Cap-2 Maneuver	842	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	877	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection	
Int Delay, s/veh	17.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	338	174	14	80	298	340
Future Vol, veh/h	338	174	14	80	298	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	-	-	90
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	338	174	14	80	298	340

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	406	298	298	0	-	0
Stage 1	298	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	599	739	1258	-	-	0
Stage 1	751	-	-	-	-	0
Stage 2	914	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	592	739	1258	-	-	-
Mov Cap-2 Maneuver	592	-	-	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	903	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30	1.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1258	-	635	-
HCM Lane V/C Ratio	0.011	-	0.806	-
HCM Control Delay (s)	7.9	0	30	-
HCM Lane LOS	A	A	D	-
HCM 95th %tile Q(veh)	0	-	8.2	-

Intersection	
Int Delay, s/veh	129

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	119	257	128	107	587	273
Future Vol, veh/h	119	257	128	107	587	273
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	150	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	119	257	128	107	587	273

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1575	128	0	0	128	0
Stage 1	128	-	-	-	-	-
Stage 2	1447	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	120	919	-	-	1452	-
Stage 1	895	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 71	919	-	-	1452	-
Mov Cap-2 Maneuver	~ 71	-	-	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	128	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 490.4	0	6.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	192	1452	-
HCM Lane V/C Ratio	-	-	1.958	0.404	-
HCM Control Delay (s)	-	-	$ 490.4	9.2	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	28	2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	86.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	713	41	1	489	1	8	110	0	0	272	74
Future Vol, veh/h	10	713	41	1	489	1	8	110	0	0	272	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	10	713	41	1	489	1	8	110	0	0	272	74

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	490	0	0	754	0	0	1419	1246	734	1301	1266	490
Stage 1	-	-	-	-	-	-	754	754	-	492	492	-
Stage 2	-	-	-	-	-	-	665	492	-	809	774	-
Critical Hdwy	4.18	-	-	4.2	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.29	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1043	-	-	821	-	-	111	169	410	134	~ 164	566
Stage 1	-	-	-	-	-	-	392	408	-	547	538	-
Stage 2	-	-	-	-	-	-	440	538	-	366	400	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1043	-	-	821	-	-	-	166	410	62	~ 161	566
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	166	-	62	~ 161	-
Stage 1	-	-	-	-	-	-	385	401	-	538	537	-
Stage 2	-	-	-	-	-	-	188	537	-	261	393	-

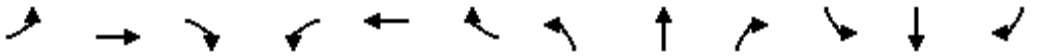
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0		$ 431.5
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1043	-	-	821	-	-	190
HCM Lane V/C Ratio	-	0.01	-	-	0.001	-	-	1.821
HCM Control Delay (s)	-	8.5	0	-	9.4	0	-	$ 431.5
HCM Lane LOS	-	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	24.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Cumulative Plus All Projects

AM

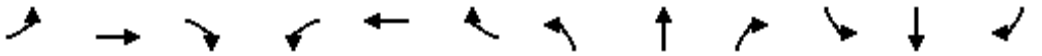


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	0	356	115	405	1264	0	1770	795	0	1906	488
Future Volume (vph)	170	0	356	115	405	1264	0	1770	795	0	1906	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		0.88	0.86	0.81	0.91		0.91	1.00		0.86	1.00
Frt	1.00		0.85	1.00	0.91	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1752		2760	2985	2691	1413		4988	1553		6285	1553
Flt Permitted	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1752		2760	2985	2691	1413		4988	1553		6285	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	0	356	115	405	1264	0	1770	795	0	1906	488
RTOR Reduction (vph)	0	0	309	0	42	42	0	0	0	0	0	171
Lane Group Flow (vph)	170	0	47	103	1007	590	0	1770	795	0	1906	317
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm	Split	NA	Perm		NA	Free		NA	Perm
Protected Phases	4			8	8			2			6	
Permitted Phases			4			8			Free			6
Actuated Green, G (s)	14.2		14.2	43.0	43.0	43.0		39.0	108.2		39.0	39.0
Effective Green, g (s)	14.2		14.2	43.0	43.0	43.0		39.0	108.2		39.0	39.0
Actuated g/C Ratio	0.13		0.13	0.40	0.40	0.40		0.36	1.00		0.36	0.36
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	229		362	1186	1069	561		1797	1553		2265	559
v/s Ratio Prot	c0.10			0.03	0.37			c0.35			0.30	
v/s Ratio Perm			0.02			c0.42			0.51			0.20
v/c Ratio	0.74		0.13	0.09	1.11dr	1.05		0.98	0.51		0.84	0.57
Uniform Delay, d1	45.2		41.5	20.3	31.4	32.6		34.3	0.0		31.8	27.8
Progression Factor	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	12.2		0.2	0.0	15.6	52.5		17.6	1.2		3.0	1.3
Delay (s)	57.5		41.7	20.4	47.0	85.1		51.9	1.2		34.8	29.1
Level of Service	E		D	C	D	F		D	A		C	C
Approach Delay (s)		46.8			59.0			36.2			33.6	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	108.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		

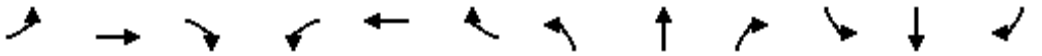
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



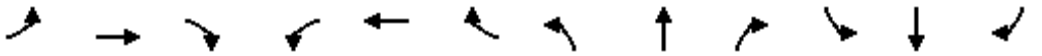
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	534	0	1711	0	0	0	0	1984	688	0	1221	682
Future Volume (vph)	534	0	1711	0	0	0	0	1984	688	0	1221	682
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	534	0	1711	0	0	0	0	1984	688	0	1221	682
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	534	0	1700	0	0	0	0	1984	688	0	1221	682
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	66.0		66.0					46.0	120.0		46.0	120.0
Effective Green, g (s)	66.0		66.0					46.0	120.0		46.0	120.0
Actuated g/C Ratio	0.55		0.55					0.38	1.00		0.38	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1851		1503					1912	1553		1912	1553
v/s Ratio Prot								c0.40			0.24	
v/s Ratio Perm	0.16		c0.62						0.44			0.44
v/c Ratio	0.29		1.13					1.04	0.44		0.64	0.44
Uniform Delay, d1	14.4		27.0					37.0	0.0		30.2	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1		67.9					31.1	0.9		0.7	0.9
Delay (s)	14.5		94.9					68.1	0.9		30.9	0.9
Level of Service	B		F					E	A		C	A
Approach Delay (s)		75.8			0.0			50.8			20.2	
Approach LOS		E			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



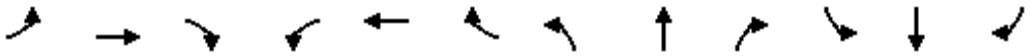
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	527	162	90	1149	805	577	1716	87	1265	1678	95
Future Volume (vph)	149	527	162	90	1149	805	577	1716	87	1265	1678	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3349		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3349		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	149	527	162	90	1149	805	577	1716	87	1265	1678	95
RTOR Reduction (vph)	0	22	0	0	0	479	0	0	60	0	0	56
Lane Group Flow (vph)	149	667	0	90	1149	326	577	1716	27	1265	1678	39
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	4.0	32.4		8.6	37.0	37.0	25.7	43.0	43.0	40.0	57.3	57.3
Effective Green, g (s)	4.0	32.4		8.6	37.0	37.0	25.7	43.0	43.0	40.0	57.3	57.3
Actuated g/C Ratio	0.03	0.23		0.06	0.26	0.26	0.18	0.31	0.31	0.29	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	96	775		206	917	722	618	1532	476	962	2041	635
v/s Ratio Prot	c0.04	0.20		0.03	c0.33		0.17	c0.34		c0.38	0.34	
v/s Ratio Perm						0.12			0.02			0.03
v/c Ratio	1.55	0.86		0.44	1.25	0.45	0.93	1.12	0.06	1.31	0.82	0.06
Uniform Delay, d1	68.0	51.6		63.4	51.5	43.0	56.3	48.5	34.2	50.0	36.8	25.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	293.1	9.7		1.5	122.9	0.5	21.3	63.4	0.0	149.2	2.8	0.0
Delay (s)	361.1	61.3		64.8	174.4	43.5	77.6	111.9	34.2	199.2	39.6	25.1
Level of Service	F	E		E	F	D	E	F	C	F	D	C
Approach Delay (s)		114.6			118.0			100.7			105.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	108.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	290	1284	5	548	27	1256	12	2	20	17	129
Future Volume (vph)	83	290	1284	5	548	27	1256	12	2	20	17	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1796	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1796	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	83	290	1284	5	548	27	1256	12	2	20	17	129
RTOR Reduction (vph)	0	0	258	0	0	21	0	0	1	0	0	118
Lane Group Flow (vph)	83	290	1026	5	548	6	628	640	1	0	37	11
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	22.5	65.5	0.8	19.3	19.3	43.0	43.0	43.0		7.4	7.4
Effective Green, g (s)	4.0	22.5	65.5	0.8	19.3	19.3	43.0	43.0	43.0		7.4	7.4
Actuated g/C Ratio	0.04	0.25	0.73	0.01	0.22	0.22	0.48	0.48	0.48		0.08	0.08
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	77	870	1203	15	746	334	775	778	730		148	129
v/s Ratio Prot	c0.05	0.08	c0.41	0.00	0.16		0.39	0.39			c0.02	
v/s Ratio Perm			0.25			0.00			0.00			0.01
v/c Ratio	1.08	0.33	0.85	0.33	0.73	0.02	0.81	0.82	0.00		0.25	0.08
Uniform Delay, d1	42.9	27.5	8.7	44.2	32.8	27.7	19.9	20.1	12.2		38.6	38.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	125.5	0.2	6.0	12.7	3.8	0.0	6.4	7.0	0.0		0.9	0.3
Delay (s)	168.3	27.7	14.7	56.9	36.6	27.8	26.3	27.1	12.2		39.4	38.3
Level of Service	F	C	B	E	D	C	C	C	B		D	D
Approach Delay (s)		24.7			36.3			26.7			38.5	
Approach LOS		C			D			C			D	

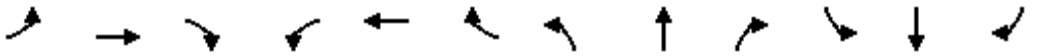
Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	192	93	410	325	70	285	183	366	120	165	34
Future Volume (vph)	26	192	93	410	325	70	285	183	366	120	165	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00		0.98	
Satd. Flow (prot)	1752	3505	1568	1752	3412		1665	1733	1568		3385	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00		0.98	
Satd. Flow (perm)	1752	3505	1568	1752	3412		1665	1733	1568		3385	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	26	192	93	410	325	70	285	183	366	120	165	34
RTOR Reduction (vph)	0	0	78	0	18	0	0	0	295	0	10	0
Lane Group Flow (vph)	26	192	15	410	377	0	231	237	71	0	309	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	1.8	12.1	12.1	21.2	31.5		14.7	14.7	14.7		11.9	
Effective Green, g (s)	1.8	12.1	12.1	21.2	31.5		14.7	14.7	14.7		11.9	
Actuated g/C Ratio	0.02	0.16	0.16	0.28	0.42		0.19	0.19	0.19		0.16	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	41	558	249	489	1416		322	335	303		530	
v/s Ratio Prot	0.01	c0.05		c0.23	0.11		c0.14	0.14			c0.09	
v/s Ratio Perm			0.01						0.05			
v/c Ratio	0.63	0.34	0.06	0.84	0.27		0.72	0.71	0.23		0.58	
Uniform Delay, d1	36.7	28.4	27.1	25.7	14.6		28.7	28.6	25.8		29.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	27.9	0.4	0.1	11.9	0.1		7.4	6.7	0.4		1.6	
Delay (s)	64.6	28.7	27.2	37.7	14.7		36.1	35.3	26.2		31.3	
Level of Service	E	C	C	D	B		D	D	C		C	
Approach Delay (s)		31.3			26.4			31.5			31.3	
Approach LOS		C			C			C			C	

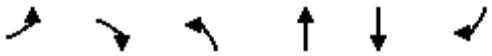
Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	2345	133	27	2398	8	517	42	211	7	16	55
Future Volume (vph)	14	2345	133	27	2398	8	517	42	211	7	16	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.4	6.4	3.5	6.4	6.4	4.4	4.4	4.4	3.5	3.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3406	1524	1703	3406	1524	1752	1845	1568	1752	1630	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3406	1524	1703	3406	1524	1752	1845	1568	1752	1630	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	2345	133	27	2398	8	517	42	211	7	16	55
RTOR Reduction (vph)	0	0	38	0	0	3	0	0	65	0	45	0
Lane Group Flow (vph)	14	2345	95	27	2398	5	517	42	146	7	26	0
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	1.5	80.3	80.3	2.6	81.4	81.4	27.7	35.5	35.5	0.7	8.5	
Effective Green, g (s)	1.5	80.3	80.3	2.6	81.4	81.4	27.7	35.5	35.5	0.7	8.5	
Actuated g/C Ratio	0.01	0.59	0.59	0.02	0.59	0.59	0.20	0.26	0.26	0.01	0.06	
Clearance Time (s)	3.5	6.4	6.4	3.5	6.4	6.4	4.4	4.4	4.4	3.5	3.5	
Vehicle Extension (s)	2.4	4.5	4.5	2.4	4.5	4.5	2.4	2.8	2.8	2.4	2.8	
Lane Grp Cap (vph)	18	1997	893	32	2025	906	354	478	406	8	101	
v/s Ratio Prot	0.01	0.69		c0.02	c0.70		c0.30	0.02		0.00	0.02	
v/s Ratio Perm			0.06			0.00			c0.09			
v/c Ratio	0.78	1.17	0.11	0.84	1.18	0.01	1.46	0.09	0.36	0.88	0.26	
Uniform Delay, d1	67.5	28.3	12.5	66.9	27.8	11.3	54.6	38.4	41.4	68.1	61.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	103.9	84.1	0.1	94.4	88.3	0.0	222.2	0.1	0.5	236.6	1.2	
Delay (s)	171.5	112.4	12.6	161.3	116.0	11.3	276.8	38.5	41.9	304.6	62.4	
Level of Service	F	F	B	F	F	B	F	D	D	F	E	
Approach Delay (s)		107.4			116.2			199.5			84.1	
Approach LOS		F			F			F			F	

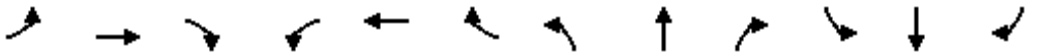
Intersection Summary			
HCM 2000 Control Delay	123.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	136.9	Sum of lost time (s)	17.8
Intersection Capacity Utilization	110.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1027	121	101	1379	997	1013
Future Volume (vph)	1027	121	101	1379	997	1013
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	3400	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	3400	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1027	121	101	1379	997	1013
RTOR Reduction (vph)	0	81	0	0	0	552
Lane Group Flow (vph)	1027	40	101	1379	997	461
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	19.5	19.5	3.1	31.0	23.9	23.9
Effective Green, g (s)	19.5	19.5	3.1	31.0	23.9	23.9
Actuated g/C Ratio	0.33	0.33	0.05	0.53	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1133	522	180	1857	1431	640
v/s Ratio Prot	c0.30		0.03	c0.39	0.28	
v/s Ratio Perm		0.03				0.29
v/c Ratio	0.91	0.08	0.56	0.74	0.70	0.72
Uniform Delay, d1	18.6	13.3	27.0	10.7	14.3	14.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.4	0.1	4.0	1.6	1.5	3.9
Delay (s)	29.0	13.4	31.0	12.3	15.8	18.4
Level of Service	C	B	C	B	B	B
Approach Delay (s)	27.4			13.6	17.1	
Approach LOS	C			B	B	

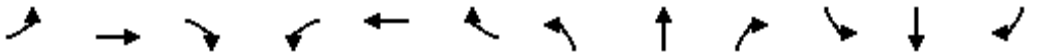
Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



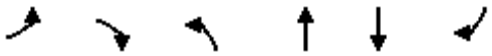
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	633	371	167	648	19	678	48	73	28	144	39
Future Volume (vph)	21	633	371	167	648	19	678	48	73	28	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3157		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3157		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	633	371	167	648	19	678	48	73	28	144	39
RTOR Reduction (vph)	0	0	243	0	0	11	0	54	0	0	0	36
Lane Group Flow (vph)	21	633	128	167	648	8	678	67	0	28	144	3
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	1.3	27.8	27.8	6.3	32.7	32.7	21.0	21.0		6.7	6.7	6.7
Effective Green, g (s)	1.3	27.8	27.8	6.3	32.7	32.7	21.0	21.0		6.7	6.7	6.7
Actuated g/C Ratio	0.02	0.34	0.34	0.08	0.41	0.41	0.26	0.26		0.08	0.08	0.08
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.1	4.1	2.0	2.0		1.0	1.0	1.0
Lane Grp Cap (vph)	28	1208	540	265	1422	636	877	822		145	291	130
v/s Ratio Prot	0.01	c0.18		c0.05	c0.18		c0.20	0.02		0.02	c0.04	
v/s Ratio Perm			0.08			0.00						0.00
v/c Ratio	0.75	0.52	0.24	0.63	0.46	0.01	0.77	0.08		0.19	0.49	0.02
Uniform Delay, d1	39.5	21.1	18.8	36.0	17.5	14.3	27.6	22.5		34.4	35.3	33.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	65.7	0.8	0.5	3.6	0.3	0.0	3.9	0.0		0.2	0.5	0.0
Delay (s)	105.2	21.9	19.3	39.6	17.8	14.3	31.5	22.5		34.7	35.8	34.0
Level of Service	F	C	B	D	B	B	C	C		C	D	C
Approach Delay (s)		22.6			22.1			30.1			35.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	22.9
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	661	0	1768	0	0	0	0	1829	1424	0	1398	287
Future Volume (vph)	661	0	1768	0	0	0	0	1829	1424	0	1398	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	661	0	1768	0	0	0	0	1829	1424	0	1398	287
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	661	0	1760	0	0	0	0	1829	1424	0	1398	287
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	72.6		72.6					45.9	130.0		46.4	130.0
Effective Green, g (s)	72.6		72.6					45.9	130.0		46.4	130.0
Actuated g/C Ratio	0.56		0.56					0.35	1.00		0.36	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1880		1526					1761	1553		1780	1553
v/s Ratio Prot								c0.37			0.28	
v/s Ratio Perm	0.20		c0.64						0.92			0.18
v/c Ratio	0.35		1.15					1.04	0.92		0.79	0.18
Uniform Delay, d1	15.8		28.7					42.0	0.0		37.4	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0		77.0					32.2	10.1		2.2	0.3
Delay (s)	15.8		105.7					74.3	10.1		39.5	0.3
Level of Service	B		F					E	B		D	A
Approach Delay (s)		81.2			0.0			46.2			32.8	
Approach LOS		F			A			D			C	

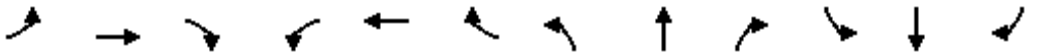
Intersection Summary			
HCM 2000 Control Delay	54.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	967	23	53	969	338	1003
Future Volume (vph)	967	23	53	969	338	1003
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1752	1568	1752	1845	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1752	1568	1752	1845	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	967	23	53	969	338	1003
RTOR Reduction (vph)	0	7	0	0	0	597
Lane Group Flow (vph)	967	16	53	969	338	406
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	61.0	61.0	4.8	61.8	53.0	53.0
Effective Green, g (s)	61.0	61.0	4.8	61.8	53.0	53.0
Actuated g/C Ratio	0.47	0.47	0.04	0.47	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	817	731	64	871	1420	635
v/s Ratio Prot	c0.55		0.03	c0.53	0.10	
v/s Ratio Perm		0.01				0.26
v/c Ratio	1.18	0.02	0.83	1.11	0.24	0.64
Uniform Delay, d1	34.9	18.8	62.6	34.5	25.6	31.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	95.0	0.0	56.0	66.2	0.1	2.2
Delay (s)	129.9	18.8	118.6	100.7	25.7	33.4
Level of Service	F	B	F	F	C	C
Approach Delay (s)	127.3			101.7	31.5	
Approach LOS	F			F	C	

Intersection Summary			
HCM 2000 Control Delay	81.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	130.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		

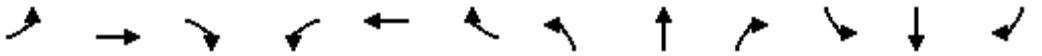
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	373	2	16	8	1	1	39	637	2	0	237	212
Future Volume (vph)	373	2	16	8	1	1	39	637	2	0	237	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95			0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1665	1670	1568	1752	1706		1752	3503			3505	1568
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)	1665	1670	1568	1752	1706		1752	3503			3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	373	2	16	8	1	1	39	637	2	0	237	212
RTOR Reduction (vph)	0	0	12	0	1	0	0	0	0	0	0	143
Lane Group Flow (vph)	186	189	4	8	1	0	39	639	0	0	237	69
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	10.2	10.2	10.2	0.9	0.9		1.3	19.1			13.8	13.8
Effective Green, g (s)	10.2	10.2	10.2	0.9	0.9		1.3	19.1			13.8	13.8
Actuated g/C Ratio	0.24	0.24	0.24	0.02	0.02		0.03	0.45			0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	402	403	378	37	36		53	1585			1146	512
v/s Ratio Prot	0.11	c0.11		c0.00	0.00		0.02	c0.18			0.07	
v/s Ratio Perm			0.00									0.04
v/c Ratio	0.46	0.47	0.01	0.22	0.03		0.74	0.40			0.21	0.14
Uniform Delay, d1	13.7	13.7	12.2	20.3	20.2		20.3	7.7			10.2	10.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.8	0.9	0.0	2.9	0.3		41.0	0.2			0.1	0.1
Delay (s)	14.5	14.5	12.2	23.2	20.5		61.2	7.9			10.3	10.1
Level of Service	B	B	B	C	C		E	A			B	B
Approach Delay (s)		14.4			22.7			11.0			10.2	
Approach LOS		B			C			B			B	

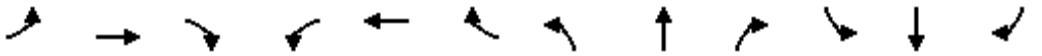
Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	42.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



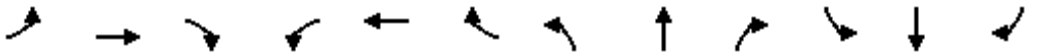
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1153	0	412	0	1196	481	0	1043	367
Future Volume (vph)	0	0	0	1153	0	412	0	1196	481	0	1043	367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.91	1.00		0.91	1.00
Frt				1.00	0.92			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.98			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1559			4988	1553		4988	1553
Flt Permitted				0.95	0.98			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1559			4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1153	0	412	0	1196	481	0	1043	367
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	807	743	0	0	1196	481	0	1043	367
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Perm	NA			NA	Free		NA	Free
Protected Phases					8			2			6	
Permitted Phases				8					Free			Free
Actuated Green, G (s)				30.1	30.1			16.1	55.9		16.1	55.9
Effective Green, g (s)				30.1	30.1			16.1	55.9		16.1	55.9
Actuated g/C Ratio				0.54	0.54			0.29	1.00		0.29	1.00
Clearance Time (s)				4.9	4.9			4.8			4.8	
Vehicle Extension (s)				1.0	1.0			1.0			1.0	
Lane Grp Cap (vph)				887	839			1436	1553		1436	1553
v/s Ratio Prot								c0.24			0.21	
v/s Ratio Perm				c0.49	0.48				0.31			0.24
v/c Ratio				0.91	0.89			0.83	0.31		0.73	0.24
Uniform Delay, d1				11.7	11.4			18.6	0.0		17.9	0.0
Progression Factor				1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2				12.8	10.7			4.1	0.5		1.6	0.4
Delay (s)				24.4	22.1			22.8	0.5		19.5	0.4
Level of Service				C	C			C	A		B	A
Approach Delay (s)		0.0			23.3			16.4			14.5	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	9.7
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



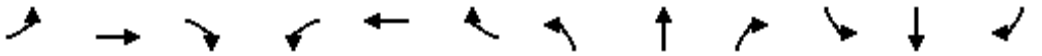
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	0	1105	0	0	0	0	1335	609	0	1804	344
Future Volume (vph)	393	0	1105	0	0	0	0	1335	609	0	1804	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.91	1.00
Frt	1.00	0.86	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1425	1475					4988	1553		4988	1553
Flt Permitted	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1425	1475					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	393	0	1105	0	0	0	0	1335	609	0	1804	344
RTOR Reduction (vph)	0	21	21	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	354	548	554	0	0	0	0	1335	609	0	1804	344
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA	Perm					NA	Free		NA	Free
Protected Phases		4						2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	23.7	23.7	23.7					23.9	57.6		24.0	57.6
Effective Green, g (s)	23.7	23.7	23.7					23.9	57.6		24.0	57.6
Actuated g/C Ratio	0.41	0.41	0.41					0.41	1.00		0.42	1.00
Clearance Time (s)	5.1	5.1	5.1					4.9			4.8	
Vehicle Extension (s)	1.0	1.0	1.0					1.0			1.0	
Lane Grp Cap (vph)	678	586	606					2069	1553		2078	1553
v/s Ratio Prot								0.27			c0.36	
v/s Ratio Perm	0.21	0.38	0.38						0.39			0.22
v/c Ratio	0.52	0.94	0.91					0.65	0.39		0.87	0.22
Uniform Delay, d1	12.7	16.2	16.0					13.5	0.0		15.4	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	22.2	18.1					0.5	0.7		4.0	0.3
Delay (s)	13.0	38.4	34.1					14.0	0.7		19.4	0.3
Level of Service	B	D	C					B	A		B	A
Approach Delay (s)		30.8			0.0			9.8			16.3	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



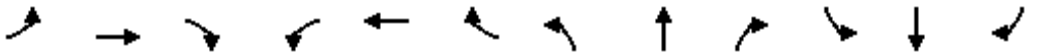
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1303	0	212	0	850	971	0	1029	1378
Future Volume (vph)	0	0	0	1303	0	212	0	850	971	0	1029	1378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		5036	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1303	0	212	0	850	971	0	1029	1378
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1303	0	196	0	850	971	0	1029	1378
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				21.9		21.9		13.9	47.2		13.9	47.2
Effective Green, g (s)				21.9		21.9		13.9	47.2		13.9	47.2
Actuated g/C Ratio				0.46		0.46		0.29	1.00		0.29	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1577		727		1483	1568		1483	1568
v/s Ratio Prot								0.17			0.20	
v/s Ratio Perm				0.38		0.13			0.62			c0.88
v/c Ratio				0.83		0.27		0.57	0.62		0.69	0.88
Uniform Delay, d1				11.0		7.8		14.1	0.0		14.8	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				3.5		0.1		0.3	1.8		1.2	7.3
Delay (s)				14.5		7.8		14.5	1.8		15.9	7.3
Level of Service				B		A		B	A		B	A
Approach Delay (s)		0.0			13.6			7.7			11.0	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	47.2	Sum of lost time (s)	11.4
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



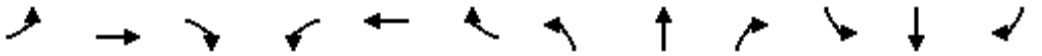
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	883	1656	0	0	87	0	3310	9	0	2159	184
Future Volume (vph)	171	883	1656	0	0	87	0	3310	9	0	2159	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		0.86			0.91	1.00
Frt	1.00	0.93	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	2943	1427			2733		6343			5036	1568
Flt Permitted	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (perm)	1595	2943	1427			2733		6343			5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	171	883	1656	0	0	87	0	3310	9	0	2159	184
RTOR Reduction (vph)	0	1	19	0	0	85	0	0	0	0	0	45
Lane Group Flow (vph)	154	1727	809	0	0	2	0	3319	0	0	2159	139
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA			NA	custom
Protected Phases	4	4				1		2			6	
Permitted Phases			4									2
Actuated Green, G (s)	69.0	69.0	69.0			4.0		65.0			73.0	65.0
Effective Green, g (s)	69.0	69.0	69.0			4.0		65.0			73.0	65.0
Actuated g/C Ratio	0.46	0.46	0.46			0.03		0.43			0.49	0.43
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	733	1353	656			72		2748			2450	679
v/s Ratio Prot	0.10	c0.59				0.00		c0.52			c0.43	
v/s Ratio Perm			0.57									0.09
v/c Ratio	0.21	1.28	1.23			0.03		1.21			0.88	0.21
Uniform Delay, d1	24.2	40.5	40.5			71.1		42.5			34.6	26.4
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	1.00
Incremental Delay, d2	0.1	130.2	117.6			0.2		97.2			4.1	0.2
Delay (s)	24.4	170.7	158.1			71.3		139.7			38.7	26.6
Level of Service	C	F	F			E		F			D	C
Approach Delay (s)		158.6			71.3			139.7			37.7	
Approach LOS		F			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	116.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	116.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	204	0	515	0	2845	254	0	1938	2219
Future Volume (vph)	0	0	0	204	0	515	0	2845	254	0	1938	2219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	204	0	515	0	2845	254	0	1938	2219
RTOR Reduction (vph)	0	0	0	0	0	30	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	204	0	485	0	2845	254	0	1938	2219
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				11.9		11.9		37.8	58.0		37.5	58.0
Effective Green, g (s)				11.9		11.9		37.8	58.0		37.5	58.0
Actuated g/C Ratio				0.21		0.21		0.65	1.00		0.65	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				677		550		3250	1553		3225	1553
v/s Ratio Prot								0.57			0.39	
v/s Ratio Perm				0.06		0.18			0.16			c1.43
v/c Ratio				0.30		0.88		0.88	0.16		0.60	1.43
Uniform Delay, d1				19.5		22.4		8.2	0.0		5.9	29.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.1		14.9		2.8	0.2		0.2	196.8
Delay (s)				19.6		37.3		11.0	0.2		6.1	225.8
Level of Service				B		D		B	A		A	F
Approach Delay (s)		0.0			32.3			10.1			123.4	
Approach LOS		A			C			B			F	

Intersection Summary			
HCM 2000 Control Delay	71.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.68		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



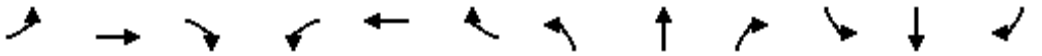
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	936	0	727	0	0	0	0	2171	401	0	1789	351
Future Volume (vph)	936	0	727	0	0	0	0	2171	401	0	1789	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	936	0	727	0	0	0	0	2171	401	0	1789	351
RTOR Reduction (vph)	0	0	32	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	936	0	695	0	0	0	0	2171	401	0	1789	351
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	13.9		13.9					22.2	44.4		21.9	44.4
Effective Green, g (s)	13.9		13.9					22.2	44.4		21.9	44.4
Actuated g/C Ratio	0.31		0.31					0.50	1.00		0.49	1.00
Clearance Time (s)	3.5		3.5					4.8			5.1	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1532		855					3142	1553		2460	1553
v/s Ratio Prot								0.35			c0.36	
v/s Ratio Perm	0.19		c0.25						0.26			0.23
v/c Ratio	0.61		0.81					0.69	0.26		0.73	0.23
Uniform Delay, d1	13.0		14.1					8.5	0.0		8.9	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.5		5.7					0.5	0.4		0.9	0.3
Delay (s)	13.5		19.7					9.0	0.4		9.8	0.3
Level of Service	B		B					A	A		A	A
Approach Delay (s)		16.2			0.0			7.7			8.3	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	8.6
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



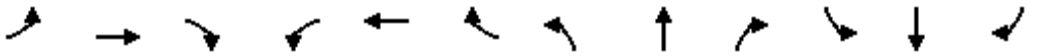
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	462	501	2340	141	77	1132
Future Volume (vph)	462	501	2340	141	77	1132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	4988	1553	3367	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	4988	1553	3367	3471
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	462	501	2340	141	77	1132
RTOR Reduction (vph)	0	284	0	41	0	0
Lane Group Flow (vph)	462	217	2340	100	77	1132
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA	Perm	Prot	NA
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Actuated Green, G (s)	12.8	12.8	41.8	41.8	4.3	51.6
Effective Green, g (s)	12.8	12.8	41.8	41.8	4.3	51.6
Actuated g/C Ratio	0.17	0.17	0.56	0.56	0.06	0.69
Clearance Time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	581	267	2783	866	193	2391
v/s Ratio Prot	0.14	c0.14	c0.47		0.02	c0.33
v/s Ratio Perm				0.06		
v/c Ratio	0.80	0.81	0.84	0.12	0.40	0.47
Uniform Delay, d1	29.8	29.9	13.8	7.8	34.1	5.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	16.0	2.4	0.0	0.5	0.1
Delay (s)	36.7	45.9	16.1	7.8	34.5	5.4
Level of Service	D	D	B	A	C	A
Approach Delay (s)	41.5		15.7			7.3
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



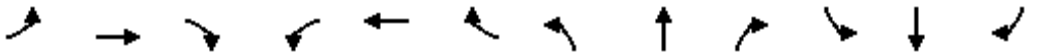
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1183	701	7	0	1122	15	8	30	5	7	6	541
Future Volume (vph)	1183	701	7	0	1122	15	8	30	5	7	6	541
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Lane Util. Factor	1.00	0.95	1.00		0.95			1.00			1.00	1.00
Frt	1.00	1.00	0.85		1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (prot)	1703	3406	1524		3431			1799			1779	1553
Flt Permitted	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (perm)	1703	3406	1524		3431			1799			1779	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1183	701	7	0	1122	15	8	30	5	7	6	541
RTOR Reduction (vph)	0	0	1	0	1	0	0	3	0	0	0	37
Lane Group Flow (vph)	1183	701	6	0	1136	0	0	40	0	0	13	504
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	62.6	106.0	106.0		38.8			3.0			2.1	64.7
Effective Green, g (s)	62.6	106.0	106.0		38.8			3.0			2.1	64.7
Actuated g/C Ratio	0.48	0.81	0.81		0.30			0.02			0.02	0.50
Clearance Time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0		1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	818	2770	1239		1021			41			28	771
v/s Ratio Prot	c0.69	0.21			c0.33			c0.02			0.01	c0.31
v/s Ratio Perm			0.00									0.01
v/c Ratio	1.45	0.25	0.00		1.11			0.98			0.46	0.65
Uniform Delay, d1	33.9	2.9	2.3		45.8			63.6			63.5	24.5
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	207.7	0.0	0.0		64.5			130.1			4.4	1.5
Delay (s)	241.5	2.9	2.3		110.3			193.8			67.9	26.0
Level of Service	F	A	A		F			F			E	C
Approach Delay (s)		152.2			110.3			193.8			27.0	
Approach LOS		F			F			F			C	

Intersection Summary			
HCM 2000 Control Delay	120.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	130.3	Sum of lost time (s)	24.7
Intersection Capacity Utilization	120.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	293	55	183	865	426	3321	0	0	4898	104
Future Volume (vph)	0	0	293	55	183	865	426	3321	0	0	4898	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1772	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1772	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	293	55	183	865	426	3321	0	0	4898	104
RTOR Reduction (vph)	0	0	174	0	0	40	0	0	0	0	0	25
Lane Group Flow (vph)	0	0	119	0	238	825	426	3321	0	0	4898	79
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			20.0		29.8	29.8	20.0	109.0			84.1	84.1
Effective Green, g (s)			20.0		29.8	29.8	20.0	109.0			84.1	84.1
Actuated g/C Ratio			0.13		0.20	0.20	0.13	0.73			0.56	0.56
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Vehicle Extension (s)			3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			212		352	532	440	3555			3457	854
v/s Ratio Prot			0.07		0.13		0.13	c0.68			c0.79	
v/s Ratio Perm						c0.31						0.05
v/c Ratio			0.56		0.68	1.55	0.97	0.93			1.42	0.09
Uniform Delay, d1			60.9		55.6	60.1	64.7	17.4			33.0	15.3
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			3.4		5.1	257.0	34.3	5.4			189.3	0.0
Delay (s)			64.2		60.7	317.1	99.0	22.8			222.3	15.3
Level of Service			E		E	F	F	C			F	B
Approach Delay (s)		64.2			261.8			31.5			218.0	
Approach LOS		E			F			C			F	

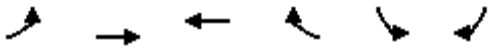
Intersection Summary			
HCM 2000 Control Delay	149.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	115.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1983	0	147	0	0	0	0	1896	43	0	1775	1032
Future Volume (vph)	1983	0	147	0	0	0	0	1896	43	0	1775	1032
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0			4.0	4.0
Lane Util. Factor	0.94		0.88					0.91			0.91	1.00
Frt	1.00		0.85					1.00			1.00	0.85
Flt Protected	0.95		1.00					1.00			1.00	1.00
Satd. Flow (prot)	4942		2760					5019			5036	1568
Flt Permitted	0.95		1.00					1.00			1.00	1.00
Satd. Flow (perm)	4942		2760					5019			5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1983	0	147	0	0	0	0	1896	43	0	1775	1032
RTOR Reduction (vph)	0	0	11	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	1983	0	136	0	0	0	0	1935	0	0	1775	1032
Turn Type	Prot		Perm					NA			NA	Free
Protected Phases	4							2			6	
Permitted Phases			4									Free
Actuated Green, G (s)	24.0		24.0					23.0			23.0	55.0
Effective Green, g (s)	24.0		24.0					23.0			23.0	55.0
Actuated g/C Ratio	0.44		0.44					0.42			0.42	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	2156		1204					2098			2105	1568
v/s Ratio Prot	c0.40							c0.39			0.35	
v/s Ratio Perm			0.05									0.66
v/c Ratio	0.92		0.11					0.92			0.84	0.66
Uniform Delay, d1	14.6		9.2					15.2			14.4	0.0
Progression Factor	1.00		1.00					1.00			1.00	1.00
Incremental Delay, d2	6.9		0.0					7.3			3.3	2.2
Delay (s)	21.5		9.2					22.5			17.7	2.2
Level of Service	C		A					C			B	A
Approach Delay (s)		20.6			0.0			22.5			12.0	
Approach LOS		C			A			C			B	

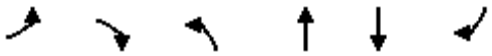
Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1098	1576	1586	200	22	764
Future Volume (vph)	1098	1576	1586	200	22	764
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3242	3343	3343	1495	3400	2760
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3242	3343	3343	1495	3400	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1098	1576	1586	200	22	764
RTOR Reduction (vph)	0	0	0	41	0	710
Lane Group Flow (vph)	1098	1576	1586	159	22	54
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	46.0	115.1	65.1	65.1	9.3	9.3
Effective Green, g (s)	46.0	115.1	65.1	65.1	9.3	9.3
Actuated g/C Ratio	0.35	0.87	0.49	0.49	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1126	2906	1643	735	238	193
v/s Ratio Prot	c0.34	0.47	c0.47		0.01	
v/s Ratio Perm				0.11		c0.02
v/c Ratio	0.98	0.54	0.97	0.22	0.09	0.28
Uniform Delay, d1	42.6	2.1	32.6	19.1	57.6	58.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.8	0.2	14.7	0.1	0.2	0.8
Delay (s)	63.5	2.3	47.3	19.3	57.8	59.2
Level of Service	E	A	D	B	E	E
Approach Delay (s)		27.4	44.1		59.1	
Approach LOS		C	D		E	

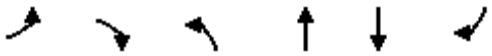
Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	132.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	605	10	65	2093	1312	1018
Future Volume (vph)	605	10	65	2093	1312	1018
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	605	10	65	2093	1312	1018
RTOR Reduction (vph)	0	7	0	0	0	63
Lane Group Flow (vph)	605	3	65	2093	1312	955
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	15.6	18.8	3.2	41.9	34.7	50.3
Effective Green, g (s)	15.6	18.8	3.2	41.9	34.7	50.3
Actuated g/C Ratio	0.24	0.29	0.05	0.64	0.53	0.77
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	809	545	85	2242	1856	1299
v/s Ratio Prot	0.18	0.00	0.04	c0.60	0.37	c0.17
v/s Ratio Perm		0.00				0.43
v/c Ratio	0.75	0.01	0.76	0.93	0.71	0.73
Uniform Delay, d1	23.1	16.7	30.8	10.6	11.6	4.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.0	32.8	7.9	1.3	2.2
Delay (s)	26.9	16.7	63.6	18.5	12.8	6.2
Level of Service	C	B	E	B	B	A
Approach Delay (s)	26.8			19.8	10.0	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

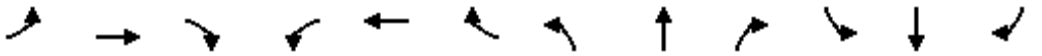
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	426	636	1023	1722	1118	203
Future Volume (vph)	426	636	1023	1722	1118	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1752	1568	3400	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1752	1568	3400	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	426	636	1023	1722	1118	203
RTOR Reduction (vph)	0	401	0	0	0	138
Lane Group Flow (vph)	426	235	1023	1722	1118	65
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	22.0	22.0	27.0	60.0	29.0	29.0
Effective Green, g (s)	22.0	22.0	27.0	60.0	29.0	29.0
Actuated g/C Ratio	0.24	0.24	0.30	0.67	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	428	383	1020	2336	1129	505
v/s Ratio Prot	c0.24		c0.30	0.49	c0.32	
v/s Ratio Perm		0.15				0.04
v/c Ratio	1.00	0.61	1.00	0.74	0.99	0.13
Uniform Delay, d1	33.9	30.2	31.5	9.8	30.4	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	42.0	2.9	28.9	1.2	24.3	0.1
Delay (s)	76.0	33.1	60.4	11.1	54.7	21.7
Level of Service	E	C	E	B	D	C
Approach Delay (s)	50.3			29.5	49.6	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		

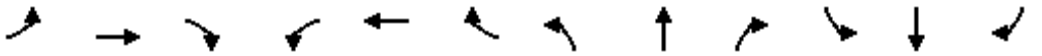
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	638	0	964	0	0	0	0	3883	609	0	1790	1584
Future Volume (vph)	638	0	964	0	0	0	0	3883	609	0	1790	1584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.95	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4540	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4540	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	638	0	964	0	0	0	0	3883	609	0	1790	1584
RTOR Reduction (vph)	0	0	25	0	0	0	0	0	0	0	66	0
Lane Group Flow (vph)	638	0	939	0	0	0	0	3883	609	0	2516	792
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	38.0		38.0					74.0	120.0		74.0	120.0
Effective Green, g (s)	38.0		38.0					74.0	120.0		74.0	120.0
Actuated g/C Ratio	0.32		0.32					0.62	1.00		0.62	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1076		874					3913	1568		2799	1348
v/s Ratio Prot	0.19							c0.61			0.55	
v/s Ratio Perm			c0.34						0.39			0.59
v/c Ratio	0.59		1.07					0.99	0.39		0.90	0.59
Uniform Delay, d1	34.5		41.0					22.7	0.0		19.8	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9		52.3					12.6	0.7		4.3	1.9
Delay (s)	35.4		93.3					35.3	0.7		24.1	1.9
Level of Service	D		F					D	A		C	A
Approach Delay (s)		70.3			0.0			30.6			18.9	
Approach LOS		E			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	501	0	1185	0	1998	2519	0	4233	1038
Future Volume (vph)	0	0	0	501	0	1185	0	1998	2519	0	4233	1038
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		0.94	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4483	1348		5953	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4483	1348		5953	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	501	0	1185	0	1998	2519	0	4233	1038
RTOR Reduction (vph)	0	0	0	0	0	27	0	76	0	0	2	0
Lane Group Flow (vph)	0	0	0	501	0	1158	0	3182	1259	0	4345	924
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				44.0		44.0		98.0	150.0		98.0	150.0
Effective Green, g (s)				44.0		44.0		98.0	150.0		98.0	150.0
Actuated g/C Ratio				0.29		0.29		0.65	1.00		0.65	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Vehicle Extension (s)				3.0		3.0		3.0			3.0	
Lane Grp Cap (vph)				997		1048		2928	1348		3889	1270
v/s Ratio Prot				0.15				0.71			c0.73	
v/s Ratio Perm						c0.32			0.93			0.73
v/c Ratio				0.50		1.11		1.20dr	0.93		1.12	0.73
Uniform Delay, d1				43.9		53.0		26.0	0.0		26.0	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.4		61.2		45.6	13.1		56.8	3.7
Delay (s)				44.3		114.2		71.6	13.1		82.8	3.7
Level of Service				D		F		E	B		F	A
Approach Delay (s)		0.0			93.5			55.3			69.0	
Approach LOS		A			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	67.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

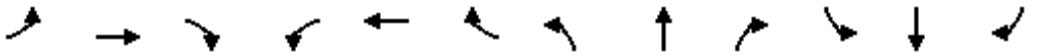
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	774	469	375	957	461	317
Future Volume (vph)	774	469	375	957	461	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	774	469	375	957	461	317
RTOR Reduction (vph)	0	242	0	0	0	246
Lane Group Flow (vph)	774	227	375	957	461	71
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	19.9	19.9	19.2	43.1	14.7	14.7
Effective Green, g (s)	19.9	19.9	19.2	43.1	14.7	14.7
Actuated g/C Ratio	0.30	0.30	0.29	0.66	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	953	426	460	2065	683	315
v/s Ratio Prot	c0.25		c0.24	0.30	c0.15	
v/s Ratio Perm		0.16				0.05
v/c Ratio	0.81	0.53	0.82	0.46	0.67	0.22
Uniform Delay, d1	21.2	19.1	21.7	5.6	23.4	20.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	1.3	10.7	0.2	2.6	0.4
Delay (s)	26.6	20.4	32.3	5.8	26.0	21.3
Level of Service	C	C	C	A	C	C
Approach Delay (s)	24.2			13.3	24.1	
Approach LOS	C			B	C	

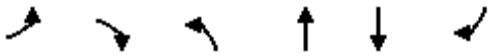
Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	492	0	1	450	207	1	1	0	54	2	455
Future Volume (vph)	219	492	0	1	450	207	1	1	0	54	2	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.95			1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (prot)	1736	3471		1736	3307			1800		1665	1675	1568
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (perm)	1736	3471		1736	3307			1800		1665	1675	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	219	492	0	1	450	207	1	1	0	54	2	455
RTOR Reduction (vph)	0	0	0	0	63	0	0	0	0	0	0	388
Lane Group Flow (vph)	219	492	0	1	594	0	0	2	0	28	28	67
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	10.8	28.1		0.7	18.0			5.7		8.7	8.7	8.7
Effective Green, g (s)	10.8	28.1		0.7	18.0			5.7		8.7	8.7	8.7
Actuated g/C Ratio	0.18	0.47		0.01	0.30			0.10		0.15	0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	316	1647		20	1005			173		244	246	230
v/s Ratio Prot	c0.13	0.14		0.00	c0.18			c0.00		0.02	0.02	
v/s Ratio Perm												c0.04
v/c Ratio	0.69	0.30		0.05	0.59			0.01		0.11	0.11	0.29
Uniform Delay, d1	22.6	9.5		28.9	17.5			24.2		21.9	21.9	22.5
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	6.4	0.1		1.0	0.9			0.0		0.2	0.2	0.7
Delay (s)	29.1	9.6		30.0	18.4			24.2		22.1	22.1	23.2
Level of Service	C	A		C	B			C		C	C	C
Approach Delay (s)		15.6			18.4			24.2			23.1	
Approach LOS		B			B			C			C	

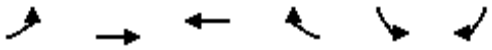
Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	59.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	507	27	21	1789	1648	392
Future Volume (vph)	507	27	21	1789	1648	392
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3404	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3404	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	507	27	21	1789	1648	392
RTOR Reduction (vph)	0	17	0	0	17	0
Lane Group Flow (vph)	507	10	21	1789	2023	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	33.0	33.0	1.5	76.6	71.1	
Effective Green, g (s)	33.0	33.0	1.5	76.6	71.1	
Actuated g/C Ratio	0.28	0.28	0.01	0.65	0.60	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	491	440	22	2283	2058	
v/s Ratio Prot	c0.29		0.01	c0.51	c0.59	
v/s Ratio Perm		0.01				
v/c Ratio	1.03	0.02	0.95	0.78	0.98	
Uniform Delay, d1	42.3	30.6	58.0	14.6	22.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	49.3	0.0	169.9	1.8	15.9	
Delay (s)	91.6	30.6	227.9	16.4	38.6	
Level of Service	F	C	F	B	D	
Approach Delay (s)	88.5			18.9	38.6	
Approach LOS	F			B	D	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	117.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	583	1392	2113	1736	0
Future Volume (vph)	0	583	1392	2113	1736	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	1.00	0.97	
Frt		1.00	1.00	0.85	1.00	
Flt Protected		1.00	1.00	1.00	0.95	
Satd. Flow (prot)		3505	3505	1568	3400	
Flt Permitted		1.00	1.00	1.00	0.95	
Satd. Flow (perm)		3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	583	1392	2113	1736	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	583	1392	2113	1736	0
Turn Type	Prot	NA	NA	custom	Prot	
Protected Phases	4	5	5	2	6	
Permitted Phases						
Actuated Green, G (s)		46.0	46.0	130.0	76.0	
Effective Green, g (s)		46.0	46.0	130.0	76.0	
Actuated g/C Ratio		0.35	0.35	1.00	0.58	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1240	1240	1568	1987	
v/s Ratio Prot		0.17	0.40	c1.35	0.51	
v/s Ratio Perm						
v/c Ratio		0.47	1.12	1.35	0.87	
Uniform Delay, d1		32.6	42.0	65.0	22.9	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	66.2	160.7	4.6	
Delay (s)		32.8	108.2	225.7	27.5	
Level of Service		C	F	F	C	
Approach Delay (s)		32.8	179.1		27.5	
Approach LOS		C	F		C	

Intersection Summary			
HCM 2000 Control Delay	119.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	134.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0
Turn Type			Prot		Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)						
Effective Green, g (s)						
Actuated g/C Ratio						
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)						
v/s Ratio Prot						
v/s Ratio Perm						
v/c Ratio						
Uniform Delay, d1						
Progression Factor						
Incremental Delay, d2						
Delay (s)						
Level of Service						
Approach Delay (s)	0.0			0.0	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	0.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	24.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

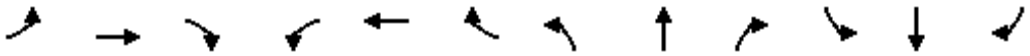
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	2236	0	1651	0
Future Volume (vph)	0	0	2236	0	1651	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	
Lane Util. Factor			0.95	0.95	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	0.95	0.95	
Satd. Flow (prot)			1665	1665	3400	
Flt Permitted			0.95	0.95	0.95	
Satd. Flow (perm)			1665	1665	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	2236	0	1651	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1118	1118	1651	0
Turn Type			Split	NA	Prot	
Protected Phases			4	4	2	
Permitted Phases						
Actuated Green, G (s)			81.0	81.0	61.0	
Effective Green, g (s)			81.0	81.0	61.0	
Actuated g/C Ratio			0.54	0.54	0.41	
Clearance Time (s)			4.0	4.0	4.0	
Vehicle Extension (s)			3.0	3.0	3.0	
Lane Grp Cap (vph)			899	899	1382	
v/s Ratio Prot			c0.67	0.67	c0.49	
v/s Ratio Perm						
v/c Ratio			1.24	1.24	1.19	
Uniform Delay, d1			34.5	34.5	44.5	
Progression Factor			1.00	1.00	1.00	
Incremental Delay, d2			119.0	119.0	95.0	
Delay (s)			153.5	153.5	139.5	
Level of Service			F	F	F	
Approach Delay (s)	0.0			153.5	139.5	
Approach LOS	A			F	F	

Intersection Summary			
HCM 2000 Control Delay	147.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	398	0	0	0	0	1651	2106	0	2236	0
Future Volume (vph)	0	0	398	0	0	0	0	1651	2106	0	2236	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95					0.91	0.91		0.95	
Frt		0.85	0.85					0.95	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		1490	1490					3176	1427		3505	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		1490	1490					3176	1427		3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	398	0	0	0	0	1651	2106	0	2236	0
RTOR Reduction (vph)	0	32	0	0	0	0	0	36	182	0	0	0
Lane Group Flow (vph)	0	167	199	0	0	0	0	2542	997	0	2236	0
Turn Type		NA	Free					NA	Perm	Prot	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			Free						2			
Actuated Green, G (s)		16.0	143.6					119.6	119.6		119.6	
Effective Green, g (s)		16.0	143.6					119.6	119.6		119.6	
Actuated g/C Ratio		0.11	1.00					0.83	0.83		0.83	
Clearance Time (s)		4.0						4.0	4.0		4.0	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		166	1490					2645	1188		2919	
v/s Ratio Prot		c0.11						c0.80			0.64	
v/s Ratio Perm			0.13						0.70			
v/c Ratio		1.01	0.13					0.96	0.84		0.77	
Uniform Delay, d1		63.8	0.0					10.1	6.7		5.5	
Progression Factor		1.00	1.00					1.00	1.00		1.00	
Incremental Delay, d2		71.4	0.2					10.0	5.4		1.2	
Delay (s)		135.2	0.2					20.1	12.0		6.8	
Level of Service		F	A					C	B		A	
Approach Delay (s)		67.7			0.0			17.5			6.8	
Approach LOS		E			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	143.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	115.7%	ICU Level of Service	H
Analysis Period (min)	15		

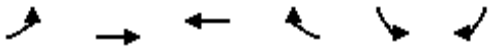
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	361	298	3683	166	7	2757
Future Volume (vph)	361	298	3683	166	7	2757
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5036	1568	3400	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5036	1568	3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	361	298	3683	166	7	2757
RTOR Reduction (vph)	0	33	0	24	0	0
Lane Group Flow (vph)	361	265	3683	142	7	2757
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	24.0	24.0	114.2	114.2	0.8	119.0
Effective Green, g (s)	24.0	24.0	114.2	114.2	0.8	119.0
Actuated g/C Ratio	0.16	0.16	0.76	0.76	0.01	0.79
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	540	249	3808	1185	18	3968
v/s Ratio Prot	0.11		c0.73		0.00	c0.55
v/s Ratio Perm		c0.17		0.09		
v/c Ratio	0.67	1.07	0.97	0.12	0.39	0.69
Uniform Delay, d1	59.8	63.5	16.7	4.9	74.9	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	75.3	8.3	0.0	13.4	0.5
Delay (s)	62.9	138.8	25.0	5.0	88.2	8.0
Level of Service	E	F	C	A	F	A
Approach Delay (s)	97.2		24.2			8.2
Approach LOS	F		C			A

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	253	1393	2076	88	134	413
Future Volume (vph)	253	1393	2076	88	134	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	253	1393	2076	88	134	413
RTOR Reduction (vph)	0	0	0	26	0	184
Lane Group Flow (vph)	253	1393	2076	62	134	229
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	14.0	76.0	58.0	58.0	15.6	15.6
Effective Green, g (s)	14.0	76.0	58.0	58.0	15.6	15.6
Actuated g/C Ratio	0.14	0.76	0.58	0.58	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	246	2674	2041	913	274	245
v/s Ratio Prot	c0.14	0.40	c0.59		0.08	
v/s Ratio Perm				0.04		c0.15
v/c Ratio	1.03	0.52	1.02	0.07	0.49	0.94
Uniform Delay, d1	42.8	4.6	20.8	9.0	38.4	41.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	64.9	0.2	24.3	0.0	1.4	39.8
Delay (s)	107.7	4.8	45.1	9.1	39.7	81.3
Level of Service	F	A	D	A	D	F
Approach Delay (s)		20.6	43.7		71.1	
Approach LOS		C	D		E	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

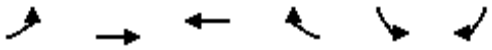
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	594	81	245	1177	132	45
Future Volume (vph)	594	81	245	1177	132	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	1752	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	594	81	245	1177	132	45
RTOR Reduction (vph)	0	52	0	0	0	35
Lane Group Flow (vph)	594	29	245	1177	132	10
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	14.2	14.2	4.5	22.7	8.4	8.4
Effective Green, g (s)	14.2	14.2	4.5	22.7	8.4	8.4
Actuated g/C Ratio	0.36	0.36	0.12	0.58	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1272	569	391	2034	376	336
v/s Ratio Prot	0.17		0.07	c0.34	c0.08	
v/s Ratio Perm		0.02				0.01
v/c Ratio	0.47	0.05	0.63	0.58	0.35	0.03
Uniform Delay, d1	9.5	8.1	16.5	5.2	13.0	12.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	3.1	0.4	0.6	0.0
Delay (s)	9.8	8.1	19.6	5.6	13.6	12.2
Level of Service	A	A	B	A	B	B
Approach Delay (s)	9.6			8.0	13.2	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	39.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

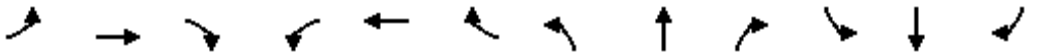
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	165	198	462	14	53	384
Future Volume (vph)	165	198	462	14	53	384
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	1.00		0.88	
Flt Protected		0.98	1.00		0.99	
Satd. Flow (prot)		1804	1837		1616	
Flt Permitted		0.63	1.00		0.99	
Satd. Flow (perm)		1154	1837		1616	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	165	198	462	14	53	384
RTOR Reduction (vph)	0	0	3	0	250	0
Lane Group Flow (vph)	0	363	473	0	187	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		15.4	15.4		8.9	
Effective Green, g (s)		15.4	15.4		8.9	
Actuated g/C Ratio		0.48	0.48		0.28	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		550	875		445	
v/s Ratio Prot			0.26		c0.12	
v/s Ratio Perm		c0.31				
v/c Ratio		0.66	0.54		0.42	
Uniform Delay, d1		6.5	6.0		9.6	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		3.0	0.7		0.6	
Delay (s)		9.4	6.6		10.2	
Level of Service		A	A		B	
Approach Delay (s)		9.4	6.6		10.2	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	32.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

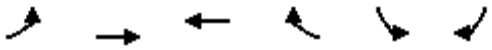
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	75	244	69	97	103	628	1616	188	264	1764	281
Future Volume (vph)	363	75	244	69	97	103	628	1616	188	264	1764	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	1845	1568	3400	3505	1568	3400	3505	1568	3400	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	1845	1568	3400	3505	1568	3400	3505	1568	3400	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	363	75	244	69	97	103	628	1616	188	264	1764	281
RTOR Reduction (vph)	0	0	189	0	0	96	0	0	45	0	0	66
Lane Group Flow (vph)	363	75	55	69	97	7	628	1616	143	264	1764	215
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	27.0	32.4	32.4	4.8	10.2	10.2	24.0	77.3	77.3	13.7	67.0	67.0
Effective Green, g (s)	27.0	32.4	32.4	4.8	10.2	10.2	24.0	77.3	77.3	13.7	67.0	67.0
Actuated g/C Ratio	0.19	0.22	0.22	0.03	0.07	0.07	0.17	0.54	0.54	0.10	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	328	414	352	113	247	110	565	1878	840	323	1628	728
v/s Ratio Prot	c0.21	0.04		0.02	c0.03		c0.18	0.46		0.08	c0.50	
v/s Ratio Perm			0.03			0.00			0.09			0.14
v/c Ratio	1.11	0.18	0.16	0.61	0.39	0.07	1.11	0.86	0.17	0.82	1.08	0.29
Uniform Delay, d1	58.6	45.2	44.9	68.8	64.0	62.6	60.1	28.8	17.1	64.0	38.6	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	81.5	0.2	0.2	9.4	1.0	0.3	72.2	4.3	0.1	14.7	48.7	0.2
Delay (s)	140.1	45.4	45.1	78.2	65.1	62.8	132.3	33.1	17.2	78.7	87.3	24.2
Level of Service	F	D	D	E	E	E	F	C	B	E	F	C
Approach Delay (s)		95.7			67.6			57.5			78.6	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	71.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	144.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		

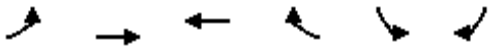
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	456	814	1307	358	21	155
Future Volume (vph)	456	814	1307	358	21	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	3392		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	3392		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	456	814	1307	358	21	155
RTOR Reduction (vph)	0	0	29	0	0	138
Lane Group Flow (vph)	456	814	1636	0	21	17
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	11.0	51.0	36.0		7.1	7.1
Effective Green, g (s)	11.0	51.0	36.0		7.1	7.1
Actuated g/C Ratio	0.17	0.77	0.54		0.11	0.11
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	565	2704	1847		188	168
v/s Ratio Prot	c0.13	0.23	c0.48		c0.01	
v/s Ratio Perm						0.01
v/c Ratio	0.81	0.30	0.89		0.11	0.10
Uniform Delay, d1	26.5	2.2	13.2		26.7	26.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	8.3	0.1	5.5		0.3	0.3
Delay (s)	34.8	2.3	18.8		26.9	26.9
Level of Service	C	A	B		C	C
Approach Delay (s)		14.0	18.8		26.9	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	169	886	1483	885	301	88
Future Volume (vph)	169	886	1483	885	301	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	169	886	1483	885	301	88
RTOR Reduction (vph)	0	0	0	435	0	68
Lane Group Flow (vph)	169	886	1483	450	301	20
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.0	40.1	29.1	29.1	14.5	14.5
Effective Green, g (s)	7.0	40.1	29.1	29.1	14.5	14.5
Actuated g/C Ratio	0.11	0.64	0.46	0.46	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	195	2245	1629	728	405	363
v/s Ratio Prot	c0.10	0.25	c0.42		c0.17	
v/s Ratio Perm				0.29		0.01
v/c Ratio	0.87	0.39	0.91	0.62	0.74	0.06
Uniform Delay, d1	27.3	5.4	15.5	12.6	22.3	18.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.8	0.1	8.0	1.6	7.2	0.1
Delay (s)	58.1	5.5	23.6	14.1	29.5	18.8
Level of Service	E	A	C	B	C	B
Approach Delay (s)		14.0	20.0		27.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	62.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

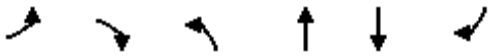
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2605	18	20	2420	87	61
Future Volume (vph)	2605	18	20	2420	87	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3501		1752	3505	1752	1568
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3501		1752	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2605	18	20	2420	87	61
RTOR Reduction (vph)	0	0	0	0	0	56
Lane Group Flow (vph)	2623	0	20	2420	87	5
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	112.8		3.4	120.2	12.1	12.1
Effective Green, g (s)	112.8		3.4	120.2	12.1	12.1
Actuated g/C Ratio	0.80		0.02	0.86	0.09	0.09
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2814		42	3002	151	135
v/s Ratio Prot	c0.75		0.01	c0.69	c0.05	
v/s Ratio Perm						0.00
v/c Ratio	0.93		0.48	0.81	0.58	0.04
Uniform Delay, d1	10.8		67.6	4.7	61.6	58.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	6.4		8.3	1.7	5.2	0.1
Delay (s)	17.2		75.9	6.3	66.9	58.9
Level of Service	B		E	A	E	E
Approach Delay (s)	17.2			6.9	63.6	
Approach LOS	B			A	E	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	38	75	1835	1569	96
Future Volume (vph)	27	38	75	1835	1569	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	1845	3475	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	1845	3475	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	27	38	75	1835	1569	96
RTOR Reduction (vph)	0	36	0	0	2	0
Lane Group Flow (vph)	27	2	75	1835	1663	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	6.5	6.5	10.7	127.2	112.5	
Effective Green, g (s)	6.5	6.5	10.7	127.2	112.5	
Actuated g/C Ratio	0.05	0.05	0.08	0.90	0.79	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	80	71	132	1656	2758	
v/s Ratio Prot	c0.02		0.04	c0.99	0.48	
v/s Ratio Perm		0.00				
v/c Ratio	0.34	0.02	0.57	1.11	0.60	
Uniform Delay, d1	65.5	64.6	63.3	7.2	5.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	0.1	5.5	58.0	0.4	
Delay (s)	68.0	64.7	68.8	65.2	6.1	
Level of Service	E	E	E	E	A	
Approach Delay (s)	66.1			65.4	6.1	
Approach LOS	E			E	A	

Intersection Summary			
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	141.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.6%	ICU Level of Service	G
Analysis Period (min)	15		

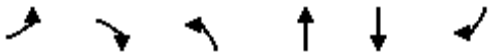
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	144	458	2274	42	237	2067
Future Volume (vph)	144	458	2274	42	237	2067
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.91		0.97	0.91
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	5022		3400	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	5022		3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	144	458	2274	42	237	2067
RTOR Reduction (vph)	0	203	2	0	0	0
Lane Group Flow (vph)	144	255	2314	0	237	2067
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	14.2	14.2	41.1		10.3	55.4
Effective Green, g (s)	14.2	14.2	41.1		10.3	55.4
Actuated g/C Ratio	0.18	0.18	0.53		0.13	0.71
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	320	286	2659		451	3595
v/s Ratio Prot	0.08		c0.46		0.07	c0.41
v/s Ratio Perm		c0.16				
v/c Ratio	0.45	0.89	0.87		0.53	0.57
Uniform Delay, d1	28.2	30.9	15.9		31.4	5.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	27.1	3.4		1.1	0.2
Delay (s)	29.2	58.1	19.3		32.5	5.6
Level of Service	C	E	B		C	A
Approach Delay (s)	51.2		19.3			8.4
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	521	9	221	1449	823	611
Future Volume (vph)	521	9	221	1449	823	611
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.94	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3281	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3281	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	521	9	221	1449	823	611
RTOR Reduction (vph)	0	3	0	0	167	0
Lane Group Flow (vph)	521	6	221	1449	1267	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	24.0	24.0	11.0	48.0	33.0	
Effective Green, g (s)	24.0	24.0	11.0	48.0	33.0	
Actuated g/C Ratio	0.30	0.30	0.14	0.60	0.41	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	525	470	240	2103	1353	
v/s Ratio Prot	c0.30		c0.13	0.41	c0.39	
v/s Ratio Perm		0.00				
v/c Ratio	0.99	0.01	0.92	0.69	0.94	
Uniform Delay, d1	27.9	19.7	34.1	10.9	22.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	37.1	0.0	37.2	1.0	12.2	
Delay (s)	65.0	19.7	71.3	11.9	34.7	
Level of Service	E	B	E	B	C	
Approach Delay (s)	64.3			19.7	34.7	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	106	2975	16	170	1257
Future Volume (vph)	0	106	2975	16	170	1257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.91		1.00	0.91
Frt		0.85	1.00		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1568	5032		1752	5036
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1568	5032		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	106	2975	16	170	1257
RTOR Reduction (vph)	0	100	0	0	0	0
Lane Group Flow (vph)	0	6	2991	0	170	1257
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		6		5	2
Permitted Phases		8				
Actuated Green, G (s)		4.8	55.9		9.0	68.9
Effective Green, g (s)		4.8	55.9		9.0	68.9
Actuated g/C Ratio		0.06	0.68		0.11	0.84
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		92	3442		192	4247
v/s Ratio Prot			c0.59		c0.10	0.25
v/s Ratio Perm		c0.00				
v/c Ratio		0.07	0.87		0.89	0.30
Uniform Delay, d1		36.3	10.0		35.8	1.3
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	2.6		34.9	0.0
Delay (s)		36.6	12.6		70.7	1.4
Level of Service		D	B		E	A
Approach Delay (s)	36.6		12.6			9.6
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	57	0	2970	132	79	1547
Future Volume (vph)	57	0	2970	132	79	1547
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.91		1.00	0.91
Frt	1.00		0.99		1.00	1.00
Flt Protected	0.95		1.00		0.95	1.00
Satd. Flow (prot)	1752		5004		1752	5036
Flt Permitted	0.95		1.00		0.95	1.00
Satd. Flow (perm)	1752		5004		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	57	0	2970	132	79	1547
RTOR Reduction (vph)	0	0	4	0	0	0
Lane Group Flow (vph)	57	0	3098	0	79	1547
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	7.1		64.7		5.0	73.7
Effective Green, g (s)	7.1		64.7		5.0	73.7
Actuated g/C Ratio	0.08		0.73		0.06	0.83
Clearance Time (s)	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	140		3645		98	4179
v/s Ratio Prot	c0.03		c0.62		c0.05	0.31
v/s Ratio Perm						
v/c Ratio	0.41		0.85		0.81	0.37
Uniform Delay, d1	38.8		8.6		41.4	1.9
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.9		2.0		36.6	0.1
Delay (s)	40.8		10.6		78.0	1.9
Level of Service	D		B		E	A
Approach Delay (s)	40.8		10.6			5.6
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	88.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

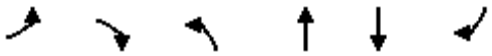
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	365	408	2767	435	710	734
Future Volume (vph)	365	408	2767	435	710	734
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	4933		1752	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	4933		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	365	408	2767	435	710	734
RTOR Reduction (vph)	0	108	14	0	0	0
Lane Group Flow (vph)	365	300	3188	0	710	734
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3				
Actuated Green, G (s)	23.0	23.0	72.0		43.0	119.0
Effective Green, g (s)	23.0	23.0	72.0		43.0	119.0
Actuated g/C Ratio	0.15	0.15	0.48		0.29	0.79
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	268	240	2367		502	3995
v/s Ratio Prot	c0.21		c0.65		c0.41	0.15
v/s Ratio Perm		0.19				
v/c Ratio	1.36	1.25	1.35		1.41	0.18
Uniform Delay, d1	63.5	63.5	39.0		53.5	3.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	185.1	142.9	159.0		198.0	0.0
Delay (s)	248.6	206.4	198.0		251.5	3.8
Level of Service	F	F	F		F	A
Approach Delay (s)	226.4		198.0			125.6
Approach LOS	F		F			F

Intersection Summary			
HCM 2000 Control Delay	182.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	132.7%	ICU Level of Service	H
Analysis Period (min)	15		

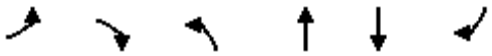
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	124	86	70	2871	920	82
Future Volume (vph)	124	86	70	2871	920	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	5036	4974	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	5036	4974	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	124	86	70	2871	920	82
RTOR Reduction (vph)	0	74	0	0	12	0
Lane Group Flow (vph)	124	12	70	2871	990	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	8.1	8.1	3.7	43.3	35.6	
Effective Green, g (s)	8.1	8.1	3.7	43.3	35.6	
Actuated g/C Ratio	0.14	0.14	0.06	0.73	0.60	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	238	213	109	3671	2981	
v/s Ratio Prot	c0.07		0.04	c0.57	0.20	
v/s Ratio Perm		0.01				
v/c Ratio	0.52	0.06	0.64	0.78	0.33	
Uniform Delay, d1	23.8	22.3	27.2	5.1	6.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	0.1	12.2	1.1	0.1	
Delay (s)	25.9	22.4	39.4	6.2	6.0	
Level of Service	C	C	D	A	A	
Approach Delay (s)	24.5			7.0	6.0	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

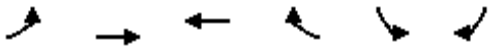
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	126	200	561	1398	789	348
Future Volume (vph)	126	200	561	1398	789	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.95	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3344	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3344	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	126	200	561	1398	789	348
RTOR Reduction (vph)	0	173	0	0	54	0
Lane Group Flow (vph)	126	27	561	1398	1083	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	11.1	11.1	29.6	64.4	30.8	
Effective Green, g (s)	11.1	11.1	29.6	64.4	30.8	
Actuated g/C Ratio	0.13	0.13	0.35	0.77	0.37	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	232	208	621	2703	1233	
v/s Ratio Prot	c0.07		c0.32	0.40	c0.32	
v/s Ratio Perm		0.02				
v/c Ratio	0.54	0.13	0.90	0.52	0.88	
Uniform Delay, d1	33.8	31.9	25.6	3.6	24.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	0.3	16.5	0.2	7.3	
Delay (s)	36.4	32.2	42.1	3.8	31.9	
Level of Service	D	C	D	A	C	
Approach Delay (s)	33.8			14.8	31.9	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

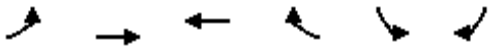
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	959	1243	2651	116	82	574
Future Volume (vph)	959	1243	2651	116	82	574
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	5004		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	5004		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	959	1243	2651	116	82	574
RTOR Reduction (vph)	0	0	3	0	0	314
Lane Group Flow (vph)	959	1243	2764	0	82	260
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	39.0	117.0	74.0		25.0	25.0
Effective Green, g (s)	39.0	117.0	74.0		25.0	25.0
Actuated g/C Ratio	0.26	0.78	0.49		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	884	2733	2468		292	261
v/s Ratio Prot	c0.28	0.35	c0.55		0.05	
v/s Ratio Perm						c0.17
v/c Ratio	1.08	0.45	1.12		0.28	1.00
Uniform Delay, d1	55.5	5.6	38.0		54.6	62.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	55.9	0.1	60.1		0.5	54.1
Delay (s)	111.4	5.7	98.1		55.2	116.6
Level of Service	F	A	F		E	F
Approach Delay (s)		51.8	98.1		108.9	
Approach LOS		D	F		F	

Intersection Summary			
HCM 2000 Control Delay	81.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

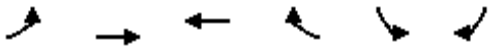
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	334	991	2604	39	153	175
Future Volume (vph)	334	991	2604	39	153	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	3505	3505	1568	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	3505	3505	1568	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	334	991	2604	39	153	175
RTOR Reduction (vph)	0	0	0	6	0	129
Lane Group Flow (vph)	334	991	2604	33	153	46
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	15.0	127.0	108.0	108.0	11.8	11.8
Effective Green, g (s)	15.0	127.0	108.0	108.0	11.8	11.8
Actuated g/C Ratio	0.10	0.87	0.74	0.74	0.08	0.08
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	347	3032	2578	1153	273	126
v/s Ratio Prot	c0.10	0.28	c0.74		c0.05	
v/s Ratio Perm				0.02		0.03
v/c Ratio	0.96	0.33	1.01	0.03	0.56	0.37
Uniform Delay, d1	65.6	1.9	19.4	5.2	65.0	64.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	38.2	0.1	20.2	0.0	2.6	1.8
Delay (s)	103.8	1.9	39.6	5.2	67.6	65.8
Level of Service	F	A	D	A	E	E
Approach Delay (s)		27.6	39.1		66.6	
Approach LOS		C	D		E	

Intersection Summary			
HCM 2000 Control Delay	37.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	146.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	107	1036	2332	9	39	222
Future Volume (vph)	107	1036	2332	9	39	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3503		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3503		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	107	1036	2332	9	39	222
RTOR Reduction (vph)	0	0	0	0	0	79
Lane Group Flow (vph)	107	1036	2341	0	39	143
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	6.0	86.1	76.1		13.3	13.3
Effective Green, g (s)	6.0	86.1	76.1		13.3	13.3
Actuated g/C Ratio	0.06	0.80	0.71		0.12	0.12
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	97	2809	2482		216	194
v/s Ratio Prot	c0.06	0.30	c0.67		0.02	
v/s Ratio Perm						c0.09
v/c Ratio	1.10	0.37	0.94		0.18	0.74
Uniform Delay, d1	50.7	3.0	13.7		42.2	45.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	121.9	0.1	8.2		0.4	13.6
Delay (s)	172.6	3.1	22.0		42.6	59.0
Level of Service	F	A	C		D	E
Approach Delay (s)		19.0	22.0		56.5	
Approach LOS		B	C		E	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	107.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	827	154	337	1274	159	380
Future Volume (vph)	827	154	337	1274	159	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	3400	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	827	154	337	1274	159	380
RTOR Reduction (vph)	0	98	0	0	0	291
Lane Group Flow (vph)	827	56	337	1274	159	89
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	16.3	16.3	7.9	28.2	8.7	8.7
Effective Green, g (s)	16.3	16.3	7.9	28.2	8.7	8.7
Actuated g/C Ratio	0.36	0.36	0.18	0.63	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1272	569	598	2201	658	303
v/s Ratio Prot	0.24		0.10	c0.36	0.05	
v/s Ratio Perm		0.04				c0.06
v/c Ratio	0.65	0.10	0.56	0.58	0.24	0.29
Uniform Delay, d1	11.9	9.4	16.9	4.9	15.3	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	1.2	0.4	0.2	0.5
Delay (s)	13.1	9.5	18.1	5.3	15.5	16.0
Level of Service	B	A	B	A	B	B
Approach Delay (s)	12.6			7.9	15.9	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	44.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

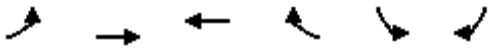
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1207	0	293	1611	0	114
Future Volume (vph)	1207	0	293	1611	0	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.95		1.00	0.95		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	3505		1752	3505		1568
Flt Permitted	1.00		0.22	1.00		1.00
Satd. Flow (perm)	3505		408	3505		1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1207	0	293	1611	0	114
RTOR Reduction (vph)	0	0	0	0	0	106
Lane Group Flow (vph)	1207	0	293	1611	0	8
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Actuated Green, G (s)	76.0		76.0	76.0		6.4
Effective Green, g (s)	76.0		76.0	76.0		6.4
Actuated g/C Ratio	0.84		0.84	0.84		0.07
Clearance Time (s)	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2946		343	2946		111
v/s Ratio Prot	0.34			0.46		
v/s Ratio Perm			c0.72			c0.01
v/c Ratio	0.41		0.85	0.55		0.07
Uniform Delay, d1	1.7		4.1	2.1		39.2
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		18.3	0.2		0.3
Delay (s)	1.8		22.3	2.3		39.5
Level of Service	A		C	A		D
Approach Delay (s)	1.8			5.4	39.5	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	176	881	2198	44	227	160
Future Volume (vph)	176	881	2198	44	227	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3495		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3495		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	176	881	2198	44	227	160
RTOR Reduction (vph)	0	0	1	0	0	122
Lane Group Flow (vph)	176	881	2241	0	227	38
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	10.0	86.0	72.0		15.8	15.8
Effective Green, g (s)	10.0	86.0	72.0		15.8	15.8
Actuated g/C Ratio	0.09	0.78	0.66		0.14	0.14
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	159	2745	2291		252	225
v/s Ratio Prot	c0.10	0.25	c0.64		c0.13	
v/s Ratio Perm						0.02
v/c Ratio	1.11	0.32	0.98		0.90	0.17
Uniform Delay, d1	49.9	3.4	18.1		46.2	41.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	102.9	0.1	13.9		31.8	0.4
Delay (s)	152.8	3.5	32.0		78.0	41.6
Level of Service	F	A	C		E	D
Approach Delay (s)		28.4	32.0		63.0	
Approach LOS		C	C		E	

Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	109.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	659	221	182	829	840	199	1837	190	505	814	71
Future Volume (veh/h)	39	659	221	182	829	840	199	1837	190	505	814	71
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	39	659	221	182	829	840	199	1837	190	505	814	71
Adj No. of Lanes	1	2	0	1	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	63	708	237	204	650	553	224	1397	144	337	1840	573
Arrive On Green	0.04	0.27	0.27	0.12	0.36	0.36	0.13	0.30	0.30	0.19	0.37	0.37
Sat Flow, veh/h	1757	2580	865	1740	1827	1553	1740	4596	473	1740	4988	1553
Grp Volume(v), veh/h	39	448	432	182	829	840	199	1327	700	505	814	71
Grp Sat Flow(s),veh/h/ln	1757	1752	1692	1740	1827	1553	1740	1663	1743	1740	1663	1553
Q Serve(g_s), s	3.2	36.0	36.0	14.9	51.5	31.6	16.3	44.0	44.0	28.0	17.8	4.4
Cycle Q Clear(g_c), s	3.2	36.0	36.0	14.9	51.5	31.6	16.3	44.0	44.0	28.0	17.8	4.4
Prop In Lane	1.00		0.51	1.00		1.00	1.00		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	63	481	465	204	650	553	224	1011	530	337	1840	573
V/C Ratio(X)	0.62	0.93	0.93	0.89	1.27	1.52	0.89	1.31	1.32	1.50	0.44	0.12
Avail Cap(c_a), veh/h	194	533	514	216	650	553	325	1011	530	337	1840	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.8	51.1	51.1	63.0	46.6	17.6	62.0	50.4	50.4	58.4	34.4	30.2
Incr Delay (d2), s/veh	9.4	22.0	22.6	32.6	135.5	243.1	18.4	147.6	157.4	240.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	20.3	19.7	9.0	50.3	50.9	9.0	40.8	44.2	35.8	8.2	1.9
LnGrp Delay(d),s/veh	78.2	73.1	73.8	95.6	182.1	260.7	80.4	197.9	207.7	298.4	34.6	30.3
LnGrp LOS	E	E	E	F	F	F	F	F	F	F	C	C
Approach Vol, veh/h		919			1851			2226			1390	
Approach Delay, s/veh		73.6			209.2			190.5			130.2	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.0	48.0	21.0	43.7	22.6	57.4	9.2	55.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	28.0	44.0	18.0	44.0	27.0	45.0	16.0	46.0
Max Q Clear Time (g_c+I1), s	30.0	46.0	16.9	38.0	18.3	19.8	5.2	53.5
Green Ext Time (p_c), s	0.0	0.0	0.1	1.7	0.3	8.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	166.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	398	727	21	30	613	561	68	1451	70	313	526	210
Future Volume (veh/h)	398	727	21	30	613	561	68	1451	70	313	526	210
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	398	727	21	30	613	561	68	1451	70	313	526	210
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	340	1409	41	38	818	366	106	1326	64	248	1511	676
Arrive On Green	0.19	0.41	0.41	0.02	0.23	0.23	0.03	0.39	0.39	0.07	0.44	0.44
Sat Flow, veh/h	1757	3479	100	1757	3505	1568	3375	3372	162	3375	3471	1553
Grp Volume(v), veh/h	398	366	382	30	613	561	68	745	776	313	526	210
Grp Sat Flow(s),veh/h/ln	1757	1752	1827	1757	1752	1568	1688	1736	1798	1688	1736	1553
Q Serve(g_s), s	29.0	23.6	23.6	2.5	24.4	35.0	3.0	59.0	59.0	11.0	15.1	13.2
Cycle Q Clear(g_c), s	29.0	23.6	23.6	2.5	24.4	35.0	3.0	59.0	59.0	11.0	15.1	13.2
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	340	710	740	38	818	366	106	683	707	248	1511	676
V/C Ratio(X)	1.17	0.52	0.52	0.79	0.75	1.53	0.64	1.09	1.10	1.26	0.35	0.31
Avail Cap(c_a), veh/h	340	710	740	70	818	366	135	683	707	248	1511	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.5	33.6	33.6	73.0	53.4	57.5	71.8	45.5	45.5	69.5	28.2	27.7
Incr Delay (d2), s/veh	104.1	0.6	0.6	29.2	3.9	253.4	6.5	62.0	63.4	147.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.9	11.5	12.0	1.5	12.3	40.9	1.5	40.0	41.7	10.2	7.3	5.7
LnGrp Delay(d),s/veh	164.6	34.2	34.2	102.2	57.3	310.9	78.3	107.5	108.9	216.6	28.3	27.9
LnGrp LOS	F	C	C	F	E	F	E	F	F	F	C	C
Approach Vol, veh/h		1146			1204			1589			1049	
Approach Delay, s/veh		79.5			176.6			107.0			84.4	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	63.0	7.2	64.8	8.7	69.3	33.0	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	59.0	6.0	58.0	6.0	64.0	29.0	35.0
Max Q Clear Time (g_c+I1), s	13.0	61.0	4.5	25.6	5.0	17.1	31.0	37.0
Green Ext Time (p_c), s	0.0	0.0	0.0	15.0	0.0	26.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	112.7
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1438	100	264	1569	132	72	633	190	73	515	2
Future Volume (veh/h)	11	1438	100	264	1569	132	72	633	190	73	515	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	11	1438	100	264	1569	132	72	633	190	73	515	2
Adj No. of Lanes	1	2	2	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	18	1367	1077	286	1776	148	92	700	313	93	717	3
Arrive On Green	0.01	0.40	0.40	0.17	0.56	0.56	0.05	0.20	0.20	0.05	0.20	0.20
Sat Flow, veh/h	1707	3406	2682	1707	3183	266	1757	3505	1568	1757	3581	14
Grp Volume(v), veh/h	11	1438	100	264	834	867	72	633	190	73	252	265
Grp Sat Flow(s),veh/h/ln	1707	1703	1341	1707	1703	1746	1757	1752	1568	1757	1752	1842
Q Serve(g_s), s	0.6	36.0	2.1	13.7	38.0	39.1	3.6	15.8	9.9	3.7	12.0	12.0
Cycle Q Clear(g_c), s	0.6	36.0	2.1	13.7	38.0	39.1	3.6	15.8	9.9	3.7	12.0	12.0
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	18	1367	1077	286	950	974	92	700	313	93	351	369
V/C Ratio(X)	0.60	1.05	0.09	0.92	0.88	0.89	0.78	0.90	0.61	0.78	0.72	0.72
Avail Cap(c_a), veh/h	76	1367	1077	286	950	974	118	704	315	98	351	369
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	26.8	16.7	36.8	17.1	17.4	42.0	35.0	32.7	41.9	33.5	33.5
Incr Delay (d2), s/veh	28.0	39.1	0.0	34.0	9.3	10.3	22.4	15.2	3.3	31.6	6.9	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	24.1	0.8	9.1	20.1	21.3	2.3	9.1	4.5	2.6	6.5	6.8
LnGrp Delay(d),s/veh	72.1	66.0	16.7	70.8	26.5	27.7	64.4	50.2	36.0	73.5	40.4	40.1
LnGrp LOS	E	F	B	E	C	C	E	D	D	E	D	D
Approach Vol, veh/h		1549			1965			895			590	
Approach Delay, s/veh		62.8			33.0			48.3			44.3	
Approach LOS		E			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.9	19.0	40.0	8.7	22.0	5.0	54.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	18.0	15.0	36.0	6.0	17.0	4.0	47.0
Max Q Clear Time (g_c+I1), s	5.7	17.8	15.7	38.0	5.6	14.0	2.6	41.1
Green Ext Time (p_c), s	0.0	0.1	0.0	0.0	0.0	2.0	0.0	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	658	269	146	988	125	451	432	135	37	511	33
Future Volume (veh/h)	36	658	269	146	988	125	451	432	135	37	511	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	36	658	269	146	988	125	451	432	135	37	511	33
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	47	919	411	179	1056	134	483	1479	662	48	612	274
Arrive On Green	0.03	0.26	0.26	0.10	0.34	0.34	0.27	0.42	0.42	0.03	0.17	0.17
Sat Flow, veh/h	1757	3505	1568	1757	3131	396	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	36	658	269	146	553	560	451	432	135	37	511	33
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1775	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	1.7	14.6	13.1	7.0	26.2	26.2	21.5	7.0	4.7	1.8	12.1	1.5
Cycle Q Clear(g_c), s	1.7	14.6	13.1	7.0	26.2	26.2	21.5	7.0	4.7	1.8	12.1	1.5
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	919	411	179	591	598	483	1479	662	48	612	274
V/C Ratio(X)	0.76	0.72	0.65	0.82	0.94	0.94	0.93	0.29	0.20	0.77	0.84	0.12
Avail Cap(c_a), veh/h	82	940	420	205	592	600	492	1479	662	123	695	311
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	28.7	28.2	37.7	27.5	27.5	30.3	16.3	15.7	41.4	34.2	29.9
Incr Delay (d2), s/veh	22.0	2.6	3.5	19.7	22.3	22.3	24.9	0.1	0.2	22.4	7.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.4	6.0	4.3	16.3	16.5	13.7	3.4	2.0	1.2	6.5	0.7
LnGrp Delay(d),s/veh	63.5	31.3	31.7	57.5	49.8	49.8	55.3	16.4	15.8	63.8	42.1	30.0
LnGrp LOS	E	C	C	E	D	D	E	B	B	E	D	C
Approach Vol, veh/h		963			1259			1018			581	
Approach Delay, s/veh		32.6			50.7			33.6			42.8	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	40.2	12.7	26.5	27.6	19.0	6.3	32.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	35.0	10.0	23.0	24.0	17.0	4.0	29.0
Max Q Clear Time (g_c+I1), s	3.8	9.0	9.0	16.6	23.5	14.1	3.7	28.2
Green Ext Time (p_c), s	0.0	7.8	0.0	5.2	0.1	0.9	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	40.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	728	88	88	835	295	47	890	203	189	361	29
Future Volume (veh/h)	84	728	88	88	835	295	47	890	203	189	361	29
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	84	728	88	88	835	295	47	890	203	189	361	29
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	107	932	417	112	942	422	64	992	444	207	1278	572
Arrive On Green	0.06	0.27	0.27	0.06	0.27	0.27	0.04	0.28	0.28	0.12	0.36	0.36
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	84	728	88	88	835	295	47	890	203	189	361	29
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	2.8	11.4	2.6	2.9	13.6	10.1	1.6	14.5	6.3	6.3	4.3	0.7
Cycle Q Clear(g_c), s	2.8	11.4	2.6	2.9	13.6	10.1	1.6	14.5	6.3	6.3	4.3	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	932	417	112	942	422	64	992	444	207	1278	572
V/C Ratio(X)	0.79	0.78	0.21	0.79	0.89	0.70	0.74	0.90	0.46	0.91	0.28	0.05
Avail Cap(c_a), veh/h	118	945	423	118	945	423	148	1004	449	207	1278	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	20.2	16.9	27.4	20.8	19.5	28.3	20.4	17.5	25.9	13.4	12.2
Incr Delay (d2), s/veh	26.8	4.2	0.2	27.7	10.2	5.1	15.1	10.6	0.7	39.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.0	1.1	2.3	7.8	4.9	1.0	8.4	2.8	5.3	2.1	0.3
LnGrp Delay(d),s/veh	54.3	24.4	17.2	55.0	31.0	24.6	43.4	31.1	18.3	64.9	13.5	12.2
LnGrp LOS	D	C	B	E	C	C	D	C	B	E	B	B
Approach Vol, veh/h		900			1218			1140			579	
Approach Delay, s/veh		26.5			31.2			29.3			30.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	20.8	7.8	19.8	6.2	25.6	7.6	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	4.0	16.0	5.0	19.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	8.3	16.5	4.9	13.4	3.6	6.3	4.8	15.6
Green Ext Time (p_c), s	0.0	0.3	0.0	2.2	0.0	7.4	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	489	131	236	492	716	64	3446	456	591	2992	532
Future Volume (veh/h)	330	489	131	236	492	716	64	3446	456	591	2992	532
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	330	489	131	236	492	716	64	3446	456	591	2992	532
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	192	885	396	192	885	547	78	2290	713	325	2654	826
Arrive On Green	0.06	0.25	0.25	0.06	0.25	0.25	0.02	0.46	0.46	0.10	0.53	0.53
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	330	489	131	236	492	716	64	3446	456	591	2992	532
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.5	18.2	10.3	8.5	18.4	38.0	2.8	69.1	33.8	14.5	80.1	36.7
Cycle Q Clear(g_c), s	8.5	18.2	10.3	8.5	18.4	38.0	2.8	69.1	33.8	14.5	80.1	36.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	885	396	192	885	547	78	2290	713	325	2654	826
V/C Ratio(X)	1.71	0.55	0.33	1.23	0.56	1.31	0.82	1.50	0.64	1.82	1.13	0.64
Avail Cap(c_a), veh/h	192	885	396	192	885	547	78	2290	713	325	2654	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	48.9	45.9	71.0	48.9	49.0	73.2	40.7	31.2	68.0	35.2	25.0
Incr Delay (d2), s/veh	342.5	0.4	0.2	138.9	0.5	151.8	43.8	229.5	1.5	379.7	62.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	8.9	4.5	7.7	8.9	45.7	1.8	80.3	14.8	23.9	52.0	16.0
LnGrp Delay(d),s/veh	413.5	49.3	46.1	209.9	49.4	200.8	116.9	270.2	32.7	447.7	97.9	26.4
LnGrp LOS	F	D	D	F	D	F	F	F	C	F	F	C
Approach Vol, veh/h		950			1444			3966			4115	
Approach Delay, s/veh		175.4			150.7			240.4			138.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	84.9	14.0	42.6	20.0	73.9	14.0	42.6
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	3.5	79.9	8.5	* 38	14.5	* 69	8.5	37.7
Max Q Clear Time (g_c+I1), s	4.8	82.1	10.5	40.0	16.5	71.1	10.5	20.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	182.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	2	9	0	97	0	3365	150	31	2693	6
Future Volume (veh/h)	10	0	2	9	0	97	0	3365	150	31	2693	6
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	10	0	2	9	0	97	0	3365	150	31	2693	6
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	12	0	2	83	0	148	2	3621	1128	38	4087	9
Arrive On Green	0.01	0.00	0.01	0.05	0.00	0.05	0.00	0.73	0.73	0.02	0.80	0.80
Sat Flow, veh/h	1435	0	287	1757	0	3136	1740	4988	1553	1740	5138	11
Grp Volume(v), veh/h	12	0	0	9	0	97	0	3365	150	31	1742	957
Grp Sat Flow(s),veh/h/ln	1722	0	0	1757	0	1568	1740	1663	1553	1740	1663	1825
Q Serve(g_s), s	0.7	0.0	0.0	0.5	0.0	3.3	0.0	61.1	3.1	1.9	24.2	24.2
Cycle Q Clear(g_c), s	0.7	0.0	0.0	0.5	0.0	3.3	0.0	61.1	3.1	1.9	24.2	24.2
Prop In Lane	0.83		0.17	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	14	0	0	83	0	148	2	3621	1128	38	2645	1452
V/C Ratio(X)	0.83	0.00	0.00	0.11	0.00	0.65	0.00	0.93	0.13	0.81	0.66	0.66
Avail Cap(c_a), veh/h	48	0	0	196	0	350	49	3762	1171	49	2645	1452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	0.0	0.0	49.0	0.0	50.3	0.0	12.4	4.5	52.4	4.7	4.7
Incr Delay (d2), s/veh	33.6	0.0	0.0	0.2	0.0	1.8	0.0	5.3	0.2	44.6	1.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.3	0.0	1.5	0.0	29.2	1.4	1.4	11.3	12.7
LnGrp Delay(d),s/veh	86.8	0.0	0.0	49.2	0.0	52.2	0.0	17.6	4.6	97.0	5.8	6.6
LnGrp LOS	F			D		D		B	A	F	A	A
Approach Vol, veh/h		12			106			3515			2730	
Approach Delay, s/veh		86.8			51.9			17.1			7.1	
Approach LOS		F			D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	90.5		6.4	7.5	83.1		10.6
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 3	81.4		3.0	* 3	* 81		12.0
Max Q Clear Time (g_c+I1), s	0.0	26.2		2.7	3.9	63.1		5.3
Green Ext Time (p_c), s	0.0	54.9		0.0	0.0	15.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	329	23	149	410	832	34	2829	206	422	2387	0
Future Volume (veh/h)	0	329	23	149	410	832	34	2829	206	422	2387	0
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	0	329	23	149	410	832	34	2829	206	422	2387	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	512	229	136	796	573	60	2448	174	468	3171	0
Arrive On Green	0.00	0.15	0.15	0.04	0.23	0.23	0.02	0.51	0.51	0.14	0.64	0.00
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4754	338	3375	5152	0
Grp Volume(v), veh/h	0	329	23	149	410	832	34	1959	1076	422	2387	0
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1767	1688	1663	0
Q Serve(g_s), s	0.0	12.3	1.8	5.5	14.2	31.4	1.4	71.2	71.2	17.0	46.2	0.0
Cycle Q Clear(g_c), s	0.0	12.3	1.8	5.5	14.2	31.4	1.4	71.2	71.2	17.0	46.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.00
Lane Grp Cap(c), veh/h	2	512	229	136	796	573	60	1712	910	468	3171	0
V/C Ratio(X)	0.00	0.64	0.10	1.10	0.52	1.45	0.56	1.14	1.18	0.90	0.75	0.00
Avail Cap(c_a), veh/h	73	728	326	136	796	573	103	1712	910	549	3225	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	55.5	51.0	66.4	46.8	43.9	67.4	33.5	33.5	58.6	17.6	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.1	106.3	0.3	212.5	3.1	72.3	93.5	15.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.0	0.8	4.6	6.9	55.6	0.7	49.8	58.3	9.0	21.3	0.0
LnGrp Delay(d),s/veh	0.0	56.0	51.1	172.7	47.0	256.3	70.4	105.8	127.0	73.7	18.5	0.0
LnGrp LOS		E	D	F	D	F	E	F	F	E	B	
Approach Vol, veh/h		352			1391			3069			2809	
Approach Delay, s/veh		55.7			185.7			112.9			26.8	
Approach LOS		E			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	93.2	0.0	37.1	24.7	76.5	11.0	26.1
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	4.2	89.4	3.0	* 31	22.5	* 71	5.5	* 29
Max Q Clear Time (g_c+I1), s	3.4	48.2	0.0	33.4	19.0	73.2	7.5	14.3
Green Ext Time (p_c), s	0.0	35.2	0.0	0.0	0.2	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	91.8
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	46	103	2896	24	61	2548
Future Volume (veh/h)	46	103	2896	24	61	2548
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	46	103	2896	24	61	2548
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	102	91	3589	30	77	2807
Arrive On Green	0.06	0.06	0.70	0.70	0.04	0.81
Sat Flow, veh/h	1757	1568	5267	42	1740	3563
Grp Volume(v), veh/h	46	103	1885	1035	61	2548
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1819	1740	1736
Q Serve(g_s), s	2.0	4.5	30.0	30.3	2.7	40.8
Cycle Q Clear(g_c), s	2.0	4.5	30.0	30.3	2.7	40.8
Prop In Lane	1.00	1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	102	91	2339	1280	77	2807
V/C Ratio(X)	0.45	1.13	0.81	0.81	0.79	0.91
Avail Cap(c_a), veh/h	102	91	2339	1280	360	2928
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	36.4	7.9	7.9	36.6	5.3
Incr Delay (d2), s/veh	1.1	133.0	2.0	3.7	6.6	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.3	14.0	16.3	1.4	20.1
LnGrp Delay(d),s/veh	36.3	169.4	9.9	11.6	43.1	9.7
LnGrp LOS	D	F	A	B	D	A
Approach Vol, veh/h	149		2920			2609
Approach Delay, s/veh	128.3		10.5			10.5
Approach LOS	F		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		67.3			8.1	59.2		10.0
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		65.2			* 16	53.4		4.5
Max Q Clear Time (g_c+I1), s		42.8			4.7	32.3		6.5
Green Ext Time (p_c), s		19.6			0.0	19.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1488	677	98	1960	977	763	1984	74	1096	1563	188
Future Volume (veh/h)	85	1488	677	98	1960	977	763	1984	74	1096	1563	188
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	85	1488	677	98	1960	977	763	1984	74	1096	1563	188
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	68	1334	597	80	1357	607	402	1380	430	569	1620	504
Arrive On Green	0.02	0.39	0.39	0.02	0.40	0.40	0.12	0.28	0.28	0.17	0.32	0.32
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	85	1488	677	98	1960	977	763	1984	74	1096	1563	188
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	3.0	56.9	56.9	3.5	57.9	57.9	17.3	40.2	5.3	24.5	44.8	13.5
Cycle Q Clear(g_c), s	3.0	56.9	56.9	3.5	57.9	57.9	17.3	40.2	5.3	24.5	44.8	13.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	1334	597	80	1357	607	402	1380	430	569	1620	504
V/C Ratio(X)	1.24	1.12	1.13	1.23	1.44	1.61	1.90	1.44	0.17	1.93	0.96	0.37
Avail Cap(c_a), veh/h	68	1334	597	80	1357	607	402	1380	430	569	1620	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.2	44.2	44.2	70.9	43.7	43.7	64.0	52.5	39.9	60.4	48.2	37.7
Incr Delay (d2), s/veh	187.8	62.9	79.9	174.4	204.1	281.8	413.6	201.2	0.1	423.0	14.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	38.3	37.2	3.5	65.6	71.9	31.1	44.1	2.3	44.8	22.8	5.8
LnGrp Delay(d),s/veh	259.0	107.1	124.1	245.3	247.8	325.5	477.6	253.8	40.0	483.4	63.0	37.8
LnGrp LOS	F	F	F	F	F	F	F	F	D	F	E	D
Approach Vol, veh/h		2250			3035			2821			2847	
Approach Delay, s/veh		117.9			272.7			308.7			223.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	63.3	22.0	52.0	9.0	62.3	29.0	45.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.5	4.8
Max Green Setting (Gmax), s	3.0	* 58	* 17	47.2	3.5	* 57	24.5	40.2
Max Q Clear Time (g_c+I1), s	5.0	59.9	19.3	46.8	5.5	58.9	26.5	42.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		237.3
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	612	57	401	826	273	325	2116	555	131	1767	432
Future Volume (veh/h)	108	612	57	401	826	273	325	2116	555	131	1767	432
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	108	612	57	401	826	273	325	2116	555	131	1767	432
Adj No. of Lanes	1	1	1	2	2	1	1	3	1	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	130	523	445	336	1073	480	278	2038	641	109	1575	490
Arrive On Green	0.07	0.28	0.28	0.10	0.31	0.31	0.16	0.41	0.41	0.06	0.32	0.32
Sat Flow, veh/h	1757	1845	1568	3408	3505	1568	1740	4988	1568	1757	4988	1553
Grp Volume(v), veh/h	108	612	57	401	826	273	325	2116	555	131	1767	432
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	1752	1568	1740	1663	1568	1757	1663	1553
Q Serve(g_s), s	8.5	39.7	3.8	13.8	30.0	20.5	22.4	57.2	45.4	8.7	44.2	36.9
Cycle Q Clear(g_c), s	8.5	39.7	3.8	13.8	30.0	20.5	22.4	57.2	45.4	8.7	44.2	36.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	130	523	445	336	1073	480	278	2038	641	109	1575	490
V/C Ratio(X)	0.83	1.17	0.13	1.19	0.77	0.57	1.17	1.04	0.87	1.20	1.12	0.88
Avail Cap(c_a), veh/h	152	523	445	336	1073	480	278	2038	641	109	1575	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	50.1	37.3	63.1	44.1	40.8	58.8	41.4	37.9	65.7	47.9	45.4
Incr Delay (d2), s/veh	24.4	95.5	0.0	112.7	3.1	1.0	107.1	30.7	11.5	149.5	64.0	16.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	34.1	1.6	11.7	14.9	9.0	19.0	32.0	21.6	8.7	29.6	18.0
LnGrp Delay(d),s/veh	88.3	145.6	37.3	175.8	47.2	41.8	165.9	72.1	49.4	215.2	111.9	61.7
LnGrp LOS	F	F	D	F	D	D	F	F	D	F	F	E
Approach Vol, veh/h		777			1500			2996			2330	
Approach Delay, s/veh		129.7			80.6			78.1			108.4	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	49.0	15.8	48.2	14.0	62.0	19.0	45.0
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 22	44.2	12.1	* 42	* 8.7	57.2	* 14	* 40
Max Q Clear Time (g_c+I1), s	24.4	46.2	10.5	32.0	10.7	59.2	15.8	41.7
Green Ext Time (p_c), s	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	93.1
HCM 2010 LOS	F

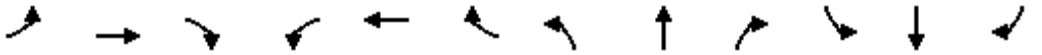
Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	852	84	107	1081	816	274	2146	382	839	1016	376
Future Volume (veh/h)	268	852	84	107	1081	816	274	2146	382	839	1016	376
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	268	852	84	107	1081	816	274	2146	382	839	1016	376
Adj No. of Lanes	2	1	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	204	627	533	82	1145	512	323	1662	523	591	2050	638
Arrive On Green	0.06	0.34	0.34	0.05	0.33	0.33	0.10	0.33	0.33	0.17	0.41	0.41
Sat Flow, veh/h	3408	1845	1568	1757	3505	1568	3375	4988	1568	3408	4988	1553
Grp Volume(v), veh/h	268	852	84	107	1081	816	274	2146	382	839	1016	376
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1757	1752	1568	1688	1663	1568	1704	1663	1553
Q Serve(g_s), s	9.0	51.0	5.6	7.0	45.0	49.0	12.0	50.0	32.2	26.0	22.6	28.2
Cycle Q Clear(g_c), s	9.0	51.0	5.6	7.0	45.0	49.0	12.0	50.0	32.2	26.0	22.6	28.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	627	533	82	1145	512	323	1663	523	591	2050	638
V/C Ratio(X)	1.31	1.36	0.16	1.31	0.94	1.59	0.85	1.29	0.73	1.42	0.50	0.59
Avail Cap(c_a), veh/h	204	627	533	82	1145	512	405	1663	523	591	2050	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.5	49.5	34.5	71.5	49.2	50.5	66.8	50.0	44.1	62.0	32.7	34.3
Incr Delay (d2), s/veh	170.2	171.5	0.1	201.3	15.1	276.0	13.0	135.5	5.2	198.9	0.2	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	55.8	2.4	8.0	24.2	60.5	6.2	43.8	14.7	28.5	10.4	12.3
LnGrp Delay(d),s/veh	240.7	221.0	34.7	272.8	64.3	326.5	79.7	185.5	49.3	260.9	32.9	35.8
LnGrp LOS	F	F	C	F	E	F	E	F	D	F	C	D
Approach Vol, veh/h		1204			2004			2802			2231	
Approach Delay, s/veh		212.4			182.2			156.6			119.1	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.3	65.7	13.0	53.0	30.0	54.0	11.0	55.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	58.0	9.0	49.0	26.0	50.0	7.0	51.0
Max Q Clear Time (g_c+I1), s	14.0	30.2	11.0	51.0	28.0	52.0	9.0	53.0
Green Ext Time (p_c), s	0.4	26.3	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	160.8
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1342	414	134	13	510	7	933	2195	129	9	816	800
Future Volume (veh/h)	1342	414	134	13	510	7	933	2195	129	9	816	800
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	1342	414	134	13	510	7	933	2195	129	9	816	800
Adj No. of Lanes	1	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	694	1748	782	15	391	175	497	1707	531	21	1023	319
Arrive On Green	0.40	0.50	0.50	0.01	0.11	0.11	0.15	0.34	0.34	0.01	0.21	0.21
Sat Flow, veh/h	1740	3471	1553	1740	3471	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	1342	414	134	13	510	7	933	2195	129	9	816	800
Grp Sat Flow(s),veh/h/ln	1740	1736	1553	1740	1736	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	59.9	10.1	7.0	1.1	16.9	0.6	22.1	51.4	8.9	0.4	23.3	30.8
Cycle Q Clear(g_c), s	59.9	10.1	7.0	1.1	16.9	0.6	22.1	51.4	8.9	0.4	23.3	30.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	694	1748	782	15	391	175	497	1707	531	21	1023	319
V/C Ratio(X)	1.93	0.24	0.17	0.86	1.30	0.04	1.88	1.29	0.24	0.43	0.80	2.51
Avail Cap(c_a), veh/h	694	1748	782	58	391	175	497	1707	531	67	1023	319
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	21.0	20.2	74.3	66.6	59.4	64.0	49.4	35.4	74.3	56.7	59.7
Incr Delay (d2), s/veh	425.0	0.3	0.5	36.8	154.7	0.4	402.4	133.4	1.1	5.0	6.5	689.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	110.7	4.9	3.1	0.7	16.5	0.3	38.1	44.6	4.0	0.2	11.3	74.2
LnGrp Delay(d),s/veh	470.1	21.3	20.7	111.1	221.3	59.8	466.4	182.7	36.5	79.3	63.1	748.7
LnGrp LOS	F	C	C	F	F	E	F	F	D	E	E	F
Approach Vol, veh/h		1890			530			3257			1625	
Approach Delay, s/veh		340.0			216.5			258.2			400.7	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	36.0	65.0	22.1	6.4	56.6	6.3	80.8
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 22	* 31	* 60	* 17	3.0	* 50	5.0	* 72
Max Q Clear Time (g_c+I1), s	24.1	32.8	61.9	18.9	2.4	53.4	3.1	12.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.5

Intersection Summary	
HCM 2010 Ctrl Delay	308.0
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	619	371	109	916	237	494	2754	201	31	1007	89
Future Volume (veh/h)	87	619	371	109	916	237	494	2754	201	31	1007	89
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	87	619	371	109	916	237	494	2754	201	31	1007	89
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	104	819	367	156	872	390	543	2691	838	56	1970	613
Arrive On Green	0.03	0.23	0.23	0.05	0.25	0.25	0.16	0.54	0.54	0.02	0.40	0.40
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	87	619	371	109	916	237	494	2754	201	31	1007	89
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	3.4	22.1	31.4	4.2	33.4	18.0	19.3	72.4	9.2	1.2	20.5	4.9
Cycle Q Clear(g_c), s	3.4	22.1	31.4	4.2	33.4	18.0	19.3	72.4	9.2	1.2	20.5	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	819	367	156	872	390	543	2691	838	56	1970	613
V/C Ratio(X)	0.84	0.76	1.01	0.70	1.05	0.61	0.91	1.02	0.24	0.56	0.51	0.15
Avail Cap(c_a), veh/h	104	819	367	168	872	390	712	2691	838	75	1970	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	47.8	51.4	63.1	50.4	44.6	55.4	30.9	16.3	65.5	30.8	26.1
Incr Delay (d2), s/veh	39.8	6.4	50.1	9.0	44.5	5.3	11.4	23.6	0.5	3.2	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	11.4	18.7	2.2	21.5	8.3	9.8	39.0	4.1	0.6	9.5	2.2
LnGrp Delay(d),s/veh	104.6	54.3	101.6	72.2	94.9	49.9	66.8	54.5	16.8	68.7	31.4	26.4
LnGrp LOS	F	D	F	E	F	D	E	F	B	E	C	C
Approach Vol, veh/h		1077			1262			3449			1127	
Approach Delay, s/veh		74.6			84.5			54.1			32.1	
Approach LOS		E			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.1	58.5	9.6	39.0	7.7	77.9	11.6	37.0
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	28.3	* 47	4.1	33.4	3.0	* 72	6.6	* 31
Max Q Clear Time (g_c+I1), s	21.3	22.5	5.4	35.4	3.2	74.4	6.2	33.4
Green Ext Time (p_c), s	0.3	24.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.3
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	1018	21	153	1269	80	238	394	208	28	148	6
Future Volume (veh/h)	115	1018	21	153	1269	80	238	394	208	28	148	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	115	1018	21	153	1269	80	238	394	208	28	148	6
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	145	1375	28	189	1395	88	276	516	439	33	261	222
Arrive On Green	0.08	0.39	0.39	0.11	0.42	0.42	0.16	0.28	0.28	0.02	0.14	0.14
Sat Flow, veh/h	1757	3512	72	1757	3349	211	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	115	508	531	153	663	686	238	394	208	28	148	6
Grp Sat Flow(s),veh/h/ln	1757	1752	1832	1757	1752	1807	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	5.1	19.7	19.7	6.7	28.1	28.2	10.5	15.5	8.7	1.3	5.9	0.3
Cycle Q Clear(g_c), s	5.1	19.7	19.7	6.7	28.1	28.2	10.5	15.5	8.7	1.3	5.9	0.3
Prop In Lane	1.00		0.04	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	686	717	189	730	753	276	516	439	33	261	222
V/C Ratio(X)	0.79	0.74	0.74	0.81	0.91	0.91	0.86	0.76	0.47	0.84	0.57	0.03
Avail Cap(c_a), veh/h	155	686	717	244	753	777	289	699	594	67	466	396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	20.6	20.6	34.5	21.7	21.7	32.5	26.1	23.7	38.7	31.7	29.3
Incr Delay (d2), s/veh	22.8	4.3	4.1	14.4	14.6	14.6	21.9	3.4	0.8	40.0	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	10.3	10.7	4.0	16.4	17.0	6.7	8.4	3.9	1.0	3.1	0.1
LnGrp Delay(d),s/veh	58.5	24.9	24.7	48.9	36.3	36.3	54.4	29.5	24.5	78.7	33.6	29.3
LnGrp LOS	E	C	C	D	D	D	D	C	C	E	C	C
Approach Vol, veh/h		1154			1502			840			182	
Approach Delay, s/veh		28.2			37.6			35.3			40.4	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	26.1	12.5	35.0	16.4	15.2	10.5	37.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	30.0	11.0	30.0	13.0	20.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	3.3	17.5	8.7	21.7	12.5	7.9	7.1	30.2
Green Ext Time (p_c), s	0.0	3.3	0.1	7.3	0.0	3.3	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	34.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1326	686	5	1390	461	608	422	107	253	235	76
Future Volume (veh/h)	69	1326	686	5	1390	461	608	422	107	253	235	76
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	69	1326	686	5	1390	461	608	422	107	253	235	76
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	47	1113	530	7	1205	382	480	480	408	258	246	209
Arrive On Green	0.03	0.48	0.48	0.00	0.46	0.46	0.27	0.26	0.26	0.15	0.13	0.13
Sat Flow, veh/h	1757	2306	1098	1757	2619	831	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	69	980	1032	5	909	942	608	422	107	253	235	76
Grp Sat Flow(s),veh/h/ln	1757	1752	1651	1757	1752	1698	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.0	72.4	72.4	0.4	69.0	69.0	41.0	32.9	8.1	21.5	19.0	6.6
Cycle Q Clear(g_c), s	4.0	72.4	72.4	0.4	69.0	69.0	41.0	32.9	8.1	21.5	19.0	6.6
Prop In Lane	1.00		0.66	1.00		0.49	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	846	797	7	806	781	480	480	408	258	246	209
V/C Ratio(X)	1.47	1.16	1.29	0.76	1.13	1.21	1.27	0.88	0.26	0.98	0.96	0.36
Avail Cap(c_a), veh/h	47	846	797	35	806	781	480	480	408	258	246	209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.0	38.8	38.8	74.6	40.5	40.5	54.5	53.3	44.1	63.8	64.6	59.2
Incr Delay (d2), s/veh	298.2	84.4	141.7	97.0	73.0	104.6	135.5	17.0	0.3	50.8	45.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	54.9	64.4	0.4	49.7	55.0	38.0	19.0	3.6	14.1	12.7	2.9
LnGrp Delay(d),s/veh	371.2	123.2	180.4	171.7	113.5	145.1	190.0	70.2	44.4	114.6	109.6	60.3
LnGrp LOS	F	F	F	F	F	F	F	E	D	F	F	E
Approach Vol, veh/h		2081			1856			1137			564	
Approach Delay, s/veh		159.8			129.7			131.9			105.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	43.0	4.6	76.4	45.0	24.0	8.0	73.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	39.0	3.0	70.0	41.0	20.0	4.0	69.0
Max Q Clear Time (g_c+I1), s	23.5	34.9	2.4	74.4	43.0	21.0	6.0	71.0
Green Ext Time (p_c), s	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	138.8
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	371	5	73	489	0	10	139	75	11	30	30
Future Volume (veh/h)	176	371	5	73	489	0	10	139	75	11	30	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1900	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	176	371	5	73	489	0	10	139	75	11	30	30
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	226	1964	26	520	1081	0	119	225	117	148	171	143
Arrive On Green	0.13	0.56	0.56	0.31	0.31	0.00	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1740	3507	47	983	3563	0	36	1114	579	120	843	704
Grp Volume(v), veh/h	176	183	193	73	489	0	224	0	0	71	0	0
Grp Sat Flow(s),veh/h/ln	1740	1736	1819	983	1736	0	1728	0	0	1666	0	0
Q Serve(g_s), s	3.3	1.8	1.8	1.9	3.8	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.3	1.8	1.8	1.9	3.8	0.0	4.0	0.0	0.0	1.2	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.00	0.04		0.33	0.15		0.42
Lane Grp Cap(c), veh/h	226	972	1019	520	1081	0	461	0	0	461	0	0
V/C Ratio(X)	0.78	0.19	0.19	0.14	0.45	0.00	0.49	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	413	1546	1620	739	1855	0	725	0	0	704	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.2	3.6	3.6	8.6	9.3	0.0	12.3	0.0	0.0	11.2	0.0	0.0
Incr Delay (d2), s/veh	5.7	0.1	0.1	0.1	0.3	0.0	0.8	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.8	0.9	0.5	1.8	0.0	2.0	0.0	0.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	19.9	3.7	3.7	8.7	9.6	0.0	13.1	0.0	0.0	11.3	0.0	0.0
LnGrp LOS	B	A	A	A	A		B			B		
Approach Vol, veh/h		552			562			224			71	
Approach Delay, s/veh		8.9			9.5			13.1			11.3	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		10.8		22.9		10.8	8.4	14.5
Change Period (Y+Rc), s		4.0		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		12.0		30.0		12.0	8.0	18.0
Max Q Clear Time (g_c+I1), s		6.0		3.8		3.2	5.3	5.8
Green Ext Time (p_c), s		0.8		6.5		1.1	0.1	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	9.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	884	101	176	1036	384	110	614	197	293	400	80
Future Volume (veh/h)	58	884	101	176	1036	384	110	614	197	293	400	80
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	58	884	101	176	1036	384	110	614	197	293	400	80
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	56	1019	116	176	976	357	131	548	466	264	688	585
Arrive On Green	0.03	0.32	0.32	0.10	0.39	0.39	0.07	0.30	0.30	0.15	0.37	0.37
Sat Flow, veh/h	1757	3171	362	1757	2515	920	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	58	489	496	176	718	702	110	614	197	293	400	80
Grp Sat Flow(s),veh/h/ln	1757	1752	1781	1757	1752	1682	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.8	39.4	39.4	15.0	58.2	58.2	9.3	44.6	15.1	22.5	26.0	5.1
Cycle Q Clear(g_c), s	4.8	39.4	39.4	15.0	58.2	58.2	9.3	44.6	15.1	22.5	26.0	5.1
Prop In Lane	1.00		0.20	1.00		0.55	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	56	563	572	176	680	653	131	548	466	264	688	585
V/C Ratio(X)	1.03	0.87	0.87	1.00	1.06	1.08	0.84	1.12	0.42	1.11	0.58	0.14
Avail Cap(c_a), veh/h	56	565	575	176	680	653	206	548	466	264	688	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.6	47.9	47.9	67.5	45.9	45.9	68.5	52.7	42.4	63.8	37.7	31.1
Incr Delay (d2), s/veh	129.3	12.9	12.7	68.4	50.2	57.4	9.1	75.6	0.2	88.8	0.8	0.0
Initial Q Delay(d3),s/veh	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	21.0	21.3	10.6	37.6	37.4	4.9	34.2	6.6	17.4	13.4	2.2
LnGrp Delay(d),s/veh	202.4	60.8	60.6	135.9	96.1	103.3	77.6	128.3	42.6	152.6	38.5	31.1
LnGrp LOS	F	E	E	F	F	F	E	F	D	F	D	C
Approach Vol, veh/h		1043			1596			921			773	
Approach Delay, s/veh		68.6			103.6			103.9			81.0	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	63.0	16.7	60.3	20.0	53.0	28.0	49.0
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 4.8	58.2	17.6	* 50	15.0	* 48	22.5	* 45
Max Q Clear Time (g_c+I1), s	6.8	60.2	11.3	28.0	17.0	41.4	24.5	46.6
Green Ext Time (p_c), s	0.0	0.0	0.0	2.5	0.0	4.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	91.2
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	373	1980	182	246	2151	3	109	1802	305	3	1650	155
Future Volume (veh/h)	373	1980	182	246	2151	3	109	1802	305	3	1650	155
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	373	1980	182	246	2151	3	109	1802	305	3	1650	155
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	295	1859	596	227	1762	564	91	1557	697	8	1472	659
Arrive On Green	0.09	0.38	0.38	0.07	0.36	0.36	0.03	0.44	0.44	0.00	0.42	0.42
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	373	1980	182	246	2151	3	109	1802	305	3	1650	155
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	13.0	57.0	12.2	10.0	54.0	0.2	4.0	66.6	20.1	0.1	63.0	9.5
Cycle Q Clear(g_c), s	13.0	57.0	12.2	10.0	54.0	0.2	4.0	66.6	20.1	0.1	63.0	9.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	1859	596	227	1762	564	91	1557	697	8	1472	659
V/C Ratio(X)	1.26	1.06	0.31	1.08	1.22	0.01	1.20	1.16	0.44	0.37	1.12	0.24
Avail Cap(c_a), veh/h	295	1859	596	227	1762	564	91	1557	697	91	1472	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	46.5	32.6	70.0	48.0	30.8	73.0	41.7	28.8	74.7	43.5	28.0
Incr Delay (d2), s/veh	142.5	40.6	0.3	83.5	104.8	0.0	157.5	78.4	0.4	26.6	64.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	32.6	5.4	7.3	41.4	0.1	3.9	49.2	8.8	0.1	43.6	4.2
LnGrp Delay(d),s/veh	211.0	87.1	32.9	153.5	152.8	30.8	230.5	120.1	29.2	101.3	107.5	28.2
LnGrp LOS	F	F	C	F	F	C	F	F	C	F	F	C
Approach Vol, veh/h		2535			2400			2216			1808	
Approach Delay, s/veh		101.4			152.7			113.0			100.7	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.4	70.6	14.0	61.0	8.0	67.0	17.0	58.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	63.0	10.0	57.0	4.0	63.0	13.0	54.0
Max Q Clear Time (g_c+I1), s	2.1	68.6	12.0	59.0	6.0	65.0	15.0	56.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	117.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	524	1035	93	731	1021	255	245	1568	441	115	1159	234
Future Volume (veh/h)	524	1035	93	731	1021	255	245	1568	441	115	1159	234
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	524	1035	93	731	1021	255	245	1568	441	115	1159	234
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	223	607	55	305	649	162	682	701	314	55	557	523
Arrive On Green	0.13	0.19	0.19	0.17	0.23	0.23	0.20	0.20	0.20	0.33	0.33	0.33
Sat Flow, veh/h	1757	3253	292	1757	2783	692	3408	3505	1568	166	1671	1568
Grp Volume(v), veh/h	524	557	571	731	641	635	245	1568	441	1274	0	234
Grp Sat Flow(s),veh/h/ln	1757	1752	1793	1757	1752	1723	1704	1752	1568	1836	0	1568
Q Serve(g_s), s	19.0	28.0	28.0	26.0	35.0	35.0	9.3	30.0	30.0	50.0	0.0	17.5
Cycle Q Clear(g_c), s	19.0	28.0	28.0	26.0	35.0	35.0	9.3	30.0	30.0	50.0	0.0	17.5
Prop In Lane	1.00		0.16	1.00		0.40	1.00		1.00	0.09		1.00
Lane Grp Cap(c), veh/h	223	327	335	305	409	402	682	701	314	612	0	523
V/C Ratio(X)	2.35	1.70	1.70	2.40	1.57	1.58	0.36	2.24	1.41	2.08	0.00	0.45
Avail Cap(c_a), veh/h	223	327	335	305	409	402	682	701	314	612	0	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.5	61.0	61.0	62.0	57.5	57.5	51.7	60.0	60.0	50.0	0.0	39.2
Incr Delay (d2), s/veh	623.4	329.5	329.7	640.2	267.5	272.2	0.3	561.2	200.9	492.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	47.7	43.5	44.5	66.8	47.3	47.0	4.4	69.1	30.5	109.0	0.0	7.7
LnGrp Delay(d),s/veh	688.9	390.5	390.7	702.2	325.0	329.7	52.0	621.2	260.9	542.2	0.0	39.8
LnGrp LOS	F	F	F	F	F	F	D	F	F	F		D
Approach Vol, veh/h		1652			2007			2254			1508	
Approach Delay, s/veh		485.2			463.9			488.8			464.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		34.0	30.0	32.0		54.0	23.0	39.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		30.0	26.0	28.0		50.0	19.0	35.0
Max Q Clear Time (g_c+I1), s		32.0	28.0	30.0		52.0	21.0	37.0
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	476.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1164	0	631	0	1168	1322	0	524	396
Future Volume (veh/h)	0	0	0	1164	0	631	0	1168	1322	0	524	396
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1827	0	1827	0	1827	1827	0	1827	1827
Adj Flow Rate, veh/h				1164	0	631	0	1168	0	0	524	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				4	0	4	0	4	4	0	4	4
Cap, veh/h				1355	0	1097	0	1815	565	0	1815	565
Arrive On Green				0.40	0.00	0.40	0.00	0.36	0.00	0.00	0.36	0.00
Sat Flow, veh/h				3375	0	2733	0	5152	1553	0	5152	1553
Grp Volume(v), veh/h				1164	0	631	0	1168	0	0	524	0
Grp Sat Flow(s),veh/h/ln				1688	0	1367	0	1663	1553	0	1663	1553
Q Serve(g_s), s				13.0	0.0	7.4	0.0	8.0	0.0	0.0	3.1	0.0
Cycle Q Clear(g_c), s				13.0	0.0	7.4	0.0	8.0	0.0	0.0	3.1	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1355	0	1097	0	1815	565	0	1815	565
V/C Ratio(X)				0.86	0.00	0.58	0.00	0.64	0.00	0.00	0.29	0.00
Avail Cap(c_a), veh/h				2155	0	1745	0	3076	958	0	2883	898
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.3	0.0	9.6	0.0	10.9	0.0	0.0	9.3	0.0
Incr Delay (d2), s/veh				1.2	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.2	0.0	2.7	0.0	3.7	0.0	0.0	1.4	0.0
LnGrp Delay(d),s/veh				12.5	0.0	9.8	0.0	11.1	0.0	0.0	9.4	0.0
LnGrp LOS				B		A		B			A	
Approach Vol, veh/h					1795			1168			524	
Approach Delay, s/veh					11.6			11.1			9.4	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		20.1		21.2		20.1		
Change Period (Y+Rc), s		5.1		4.6		* 5.1		
Max Green Setting (Gmax), s		23.9		26.4		* 26		
Max Q Clear Time (g_c+I1), s		5.1		15.0		10.0		
Green Ext Time (p_c), s		5.3		1.6		5.0		

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	40	32	307	30	388	57	2863	368	680	1890	59
Future Volume (veh/h)	76	40	32	307	30	388	57	2863	368	680	1890	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	76	40	32	307	30	388	57	2863	368	680	1890	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	64	35	28	545	295	251	72	2437	759	574	3080	96
Arrive On Green	0.04	0.04	0.04	0.16	0.16	0.16	0.04	0.49	0.49	0.17	0.62	0.62
Sat Flow, veh/h	1757	950	760	3408	1845	1568	1740	4988	1553	3375	4970	155
Grp Volume(v), veh/h	76	0	72	307	30	388	57	2863	368	680	1264	685
Grp Sat Flow(s),veh/h/ln	1757	0	1711	1704	1845	1568	1740	1663	1553	1688	1663	1800
Q Serve(g_s), s	5.5	0.0	5.5	12.5	2.1	24.0	4.9	73.3	23.8	25.5	35.0	35.1
Cycle Q Clear(g_c), s	5.5	0.0	5.5	12.5	2.1	24.0	4.9	73.3	23.8	25.5	35.0	35.1
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	64	0	63	545	295	251	72	2437	759	574	2061	1115
V/C Ratio(X)	1.18	0.00	1.15	0.56	0.10	1.55	0.79	1.17	0.48	1.19	0.61	0.61
Avail Cap(c_a), veh/h	64	0	63	545	295	251	123	2437	759	574	2061	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	0.0	72.3	58.2	53.8	63.0	71.2	38.3	25.7	62.3	17.5	17.5
Incr Delay (d2), s/veh	168.8	0.0	159.5	0.8	0.1	264.8	6.9	83.3	0.2	100.0	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	5.4	5.9	1.1	28.8	2.5	52.4	10.3	19.8	16.1	17.5
LnGrp Delay(d),s/veh	241.1	0.0	231.9	59.0	53.9	327.8	78.1	121.7	25.9	162.2	17.9	18.3
LnGrp LOS	F		F	E	D	F	E	F	C	F	B	B
Approach Vol, veh/h		148			725			3288			2629	
Approach Delay, s/veh		236.6			202.6			110.2			55.3	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	98.2		11.0	31.0	78.5		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 89		5.5	25.5	* 73		24.0
Max Q Clear Time (g_c+I1), s	6.9	37.1		7.5	27.5	75.3		26.0
Green Ext Time (p_c), s	0.0	38.5		0.0	0.0	0.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		101.6	
HCM 2010 LOS		F	

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	1179	429	252	1471	826	359	2029	361	577	839	158
Future Volume (veh/h)	224	1179	429	252	1471	826	359	2029	361	577	839	158
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	224	1179	429	252	1471	826	359	2029	361	577	839	158
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	170	1100	492	249	1181	529	403	1705	531	415	1723	537
Arrive On Green	0.05	0.31	0.31	0.07	0.34	0.34	0.12	0.34	0.34	0.12	0.35	0.35
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	224	1179	429	252	1471	826	359	2029	361	577	839	158
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	7.5	47.2	38.9	11.0	50.7	50.7	15.8	51.4	30.0	18.5	19.9	11.2
Cycle Q Clear(g_c), s	7.5	47.2	38.9	11.0	50.7	50.7	15.8	51.4	30.0	18.5	19.9	11.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	1100	492	249	1181	529	403	1705	531	415	1723	537
V/C Ratio(X)	1.32	1.07	0.87	1.01	1.25	1.56	0.89	1.19	0.68	1.39	0.49	0.29
Avail Cap(c_a), veh/h	170	1100	492	249	1181	529	532	1705	531	415	1723	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.4	51.6	48.7	69.7	49.8	49.9	65.3	49.5	42.5	65.9	38.7	35.9
Incr Delay (d2), s/veh	178.3	48.6	15.1	59.8	117.5	262.4	11.9	91.8	2.9	189.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	30.2	18.9	7.2	43.7	60.5	8.0	38.0	13.3	19.5	9.2	4.8
LnGrp Delay(d),s/veh	249.8	100.2	63.8	129.6	167.4	312.2	77.2	141.3	45.4	255.6	38.8	36.0
LnGrp LOS	F	F	E	F	F	F	E	F	D	F	D	D
Approach Vol, veh/h		1832			2549			2749			1574	
Approach Delay, s/veh		110.0			210.6			120.3			118.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.4	57.6	13.0	56.4	24.0	57.0	16.5	52.9
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	23.7	* 46	7.5	* 51	18.5	* 51	11.0	* 47
Max Q Clear Time (g_c+I1), s	17.8	21.9	9.5	52.7	20.5	53.4	13.0	49.2
Green Ext Time (p_c), s	0.2	12.7	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	144.2
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	1491	494	163	2278	530	71	2559	158	521	865	90
Future Volume (veh/h)	350	1491	494	163	2278	530	71	2559	158	521	865	90
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	350	1491	494	163	2278	530	71	2559	158	521	865	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	258	1679	538	207	1612	502	110	1810	563	338	2137	659
Arrive On Green	0.08	0.34	0.34	0.06	0.33	0.33	0.03	0.36	0.36	0.10	0.42	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	350	1491	494	163	2278	530	71	2559	158	521	865	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	11.7	43.2	45.3	7.1	49.4	49.4	3.1	53.9	10.8	15.0	17.9	0.0
Cycle Q Clear(g_c), s	11.7	43.2	45.3	7.1	49.4	49.4	3.1	53.9	10.8	15.0	17.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	1679	538	207	1612	502	110	1810	563	338	2137	659
V/C Ratio(X)	1.35	0.89	0.92	0.79	1.41	1.06	0.65	1.41	0.28	1.54	0.40	0.00
Avail Cap(c_a), veh/h	258	1679	538	232	1612	502	204	1810	563	338	2137	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	69.1	46.5	47.2	69.5	50.3	50.3	71.7	48.1	34.2	67.5	30.0	0.0
Incr Delay (d2), s/veh	182.9	6.0	20.5	14.8	189.8	55.9	2.4	189.7	0.3	258.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	20.4	22.6	3.8	50.6	28.5	1.5	56.8	4.7	19.1	8.3	0.0
LnGrp Delay(d),s/veh	252.1	52.5	67.7	84.3	240.1	106.2	74.1	237.8	34.5	326.4	30.0	0.0
LnGrp LOS	F	D	E	F	F	F	E	F	C	F	C	
Approach Vol, veh/h		2335			2971			2788			1386	
Approach Delay, s/veh		85.7			207.7			222.1			141.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	68.8	16.0	55.0	20.0	59.0	13.9	57.1
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 9	59.5	* 12	49.4	15.0	53.9	* 10	* 51
Max Q Clear Time (g_c+I1), s	5.1	19.9	13.7	51.4	17.0	55.9	9.1	47.3
Green Ext Time (p_c), s	0.0	35.1	0.0	0.0	0.0	0.0	0.1	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	172.2
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	753	154	443	1112	52	424	2790	175	38	945	77
Future Volume (veh/h)	102	753	154	443	1112	52	424	2790	175	38	945	77
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	102	753	154	443	1112	52	424	2790	175	38	945	77
Adj No. of Lanes	2	1	0	2	2	1	1	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	147	488	100	286	1293	579	374	2066	127	66	1169	364
Arrive On Green	0.04	0.33	0.33	0.08	0.37	0.37	0.21	0.43	0.43	0.02	0.23	0.23
Sat Flow, veh/h	3408	1487	304	3408	3505	1568	1757	4851	298	3408	5036	1568
Grp Volume(v), veh/h	102	0	907	443	1112	52	424	1914	1051	38	945	77
Grp Sat Flow(s),veh/h/ln	1704	0	1791	1704	1752	1568	1757	1679	1792	1704	1679	1568
Q Serve(g_s), s	4.4	0.0	48.8	12.5	43.6	3.2	31.7	63.3	63.3	1.6	26.4	5.9
Cycle Q Clear(g_c), s	4.4	0.0	48.8	12.5	43.6	3.2	31.7	63.3	63.3	1.6	26.4	5.9
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	147	0	588	286	1293	579	374	1430	763	66	1169	364
V/C Ratio(X)	0.69	0.00	1.54	1.55	0.86	0.09	1.13	1.34	1.38	0.57	0.81	0.21
Avail Cap(c_a), veh/h	291	0	588	286	1293	579	374	1430	763	103	1212	377
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.2	0.0	50.0	68.1	43.4	30.6	58.5	42.7	42.7	72.3	54.0	46.1
Incr Delay (d2), s/veh	5.7	0.0	252.9	262.5	6.1	0.1	87.5	157.2	178.2	7.6	3.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	65.3	16.3	22.2	1.4	24.4	60.4	68.9	0.8	12.7	2.6
LnGrp Delay(d),s/veh	75.9	0.0	302.9	330.7	49.4	30.7	146.0	199.8	220.9	79.9	57.7	46.2
LnGrp LOS	E		F	F	D	C	F	F	F	E	E	D
Approach Vol, veh/h		1009			1607			3389			1060	
Approach Delay, s/veh		279.9			126.3			199.6			57.6	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.2	39.5	18.0	54.0	8.4	68.3	11.9	60.1
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	31.7	35.8	12.5	* 49	4.5	63.0	12.7	* 49
Max Q Clear Time (g_c+I1), s	33.7	28.4	14.5	50.8	3.6	65.3	6.4	45.6
Green Ext Time (p_c), s	0.0	6.1	0.0	0.0	0.0	0.0	0.1	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	173.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	665	799	268	156	941	220	392	2588	124	75	870	283
Future Volume (veh/h)	665	799	268	156	941	220	392	2588	124	75	870	283
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1831	1900	1845	1802	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	665	799	268	156	941	220	392	2588	124	75	870	283
Adj No. of Lanes	2	2	0	2	2	0	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	6	3	3	3	3	3	3
Cap, veh/h	534	934	313	200	735	172	449	2095	652	68	1532	477
Arrive On Green	0.16	0.36	0.36	0.06	0.27	0.27	0.13	0.42	0.42	0.02	0.30	0.30
Sat Flow, veh/h	3408	2561	859	3408	2757	644	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	665	543	524	156	584	577	392	2588	124	75	870	283
Grp Sat Flow(s),veh/h/ln	1704	1740	1680	1704	1712	1689	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	23.5	43.2	43.3	6.8	40.0	40.0	16.9	62.4	7.5	3.0	21.8	23.0
Cycle Q Clear(g_c), s	23.5	43.2	43.3	6.8	40.0	40.0	16.9	62.4	7.5	3.0	21.8	23.0
Prop In Lane	1.00		0.51	1.00		0.38	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	534	634	612	200	457	450	449	2095	652	68	1532	477
V/C Ratio(X)	1.25	0.86	0.86	0.78	1.28	1.28	0.87	1.24	0.19	1.10	0.57	0.59
Avail Cap(c_a), veh/h	534	634	612	229	457	450	591	2095	652	68	1532	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.3	44.0	44.0	69.6	55.0	55.0	63.9	43.8	27.8	73.5	43.9	44.3
Incr Delay (d2), s/veh	125.5	10.6	11.0	13.8	141.5	143.0	10.9	110.2	0.1	139.1	0.5	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	22.7	22.0	3.6	36.8	36.5	8.7	50.3	3.3	2.7	10.1	10.2
LnGrp Delay(d),s/veh	188.7	54.6	55.0	83.4	196.5	198.0	74.8	154.0	27.9	213.5	44.4	46.3
LnGrp LOS	F	D	E	F	F	F	E	F	C	F	D	D
Approach Vol, veh/h		1732			1317			3104			1228	
Approach Delay, s/veh		106.2			183.7			139.0			55.2	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	67.5	29.0	45.0	25.3	50.7	14.3	59.7
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	3.0	* 62	23.5	* 40	26.0	* 39	10.1	* 53
Max Q Clear Time (g_c+I1), s	5.0	64.4	25.5	42.0	18.9	25.0	8.8	45.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.9	14.1	0.1	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	125.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

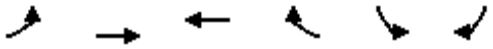
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	471	514	148	58	467	551	155	2263	462	194	1126	229
Future Volume (veh/h)	471	514	148	58	467	551	155	2263	462	194	1126	229
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1845	1827	1845	1845	1845
Adj Flow Rate, veh/h	471	514	148	58	467	551	155	2263	462	194	1126	229
Adj No. of Lanes	2	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	3	4	3	3	3
Cap, veh/h	399	1019	456	74	757	339	210	2179	672	174	2115	658
Arrive On Green	0.12	0.29	0.29	0.04	0.22	0.22	0.06	0.43	0.43	0.05	0.42	0.42
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	3375	5036	1553	3408	5036	1568
Grp Volume(v), veh/h	471	514	148	58	467	551	155	2263	462	194	1126	229
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1688	1679	1553	1704	1679	1568
Q Serve(g_s), s	13.5	14.1	8.5	3.8	13.9	24.9	5.2	49.9	27.7	5.9	19.3	11.4
Cycle Q Clear(g_c), s	13.5	14.1	8.5	3.8	13.9	24.9	5.2	49.9	27.7	5.9	19.3	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	399	1019	456	74	757	339	210	2179	672	174	2115	658
V/C Ratio(X)	1.18	0.50	0.32	0.78	0.62	1.63	0.74	1.04	0.69	1.11	0.53	0.35
Avail Cap(c_a), veh/h	399	1019	456	96	757	339	296	2179	672	174	2115	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	34.0	32.0	54.7	40.9	45.2	53.1	32.7	26.4	54.7	25.0	22.7
Incr Delay (d2), s/veh	104.1	0.2	0.2	19.7	1.1	295.4	2.9	30.1	2.9	101.5	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.1	6.8	3.7	2.2	6.9	38.5	2.5	29.1	12.4	5.2	8.9	5.0
LnGrp Delay(d),s/veh	155.0	34.1	32.2	74.3	42.0	340.6	56.0	62.8	29.3	156.2	25.2	23.0
LnGrp LOS	F	C	C	E	D	F	E	F	C	F	C	C
Approach Vol, veh/h		1133			1076			2880			1549	
Approach Delay, s/veh		84.1			196.7			57.1			41.3	
Approach LOS		F			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	55.0	19.0	30.3	12.5	53.5	10.4	38.9
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 5.9	49.9	13.5	* 25	* 10	45.5	6.3	* 32
Max Q Clear Time (g_c+I1), s	7.9	51.9	15.5	26.9	7.2	21.3	5.8	16.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	23.4	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	80.6
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	309	1368	2592	849	562	193
Future Volume (veh/h)	309	1368	2592	849	562	193
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	309	1368	2592	849	562	193
Adj No. of Lanes	1	3	3	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	234	3458	2031	602	457	408
Arrive On Green	0.13	0.69	0.53	0.53	0.26	0.26
Sat Flow, veh/h	1757	5202	4023	1143	1757	1568
Grp Volume(v), veh/h	309	1368	2221	1220	562	193
Grp Sat Flow(s),veh/h/ln	1757	1679	1679	1643	1757	1568
Q Serve(g_s), s	20.0	17.5	79.0	79.0	39.0	15.6
Cycle Q Clear(g_c), s	20.0	17.5	79.0	79.0	39.0	15.6
Prop In Lane	1.00			0.70	1.00	1.00
Lane Grp Cap(c), veh/h	234	3458	1768	865	457	408
V/C Ratio(X)	1.32	0.40	1.26	1.41	1.23	0.47
Avail Cap(c_a), veh/h	234	3458	1768	865	457	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	10.1	35.5	35.5	55.5	46.8
Incr Delay (d2), s/veh	170.4	0.1	120.0	191.5	121.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.8	8.1	65.8	81.6	34.3	14.0
LnGrp Delay(d),s/veh	235.4	10.2	155.5	227.0	177.1	47.7
LnGrp LOS	F	B	F	F	F	D
Approach Vol, veh/h		1677	3441		755	
Approach Delay, s/veh		51.7	180.8		144.0	
Approach LOS		D	F		F	

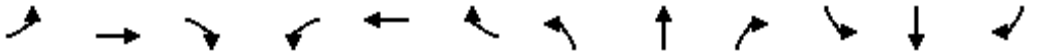
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				107.0		43.0	24.0	83.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				103.0		39.0	20.0	79.0
Max Q Clear Time (g_c+I1), s				19.5		41.0	22.0	81.0
Green Ext Time (p_c), s				82.1		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	139.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	938	15	70	1408	0	5	294	42	0	0	0
Future Volume (veh/h)	0	938	15	70	1408	0	5	294	42	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	938	15	70	1408	0	5	294	42	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1641	26	86	2122	0	7	391	332	4	215	183
Arrive On Green	0.00	0.46	0.46	0.05	0.61	0.00	0.00	0.21	0.21	0.00	0.00	0.00
Sat Flow, veh/h	1757	3531	56	1757	3597	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	0	466	487	70	1408	0	5	294	42	0	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1835	1757	1752	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.0	8.5	8.5	1.7	11.6	0.0	0.1	6.5	0.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	8.5	8.5	1.7	11.6	0.0	0.1	6.5	0.9	0.0	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	815	853	86	2122	0	7	391	332	4	215	183
V/C Ratio(X)	0.00	0.57	0.57	0.81	0.66	0.00	0.70	0.75	0.13	0.00	0.00	0.00
Avail Cap(c_a), veh/h	120	921	964	241	2122	0	120	548	466	80	506	430
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.5	8.5	20.6	5.7	0.0	21.8	16.2	14.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.6	16.3	0.8	0.0	81.0	3.7	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.2	4.3	1.2	5.7	0.0	0.2	3.7	0.4	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	9.2	9.2	36.9	6.5	0.0	102.8	19.9	14.1	0.0	0.0	0.0
LnGrp LOS		A	A	D	A		F	B	B			
Approach Vol, veh/h		953			1478			341			0	
Approach Delay, s/veh		9.2			7.9			20.4			0.0	
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	13.3	6.1	24.3	4.2	9.1	0.0	30.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	2.0	13.0	6.0	23.0	3.0	12.0	3.0	26.0
Max Q Clear Time (g_c+I1), s	0.0	8.5	3.7	10.5	2.1	0.0	0.0	13.6
Green Ext Time (p_c), s	0.0	0.7	0.0	9.9	0.0	0.0	0.0	10.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.9
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	981	84	886	1977	331	160	953	869	352	534	132
Future Volume (veh/h)	171	981	84	886	1977	331	160	953	869	352	534	132
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	171	981	84	886	1977	331	160	953	869	352	534	132
Adj No. of Lanes	2	3	1	2	3	1	1	1	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	91	868	278	409	1324	424	184	469	427	182	1667	746
Arrive On Green	0.03	0.18	0.18	0.12	0.27	0.27	0.10	0.53	0.53	0.05	0.48	0.48
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	1757	890	812	3408	3505	1568
Grp Volume(v), veh/h	171	981	84	886	1977	331	160	0	1822	352	534	132
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1757	0	1701	1704	1752	1568
Q Serve(g_s), s	4.0	26.6	7.0	18.0	40.6	29.3	13.5	0.0	79.0	8.0	14.1	7.2
Cycle Q Clear(g_c), s	4.0	26.6	7.0	18.0	40.6	29.3	13.5	0.0	79.0	8.0	14.1	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	91	868	278	409	1324	424	184	0	896	182	1667	746
V/C Ratio(X)	1.88	1.13	0.30	2.17	1.49	0.78	0.87	0.00	2.03	1.94	0.32	0.18
Avail Cap(c_a), veh/h	91	868	278	409	1324	424	269	0	896	182	1667	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.0	61.7	53.6	66.0	54.7	50.6	66.2	0.0	35.5	71.0	24.3	22.5
Incr Delay (d2), s/veh	435.2	73.1	0.9	532.9	225.7	9.5	18.4	0.0	468.9	441.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	17.8	3.1	38.7	46.0	13.8	7.5	0.0	153.6	14.9	6.8	3.2
LnGrp Delay(d),s/veh	508.2	134.8	54.5	598.9	280.4	60.1	84.5	0.0	504.4	512.0	24.5	22.6
LnGrp LOS	F	F	D	F	F	E	F		F	F	C	C
Approach Vol, veh/h		1236			3194			1982			1018	
Approach Delay, s/veh		181.0			345.9			470.5			192.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	33.0	19.7	75.3	8.0	47.0	12.0	83.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	18.0	26.6	23.0	64.0	4.0	40.6	8.0	79.0
Max Q Clear Time (g_c+I1), s	20.0	28.6	15.5	16.1	6.0	42.6	10.0	81.0
Green Ext Time (p_c), s	0.0	0.0	0.2	46.7	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	330.8
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	594	29	179	626	12	29	828	162	5	286	13
Future Volume (veh/h)	104	594	29	179	626	12	29	828	162	5	286	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1759	1759	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	104	594	29	179	626	12	29	828	162	5	286	13
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	8	8	8	3	3	3	3	3	3
Cap, veh/h	126	533	26	172	590	11	37	691	135	9	779	35
Arrive On Green	0.07	0.31	0.31	0.10	0.34	0.34	0.02	0.46	0.46	0.01	0.45	0.45
Sat Flow, veh/h	1707	1695	83	1675	1720	33	1757	1500	293	1757	1751	80
Grp Volume(v), veh/h	104	0	623	179	0	638	29	0	990	5	0	299
Grp Sat Flow(s),veh/h/ln	1707	0	1778	1675	0	1753	1757	0	1793	1757	0	1831
Q Serve(g_s), s	8.2	0.0	43.0	14.0	0.0	46.9	2.2	0.0	63.0	0.4	0.0	14.8
Cycle Q Clear(g_c), s	8.2	0.0	43.0	14.0	0.0	46.9	2.2	0.0	63.0	0.4	0.0	14.8
Prop In Lane	1.00		0.05	1.00		0.02	1.00		0.16	1.00		0.04
Lane Grp Cap(c), veh/h	126	0	559	172	0	602	37	0	826	9	0	815
V/C Ratio(X)	0.83	0.00	1.11	1.04	0.00	1.06	0.79	0.00	1.20	0.56	0.00	0.37
Avail Cap(c_a), veh/h	175	0	559	172	0	602	180	0	826	180	0	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.4	0.0	46.8	61.3	0.0	44.9	66.6	0.0	36.8	67.8	0.0	25.2
Incr Delay (d2), s/veh	19.7	0.0	73.3	80.5	0.0	53.7	30.5	0.0	100.8	45.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	32.4	10.3	0.0	31.5	1.4	0.0	54.1	0.3	0.0	7.5
LnGrp Delay(d),s/veh	82.2	0.0	120.1	142.0	0.0	98.6	97.1	0.0	137.6	113.5	0.0	25.4
LnGrp LOS	F		F	F		F	F		F	F		C
Approach Vol, veh/h		727			817			1019			304	
Approach Delay, s/veh		114.7			108.1			136.5			26.9	
Approach LOS		F			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	67.0	18.0	47.0	6.8	64.8	14.1	50.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	63.0	14.0	43.0	14.0	63.0	14.0	43.0
Max Q Clear Time (g_c+I1), s	2.4	65.0	16.0	45.0	4.2	16.8	10.2	48.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	14.7	0.1	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		111.2
HCM 2010 LOS		F

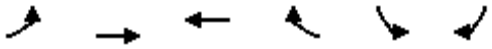
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	538	47	971	25	63	161	999	1153	13	105	1699	1114
Future Volume (veh/h)	538	47	971	25	63	161	999	1153	13	105	1699	1114
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	572	0	971	25	63	161	999	1153	13	105	1699	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	712	0	318	19	48	57	549	2813	32	126	1536	478
Arrive On Green	0.20	0.00	0.20	0.04	0.04	0.04	0.32	0.55	0.55	0.07	0.31	0.00
Sat Flow, veh/h	3480	0	1553	517	1302	1568	1740	5084	57	1740	4988	1553
Grp Volume(v), veh/h	572	0	971	88	0	161	999	754	412	105	1699	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1819	0	1568	1740	1663	1817	1740	1663	1553
Q Serve(g_s), s	23.5	0.0	30.7	5.5	0.0	5.5	47.3	19.7	19.7	8.9	46.2	0.0
Cycle Q Clear(g_c), s	23.5	0.0	30.7	5.5	0.0	5.5	47.3	19.7	19.7	8.9	46.2	0.0
Prop In Lane	1.00		1.00	0.28		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	712	0	318	67	0	57	549	1839	1005	126	1536	478
V/C Ratio(X)	0.80	0.00	3.06	1.32	0.00	2.80	1.82	0.41	0.41	0.84	1.11	0.00
Avail Cap(c_a), veh/h	712	0	318	67	0	57	549	1839	1005	194	1536	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.8	0.0	59.6	72.3	0.0	72.3	51.3	19.4	19.4	68.7	51.9	0.0
Incr Delay (d2), s/veh	6.1	0.0	933.2	217.5	0.0	856.3	376.5	0.1	0.1	10.2	57.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	95.6	6.8	0.0	16.1	80.1	9.0	9.9	4.7	29.4	0.0
LnGrp Delay(d),s/veh	62.9	0.0	992.8	289.7	0.0	928.5	427.9	19.4	19.5	78.9	109.7	0.0
LnGrp LOS	E		F	F		F	F	B	B	E	F	
Approach Vol, veh/h		1543			249			2165			1804	
Approach Delay, s/veh		648.1			702.8			207.9			107.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	52.0	51.0		11.0	15.2	87.8		36.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 47	46.2		5.5	* 17	* 77		30.7
Max Q Clear Time (g_c+I1), s	49.3	48.2		7.5	10.9	21.7		32.7
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	13.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	315.9
HCM 2010 LOS	F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	374	1027	1445	741	156	38
Future Volume (veh/h)	374	1027	1445	741	156	38
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	374	1027	1445	741	156	38
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	296	2950	1492	705	179	160
Arrive On Green	0.17	0.84	0.65	0.65	0.10	0.10
Sat Flow, veh/h	1757	3597	2405	1092	1757	1568
Grp Volume(v), veh/h	374	1027	1065	1121	156	38
Grp Sat Flow(s),veh/h/ln	1757	1752	1752	1652	1757	1568
Q Serve(g_s), s	24.0	9.3	78.3	92.0	12.5	3.2
Cycle Q Clear(g_c), s	24.0	9.3	78.3	92.0	12.5	3.2
Prop In Lane	1.00			0.66	1.00	1.00
Lane Grp Cap(c), veh/h	296	2950	1131	1066	179	160
V/C Ratio(X)	1.26	0.35	0.94	1.05	0.87	0.24
Avail Cap(c_a), veh/h	296	2950	1131	1066	197	176
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	2.5	22.8	25.3	63.1	58.9
Incr Delay (d2), s/veh	143.2	0.1	14.9	42.1	29.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.3	4.5	42.2	53.9	7.6	2.9
LnGrp Delay(d),s/veh	202.5	2.6	37.7	67.4	93.0	59.7
LnGrp LOS	F	A	D	F	F	E
Approach Vol, veh/h		1401	2186		194	
Approach Delay, s/veh		55.9	52.9		86.4	
Approach LOS		E	D		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		124.0		18.5	28.0	96.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		120.0		16.0	24.0	92.0		
Max Q Clear Time (g_c+I1), s		11.3		14.5	26.0	94.0		
Green Ext Time (p_c), s		86.7		0.1	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	55.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	329	237	35	83	311	791	37	2208	98	517	2410	889
Future Volume (veh/h)	329	237	35	83	311	791	37	2208	98	517	2410	889
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	329	237	35	83	311	791	37	2208	98	517	2410	889
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	306	1129	162	125	368	1052	65	2109	93	464	2739	853
Arrive On Green	0.09	0.25	0.25	0.04	0.20	0.20	0.02	0.43	0.43	0.14	0.54	0.54
Sat Flow, veh/h	3408	4452	637	3514	1845	3136	3408	4945	218	3408	5036	1568
Grp Volume(v), veh/h	329	177	95	83	311	791	37	1496	810	517	2410	889
Grp Sat Flow(s),veh/h/ln	1704	1679	1732	1757	1845	1568	1704	1679	1806	1704	1679	1568
Q Serve(g_s), s	13.5	6.2	6.5	3.5	24.4	30.0	1.6	64.2	64.2	20.5	63.0	81.9
Cycle Q Clear(g_c), s	13.5	6.2	6.5	3.5	24.4	30.0	1.6	64.2	64.2	20.5	63.0	81.9
Prop In Lane	1.00		0.37	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	306	851	439	125	368	1052	65	1432	770	464	2739	853
V/C Ratio(X)	1.08	0.21	0.22	0.66	0.85	0.75	0.57	1.04	1.05	1.11	0.88	1.04
Avail Cap(c_a), veh/h	306	851	439	175	368	1052	68	1432	770	464	2739	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	44.3	44.4	71.7	58.0	44.4	73.2	43.1	43.2	65.0	30.0	34.3
Incr Delay (d2), s/veh	73.2	0.0	0.1	2.3	15.7	2.7	5.9	36.3	46.9	76.5	3.5	42.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	2.9	3.1	1.7	14.0	15.0	0.8	36.8	41.9	14.5	29.9	45.3
LnGrp Delay(d),s/veh	141.7	44.3	44.5	73.9	73.7	47.2	79.1	79.4	90.0	141.5	33.5	76.8
LnGrp LOS	F	D	D	E	E	D	E	F	F	F	C	F
Approach Vol, veh/h		601			1185			2343			3816	
Approach Delay, s/veh		97.7			56.0			83.1			58.3	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	87.5	19.0	35.7	26.0	69.8	10.8	43.9
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	81.4	13.5	* 30	20.5	* 64	7.5	* 36
Max Q Clear Time (g_c+I1), s	3.6	83.9	15.5	32.0	22.5	66.2	5.5	8.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	68.2
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	64	13	38	46	66	37	2207	63	133	1848	215
Future Volume (veh/h)	105	64	13	38	46	66	37	2207	63	133	1848	215
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	91	84	13	38	46	66	37	2207	63	133	1848	215
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	131	116	18	109	114	97	46	2821	80	166	2871	332
Arrive On Green	0.07	0.07	0.07	0.06	0.06	0.06	0.03	0.56	0.56	0.09	0.63	0.63
Sat Flow, veh/h	1757	1561	242	1757	1845	1568	1757	5033	143	1757	4579	529
Grp Volume(v), veh/h	91	0	97	38	46	66	37	1470	800	133	1352	711
Grp Sat Flow(s),veh/h/ln	1757	0	1802	1757	1845	1568	1757	1679	1819	1757	1679	1751
Q Serve(g_s), s	4.9	0.0	5.2	2.0	2.3	4.0	2.1	33.5	33.8	7.3	24.6	25.0
Cycle Q Clear(g_c), s	4.9	0.0	5.2	2.0	2.3	4.0	2.1	33.5	33.8	7.3	24.6	25.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.08	1.00		0.30
Lane Grp Cap(c), veh/h	131	0	134	109	114	97	46	1882	1020	166	2105	1098
V/C Ratio(X)	0.69	0.00	0.72	0.35	0.40	0.68	0.80	0.78	0.78	0.80	0.64	0.65
Avail Cap(c_a), veh/h	504	0	517	486	511	434	108	2144	1162	214	2339	1220
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	0.0	44.3	44.0	44.2	45.0	47.4	16.8	16.9	43.4	11.4	11.5
Incr Delay (d2), s/veh	2.5	0.0	2.7	0.7	0.9	3.1	11.2	1.4	2.7	11.7	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	2.7	1.0	1.2	1.8	1.1	15.7	17.6	4.0	11.4	12.1
LnGrp Delay(d),s/veh	46.7	0.0	47.0	44.7	45.0	48.1	58.6	18.2	19.5	55.1	11.7	12.2
LnGrp LOS	D		D	D	D	D	E	B	B	E	B	B
Approach Vol, veh/h		188			150			2307			2196	
Approach Delay, s/veh		46.8			46.3			19.3			14.5	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	66.2		11.5	13.9	59.7		12.8
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 6	68.2		27.1	* 12	62.5		28.1
Max Q Clear Time (g_c+I1), s	4.1	27.0		6.0	9.3	35.8		7.2
Green Ext Time (p_c), s	0.0	25.3		0.1	0.0	19.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

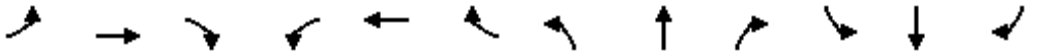
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	835	541	149	1322	838	544	1404	199	267	1188	180
Future Volume (veh/h)	53	835	541	149	1322	838	544	1404	199	267	1188	180
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	53	835	541	149	1322	838	544	1404	199	267	1188	180
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	79	1178	550	199	1945	605	511	1640	511	316	1185	180
Arrive On Green	0.02	0.35	0.35	0.06	0.39	0.39	0.15	0.33	0.33	0.09	0.27	0.27
Sat Flow, veh/h	3408	3357	1568	3408	5036	1568	3408	5036	1568	3408	4415	669
Grp Volume(v), veh/h	53	835	541	149	1322	838	544	1404	199	267	903	465
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1727
Q Serve(g_s), s	2.0	27.9	44.4	5.6	28.4	50.2	19.5	33.9	12.7	10.0	34.9	34.9
Cycle Q Clear(g_c), s	2.0	27.9	44.4	5.6	28.4	50.2	19.5	33.9	12.7	10.0	34.9	34.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	79	1178	550	199	1945	605	511	1640	511	316	901	464
V/C Ratio(X)	0.67	0.71	0.98	0.75	0.68	1.38	1.06	0.86	0.39	0.84	1.00	1.00
Avail Cap(c_a), veh/h	79	1178	550	236	1945	605	511	1640	511	354	901	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	36.4	41.8	60.3	33.2	39.9	55.3	41.0	33.9	58.0	47.5	47.6
Incr Delay (d2), s/veh	17.0	1.7	33.8	8.2	0.8	182.9	57.9	4.5	0.2	14.1	30.5	42.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	13.3	24.4	2.9	13.2	52.4	13.3	16.4	5.5	5.3	20.0	22.1
LnGrp Delay(d),s/veh	80.0	38.1	75.7	68.4	34.0	222.8	113.2	45.5	34.0	72.1	78.1	90.0
LnGrp LOS	E	D	E	E	C	F	F	D	C	E	F	F
Approach Vol, veh/h		1429			2309			2147			1635	
Approach Delay, s/veh		53.9			104.8			61.6			80.5	
Approach LOS		D			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	40.5	8.5	56.0	17.6	47.9	13.1	51.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	19.5	* 35	3.0	50.2	13.5	* 41	9.0	44.2
Max Q Clear Time (g_c+I1), s	21.5	36.9	4.0	52.2	12.0	35.9	7.6	46.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	77.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



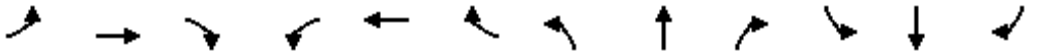
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	900	52	486	1987	757	92	660	221	463	493	107
Future Volume (veh/h)	234	900	52	486	1987	757	92	660	221	463	493	107
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	234	900	52	486	1987	757	92	660	221	463	493	107
Adj No. of Lanes	1	2	0	2	2	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	127	1035	60	502	1331	595	112	439	147	246	627	533
Arrive On Green	0.07	0.31	0.31	0.15	0.38	0.38	0.06	0.33	0.33	0.07	0.34	0.34
Sat Flow, veh/h	1757	3368	195	3408	3505	1568	1757	1323	443	3408	1845	1568
Grp Volume(v), veh/h	234	468	484	486	1987	757	92	0	881	463	493	107
Grp Sat Flow(s),veh/h/ln	1757	1752	1810	1704	1752	1568	1757	0	1766	1704	1845	1568
Q Serve(g_s), s	10.5	36.7	36.7	20.6	55.2	55.2	7.5	0.0	48.2	10.5	35.0	7.0
Cycle Q Clear(g_c), s	10.5	36.7	36.7	20.6	55.2	55.2	7.5	0.0	48.2	10.5	35.0	7.0
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	127	539	557	502	1331	595	112	0	586	246	627	533
V/C Ratio(X)	1.84	0.87	0.87	0.97	1.49	1.27	0.82	0.00	1.50	1.88	0.79	0.20
Avail Cap(c_a), veh/h	127	539	557	502	1331	595	132	0	586	246	627	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	47.6	47.6	61.7	45.1	45.1	67.2	0.0	48.6	67.5	43.2	34.0
Incr Delay (d2), s/veh	408.8	13.7	13.3	32.0	226.0	135.1	24.8	0.0	235.8	411.6	6.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.5	19.9	20.5	12.0	68.4	46.2	4.4	0.0	61.8	19.0	18.9	3.0
LnGrp Delay(d),s/veh	476.3	61.3	60.9	93.7	271.1	180.2	92.0	0.0	284.4	479.0	49.3	34.1
LnGrp LOS	F	E	E	F	F	F	F		F	F	D	C
Approach Vol, veh/h		1186			3230			973			1063	
Approach Delay, s/veh		143.0			223.1			266.2			234.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	60.1	14.8	54.5	26.5	49.6	16.0	53.3
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	10.5	* 55	10.9	* 48	* 21	* 45	10.5	* 48
Max Q Clear Time (g_c+I1), s	12.5	57.2	9.5	37.0	22.6	38.7	12.5	50.2
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	4.7	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		216.8
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	307	978	35	74	1274	127	124	399	223	94	214	506
Future Volume (veh/h)	307	978	35	74	1274	127	124	399	223	94	214	506
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	307	978	35	74	1274	127	124	399	223	94	214	506
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	344	1540	689	155	1346	602	153	1020	457	153	1021	457
Arrive On Green	0.10	0.44	0.44	0.05	0.38	0.38	0.04	0.29	0.29	0.04	0.29	0.29
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	307	978	35	74	1274	127	124	399	223	94	214	506
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	7.9	19.4	1.1	1.9	31.4	4.8	3.2	8.1	10.5	2.4	4.1	26.0
Cycle Q Clear(g_c), s	7.9	19.4	1.1	1.9	31.4	4.8	3.2	8.1	10.5	2.4	4.1	26.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	1540	689	155	1346	602	153	1020	457	153	1021	457
V/C Ratio(X)	0.89	0.63	0.05	0.48	0.95	0.21	0.81	0.39	0.49	0.62	0.21	1.11
Avail Cap(c_a), veh/h	344	1540	689	573	1374	615	153	1020	457	191	1021	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	19.5	14.3	41.6	26.6	18.4	42.3	25.3	26.2	41.9	23.9	31.6
Incr Delay (d2), s/veh	24.3	0.9	0.0	2.3	13.5	0.2	27.2	0.2	0.8	4.0	0.1	74.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	9.6	0.5	0.9	17.6	2.1	2.1	4.0	4.6	1.2	2.0	20.7
LnGrp Delay(d),s/veh	64.0	20.3	14.4	43.9	40.1	18.6	69.5	25.6	27.0	45.9	24.0	106.6
LnGrp LOS	E	C	B	D	D	B	E	C	C	D	C	F
Approach Vol, veh/h		1320			1475			746			814	
Approach Delay, s/veh		30.3			38.4			33.3			77.9	
Approach LOS		C			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	30.0	8.1	43.2	8.0	30.0	13.0	38.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	25.0	15.0	29.0	4.0	26.0	9.0	35.0
Max Q Clear Time (g_c+I1), s	4.4	12.5	3.9	21.4	5.2	28.0	9.9	33.4
Green Ext Time (p_c), s	0.0	4.9	0.2	6.8	0.0	0.0	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	42.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	931	47	42	2147	153	28	545	61	64	267	167
Future Volume (veh/h)	75	931	47	42	2147	153	28	545	61	64	267	167
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1759	1845	1845	1759	1845
Adj Flow Rate, veh/h	75	931	47	42	2147	153	28	545	61	64	267	167
Adj No. of Lanes	2	2	0	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	8	3	3	8	3
Cap, veh/h	91	1888	95	54	1963	878	35	504	449	68	504	449
Arrive On Green	0.03	0.56	0.56	0.03	0.56	0.56	0.02	0.29	0.29	0.02	0.29	0.29
Sat Flow, veh/h	3408	3395	171	1757	3505	1568	1757	1759	1568	3408	1759	1568
Grp Volume(v), veh/h	75	481	497	42	2147	153	28	545	61	64	267	167
Grp Sat Flow(s),veh/h/ln	1704	1752	1814	1757	1752	1568	1757	1759	1568	1704	1759	1568
Q Serve(g_s), s	3.3	25.2	25.2	3.6	84.0	7.1	2.4	43.0	4.3	2.8	19.1	12.8
Cycle Q Clear(g_c), s	3.3	25.2	25.2	3.6	84.0	7.1	2.4	43.0	4.3	2.8	19.1	12.8
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	974	1009	54	1963	878	35	504	449	68	504	449
V/C Ratio(X)	0.83	0.49	0.49	0.78	1.09	0.17	0.79	1.08	0.14	0.94	0.53	0.37
Avail Cap(c_a), veh/h	91	974	1009	105	1963	878	70	504	449	68	504	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.7	20.4	20.4	72.2	33.0	16.1	73.2	53.5	39.7	73.4	45.0	42.7
Incr Delay (d2), s/veh	43.7	0.4	0.4	20.9	51.1	0.1	31.4	63.6	0.1	87.6	1.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	12.3	12.7	2.0	54.3	3.1	1.5	29.8	1.9	2.2	9.5	5.6
LnGrp Delay(d),s/veh	116.3	20.8	20.7	93.1	84.1	16.2	104.5	117.1	39.8	161.0	46.1	43.2
LnGrp LOS	F	C	C	F	F	B	F	F	D	F	D	D
Approach Vol, veh/h		1053			2342			634			498	
Approach Delay, s/veh		27.6			79.8			109.1			59.9	
Approach LOS		C			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	47.0	8.6	87.4	7.0	47.0	8.0	88.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	43.0	9.0	79.0	6.0	40.0	4.0	84.0
Max Q Clear Time (g_c+I1), s	4.8	45.0	5.6	27.2	4.4	21.1	5.3	86.0
Green Ext Time (p_c), s	0.0	0.0	0.0	44.9	0.0	6.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	190	191	95	458	183	380	2010	152	233	2065	268
Future Volume (veh/h)	320	190	191	95	458	183	380	2010	152	233	2065	268
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	320	190	191	95	458	183	380	2010	152	233	2065	268
Adj No. of Lanes	2	2	1	2	2	1	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	349	866	387	140	681	419	417	2977	736	279	2160	672
Arrive On Green	0.10	0.25	0.25	0.04	0.18	0.18	0.12	0.47	0.47	0.08	0.43	0.43
Sat Flow, veh/h	3408	3505	1568	3514	3689	1568	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	320	190	191	95	458	183	380	2010	152	233	2065	268
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	13.2	6.1	14.8	3.8	16.4	13.7	15.8	35.1	8.1	9.6	56.8	16.8
Cycle Q Clear(g_c), s	13.2	6.1	14.8	3.8	16.4	13.7	15.8	35.1	8.1	9.6	56.8	16.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	349	866	387	140	681	419	417	2977	736	279	2160	672
V/C Ratio(X)	0.92	0.22	0.49	0.68	0.67	0.44	0.91	0.68	0.21	0.83	0.96	0.40
Avail Cap(c_a), veh/h	349	939	420	213	833	484	417	2977	736	402	2245	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	42.5	45.8	67.2	53.8	43.1	61.4	28.9	21.8	64.1	38.9	27.5
Incr Delay (d2), s/veh	27.9	0.2	1.4	2.1	3.4	2.0	23.5	0.5	0.1	6.7	11.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	3.0	6.6	1.9	8.7	6.2	8.7	15.3	3.5	4.8	28.2	7.4
LnGrp Delay(d),s/veh	91.0	42.7	47.2	69.3	57.2	45.0	84.9	29.4	21.8	70.8	50.0	28.9
LnGrp LOS	F	D	D	E	E	D	F	C	C	E	D	C
Approach Vol, veh/h		701			736			2542			2566	
Approach Delay, s/veh		66.0			55.7			37.2			49.7	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	66.8	20.0	32.0	17.2	72.6	11.2	40.8
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	17.5	* 64	14.5	32.0	16.9	* 64	8.6	* 38
Max Q Clear Time (g_c+I1), s	17.8	58.8	15.2	18.4	11.6	37.1	5.8	16.8
Green Ext Time (p_c), s	0.0	2.6	0.0	7.8	0.1	27.1	0.0	10.4

Intersection Summary	
HCM 2010 Ctrl Delay	47.3
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	455	303	669	1285	28	860	2028	348	118	773	317
Future Volume (veh/h)	224	455	303	669	1285	28	860	2028	348	118	773	317
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	224	455	303	669	1285	28	860	2028	348	118	773	317
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	267	700	313	650	1566	488	848	2091	651	124	1021	318
Arrive On Green	0.08	0.20	0.20	0.19	0.31	0.31	0.25	0.42	0.42	0.04	0.20	0.20
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	224	455	303	669	1285	28	860	2028	348	118	773	317
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	9.7	17.9	28.8	28.9	35.7	1.9	37.7	59.8	25.2	5.2	21.9	30.6
Cycle Q Clear(g_c), s	9.7	17.9	28.8	28.9	35.7	1.9	37.7	59.8	25.2	5.2	21.9	30.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	700	313	650	1566	488	848	2091	651	124	1021	318
V/C Ratio(X)	0.84	0.65	0.97	1.03	0.82	0.06	1.01	0.97	0.53	0.95	0.76	1.00
Avail Cap(c_a), veh/h	288	700	313	650	1566	488	848	2093	652	124	1021	318
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.3	55.2	59.6	60.6	47.6	36.0	56.2	42.7	32.6	72.2	56.2	59.7
Incr Delay (d2), s/veh	16.9	2.8	42.2	43.1	4.5	0.2	34.6	13.5	1.5	66.1	3.9	49.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	8.9	16.1	17.3	17.1	0.8	21.6	30.0	11.0	3.6	10.5	17.5
LnGrp Delay(d),s/veh	85.1	58.1	101.8	103.7	52.1	36.1	90.8	56.1	34.1	138.3	60.0	109.3
LnGrp LOS	F	E	F	F	D	D	F	E	C	F	E	F
Approach Vol, veh/h		982			1982			3236			1208	
Approach Delay, s/veh		77.7			69.3			63.0			80.6	
Approach LOS		E			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	43.2	36.5	17.3	53.1	11.0	68.7	34.4	36.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	37.7	* 31	12.7	* 46	5.5	* 63	28.9	30.0
Max Q Clear Time (g_c+I1), s	39.7	32.6	11.7	37.7	7.2	61.8	30.9	30.8
Green Ext Time (p_c), s	0.0	0.0	0.0	8.3	0.0	1.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	341	560	175	40	1828	848	389	2034	20	78	834	632
Future Volume (veh/h)	341	560	175	40	1828	848	389	2034	20	78	834	632
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	341	560	175	40	1828	848	389	2034	20	78	834	632
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	278	2142	667	70	1834	571	299	1824	568	84	1506	469
Arrive On Green	0.08	0.43	0.43	0.02	0.36	0.36	0.09	0.37	0.37	0.02	0.30	0.30
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	341	560	175	40	1828	848	389	2034	20	78	834	632
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	11.5	10.1	10.2	1.6	51.1	51.4	12.5	51.6	1.2	3.3	19.8	42.6
Cycle Q Clear(g_c), s	11.5	10.1	10.2	1.6	51.1	51.4	12.5	51.6	1.2	3.3	19.8	42.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	2142	667	70	1834	571	299	1824	568	84	1506	469
V/C Ratio(X)	1.23	0.26	0.26	0.57	1.00	1.48	1.30	1.12	0.04	0.93	0.55	1.35
Avail Cap(c_a), veh/h	278	2142	667	121	1834	571	299	1824	568	84	1506	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	26.2	26.2	68.5	44.8	44.8	64.3	44.8	28.8	68.7	41.3	49.3
Incr Delay (d2), s/veh	130.0	0.0	0.1	2.7	20.1	227.4	157.7	60.1	0.0	74.7	0.3	170.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	4.7	4.4	0.8	27.1	58.2	12.4	33.8	0.5	2.4	9.1	40.5
LnGrp Delay(d),s/veh	194.8	26.2	26.3	71.2	64.9	272.2	222.0	104.8	28.8	143.4	41.5	219.5
LnGrp LOS	F	C	C	E	E	F	F	F	C	F	D	F
Approach Vol, veh/h		1076			2716			2443			1544	
Approach Delay, s/veh		79.7			129.7			122.9			119.5	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	48.6	17.0	57.5	9.0	57.6	8.4	66.1
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	12.5	42.0	11.5	* 51	3.5	* 52	5.0	* 57
Max Q Clear Time (g_c+I1), s	14.5	44.6	13.5	53.4	5.3	53.6	3.6	12.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6

Intersection Summary	
HCM 2010 Ctrl Delay	118.6
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	582	806	165	87	1809	926	786	2137	187	177	984	721
Future Volume (veh/h)	582	806	165	87	1809	926	786	2137	187	177	984	721
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	582	806	165	87	1809	926	786	2137	187	177	984	721
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	352	1684	342	126	1617	503	484	1879	585	124	1347	419
Arrive On Green	0.10	0.40	0.40	0.04	0.34	0.34	0.14	0.38	0.38	0.04	0.27	0.27
Sat Flow, veh/h	3408	4198	853	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	582	643	328	87	1809	926	786	2137	187	177	984	721
Grp Sat Flow(s),veh/h/ln	1704	1679	1694	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	15.5	21.3	21.5	4.0	50.5	50.5	21.5	56.5	12.8	5.5	26.9	40.5
Cycle Q Clear(g_c), s	15.5	21.3	21.5	4.0	50.5	50.5	21.5	56.5	12.8	5.5	26.9	40.5
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	1347	680	126	1617	503	484	1879	585	124	1347	419
V/C Ratio(X)	1.65	0.48	0.48	0.69	1.12	1.84	1.62	1.14	0.32	1.43	0.73	1.72
Avail Cap(c_a), veh/h	352	1347	680	186	1617	503	484	1879	585	124	1347	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	33.3	33.3	71.2	49.8	49.7	64.3	46.7	33.1	72.3	49.8	54.8
Incr Delay (d2), s/veh	306.1	0.1	0.2	2.5	62.4	385.4	290.4	69.0	0.1	233.6	1.8	333.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	9.8	10.1	1.8	31.7	74.7	29.5	37.9	5.5	6.6	12.6	56.3
LnGrp Delay(d),s/veh	373.3	33.4	33.5	73.7	112.2	435.1	354.7	115.7	33.2	305.9	51.6	388.5
LnGrp LOS	F	C	C	E	F	F	F	F	C	F	D	F
Approach Vol, veh/h		1553			2822			3110			1882	
Approach Delay, s/veh		160.8			217.0			171.2			204.6	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	46.0	21.0	56.0	11.0	62.0	11.3	65.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	21.5	40.5	15.5	50.5	5.5	56.5	8.6	57.4
Max Q Clear Time (g_c+I1), s	23.5	42.5	17.5	52.5	7.5	58.5	6.0	23.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.3

Intersection Summary			
HCM 2010 Ctrl Delay		190.0	
HCM 2010 LOS		F	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	588	536	132	369	1386	329	178	1527	146	116	833	833
Future Volume (veh/h)	588	536	132	369	1386	329	178	1527	146	116	833	833
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845	1845	1827	1827	1827	1836	1900
Adj Flow Rate, veh/h	588	536	132	369	1386	329	178	1527	146	116	833	833
Adj No. of Lanes	2	2	1	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	4
Cap, veh/h	468	481	215	166	625	679	94	949	424	92	442	395
Arrive On Green	0.14	0.14	0.14	0.43	0.43	0.43	0.05	0.27	0.27	0.03	0.25	0.25
Sat Flow, veh/h	3408	3505	1568	384	1442	1568	1757	3471	1553	3375	1744	1560
Grp Volume(v), veh/h	588	536	132	1755	0	329	178	1527	146	116	833	833
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1825	0	1568	1757	1736	1553	1688	1744	1560
Q Serve(g_s), s	20.6	20.6	11.9	65.0	0.0	22.6	8.0	41.0	11.3	4.1	38.0	38.0
Cycle Q Clear(g_c), s	20.6	20.6	11.9	65.0	0.0	22.6	8.0	41.0	11.3	4.1	38.0	38.0
Prop In Lane	1.00		1.00	0.21		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	468	481	215	791	0	679	94	949	424	92	442	395
V/C Ratio(X)	1.26	1.11	0.61	2.22	0.00	0.48	1.90	1.61	0.34	1.26	1.89	2.11
Avail Cap(c_a), veh/h	468	481	215	791	0	679	94	949	424	92	442	395
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	64.7	60.9	42.5	0.0	30.5	71.0	54.5	43.7	72.9	56.0	56.0
Incr Delay (d2), s/veh	131.8	75.8	5.1	552.5	0.0	0.5	442.0	279.2	0.5	177.8	406.9	506.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.3	15.0	5.5	154.1	0.0	9.9	15.4	56.4	4.9	4.2	68.2	72.0
LnGrp Delay(d),s/veh	196.5	140.5	66.0	595.0	0.0	31.0	513.0	333.7	44.2	250.8	462.9	562.8
LnGrp LOS	F	F	E	F		C	F	F	D	F	F	F
Approach Vol, veh/h		1256			2084			1851			1782	
Approach Delay, s/veh		158.9			506.0			328.1			495.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	43.0		26.0	9.0	46.0		69.0
Change Period (Y+Rc), s	4.0	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	8.0	38.0		* 21	* 4.1	41.0		65.0
Max Q Clear Time (g_c+I1), s	10.0	40.0		22.6	6.1	43.0		67.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		393.6	
HCM 2010 LOS		F	

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	839	61	386	1867	370	83	1214	301	216	711	430
Future Volume (veh/h)	188	839	61	386	1867	370	83	1214	301	216	711	430
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1845	1827	1845	1845
Adj Flow Rate, veh/h	188	839	61	386	1867	370	83	1214	301	216	711	430
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	141	1357	607	443	1668	799	125	1039	465	163	1080	548
Arrive On Green	0.04	0.39	0.39	0.13	0.48	0.48	0.04	0.30	0.30	0.05	0.31	0.31
Sat Flow, veh/h	3408	3505	1568	3408	3505	1524	3408	3505	1568	3375	3505	1568
Grp Volume(v), veh/h	188	839	61	386	1867	370	83	1214	301	216	711	430
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1524	1704	1752	1568	1688	1752	1568
Q Serve(g_s), s	6.0	28.0	3.6	16.1	69.0	22.1	3.5	43.0	24.2	7.0	25.5	35.6
Cycle Q Clear(g_c), s	6.0	28.0	3.6	16.1	69.0	22.1	3.5	43.0	24.2	7.0	25.5	35.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	1357	607	443	1668	799	125	1039	465	163	1080	548
V/C Ratio(X)	1.33	0.62	0.10	0.87	1.12	0.46	0.66	1.17	0.65	1.33	0.66	0.78
Avail Cap(c_a), veh/h	141	1357	607	564	1668	799	165	1039	465	163	1080	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.5	35.8	28.3	61.9	38.0	21.7	69.0	51.0	44.4	69.0	43.5	42.3
Incr Delay (d2), s/veh	190.1	0.9	0.1	11.6	62.4	0.4	6.1	86.2	3.1	182.6	1.5	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	13.7	1.6	8.3	47.8	9.3	1.8	33.2	10.9	7.4	12.6	16.6
LnGrp Delay(d),s/veh	259.6	36.6	28.4	73.4	100.4	22.1	75.1	137.2	47.5	251.6	45.0	49.6
LnGrp LOS	F	D	C	E	F	C	E	F	D	F	D	D
Approach Vol, veh/h		1088			2623			1598			1357	
Approach Delay, s/veh		74.7			85.4			117.1			79.4	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.9	62.1	9.3	50.7	10.0	75.0	11.0	49.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	24.0	51.0	7.0	43.0	6.0	69.0	7.0	43.0
Max Q Clear Time (g_c+I1), s	18.1	30.0	5.5	37.6	8.0	71.0	9.0	45.0
Green Ext Time (p_c), s	0.7	19.1	0.0	4.9	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	90.0
HCM 2010 LOS	F

Notes

User approved changes to right turn type.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	396	11	31	1183	538	625
Future Volume (veh/h)	396	11	31	1183	538	625
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	396	11	31	1183	538	625
Adj No. of Lanes	0	0	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	449	12	36	1857	712	637
Arrive On Green	0.28	0.28	0.02	0.53	0.41	0.41
Sat Flow, veh/h	1592	44	1740	3563	1827	1553
Grp Volume(v), veh/h	408	0	31	1183	538	625
Grp Sat Flow(s),veh/h/ln	1640	0	1740	1736	1736	1553
Q Serve(g_s), s	12.6	0.0	0.9	12.7	14.0	21.0
Cycle Q Clear(g_c), s	12.6	0.0	0.9	12.7	14.0	21.0
Prop In Lane	0.97	0.03	1.00			1.00
Lane Grp Cap(c), veh/h	462	0	36	1857	712	637
V/C Ratio(X)	0.88	0.00	0.86	0.64	0.76	0.98
Avail Cap(c_a), veh/h	527	0	201	2211	712	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	0.0	25.8	8.7	13.3	15.4
Incr Delay (d2), s/veh	14.8	0.0	18.7	0.2	4.2	30.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	0.6	6.0	7.4	14.3
LnGrp Delay(d),s/veh	33.0	0.0	44.6	8.9	17.5	46.2
LnGrp LOS	C		D	A	B	D
Approach Vol, veh/h	408			1214	1163	
Approach Delay, s/veh	33.0			9.8	32.9	
Approach LOS	C			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.6	27.4		18.9		34.0		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.1	* 22		17.0		* 34		
Max Q Clear Time (g_c+I1), s	2.9	23.0		14.6		14.7		
Green Ext Time (p_c), s	0.0	0.0		0.4		7.6		

Intersection Summary	
HCM 2010 Ctrl Delay	22.9
HCM 2010 LOS	C

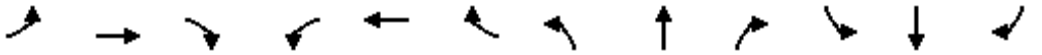
Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	31	52	4	26	53	7	1279	29	21	1842	424
Future Volume (veh/h)	234	31	52	4	26	53	7	1279	29	21	1842	424
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1583	1845	1845	1845	1845	1810	1845	1845	1845
Adj Flow Rate, veh/h	234	31	52	4	26	53	7	1279	29	21	1842	424
Adj No. of Lanes	2	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	20	3	3	3	3	5	3	3	3
Cap, veh/h	274	257	218	6	116	99	25	2184	958	33	2225	995
Arrive On Green	0.08	0.14	0.14	0.00	0.06	0.06	0.01	0.62	0.62	0.02	0.63	0.63
Sat Flow, veh/h	3408	1845	1568	1508	1845	1568	3408	3505	1538	1757	3505	1568
Grp Volume(v), veh/h	234	31	52	4	26	53	7	1279	29	21	1842	424
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1508	1845	1568	1704	1752	1538	1757	1752	1568
Q Serve(g_s), s	5.1	1.1	2.2	0.2	1.0	2.4	0.2	16.2	0.5	0.9	30.2	10.1
Cycle Q Clear(g_c), s	5.1	1.1	2.2	0.2	1.0	2.4	0.2	16.2	0.5	0.9	30.2	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	274	257	218	6	116	99	25	2184	958	33	2225	995
V/C Ratio(X)	0.85	0.12	0.24	0.62	0.22	0.54	0.28	0.59	0.03	0.63	0.83	0.43
Avail Cap(c_a), veh/h	274	445	378	81	396	336	183	2208	969	118	2255	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	28.1	28.6	37.1	33.2	33.9	36.8	8.3	5.4	36.3	10.5	6.8
Incr Delay (d2), s/veh	22.1	0.2	0.6	70.4	1.0	4.4	6.1	0.4	0.0	18.1	2.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.6	1.0	0.2	0.5	1.2	0.1	7.8	0.2	0.6	15.2	4.3
LnGrp Delay(d),s/veh	56.0	28.3	29.1	107.5	34.2	38.3	43.0	8.7	5.4	54.4	13.2	7.1
LnGrp LOS	E	C	C	F	C	D	D	A	A	D	B	A
Approach Vol, veh/h		317			83			1315			2287	
Approach Delay, s/veh		48.9			40.4			8.8			12.4	
Approach LOS		D			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	50.5	4.3	14.4	4.5	51.4	10.0	8.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	47.0	4.0	18.0	4.0	48.0	6.0	16.0
Max Q Clear Time (g_c+I1), s	2.9	18.2	2.2	4.2	2.2	32.2	7.1	4.4
Green Ext Time (p_c), s	0.0	26.9	0.0	0.5	0.0	15.2	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	609	393	58	58	770	103	2	646	40	94	1017	1130
Future Volume (veh/h)	609	393	58	58	770	103	2	646	40	94	1017	1130
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	609	393	58	58	770	103	2	646	40	94	1017	1130
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	549	1241	555	93	773	346	5	1451	649	139	1588	710
Arrive On Green	0.17	0.36	0.36	0.03	0.23	0.23	0.00	0.42	0.42	0.04	0.46	0.46
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3343	3438	1538	3343	3438	1538
Grp Volume(v), veh/h	609	393	58	58	770	103	2	646	40	94	1017	1130
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1672	1719	1538	1672	1719	1538
Q Serve(g_s), s	24.4	12.2	3.7	2.6	33.3	8.3	0.1	19.7	2.3	4.1	33.3	68.0
Cycle Q Clear(g_c), s	24.4	12.2	3.7	2.6	33.3	8.3	0.1	19.7	2.3	4.1	33.3	68.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	549	1241	555	93	773	346	5	1451	649	139	1588	710
V/C Ratio(X)	1.11	0.32	0.10	0.62	1.00	0.30	0.37	0.45	0.06	0.68	0.64	1.59
Avail Cap(c_a), veh/h	549	1241	555	137	773	346	68	1455	651	198	1588	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.4	33.6	30.9	70.8	56.9	47.2	73.4	30.3	25.3	69.6	30.3	39.6
Incr Delay (d2), s/veh	72.1	0.3	0.2	2.5	31.5	1.0	15.3	0.2	0.0	2.2	0.9	272.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	5.8	1.6	1.2	19.0	3.6	0.1	9.4	1.0	1.9	16.0	82.6
LnGrp Delay(d),s/veh	133.5	33.9	31.1	73.3	88.4	48.2	88.7	30.5	25.3	71.7	31.2	312.1
LnGrp LOS	F	C	C	E	F	D	F	C	C	E	C	F
Approach Vol, veh/h		1060			931			688			2241	
Approach Delay, s/veh		91.0			83.0			30.4			174.5	
Approach LOS		F			F			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	39.4	4.8	74.0	8.7	59.7	10.7	68.1
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	4.6	6.0
Max Green Setting (Gmax), s	24.4	33.4	3.0	68.0	6.1	51.7	8.7	62.3
Max Q Clear Time (g_c+I1), s	26.4	35.3	2.1	70.0	4.6	14.2	6.1	21.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	20.8	0.0	29.2

Intersection Summary	
HCM 2010 Ctrl Delay	119.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	877	94	309	742	146	85	1116	294	52	748	133
Future Volume (veh/h)	155	877	94	309	742	146	85	1116	294	52	748	133
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	155	877	94	309	742	146	85	1116	294	52	748	133
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	189	934	100	259	1163	520	109	1199	536	66	1113	498
Arrive On Green	0.11	0.29	0.29	0.15	0.33	0.33	0.06	0.34	0.34	0.04	0.32	0.32
Sat Flow, veh/h	1757	3194	342	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	155	481	490	309	742	146	85	1116	294	52	748	133
Grp Sat Flow(s),veh/h/ln	1757	1752	1784	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	7.6	23.7	23.7	13.0	15.9	6.1	4.2	27.2	13.4	2.6	16.4	5.6
Cycle Q Clear(g_c), s	7.6	23.7	23.7	13.0	15.9	6.1	4.2	27.2	13.4	2.6	16.4	5.6
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	512	522	259	1163	520	109	1199	536	66	1113	498
V/C Ratio(X)	0.82	0.94	0.94	1.20	0.64	0.28	0.78	0.93	0.55	0.79	0.67	0.27
Avail Cap(c_a), veh/h	239	516	525	259	1163	520	159	1230	550	80	1113	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	30.5	30.5	37.7	25.0	21.7	40.9	28.1	23.5	42.2	26.2	22.5
Incr Delay (d2), s/veh	16.3	25.3	25.0	119.3	1.2	0.3	14.0	12.4	1.1	34.4	1.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	15.0	15.2	14.8	7.8	2.6	2.5	15.1	6.0	1.9	8.1	2.5
LnGrp Delay(d),s/veh	54.9	55.8	55.5	156.9	26.2	22.0	54.9	40.5	24.6	76.6	27.7	22.8
LnGrp LOS	D	E	E	F	C	C	D	D	C	E	C	C
Approach Vol, veh/h		1126			1197			1495			933	
Approach Delay, s/veh		55.5			59.4			38.2			29.8	
Approach LOS		E			E			D			C	

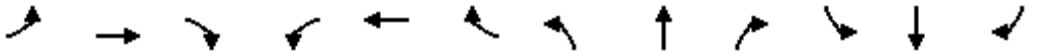
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	34.2	17.0	29.8	9.5	32.1	13.5	33.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	31.0	13.0	26.0	8.0	27.0	12.0	27.0
Max Q Clear Time (g_c+I1), s	4.6	29.2	15.0	25.7	6.2	18.4	9.6	17.9
Green Ext Time (p_c), s	0.0	1.1	0.0	0.2	0.0	7.3	0.1	6.8

Intersection Summary	
HCM 2010 Ctrl Delay	46.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	636	223	49	795	100	183	1649	188	131	461	58
Future Volume (veh/h)	147	636	223	49	795	100	183	1649	188	131	461	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	147	636	223	49	795	100	183	1649	188	131	461	58
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	135	953	426	63	723	91	210	1573	177	120	1393	174
Arrive On Green	0.08	0.27	0.27	0.04	0.23	0.23	0.12	0.50	0.50	0.07	0.45	0.45
Sat Flow, veh/h	1757	3505	1568	1757	3133	394	1740	3147	353	1740	3105	389
Grp Volume(v), veh/h	147	636	223	49	445	450	183	898	939	131	257	262
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1775	1740	1736	1765	1740	1736	1758
Q Serve(g_s), s	10.0	21.0	15.7	3.6	30.0	30.0	13.4	65.0	65.0	9.0	12.4	12.6
Cycle Q Clear(g_c), s	10.0	21.0	15.7	3.6	30.0	30.0	13.4	65.0	65.0	9.0	12.4	12.6
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.20	1.00		0.22
Lane Grp Cap(c), veh/h	135	953	426	63	404	410	210	868	882	120	778	789
V/C Ratio(X)	1.09	0.67	0.52	0.78	1.10	1.10	0.87	1.04	1.06	1.09	0.33	0.33
Avail Cap(c_a), veh/h	135	953	426	108	404	410	308	868	882	120	778	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	42.1	40.2	62.2	50.0	50.0	56.2	32.5	32.5	60.5	23.2	23.2
Incr Delay (d2), s/veh	102.9	1.8	1.2	18.4	74.3	74.1	16.4	40.0	48.8	107.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	10.4	6.9	2.1	22.8	23.1	7.4	40.5	43.3	7.9	6.0	6.2
LnGrp Delay(d),s/veh	162.9	43.9	41.3	80.6	124.3	124.1	72.6	72.5	81.3	168.0	23.4	23.5
LnGrp LOS	F	D	D	F	F	F	E	F	F	F	C	C
Approach Vol, veh/h		1006			944			2020			650	
Approach Delay, s/veh		60.7			122.0			76.6			52.6	
Approach LOS		E			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	69.0	8.7	39.3	19.7	62.3	14.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	65.0	8.0	32.0	23.0	51.0	10.0	30.0
Max Q Clear Time (g_c+I1), s	11.0	67.0	5.6	23.0	15.4	14.6	12.0	32.0
Green Ext Time (p_c), s	0.0	0.0	0.0	6.4	0.3	26.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.0
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	1303	168	229	1446	142	179	1559	217	127	367	127
Future Volume (veh/h)	319	1303	168	229	1446	142	179	1559	217	127	367	127
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	319	1303	168	229	1446	142	179	1559	217	127	367	127
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	255	1402	181	151	1264	393	201	1329	182	104	1311	587
Arrive On Green	0.15	0.31	0.31	0.09	0.25	0.25	0.12	0.43	0.43	0.06	0.38	0.38
Sat Flow, veh/h	1740	4473	577	1740	4988	1553	1740	3068	420	1740	3471	1553
Grp Volume(v), veh/h	319	969	502	229	1446	142	179	871	905	127	367	127
Grp Sat Flow(s),veh/h/ln	1740	1663	1725	1740	1663	1553	1740	1736	1753	1740	1736	1553
Q Serve(g_s), s	22.0	42.3	42.3	13.0	38.0	11.3	15.2	65.0	65.0	9.0	11.0	8.3
Cycle Q Clear(g_c), s	22.0	42.3	42.3	13.0	38.0	11.3	15.2	65.0	65.0	9.0	11.0	8.3
Prop In Lane	1.00		0.33	1.00		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	255	1042	541	151	1264	393	201	752	760	104	1311	587
V/C Ratio(X)	1.25	0.93	0.93	1.52	1.14	0.36	0.89	1.16	1.19	1.22	0.28	0.22
Avail Cap(c_a), veh/h	255	1042	541	151	1264	393	232	752	760	104	1311	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	49.9	49.9	68.5	56.0	46.0	65.4	42.5	42.5	70.5	32.5	31.6
Incr Delay (d2), s/veh	140.7	14.1	22.8	264.3	74.8	0.6	29.3	85.8	98.9	157.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	21.4	23.5	17.3	26.2	4.9	8.9	49.1	52.3	8.9	5.3	3.6
LnGrp Delay(d),s/veh	204.7	64.0	72.7	332.8	130.8	46.6	94.7	128.3	141.4	227.9	32.6	31.8
LnGrp LOS	F	E	E	F	F	D	F	F	F	F	C	C
Approach Vol, veh/h		1790			1817			1955			621	
Approach Delay, s/veh		91.5			149.7			131.3			72.4	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	69.0	17.0	51.0	21.3	60.7	26.0	42.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	65.0	13.0	47.0	20.0	54.0	22.0	38.0
Max Q Clear Time (g_c+I1), s	11.0	67.0	15.0	44.3	17.2	13.0	24.0	40.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.1	26.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	119.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	1202	179	121	1729	404	147	989	335	28	252	212
Future Volume (veh/h)	192	1202	179	121	1729	404	147	989	335	28	252	212
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	192	1202	179	121	1729	404	147	989	335	28	252	212
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	188	1542	229	144	1676	750	172	960	429	35	687	307
Arrive On Green	0.11	0.51	0.51	0.08	0.48	0.48	0.10	0.27	0.27	0.02	0.20	0.20
Sat Flow, veh/h	1740	3033	450	1740	3471	1553	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	192	685	696	121	1729	404	147	989	335	28	252	212
Grp Sat Flow(s),veh/h/ln	1740	1736	1748	1740	1736	1553	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	15.0	44.5	45.1	9.5	67.0	25.2	11.4	38.0	27.4	2.2	8.6	17.4
Cycle Q Clear(g_c), s	15.0	44.5	45.1	9.5	67.0	25.2	11.4	38.0	27.4	2.2	8.6	17.4
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	882	888	144	1676	750	172	960	429	35	687	307
V/C Ratio(X)	1.02	0.78	0.78	0.84	1.03	0.54	0.86	1.03	0.78	0.80	0.37	0.69
Avail Cap(c_a), veh/h	188	882	888	163	1676	750	253	960	429	51	687	307
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.9	27.7	27.9	62.8	35.9	25.1	61.6	50.4	46.5	67.7	48.3	51.9
Incr Delay (d2), s/veh	71.2	4.4	4.6	28.6	30.6	0.8	16.9	37.1	8.9	41.4	0.3	6.4
Initial Q Delay(d3),s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	22.4	22.8	5.7	39.0	10.9	6.4	23.2	13.0	1.5	4.2	8.1
LnGrp Delay(d),s/veh	133.3	32.1	32.5	91.4	66.5	25.9	78.5	87.5	55.5	109.1	48.7	58.3
LnGrp LOS	F	C	C	F	F	C	E	F	E	F	D	E
Approach Vol, veh/h		1573			2254			1471			492	
Approach Delay, s/veh		44.6			60.5			79.3			56.2	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	42.0	15.4	74.6	17.6	31.2	19.0	71.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.0	13.0	69.0	20.0	22.0	15.0	67.0
Max Q Clear Time (g_c+I1), s	4.2	40.0	11.5	47.1	13.4	19.4	17.0	69.0
Green Ext Time (p_c), s	0.0	0.0	0.0	20.6	0.2	2.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	60.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	520	33	72	681	273	65	1448	59	89	996	15
Future Volume (veh/h)	404	520	33	72	681	273	65	1448	59	89	996	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	404	520	33	72	681	273	65	1448	59	89	996	15
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	453	1376	428	126	892	278	121	1581	64	145	1639	733
Arrive On Green	0.13	0.28	0.28	0.04	0.18	0.18	0.04	0.46	0.46	0.04	0.47	0.47
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	3400	138	3375	3471	1553
Grp Volume(v), veh/h	404	520	33	72	681	273	65	738	769	89	996	15
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1736	1803	1688	1736	1553
Q Serve(g_s), s	10.5	7.5	1.4	1.9	11.6	15.7	1.7	35.4	35.6	2.3	19.0	0.5
Cycle Q Clear(g_c), s	10.5	7.5	1.4	1.9	11.6	15.7	1.7	35.4	35.6	2.3	19.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	453	1376	428	126	892	278	121	807	838	145	1639	733
V/C Ratio(X)	0.89	0.38	0.08	0.57	0.76	0.98	0.54	0.91	0.92	0.61	0.61	0.02
Avail Cap(c_a), veh/h	453	1376	428	189	892	278	151	815	847	151	1639	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	26.2	24.0	42.3	34.9	36.6	42.4	22.3	22.3	42.1	17.5	12.6
Incr Delay (d2), s/veh	19.4	0.2	0.1	4.1	3.9	49.0	3.7	14.7	14.7	6.7	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	3.5	0.6	0.9	5.6	10.5	0.8	20.1	20.9	1.2	9.1	0.2
LnGrp Delay(d),s/veh	57.5	26.3	24.0	46.4	38.8	85.6	46.1	36.9	37.0	48.8	18.1	12.6
LnGrp LOS	E	C	C	D	D	F	D	D	D	D	B	B
Approach Vol, veh/h		957			1026			1572			1100	
Approach Delay, s/veh		39.4			51.8			37.4			20.5	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	45.6	7.3	28.7	7.2	46.2	16.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	42.0	5.0	23.0	4.0	42.0	12.0	16.0
Max Q Clear Time (g_c+I1), s	4.3	37.6	3.9	9.5	3.7	21.0	12.5	17.7
Green Ext Time (p_c), s	0.0	4.0	0.0	7.6	0.0	17.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	418	61	2	442	23	145	549	48	8	220	28
Future Volume (veh/h)	142	418	61	2	442	23	145	549	48	8	220	28
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1827	1827	1827	1845	1845	1845
Adj Flow Rate, veh/h	142	418	61	2	442	23	145	549	48	8	220	28
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	3	3	3
Cap, veh/h	179	980	142	4	743	39	184	665	565	15	492	418
Arrive On Green	0.10	0.32	0.32	0.00	0.22	0.22	0.11	0.36	0.36	0.01	0.27	0.27
Sat Flow, veh/h	1740	3043	441	1740	3357	174	1740	1827	1553	1757	1845	1568
Grp Volume(v), veh/h	142	237	242	2	228	237	145	549	48	8	220	28
Grp Sat Flow(s),veh/h/ln	1740	1736	1749	1740	1736	1796	1740	1827	1553	1757	1845	1568
Q Serve(g_s), s	4.2	5.7	5.7	0.1	6.2	6.2	4.3	14.4	1.1	0.2	5.2	0.7
Cycle Q Clear(g_c), s	4.2	5.7	5.7	0.1	6.2	6.2	4.3	14.4	1.1	0.2	5.2	0.7
Prop In Lane	1.00		0.25	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	559	563	4	384	398	184	665	565	15	492	418
V/C Ratio(X)	0.79	0.42	0.43	0.52	0.59	0.60	0.79	0.83	0.08	0.54	0.45	0.07
Avail Cap(c_a), veh/h	198	592	597	132	526	545	264	796	677	133	664	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	14.0	14.1	26.3	18.4	18.4	23.0	15.3	11.0	26.1	16.1	14.5
Incr Delay (d2), s/veh	18.0	0.5	0.5	81.6	1.5	1.4	9.6	6.1	0.1	27.6	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	2.8	2.8	0.1	3.1	3.3	2.5	8.3	0.5	0.2	2.7	0.3
LnGrp Delay(d),s/veh	41.1	14.6	14.6	107.9	19.9	19.9	32.6	21.3	11.1	53.7	16.8	14.5
LnGrp LOS	D	B	B	F	B	B	C	C	B	D	B	B
Approach Vol, veh/h		621			467			742			256	
Approach Delay, s/veh		20.6			20.2			22.9			17.7	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.4	23.2	4.1	21.0	9.6	18.1	9.4	15.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	23.0	4.0	18.0	8.0	19.0	6.0	16.0
Max Q Clear Time (g_c+I1), s	2.2	16.4	2.1	7.7	6.3	7.2	6.2	8.2
Green Ext Time (p_c), s	0.0	2.8	0.0	4.1	0.1	4.1	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	21.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	163	110	3	1	301	1904	37	0	1609	0
Future Volume (veh/h)	0	1	163	110	3	1	301	1904	37	0	1609	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	0	1	163	110	3	1	301	1904	37	0	1609	0
Adj No. of Lanes	0	1	0	1	1	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	0	1	185	139	105	35	306	2075	928	97	1659	0
Arrive On Green	0.00	0.12	0.12	0.08	0.08	0.08	0.18	0.61	0.61	0.00	0.49	0.00
Sat Flow, veh/h	0	9	1488	1757	1325	442	1707	3406	1524	1707	3495	0
Grp Volume(v), veh/h	0	0	164	110	0	4	301	1904	37	0	1609	0
Grp Sat Flow(s),veh/h/ln	0	0	1497	1757	0	1767	1707	1703	1524	1707	1703	0
Q Serve(g_s), s	0.0	0.0	13.2	7.6	0.0	0.3	21.6	60.8	1.2	0.0	56.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	13.2	7.6	0.0	0.3	21.6	60.8	1.2	0.0	56.4	0.0
Prop In Lane	0.00		0.99	1.00		0.25	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	186	139	0	139	306	2075	928	97	1659	0
V/C Ratio(X)	0.00	0.00	0.88	0.79	0.00	0.03	0.98	0.92	0.04	0.00	0.97	0.00
Avail Cap(c_a), veh/h	0	0	195	229	0	230	306	2164	968	97	1665	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	52.8	55.6	0.0	52.2	50.2	21.2	9.6	0.0	30.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	32.9	9.8	0.0	0.1	46.9	6.6	0.0	0.0	15.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	7.2	4.0	0.0	0.1	14.1	30.2	0.5	0.0	29.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	85.8	65.3	0.0	52.3	97.1	27.9	9.6	0.0	46.1	0.0
LnGrp LOS			F	E		D	F	C	A		D	
Approach Vol, veh/h		164			114			2242			1609	
Approach Delay, s/veh		85.8			64.9			36.9			46.1	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	78.8		19.3	26.0	63.8		13.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	78.0		16.0	22.0	60.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	62.8		15.2	23.6	58.4		9.6
Green Ext Time (p_c), s	0.0	12.0		0.1	0.0	1.4		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		43.2
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	19	205	4	610	19	1807	107	224	1589	0
Future Volume (veh/h)	0	1	19	205	4	610	19	1807	107	224	1589	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	0	1	19	205	4	610	19	1807	107	224	1589	0
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1	7	142	230	3	395	26	1825	107	210	2268	0
Arrive On Green	0.00	0.09	0.09	0.13	0.25	0.25	0.01	0.54	0.54	0.12	0.65	0.00
Sat Flow, veh/h	1757	79	1501	1757	10	1559	1757	3365	197	1757	3597	0
Grp Volume(v), veh/h	0	0	20	205	0	614	19	933	981	224	1589	0
Grp Sat Flow(s),veh/h/ln	1757	0	1580	1757	0	1569	1757	1752	1810	1757	1752	0
Q Serve(g_s), s	0.0	0.0	1.6	16.3	0.0	36.0	1.5	74.0	76.9	17.0	41.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	1.6	16.3	0.0	36.0	1.5	74.0	76.9	17.0	41.6	0.0
Prop In Lane	1.00		0.95	1.00		0.99	1.00		0.11	1.00		0.00
Lane Grp Cap(c), veh/h	1	0	149	230	0	398	26	950	981	210	2268	0
V/C Ratio(X)	0.00	0.00	0.13	0.89	0.00	1.54	0.73	0.98	1.00	1.07	0.70	0.00
Avail Cap(c_a), veh/h	49	0	178	297	0	398	62	950	981	210	2268	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	59.0	60.7	0.0	53.0	69.7	31.8	32.5	62.5	16.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.4	22.7	0.0	256.6	31.7	24.7	28.6	80.3	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.7	9.4	0.0	43.9	1.0	42.0	45.9	12.9	20.4	0.0
LnGrp Delay(d),s/veh	0.0	0.0	59.4	83.5	0.0	309.6	101.3	56.6	61.1	142.8	17.2	0.0
LnGrp LOS			E	F		F	F	E	E	F	B	
Approach Vol, veh/h		20			819			1933			1813	
Approach Delay, s/veh		59.4			253.0			59.3			32.7	
Approach LOS		E			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	81.0	22.6	17.4	6.1	95.9	0.0	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	77.0	24.0	16.0	5.0	89.0	4.0	36.0
Max Q Clear Time (g_c+I1), s	19.0	78.9	18.3	3.6	3.5	43.6	0.0	38.0
Green Ext Time (p_c), s	0.0	0.0	0.3	3.8	0.0	41.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	83.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	359	6	4	1	5	7	3	1391	1	0	1457	343
Future Volume (veh/h)	359	6	4	1	5	7	3	1391	1	0	1457	343
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	359	6	4	1	5	7	3	1391	1	0	1457	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	406	7	368	2	8	12	6	2063	1	3	1792	802
Arrive On Green	0.23	0.23	0.23	0.01	0.01	0.01	0.00	0.57	0.57	0.00	0.51	0.00
Sat Flow, veh/h	1729	29	1568	129	646	904	1757	3594	3	1757	3505	1568
Grp Volume(v), veh/h	365	0	4	13	0	0	3	678	714	0	1457	0
Grp Sat Flow(s),veh/h/ln	1758	0	1568	1679	0	0	1757	1752	1844	1757	1752	1568
Q Serve(g_s), s	13.5	0.0	0.1	0.5	0.0	0.0	0.1	18.1	18.1	0.0	23.4	0.0
Cycle Q Clear(g_c), s	13.5	0.0	0.1	0.5	0.0	0.0	0.1	18.1	18.1	0.0	23.4	0.0
Prop In Lane	0.98		1.00	0.08		0.54	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	413	0	368	22	0	0	6	1006	1059	3	1792	802
V/C Ratio(X)	0.88	0.00	0.01	0.60	0.00	0.00	0.53	0.67	0.67	0.00	0.81	0.00
Avail Cap(c_a), veh/h	444	0	396	399	0	0	104	1006	1059	104	1925	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	24.9	0.0	19.8	33.1	0.0	0.0	33.5	10.0	10.0	0.0	13.8	0.0
Incr Delay (d2), s/veh	17.8	0.0	0.0	24.3	0.0	0.0	59.4	1.8	1.7	0.0	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.1	0.4	0.0	0.0	0.1	9.2	9.6	0.0	11.8	0.0
LnGrp Delay(d),s/veh	42.7	0.0	19.8	57.3	0.0	0.0	93.0	11.8	11.7	0.0	16.4	0.0
LnGrp LOS	D		B	E			F	B	B		B	
Approach Vol, veh/h		369			13			1395			1457	
Approach Delay, s/veh		42.4			57.3			11.9			16.4	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	42.7		19.8	4.2	38.5		4.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	37.0		17.0	4.0	37.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	20.1		15.5	2.1	25.4		2.5
Green Ext Time (p_c), s	0.0	15.2		0.3	0.0	9.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		17.6	
HCM 2010 LOS		B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	518	588	90	1297	6	242	1029	64	2	1412	336
Future Volume (veh/h)	278	518	588	90	1297	6	242	1029	64	2	1412	336
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	278	518	588	90	1297	6	242	1029	64	2	1412	336
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	262	1348	603	131	1213	543	236	1583	708	7	1348	603
Arrive On Green	0.08	0.38	0.38	0.04	0.35	0.35	0.07	0.45	0.45	0.00	0.38	0.38
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	278	518	588	90	1297	6	242	1029	64	2	1412	336
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	10.0	13.9	48.0	3.4	45.0	0.3	9.0	29.6	3.0	0.1	50.0	21.8
Cycle Q Clear(g_c), s	10.0	13.9	48.0	3.4	45.0	0.3	9.0	29.6	3.0	0.1	50.0	21.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	1348	603	131	1213	543	236	1583	708	7	1348	603
V/C Ratio(X)	1.06	0.38	0.98	0.69	1.07	0.01	1.03	0.65	0.09	0.27	1.05	0.56
Avail Cap(c_a), veh/h	262	1348	603	131	1213	543	236	1583	708	105	1348	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	28.9	39.4	61.7	42.5	27.9	60.5	27.7	20.4	64.8	40.0	31.3
Incr Delay (d2), s/veh	72.4	0.2	30.3	13.9	46.4	0.0	65.4	0.9	0.1	19.0	37.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	6.7	25.8	1.9	29.6	0.1	6.4	14.5	1.3	0.1	31.3	9.6
LnGrp Delay(d),s/veh	132.4	29.1	69.7	75.6	88.9	27.9	126.0	28.6	20.4	83.7	77.9	32.5
LnGrp LOS	F	C	E	E	F	C	F	C	C	F	F	C
Approach Vol, veh/h		1384			1393			1335			1750	
Approach Delay, s/veh		67.1			87.8			45.9			69.2	
Approach LOS		E			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	62.7	9.0	54.0	13.0	54.0	14.0	49.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	55.0	5.0	50.0	9.0	50.0	10.0	45.0
Max Q Clear Time (g_c+I1), s	2.1	31.6	5.4	50.0	11.0	52.0	12.0	47.0
Green Ext Time (p_c), s	0.0	19.8	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	2129	49	18	2851	171	387	257	36	213	64	266
Future Volume (veh/h)	140	2129	49	18	2851	171	387	257	36	213	64	266
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	140	2129	49	18	2851	171	387	257	36	213	64	266
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	94	2146	49	25	1928	114	258	295	251	187	221	188
Arrive On Green	0.05	0.61	0.61	0.01	0.57	0.57	0.15	0.16	0.16	0.11	0.12	0.12
Sat Flow, veh/h	1757	3503	80	1757	3362	200	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	140	1061	1117	18	1472	1550	387	257	36	213	64	266
Grp Sat Flow(s),veh/h/ln	1757	1752	1830	1757	1752	1809	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	8.0	89.2	91.0	1.5	86.0	86.0	22.0	20.4	3.0	16.0	4.7	18.0
Cycle Q Clear(g_c), s	8.0	89.2	91.0	1.5	86.0	86.0	22.0	20.4	3.0	16.0	4.7	18.0
Prop In Lane	1.00		0.04	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	1074	1121	25	1005	1037	258	295	251	187	221	188
V/C Ratio(X)	1.49	0.99	1.00	0.73	1.47	1.49	1.50	0.87	0.14	1.14	0.29	1.41
Avail Cap(c_a), veh/h	94	1074	1121	47	1005	1037	258	295	251	187	221	188
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	28.5	28.9	73.7	32.0	32.0	64.0	61.5	54.2	67.0	60.2	66.0
Incr Delay (d2), s/veh	270.2	24.6	25.9	33.2	214.9	227.4	245.1	23.4	0.3	107.3	0.7	214.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	50.1	53.7	1.0	101.3	108.2	28.2	12.3	1.3	13.3	2.5	19.0
LnGrp Delay(d),s/veh	341.2	53.1	54.7	106.8	246.9	259.4	309.1	84.9	54.4	174.3	60.9	280.5
LnGrp LOS	F	D	D	F	F	F	F	F	D	F	E	F
Approach Vol, veh/h		2318			3040			680			543	
Approach Delay, s/veh		71.3			252.4			210.9			213.0	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	28.0	6.1	95.9	26.0	22.0	12.0	90.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	24.0	4.0	90.0	22.0	18.0	8.0	86.0
Max Q Clear Time (g_c+I1), s	18.0	22.4	3.5	93.0	24.0	20.0	10.0	88.0
Green Ext Time (p_c), s	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	181.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	471	621	506	7	1179	414	643	1834	4	266	1276	1614
Future Volume (veh/h)	471	621	506	7	1179	414	643	1834	4	266	1276	1614
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	471	621	506	7	1179	414	643	1834	4	266	1276	1614
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	250	1410	439	23	1074	334	341	2591	807	314	2552	794
Arrive On Green	0.07	0.28	0.28	0.01	0.21	0.21	0.10	0.51	0.51	0.09	0.51	0.51
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	471	621	506	7	1179	414	643	1834	4	266	1276	1614
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	11.0	15.2	42.0	0.3	32.0	32.0	15.0	41.7	0.2	11.5	25.1	76.0
Cycle Q Clear(g_c), s	11.0	15.2	42.0	0.3	32.0	32.0	15.0	41.7	0.2	11.5	25.1	76.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	250	1410	439	23	1074	334	341	2591	807	314	2552	794
V/C Ratio(X)	1.88	0.44	1.15	0.30	1.10	1.24	1.89	0.71	0.00	0.85	0.50	2.03
Avail Cap(c_a), veh/h	250	1410	439	91	1074	334	341	2591	807	386	2552	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.5	44.4	54.0	74.1	59.0	59.0	67.5	27.8	17.7	67.0	24.4	37.0
Incr Delay (d2), s/veh	412.8	0.2	91.9	7.2	58.1	130.0	409.9	0.9	0.0	13.5	0.2	468.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.5	7.1	29.4	0.2	20.6	25.9	26.5	19.6	0.1	6.0	11.6	136.1
LnGrp Delay(d),s/veh	482.3	44.6	145.9	81.4	117.1	189.0	477.4	28.7	17.7	80.6	24.6	505.7
LnGrp LOS	F	D	F	F	F	F	F	C	B	F	C	F
Approach Vol, veh/h		1598			1600			2481			3156	
Approach Delay, s/veh		205.7			135.5			145.0			275.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	81.2	5.0	46.0	19.0	80.0	15.0	36.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	74.0	4.0	39.0	15.0	76.0	11.0	32.0
Max Q Clear Time (g_c+I1), s	13.5	43.7	2.3	44.0	17.0	78.0	13.0	34.0
Green Ext Time (p_c), s	0.3	29.9	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	200.8
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	605	301	402	1256	856	661	1097	239	357	329	0
Future Volume (veh/h)	0	605	301	402	1256	856	661	1097	239	357	329	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	605	301	402	1256	856	661	1097	239	357	329	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1076	335	494	2043	636	753	1177	527	400	814	364
Arrive On Green	0.00	0.21	0.21	0.15	0.41	0.41	0.22	0.34	0.34	0.12	0.23	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	605	301	402	1256	856	661	1097	239	357	329	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	9.1	15.9	9.7	16.8	34.6	16.0	25.8	10.2	8.8	6.8	0.0
Cycle Q Clear(g_c), s	0.0	9.1	15.9	9.7	16.8	34.6	16.0	25.8	10.2	8.8	6.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1076	335	494	2043	636	753	1177	527	400	814	364
V/C Ratio(X)	0.00	0.56	0.90	0.81	0.61	1.35	0.88	0.93	0.45	0.89	0.40	0.00
Avail Cap(c_a), veh/h	160	1124	350	640	2043	636	840	1194	534	400	814	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	29.9	32.6	35.3	20.0	25.3	32.1	27.3	22.2	37.0	27.7	0.0
Incr Delay (d2), s/veh	0.0	0.6	24.2	6.2	0.6	165.8	9.7	12.9	0.6	21.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.3	9.1	5.0	7.9	44.1	8.5	14.4	4.4	5.3	3.3	0.0
LnGrp Delay(d),s/veh	0.0	30.5	56.8	41.4	20.6	191.1	41.7	40.2	22.8	58.5	28.0	0.0
LnGrp LOS		C	E	D	C	F	D	D	C	E	C	
Approach Vol, veh/h		906			2514			1997			686	
Approach Delay, s/veh		39.2			82.0			38.6			43.9	
Approach LOS		D			F			D			D	

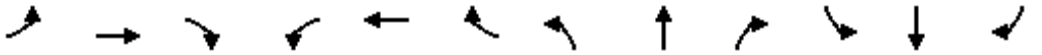
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	32.6	16.4	22.2	22.8	23.8	0.0	38.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	29.0	16.0	19.0	21.0	18.0	4.0	31.0
Max Q Clear Time (g_c+I1), s	10.8	27.8	11.7	17.9	18.0	8.8	0.0	36.6
Green Ext Time (p_c), s	0.0	0.8	0.6	0.3	0.9	6.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.2
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	74	18	155	408	995	134	985	89	357	461	244
Future Volume (veh/h)	28	74	18	155	408	995	134	985	89	357	461	244
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	28	74	18	155	408	995	134	985	89	357	461	244
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	69	1511	676	212	1658	742	189	947	424	345	1108	496
Arrive On Green	0.02	0.43	0.43	0.06	0.47	0.47	0.06	0.27	0.27	0.10	0.32	0.32
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	28	74	18	155	408	995	134	985	89	357	461	244
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	1.0	1.5	0.8	5.3	8.2	56.0	4.6	32.0	5.2	12.0	12.3	14.9
Cycle Q Clear(g_c), s	1.0	1.5	0.8	5.3	8.2	56.0	4.6	32.0	5.2	12.0	12.3	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	1511	676	212	1658	742	189	947	424	345	1108	496
V/C Ratio(X)	0.40	0.05	0.03	0.73	0.25	1.34	0.71	1.04	0.21	1.03	0.42	0.49
Avail Cap(c_a), veh/h	115	1511	676	288	1658	742	259	947	424	345	1108	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.3	19.6	19.4	54.6	18.6	31.2	55.0	43.2	33.4	53.2	31.9	32.8
Incr Delay (d2), s/veh	3.8	0.0	0.0	6.1	0.1	162.8	5.4	40.1	0.2	57.4	0.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.3	2.7	4.0	57.7	2.3	20.7	2.3	8.4	6.0	6.5
LnGrp Delay(d),s/veh	61.0	19.6	19.4	60.7	18.7	194.0	60.3	83.3	33.7	110.6	32.1	33.6
LnGrp LOS	E	B	B	E	B	F	E	F	C	F	C	C
Approach Vol, veh/h		120			1558			1208			1062	
Approach Delay, s/veh		29.2			134.8			77.1			58.8	
Approach LOS		C			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	36.0	11.4	55.0	10.6	41.4	6.4	60.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	32.0	10.0	50.0	9.0	35.0	4.0	56.0
Max Q Clear Time (g_c+I1), s	14.0	34.0	7.3	3.5	6.6	16.9	3.0	58.0
Green Ext Time (p_c), s	0.0	0.0	0.1	11.0	0.1	10.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	93.5
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	348	98	29	858	260	244	596	31	90	335	300
Future Volume (veh/h)	126	348	98	29	858	260	244	596	31	90	335	300
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	126	348	98	29	858	260	244	596	31	90	335	300
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	210	1172	524	88	1047	468	349	1063	475	182	891	399
Arrive On Green	0.06	0.33	0.33	0.03	0.30	0.30	0.10	0.30	0.30	0.05	0.25	0.25
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	126	348	98	29	858	260	244	596	31	90	335	300
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	2.0	4.1	2.5	0.5	12.9	7.9	3.9	8.1	0.8	1.5	4.5	10.0
Cycle Q Clear(g_c), s	2.0	4.1	2.5	0.5	12.9	7.9	3.9	8.1	0.8	1.5	4.5	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	1172	524	88	1047	468	349	1063	475	182	891	399
V/C Ratio(X)	0.60	0.30	0.19	0.33	0.82	0.56	0.70	0.56	0.07	0.49	0.38	0.75
Avail Cap(c_a), veh/h	241	1172	524	241	1116	499	362	1063	475	301	992	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	13.9	13.4	27.1	18.4	16.7	24.5	16.5	14.0	26.0	17.4	19.4
Incr Delay (d2), s/veh	3.2	0.1	0.2	2.1	4.7	1.2	5.6	0.7	0.1	2.1	0.3	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.0	1.1	0.2	6.9	3.5	2.1	4.0	0.3	0.7	2.2	5.0
LnGrp Delay(d),s/veh	29.0	14.0	13.5	29.2	23.1	17.9	30.1	17.2	14.1	28.1	17.6	25.8
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	C
Approach Vol, veh/h		572			1147			871			725	
Approach Delay, s/veh		17.3			22.1			20.7			22.3	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	21.1	5.5	22.9	9.8	18.4	7.5	20.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	17.0	4.0	18.0	6.0	16.0	4.0	18.0
Max Q Clear Time (g_c+I1), s	3.5	10.1	2.5	6.1	5.9	12.0	4.0	14.9
Green Ext Time (p_c), s	0.0	4.0	0.0	7.2	0.0	2.4	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	773	124	25	1279	244	578	221	54	104	54	143
Future Volume (veh/h)	51	773	124	25	1279	244	578	221	54	104	54	143
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	51	773	124	25	1279	244	578	221	54	104	54	143
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	65	1354	606	35	1293	578	581	680	578	131	206	175
Arrive On Green	0.04	0.39	0.39	0.02	0.37	0.37	0.33	0.37	0.37	0.07	0.11	0.11
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	51	773	124	25	1279	244	578	221	54	104	54	143
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	3.0	18.4	5.6	1.5	38.4	12.3	34.7	9.1	2.4	6.2	2.8	9.4
Cycle Q Clear(g_c), s	3.0	18.4	5.6	1.5	38.4	12.3	34.7	9.1	2.4	6.2	2.8	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	65	1354	606	35	1293	578	581	680	578	131	206	175
V/C Ratio(X)	0.78	0.57	0.20	0.72	0.99	0.42	0.99	0.33	0.09	0.80	0.26	0.82
Avail Cap(c_a), veh/h	66	1354	606	83	1293	578	581	680	578	216	279	237
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	25.6	21.6	51.5	33.2	24.9	35.3	24.0	21.8	48.2	43.0	45.9
Incr Delay (d2), s/veh	43.9	0.6	0.2	24.6	22.4	0.5	35.7	0.3	0.1	10.5	0.7	14.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	9.0	2.4	1.0	22.5	5.4	22.5	4.7	1.0	3.4	1.5	4.8
LnGrp Delay(d),s/veh	94.4	26.1	21.8	76.1	55.6	25.4	71.0	24.2	21.9	58.6	43.6	60.4
LnGrp LOS	F	C	C	E	E	C	E	C	C	E	D	E
Approach Vol, veh/h		948			1548			853			301	
Approach Delay, s/veh		29.2			51.2			55.8			56.8	
Approach LOS		C			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	43.0	6.1	44.8	39.0	15.8	7.9	43.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	38.0	5.0	38.0	35.0	16.0	4.0	39.0
Max Q Clear Time (g_c+I1), s	8.2	11.1	3.5	20.4	36.7	11.4	5.0	40.4
Green Ext Time (p_c), s	0.1	2.3	0.0	14.0	0.0	0.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	210	167	26	448	223	180	192	88	43	86	41
Future Volume (veh/h)	20	210	167	26	448	223	180	192	88	43	86	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	20	210	167	26	448	223	180	192	88	43	86	41
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	33	831	706	41	529	263	224	270	124	60	156	74
Arrive On Green	0.02	0.45	0.45	0.02	0.45	0.45	0.13	0.23	0.23	0.03	0.13	0.13
Sat Flow, veh/h	1757	1845	1568	1757	1163	579	1757	1198	549	1757	1182	563
Grp Volume(v), veh/h	20	210	167	26	0	671	180	0	280	43	0	127
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1742	1757	0	1748	1757	0	1745
Q Serve(g_s), s	0.7	4.2	3.9	0.9	0.0	20.5	6.0	0.0	8.9	1.5	0.0	4.1
Cycle Q Clear(g_c), s	0.7	4.2	3.9	0.9	0.0	20.5	6.0	0.0	8.9	1.5	0.0	4.1
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.31	1.00		0.32
Lane Grp Cap(c), veh/h	33	831	706	41	0	793	224	0	394	60	0	230
V/C Ratio(X)	0.60	0.25	0.24	0.63	0.00	0.85	0.80	0.00	0.71	0.72	0.00	0.55
Avail Cap(c_a), veh/h	117	983	836	146	0	958	293	0	641	146	0	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.2	10.2	10.1	29.1	0.0	14.5	25.4	0.0	21.4	28.7	0.0	24.4
Incr Delay (d2), s/veh	16.3	0.2	0.2	14.8	0.0	6.1	11.4	0.0	2.4	14.8	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.2	1.7	0.6	0.0	11.0	3.6	0.0	4.5	1.0	0.0	2.1
LnGrp Delay(d),s/veh	45.5	10.4	10.3	43.9	0.0	20.6	36.8	0.0	23.8	43.5	0.0	26.4
LnGrp LOS	D	B	B	D		C	D		C	D		C
Approach Vol, veh/h		397			697			460			170	
Approach Delay, s/veh		12.1			21.5			28.9			30.8	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	17.5	5.4	31.0	11.7	11.9	5.1	31.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	22.0	5.0	32.0	10.0	17.0	4.0	33.0
Max Q Clear Time (g_c+I1), s	3.5	10.9	2.9	6.2	8.0	6.1	2.7	22.5
Green Ext Time (p_c), s	0.0	1.8	0.0	7.5	0.1	1.8	0.0	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	78	0	0	607	805	0	0	0	280	0	0
Future Volume (veh/h)	0	78	0	0	607	805	0	0	0	280	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	78	0	0	607	805	0	0	0	280	0	0
Adj No. of Lanes	2	2	1	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	11	2029	908	6	2029	908	6	6	5	517	280	238
Arrive On Green	0.00	0.58	0.00	0.00	0.58	0.58	0.00	0.00	0.00	0.15	0.00	0.00
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	1757	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	0	78	0	0	607	805	0	0	0	280	0	0
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	0.0	0.3	0.0	0.0	2.6	13.2	0.0	0.0	0.0	2.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.3	0.0	0.0	2.6	13.2	0.0	0.0	0.0	2.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	11	2029	908	6	2029	908	6	6	5	517	280	238
V/C Ratio(X)	0.00	0.04	0.00	0.00	0.30	0.89	0.00	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	459	2125	950	237	2125	950	237	994	845	1836	1739	1478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	2.7	0.0	0.0	3.2	5.4	0.0	0.0	0.0	11.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	9.9	0.0	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	1.3	8.0	0.0	0.0	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	0.0	2.7	0.0	0.0	3.3	15.3	0.0	0.0	0.0	12.5	0.0	0.0
LnGrp LOS		A			A	B				B		
Approach Vol, veh/h		78			1412			0			280	
Approach Delay, s/veh		2.7			10.1			0.0			12.5	
Approach LOS		A			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	0.0	0.0	21.2	0.0	8.5	0.0	21.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	16.0	4.0	18.0	4.0	28.0	4.0	18.0
Max Q Clear Time (g_c+I1), s	4.3	0.0	0.0	2.3	0.0	0.0	0.0	15.2
Green Ext Time (p_c), s	0.7	0.0	0.0	7.6	0.0	0.0	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	17	66	189	10	77	22	1496	69	63	665	29
Future Volume (veh/h)	128	17	66	189	10	77	22	1496	69	63	665	29
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	128	17	66	189	10	77	22	1496	69	63	665	29
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	133	113	228	203	172	26	1848	85	80	1958	85
Arrive On Green	0.09	0.07	0.07	0.13	0.11	0.11	0.01	0.54	0.54	0.05	0.57	0.57
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3412	157	1757	3422	149
Grp Volume(v), veh/h	128	17	66	189	10	77	22	766	799	63	340	354
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1817	1757	1752	1818
Q Serve(g_s), s	5.4	0.7	3.1	7.9	0.4	3.5	0.9	27.0	27.2	2.7	7.8	7.8
Cycle Q Clear(g_c), s	5.4	0.7	3.1	7.9	0.4	3.5	0.9	27.0	27.2	2.7	7.8	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		0.08
Lane Grp Cap(c), veh/h	161	133	113	228	203	172	26	949	984	80	1003	1041
V/C Ratio(X)	0.79	0.13	0.59	0.83	0.05	0.45	0.85	0.81	0.81	0.79	0.34	0.34
Avail Cap(c_a), veh/h	209	366	311	255	414	352	116	1019	1056	93	1003	1041
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	32.9	34.0	32.1	30.1	31.5	37.2	14.1	14.2	35.8	8.6	8.6
Incr Delay (d2), s/veh	14.6	0.4	4.7	18.4	0.1	1.8	49.9	4.6	4.6	31.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.3	1.5	5.0	0.2	1.6	0.8	14.0	14.8	2.0	3.7	3.9
LnGrp Delay(d),s/veh	48.3	33.3	38.8	50.6	30.2	33.3	87.1	18.7	18.8	67.1	8.8	8.8
LnGrp LOS	D	C	D	D	C	C	F	B	B	E	A	A
Approach Vol, veh/h		211			276			1587			757	
Approach Delay, s/veh		44.1			45.0			19.7			13.6	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	45.0	13.8	9.4	5.1	47.3	10.9	12.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	44.0	11.0	15.0	5.0	43.0	9.0	17.0
Max Q Clear Time (g_c+I1), s	4.7	29.2	9.9	5.1	2.9	9.8	7.4	5.5
Green Ext Time (p_c), s	0.0	11.8	0.1	0.4	0.0	22.1	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	3	59	67	2	47	13	1331	111	104	892	74
Future Volume (veh/h)	64	3	59	67	2	47	13	1331	111	104	892	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	64	3	59	67	2	47	13	1331	111	104	892	74
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	80	128	109	84	133	113	17	1762	146	132	1977	164
Arrive On Green	0.05	0.07	0.07	0.05	0.07	0.07	0.01	0.54	0.54	0.08	0.60	0.60
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3277	272	1757	3277	272
Grp Volume(v), veh/h	64	3	59	67	2	47	13	710	732	104	477	489
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1797	1757	1752	1797
Q Serve(g_s), s	2.1	0.1	2.2	2.2	0.1	1.7	0.4	18.7	18.9	3.5	8.8	8.8
Cycle Q Clear(g_c), s	2.1	0.1	2.2	2.2	0.1	1.7	0.4	18.7	18.9	3.5	8.8	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.15
Lane Grp Cap(c), veh/h	80	128	109	84	133	113	17	942	966	132	1057	1084
V/C Ratio(X)	0.80	0.02	0.54	0.80	0.02	0.42	0.76	0.75	0.76	0.79	0.45	0.45
Avail Cap(c_a), veh/h	118	497	423	118	497	423	89	1004	1029	148	1063	1090
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	25.7	26.7	28.0	25.6	26.4	29.3	10.7	10.7	27.0	6.4	6.4
Incr Delay (d2), s/veh	20.6	0.1	4.1	21.8	0.0	2.4	49.2	3.1	3.1	21.7	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.1	1.6	0.0	0.8	0.4	9.7	10.0	2.5	4.3	4.4
LnGrp Delay(d),s/veh	48.7	25.8	30.8	49.8	25.6	28.8	78.5	13.7	13.8	48.7	6.7	6.7
LnGrp LOS	D	C	C	D	C	C	E	B	B	D	A	A
Approach Vol, veh/h		126			116			1455			1070	
Approach Delay, s/veh		39.8			40.9			14.3			10.8	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	35.9	6.8	8.1	4.6	39.8	6.7	8.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	34.0	4.0	16.0	3.0	36.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	5.5	20.9	4.2	4.2	2.4	10.8	4.1	3.7
Green Ext Time (p_c), s	0.0	11.0	0.0	0.2	0.0	18.9	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	819	23	101	1596	73	226
Future Volume (veh/h)	819	23	101	1596	73	226
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	819	23	101	1596	73	226
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	2204	62	492	2219	338	302
Arrive On Green	0.63	0.63	0.63	0.63	0.19	0.19
Sat Flow, veh/h	3574	98	645	3597	1757	1568
Grp Volume(v), veh/h	412	430	101	1596	73	226
Grp Sat Flow(s),veh/h/ln	1752	1827	645	1752	1757	1568
Q Serve(g_s), s	5.2	5.2	4.1	14.1	1.6	6.2
Cycle Q Clear(g_c), s	5.2	5.2	9.3	14.1	1.6	6.2
Prop In Lane		0.05	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1109	1157	492	2219	338	302
V/C Ratio(X)	0.37	0.37	0.21	0.72	0.22	0.75
Avail Cap(c_a), veh/h	1184	1234	520	2368	613	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.0	4.0	6.3	5.7	15.6	17.5
Incr Delay (d2), s/veh	0.2	0.2	0.2	1.0	0.3	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	2.6	0.8	7.0	0.8	3.0
LnGrp Delay(d),s/veh	4.2	4.2	6.5	6.7	15.9	21.2
LnGrp LOS	A	A	A	A	B	C
Approach Vol, veh/h	842			1697	299	
Approach Delay, s/veh	4.2			6.7	19.9	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		12.8		33.1				33.1
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		31.0				31.0
Max Q Clear Time (g_c+I1), s		8.2		7.2				16.1
Green Ext Time (p_c), s		0.6		19.5				13.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	1915	0	75	2992	0	0	1	31	52	0	0
Future Volume (veh/h)	256	1915	0	75	2992	0	0	1	31	52	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	256	1915	0	75	2992	0	0	1	31	52	0	0
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	282	3707	0	96	3172	0	2	68	58	61	195	166
Arrive On Green	0.16	0.74	0.00	0.05	0.63	0.00	0.00	0.04	0.04	0.03	0.00	0.00
Sat Flow, veh/h	1757	5202	0	1757	5202	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	256	1915	0	75	2992	0	0	1	31	52	0	0
Grp Sat Flow(s),veh/h/ln	1757	1679	0	1757	1679	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	16.6	18.8	0.0	4.9	62.8	0.0	0.0	0.1	2.3	3.4	0.0	0.0
Cycle Q Clear(g_c), s	16.6	18.8	0.0	4.9	62.8	0.0	0.0	0.1	2.3	3.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	3707	0	96	3172	0	2	68	58	61	195	166
V/C Ratio(X)	0.91	0.52	0.00	0.78	0.94	0.00	0.00	0.01	0.53	0.86	0.00	0.00
Avail Cap(c_a), veh/h	288	3707	0	182	3257	0	45	255	216	61	270	230
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	47.8	6.5	0.0	54.1	19.6	0.0	0.0	53.8	54.9	55.7	0.0	0.0
Incr Delay (d2), s/veh	30.0	0.1	0.0	12.9	6.5	0.0	0.0	0.1	7.5	67.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	8.6	0.0	2.7	30.7	0.0	0.0	0.0	1.1	2.8	0.0	0.0
LnGrp Delay(d),s/veh	77.8	6.6	0.0	67.1	26.1	0.0	0.0	53.9	62.3	123.5	0.0	0.0
LnGrp LOS	E	A		E	C			D	E	F		
Approach Vol, veh/h		2171			3067			32			52	
Approach Delay, s/veh		15.0			27.1			62.1			123.5	
Approach LOS		B			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	8.3	10.3	89.4	0.0	16.3	22.6	77.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	12.0	82.0	3.0	17.0	19.0	75.0
Max Q Clear Time (g_c+I1), s	5.4	4.3	6.9	20.8	0.0	0.0	18.6	64.8
Green Ext Time (p_c), s	0.0	0.0	0.1	60.5	0.0	0.0	0.0	8.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	1103	492	231	2150	8	859	600	151	48	635	259
Future Volume (veh/h)	319	1103	492	231	2150	8	859	600	151	48	635	259
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	319	1103	492	231	2150	8	859	600	151	48	635	259
Adj No. of Lanes	2	3	1	2	3	1	2	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	243	1640	511	278	1691	526	633	818	696	61	540	459
Arrive On Green	0.07	0.33	0.33	0.08	0.34	0.34	0.19	0.44	0.44	0.03	0.29	0.29
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	319	1103	492	231	2150	8	859	600	151	48	635	259
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1845	1568	1757	1845	1568
Q Serve(g_s), s	10.0	26.5	43.2	9.3	47.0	0.5	26.0	37.6	8.3	3.8	41.0	19.6
Cycle Q Clear(g_c), s	10.0	26.5	43.2	9.3	47.0	0.5	26.0	37.6	8.3	3.8	41.0	19.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1640	511	278	1691	526	633	818	696	61	540	459
V/C Ratio(X)	1.31	0.67	0.96	0.83	1.27	0.02	1.36	0.73	0.22	0.78	1.18	0.56
Avail Cap(c_a), veh/h	243	1640	511	292	1691	526	633	818	696	75	540	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	40.8	46.4	63.4	46.5	31.0	57.0	32.1	24.0	67.0	49.5	41.9
Incr Delay (d2), s/veh	165.9	1.1	30.6	17.5	127.1	0.0	170.9	3.4	0.2	33.6	97.1	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	12.4	23.0	5.1	41.6	0.2	27.2	19.8	3.6	2.4	35.4	8.7
LnGrp Delay(d),s/veh	230.9	41.8	77.0	80.9	173.6	31.1	227.9	35.5	24.1	100.6	146.6	43.5
LnGrp LOS	F	D	E	F	F	C	F	D	C	F	F	D
Approach Vol, veh/h		1914			2389			1610			942	
Approach Delay, s/veh		82.4			164.1			137.1			115.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	66.1	15.4	49.6	30.0	45.0	14.0	51.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	61.0	12.0	45.0	26.0	41.0	10.0	47.0
Max Q Clear Time (g_c+I1), s	5.8	39.6	11.3	45.2	28.0	43.0	12.0	49.0
Green Ext Time (p_c), s	0.0	10.7	0.1	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	128.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1117	14	75	2036	1	118	0	0	5	1	58
Future Volume (veh/h)	10	1117	14	75	2036	1	118	0	0	5	1	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	10	1117	14	75	2036	1	118	0	0	5	1	58
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	13	2935	37	76	3163	2	151	274	233	7	122	104
Arrive On Green	0.01	0.57	0.57	0.04	0.61	0.61	0.09	0.00	0.00	0.00	0.07	0.07
Sat Flow, veh/h	1757	5126	64	1757	5199	3	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	10	731	400	75	1315	722	118	0	0	5	1	58
Grp Sat Flow(s),veh/h/ln	1757	1679	1833	1757	1679	1844	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.4	8.2	8.2	2.9	17.4	17.4	4.5	0.0	0.0	0.2	0.0	2.5
Cycle Q Clear(g_c), s	0.4	8.2	8.2	2.9	17.4	17.4	4.5	0.0	0.0	0.2	0.0	2.5
Prop In Lane	1.00		0.04	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	13	1922	1049	76	2042	1122	151	274	233	7	122	104
V/C Ratio(X)	0.75	0.38	0.38	0.98	0.64	0.64	0.78	0.00	0.00	0.72	0.01	0.56
Avail Cap(c_a), veh/h	76	2140	1169	76	2140	1176	280	454	386	255	428	363
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	8.1	8.1	33.0	8.7	8.7	30.9	0.0	0.0	34.3	30.1	31.3
Incr Delay (d2), s/veh	57.9	0.1	0.2	96.7	0.6	1.1	8.4	0.0	0.0	84.6	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.8	4.2	3.5	8.0	9.0	2.5	0.0	0.0	0.3	0.0	1.2
LnGrp Delay(d),s/veh	92.1	8.2	8.3	129.7	9.3	9.8	39.3	0.0	0.0	118.9	30.1	35.9
LnGrp LOS	F	A	A	F	A	A	D			F	C	D
Approach Vol, veh/h		1141			2112			118			64	
Approach Delay, s/veh		9.0			13.8			39.3			42.3	
Approach LOS		A			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	14.2	7.0	43.5	9.9	8.6	4.5	46.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	17.0	3.0	44.0	11.0	16.0	3.0	44.0
Max Q Clear Time (g_c+I1), s	2.2	0.0	4.9	10.2	6.5	4.5	2.4	19.4
Green Ext Time (p_c), s	0.0	0.0	0.0	29.3	0.1	0.1	0.0	22.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	1040	30	107	1892	34	139	9	92	42	27	81
Future Volume (veh/h)	51	1040	30	107	1892	34	139	9	92	42	27	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	51	1040	30	107	1892	34	139	9	92	42	27	81
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	61	2050	59	137	2296	41	176	315	268	50	182	155
Arrive On Green	0.04	0.41	0.41	0.08	0.45	0.45	0.10	0.17	0.17	0.03	0.10	0.10
Sat Flow, veh/h	1757	5031	145	1757	5094	91	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	51	694	376	107	1246	680	139	9	92	42	27	81
Grp Sat Flow(s),veh/h/ln	1757	1679	1819	1757	1679	1829	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.5	7.8	7.8	3.0	16.5	16.5	3.9	0.2	2.6	1.2	0.7	2.5
Cycle Q Clear(g_c), s	1.5	7.8	7.8	3.0	16.5	16.5	3.9	0.2	2.6	1.2	0.7	2.5
Prop In Lane	1.00		0.08	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	61	1368	741	137	1513	824	176	315	268	50	182	155
V/C Ratio(X)	0.83	0.51	0.51	0.78	0.82	0.82	0.79	0.03	0.34	0.84	0.15	0.52
Avail Cap(c_a), veh/h	104	1368	741	277	1587	864	208	618	525	173	581	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	11.2	11.2	23.0	12.2	12.2	22.3	17.5	18.5	24.6	20.9	21.7
Incr Delay (d2), s/veh	23.5	0.3	0.6	9.2	3.5	6.3	15.8	0.0	0.8	29.8	0.4	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.6	4.0	1.8	8.2	9.6	2.7	0.1	1.2	1.0	0.4	1.2
LnGrp Delay(d),s/veh	47.9	11.5	11.8	32.1	15.7	18.5	38.1	17.6	19.3	54.3	21.3	24.4
LnGrp LOS	D	B	B	C	B	B	D	B	B	D	C	C
Approach Vol, veh/h		1121			2033			240			150	
Approach Delay, s/veh		13.3			17.5			30.1			32.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	12.7	8.0	24.7	9.1	9.0	5.8	26.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	17.0	8.0	19.0	6.0	16.0	3.0	24.0
Max Q Clear Time (g_c+I1), s	3.2	4.6	5.0	9.8	5.9	4.5	3.5	18.5
Green Ext Time (p_c), s	0.0	0.6	0.1	8.6	0.0	0.5	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	46	149	387	2781	1273	35
Future Volume (veh/h)	46	149	387	2781	1273	35
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	46	149	387	2781	1273	35
Adj No. of Lanes	1	1	1	3	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	227	203	452	3586	1893	52
Arrive On Green	0.13	0.13	0.26	0.71	0.38	0.38
Sat Flow, veh/h	1757	1568	1757	5202	5205	139
Grp Volume(v), veh/h	46	149	387	2781	848	460
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1679	1679	1820
Q Serve(g_s), s	1.2	4.6	10.6	17.9	10.6	10.6
Cycle Q Clear(g_c), s	1.2	4.6	10.6	17.9	10.6	10.6
Prop In Lane	1.00	1.00	1.00			0.08
Lane Grp Cap(c), veh/h	227	203	452	3586	1261	684
V/C Ratio(X)	0.20	0.74	0.86	0.78	0.67	0.67
Avail Cap(c_a), veh/h	523	466	557	3695	1261	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	21.1	17.8	4.7	13.2	13.2
Incr Delay (d2), s/veh	0.4	5.1	10.6	1.1	1.4	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.2	6.4	8.3	5.1	5.7
LnGrp Delay(d),s/veh	20.1	26.2	28.5	5.7	14.6	15.7
LnGrp LOS	C	C	C	A	B	B
Approach Vol, veh/h	195			3168	1308	
Approach Delay, s/veh	24.8			8.5	15.0	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		39.9		10.5	17.0	22.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		37.0		15.0	16.0	17.0		
Max Q Clear Time (g_c+I1), s		19.9		6.6	12.6	12.6		
Green Ext Time (p_c), s		16.0		0.4	0.4	4.3		

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	120	12	180	1488	832	518
Future Volume (veh/h)	120	12	180	1488	832	518
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	120	12	180	1488	832	518
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	158	141	228	2523	1034	634
Arrive On Green	0.09	0.09	0.13	0.72	0.49	0.49
Sat Flow, veh/h	1757	1568	1757	3597	2182	1281
Grp Volume(v), veh/h	120	12	180	1488	696	654
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1619
Q Serve(g_s), s	2.8	0.3	4.2	8.7	14.0	14.4
Cycle Q Clear(g_c), s	2.8	0.3	4.2	8.7	14.0	14.4
Prop In Lane	1.00	1.00	1.00			0.79
Lane Grp Cap(c), veh/h	158	141	228	2523	867	801
V/C Ratio(X)	0.76	0.09	0.79	0.59	0.80	0.82
Avail Cap(c_a), veh/h	209	186	292	2667	875	808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	17.5	17.7	2.9	8.9	9.0
Incr Delay (d2), s/veh	10.9	0.3	10.6	0.3	5.4	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.3	2.7	4.0	7.9	7.8
LnGrp Delay(d),s/veh	29.6	17.8	28.3	3.2	14.3	15.5
LnGrp LOS	C	B	C	A	B	B
Approach Vol, veh/h	132			1668	1350	
Approach Delay, s/veh	28.5			5.9	14.9	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		34.3		7.8	9.5	24.8		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		32.0		5.0	7.0	21.0		
Max Q Clear Time (g_c+I1), s		10.7		4.8	6.2	16.4		
Green Ext Time (p_c), s		18.8		0.0	0.0	4.4		

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	984	950	35	791	895	0	133	2154	1044	54	691	791
Future Volume (veh/h)	984	950	35	791	895	0	133	2154	1044	54	691	791
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	984	950	35	791	895	0	133	2154	1044	54	691	791
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	828	876	392	730	776	347	146	2014	627	73	1906	594
Arrive On Green	0.24	0.25	0.25	0.21	0.22	0.00	0.04	0.40	0.40	0.02	0.38	0.38
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	984	950	35	791	895	0	133	2154	1044	54	691	791
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	34.0	35.0	2.4	30.0	31.0	0.0	5.4	56.0	56.0	2.2	13.8	53.0
Cycle Q Clear(g_c), s	34.0	35.0	2.4	30.0	31.0	0.0	5.4	56.0	56.0	2.2	13.8	53.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	828	876	392	730	776	347	146	2014	627	73	1906	594
V/C Ratio(X)	1.19	1.08	0.09	1.08	1.15	0.00	0.91	1.07	1.66	0.74	0.36	1.33
Avail Cap(c_a), veh/h	828	876	392	730	776	347	146	2014	627	73	1906	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	52.5	40.3	55.0	54.5	0.0	66.7	42.0	42.0	68.1	31.3	43.5
Incr Delay (d2), s/veh	97.0	55.8	0.1	58.1	83.4	0.0	48.8	41.5	306.1	32.4	0.1	161.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.1	23.7	1.1	20.0	24.0	0.0	3.6	33.7	77.5	1.4	6.4	49.5
LnGrp Delay(d),s/veh	150.0	108.3	40.4	113.1	137.9	0.0	115.5	83.5	348.1	100.5	31.4	204.5
LnGrp LOS	F	F	D	F	F		F	F	F	F	C	F
Approach Vol, veh/h		1969			1686			3331			1536	
Approach Delay, s/veh		127.9			126.2			167.7			123.0	
Approach LOS		F			F			F			F	

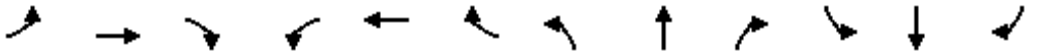
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	60.0	34.0	39.0	10.0	57.0	38.0	35.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	56.0	30.0	35.0	6.0	53.0	34.0	31.0
Max Q Clear Time (g_c+I1), s	4.2	58.0	32.0	37.0	7.4	55.0	36.0	33.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	142.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	1029	29	23	1197	14	102	3	69	29	0	102
Future Volume (veh/h)	73	1029	29	23	1197	14	102	3	69	29	0	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	73	1029	29	23	1197	14	102	3	69	29	0	102
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	90	1595	45	29	1501	18	129	305	259	35	207	176
Arrive On Green	0.05	0.46	0.46	0.02	0.42	0.42	0.07	0.17	0.17	0.02	0.00	0.11
Sat Flow, veh/h	1757	3482	98	1757	3548	41	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	73	518	540	23	591	620	102	3	69	29	0	102
Grp Sat Flow(s),veh/h/ln	1757	1752	1827	1757	1752	1837	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.9	10.7	10.7	0.6	13.8	13.8	2.7	0.1	1.8	0.8	0.0	2.9
Cycle Q Clear(g_c), s	1.9	10.7	10.7	0.6	13.8	13.8	2.7	0.1	1.8	0.8	0.0	2.9
Prop In Lane	1.00		0.05	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	803	837	29	742	777	129	305	259	35	207	176
V/C Ratio(X)	0.81	0.65	0.65	0.79	0.80	0.80	0.79	0.01	0.27	0.82	0.00	0.58
Avail Cap(c_a), veh/h	112	803	837	112	782	819	149	666	566	112	627	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.1	9.8	9.8	23.1	11.8	11.8	21.5	16.4	17.1	23.0	0.0	19.8
Incr Delay (d2), s/veh	28.6	1.8	1.7	36.5	5.6	5.3	21.7	0.0	0.5	35.1	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.4	5.7	0.6	7.7	8.0	2.1	0.0	0.8	0.7	0.0	1.4
LnGrp Delay(d),s/veh	50.7	11.6	11.5	59.5	17.4	17.1	43.1	16.4	17.7	58.1	0.0	22.8
LnGrp LOS	D	B	B	E	B	B	D	B	B	E		C
Approach Vol, veh/h		1131			1234			174			131	
Approach Delay, s/veh		14.1			18.0			32.6			30.6	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	11.8	4.8	25.6	7.5	9.3	6.4	23.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	17.0	3.0	21.0	4.0	16.0	3.0	21.0
Max Q Clear Time (g_c+I1), s	2.8	3.8	2.6	12.7	4.7	4.9	3.9	15.8
Green Ext Time (p_c), s	0.0	0.4	0.0	7.1	0.0	0.4	0.0	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	289	1682	146	90	2285	94	100	3	0	63	3	83
Future Volume (veh/h)	289	1682	146	90	2285	94	100	3	0	63	3	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	289	1682	146	90	2285	94	100	3	0	63	3	83
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	313	2791	242	116	2378	97	112	147	125	106	140	119
Arrive On Green	0.18	0.59	0.59	0.07	0.48	0.48	0.06	0.08	0.00	0.06	0.08	0.08
Sat Flow, veh/h	1757	4721	409	1757	4963	203	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	289	1195	633	90	1542	837	100	3	0	63	3	83
Grp Sat Flow(s),veh/h/ln	1757	1679	1772	1757	1679	1809	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	12.7	17.8	17.9	4.0	34.8	35.3	4.4	0.1	0.0	2.8	0.1	4.1
Cycle Q Clear(g_c), s	12.7	17.8	17.9	4.0	34.8	35.3	4.4	0.1	0.0	2.8	0.1	4.1
Prop In Lane	1.00		0.23	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	1985	1048	116	1609	867	112	147	125	106	140	119
V/C Ratio(X)	0.92	0.60	0.60	0.78	0.96	0.97	0.90	0.02	0.00	0.60	0.02	0.70
Avail Cap(c_a), veh/h	313	1985	1048	223	1621	873	112	398	339	112	398	339
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	10.2	10.2	36.2	19.7	19.9	36.6	33.4	0.0	36.1	33.6	35.5
Incr Delay (d2), s/veh	32.1	0.5	1.0	10.6	13.7	22.4	54.0	0.1	0.0	7.7	0.1	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	8.3	8.9	2.3	18.9	22.8	3.8	0.1	0.0	1.6	0.1	2.0
LnGrp Delay(d),s/veh	63.9	10.7	11.2	46.8	33.5	42.3	90.6	33.5	0.0	43.7	33.7	42.5
LnGrp LOS	E	B	B	D	C	D	F	C		D	C	D
Approach Vol, veh/h		2117			2469			103			149	
Approach Delay, s/veh		18.1			36.9			88.9			42.9	
Approach LOS		B			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	10.3	9.2	50.5	9.0	10.0	18.0	41.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	17.0	10.0	42.0	5.0	17.0	14.0	38.0
Max Q Clear Time (g_c+I1), s	4.8	2.1	6.0	19.9	6.4	6.1	14.7	37.3
Green Ext Time (p_c), s	0.0	0.2	0.1	21.7	0.0	0.2	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	996	631	20	1649	37	1225	741	22	50	782	585
Future Volume (veh/h)	347	996	631	20	1649	37	1225	741	22	50	782	585
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	347	996	631	20	1649	37	1225	741	22	50	782	585
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	243	2028	631	39	1202	538	828	1566	700	84	801	358
Arrive On Green	0.07	0.40	0.40	0.01	0.34	0.34	0.24	0.45	0.45	0.02	0.23	0.23
Sat Flow, veh/h	3408	5036	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	347	996	631	20	1649	37	1225	741	22	50	782	585
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	10.0	20.6	56.3	0.8	48.0	2.2	34.0	20.8	1.1	2.0	31.0	32.0
Cycle Q Clear(g_c), s	10.0	20.6	56.3	0.8	48.0	2.2	34.0	20.8	1.1	2.0	31.0	32.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	2028	631	39	1202	538	828	1566	700	84	801	358
V/C Ratio(X)	1.43	0.49	1.00	0.51	1.37	0.07	1.48	0.47	0.03	0.59	0.98	1.63
Avail Cap(c_a), veh/h	243	2028	631	73	1202	538	828	1566	700	122	801	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	31.1	41.8	68.8	46.0	31.0	53.0	27.2	21.7	67.6	53.6	54.0
Incr Delay (d2), s/veh	213.6	0.2	35.6	9.7	172.9	0.1	222.5	0.2	0.0	6.5	25.9	297.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	9.6	30.5	0.4	52.1	1.0	41.6	10.1	0.5	1.0	17.9	43.4
LnGrp Delay(d),s/veh	278.6	31.3	77.4	78.5	218.9	31.0	275.5	27.4	21.8	74.1	79.5	351.0
LnGrp LOS	F	C	E	E	F	C	F	C	C	E	E	F
Approach Vol, veh/h		1974			1706			1988			1417	
Approach Delay, s/veh		89.5			213.1			180.2			191.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	66.5	5.6	60.4	38.0	36.0	14.0	52.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	61.0	3.0	55.0	34.0	32.0	10.0	48.0
Max Q Clear Time (g_c+I1), s	4.0	22.8	2.8	58.3	36.0	34.0	12.0	50.0
Green Ext Time (p_c), s	0.0	19.5	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	165.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	292	595	27	33	1036	220	117	1075	199	122	316	453
Future Volume (veh/h)	292	595	27	33	1036	220	117	1075	199	122	316	453
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	292	595	27	33	1036	220	117	1075	199	122	316	453
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	342	1381	618	66	1098	491	171	1177	527	171	1177	527
Arrive On Green	0.10	0.39	0.39	0.02	0.31	0.31	0.05	0.34	0.34	0.05	0.34	0.34
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	292	595	27	33	1036	220	117	1075	199	122	316	453
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	6.7	9.9	0.8	0.8	23.0	8.9	2.7	23.4	7.7	2.8	5.3	21.5
Cycle Q Clear(g_c), s	6.7	9.9	0.8	0.8	23.0	8.9	2.7	23.4	7.7	2.8	5.3	21.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	1381	618	66	1098	491	171	1177	527	171	1177	527
V/C Ratio(X)	0.85	0.43	0.04	0.50	0.94	0.45	0.68	0.91	0.38	0.71	0.27	0.86
Avail Cap(c_a), veh/h	342	1381	618	128	1098	491	171	1186	530	171	1186	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	17.7	14.9	38.7	26.7	21.9	37.3	25.4	20.2	37.3	19.3	24.7
Incr Delay (d2), s/veh	18.6	0.2	0.0	5.6	15.5	0.6	10.8	10.8	0.4	13.2	0.1	13.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	4.8	0.4	0.4	13.4	3.9	1.5	13.1	3.4	1.6	2.6	11.3
LnGrp Delay(d),s/veh	54.0	17.9	14.9	44.4	42.2	22.5	48.1	36.1	20.6	50.5	19.5	38.1
LnGrp LOS	D	B	B	D	D	C	D	D	C	D	B	D
Approach Vol, veh/h		914			1289			1391			891	
Approach Delay, s/veh		29.3			38.9			34.9			33.2	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	30.8	5.6	35.4	8.0	30.8	12.0	29.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	27.0	3.0	30.0	4.0	27.0	8.0	25.0
Max Q Clear Time (g_c+I1), s	4.8	25.4	2.8	11.9	4.7	23.5	8.7	25.0
Green Ext Time (p_c), s	0.0	1.4	0.0	11.8	0.0	2.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	708	10	27	726	1	117	907	337	3	85	30
Future Volume (veh/h)	184	708	10	27	726	1	117	907	337	3	85	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	184	708	10	27	726	1	117	907	337	3	85	30
Adj No. of Lanes	2	1	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	272	778	661	78	1278	572	191	1048	469	137	993	444
Arrive On Green	0.08	0.42	0.42	0.02	0.36	0.36	0.06	0.30	0.30	0.04	0.28	0.28
Sat Flow, veh/h	3408	1845	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	184	708	10	27	726	1	117	907	337	3	85	30
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.9	26.7	0.3	0.6	12.3	0.0	2.5	18.1	14.2	0.1	1.3	1.0
Cycle Q Clear(g_c), s	3.9	26.7	0.3	0.6	12.3	0.0	2.5	18.1	14.2	0.1	1.3	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	778	661	78	1278	572	191	1048	469	137	993	444
V/C Ratio(X)	0.68	0.91	0.02	0.34	0.57	0.00	0.61	0.87	0.72	0.02	0.09	0.07
Avail Cap(c_a), veh/h	414	798	678	184	1279	572	322	1089	487	691	1468	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	20.1	12.5	35.6	18.8	14.9	34.2	24.5	23.2	34.1	19.5	19.4
Incr Delay (d2), s/veh	2.9	14.3	0.0	2.6	0.6	0.0	3.2	7.3	4.9	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	16.5	0.1	0.3	6.1	0.0	1.3	9.7	6.7	0.0	0.6	0.5
LnGrp Delay(d),s/veh	36.0	34.4	12.5	38.2	19.4	14.9	37.3	31.8	28.0	34.2	19.5	19.4
LnGrp LOS	D	C	B	D	B	B	D	C	C	C	B	B
Approach Vol, veh/h		902			754			1361			118	
Approach Delay, s/veh		34.5			20.1			31.3			19.9	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	26.1	5.7	35.2	8.1	25.0	9.9	31.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	23.0	4.0	32.0	7.0	31.0	9.0	27.0
Max Q Clear Time (g_c+I1), s	2.1	20.1	2.6	28.7	4.5	3.3	5.9	14.3
Green Ext Time (p_c), s	0.0	2.0	0.0	2.5	0.1	9.8	0.2	7.7

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Future Volume (veh/h)	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	92	1669	520	369	2078	647	28	1541	689	42	1555	696
Arrive On Green	0.03	0.33	0.33	0.11	0.41	0.41	0.01	0.44	0.44	0.01	0.44	0.44
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	4.0	45.3	7.7	15.4	61.0	0.5	0.4	65.0	6.5	0.6	55.4	4.7
Cycle Q Clear(g_c), s	4.0	45.3	7.7	15.4	61.0	0.5	0.4	65.0	6.5	0.6	55.4	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	1669	520	369	2078	647	28	1541	689	42	1555	696
V/C Ratio(X)	1.11	0.95	0.22	0.97	1.16	0.01	0.32	1.12	0.17	0.35	0.91	0.12
Avail Cap(c_a), veh/h	92	1669	520	369	2078	647	92	1541	689	92	1555	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.9	48.2	35.6	65.6	43.4	25.7	72.9	41.4	25.0	72.4	38.3	24.2
Incr Delay (d2), s/veh	125.3	11.9	0.2	37.6	76.7	0.0	6.2	62.3	0.1	4.9	8.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	22.8	3.4	9.1	42.9	0.2	0.2	44.6	2.8	0.3	28.6	2.1
LnGrp Delay(d),s/veh	197.2	60.1	35.8	103.2	120.1	25.7	79.1	103.7	25.1	77.3	46.3	24.3
LnGrp LOS	F	E	D	F	F	C	E	F	C	E	D	C
Approach Vol, veh/h		1798			2770			1845			1510	
Approach Delay, s/veh		66.3			117.7			98.7			45.4	
Approach LOS		E			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	69.0	20.0	53.0	5.2	69.6	8.0	65.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	65.0	16.0	49.0	4.0	65.0	4.0	61.0
Max Q Clear Time (g_c+I1), s	2.6	67.0	17.4	47.3	2.4	57.4	6.0	63.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	7.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	87.8
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	1343	0	391	1352	0	0	325	517	0	187	262
Future Volume (veh/h)	475	1343	0	391	1352	0	0	325	517	0	187	262
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	475	1343	0	391	1352	0	0	325	517	0	187	262
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	500	1564	0	420	1403	0	2	363	309	2	363	309
Arrive On Green	0.28	0.45	0.00	0.24	0.40	0.00	0.00	0.20	0.20	0.00	0.20	0.20
Sat Flow, veh/h	1757	3597	0	1757	3597	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	475	1343	0	391	1352	0	0	325	517	0	187	262
Grp Sat Flow(s),veh/h/ln	1757	1752	0	1757	1752	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	26.9	35.0	0.0	22.1	38.3	0.0	0.0	17.5	20.0	0.0	9.2	16.4
Cycle Q Clear(g_c), s	26.9	35.0	0.0	22.1	38.3	0.0	0.0	17.5	20.0	0.0	9.2	16.4
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	500	1564	0	420	1403	0	2	363	309	2	363	309
V/C Ratio(X)	0.95	0.86	0.00	0.93	0.96	0.00	0.00	0.89	1.67	0.00	0.51	0.85
Avail Cap(c_a), veh/h	501	1564	0	432	1414	0	69	363	309	69	363	309
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	25.3	0.0	37.9	29.8	0.0	0.0	39.8	40.8	0.0	36.5	39.3
Incr Delay (d2), s/veh	27.8	5.1	0.0	26.6	16.1	0.0	0.0	23.6	317.6	0.0	1.3	19.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.9	17.9	0.0	13.9	21.5	0.0	0.0	11.2	35.9	0.0	4.8	8.8
LnGrp Delay(d),s/veh	63.4	30.3	0.0	64.5	45.8	0.0	0.0	63.3	358.4	0.0	37.7	58.8
LnGrp LOS	E	C		E	D			E	F		D	E
Approach Vol, veh/h		1818			1743			842			449	
Approach Delay, s/veh		39.0			50.0			244.5			50.0	
Approach LOS		D			D			F			D	

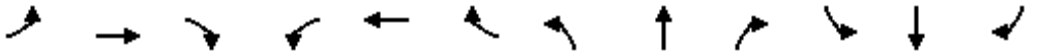
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	24.0	28.3	49.3	0.0	24.0	32.9	44.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	20.0	25.0	45.0	4.0	20.0	29.0	41.0
Max Q Clear Time (g_c+I1), s	0.0	22.0	24.1	37.0	0.0	18.4	28.9	40.3
Green Ext Time (p_c), s	0.0	0.0	0.1	7.5	0.0	1.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	79.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	672	0	1035	708	68	0	699	1197	118	797	238
Future Volume (veh/h)	238	672	0	1035	708	68	0	699	1197	118	797	238
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	238	672	0	1035	708	68	0	699	1197	118	797	238
Adj No. of Lanes	1	2	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	199	631	282	863	590	502	1	1519	679	91	1706	763
Arrive On Green	0.11	0.18	0.00	0.25	0.32	0.32	0.00	0.43	0.43	0.03	0.49	0.49
Sat Flow, veh/h	1757	3505	1568	3408	1845	1568	1757	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	238	672	0	1035	708	68	0	699	1197	118	797	238
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1704	1845	1568	1757	1752	1568	1704	1752	1568
Q Serve(g_s), s	17.0	27.0	0.0	38.0	48.0	4.6	0.0	21.2	65.0	4.0	22.7	13.8
Cycle Q Clear(g_c), s	17.0	27.0	0.0	38.0	48.0	4.6	0.0	21.2	65.0	4.0	22.7	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	631	282	863	590	502	1	1519	679	91	1706	763
V/C Ratio(X)	1.20	1.07	0.00	1.20	1.20	0.14	0.00	0.46	1.76	1.30	0.47	0.31
Avail Cap(c_a), veh/h	199	631	282	863	590	502	47	1519	679	91	1706	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.5	61.5	0.0	56.0	51.0	36.3	0.0	30.1	42.5	73.0	25.6	23.3
Incr Delay (d2), s/veh	126.4	54.5	0.0	100.6	105.4	0.1	0.0	0.2	348.8	193.9	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	17.8	0.0	29.9	41.7	2.0	0.0	10.2	94.0	4.3	11.0	6.0
LnGrp Delay(d),s/veh	192.9	116.0	0.0	156.6	156.4	36.4	0.0	30.3	391.3	266.9	25.8	23.5
LnGrp LOS	F	F		F	F	D		C	F	F	C	C
Approach Vol, veh/h		910			1811			1896			1153	
Approach Delay, s/veh		136.1			152.0			258.2			50.0	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	69.0	42.0	31.0	0.0	77.0	21.0	52.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	65.0	38.0	27.0	4.0	65.0	17.0	48.0
Max Q Clear Time (g_c+I1), s	6.0	67.0	40.0	29.0	0.0	24.7	19.0	50.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	29.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	164.0
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	2	34	31	11	76	16	283	24	11	252	88
Future Volume (veh/h)	40	2	34	31	11	76	16	283	24	11	252	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	40	2	34	31	11	76	16	283	24	11	252	88
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	51	175	149	41	164	140	22	897	76	15	694	237
Arrive On Green	0.03	0.09	0.09	0.02	0.09	0.09	0.01	0.27	0.27	0.01	0.27	0.27
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3273	276	1757	2568	875
Grp Volume(v), veh/h	40	2	34	31	11	76	16	151	156	11	170	170
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1796	1757	1752	1690
Q Serve(g_s), s	0.6	0.0	0.5	0.5	0.1	1.2	0.2	1.8	1.8	0.2	2.1	2.2
Cycle Q Clear(g_c), s	0.6	0.0	0.5	0.5	0.1	1.2	0.2	1.8	1.8	0.2	2.1	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.52
Lane Grp Cap(c), veh/h	51	175	149	41	164	140	22	481	492	15	474	457
V/C Ratio(X)	0.79	0.01	0.23	0.76	0.07	0.54	0.72	0.31	0.32	0.71	0.36	0.37
Avail Cap(c_a), veh/h	329	1174	998	197	1036	880	197	1050	1076	197	1050	1012
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	11.0	11.2	13.0	11.1	11.6	13.1	7.7	7.7	13.2	7.9	7.9
Incr Delay (d2), s/veh	23.1	0.0	0.8	25.2	0.2	3.3	35.9	0.4	0.4	45.8	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.3	0.5	0.1	0.7	0.3	0.9	1.0	0.3	1.1	1.1
LnGrp Delay(d),s/veh	36.0	11.0	12.0	38.2	11.3	14.9	49.0	8.1	8.1	59.0	8.3	8.4
LnGrp LOS	D	B	B	D	B	B	D	A	A	E	A	A
Approach Vol, veh/h		76			118			323			351	
Approach Delay, s/veh		24.6			20.7			10.1			10.0	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.2	11.3	4.6	6.5	4.3	11.2	4.8	6.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	16.0	3.0	17.0	3.0	16.0	5.0	15.0
Max Q Clear Time (g_c+I1), s	2.2	3.8	2.5	2.5	2.2	4.2	2.6	3.2
Green Ext Time (p_c), s	0.0	3.1	0.0	0.3	0.0	3.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	5	9	5	5	5	3	586	5	5	364	22
Future Volume (veh/h)	21	5	9	5	5	5	3	586	5	5	364	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	21	5	9	5	5	5	3	586	5	5	364	22
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	50	96	81	10	53	45	6	1323	11	10	1258	76
Arrive On Green	0.03	0.05	0.05	0.01	0.03	0.03	0.00	0.37	0.37	0.01	0.37	0.37
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3561	30	1757	3359	202
Grp Volume(v), veh/h	21	5	9	5	5	5	3	288	303	5	189	197
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1839	1757	1752	1809
Q Serve(g_s), s	0.3	0.1	0.2	0.1	0.1	0.1	0.0	3.5	3.5	0.1	2.1	2.2
Cycle Q Clear(g_c), s	0.3	0.1	0.2	0.1	0.1	0.1	0.0	3.5	3.5	0.1	2.1	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.11
Lane Grp Cap(c), veh/h	50	96	81	10	53	45	6	651	683	10	656	677
V/C Ratio(X)	0.42	0.05	0.11	0.52	0.09	0.11	0.48	0.44	0.44	0.52	0.29	0.29
Avail Cap(c_a), veh/h	932	1761	1497	248	1044	887	186	1177	1236	248	1239	1279
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	12.7	12.8	14.0	13.4	13.4	14.1	6.7	6.7	14.0	6.2	6.2
Incr Delay (d2), s/veh	5.4	0.2	0.6	37.8	0.8	1.1	48.4	0.5	0.5	37.8	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.1	0.1	0.0	0.1	0.1	1.8	1.9	0.1	1.0	1.1
LnGrp Delay(d),s/veh	18.9	13.0	13.4	51.8	14.1	14.4	62.5	7.2	7.1	51.8	6.4	6.4
LnGrp LOS	B	B	B	D	B	B	E	A	A	D	A	A
Approach Vol, veh/h		35			15			594			391	
Approach Delay, s/veh		16.7			26.8			7.4			7.0	
Approach LOS		B			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.2	14.5	4.2	5.5	4.1	14.6	4.8	4.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	19.0	4.0	27.0	3.0	20.0	15.0	16.0
Max Q Clear Time (g_c+I1), s	2.1	5.5	2.1	2.2	2.0	4.2	2.3	2.1
Green Ext Time (p_c), s	0.0	5.0	0.0	0.0	0.0	5.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	40	18	65	13	43	26	428	153	116	303	72
Future Volume (veh/h)	67	40	18	65	13	43	26	428	153	116	303	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	67	40	18	65	13	43	26	428	153	116	303	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	80	144	122	77	141	120	34	809	286	145	1077	252
Arrive On Green	0.05	0.08	0.08	0.04	0.08	0.08	0.02	0.32	0.32	0.08	0.38	0.38
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	2539	899	1757	2820	660
Grp Volume(v), veh/h	67	40	18	65	13	43	26	294	287	116	187	188
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1686	1757	1752	1728
Q Serve(g_s), s	1.3	0.7	0.4	1.2	0.2	0.9	0.5	4.6	4.7	2.2	2.5	2.5
Cycle Q Clear(g_c), s	1.3	0.7	0.4	1.2	0.2	0.9	0.5	4.6	4.7	2.2	2.5	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		0.38
Lane Grp Cap(c), veh/h	80	144	122	77	141	120	34	558	537	145	669	660
V/C Ratio(X)	0.84	0.28	0.15	0.85	0.09	0.36	0.77	0.53	0.53	0.80	0.28	0.29
Avail Cap(c_a), veh/h	157	825	701	157	825	701	157	836	804	262	941	927
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	14.6	14.4	15.9	14.4	14.7	16.4	9.4	9.4	15.1	7.2	7.2
Incr Delay (d2), s/veh	20.3	1.0	0.5	21.2	0.3	1.8	29.8	0.8	0.8	9.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.4	0.2	1.0	0.1	0.4	0.5	2.3	2.3	1.4	1.2	1.2
LnGrp Delay(d),s/veh	36.2	15.6	15.0	37.1	14.7	16.5	46.2	10.1	10.2	24.7	7.4	7.4
LnGrp LOS	D	B	B	D	B	B	D	B	B	C	A	A
Approach Vol, veh/h		125			121			607			491	
Approach Delay, s/veh		26.6			27.4			11.7			11.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	14.7	5.5	6.6	4.6	16.8	5.5	6.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	16.0	3.0	15.0	3.0	18.0	3.0	15.0
Max Q Clear Time (g_c+I1), s	4.2	6.7	3.2	2.7	2.5	4.5	3.3	2.9
Green Ext Time (p_c), s	0.0	4.0	0.0	0.3	0.0	5.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.4
HCM 2010 LOS	B



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	43	27	717	25	10	314
Future Volume (veh/h)	43	27	717	25	10	314
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	43	27	717	25	10	314
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	114	102	1774	62	653	1799
Arrive On Green	0.07	0.07	0.51	0.51	0.51	0.51
Sat Flow, veh/h	1757	1568	3548	120	708	3597
Grp Volume(v), veh/h	43	27	364	378	10	314
Grp Sat Flow(s),veh/h/ln	1757	1568	1752	1823	708	1752
Q Serve(g_s), s	0.4	0.3	2.4	2.4	0.2	0.9
Cycle Q Clear(g_c), s	0.4	0.3	2.4	2.4	2.6	0.9
Prop In Lane	1.00	1.00		0.07	1.00	
Lane Grp Cap(c), veh/h	114	102	900	936	653	1799
V/C Ratio(X)	0.38	0.26	0.40	0.40	0.02	0.17
Avail Cap(c_a), veh/h	1481	1322	1477	1537	886	2955
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.5	8.4	2.8	2.8	3.6	2.5
Incr Delay (d2), s/veh	2.0	1.4	0.3	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	1.2	1.2	0.0	0.4
LnGrp Delay(d),s/veh	10.5	9.8	3.1	3.1	3.6	2.5
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	70		742			324
Approach Delay, s/veh	10.3		3.1			2.5
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.7				13.7		5.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		16.0				16.0		16.0
Max Q Clear Time (g_c+I1), s		4.4				4.6		2.4
Green Ext Time (p_c), s		5.2				5.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	3.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	51	70	212	13	83	132	550	80	30	219	108
Future Volume (veh/h)	109	51	70	212	13	83	132	550	80	30	219	108
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	109	51	70	212	13	83	132	550	80	30	219	108
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	352	264	224	266	717	609	167	1302	189	353	541	258
Arrive On Green	0.14	0.14	0.14	0.15	0.39	0.39	0.10	0.42	0.42	0.23	0.23	0.23
Sat Flow, veh/h	1282	1845	1568	1757	1845	1568	1757	3073	446	785	2306	1097
Grp Volume(v), veh/h	109	51	70	212	13	83	132	313	317	30	165	162
Grp Sat Flow(s),veh/h/ln	1282	1845	1568	1757	1845	1568	1757	1752	1766	785	1752	1651
Q Serve(g_s), s	3.4	1.0	1.7	5.0	0.2	1.5	3.1	5.3	5.4	1.3	3.4	3.6
Cycle Q Clear(g_c), s	3.4	1.0	1.7	5.0	0.2	1.5	3.1	5.3	5.4	1.3	3.4	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		0.66
Lane Grp Cap(c), veh/h	352	264	224	266	717	609	167	743	748	353	411	388
V/C Ratio(X)	0.31	0.19	0.31	0.80	0.02	0.14	0.79	0.42	0.42	0.08	0.40	0.42
Avail Cap(c_a), veh/h	620	649	552	330	1169	993	206	1028	1036	464	658	620
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	16.1	16.4	17.4	8.0	8.4	18.9	8.6	8.6	13.0	13.8	13.8
Incr Delay (d2), s/veh	0.5	0.4	0.8	10.5	0.0	0.1	15.2	0.4	0.4	0.1	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.6	0.8	3.2	0.1	0.6	2.2	2.6	2.6	0.3	1.7	1.7
LnGrp Delay(d),s/veh	17.6	16.4	17.2	27.9	8.0	8.5	34.0	9.0	9.0	13.1	14.4	14.6
LnGrp LOS	B	B	B	C	A	A	C	A	A	B	B	B
Approach Vol, veh/h		230			308			762			357	
Approach Delay, s/veh		17.2			21.8			13.3			14.4	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		22.1	10.5	10.1	8.1	14.0		20.6
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s		25.0	8.0	15.0	5.0	16.0		27.0
Max Q Clear Time (g_c+I1), s		7.4	7.0	5.4	5.1	5.6		3.5
Green Ext Time (p_c), s		5.9	0.1	0.8	0.0	4.4		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	60.5
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	0	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	659	652	152
Demand Flow Rate, veh/h	0	679	671	156
Vehicles Circulating, veh/h	62	671	0	612
Vehicles Exiting, veh/h	706	0	62	738
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	121.3	10.9	9.4
Approach LOS	-	F	B	A

Lane	Left	Left	Left
Designated Moves	LTR	LT	TR
Assumed Moves	LTR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	679	671	156
Cap Entry Lane, veh/h	578	1130	613
Entry HV Adj Factor	0.971	0.971	0.973
Flow Entry, veh/h	659	652	152
Cap Entry, veh/h	561	1098	596
V/C Ratio	1.176	0.594	0.255
Control Delay, s/veh	121.3	10.9	9.4
LOS	F	B	A
95th %tile Queue, veh	23	4	1

Intersection	
Intersection Delay, s/veh	24.0
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	0	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	292	0	669	210
Demand Flow Rate, veh/h	300	0	689	216
Vehicles Circulating, veh/h	216	670	393	0
Vehicles Exiting, veh/h	0	412	123	670
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.7	0.0	37.1	5.0
Approach LOS	A	-	E	A

Lane	Left	Left	Left
Designated Moves	LTR	TR	LT
Assumed Moves	LTR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	300	689	216
Cap Entry Lane, veh/h	910	763	1130
Entry HV Adj Factor	0.973	0.971	0.971
Flow Entry, veh/h	292	669	210
Cap Entry, veh/h	886	740	1097
V/C Ratio	0.330	0.903	0.191
Control Delay, s/veh	7.7	37.1	5.0
LOS	A	E	A
95th %tile Queue, veh	1	12	1

Intersection	
Intersection Delay, s/veh	181.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	0	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	0	314	2552	2097
Demand Flow Rate, veh/h	0	323	2629	2159
Vehicles Circulating, veh/h	2110	2629	0	598
Vehicles Exiting, veh/h	647	0	2110	2354
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	427.5	103.1	239.4
Approach LOS	-	F	F	F

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	323	1236	1393	1015	1144
Cap Entry Lane, veh/h	179	1130	1130	722	743
Entry HV Adj Factor	0.971	0.971	0.971	0.971	0.971
Flow Entry, veh/h	314	1200	1353	985	1111
Cap Entry, veh/h	174	1097	1097	701	722
V/C Ratio	1.800	1.094	1.233	1.407	1.539
Control Delay, s/veh	427.5	74.8	128.2	209.5	265.9
LOS	F	F	F	F	F
95th %tile Queue, veh	23	29	44	44	56

Intersection	
Intersection Delay, s/veh	171.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	0	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	535	0	2405	2049
Demand Flow Rate, veh/h	550	0	2477	2110
Vehicles Circulating, veh/h	2110	2628	331	0
Vehicles Exiting, veh/h	0	180	2329	2628
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	554.4	0.0	201.7	35.4
Approach LOS	F	-	F	E

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	550	1164	1313	992	1118
Cap Entry Lane, veh/h	258	882	896	1130	1130
Entry HV Adj Factor	0.972	0.971	0.971	0.971	0.971
Flow Entry, veh/h	535	1130	1274	963	1086
Cap Entry, veh/h	251	856	870	1097	1097
V/C Ratio	2.132	1.320	1.465	0.878	0.989
Control Delay, s/veh	554.4	169.0	230.7	25.5	44.1
LOS	F	F	F	D	E
95th %tile Queue, veh	40	44	59	12	19

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	449	729	1012
Demand Flow Rate, veh/h	462	751	1043
Vehicles Circulating, veh/h	622	269	140
Vehicles Exiting, veh/h	398	914	944
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	16.5	8.7	10.0
Approach LOS	C	A	A

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	462	353	398	490	553
Cap Entry Lane, veh/h	731	924	936	1017	1024
Entry HV Adj Factor	0.972	0.970	0.971	0.971	0.970
Flow Entry, veh/h	449	343	386	476	537
Cap Entry, veh/h	711	896	909	988	994
V/C Ratio	0.632	0.382	0.425	0.482	0.540
Control Delay, s/veh	16.5	8.4	9.0	9.4	10.5
LOS	C	A	A	A	B
95th %tile Queue, veh	5	2	2	3	3

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	229	815	887
Demand Flow Rate, veh/h	236	839	914
Vehicles Circulating, veh/h	624	169	110
Vehicles Exiting, veh/h	384	855	750
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.0	8.5	8.5
Approach LOS	A	A	A

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.466	0.534	0.470	0.530	0.470	0.530
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	110	126	394	445	430	484
Cap Entry Lane, veh/h	708	730	995	1004	1040	1046
Entry HV Adj Factor	0.973	0.968	0.972	0.970	0.970	0.972
Flow Entry, veh/h	107	122	383	432	417	470
Cap Entry, veh/h	688	707	968	974	1009	1017
V/C Ratio	0.155	0.173	0.396	0.443	0.413	0.463
Control Delay, s/veh	7.0	7.0	8.1	8.8	8.1	8.9
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	2	2	2	2

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	313	834	830
Demand Flow Rate, veh/h	323	859	855
Vehicles Circulating, veh/h	743	199	225
Vehicles Exiting, veh/h	315	881	841
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.5	8.9	9.2
Approach LOS	A	A	A

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.697	0.303	0.470	0.530	0.470	0.530
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	225	98	404	455	402	453
Cap Entry Lane, veh/h	647	672	973	983	954	965
Entry HV Adj Factor	0.969	0.969	0.971	0.972	0.970	0.971
Flow Entry, veh/h	218	95	392	442	390	440
Cap Entry, veh/h	627	651	945	955	926	937
V/C Ratio	0.348	0.146	0.415	0.463	0.421	0.469
Control Delay, s/veh	10.5	7.2	8.6	9.3	8.8	9.5
LOS	B	A	A	A	A	A
95th %tile Queue, veh	2	1	2	2	2	3

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	108	725	44	131	495
Future Vol, veh/h	46	108	725	44	131	495
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	46	108	725	44	131	495

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1257	385	0	0	769	0
Stage 1	747	-	-	-	-	-
Stage 2	510	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	160	608	-	-	834	-
Stage 1	424	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	135	608	-	-	834	-
Mov Cap-2 Maneuver	266	-	-	-	-	-
Stage 1	424	-	-	-	-	-
Stage 2	474	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	266	608	834	-
HCM Lane V/C Ratio	-	-	0.173	0.178	0.157	-
HCM Control Delay (s)	-	-	21.3	12.2	10.1	-
HCM Lane LOS	-	-	C	B	B	-
HCM 95th %tile Q(veh)	-	-	0.6	0.6	0.6	-

Intersection	
Int Delay, s/veh	20.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	165	31	1910	289	80	744
Future Vol, veh/h	165	31	1910	289	80	744
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	165	31	1910	289	80	744

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2513	1100	0	0	2199	0
Stage 1	2055	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	5.76	7.16	-	-	5.38	-
Critical Hdwy Stg 1	6.66	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	3.83	3.93	-	-	3.14	-
Pot Cap-1 Maneuver	~ 48	176	-	-	96	-
Stage 1	~ 52	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	176	-	-	96	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	~ 52	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	155.4	0	42
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	176	96	-
HCM Lane V/C Ratio	-	-	1.114	0.833	-
HCM Control Delay (s)	-	-	155.4	129.4	32.6
HCM Lane LOS	-	-	F	F	D
HCM 95th %tile Q(veh)	-	-	9.9	4.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	90.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	2469	2951	34	10	93
Future Vol, veh/h	27	2469	2951	34	10	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	27	2469	2951	34	10	93

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2985	0	-	0	4257	1493
Stage 1	-	-	-	-	2968	-
Stage 2	-	-	-	-	1289	-
Critical Hdwy	4.22	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.26	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	107	-	-	-	~ 1	111
Stage 1	-	-	-	-	25	-
Stage 2	-	-	-	-	220	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	107	-	-	-	~ 1	111
Mov Cap-2 Maneuver	-	-	-	-	~ 1	-
Stage 1	-	-	-	-	25	-
Stage 2	-	-	-	-	164	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	$ 4916.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	107	-	-	-	10
HCM Lane V/C Ratio	0.252	-	-	-	10.3
HCM Control Delay (s)	49.6	-	-	-	$ 4916.6
HCM Lane LOS	E	-	-	-	F
HCM 95th %tile Q(veh)	0.9	-	-	-	14.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	0	3	1	6	0	1128	1	1	921	1
Future Vol, veh/h	3	1	0	3	1	6	0	1128	1	1	921	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	1	0	3	1	6	0	1128	1	1	921	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2056	2053	922	2053	2053	1129	922	0	0	1129	0	0
Stage 1	924	924	-	1129	1129	-	-	-	-	-	-	-
Stage 2	1132	1129	-	924	924	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	40	55	326	41	55	247	737	-	-	615	-	-
Stage 1	322	347	-	247	278	-	-	-	-	-	-	-
Stage 2	246	278	-	322	347	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	38	55	326	40	55	247	737	-	-	615	-	-
Mov Cap-2 Maneuver	38	55	-	40	55	-	-	-	-	-	-	-
Stage 1	322	346	-	247	278	-	-	-	-	-	-	-
Stage 2	239	278	-	320	346	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	102.1	52.9	0	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	737	-	-	41	85	615	-	-
HCM Lane V/C Ratio	-	-	-	0.098	0.118	0.002	-	-
HCM Control Delay (s)	0	-	-	102.1	52.9	10.9	0	-
HCM Lane LOS	A	-	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.4	0	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	77	55	24	893	957	76
Future Vol, veh/h	77	55	24	893	957	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	77	55	24	893	957	76

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1490	517	1033	0	-	0
Stage 1	995	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	113	501	662	-	-	-
Stage 1	316	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	109	501	662	-	-	-
Mov Cap-2 Maneuver	109	-	-	-	-	-
Stage 1	316	-	-	-	-	-
Stage 2	554	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	85	0.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	662	-	162	-	-
HCM Lane V/C Ratio	0.036	-	0.815	-	-
HCM Control Delay (s)	10.6	-	85	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.1	-	5.4	-	-

Intersection	
Int Delay, s/veh	409.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	725	266	506	730	144	751
Future Vol, veh/h	725	266	506	730	144	751
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	725	266	506	730	144	751

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	991	0	2235	496
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	1377	-
Critical Hdwy	-	-	4.16	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.23	-	3.53	3.33
Pot Cap-1 Maneuver	-	-	687	-	~ 36	~ 517
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	198	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	687	-	~ 9	~ 517
Mov Cap-2 Maneuver	-	-	-	-	~ 9	-
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	~ 52	-

Approach	EB	WB	NB
HCM Control Delay, s	0	9.6	$ 1414
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	9	517	-	-	687	-
HCM Lane V/C Ratio	16	1.453	-	-	0.737	-
HCM Control Delay (s)	$ 7557.6	236	-	-	23.4	-
HCM Lane LOS	F	F	-	-	C	-
HCM 95th %tile Q(veh)	19.6	36.9	-	-	6.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	331	412	1	0	648	7	5	302	0	0	168	188
Future Vol, veh/h	331	412	1	0	648	7	5	302	0	0	168	188
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	331	412	1	0	648	7	5	302	0	0	168	188

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	655	0	0	413	0	0	1905	1730	413	1878	1727	652
Stage 1	-	-	-	-	-	-	1075	1075	-	652	652	-
Stage 2	-	-	-	-	-	-	830	655	-	1226	1075	-
Critical Hdwy	4.18	-	-	4.2	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.29	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	904	-	-	1104	-	-	50	~ 85	626	53	~ 86	457
Stage 1	-	-	-	-	-	-	259	~ 289	-	447	455	-
Stage 2	-	-	-	-	-	-	356	453	-	212	289	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	904	-	-	1104	-	-	-	~ 45	626	-	~ 45	457
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 45	-	-	~ 45	-
Stage 1	-	-	-	-	-	-	136	~ 152	-	235	455	-
Stage 2	-	-	-	-	-	-	132	453	-	-	~ 152	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	904	-	-	1104	-	-	-
HCM Lane V/C Ratio	-	0.366	-	-	-	-	-	-
HCM Control Delay (s)	-	11.3	0	-	0	-	-	-
HCM Lane LOS	-	B	A	-	A	-	-	-
HCM 95th %tile Q(veh)	-	1.7	-	-	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	76	34	35	177	81
Future Vol, veh/h	15	76	34	35	177	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	15	76	34	35	177	81

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	321	218	258	0	-	0
Stage 1	218	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	671	819	1301	-	-	-
Stage 1	816	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	653	819	1301	-	-	-
Mov Cap-2 Maneuver	653	-	-	-	-	-
Stage 1	816	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	3.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1301	-	786	-	-
HCM Lane V/C Ratio	0.026	-	0.116	-	-
HCM Control Delay (s)	7.8	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	6	20	95	228	10
Future Vol, veh/h	2	6	20	95	228	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	2	6	20	95	228	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	368	233	238	0	-	0
Stage 1	233	-	-	-	-	-
Stage 2	135	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	630	804	1323	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	620	804	1323	-	-	-
Mov Cap-2 Maneuver	620	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	875	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	1.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1323	-	748	-	-
HCM Lane V/C Ratio	0.015	-	0.011	-	-
HCM Control Delay (s)	7.8	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	122	184	73	85	211	220
Future Vol, veh/h	122	184	73	85	211	220
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	122	184	73	85	211	220

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	552	321	431	0	-	0
Stage 1	321	-	-	-	-	-
Stage 2	231	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	493	718	1123	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	459	718	1123	-	-	-
Mov Cap-2 Maneuver	459	-	-	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.7	3.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1123	-	586	-	-
HCM Lane V/C Ratio	0.065	-	0.522	-	-
HCM Control Delay (s)	8.4	0	17.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	3	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	25	7	216	183	67
Future Vol, veh/h	52	25	7	216	183	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	52	25	7	216	183	67

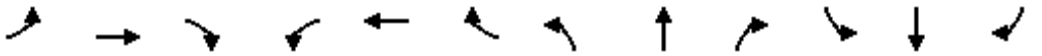
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	413	183	183	0	-	0
Stage 1	183	-	-	-	-	-
Stage 2	230	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	594	857	1386	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	806	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	591	857	1386	-	-	-
Mov Cap-2 Maneuver	591	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	802	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1386	-	591	857	-	-
HCM Lane V/C Ratio	0.005	-	0.088	0.029	-	-
HCM Control Delay (s)	7.6	-	11.7	9.3	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0.1	-	-

Cumulative Plus All Projects

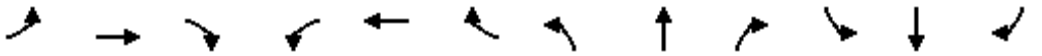
PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	0	514	376	294	1087	0	2004	627	0	2951	486
Future Volume (vph)	375	0	514	376	294	1087	0	2004	627	0	2951	486
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		0.88	0.86	0.81	0.91		0.91	1.00		0.86	1.00
Frt	1.00		0.85	1.00	0.91	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1752		2760	2985	2678	1413		4988	1553		6285	1553
Flt Permitted	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1752		2760	2985	2678	1413		4988	1553		6285	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	375	0	514	376	294	1087	0	2004	627	0	2951	486
RTOR Reduction (vph)	0	0	118	0	16	32	0	0	0	0	0	102
Lane Group Flow (vph)	375	0	396	338	860	511	0	2004	627	0	2951	384
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm	Split	NA	Perm		NA	Free		NA	Perm
Protected Phases	4			8	8			2			6	
Permitted Phases			4			8			Free			6
Actuated Green, G (s)	22.0		22.0	35.0	35.0	35.0		51.0	120.0		51.0	51.0
Effective Green, g (s)	22.0		22.0	35.0	35.0	35.0		51.0	120.0		51.0	51.0
Actuated g/C Ratio	0.18		0.18	0.29	0.29	0.29		0.42	1.00		0.42	0.42
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	321		506	870	781	412		2119	1553		2671	660
v/s Ratio Prot	c0.21			0.11	0.32			0.40			c0.47	
v/s Ratio Perm			0.14			c0.36			0.40			0.25
v/c Ratio	1.17		0.78	0.39	1.35dr	1.24		0.95	0.40		1.10	0.58
Uniform Delay, d1	49.0		46.7	34.0	42.5	42.5		33.2	0.0		34.5	26.4
Progression Factor	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	104.0		7.7	0.3	63.7	127.4		9.6	0.8		53.4	1.3
Delay (s)	153.0		54.4	34.2	106.2	169.9		42.8	0.8		87.9	27.7
Level of Service	F		D	C	F	F		D	A		F	C
Approach Delay (s)		96.0			112.0			32.8			79.4	
Approach LOS		F			F			C			E	

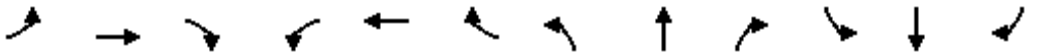
Intersection Summary			
HCM 2000 Control Delay	73.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	114.4%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	764	0	1334	0	0	0	0	1867	613	0	1890	1313
Future Volume (vph)	764	0	1334	0	0	0	0	1867	613	0	1890	1313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	764	0	1334	0	0	0	0	1867	613	0	1890	1313
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	764	0	1326	0	0	0	0	1867	613	0	1890	1313
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	36.0		36.0					31.0	75.0		31.0	75.0
Effective Green, g (s)	36.0		36.0					31.0	75.0		31.0	75.0
Actuated g/C Ratio	0.48		0.48					0.41	1.00		0.41	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1616		1311					2061	1553		2061	1553
v/s Ratio Prot								0.37			0.38	
v/s Ratio Perm	0.23		c0.49						0.39			c0.85
v/c Ratio	0.47		1.01					0.91	0.39		0.92	0.85
Uniform Delay, d1	13.1		19.5					20.6	0.0		20.8	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2		27.7					6.2	0.8		7.0	5.8
Delay (s)	13.3		47.2					26.8	0.8		27.7	5.8
Level of Service	B		D					C	A		C	A
Approach Delay (s)		34.9			0.0			20.4			18.8	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

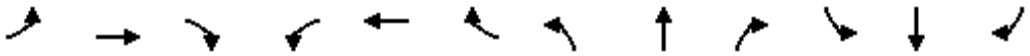


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	571	338	152	934	981	475	1225	49	1391	1798	150
Future Volume (vph)	271	571	338	152	934	981	475	1225	49	1391	1798	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3278		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3278		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	271	571	338	152	934	981	475	1225	49	1391	1798	150
RTOR Reduction (vph)	0	67	0	0	0	755	0	0	37	0	0	63
Lane Group Flow (vph)	271	842	0	152	934	226	475	1225	12	1391	1798	87
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	8.0	32.0		6.0	30.0	30.0	20.6	31.0	31.0	45.0	55.4	55.4
Effective Green, g (s)	8.0	32.0		6.0	30.0	30.0	20.6	31.0	31.0	45.0	55.4	55.4
Actuated g/C Ratio	0.06	0.25		0.05	0.23	0.23	0.16	0.24	0.24	0.35	0.43	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	806		155	801	630	533	1189	370	1165	2125	661
v/s Ratio Prot	c0.08	0.26		0.05	c0.27		0.14	c0.25		c0.41	0.36	
v/s Ratio Perm						0.08			0.01			0.06
v/c Ratio	1.31	1.04		0.98	1.17	0.36	0.89	1.03	0.03	1.19	0.85	0.13
Uniform Delay, d1	61.0	49.0		61.9	50.0	41.9	53.6	49.5	38.0	42.5	33.5	22.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	169.4	43.9		66.2	88.1	0.4	16.9	34.2	0.0	95.9	3.3	0.1
Delay (s)	230.4	92.9		128.2	138.1	42.3	70.5	83.7	38.0	138.4	36.8	22.8
Level of Service	F	F		F	F	D	E	F	D	F	D	C
Approach Delay (s)		124.5			91.9			78.8			78.5	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	88.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	437	1543	12	653	19	1172	5	3	14	13	39
Future Volume (vph)	38	437	1543	12	653	19	1172	5	3	14	13	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1622	1524		1798	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1622	1524		1798	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	437	1543	12	653	19	1172	5	3	14	13	39
RTOR Reduction (vph)	0	0	234	0	0	15	0	0	1	0	0	37
Lane Group Flow (vph)	38	437	1309	12	653	4	586	591	2	0	27	2
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.2	19.2	62.9	0.7	17.7	17.7	43.7	43.7	43.7		4.1	4.1
Effective Green, g (s)	2.2	19.2	62.9	0.7	17.7	17.7	43.7	43.7	43.7		4.1	4.1
Actuated g/C Ratio	0.03	0.23	0.75	0.01	0.21	0.21	0.52	0.52	0.52		0.05	0.05
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	45	796	1241	14	734	328	844	846	795		88	76
v/s Ratio Prot	c0.02	0.13	c0.55	0.01	0.19		0.36	0.36			c0.02	
v/s Ratio Perm			0.29			0.00			0.00			0.00
v/c Ratio	0.84	0.55	1.05	0.86	0.89	0.01	0.69	0.70	0.00		0.31	0.03
Uniform Delay, d1	40.6	28.4	10.4	41.5	32.1	26.1	15.0	15.0	9.6		38.4	37.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	77.0	0.8	41.2	164.6	12.7	0.0	2.5	2.5	0.0		2.0	0.1
Delay (s)	117.5	29.2	51.6	206.1	44.8	26.1	17.5	17.6	9.6		40.4	38.0
Level of Service	F	C	D	F	D	C	B	B	A		D	D
Approach Delay (s)		48.0			47.1			17.5			39.0	
Approach LOS		D			D			B			D	

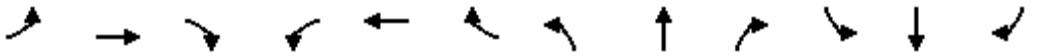
Intersection Summary			
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	112.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	352	164	358	432	110	214	253	388	139	228	37
Future Volume (vph)	38	352	164	358	432	110	214	253	388	139	228	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85		0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1752	3505	1568	1752	3398		1665	1746	1568		3398	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.98	
Satd. Flow (perm)	1752	3505	1568	1752	3398		1665	1746	1568		3398	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	352	164	358	432	110	214	253	388	139	228	37
RTOR Reduction (vph)	0	0	133	0	23	0	0	0	313	0	8	0
Lane Group Flow (vph)	38	352	31	358	519	0	193	274	75	0	396	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	2.8	15.1	15.1	19.6	31.9		15.4	15.4	15.4		13.8	
Effective Green, g (s)	2.8	15.1	15.1	19.6	31.9		15.4	15.4	15.4		13.8	
Actuated g/C Ratio	0.04	0.19	0.19	0.25	0.40		0.19	0.19	0.19		0.17	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	61	662	296	429	1356		320	336	302		586	
v/s Ratio Prot	0.02	c0.10		c0.20	0.15		0.12	c0.16			c0.12	
v/s Ratio Perm			0.02						0.05			
v/c Ratio	0.62	0.53	0.10	0.83	0.38		0.60	0.82	0.25		0.68	
Uniform Delay, d1	38.0	29.2	26.8	28.6	17.0		29.5	30.9	27.3		31.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	18.1	0.8	0.2	13.1	0.2		3.2	14.1	0.4		3.1	
Delay (s)	56.2	30.0	27.0	41.7	17.2		32.6	45.0	27.8		34.0	
Level of Service	E	C	C	D	B		C	D	C		C	
Approach Delay (s)		30.9			26.9			34.4			34.0	
Approach LOS		C			C			C			C	

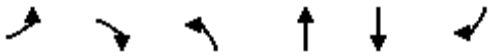
Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	2296	387	153	2224	5	138	30	79	4	32	23
Future Volume (vph)	14	2296	387	153	2224	5	138	30	79	4	32	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.4	6.4	3.5	6.4	6.4	4.4	4.4	4.4	3.5	3.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3406	1524	1703	3406	1524	1752	1845	1568	1752	1729	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3406	1524	1703	3406	1524	1752	1845	1568	1752	1729	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	2296	387	153	2224	5	138	30	79	4	32	23
RTOR Reduction (vph)	0	0	64	0	0	1	0	0	69	0	19	0
Lane Group Flow (vph)	14	2296	323	153	2224	4	138	30	10	4	36	0
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	1.6	93.5	93.5	10.5	102.4	102.4	9.6	18.0	18.0	0.8	9.2	
Effective Green, g (s)	1.6	93.5	93.5	10.5	102.4	102.4	9.6	18.0	18.0	0.8	9.2	
Actuated g/C Ratio	0.01	0.67	0.67	0.07	0.73	0.73	0.07	0.13	0.13	0.01	0.07	
Clearance Time (s)	3.5	6.4	6.4	3.5	6.4	6.4	4.4	4.4	4.4	3.5	3.5	
Vehicle Extension (s)	2.4	4.5	4.5	2.4	4.5	4.5	2.4	2.8	2.8	2.4	2.8	
Lane Grp Cap (vph)	19	2265	1013	127	2480	1109	119	236	200	9	113	
v/s Ratio Prot	0.01	c0.67		c0.09	0.65		c0.08	0.02		0.00	c0.02	
v/s Ratio Perm			0.21			0.00			0.01			
v/c Ratio	0.74	1.01	0.32	1.20	0.90	0.00	1.16	0.13	0.05	0.44	0.32	
Uniform Delay, d1	69.3	23.5	10.0	65.0	15.0	5.2	65.5	54.3	53.8	69.7	62.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	83.7	22.4	0.3	145.1	4.9	0.0	131.8	0.2	0.1	21.2	1.5	
Delay (s)	153.0	45.9	10.3	210.1	19.9	5.2	197.3	54.6	53.9	90.9	64.2	
Level of Service	F	D	B	F	B	A	F	D	D	F	E	
Approach Delay (s)		41.4			32.1			134.1			66.0	
Approach LOS		D			C			F			E	

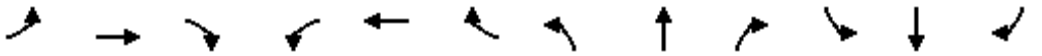
Intersection Summary			
HCM 2000 Control Delay	41.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	140.6	Sum of lost time (s)	17.8
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1010	165	126	965	1184	961
Future Volume (vph)	1010	165	126	965	1184	961
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	3400	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	3400	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1010	165	126	965	1184	961
RTOR Reduction (vph)	0	110	0	0	0	543
Lane Group Flow (vph)	1010	55	126	965	1184	418
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	19.4	19.4	3.1	31.3	24.2	24.2
Effective Green, g (s)	19.4	19.4	3.1	31.3	24.2	24.2
Actuated g/C Ratio	0.33	0.33	0.05	0.53	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1123	518	179	1868	1444	646
v/s Ratio Prot	c0.30		0.04	c0.28	c0.34	
v/s Ratio Perm		0.03				0.27
v/c Ratio	0.90	0.11	0.70	0.52	0.82	0.65
Uniform Delay, d1	18.7	13.6	27.3	8.8	15.3	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.7	0.1	11.9	0.2	3.8	2.2
Delay (s)	28.4	13.7	39.2	9.1	19.1	16.1
Level of Service	C	B	D	A	B	B
Approach Delay (s)	26.4			12.5	17.7	
Approach LOS	C			B	B	

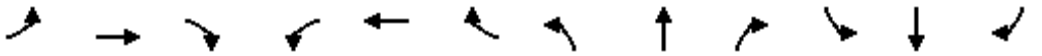
Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



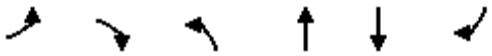
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	732	833	184	809	40	540	160	82	36	80	31
Future Volume (vph)	34	732	833	184	809	40	540	160	82	36	80	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3295		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3295		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	34	732	833	184	809	40	540	160	82	36	80	31
RTOR Reduction (vph)	0	0	517	0	0	22	0	64	0	0	0	29
Lane Group Flow (vph)	34	732	316	184	809	18	540	178	0	36	80	2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	1.9	28.4	28.4	6.6	33.0	33.0	16.8	16.8		4.3	4.3	4.3
Effective Green, g (s)	1.9	28.4	28.4	6.6	33.0	33.0	16.8	16.8		4.3	4.3	4.3
Actuated g/C Ratio	0.03	0.38	0.38	0.09	0.44	0.44	0.22	0.22		0.06	0.06	0.06
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.1	4.1	2.0	2.0		1.0	1.0	1.0
Lane Grp Cap (vph)	44	1328	594	299	1544	690	755	739		100	201	90
v/s Ratio Prot	0.02	0.21		c0.05	c0.23		c0.16	0.05		0.02	c0.02	
v/s Ratio Perm			0.20			0.01						0.00
v/c Ratio	0.77	0.55	0.53	0.62	0.52	0.03	0.72	0.24		0.36	0.40	0.02
Uniform Delay, d1	36.3	18.2	18.1	32.9	15.2	11.9	26.8	23.8		34.0	34.1	33.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	53.1	0.8	1.6	2.6	0.4	0.0	2.7	0.1		0.8	0.5	0.0
Delay (s)	89.4	19.1	19.7	35.6	15.7	11.9	29.5	23.9		34.8	34.5	33.3
Level of Service	F	B	B	D	B	B	C	C		C	C	C
Approach Delay (s)		20.9			19.1			27.8			34.3	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	22.9
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	468	0	1458	0	0	0	0	1888	1021	0	1941	497
Future Volume (vph)	468	0	1458	0	0	0	0	1888	1021	0	1941	497
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	468	0	1458	0	0	0	0	1888	1021	0	1941	497
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	468	0	1446	0	0	0	0	1888	1021	0	1941	497
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	49.6		49.6					38.9	100.0		39.4	100.0
Effective Green, g (s)	49.6		49.6					38.9	100.0		39.4	100.0
Actuated g/C Ratio	0.50		0.50					0.39	1.00		0.39	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1670		1355					1940	1553		1965	1553
v/s Ratio Prot								0.38			c0.39	
v/s Ratio Perm	0.14		c0.53						0.66			0.32
v/c Ratio	0.28		1.07					0.97	0.66		0.99	0.32
Uniform Delay, d1	14.8		25.2					30.0	0.0		30.1	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0		44.6					14.5	2.2		17.3	0.5
Delay (s)	14.8		69.8					44.5	2.2		47.3	0.5
Level of Service	B		E					D	A		D	A
Approach Delay (s)		56.5			0.0			29.7			37.8	
Approach LOS		E			A			C			D	

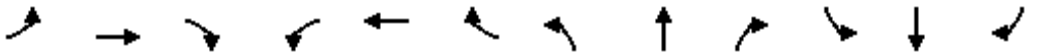
Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1155	28	33	361	838	779
Future Volume (vph)	1155	28	33	361	838	779
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1752	1568	1752	1845	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1752	1568	1752	1845	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1155	28	33	361	838	779
RTOR Reduction (vph)	0	11	0	0	0	492
Lane Group Flow (vph)	1155	17	33	361	838	287
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	54.1	54.1	1.7	26.7	21.0	21.0
Effective Green, g (s)	54.1	54.1	1.7	26.7	21.0	21.0
Actuated g/C Ratio	0.61	0.61	0.02	0.30	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1067	955	33	554	828	370
v/s Ratio Prot	c0.66		0.02	c0.20	c0.24	
v/s Ratio Perm		0.01				0.18
v/c Ratio	1.08	0.02	1.00	0.65	1.01	0.77
Uniform Delay, d1	17.3	6.9	43.5	27.0	33.9	31.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.7	0.0	156.7	2.7	34.3	9.7
Delay (s)	70.1	6.9	200.2	29.8	68.2	41.4
Level of Service	E	A	F	C	E	D
Approach Delay (s)	68.6			44.0	55.3	
Approach LOS	E			D	E	

Intersection Summary			
HCM 2000 Control Delay	58.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	88.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

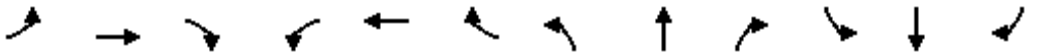
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	3	39	0	1	1	19	237	1	1	460	307
Future Volume (vph)	214	3	39	0	1	1	19	237	1	1	460	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.93		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1665	1671	1568		1706		1752	3503		1752	3505	1568
Flt Permitted	0.95	0.95	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1665	1671	1568		1706		1752	3503		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	214	3	39	0	1	1	19	237	1	1	460	307
RTOR Reduction (vph)	0	0	33	0	1	0	0	1	0	0	0	180
Lane Group Flow (vph)	109	108	6	0	1	0	19	237	0	1	460	127
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	6.8	6.8	6.8		0.7		0.5	16.9		0.5	16.9	16.9
Effective Green, g (s)	6.8	6.8	6.8		0.7		0.5	16.9		0.5	16.9	16.9
Actuated g/C Ratio	0.17	0.17	0.17		0.02		0.01	0.41		0.01	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	276	277	260		29		21	1447		21	1448	647
v/s Ratio Prot	c0.07	0.06			c0.00		c0.01	0.07		0.00	c0.13	
v/s Ratio Perm			0.00									0.08
v/c Ratio	0.39	0.39	0.02		0.04		0.90	0.16		0.05	0.32	0.20
Uniform Delay, d1	15.2	15.2	14.3		19.8		20.2	7.6		20.0	8.1	7.7
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.9	0.0		0.5		151.1	0.1		0.9	0.1	0.1
Delay (s)	16.1	16.1	14.3		20.3		171.3	7.6		20.9	8.2	7.8
Level of Service	B	B	B		C		F	A		C	A	A
Approach Delay (s)		15.9			20.3			19.7			8.1	
Approach LOS		B			C			B			A	

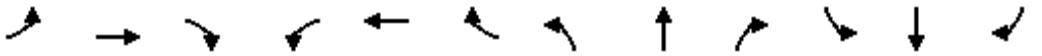
Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	40.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



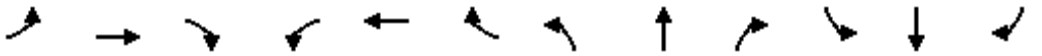
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	634	0	355	0	1176	1392	0	1028	468
Future Volume (vph)	0	0	0	634	0	355	0	1176	1392	0	1028	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.91	1.00		0.91	1.00
Frt				1.00	0.89			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.99			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1522			4988	1553		4988	1553
Flt Permitted				0.95	0.99			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1522			4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	634	0	355	0	1176	1392	0	1028	468
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	514	448	0	0	1176	1392	0	1028	468
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Perm	NA			NA	Free		NA	Free
Protected Phases					8			2			6	
Permitted Phases				8					Free			Free
Actuated Green, G (s)				15.1	15.1			13.3	38.1		13.3	38.1
Effective Green, g (s)				15.1	15.1			13.3	38.1		13.3	38.1
Actuated g/C Ratio				0.40	0.40			0.35	1.00		0.35	1.00
Clearance Time (s)				4.9	4.9			4.8			4.8	
Vehicle Extension (s)				1.0	1.0			1.0			1.0	
Lane Grp Cap (vph)				653	603			1741	1553		1741	1553
v/s Ratio Prot								0.24			0.21	
v/s Ratio Perm				0.31	0.29				c0.90			0.30
v/c Ratio				0.79	0.74			0.68	0.90		0.59	0.30
Uniform Delay, d1				10.1	9.8			10.6	0.0		10.2	0.0
Progression Factor				1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2				5.8	4.3			0.8	8.5		0.4	0.5
Delay (s)				15.9	14.2			11.4	8.5		10.5	0.5
Level of Service				B	B			B	A		B	A
Approach Delay (s)		0.0			15.1			9.8			7.4	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	38.1	Sum of lost time (s)	9.7
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



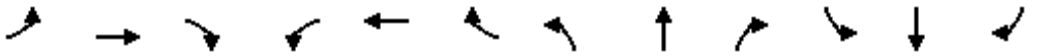
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	537	0	806	0	0	0	0	2105	1191	0	1354	309
Future Volume (vph)	537	0	806	0	0	0	0	2105	1191	0	1354	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.91	1.00
Frt	1.00	0.87	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	0.99	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1441	1475					4988	1553		4988	1553
Flt Permitted	0.95	0.99	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1441	1475					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	537	0	806	0	0	0	0	2105	1191	0	1354	309
RTOR Reduction (vph)	0	23	23	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	467	418	412	0	0	0	0	2105	1191	0	1354	309
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA	Perm					NA	Free		NA	Free
Protected Phases		4						2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	18.7	18.7	18.7					27.3	56.0		27.4	56.0
Effective Green, g (s)	18.7	18.7	18.7					27.3	56.0		27.4	56.0
Actuated g/C Ratio	0.33	0.33	0.33					0.49	1.00		0.49	1.00
Clearance Time (s)	5.1	5.1	5.1					4.9			4.8	
Vehicle Extension (s)	1.0	1.0	1.0					1.0			1.0	
Lane Grp Cap (vph)	550	481	492					2431	1553		2440	1553
v/s Ratio Prot								0.42			0.27	
v/s Ratio Perm	0.28	0.29	0.28						c0.77			0.20
v/c Ratio	0.85	0.87	0.84					0.87	0.77		0.55	0.20
Uniform Delay, d1	17.3	17.5	17.2					12.7	0.0		10.0	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	11.2	14.8	11.3					3.4	3.7		0.2	0.3
Delay (s)	28.6	32.3	28.5					16.1	3.7		10.2	0.3
Level of Service	C	C	C					B	A		B	A
Approach Delay (s)		29.8			0.0			11.6			8.3	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	908	0	384	0	1661	1961	0	1251	649
Future Volume (vph)	0	0	0	908	0	384	0	1661	1961	0	1251	649
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		5036	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	908	0	384	0	1661	1961	0	1251	649
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	908	0	360	0	1661	1961	0	1251	649
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				14.7		14.7		19.0	45.1		19.0	45.1
Effective Green, g (s)				14.7		14.7		19.0	45.1		19.0	45.1
Actuated g/C Ratio				0.33		0.33		0.42	1.00		0.42	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1108		511		2121	1568		2121	1568
v/s Ratio Prot								0.33			0.25	
v/s Ratio Perm				0.27		0.23			c1.25			0.41
v/c Ratio				0.82		0.71		0.78	1.25		0.59	0.41
Uniform Delay, d1				14.0		13.3		11.3	22.6		10.0	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				4.6		3.6		1.8	118.3		0.3	0.8
Delay (s)				18.6		16.9		13.1	140.8		10.3	0.8
Level of Service				B		B		B	F		B	A
Approach Delay (s)		0.0			18.1			82.2			7.1	
Approach LOS		A			B			F			A	

Intersection Summary			
HCM 2000 Control Delay	49.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.67		
Actuated Cycle Length (s)	45.1	Sum of lost time (s)	11.4
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

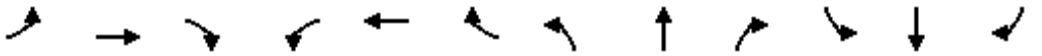


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	529	19	1006	0	0	547	0	3442	8	0	2010	147
Future Volume (vph)	529	19	1006	0	0	547	0	3442	8	0	2010	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		0.86			0.91	1.00
Frt	1.00	0.89	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	0.99	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	2789	1427			2733		6343			5036	1568
Flt Permitted	0.95	0.99	1.00			1.00		1.00			1.00	1.00
Satd. Flow (perm)	1595	2789	1427			2733		6343			5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	529	19	1006	0	0	547	0	3442	8	0	2010	147
RTOR Reduction (vph)	0	11	36	0	0	51	0	0	0	0	0	52
Lane Group Flow (vph)	370	670	467	0	0	496	0	3450	0	0	2010	95
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA			NA	custom
Protected Phases	4	4				1		2			6	
Permitted Phases			4									2
Actuated Green, G (s)	31.0	31.0	31.0			15.0		52.0			71.0	52.0
Effective Green, g (s)	31.0	31.0	31.0			15.0		52.0			71.0	52.0
Actuated g/C Ratio	0.28	0.28	0.28			0.14		0.47			0.65	0.47
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	449	785	402			372		2998			3250	741
v/s Ratio Prot	0.23	0.24				c0.18		c0.54			0.40	
v/s Ratio Perm			c0.33									0.06
v/c Ratio	0.82	1.22dr	1.16			1.33		1.15			0.62	0.13
Uniform Delay, d1	36.9	37.4	39.5			47.5		29.0			11.5	16.3
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	1.00
Incremental Delay, d2	11.7	9.0	97.0			167.4		72.2			0.4	0.1
Delay (s)	48.6	46.3	136.5			214.9		101.2			11.9	16.4
Level of Service	D	D	F			F		F			B	B
Approach Delay (s)		76.0			214.9			101.2			12.2	
Approach LOS		E			F			F			B	

Intersection Summary			
HCM 2000 Control Delay	79.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

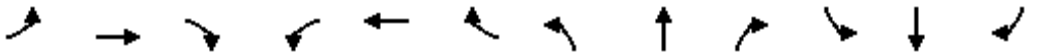
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	67	0	667	0	3345	681	0	1999	1121
Future Volume (vph)	0	0	0	67	0	667	0	3345	681	0	1999	1121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	67	0	667	0	3345	681	0	1999	1121
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	67	0	651	0	3345	681	0	1999	1121
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				25.9		25.9		75.8	110.0		75.5	110.0
Effective Green, g (s)				25.9		25.9		75.8	110.0		75.5	110.0
Actuated g/C Ratio				0.24		0.24		0.69	1.00		0.69	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				777		631		3437	1553		3423	1553
v/s Ratio Prot								c0.67			0.40	
v/s Ratio Perm				0.02		c0.24			0.44			0.72
v/c Ratio				0.09		1.03		0.97	0.44		0.58	0.72
Uniform Delay, d1				32.8		42.0		16.1	0.0		9.0	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.0		44.2		9.9	0.9		0.2	2.9
Delay (s)				32.8		86.2		26.0	0.9		9.2	2.9
Level of Service				C		F		C	A		A	A
Approach Delay (s)		0.0			81.4			21.8			6.9	
Approach LOS		A			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



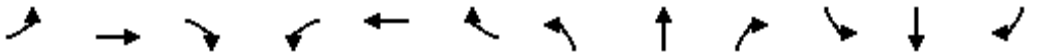
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1575	0	492	0	0	0	0	2449	240	0	1567	498
Future Volume (vph)	1575	0	492	0	0	0	0	2449	240	0	1567	498
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1575	0	492	0	0	0	0	2449	240	0	1567	498
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1575	0	465	0	0	0	0	2449	240	0	1567	498
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	19.3		19.3					24.9	52.5		24.6	52.5
Effective Green, g (s)	19.3		19.3					24.9	52.5		24.6	52.5
Actuated g/C Ratio	0.37		0.37					0.47	1.00		0.47	1.00
Clearance Time (s)	3.5		3.5					4.8			5.1	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1799		1004					2980	1553		2337	1553
v/s Ratio Prot								c0.39			0.31	
v/s Ratio Perm	c0.32		0.17						0.15			0.32
v/c Ratio	0.88		0.46					0.82	0.15		0.67	0.32
Uniform Delay, d1	15.5		12.7					11.9	0.0		10.8	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	5.0		0.1					1.8	0.2		0.6	0.5
Delay (s)	20.4		12.8					13.7	0.2		11.4	0.5
Level of Service	C		B					B	A		B	A
Approach Delay (s)		18.6			0.0			12.5			8.8	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	8.6
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



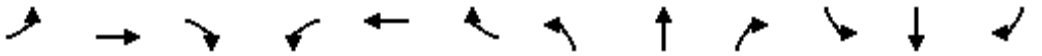
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	151	169	1224	448	228	2026
Future Volume (vph)	151	169	1224	448	228	2026
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	4988	1553	3367	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	4988	1553	3367	3471
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	151	169	1224	448	228	2026
RTOR Reduction (vph)	0	154	0	243	0	0
Lane Group Flow (vph)	151	15	1224	205	228	2026
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA	Perm	Prot	NA
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Actuated Green, G (s)	4.5	4.5	23.1	23.1	7.0	35.6
Effective Green, g (s)	4.5	4.5	23.1	23.1	7.0	35.6
Actuated g/C Ratio	0.09	0.09	0.46	0.46	0.14	0.70
Clearance Time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	302	139	2277	708	465	2442
v/s Ratio Prot	c0.04	0.01	0.25		0.07	c0.58
v/s Ratio Perm				0.13		
v/c Ratio	0.50	0.11	0.54	0.29	0.49	0.83
Uniform Delay, d1	22.0	21.2	9.9	8.6	20.2	5.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.1	0.1	0.3	2.4
Delay (s)	22.5	21.3	10.0	8.7	20.4	7.7
Level of Service	C	C	B	A	C	A
Approach Delay (s)	21.9		9.7			9.0
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	50.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



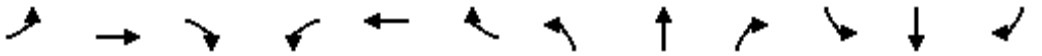
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	549	1024	9	2	750	6	7	15	2	5	21	1108
Future Volume (vph)	549	1024	9	2	750	6	7	15	2	5	21	1108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95			1.00			1.00	0.88
Frt	1.00	1.00	0.85	1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	3303	3406	1524	1719	3434			1798			1810	2733
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)	3303	3406	1524	1719	3434			1798			1810	2733
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	549	1024	9	2	750	6	7	15	2	5	21	1108
RTOR Reduction (vph)	0	0	3	0	0	0	0	2	0	0	0	73
Lane Group Flow (vph)	549	1024	6	2	756	0	0	22	0	0	26	1035
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	35.4	66.0	66.0	0.5	32.0			1.6			1.9	37.3
Effective Green, g (s)	35.4	66.0	66.0	0.5	32.0			1.6			1.9	37.3
Actuated g/C Ratio	0.37	0.70	0.70	0.01	0.34			0.02			0.02	0.39
Clearance Time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	1234	2373	1062	9	1160			30			36	1076
v/s Ratio Prot	0.17	0.30		0.00	c0.22			c0.01			0.01	c0.36
v/s Ratio Perm			0.00									0.02
v/c Ratio	0.44	0.43	0.01	0.22	0.65			0.73			0.72	0.96
Uniform Delay, d1	22.3	6.2	4.4	46.9	26.6			46.3			46.1	28.0
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.1	0.0	0.0	4.5	1.0			56.4			45.7	18.7
Delay (s)	22.4	6.3	4.4	51.4	27.6			102.7			91.8	46.7
Level of Service	C	A	A	D	C			F			F	D
Approach Delay (s)		11.8			27.7			102.7			47.7	
Approach LOS		B			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	24.7
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	406	39	200	749	255	3789	0	0	4201	70
Future Volume (vph)	0	0	406	39	200	749	255	3789	0	0	4201	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1778	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1778	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	406	39	200	749	255	3789	0	0	4201	70
RTOR Reduction (vph)	0	0	193	0	0	40	0	0	0	0	0	25
Lane Group Flow (vph)	0	0	213	0	239	709	255	3789	0	0	4201	45
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			20.0		29.8	29.8	20.0	109.0			84.1	84.1
Effective Green, g (s)			20.0		29.8	29.8	20.0	109.0			84.1	84.1
Actuated g/C Ratio			0.13		0.20	0.20	0.13	0.73			0.56	0.56
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Vehicle Extension (s)			3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			212		353	532	440	3555			3457	854
v/s Ratio Prot			0.13		0.13		0.08	c0.77			c0.68	
v/s Ratio Perm						c0.26						0.03
v/c Ratio			1.00		0.68	1.33	0.58	1.07			1.22	0.05
Uniform Delay, d1			65.0		55.6	60.1	61.1	20.5			33.0	14.9
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			62.7		5.1	162.2	1.9	36.3			99.7	0.0
Delay (s)			127.7		60.7	222.3	62.9	56.8			132.7	14.9
Level of Service			F		E	F	E	E			F	B
Approach Delay (s)		127.7			183.2			57.2			130.7	
Approach LOS		F			F			E			F	

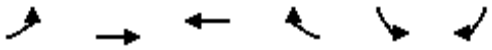
Intersection Summary			
HCM 2000 Control Delay	105.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	112.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2776	0	134	0	0	0	0	1670	217	0	328	1965
Future Volume (vph)	2776	0	134	0	0	0	0	1670	217	0	328	1965
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0			4.0	4.0
Lane Util. Factor	0.94		0.88					0.91			0.91	1.00
Frt	1.00		0.85					0.98			1.00	0.85
Flt Protected	0.95		1.00					1.00			1.00	1.00
Satd. Flow (prot)	4942		2760					4949			5036	1568
Flt Permitted	0.95		1.00					1.00			1.00	1.00
Satd. Flow (perm)	4942		2760					4949			5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2776	0	134	0	0	0	0	1670	217	0	328	1965
RTOR Reduction (vph)	0	0	54	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	2776	0	80	0	0	0	0	1871	0	0	328	1965
Turn Type	Prot		Perm					NA			NA	Free
Protected Phases	4							2			6	
Permitted Phases			4									Free
Actuated Green, G (s)	55.0		55.0					37.0			37.0	100.0
Effective Green, g (s)	55.0		55.0					37.0			37.0	100.0
Actuated g/C Ratio	0.55		0.55					0.37			0.37	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	2718		1518					1831			1863	1568
v/s Ratio Prot	0.56							0.38			0.07	
v/s Ratio Perm			0.03									c1.25
v/c Ratio	1.02		0.05					1.02			0.18	1.25
Uniform Delay, d1	22.5		10.4					31.5			21.2	50.0
Progression Factor	1.00		1.00					1.00			1.00	1.00
Incremental Delay, d2	22.9		0.0					26.7			0.0	119.4
Delay (s)	45.4		10.4					58.2			21.3	169.4
Level of Service	D		B					E			C	F
Approach Delay (s)		43.8			0.0			58.2			148.2	
Approach LOS		D			A			E			F	

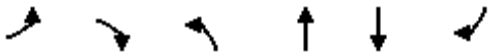
Intersection Summary			
HCM 2000 Control Delay	81.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	808	1438	1327	34	32	1098
Future Volume (vph)	808	1438	1327	34	32	1098
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3242	3343	3343	1495	3400	2760
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3242	3343	3343	1495	3400	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	808	1438	1327	34	32	1098
RTOR Reduction (vph)	0	0	0	14	0	610
Lane Group Flow (vph)	808	1438	1327	20	32	488
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	23.0	63.1	36.1	36.1	17.6	17.6
Effective Green, g (s)	23.0	63.1	36.1	36.1	17.6	17.6
Actuated g/C Ratio	0.26	0.71	0.41	0.41	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	840	2378	1360	608	674	547
v/s Ratio Prot	c0.25	0.43	c0.40		0.01	
v/s Ratio Perm				0.01		c0.18
v/c Ratio	0.96	0.60	0.98	0.03	0.05	0.89
Uniform Delay, d1	32.4	6.5	25.9	15.8	28.8	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.1	0.4	18.7	0.0	0.0	16.7
Delay (s)	54.5	6.9	44.6	15.8	28.8	51.3
Level of Service	D	A	D	B	C	D
Approach Delay (s)		24.1	43.8		50.7	
Approach LOS		C	D		D	

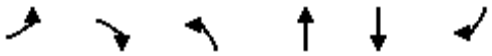
Intersection Summary			
HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	878	147	9	1393	1808	614
Future Volume (vph)	878	147	9	1393	1808	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	878	147	9	1393	1808	614
RTOR Reduction (vph)	0	7	0	0	0	109
Lane Group Flow (vph)	878	140	9	1393	1808	505
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	25.0	29.0	4.0	57.0	49.0	74.0
Effective Green, g (s)	25.0	29.0	4.0	57.0	49.0	74.0
Actuated g/C Ratio	0.28	0.32	0.04	0.63	0.54	0.82
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	944	574	77	2219	1908	1358
v/s Ratio Prot	c0.26	0.01	0.01	c0.40	c0.52	0.10
v/s Ratio Perm		0.08				0.22
v/c Ratio	0.93	0.24	0.12	0.63	0.95	0.37
Uniform Delay, d1	31.6	22.4	41.3	10.0	19.3	2.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.2	0.2	0.7	0.6	10.6	0.2
Delay (s)	46.8	22.7	42.0	10.6	29.9	2.2
Level of Service	D	C	D	B	C	A
Approach Delay (s)	43.4			10.8	22.9	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

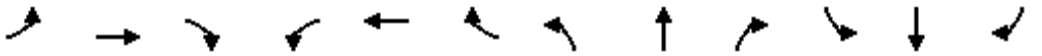
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	238	818	858	1153	1625	273
Future Volume (vph)	238	818	858	1153	1625	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1752	1568	3400	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1752	1568	3400	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	238	818	858	1153	1625	273
RTOR Reduction (vph)	0	281	0	0	0	136
Lane Group Flow (vph)	238	537	858	1153	1625	137
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	28.0	28.0	24.0	74.0	46.0	46.0
Effective Green, g (s)	28.0	28.0	24.0	74.0	46.0	46.0
Actuated g/C Ratio	0.25	0.25	0.22	0.67	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	445	399	741	2357	1465	655
v/s Ratio Prot	0.14		c0.25	0.33	c0.46	
v/s Ratio Perm		c0.34				0.09
v/c Ratio	0.53	1.35	1.16	0.49	1.11	0.21
Uniform Delay, d1	35.4	41.0	43.0	8.8	32.0	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	171.5	85.8	0.2	59.5	0.2
Delay (s)	36.6	212.5	128.8	8.9	91.5	20.6
Level of Service	D	F	F	A	F	C
Approach Delay (s)	172.9			60.1	81.3	
Approach LOS	F			E	F	

Intersection Summary			
HCM 2000 Control Delay	92.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		

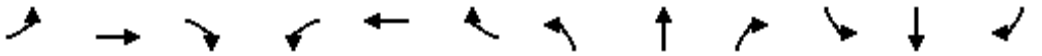
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	773	0	816	0	0	0	0	3544	625	0	1888	1108
Future Volume (vph)	773	0	816	0	0	0	0	3544	625	0	1888	1108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.97	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4626	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4626	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	773	0	816	0	0	0	0	3544	625	0	1888	1108
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	48	0
Lane Group Flow (vph)	773	0	797	0	0	0	0	3544	625	0	2272	676
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	20.0		20.0					42.0	70.0		42.0	70.0
Effective Green, g (s)	20.0		20.0					42.0	70.0		42.0	70.0
Actuated g/C Ratio	0.29		0.29					0.60	1.00		0.60	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	971		788					3807	1568		2775	1348
v/s Ratio Prot	0.23							c0.56			0.49	
v/s Ratio Perm			c0.29						0.40			0.50
v/c Ratio	0.80		1.01					0.93	0.40		0.82	0.50
Uniform Delay, d1	23.1		25.0					12.7	0.0		11.0	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	4.6		35.1					4.9	0.8		2.0	1.3
Delay (s)	27.7		60.1					17.6	0.8		13.0	1.3
Level of Service	C		E					B	A		B	A
Approach Delay (s)		44.3			0.0			15.1			10.4	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	342	0	1095	0	2693	1629	0	4241	402
Future Volume (vph)	0	0	0	342	0	1095	0	2693	1629	0	4241	402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		0.97	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4620	1348		5968	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4620	1348		5968	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	342	0	1095	0	2693	1629	0	4241	402
RTOR Reduction (vph)	0	0	0	0	0	6	0	26	0	0	1	0
Lane Group Flow (vph)	0	0	0	342	0	1089	0	3319	977	0	4280	362
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				39.0		39.0		93.0	140.0		93.0	140.0
Effective Green, g (s)				39.0		39.0		93.0	140.0		93.0	140.0
Actuated g/C Ratio				0.28		0.28		0.66	1.00		0.66	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Vehicle Extension (s)				3.0		3.0		3.0			3.0	
Lane Grp Cap (vph)				947		995		3069	1348		3964	1270
v/s Ratio Prot				0.10				c0.72			0.72	
v/s Ratio Perm						c0.30			0.72			0.29
v/c Ratio				0.36		1.09		1.08	0.72		1.08	0.29
Uniform Delay, d1				40.5		50.5		23.5	0.0		23.5	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.2		57.7		43.3	3.4		41.3	0.6
Delay (s)				40.7		108.2		66.8	3.4		64.8	0.6
Level of Service				D		F		E	A		E	A
Approach Delay (s)		0.0			92.2			52.5			59.8	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	61.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

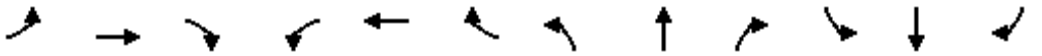
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	818	337	358	1144	538	432
Future Volume (vph)	818	337	358	1144	538	432
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	818	337	358	1144	538	432
RTOR Reduction (vph)	0	178	0	0	0	326
Lane Group Flow (vph)	818	159	358	1144	538	106
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	19.0	19.0	16.8	39.8	15.5	15.5
Effective Green, g (s)	19.0	19.0	16.8	39.8	15.5	15.5
Actuated g/C Ratio	0.30	0.30	0.27	0.63	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	946	423	418	1983	749	345
v/s Ratio Prot	c0.26		c0.23	0.36	c0.18	
v/s Ratio Perm		0.11				0.07
v/c Ratio	0.86	0.38	0.86	0.58	0.72	0.31
Uniform Delay, d1	20.9	17.5	22.1	6.8	21.9	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	0.6	15.7	0.4	3.3	0.5
Delay (s)	29.2	18.0	37.8	7.3	25.2	20.0
Level of Service	C	B	D	A	C	C
Approach Delay (s)	26.0			14.5	22.9	
Approach LOS	C			B	C	

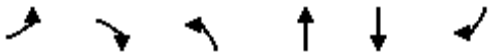
Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	400	1	0	489	53	0	0	0	179	0	248
Future Volume (vph)	309	400	1	0	489	53	0	0	0	179	0	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95					0.95	0.95	1.00
Frt	1.00	1.00			0.99					1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (prot)	1736	3470			3420					1665	1665	1568
Flt Permitted	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (perm)	1736	3470			3420					1665	1665	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	309	400	1	0	489	53	0	0	0	179	0	248
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	211
Lane Group Flow (vph)	309	401	0	0	532	0	0	0	0	89	90	37
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA					Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	15.3	33.5			14.2					9.1	9.1	9.1
Effective Green, g (s)	15.3	33.5			14.2					9.1	9.1	9.1
Actuated g/C Ratio	0.25	0.56			0.24					0.15	0.15	0.15
Clearance Time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	441	1930			806					251	251	237
v/s Ratio Prot	c0.18	0.12			c0.16					0.05	c0.05	
v/s Ratio Perm												0.02
v/c Ratio	0.70	0.21			0.66					0.35	0.36	0.16
Uniform Delay, d1	20.4	6.7			20.8					22.9	22.9	22.2
Progression Factor	1.00	1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2	5.0	0.1			2.0					0.9	0.9	0.3
Delay (s)	25.3	6.7			22.9					23.8	23.8	22.5
Level of Service	C	A			C					C	C	C
Approach Delay (s)		14.8			22.9			0.0			23.1	
Approach LOS		B			C			A			C	

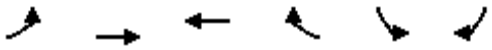
Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	361	47	22	1333	1729	487
Future Volume (vph)	361	47	22	1333	1729	487
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3389	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3389	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	361	47	22	1333	1729	487
RTOR Reduction (vph)	0	37	0	0	27	0
Lane Group Flow (vph)	361	10	22	1333	2189	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	18.0	18.0	1.5	62.3	56.8	
Effective Green, g (s)	18.0	18.0	1.5	62.3	56.8	
Actuated g/C Ratio	0.20	0.20	0.02	0.71	0.64	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	357	319	29	2472	2180	
v/s Ratio Prot	c0.21		0.01	c0.38	c0.65	
v/s Ratio Perm		0.01				
v/c Ratio	1.01	0.03	0.76	0.54	1.00	
Uniform Delay, d1	35.1	28.2	43.2	6.2	15.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	50.5	0.0	71.7	0.2	20.3	
Delay (s)	85.6	28.2	114.9	6.4	36.0	
Level of Service	F	C	F	A	D	
Approach Delay (s)	79.0			8.2	36.0	
Approach LOS	E			A	D	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	1215	804	1686	1898	0
Future Volume (vph)	2	1215	804	1686	1898	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	3400	3505	3505	1568	3400	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	3400	3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1215	804	1686	1898	0
RTOR Reduction (vph)	0	0	0	72	0	0
Lane Group Flow (vph)	2	1215	804	1614	1898	0
Turn Type	Prot	NA	NA	custom	Prot	
Protected Phases	4	5	5	2	6	
Permitted Phases						
Actuated Green, G (s)	1.1	46.0	46.0	126.1	76.1	
Effective Green, g (s)	1.1	46.0	46.0	126.1	76.1	
Actuated g/C Ratio	0.01	0.34	0.34	0.93	0.56	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	27	1192	1192	1462	1913	
v/s Ratio Prot	c0.00	0.35	0.23	c1.03	0.56	
v/s Ratio Perm						
v/c Ratio	0.07	1.02	0.67	1.10	0.99	
Uniform Delay, d1	66.5	44.6	38.2	4.5	29.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	31.0	1.5	57.5	18.6	
Delay (s)	67.7	75.6	39.7	62.1	47.9	
Level of Service	E	E	D	E	D	
Approach Delay (s)		75.6	54.9		47.9	
Approach LOS		E	D		D	

Intersection Summary			
HCM 2000 Control Delay	57.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	135.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	114.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0
Turn Type			Prot		Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)						
Effective Green, g (s)						
Actuated g/C Ratio						
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)						
v/s Ratio Prot						
v/s Ratio Perm						
v/c Ratio						
Uniform Delay, d1						
Progression Factor						
Incremental Delay, d2						
Delay (s)						
Level of Service						
Approach Delay (s)	0.0			0.0	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	0.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	24.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

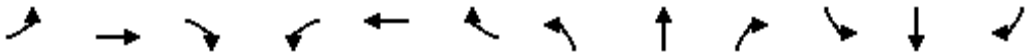
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	2346	0	1217	0
Future Volume (vph)	0	0	2346	0	1217	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	
Lane Util. Factor			0.95	0.95	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	0.95	0.95	
Satd. Flow (prot)			1665	1665	3400	
Flt Permitted			0.95	0.95	0.95	
Satd. Flow (perm)			1665	1665	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	2346	0	1217	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1173	1173	1217	0
Turn Type			Split	NA	Prot	
Protected Phases			4	4	2	
Permitted Phases						
Actuated Green, G (s)			93.0	93.0	49.0	
Effective Green, g (s)			93.0	93.0	49.0	
Actuated g/C Ratio			0.62	0.62	0.33	
Clearance Time (s)			4.0	4.0	4.0	
Vehicle Extension (s)			3.0	3.0	3.0	
Lane Grp Cap (vph)			1032	1032	1110	
v/s Ratio Prot			c0.70	0.70	c0.36	
v/s Ratio Perm						
v/c Ratio			1.14	1.14	1.10	
Uniform Delay, d1			28.5	28.5	50.5	
Progression Factor			1.00	1.00	1.00	
Incremental Delay, d2			73.6	73.6	57.3	
Delay (s)			102.1	102.1	107.8	
Level of Service			F	F	F	
Approach Delay (s)	0.0			102.1	107.8	
Approach LOS	A			F	F	

Intersection Summary			
HCM 2000 Control Delay	104.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	196.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	871	0	0	0	0	1217	1971	0	2346	0
Future Volume (vph)	0	0	871	0	0	0	0	1217	1971	0	2346	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95					0.91	0.91		0.95	
Frt		0.85	0.85					0.93	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		1490	1490					3134	1427		3505	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		1490	1490					3134	1427		3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	871	0	0	0	0	1217	1971	0	2346	0
RTOR Reduction (vph)	0	38	0	0	0	0	0	105	311	0	0	0
Lane Group Flow (vph)	0	398	435	0	0	0	0	2078	694	0	2346	0
Turn Type		NA	Free					NA	Perm	Prot	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			Free						2			
Actuated Green, G (s)		26.0	110.0					76.0	76.0		76.0	
Effective Green, g (s)		26.0	110.0					76.0	76.0		76.0	
Actuated g/C Ratio		0.24	1.00					0.69	0.69		0.69	
Clearance Time (s)		4.0						4.0	4.0		4.0	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		352	1490					2165	985		2421	
v/s Ratio Prot		c0.27						0.66			c0.67	
v/s Ratio Perm			0.29						0.49			
v/c Ratio		1.13	0.29					0.96	0.70		0.97	
Uniform Delay, d1		42.0	0.0					15.6	10.2		15.9	
Progression Factor		1.00	1.00					1.00	1.00		1.00	
Incremental Delay, d2		88.1	0.5					11.2	2.3		11.8	
Delay (s)		130.1	0.5					26.8	12.6		27.7	
Level of Service		F	A					C	B		C	
Approach Delay (s)		65.4			0.0			22.3			27.7	
Approach LOS		E			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	153.0%	ICU Level of Service	H
Analysis Period (min)	15		

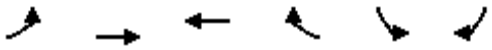
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	355	134	2874	223	105	3210
Future Volume (vph)	355	134	2874	223	105	3210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5036	1568	3400	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5036	1568	3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	355	134	2874	223	105	3210
RTOR Reduction (vph)	0	71	0	77	0	0
Lane Group Flow (vph)	355	63	2874	146	105	3210
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	13.0	13.0	50.1	50.1	3.2	57.3
Effective Green, g (s)	13.0	13.0	50.1	50.1	3.2	57.3
Actuated g/C Ratio	0.17	0.17	0.64	0.64	0.04	0.73
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	564	260	3222	1003	138	3685
v/s Ratio Prot	c0.10		0.57		0.03	c0.64
v/s Ratio Perm		0.04		0.09		
v/c Ratio	0.63	0.24	0.89	0.15	0.76	0.87
Uniform Delay, d1	30.4	28.4	11.8	5.6	37.2	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.5	3.5	0.1	21.6	2.5
Delay (s)	32.6	28.9	15.4	5.7	58.7	10.3
Level of Service	C	C	B	A	E	B
Approach Delay (s)	31.6		14.7			11.8
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	339	1713	1328	99	76	266
Future Volume (vph)	339	1713	1328	99	76	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	339	1713	1328	99	76	266
RTOR Reduction (vph)	0	0	0	54	0	232
Lane Group Flow (vph)	339	1713	1328	45	76	34
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	15.6	49.3	29.7	29.7	8.5	8.5
Effective Green, g (s)	15.6	49.3	29.7	29.7	8.5	8.5
Actuated g/C Ratio	0.24	0.75	0.45	0.45	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	415	2626	1582	707	226	202
v/s Ratio Prot	c0.19	0.49	c0.38		c0.04	
v/s Ratio Perm				0.03		0.02
v/c Ratio	0.82	0.65	0.84	0.06	0.34	0.17
Uniform Delay, d1	23.7	4.0	15.9	10.2	26.1	25.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.8	0.6	4.1	0.0	0.9	0.4
Delay (s)	35.5	4.6	20.0	10.2	27.0	25.9
Level of Service	D	A	C	B	C	C
Approach Delay (s)		9.7	19.4		26.1	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

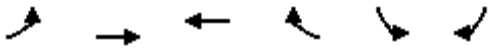
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1140	111	72	702	86	139
Future Volume (vph)	1140	111	72	702	86	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	1752	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1140	111	72	702	86	139
RTOR Reduction (vph)	0	58	0	0	0	113
Lane Group Flow (vph)	1140	53	72	702	86	26
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	20.1	20.1	2.0	26.1	7.8	7.8
Effective Green, g (s)	20.1	20.1	2.0	26.1	7.8	7.8
Actuated g/C Ratio	0.48	0.48	0.05	0.62	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1681	752	162	2183	326	291
v/s Ratio Prot	c0.33		0.02	c0.20	c0.05	
v/s Ratio Perm		0.03				0.02
v/c Ratio	0.68	0.07	0.44	0.32	0.26	0.09
Uniform Delay, d1	8.4	5.9	19.4	3.7	14.6	14.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.0	1.9	0.1	0.4	0.1
Delay (s)	9.5	5.9	21.3	3.8	15.0	14.2
Level of Service	A	A	C	A	B	B
Approach Delay (s)	9.2			5.4	14.5	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	41.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

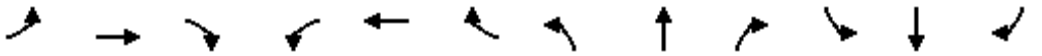
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	281	415	273	45	18	239
Future Volume (vph)	281	415	273	45	18	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	0.98		0.87	
Flt Protected		0.98	1.00		1.00	
Satd. Flow (prot)		1808	1809		1607	
Flt Permitted		0.73	1.00		1.00	
Satd. Flow (perm)		1354	1809		1607	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	281	415	273	45	18	239
RTOR Reduction (vph)	0	0	9	0	199	0
Lane Group Flow (vph)	0	696	309	0	58	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		29.3	29.3		7.5	
Effective Green, g (s)		29.3	29.3		7.5	
Actuated g/C Ratio		0.65	0.65		0.17	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		885	1183		269	
v/s Ratio Prot			0.17		c0.04	
v/s Ratio Perm		c0.51				
v/c Ratio		0.79	0.26		0.22	
Uniform Delay, d1		5.5	3.2		16.1	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		4.7	0.1		0.4	
Delay (s)		10.2	3.4		16.5	
Level of Service		B	A		B	
Approach Delay (s)		10.2	3.4		16.5	
Approach LOS		B	A		B	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	44.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

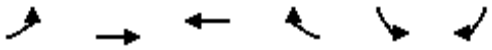
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	242	108	543	139	89	231	231	1656	80	96	1505	368
Future Volume (vph)	242	108	543	139	89	231	231	1656	80	96	1505	368
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	1845	1568	3400	3505	1568	3400	3505	1568	3400	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	1845	1568	3400	3505	1568	3400	3505	1568	3400	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	242	108	543	139	89	231	231	1656	80	96	1505	368
RTOR Reduction (vph)	0	0	130	0	0	141	0	0	41	0	0	134
Lane Group Flow (vph)	242	108	413	139	89	90	231	1656	39	96	1505	234
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.4	28.1	28.1	7.8	18.5	18.5	11.8	54.0	54.0	4.0	46.2	46.2
Effective Green, g (s)	17.4	28.1	28.1	7.8	18.5	18.5	11.8	54.0	54.0	4.0	46.2	46.2
Actuated g/C Ratio	0.16	0.26	0.26	0.07	0.17	0.17	0.11	0.49	0.49	0.04	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	277	471	400	241	590	263	365	1722	770	123	1473	659
v/s Ratio Prot	c0.14	0.06		0.04	0.03		c0.07	c0.47		0.03	c0.43	
v/s Ratio Perm			c0.26			0.06			0.03			0.15
v/c Ratio	0.87	0.23	1.03	0.58	0.15	0.34	0.63	0.96	0.05	0.78	1.02	0.35
Uniform Delay, d1	45.2	32.3	40.9	49.5	39.0	40.3	47.0	27.0	14.6	52.5	31.9	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.8	0.2	54.0	3.3	0.1	0.8	3.6	13.7	0.0	26.7	29.1	0.3
Delay (s)	70.0	32.6	94.9	52.8	39.1	41.1	50.5	40.6	14.6	79.2	60.9	22.0
Level of Service	E	C	F	D	D	D	D	D	B	E	E	C
Approach Delay (s)		80.6			44.3			40.7			54.6	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	109.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

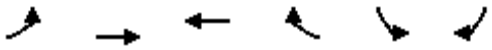
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	228	1222	811	119	255	364
Future Volume (vph)	228	1222	811	119	255	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	3438		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	3438		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	228	1222	811	119	255	364
RTOR Reduction (vph)	0	0	22	0	0	210
Lane Group Flow (vph)	228	1222	908	0	255	154
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	5.1	24.3	15.2		11.9	11.9
Effective Green, g (s)	5.1	24.3	15.2		11.9	11.9
Actuated g/C Ratio	0.12	0.55	0.34		0.27	0.27
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	392	1926	1182		471	422
v/s Ratio Prot	0.07	c0.35	c0.26		c0.15	
v/s Ratio Perm						0.10
v/c Ratio	0.58	0.63	0.77		0.54	0.37
Uniform Delay, d1	18.5	6.9	12.9		13.8	13.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.2	0.7	3.1		1.3	0.5
Delay (s)	20.7	7.6	16.0		15.1	13.6
Level of Service	C	A	B		B	B
Approach Delay (s)		9.6	16.0		14.2	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	44.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	158	1330	886	454	725	195
Future Volume (vph)	158	1330	886	454	725	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	158	1330	886	454	725	195
RTOR Reduction (vph)	0	0	0	332	0	111
Lane Group Flow (vph)	158	1330	886	122	725	84
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	6.0	26.0	16.0	16.0	25.7	25.7
Effective Green, g (s)	6.0	26.0	16.0	16.0	25.7	25.7
Actuated g/C Ratio	0.10	0.44	0.27	0.27	0.43	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	176	1526	939	420	754	675
v/s Ratio Prot	0.09	c0.38	0.25		c0.41	
v/s Ratio Perm				0.08		0.05
v/c Ratio	0.90	0.87	0.94	0.29	0.96	0.12
Uniform Delay, d1	26.5	15.3	21.4	17.3	16.5	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.7	5.8	17.3	0.4	23.6	0.1
Delay (s)	66.3	21.1	38.7	17.7	40.1	10.3
Level of Service	E	C	D	B	D	B
Approach Delay (s)		25.9	31.6		33.8	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

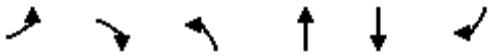
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2381	67	45	2392	32	23
Future Volume (vph)	2381	67	45	2392	32	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3490		1752	3505	1752	1568
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3490		1752	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2381	67	45	2392	32	23
RTOR Reduction (vph)	1	0	0	0	0	22
Lane Group Flow (vph)	2447	0	45	2392	32	1
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	104.0		4.4	112.4	8.1	8.1
Effective Green, g (s)	104.0		4.4	112.4	8.1	8.1
Actuated g/C Ratio	0.81		0.03	0.87	0.06	0.06
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2824		59	3065	110	98
v/s Ratio Prot	c0.70		0.03	c0.68	c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.87		0.76	0.78	0.29	0.01
Uniform Delay, d1	7.8		61.5	3.2	57.5	56.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1		43.5	1.3	1.5	0.1
Delay (s)	10.9		105.0	4.5	58.9	56.5
Level of Service	B		F	A	E	E
Approach Delay (s)	10.9			6.4	57.9	
Approach LOS	B			A	E	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	128.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	76	84	1566	1686	117
Future Volume (vph)	18	76	84	1566	1686	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	1845	3471	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	1845	3471	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	18	76	84	1566	1686	117
RTOR Reduction (vph)	0	72	0	0	3	0
Lane Group Flow (vph)	18	4	84	1566	1800	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	6.1	6.1	10.8	117.2	102.4	
Effective Green, g (s)	6.1	6.1	10.8	117.2	102.4	
Actuated g/C Ratio	0.05	0.05	0.08	0.89	0.78	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	81	72	144	1646	2707	
v/s Ratio Prot	c0.01		0.05	c0.85	0.52	
v/s Ratio Perm		0.00				
v/c Ratio	0.22	0.05	0.58	0.95	0.66	
Uniform Delay, d1	60.3	59.8	58.1	5.0	6.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	0.3	5.9	12.5	0.6	
Delay (s)	61.7	60.1	64.0	17.5	7.2	
Level of Service	E	E	E	B	A	
Approach Delay (s)	60.4			19.9	7.2	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	131.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

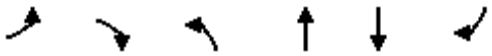
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	182	216	2162	33	579	2011
Future Volume (vph)	182	216	2162	33	579	2011
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.91		0.97	0.91
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	5025		3400	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	5025		3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	182	216	2162	33	579	2011
RTOR Reduction (vph)	0	181	2	0	0	0
Lane Group Flow (vph)	182	35	2193	0	579	2011
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	12.4	12.4	38.1		14.9	57.0
Effective Green, g (s)	12.4	12.4	38.1		14.9	57.0
Actuated g/C Ratio	0.16	0.16	0.49		0.19	0.74
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	280	251	2473		654	3708
v/s Ratio Prot	c0.10		c0.44		c0.17	0.40
v/s Ratio Perm		0.02				
v/c Ratio	0.65	0.14	0.89		0.89	0.54
Uniform Delay, d1	30.5	27.9	17.7		30.4	4.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.3	0.3	4.3		13.6	0.2
Delay (s)	35.8	28.2	22.0		44.0	4.6
Level of Service	D	C	C		D	A
Approach Delay (s)	31.6		22.0			13.4
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

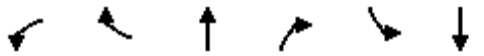
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	628	30	124	983	1294	516
Future Volume (vph)	628	30	124	983	1294	516
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.96	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3355	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3355	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	628	30	124	983	1294	516
RTOR Reduction (vph)	0	6	0	0	36	0
Lane Group Flow (vph)	628	24	124	983	1775	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	40.0	40.0	8.0	72.0	60.0	
Effective Green, g (s)	40.0	40.0	8.0	72.0	60.0	
Actuated g/C Ratio	0.33	0.33	0.07	0.60	0.50	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	584	522	116	2103	1677	
v/s Ratio Prot	c0.36		c0.07	0.28	c0.53	
v/s Ratio Perm		0.02				
v/c Ratio	1.08	0.05	1.07	0.47	1.06	
Uniform Delay, d1	40.0	27.1	56.0	13.3	30.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	59.1	0.0	103.3	0.2	39.2	
Delay (s)	99.1	27.1	159.3	13.5	69.2	
Level of Service	F	C	F	B	E	
Approach Delay (s)	95.8			29.8	69.2	
Approach LOS	F			C	E	

Intersection Summary			
HCM 2000 Control Delay	61.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		

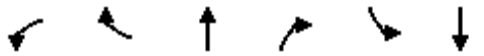
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	92	1695	50	160	2740
Future Volume (vph)	1	92	1695	50	160	2740
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	5014		1752	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	5014		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	92	1695	50	160	2740
RTOR Reduction (vph)	0	85	3	0	0	0
Lane Group Flow (vph)	1	7	1742	0	160	2740
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		6		5	2
Permitted Phases		8				
Actuated Green, G (s)	4.1	4.1	30.2		6.6	40.8
Effective Green, g (s)	4.1	4.1	30.2		6.6	40.8
Actuated g/C Ratio	0.08	0.08	0.57		0.12	0.77
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	135	121	2862		218	3884
v/s Ratio Prot	0.00		0.35		0.09	c0.54
v/s Ratio Perm		c0.00				
v/c Ratio	0.01	0.06	0.61		0.73	0.71
Uniform Delay, d1	22.5	22.6	7.5		22.3	3.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.2	0.4		12.0	0.6
Delay (s)	22.5	22.8	7.8		34.3	3.6
Level of Service	C	C	A		C	A
Approach Delay (s)	22.8		7.8			5.3
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	52.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	95	0	1659	52	42	2800
Future Volume (vph)	95	0	1659	52	42	2800
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.91		1.00	0.91
Frt	1.00		1.00		1.00	1.00
Flt Protected	0.95		1.00		0.95	1.00
Satd. Flow (prot)	1752		5013		1752	5036
Flt Permitted	0.95		1.00		0.95	1.00
Satd. Flow (perm)	1752		5013		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	95	0	1659	52	42	2800
RTOR Reduction (vph)	0	0	3	0	0	0
Lane Group Flow (vph)	95	0	1708	0	42	2800
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	8.7		66.6		3.0	73.6
Effective Green, g (s)	8.7		66.6		3.0	73.6
Actuated g/C Ratio	0.10		0.74		0.03	0.82
Clearance Time (s)	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	168		3697		58	4104
v/s Ratio Prot	c0.05		0.34		0.02	c0.56
v/s Ratio Perm						
v/c Ratio	0.57		0.46		0.72	0.68
Uniform Delay, d1	39.0		4.7		43.2	3.5
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	4.3		0.1		35.9	0.5
Delay (s)	43.3		4.8		79.1	4.0
Level of Service	D		A		E	A
Approach Delay (s)	43.3		4.8			5.1
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

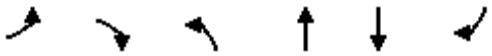
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	390	690	1158	312	475	2678
Future Volume (vph)	390	690	1158	312	475	2678
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	4876		1752	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	4876		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	390	690	1158	312	475	2678
RTOR Reduction (vph)	0	392	75	0	0	0
Lane Group Flow (vph)	390	298	1395	0	475	2678
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3				
Actuated Green, G (s)	15.0	15.0	20.0		18.0	42.0
Effective Green, g (s)	15.0	15.0	20.0		18.0	42.0
Actuated g/C Ratio	0.23	0.23	0.31		0.28	0.65
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	404	361	1500		485	3254
v/s Ratio Prot	c0.22		c0.29		c0.27	0.53
v/s Ratio Perm		0.19				
v/c Ratio	0.97	0.82	0.93		0.98	0.82
Uniform Delay, d1	24.7	23.8	21.8		23.3	8.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	35.5	14.2	10.6		35.1	1.8
Delay (s)	60.2	37.9	32.4		58.4	10.5
Level of Service	E	D	C		E	B
Approach Delay (s)	46.0		32.4			17.7
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

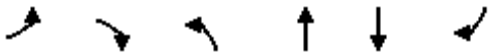
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	109	110	131	1180	2693	138
Future Volume (vph)	109	110	131	1180	2693	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	5036	4999	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	5036	4999	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	109	110	131	1180	2693	138
RTOR Reduction (vph)	0	96	0	0	6	0
Lane Group Flow (vph)	109	14	131	1180	2825	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	10.1	10.1	7.0	59.9	48.9	
Effective Green, g (s)	10.1	10.1	7.0	59.9	48.9	
Actuated g/C Ratio	0.13	0.13	0.09	0.77	0.63	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	226	203	157	3867	3133	
v/s Ratio Prot	c0.06		c0.07	0.23	c0.57	
v/s Ratio Perm		0.01				
v/c Ratio	0.48	0.07	0.83	0.31	0.90	
Uniform Delay, d1	31.5	29.8	34.9	2.7	12.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.1	30.0	0.0	4.1	
Delay (s)	33.1	30.0	64.9	2.8	16.5	
Level of Service	C	C	E	A	B	
Approach Delay (s)	31.6			9.0	16.5	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	78.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

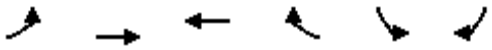
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	282	437	216	827	1228	155
Future Volume (vph)	282	437	216	827	1228	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3446	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3446	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	282	437	216	827	1228	155
RTOR Reduction (vph)	0	218	0	0	15	0
Lane Group Flow (vph)	282	219	216	827	1368	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	13.5	13.5	9.0	41.4	28.4	
Effective Green, g (s)	13.5	13.5	9.0	41.4	28.4	
Actuated g/C Ratio	0.21	0.21	0.14	0.66	0.45	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	376	336	250	2306	1555	
v/s Ratio Prot	c0.16		c0.12	0.24	c0.40	
v/s Ratio Perm		0.14				
v/c Ratio	0.75	0.65	0.86	0.36	0.88	
Uniform Delay, d1	23.1	22.5	26.4	4.8	15.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.2	4.5	25.2	0.1	6.0	
Delay (s)	31.3	27.0	51.5	4.9	21.7	
Level of Service	C	C	D	A	C	
Approach Delay (s)	28.7			14.6	21.7	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

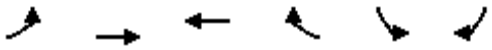
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	818	2167	1641	62	134	761
Future Volume (vph)	818	2167	1641	62	134	761
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	5008		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	5008		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	818	2167	1641	62	134	761
RTOR Reduction (vph)	0	0	5	0	0	335
Lane Group Flow (vph)	818	2167	1698	0	134	426
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	18.0	47.0	25.0		20.0	20.0
Effective Green, g (s)	18.0	47.0	25.0		20.0	20.0
Actuated g/C Ratio	0.24	0.63	0.33		0.27	0.27
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	816	2196	1669		467	418
v/s Ratio Prot	0.24	c0.62	0.34		0.08	
v/s Ratio Perm						c0.27
v/c Ratio	1.00	0.99	1.02		0.29	1.02
Uniform Delay, d1	28.5	13.7	25.0		21.8	27.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	32.1	16.0	26.4		0.3	48.9
Delay (s)	60.6	29.7	51.4		22.2	76.4
Level of Service	E	C	D		C	E
Approach Delay (s)		38.2	51.4		68.3	
Approach LOS		D	D		E	

Intersection Summary			
HCM 2000 Control Delay	47.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

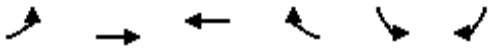
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	248	2054	1269	64	237	184
Future Volume (vph)	248	2054	1269	64	237	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	3505	3505	1568	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	3505	3505	1568	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	248	2054	1269	64	237	184
RTOR Reduction (vph)	0	0	0	32	0	153
Lane Group Flow (vph)	248	2054	1269	32	237	31
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	6.0	37.0	27.0	27.0	9.0	9.0
Effective Green, g (s)	6.0	37.0	27.0	27.0	9.0	9.0
Actuated g/C Ratio	0.11	0.69	0.50	0.50	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	377	2401	1752	784	566	261
v/s Ratio Prot	0.07	c0.59	0.36		c0.07	
v/s Ratio Perm				0.02		0.02
v/c Ratio	0.66	0.86	0.72	0.04	0.42	0.12
Uniform Delay, d1	23.0	6.5	10.6	6.9	20.2	19.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	3.2	1.5	0.0	0.5	0.2
Delay (s)	27.1	9.7	12.1	6.9	20.7	19.3
Level of Service	C	A	B	A	C	B
Approach Delay (s)		11.6	11.8		20.1	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	173	2121	1189	25	20	154
Future Volume (vph)	173	2121	1189	25	20	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3494		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3494		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	173	2121	1189	25	20	154
RTOR Reduction (vph)	0	0	2	0	0	135
Lane Group Flow (vph)	173	2121	1212	0	20	19
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	8.7	41.7	29.0		6.9	6.9
Effective Green, g (s)	8.7	41.7	29.0		6.9	6.9
Actuated g/C Ratio	0.15	0.74	0.51		0.12	0.12
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	269	2582	1790		213	191
v/s Ratio Prot	0.10	c0.61	0.35		0.01	
v/s Ratio Perm						c0.01
v/c Ratio	0.64	0.82	0.68		0.09	0.10
Uniform Delay, d1	22.5	5.0	10.3		22.1	22.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.2	2.2	1.0		0.2	0.2
Delay (s)	27.7	7.2	11.3		22.3	22.3
Level of Service	C	A	B		C	C
Approach Delay (s)		8.7	11.3		22.3	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	56.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1307	168	370	923	163	252
Future Volume (vph)	1307	168	370	923	163	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	3400	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1307	168	370	923	163	252
RTOR Reduction (vph)	0	90	0	0	0	213
Lane Group Flow (vph)	1307	78	370	923	163	39
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	24.4	24.4	8.0	36.4	8.2	8.2
Effective Green, g (s)	24.4	24.4	8.0	36.4	8.2	8.2
Actuated g/C Ratio	0.46	0.46	0.15	0.69	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1625	727	517	2425	530	244
v/s Ratio Prot	c0.37		c0.11	0.26	c0.05	
v/s Ratio Perm		0.05				0.03
v/c Ratio	0.80	0.11	0.72	0.38	0.31	0.16
Uniform Delay, d1	12.1	8.0	21.2	3.4	19.7	19.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.1	4.7	0.1	0.3	0.3
Delay (s)	15.1	8.0	25.9	3.5	20.0	19.5
Level of Service	B	A	C	A	C	B
Approach Delay (s)	14.3			9.9	19.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

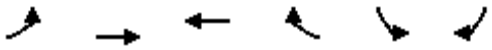
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1560	0	127	1293	0	208
Future Volume (vph)	1560	0	127	1293	0	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.95		1.00	0.95		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	3505		1752	3505		1568
Flt Permitted	1.00		0.12	1.00		1.00
Satd. Flow (perm)	3505		225	3505		1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1560	0	127	1293	0	208
RTOR Reduction (vph)	0	0	0	0	0	59
Lane Group Flow (vph)	1560	0	127	1293	0	149
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Actuated Green, G (s)	50.6		50.6	50.6		11.9
Effective Green, g (s)	50.6		50.6	50.6		11.9
Actuated g/C Ratio	0.72		0.72	0.72		0.17
Clearance Time (s)	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2515		161	2515		264
v/s Ratio Prot	0.45			0.37		
v/s Ratio Perm			c0.56			c0.10
v/c Ratio	0.62		0.79	0.51		0.56
Uniform Delay, d1	5.1		6.5	4.5		26.9
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.5		22.1	0.2		2.8
Delay (s)	5.5		28.6	4.6		29.7
Level of Service	A		C	A		C
Approach Delay (s)	5.5			6.8	29.7	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

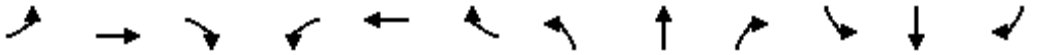
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	221	1867	1089	85	271	173
Future Volume (vph)	221	1867	1089	85	271	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3467		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3467		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	221	1867	1089	85	271	173
RTOR Reduction (vph)	0	0	7	0	0	137
Lane Group Flow (vph)	221	1867	1167	0	271	36
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	10.4	59.2	44.8		16.6	16.6
Effective Green, g (s)	10.4	59.2	44.8		16.6	16.6
Actuated g/C Ratio	0.12	0.71	0.53		0.20	0.20
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	217	2476	1853		347	310
v/s Ratio Prot	c0.13	c0.53	0.34		c0.15	
v/s Ratio Perm						0.02
v/c Ratio	1.02	0.75	0.63		0.78	0.12
Uniform Delay, d1	36.7	7.7	13.7		31.9	27.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	65.9	1.3	0.7		10.9	0.2
Delay (s)	102.6	9.1	14.4		42.7	27.7
Level of Service	F	A	B		D	C
Approach Delay (s)		19.0	14.4		36.9	
Approach LOS		B	B		D	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	656	259	244	735	531	241	904	190	786	1656	91
Future Volume (veh/h)	74	656	259	244	735	531	241	904	190	786	1656	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	74	656	259	244	735	531	241	904	190	786	1656	91
Adj No. of Lanes	1	2	0	1	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	97	639	252	255	642	546	232	744	156	534	1762	549
Arrive On Green	0.06	0.26	0.26	0.15	0.35	0.35	0.13	0.18	0.18	0.31	0.35	0.35
Sat Flow, veh/h	1757	2456	970	1740	1827	1553	1740	4134	865	1740	4988	1553
Grp Volume(v), veh/h	74	468	447	244	735	531	241	726	368	786	1656	91
Grp Sat Flow(s),veh/h/ln	1757	1752	1674	1740	1827	1553	1740	1663	1674	1740	1663	1553
Q Serve(g_s), s	6.2	39.0	39.0	20.9	52.7	22.5	20.0	27.0	27.0	46.0	48.2	6.0
Cycle Q Clear(g_c), s	6.2	39.0	39.0	20.9	52.7	22.5	20.0	27.0	27.0	46.0	48.2	6.0
Prop In Lane	1.00		0.58	1.00		1.00	1.00		0.52	1.00		1.00
Lane Grp Cap(c), veh/h	97	456	435	255	642	546	232	599	301	534	1762	549
V/C Ratio(X)	0.76	1.03	1.03	0.96	1.15	0.97	1.04	1.21	1.22	1.47	0.94	0.17
Avail Cap(c_a), veh/h	187	456	435	255	642	546	232	599	301	534	1762	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.9	55.5	55.5	63.5	48.7	9.5	65.0	61.5	61.5	52.0	47.0	33.3
Incr Delay (d2), s/veh	11.5	49.2	50.3	44.2	82.8	31.7	69.6	110.9	125.2	222.9	10.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	25.1	24.1	13.2	41.3	14.3	14.1	21.6	23.0	55.1	23.8	2.6
LnGrp Delay(d),s/veh	81.3	104.7	105.8	107.7	131.5	41.2	134.6	172.4	186.7	274.9	57.4	33.5
LnGrp LOS	F	F	F	F	F	D	F	F	F	F	E	C
Approach Vol, veh/h		989			1510			1335			2533	
Approach Delay, s/veh		103.5			95.9			169.5			124.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	50.0	31.0	26.0	43.0	24.0	57.0	12.3	56.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	46.0	27.0	22.0	39.0	20.0	53.0	16.0	45.0
Max Q Clear Time (g_c+I1), s	48.0	29.0	22.9	41.0	22.0	50.2	8.2	54.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.6	0.1	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		123.7
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	251	644	101	184	868	221	108	827	22	508	1217	469
Future Volume (veh/h)	251	644	101	184	868	221	108	827	22	508	1217	469
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	251	644	101	184	868	221	108	827	22	508	1217	469
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	254	838	131	219	896	401	150	919	24	525	1310	586
Arrive On Green	0.14	0.28	0.28	0.12	0.26	0.26	0.04	0.27	0.27	0.16	0.38	0.38
Sat Flow, veh/h	1757	3037	476	1757	3505	1568	3375	3454	92	3375	3471	1553
Grp Volume(v), veh/h	251	371	374	184	868	221	108	415	434	508	1217	469
Grp Sat Flow(s),veh/h/ln	1757	1752	1761	1757	1752	1568	1688	1736	1811	1688	1736	1553
Q Serve(g_s), s	12.8	17.5	17.6	9.2	22.0	11.0	2.8	20.8	20.8	13.5	30.2	24.2
Cycle Q Clear(g_c), s	12.8	17.5	17.6	9.2	22.0	11.0	2.8	20.8	20.8	13.5	30.2	24.2
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	254	484	486	219	896	401	150	462	482	525	1310	586
V/C Ratio(X)	0.99	0.77	0.77	0.84	0.97	0.55	0.72	0.90	0.90	0.97	0.93	0.80
Avail Cap(c_a), veh/h	254	484	486	254	896	401	150	463	483	525	1312	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	29.9	29.9	38.5	33.1	29.0	42.4	31.8	31.8	37.7	26.8	25.0
Incr Delay (d2), s/veh	53.1	7.3	7.4	19.6	22.6	1.6	15.3	20.2	19.6	30.8	11.7	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	9.4	9.5	5.6	13.4	4.9	1.6	12.5	13.0	8.5	16.5	11.6
LnGrp Delay(d),s/veh	91.5	37.2	37.3	58.1	55.7	30.6	57.8	52.1	51.4	68.6	38.5	32.7
LnGrp LOS	F	D	D	E	E	C	E	D	D	E	D	C
Approach Vol, veh/h		996			1273			957			2194	
Approach Delay, s/veh		50.9			51.7			52.4			44.3	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.9	15.2	28.8	8.0	37.9	17.0	27.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	24.0	13.0	23.0	4.0	34.0	13.0	23.0
Max Q Clear Time (g_c+I1), s	15.5	22.8	11.2	19.6	4.8	32.2	14.8	24.0
Green Ext Time (p_c), s	0.0	1.2	0.1	2.8	0.0	1.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	1593	122	228	1309	130	57	761	252	57	312	1
Future Volume (veh/h)	19	1593	122	228	1309	130	57	761	252	57	312	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	19	1593	122	228	1309	130	57	761	252	57	312	1
Adj No. of Lanes	1	2	2	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	28	1533	1207	222	1765	175	73	771	345	70	783	3
Arrive On Green	0.02	0.45	0.45	0.13	0.56	0.56	0.04	0.22	0.22	0.04	0.22	0.22
Sat Flow, veh/h	1707	3406	2682	1707	3131	310	1757	3505	1568	1757	3584	11
Grp Volume(v), veh/h	19	1593	122	228	710	729	57	761	252	57	153	160
Grp Sat Flow(s),veh/h/ln	1707	1703	1341	1707	1703	1738	1757	1752	1568	1757	1752	1843
Q Serve(g_s), s	1.1	45.0	2.6	13.0	31.2	31.6	3.2	21.6	14.9	3.2	7.5	7.5
Cycle Q Clear(g_c), s	1.1	45.0	2.6	13.0	31.2	31.6	3.2	21.6	14.9	3.2	7.5	7.5
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	28	1533	1207	222	960	979	73	771	345	70	383	402
V/C Ratio(X)	0.68	1.04	0.10	1.03	0.74	0.74	0.78	0.99	0.73	0.81	0.40	0.40
Avail Cap(c_a), veh/h	85	1533	1207	222	960	979	141	771	345	70	383	402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.9	27.5	15.8	43.5	16.3	16.4	47.5	38.9	36.2	47.6	33.5	33.5
Incr Delay (d2), s/veh	25.0	33.9	0.0	67.7	3.1	3.1	16.2	29.1	7.7	49.1	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	28.3	1.0	10.3	15.4	15.8	1.9	13.6	7.2	2.5	3.7	3.9
LnGrp Delay(d),s/veh	73.9	61.4	15.9	111.3	19.4	19.5	63.7	67.9	43.9	96.7	34.1	34.1
LnGrp LOS	E	F	B	F	B	B	E	E	D	F	C	C
Approach Vol, veh/h		1734			1667			1070			370	
Approach Delay, s/veh		58.4			32.0			62.0			43.8	
Approach LOS		E			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	26.0	17.0	49.0	8.2	25.8	5.6	60.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	22.0	13.0	45.0	8.0	18.0	5.0	53.0
Max Q Clear Time (g_c+I1), s	5.2	23.6	15.0	47.0	5.2	9.5	3.1	33.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.9	0.0	17.9

Intersection Summary	
HCM 2010 Ctrl Delay	49.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	771	550	142	765	118	152	741	266	65	502	84
Future Volume (veh/h)	16	771	550	142	765	118	152	741	266	65	502	84
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	16	771	550	142	765	118	152	741	266	65	502	84
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	28	976	437	153	1065	164	183	1087	486	81	882	395
Arrive On Green	0.02	0.28	0.28	0.09	0.35	0.35	0.10	0.31	0.31	0.05	0.25	0.25
Sat Flow, veh/h	1757	3505	1568	1757	3045	470	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	16	771	550	142	440	443	152	741	266	65	502	84
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1762	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	0.5	11.7	16.0	4.6	12.5	12.5	4.9	10.6	8.1	2.1	7.2	2.4
Cycle Q Clear(g_c), s	0.5	11.7	16.0	4.6	12.5	12.5	4.9	10.6	8.1	2.1	7.2	2.4
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	28	976	437	153	613	616	183	1087	486	81	882	395
V/C Ratio(X)	0.58	0.79	1.26	0.93	0.72	0.72	0.83	0.68	0.55	0.80	0.57	0.21
Avail Cap(c_a), veh/h	122	976	437	153	613	616	183	1159	518	122	1037	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	19.2	20.7	26.1	16.2	16.2	25.2	17.3	16.5	27.1	18.8	17.0
Incr Delay (d2), s/veh	17.8	4.5	134.4	52.1	4.1	4.0	26.0	1.5	1.1	19.6	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	6.2	23.1	4.4	6.7	6.7	3.7	5.4	3.6	1.5	3.6	1.1
LnGrp Delay(d),s/veh	45.9	23.6	155.1	78.1	20.3	20.3	51.2	18.9	17.5	46.7	19.4	17.3
LnGrp LOS	D	C	F	E	C	C	D	B	B	D	B	B
Approach Vol, veh/h		1337			1025			1159			651	
Approach Delay, s/veh		78.0			28.3			22.8			21.8	
Approach LOS		E			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	21.8	9.0	20.0	10.0	18.5	4.9	24.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	19.0	5.0	16.0	6.0	17.0	4.0	17.0
Max Q Clear Time (g_c+I1), s	4.1	12.6	6.6	18.0	6.9	9.2	2.5	14.5
Green Ext Time (p_c), s	0.0	4.5	0.0	0.0	0.0	5.3	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	758	68	193	828	239	86	315	125	282	958	104
Future Volume (veh/h)	135	758	68	193	828	239	86	315	125	282	958	104
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	135	758	68	193	828	239	86	315	125	282	958	104
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	169	837	375	223	945	423	110	784	351	324	1213	542
Arrive On Green	0.10	0.24	0.24	0.13	0.27	0.27	0.06	0.22	0.22	0.18	0.35	0.35
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	135	758	68	193	828	239	86	315	125	282	958	104
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	5.3	14.9	2.4	7.6	16.0	9.3	3.4	5.4	4.8	11.1	17.4	3.3
Cycle Q Clear(g_c), s	5.3	14.9	2.4	7.6	16.0	9.3	3.4	5.4	4.8	11.1	17.4	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	837	375	223	945	423	110	784	351	324	1213	542
V/C Ratio(X)	0.80	0.91	0.18	0.87	0.88	0.57	0.78	0.40	0.36	0.87	0.79	0.19
Avail Cap(c_a), veh/h	173	840	376	223	945	423	149	939	420	347	1335	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	26.2	21.5	30.4	24.8	22.3	32.8	23.5	23.2	28.1	20.9	16.2
Incr Delay (d2), s/veh	22.2	13.3	0.2	28.0	9.3	1.7	17.1	0.3	0.6	19.6	3.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	8.7	1.1	5.4	8.9	4.2	2.2	2.7	2.1	7.1	8.9	1.5
LnGrp Delay(d),s/veh	53.5	39.5	21.7	58.3	34.1	24.1	49.8	23.8	23.8	47.6	23.9	16.4
LnGrp LOS	D	D	C	E	C	C	D	C	C	D	C	B
Approach Vol, veh/h		961			1260			526			1344	
Approach Delay, s/veh		40.2			35.9			28.1			28.3	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	19.9	13.0	20.9	8.4	28.5	10.8	23.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	19.0	9.0	17.0	6.0	27.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	13.1	7.4	9.6	16.9	5.4	19.4	7.3	18.0
Green Ext Time (p_c), s	0.1	7.0	0.0	0.0	0.0	5.1	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	500	145	479	516	787	128	3116	288	670	3104	403
Future Volume (veh/h)	265	500	145	479	516	787	128	3116	288	670	3104	403
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	265	500	145	479	516	787	128	3116	288	670	3104	403
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	170	869	389	260	962	602	101	2147	669	370	2545	792
Arrive On Green	0.05	0.25	0.25	0.08	0.27	0.27	0.03	0.43	0.43	0.11	0.51	0.51
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	265	500	145	479	516	787	128	3116	288	670	3104	403
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	7.5	18.8	11.5	11.5	18.9	41.3	4.5	64.8	19.5	16.5	76.8	25.8
Cycle Q Clear(g_c), s	7.5	18.8	11.5	11.5	18.9	41.3	4.5	64.8	19.5	16.5	76.8	25.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	869	389	260	962	602	101	2147	669	370	2545	792
V/C Ratio(X)	1.56	0.58	0.37	1.84	0.54	1.31	1.27	1.45	0.43	1.81	1.22	0.51
Avail Cap(c_a), veh/h	170	869	389	260	962	602	101	2147	669	370	2545	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.5	49.7	46.9	69.5	46.5	46.4	73.0	42.8	30.0	67.0	36.8	24.4
Incr Delay (d2), s/veh	278.8	0.6	0.2	392.3	0.3	149.8	177.9	205.6	0.2	375.3	102.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	9.2	5.0	19.6	9.1	50.1	4.6	70.5	8.4	26.9	59.3	11.1
LnGrp Delay(d),s/veh	350.3	50.3	47.1	461.8	46.8	196.2	250.9	248.5	30.1	442.3	139.4	24.6
LnGrp LOS	F	D	D	F	D	F	F	F	C	F	F	C
Approach Vol, veh/h		910			1782			3532			4177	
Approach Delay, s/veh		137.1			224.3			230.8			176.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	81.6	13.0	45.9	22.0	69.6	17.0	41.9
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	4.5	76.6	7.5	* 41	16.5	* 65	11.5	37.0
Max Q Clear Time (g_c+I1), s	6.5	78.8	9.5	43.3	18.5	66.8	13.5	20.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	199.9
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	75	0	70	0	2753	28	25	3161	4
Future Volume (veh/h)	1	0	1	75	0	70	0	2753	28	25	3161	4
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	1	0	1	75	0	70	0	2753	28	25	3161	4
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	1	0	1	106	0	189	2	3609	1124	30	4057	5
Arrive On Green	0.00	0.00	0.00	0.06	0.00	0.06	0.00	0.72	0.72	0.02	0.79	0.79
Sat Flow, veh/h	828	0	828	1757	0	3136	1740	4988	1553	1740	5144	7
Grp Volume(v), veh/h	2	0	0	75	0	70	0	2753	28	25	2043	1122
Grp Sat Flow(s),veh/h/ln	1657	0	0	1757	0	1568	1740	1663	1553	1740	1663	1826
Q Serve(g_s), s	0.1	0.0	0.0	4.5	0.0	2.3	0.0	36.4	0.5	1.5	36.0	36.1
Cycle Q Clear(g_c), s	0.1	0.0	0.0	4.5	0.0	2.3	0.0	36.4	0.5	1.5	36.0	36.1
Prop In Lane	0.50		0.50	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	3	0	0	106	0	189	2	3609	1124	30	2622	1440
V/C Ratio(X)	0.75	0.00	0.00	0.71	0.00	0.37	0.00	0.76	0.02	0.83	0.78	0.78
Avail Cap(c_a), veh/h	46	0	0	197	0	352	49	3783	1178	49	2622	1440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	0.0	49.3	0.0	48.3	0.0	9.1	4.2	52.4	6.2	6.2
Incr Delay (d2), s/veh	88.8	0.0	0.0	3.2	0.0	0.4	0.0	1.3	0.0	23.0	2.1	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	2.3	0.0	1.0	0.0	16.8	0.2	0.9	16.9	19.3
LnGrp Delay(d),s/veh	142.1	0.0	0.0	52.6	0.0	48.7	0.0	10.4	4.2	75.3	8.3	9.9
LnGrp LOS	F			D		D		B	A	E	A	A
Approach Vol, veh/h		2			145			2781			3190	
Approach Delay, s/veh		142.1			50.7			10.4			9.4	
Approach LOS		F			D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	89.3		5.7	7.0	82.4		11.9
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 3	81.4		3.0	* 3	* 81		12.0
Max Q Clear Time (g_c+I1), s	0.0	38.1		2.1	3.5	38.4		6.5
Green Ext Time (p_c), s	0.0	43.2		0.0	0.0	38.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	580	23	194	198	704	9	2256	129	749	2558	1
Future Volume (veh/h)	0	580	23	194	198	704	9	2256	129	749	2558	1
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	0	580	23	194	198	704	9	2256	129	749	2558	1
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	627	280	173	941	712	21	2096	119	628	3160	1
Arrive On Green	0.00	0.18	0.18	0.05	0.27	0.27	0.01	0.43	0.43	0.19	0.61	0.61
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4829	274	3375	5150	2
Grp Volume(v), veh/h	0	580	23	194	198	704	9	1548	837	749	1652	907
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1779	1688	1663	1827
Q Serve(g_s), s	0.0	24.3	1.8	7.5	6.5	39.7	0.4	64.2	64.2	27.5	56.4	56.4
Cycle Q Clear(g_c), s	0.0	24.3	1.8	7.5	6.5	39.7	0.4	64.2	64.2	27.5	56.4	56.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.00
Lane Grp Cap(c), veh/h	2	627	280	173	941	712	21	1443	772	628	2041	1121
V/C Ratio(X)	0.00	0.93	0.08	1.12	0.21	0.99	0.43	1.07	1.08	1.19	0.81	0.81
Avail Cap(c_a), veh/h	68	681	304	173	941	712	68	1443	772	628	2041	1121
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	59.6	50.4	70.2	41.9	40.0	73.2	41.9	41.9	60.2	21.9	21.9
Incr Delay (d2), s/veh	0.0	17.2	0.0	105.2	0.0	30.6	4.9	45.8	57.6	102.1	2.4	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.2	0.8	6.0	3.1	34.4	0.2	38.4	43.7	21.6	26.4	29.5
LnGrp Delay(d),s/veh	0.0	76.8	50.5	175.4	42.0	70.6	78.2	87.7	99.5	162.3	24.3	26.1
LnGrp LOS		E	D	F	D	E	E	F	F	F	C	C
Approach Vol, veh/h		603			1096			2394			3308	
Approach Delay, s/veh		75.8			83.9			91.7			56.1	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	96.1	0.0	45.4	33.0	69.5	13.0	32.4
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	88.6	3.0	* 33	27.5	* 64	7.5	* 29
Max Q Clear Time (g_c+I1), s	2.4	58.4	0.0	41.7	29.5	66.2	9.5	26.3
Green Ext Time (p_c), s	0.0	24.1	0.0	0.0	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	73.3
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	34	2343	23	79	2694
Future Volume (veh/h)	13	34	2343	23	79	2694
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	13	34	2343	23	79	2694
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	53	47	3640	36	101	2896
Arrive On Green	0.03	0.03	0.71	0.71	0.06	0.83
Sat Flow, veh/h	1757	1568	5258	50	1740	3563
Grp Volume(v), veh/h	13	34	1529	837	79	2694
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1818	1740	1736
Q Serve(g_s), s	0.5	1.6	18.4	18.5	3.4	43.6
Cycle Q Clear(g_c), s	0.5	1.6	18.4	18.5	3.4	43.6
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	53	47	2376	1299	101	2896
V/C Ratio(X)	0.25	0.72	0.64	0.64	0.79	0.93
Avail Cap(c_a), veh/h	69	62	2376	1299	213	3047
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	36.5	5.7	5.7	35.3	4.7
Incr Delay (d2), s/veh	0.9	15.0	0.5	0.9	5.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.9	8.4	9.4	1.8	21.7
LnGrp Delay(d),s/veh	36.9	51.6	6.2	6.6	40.3	10.2
LnGrp LOS	D	D	A	A	D	B
Approach Vol, veh/h	47		2366			2773
Approach Delay, s/veh	47.5		6.3			11.1
Approach LOS	D		A			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		68.2			9.1	59.1		7.8
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		66.7			* 9.3	52.7		3.0
Max Q Clear Time (g_c+I1), s		45.6			5.4	20.5		3.6
Green Ext Time (p_c), s		17.8			0.0	27.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	1828	773	61	1518	875	613	1675	106	935	1669	126
Future Volume (veh/h)	153	1828	773	61	1518	875	613	1675	106	935	1669	126
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	153	1828	773	61	1518	875	613	1675	106	935	1669	126
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	114	1392	623	68	1357	607	402	1311	408	569	1552	483
Arrive On Green	0.03	0.41	0.41	0.02	0.40	0.40	0.12	0.26	0.26	0.17	0.31	0.31
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	153	1828	773	61	1518	875	613	1675	106	935	1669	126
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	5.0	59.4	59.4	2.7	57.9	57.9	17.3	38.2	7.8	24.5	45.2	8.8
Cycle Q Clear(g_c), s	5.0	59.4	59.4	2.7	57.9	57.9	17.3	38.2	7.8	24.5	45.2	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	114	1392	623	68	1357	607	402	1311	408	569	1552	483
V/C Ratio(X)	1.34	1.31	1.24	0.89	1.12	1.44	1.53	1.28	0.26	1.64	1.08	0.26
Avail Cap(c_a), veh/h	114	1392	623	68	1357	607	402	1311	408	569	1552	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.1	43.0	43.0	71.0	43.7	43.7	64.0	53.6	42.4	60.4	50.0	37.5
Incr Delay (d2), s/veh	201.5	146.1	121.7	70.9	63.8	207.8	248.7	130.9	0.1	297.1	46.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	56.1	46.0	1.9	39.2	59.4	21.9	33.4	3.4	34.9	27.3	3.8
LnGrp Delay(d),s/veh	271.6	189.0	164.7	141.9	107.5	251.5	312.7	184.4	42.5	357.5	96.3	37.6
LnGrp LOS	F	F	F	F	F	F	F	F	D	F	F	D
Approach Vol, veh/h		2754			2454			2394			2730	
Approach Delay, s/veh		186.8			159.7			211.0			183.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	63.3	22.0	50.0	8.5	64.8	29.0	43.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.5	4.8
Max Green Setting (Gmax), s	5.0	* 58	* 17	45.2	3.0	* 59	24.5	38.2
Max Q Clear Time (g_c+I1), s	7.0	59.9	19.3	47.2	4.7	61.4	26.5	40.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	185.0
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	444	839	252	373	704	219	108	1704	446	182	2034	203
Future Volume (veh/h)	444	839	252	373	704	219	108	1704	446	182	2034	203
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	444	839	252	373	704	219	108	1704	446	182	2034	203
Adj No. of Lanes	1	1	1	2	2	1	1	3	1	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	433	674	573	310	727	325	92	1567	493	146	1744	543
Arrive On Green	0.25	0.37	0.37	0.09	0.21	0.21	0.05	0.31	0.31	0.08	0.35	0.35
Sat Flow, veh/h	1757	1845	1568	3408	3505	1568	1740	4988	1568	1757	4988	1553
Grp Volume(v), veh/h	444	839	252	373	704	219	108	1704	446	182	2034	203
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	1752	1568	1740	1663	1568	1757	1663	1553
Q Serve(g_s), s	34.7	51.4	17.1	12.8	28.0	18.1	7.4	44.2	38.4	11.7	49.2	13.8
Cycle Q Clear(g_c), s	34.7	51.4	17.1	12.8	28.0	18.1	7.4	44.2	38.4	11.7	49.2	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	433	674	573	310	727	325	92	1567	493	146	1744	543
V/C Ratio(X)	1.02	1.25	0.44	1.20	0.97	0.67	1.18	1.09	0.91	1.25	1.17	0.37
Avail Cap(c_a), veh/h	433	674	573	310	727	325	92	1567	493	146	1744	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	44.7	33.8	63.9	55.3	51.4	66.7	48.3	46.2	64.5	45.8	34.2
Incr Delay (d2), s/veh	49.7	122.5	0.2	118.0	25.4	4.4	150.5	50.5	19.7	155.1	81.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.7	48.9	7.4	11.1	16.2	8.2	7.4	27.5	19.2	11.9	35.6	5.9
LnGrp Delay(d),s/veh	102.7	167.1	34.0	181.9	80.7	55.8	217.2	98.8	66.0	219.6	127.2	34.4
LnGrp LOS	F	F	C	F	F	E	F	F	E	F	F	C
Approach Vol, veh/h		1535			1296			2258			2419	
Approach Delay, s/veh		126.6			105.6			98.0			126.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	54.0	40.2	34.5	17.0	49.0	18.0	56.7
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 7.4	49.2	34.7	* 29	* 12	44.2	* 13	* 51
Max Q Clear Time (g_c+I1), s	9.4	51.2	36.7	30.0	13.7	46.2	14.8	53.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	114.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	942	343	220	961	684	137	1213	18	844	1837	238
Future Volume (veh/h)	358	942	343	220	961	684	137	1213	18	844	1837	238
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	358	942	343	220	961	684	137	1213	18	844	1837	238
Adj No. of Lanes	2	1	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	403	726	617	164	1291	578	135	1097	345	636	1829	569
Arrive On Green	0.12	0.39	0.39	0.09	0.37	0.37	0.04	0.22	0.22	0.19	0.37	0.37
Sat Flow, veh/h	3408	1845	1568	1757	3505	1568	3375	4988	1568	3408	4988	1553
Grp Volume(v), veh/h	358	942	343	220	961	684	137	1213	18	844	1837	238
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1757	1752	1568	1688	1663	1568	1704	1663	1553
Q Serve(g_s), s	15.5	59.0	25.5	14.0	35.8	55.3	6.0	33.0	1.4	28.0	55.0	17.2
Cycle Q Clear(g_c), s	15.5	59.0	25.5	14.0	35.8	55.3	6.0	33.0	1.4	28.0	55.0	17.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	403	726	617	164	1291	578	135	1097	345	636	1829	569
V/C Ratio(X)	0.89	1.30	0.56	1.34	0.74	1.18	1.01	1.11	0.05	1.33	1.00	0.42
Avail Cap(c_a), veh/h	432	726	617	164	1291	578	135	1097	345	636	1829	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	45.5	35.3	68.0	41.2	47.4	72.0	58.5	46.2	61.0	47.5	35.5
Incr Delay (d2), s/veh	18.9	144.3	1.1	188.9	2.4	99.5	81.4	60.9	0.1	157.7	22.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	59.1	11.2	15.4	17.8	39.8	4.3	21.3	0.6	27.1	29.0	7.5
LnGrp Delay(d),s/veh	84.1	189.8	36.4	256.9	43.6	146.9	153.5	119.4	46.2	218.7	69.6	36.0
LnGrp LOS	F	F	D	F	D	F	F	F	D	F	F	D
Approach Vol, veh/h		1643			1865			1368			2919	
Approach Delay, s/veh		134.7			106.6			121.8			110.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	59.0	21.7	59.3	32.0	37.0	18.0	63.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	55.0	19.0	54.0	28.0	33.0	14.0	59.0
Max Q Clear Time (g_c+I1), s	8.0	57.0	17.5	57.3	30.0	35.0	16.0	61.0
Green Ext Time (p_c), s	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	116.5
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	821	455	804	91	557	9	188	1038	11	22	1978	1340
Future Volume (veh/h)	821	455	804	91	557	9	188	1038	11	22	1978	1340
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	821	455	804	91	557	9	188	1038	11	22	1978	1340
Adj No. of Lanes	1	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	545	1410	631	87	493	221	171	1907	594	42	1737	541
Arrive On Green	0.31	0.41	0.41	0.05	0.14	0.14	0.05	0.38	0.38	0.01	0.35	0.35
Sat Flow, veh/h	1740	3471	1553	1740	3471	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	821	455	804	91	557	9	188	1038	11	22	1978	1340
Grp Sat Flow(s),veh/h/ln	1740	1736	1553	1740	1736	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	43.9	12.6	56.9	7.0	19.9	0.7	7.1	22.7	0.6	0.9	48.8	48.8
Cycle Q Clear(g_c), s	43.9	12.6	56.9	7.0	19.9	0.7	7.1	22.7	0.6	0.9	48.8	48.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	545	1410	631	87	493	221	171	1907	594	42	1737	541
V/C Ratio(X)	1.51	0.32	1.27	1.05	1.13	0.04	1.10	0.54	0.02	0.53	1.14	2.48
Avail Cap(c_a), veh/h	545	1410	631	87	493	221	171	1907	594	133	1737	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	28.4	41.6	66.6	60.1	51.9	66.5	33.7	26.9	68.8	45.7	45.7
Incr Delay (d2), s/veh	237.1	0.6	135.7	109.8	81.2	0.3	97.8	1.1	0.1	3.8	69.9	670.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	57.0	6.1	48.2	6.0	15.1	0.3	5.6	10.7	0.3	0.4	33.6	121.6
LnGrp Delay(d),s/veh	285.2	29.0	177.3	177.3	141.3	52.2	164.3	34.9	27.0	72.6	115.6	716.0
LnGrp LOS	F	C	F	F	F	D	F	C	C	E	F	F
Approach Vol, veh/h		2080			657			1237			3340	
Approach Delay, s/veh		187.5			145.1			54.5			356.2	
Approach LOS		F			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	54.0	49.0	25.1	7.2	58.8	12.0	62.1
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 7.1	* 49	* 44	* 20	5.5	* 50	7.0	* 57
Max Q Clear Time (g_c+I1), s	9.1	50.8	45.9	21.9	2.9	24.7	9.0	58.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	25.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	238.2
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	796	483	151	694	40	334	1197	103	240	2471	99
Future Volume (veh/h)	97	796	483	151	694	40	334	1197	103	240	2471	99
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	97	796	483	151	694	40	334	1197	103	240	2471	99
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	120	762	341	160	803	359	337	2490	775	285	2413	751
Arrive On Green	0.04	0.22	0.22	0.05	0.23	0.23	0.10	0.50	0.50	0.08	0.48	0.48
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	97	796	483	151	694	40	334	1197	103	240	2471	99
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	4.1	31.6	31.6	6.4	27.7	2.9	14.4	23.0	5.2	10.2	70.3	5.1
Cycle Q Clear(g_c), s	4.1	31.6	31.6	6.4	27.7	2.9	14.4	23.0	5.2	10.2	70.3	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	762	341	160	803	359	337	2490	775	285	2413	751
V/C Ratio(X)	0.81	1.04	1.42	0.95	0.86	0.11	0.99	0.48	0.13	0.84	1.02	0.13
Avail Cap(c_a), veh/h	120	762	341	160	803	359	337	2490	775	390	2413	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.6	56.9	56.9	69.1	53.8	44.3	65.3	24.0	19.5	65.6	37.5	20.7
Incr Delay (d2), s/veh	30.9	44.7	203.9	54.9	11.1	0.4	46.6	0.5	0.2	8.7	24.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	20.0	33.0	4.2	14.6	1.3	8.9	10.6	2.3	5.1	37.7	2.3
LnGrp Delay(d),s/veh	100.5	101.6	260.7	124.0	64.9	44.7	111.9	24.4	19.8	74.3	62.2	20.9
LnGrp LOS	F	F	F	F	E	D	F	C	B	E	F	C
Approach Vol, veh/h		1376			885			1634			2810	
Approach Delay, s/veh		157.4			74.1			42.0			61.8	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	75.8	10.6	38.9	17.8	78.0	12.3	37.2
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	14.5	* 70	5.1	33.1	16.8	* 68	6.8	* 32
Max Q Clear Time (g_c+I1), s	16.4	72.3	6.1	29.7	12.2	25.0	8.4	33.6
Green Ext Time (p_c), s	0.0	0.0	0.0	3.4	0.1	42.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	78.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1202	100	124	1046	30	112	80	104	92	410	19
Future Volume (veh/h)	31	1202	100	124	1046	30	112	80	104	92	410	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	31	1202	100	124	1046	30	112	80	104	92	410	19
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	38	1295	108	145	1589	46	141	490	417	118	467	397
Arrive On Green	0.02	0.40	0.40	0.08	0.46	0.46	0.08	0.27	0.27	0.07	0.25	0.25
Sat Flow, veh/h	1757	3277	272	1757	3480	100	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	31	642	660	124	527	549	112	80	104	92	410	19
Grp Sat Flow(s),veh/h/ln	1757	1752	1797	1757	1752	1827	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.5	29.6	29.7	5.9	19.8	19.8	5.3	2.8	4.4	4.4	18.1	0.8
Cycle Q Clear(g_c), s	1.5	29.6	29.7	5.9	19.8	19.8	5.3	2.8	4.4	4.4	18.1	0.8
Prop In Lane	1.00		0.15	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	38	692	710	145	800	834	141	490	417	118	467	397
V/C Ratio(X)	0.83	0.93	0.93	0.85	0.66	0.66	0.80	0.16	0.25	0.78	0.88	0.05
Avail Cap(c_a), veh/h	104	725	743	145	800	834	145	490	417	208	545	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	24.4	24.5	38.3	17.9	17.9	38.2	23.8	24.4	38.9	30.4	23.9
Incr Delay (d2), s/veh	34.3	17.6	17.7	35.9	2.0	1.9	25.1	0.2	0.3	10.6	13.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	17.7	18.2	4.3	10.0	10.4	3.6	1.4	1.9	2.5	11.0	0.3
LnGrp Delay(d),s/veh	75.6	42.0	42.2	74.2	19.9	19.8	63.4	24.0	24.7	49.4	44.0	24.0
LnGrp LOS	E	D	D	E	B	B	E	C	C	D	D	C
Approach Vol, veh/h		1333			1200			296			521	
Approach Delay, s/veh		42.9			25.4			39.1			44.2	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	26.5	11.0	37.4	10.8	25.4	5.8	42.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	22.0	7.0	35.0	7.0	25.0	5.0	37.0
Max Q Clear Time (g_c+I1), s	6.4	6.4	7.9	31.7	7.3	20.1	3.5	21.8
Green Ext Time (p_c), s	0.1	3.1	0.0	1.7	0.0	1.3	0.0	12.4

Intersection Summary	
HCM 2010 Ctrl Delay	36.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	1249	518	91	1235	265	575	191	8	318	374	87
Future Volume (veh/h)	77	1249	518	91	1235	265	575	191	8	318	374	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	77	1249	518	91	1235	265	575	191	8	318	374	87
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	47	1145	454	35	1324	281	480	480	408	258	246	209
Arrive On Green	0.03	0.47	0.47	0.02	0.46	0.46	0.27	0.26	0.26	0.15	0.13	0.13
Sat Flow, veh/h	1757	2453	972	1757	2878	611	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	77	876	891	91	747	753	575	191	8	318	374	87
Grp Sat Flow(s),veh/h/ln	1757	1752	1673	1757	1752	1737	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.0	70.0	70.0	3.0	60.2	62.0	41.0	12.8	0.6	22.0	20.0	7.6
Cycle Q Clear(g_c), s	4.0	70.0	70.0	3.0	60.2	62.0	41.0	12.8	0.6	22.0	20.0	7.6
Prop In Lane	1.00		0.58	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	818	781	35	806	799	480	480	408	258	246	209
V/C Ratio(X)	1.64	1.07	1.14	2.59	0.93	0.94	1.20	0.40	0.02	1.23	1.52	0.42
Avail Cap(c_a), veh/h	47	818	781	35	806	799	480	480	408	258	246	209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.0	40.0	40.0	73.5	38.1	38.6	54.5	45.8	41.3	64.0	65.0	59.6
Incr Delay (d2), s/veh	367.0	52.2	78.7	790.9	16.6	19.3	107.6	0.5	0.0	134.3	254.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	45.7	49.4	9.2	32.8	34.0	34.2	6.6	0.2	20.3	27.5	3.4
LnGrp Delay(d),s/veh	440.0	92.2	118.7	864.4	54.7	57.9	162.1	46.3	41.3	198.3	319.0	61.0
LnGrp LOS	F	F	F	F	D	E	F	D	D	F	F	E
Approach Vol, veh/h		1844			1591			774			779	
Approach Delay, s/veh		119.5			102.5			132.3			240.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	43.0	7.0	74.0	45.0	24.0	8.0	73.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	39.0	3.0	70.0	41.0	20.0	4.0	69.0
Max Q Clear Time (g_c+I1), s	24.0	14.8	5.0	72.0	43.0	22.0	6.0	64.0
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.0	0.0	0.0	4.9

Intersection Summary		
HCM 2010 Ctrl Delay		135.0
HCM 2010 LOS		F

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	506	9	68	580	3	10	46	63	56	132	66
Future Volume (veh/h)	0	506	9	68	580	3	10	46	63	56	132	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1900	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	0	506	9	68	580	3	10	46	63	56	132	66
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	6	1597	28	580	1621	8	158	179	218	222	244	107
Arrive On Green	0.00	0.46	0.46	0.46	0.46	0.46	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1740	3490	62	865	3541	18	61	717	876	244	982	431
Grp Volume(v), veh/h	0	251	264	68	284	299	119	0	0	254	0	0
Grp Sat Flow(s),veh/h/ln	1740	1736	1816	865	1736	1824	1655	0	0	1657	0	0
Q Serve(g_s), s	0.0	2.5	2.5	1.5	2.9	2.9	0.0	0.0	0.0	1.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	2.5	2.5	4.0	2.9	2.9	1.6	0.0	0.0	3.6	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.01	0.08		0.53	0.22		0.26
Lane Grp Cap(c), veh/h	6	794	831	580	794	835	555	0	0	573	0	0
V/C Ratio(X)	0.00	0.32	0.32	0.12	0.36	0.36	0.21	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	511	1910	1998	756	1146	1204	864	0	0	881	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.7	4.7	6.0	4.8	4.8	8.3	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.1	0.3	0.3	0.2	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.3	0.4	1.4	1.5	0.7	0.0	0.0	1.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	4.9	4.9	6.0	5.1	5.1	8.5	0.0	0.0	9.5	0.0	0.0
LnGrp LOS		A	A	A	A	A	A			A		
Approach Vol, veh/h		515			651			119			254	
Approach Delay, s/veh		4.9			5.2			8.5			9.5	
Approach LOS		A			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		10.8		16.5		10.8	0.0	16.5
Change Period (Y+Rc), s		4.0		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		12.0		30.0		12.0	8.0	18.0
Max Q Clear Time (g_c+I1), s		3.6		4.5		5.6	0.0	6.0
Green Ext Time (p_c), s		1.4		8.0		1.2	0.0	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	853	161	196	828	364	131	430	116	356	520	22
Future Volume (veh/h)	65	853	161	196	828	364	131	430	116	356	520	22
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	65	853	161	196	828	364	131	430	116	356	520	22
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	82	897	169	201	881	386	153	433	368	361	650	553
Arrive On Green	0.05	0.30	0.30	0.11	0.37	0.37	0.09	0.23	0.23	0.21	0.35	0.35
Sat Flow, veh/h	1757	2944	556	1757	2374	1040	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	65	508	506	196	610	582	131	430	116	356	520	22
Grp Sat Flow(s),veh/h/ln	1757	1752	1747	1757	1752	1661	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	5.1	39.7	39.7	15.5	47.0	47.4	10.3	32.5	8.5	28.2	35.5	1.3
Cycle Q Clear(g_c), s	5.1	39.7	39.7	15.5	47.0	47.4	10.3	32.5	8.5	28.2	35.5	1.3
Prop In Lane	1.00		0.32	1.00		0.63	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	534	532	201	650	616	153	433	368	361	650	553
V/C Ratio(X)	0.79	0.95	0.95	0.97	0.94	0.94	0.85	0.99	0.32	0.99	0.80	0.04
Avail Cap(c_a), veh/h	83	539	537	201	652	618	178	433	368	361	650	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.0	47.6	47.6	61.7	42.4	42.6	62.9	53.4	44.2	55.4	40.8	29.7
Incr Delay (d2), s/veh	35.9	26.5	26.6	55.8	21.2	22.9	25.2	41.5	0.2	43.7	6.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	23.1	23.0	10.6	26.6	25.6	6.1	21.5	3.7	18.0	19.2	0.6
LnGrp Delay(d),s/veh	101.8	74.1	74.1	117.5	63.7	65.5	88.1	94.9	44.4	99.1	47.3	29.7
LnGrp LOS	F	E	E	F	E	E	F	F	D	F	D	C
Approach Vol, veh/h		1079			1388			677			898	
Approach Delay, s/veh		75.8			72.0			84.9			67.4	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	56.7	17.7	53.7	21.0	47.4	34.2	37.2
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 6.6	52.0	14.2	* 47	16.0	* 43	28.7	* 33
Max Q Clear Time (g_c+I1), s	7.1	49.4	12.3	37.5	17.5	41.7	30.2	34.5
Green Ext Time (p_c), s	0.0	1.7	0.0	1.9	0.0	1.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	74.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	286	2049	114	324	1944	1	229	1489	258	30	1589	212
Future Volume (veh/h)	286	2049	114	324	1944	1	229	1489	258	30	1589	212
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	286	2049	114	324	1944	1	229	1489	258	30	1589	212
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	250	1729	554	273	1762	564	182	1557	697	54	1425	638
Arrive On Green	0.07	0.35	0.35	0.08	0.36	0.36	0.05	0.44	0.44	0.02	0.41	0.41
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	286	2049	114	324	1944	1	229	1489	258	30	1589	212
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	11.0	53.0	7.6	12.0	54.0	0.1	8.0	61.6	16.4	1.3	61.0	13.9
Cycle Q Clear(g_c), s	11.0	53.0	7.6	12.0	54.0	0.1	8.0	61.6	16.4	1.3	61.0	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	250	1729	554	273	1762	564	182	1557	697	54	1425	638
V/C Ratio(X)	1.14	1.19	0.21	1.19	1.10	0.00	1.26	0.96	0.37	0.56	1.11	0.33
Avail Cap(c_a), veh/h	250	1729	554	273	1762	564	182	1557	697	91	1425	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.5	48.5	33.8	69.0	48.0	30.7	71.0	40.3	27.7	73.3	44.5	30.5
Incr Delay (d2), s/veh	101.5	89.5	0.2	115.3	55.7	0.0	153.5	13.8	0.3	8.8	61.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	38.2	3.3	10.0	33.4	0.0	7.6	32.8	7.2	0.7	41.8	6.1
LnGrp Delay(d),s/veh	171.0	138.0	34.0	184.3	103.7	30.7	224.5	54.1	28.1	82.1	106.4	30.8
LnGrp LOS	F	F	C	F	F	C	F	D	C	F	F	C
Approach Vol, veh/h		2449			2269			1976			1831	
Approach Delay, s/veh		137.0			115.2			70.5			97.3	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	70.6	16.0	57.0	12.0	65.0	15.0	58.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	65.0	12.0	53.0	8.0	61.0	11.0	54.0
Max Q Clear Time (g_c+I1), s	3.3	63.6	14.0	55.0	10.0	63.0	13.0	56.0
Green Ext Time (p_c), s	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	107.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	805	124	512	971	135	71	1129	660	205	1386	442
Future Volume (veh/h)	240	805	124	512	971	135	71	1129	660	205	1386	442
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1900	1900	1845	1845
Adj Flow Rate, veh/h	240	805	124	512	971	135	71	1129	660	205	1386	442
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	82	467	72	164	618	86	21	337	197	77	522	512
Arrive On Green	0.05	0.15	0.15	0.09	0.20	0.20	0.32	0.32	0.32	0.33	0.33	0.33
Sat Flow, veh/h	1757	3045	469	1757	3092	430	66	1052	615	236	1597	1568
Grp Volume(v), veh/h	240	463	466	512	550	556	1860	0	0	1591	0	442
Grp Sat Flow(s),veh/h/ln	1757	1752	1762	1757	1752	1769	1733	0	0	1833	0	1568
Q Serve(g_s), s	7.0	23.0	23.0	14.0	30.0	30.0	48.0	0.0	0.0	49.0	0.0	39.6
Cycle Q Clear(g_c), s	7.0	23.0	23.0	14.0	30.0	30.0	48.0	0.0	0.0	49.0	0.0	39.6
Prop In Lane	1.00		0.27	1.00		0.24	0.04		0.35	0.13		1.00
Lane Grp Cap(c), veh/h	82	269	270	164	350	354	555	0	0	599	0	512
V/C Ratio(X)	2.93	1.72	1.72	3.12	1.57	1.57	3.35	0.00	0.00	2.66	0.00	0.86
Avail Cap(c_a), veh/h	82	269	270	164	350	354	555	0	0	599	0	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	71.5	63.5	63.5	68.0	60.0	60.0	51.0	0.0	0.0	50.5	0.0	47.4
Incr Delay (d2), s/veh	899.5	341.0	341.0	971.0	269.9	270.3	1064.0	0.0	0.0	750.6	0.0	14.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.9	36.6	36.8	51.0	40.8	41.2	186.8	0.0	0.0	149.6	0.0	19.2
LnGrp Delay(d),s/veh	971.0	404.5	404.5	1039.0	329.9	330.3	1115.0	0.0	0.0	801.1	0.0	61.5
LnGrp LOS	F	F	F	F	F	F	F			F		E
Approach Vol, veh/h		1169			1618			1860			2033	
Approach Delay, s/veh		520.8			554.4			1115.0			640.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		52.0	18.0	27.0		53.0	11.0	34.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		48.0	14.0	23.0		49.0	7.0	30.0
Max Q Clear Time (g_c+I1), s		50.0	16.0	25.0		51.0	9.0	32.0
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		730.8
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1247	0	468	0	657	1700	0	1194	804
Future Volume (veh/h)	0	0	0	1247	0	468	0	657	1700	0	1194	804
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1827	0	1827	0	1827	1827	0	1827	1827
Adj Flow Rate, veh/h				1247	0	468	0	657	0	0	1194	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				4	0	4	0	4	4	0	4	4
Cap, veh/h				1412	0	1143	0	1807	563	0	1807	563
Arrive On Green				0.42	0.00	0.42	0.00	0.36	0.00	0.00	0.36	0.00
Sat Flow, veh/h				3375	0	2733	0	5152	1553	0	5152	1553
Grp Volume(v), veh/h				1247	0	468	0	657	0	0	1194	0
Grp Sat Flow(s),veh/h/ln				1688	0	1367	0	1663	1553	0	1663	1553
Q Serve(g_s), s				15.1	0.0	5.3	0.0	4.3	0.0	0.0	8.9	0.0
Cycle Q Clear(g_c), s				15.1	0.0	5.3	0.0	4.3	0.0	0.0	8.9	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1412	0	1143	0	1807	563	0	1807	563
V/C Ratio(X)				0.88	0.00	0.41	0.00	0.36	0.00	0.00	0.66	0.00
Avail Cap(c_a), veh/h				2015	0	1632	0	2876	895	0	2696	839
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.9	0.0	9.0	0.0	10.4	0.0	0.0	11.8	0.0
Incr Delay (d2), s/veh				2.7	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.5	0.0	2.0	0.0	2.0	0.0	0.0	4.0	0.0
LnGrp Delay(d),s/veh				14.6	0.0	9.1	0.0	10.4	0.0	0.0	12.0	0.0
LnGrp LOS				B		A		B			B	
Approach Vol, veh/h					1715			657			1194	
Approach Delay, s/veh					13.1			10.4			12.0	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		21.1		23.1		21.1		
Change Period (Y+Rc), s		5.1		4.6		* 5.1		
Max Green Setting (Gmax), s		23.9		26.4		* 26		
Max Q Clear Time (g_c+I1), s		10.9		17.1		6.3		
Green Ext Time (p_c), s		5.2		1.4		6.0		

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	31	17	472	44	537	48	2143	294	530	2550	59
Future Volume (veh/h)	73	31	17	472	44	537	48	2143	294	530	2550	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	73	31	17	472	44	537	48	2143	294	530	2550	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	66	42	23	560	303	258	61	2396	746	570	3095	71
Arrive On Green	0.04	0.04	0.04	0.16	0.16	0.16	0.04	0.48	0.48	0.17	0.62	0.62
Sat Flow, veh/h	1757	1121	615	3408	1845	1568	1740	4988	1553	3375	5016	116
Grp Volume(v), veh/h	73	0	48	472	44	537	48	2143	294	530	1686	923
Grp Sat Flow(s),veh/h/ln	1757	0	1736	1704	1845	1568	1740	1663	1553	1688	1663	1807
Q Serve(g_s), s	5.5	0.0	4.0	19.6	3.0	24.0	4.0	57.2	17.7	22.6	57.6	58.4
Cycle Q Clear(g_c), s	5.5	0.0	4.0	19.6	3.0	24.0	4.0	57.2	17.7	22.6	57.6	58.4
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	66	0	65	560	303	258	61	2396	746	570	2051	1115
V/C Ratio(X)	1.10	0.00	0.73	0.84	0.15	2.08	0.78	0.89	0.39	0.93	0.82	0.83
Avail Cap(c_a), veh/h	66	0	65	560	303	258	126	2503	779	589	2051	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	0.0	69.6	59.2	52.2	61.0	69.9	34.6	24.3	59.8	21.7	21.9
Incr Delay (d2), s/veh	141.8	0.0	30.9	10.6	0.1	501.0	7.8	4.3	0.1	20.5	2.6	5.0
Initial Q Delay(d3),s/veh	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	2.5	10.1	1.5	46.2	2.1	27.1	7.6	12.2	27.0	30.5
LnGrp Delay(d),s/veh	213.0	0.0	100.4	69.8	52.3	562.0	77.7	38.8	24.4	80.4	24.4	26.9
LnGrp LOS	F		F	E	D	F	E	D	C	F	C	C
Approach Vol, veh/h		121			1053			2485			3139	
Approach Delay, s/veh		168.4			320.1			37.9			34.6	
Approach LOS		F			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.2	95.3		11.0	30.2	75.4		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 89		5.5	25.5	* 73		24.0
Max Q Clear Time (g_c+I1), s	6.0	60.4		7.5	24.6	59.2		26.0
Green Ext Time (p_c), s	0.0	23.1		0.0	0.1	11.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	82.4
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

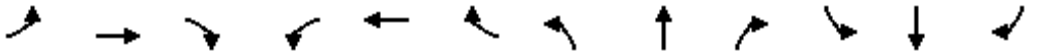
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Future Volume (veh/h)	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	208	1064	476	419	1280	573	370	1245	388	594	1576	491
Arrive On Green	0.06	0.30	0.30	0.12	0.37	0.37	0.11	0.25	0.25	0.18	0.32	0.32
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.1	45.7	44.1	18.5	42.5	55.0	16.5	31.2	12.4	26.5	47.6	13.6
Cycle Q Clear(g_c), s	8.1	45.7	44.1	18.5	42.5	55.0	16.5	31.2	12.4	26.5	47.6	13.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	1064	476	419	1280	573	370	1245	388	594	1576	491
V/C Ratio(X)	0.88	1.19	0.98	1.38	0.84	1.29	1.34	0.87	0.40	1.39	1.16	0.37
Avail Cap(c_a), veh/h	208	1064	476	419	1280	573	370	1245	388	594	1576	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.2	52.5	51.9	66.1	43.8	47.8	67.1	54.1	47.1	62.1	51.5	39.9
Incr Delay (d2), s/veh	32.0	93.2	34.6	184.6	5.0	144.2	169.6	6.4	0.2	185.3	78.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	35.8	23.6	19.4	21.4	46.7	16.4	15.1	5.4	27.6	33.2	5.9
LnGrp Delay(d),s/veh	102.2	145.7	86.5	250.7	48.9	192.0	236.7	60.5	47.3	247.3	129.8	40.0
LnGrp LOS	F	F	F	F	D	F	F	E	D	F	F	D
Approach Vol, veh/h		1909			2396			1728			2830	
Approach Delay, s/veh		127.1			141.7			109.8			158.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	53.2	14.7	60.7	32.0	43.2	24.0	51.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	16.5	* 48	9.2	* 55	26.5	* 37	18.5	* 45
Max Q Clear Time (g_c+I1), s	18.5	49.6	10.1	57.0	28.5	33.2	20.5	47.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	137.6
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	2208	58	290	1548	492	476	1059	118	521	2559	161
Future Volume (veh/h)	260	2208	58	290	1548	492	476	1059	118	521	2559	161
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	260	2208	58	290	1548	492	476	1059	118	521	2559	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	297	1655	530	231	1564	487	331	1466	456	563	1804	556
Arrive On Green	0.09	0.34	0.34	0.07	0.32	0.32	0.10	0.29	0.29	0.17	0.36	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	260	2208	58	290	1548	492	476	1059	118	521	2559	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	11.7	50.9	3.8	10.2	47.4	48.1	14.6	28.4	8.7	22.9	53.9	0.0
Cycle Q Clear(g_c), s	11.7	50.9	3.8	10.2	47.4	48.1	14.6	28.4	8.7	22.9	53.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	297	1655	530	231	1564	487	331	1466	456	563	1804	556
V/C Ratio(X)	0.88	1.33	0.11	1.26	0.99	1.01	1.44	0.72	0.26	0.93	1.42	0.00
Avail Cap(c_a), veh/h	297	1655	530	231	1564	487	331	1466	456	628	1804	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.7	49.8	34.2	70.2	51.0	51.2	67.9	47.9	40.9	61.8	48.3	0.0
Incr Delay (d2), s/veh	23.2	154.6	0.0	145.3	20.3	43.4	214.3	1.8	0.3	17.9	191.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	46.5	1.7	9.4	24.3	26.1	16.7	13.4	3.8	12.1	56.9	0.0
LnGrp Delay(d),s/veh	90.8	204.4	34.3	215.4	71.2	94.6	282.3	49.7	41.2	79.7	240.1	0.0
LnGrp LOS	F	F	C	F	E	F	F	D	D	E	F	
Approach Vol, veh/h		2526			2330			1653			3080	
Approach Delay, s/veh		188.8			94.1			116.0			213.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	59.0	17.8	53.7	30.1	48.9	15.0	56.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 15	53.9	* 14	47.6	28.0	40.9	* 10	* 51
Max Q Clear Time (g_c+I1), s	16.6	55.9	13.7	50.1	24.9	30.4	12.2	52.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	9.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	161.0
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	990	322	121	782	54	118	1246	458	17	2647	150
Future Volume (veh/h)	46	990	322	121	782	54	118	1246	458	17	2647	150
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	46	990	322	121	782	54	118	1246	458	17	2647	150
Adj No. of Lanes	2	1	0	2	2	1	1	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	78	585	190	80	1539	689	76	1405	515	35	1779	554
Arrive On Green	0.02	0.44	0.44	0.02	0.44	0.44	0.04	0.39	0.39	0.01	0.35	0.35
Sat Flow, veh/h	3408	1334	434	3408	3505	1568	1757	3635	1332	3408	5036	1568
Grp Volume(v), veh/h	46	0	1312	121	782	54	118	1150	554	17	2647	150
Grp Sat Flow(s),veh/h/ln	1704	0	1768	1704	1752	1568	1757	1679	1610	1704	1679	1568
Q Serve(g_s), s	2.0	0.0	65.8	3.5	24.2	3.0	6.5	48.0	48.2	0.7	53.0	10.3
Cycle Q Clear(g_c), s	2.0	0.0	65.8	3.5	24.2	3.0	6.5	48.0	48.2	0.7	53.0	10.3
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.83	1.00		1.00
Lane Grp Cap(c), veh/h	78	0	776	80	1539	689	76	1298	622	35	1779	554
V/C Ratio(X)	0.59	0.00	1.69	1.52	0.51	0.08	1.55	0.89	0.89	0.49	1.49	0.27
Avail Cap(c_a), veh/h	123	0	776	80	1539	689	76	1298	622	68	1779	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.6	0.0	42.1	73.2	30.4	24.4	71.8	42.9	43.0	73.9	48.5	34.7
Incr Delay (d2), s/veh	7.0	0.0	316.8	288.4	0.3	0.0	302.1	7.7	14.9	10.4	222.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	100.4	4.8	11.8	1.3	9.5	23.6	23.9	0.4	61.2	4.5
LnGrp Delay(d),s/veh	79.6	0.0	358.9	361.7	30.6	24.5	373.8	50.7	57.9	84.2	271.0	34.8
LnGrp LOS	E		F	F	C	C	F	D	E	F	F	C
Approach Vol, veh/h		1358			957			1822			2814	
Approach Delay, s/veh		349.4			72.1			73.8			257.3	
Approach LOS		F			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	58.0	9.0	71.0	7.0	63.0	8.9	71.1
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	6.5	53.0	3.5	* 66	3.0	56.5	5.4	* 64
Max Q Clear Time (g_c+I1), s	8.5	55.0	5.5	67.8	2.7	50.2	4.0	26.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	6.1	0.0	28.2

Intersection Summary	
HCM 2010 Ctrl Delay	201.7
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

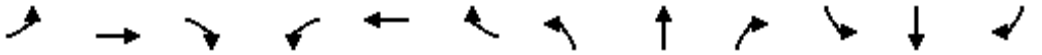
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	863	364	95	966	107	228	1076	100	201	2253	584
Future Volume (veh/h)	372	863	364	95	966	107	228	1076	100	201	2253	584
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1832	1900	1845	1798	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	372	863	364	95	966	107	228	1076	100	201	2253	584
Adj No. of Lanes	2	2	0	2	2	0	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	6	3	3	3	3	3	3
Cap, veh/h	352	802	337	118	827	92	216	2097	653	249	2145	668
Arrive On Green	0.10	0.34	0.34	0.03	0.27	0.27	0.06	0.42	0.42	0.07	0.43	0.43
Sat Flow, veh/h	3408	2392	1004	3408	3101	343	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	372	627	600	95	532	541	228	1076	100	201	2253	584
Grp Sat Flow(s),veh/h/ln	1704	1741	1655	1704	1708	1737	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	15.5	50.3	50.3	4.2	40.0	40.0	9.5	23.8	6.0	8.7	63.9	51.1
Cycle Q Clear(g_c), s	15.5	50.3	50.3	4.2	40.0	40.0	9.5	23.8	6.0	8.7	63.9	51.1
Prop In Lane	1.00		0.61	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	584	555	118	455	463	216	2097	653	249	2145	668
V/C Ratio(X)	1.06	1.07	1.08	0.80	1.17	1.17	1.06	0.51	0.15	0.81	1.05	0.87
Avail Cap(c_a), veh/h	352	584	555	118	455	463	216	2097	653	332	2145	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	49.8	49.9	71.9	55.0	55.0	70.3	32.5	27.3	68.5	43.1	39.4
Incr Delay (d2), s/veh	63.5	58.7	62.0	31.8	97.0	96.9	76.9	0.2	0.1	10.4	34.2	12.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	33.7	32.5	2.5	31.1	31.6	6.8	11.1	2.6	4.5	36.4	24.4
LnGrp Delay(d),s/veh	130.8	108.6	111.9	103.7	152.0	151.9	147.1	32.7	27.4	78.9	77.2	51.7
LnGrp LOS	F	F	F	F	F	F	F	C	C	E	F	D
Approach Vol, veh/h		1599			1168			1404			3038	
Approach Delay, s/veh		115.0			148.0			50.9			72.4	
Approach LOS		F			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	67.6	21.0	45.0	15.0	69.0	10.7	55.3
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	14.6	* 59	15.5	* 40	9.5	* 64	5.2	* 50
Max Q Clear Time (g_c+I1), s	10.7	25.8	17.5	42.0	11.5	65.9	6.2	52.3
Green Ext Time (p_c), s	0.2	31.3	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	89.9
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



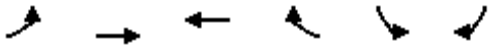
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	276	408	167	409	447	207	46	1147	112	437	2031	378
Future Volume (veh/h)	276	408	167	409	447	207	46	1147	112	437	2031	378
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1845	1827	1845	1845	1845
Adj Flow Rate, veh/h	276	408	167	409	447	207	46	1147	112	437	2031	378
Adj No. of Lanes	2	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	3	4	3	3	3
Cap, veh/h	334	507	227	429	1020	456	76	1564	482	483	2156	671
Arrive On Green	0.10	0.14	0.14	0.24	0.29	0.29	0.02	0.31	0.31	0.14	0.43	0.43
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	3375	5036	1553	3408	5036	1568
Grp Volume(v), veh/h	276	408	167	409	447	207	46	1147	112	437	2031	378
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1688	1679	1553	1704	1679	1568
Q Serve(g_s), s	10.6	15.0	13.6	30.5	13.8	14.3	1.8	27.0	7.1	16.8	51.4	24.1
Cycle Q Clear(g_c), s	10.6	15.0	13.6	30.5	13.8	14.3	1.8	27.0	7.1	16.8	51.4	24.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	334	507	227	429	1020	456	76	1564	482	483	2156	671
V/C Ratio(X)	0.83	0.80	0.74	0.95	0.44	0.45	0.60	0.73	0.23	0.91	0.94	0.56
Avail Cap(c_a), veh/h	472	817	366	430	1197	536	76	1564	482	503	2167	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	55.0	54.4	49.5	38.3	38.5	64.4	40.9	34.0	56.2	36.4	28.6
Incr Delay (d2), s/veh	8.1	1.2	1.7	31.2	0.1	0.3	9.3	1.8	0.2	18.8	9.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	7.3	6.0	18.5	6.7	6.3	0.9	12.8	3.1	9.1	25.5	10.6
LnGrp Delay(d),s/veh	66.9	56.2	56.2	80.7	38.4	38.8	73.6	42.7	34.3	74.9	45.5	29.7
LnGrp LOS	E	E	E	F	D	D	E	D	C	E	D	C
Approach Vol, veh/h		851			1063			1305			2846	
Approach Delay, s/veh		59.6			54.7			43.1			47.9	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.9	46.4	18.5	44.1	8.3	62.0	38.0	24.6
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 20	40.8	18.4	* 45	* 3	57.2	32.5	* 31
Max Q Clear Time (g_c+I1), s	18.8	29.0	12.6	16.3	3.8	53.4	32.5	17.0
Green Ext Time (p_c), s	0.0	11.4	0.5	2.4	0.0	3.5	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	2274	1641	657	777	316
Future Volume (veh/h)	141	2274	1641	657	777	316
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	141	2274	1641	657	777	316
Adj No. of Lanes	1	3	3	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	132	2644	1493	573	717	640
Arrive On Green	0.08	0.52	0.42	0.42	0.41	0.41
Sat Flow, veh/h	1757	5202	3749	1376	1757	1568
Grp Volume(v), veh/h	141	2274	1533	765	777	316
Grp Sat Flow(s),veh/h/ln	1757	1679	1679	1602	1757	1568
Q Serve(g_s), s	9.0	46.9	50.0	50.0	49.0	17.9
Cycle Q Clear(g_c), s	9.0	46.9	50.0	50.0	49.0	17.9
Prop In Lane	1.00			0.86	1.00	1.00
Lane Grp Cap(c), veh/h	132	2644	1399	667	717	640
V/C Ratio(X)	1.07	0.86	1.10	1.15	1.08	0.49
Avail Cap(c_a), veh/h	132	2644	1399	667	717	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	24.7	35.0	35.0	35.5	26.3
Incr Delay (d2), s/veh	98.4	3.1	54.8	82.5	58.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	22.4	33.8	37.4	35.3	16.8
LnGrp Delay(d),s/veh	153.9	27.8	89.8	117.5	93.9	26.9
LnGrp LOS	F	C	F	F	F	C
Approach Vol, veh/h		2415	2298		1093	
Approach Delay, s/veh		35.2	99.0		74.5	
Approach LOS		D	F		E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				67.0		53.0	13.0	54.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				63.0		49.0	9.0	50.0
Max Q Clear Time (g_c+I1), s				48.9		51.0	11.0	52.0
Green Ext Time (p_c), s				14.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1409	47	57	1016	0	19	0	135	0	148	0
Future Volume (veh/h)	0	1409	47	57	1016	0	19	0	135	0	148	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	1409	47	57	1016	0	19	0	135	0	148	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1675	56	69	2125	0	25	420	357	4	241	205
Arrive On Green	0.00	0.48	0.48	0.04	0.61	0.00	0.01	0.00	0.23	0.00	0.13	0.00
Sat Flow, veh/h	1757	3461	115	1757	3597	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	0	712	744	57	1016	0	19	0	135	0	148	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1824	1757	1752	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.0	17.0	17.1	1.6	7.7	0.0	0.5	0.0	3.5	0.0	3.7	0.0
Cycle Q Clear(g_c), s	0.0	17.0	17.1	1.6	7.7	0.0	0.5	0.0	3.5	0.0	3.7	0.0
Prop In Lane	1.00		0.06	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	848	883	69	2125	0	25	420	357	4	241	205
V/C Ratio(X)	0.00	0.84	0.84	0.82	0.48	0.00	0.77	0.00	0.38	0.00	0.61	0.00
Avail Cap(c_a), veh/h	109	945	984	109	2125	0	109	498	423	73	459	390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	10.8	10.8	23.0	5.3	0.0	23.7	0.0	15.7	0.0	19.8	0.0
Incr Delay (d2), s/veh	0.0	6.3	6.2	23.5	0.2	0.0	39.1	0.0	0.7	0.0	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.6	10.0	1.2	3.7	0.0	0.5	0.0	1.6	0.0	2.0	0.0
LnGrp Delay(d),s/veh	0.0	17.1	17.0	46.5	5.4	0.0	62.8	0.0	16.4	0.0	22.3	0.0
LnGrp LOS		B	B	D	A		E		B		C	
Approach Vol, veh/h		1456			1073			154			148	
Approach Delay, s/veh		17.0			7.6			22.1			22.3	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	15.0	5.9	27.3	4.7	10.3	0.0	33.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	2.0	13.0	3.0	26.0	3.0	12.0	3.0	26.0
Max Q Clear Time (g_c+I1), s	0.0	5.5	3.6	19.1	2.5	5.7	0.0	9.7
Green Ext Time (p_c), s	0.0	0.7	0.0	4.2	0.0	0.6	0.0	13.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	1805	98	956	1148	361	89	625	769	411	838	82
Future Volume (veh/h)	283	1805	98	956	1148	361	89	625	769	411	838	82
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	283	1805	98	956	1148	361	89	625	769	411	838	82
Adj No. of Lanes	2	3	1	2	3	1	1	1	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	326	1259	403	477	1476	473	109	317	389	204	1464	655
Arrive On Green	0.10	0.26	0.26	0.14	0.30	0.30	0.06	0.42	0.42	0.06	0.42	0.42
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	1757	754	927	3408	3505	1568
Grp Volume(v), veh/h	283	1805	98	956	1148	361	89	0	1394	411	838	82
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1757	0	1681	1704	1752	1568
Q Serve(g_s), s	12.3	38.6	7.4	21.0	32.1	31.3	7.5	0.0	63.0	9.0	27.4	4.8
Cycle Q Clear(g_c), s	12.3	38.6	7.4	21.0	32.1	31.3	7.5	0.0	63.0	9.0	27.4	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.55	1.00		1.00
Lane Grp Cap(c), veh/h	326	1259	403	477	1476	473	109	0	706	204	1464	655
V/C Ratio(X)	0.87	1.43	0.24	2.00	0.78	0.76	0.81	0.00	1.97	2.01	0.57	0.13
Avail Cap(c_a), veh/h	341	1259	403	477	1476	473	164	0	706	204	1464	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.9	55.7	44.1	64.5	47.8	47.5	69.5	0.0	43.5	70.5	33.4	26.8
Incr Delay (d2), s/veh	19.9	199.7	0.4	459.0	2.9	7.7	17.0	0.0	443.6	471.3	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	40.7	3.3	40.3	14.8	14.6	4.2	0.0	116.2	17.6	13.4	2.1
LnGrp Delay(d),s/veh	86.7	255.4	44.6	523.5	50.7	55.2	86.4	0.0	487.1	541.8	34.0	26.9
LnGrp LOS	F	F	D	F	D	E	F		F	F	C	C
Approach Vol, veh/h		2186			2465			1483			1331	
Approach Delay, s/veh		224.1			234.7			463.1			190.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	45.0	13.3	66.7	18.4	51.6	13.0	67.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	21.0	38.6	14.0	58.0	15.0	44.6	9.0	63.0
Max Q Clear Time (g_c+I1), s	23.0	40.6	9.5	29.4	14.3	34.1	11.0	65.0
Green Ext Time (p_c), s	0.0	0.0	0.1	24.5	0.1	10.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	269.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	577	37	168	638	12	39	299	157	2	657	123
Future Volume (veh/h)	9	577	37	168	638	12	39	299	157	2	657	123
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1759	1759	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	9	577	37	168	638	12	39	299	157	2	657	123
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	8	8	8	3	3	3	3	3	3
Cap, veh/h	48	579	37	166	720	14	64	470	247	50	611	114
Arrive On Green	0.03	0.35	0.35	0.10	0.42	0.42	0.04	0.41	0.41	0.03	0.40	0.40
Sat Flow, veh/h	1707	1667	107	1675	1721	32	1757	1140	599	1757	1512	283
Grp Volume(v), veh/h	9	0	614	168	0	650	39	0	456	2	0	780
Grp Sat Flow(s),veh/h/ln	1707	0	1774	1675	0	1754	1757	0	1739	1757	0	1795
Q Serve(g_s), s	0.7	0.0	48.8	14.0	0.0	48.4	3.1	0.0	29.5	0.2	0.0	57.0
Cycle Q Clear(g_c), s	0.7	0.0	48.8	14.0	0.0	48.4	3.1	0.0	29.5	0.2	0.0	57.0
Prop In Lane	1.00		0.06	1.00		0.02	1.00		0.34	1.00		0.16
Lane Grp Cap(c), veh/h	48	0	616	166	0	733	64	0	716	50	0	725
V/C Ratio(X)	0.19	0.00	1.00	1.01	0.00	0.89	0.61	0.00	0.64	0.04	0.00	1.08
Avail Cap(c_a), veh/h	169	0	616	166	0	733	174	0	716	174	0	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.0	0.0	46.0	63.6	0.0	38.0	67.0	0.0	33.1	66.7	0.0	42.1
Incr Delay (d2), s/veh	1.8	0.0	35.5	72.6	0.0	12.6	9.1	0.0	1.9	0.3	0.0	55.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	29.9	9.8	0.0	26.0	1.7	0.0	14.6	0.1	0.0	39.4
LnGrp Delay(d),s/veh	68.8	0.0	81.5	136.3	0.0	50.6	76.2	0.0	35.0	67.0	0.0	97.8
LnGrp LOS	E		F	F		D	E		C	E		F
Approach Vol, veh/h		623			818			495			782	
Approach Delay, s/veh		81.3			68.2			38.2			97.7	
Approach LOS		F			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	62.1	18.0	53.0	9.1	61.0	8.0	63.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	57.0	14.0	49.0	14.0	57.0	14.0	49.0
Max Q Clear Time (g_c+I1), s	2.2	31.5	16.0	50.8	5.1	59.0	2.7	50.4
Green Ext Time (p_c), s	0.0	10.2	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	74.2
HCM 2010 LOS	E

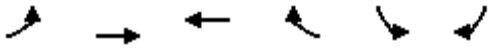
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1059	44	925	27	77	110	645	2110	17	146	1045	974
Future Volume (veh/h)	1059	44	925	27	77	110	645	2110	17	146	1045	974
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	1090	0	925	27	77	110	645	2110	17	146	1045	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	982	0	438	22	62	72	427	2249	18	111	1279	398
Arrive On Green	0.28	0.00	0.28	0.05	0.05	0.05	0.25	0.44	0.44	0.06	0.26	0.00
Sat Flow, veh/h	3480	0	1553	473	1348	1568	1740	5104	41	1740	4988	1553
Grp Volume(v), veh/h	1090	0	925	104	0	110	645	1374	753	146	1045	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1821	0	1568	1740	1663	1820	1740	1663	1553
Q Serve(g_s), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.1	47.1	7.6	23.5	0.0
Cycle Q Clear(g_c), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.1	47.1	7.6	23.5	0.0
Prop In Lane	1.00		1.00	0.26		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	982	0	438	84	0	72	427	1465	802	111	1279	398
V/C Ratio(X)	1.11	0.00	2.11	1.24	0.00	1.52	1.51	0.94	0.94	1.32	0.82	0.00
Avail Cap(c_a), veh/h	982	0	438	84	0	72	427	1487	814	111	1303	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	0.0	42.9	57.0	0.0	57.0	45.1	31.8	31.9	55.9	41.8	0.0
Incr Delay (d2), s/veh	63.9	0.0	507.6	176.1	0.0	293.7	241.8	11.4	18.0	193.3	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.8	0.0	76.2	6.9	0.0	8.3	42.7	23.9	27.6	9.6	11.3	0.0
LnGrp Delay(d),s/veh	106.7	0.0	550.5	233.0	0.0	350.7	286.9	43.2	49.8	249.2	45.6	0.0
LnGrp LOS	F		F	F		F	F	D	D	F	D	
Approach Vol, veh/h		2015			214			2772			1191	
Approach Delay, s/veh		310.4			293.5			101.7			70.5	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	34.0	35.4		11.0	12.0	57.4		39.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 29	31.2		5.5	* 7.6	* 53		33.7
Max Q Clear Time (g_c+I1), s	31.3	25.5		7.5	9.6	49.1		35.7
Green Ext Time (p_c), s	0.0	4.5		0.0	0.0	3.5		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		170.3
HCM 2010 LOS		F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	1254	1204	269	661	254
Future Volume (veh/h)	28	1254	1204	269	661	254
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	28	1254	1204	269	661	254
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	56	1895	1360	301	694	620
Arrive On Green	0.03	0.54	0.48	0.48	0.40	0.40
Sat Flow, veh/h	1757	3597	2946	631	1757	1568
Grp Volume(v), veh/h	28	1254	735	738	661	254
Grp Sat Flow(s),veh/h/ln	1757	1752	1752	1733	1757	1568
Q Serve(g_s), s	2.0	31.9	47.1	48.5	45.5	14.6
Cycle Q Clear(g_c), s	2.0	31.9	47.1	48.5	45.5	14.6
Prop In Lane	1.00			0.36	1.00	1.00
Lane Grp Cap(c), veh/h	56	1895	835	826	694	620
V/C Ratio(X)	0.50	0.66	0.88	0.89	0.95	0.41
Avail Cap(c_a), veh/h	225	2220	835	826	747	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.4	20.5	29.4	29.8	36.6	27.2
Incr Delay (d2), s/veh	6.6	0.6	10.7	12.2	21.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	15.5	25.1	26.0	26.1	14.1
LnGrp Delay(d),s/veh	66.0	21.1	40.1	42.0	57.8	27.7
LnGrp LOS	E	C	D	D	E	C
Approach Vol, veh/h		1282	1473		915	
Approach Delay, s/veh		22.1	41.1		49.4	
Approach LOS		C	D		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		71.4		53.3	8.0	63.4		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		79.0		53.0	16.0	59.0		
Max Q Clear Time (g_c+I1), s		33.9		47.5	4.0	50.5		
Green Ext Time (p_c), s		33.5		1.8	0.0	7.9		

Intersection Summary	
HCM 2010 Ctrl Delay	36.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	521	376	31	107	300	760	56	2176	59	876	1674	466
Future Volume (veh/h)	521	376	31	107	300	760	56	2176	59	876	1674	466
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	521	376	31	107	300	760	56	2176	59	876	1674	466
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	374	1263	103	151	368	1198	91	1816	49	623	2599	809
Arrive On Green	0.11	0.27	0.27	0.04	0.20	0.20	0.03	0.36	0.36	0.18	0.52	0.52
Sat Flow, veh/h	3408	4748	386	3514	1845	3136	3408	5042	136	3408	5036	1568
Grp Volume(v), veh/h	521	264	143	107	300	760	56	1447	788	876	1674	466
Grp Sat Flow(s),veh/h/ln	1704	1679	1777	1757	1845	1568	1704	1679	1821	1704	1679	1568
Q Serve(g_s), s	16.5	9.4	9.6	4.5	23.4	29.7	2.4	54.2	54.2	27.5	36.3	30.8
Cycle Q Clear(g_c), s	16.5	9.4	9.6	4.5	23.4	29.7	2.4	54.2	54.2	27.5	36.3	30.8
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	374	893	473	151	368	1198	91	1209	656	623	2599	809
V/C Ratio(X)	1.39	0.30	0.30	0.71	0.82	0.63	0.61	1.20	1.20	1.41	0.64	0.58
Avail Cap(c_a), veh/h	374	893	473	212	368	1198	134	1209	656	623	2599	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.0	44.0	44.1	71.1	57.6	37.9	72.5	48.2	48.2	61.5	26.4	25.1
Incr Delay (d2), s/veh	193.1	0.1	0.1	2.5	12.5	0.8	2.5	96.9	104.8	192.5	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.8	4.4	4.8	2.3	13.2	13.0	1.2	41.3	46.2	29.5	16.8	13.5
LnGrp Delay(d),s/veh	260.1	44.1	44.2	73.6	70.1	38.8	75.0	145.1	153.0	254.0	26.8	25.7
LnGrp LOS	F	D	D	E	E	D	E	F	F	F	C	C
Approach Vol, veh/h		928			1167			2291			3016	
Approach Delay, s/veh		165.4			50.0			146.1			92.6	
Approach LOS		F			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	83.3	22.0	35.7	33.0	59.8	12.0	45.7
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	5.9	75.5	16.5	* 30	27.5	* 54	9.1	* 37
Max Q Clear Time (g_c+I1), s	4.4	38.3	18.5	31.7	29.5	56.2	6.5	11.6
Green Ext Time (p_c), s	0.0	22.3	0.0	0.0	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	111.6
HCM 2010 LOS	F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	103	44	69	49	159	17	1678	31	71	1666	51
Future Volume (veh/h)	311	103	44	69	49	159	17	1678	31	71	1666	51
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	229	218	44	59	63	159	17	1678	31	71	1666	51
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	301	255	52	218	229	195	20	2072	38	110	2288	70
Arrive On Green	0.17	0.17	0.17	0.12	0.12	0.12	0.01	0.41	0.41	0.06	0.46	0.46
Sat Flow, veh/h	1757	1491	301	1757	1845	1568	1757	5091	94	1757	5021	154
Grp Volume(v), veh/h	229	0	262	59	63	159	17	1106	603	71	1114	603
Grp Sat Flow(s),veh/h/ln	1757	0	1792	1757	1845	1568	1757	1679	1828	1757	1679	1818
Q Serve(g_s), s	10.8	0.0	12.3	2.6	2.7	8.6	0.8	25.3	25.3	3.4	23.5	23.5
Cycle Q Clear(g_c), s	10.8	0.0	12.3	2.6	2.7	8.6	0.8	25.3	25.3	3.4	23.5	23.5
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.05	1.00		0.08
Lane Grp Cap(c), veh/h	301	0	307	218	229	195	20	1366	744	110	1530	828
V/C Ratio(X)	0.76	0.00	0.85	0.27	0.28	0.82	0.83	0.81	0.81	0.65	0.73	0.73
Avail Cap(c_a), veh/h	569	0	580	549	576	490	65	1493	813	117	1586	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	0.0	34.9	34.4	34.5	37.0	42.8	22.8	22.8	39.7	19.2	19.2
Incr Delay (d2), s/veh	1.5	0.0	2.6	0.2	0.2	3.2	26.1	2.8	5.1	7.8	1.4	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	6.3	1.3	1.4	3.9	0.5	12.2	13.8	1.9	11.1	12.3
LnGrp Delay(d),s/veh	35.8	0.0	37.5	34.7	34.7	40.2	68.9	25.6	27.9	47.5	20.7	21.8
LnGrp LOS	D		D	C	C	D	E	C	C	D	C	C
Approach Vol, veh/h		491			281			1726			1788	
Approach Delay, s/veh		36.7			37.8			26.8			22.1	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	44.3		16.3	10.0	40.1		20.4
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 3.2	41.0		27.1	* 5.8	38.6		28.1
Max Q Clear Time (g_c+I1), s	2.8	25.5		10.6	5.4	27.3		14.3
Green Ext Time (p_c), s	0.0	10.0		0.2	0.0	8.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	1491	529	262	1266	290	535	1243	144	487	1212	62
Future Volume (veh/h)	83	1491	529	262	1266	290	535	1243	144	487	1212	62
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	83	1491	529	262	1266	290	535	1243	144	487	1212	62
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	124	1357	474	266	2063	642	520	1309	408	493	1236	63
Arrive On Green	0.04	0.37	0.37	0.08	0.41	0.41	0.15	0.26	0.26	0.14	0.25	0.25
Sat Flow, veh/h	3408	3688	1287	3408	5036	1568	3408	5036	1568	3408	4907	251
Grp Volume(v), veh/h	83	1355	665	262	1266	290	535	1243	144	487	829	445
Grp Sat Flow(s),veh/h/ln	1704	1679	1618	1704	1679	1568	1704	1679	1568	1704	1679	1800
Q Serve(g_s), s	3.6	55.2	55.2	11.5	29.7	20.1	22.9	36.4	11.2	21.4	36.8	36.8
Cycle Q Clear(g_c), s	3.6	55.2	55.2	11.5	29.7	20.1	22.9	36.4	11.2	21.4	36.8	36.8
Prop In Lane	1.00		0.80	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	124	1235	595	266	2063	642	520	1309	408	493	846	454
V/C Ratio(X)	0.67	1.10	1.12	0.99	0.61	0.45	1.03	0.95	0.35	0.99	0.98	0.98
Avail Cap(c_a), veh/h	170	1235	595	266	2063	642	520	1309	408	493	846	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.4	47.4	47.4	69.1	34.9	32.1	63.5	54.5	45.2	64.0	55.7	55.7
Incr Delay (d2), s/veh	2.3	56.3	73.4	50.9	0.4	0.2	46.9	14.3	0.2	37.2	25.9	36.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	35.2	36.8	7.3	13.9	8.7	14.2	18.7	4.9	12.6	20.1	22.9
LnGrp Delay(d),s/veh	73.7	103.7	120.8	120.0	35.3	32.2	110.4	68.9	45.4	101.2	81.6	92.6
LnGrp LOS	E	F	F	F	D	C	F	E	D	F	F	F
Approach Vol, veh/h		2103			1818			1922			1761	
Approach Delay, s/veh		107.9			47.0			78.7			89.8	
Approach LOS		F			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.4	43.4	10.9	67.3	27.2	44.6	17.2	61.0
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	22.9	* 38	7.5	59.4	21.7	* 39	11.7	55.2
Max Q Clear Time (g_c+I1), s	24.9	38.8	5.6	31.7	23.4	38.4	13.5	57.2
Green Ext Time (p_c), s	0.0	0.0	0.0	14.9	0.0	0.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	81.8
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1594	135	456	1143	436	80	503	412	624	692	266
Future Volume (veh/h)	159	1594	135	456	1143	436	80	503	412	624	692	266
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	159	1594	135	456	1143	436	80	503	412	624	692	266
Adj No. of Lanes	1	2	0	2	2	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	156	1153	97	232	1152	515	92	324	266	316	712	605
Arrive On Green	0.09	0.35	0.35	0.07	0.33	0.33	0.05	0.35	0.35	0.09	0.39	0.39
Sat Flow, veh/h	1757	3274	275	3408	3505	1568	1757	939	769	3408	1845	1568
Grp Volume(v), veh/h	159	847	882	456	1143	436	80	0	915	624	692	266
Grp Sat Flow(s),veh/h/ln	1757	1752	1796	1704	1752	1568	1757	0	1709	1704	1845	1568
Q Serve(g_s), s	12.9	51.2	51.2	9.9	47.2	37.6	6.6	0.0	50.2	13.5	53.6	18.2
Cycle Q Clear(g_c), s	12.9	51.2	51.2	9.9	47.2	37.6	6.6	0.0	50.2	13.5	53.6	18.2
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	156	617	632	232	1152	515	92	0	590	316	712	605
V/C Ratio(X)	1.02	1.37	1.39	1.97	0.99	0.85	0.87	0.00	1.55	1.97	0.97	0.44
Avail Cap(c_a), veh/h	156	617	632	232	1152	515	92	0	590	316	712	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.3	47.1	47.1	67.8	48.6	45.4	68.4	0.0	47.6	66.0	43.9	33.0
Incr Delay (d2), s/veh	77.5	177.7	187.1	449.5	24.5	11.7	52.9	0.0	256.2	448.6	26.8	0.2
Initial Q Delay(d3),s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	55.2	58.2	19.1	26.8	18.0	4.5	0.0	65.6	26.0	32.6	8.0
LnGrp Delay(d),s/veh	143.9	224.8	234.2	517.3	73.1	57.1	121.3	0.0	303.8	514.6	70.6	33.2
LnGrp LOS	F	F	F	F	E	E	F		F	F	E	C
Approach Vol, veh/h		1888			2035			995			1582	
Approach Delay, s/veh		222.4			169.2			289.1			239.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.4	52.7	13.1	61.2	15.0	56.1	19.0	55.3
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	12.9	* 48	7.6	* 56	* 9.9	* 51	13.5	* 50
Max Q Clear Time (g_c+I1), s	14.9	49.2	8.6	55.6	11.9	53.2	15.5	52.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	220.1
HCM 2010 LOS	F

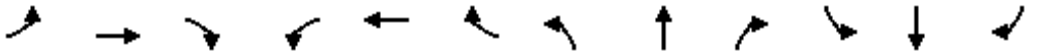
Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	449	1253	66	173	928	83	74	236	81	143	458	418
Future Volume (veh/h)	449	1253	66	173	928	83	74	236	81	143	458	418
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	449	1253	66	173	928	83	74	236	81	143	458	418
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	564	1541	689	285	1253	561	147	690	309	191	735	329
Arrive On Green	0.17	0.44	0.44	0.08	0.36	0.36	0.04	0.20	0.20	0.06	0.21	0.21
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	449	1253	66	173	928	83	74	236	81	143	458	418
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	9.0	22.3	1.8	3.5	16.5	2.6	1.5	4.1	3.1	3.0	8.5	15.0
Cycle Q Clear(g_c), s	9.0	22.3	1.8	3.5	16.5	2.6	1.5	4.1	3.1	3.0	8.5	15.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	564	1541	689	285	1253	561	147	690	309	191	735	329
V/C Ratio(X)	0.80	0.81	0.10	0.61	0.74	0.15	0.50	0.34	0.26	0.75	0.62	1.27
Avail Cap(c_a), veh/h	763	1541	689	715	1422	636	191	735	329	191	735	329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	17.5	11.7	31.6	20.1	15.6	33.5	24.7	24.3	33.2	25.7	28.2
Incr Delay (d2), s/veh	4.2	3.5	0.1	2.1	1.8	0.1	2.7	0.3	0.4	15.1	1.6	143.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	11.4	0.8	1.7	8.3	1.1	0.8	2.0	1.4	1.8	4.2	19.6
LnGrp Delay(d),s/veh	32.9	20.9	11.8	33.7	21.9	15.7	36.1	25.0	24.7	48.4	27.3	171.7
LnGrp LOS	C	C	B	C	C	B	D	C	C	D	C	F
Approach Vol, veh/h		1768			1184			391			1019	
Approach Delay, s/veh		23.6			23.2			27.1			89.5	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	18.1	10.0	35.4	7.1	19.0	15.8	29.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	15.0	15.0	30.0	4.0	15.0	16.0	29.0
Max Q Clear Time (g_c+I1), s	5.0	6.1	5.5	24.3	3.5	17.0	11.0	18.5
Green Ext Time (p_c), s	0.0	3.6	0.5	5.1	0.0	0.0	0.8	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.2
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	1912	35	60	1070	141	57	299	29	147	526	112
Future Volume (veh/h)	208	1912	35	60	1070	141	57	299	29	147	526	112
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1759	1845	1845	1759	1845
Adj Flow Rate, veh/h	208	1912	35	60	1070	141	57	299	29	147	526	112
Adj No. of Lanes	2	2	0	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	8	3	3	8	3
Cap, veh/h	257	1836	34	63	1688	755	63	478	426	193	515	459
Arrive On Green	0.08	0.52	0.52	0.04	0.48	0.48	0.04	0.27	0.27	0.06	0.29	0.29
Sat Flow, veh/h	3408	3521	64	1757	3505	1568	1757	1759	1568	3408	1759	1568
Grp Volume(v), veh/h	208	949	998	60	1070	141	57	299	29	147	526	112
Grp Sat Flow(s),veh/h/ln	1704	1752	1833	1757	1752	1568	1757	1759	1568	1704	1759	1568
Q Serve(g_s), s	8.4	73.0	73.0	4.8	31.9	7.2	4.5	20.9	1.9	6.0	41.0	7.6
Cycle Q Clear(g_c), s	8.4	73.0	73.0	4.8	31.9	7.2	4.5	20.9	1.9	6.0	41.0	7.6
Prop In Lane	1.00		0.04	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	914	956	63	1688	755	63	478	426	193	515	459
V/C Ratio(X)	0.81	1.04	1.04	0.96	0.63	0.19	0.91	0.62	0.07	0.76	1.02	0.24
Avail Cap(c_a), veh/h	316	914	956	63	1688	755	63	478	426	195	515	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	33.5	33.5	67.4	27.1	20.7	67.3	44.7	37.8	65.1	49.5	37.7
Incr Delay (d2), s/veh	11.9	40.1	41.4	97.8	0.8	0.1	81.7	2.5	0.1	16.0	45.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	45.2	47.6	4.0	15.6	3.1	3.6	10.5	0.8	3.2	26.3	3.3
LnGrp Delay(d),s/veh	75.7	73.6	74.9	165.2	27.9	20.8	149.0	47.2	37.9	81.1	94.6	38.0
LnGrp LOS	E	F	F	F	C	C	F	D	D	F	F	D
Approach Vol, veh/h		2155			1271			385			785	
Approach Delay, s/veh		74.4			33.6			61.6			84.0	
Approach LOS		E			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	42.1	9.0	77.0	9.0	45.0	14.6	71.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	38.0	5.0	73.0	5.0	41.0	13.0	65.0
Max Q Clear Time (g_c+I1), s	8.0	22.9	6.8	75.0	6.5	43.0	10.4	33.9
Green Ext Time (p_c), s	0.0	5.2	0.0	0.0	0.0	0.0	0.2	27.9

Intersection Summary	
HCM 2010 Ctrl Delay	63.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	272	559	267	206	270	335	137	2083	118	359	1373	326
Future Volume (veh/h)	272	559	267	206	270	335	137	2083	118	359	1373	326
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	272	559	267	206	268	336	137	2083	118	359	1373	326
Adj No. of Lanes	2	2	1	2	1	2	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	290	917	410	271	467	1143	196	2124	525	375	1950	607
Arrive On Green	0.09	0.26	0.26	0.08	0.25	0.25	0.06	0.34	0.34	0.11	0.39	0.39
Sat Flow, veh/h	3408	3505	1568	3514	1845	3136	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	272	559	267	206	268	336	137	2083	118	359	1373	326
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	8.3	14.6	15.8	6.0	13.3	8.0	4.2	34.3	5.7	11.1	24.2	16.9
Cycle Q Clear(g_c), s	8.3	14.6	15.8	6.0	13.3	8.0	4.2	34.3	5.7	11.1	24.2	16.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	917	410	271	467	1143	196	2124	525	375	1950	607
V/C Ratio(X)	0.94	0.61	0.65	0.76	0.57	0.29	0.70	0.98	0.22	0.96	0.70	0.54
Avail Cap(c_a), veh/h	290	983	440	394	565	1309	217	2124	525	375	1950	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	33.9	34.3	47.3	34.1	23.6	48.3	34.2	24.8	46.2	26.7	24.5
Incr Delay (d2), s/veh	35.9	1.3	3.7	2.6	3.0	0.4	6.6	15.2	0.1	35.2	1.8	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	7.2	7.3	3.0	7.2	3.5	2.1	17.1	2.4	7.0	11.4	7.6
LnGrp Delay(d),s/veh	83.4	35.1	38.1	49.8	37.1	24.0	54.9	49.4	24.9	81.4	28.6	27.1
LnGrp LOS	F	D	D	D	D	C	D	D	C	F	C	C
Approach Vol, veh/h		1098			810			2338			2058	
Approach Delay, s/veh		47.8			34.9			48.5			37.6	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	46.2	14.4	32.3	17.1	40.7	13.5	33.1
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	6.7	* 40	8.9	32.0	11.6	* 35	11.7	* 29
Max Q Clear Time (g_c+I1), s	6.2	26.2	10.3	15.3	13.1	36.3	8.0	17.8
Green Ext Time (p_c), s	0.0	13.7	0.0	11.2	0.0	0.0	0.1	8.3

Intersection Summary	
HCM 2010 Ctrl Delay	43.1
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	514	1177	760	530	696	131	549	1039	666	70	1670	162
Future Volume (veh/h)	514	1177	760	530	696	131	549	1039	666	70	1670	162
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	514	1177	760	530	696	131	549	1039	666	70	1670	162
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	558	1073	480	393	1292	402	416	1979	616	97	1508	469
Arrive On Green	0.16	0.31	0.31	0.12	0.26	0.26	0.12	0.40	0.40	0.03	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	514	1177	760	530	696	131	549	1039	666	70	1670	162
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	22.3	46.0	46.0	17.5	18.1	10.3	18.5	23.8	59.6	3.1	45.4	12.2
Cycle Q Clear(g_c), s	22.3	46.0	46.0	17.5	18.1	10.3	18.5	23.8	59.6	3.1	45.4	12.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	558	1073	480	393	1292	402	416	1979	616	97	1508	469
V/C Ratio(X)	0.92	1.10	1.58	1.35	0.54	0.33	1.32	0.52	1.08	0.72	1.11	0.35
Avail Cap(c_a), veh/h	715	1073	480	393	1292	402	416	1979	616	97	1508	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.8	52.1	52.1	66.4	47.9	45.0	65.9	34.5	45.3	72.4	52.4	40.8
Incr Delay (d2), s/veh	13.2	57.8	272.0	172.5	1.2	1.6	160.3	0.5	60.0	20.7	58.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	30.8	56.2	17.6	8.5	4.6	17.9	11.1	35.7	1.7	29.0	5.4
LnGrp Delay(d),s/veh	75.0	109.9	324.1	238.9	49.2	46.6	226.1	35.0	105.3	93.0	111.0	41.7
LnGrp LOS	E	F	F	F	D	D	F	C	F	F	F	D
Approach Vol, veh/h		2451			1357			2254			1902	
Approach Delay, s/veh		169.0			123.0			102.3			104.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	51.2	30.1	44.9	9.8	65.4	23.0	52.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	18.5	* 45	31.5	* 32	4.3	* 60	17.5	46.0
Max Q Clear Time (g_c+I1), s	20.5	47.4	24.3	20.1	5.1	61.6	19.5	48.0
Green Ext Time (p_c), s	0.0	0.0	0.3	11.9	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		126.9
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	706	1569	392	42	860	300	283	1290	46	729	1761	372
Future Volume (veh/h)	706	1569	392	42	860	300	283	1290	46	729	1761	372
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	706	1569	392	42	860	300	283	1290	46	729	1761	372
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	625	1923	599	72	1106	344	277	1230	383	664	1801	561
Arrive On Green	0.18	0.38	0.38	0.02	0.22	0.22	0.08	0.25	0.25	0.20	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	706	1569	392	42	860	300	283	1290	46	729	1761	372
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	27.5	42.0	30.9	1.8	24.1	27.7	12.3	37.0	3.5	29.5	52.3	30.2
Cycle Q Clear(g_c), s	27.5	42.0	30.9	1.8	24.1	27.7	12.3	37.0	3.5	29.5	52.3	30.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	625	1923	599	72	1106	344	277	1230	383	664	1801	561
V/C Ratio(X)	1.13	0.82	0.65	0.58	0.78	0.87	1.02	1.05	0.12	1.10	0.98	0.66
Avail Cap(c_a), veh/h	625	1923	599	84	1141	355	277	1230	383	664	1801	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	41.7	38.2	72.8	55.1	56.5	68.9	56.5	43.9	60.3	47.3	40.3
Incr Delay (d2), s/veh	77.5	2.7	2.1	2.8	3.0	19.0	60.1	39.5	0.1	65.0	16.1	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.7	19.9	13.7	0.9	11.5	13.8	8.0	21.5	1.5	19.7	26.7	13.3
LnGrp Delay(d),s/veh	138.8	44.3	40.3	75.6	58.1	75.5	129.0	96.0	43.9	125.3	63.4	42.6
LnGrp LOS	F	D	D	E	E	E	F	F	D	F	E	D
Approach Vol, veh/h		2667			1202			1619			2862	
Approach Delay, s/veh		68.7			63.1			100.3			76.5	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	60.2	33.0	39.1	35.0	43.0	8.7	63.4
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	12.3	53.6	27.5	* 34	29.5	* 37	3.7	* 57
Max Q Clear Time (g_c+I1), s	14.3	54.3	29.5	29.7	31.5	39.0	3.8	44.0
Green Ext Time (p_c), s	0.0	0.0	0.0	3.2	0.0	0.0	0.0	7.5

Intersection Summary	
HCM 2010 Ctrl Delay	76.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	677	1598	347	112	865	360	264	1249	102	701	1858	829
Future Volume (veh/h)	677	1598	347	112	865	360	264	1249	102	701	1858	829
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	677	1598	347	112	865	360	264	1249	102	701	1858	829
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	701	1479	319	132	919	286	263	1243	387	663	1835	571
Arrive On Green	0.21	0.36	0.36	0.04	0.19	0.19	0.08	0.25	0.25	0.20	0.37	0.37
Sat Flow, veh/h	3408	4150	894	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	677	1290	655	112	865	360	264	1249	102	701	1858	829
Grp Sat Flow(s),veh/h/ln	1704	1679	1687	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	27.6	49.9	49.9	4.8	24.9	26.8	10.9	34.9	7.4	27.5	51.5	51.5
Cycle Q Clear(g_c), s	27.6	49.9	49.9	4.8	24.9	26.8	10.9	34.9	7.4	27.5	51.5	51.5
Prop In Lane	1.00		0.53	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	701	1197	601	132	919	286	263	1243	387	663	1835	571
V/C Ratio(X)	0.97	1.08	1.09	0.85	0.94	1.26	1.00	1.00	0.26	1.06	1.01	1.45
Avail Cap(c_a), veh/h	701	1197	601	132	919	286	263	1243	387	663	1835	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	45.0	45.1	66.7	55.8	56.6	64.6	52.5	42.2	56.3	44.3	44.3
Incr Delay (d2), s/veh	25.5	49.9	63.1	35.5	17.0	141.1	56.7	26.6	0.1	51.1	24.2	212.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	31.4	33.8	2.8	12.4	22.3	7.1	19.1	3.2	17.5	27.7	55.7
LnGrp Delay(d),s/veh	80.6	95.0	108.2	102.2	72.8	197.7	121.2	79.2	42.4	107.3	68.4	257.0
LnGrp LOS	F	F	F	F	E	F	F	F	D	F	F	F
Approach Vol, veh/h		2622			1337			1615			3388	
Approach Delay, s/veh		94.6			108.9			83.7			122.6	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	57.0	34.3	32.3	33.0	40.4	11.2	55.4
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	10.9	51.5	28.8	26.8	27.5	34.9	5.7	49.9
Max Q Clear Time (g_c+I1), s	12.9	53.5	29.6	28.8	29.5	36.9	6.8	51.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	105.4
HCM 2010 LOS	F

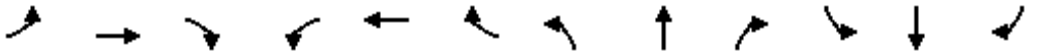
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	759	1164	161	178	787	163	130	885	308	239	1459	455
Future Volume (veh/h)	759	1164	161	178	787	163	130	885	308	239	1459	455
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845	1845	1827	1827	1827	1831	1900
Adj Flow Rate, veh/h	759	1164	161	178	787	163	130	885	308	239	1459	455
Adj No. of Lanes	2	2	1	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	4
Cap, veh/h	718	738	330	99	437	460	82	1009	451	259	864	257
Arrive On Green	0.21	0.21	0.21	0.29	0.29	0.29	0.05	0.29	0.29	0.08	0.33	0.33
Sat Flow, veh/h	3408	3505	1568	337	1491	1568	1757	3471	1553	3375	2645	787
Grp Volume(v), veh/h	759	1164	161	965	0	163	130	885	308	239	935	979
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1828	0	1568	1757	1736	1553	1688	1740	1692
Q Serve(g_s), s	31.6	31.6	13.5	44.0	0.0	12.3	7.0	36.4	26.3	10.6	49.0	49.0
Cycle Q Clear(g_c), s	31.6	31.6	13.5	44.0	0.0	12.3	7.0	36.4	26.3	10.6	49.0	49.0
Prop In Lane	1.00		1.00	0.18		1.00	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	718	738	330	536	0	460	82	1009	451	259	568	553
V/C Ratio(X)	1.06	1.58	0.49	1.80	0.00	0.35	1.59	0.88	0.68	0.92	1.65	1.77
Avail Cap(c_a), veh/h	718	738	330	536	0	460	82	1009	451	259	568	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.2	59.2	52.1	53.0	0.0	41.8	71.5	50.7	47.1	68.8	50.5	50.5
Incr Delay (d2), s/veh	49.7	265.9	1.1	367.3	0.0	0.5	313.5	8.9	4.2	36.1	298.3	354.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.8	42.5	6.0	76.9	0.0	5.4	10.5	18.7	11.8	6.2	70.6	77.3
LnGrp Delay(d),s/veh	108.9	325.1	53.2	420.3	0.0	42.3	385.0	59.5	51.3	104.9	348.8	404.7
LnGrp LOS	F	F	D	F		D	F	E	D	F	F	F
Approach Vol, veh/h		2084			1128			1323			2153	
Approach Delay, s/veh		225.4			365.7			89.6			347.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	54.0		37.0	16.4	48.6		48.0
Change Period (Y+Rc), s	4.0	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	7.0	49.0		* 32	* 12	43.6		44.0
Max Q Clear Time (g_c+I1), s	9.0	51.0		33.6	12.6	38.4		46.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	5.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		261.4
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	364	1698	102	333	951	262	66	704	336	307	1186	293
Future Volume (veh/h)	364	1698	102	333	951	262	66	704	336	307	1186	293
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1845	1827	1845	1845
Adj Flow Rate, veh/h	364	1698	102	333	951	262	66	704	336	307	1186	293
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	420	1547	692	306	1429	779	71	798	357	349	1088	680
Arrive On Green	0.12	0.44	0.44	0.09	0.41	0.41	0.02	0.23	0.23	0.10	0.31	0.31
Sat Flow, veh/h	3408	3505	1568	3408	3505	1524	3408	3505	1568	3375	3505	1568
Grp Volume(v), veh/h	364	1698	102	333	951	262	66	704	336	307	1186	293
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1524	1704	1752	1568	1688	1752	1568
Q Serve(g_s), s	15.2	64.0	5.6	13.0	32.0	14.7	2.8	28.2	30.5	13.0	45.0	18.9
Cycle Q Clear(g_c), s	15.2	64.0	5.6	13.0	32.0	14.7	2.8	28.2	30.5	13.0	45.0	18.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	420	1547	692	306	1429	779	71	798	357	349	1088	680
V/C Ratio(X)	0.87	1.10	0.15	1.09	0.67	0.34	0.94	0.88	0.94	0.88	1.09	0.43
Avail Cap(c_a), veh/h	541	1547	692	306	1429	779	71	798	357	349	1088	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.4	40.5	24.2	66.0	34.9	20.9	70.9	54.1	55.1	64.1	50.0	28.6
Incr Delay (d2), s/veh	11.4	54.5	0.1	77.6	1.2	0.3	85.0	11.4	32.8	21.0	55.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	42.6	2.5	9.4	15.7	6.2	2.2	14.9	16.5	7.1	30.1	8.2
LnGrp Delay(d),s/veh	73.8	95.0	24.3	143.6	36.1	21.2	155.9	65.5	87.9	85.1	105.3	29.0
LnGrp LOS	E	F	C	F	D	C	F	E	F	F	F	C
Approach Vol, veh/h		2164			1546			1106			1786	
Approach Delay, s/veh		88.1			56.7			77.7			89.3	
Approach LOS		F			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	70.0	7.0	51.0	21.9	65.1	19.0	39.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	13.0	64.0	3.0	45.0	23.0	54.0	15.0	33.0
Max Q Clear Time (g_c+I1), s	15.0	66.0	4.8	47.0	17.2	34.0	15.0	32.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.7	18.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	79.3
HCM 2010 LOS	E

Notes

User approved changes to right turn type.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	554	16	20	545	1141	484
Future Volume (veh/h)	554	16	20	545	1141	484
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	554	16	20	545	1141	484
Adj No. of Lanes	0	0	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	554	16	24	1969	1215	499
Arrive On Green	0.35	0.35	0.01	0.57	0.51	0.51
Sat Flow, veh/h	1591	46	1740	3563	2493	987
Grp Volume(v), veh/h	571	0	20	545	815	810
Grp Sat Flow(s),veh/h/ln	1640	0	1740	1736	1736	1653
Q Serve(g_s), s	40.0	0.0	1.3	9.3	50.2	54.6
Cycle Q Clear(g_c), s	40.0	0.0	1.3	9.3	50.2	54.6
Prop In Lane	0.97	0.03	1.00			0.60
Lane Grp Cap(c), veh/h	571	0	24	1969	878	836
V/C Ratio(X)	1.00	0.00	0.84	0.28	0.93	0.97
Avail Cap(c_a), veh/h	571	0	92	2137	887	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	0.0	56.5	12.8	26.4	27.5
Incr Delay (d2), s/veh	37.7	0.0	24.3	0.0	15.3	23.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.9	0.0	0.8	4.4	27.7	30.2
LnGrp Delay(d),s/veh	75.1	0.0	80.9	12.8	41.7	50.9
LnGrp LOS	F		F	B	D	D
Approach Vol, veh/h	571			565	1625	
Approach Delay, s/veh	75.1			15.2	46.3	
Approach LOS	E			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	7.1	63.8		44.0		70.9		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.1	* 59		40.0		* 71		
Max Q Clear Time (g_c+I1), s	3.3	56.6		42.0		11.3		
Green Ext Time (p_c), s	0.0	1.5		0.0		8.1		

Intersection Summary	
HCM 2010 Ctrl Delay	45.9
HCM 2010 LOS	D

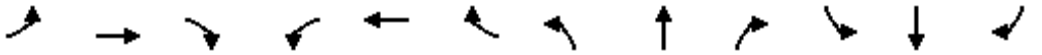
Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	369	51	11	20	27	12	45	1604	3	27	1260	291
Future Volume (veh/h)	369	51	11	20	27	12	45	1604	3	27	1260	291
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1583	1845	1845	1845	1845	1810	1845	1845	1845
Adj Flow Rate, veh/h	369	51	11	20	27	12	45	1604	3	27	1260	291
Adj No. of Lanes	2	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	20	3	3	3	3	5	3	3	3
Cap, veh/h	452	302	257	27	91	78	111	2029	891	40	1996	893
Arrive On Green	0.13	0.16	0.16	0.02	0.05	0.05	0.03	0.58	0.58	0.02	0.57	0.57
Sat Flow, veh/h	3408	1845	1568	1508	1845	1568	3408	3505	1538	1757	3505	1568
Grp Volume(v), veh/h	369	51	11	20	27	12	45	1604	3	27	1260	291
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1508	1845	1568	1704	1752	1538	1757	1752	1568
Q Serve(g_s), s	7.8	1.8	0.4	1.0	1.0	0.5	1.0	26.3	0.1	1.1	17.9	7.3
Cycle Q Clear(g_c), s	7.8	1.8	0.4	1.0	1.0	0.5	1.0	26.3	0.1	1.1	17.9	7.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	452	302	257	27	91	78	111	2029	891	40	1996	893
V/C Ratio(X)	0.82	0.17	0.04	0.73	0.30	0.15	0.41	0.79	0.00	0.67	0.63	0.33
Avail Cap(c_a), veh/h	460	498	423	122	398	338	184	2080	913	95	2080	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	26.6	26.1	36.2	34.0	33.7	35.2	12.1	6.6	35.9	10.7	8.4
Incr Delay (d2), s/veh	10.8	0.3	0.1	30.4	1.8	0.9	2.4	2.1	0.0	17.3	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.9	0.2	0.6	0.6	0.3	0.5	13.1	0.0	0.7	8.7	3.2
LnGrp Delay(d),s/veh	42.1	26.9	26.2	66.6	35.8	34.7	37.5	14.2	6.6	53.3	11.3	8.6
LnGrp LOS	D	C	C	E	D	C	D	B	A	D	B	A
Approach Vol, veh/h		431			59			1652			1578	
Approach Delay, s/veh		39.9			46.0			14.8			11.5	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	46.9	5.4	16.2	6.4	46.2	13.8	7.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	44.0	6.0	20.0	4.0	44.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	3.1	28.3	3.0	3.8	3.0	19.9	9.8	3.0
Green Ext Time (p_c), s	0.0	14.6	0.0	0.3	0.0	21.8	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	976	768	4	64	442	80	54	847	73	86	686	690
Future Volume (veh/h)	976	768	4	64	442	80	54	847	73	86	686	690
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	976	768	4	64	442	80	54	847	73	86	686	690
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	989	1672	748	107	765	342	93	837	375	116	861	385
Arrive On Green	0.30	0.49	0.49	0.03	0.22	0.22	0.03	0.24	0.24	0.03	0.25	0.25
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3343	3438	1538	3343	3438	1538
Grp Volume(v), veh/h	976	768	4	64	442	80	54	847	73	86	686	690
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1672	1719	1538	1672	1719	1538
Q Serve(g_s), s	31.3	15.8	0.1	2.0	12.3	4.6	1.7	26.0	4.0	2.7	19.9	26.7
Cycle Q Clear(g_c), s	31.3	15.8	0.1	2.0	12.3	4.6	1.7	26.0	4.0	2.7	19.9	26.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	989	1672	748	107	765	342	93	837	375	116	861	385
V/C Ratio(X)	0.99	0.46	0.01	0.60	0.58	0.23	0.58	1.01	0.19	0.74	0.80	1.79
Avail Cap(c_a), veh/h	989	1706	763	174	868	388	94	837	375	116	861	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	17.9	13.9	51.0	36.9	33.9	51.3	40.4	32.1	51.1	37.5	40.0
Incr Delay (d2), s/veh	25.2	0.4	0.0	2.0	1.5	0.7	5.7	34.0	0.3	20.1	5.3	366.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	7.5	0.1	1.0	5.9	2.0	0.9	16.2	1.7	1.6	10.1	50.5
LnGrp Delay(d),s/veh	62.4	18.3	13.9	53.0	38.4	34.6	57.0	74.4	32.3	71.1	42.7	406.3
LnGrp LOS	E	B	B	D	D	C	E	F	C	E	D	F
Approach Vol, veh/h		1748			586			974			1462	
Approach Delay, s/veh		42.9			39.5			70.3			216.0	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.5	30.0	7.6	32.7	8.0	58.4	8.3	32.0
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	4.6	6.0
Max Green Setting (Gmax), s	31.9	27.2	3.0	26.7	5.6	53.5	3.7	26.0
Max Q Clear Time (g_c+I1), s	33.3	14.3	3.7	28.7	4.0	17.8	4.7	28.0
Green Ext Time (p_c), s	0.0	9.6	0.0	0.0	0.0	20.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	101.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	812	25	409	961	99	90	558	169	125	918	186
Future Volume (veh/h)	126	812	25	409	961	99	90	558	169	125	918	186
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	126	812	25	409	961	99	90	558	169	125	918	186
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	158	824	25	395	1307	585	110	871	390	156	964	431
Arrive On Green	0.09	0.24	0.24	0.22	0.37	0.37	0.06	0.25	0.25	0.09	0.28	0.28
Sat Flow, veh/h	1757	3471	107	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	126	410	427	409	961	99	90	558	169	125	918	186
Grp Sat Flow(s),veh/h/ln	1757	1752	1826	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	5.6	18.6	18.6	18.0	19.0	3.4	4.0	11.4	7.3	5.6	20.6	7.8
Cycle Q Clear(g_c), s	5.6	18.6	18.6	18.0	19.0	3.4	4.0	11.4	7.3	5.6	20.6	7.8
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	416	434	395	1307	585	110	871	390	156	964	431
V/C Ratio(X)	0.80	0.98	0.98	1.03	0.74	0.17	0.82	0.64	0.43	0.80	0.95	0.43
Avail Cap(c_a), veh/h	176	416	434	395	1307	585	110	871	390	176	964	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	30.4	30.4	31.0	21.7	16.8	37.1	26.9	25.3	35.7	28.5	23.9
Incr Delay (d2), s/veh	20.7	40.0	39.1	54.5	2.2	0.1	36.8	1.6	0.8	20.5	18.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	13.6	14.1	14.7	9.5	1.5	3.1	5.7	3.2	3.6	12.4	3.4
LnGrp Delay(d),s/veh	56.4	70.3	69.5	85.5	23.9	16.9	73.8	28.5	26.1	56.2	47.0	24.5
LnGrp LOS	E	E	E	F	C	B	E	C	C	E	D	C
Approach Vol, veh/h		963			1469			817			1229	
Approach Delay, s/veh		68.1			40.6			33.0			44.6	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	23.9	22.0	23.0	9.0	26.0	11.2	33.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	19.0	18.0	19.0	5.0	22.0	8.0	29.0
Max Q Clear Time (g_c+I1), s	7.6	13.4	20.0	20.6	6.0	22.6	7.6	21.0
Green Ext Time (p_c), s	0.0	4.4	0.0	0.0	0.0	0.0	0.0	6.3

Intersection Summary	
HCM 2010 Ctrl Delay	46.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	644	162	118	701	123	267	766	131	149	1232	190
Future Volume (veh/h)	70	644	162	118	701	123	267	766	131	149	1232	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	70	644	162	118	701	123	267	766	131	149	1232	190
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	78	701	314	137	696	122	271	1303	223	183	1174	180
Arrive On Green	0.04	0.20	0.20	0.08	0.23	0.23	0.16	0.44	0.44	0.11	0.39	0.39
Sat Flow, veh/h	1757	3505	1568	1757	2982	523	1740	2966	507	1740	3018	463
Grp Volume(v), veh/h	70	644	162	118	412	412	267	448	449	149	706	716
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1752	1740	1736	1737	1740	1736	1745
Q Serve(g_s), s	3.6	16.2	8.3	6.0	21.0	21.0	13.8	17.6	17.6	7.5	35.0	35.0
Cycle Q Clear(g_c), s	3.6	16.2	8.3	6.0	21.0	21.0	13.8	17.6	17.6	7.5	35.0	35.0
Prop In Lane	1.00		1.00	1.00		0.30	1.00		0.29	1.00		0.27
Lane Grp Cap(c), veh/h	78	701	314	137	409	409	271	762	763	183	675	679
V/C Ratio(X)	0.90	0.92	0.52	0.86	1.01	1.01	0.99	0.59	0.59	0.81	1.05	1.06
Avail Cap(c_a), veh/h	78	701	314	137	409	409	271	762	763	290	675	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	35.3	32.1	41.0	34.5	34.5	37.9	19.1	19.1	39.4	27.5	27.5
Incr Delay (d2), s/veh	68.0	17.2	1.5	39.8	46.3	46.6	50.8	1.2	1.2	9.2	47.1	50.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	9.5	3.7	4.4	15.4	15.4	10.4	8.6	8.6	4.1	25.5	26.2
LnGrp Delay(d),s/veh	110.8	52.5	33.6	80.8	80.8	81.1	88.7	20.3	20.3	48.6	74.6	77.6
LnGrp LOS	F	D	C	F	F	F	F	C	C	D	F	F
Approach Vol, veh/h		876			942			1164			1571	
Approach Delay, s/veh		53.7			80.9			36.0			73.5	
Approach LOS		D			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	43.5	11.0	22.0	18.0	39.0	8.0	25.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	34.0	7.0	18.0	14.0	35.0	4.0	21.0
Max Q Clear Time (g_c+I1), s	9.5	19.6	8.0	18.2	15.8	37.0	5.6	23.0
Green Ext Time (p_c), s	0.2	11.8	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	1214	465	44	1647	192	186	747	77	53	1388	148
Future Volume (veh/h)	185	1214	465	44	1647	192	186	747	77	53	1388	148
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	185	1214	465	44	1647	192	186	747	77	53	1388	148
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	174	1308	499	56	1496	466	174	1359	140	68	1273	569
Arrive On Green	0.10	0.37	0.37	0.03	0.30	0.30	0.10	0.43	0.43	0.04	0.37	0.37
Sat Flow, veh/h	1740	3555	1358	1740	4988	1553	1740	3177	327	1740	3471	1553
Grp Volume(v), veh/h	185	1135	544	44	1647	192	186	408	416	53	1388	148
Grp Sat Flow(s),veh/h/ln	1740	1663	1587	1740	1663	1553	1740	1736	1769	1740	1736	1553
Q Serve(g_s), s	12.0	39.3	39.5	3.0	36.0	11.9	12.0	21.1	21.1	3.6	44.0	8.0
Cycle Q Clear(g_c), s	12.0	39.3	39.5	3.0	36.0	11.9	12.0	21.1	21.1	3.6	44.0	8.0
Prop In Lane	1.00		0.86	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	174	1223	584	56	1496	466	174	742	757	68	1273	569
V/C Ratio(X)	1.06	0.93	0.93	0.79	1.10	0.41	1.07	0.55	0.55	0.78	1.09	0.26
Avail Cap(c_a), veh/h	174	1223	584	58	1496	466	174	742	757	130	1273	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	36.4	36.5	57.7	42.0	33.5	54.0	25.7	25.7	57.2	38.0	26.6
Incr Delay (d2), s/veh	86.0	12.2	21.8	48.9	56.0	0.6	87.8	0.9	0.9	17.4	53.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	20.1	20.8	2.2	24.2	5.1	10.0	10.3	10.5	2.1	30.5	3.5
LnGrp Delay(d),s/veh	140.0	48.7	58.3	106.6	98.0	34.1	141.8	26.6	26.6	74.5	91.7	26.8
LnGrp LOS	F	D	E	F	F	C	F	C	C	E	F	C
Approach Vol, veh/h		1864			1883			1010			1589	
Approach Delay, s/veh		60.5			91.7			47.8			85.1	
Approach LOS		E			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	55.3	7.9	48.1	16.0	48.0	16.0	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	47.0	4.0	44.0	12.0	44.0	12.0	36.0
Max Q Clear Time (g_c+I1), s	5.6	23.1	5.0	41.5	14.0	46.0	14.0	38.0
Green Ext Time (p_c), s	0.0	17.9	0.0	2.5	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	73.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	1425	143	276	1418	12	227	286	139	321	1114	150
Future Volume (veh/h)	154	1425	143	276	1418	12	227	286	139	321	1114	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	154	1425	143	276	1418	12	227	286	139	321	1114	150
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	104	1233	123	209	1550	694	176	667	298	345	1005	449
Arrive On Green	0.06	0.39	0.39	0.12	0.45	0.45	0.10	0.19	0.19	0.20	0.29	0.29
Sat Flow, veh/h	1740	3188	318	1740	3471	1553	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	154	772	796	276	1418	12	227	286	139	321	1114	150
Grp Sat Flow(s),veh/h/ln	1740	1736	1771	1740	1736	1553	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	9.0	58.0	58.0	18.0	57.3	0.6	15.0	10.8	11.8	26.9	43.0	11.3
Cycle Q Clear(g_c), s	9.0	58.0	58.0	18.0	57.3	0.6	15.0	10.8	11.8	26.9	43.0	11.3
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	671	685	209	1550	694	176	667	298	345	1005	449
V/C Ratio(X)	1.48	1.15	1.16	1.32	0.91	0.02	1.29	0.43	0.47	0.93	1.11	0.33
Avail Cap(c_a), veh/h	104	671	685	209	1550	694	176	667	298	410	1005	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.5	46.0	46.0	66.0	38.8	23.1	67.5	53.6	54.0	59.2	53.5	42.2
Incr Delay (d2), s/veh	258.2	83.9	88.9	174.3	8.8	0.0	167.1	0.4	1.1	25.3	63.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	43.4	45.2	18.7	29.3	0.3	15.4	5.3	5.2	15.5	29.6	5.0
LnGrp Delay(d),s/veh	328.7	129.9	134.9	240.3	47.6	23.2	234.6	54.0	55.1	84.6	116.6	42.6
LnGrp LOS	F	F	F	F	D	C	F	D	E	F	F	D
Approach Vol, veh/h		1722			1706			652			1585	
Approach Delay, s/veh		150.0			78.6			117.1			103.1	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.5	32.5	22.0	62.0	19.0	47.0	13.0	71.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	35.0	23.0	18.0	58.0	15.0	43.0	9.0	67.0
Max Q Clear Time (g_c+I1), s	28.9	13.8	20.0	60.0	17.0	45.0	11.0	59.3
Green Ext Time (p_c), s	0.5	6.5	0.0	0.0	0.0	0.0	0.0	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	111.6
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	592	40	80	605	50	59	939	85	182	1396	637
Future Volume (veh/h)	155	592	40	80	605	50	59	939	85	182	1396	637
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	155	592	40	80	605	50	59	939	85	182	1396	637
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	204	1088	339	157	1018	317	135	1329	120	271	1572	703
Arrive On Green	0.06	0.22	0.22	0.05	0.20	0.20	0.04	0.41	0.41	0.08	0.45	0.45
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	3220	291	3375	3471	1553
Grp Volume(v), veh/h	155	592	40	80	605	50	59	506	518	182	1396	637
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1736	1775	1688	1736	1553
Q Serve(g_s), s	3.0	7.0	1.4	1.5	7.3	1.7	1.1	16.0	16.0	3.5	24.3	25.1
Cycle Q Clear(g_c), s	3.0	7.0	1.4	1.5	7.3	1.7	1.1	16.0	16.0	3.5	24.3	25.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	204	1088	339	157	1018	317	135	716	733	271	1572	703
V/C Ratio(X)	0.76	0.54	0.12	0.51	0.59	0.16	0.44	0.71	0.71	0.67	0.89	0.91
Avail Cap(c_a), veh/h	204	1208	376	204	1208	376	204	736	753	307	1577	705
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	22.9	20.7	30.7	23.8	21.6	31.0	16.1	16.1	29.5	16.5	16.8
Incr Delay (d2), s/veh	15.0	0.4	0.2	2.5	0.6	0.2	2.2	3.0	3.0	4.8	6.6	15.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.2	0.6	0.8	3.4	0.8	0.6	8.2	8.4	1.8	12.9	13.6
LnGrp Delay(d),s/veh	45.6	23.3	20.9	33.3	24.4	21.8	33.2	19.1	19.0	34.3	23.1	32.1
LnGrp LOS	D	C	C	C	C	C	C	B	B	C	C	C
Approach Vol, veh/h		787			735			1083			2215	
Approach Delay, s/veh		27.6			25.2			19.8			26.6	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	31.3	7.1	18.4	6.6	33.9	8.0	17.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	28.0	4.0	16.0	4.0	30.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	5.5	18.0	3.5	9.0	3.1	27.1	5.0	9.3
Green Ext Time (p_c), s	0.0	9.3	0.0	4.4	0.0	2.8	0.0	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	25.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	396	187	32	429	3	77	226	14	18	447	87
Future Volume (veh/h)	36	396	187	32	429	3	77	226	14	18	447	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1827	1827	1827	1845	1845	1845
Adj Flow Rate, veh/h	36	396	187	32	429	3	77	226	14	18	447	87
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	3	3	3
Cap, veh/h	55	611	285	50	928	6	95	647	550	31	585	497
Arrive On Green	0.03	0.27	0.27	0.03	0.26	0.26	0.05	0.35	0.35	0.02	0.32	0.32
Sat Flow, veh/h	1740	2300	1073	1740	3533	25	1740	1827	1553	1757	1845	1568
Grp Volume(v), veh/h	36	298	285	32	211	221	77	226	14	18	447	87
Grp Sat Flow(s),veh/h/ln	1740	1736	1638	1740	1736	1823	1740	1827	1553	1757	1845	1568
Q Serve(g_s), s	1.0	7.3	7.4	0.9	4.9	4.9	2.1	4.4	0.3	0.5	10.5	1.9
Cycle Q Clear(g_c), s	1.0	7.3	7.4	0.9	4.9	4.9	2.1	4.4	0.3	0.5	10.5	1.9
Prop In Lane	1.00		0.66	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	55	461	435	50	456	479	95	647	550	31	585	497
V/C Ratio(X)	0.65	0.65	0.66	0.64	0.46	0.46	0.81	0.35	0.03	0.58	0.76	0.18
Avail Cap(c_a), veh/h	145	579	547	145	579	608	145	762	648	147	770	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	15.6	15.7	23.0	14.8	14.8	22.4	11.4	10.1	23.4	14.8	11.8
Incr Delay (d2), s/veh	12.2	1.7	2.0	12.5	0.7	0.7	17.4	0.3	0.0	15.6	3.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.7	3.6	0.6	2.4	2.6	1.5	2.3	0.1	0.4	5.8	0.8
LnGrp Delay(d),s/veh	35.1	17.3	17.6	35.5	15.6	15.5	39.8	11.7	10.1	39.0	18.1	12.0
LnGrp LOS	D	B	B	D	B	B	D	B	B	D	B	B
Approach Vol, veh/h		619			464			317			552	
Approach Delay, s/veh		18.5			16.9			18.5			17.8	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	21.0	5.4	16.7	6.6	19.2	5.5	16.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	20.0	4.0	16.0	4.0	20.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	2.5	6.4	2.9	9.4	4.1	12.5	3.0	6.9
Green Ext Time (p_c), s	0.0	3.9	0.0	3.3	0.0	2.7	0.0	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	6	262	50	9	1	194	1515	55	1	1895	0
Future Volume (veh/h)	1	6	262	50	9	1	194	1515	55	1	1895	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	1	6	262	50	9	1	194	1515	55	1	1895	0
Adj No. of Lanes	0	1	0	1	1	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	1	4	182	78	72	8	212	1793	802	309	1986	0
Arrive On Green	0.12	0.12	0.12	0.04	0.04	0.04	0.12	0.53	0.53	0.18	0.58	0.00
Sat Flow, veh/h	6	33	1462	1757	1631	181	1707	3406	1524	1707	3495	0
Grp Volume(v), veh/h	269	0	0	50	0	10	194	1515	55	1	1895	0
Grp Sat Flow(s),veh/h/ln	1501	0	0	1757	0	1813	1707	1703	1524	1707	1703	0
Q Serve(g_s), s	16.0	0.0	0.0	3.6	0.0	0.7	14.5	48.9	2.3	0.1	67.3	0.0
Cycle Q Clear(g_c), s	16.0	0.0	0.0	3.6	0.0	0.7	14.5	48.9	2.3	0.1	67.3	0.0
Prop In Lane	0.00		0.97	1.00		0.10	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	187	0	0	78	0	80	212	1793	802	309	1986	0
V/C Ratio(X)	1.44	0.00	0.00	0.64	0.00	0.12	0.91	0.85	0.07	0.00	0.95	0.00
Avail Cap(c_a), veh/h	187	0	0	218	0	225	212	2327	1041	309	2010	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.4	0.0	0.0	60.5	0.0	59.2	55.7	26.0	15.0	43.2	25.2	0.0
Incr Delay (d2), s/veh	226.7	0.0	0.0	8.6	0.0	0.7	39.0	2.4	0.0	0.0	11.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.3	0.0	0.0	1.9	0.0	0.4	9.1	23.5	1.0	0.0	34.4	0.0
LnGrp Delay(d),s/veh	283.1	0.0	0.0	69.2	0.0	59.8	94.8	28.4	15.0	43.2	36.4	0.0
LnGrp LOS	F			E		E	F	C	B	D	D	
Approach Vol, veh/h		269			60			1764			1896	
Approach Delay, s/veh		283.1			67.6			35.3			36.4	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	27.3	71.8		20.0	20.0	79.1		9.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	88.0		16.0	16.0	76.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	50.9		18.0	16.5	69.3		5.6
Green Ext Time (p_c), s	1.8	16.9		0.0	0.0	5.7		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		53.0
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	13	43	148	6	202	38	1451	183	714	1482	1
Future Volume (veh/h)	12	13	43	148	6	202	38	1451	183	714	1482	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	12	13	43	148	6	202	38	1451	183	714	1482	1
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	19	32	107	120	7	219	49	1241	155	599	2549	2
Arrive On Green	0.01	0.09	0.09	0.07	0.14	0.14	0.03	0.40	0.40	0.34	0.71	0.71
Sat Flow, veh/h	1757	377	1247	1757	45	1529	1757	3136	392	1757	3594	2
Grp Volume(v), veh/h	12	0	56	148	0	208	38	805	829	714	723	760
Grp Sat Flow(s),veh/h/ln	1757	0	1625	1757	0	1575	1757	1752	1776	1757	1752	1844
Q Serve(g_s), s	1.0	0.0	4.8	10.0	0.0	19.1	3.2	58.0	58.0	50.0	29.9	29.9
Cycle Q Clear(g_c), s	1.0	0.0	4.8	10.0	0.0	19.1	3.2	58.0	58.0	50.0	29.9	29.9
Prop In Lane	1.00		0.77	1.00		0.97	1.00		0.22	1.00		0.00
Lane Grp Cap(c), veh/h	19	0	139	120	0	226	49	694	703	599	1243	1308
V/C Ratio(X)	0.65	0.00	0.40	1.23	0.00	0.92	0.78	1.16	1.18	1.19	0.58	0.58
Avail Cap(c_a), veh/h	60	0	177	120	0	226	96	694	703	599	1243	1308
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.2	0.0	63.5	68.3	0.0	62.0	70.8	44.3	44.3	48.3	10.5	10.5
Incr Delay (d2), s/veh	32.1	0.0	1.9	158.3	0.0	39.1	23.0	87.5	95.4	101.8	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.2	10.1	0.0	10.8	1.8	44.8	46.9	41.1	14.5	15.2
LnGrp Delay(d),s/veh	104.3	0.0	65.3	226.5	0.0	101.0	93.8	131.7	139.7	150.1	11.2	11.2
LnGrp LOS	F		E	F		F	F	F	F	F	B	B
Approach Vol, veh/h		68			356			1672			2197	
Approach Delay, s/veh		72.2			153.2			134.8			56.4	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	54.0	62.0	14.0	16.5	8.1	107.9	5.5	25.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	50.0	58.0	10.0	16.0	8.0	100.0	5.0	21.0
Max Q Clear Time (g_c+I1), s	52.0	60.0	12.0	6.8	5.2	31.9	3.0	21.1
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.0	52.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	95.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	12	14	1	6	4	10	1265	0	3	1356	381
Future Volume (veh/h)	332	12	14	1	6	4	10	1265	0	3	1356	381
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	332	12	14	1	6	4	10	1265	0	3	1356	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	381	14	352	2	10	7	18	1845	0	6	1821	815
Arrive On Green	0.22	0.22	0.22	0.01	0.01	0.01	0.01	0.53	0.00	0.00	0.52	0.00
Sat Flow, veh/h	1698	61	1568	157	941	628	1757	3597	0	1757	3505	1568
Grp Volume(v), veh/h	344	0	14	11	0	0	10	1265	0	3	1356	0
Grp Sat Flow(s),veh/h/ln	1760	0	1568	1726	0	0	1757	1752	0	1757	1752	1568
Q Serve(g_s), s	12.8	0.0	0.5	0.4	0.0	0.0	0.4	18.2	0.0	0.1	20.6	0.0
Cycle Q Clear(g_c), s	12.8	0.0	0.5	0.4	0.0	0.0	0.4	18.2	0.0	0.1	20.6	0.0
Prop In Lane	0.97		1.00	0.09		0.36	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	395	0	352	19	0	0	18	1845	0	6	1821	815
V/C Ratio(X)	0.87	0.00	0.04	0.58	0.00	0.00	0.56	0.69	0.00	0.53	0.74	0.00
Avail Cap(c_a), veh/h	439	0	391	405	0	0	103	1904	0	103	1904	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.5	0.0	20.7	33.5	0.0	0.0	33.6	11.9	0.0	33.9	12.8	0.0
Incr Delay (d2), s/veh	16.0	0.0	0.0	24.7	0.0	0.0	24.9	1.0	0.0	59.5	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	0.2	0.3	0.0	0.0	0.3	8.9	0.0	0.1	10.2	0.0
LnGrp Delay(d),s/veh	41.5	0.0	20.7	58.2	0.0	0.0	58.5	12.9	0.0	93.4	14.4	0.0
LnGrp LOS	D		C	E			E	B		F	B	
Approach Vol, veh/h		358			11			1275			1359	
Approach Delay, s/veh		40.7			58.2			13.3			14.6	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.2	39.9		19.3	4.7	39.4		4.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	37.0		17.0	4.0	37.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	20.2		14.8	2.4	22.6		2.4
Green Ext Time (p_c), s	0.0	14.7		0.5	0.0	12.8		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		17.3
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	1103	319	76	721	6	585	1248	78	36	1015	366
Future Volume (veh/h)	360	1103	319	76	721	6	585	1248	78	36	1015	366
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	360	1103	319	76	721	6	585	1248	78	36	1015	366
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	381	1101	493	129	842	377	571	1552	694	90	1057	473
Arrive On Green	0.11	0.31	0.31	0.04	0.24	0.24	0.17	0.44	0.44	0.03	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	360	1103	319	76	721	6	585	1248	78	36	1015	366
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	9.4	28.1	15.7	2.0	17.6	0.3	15.0	27.6	2.6	0.9	25.5	19.0
Cycle Q Clear(g_c), s	9.4	28.1	15.7	2.0	17.6	0.3	15.0	27.6	2.6	0.9	25.5	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	1101	493	129	842	377	571	1552	694	90	1057	473
V/C Ratio(X)	0.95	1.00	0.65	0.59	0.86	0.02	1.02	0.80	0.11	0.40	0.96	0.77
Avail Cap(c_a), veh/h	381	1101	493	152	861	385	571	1552	694	152	1057	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	30.7	26.4	42.4	32.5	25.9	37.3	21.6	14.6	42.9	30.7	28.5
Incr Delay (d2), s/veh	32.4	27.6	3.0	4.2	8.4	0.0	44.0	3.2	0.1	2.8	18.8	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	17.7	7.2	1.0	9.5	0.1	10.5	13.9	1.1	0.5	15.0	9.2
LnGrp Delay(d),s/veh	71.8	58.3	29.4	46.6	40.9	25.9	81.2	24.8	14.7	45.7	49.5	36.3
LnGrp LOS	E	F	C	D	D	C	F	C	B	D	D	D
Approach Vol, veh/h		1782			803			1911			1417	
Approach Delay, s/veh		55.8			41.3			41.6			46.0	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	43.6	7.4	32.1	19.0	31.0	14.0	25.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.0	4.0	28.0	15.0	27.0	10.0	22.0
Max Q Clear Time (g_c+I1), s	2.9	29.6	4.0	30.1	17.0	27.5	11.4	19.6
Green Ext Time (p_c), s	0.0	7.6	0.0	0.0	0.0	0.0	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	46.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	2455	461	29	2171	209	136	74	18	322	185	183
Future Volume (veh/h)	197	2455	461	29	2171	209	136	74	18	322	185	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	197	2455	461	29	2171	209	136	74	18	322	185	183
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	145	1913	348	37	1891	179	158	158	135	241	246	209
Arrive On Green	0.08	0.65	0.65	0.02	0.58	0.58	0.09	0.09	0.09	0.14	0.13	0.13
Sat Flow, veh/h	1757	2963	539	1757	3236	307	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	197	1421	1495	29	1159	1221	136	74	18	322	185	183
Grp Sat Flow(s),veh/h/ln	1757	1752	1749	1757	1752	1791	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	12.0	94.0	94.0	2.4	85.0	85.0	11.1	5.6	1.5	20.0	14.1	16.7
Cycle Q Clear(g_c), s	12.0	94.0	94.0	2.4	85.0	85.0	11.1	5.6	1.5	20.0	14.1	16.7
Prop In Lane	1.00		0.31	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	1132	1130	37	1024	1046	158	158	135	241	246	209
V/C Ratio(X)	1.36	1.26	1.32	0.79	1.13	1.17	0.86	0.47	0.13	1.33	0.75	0.88
Avail Cap(c_a), veh/h	145	1132	1130	48	1024	1046	181	216	183	241	279	237
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.8	25.8	25.8	70.9	30.3	30.3	65.3	63.3	61.5	62.8	60.7	61.9
Incr Delay (d2), s/veh	199.9	122.2	151.8	46.7	72.1	85.6	29.0	2.1	0.4	175.5	9.7	26.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	83.4	92.5	1.6	61.5	66.7	6.7	2.9	0.7	21.4	7.9	8.8
LnGrp Delay(d),s/veh	266.6	148.0	177.6	117.7	102.3	115.9	94.3	65.5	61.9	238.3	70.4	88.4
LnGrp LOS	F	F	F	F	F	F	F	E	E	F	E	F
Approach Vol, veh/h		3113			2409			228			690	
Approach Delay, s/veh		169.7			109.4			82.4			153.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	16.5	7.0	98.0	17.1	23.4	16.0	89.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	17.0	4.0	93.0	15.0	22.0	12.0	85.0
Max Q Clear Time (g_c+I1), s	22.0	7.6	4.4	96.0	13.1	18.7	14.0	87.0
Green Ext Time (p_c), s	0.0	1.5	0.0	0.0	0.1	0.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	142.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1359	1132	620	2	717	295	606	1236	5	376	1582	768
Future Volume (veh/h)	1359	1132	620	2	717	295	606	1236	5	376	1582	768
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	1359	1132	620	2	717	295	606	1236	5	376	1582	768
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1101	2236	696	7	620	193	498	1540	479	426	1433	446
Arrive On Green	0.32	0.44	0.44	0.00	0.12	0.12	0.15	0.31	0.31	0.12	0.28	0.28
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	1359	1132	620	2	717	295	606	1236	5	376	1582	768
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	42.0	21.0	47.3	0.1	16.0	16.0	19.0	29.4	0.3	14.1	37.0	37.0
Cycle Q Clear(g_c), s	42.0	21.0	47.3	0.1	16.0	16.0	19.0	29.4	0.3	14.1	37.0	37.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1101	2236	696	7	620	193	498	1540	479	426	1433	446
V/C Ratio(X)	1.23	0.51	0.89	0.27	1.16	1.53	1.22	0.80	0.01	0.88	1.10	1.72
Avail Cap(c_a), veh/h	1101	2236	696	105	620	193	498	1540	479	446	1433	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	25.9	33.2	64.8	57.0	57.0	55.5	41.5	31.4	55.9	46.5	46.5
Incr Delay (d2), s/veh	113.4	0.2	13.6	19.0	87.8	262.4	114.7	3.2	0.0	17.9	57.5	333.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.1	9.7	23.0	0.1	12.4	21.0	16.9	14.1	0.1	7.7	24.8	57.4
LnGrp Delay(d),s/veh	157.4	26.1	46.9	83.7	144.8	319.4	170.2	44.7	31.4	73.8	104.0	380.3
LnGrp LOS	F	C	D	F	F	F	F	D	C	E	F	F
Approach Vol, veh/h		3111			1014			1847			2726	
Approach Delay, s/veh		87.6			195.5			85.8			177.7	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.2	43.8	4.3	61.7	23.0	41.0	46.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	39.0	4.0	54.0	19.0	37.0	42.0	16.0
Max Q Clear Time (g_c+I1), s	16.1	31.4	2.1	49.3	21.0	39.0	44.0	18.0
Green Ext Time (p_c), s	0.1	7.4	0.0	4.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	128.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	986	643	205	657	673	338	490	391	785	976	0
Future Volume (veh/h)	0	986	643	205	657	673	338	490	391	785	976	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	986	643	205	657	673	338	490	391	785	976	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	5	1276	397	227	1880	585	409	794	355	818	1215	544
Arrive On Green	0.00	0.25	0.25	0.07	0.37	0.37	0.12	0.23	0.23	0.24	0.35	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	986	643	205	657	673	338	490	391	785	976	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	13.6	19.0	4.5	7.1	28.0	7.3	9.4	17.0	17.1	18.9	0.0
Cycle Q Clear(g_c), s	0.0	13.6	19.0	4.5	7.1	28.0	7.3	9.4	17.0	17.1	18.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	5	1276	397	227	1880	585	409	794	355	818	1215	544
V/C Ratio(X)	0.00	0.77	1.62	0.90	0.35	1.15	0.83	0.62	1.10	0.96	0.80	0.00
Avail Cap(c_a), veh/h	182	1276	397	227	1880	585	409	794	355	818	1215	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	26.0	28.0	34.8	16.9	23.5	32.2	26.1	29.0	28.1	22.2	0.0
Incr Delay (d2), s/veh	0.0	3.0	289.8	34.6	0.1	85.9	13.1	1.4	77.4	22.1	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.7	40.1	3.2	3.2	26.0	4.2	4.7	15.0	10.5	9.8	0.0
LnGrp Delay(d),s/veh	0.0	29.0	317.8	69.4	17.0	109.4	45.3	27.5	106.4	50.3	26.2	0.0
LnGrp LOS		C	F	E	B	F	D	C	F	D	C	
Approach Vol, veh/h		1629			1535			1219			1761	
Approach Delay, s/veh		143.0			64.5			57.8			36.9	
Approach LOS		F			E			E			D	

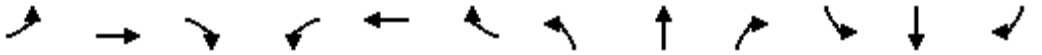
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	21.0	9.0	23.0	13.0	30.0	0.0	32.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	17.0	5.0	19.0	9.0	26.0	4.0	20.0
Max Q Clear Time (g_c+I1), s	19.1	19.0	6.5	21.0	9.3	20.9	0.0	30.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	76.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	197	25	100	88	481	17	537	147	885	912	32
Future Volume (veh/h)	211	197	25	100	88	481	17	537	147	885	912	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	211	197	25	100	88	481	17	537	147	885	912	32
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	234	840	376	167	771	345	54	729	326	966	1666	745
Arrive On Green	0.07	0.24	0.24	0.05	0.22	0.22	0.02	0.21	0.21	0.28	0.48	0.48
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	211	197	25	100	88	481	17	537	147	885	912	32
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	4.5	3.3	0.9	2.1	1.5	16.0	0.4	10.4	6.0	18.3	13.4	0.8
Cycle Q Clear(g_c), s	4.5	3.3	0.9	2.1	1.5	16.0	0.4	10.4	6.0	18.3	13.4	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	840	376	167	771	345	54	729	326	966	1666	745
V/C Ratio(X)	0.90	0.23	0.07	0.60	0.11	1.39	0.31	0.74	0.45	0.92	0.55	0.04
Avail Cap(c_a), veh/h	234	840	376	234	771	345	187	819	366	984	1666	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	22.3	21.4	33.9	22.7	28.4	35.4	26.9	25.2	25.2	13.5	10.2
Incr Delay (d2), s/veh	33.6	0.1	0.1	3.4	0.1	194.3	3.2	3.1	1.0	12.9	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	1.6	0.4	1.1	0.7	25.5	0.2	5.3	2.6	10.3	6.5	0.3
LnGrp Delay(d),s/veh	67.2	22.4	21.4	37.3	22.8	222.7	38.6	30.0	26.1	38.1	13.9	10.2
LnGrp LOS	E	C	C	D	C	F	D	C	C	D	B	B
Approach Vol, veh/h		433			669			701			1829	
Approach Delay, s/veh		44.2			168.7			29.4			25.5	
Approach LOS		D			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.6	19.1	7.6	21.4	5.2	38.6	9.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	21.0	17.0	5.0	16.0	4.0	34.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	20.3	12.4	4.1	5.3	2.4	15.4	6.5	18.0
Green Ext Time (p_c), s	0.3	2.7	0.0	2.9	0.0	10.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.9
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	242	687	200	27	513	115	134	352	24	228	497	147
Future Volume (veh/h)	242	687	200	27	513	115	134	352	24	228	497	147
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	242	687	200	27	513	115	134	352	24	228	497	147
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	366	1342	600	82	1051	470	223	781	349	347	909	407
Arrive On Green	0.11	0.38	0.38	0.02	0.30	0.30	0.07	0.22	0.22	0.10	0.26	0.26
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	242	687	200	27	513	115	134	352	24	228	497	147
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	4.1	9.0	5.4	0.5	7.2	3.3	2.3	5.2	0.7	3.8	7.3	4.6
Cycle Q Clear(g_c), s	4.1	9.0	5.4	0.5	7.2	3.3	2.3	5.2	0.7	3.8	7.3	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	366	1342	600	82	1051	470	223	781	349	347	909	407
V/C Ratio(X)	0.66	0.51	0.33	0.33	0.49	0.24	0.60	0.45	0.07	0.66	0.55	0.36
Avail Cap(c_a), veh/h	742	2056	920	228	1527	683	400	1351	604	685	1644	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	14.1	13.0	28.6	17.1	15.8	27.1	20.0	18.3	25.8	19.1	18.1
Incr Delay (d2), s/veh	2.1	0.3	0.3	2.3	0.4	0.3	2.6	0.4	0.1	2.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.4	2.4	0.2	3.5	1.5	1.2	2.5	0.3	1.9	3.6	2.0
LnGrp Delay(d),s/veh	27.6	14.4	13.3	30.9	17.5	16.1	29.7	20.4	18.4	27.9	19.6	18.6
LnGrp LOS	C	B	B	C	B	B	C	C	B	C	B	B
Approach Vol, veh/h		1129			655			510			872	
Approach Delay, s/veh		17.1			17.8			22.8			21.6	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	17.3	5.4	26.9	7.9	19.5	10.4	21.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	23.0	4.0	35.0	7.0	28.0	13.0	26.0
Max Q Clear Time (g_c+I1), s	5.8	7.2	2.5	11.0	4.3	9.3	6.1	9.2
Green Ext Time (p_c), s	0.4	5.7	0.0	10.5	0.1	6.2	0.5	8.7

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	1083	499	43	994	98	169	48	31	202	212	51
Future Volume (veh/h)	117	1083	499	43	994	98	169	48	31	202	212	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	117	1083	499	43	994	98	169	48	31	202	212	51
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	149	1370	613	61	1196	535	212	265	225	248	302	257
Arrive On Green	0.08	0.39	0.39	0.03	0.34	0.34	0.12	0.14	0.14	0.14	0.16	0.16
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	117	1083	499	43	994	98	169	48	31	202	212	51
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	3.6	15.1	15.7	1.3	14.4	2.4	5.2	1.3	1.0	6.2	6.0	1.6
Cycle Q Clear(g_c), s	3.6	15.1	15.7	1.3	14.4	2.4	5.2	1.3	1.0	6.2	6.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	1370	613	61	1196	535	212	265	225	248	302	257
V/C Ratio(X)	0.79	0.79	0.81	0.70	0.83	0.18	0.80	0.18	0.14	0.81	0.70	0.20
Avail Cap(c_a), veh/h	159	1370	613	127	1268	567	254	534	454	254	534	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	14.8	15.0	26.4	16.7	12.8	23.6	20.8	20.7	23.0	21.8	20.0
Incr Delay (d2), s/veh	21.4	3.2	8.3	13.4	4.6	0.2	13.7	0.3	0.3	17.8	2.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	7.8	8.2	0.9	7.7	1.1	3.3	0.7	0.4	4.2	3.3	0.7
LnGrp Delay(d),s/veh	46.2	18.1	23.3	39.8	21.4	13.0	37.4	21.1	21.0	40.9	24.8	20.3
LnGrp LOS	D	B	C	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1699			1135			248			465	
Approach Delay, s/veh		21.5			21.3			32.2			31.3	
Approach LOS		C			C			C			C	

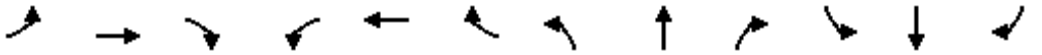
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	11.9	5.9	25.6	10.7	13.1	8.7	22.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	16.0	4.0	21.0	8.0	16.0	5.0	20.0
Max Q Clear Time (g_c+I1), s	8.2	3.3	3.3	17.7	7.2	8.0	5.6	16.4
Green Ext Time (p_c), s	0.0	1.4	0.0	3.1	0.0	1.1	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	23.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	308	164	132	173	31	207	71	30	230	206	18
Future Volume (veh/h)	46	308	164	132	173	31	207	71	30	230	206	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	46	308	164	132	173	31	207	71	30	230	206	18
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	68	444	377	151	439	79	258	209	88	283	306	27
Arrive On Green	0.04	0.24	0.24	0.09	0.29	0.29	0.15	0.17	0.17	0.16	0.18	0.18
Sat Flow, veh/h	1757	1845	1568	1757	1523	273	1757	1232	521	1757	1673	146
Grp Volume(v), veh/h	46	308	164	132	0	204	207	0	101	230	0	224
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1796	1757	0	1753	1757	0	1819
Q Serve(g_s), s	1.2	7.1	4.1	3.5	0.0	4.2	5.3	0.0	2.4	5.9	0.0	5.3
Cycle Q Clear(g_c), s	1.2	7.1	4.1	3.5	0.0	4.2	5.3	0.0	2.4	5.9	0.0	5.3
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.30	1.00		0.08
Lane Grp Cap(c), veh/h	68	444	377	151	0	517	258	0	297	283	0	333
V/C Ratio(X)	0.68	0.69	0.43	0.87	0.00	0.39	0.80	0.00	0.34	0.81	0.00	0.67
Avail Cap(c_a), veh/h	151	634	539	151	0	617	302	0	602	302	0	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.1	16.1	15.0	21.0	0.0	13.3	19.2	0.0	17.1	18.9	0.0	17.7
Incr Delay (d2), s/veh	11.3	2.0	0.8	39.4	0.0	0.5	12.6	0.0	0.7	14.8	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.8	1.9	3.3	0.0	2.2	3.4	0.0	1.2	4.0	0.0	2.9
LnGrp Delay(d),s/veh	33.4	18.1	15.8	60.5	0.0	13.8	31.8	0.0	17.7	33.7	0.0	20.1
LnGrp LOS	C	B	B	E		B	C		B	C		C
Approach Vol, veh/h		518			336			308			454	
Approach Delay, s/veh		18.7			32.2			27.2			27.0	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	11.9	8.0	15.2	10.8	12.5	5.8	17.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	16.0	4.0	16.0	8.0	16.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	7.9	4.4	5.5	9.1	7.3	7.3	3.2	6.2
Green Ext Time (p_c), s	0.0	1.4	0.0	2.1	0.0	1.2	0.0	2.6

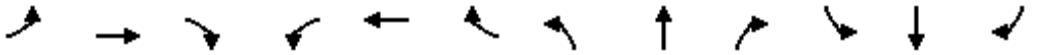
Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	258	0	0	386	193	0	0	0	547	0	0
Future Volume (veh/h)	0	258	0	0	386	193	0	0	0	547	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	258	0	0	386	193	0	0	0	547	0	0
Adj No. of Lanes	2	2	1	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	15	1236	553	8	1236	553	8	8	7	988	535	455
Arrive On Green	0.00	0.35	0.00	0.00	0.35	0.35	0.00	0.00	0.00	0.29	0.00	0.00
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	1757	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	0	258	0	0	386	193	0	0	0	547	0	0
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	0.0	1.2	0.0	0.0	1.8	2.0	0.0	0.0	0.0	3.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.2	0.0	0.0	1.8	2.0	0.0	0.0	0.0	3.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	15	1236	553	8	1236	553	8	8	7	988	535	455
V/C Ratio(X)	0.00	0.21	0.00	0.00	0.31	0.35	0.00	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	609	2505	1120	314	2505	1120	314	1401	1190	2588	2472	2101
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	5.1	0.0	0.0	5.3	5.3	0.0	0.0	0.0	6.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.1	0.4	0.0	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.0	0.0	0.9	0.9	0.0	0.0	0.0	1.4	0.0	0.0
LnGrp Delay(d),s/veh	0.0	5.1	0.0	0.0	5.4	5.7	0.0	0.0	0.0	7.2	0.0	0.0
LnGrp LOS		A			A	A				A		
Approach Vol, veh/h		258			579			0			547	
Approach Delay, s/veh		5.1			5.5			0.0			7.2	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	0.0	0.0	11.9	0.0	10.5	0.0	11.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	17.0	4.0	16.0	4.0	30.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	5.0	0.0	0.0	3.2	0.0	0.0	0.0	4.0
Green Ext Time (p_c), s	1.7	0.0	0.0	4.1	0.0	0.0	0.0	3.9

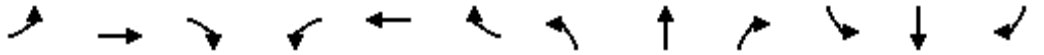
Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	5	34	162	21	69	55	1124	63	134	1213	107
Future Volume (veh/h)	48	5	34	162	21	69	55	1124	63	134	1213	107
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	48	5	34	162	21	69	55	1124	63	134	1213	107
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	58	106	90	203	258	219	67	1505	84	170	1643	145
Arrive On Green	0.03	0.06	0.06	0.12	0.14	0.14	0.04	0.45	0.45	0.10	0.50	0.50
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3375	189	1757	3259	287
Grp Volume(v), veh/h	48	5	34	162	21	69	55	583	604	134	651	669
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1811	1757	1752	1794
Q Serve(g_s), s	1.5	0.1	1.2	5.1	0.6	2.2	1.7	15.6	15.6	4.2	16.5	16.6
Cycle Q Clear(g_c), s	1.5	0.1	1.2	5.1	0.6	2.2	1.7	15.6	15.6	4.2	16.5	16.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.16
Lane Grp Cap(c), veh/h	58	106	90	203	258	219	67	781	808	170	883	904
V/C Ratio(X)	0.82	0.05	0.38	0.80	0.08	0.31	0.81	0.75	0.75	0.79	0.74	0.74
Avail Cap(c_a), veh/h	187	492	418	219	525	446	94	810	837	187	903	925
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	25.0	25.5	24.3	21.1	21.8	26.9	12.9	13.0	24.9	11.0	11.0
Incr Delay (d2), s/veh	23.8	0.2	2.6	17.5	0.1	0.8	30.4	3.7	3.6	18.5	3.1	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.1	0.6	3.4	0.3	1.0	1.4	8.3	8.5	2.9	8.5	9.0
LnGrp Delay(d),s/veh	50.8	25.2	28.1	41.8	21.2	22.6	57.2	16.6	16.5	43.3	14.1	14.2
LnGrp LOS	D	C	C	D	C	C	E	B	B	D	B	B
Approach Vol, veh/h		87			252			1242			1454	
Approach Delay, s/veh		40.5			34.8			18.4			16.8	
Approach LOS		D			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	29.1	10.5	7.2	6.2	32.4	5.9	11.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	26.0	7.0	15.0	3.0	29.0	6.0	16.0
Max Q Clear Time (g_c+I1), s	6.2	17.6	7.1	3.2	3.7	18.6	3.5	4.2
Green Ext Time (p_c), s	0.0	7.5	0.0	0.3	0.0	9.1	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	9	98	52	7	122	36	1123	108	62	1182	53
Future Volume (veh/h)	90	9	98	52	7	122	36	1123	108	62	1182	53
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	90	9	98	52	7	122	36	1123	108	62	1182	53
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	114	266	226	64	213	181	43	1656	159	78	1819	82
Arrive On Green	0.07	0.14	0.14	0.04	0.12	0.12	0.02	0.51	0.51	0.04	0.53	0.53
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3232	310	1757	3417	153
Grp Volume(v), veh/h	90	9	98	52	7	122	36	608	623	62	606	629
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1790	1757	1752	1818
Q Serve(g_s), s	3.1	0.3	3.5	1.8	0.2	4.5	1.2	15.8	15.8	2.1	15.0	15.1
Cycle Q Clear(g_c), s	3.1	0.3	3.5	1.8	0.2	4.5	1.2	15.8	15.8	2.1	15.0	15.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		0.08
Lane Grp Cap(c), veh/h	114	266	226	64	213	181	43	898	917	78	933	967
V/C Ratio(X)	0.79	0.03	0.43	0.81	0.03	0.68	0.84	0.68	0.68	0.80	0.65	0.65
Avail Cap(c_a), veh/h	116	485	412	116	485	412	87	980	1001	144	1037	1076
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	22.4	23.8	29.1	23.9	25.8	29.6	11.1	11.1	28.8	10.2	10.2
Incr Delay (d2), s/veh	29.1	0.1	1.3	21.1	0.1	4.3	33.4	1.7	1.7	16.9	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.1	1.6	1.2	0.1	2.2	1.0	7.9	8.2	1.4	7.6	7.8
LnGrp Delay(d),s/veh	57.1	22.4	25.1	50.2	24.0	30.2	62.9	12.8	12.8	45.7	11.4	11.4
LnGrp LOS	E	C	C	D	C	C	E	B	B	D	B	B
Approach Vol, veh/h		197			181			1267			1297	
Approach Delay, s/veh		39.6			35.7			14.2			13.0	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	35.2	6.2	12.8	5.5	36.4	8.0	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	34.0	4.0	16.0	3.0	36.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	4.1	17.8	3.8	5.5	3.2	17.1	5.1	6.5
Green Ext Time (p_c), s	0.0	13.3	0.0	0.6	0.0	15.2	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1465	45	221	867	64	104
Future Volume (veh/h)	1465	45	221	867	64	104
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	1465	45	221	867	64	104
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	2922	90	314	2950	150	134
Arrive On Green	0.84	0.84	0.84	0.84	0.09	0.09
Sat Flow, veh/h	3564	106	342	3597	1757	1568
Grp Volume(v), veh/h	738	772	221	867	64	104
Grp Sat Flow(s),veh/h/ln	1752	1826	342	1752	1757	1568
Q Serve(g_s), s	12.7	12.7	55.1	5.7	3.8	7.1
Cycle Q Clear(g_c), s	12.7	12.7	67.8	5.7	3.8	7.1
Prop In Lane		0.06	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1475	1537	314	2950	150	134
V/C Ratio(X)	0.50	0.50	0.70	0.29	0.43	0.78
Avail Cap(c_a), veh/h	1533	1598	325	3067	256	229
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.4	2.4	11.7	1.8	47.6	49.1
Incr Delay (d2), s/veh	0.3	0.3	6.5	0.1	1.9	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	6.3	5.7	2.7	1.9	3.4
LnGrp Delay(d),s/veh	2.6	2.6	18.2	1.9	49.5	58.4
LnGrp LOS	A	A	B	A	D	E
Approach Vol, veh/h	1510			1088	168	
Approach Delay, s/veh	2.6			5.2	55.0	
Approach LOS	A			A	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		13.4		96.3				96.3
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		96.0				96.0
Max Q Clear Time (g_c+I1), s		9.1		14.7				69.8
Green Ext Time (p_c), s		0.2		54.3				22.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	2701	0	68	2249	0	0	4	83	128	0	0
Future Volume (veh/h)	147	2701	0	68	2249	0	0	4	83	128	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	147	2701	0	68	2249	0	0	4	83	128	0	0
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	175	2950	0	87	2697	0	2	144	123	153	397	338
Arrive On Green	0.10	0.59	0.00	0.05	0.54	0.00	0.00	0.08	0.08	0.09	0.00	0.00
Sat Flow, veh/h	1757	5202	0	1757	5202	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	147	2701	0	68	2249	0	0	4	83	128	0	0
Grp Sat Flow(s),veh/h/ln	1757	1679	0	1757	1679	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	6.6	38.4	0.0	3.1	30.1	0.0	0.0	0.2	4.1	5.8	0.0	0.0
Cycle Q Clear(g_c), s	6.6	38.4	0.0	3.1	30.1	0.0	0.0	0.2	4.1	5.8	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	2950	0	87	2697	0	2	144	123	153	397	338
V/C Ratio(X)	0.84	0.92	0.00	0.78	0.83	0.00	0.00	0.03	0.68	0.84	0.00	0.00
Avail Cap(c_a), veh/h	175	2950	0	88	2699	0	66	368	313	153	460	391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	35.5	14.8	0.0	37.7	15.6	0.0	0.0	34.2	36.0	36.0	0.0	0.0
Incr Delay (d2), s/veh	28.7	5.1	0.0	35.9	2.4	0.0	0.0	0.1	6.4	31.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	18.9	0.0	2.4	14.3	0.0	0.0	0.1	2.0	4.1	0.0	0.0
LnGrp Delay(d),s/veh	64.2	19.9	0.0	73.6	18.0	0.0	0.0	34.2	42.4	67.1	0.0	0.0
LnGrp LOS	E	B		E	B			C	D	E		
Approach Vol, veh/h		2848			2317			87			128	
Approach Delay, s/veh		22.2			19.7			42.0			67.1	
Approach LOS		C			B			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	10.3	8.0	51.0	0.0	21.3	12.0	47.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	4.0	47.0	3.0	20.0	8.0	43.0
Max Q Clear Time (g_c+I1), s	7.8	6.1	5.1	40.4	0.0	0.0	8.6	32.1
Green Ext Time (p_c), s	0.0	0.1	0.0	6.6	0.0	0.0	0.0	10.9

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	314	1972	703	216	1299	0	621	518	228	86	613	276
Future Volume (veh/h)	314	1972	703	216	1299	0	621	518	228	86	613	276
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	314	1972	703	216	1299	0	621	518	228	86	613	276
Adj No. of Lanes	2	3	1	2	3	1	2	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	365	1743	543	184	1475	459	551	767	652	107	582	495
Arrive On Green	0.11	0.35	0.35	0.05	0.29	0.00	0.16	0.42	0.42	0.06	0.32	0.32
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	314	1972	703	216	1299	0	621	518	228	86	613	276
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1845	1568	1757	1845	1568
Q Serve(g_s), s	11.8	45.0	45.0	7.0	32.0	0.0	21.0	29.6	12.9	6.3	41.0	19.0
Cycle Q Clear(g_c), s	11.8	45.0	45.0	7.0	32.0	0.0	21.0	29.6	12.9	6.3	41.0	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	365	1743	543	184	1475	459	551	767	652	107	582	495
V/C Ratio(X)	0.86	1.13	1.30	1.18	0.88	0.00	1.13	0.68	0.35	0.80	1.05	0.56
Avail Cap(c_a), veh/h	393	1743	543	184	1475	459	551	767	652	122	582	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	42.5	42.5	61.5	43.8	0.0	54.5	30.8	25.9	60.3	44.5	37.0
Incr Delay (d2), s/veh	16.4	66.9	146.1	122.2	6.5	0.0	78.7	2.4	0.3	28.2	52.2	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	31.6	41.5	6.4	15.7	0.0	15.9	15.6	5.6	3.9	29.3	8.4
LnGrp Delay(d),s/veh	73.5	109.4	188.6	183.7	50.3	0.0	133.2	33.2	26.3	88.4	96.7	38.4
LnGrp LOS	E	F	F	F	D		F	C	C	F	F	D
Approach Vol, veh/h		2989			1515			1367			975	
Approach Delay, s/veh		124.3			69.3			77.4			79.5	
Approach LOS		F			E			E			E	

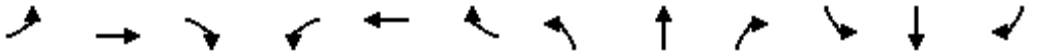
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	58.1	11.0	49.0	25.0	45.0	17.9	42.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	53.0	7.0	45.0	21.0	41.0	15.0	37.0
Max Q Clear Time (g_c+I1), s	8.3	31.6	9.0	47.0	23.0	43.0	13.8	34.0
Green Ext Time (p_c), s	0.0	10.1	0.0	0.0	0.0	0.0	0.2	3.0

Intersection Summary	
HCM 2010 Ctrl Delay	96.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	2103	43	46	1213	3	159	0	0	3	1	21
Future Volume (veh/h)	50	2103	43	46	1213	3	159	0	0	3	1	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	50	2103	43	46	1213	3	159	0	0	3	1	21
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	61	2685	55	56	2725	7	199	299	255	4	95	81
Arrive On Green	0.03	0.53	0.53	0.03	0.53	0.53	0.11	0.00	0.00	0.00	0.05	0.05
Sat Flow, veh/h	1757	5080	104	1757	5187	13	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	50	1389	757	46	785	431	159	0	0	3	1	21
Grp Sat Flow(s),veh/h/ln	1757	1679	1826	1757	1679	1842	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.6	19.4	19.4	1.5	8.4	8.4	5.1	0.0	0.0	0.1	0.0	0.7
Cycle Q Clear(g_c), s	1.6	19.4	19.4	1.5	8.4	8.4	5.1	0.0	0.0	0.1	0.0	0.7
Prop In Lane	1.00		0.06	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	61	1774	965	56	1764	968	199	299	255	4	95	81
V/C Ratio(X)	0.82	0.78	0.78	0.83	0.45	0.45	0.80	0.00	0.00	0.70	0.01	0.26
Avail Cap(c_a), veh/h	181	1847	1005	91	1764	968	211	666	566	91	539	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	11.0	11.0	28.0	8.6	8.6	25.2	0.0	0.0	29.0	26.2	26.5
Incr Delay (d2), s/veh	22.3	2.2	4.0	26.3	0.2	0.3	18.3	0.0	0.0	114.4	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	9.4	10.7	1.1	3.9	4.3	3.5	0.0	0.0	0.2	0.0	0.4
LnGrp Delay(d),s/veh	50.1	13.2	15.0	54.3	8.7	8.9	43.5	0.0	0.0	143.4	26.2	28.2
LnGrp LOS	D	B	B	D	A	A	D			F	C	C
Approach Vol, veh/h		2196			1262			159			25	
Approach Delay, s/veh		14.7			10.4			43.5			42.0	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	13.4	5.8	34.7	10.6	7.0	6.0	34.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	21.0	3.0	32.0	7.0	17.0	6.0	29.0
Max Q Clear Time (g_c+I1), s	2.1	0.0	3.5	21.4	7.1	2.7	3.6	10.4
Green Ext Time (p_c), s	0.0	0.0	0.0	9.3	0.0	0.0	0.0	17.4

Intersection Summary		
HCM 2010 Ctrl Delay		14.7
HCM 2010 LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1945	77	99	1127	23	88	8	105	35	18	46
Future Volume (veh/h)	82	1945	77	99	1127	23	88	8	105	35	18	46
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	82	1945	77	99	1127	23	88	8	105	35	18	46
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	104	2452	97	126	2568	52	111	210	179	41	136	116
Arrive On Green	0.06	0.49	0.49	0.07	0.51	0.51	0.06	0.11	0.11	0.02	0.07	0.07
Sat Flow, veh/h	1757	4971	196	1757	5080	104	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	82	1312	710	99	745	405	88	8	105	35	18	46
Grp Sat Flow(s),veh/h/ln	1757	1679	1810	1757	1679	1826	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	2.5	17.5	17.5	3.0	7.6	7.6	2.7	0.2	3.4	1.1	0.5	1.5
Cycle Q Clear(g_c), s	2.5	17.5	17.5	3.0	7.6	7.6	2.7	0.2	3.4	1.1	0.5	1.5
Prop In Lane	1.00		0.11	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	1656	893	126	1697	923	111	210	179	41	136	116
V/C Ratio(X)	0.79	0.79	0.79	0.79	0.44	0.44	0.79	0.04	0.59	0.86	0.13	0.40
Avail Cap(c_a), veh/h	262	1751	944	164	1697	923	131	584	496	131	584	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	11.3	11.3	24.5	8.4	8.4	24.8	21.2	22.6	26.1	23.3	23.7
Incr Delay (d2), s/veh	12.2	2.5	4.5	17.2	0.2	0.3	23.8	0.1	3.1	36.4	0.4	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.6	9.8	2.0	3.5	3.8	2.0	0.1	1.6	0.9	0.3	0.7
LnGrp Delay(d),s/veh	37.1	13.8	15.9	41.7	8.6	8.8	48.6	21.2	25.6	62.6	23.7	25.9
LnGrp LOS	D	B	B	D	A	A	D	C	C	E	C	C
Approach Vol, veh/h		2104			1249			201			99	
Approach Delay, s/veh		15.4			11.3			35.5			38.5	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.2	10.1	7.8	30.5	7.4	8.0	7.2	31.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	17.0	5.0	28.0	4.0	17.0	8.0	25.0
Max Q Clear Time (g_c+I1), s	3.1	5.4	5.0	19.5	4.7	3.5	4.5	9.6
Green Ext Time (p_c), s	0.0	0.4	0.0	6.9	0.0	0.5	0.0	14.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	72	319	286	1541	2818	47
Future Volume (veh/h)	72	319	286	1541	2818	47
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	72	319	286	1541	2818	47
Adj No. of Lanes	1	1	1	3	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	293	261	293	3749	2721	45
Arrive On Green	0.17	0.17	0.17	0.74	0.53	0.53
Sat Flow, veh/h	1757	1568	1757	5202	5268	85
Grp Volume(v), veh/h	72	319	286	1541	1849	1016
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1679	1679	1830
Q Serve(g_s), s	3.2	15.0	14.6	10.1	48.0	48.0
Cycle Q Clear(g_c), s	3.2	15.0	14.6	10.1	48.0	48.0
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	293	261	293	3749	1791	976
V/C Ratio(X)	0.25	1.22	0.98	0.41	1.03	1.04
Avail Cap(c_a), veh/h	293	261	293	3749	1791	976
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	37.5	37.3	4.2	21.0	21.0
Incr Delay (d2), s/veh	0.4	128.7	46.1	0.1	30.2	39.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	21.2	10.8	4.6	29.4	34.7
LnGrp Delay(d),s/veh	33.0	166.2	83.4	4.3	51.2	60.9
LnGrp LOS	C	F	F	A	F	F
Approach Vol, veh/h	391			1827	2865	
Approach Delay, s/veh	141.7			16.7	54.7	
Approach LOS	F			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		71.0		19.0	19.0	52.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		67.0		15.0	15.0	48.0		
Max Q Clear Time (g_c+I1), s		12.1		17.0	16.6	50.0		
Green Ext Time (p_c), s		53.2		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	47.7
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	387	104	77	927	1355	198
Future Volume (veh/h)	387	104	77	927	1355	198
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	387	104	77	927	1355	198
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	436	389	97	2156	1511	219
Arrive On Green	0.25	0.25	0.06	0.62	0.49	0.49
Sat Flow, veh/h	1757	1568	1757	3597	3166	445
Grp Volume(v), veh/h	387	104	77	927	768	785
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1766
Q Serve(g_s), s	12.4	3.1	2.5	8.1	23.2	23.9
Cycle Q Clear(g_c), s	12.4	3.1	2.5	8.1	23.2	23.9
Prop In Lane	1.00	1.00	1.00			0.25
Lane Grp Cap(c), veh/h	436	389	97	2156	861	868
V/C Ratio(X)	0.89	0.27	0.79	0.43	0.89	0.90
Avail Cap(c_a), veh/h	450	401	120	2212	867	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	17.7	27.4	5.9	13.5	13.6
Incr Delay (d2), s/veh	18.5	0.4	24.6	0.1	11.4	12.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	3.0	1.9	3.9	13.8	14.6
LnGrp Delay(d),s/veh	39.8	18.1	51.9	6.0	24.9	26.4
LnGrp LOS	D	B	D	A	C	C
Approach Vol, veh/h	491			1004	1553	
Approach Delay, s/veh	35.2			9.6	25.6	
Approach LOS	D			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		40.1		18.6	7.2	32.8		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		37.0		15.0	4.0	29.0		
Max Q Clear Time (g_c+I1), s		10.1		14.4	4.5	25.9		
Green Ext Time (p_c), s		21.0		0.1	0.0	2.9		

Intersection Summary	
HCM 2010 Ctrl Delay	21.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	851	822	72	1075	768	0	154	819	843	40	2036	759
Future Volume (veh/h)	851	822	72	1075	768	0	154	819	843	40	2036	759
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	851	822	72	1075	768	0	154	819	843	40	2036	759
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	839	701	314	918	782	350	105	1949	607	70	1898	591
Arrive On Green	0.25	0.20	0.20	0.27	0.22	0.00	0.03	0.39	0.39	0.02	0.38	0.38
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	851	822	72	1075	768	0	154	819	843	40	2036	759
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	32.0	26.0	5.0	35.0	28.3	0.0	4.0	15.5	50.3	1.5	49.0	49.0
Cycle Q Clear(g_c), s	32.0	26.0	5.0	35.0	28.3	0.0	4.0	15.5	50.3	1.5	49.0	49.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	839	701	314	918	782	350	105	1949	607	70	1898	591
V/C Ratio(X)	1.01	1.17	0.23	1.17	0.98	0.00	1.47	0.42	1.39	0.57	1.07	1.28
Avail Cap(c_a), veh/h	839	701	314	918	782	350	105	1949	607	79	1898	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	52.0	43.6	47.5	50.2	0.0	63.0	29.2	39.8	63.1	40.5	40.5
Incr Delay (d2), s/veh	34.7	92.4	0.4	88.8	27.7	0.0	255.3	0.1	185.1	7.5	43.3	140.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.1	21.6	2.2	27.8	16.8	0.0	5.6	7.2	52.9	0.8	30.3	44.2
LnGrp Delay(d),s/veh	83.7	144.4	44.0	136.3	78.0	0.0	318.3	29.3	224.9	70.5	83.8	181.0
LnGrp LOS	F	F	D	F	E		F	C	F	E	F	F
Approach Vol, veh/h		1745			1843			1816			2835	
Approach Delay, s/veh		110.6			112.0			144.6			109.6	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	54.3	39.0	30.0	8.0	53.0	36.0	33.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	50.0	35.0	26.0	4.0	49.0	32.0	29.0
Max Q Clear Time (g_c+I1), s	3.5	52.3	37.0	28.0	6.0	51.0	34.0	30.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	118.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	1183	77	61	1049	24	36	1	28	24	2	89
Future Volume (veh/h)	114	1183	77	61	1049	24	36	1	28	24	2	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	114	1183	77	61	1049	24	36	1	28	24	2	89
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	144	1606	104	74	1543	35	42	202	172	30	189	161
Arrive On Green	0.08	0.48	0.48	0.04	0.44	0.44	0.02	0.11	0.11	0.02	0.10	0.10
Sat Flow, veh/h	1757	3341	217	1757	3503	80	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	114	620	640	61	525	548	36	1	28	24	2	89
Grp Sat Flow(s),veh/h/ln	1757	1752	1806	1757	1752	1831	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	2.9	13.0	13.0	1.6	10.9	10.9	0.9	0.0	0.7	0.6	0.0	2.5
Cycle Q Clear(g_c), s	2.9	13.0	13.0	1.6	10.9	10.9	0.9	0.0	0.7	0.6	0.0	2.5
Prop In Lane	1.00		0.12	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	842	868	74	772	807	42	202	172	30	189	161
V/C Ratio(X)	0.79	0.74	0.74	0.82	0.68	0.68	0.85	0.00	0.16	0.79	0.01	0.55
Avail Cap(c_a), veh/h	192	883	910	115	806	842	115	606	515	115	606	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	9.5	9.5	21.7	10.2	10.2	22.2	18.1	18.4	22.4	18.4	19.5
Incr Delay (d2), s/veh	14.6	3.1	3.0	22.9	2.2	2.1	34.6	0.0	0.4	35.5	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	6.9	7.1	1.2	5.7	6.0	0.8	0.0	0.3	0.6	0.0	1.2
LnGrp Delay(d),s/veh	35.2	12.6	12.6	44.6	12.4	12.3	56.8	18.1	18.9	57.8	18.4	22.4
LnGrp LOS	D	B	B	D	B	B	E	B	B	E	B	C
Approach Vol, veh/h		1374			1134			65			115	
Approach Delay, s/veh		14.5			14.1			39.9			29.8	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.8	9.0	5.9	25.9	5.1	8.7	7.8	24.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	15.0	3.0	23.0	3.0	15.0	5.0	21.0
Max Q Clear Time (g_c+I1), s	2.6	2.7	3.6	15.0	2.9	4.5	4.9	12.9
Green Ext Time (p_c), s	0.0	0.2	0.0	6.9	0.0	0.2	0.0	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	2098	75	56	1828	86	247	5	0	124	7	114
Future Volume (veh/h)	67	2098	75	56	1828	86	247	5	0	124	7	114
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	67	2098	75	56	1828	86	247	5	0	124	7	114
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	85	2480	88	71	2407	113	286	305	259	168	181	154
Arrive On Green	0.05	0.50	0.50	0.04	0.49	0.49	0.16	0.17	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1757	4993	178	1757	4930	232	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	67	1409	764	56	1244	670	247	5	0	124	7	114
Grp Sat Flow(s),veh/h/ln	1757	1679	1813	1757	1679	1804	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	3.0	28.8	29.0	2.5	23.8	23.9	10.8	0.2	0.0	5.4	0.3	5.6
Cycle Q Clear(g_c), s	3.0	28.8	29.0	2.5	23.8	23.9	10.8	0.2	0.0	5.4	0.3	5.6
Prop In Lane	1.00		0.10	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	85	1668	901	71	1639	881	286	305	259	168	181	154
V/C Ratio(X)	0.78	0.84	0.85	0.79	0.76	0.76	0.86	0.02	0.00	0.74	0.04	0.74
Avail Cap(c_a), veh/h	133	1696	916	89	1639	881	311	396	337	288	373	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	17.3	17.3	37.7	16.5	16.5	32.3	27.6	0.0	34.8	32.3	34.7
Incr Delay (d2), s/veh	14.7	4.1	7.5	30.7	2.1	3.9	20.4	0.0	0.0	6.2	0.1	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	14.3	16.3	1.8	11.4	12.7	6.8	0.1	0.0	2.9	0.1	2.7
LnGrp Delay(d),s/veh	51.9	21.4	24.8	68.3	18.6	20.4	52.7	27.7	0.0	41.1	32.4	41.5
LnGrp LOS	D	C	C	E	B	C	D	C		D	C	D
Approach Vol, veh/h		2240			1970			252			245	
Approach Delay, s/veh		23.4			20.6			52.2			41.0	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	17.1	7.2	43.3	16.9	11.8	7.9	42.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	17.0	4.0	40.0	14.0	16.0	6.0	38.0
Max Q Clear Time (g_c+I1), s	7.4	2.2	4.5	31.0	12.8	7.6	5.0	25.9
Green Ext Time (p_c), s	0.1	0.3	0.0	8.3	0.1	0.2	0.0	11.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	553	1543	1044	34	1123	23	851	743	59	86	732	392
Future Volume (veh/h)	553	1543	1044	34	1123	23	851	743	59	86	732	392
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	553	1543	1044	34	1123	23	851	743	59	86	732	392
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	511	2134	664	61	1022	457	795	1352	605	134	672	301
Arrive On Green	0.15	0.42	0.42	0.02	0.29	0.29	0.23	0.39	0.39	0.04	0.19	0.19
Sat Flow, veh/h	3408	5036	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	553	1543	1044	34	1123	23	851	743	59	86	732	392
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	18.0	30.6	50.8	1.2	35.0	1.3	28.0	19.8	2.9	3.0	23.0	23.0
Cycle Q Clear(g_c), s	18.0	30.6	50.8	1.2	35.0	1.3	28.0	19.8	2.9	3.0	23.0	23.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	511	2134	664	61	1022	457	795	1352	605	134	672	301
V/C Ratio(X)	1.08	0.72	1.57	0.55	1.10	0.05	1.07	0.55	0.10	0.64	1.09	1.30
Avail Cap(c_a), veh/h	511	2134	664	85	1022	457	795	1352	605	170	672	301
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	28.7	34.6	58.4	42.5	30.6	46.0	28.7	23.5	56.8	48.5	48.5
Incr Delay (d2), s/veh	63.7	1.2	264.5	7.6	59.1	0.0	52.4	0.5	0.1	5.2	61.7	159.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	14.4	70.8	0.6	25.3	0.6	18.9	9.7	1.3	1.5	16.9	23.2
LnGrp Delay(d),s/veh	114.7	30.0	299.1	66.0	101.6	30.6	98.4	29.2	23.6	62.0	110.2	207.6
LnGrp LOS	F	C	F	E	F	C	F	C	C	E	F	F
Approach Vol, veh/h		3140			1180			1653			1210	
Approach Delay, s/veh		134.4			99.2			64.6			138.3	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	50.3	6.2	54.8	32.0	27.0	22.0	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	45.0	3.0	50.0	28.0	23.0	18.0	35.0
Max Q Clear Time (g_c+I1), s	5.0	21.8	3.2	52.8	30.0	25.0	20.0	37.0
Green Ext Time (p_c), s	0.0	13.4	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	113.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	431	974	91	119	569	169	47	376	36	223	960	311
Future Volume (veh/h)	431	974	91	119	569	169	47	376	36	223	960	311
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	431	974	91	119	569	169	47	376	36	223	960	311
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	471	1177	527	177	875	391	94	935	418	236	1081	484
Arrive On Green	0.14	0.34	0.34	0.05	0.25	0.25	0.03	0.27	0.27	0.07	0.31	0.31
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	431	974	91	119	569	169	47	376	36	223	960	311
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	7.2	14.8	2.4	2.0	8.4	5.2	0.8	5.1	1.0	3.8	15.1	9.9
Cycle Q Clear(g_c), s	7.2	14.8	2.4	2.0	8.4	5.2	0.8	5.1	1.0	3.8	15.1	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	471	1177	527	177	875	391	94	935	418	236	1081	484
V/C Ratio(X)	0.92	0.83	0.17	0.67	0.65	0.43	0.50	0.40	0.09	0.95	0.89	0.64
Avail Cap(c_a), veh/h	471	1211	542	177	908	406	177	1029	460	236	1090	488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	17.7	13.6	27.0	19.5	18.3	27.8	17.4	15.9	26.8	19.1	17.3
Incr Delay (d2), s/veh	22.5	4.8	0.2	9.6	1.6	0.8	4.1	0.3	0.1	44.0	9.1	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	7.8	1.0	1.2	4.2	2.4	0.4	2.5	0.4	3.2	8.6	4.6
LnGrp Delay(d),s/veh	47.1	22.5	13.7	36.6	21.0	19.0	31.9	17.7	16.0	70.8	28.2	20.1
LnGrp LOS	D	C	B	D	C	B	C	B	B	E	C	C
Approach Vol, veh/h		1496			857			459			1494	
Approach Delay, s/veh		29.0			22.8			19.0			32.9	
Approach LOS		C			C			B			C	

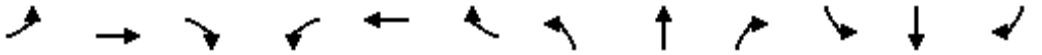
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	19.4	7.0	23.4	5.6	21.9	12.0	18.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	17.0	3.0	20.0	3.0	18.0	8.0	15.0
Max Q Clear Time (g_c+I1), s	5.8	7.1	4.0	16.8	2.8	17.1	9.2	10.4
Green Ext Time (p_c), s	0.0	6.7	0.0	2.6	0.0	0.8	0.0	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	28.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	661	100	354	764	3	44	148	118	3	711	189
Future Volume (veh/h)	45	661	100	354	764	3	44	148	118	3	711	189
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	45	661	100	354	764	3	44	148	118	3	711	189
Adj No. of Lanes	2	1	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	82	725	616	417	1722	770	105	884	396	125	905	405
Arrive On Green	0.02	0.39	0.39	0.12	0.49	0.49	0.03	0.25	0.25	0.04	0.26	0.26
Sat Flow, veh/h	3408	1845	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	45	661	100	354	764	3	44	148	118	3	711	189
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	1.1	27.7	3.4	8.3	11.6	0.1	1.0	2.7	5.0	0.1	15.4	8.3
Cycle Q Clear(g_c), s	1.1	27.7	3.4	8.3	11.6	0.1	1.0	2.7	5.0	0.1	15.4	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	725	616	417	1722	770	105	884	396	125	905	405
V/C Ratio(X)	0.55	0.91	0.16	0.85	0.44	0.00	0.42	0.17	0.30	0.02	0.79	0.47
Avail Cap(c_a), veh/h	125	745	633	417	1722	770	167	884	396	626	1158	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	23.5	16.1	35.1	13.5	10.6	38.9	23.9	24.7	38.0	28.2	25.6
Incr Delay (d2), s/veh	5.6	15.3	0.1	15.1	0.2	0.0	2.6	0.1	0.4	0.1	2.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	17.0	1.5	4.8	5.6	0.0	0.5	1.3	2.2	0.0	7.8	3.7
LnGrp Delay(d),s/veh	45.1	38.8	16.2	50.3	13.7	10.6	41.5	23.9	25.1	38.0	31.0	26.4
LnGrp LOS	D	D	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		806			1121			310			903	
Approach Delay, s/veh		36.3			25.2			26.9			30.1	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	24.6	14.0	36.1	6.5	25.1	6.0	44.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	16.0	10.0	33.0	4.0	27.0	3.0	40.0
Max Q Clear Time (g_c+I1), s	2.1	7.0	10.3	29.7	3.0	17.4	3.1	13.6
Green Ext Time (p_c), s	0.0	4.5	0.0	2.4	0.0	3.7	0.0	12.2

Intersection Summary	
HCM 2010 Ctrl Delay	29.6
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	2168	47	170	1793	6	32	1488	251	14	1604	99
Future Volume (veh/h)	91	2168	47	170	1793	6	32	1488	251	14	1604	99
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	91	2168	47	170	1793	6	32	1488	251	14	1604	99
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	133	1995	621	160	2036	634	67	1534	686	40	1506	674
Arrive On Green	0.04	0.40	0.40	0.05	0.40	0.40	0.02	0.44	0.44	0.01	0.43	0.43
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	91	2168	47	170	1793	6	32	1488	251	14	1604	99
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.9	59.0	2.8	7.0	49.1	0.3	1.4	61.8	16.0	0.6	64.0	5.7
Cycle Q Clear(g_c), s	3.9	59.0	2.8	7.0	49.1	0.3	1.4	61.8	16.0	0.6	64.0	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	1995	621	160	2036	634	67	1534	686	40	1506	674
V/C Ratio(X)	0.69	1.09	0.08	1.06	0.88	0.01	0.48	0.97	0.37	0.35	1.07	0.15
Avail Cap(c_a), veh/h	137	1995	621	160	2036	634	92	1534	686	92	1506	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.7	45.0	28.0	71.0	41.0	26.5	72.2	40.9	28.0	73.0	42.5	25.9
Incr Delay (d2), s/veh	12.9	48.2	0.1	88.3	4.9	0.0	5.2	16.4	0.3	5.1	42.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	36.2	1.2	5.3	23.7	0.1	0.7	33.2	6.9	0.3	39.9	2.5
LnGrp Delay(d),s/veh	83.5	93.2	28.0	159.3	45.9	26.5	77.4	57.3	28.4	78.1	85.1	26.0
LnGrp LOS	F	F	C	F	D	C	E	E	C	E	F	C
Approach Vol, veh/h		2306			1969			1771			1717	
Approach Delay, s/veh		91.5			55.6			53.6			81.7	
Approach LOS		F			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	69.2	11.0	63.0	6.9	68.0	9.8	64.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	64.0	7.0	59.0	4.0	64.0	6.0	60.0
Max Q Clear Time (g_c+I1), s	2.6	63.8	9.0	61.0	3.4	66.0	5.9	51.1
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	0.0	0.0	8.8

Intersection Summary	
HCM 2010 Ctrl Delay	71.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	379	1270	0	451	1278	0	1	257	394	5	333	492
Future Volume (veh/h)	379	1270	0	451	1278	0	1	257	394	5	333	492
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	379	1270	0	451	1278	0	1	257	394	5	333	492
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	368	1285	0	423	1395	0	2	406	345	9	413	351
Arrive On Green	0.21	0.37	0.00	0.24	0.40	0.00	0.00	0.22	0.22	0.01	0.22	0.22
Sat Flow, veh/h	1757	3597	0	1757	3597	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	379	1270	0	451	1278	0	1	257	394	5	333	492
Grp Sat Flow(s),veh/h/ln	1757	1752	0	1757	1752	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	20.0	34.4	0.0	23.0	33.0	0.0	0.1	12.1	21.0	0.3	16.3	21.4
Cycle Q Clear(g_c), s	20.0	34.4	0.0	23.0	33.0	0.0	0.1	12.1	21.0	0.3	16.3	21.4
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	1285	0	423	1395	0	2	406	345	9	413	351
V/C Ratio(X)	1.03	0.99	0.00	1.07	0.92	0.00	0.52	0.63	1.14	0.55	0.81	1.40
Avail Cap(c_a), veh/h	368	1285	0	423	1395	0	74	406	345	74	413	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	30.1	0.0	36.2	27.2	0.0	47.7	33.8	37.2	47.4	35.1	37.1
Incr Delay (d2), s/veh	54.9	22.3	0.0	62.4	9.8	0.0	134.4	3.2	93.1	42.5	11.2	196.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	20.6	0.0	18.4	17.7	0.0	0.1	6.5	18.0	0.2	9.6	28.5
LnGrp Delay(d),s/veh	92.6	52.4	0.0	98.6	37.0	0.0	182.1	37.0	130.3	89.9	46.2	233.8
LnGrp LOS	F	D		F	D		F	D	F	F	D	F
Approach Vol, veh/h		1649			1729			652			830	
Approach Delay, s/veh		61.6			53.1			93.6			157.7	
Approach LOS		E			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.5	25.0	27.0	39.0	4.1	25.4	24.0	42.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	21.0	23.0	35.0	4.0	21.0	20.0	38.0
Max Q Clear Time (g_c+I1), s	2.3	23.0	25.0	36.4	2.1	23.4	22.0	35.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	79.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	672	0	1044	749	123	3	799	947	98	732	304
Future Volume (veh/h)	301	672	0	1044	749	123	3	799	947	98	732	304
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	301	672	0	1044	749	123	3	799	947	98	732	304
Adj No. of Lanes	1	2	1	2	2	1	1	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	333	666	298	1022	1053	471	6	1087	486	136	1215	544
Arrive On Green	0.19	0.19	0.00	0.30	0.30	0.30	0.00	0.31	0.31	0.04	0.35	0.35
Sat Flow, veh/h	1757	3505	1568	3408	3505	1568	1757	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	301	672	0	1044	749	123	3	799	947	98	732	304
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1704	1752	1568	1757	1752	1568	1704	1752	1568
Q Serve(g_s), s	16.8	19.0	0.0	30.0	19.0	6.0	0.2	20.4	31.0	2.8	17.2	15.7
Cycle Q Clear(g_c), s	16.8	19.0	0.0	30.0	19.0	6.0	0.2	20.4	31.0	2.8	17.2	15.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	333	666	298	1022	1053	471	6	1087	486	136	1215	544
V/C Ratio(X)	0.90	1.01	0.00	1.02	0.71	0.26	0.53	0.74	1.95	0.72	0.60	0.56
Avail Cap(c_a), veh/h	369	666	298	1022	1053	471	70	1087	486	136	1215	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	40.5	0.0	35.0	31.1	26.6	49.8	30.8	34.5	47.4	27.0	26.5
Incr Delay (d2), s/veh	23.3	37.1	0.0	33.6	2.3	0.3	61.3	2.6	434.2	16.7	0.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	12.6	0.0	18.8	9.5	2.6	0.2	10.3	72.0	1.6	8.5	7.0
LnGrp Delay(d),s/veh	63.0	77.7	0.0	68.6	33.4	26.9	111.1	33.5	468.7	64.1	27.8	27.8
LnGrp LOS	E	F		F	C	C	F	C	F	E	C	C
Approach Vol, veh/h		973			1916			1749			1134	
Approach Delay, s/veh		73.1			52.1			269.3			30.9	
Approach LOS		E			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	35.0	34.0	23.0	4.3	38.7	23.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	31.0	30.0	19.0	4.0	31.0	21.0	28.0
Max Q Clear Time (g_c+I1), s	4.8	33.0	32.0	21.0	2.2	19.2	18.8	21.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	10.1	0.2	4.9

Intersection Summary		
HCM 2010 Ctrl Delay		117.3
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	12	100	10	2	28	8	174	78	28	327	84
Future Volume (veh/h)	122	12	100	10	2	28	8	174	78	28	327	84
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	122	12	100	10	2	28	8	174	78	28	327	84
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	153	281	239	14	136	116	11	613	264	37	752	190
Arrive On Green	0.09	0.15	0.15	0.01	0.07	0.07	0.01	0.26	0.26	0.02	0.27	0.27
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	2388	1028	1757	2771	702
Grp Volume(v), veh/h	122	12	100	10	2	28	8	126	126	28	205	206
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1663	1757	1752	1721
Q Serve(g_s), s	1.9	0.2	1.6	0.2	0.0	0.5	0.1	1.6	1.7	0.5	2.8	2.8
Cycle Q Clear(g_c), s	1.9	0.2	1.6	0.2	0.0	0.5	0.1	1.6	1.7	0.5	2.8	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.62	1.00		0.41
Lane Grp Cap(c), veh/h	153	281	239	14	136	116	11	450	427	37	475	467
V/C Ratio(X)	0.80	0.04	0.42	0.71	0.01	0.24	0.70	0.28	0.30	0.76	0.43	0.44
Avail Cap(c_a), veh/h	370	1166	991	185	972	826	185	923	876	185	923	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.8	10.3	10.9	14.1	12.2	12.4	14.1	8.5	8.5	13.9	8.6	8.6
Incr Delay (d2), s/veh	9.2	0.1	1.2	49.2	0.0	1.1	57.2	0.3	0.4	27.0	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.8	0.3	0.0	0.2	0.2	0.8	0.8	0.5	1.4	1.4
LnGrp Delay(d),s/veh	22.0	10.4	12.1	63.3	12.3	13.5	71.3	8.8	8.9	40.9	9.2	9.2
LnGrp LOS	C	B	B	E	B	B	E	A	A	D	A	A
Approach Vol, veh/h		234			40			260			439	
Approach Delay, s/veh		17.2			25.9			10.8			11.2	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	11.3	4.2	8.3	4.2	11.7	6.5	6.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	15.0	3.0	18.0	3.0	15.0	6.0	15.0
Max Q Clear Time (g_c+I1), s	2.5	3.7	2.2	3.6	2.1	4.8	3.9	2.5
Green Ext Time (p_c), s	0.0	3.1	0.0	0.3	0.0	2.9	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	5	9	5	5	5	12	377	5	5	567	14
Future Volume (veh/h)	10	5	9	5	5	5	12	377	5	5	567	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	10	5	9	5	5	5	12	377	5	5	567	14
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	38	83	71	10	53	45	17	1783	798	612	1231	30
Arrive On Green	0.02	0.05	0.05	0.01	0.03	0.03	0.01	0.51	0.51	0.35	0.35	0.35
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3505	1568	987	3496	86
Grp Volume(v), veh/h	10	5	9	5	5	5	12	377	5	5	284	297
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1568	987	1752	1829
Q Serve(g_s), s	0.2	0.1	0.2	0.1	0.1	0.1	0.2	1.6	0.0	0.1	3.4	3.4
Cycle Q Clear(g_c), s	0.2	0.1	0.2	0.1	0.1	0.1	0.2	1.6	0.0	0.1	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	38	83	71	10	53	45	17	1783	798	612	617	644
V/C Ratio(X)	0.26	0.06	0.13	0.52	0.09	0.11	0.71	0.21	0.01	0.01	0.46	0.46
Avail Cap(c_a), veh/h	968	1829	1555	258	1084	921	194	2832	1267	808	965	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.1	12.4	12.5	13.5	12.9	12.9	13.4	3.7	3.3	5.7	6.8	6.8
Incr Delay (d2), s/veh	3.6	0.3	0.8	37.7	0.8	1.1	43.3	0.1	0.0	0.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.1	0.0	0.0	0.3	0.7	0.0	0.0	1.7	1.7
LnGrp Delay(d),s/veh	16.7	12.7	13.3	51.2	13.6	13.9	56.8	3.7	3.3	5.7	7.4	7.3
LnGrp LOS	B	B	B	D	B	B	E	A	A	A	A	A
Approach Vol, veh/h		24			15			394			586	
Approach Delay, s/veh		14.6			26.3			5.4			7.3	
Approach LOS		B			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		17.9	4.1	5.2	4.3	13.6	4.6	4.8
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s		22.0	4.0	27.0	3.0	15.0	15.0	16.0
Max Q Clear Time (g_c+I1), s		3.6	2.1	2.2	2.2	5.4	2.2	2.1
Green Ext Time (p_c), s		6.0	0.0	0.0	0.0	4.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	17	18	164	25	97	22	290	76	61	399	78
Future Volume (veh/h)	29	17	18	164	25	97	22	290	76	61	399	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	29	17	18	164	25	97	22	290	76	61	399	78
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	37	138	118	213	322	274	29	748	193	72	865	168
Arrive On Green	0.02	0.08	0.08	0.12	0.17	0.17	0.02	0.27	0.27	0.04	0.30	0.30
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	2760	711	1757	2929	568
Grp Volume(v), veh/h	29	17	18	164	25	97	22	182	184	61	237	240
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1719	1757	1752	1744
Q Serve(g_s), s	0.5	0.3	0.3	2.9	0.4	1.8	0.4	2.8	2.8	1.1	3.6	3.6
Cycle Q Clear(g_c), s	0.5	0.3	0.3	2.9	0.4	1.8	0.4	2.8	2.8	1.1	3.6	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.41	1.00		0.33
Lane Grp Cap(c), veh/h	37	138	118	213	322	274	29	475	466	72	517	515
V/C Ratio(X)	0.78	0.12	0.15	0.77	0.08	0.35	0.75	0.38	0.39	0.85	0.46	0.47
Avail Cap(c_a), veh/h	162	851	723	486	1191	1013	162	862	846	216	916	912
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	14.0	14.1	13.9	11.2	11.8	15.9	9.6	9.7	15.5	9.3	9.4
Incr Delay (d2), s/veh	28.2	0.4	0.6	5.8	0.1	0.8	31.6	0.5	0.5	23.1	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.2	0.2	1.8	0.2	0.8	0.4	1.4	1.4	1.0	1.8	1.8
LnGrp Delay(d),s/veh	44.1	14.4	14.7	19.7	11.3	12.6	47.5	10.1	10.2	38.6	10.0	10.0
LnGrp LOS	D	B	B	B	B	B	D	B	B	D	A	B
Approach Vol, veh/h		64			286			388			538	
Approach Delay, s/veh		27.9			16.5			12.3			13.2	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	12.8	7.9	6.4	4.5	13.6	4.7	9.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	9.0	15.0	3.0	17.0	3.0	21.0
Max Q Clear Time (g_c+I1), s	3.1	4.8	4.9	2.3	2.4	5.6	2.5	3.8
Green Ext Time (p_c), s	0.0	3.9	0.2	0.4	0.0	4.0	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.4
HCM 2010 LOS	B



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	43	10	380	45	24	671
Future Volume (veh/h)	43	10	380	45	24	671
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	43	10	380	45	24	671
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	90	81	1646	194	817	1826
Arrive On Green	0.05	0.05	0.52	0.52	0.52	0.52
Sat Flow, veh/h	1757	1568	3252	372	949	3597
Grp Volume(v), veh/h	43	10	210	215	24	671
Grp Sat Flow(s),veh/h/ln	1757	1568	1752	1779	949	1752
Q Serve(g_s), s	0.4	0.1	1.2	1.2	0.3	2.1
Cycle Q Clear(g_c), s	0.4	0.1	1.2	1.2	1.5	2.1
Prop In Lane	1.00	1.00		0.21	1.00	
Lane Grp Cap(c), veh/h	90	81	913	927	817	1826
V/C Ratio(X)	0.48	0.12	0.23	0.23	0.03	0.37
Avail Cap(c_a), veh/h	1502	1340	1498	1521	1133	2996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	8.5	2.4	2.4	2.9	2.7
Incr Delay (d2), s/veh	3.8	0.7	0.1	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.6	0.6	0.1	1.0
LnGrp Delay(d),s/veh	12.5	9.2	2.6	2.6	2.9	2.8
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	53		425			695
Approach Delay, s/veh	11.8		2.6			2.8
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.8				13.8		5.0
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		16.0				16.0		16.0
Max Q Clear Time (g_c+I1), s		3.2				4.1		2.4
Green Ext Time (p_c), s		5.9				5.6		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	3.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	43	97	136	35	30	112	306	193	73	515	126
Future Volume (veh/h)	89	43	97	136	35	30	112	306	193	73	515	126
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	89	43	97	136	35	30	112	306	193	73	515	126
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	340	233	198	174	594	505	142	1012	623	447	861	210
Arrive On Green	0.13	0.13	0.13	0.10	0.32	0.32	0.08	0.49	0.49	0.31	0.31	0.31
Sat Flow, veh/h	1318	1845	1568	1757	1845	1568	1757	2087	1284	887	2796	681
Grp Volume(v), veh/h	89	43	97	136	35	30	112	256	243	73	322	319
Grp Sat Flow(s),veh/h/ln	1318	1845	1568	1757	1845	1568	1757	1752	1618	887	1752	1725
Q Serve(g_s), s	2.6	0.9	2.4	3.1	0.5	0.5	2.6	3.6	3.8	2.6	6.5	6.5
Cycle Q Clear(g_c), s	2.6	0.9	2.4	3.1	0.5	0.5	2.6	3.6	3.8	2.6	6.5	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.79	1.00		0.39
Lane Grp Cap(c), veh/h	340	233	198	174	594	505	142	850	785	447	539	531
V/C Ratio(X)	0.26	0.18	0.49	0.78	0.06	0.06	0.79	0.30	0.31	0.16	0.60	0.60
Avail Cap(c_a), veh/h	651	668	568	297	1157	984	254	1100	1015	516	677	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	16.2	16.9	18.2	9.7	9.7	18.7	6.4	6.5	10.8	12.2	12.2
Incr Delay (d2), s/veh	0.4	0.4	1.9	7.4	0.0	0.0	9.3	0.2	0.2	0.2	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.5	1.1	1.9	0.3	0.2	1.6	1.8	1.7	0.6	3.2	3.2
LnGrp Delay(d),s/veh	17.4	16.6	18.7	25.7	9.8	9.8	28.0	6.6	6.7	11.0	13.2	13.3
LnGrp LOS	B	B	B	C	A	A	C	A	A	B	B	B
Approach Vol, veh/h		229			201			611			714	
Approach Delay, s/veh		17.8			20.5			10.6			13.0	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		24.1	8.1	9.2	7.4	16.8		17.3
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s		26.0	7.0	15.0	6.0	16.0		26.0
Max Q Clear Time (g_c+I1), s		5.8	5.1	4.6	4.6	8.5		2.5
Green Ext Time (p_c), s		7.9	0.1	0.8	0.0	4.2		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	0	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	414	76	520
Demand Flow Rate, veh/h	0	427	78	536
Vehicles Circulating, veh/h	429	78	0	289
Vehicles Exiting, veh/h	396	0	429	216
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	8.0	3.9	14.8
Approach LOS	-	A	A	B

Lane	Left	Left	Left
Designated Moves	LTR	LT	TR
Assumed Moves	LTR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	427	78	536
Cap Entry Lane, veh/h	1045	1130	846
Entry HV Adj Factor	0.970	0.972	0.971
Flow Entry, veh/h	414	76	520
Cap Entry, veh/h	1014	1098	821
V/C Ratio	0.409	0.069	0.633
Control Delay, s/veh	8.0	3.9	14.8
LOS	A	A	B
95th %tile Queue, veh	2	0	5

Intersection	
Intersection Delay, s/veh	48.9
Intersection LOS	E

Approach	EB	WB	NB	SB
Entry Lanes	1	0	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	762	0	90	417
Demand Flow Rate, veh/h	785	0	93	429
Vehicles Circulating, veh/h	429	78	700	0
Vehicles Exiting, veh/h	0	715	514	78
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	76.5	0.0	8.8	7.2
Approach LOS	F	-	A	A

Lane	Left	Left	Left
Designated Moves	LTR	TR	LT
Assumed Moves	LTR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	785	93	429
Cap Entry Lane, veh/h	736	561	1130
Entry HV Adj Factor	0.971	0.968	0.972
Flow Entry, veh/h	762	90	417
Cap Entry, veh/h	714	543	1098
V/C Ratio	1.067	0.166	0.380
Control Delay, s/veh	76.5	8.8	7.2
LOS	F	A	A
95th %tile Queue, veh	20	1	2

Intersection	
Intersection Delay, s/veh	106.4
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	0	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	0	246	2192	2059
Demand Flow Rate, veh/h	0	254	2258	2121
Vehicles Circulating, veh/h	1978	2258	0	450
Vehicles Exiting, veh/h	593	0	1978	2062
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	132.6	49.5	163.8
Approach LOS	-	F	E	F

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	254	1061	1197	997	1124
Cap Entry Lane, veh/h	233	1130	1130	806	825
Entry HV Adj Factor	0.969	0.971	0.971	0.971	0.971
Flow Entry, veh/h	246	1030	1162	968	1091
Cap Entry, veh/h	225	1097	1097	783	801
V/C Ratio	1.092	0.939	1.059	1.237	1.363
Control Delay, s/veh	132.6	33.9	63.4	136.3	188.3
LOS	F	D	F	F	F
95th %tile Queue, veh	11	16	25	34	45

Intersection	
Intersection Delay, s/veh	215.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	0	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	749	0	2094	1920
Demand Flow Rate, veh/h	771	0	2157	1978
Vehicles Circulating, veh/h	1978	2257	452	0
Vehicles Exiting, veh/h	0	352	2297	2257
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	814.4	0.0	173.9	26.6
Approach LOS	F	-	F	D

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	771	1014	1143	930	1048
Cap Entry Lane, veh/h	283	805	823	1130	1130
Entry HV Adj Factor	0.971	0.971	0.971	0.971	0.971
Flow Entry, veh/h	749	984	1110	903	1018
Cap Entry, veh/h	275	781	800	1097	1097
V/C Ratio	2.725	1.260	1.388	0.823	0.927
Control Delay, s/veh	814.4	145.6	199.0	20.5	32.0
LOS	F	F	F	C	D
95th %tile Queue, veh	64	36	48	10	15

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	368	828	1168
Demand Flow Rate, veh/h	379	853	1203
Vehicles Circulating, veh/h	725	344	110
Vehicles Exiting, veh/h	472	969	994
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	14.9	10.6	11.2
Approach LOS	B	B	B

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	379	401	452	565	638
Cap Entry Lane, veh/h	680	873	888	1040	1046
Entry HV Adj Factor	0.971	0.970	0.971	0.972	0.970
Flow Entry, veh/h	368	389	439	549	619
Cap Entry, veh/h	660	847	862	1011	1015
V/C Ratio	0.557	0.459	0.509	0.543	0.610
Control Delay, s/veh	14.9	10.1	11.0	10.4	12.0
LOS	B	B	B	B	B
95th %tile Queue, veh	3	2	3	3	4

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	375	791	941
Demand Flow Rate, veh/h	386	815	969
Vehicles Circulating, veh/h	673	135	206
Vehicles Exiting, veh/h	277	1040	853
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.8	8.0	10.1
Approach LOS	A	A	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.534	0.466	0.470	0.530	0.470	0.530
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	206	180	383	432	455	514
Cap Entry Lane, veh/h	682	705	1021	1028	968	978
Entry HV Adj Factor	0.971	0.972	0.971	0.971	0.972	0.970
Flow Entry, veh/h	200	175	372	419	442	499
Cap Entry, veh/h	662	686	992	998	941	949
V/C Ratio	0.302	0.255	0.375	0.420	0.470	0.525
Control Delay, s/veh	9.3	8.3	7.7	8.3	9.5	10.5
LOS	A	A	A	A	A	B
95th %tile Queue, veh	1	1	2	2	3	3

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	353	791	1009
Demand Flow Rate, veh/h	364	815	1039
Vehicles Circulating, veh/h	610	140	160
Vehicles Exiting, veh/h	345	1059	814
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.1	8.0	10.2
Approach LOS	A	A	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.440	0.560	0.470	0.530	0.470	0.530
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	160	204	383	432	488	551
Cap Entry Lane, veh/h	715	737	1017	1024	1002	1010
Entry HV Adj Factor	0.969	0.971	0.971	0.971	0.972	0.970
Flow Entry, veh/h	155	198	372	419	474	535
Cap Entry, veh/h	693	716	988	994	974	980
V/C Ratio	0.224	0.277	0.376	0.422	0.487	0.545
Control Delay, s/veh	7.8	8.3	7.7	8.3	9.6	10.7
LOS	A	A	A	A	A	B
95th %tile Queue, veh	1	1	2	2	3	3

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	42	121	875	59	299	210
Future Vol, veh/h	42	121	875	59	299	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	42	121	875	59	299	210

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1608	467	0	0	934	0
Stage 1	905	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	94	537	-	-	723	-
Stage 1	350	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	55	537	-	-	723	-
Mov Cap-2 Maneuver	161	-	-	-	-	-
Stage 1	350	-	-	-	-	-
Stage 2	262	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.1	0	7.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	161	537	723	-
HCM Lane V/C Ratio	-	-	0.261	0.225	0.414	-
HCM Control Delay (s)	-	-	35.1	13.6	13.4	-
HCM Lane LOS	-	-	E	B	B	-
HCM 95th %tile Q(veh)	-	-	1	0.9	2	-

Intersection	
Int Delay, s/veh	582.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	299	65	820	158	57	1480
Future Vol, veh/h	299	65	820	158	57	1480
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	299	65	820	158	57	1480

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1605	489	0	0	978	0
Stage 1	899	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Critical Hdwy	5.76	7.16	-	-	5.38	-
Critical Hdwy Stg 1	6.66	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	3.83	3.93	-	-	3.14	-
Pot Cap-1 Maneuver	~ 150	447	-	-	395	-
Stage 1	~ 277	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 28	447	-	-	395	-
Mov Cap-2 Maneuver	~ 28	-	-	-	-	-
Stage 1	~ 277	-	-	-	-	-
Stage 2	~ 77	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, $	4592.4	0	4.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	34	395	-
HCM Lane V/C Ratio	-	-	10.706	0.144	-
HCM Control Delay (s)	-	-	$ 4592.4	15.6	3.8
HCM Lane LOS	-	-	F	C	A
HCM 95th %tile Q(veh)	-	-	44.3	0.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	72

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	2720	2336	25	14	30
Future Vol, veh/h	83	2720	2336	25	14	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	83	2720	2336	25	14	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2361	0	-	0	3875	1181
Stage 1	-	-	-	-	2349	-
Stage 2	-	-	-	-	1526	-
Critical Hdwy	4.22	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.26	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	192	-	-	-	~ 2	181
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	164	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	192	-	-	-	~ 1	181
Mov Cap-2 Maneuver	-	-	-	-	~ 1	-
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	93	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	$ 8448.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	192	-	-	-	3
HCM Lane V/C Ratio	0.432	-	-	-	14.667
HCM Control Delay (s)	37.3	-	-	-	$ 8448.4
HCM Lane LOS	E	-	-	-	F
HCM 95th %tile Q(veh)	2	-	-	-	7.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	2	0	2	0	770	6	1	976	4
Future Vol, veh/h	2	0	1	2	0	2	0	770	6	1	976	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	0	1	2	0	2	0	770	6	1	976	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1754	1756	978	1754	1755	773	980	0	0	776	0	0
Stage 1	980	980	-	773	773	-	-	-	-	-	-	-
Stage 2	774	776	-	981	982	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	66	84	303	66	85	397	700	-	-	836	-	-
Stage 1	299	327	-	390	407	-	-	-	-	-	-	-
Stage 2	390	406	-	299	326	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	66	84	303	66	85	397	700	-	-	836	-	-
Mov Cap-2 Maneuver	66	84	-	66	85	-	-	-	-	-	-	-
Stage 1	299	326	-	390	407	-	-	-	-	-	-	-
Stage 2	388	406	-	297	325	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	46.9	38	0	0
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	700	-	-	89	113	836	-	-
HCM Lane V/C Ratio	-	-	-	0.034	0.035	0.001	-	-
HCM Control Delay (s)	0	-	-	46.9	38	9.3	0	-
HCM Lane LOS	A	-	-	E	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	74	36	45	920	1132	147
Future Vol, veh/h	74	36	45	920	1132	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	74	36	45	920	1132	147

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1756	640	1279	0	-	0
Stage 1	1206	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	75	416	533	-	-	-
Stage 1	244	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 69	416	533	-	-	-
Mov Cap-2 Maneuver	~ 69	-	-	-	-	-
Stage 1	244	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	223.4	0.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	533	-	95	-	-
HCM Lane V/C Ratio	0.084	-	1.158	-	-
HCM Control Delay (s)	12.4	-	223.4	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.3	-	7.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	11.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	689	182	755	773	777	316
Future Vol, veh/h	689	182	755	773	777	316
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	689	182	755	773	777	316

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	871	0	2677	436
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	1897	-
Critical Hdwy	-	-	4.16	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.23	-	3.53	3.33
Pot Cap-1 Maneuver	-	-	763	-	~ 18	565
Stage 1	-	-	-	-	~ 410	-
Stage 2	-	-	-	-	~ 102	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	763	-	0	565
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	~ 410	-
Stage 2	-	-	-	-	~ 1	-

Approach	EB	WB	NB
HCM Control Delay, s	0	26.3	
HCM LOS			-

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	565	-	-	763	-
HCM Lane V/C Ratio	-	0.559	-	-	0.99	-
HCM Control Delay (s)	-	19.2	-	-	53.3	-
HCM Lane LOS	-	C	-	-	F	-
HCM 95th %tile Q(veh)	-	3.4	-	-	16.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	196	553	8	2	501	1	9	188	0	1	280	323
Future Vol, veh/h	196	553	8	2	501	1	9	188	0	1	280	323
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	196	553	8	2	501	1	9	188	0	1	280	323

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	502	0	0	561	0	0	1756	1455	557	1549	1459	502
Stage 1	-	-	-	-	-	-	949	949	-	506	506	-
Stage 2	-	-	-	-	-	-	807	506	-	1043	953	-
Critical Hdwy	4.18	-	-	4.2	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.29	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1032	-	-	971	-	-	64	~ 126	519	90	~ 125	557
Stage 1	-	-	-	-	-	-	305	331	-	538	530	-
Stage 2	-	-	-	-	-	-	367	530	-	270	330	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1032	-	-	971	-	-	-	~ 91	519	-	~ 90	557
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 91	-	-	~ 90	-
Stage 1	-	-	-	-	-	-	221	240	-	390	528	-
Stage 2	-	-	-	-	-	-	72	528	-	42	~ 239	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1032	-	-	971	-	-	-
HCM Lane V/C Ratio	-	0.19	-	-	0.002	-	-	-
HCM Control Delay (s)	-	9.3	0	-	8.7	0	-	-
HCM Lane LOS	-	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	-	0.7	-	-	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	75	47	65	121	56	30
Future Vol, veh/h	75	47	65	121	56	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	75	47	65	121	56	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	322	71	86	0	-	0
Stage 1	71	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	670	989	1504	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	639	989	1504	-	-	-
Mov Cap-2 Maneuver	639	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	752	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	2.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1504	-	740	-	-
HCM Lane V/C Ratio	0.043	-	0.165	-	-
HCM Control Delay (s)	7.5	0	10.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	13	8	181	119	8
Future Vol, veh/h	10	13	8	181	119	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	10	13	8	181	119	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	320	123	127	0	-	0
Stage 1	123	-	-	-	-	-
Stage 2	197	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	671	925	1453	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	667	925	1453	-	-	-
Mov Cap-2 Maneuver	667	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	829	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1453	-	792	-	-
HCM Lane V/C Ratio	0.006	-	0.029	-	-
HCM Control Delay (s)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	12.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	198	120	185	165	99	164
Future Vol, veh/h	198	120	185	165	99	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	198	120	185	165	99	164

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	716	181	263	0	-	0
Stage 1	181	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	395	859	1295	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	333	859	1295	-	-	-
Mov Cap-2 Maneuver	333	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33	4.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1295	-	433	-	-
HCM Lane V/C Ratio	0.143	-	0.734	-	-
HCM Control Delay (s)	8.2	0	33	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.5	-	5.9	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	66	12	24	206	191	57
Future Vol, veh/h	66	12	24	206	191	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	66	12	24	206	191	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	445	191	191	0	-	0
Stage 1	191	-	-	-	-	-
Stage 2	254	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	569	848	1377	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	559	848	1377	-	-	-
Mov Cap-2 Maneuver	559	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	772	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	0.8	0
HCM LOS	B		

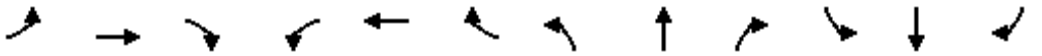
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1377	-	559	848	-	-
HCM Lane V/C Ratio	0.017	-	0.118	0.014	-	-
HCM Control Delay (s)	7.7	-	12.3	9.3	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	0	-	-

Appendix C

Mitigation Synchro Reports

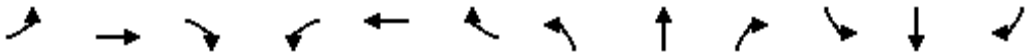
Existing Plus All Projects Mitigation

AM



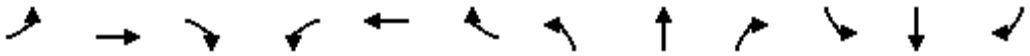
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	642	28	225	434	191	70	693	310	78	430	206
Future Volume (vph)	49	642	28	225	434	191	70	693	310	78	430	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1		6.8	6.8		4.7	5.1	5.1	5.3	5.1	5.1
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3483		1752	3344		1736	3471	1568	1752	3471	1553
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	3483		1752	3344		1736	3471	1568	1752	3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	49	642	28	225	434	191	70	693	310	78	430	206
RTOR Reduction (vph)	0	3	0	0	43	0	0	0	214	0	0	153
Lane Group Flow (vph)	49	667	0	225	582	0	70	693	96	78	430	53
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	3%	3%	4%	4%
Turn Type	Split	NA		Split	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	21.2	21.2		18.4	18.4		5.2	23.0	23.0	5.5	23.9	23.9
Effective Green, g (s)	21.2	21.2		18.4	18.4		5.2	23.0	23.0	5.5	23.9	23.9
Actuated g/C Ratio	0.23	0.23		0.20	0.20		0.06	0.25	0.25	0.06	0.26	0.26
Clearance Time (s)	7.1	7.1		6.8	6.8		4.7	5.1	5.1	5.3	5.1	5.1
Vehicle Extension (s)	1.0	1.0		3.0	3.0		1.0	1.0	1.0	3.0	1.0	1.0
Lane Grp Cap (vph)	401	799		348	665		97	863	390	104	897	401
v/s Ratio Prot	0.03	c0.19		0.13	c0.17		0.04	c0.20		c0.04	0.12	
v/s Ratio Perm									0.06			0.03
v/c Ratio	0.12	0.83		0.65	0.87		0.72	0.80	0.25	0.75	0.48	0.13
Uniform Delay, d1	28.2	33.9		34.0	35.9		42.9	32.6	27.8	42.8	29.0	26.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	7.2		4.1	12.3		19.9	5.1	0.1	25.8	0.1	0.1
Delay (s)	28.3	41.1		38.1	48.2		62.8	37.7	27.9	68.5	29.1	26.3
Level of Service	C	D		D	D		E	D	C	E	C	C
Approach Delay (s)		40.3			45.5			36.5			32.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	92.4	Sum of lost time (s)	24.3
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	586	599	5	1	317	6	20	5	3	14	8	70
Future Volume (vph)	586	599	5	1	317	6	20	5	3	14	8	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.99			0.90	
Flt Protected		0.98			1.00			0.97			0.99	
Satd. Flow (prot)		1782			1822			1755			1643	
Flt Permitted		0.69			1.00			0.40			0.95	
Satd. Flow (perm)		1253			1820			725			1575	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	586	599	5	1	317	6	20	5	3	14	8	70
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	66	0
Lane Group Flow (vph)	0	1190	0	0	324	0	0	25	0	0	26	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		126.0			126.0			8.6			8.6	
Effective Green, g (s)		126.0			126.0			8.6			8.6	
Actuated g/C Ratio		0.88			0.88			0.06			0.06	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1107			1608			43			94	
v/s Ratio Prot												
v/s Ratio Perm		c0.95			0.18			c0.03			0.02	
v/c Ratio		1.07			0.20			0.59			0.28	
Uniform Delay, d1		8.3			1.2			65.3			64.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		49.6			0.1			18.7			1.6	
Delay (s)		57.9			1.2			84.0			65.7	
Level of Service		E			A			F			E	
Approach Delay (s)		57.9			1.2			84.0			65.7	
Approach LOS		E			A			F			E	

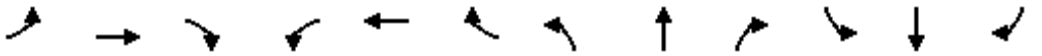
Intersection Summary			
HCM 2000 Control Delay	47.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	142.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	417	2	9	8	1	1	26	872	2	0	167	50
Future Volume (vph)	417	2	9	8	1	1	26	872	2	0	167	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			1.00			0.97	
Flt Protected		0.95			0.96			1.00			1.00	
Satd. Flow (prot)		1754			1750			1841			1787	
Flt Permitted		0.72			0.81			0.99			1.00	
Satd. Flow (perm)		1333			1475			1824			1787	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	417	2	9	8	1	1	26	872	2	0	167	50
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	427	0	0	9	0	0	900	0	0	202	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		24.8			24.8			37.8			37.8	
Effective Green, g (s)		24.8			24.8			37.8			37.8	
Actuated g/C Ratio		0.35			0.35			0.54			0.54	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		468			518			976			956	
v/s Ratio Prot											0.11	
v/s Ratio Perm		c0.32			0.01			c0.49				
v/c Ratio		0.91			0.02			0.92			0.21	
Uniform Delay, d1		21.9			15.0			15.0			8.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		21.9			0.0			13.7			0.1	
Delay (s)		43.8			15.0			28.7			8.7	
Level of Service		D			B			C			A	
Approach Delay (s)		43.8			15.0			28.7			8.7	
Approach LOS		D			B			C			A	

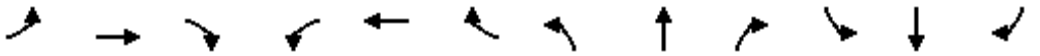
Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



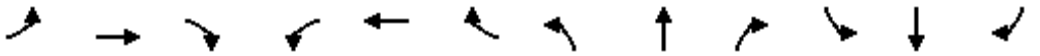
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	777	47	658	25	63	161	545	482	13	105	1229	1151
Future Volume (vph)	777	47	658	25	63	161	545	482	13	105	1229	1151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3		5.5	5.5	4.7	4.6		4.4	4.8	4.8
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1649	1662	1553		1819	1568	1736	4968		1736	4988	1553
Flt Permitted	0.95	0.96	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1649	1662	1553		1819	1568	1736	4968		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	777	47	658	25	63	161	545	482	13	105	1229	1151
RTOR Reduction (vph)	0	0	274	0	0	155	0	2	0	0	0	459
Lane Group Flow (vph)	412	412	384	0	88	6	545	493	0	105	1229	692
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8			4						2
Actuated Green, G (s)	25.9	25.9	25.9		3.5	3.5	19.3	42.5		8.1	30.8	30.8
Effective Green, g (s)	25.9	25.9	25.9		3.5	3.5	19.3	42.5		8.1	30.8	30.8
Actuated g/C Ratio	0.26	0.26	0.26		0.04	0.04	0.19	0.43		0.08	0.31	0.31
Clearance Time (s)	5.3	5.3	5.3		5.5	5.5	4.7	4.6		4.4	4.8	4.8
Vehicle Extension (s)	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lane Grp Cap (vph)	427	431	403		63	54	335	2115		140	1539	479
v/s Ratio Prot	c0.25	0.25			c0.05		c0.31	0.10		0.06	0.25	
v/s Ratio Perm			0.25			0.00						c0.45
v/c Ratio	0.96	0.96	0.95		1.40	0.10	1.63	0.23		0.75	0.80	1.44
Uniform Delay, d1	36.5	36.4	36.4		48.1	46.6	40.2	18.3		44.9	31.7	34.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	34.1	31.7	32.5		250.3	0.3	295.4	0.0		18.0	2.8	211.6
Delay (s)	70.6	68.1	68.8		298.5	46.9	335.7	18.3		62.8	34.4	246.1
Level of Service	E	E	E		F	D	F	B		E	C	F
Approach Delay (s)		69.1			135.8			184.6			133.7	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	125.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	99.8	Sum of lost time (s)	20.3
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	156	0	0	156	7	5	302	0	0	93	109
Future Volume (vph)	225	156	0	0	156	7	5	302	0	0	93	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.99			1.00			0.93	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1671	1759			1716			1758			1631	
Flt Permitted	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (perm)	1671	1759			1716			1758			1631	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	225	156	0	0	156	7	5	302	0	0	93	109
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	55	0
Lane Group Flow (vph)	225	156	0	0	160	0	0	307	0	0	147	0
Heavy Vehicles (%)	8%	8%	8%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Split	NA			NA	
Protected Phases	7	4		3	8		2	2			6	
Permitted Phases										6		
Actuated Green, G (s)	13.5	26.8			9.3			15.7			11.0	
Effective Green, g (s)	13.5	26.8			9.3			15.7			11.0	
Actuated g/C Ratio	0.21	0.41			0.14			0.24			0.17	
Clearance Time (s)	4.0	4.0			4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	344	719			243			421			273	
v/s Ratio Prot	c0.13	0.09			c0.09			c0.17			c0.09	
v/s Ratio Perm												
v/c Ratio	0.65	0.22			0.66			0.73			0.54	
Uniform Delay, d1	23.9	12.5			26.6			22.9			24.9	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	4.4	0.2			6.6			6.2			2.0	
Delay (s)	28.3	12.7			33.2			29.2			27.0	
Level of Service	C	B			C			C			C	
Approach Delay (s)		21.9			33.2			29.2			27.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	310	40	3	155	23	32	620	26	20	129	28
Future Volume (vph)	189	310	40	3	155	23	32	620	26	20	129	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1796		1736	1792		1736	1816		1752	1795	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1736	1796		1736	1792		1736	1816		1752	1795	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	189	310	40	3	155	23	32	620	26	20	129	28
RTOR Reduction (vph)	0	6	0	0	7	0	0	2	0	0	10	0
Lane Group Flow (vph)	189	344	0	3	171	0	32	644	0	20	147	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	9.3	23.4		0.7	14.8		1.7	26.4		1.3	26.0	
Effective Green, g (s)	9.3	23.4		0.7	14.8		1.7	26.4		1.3	26.0	
Actuated g/C Ratio	0.14	0.35		0.01	0.22		0.03	0.39		0.02	0.38	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	238	619		17	391		43	707		33	688	
v/s Ratio Prot	c0.11	c0.19		0.00	0.10		c0.02	c0.35		0.01	0.08	
v/s Ratio Perm												
v/c Ratio	0.79	0.56		0.18	0.44		0.74	0.91		0.61	0.21	
Uniform Delay, d1	28.3	18.0		33.3	22.9		32.8	19.6		33.0	14.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.5	1.1		4.9	0.8		50.5	16.0		27.6	0.2	
Delay (s)	44.8	19.1		38.2	23.7		83.3	35.6		60.6	14.2	
Level of Service	D	B		D	C		F	D		E	B	
Approach Delay (s)		28.1			23.9			37.8			19.4	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	186	342	1781	370	865	255
Future Volume (vph)	186	342	1781	370	865	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.88	0.91		0.97	0.91
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	2760	4906		3400	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	2760	4906		3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	186	342	1781	370	865	255
RTOR Reduction (vph)	0	294	35	0	0	0
Lane Group Flow (vph)	186	48	2116	0	865	255
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3				
Actuated Green, G (s)	11.0	11.0	42.0		24.7	70.7
Effective Green, g (s)	11.0	11.0	42.0		24.7	70.7
Actuated g/C Ratio	0.12	0.12	0.47		0.28	0.79
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	214	338	2297		936	3969
v/s Ratio Prot	c0.11		c0.43		c0.25	0.05
v/s Ratio Perm		0.02				
v/c Ratio	0.87	0.14	0.92		0.92	0.06
Uniform Delay, d1	38.6	35.1	22.3		31.6	2.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	29.0	0.2	6.7		14.4	0.0
Delay (s)	67.7	35.3	29.0		46.0	2.1
Level of Service	E	D	C		D	A
Approach Delay (s)	46.7		29.0			36.0
Approach LOS	D		C			D

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	726	37	67	632	425	100	1120	148	248	469	68
Future Volume (veh/h)	216	726	37	67	632	425	100	1120	148	248	469	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	216	726	37	67	632	425	100	1120	148	248	469	68
Adj No. of Lanes	1	2	1	1	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	237	1057	473	85	755	338	166	1228	549	273	1338	599
Arrive On Green	0.13	0.30	0.30	0.05	0.22	0.22	0.05	0.35	0.35	0.08	0.39	0.39
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	3375	3471	1553	3375	3471	1553
Grp Volume(v), veh/h	216	726	37	67	632	425	100	1120	148	248	469	68
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1688	1736	1553	1688	1736	1553
Q Serve(g_s), s	9.0	13.6	1.3	2.8	12.8	16.0	2.2	22.9	5.1	5.4	7.1	2.1
Cycle Q Clear(g_c), s	9.0	13.6	1.3	2.8	12.8	16.0	2.2	22.9	5.1	5.4	7.1	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	1057	473	85	755	338	166	1228	549	273	1338	599
V/C Ratio(X)	0.91	0.69	0.08	0.79	0.84	1.26	0.60	0.91	0.27	0.91	0.35	0.11
Avail Cap(c_a), veh/h	237	1057	473	118	755	338	227	1262	564	273	1338	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	22.8	18.6	35.0	27.9	29.1	34.6	22.9	17.1	33.9	16.2	14.7
Incr Delay (d2), s/veh	36.0	1.9	0.1	20.6	8.2	138.1	3.5	10.0	0.3	31.9	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	6.8	0.6	1.8	7.0	19.8	1.1	12.6	2.2	3.7	3.4	0.9
LnGrp Delay(d),s/veh	67.7	24.7	18.6	55.6	36.1	167.2	38.1	32.9	17.4	65.8	16.4	14.8
LnGrp LOS	E	C	B	E	D	F	D	C	B	E	B	B
Approach Vol, veh/h		979			1124			1368			785	
Approach Delay, s/veh		34.0			86.8			31.6			31.8	
Approach LOS		C			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	30.3	7.6	26.4	7.7	32.6	14.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	27.0	5.0	21.0	5.0	28.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	7.4	24.9	4.8	15.6	4.2	9.1	11.0	18.0
Green Ext Time (p_c), s	0.0	1.4	0.0	3.8	0.0	9.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1279	136	190	1628	88	14	536	111	58	474	2
Future Volume (veh/h)	10	1279	136	190	1628	88	14	536	111	58	474	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	10	1279	136	190	1628	88	14	536	111	58	474	2
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	17	1434	642	228	1790	96	24	667	298	73	782	3
Arrive On Green	0.01	0.42	0.42	0.13	0.54	0.54	0.01	0.19	0.19	0.04	0.22	0.22
Sat Flow, veh/h	1707	3406	1524	1707	3287	177	1757	3505	1568	1757	3579	15
Grp Volume(v), veh/h	10	1279	136	190	839	877	14	536	111	58	232	244
Grp Sat Flow(s),veh/h/ln	1707	1703	1524	1707	1703	1761	1757	1752	1568	1757	1752	1842
Q Serve(g_s), s	0.4	26.1	4.3	8.1	33.2	33.8	0.6	11.0	4.6	2.5	8.9	8.9
Cycle Q Clear(g_c), s	0.4	26.1	4.3	8.1	33.2	33.8	0.6	11.0	4.6	2.5	8.9	8.9
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	17	1434	642	228	927	959	24	667	298	73	383	402
V/C Ratio(X)	0.58	0.89	0.21	0.83	0.91	0.91	0.59	0.80	0.37	0.79	0.61	0.61
Avail Cap(c_a), veh/h	91	1500	671	251	927	959	94	748	335	94	383	402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	20.1	13.8	31.7	15.3	15.5	36.8	29.0	26.4	35.6	26.4	26.4
Incr Delay (d2), s/veh	27.8	7.0	0.2	19.5	12.2	13.0	21.2	5.8	0.8	28.9	2.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	13.5	1.8	5.1	18.5	19.8	0.4	5.8	2.1	1.8	4.6	4.8
LnGrp Delay(d),s/veh	64.7	27.1	13.9	51.2	27.6	28.5	58.0	34.8	27.2	64.5	29.1	29.0
LnGrp LOS	E	C	B	D	C	C	E	C	C	E	C	C
Approach Vol, veh/h		1425			1906			661			534	
Approach Delay, s/veh		26.1			30.3			34.0			32.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	18.3	14.0	35.6	5.0	20.4	4.8	44.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	11.0	33.0	4.0	16.0	4.0	40.0
Max Q Clear Time (g_c+I1), s	4.5	13.0	10.1	28.1	2.6	10.9	2.4	35.8
Green Ext Time (p_c), s	0.0	1.3	0.1	3.5	0.0	2.4	0.0	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	29.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	142	23	148	179	777	34	2115	149	553	1610	65
Future Volume (veh/h)	37	142	23	148	179	777	34	2115	149	553	1610	65
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	37	142	23	148	179	777	34	2115	149	553	1610	65
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	65	674	301	153	771	625	60	2048	143	602	2906	117
Arrive On Green	0.02	0.19	0.19	0.04	0.22	0.22	0.02	0.43	0.43	0.18	0.59	0.59
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4760	333	3375	4918	199
Grp Volume(v), veh/h	37	142	23	148	179	777	34	1473	791	553	1088	587
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1768	1688	1663	1792
Q Serve(g_s), s	1.6	5.0	1.8	6.3	6.1	31.8	1.4	62.2	62.2	23.3	28.8	28.8
Cycle Q Clear(g_c), s	1.6	5.0	1.8	6.3	6.1	31.8	1.4	62.2	62.2	23.3	28.8	28.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.11
Lane Grp Cap(c), veh/h	65	674	301	153	771	625	60	1431	761	602	1965	1059
V/C Ratio(X)	0.57	0.21	0.08	0.97	0.23	1.24	0.57	1.03	1.04	0.92	0.55	0.55
Avail Cap(c_a), veh/h	84	696	312	153	771	625	98	1431	761	712	2034	1096
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	48.9	47.6	68.9	46.3	43.5	70.4	41.2	41.2	58.4	18.0	18.0
Incr Delay (d2), s/veh	3.0	0.1	0.0	61.8	0.1	122.9	3.1	31.7	43.4	14.3	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.4	0.8	4.3	2.9	46.1	0.7	34.7	39.4	12.0	13.2	14.3
LnGrp Delay(d),s/veh	73.3	49.0	47.7	130.8	46.4	166.4	73.5	72.8	84.5	72.6	18.1	18.3
LnGrp LOS	E	D	D	F	D	F	E	F	F	E	B	B
Approach Vol, veh/h		202			1104			2298			2228	
Approach Delay, s/veh		53.3			142.2			76.9			31.7	
Approach LOS		D			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	90.7	8.3	37.5	31.3	67.5	12.0	33.8
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	4.2	88.4	3.6	* 32	30.5	* 62	6.5	* 29
Max Q Clear Time (g_c+I1), s	3.4	30.8	3.6	33.8	25.3	64.2	8.3	7.0
Green Ext Time (p_c), s	0.0	8.6	0.0	0.0	0.5	0.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	71.2
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1322	106	283	1410	1114	407	1062	55	938	766	111
Future Volume (veh/h)	60	1322	106	283	1410	1114	407	1062	55	938	766	111
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	60	1322	106	283	1410	0	407	1062	55	938	766	111
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	83	1306	407	289	1631	508	465	1119	349	870	1688	526
Arrive On Green	0.02	0.27	0.27	0.09	0.33	0.00	0.14	0.22	0.22	0.26	0.34	0.34
Sat Flow, veh/h	3312	4893	1524	3312	4893	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	60	1322	106	283	1410	0	407	1062	55	938	766	111
Grp Sat Flow(s),veh/h/ln	1656	1631	1524	1656	1631	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	2.2	32.1	6.6	10.3	32.5	0.0	14.2	25.2	3.4	31.0	14.4	6.1
Cycle Q Clear(g_c), s	2.2	32.1	6.6	10.3	32.5	0.0	14.2	25.2	3.4	31.0	14.4	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	83	1306	407	289	1631	508	465	1119	349	870	1688	526
V/C Ratio(X)	0.73	1.01	0.26	0.98	0.86	0.00	0.87	0.95	0.16	1.08	0.45	0.21
Avail Cap(c_a), veh/h	83	1306	407	289	1631	508	612	1119	349	870	1688	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.2	44.1	34.8	54.8	37.6	0.0	50.8	46.0	37.5	44.6	31.1	28.3
Incr Delay (d2), s/veh	24.1	28.0	0.1	46.9	4.9	0.0	9.0	15.9	0.1	53.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	17.8	2.8	6.6	15.4	0.0	7.2	13.3	1.5	20.9	6.6	2.6
LnGrp Delay(d),s/veh	82.3	72.1	34.9	101.6	42.4	0.0	59.8	61.9	37.6	98.6	31.2	28.4
LnGrp LOS	F	F	C	F	D		E	E	D	F	C	C
Approach Vol, veh/h		1488			1693			1524			1815	
Approach Delay, s/veh		69.9			52.3			60.5			65.8	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	45.5	21.3	45.5	16.0	37.5	35.0	31.8
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.0	4.8
Max Green Setting (Gmax), s	3.0	* 40	* 22	35.5	10.5	* 32	31.0	27.0
Max Q Clear Time (g_c+I1), s	4.2	34.5	16.2	16.4	12.3	34.1	33.0	27.2
Green Ext Time (p_c), s	0.0	3.0	0.4	3.2	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.0
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	738	43	60	439	249	134	803	52	160	688	247
Future Volume (veh/h)	161	738	43	60	439	249	134	803	52	160	688	247
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	161	738	43	60	439	249	134	803	52	160	688	247
Adj No. of Lanes	1	2	0	1	2	0	1	3	1	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	201	989	58	75	470	265	169	1076	338	200	1216	379
Arrive On Green	0.11	0.29	0.29	0.04	0.22	0.22	0.10	0.22	0.22	0.11	0.24	0.24
Sat Flow, veh/h	1757	3366	196	1757	2164	1218	1740	4988	1568	1757	4988	1553
Grp Volume(v), veh/h	161	384	397	60	355	333	134	803	52	160	688	247
Grp Sat Flow(s),veh/h/ln	1757	1752	1810	1757	1752	1630	1740	1663	1568	1757	1663	1553
Q Serve(g_s), s	5.5	12.2	12.2	2.1	12.3	12.4	4.6	9.3	1.7	5.5	7.5	8.8
Cycle Q Clear(g_c), s	5.5	12.2	12.2	2.1	12.3	12.4	4.6	9.3	1.7	5.5	7.5	8.8
Prop In Lane	1.00		0.11	1.00		0.75	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	201	515	532	75	381	354	169	1076	338	200	1216	379
V/C Ratio(X)	0.80	0.75	0.75	0.80	0.93	0.94	0.79	0.75	0.15	0.80	0.57	0.65
Avail Cap(c_a), veh/h	242	515	532	108	381	354	209	1496	470	268	1714	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	19.7	19.7	29.3	23.7	23.8	27.2	22.6	19.6	26.6	20.5	21.0
Incr Delay (d2), s/veh	12.2	5.2	5.1	15.0	29.0	32.5	12.3	0.7	0.1	8.5	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	6.6	6.8	1.3	9.0	8.8	2.8	4.3	0.7	3.1	3.5	3.8
LnGrp Delay(d),s/veh	38.9	24.9	24.8	44.3	52.7	56.3	39.6	23.3	19.7	35.2	20.6	21.7
LnGrp LOS	D	C	C	D	D	E	D	C	B	D	C	C
Approach Vol, veh/h		942			748			989			1095	
Approach Delay, s/veh		27.2			53.6			25.3			23.0	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	19.8	12.6	18.7	12.3	18.1	7.8	23.4
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 7.4	21.2	8.5	* 13	* 9.4	18.5	* 3.8	* 18
Max Q Clear Time (g_c+I1), s	6.6	10.8	7.5	14.4	7.5	11.3	4.1	14.2
Green Ext Time (p_c), s	0.0	2.3	0.0	0.0	0.0	2.0	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	30.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	895	412	6	1	465	274	4	0	1	106	0	526
Future Volume (veh/h)	895	412	6	1	465	274	4	0	1	106	0	526
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	895	412	6	1	465	274	4	0	1	106	0	526
Adj No. of Lanes	2	1	0	1	2	0	0	1	0	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	981	893	13	77	530	310	5	0	1	397	417	624
Arrive On Green	0.29	0.49	0.49	0.04	0.25	0.25	0.00	0.00	0.00	0.23	0.00	0.23
Sat Flow, veh/h	3408	1814	26	1757	2129	1248	1372	0	343	1757	1845	2760
Grp Volume(v), veh/h	895	0	418	1	382	357	5	0	0	106	0	526
Grp Sat Flow(s),veh/h/ln	1704	0	1840	1757	1752	1624	1715	0	0	1757	1845	1380
Q Serve(g_s), s	17.4	0.0	10.2	0.0	14.4	14.5	0.2	0.0	0.0	3.4	0.0	12.5
Cycle Q Clear(g_c), s	17.4	0.0	10.2	0.0	14.4	14.5	0.2	0.0	0.0	3.4	0.0	12.5
Prop In Lane	1.00		0.01	1.00		0.77	0.80		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	981	0	906	77	436	404	7	0	0	397	417	624
V/C Ratio(X)	0.91	0.00	0.46	0.01	0.88	0.88	0.73	0.00	0.00	0.27	0.00	0.84
Avail Cap(c_a), veh/h	995	0	906	462	460	427	75	0	0	462	485	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	11.4	31.3	24.7	24.8	34.1	0.0	0.0	21.8	0.0	25.4
Incr Delay (d2), s/veh	12.3	0.0	0.4	0.1	16.6	18.5	89.7	0.0	0.0	0.4	0.0	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	0.0	5.2	0.0	8.9	8.5	0.3	0.0	0.0	1.7	0.0	5.4
LnGrp Delay(d),s/veh	35.9	0.0	11.8	31.4	41.3	43.2	123.8	0.0	0.0	22.2	0.0	33.3
LnGrp LOS	D		B	C	D	D	F			C		C
Approach Vol, veh/h		1313			740			5			632	
Approach Delay, s/veh		28.2			42.2			123.8			31.4	
Approach LOS		C			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		4.3	7.0	37.8		19.5	23.7	21.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		3.0	18.0	20.0		18.0	20.0	18.0
Max Q Clear Time (g_c+I1), s		2.2	2.0	12.2		14.5	19.4	16.5
Green Ext Time (p_c), s		0.0	0.0	3.4		1.0	0.3	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	33.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	40	32	9	30	234	57	2633	72	543	2091	59
Future Volume (veh/h)	76	40	32	9	30	234	57	2633	72	543	2091	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	76	40	32	9	30	234	57	2633	72	543	2091	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	81	44	35	545	295	251	72	2480	772	513	3044	86
Arrive On Green	0.05	0.05	0.05	0.16	0.16	0.16	0.04	0.50	0.50	0.15	0.61	0.61
Sat Flow, veh/h	1757	950	760	3408	1845	1568	1740	4988	1553	3375	4987	140
Grp Volume(v), veh/h	76	0	72	9	30	234	57	2633	72	543	1393	757
Grp Sat Flow(s),veh/h/ln	1757	0	1711	1704	1845	1568	1740	1663	1553	1688	1663	1802
Q Serve(g_s), s	6.5	0.0	6.3	0.3	2.1	22.1	4.9	74.6	3.7	22.8	42.1	42.3
Cycle Q Clear(g_c), s	6.5	0.0	6.3	0.3	2.1	22.1	4.9	74.6	3.7	22.8	42.1	42.3
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	81	0	79	545	295	251	72	2480	772	513	2030	1100
V/C Ratio(X)	0.94	0.00	0.92	0.02	0.10	0.93	0.79	1.06	0.09	1.06	0.69	0.69
Avail Cap(c_a), veh/h	81	0	79	545	295	251	123	2480	772	513	2030	1100
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.3	0.0	71.3	53.1	53.8	62.2	71.2	37.7	19.9	63.6	19.6	19.6
Incr Delay (d2), s/veh	79.2	0.0	72.1	0.0	0.1	38.4	6.9	37.0	0.0	56.1	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	4.6	0.2	1.1	12.2	2.5	42.7	1.6	14.6	19.4	21.5
LnGrp Delay(d),s/veh	150.5	0.0	143.3	53.1	53.9	100.6	78.1	74.7	19.9	119.7	20.4	21.2
LnGrp LOS	F		F	D	D	F	E	F	B	F	C	C
Approach Vol, veh/h		148			273			2762			2693	
Approach Delay, s/veh		147.0			93.9			73.4			40.6	
Approach LOS		F			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	96.8		12.4	28.3	79.8		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 87		6.9	22.8	* 75		24.0
Max Q Clear Time (g_c+I1), s	6.9	44.3		8.5	24.8	76.6		24.1
Green Ext Time (p_c), s	0.0	16.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.2
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	1166	473	188	1092	942	350	1491	300	484	873	139
Future Volume (veh/h)	204	1166	473	188	1092	942	350	1491	300	484	873	139
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	204	1166	473	188	1092	942	350	1491	300	484	873	139
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	182	1811	564	236	1890	589	398	1471	458	397	1469	457
Arrive On Green	0.05	0.36	0.36	0.07	0.38	0.38	0.12	0.29	0.29	0.12	0.29	0.29
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	204	1166	473	188	1092	942	350	1491	300	484	873	139
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	7.5	27.1	38.8	7.6	24.3	52.7	14.3	41.4	23.7	16.5	21.0	9.7
Cycle Q Clear(g_c), s	7.5	27.1	38.8	7.6	24.3	52.7	14.3	41.4	23.7	16.5	21.0	9.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	1811	564	236	1890	589	398	1471	458	397	1469	457
V/C Ratio(X)	1.12	0.64	0.84	0.80	0.58	1.60	0.88	1.01	0.66	1.22	0.59	0.30
Avail Cap(c_a), veh/h	182	1811	564	313	1890	589	478	1471	458	397	1469	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.4	37.5	41.2	64.4	35.0	43.8	61.0	49.5	43.3	61.9	42.3	38.4
Incr Delay (d2), s/veh	102.7	0.6	10.2	7.4	0.3	278.2	13.4	26.9	2.7	119.8	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	12.6	18.4	3.8	11.3	68.3	7.5	22.6	10.5	14.3	9.7	4.2
LnGrp Delay(d),s/veh	169.2	38.1	51.5	71.8	35.3	322.0	74.4	76.4	45.9	181.8	42.8	38.5
LnGrp LOS	F	D	D	E	D	F	E	F	D	F	D	D
Approach Vol, veh/h		1843			2222			2141			1496	
Approach Delay, s/veh		56.0			159.9			71.8			87.4	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	47.0	13.0	58.4	22.0	47.0	15.2	56.2
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	19.9	* 38	7.5	* 53	16.5	* 41	12.9	* 47
Max Q Clear Time (g_c+I1), s	16.3	23.0	9.5	54.7	18.5	43.4	9.6	40.8
Green Ext Time (p_c), s	0.2	4.5	0.0	0.0	0.0	0.0	0.1	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	96.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	335	1406	450	120	1570	664	370	1436	107	674	648	90
Future Volume (veh/h)	335	1406	450	120	1570	664	370	1436	107	674	648	90
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	335	1406	450	120	1570	664	370	1436	107	674	648	0
Adj No. of Lanes	2	3	1	2	3	2	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	329	1674	536	169	1449	794	424	1340	417	623	1628	502
Arrive On Green	0.10	0.34	0.34	0.05	0.30	0.30	0.12	0.27	0.27	0.18	0.32	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	2682	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	335	1406	450	120	1570	664	370	1436	107	674	648	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1341	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	12.9	34.5	34.4	4.5	38.5	30.1	13.9	34.6	7.0	24.0	13.0	0.0
Cycle Q Clear(g_c), s	12.9	34.5	34.4	4.5	38.5	30.1	13.9	34.6	7.0	24.0	13.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	1674	536	169	1449	794	424	1340	417	623	1628	502
V/C Ratio(X)	1.02	0.84	0.84	0.71	1.08	0.84	0.87	1.07	0.26	1.08	0.40	0.00
Avail Cap(c_a), veh/h	329	1675	537	181	1449	794	558	1340	417	623	1628	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.6	39.5	39.5	60.9	45.8	42.8	55.9	47.7	37.6	53.0	34.2	0.0
Incr Delay (d2), s/veh	54.7	3.8	10.7	11.4	49.7	7.3	9.5	46.1	0.3	60.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	16.1	16.5	2.4	24.0	11.9	7.1	21.7	3.1	16.4	6.0	0.0
LnGrp Delay(d),s/veh	113.3	43.3	50.2	72.2	95.4	50.1	65.4	93.8	37.9	113.1	34.2	0.0
LnGrp LOS	F	D	D	E	F	D	E	F	D	F	C	
Approach Vol, veh/h		2191			2354			1913			1322	
Approach Delay, s/veh		55.4			81.5			85.2			74.4	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.6	47.1	17.2	44.1	29.0	39.7	11.2	50.1
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 21	36.9	* 13	38.5	24.0	34.6	* 6.9	* 45
Max Q Clear Time (g_c+I1), s	15.9	15.0	14.9	40.5	26.0	36.6	6.5	36.5
Green Ext Time (p_c), s	0.3	10.2	0.0	0.0	0.0	0.0	0.0	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	73.9
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	410	96	287	560	123	231	1668	202	37	357	57
Future Volume (veh/h)	9	410	96	287	560	123	231	1668	202	37	357	57
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	9	410	96	287	560	123	231	1668	202	37	357	57
Adj No. of Lanes	2	1	1	2	2	1	1	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	22	456	387	294	1145	512	265	1635	732	66	1176	526
Arrive On Green	0.01	0.25	0.25	0.09	0.33	0.33	0.15	0.47	0.47	0.02	0.34	0.34
Sat Flow, veh/h	3408	1845	1568	3408	3505	1568	1757	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	9	410	96	287	560	123	231	1668	202	37	357	57
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1704	1752	1568	1757	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.3	25.2	5.8	9.9	15.0	6.7	15.1	54.7	9.2	1.3	8.8	2.9
Cycle Q Clear(g_c), s	0.3	25.2	5.8	9.9	15.0	6.7	15.1	54.7	9.2	1.3	8.8	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	22	456	387	294	1145	512	265	1635	732	66	1176	526
V/C Ratio(X)	0.41	0.90	0.25	0.98	0.49	0.24	0.87	1.02	0.28	0.56	0.30	0.11
Avail Cap(c_a), veh/h	87	488	415	294	1145	512	390	1635	732	87	1176	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	42.7	35.4	53.5	31.6	28.8	48.7	31.3	19.1	57.0	28.8	26.9
Incr Delay (d2), s/veh	11.5	18.8	0.3	46.2	0.3	0.2	13.7	27.4	0.2	7.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	15.2	2.5	6.5	7.3	2.9	8.3	32.6	4.1	0.7	4.3	1.3
LnGrp Delay(d),s/veh	69.5	61.5	35.7	99.6	32.0	29.1	62.4	58.7	19.4	64.1	28.9	26.9
LnGrp LOS	E	E	D	F	C	C	E	F	B	E	C	C
Approach Vol, veh/h		515			970			2101			451	
Approach Delay, s/veh		56.9			51.6			55.3			31.5	
Approach LOS		E			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.2	44.3	15.6	34.2	7.8	59.7	6.3	43.5
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	26.0	31.7	10.1	* 31	3.0	54.7	3.0	* 38
Max Q Clear Time (g_c+I1), s	17.1	10.8	11.9	27.2	3.3	56.7	2.3	17.0
Green Ext Time (p_c), s	0.6	11.8	0.0	1.7	0.0	0.0	0.0	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	52.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	427	34	96	247	19	9	1987	465	20	492	186
Future Volume (veh/h)	170	427	34	96	247	19	9	1987	465	20	492	186
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1828	1900	1845	1796	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	170	427	34	96	247	19	9	1987	465	20	492	186
Adj No. of Lanes	2	1	0	2	1	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	6	3	3	3	3	3	3
Cap, veh/h	194	409	33	120	368	28	11	1943	869	24	1401	527
Arrive On Green	0.06	0.24	0.24	0.04	0.22	0.22	0.01	0.55	0.55	0.01	0.56	0.56
Sat Flow, veh/h	3408	1672	133	3408	1647	127	1757	3505	1568	1757	2494	937
Grp Volume(v), veh/h	170	0	461	96	0	266	9	1987	465	20	345	333
Grp Sat Flow(s),veh/h/ln	1704	0	1805	1704	0	1774	1757	1752	1568	1757	1752	1679
Q Serve(g_s), s	6.9	0.0	34.0	3.9	0.0	19.0	0.7	77.0	26.1	1.6	14.9	15.1
Cycle Q Clear(g_c), s	6.9	0.0	34.0	3.9	0.0	19.0	0.7	77.0	26.1	1.6	14.9	15.1
Prop In Lane	1.00		0.07	1.00		0.07	1.00		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	194	0	442	120	0	396	11	1943	869	24	984	943
V/C Ratio(X)	0.88	0.00	1.04	0.80	0.00	0.67	0.81	1.02	0.54	0.82	0.35	0.35
Avail Cap(c_a), veh/h	194	0	442	120	0	396	43	1943	869	38	984	943
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	0.0	52.5	66.5	0.0	49.3	68.9	31.0	19.6	68.3	16.6	16.6
Incr Delay (d2), s/veh	33.4	0.0	54.7	30.4	0.0	3.6	77.6	26.4	0.6	53.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	23.6	2.3	0.0	9.7	0.6	44.1	11.4	1.1	7.2	7.0
LnGrp Delay(d),s/veh	98.4	0.0	107.1	96.9	0.0	52.9	146.5	57.4	20.3	121.5	16.8	16.9
LnGrp LOS	F		F	F		D	F	F	C	F	B	B
Approach Vol, veh/h		631			362			2461			698	
Approach Delay, s/veh		104.8			64.6			50.7			19.8	
Approach LOS		F			E			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	82.1	13.4	36.0	6.4	83.1	10.4	39.0
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	3.0	* 77	7.9	* 31	3.4	* 77	4.9	* 34
Max Q Clear Time (g_c+I1), s	3.6	79.0	8.9	21.0	2.7	17.1	5.9	36.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.6	0.0	36.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.9
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	343	195	313	264	42	380
Future Volume (veh/h)	343	195	313	264	42	380
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	343	195	313	264	42	380
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	460	391	385	1017	498	444
Arrive On Green	0.25	0.25	0.22	0.55	0.28	0.28
Sat Flow, veh/h	1845	1568	1757	1845	1757	1568
Grp Volume(v), veh/h	343	195	313	264	42	380
Grp Sat Flow(s),veh/h/ln	1845	1568	1757	1845	1757	1568
Q Serve(g_s), s	8.3	5.2	8.2	3.6	0.8	11.1
Cycle Q Clear(g_c), s	8.3	5.2	8.2	3.6	0.8	11.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	460	391	385	1017	498	444
V/C Ratio(X)	0.75	0.50	0.81	0.26	0.08	0.86
Avail Cap(c_a), veh/h	610	518	545	1334	617	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	15.6	18.0	5.7	12.7	16.4
Incr Delay (d2), s/veh	3.5	1.0	6.3	0.1	0.1	10.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	2.3	4.6	1.9	0.4	6.0
LnGrp Delay(d),s/veh	20.2	16.6	24.3	5.8	12.8	27.0
LnGrp LOS	C	B	C	A	B	C
Approach Vol, veh/h	538			577	422	
Approach Delay, s/veh	18.9			15.8	25.6	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		17.7	14.6	16.1				30.7
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		17.0	15.0	16.0				35.0
Max Q Clear Time (g_c+I1), s		13.1	10.2	10.3				5.6
Green Ext Time (p_c), s		0.6	0.6	1.8				3.4

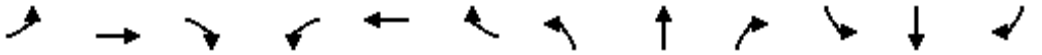
Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	833	133	562	1244	311	177	695	784	339	283	49
Future Volume (veh/h)	117	833	133	562	1244	311	177	695	784	339	283	49
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	117	833	133	562	1244	311	177	695	784	339	283	49
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	186	1280	410	684	1996	639	257	747	649	363	857	383
Arrive On Green	0.05	0.26	0.26	0.20	0.41	0.41	0.08	0.21	0.21	0.11	0.24	0.24
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	117	833	133	562	1244	311	177	695	784	339	283	49
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	2.8	12.8	5.8	13.3	17.0	12.4	4.3	16.4	18.0	8.3	5.6	2.1
Cycle Q Clear(g_c), s	2.8	12.8	5.8	13.3	17.0	12.4	4.3	16.4	18.0	8.3	5.6	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	1280	410	684	1996	639	257	747	649	363	857	383
V/C Ratio(X)	0.63	0.65	0.32	0.82	0.62	0.49	0.69	0.93	1.21	0.93	0.33	0.13
Avail Cap(c_a), veh/h	283	1310	420	888	2179	698	363	747	649	363	857	383
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	27.7	25.1	32.3	19.9	18.5	38.1	32.6	24.7	37.4	26.2	24.9
Incr Delay (d2), s/veh	3.5	1.3	0.6	4.9	0.6	0.8	3.3	18.1	107.7	30.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	5.9	2.6	6.7	7.7	5.5	2.1	9.8	34.5	5.5	2.7	0.9
LnGrp Delay(d),s/veh	42.6	29.0	25.8	37.2	20.5	19.3	41.4	50.7	132.4	68.1	26.4	25.0
LnGrp LOS	D	C	C	D	C	B	D	D	F	E	C	C
Approach Vol, veh/h		1083			2117			1656			671	
Approach Delay, s/veh		30.1			24.7			88.4			47.4	
Approach LOS		C			C			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.9	28.5	10.4	24.6	8.6	40.8	13.0	22.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	22.0	22.6	9.0	18.0	7.0	37.6	9.0	18.0
Max Q Clear Time (g_c+I1), s	15.3	14.8	6.3	7.6	4.8	19.0	10.3	20.0
Green Ext Time (p_c), s	1.6	7.1	0.2	6.2	0.1	15.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.6
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	644	3	92	34	33	123	224	877	29	55	450	574
Future Volume (veh/h)	644	3	92	34	33	123	224	877	29	55	450	574
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1845
Adj Flow Rate, veh/h	644	3	92	34	33	123	224	877	29	55	450	574
Adj No. of Lanes	2	2	1	0	1	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	3
Cap, veh/h	751	772	345	99	96	170	313	1248	558	99	1046	472
Arrive On Green	0.22	0.22	0.22	0.11	0.11	0.11	0.09	0.36	0.36	0.03	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	913	886	1568	3408	3471	1553	3375	3471	1568
Grp Volume(v), veh/h	644	3	92	67	0	123	224	877	29	55	450	574
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1799	0	1568	1704	1736	1553	1688	1736	1568
Q Serve(g_s), s	12.4	0.0	3.3	2.4	0.0	5.2	4.4	14.8	0.8	1.1	7.1	20.6
Cycle Q Clear(g_c), s	12.4	0.0	3.3	2.4	0.0	5.2	4.4	14.8	0.8	1.1	7.1	20.6
Prop In Lane	1.00		1.00	0.51		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	751	772	345	195	0	170	313	1248	558	99	1046	472
V/C Ratio(X)	0.86	0.00	0.27	0.34	0.00	0.72	0.72	0.70	0.05	0.55	0.43	1.21
Avail Cap(c_a), veh/h	798	820	367	474	0	413	319	1248	558	148	1046	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	20.8	22.1	28.2	0.0	29.5	30.2	18.8	14.3	32.7	19.2	23.9
Incr Delay (d2), s/veh	8.9	0.0	0.4	1.0	0.0	5.7	7.3	1.8	0.0	4.8	0.3	114.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	0.0	1.5	1.2	0.0	2.5	2.4	7.4	0.4	0.6	3.4	23.9
LnGrp Delay(d),s/veh	34.5	20.8	22.5	29.2	0.0	35.2	37.5	20.6	14.3	37.5	19.5	138.8
LnGrp LOS	C	C	C	C		D	D	C	B	D	B	F
Approach Vol, veh/h		739			190			1130			1079	
Approach Delay, s/veh		32.9			33.1			23.8			83.8	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	25.6		12.8	6.9	29.6		19.1
Change Period (Y+Rc), s	* 4.6	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	* 6.4	20.6		* 18	* 3	23.7		16.0
Max Q Clear Time (g_c+I1), s	6.4	22.6		7.2	3.1	16.8		14.4
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	4.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	47.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	386	38	45	870	120	88	753	31	106	298	214
Future Volume (veh/h)	193	386	38	45	870	120	88	753	31	106	298	214
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1838	1900	1845	1845	1900	1827	1845	1845
Adj Flow Rate, veh/h	193	386	38	45	870	120	88	753	31	106	298	214
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	4	3	3
Cap, veh/h	202	1384	136	57	1070	148	113	959	39	117	521	623
Arrive On Green	0.11	0.43	0.43	0.03	0.35	0.35	0.06	0.28	0.28	0.07	0.28	0.28
Sat Flow, veh/h	1757	3225	316	1757	3084	425	1757	3431	141	1740	1845	1568
Grp Volume(v), veh/h	193	209	215	45	493	497	88	385	399	106	298	214
Grp Sat Flow(s),veh/h/ln	1757	1752	1789	1757	1746	1763	1757	1752	1820	1740	1845	1568
Q Serve(g_s), s	11.4	8.1	8.1	2.7	26.8	26.8	5.2	21.1	21.2	6.3	14.4	9.9
Cycle Q Clear(g_c), s	11.4	8.1	8.1	2.7	26.8	26.8	5.2	21.1	21.2	6.3	14.4	9.9
Prop In Lane	1.00		0.18	1.00		0.24	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	202	752	768	57	606	612	113	490	509	117	521	623
V/C Ratio(X)	0.96	0.28	0.28	0.78	0.81	0.81	0.78	0.79	0.79	0.91	0.57	0.34
Avail Cap(c_a), veh/h	202	1024	1046	152	971	980	219	806	837	117	742	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	19.3	19.3	50.1	31.0	31.0	48.1	34.7	34.7	48.4	32.0	21.9
Incr Delay (d2), s/veh	50.5	0.2	0.2	20.3	2.9	2.8	11.1	2.8	2.7	54.6	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	3.9	4.0	1.6	13.3	13.5	2.8	10.6	11.0	4.8	7.5	4.3
LnGrp Delay(d),s/veh	96.4	19.5	19.5	70.4	33.9	33.8	59.2	37.5	37.4	103.0	33.0	22.3
LnGrp LOS	F	B	B	E	C	C	E	D	D	F	C	C
Approach Vol, veh/h		617			1035			872			618	
Approach Delay, s/veh		43.6			35.4			39.7			41.3	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	50.8	10.7	35.5	16.0	42.2	11.0	35.2
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	9.0	61.0	13.0	42.0	12.0	58.0	7.0	48.0
Max Q Clear Time (g_c+I1), s	4.7	10.1	7.2	16.4	13.4	28.8	8.3	23.2
Green Ext Time (p_c), s	0.0	7.9	0.1	6.1	0.0	7.4	0.0	6.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	291	5	39	768	40	2	107	9	13	150	187
Future Volume (veh/h)	203	291	5	39	768	40	2	107	9	13	150	187
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1900	1810	1900	1900	1810	1900
Adj Flow Rate, veh/h	203	291	5	39	768	40	2	107	9	13	150	187
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	232	792	14	49	1130	59	3	136	11	14	159	198
Arrive On Green	0.14	0.45	0.45	0.03	0.34	0.34	0.08	0.08	0.08	0.22	0.22	0.22
Sat Flow, veh/h	1707	1757	30	1707	3294	171	30	1618	136	61	707	882
Grp Volume(v), veh/h	203	0	296	39	397	411	118	0	0	350	0	0
Grp Sat Flow(s),veh/h/ln	1707	0	1787	1707	1703	1762	1784	0	0	1651	0	0
Q Serve(g_s), s	12.4	0.0	11.6	2.4	21.3	21.3	6.9	0.0	0.0	22.3	0.0	0.0
Cycle Q Clear(g_c), s	12.4	0.0	11.6	2.4	21.3	21.3	6.9	0.0	0.0	22.3	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.10	0.02		0.08	0.04		0.53
Lane Grp Cap(c), veh/h	232	0	805	49	584	604	150	0	0	371	0	0
V/C Ratio(X)	0.87	0.00	0.37	0.80	0.68	0.68	0.79	0.00	0.00	0.94	0.00	0.00
Avail Cap(c_a), veh/h	262	0	1142	147	973	1007	435	0	0	371	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	45.2	0.0	19.3	51.5	30.0	30.0	47.9	0.0	0.0	40.7	0.0	0.0
Incr Delay (d2), s/veh	22.4	0.0	0.6	10.7	3.0	2.9	8.7	0.0	0.0	32.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	5.9	1.3	10.5	10.9	3.8	0.0	0.0	13.4	0.0	0.0
LnGrp Delay(d),s/veh	67.6	0.0	19.9	62.2	33.0	32.9	56.6	0.0	0.0	73.0	0.0	0.0
LnGrp LOS	E		B	E	C	C	E			E		
Approach Vol, veh/h		499			847			118			350	
Approach Delay, s/veh		39.3			34.3			56.6			73.0	
Approach LOS		D			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.1	42.6		30.0	7.6	54.1		15.0
Change Period (Y+Rc), s	4.6	6.0		6.0	4.6	6.0		6.0
Max Green Setting (Gmax), s	16.4	61.0		24.0	9.2	68.2		26.0
Max Q Clear Time (g_c+I1), s	14.4	23.3		24.3	4.4	13.6		8.9
Green Ext Time (p_c), s	0.1	13.3		0.0	0.0	14.6		0.3

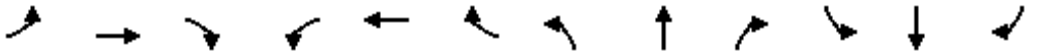
Intersection Summary	
HCM 2010 Ctrl Delay	44.6
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	1	260	0	432	2	882	131	181	568	5
Future Volume (veh/h)	5	1	1	260	0	432	2	882	131	181	568	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	5	1	1	260	0	432	2	882	131	181	568	5
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	9	117	117	305	0	480	4	1065	158	223	862	8
Arrive On Green	0.01	0.14	0.14	0.17	0.00	0.31	0.00	0.35	0.35	0.13	0.47	0.47
Sat Flow, veh/h	1757	848	848	1757	0	1568	1757	3062	455	1757	1826	16
Grp Volume(v), veh/h	5	0	2	260	0	432	2	505	508	181	0	573
Grp Sat Flow(s),veh/h/ln	1757	0	1695	1757	0	1568	1757	1752	1764	1757	0	1842
Q Serve(g_s), s	0.2	0.0	0.1	10.7	0.0	19.7	0.1	19.7	19.7	7.5	0.0	17.8
Cycle Q Clear(g_c), s	0.2	0.0	0.1	10.7	0.0	19.7	0.1	19.7	19.7	7.5	0.0	17.8
Prop In Lane	1.00		0.50	1.00		1.00	1.00		0.26	1.00		0.01
Lane Grp Cap(c), veh/h	9	0	233	305	0	480	4	610	614	223	0	870
V/C Ratio(X)	0.54	0.00	0.01	0.85	0.00	0.90	0.52	0.83	0.83	0.81	0.00	0.66
Avail Cap(c_a), veh/h	94	0	363	376	0	587	94	680	684	305	0	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.1	0.0	27.8	30.0	0.0	24.8	37.3	22.3	22.3	31.8	0.0	15.1
Incr Delay (d2), s/veh	41.0	0.0	0.0	14.4	0.0	14.8	81.0	7.7	7.7	11.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	6.4	0.0	10.5	0.1	10.8	10.9	4.3	0.0	9.3
LnGrp Delay(d),s/veh	78.1	0.0	27.9	44.3	0.0	39.7	118.2	30.1	30.0	43.0	0.0	16.7
LnGrp LOS	E		C	D		D	F	C	C	D		B
Approach Vol, veh/h		7			692			1015			754	
Approach Delay, s/veh		63.8			41.4			30.2			23.0	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	30.0	17.0	14.3	4.2	39.3	4.4	26.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	29.0	16.0	16.0	4.0	38.0	4.0	28.0
Max Q Clear Time (g_c+I1), s	9.5	21.7	12.7	2.1	2.1	19.8	2.2	21.7
Green Ext Time (p_c), s	0.2	4.3	0.3	1.9	0.0	7.5	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	263	752	772	20	1276	24	1484	124	38	18	45	96
Future Volume (veh/h)	263	752	772	20	1276	24	1484	124	38	18	45	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	263	752	772	20	1276	24	1484	124	38	18	45	96
Adj No. of Lanes	2	3	2	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	277	1659	909	41	1310	408	1521	1812	811	38	287	128
Arrive On Green	0.08	0.33	0.33	0.01	0.26	0.26	0.45	0.52	0.52	0.01	0.08	0.08
Sat Flow, veh/h	3408	5036	2760	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	263	752	772	20	1276	24	1484	124	38	18	45	96
Grp Sat Flow(s),veh/h/ln	1704	1679	1380	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	9.4	14.5	32.0	0.7	30.9	1.4	52.5	2.2	1.5	0.6	1.5	7.4
Cycle Q Clear(g_c), s	9.4	14.5	32.0	0.7	30.9	1.4	52.5	2.2	1.5	0.6	1.5	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	1659	909	41	1310	408	1521	1812	811	38	287	128
V/C Ratio(X)	0.95	0.45	0.85	0.49	0.97	0.06	0.98	0.07	0.05	0.47	0.16	0.75
Avail Cap(c_a), veh/h	277	1659	909	83	1310	408	1524	1967	880	83	485	217
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	32.5	38.4	60.4	45.1	34.2	33.4	14.9	14.7	60.4	52.5	55.2
Incr Delay (d2), s/veh	40.3	0.2	7.6	8.6	18.8	0.1	17.5	0.0	0.0	8.8	0.3	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	6.7	13.1	0.4	16.6	0.6	28.2	1.1	0.6	0.4	0.7	3.5
LnGrp Delay(d),s/veh	96.5	32.7	46.0	69.0	63.9	34.2	50.8	14.9	14.7	69.2	52.7	63.5
LnGrp LOS	F	C	D	E	E	C	D	B	B	E	D	E
Approach Vol, veh/h		1787			1320			1646			159	
Approach Delay, s/veh		47.8			63.4			47.3			61.1	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	67.6	5.5	44.5	58.9	14.1	14.0	36.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	69.0	3.0	39.0	55.0	17.0	10.0	32.0
Max Q Clear Time (g_c+I1), s	2.6	4.2	2.7	34.0	54.5	9.4	11.4	32.9
Green Ext Time (p_c), s	0.0	1.3	0.0	4.4	0.4	0.7	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		52.3
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	140	0	1326	199	125	0	305	1328	147	561	88
Future Volume (veh/h)	18	140	0	1326	199	125	0	305	1328	147	561	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	18	140	0	1326	199	125	0	305	1328	147	561	88
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	28	196	167	1592	1028	874	2	674	1034	216	1046	468
Arrive On Green	0.02	0.11	0.00	0.47	0.56	0.56	0.00	0.19	0.19	0.06	0.30	0.30
Sat Flow, veh/h	1757	1845	1568	3408	1845	1568	1757	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	18	140	0	1326	199	125	0	305	1328	147	561	88
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	1845	1568	1757	1752	1568	1704	1752	1568
Q Serve(g_s), s	1.0	6.9	0.0	31.8	5.0	3.6	0.0	7.2	18.0	4.0	12.5	3.9
Cycle Q Clear(g_c), s	1.0	6.9	0.0	31.8	5.0	3.6	0.0	7.2	18.0	4.0	12.5	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	28	196	167	1592	1028	874	2	674	1034	216	1046	468
V/C Ratio(X)	0.64	0.71	0.00	0.83	0.19	0.14	0.00	0.45	1.28	0.68	0.54	0.19
Avail Cap(c_a), veh/h	94	315	268	2986	1833	1558	75	674	1034	291	1046	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	40.4	0.0	21.8	10.3	10.0	0.0	33.4	15.9	42.9	27.4	24.4
Incr Delay (d2), s/veh	21.8	4.7	0.0	1.2	0.1	0.1	0.0	0.5	135.5	3.9	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.8	0.0	15.2	2.6	1.6	0.0	3.5	65.0	2.0	6.2	1.7
LnGrp Delay(d),s/veh	67.6	45.2	0.0	23.0	10.4	10.0	0.0	33.9	151.4	46.8	28.0	24.6
LnGrp LOS	E	D		C	B	B		C	F	D	C	C
Approach Vol, veh/h		158			1650			1633			796	
Approach Delay, s/veh		47.7			20.5			129.5			31.1	
Approach LOS		D			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	22.0	47.7	14.0	0.0	31.9	5.5	56.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	18.0	82.0	16.0	4.0	22.0	5.0	93.0
Max Q Clear Time (g_c+I1), s	6.0	20.0	33.8	8.9	0.0	14.5	3.0	7.0
Green Ext Time (p_c), s	0.1	0.0	10.0	1.1	0.0	6.1	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	65.5
HCM 2010 LOS	E

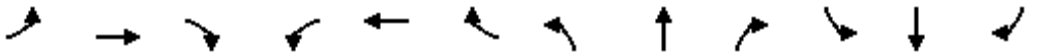
Intersection	
Intersection Delay, s/veh	18.0
Intersection LOS	C

Approach	EB	NB	SB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	117	864	768
Demand Flow Rate, veh/h	120	890	791
Vehicles Circulating, veh/h	721	77	20
Vehicles Exiting, veh/h	90	764	947
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.7	22.0	14.8
Approach LOS	A	C	B

Lane	Left	Left	Right	Left
Designated Moves	LR	L	TR	TR
Assumed Moves	LR	L	TR	TR
RT Channelized				
Lane Util	1.000	0.022	0.978	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	120	20	870	791
Cap Entry Lane, veh/h	549	1046	1046	1108
Entry HV Adj Factor	0.975	0.950	0.971	0.971
Flow Entry, veh/h	117	19	845	768
Cap Entry, veh/h	536	994	1016	1075
V/C Ratio	0.218	0.019	0.832	0.714
Control Delay, s/veh	9.7	3.8	22.4	14.8
LOS	A	A	C	B
95th %tile Queue, veh	1	0	10	6

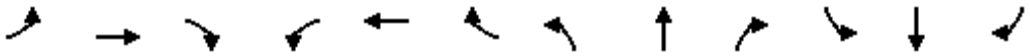
Existing Plus All Projects Mitigation

PM



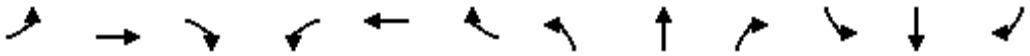
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	454	134	376	604	52	44	513	212	180	589	20
Future Volume (vph)	136	454	134	376	604	52	44	513	212	180	589	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1		6.8	6.8		4.7	5.1	5.1	5.3	5.1	5.1
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3385		1752	3463		1736	3471	1568	1752	3471	1553
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	3385		1752	3463		1736	3471	1568	1752	3471	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	136	454	134	376	604	52	44	513	212	180	589	20
RTOR Reduction (vph)	0	25	0	0	5	0	0	0	169	0	0	14
Lane Group Flow (vph)	136	563	0	376	651	0	44	513	43	180	589	6
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	3%	3%	4%	4%
Turn Type	Split	NA		Split	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	19.8	19.8		23.4	23.4		3.9	20.1	20.1	11.8	28.6	28.6
Effective Green, g (s)	19.8	19.8		23.4	23.4		3.9	20.1	20.1	11.8	28.6	28.6
Actuated g/C Ratio	0.20	0.20		0.24	0.24		0.04	0.20	0.20	0.12	0.29	0.29
Clearance Time (s)	7.1	7.1		6.8	6.8		4.7	5.1	5.1	5.3	5.1	5.1
Vehicle Extension (s)	1.0	1.0		3.0	3.0		1.0	1.0	1.0	3.0	1.0	1.0
Lane Grp Cap (vph)	348	674		412	815		68	701	317	207	998	446
v/s Ratio Prot	0.08	c0.17		c0.21	0.19		0.03	c0.15		c0.10	0.17	
v/s Ratio Perm									0.03			0.00
v/c Ratio	0.39	0.84		0.91	0.80		0.65	0.73	0.14	0.87	0.59	0.01
Uniform Delay, d1	34.6	38.2		37.0	35.8		47.1	37.1	32.5	43.0	30.4	25.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	8.5		24.2	5.5		14.7	3.4	0.1	29.8	0.6	0.0
Delay (s)	34.8	46.7		61.2	41.3		61.8	40.5	32.6	72.9	31.0	25.3
Level of Service	C	D		E	D		E	D	C	E	C	C
Approach Delay (s)		44.5			48.5			39.6			40.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	99.4	Sum of lost time (s)	24.3
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	356	17	2	621	4	10	8	2	61	11	402
Future Volume (vph)	62	356	17	2	621	4	10	8	2	61	11	402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.99			0.89	
Flt Protected		0.99			1.00			0.98			0.99	
Satd. Flow (prot)		1804			1825			1775			1623	
Flt Permitted		0.88			1.00			0.85			0.96	
Satd. Flow (perm)		1608			1823			1543			1564	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	62	356	17	2	621	4	10	8	2	61	11	402
RTOR Reduction (vph)	0	2	0	0	1	0	0	1	0	0	207	0
Lane Group Flow (vph)	0	433	0	0	626	0	0	19	0	0	267	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		16.2			16.2			10.0			10.0	
Effective Green, g (s)		16.2			16.2			10.0			10.0	
Actuated g/C Ratio		0.47			0.47			0.29			0.29	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		761			863			451			457	
v/s Ratio Prot												
v/s Ratio Perm		0.27			c0.34			0.01			c0.17	
v/c Ratio		0.57			0.73			0.04			0.59	
Uniform Delay, d1		6.5			7.2			8.7			10.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			3.1			0.0			1.9	
Delay (s)		7.5			10.3			8.7			12.2	
Level of Service		A			B			A			B	
Approach Delay (s)		7.5			10.3			8.7			12.2	
Approach LOS		A			B			A			B	

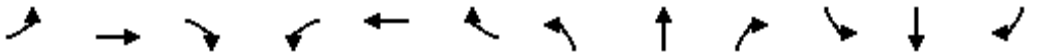
Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	34.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	3	22	0	1	1	14	285	1	1	680	325
Future Volume (vph)	97	3	22	0	1	1	14	285	1	1	680	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.93			1.00			0.96	
Flt Protected		0.96			1.00			1.00			1.00	
Satd. Flow (prot)		1731			1720			1840			1764	
Flt Permitted		0.77			1.00			0.96			1.00	
Satd. Flow (perm)		1384			1720			1764			1764	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	97	3	22	0	1	1	14	285	1	1	680	325
RTOR Reduction (vph)	0	15	0	0	1	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	107	0	0	1	0	0	300	0	0	986	0
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.1			8.1			41.5			41.5	
Effective Green, g (s)		8.1			8.1			41.5			41.5	
Actuated g/C Ratio		0.14			0.14			0.72			0.72	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		194			241			1270			1270	
v/s Ratio Prot					0.00							
v/s Ratio Perm		c0.08						0.17			0.56	
v/c Ratio		0.55			0.00			0.24			0.78	
Uniform Delay, d1		23.0			21.3			2.7			5.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.2			0.0			0.1			3.0	
Delay (s)		26.2			21.3			2.8			8.2	
Level of Service		C			C			A			A	
Approach Delay (s)		26.2			21.3			2.8			8.2	
Approach LOS		C			C			A			A	

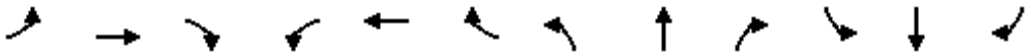
Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



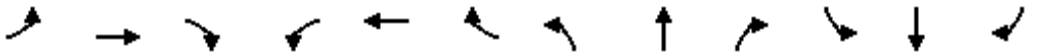
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1040	44	624	27	77	110	598	1430	17	146	362	586
Future Volume (vph)	1040	44	624	27	77	110	598	1430	17	146	362	586
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3		5.5	5.5	4.7	4.6		4.4	4.8	4.8
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1649	1659	1553		1821	1568	1736	4979		1736	4988	1553
Flt Permitted	0.95	0.96	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1649	1659	1553		1821	1568	1736	4979		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1040	44	624	27	77	110	598	1430	17	146	362	586
RTOR Reduction (vph)	0	0	185	0	0	103	0	1	0	0	0	514
Lane Group Flow (vph)	541	543	439	0	104	7	598	1446	0	146	362	72
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8			4						2
Actuated Green, G (s)	44.5	44.5	44.5		8.5	8.5	46.7	47.3		13.7	13.8	13.8
Effective Green, g (s)	44.5	44.5	44.5		8.5	8.5	46.7	47.3		13.7	13.8	13.8
Actuated g/C Ratio	0.33	0.33	0.33		0.06	0.06	0.35	0.35		0.10	0.10	0.10
Clearance Time (s)	5.3	5.3	5.3		5.5	5.5	4.7	4.6		4.4	4.8	4.8
Vehicle Extension (s)	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lane Grp Cap (vph)	548	551	516		115	99	605	1760		177	514	160
v/s Ratio Prot	c0.33	0.33			c0.06		c0.34	c0.29		0.08	0.07	
v/s Ratio Perm			0.28			0.00						0.05
v/c Ratio	0.99	0.99	0.85		0.90	0.07	0.99	0.82		0.82	0.70	0.45
Uniform Delay, d1	44.4	44.3	41.6		62.2	58.9	43.3	39.4		58.9	58.0	56.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	34.7	34.2	12.3		53.9	0.1	33.2	3.1		24.7	3.6	0.7
Delay (s)	79.1	78.6	53.9		116.1	59.0	76.5	42.5		83.5	61.6	57.2
Level of Service	E	E	D		F	E	E	D		F	E	E
Approach Delay (s)		69.7			86.8			52.4			62.2	
Approach LOS		E			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	61.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	133.8	Sum of lost time (s)	20.3
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	140	7	0	216	1	8	98	0	1	262	216
Future Volume (vph)	125	140	7	0	216	1	8	98	0	1	262	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			1.00			1.00			0.94	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1671	1747			1726			1753			1652	
Flt Permitted	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (perm)	1671	1747			1726			1753			1652	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	125	140	7	0	216	1	8	98	0	1	262	216
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	30	0
Lane Group Flow (vph)	125	145	0	0	217	0	0	106	0	0	449	0
Heavy Vehicles (%)	8%	8%	8%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Split	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2			6	
Permitted Phases										6		
Actuated Green, G (s)	9.0	26.9			13.9			10.1			25.1	
Effective Green, g (s)	9.0	26.9			13.9			10.1			25.1	
Actuated g/C Ratio	0.12	0.36			0.19			0.14			0.34	
Clearance Time (s)	4.0	4.0			4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	202	634			323			238			559	
v/s Ratio Prot	c0.07	0.08			c0.13			c0.06				
v/s Ratio Perm											0.27	
v/c Ratio	0.62	0.23			0.67			0.45			0.80	
Uniform Delay, d1	30.9	16.4			28.0			29.4			22.2	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	5.5	0.2			5.4			1.3			8.1	
Delay (s)	36.5	16.6			33.4			30.8			30.4	
Level of Service	D	B			C			C			C	
Approach Delay (s)		25.7			33.4			30.8			30.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	151	52	19	288	3	68	214	9	18	512	135
Future Volume (vph)	36	151	52	19	288	3	68	214	9	18	512	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1757		1736	1824		1736	1816		1752	1787	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1736	1757		1736	1824		1736	1816		1752	1787	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	36	151	52	19	288	3	68	214	9	18	512	135
RTOR Reduction (vph)	0	19	0	0	1	0	0	2	0	0	14	0
Lane Group Flow (vph)	36	184	0	19	290	0	68	221	0	18	633	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.3	14.4		0.7	13.8		3.0	28.5		0.7	26.2	
Effective Green, g (s)	1.3	14.4		0.7	13.8		3.0	28.5		0.7	26.2	
Actuated g/C Ratio	0.02	0.24		0.01	0.23		0.05	0.47		0.01	0.43	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	37	419		20	417		86	858		20	776	
v/s Ratio Prot	c0.02	0.10		0.01	c0.16		c0.04	0.12		0.01	c0.35	
v/s Ratio Perm												
v/c Ratio	0.97	0.44		0.95	0.70		0.79	0.26		0.90	0.82	
Uniform Delay, d1	29.5	19.5		29.8	21.3		28.3	9.5		29.8	14.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	136.4	0.7		175.6	5.0		37.6	0.2		153.9	6.6	
Delay (s)	165.9	20.3		205.4	26.3		66.0	9.7		183.7	21.6	
Level of Service	F	C		F	C		E	A		F	C	
Approach Delay (s)		42.2			37.3			22.9			26.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	304	797	617	169	425	1874
Future Volume (vph)	304	797	617	169	425	1874
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.88	0.91		1.00	0.91
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	2760	4874		1752	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	2760	4874		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	304	797	617	169	425	1874
RTOR Reduction (vph)	0	607	90	0	0	0
Lane Group Flow (vph)	304	190	696	0	425	1874
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3				
Actuated Green, G (s)	12.3	12.3	11.4		15.9	31.3
Effective Green, g (s)	12.3	12.3	11.4		15.9	31.3
Actuated g/C Ratio	0.24	0.24	0.22		0.31	0.61
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	417	657	1076		539	3054
v/s Ratio Prot	c0.17		0.14		c0.24	c0.37
v/s Ratio Perm		0.07				
v/c Ratio	0.73	0.29	0.65		0.79	0.61
Uniform Delay, d1	18.1	16.1	18.3		16.3	6.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.3	0.2	1.4		7.5	0.4
Delay (s)	24.4	16.3	19.6		23.8	6.7
Level of Service	C	B	B		C	A
Approach Delay (s)	18.5		19.6			9.9
Approach LOS	B		B			A

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	51.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	636	124	158	855	204	132	616	15	225	1165	231
Future Volume (veh/h)	149	636	124	158	855	204	132	616	15	225	1165	231
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	149	636	124	158	855	204	132	616	15	225	1165	231
Adj No. of Lanes	1	2	1	1	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	179	903	404	193	931	416	172	1163	520	314	1308	585
Arrive On Green	0.10	0.26	0.26	0.11	0.27	0.27	0.05	0.33	0.33	0.09	0.38	0.38
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	3375	3471	1553	3375	3471	1553
Grp Volume(v), veh/h	149	636	124	158	855	204	132	616	15	225	1165	231
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1688	1736	1553	1688	1736	1553
Q Serve(g_s), s	6.5	12.9	5.0	6.9	18.6	8.6	3.0	11.2	0.5	5.1	24.6	8.5
Cycle Q Clear(g_c), s	6.5	12.9	5.0	6.9	18.6	8.6	3.0	11.2	0.5	5.1	24.6	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	903	404	193	931	416	172	1163	520	314	1308	585
V/C Ratio(X)	0.83	0.70	0.31	0.82	0.92	0.49	0.77	0.53	0.03	0.72	0.89	0.39
Avail Cap(c_a), veh/h	179	903	404	202	940	420	172	1163	520	431	1374	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	26.4	23.4	34.1	27.9	24.3	36.7	21.1	17.5	34.5	22.9	17.9
Incr Delay (d2), s/veh	26.7	2.5	0.4	21.8	13.7	0.9	18.4	0.5	0.0	3.5	7.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	6.5	2.2	4.5	10.7	3.8	1.9	5.5	0.2	2.5	13.0	3.7
LnGrp Delay(d),s/veh	61.2	28.8	23.8	55.9	41.6	25.2	55.1	21.5	17.5	38.0	30.3	18.3
LnGrp LOS	E	C	C	E	D	C	E	C	B	D	C	B
Approach Vol, veh/h		909			1217			763			1621	
Approach Delay, s/veh		33.5			40.7			27.2			29.6	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	30.2	12.6	24.2	8.0	33.5	12.0	24.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	25.0	9.0	20.0	4.0	31.0	8.0	21.0
Max Q Clear Time (g_c+I1), s	7.1	13.2	8.9	14.9	5.0	26.6	8.5	20.6
Green Ext Time (p_c), s	0.3	7.7	0.0	3.6	0.0	2.9	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	33.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1629	67	160	1087	105	88	802	185	27	236	2
Future Volume (veh/h)	23	1629	67	160	1087	105	88	802	185	27	236	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	23	1629	67	160	1087	105	88	802	185	27	236	2
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	33	1588	710	175	1723	166	112	797	357	39	661	6
Arrive On Green	0.02	0.47	0.47	0.10	0.55	0.55	0.06	0.23	0.23	0.02	0.19	0.19
Sat Flow, veh/h	1707	3406	1524	1707	3139	303	1757	3505	1568	1757	3562	30
Grp Volume(v), veh/h	23	1629	67	160	589	603	88	802	185	27	116	122
Grp Sat Flow(s),veh/h/ln	1707	1703	1524	1707	1703	1739	1757	1752	1568	1757	1752	1839
Q Serve(g_s), s	1.2	41.0	2.2	8.2	21.0	21.0	4.3	20.0	9.1	1.3	5.1	5.1
Cycle Q Clear(g_c), s	1.2	41.0	2.2	8.2	21.0	21.0	4.3	20.0	9.1	1.3	5.1	5.1
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	33	1588	710	175	935	955	112	797	357	39	325	341
V/C Ratio(X)	0.69	1.03	0.09	0.92	0.63	0.63	0.78	1.01	0.52	0.70	0.36	0.36
Avail Cap(c_a), veh/h	97	1588	710	175	935	955	140	797	357	80	339	356
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	23.5	13.1	39.1	13.7	13.7	40.6	34.0	29.8	42.7	31.2	31.2
Incr Delay (d2), s/veh	22.3	29.4	0.1	44.6	1.4	1.4	20.2	33.4	1.3	20.4	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	25.7	0.9	6.0	10.2	10.4	2.7	13.3	4.0	0.9	2.5	2.6
LnGrp Delay(d),s/veh	65.1	52.9	13.2	83.7	15.0	15.0	60.8	67.3	31.1	63.1	31.9	31.9
LnGrp LOS	E	F	B	F	B	B	E	F	C	E	C	C
Approach Vol, veh/h		1719			1352			1075			265	
Approach Delay, s/veh		51.5			23.2			60.6			35.1	
Approach LOS		D			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	24.0	13.0	45.0	9.6	20.3	5.7	52.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	20.0	9.0	41.0	7.0	17.0	5.0	45.0
Max Q Clear Time (g_c+I1), s	3.3	22.0	10.2	43.0	6.3	7.1	3.2	23.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.2	0.0	16.7

Intersection Summary	
HCM 2010 Ctrl Delay	44.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	333	23	115	149	648	9	1900	129	789	1879	23
Future Volume (veh/h)	74	333	23	115	149	648	9	1900	129	789	1879	23
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	74	333	23	115	149	648	9	1900	129	789	1879	23
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	97	673	301	143	726	675	21	1882	127	753	3105	38
Arrive On Green	0.03	0.19	0.19	0.04	0.21	0.21	0.01	0.39	0.39	0.22	0.61	0.61
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4772	323	3375	5079	62
Grp Volume(v), veh/h	74	333	23	115	149	648	9	1322	707	789	1230	672
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1770	1688	1663	1816
Q Serve(g_s), s	3.3	12.8	1.8	5.0	5.3	31.1	0.4	59.2	59.2	33.5	34.2	34.3
Cycle Q Clear(g_c), s	3.3	12.8	1.8	5.0	5.3	31.1	0.4	59.2	59.2	33.5	34.2	34.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.03
Lane Grp Cap(c), veh/h	97	673	301	143	726	675	21	1311	698	753	2033	1110
V/C Ratio(X)	0.77	0.49	0.08	0.80	0.21	0.96	0.43	1.01	1.01	1.05	0.61	0.61
Avail Cap(c_a), veh/h	97	675	302	143	726	675	67	1311	698	753	2033	1110
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.4	53.9	49.5	71.3	49.3	41.5	74.3	45.4	45.5	58.3	18.0	18.0
Incr Delay (d2), s/veh	27.4	0.2	0.0	25.6	0.1	24.9	5.0	26.8	37.3	45.9	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	6.2	0.8	2.9	2.6	30.7	0.2	32.0	36.1	20.4	15.8	17.4
LnGrp Delay(d),s/veh	99.8	54.2	49.5	96.9	49.3	66.4	79.3	72.3	82.7	104.2	18.4	18.7
LnGrp LOS	F	D	D	F	D	E	E	F	F	F	B	B
Approach Vol, veh/h		430			912			2038			2691	
Approach Delay, s/veh		61.8			67.5			75.9			43.6	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	97.1	9.8	36.8	39.0	64.5	11.8	34.8
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	89.6	4.3	* 31	33.5	* 59	6.3	* 29
Max Q Clear Time (g_c+I1), s	2.4	36.3	5.3	33.1	35.5	61.2	7.0	14.8
Green Ext Time (p_c), s	0.0	8.4	0.0	0.0	0.0	0.0	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	59.3
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1383	322	161	1116	1075	157	1101	85	1011	705	79
Future Volume (veh/h)	105	1383	322	161	1116	1075	157	1101	85	1011	705	79
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	105	1383	322	161	1116	0	157	1101	85	1011	705	79
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	154	1395	434	173	1445	450	208	1119	349	926	2152	670
Arrive On Green	0.05	0.29	0.29	0.05	0.30	0.00	0.06	0.22	0.22	0.27	0.43	0.43
Sat Flow, veh/h	3312	4893	1524	3312	4893	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	105	1383	322	161	1116	0	157	1101	85	1011	705	79
Grp Sat Flow(s),veh/h/ln	1656	1631	1524	1656	1631	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	3.8	33.9	23.0	5.8	25.0	0.0	5.5	26.4	5.4	33.0	11.3	3.7
Cycle Q Clear(g_c), s	3.8	33.9	23.0	5.8	25.0	0.0	5.5	26.4	5.4	33.0	11.3	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	1395	434	173	1445	450	208	1119	349	926	2152	670
V/C Ratio(X)	0.68	0.99	0.74	0.93	0.77	0.00	0.76	0.98	0.24	1.09	0.33	0.12
Avail Cap(c_a), veh/h	165	1395	434	173	1445	450	208	1119	349	926	2152	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.5	42.9	39.0	56.8	38.7	0.0	55.6	46.4	38.3	43.7	22.6	20.5
Incr Delay (d2), s/veh	7.9	21.9	5.9	47.3	2.4	0.0	13.2	22.8	0.1	57.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	18.1	10.4	3.8	11.6	0.0	3.0	14.5	2.3	22.7	5.2	1.6
LnGrp Delay(d),s/veh	64.4	64.8	44.9	104.1	41.1	0.0	68.8	69.3	38.4	101.5	22.7	20.5
LnGrp LOS	E	E	D	F	D		E	E	D	F	C	C
Approach Vol, veh/h		1810			1277			1343			1795	
Approach Delay, s/veh		61.2			49.0			67.3			67.0	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	40.9	12.1	56.7	11.8	39.7	37.0	31.8
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.0	4.8
Max Green Setting (Gmax), s	6.0	* 35	* 7.4	51.9	6.3	* 34	33.0	27.0
Max Q Clear Time (g_c+I1), s	5.8	27.0	7.5	13.3	7.8	35.9	35.0	28.4
Green Ext Time (p_c), s	0.0	3.6	0.0	3.2	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.7
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	369	444	99	57	692	152	35	747	54	227	626	199
Future Volume (veh/h)	369	444	99	57	692	152	35	747	54	227	626	199
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	369	444	99	57	692	152	35	747	54	227	626	199
Adj No. of Lanes	1	2	0	1	2	0	1	3	1	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	385	1189	263	73	674	148	43	861	271	243	1466	457
Arrive On Green	0.22	0.42	0.42	0.04	0.24	0.24	0.02	0.17	0.17	0.14	0.29	0.29
Sat Flow, veh/h	1757	2854	632	1757	2859	628	1740	4988	1568	1757	4988	1553
Grp Volume(v), veh/h	369	271	272	57	424	420	35	747	54	227	626	199
Grp Sat Flow(s),veh/h/ln	1757	1752	1733	1757	1752	1734	1740	1663	1568	1757	1663	1553
Q Serve(g_s), s	18.5	9.5	9.7	2.9	21.0	21.0	1.8	13.0	2.6	11.4	9.0	9.2
Cycle Q Clear(g_c), s	18.5	9.5	9.7	2.9	21.0	21.0	1.8	13.0	2.6	11.4	9.0	9.2
Prop In Lane	1.00		0.36	1.00		0.36	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	385	730	722	73	413	409	43	861	271	243	1466	457
V/C Ratio(X)	0.96	0.37	0.38	0.78	1.03	1.03	0.82	0.87	0.20	0.94	0.43	0.44
Avail Cap(c_a), veh/h	385	730	722	142	413	409	119	952	299	243	1466	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	17.9	18.0	42.3	34.0	34.0	43.2	35.9	31.6	38.0	25.4	25.5
Incr Delay (d2), s/veh	35.1	0.1	0.1	6.8	51.2	51.7	12.9	7.4	0.1	40.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	4.6	4.6	1.5	16.0	15.9	1.0	6.5	1.1	8.2	4.1	4.0
LnGrp Delay(d),s/veh	69.5	18.1	18.1	49.1	85.2	85.8	56.2	43.2	31.7	78.0	25.5	25.7
LnGrp LOS	E	B	B	D	F	F	E	D	C	E	C	C
Approach Vol, veh/h		912			901			836			1052	
Approach Delay, s/veh		38.9			83.2			43.0			36.8	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	31.0	25.0	26.3	17.6	20.2	8.9	42.4
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 6.1	23.9	19.5	* 21	* 12	17.0	* 7.2	* 33
Max Q Clear Time (g_c+I1), s	3.8	11.2	20.5	23.0	13.4	15.0	4.9	11.7
Green Ext Time (p_c), s	0.0	2.2	0.0	0.0	0.0	0.4	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	50.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	515	296	0	0	484	129	6	0	1	197	0	748
Future Volume (veh/h)	515	296	0	0	484	129	6	0	1	197	0	748
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	515	296	0	0	484	129	6	0	1	197	0	748
Adj No. of Lanes	2	1	0	1	2	0	0	1	0	1	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	687	918	0	3	629	167	8	0	1	522	548	820
Arrive On Green	0.20	0.50	0.00	0.00	0.23	0.23	0.01	0.00	0.01	0.30	0.00	0.30
Sat Flow, veh/h	3408	1845	0	1757	2742	726	1480	0	247	1757	1845	2760
Grp Volume(v), veh/h	515	296	0	0	308	305	7	0	0	197	0	748
Grp Sat Flow(s),veh/h/ln	1704	1845	0	1757	1752	1716	1727	0	0	1757	1845	1380
Q Serve(g_s), s	8.5	5.8	0.0	0.0	9.9	10.0	0.2	0.0	0.0	5.3	0.0	15.7
Cycle Q Clear(g_c), s	8.5	5.8	0.0	0.0	9.9	10.0	0.2	0.0	0.0	5.3	0.0	15.7
Prop In Lane	1.00		0.00	1.00		0.42	0.86		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	687	918	0	3	402	393	10	0	0	522	548	820
V/C Ratio(X)	0.75	0.32	0.00	0.00	0.77	0.77	0.74	0.00	0.00	0.38	0.00	0.91
Avail Cap(c_a), veh/h	1021	918	0	527	584	572	86	0	0	527	553	827
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.5	9.0	0.0	0.0	21.6	21.7	29.8	0.0	0.0	16.7	0.0	20.3
Incr Delay (d2), s/veh	1.7	0.2	0.0	0.0	3.7	4.1	71.3	0.0	0.0	0.5	0.0	14.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	2.9	0.0	0.0	5.1	5.2	0.3	0.0	0.0	2.6	0.0	7.6
LnGrp Delay(d),s/veh	24.3	9.2	0.0	0.0	25.4	25.7	101.1	0.0	0.0	17.2	0.0	34.6
LnGrp LOS	C	A			C	C	F			B		C
Approach Vol, veh/h		811			613			7			945	
Approach Delay, s/veh		18.8			25.6			101.1			30.9	
Approach LOS		B			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		4.3	0.0	33.9		21.9	16.1	17.8
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		3.0	18.0	20.0		18.0	18.0	20.0
Max Q Clear Time (g_c+I1), s		2.2	0.0	7.8		17.7	10.5	12.0
Green Ext Time (p_c), s		0.0	0.0	3.3		0.2	1.6	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	31	17	128	44	479	48	2159	37	419	2225	59
Future Volume (veh/h)	73	31	17	128	44	479	48	2159	37	419	2225	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	73	31	17	128	44	479	48	2159	37	419	2225	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	88	56	31	593	321	273	61	2395	746	468	2931	78
Arrive On Green	0.05	0.05	0.05	0.17	0.17	0.17	0.04	0.48	0.48	0.14	0.59	0.59
Sat Flow, veh/h	1757	1121	615	3408	1845	1568	1740	4988	1553	3375	4996	132
Grp Volume(v), veh/h	73	0	48	128	44	479	48	2159	37	419	1479	805
Grp Sat Flow(s),veh/h/ln	1757	0	1736	1704	1845	1568	1740	1663	1553	1688	1663	1804
Q Serve(g_s), s	5.7	0.0	3.7	4.5	2.8	24.0	3.8	54.8	1.8	16.9	45.7	46.0
Cycle Q Clear(g_c), s	5.7	0.0	3.7	4.5	2.8	24.0	3.8	54.8	1.8	16.9	45.7	46.0
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	88	0	87	593	321	273	61	2395	746	468	1950	1058
V/C Ratio(X)	0.83	0.00	0.55	0.22	0.14	1.76	0.78	0.90	0.05	0.89	0.76	0.76
Avail Cap(c_a), veh/h	88	0	87	593	321	273	134	2695	839	557	2103	1141
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	0.0	64.1	49.0	48.3	57.0	66.1	32.9	19.1	58.5	21.2	21.3
Incr Delay (d2), s/veh	44.1	0.0	4.5	0.1	0.1	355.5	7.8	4.0	0.0	13.8	1.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	1.9	2.1	1.4	37.3	1.9	25.9	0.8	8.8	21.3	23.5
LnGrp Delay(d),s/veh	109.1	0.0	68.5	49.0	48.3	412.5	73.9	36.9	19.1	72.2	22.5	23.7
LnGrp LOS	F		E	D	D	F	E	D	B	E	C	C
Approach Vol, veh/h		121			651			2244			2703	
Approach Delay, s/veh		93.0			316.4			37.4			30.6	
Approach LOS		F			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	86.2		12.4	24.6	71.5		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 87		6.9	22.8	* 75		24.0
Max Q Clear Time (g_c+I1), s	5.8	48.0		7.7	18.9	56.8		26.0
Green Ext Time (p_c), s	0.0	12.7		0.0	0.3	9.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	1075	457	395	987	603	500	1023	148	728	1370	169
Future Volume (veh/h)	179	1075	457	395	987	603	500	1023	148	728	1370	169
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	179	1075	457	395	987	603	500	1023	148	728	1370	169
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	210	1274	397	383	1530	476	528	1222	380	688	1458	454
Arrive On Green	0.06	0.25	0.25	0.11	0.30	0.30	0.16	0.24	0.24	0.20	0.29	0.29
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	179	1075	457	395	987	603	500	1023	148	728	1370	169
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	6.2	24.4	30.4	13.5	20.4	36.5	17.6	23.4	9.6	24.5	32.2	10.4
Cycle Q Clear(g_c), s	6.2	24.4	30.4	13.5	20.4	36.5	17.6	23.4	9.6	24.5	32.2	10.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	1274	397	383	1530	476	528	1222	380	688	1458	454
V/C Ratio(X)	0.85	0.84	1.15	1.03	0.65	1.27	0.95	0.84	0.39	1.06	0.94	0.37
Avail Cap(c_a), veh/h	210	1274	397	383	1530	476	528	1233	384	688	1478	460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.8	42.6	44.9	53.3	36.2	41.8	50.2	43.1	37.8	47.8	41.5	33.7
Incr Delay (d2), s/veh	26.0	5.1	93.4	54.3	0.7	135.5	26.1	4.9	0.2	50.5	11.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	11.8	23.5	9.2	9.5	33.8	10.1	11.3	4.1	16.2	16.3	4.5
LnGrp Delay(d),s/veh	81.8	47.7	138.3	107.6	36.9	177.3	76.3	48.0	38.1	98.3	53.1	33.9
LnGrp LOS	F	D	F	F	D	F	E	D	D	F	D	C
Approach Vol, veh/h		1711			1985			1671			2267	
Approach Delay, s/veh		75.4			93.6			55.5			66.2	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.3	40.7	12.9	42.2	30.0	35.0	19.0	36.1
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	18.8	* 36	7.4	* 37	24.5	* 30	13.5	* 30
Max Q Clear Time (g_c+I1), s	19.6	34.2	8.2	38.5	26.5	25.4	15.5	32.4
Green Ext Time (p_c), s	0.0	0.9	0.0	0.0	0.0	2.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	73.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	276	1576	354	240	1322	594	493	694	78	596	1666	161
Future Volume (veh/h)	276	1576	354	240	1322	594	493	694	78	596	1666	161
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	276	1576	354	240	1322	594	493	694	78	596	1666	0
Adj No. of Lanes	2	3	1	2	3	2	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	302	1496	479	243	1417	777	486	1372	427	653	1613	497
Arrive On Green	0.09	0.31	0.31	0.07	0.29	0.29	0.14	0.27	0.27	0.19	0.32	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	2682	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	276	1576	354	240	1322	594	493	694	78	596	1666	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1341	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	10.8	39.9	26.4	9.2	34.3	26.4	18.6	15.2	5.0	22.6	41.8	0.0
Cycle Q Clear(g_c), s	10.8	39.9	26.4	9.2	34.3	26.4	18.6	15.2	5.0	22.6	41.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	302	1496	479	243	1417	777	486	1372	427	653	1613	497
V/C Ratio(X)	0.91	1.05	0.74	0.99	0.93	0.76	1.01	0.51	0.18	0.91	1.03	0.00
Avail Cap(c_a), veh/h	302	1496	479	243	1417	777	486	1372	427	828	1613	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.8	45.3	40.6	60.5	45.1	42.3	56.0	40.1	36.3	51.5	44.4	0.0
Incr Delay (d2), s/veh	30.0	38.7	5.3	54.3	11.2	4.1	44.6	0.3	0.2	10.9	31.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	23.2	12.2	6.1	16.9	10.2	11.7	7.1	2.2	11.5	23.9	0.0
LnGrp Delay(d),s/veh	88.8	84.0	45.9	114.8	56.4	46.4	100.6	40.4	36.5	62.5	75.7	0.0
LnGrp LOS	F	F	D	F	E	D	F	D	D	E	F	
Approach Vol, veh/h		2206			2156			1265			2262	
Approach Delay, s/veh		78.5			60.1			63.6			72.2	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	46.9	16.2	43.4	30.2	40.7	14.1	45.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 19	41.8	* 12	37.3	32.0	28.8	* 9.3	* 40
Max Q Clear Time (g_c+I1), s	20.6	43.8	12.8	36.3	24.6	17.2	11.2	41.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.7	5.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.3
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	535	43	190	493	63	73	612	311	91	1725	40
Future Volume (veh/h)	34	535	43	190	493	63	73	612	311	91	1725	40
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	34	535	43	190	493	63	73	612	311	91	1725	40
Adj No. of Lanes	2	1	1	2	2	1	1	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	60	514	437	198	1118	500	78	1692	757	134	1673	748
Arrive On Green	0.02	0.28	0.28	0.06	0.32	0.32	0.04	0.48	0.48	0.04	0.48	0.48
Sat Flow, veh/h	3408	1845	1568	3408	3505	1568	1757	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	34	535	43	190	493	63	73	612	311	91	1725	40
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1704	1752	1568	1757	1752	1568	1704	1752	1568
Q Serve(g_s), s	1.5	41.8	3.1	8.3	16.7	4.3	6.2	16.4	19.2	4.0	71.6	2.1
Cycle Q Clear(g_c), s	1.5	41.8	3.1	8.3	16.7	4.3	6.2	16.4	19.2	4.0	71.6	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	514	437	198	1118	500	78	1692	757	134	1673	748
V/C Ratio(X)	0.57	1.04	0.10	0.96	0.44	0.13	0.93	0.36	0.41	0.68	1.03	0.05
Avail Cap(c_a), veh/h	95	514	437	198	1118	500	78	1692	757	191	1673	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.1	54.1	40.1	70.5	40.5	36.2	71.4	24.3	25.0	71.1	39.2	21.0
Incr Delay (d2), s/veh	8.1	50.7	0.1	52.7	0.3	0.1	78.1	0.1	0.4	6.0	30.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	28.5	1.3	5.4	8.1	1.9	4.7	7.9	8.3	2.0	41.7	0.9
LnGrp Delay(d),s/veh	81.2	104.8	40.2	123.2	40.7	36.3	149.5	24.4	25.4	77.1	69.6	21.0
LnGrp LOS	F	F	D	F	D	D	F	C	C	E	F	C
Approach Vol, veh/h		612			746			996			1856	
Approach Delay, s/veh		98.9			61.4			33.9			68.9	
Approach LOS		F			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	76.6	14.2	47.0	11.4	77.4	8.1	53.1
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	6.7	71.6	8.7	* 42	8.4	69.9	4.2	* 46
Max Q Clear Time (g_c+I1), s	8.2	73.6	10.3	43.8	6.0	21.2	3.5	18.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	9.7	0.0	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	63.7
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	253	14	355	459	31	4	670	130	13	1752	188
Future Volume (veh/h)	220	253	14	355	459	31	4	670	130	13	1752	188
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1828	1900	1845	1796	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	220	253	14	355	459	31	4	670	130	13	1752	188
Adj No. of Lanes	2	1	0	2	1	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	6	3	3	3	3	3	3
Cap, veh/h	238	363	20	397	429	29	5	1824	816	15	1683	177
Arrive On Green	0.07	0.21	0.21	0.12	0.26	0.26	0.00	0.52	0.52	0.01	0.53	0.53
Sat Flow, veh/h	3408	1716	95	3408	1663	112	1757	3505	1568	1757	3200	337
Grp Volume(v), veh/h	220	0	267	355	0	490	4	670	130	13	945	995
Grp Sat Flow(s),veh/h/ln	1704	0	1811	1704	0	1776	1757	1752	1568	1757	1752	1785
Q Serve(g_s), s	9.5	0.0	20.1	15.1	0.0	38.0	0.3	16.7	6.4	1.1	77.5	77.5
Cycle Q Clear(g_c), s	9.5	0.0	20.1	15.1	0.0	38.0	0.3	16.7	6.4	1.1	77.5	77.5
Prop In Lane	1.00		0.05	1.00		0.06	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	238	0	383	397	0	458	5	1824	816	15	922	939
V/C Ratio(X)	0.92	0.00	0.70	0.89	0.00	1.07	0.74	0.37	0.16	0.85	1.03	1.06
Avail Cap(c_a), veh/h	238	0	383	398	0	458	37	1824	816	66	922	939
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.1	0.0	53.7	64.2	0.0	54.7	73.4	21.0	18.5	72.9	34.9	34.9
Incr Delay (d2), s/veh	38.1	0.0	4.6	21.9	0.0	62.0	107.1	0.1	0.1	71.8	36.3	46.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	10.6	8.4	0.0	26.5	0.3	8.1	2.8	0.8	46.7	50.2
LnGrp Delay(d),s/veh	106.2	0.0	58.4	86.2	0.0	116.7	180.5	21.1	18.6	144.7	71.3	81.4
LnGrp LOS	F		E	F		F	F	C	B	F	F	F
Approach Vol, veh/h		487			845			804			1953	
Approach Delay, s/veh		80.0			103.9			21.5			76.9	
Approach LOS		E			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	81.8	15.8	43.0	6.0	82.6	22.7	36.1
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	5.5	* 75	10.3	* 38	3.1	* 78	17.2	* 31
Max Q Clear Time (g_c+I1), s	3.1	18.7	11.5	40.0	2.3	79.5	17.1	22.1
Green Ext Time (p_c), s	0.0	29.5	0.0	0.0	0.0	0.0	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	71.9
HCM 2010 LOS	E

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	322	119	381	288	168	303
Future Volume (veh/h)	322	119	381	288	168	303
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	322	119	381	288	168	303
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	444	377	457	1081	428	382
Arrive On Green	0.24	0.24	0.26	0.59	0.24	0.24
Sat Flow, veh/h	1845	1568	1757	1845	1757	1568
Grp Volume(v), veh/h	322	119	381	288	168	303
Grp Sat Flow(s),veh/h/ln	1845	1568	1757	1845	1757	1568
Q Serve(g_s), s	7.5	2.9	9.6	3.6	3.8	8.5
Cycle Q Clear(g_c), s	7.5	2.9	9.6	3.6	3.8	8.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	444	377	457	1081	428	382
V/C Ratio(X)	0.73	0.32	0.83	0.27	0.39	0.79
Avail Cap(c_a), veh/h	628	534	598	1414	598	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	14.7	16.4	4.8	14.9	16.7
Incr Delay (d2), s/veh	2.5	0.5	7.7	0.1	0.6	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	1.3	5.6	1.8	1.9	4.2
LnGrp Delay(d),s/veh	18.9	15.1	24.1	4.9	15.4	22.2
LnGrp LOS	B	B	C	A	B	C
Approach Vol, veh/h	441			669	471	
Approach Delay, s/veh	17.9			15.8	19.8	
Approach LOS	B			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		15.4	16.2	15.3				31.5
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	16.0	16.0				36.0
Max Q Clear Time (g_c+I1), s		10.5	11.6	9.5				5.6
Green Ext Time (p_c), s		0.9	0.7	1.8				3.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	1167	153	766	844	374	107	347	597	363	626	39
Future Volume (veh/h)	126	1167	153	766	844	374	107	347	597	363	626	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	126	1167	153	766	844	374	107	347	597	363	626	39
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	194	1298	416	804	2174	697	153	630	652	383	866	388
Arrive On Green	0.06	0.27	0.27	0.24	0.44	0.44	0.04	0.18	0.18	0.11	0.25	0.25
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	126	1167	153	766	844	374	107	347	597	363	626	39
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.2	20.5	7.1	19.7	10.3	15.5	2.8	8.0	16.0	9.4	14.6	1.7
Cycle Q Clear(g_c), s	3.2	20.5	7.1	19.7	10.3	15.5	2.8	8.0	16.0	9.4	14.6	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	1298	416	804	2174	697	153	630	652	383	866	388
V/C Ratio(X)	0.65	0.90	0.37	0.95	0.39	0.54	0.70	0.55	0.92	0.95	0.72	0.10
Avail Cap(c_a), veh/h	268	1352	433	804	2174	697	153	630	652	383	866	388
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	31.5	26.6	33.5	16.6	18.0	41.9	33.2	24.5	39.2	30.7	25.9
Incr Delay (d2), s/veh	3.6	8.4	0.8	21.0	0.2	1.1	13.1	1.0	17.8	32.8	3.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	10.2	3.1	11.6	4.6	6.9	1.6	4.0	17.0	6.2	7.4	0.7
LnGrp Delay(d),s/veh	44.8	40.0	27.4	54.5	16.8	19.1	55.0	34.3	42.3	72.0	33.7	26.0
LnGrp LOS	D	D	C	D	B	B	E	C	D	E	C	C
Approach Vol, veh/h		1446			1984			1051			1028	
Approach Delay, s/veh		39.1			31.8			41.0			46.9	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	30.0	8.0	26.0	9.1	46.0	14.0	20.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	21.0	24.6	4.0	22.0	7.0	38.6	10.0	16.0
Max Q Clear Time (g_c+I1), s	21.7	22.5	4.8	16.6	5.2	17.5	11.4	18.0
Green Ext Time (p_c), s	0.0	1.1	0.0	3.4	0.1	17.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	542	20	182	9	16	51	109	498	42	84	952	621
Future Volume (veh/h)	542	20	182	9	16	51	109	498	42	84	952	621
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1845
Adj Flow Rate, veh/h	542	20	182	9	16	51	109	498	42	84	952	621
Adj No. of Lanes	2	2	1	0	1	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	3
Cap, veh/h	710	730	327	32	56	76	184	1338	599	148	1320	596
Arrive On Green	0.21	0.21	0.21	0.05	0.05	0.05	0.05	0.39	0.39	0.04	0.38	0.38
Sat Flow, veh/h	3408	3505	1568	652	1160	1568	3408	3471	1553	3375	3471	1568
Grp Volume(v), veh/h	542	20	182	25	0	51	109	498	42	84	952	621
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1812	0	1568	1704	1736	1553	1688	1736	1568
Q Serve(g_s), s	9.2	0.3	6.4	0.8	0.0	2.0	1.9	6.3	1.1	1.5	14.4	23.4
Cycle Q Clear(g_c), s	9.2	0.3	6.4	0.8	0.0	2.0	1.9	6.3	1.1	1.5	14.4	23.4
Prop In Lane	1.00		1.00	0.36		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	710	730	327	88	0	76	184	1338	599	148	1320	596
V/C Ratio(X)	0.76	0.03	0.56	0.28	0.00	0.67	0.59	0.37	0.07	0.57	0.72	1.04
Avail Cap(c_a), veh/h	886	912	408	530	0	459	199	1338	599	296	1320	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	19.4	21.8	28.2	0.0	28.8	28.4	13.6	11.9	28.8	16.3	19.1
Incr Delay (d2), s/veh	3.1	0.0	1.5	1.7	0.0	9.7	4.1	0.2	0.0	3.4	2.0	48.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.1	2.9	0.5	0.0	1.0	1.0	3.1	0.5	0.8	7.2	17.9
LnGrp Delay(d),s/veh	26.0	19.4	23.3	30.0	0.0	38.4	32.5	13.7	12.0	32.2	18.2	67.1
LnGrp LOS	C	B	C	C		D	C	B	B	C	B	F
Approach Vol, veh/h		744			76			649			1657	
Approach Delay, s/veh		25.2			35.7			16.8			37.2	
Approach LOS		C			D			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	28.4		8.4	7.6	28.7		16.8
Change Period (Y+Rc), s	* 4.6	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	* 3.6	23.4		* 18	* 5.4	21.3		16.0
Max Q Clear Time (g_c+I1), s	3.9	25.4		4.0	3.5	8.3		11.2
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	8.3		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	30.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	217	747	88	46	404	119	41	323	61	134	795	209
Future Volume (veh/h)	217	747	88	46	404	119	41	323	61	134	795	209
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1833	1900	1845	1845	1900	1827	1845	1845
Adj Flow Rate, veh/h	217	747	88	46	404	119	41	323	61	134	795	209
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	4	3	3
Cap, veh/h	214	946	111	58	562	164	52	1092	204	165	803	873
Arrive On Green	0.12	0.30	0.30	0.03	0.21	0.21	0.03	0.37	0.37	0.09	0.44	0.44
Sat Flow, veh/h	1757	3159	372	1757	2661	776	1757	2949	551	1740	1845	1568
Grp Volume(v), veh/h	217	414	421	46	263	260	41	190	194	134	795	209
Grp Sat Flow(s),veh/h/ln	1757	1752	1779	1757	1741	1696	1757	1752	1747	1740	1845	1568
Q Serve(g_s), s	12.0	21.4	21.4	2.6	13.9	14.1	2.3	7.6	7.7	7.5	42.2	6.7
Cycle Q Clear(g_c), s	12.0	21.4	21.4	2.6	13.9	14.1	2.3	7.6	7.7	7.5	42.2	6.7
Prop In Lane	1.00		0.21	1.00		0.46	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	214	525	533	58	367	358	52	649	647	165	803	873
V/C Ratio(X)	1.02	0.79	0.79	0.79	0.72	0.73	0.80	0.29	0.30	0.81	0.99	0.24
Avail Cap(c_a), veh/h	214	586	595	107	476	464	53	649	647	264	803	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	31.7	31.7	47.4	36.2	36.3	47.6	22.0	22.0	43.9	27.6	11.2
Incr Delay (d2), s/veh	65.9	6.5	6.4	20.4	3.6	4.0	54.4	0.2	0.3	4.3	29.1	0.1
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	11.3	11.5	1.6	7.0	7.0	1.9	3.7	3.8	3.8	27.9	2.9
LnGrp Delay(d),s/veh	109.4	38.2	38.2	67.8	39.8	40.3	102.0	22.2	22.3	48.1	56.7	11.3
LnGrp LOS	F	D	D	E	D	D	F	C	C	D	E	B
Approach Vol, veh/h		1052			569			425			1138	
Approach Delay, s/veh		52.9			42.3			29.9			47.4	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	35.6	6.9	49.0	16.0	26.8	13.3	42.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	33.0	3.0	43.0	12.0	27.0	15.0	31.0
Max Q Clear Time (g_c+I1), s	4.6	23.4	4.3	44.2	14.0	16.1	9.5	9.7
Green Ext Time (p_c), s	0.0	4.4	0.0	0.0	0.0	4.7	0.1	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	46.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	710	4	46	352	13	4	142	48	42	165	179
Future Volume (veh/h)	176	710	4	46	352	13	4	142	48	42	165	179
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1900	1810	1900	1900	1810	1900
Adj Flow Rate, veh/h	176	710	4	46	352	13	4	142	48	42	165	179
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	205	747	4	58	1115	41	5	166	56	40	158	172
Arrive On Green	0.12	0.42	0.42	0.03	0.33	0.33	0.13	0.13	0.13	0.22	0.22	0.22
Sat Flow, veh/h	1707	1781	10	1707	3350	123	36	1268	429	181	711	772
Grp Volume(v), veh/h	176	0	714	46	179	186	194	0	0	386	0	0
Grp Sat Flow(s),veh/h/ln	1707	0	1791	1707	1703	1771	1732	0	0	1664	0	0
Q Serve(g_s), s	11.8	0.0	45.0	3.1	9.1	9.2	12.8	0.0	0.0	26.0	0.0	0.0
Cycle Q Clear(g_c), s	11.8	0.0	45.0	3.1	9.1	9.2	12.8	0.0	0.0	26.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.07	0.02		0.25	0.11		0.46
Lane Grp Cap(c), veh/h	205	0	751	58	567	590	227	0	0	370	0	0
V/C Ratio(X)	0.86	0.00	0.95	0.79	0.31	0.32	0.85	0.00	0.00	1.04	0.00	0.00
Avail Cap(c_a), veh/h	329	0	781	64	567	590	385	0	0	370	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.4	0.0	32.8	56.1	29.1	29.1	49.7	0.0	0.0	45.5	0.0	0.0
Incr Delay (d2), s/veh	6.9	0.0	21.4	39.6	0.7	0.7	9.1	0.0	0.0	58.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	26.7	2.1	4.4	4.6	6.7	0.0	0.0	17.9	0.0	0.0
LnGrp Delay(d),s/veh	57.4	0.0	54.2	95.7	29.7	29.7	58.8	0.0	0.0	103.8	0.0	0.0
LnGrp LOS	E		D	F	C	C	E			F		
Approach Vol, veh/h		890			411			194			386	
Approach Delay, s/veh		54.8			37.1			58.8			103.8	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.7	44.9		32.0	8.6	55.0		21.3
Change Period (Y+Rc), s	4.6	6.0		6.0	4.6	6.0		6.0
Max Green Setting (Gmax), s	22.5	32.9		26.0	4.4	51.0		26.0
Max Q Clear Time (g_c+I1), s	13.8	11.2		28.0	5.1	47.0		14.8
Green Ext Time (p_c), s	0.2	10.8		0.0	0.0	2.0		0.5

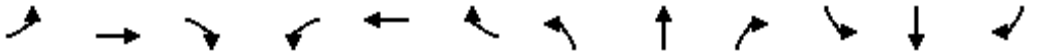
Intersection Summary	
HCM 2010 Ctrl Delay	61.4
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	13	21	168	3	165	4	636	219	545	697	1
Future Volume (veh/h)	7	13	21	168	3	165	4	636	219	545	697	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	7	13	21	168	3	165	4	636	219	545	697	1
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	13	35	56	205	5	253	7	705	243	594	1122	2
Arrive On Green	0.01	0.05	0.05	0.12	0.16	0.16	0.00	0.28	0.28	0.34	0.61	0.61
Sat Flow, veh/h	1757	636	1027	1757	28	1544	1757	2561	881	1757	1842	3
Grp Volume(v), veh/h	7	0	34	168	0	168	4	435	420	545	0	698
Grp Sat Flow(s),veh/h/ln	1757	0	1663	1757	0	1572	1757	1752	1689	1757	0	1844
Q Serve(g_s), s	0.3	0.0	1.5	6.9	0.0	7.4	0.2	17.8	17.8	22.1	0.0	17.7
Cycle Q Clear(g_c), s	0.3	0.0	1.5	6.9	0.0	7.4	0.2	17.8	17.8	22.1	0.0	17.7
Prop In Lane	1.00		0.62	1.00		0.98	1.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	13	0	91	205	0	258	7	482	465	594	0	1123
V/C Ratio(X)	0.55	0.00	0.37	0.82	0.00	0.65	0.53	0.90	0.90	0.92	0.00	0.62
Avail Cap(c_a), veh/h	95	0	358	213	0	444	95	495	477	662	0	1123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	0.0	33.9	32.1	0.0	29.1	36.9	26.0	26.0	23.6	0.0	9.1
Incr Delay (d2), s/veh	32.2	0.0	2.5	21.2	0.0	2.8	48.3	19.3	20.0	16.8	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.7	4.6	0.0	3.4	0.2	11.2	10.9	13.4	0.0	9.3
LnGrp Delay(d),s/veh	69.0	0.0	36.4	53.3	0.0	31.8	85.2	45.3	46.0	40.4	0.0	10.2
LnGrp LOS	E		D	D		C	F	D	D	D		B
Approach Vol, veh/h		41			336			859			1243	
Approach Delay, s/veh		42.0			42.6			45.8			23.4	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.1	24.5	12.7	8.1	4.3	49.3	4.5	16.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	28.0	21.0	9.0	16.0	4.0	45.0	4.0	21.0
Max Q Clear Time (g_c+I1), s	24.1	19.8	8.9	3.5	2.2	19.7	2.3	9.4
Green Ext Time (p_c), s	1.0	0.6	0.0	0.7	0.0	8.5	0.0	0.6

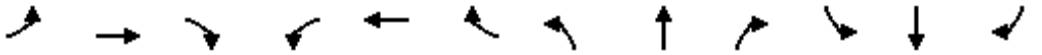
Intersection Summary	
HCM 2010 Ctrl Delay	34.1
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	1209	1135	30	816	20	977	75	75	40	97	206
Future Volume (veh/h)	132	1209	1135	30	816	20	977	75	75	40	97	206
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	132	1209	1135	30	816	20	977	75	75	40	97	206
Adj No. of Lanes	2	3	2	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	197	1945	1066	58	1740	542	970	1447	647	72	524	234
Arrive On Green	0.06	0.39	0.39	0.02	0.35	0.35	0.28	0.41	0.41	0.02	0.15	0.15
Sat Flow, veh/h	3408	5036	2760	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	132	1209	1135	30	816	20	977	75	75	40	97	206
Grp Sat Flow(s),veh/h/ln	1704	1679	1380	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.7	19.1	38.0	0.9	12.4	0.8	28.0	1.3	2.9	1.1	2.4	12.7
Cycle Q Clear(g_c), s	3.7	19.1	38.0	0.9	12.4	0.8	28.0	1.3	2.9	1.1	2.4	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	197	1945	1066	58	1740	542	970	1447	647	72	524	234
V/C Ratio(X)	0.67	0.62	1.06	0.52	0.47	0.04	1.01	0.05	0.12	0.55	0.19	0.88
Avail Cap(c_a), veh/h	277	1945	1066	104	1740	542	970	1447	647	104	534	239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	24.4	30.2	48.0	25.1	21.3	35.2	17.3	17.8	47.7	36.6	41.0
Incr Delay (d2), s/veh	3.9	0.6	46.6	6.9	0.2	0.0	30.7	0.0	0.1	6.4	0.2	28.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	9.0	21.3	0.5	5.8	0.4	17.2	0.6	1.3	0.6	1.2	7.3
LnGrp Delay(d),s/veh	49.4	25.0	76.8	54.9	25.3	21.4	65.9	17.3	17.9	54.1	36.8	69.6
LnGrp LOS	D	C	F	D	C	C	F	B	B	D	D	E
Approach Vol, veh/h		2476			866			1127			343	
Approach Delay, s/veh		50.0			26.3			59.5			58.5	
Approach LOS		D			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	44.6	5.7	42.0	32.0	18.7	9.7	38.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	40.0	3.0	38.0	28.0	15.0	8.0	33.0
Max Q Clear Time (g_c+I1), s	3.1	4.9	2.9	40.0	30.0	14.7	5.7	14.4
Green Ext Time (p_c), s	0.0	1.8	0.0	0.0	0.0	0.1	0.1	15.1

Intersection Summary	
HCM 2010 Ctrl Delay	48.6
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	240	0	1216	162	186	0	565	1167	121	425	36
Future Volume (veh/h)	99	240	0	1216	162	186	0	565	1167	121	425	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	99	240	0	1216	162	186	0	565	1167	121	425	36
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	127	291	247	1429	931	791	2	681	962	156	1002	448
Arrive On Green	0.07	0.16	0.00	0.42	0.50	0.50	0.00	0.19	0.19	0.05	0.29	0.29
Sat Flow, veh/h	1757	1845	1568	3408	1845	1568	1757	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	99	240	0	1216	162	186	0	565	1167	121	425	36
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	1845	1568	1757	1752	1568	1704	1752	1568
Q Serve(g_s), s	4.8	11.0	0.0	28.2	4.2	5.8	0.0	13.5	17.0	3.1	8.6	1.5
Cycle Q Clear(g_c), s	4.8	11.0	0.0	28.2	4.2	5.8	0.0	13.5	17.0	3.1	8.6	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	291	247	1429	931	791	2	681	962	156	1002	448
V/C Ratio(X)	0.78	0.83	0.00	0.85	0.17	0.24	0.00	0.83	1.21	0.78	0.42	0.08
Avail Cap(c_a), veh/h	241	337	287	1832	1076	914	80	681	962	156	1002	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	35.7	0.0	22.9	11.8	12.2	0.0	33.8	16.9	41.3	25.4	22.8
Incr Delay (d2), s/veh	9.8	13.7	0.0	3.2	0.1	0.2	0.0	8.5	105.4	21.4	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.7	0.0	13.8	2.1	2.5	0.0	7.3	51.1	1.9	4.2	0.6
LnGrp Delay(d),s/veh	49.6	49.4	0.0	26.2	11.9	12.3	0.0	42.3	122.2	62.7	25.7	22.9
LnGrp LOS	D	D		C	B	B		D	F	E	C	C
Approach Vol, veh/h		339			1564			1732			582	
Approach Delay, s/veh		49.4			23.0			96.2			33.2	
Approach LOS		D			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	21.0	40.7	17.8	0.0	29.0	10.3	48.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	17.0	47.0	16.0	4.0	17.0	12.0	51.0
Max Q Clear Time (g_c+I1), s	5.1	19.0	30.2	13.0	0.0	10.6	6.8	7.8
Green Ext Time (p_c), s	0.0	0.0	6.5	0.8	0.0	5.1	0.1	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	56.6
HCM 2010 LOS	E

Intersection	
Intersection Delay, s/veh	19.6
Intersection LOS	C

Approach	EB	NB	SB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	101	740	921
Demand Flow Rate, veh/h	104	762	949
Vehicles Circulating, veh/h	813	69	34
Vehicles Exiting, veh/h	170	848	797
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.4	13.9	25.1
Approach LOS	B	B	D

Lane	Left	Left	Right	Left
Designated Moves	LR	L	TR	TR
Assumed Moves	LR	L	TR	TR
RT Channelized				
Lane Util	1.000	0.045	0.955	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	104	34	728	949
Cap Entry Lane, veh/h	501	1055	1055	1092
Entry HV Adj Factor	0.971	0.971	0.971	0.971
Flow Entry, veh/h	101	33	707	921
Cap Entry, veh/h	487	1024	1024	1060
V/C Ratio	0.208	0.032	0.690	0.869
Control Delay, s/veh	10.4	3.8	14.4	25.1
LOS	B	A	B	D
95th %tile Queue, veh	1	0	6	12

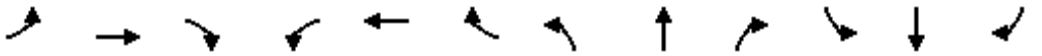
Cumulative Plus All Projects

County Standard Mitigation

AM

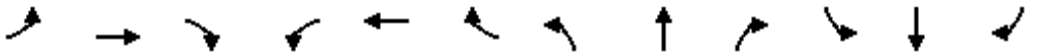
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	527	162	90	1149	805	577	1716	87	1265	1678	95
Future Volume (vph)	149	527	162	90	1149	805	577	1716	87	1265	1678	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3349		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3349		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	149	527	162	90	1149	805	577	1716	87	1265	1678	95
RTOR Reduction (vph)	0	22	0	0	0	479	0	0	60	0	0	56
Lane Group Flow (vph)	149	667	0	90	1149	326	577	1716	27	1265	1678	39
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	4.0	32.4		8.6	37.0	37.0	25.7	43.0	43.0	40.0	57.3	57.3
Effective Green, g (s)	4.0	32.4		8.6	37.0	37.0	25.7	43.0	43.0	40.0	57.3	57.3
Actuated g/C Ratio	0.03	0.23		0.06	0.26	0.26	0.18	0.31	0.31	0.29	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	96	775		206	917	722	618	1532	476	962	2041	635
v/s Ratio Prot	c0.04	0.20		0.03	c0.33		0.17	c0.34		c0.38	0.34	
v/s Ratio Perm						0.12			0.02			0.03
v/c Ratio	1.55	0.86		0.44	1.25	0.45	0.93	1.12	0.06	1.31	0.82	0.06
Uniform Delay, d1	68.0	51.6		63.4	51.5	43.0	56.3	48.5	34.2	50.0	36.8	25.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	293.1	9.7		1.5	122.9	0.5	21.3	63.4	0.0	149.2	2.8	0.0
Delay (s)	361.1	61.3		64.8	174.4	43.5	77.6	111.9	34.2	199.2	39.6	25.1
Level of Service	F	E		E	F	D	E	F	C	F	D	C
Approach Delay (s)		114.6			118.0			100.7			105.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	108.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	659	221	182	829	840	199	1837	190	505	814	71
Future Volume (vph)	39	659	221	182	829	840	199	1837	190	505	814	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91	0.91	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.96		1.00	0.96	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3373		1736	3184	1413	1736	4917		1736	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3373		1736	3184	1413	1736	4917		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	39	659	221	182	829	840	199	1837	190	505	814	71
RTOR Reduction (vph)	0	22	0	0	24	335	0	8	0	0	0	42
Lane Group Flow (vph)	39	858	0	182	1133	177	199	2019	0	505	814	29
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	7.6	39.8		16.0	48.2	48.2	21.8	48.0		31.0	57.2	57.2
Effective Green, g (s)	7.6	39.8		16.0	48.2	48.2	21.8	48.0		31.0	57.2	57.2
Actuated g/C Ratio	0.05	0.26		0.11	0.32	0.32	0.14	0.32		0.21	0.38	0.38
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	88	890		184	1017	451	250	1565		356	1892	589
v/s Ratio Prot	0.02	0.25		c0.10	c0.36		0.11	c0.41		c0.29	0.16	
v/s Ratio Perm						0.13						0.02
v/c Ratio	0.44	0.96		0.99	1.11	0.39	0.80	1.29		1.42	0.43	0.05
Uniform Delay, d1	69.5	54.8		67.3	51.3	39.9	62.4	51.4		59.9	34.7	29.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.5	21.7		62.5	65.1	0.6	15.9	135.4		204.2	0.2	0.0
Delay (s)	73.1	76.5		129.8	116.4	40.5	78.3	186.8		264.1	34.9	29.6
Level of Service	E	E		F	F	D	E	F		F	C	C
Approach Delay (s)		76.3			96.7			177.1			117.9	
Approach LOS		E			F			F			F	

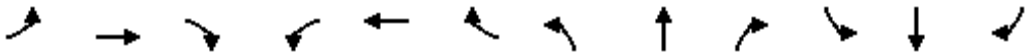
Intersection Summary			
HCM 2000 Control Delay	126.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	150.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	116.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	884	101	176	1036	384	110	614	197	293	400	80
Future Volume (vph)	58	884	101	176	1036	384	110	614	197	293	400	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.6		5.0	4.8	4.8	5.5	4.4	4.4	5.5	4.3	4.3
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3451		1752	3505	1568	1752	1845	1568	1752	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	3451		1752	3505	1568	1752	1845	1568	1752	1845	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	58	884	101	176	1036	384	110	614	197	293	400	80
RTOR Reduction (vph)	0	6	0	0	0	215	0	0	101	0	0	49
Lane Group Flow (vph)	58	979	0	176	1036	169	110	614	96	293	400	31
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases						2			8			4
Actuated Green, G (s)	5.2	37.2		12.0	43.6	43.6	11.4	40.6	40.6	20.7	50.0	50.0
Effective Green, g (s)	5.2	37.2		12.0	43.6	43.6	11.4	40.6	40.6	20.7	50.0	50.0
Actuated g/C Ratio	0.04	0.29		0.09	0.34	0.34	0.09	0.31	0.31	0.16	0.38	0.38
Clearance Time (s)	5.2	4.6		5.0	4.8	4.8	5.5	4.4	4.4	5.5	4.3	4.3
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	70	987		161	1175	525	153	576	489	278	709	603
v/s Ratio Prot	0.03	c0.28		c0.10	0.30		0.06	c0.33		c0.17	0.22	
v/s Ratio Perm						0.11			0.06			0.02
v/c Ratio	0.83	0.99		1.09	0.88	0.32	0.72	1.07	0.20	1.05	0.56	0.05
Uniform Delay, d1	62.0	46.2		59.0	40.8	32.2	57.7	44.7	32.7	54.6	31.4	25.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	50.7	26.4		98.0	7.8	0.1	12.6	56.3	0.1	68.9	0.6	0.0
Delay (s)	112.7	72.7		157.0	48.6	32.3	70.3	101.0	32.8	123.5	32.1	25.1
Level of Service	F	E		F	D	C	E	F	C	F	C	C
Approach Delay (s)		74.9			56.6			82.8			66.0	
Approach LOS		E			E			F			E	

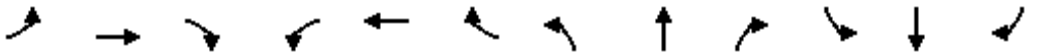
Intersection Summary			
HCM 2000 Control Delay	68.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.9
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



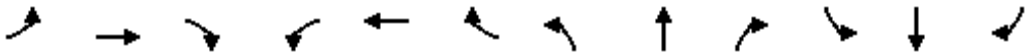
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	331	412	1	0	648	7	5	302	0	0	168	188
Future Volume (vph)	331	412	1	0	648	7	5	302	0	0	168	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			1.00			0.93	
Flt Protected		0.98			1.00			1.00			1.00	
Satd. Flow (prot)		1721			1725			1758			1634	
Flt Permitted		0.98			1.00			0.82			1.00	
Satd. Flow (perm)		1721			1725			1436			1634	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	331	412	1	0	648	7	5	302	0	0	168	188
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	33	0
Lane Group Flow (vph)	0	744	0	0	655	0	0	307	0	0	323	0
Heavy Vehicles (%)	8%	8%	8%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Split	NA			NA		Perm	NA			NA	
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)		44.0			39.0			25.0			25.0	
Effective Green, g (s)		44.0			39.0			25.0			25.0	
Actuated g/C Ratio		0.37			0.32			0.21			0.21	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		631			560			299			340	
v/s Ratio Prot		c0.43			c0.38						0.20	
v/s Ratio Perm								c0.21				
v/c Ratio		1.18			1.17			1.03			0.95	
Uniform Delay, d1		38.0			40.5			47.5			46.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		96.3			94.3			59.1			35.2	
Delay (s)		134.3			134.8			106.6			82.1	
Level of Service		F			F			F			F	
Approach Delay (s)		134.3			134.8			106.6			82.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	121.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1183	701	7	0	1122	15	8	30	5	7	6	541
Future Volume (vph)	1183	701	7	0	1122	15	8	30	5	7	6	541
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Lane Util. Factor	0.97	0.95	1.00		0.95			1.00			1.00	1.00
Frt	1.00	1.00	0.85		1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (prot)	3303	3406	1524		3431			1799			1779	1553
Flt Permitted	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (perm)	3303	3406	1524		3431			1799			1779	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1183	701	7	0	1122	15	8	30	5	7	6	541
RTOR Reduction (vph)	0	0	1	0	1	0	0	3	0	0	0	42
Lane Group Flow (vph)	1183	701	6	0	1136	0	0	40	0	0	13	499
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	51.6	103.5	103.5		47.3			3.3			2.1	53.7
Effective Green, g (s)	51.6	103.5	103.5		47.3			3.3			2.1	53.7
Actuated g/C Ratio	0.40	0.81	0.81		0.37			0.03			0.02	0.42
Clearance Time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0		1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	1330	2751	1231		1266			46			29	651
v/s Ratio Prot	c0.36	0.21			c0.33			c0.02			0.01	c0.31
v/s Ratio Perm			0.00									0.01
v/c Ratio	0.89	0.25	0.00		0.90			0.87			0.45	0.77
Uniform Delay, d1	35.6	3.0	2.4		38.1			62.2			62.4	31.8
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	7.4	0.0	0.0		8.4			83.2			4.0	4.8
Delay (s)	43.0	3.0	2.4		46.6			145.4			66.4	36.7
Level of Service	D	A	A		D			F			E	D
Approach Delay (s)		28.0			46.6			145.4			37.4	
Approach LOS		C			D			F			D	

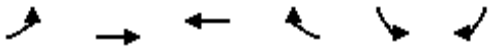
Intersection Summary			
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	128.1	Sum of lost time (s)	24.7
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	19	205	4	610	19	1807	107	224	1589	0
Future Volume (vph)	0	1	19	205	4	610	19	1807	107	224	1589	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.86		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1582		1752	1845	1568	1752	3475		1752	3505	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1582		1752	1845	1568	1752	3475		1752	3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1	19	205	4	610	19	1807	107	224	1589	0
RTOR Reduction (vph)	0	18	0	0	0	159	0	3	0	0	0	0
Lane Group Flow (vph)	0	2	0	205	4	451	19	1911	0	224	1589	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		6.0		27.6	37.6	37.6	3.0	77.6		18.0	92.6	
Effective Green, g (s)		6.0		27.6	37.6	37.6	3.0	77.6		18.0	92.6	
Actuated g/C Ratio		0.04		0.19	0.26	0.26	0.02	0.53		0.12	0.64	
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		65		333	477	406	36	1857		217	2235	
v/s Ratio Prot		0.00		0.12	0.00		0.01	c0.55		c0.13	0.45	
v/s Ratio Perm						c0.29						
v/c Ratio		0.03		0.62	0.01	1.11	0.53	1.03		1.03	0.71	
Uniform Delay, d1		66.8		53.9	40.0	53.8	70.4	33.8		63.6	17.4	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2		3.4	0.0	77.9	13.3	28.8		69.8	1.1	
Delay (s)		67.0		57.3	40.0	131.7	83.7	62.6		133.4	18.5	
Level of Service		E		E	D	F	F	E		F	B	
Approach Delay (s)		67.0			112.7			62.8			32.7	
Approach LOS		E			F			E			C	

Intersection Summary			
HCM 2000 Control Delay	59.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	145.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		

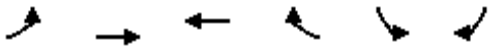
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	583	1392	2113	1736	0
Future Volume (vph)	0	583	1392	2113	1736	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	1.00	0.97	
Frt		1.00	1.00	0.85	1.00	
Flt Protected		1.00	1.00	1.00	0.95	
Satd. Flow (prot)		3505	3505	1568	3400	
Flt Permitted		1.00	1.00	1.00	0.95	
Satd. Flow (perm)		3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	583	1392	2113	1736	0
RTOR Reduction (vph)	0	0	0	518	0	0
Lane Group Flow (vph)	0	583	1392	1595	1736	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	4	5	5		6	
Permitted Phases				5		
Actuated Green, G (s)		63.0	63.0	63.0	49.0	
Effective Green, g (s)		63.0	63.0	63.0	49.0	
Actuated g/C Ratio		0.52	0.52	0.52	0.41	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1840	1840	823	1388	
v/s Ratio Prot		0.17	0.40		c0.51	
v/s Ratio Perm				c1.02		
v/c Ratio		0.32	0.76	1.94	1.25	
Uniform Delay, d1		16.2	22.5	28.5	35.5	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	1.8	426.5	119.0	
Delay (s)		16.3	24.3	455.0	154.5	
Level of Service		B	C	F	F	
Approach Delay (s)		16.3	283.9		154.5	
Approach LOS		B	F		F	

Intersection Summary			
HCM 2000 Control Delay	218.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	134.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	959	1243	2651	116	82	574
Future Volume (vph)	959	1243	2651	116	82	574
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.91	0.91		1.00	0.88
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	5036	5004		1752	2760
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	5036	5004		1752	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	959	1243	2651	116	82	574
RTOR Reduction (vph)	0	0	3	0	0	525
Lane Group Flow (vph)	959	1243	2764	0	82	49
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	42.0	125.1	79.1		12.3	12.3
Effective Green, g (s)	42.0	125.1	79.1		12.3	12.3
Actuated g/C Ratio	0.29	0.86	0.54		0.08	0.08
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	982	4332	2722		148	233
v/s Ratio Prot	c0.28	0.25	c0.55		c0.05	
v/s Ratio Perm						0.02
v/c Ratio	0.98	0.29	1.02		0.55	0.21
Uniform Delay, d1	51.2	1.9	33.2		63.9	62.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	22.9	0.0	21.2		4.4	0.4
Delay (s)	74.1	1.9	54.3		68.4	62.5
Level of Service	E	A	D		E	E
Approach Delay (s)		33.4	54.3		63.2	
Approach LOS		C	D		E	

Intersection Summary			
HCM 2000 Control Delay	47.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	145.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	489	131	236	492	716	64	3446	456	591	2992	532
Future Volume (veh/h)	330	489	131	236	492	716	64	3446	456	591	2992	532
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	330	489	131	236	492	716	64	3446	456	591	2992	532
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	192	932	417	147	885	547	67	2290	713	325	2671	832
Arrive On Green	0.06	0.27	0.27	0.04	0.25	0.25	0.02	0.46	0.46	0.10	0.54	0.54
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	330	489	131	236	492	716	64	3446	456	591	2992	532
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.5	17.9	10.1	6.5	18.4	38.0	2.9	69.1	33.8	14.5	80.6	36.4
Cycle Q Clear(g_c), s	8.5	17.9	10.1	6.5	18.4	38.0	2.9	69.1	33.8	14.5	80.6	36.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	932	417	147	885	547	67	2290	713	325	2671	832
V/C Ratio(X)	1.71	0.52	0.31	1.60	0.56	1.31	0.95	1.50	0.64	1.82	1.12	0.64
Avail Cap(c_a), veh/h	192	932	417	147	885	547	67	2290	713	325	2671	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	47.1	44.3	72.0	48.9	49.0	73.7	40.7	31.2	68.0	35.0	24.7
Incr Delay (d2), s/veh	342.5	0.3	0.2	300.8	0.5	151.8	91.7	229.5	1.5	379.7	59.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	8.7	4.4	9.2	8.9	45.7	2.2	80.3	14.8	23.9	51.6	15.8
LnGrp Delay(d),s/veh	413.5	47.4	44.4	372.8	49.4	200.8	165.4	270.2	32.7	447.7	94.7	26.0
LnGrp LOS	F	D	D	F	D	F	F	F	C	F	F	C
Approach Vol, veh/h		950			1444			3966			4115	
Approach Delay, s/veh		174.2			177.3			241.2			136.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	85.4	14.0	42.6	20.0	73.9	12.0	44.6
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	3.0	80.4	8.5	* 38	14.5	* 69	6.5	39.7
Max Q Clear Time (g_c+I1), s	4.9	82.6	10.5	40.0	16.5	71.1	8.5	19.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	185.2
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	329	23	149	410	832	34	2829	206	422	2387	0
Future Volume (veh/h)	0	329	23	149	410	832	34	2829	206	422	2387	0
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	0	329	23	149	410	832	34	2829	206	422	2387	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	3	555	248	117	828	587	61	2492	776	467	3094	963
Arrive On Green	0.00	0.16	0.16	0.03	0.24	0.24	0.02	0.50	0.50	0.14	0.62	0.00
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	0	329	23	149	410	832	34	2829	206	422	2387	0
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	0.0	11.5	1.7	4.5	13.3	31.0	1.3	65.6	10.0	16.2	45.8	0.0
Cycle Q Clear(g_c), s	0.0	11.5	1.7	4.5	13.3	31.0	1.3	65.6	10.0	16.2	45.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	3	555	248	117	828	587	61	2492	776	467	3094	963
V/C Ratio(X)	0.00	0.59	0.09	1.28	0.50	1.42	0.56	1.14	0.27	0.90	0.77	0.00
Avail Cap(c_a), veh/h	77	783	350	117	828	587	77	2492	776	476	3094	963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	51.2	47.0	63.4	43.4	41.1	64.0	32.8	18.9	55.7	18.2	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.1	174.6	0.2	197.3	3.0	66.4	0.1	19.6	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.6	0.7	4.9	6.5	53.4	0.6	45.3	4.3	8.8	21.1	0.0
LnGrp Delay(d),s/veh	0.0	51.5	47.1	238.0	43.5	238.3	67.0	99.2	19.0	75.3	19.3	0.0
LnGrp LOS		D	D	F	D	F	E	F	B	E	B	
Approach Vol, veh/h		352			1391			3069			2809	
Approach Delay, s/veh		51.3			180.9			93.5			27.7	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	86.7	0.0	36.7	23.7	70.9	10.0	26.7
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	81.0	3.0	* 31	18.5	* 66	4.5	* 30
Max Q Clear Time (g_c+I1), s	3.3	47.8	0.0	33.0	18.2	67.6	6.5	13.5
Green Ext Time (p_c), s	0.0	29.4	0.0	0.0	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	83.2
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1488	677	98	1960	977	763	1984	74	1096	1563	188
Future Volume (veh/h)	85	1488	677	98	1960	977	763	1984	74	1096	1563	188
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	85	1488	677	98	1960	0	763	1984	74	1096	1563	188
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	66	1537	478	115	1625	506	710	1533	477	719	1523	474
Arrive On Green	0.02	0.31	0.31	0.03	0.33	0.00	0.21	0.31	0.31	0.21	0.31	0.31
Sat Flow, veh/h	3312	4893	1524	3312	4893	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	85	1488	677	98	1960	0	763	1984	74	1096	1563	188
Grp Sat Flow(s),veh/h/ln	1656	1631	1524	1656	1631	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	3.0	45.0	47.2	4.4	49.9	0.0	31.6	46.2	5.2	32.0	45.9	14.4
Cycle Q Clear(g_c), s	3.0	45.0	47.2	4.4	49.9	0.0	31.6	46.2	5.2	32.0	45.9	14.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1537	478	115	1625	506	710	1533	477	719	1523	474
V/C Ratio(X)	1.29	0.97	1.41	0.86	1.21	0.00	1.08	1.29	0.16	1.53	1.03	0.40
Avail Cap(c_a), veh/h	66	1537	478	115	1625	506	710	1533	477	719	1523	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.7	50.8	51.6	72.2	50.2	0.0	59.4	52.1	37.9	59.2	52.2	41.3
Incr Delay (d2), s/veh	205.4	15.9	198.8	41.6	99.0	0.0	55.8	137.3	0.1	243.3	30.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	22.5	46.2	2.7	37.3	0.0	20.2	40.6	2.2	39.2	25.2	6.2
LnGrp Delay(d),s/veh	279.0	66.7	250.3	113.8	149.2	0.0	115.2	189.4	37.9	302.5	82.2	41.5
LnGrp LOS	F	E	F	F	F		F	F	D	F	F	D
Approach Vol, veh/h		2250			2058			2821			2847	
Approach Delay, s/veh		130.0			147.5			165.3			164.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	55.3	36.3	50.7	10.7	52.6	36.0	51.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.0	4.8
Max Green Setting (Gmax), s	3.0	* 50	* 32	45.9	5.2	* 47	32.0	46.2
Max Q Clear Time (g_c+I1), s	5.0	51.9	33.6	47.9	6.4	49.2	34.0	48.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	153.4
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	612	57	401	826	273	325	2116	555	131	1767	432
Future Volume (veh/h)	108	612	57	401	826	273	325	2116	555	131	1767	432
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	108	612	57	401	826	273	325	2116	555	131	1767	432
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	143	625	280	416	895	400	351	2228	701	160	1979	616
Arrive On Green	0.04	0.18	0.18	0.12	0.26	0.26	0.10	0.45	0.45	0.05	0.40	0.40
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1568	3408	4988	1553
Grp Volume(v), veh/h	108	612	57	401	826	273	325	2116	555	131	1767	432
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1568	1704	1663	1553
Q Serve(g_s), s	3.1	17.4	3.1	11.7	23.0	15.7	9.6	40.8	30.3	3.8	33.1	23.3
Cycle Q Clear(g_c), s	3.1	17.4	3.1	11.7	23.0	15.7	9.6	40.8	30.3	3.8	33.1	23.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	625	280	416	895	400	351	2228	701	160	1979	616
V/C Ratio(X)	0.75	0.98	0.20	0.97	0.92	0.68	0.93	0.95	0.79	0.82	0.89	0.70
Avail Cap(c_a), veh/h	143	625	280	416	914	409	351	2233	702	160	1984	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	40.9	35.0	43.7	36.3	33.6	44.5	26.6	23.7	47.3	28.2	25.2
Incr Delay (d2), s/veh	18.3	30.4	0.1	34.8	14.1	3.6	29.5	9.6	5.7	25.7	5.4	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	11.1	1.4	7.5	12.9	7.2	5.9	20.6	14.1	2.4	16.0	10.4
LnGrp Delay(d),s/veh	65.7	71.3	35.2	78.5	50.4	37.2	74.0	36.2	29.4	72.9	33.6	28.2
LnGrp LOS	E	E	D	E	D	D	E	D	C	E	C	C
Approach Vol, veh/h		777			1500			2996			2330	
Approach Delay, s/veh		67.9			55.5			39.1			34.8	
Approach LOS		E			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	44.5	9.7	30.9	10.0	49.5	17.4	23.2
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 10	39.8	4.2	* 26	* 4.7	44.8	* 12	* 18
Max Q Clear Time (g_c+I1), s	11.6	35.1	5.1	25.0	5.8	42.8	13.7	19.4
Green Ext Time (p_c), s	0.0	4.3	0.0	0.6	0.0	1.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1342	414	134	13	510	7	933	2195	129	9	816	800
Future Volume (veh/h)	1342	414	134	13	510	7	933	2195	129	9	816	800
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	1342	414	134	13	510	7	933	2195	129	9	816	800
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	1055	1985	618	28	465	145	744	2235	696	21	1186	369
Arrive On Green	0.31	0.40	0.40	0.01	0.09	0.09	0.22	0.45	0.45	0.01	0.24	0.24
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	1342	414	134	13	510	7	933	2195	129	9	816	800
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	46.9	8.2	8.5	0.6	14.0	0.6	33.1	65.1	7.5	0.4	22.4	35.7
Cycle Q Clear(g_c), s	46.9	8.2	8.5	0.6	14.0	0.6	33.1	65.1	7.5	0.4	22.4	35.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1055	1985	618	28	465	145	744	2235	696	21	1186	369
V/C Ratio(X)	1.27	0.21	0.22	0.46	1.10	0.05	1.25	0.98	0.19	0.43	0.69	2.17
Avail Cap(c_a), veh/h	1055	1985	618	67	465	145	744	2235	696	67	1186	369
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	29.7	29.8	74.1	68.1	62.0	58.5	40.8	24.9	74.3	52.1	57.2
Incr Delay (d2), s/veh	130.1	0.2	0.8	4.3	70.4	0.6	125.0	15.3	0.6	5.0	3.3	533.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	40.9	3.8	3.8	0.3	9.5	0.3	28.3	33.0	3.3	0.2	10.6	70.1
LnGrp Delay(d),s/veh	181.7	29.9	30.6	78.4	138.5	62.6	183.5	56.1	25.5	79.3	55.4	590.8
LnGrp LOS	F	C	C	E	F	E	F	E	C	E	E	F
Approach Vol, veh/h		1890			530			3257			1625	
Approach Delay, s/veh		137.7			136.0			91.4			319.1	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	38.0	40.9	52.0	19.2	6.4	72.5	6.3	64.9
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 33	* 36	* 47	* 14	3.0	* 65	3.0	* 58
Max Q Clear Time (g_c+I1), s	35.1	37.7	48.9	16.0	2.4	67.1	2.6	10.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.1

Intersection Summary	
HCM 2010 Ctrl Delay	157.3
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	2345	133	27	2398	8	517	42	211	7	16	55
Future Volume (veh/h)	14	2345	133	27	2398	8	517	42	211	7	16	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	14	2345	133	27	2398	8	517	42	211	7	16	55
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	21	2389	134	33	2574	9	498	625	532	12	103	87
Arrive On Green	0.01	0.50	0.50	0.02	0.51	0.51	0.28	0.34	0.34	0.01	0.06	0.06
Sat Flow, veh/h	1707	4741	267	1707	5035	17	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	14	1607	871	27	1553	853	517	42	211	7	16	55
Grp Sat Flow(s),veh/h/ln	1707	1631	1745	1707	1631	1789	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.1	65.6	67.3	2.1	60.5	60.6	38.6	2.1	14.0	0.5	1.1	4.7
Cycle Q Clear(g_c), s	1.1	65.6	67.3	2.1	60.5	60.6	38.6	2.1	14.0	0.5	1.1	4.7
Prop In Lane	1.00		0.15	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	21	1644	879	33	1668	915	498	625	532	12	103	87
V/C Ratio(X)	0.68	0.98	0.99	0.81	0.93	0.93	1.04	0.07	0.40	0.58	0.16	0.63
Avail Cap(c_a), veh/h	50	1644	879	50	1668	915	498	753	640	52	285	242
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.0	33.0	33.4	66.5	31.0	31.1	48.8	30.4	34.4	67.4	61.2	62.9
Incr Delay (d2), s/veh	23.3	17.2	27.9	35.0	10.1	16.1	50.5	0.0	0.4	26.9	0.6	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	33.4	39.0	1.3	29.5	33.9	25.7	1.1	6.1	0.4	0.6	2.2
LnGrp Delay(d),s/veh	90.3	50.2	61.4	101.5	41.1	47.2	99.3	30.5	34.8	94.3	61.9	69.5
LnGrp LOS	F	D	E	F	D	D	F	C	C	F	E	E
Approach Vol, veh/h		2492			2433			770			78	
Approach Delay, s/veh		54.3			43.9			77.9			70.1	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	75.0	43.0	12.0	5.1	76.0	4.4	50.6
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	4.0	68.6	38.6	* 21	4.0	68.6	4.0	55.6
Max Q Clear Time (g_c+I1), s	4.1	69.3	40.6	6.7	3.1	62.6	2.5	16.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	6.0	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	53.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1326	686	5	1390	461	608	422	107	253	235	76
Future Volume (veh/h)	69	1326	686	5	1390	461	608	422	107	253	235	76
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	69	1326	686	5	1390	461	608	422	107	253	235	76
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	47	1113	530	7	1205	382	480	480	408	258	246	209
Arrive On Green	0.03	0.48	0.48	0.00	0.46	0.46	0.27	0.26	0.26	0.15	0.13	0.13
Sat Flow, veh/h	1757	2306	1098	1757	2619	831	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	69	980	1032	5	909	942	608	422	107	253	235	76
Grp Sat Flow(s),veh/h/ln	1757	1752	1651	1757	1752	1698	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.0	72.4	72.4	0.4	69.0	69.0	41.0	32.9	8.1	21.5	19.0	6.6
Cycle Q Clear(g_c), s	4.0	72.4	72.4	0.4	69.0	69.0	41.0	32.9	8.1	21.5	19.0	6.6
Prop In Lane	1.00		0.66	1.00		0.49	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	846	797	7	806	781	480	480	408	258	246	209
V/C Ratio(X)	1.47	1.16	1.29	0.76	1.13	1.21	1.27	0.88	0.26	0.98	0.96	0.36
Avail Cap(c_a), veh/h	47	846	797	35	806	781	480	480	408	258	246	209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.0	38.8	38.8	74.6	40.5	40.5	54.5	53.3	44.1	63.8	64.6	59.2
Incr Delay (d2), s/veh	298.2	84.4	141.7	97.0	73.0	104.6	135.5	17.0	0.3	50.8	45.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	54.9	64.4	0.4	49.7	55.0	38.0	19.0	3.6	14.1	12.7	2.9
LnGrp Delay(d),s/veh	371.2	123.2	180.4	171.7	113.5	145.1	190.0	70.2	44.4	114.6	109.6	60.3
LnGrp LOS	F	F	F	F	F	F	F	E	D	F	F	E
Approach Vol, veh/h		2081			1856			1137			564	
Approach Delay, s/veh		159.8			129.7			131.9			105.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	43.0	4.6	76.4	45.0	24.0	8.0	73.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	39.0	3.0	70.0	41.0	20.0	4.0	69.0
Max Q Clear Time (g_c+I1), s	23.5	34.9	2.4	74.4	43.0	21.0	6.0	71.0
Green Ext Time (p_c), s	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	138.8
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	373	1980	182	246	2151	3	109	1802	305	3	1650	155
Future Volume (veh/h)	373	1980	182	246	2151	3	109	1802	305	3	1650	155
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	373	1980	182	246	2151	3	109	1802	305	3	1650	155
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	341	2132	683	268	2027	650	122	1859	579	8	1691	526
Arrive On Green	0.10	0.44	0.44	0.08	0.41	0.41	0.04	0.37	0.37	0.00	0.34	0.34
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	373	1980	182	246	2151	3	109	1802	305	3	1650	155
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	14.0	53.7	10.4	10.0	58.0	0.2	4.5	49.2	21.3	0.1	45.3	10.2
Cycle Q Clear(g_c), s	14.0	53.7	10.4	10.0	58.0	0.2	4.5	49.2	21.3	0.1	45.3	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	2132	683	268	2027	650	122	1859	579	8	1691	526
V/C Ratio(X)	1.09	0.93	0.27	0.92	1.06	0.00	0.90	0.97	0.53	0.37	0.98	0.29
Avail Cap(c_a), veh/h	341	2132	683	268	2027	650	122	1859	579	97	1691	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	37.4	25.2	64.1	41.0	24.1	67.2	43.4	34.6	69.7	45.9	34.3
Incr Delay (d2), s/veh	76.5	7.8	0.2	34.2	38.5	0.0	50.9	14.3	0.9	26.3	16.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	25.7	4.5	6.0	33.3	0.1	3.0	25.3	9.4	0.1	23.5	4.5
LnGrp Delay(d),s/veh	139.5	45.3	25.4	98.3	79.5	24.1	118.1	57.7	35.5	96.0	62.4	34.6
LnGrp LOS	F	D	C	F	F	C	F	E	D	F	E	C
Approach Vol, veh/h		2535			2400			2216			1808	
Approach Delay, s/veh		57.7			81.3			57.6			60.1	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	55.7	15.0	65.0	9.0	51.0	18.0	62.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	48.0	11.0	61.0	5.0	47.0	14.0	58.0
Max Q Clear Time (g_c+I1), s	2.1	51.2	12.0	55.7	6.5	47.3	16.0	60.0
Green Ext Time (p_c), s	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	64.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	524	1035	93	731	1021	255	245	1568	441	115	1159	234
Future Volume (veh/h)	524	1035	93	731	1021	255	245	1568	441	115	1159	234
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	524	1035	93	731	1021	255	245	1568	441	115	1159	234
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	568	962	300	699	1156	360	297	1548	693	167	1415	633
Arrive On Green	0.17	0.19	0.19	0.21	0.23	0.23	0.09	0.44	0.44	0.05	0.40	0.40
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	524	1035	93	731	1021	255	245	1568	441	115	1159	234
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	21.4	27.0	7.2	29.0	27.7	21.2	10.0	62.4	30.9	4.7	41.6	14.8
Cycle Q Clear(g_c), s	21.4	27.0	7.2	29.0	27.7	21.2	10.0	62.4	30.9	4.7	41.6	14.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	568	962	300	699	1156	360	297	1548	693	167	1415	633
V/C Ratio(X)	0.92	1.08	0.31	1.05	0.88	0.71	0.83	1.01	0.64	0.69	0.82	0.37
Avail Cap(c_a), veh/h	579	962	300	699	1156	360	386	1548	693	434	1537	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	57.2	49.2	56.2	52.6	50.1	63.5	39.5	30.7	66.2	37.6	29.5
Incr Delay (d2), s/veh	20.3	51.7	0.6	46.5	8.3	6.3	10.8	26.1	1.9	5.0	3.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	17.1	3.2	18.1	13.7	9.8	5.2	35.7	13.7	2.3	20.8	6.5
LnGrp Delay(d),s/veh	78.3	108.9	49.8	102.7	60.9	56.4	74.3	65.6	32.6	71.1	41.0	29.9
LnGrp LOS	E	F	D	F	E	E	E	F	C	E	D	C
Approach Vol, veh/h		1652			2007			2254			1508	
Approach Delay, s/veh		95.9			75.5			60.1			41.5	
Approach LOS		F			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	66.4	33.0	31.0	16.3	61.1	27.6	36.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	60.0	29.0	27.0	16.0	62.0	24.0	32.0
Max Q Clear Time (g_c+I1), s	6.7	64.4	31.0	29.0	12.0	43.6	23.4	29.7
Green Ext Time (p_c), s	0.2	0.0	0.0	0.0	0.3	13.4	0.1	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	68.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	40	32	307	30	388	57	2863	368	680	1890	59
Future Volume (veh/h)	76	40	32	307	30	388	57	2863	368	680	1890	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	76	40	32	307	30	388	57	2863	368	680	1890	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	64	222	177	503	295	251	72	2470	769	551	3080	96
Arrive On Green	0.04	0.23	0.23	0.16	0.16	0.16	0.04	0.50	0.50	0.16	0.62	0.62
Sat Flow, veh/h	1757	950	760	2541	1845	1568	1740	4988	1553	3375	4970	155
Grp Volume(v), veh/h	76	0	72	307	30	388	57	2863	368	680	1264	685
Grp Sat Flow(s),veh/h/ln	1757	0	1711	1271	1845	1568	1740	1663	1553	1688	1663	1800
Q Serve(g_s), s	5.5	0.0	5.1	17.3	2.1	24.0	4.9	74.3	23.5	24.5	35.0	35.1
Cycle Q Clear(g_c), s	5.5	0.0	5.1	17.3	2.1	24.0	4.9	74.3	23.5	24.5	35.0	35.1
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	64	0	399	503	295	251	72	2470	769	551	2061	1115
V/C Ratio(X)	1.18	0.00	0.18	0.61	0.10	1.55	0.79	1.16	0.48	1.23	0.61	0.61
Avail Cap(c_a), veh/h	64	0	399	503	295	251	123	2470	769	551	2061	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	0.0	46.0	60.2	53.8	63.0	71.2	37.8	25.0	62.8	17.5	17.5
Incr Delay (d2), s/veh	168.8	0.0	0.1	1.6	0.1	264.8	6.9	76.5	0.2	120.1	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	2.4	6.2	1.1	28.8	2.5	51.6	10.1	20.6	16.1	17.5
LnGrp Delay(d),s/veh	241.1	0.0	46.1	61.8	53.9	327.8	78.1	114.3	25.2	182.9	17.9	18.3
LnGrp LOS	F		D	E	D	F	E	F	C	F	B	B
Approach Vol, veh/h		148			725			3288			2629	
Approach Delay, s/veh		146.2			203.8			103.7			60.7	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	98.2		40.5	30.0	79.5	11.0	29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2	5.5	5.5
Max Green Setting (Gmax), s	* 11	* 89		35.0	24.5	* 74	5.5	24.0
Max Q Clear Time (g_c+I1), s	6.9	37.1		7.1	26.5	76.3	7.5	26.0
Green Ext Time (p_c), s	0.0	38.5		0.7	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	98.7
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	1179	429	252	1471	826	359	2029	361	577	839	158
Future Volume (veh/h)	224	1179	429	252	1471	826	359	2029	361	577	839	158
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	224	1179	429	252	1471	826	359	2029	361	577	839	158
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	193	1413	440	294	1564	487	403	1771	551	438	1823	567
Arrive On Green	0.06	0.28	0.28	0.09	0.31	0.31	0.12	0.36	0.36	0.13	0.37	0.37
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	224	1179	429	252	1471	826	359	2029	361	577	839	158
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.5	33.1	40.8	11.0	42.8	46.7	15.8	53.4	29.4	19.5	19.3	10.8
Cycle Q Clear(g_c), s	8.5	33.1	40.8	11.0	42.8	46.7	15.8	53.4	29.4	19.5	19.3	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	1413	440	294	1564	487	403	1771	551	438	1823	567
V/C Ratio(X)	1.16	0.83	0.97	0.86	0.94	1.70	0.89	1.15	0.65	1.32	0.46	0.28
Avail Cap(c_a), veh/h	193	1413	440	315	1564	487	532	1771	551	438	1823	567
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.9	50.8	53.6	67.8	50.5	51.9	65.3	48.5	40.8	65.4	36.4	33.7
Incr Delay (d2), s/veh	115.6	4.2	36.1	18.0	11.4	322.2	11.9	72.8	2.2	158.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	15.8	22.1	5.9	21.5	63.8	8.0	36.4	13.0	18.7	8.9	4.6
LnGrp Delay(d),s/veh	186.6	55.0	89.7	85.7	61.9	374.1	77.2	121.3	43.0	224.1	36.5	33.8
LnGrp LOS	F	E	F	F	E	F	E	F	D	F	D	C
Approach Vol, veh/h		1832			2549			2749			1574	
Approach Delay, s/veh		79.2			165.4			105.3			105.0	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.4	60.6	14.0	52.4	25.0	59.0	18.5	47.9
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	23.7	* 49	8.5	* 47	19.5	* 53	13.9	* 41
Max Q Clear Time (g_c+I1), s	17.8	21.3	10.5	48.7	21.5	55.4	13.0	42.8
Green Ext Time (p_c), s	0.2	13.5	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	117.3
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	1491	494	163	2278	530	71	2559	158	521	865	90
Future Volume (veh/h)	350	1491	494	163	2278	530	71	2559	158	521	865	90
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	350	1491	494	163	2278	530	71	2559	158	521	865	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	258	1679	538	207	1612	502	110	1810	563	338	2137	659
Arrive On Green	0.08	0.34	0.34	0.06	0.33	0.33	0.03	0.36	0.36	0.10	0.42	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	350	1491	494	163	2278	530	71	2559	158	521	865	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	11.7	43.2	45.3	7.1	49.4	49.4	3.1	53.9	10.8	15.0	17.9	0.0
Cycle Q Clear(g_c), s	11.7	43.2	45.3	7.1	49.4	49.4	3.1	53.9	10.8	15.0	17.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	1679	538	207	1612	502	110	1810	563	338	2137	659
V/C Ratio(X)	1.35	0.89	0.92	0.79	1.41	1.06	0.65	1.41	0.28	1.54	0.40	0.00
Avail Cap(c_a), veh/h	258	1679	538	232	1612	502	204	1810	563	338	2137	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	69.1	46.5	47.2	69.5	50.3	50.3	71.7	48.1	34.2	67.5	30.0	0.0
Incr Delay (d2), s/veh	182.9	6.0	20.5	14.8	189.8	55.9	2.4	189.7	0.3	258.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	20.4	22.6	3.8	50.6	28.5	1.5	56.8	4.7	19.1	8.3	0.0
LnGrp Delay(d),s/veh	252.1	52.5	67.7	84.3	240.1	106.2	74.1	237.8	34.5	326.4	30.0	0.0
LnGrp LOS	F	D	E	F	F	F	E	F	C	F	C	
Approach Vol, veh/h		2335			2971			2788			1386	
Approach Delay, s/veh		85.7			207.7			222.1			141.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	68.8	16.0	55.0	20.0	59.0	13.9	57.1
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 9	59.5	* 12	49.4	15.0	53.9	* 10	* 51
Max Q Clear Time (g_c+I1), s	5.1	19.9	13.7	51.4	17.0	55.9	9.1	47.3
Green Ext Time (p_c), s	0.0	35.1	0.0	0.0	0.0	0.0	0.1	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	172.2
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	753	154	443	1112	52	424	2790	175	38	945	77
Future Volume (veh/h)	102	753	154	443	1112	52	424	2790	175	38	945	77
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	102	753	154	443	1112	52	424	2790	175	38	945	77
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	145	1002	312	427	1419	442	482	2586	805	66	1971	614
Arrive On Green	0.04	0.20	0.20	0.13	0.28	0.28	0.14	0.51	0.51	0.02	0.39	0.39
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	102	753	154	443	1112	52	424	2790	175	38	945	77
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	4.4	20.9	12.9	18.6	30.2	3.7	18.1	76.2	9.1	1.6	20.9	4.7
Cycle Q Clear(g_c), s	4.4	20.9	12.9	18.6	30.2	3.7	18.1	76.2	9.1	1.6	20.9	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	1002	312	427	1419	442	482	2586	805	66	1971	614
V/C Ratio(X)	0.71	0.75	0.49	1.04	0.78	0.12	0.88	1.08	0.22	0.57	0.48	0.13
Avail Cap(c_a), veh/h	156	1052	328	427	1452	452	615	2586	805	69	1971	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.1	56.0	52.8	64.9	49.1	39.6	62.5	36.1	19.8	72.2	33.8	28.9
Incr Delay (d2), s/veh	12.4	2.9	1.2	53.5	2.8	0.1	11.5	43.3	0.1	10.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	10.0	5.7	11.9	14.4	1.6	9.3	45.6	3.9	0.9	9.7	2.0
LnGrp Delay(d),s/veh	82.5	58.9	54.0	118.4	51.9	39.7	73.9	79.4	19.9	82.5	33.9	28.9
LnGrp LOS	F	E	D	F	D	D	E	F	B	F	C	C
Approach Vol, veh/h		1009			1607			3389			1060	
Approach Delay, s/veh		60.6			69.9			75.7			35.3	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.5	63.1	24.1	34.7	8.4	81.2	11.8	47.0
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	26.8	52.4	18.6	* 31	3.0	76.2	6.8	* 43
Max Q Clear Time (g_c+I1), s	20.1	22.9	20.6	22.9	3.6	78.2	6.4	32.2
Green Ext Time (p_c), s	0.9	27.9	0.0	6.6	0.0	0.0	0.0	8.4

Intersection Summary	
HCM 2010 Ctrl Delay	66.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	665	799	268	156	941	220	392	2588	124	75	870	283
Future Volume (veh/h)	665	799	268	156	941	220	392	2588	124	75	870	283
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1831	1900	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	665	799	268	156	941	220	392	2588	124	75	870	283
Adj No. of Lanes	2	2	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	3	3	3	3	3	3	3
Cap, veh/h	580	824	276	186	1010	324	448	2314	720	80	1769	551
Arrive On Green	0.17	0.32	0.32	0.05	0.21	0.21	0.13	0.46	0.46	0.02	0.35	0.35
Sat Flow, veh/h	3408	2561	859	3408	4893	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	665	543	524	156	941	220	392	2588	124	75	870	283
Grp Sat Flow(s),veh/h/ln	1704	1740	1680	1704	1631	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	25.5	46.1	46.2	6.8	28.3	19.4	16.9	68.9	7.0	3.3	20.3	21.4
Cycle Q Clear(g_c), s	25.5	46.1	46.2	6.8	28.3	19.4	16.9	68.9	7.0	3.3	20.3	21.4
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	580	560	541	186	1010	324	448	2314	720	80	1769	551
V/C Ratio(X)	1.15	0.97	0.97	0.84	0.93	0.68	0.88	1.12	0.17	0.94	0.49	0.51
Avail Cap(c_a), veh/h	580	560	541	186	1012	324	570	2314	720	80	1769	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.2	50.1	50.1	70.2	58.5	54.9	63.9	40.5	23.8	73.1	38.1	38.5
Incr Delay (d2), s/veh	85.2	30.1	30.9	27.0	14.4	4.7	11.9	59.9	0.1	81.5	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.8	26.8	26.0	3.9	14.2	8.9	8.7	44.8	3.0	2.5	9.5	9.4
LnGrp Delay(d),s/veh	147.4	80.2	81.0	97.2	72.8	59.6	75.8	100.4	23.9	154.7	38.3	39.3
LnGrp LOS	F	F	F	F	E	E	E	F	C	F	D	D
Approach Vol, veh/h		1732			1317			3104			1228	
Approach Delay, s/veh		106.2			73.5			94.2			45.7	
Approach LOS		F			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	74.0	31.0	36.0	25.2	57.8	13.7	53.3
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	3.5	* 69	25.5	* 31	25.1	* 47	8.2	* 48
Max Q Clear Time (g_c+I1), s	5.3	70.9	27.5	30.3	18.9	23.4	8.8	48.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.8	23.0	0.0	0.1

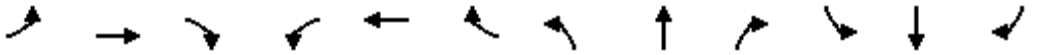
Intersection Summary	
HCM 2010 Ctrl Delay	85.3
HCM 2010 LOS	F

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	725	266	506	730	144	751
Future Volume (veh/h)	725	266	506	730	144	751
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	725	266	506	730	144	751
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	781	287	549	2367	388	836
Arrive On Green	0.31	0.31	0.31	0.68	0.22	0.22
Sat Flow, veh/h	2605	922	1757	3597	1757	1568
Grp Volume(v), veh/h	506	485	506	730	144	751
Grp Sat Flow(s),veh/h/ln	1752	1682	1757	1752	1757	1568
Q Serve(g_s), s	21.5	21.5	21.4	6.6	5.4	17.0
Cycle Q Clear(g_c), s	21.5	21.5	21.4	6.6	5.4	17.0
Prop In Lane		0.55	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	545	523	549	2367	388	836
V/C Ratio(X)	0.93	0.93	0.92	0.31	0.37	0.90
Avail Cap(c_a), veh/h	546	524	616	2503	388	836
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	25.7	25.6	5.1	25.5	16.1
Incr Delay (d2), s/veh	22.3	23.0	18.2	0.1	0.6	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	13.3	13.2	3.2	2.7	17.1
LnGrp Delay(d),s/veh	48.1	48.7	43.8	5.2	26.1	28.6
LnGrp LOS	D	D	D	A	C	C
Approach Vol, veh/h	991			1236	895	
Approach Delay, s/veh	48.4			21.0	28.2	
Approach LOS	D			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		21.0	28.1	27.9				56.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		17.0	27.0	24.0				55.0
Max Q Clear Time (g_c+I1), s		19.0	23.4	23.5				8.6
Green Ext Time (p_c), s		0.0	0.7	0.4				18.1

Intersection Summary	
HCM 2010 Ctrl Delay	31.8
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	981	84	886	1977	331	160	953	869	352	534	132
Future Volume (veh/h)	171	981	84	886	1977	331	160	953	869	352	534	132
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	171	981	84	886	1977	331	160	953	869	352	534	132
Adj No. of Lanes	2	3	1	2	3	1	1	1	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	170	1044	334	824	1982	635	146	538	457	341	1081	483
Arrive On Green	0.05	0.21	0.21	0.24	0.41	0.41	0.08	0.29	0.29	0.10	0.31	0.31
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	1757	1845	1568	3408	3505	1568
Grp Volume(v), veh/h	171	981	84	886	1977	331	160	953	869	352	534	132
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1757	1845	1568	1704	1752	1568
Q Serve(g_s), s	6.0	23.7	5.3	29.0	48.4	19.1	10.0	35.0	35.0	12.0	14.9	7.6
Cycle Q Clear(g_c), s	6.0	23.7	5.3	29.0	48.4	19.1	10.0	35.0	35.0	12.0	14.9	7.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	1044	334	824	1982	635	146	538	457	341	1081	483
V/C Ratio(X)	1.00	0.94	0.25	1.08	1.00	0.52	1.09	1.77	1.90	1.03	0.49	0.27
Avail Cap(c_a), veh/h	170	1044	334	824	1982	635	146	538	457	341	1081	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.0	46.4	39.2	45.5	35.6	26.9	55.0	42.5	42.5	54.0	33.9	31.3
Incr Delay (d2), s/veh	69.8	15.6	0.6	53.7	19.6	1.0	101.4	354.6	413.2	57.5	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	12.1	2.4	19.8	25.4	8.4	9.0	70.8	67.6	8.4	7.2	3.3
LnGrp Delay(d),s/veh	126.8	62.1	39.8	99.2	55.3	28.0	156.4	397.1	455.7	111.5	34.2	31.6
LnGrp LOS	F	E	D	F	E	C	F	F	F	F	C	C
Approach Vol, veh/h		1236			3194			1982			1018	
Approach Delay, s/veh		69.5			64.6			403.4			60.6	
Approach LOS		E			E			F			E	

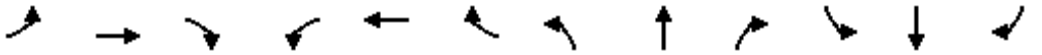
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	32.0	14.0	41.0	10.0	55.0	16.0	39.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	29.0	25.6	10.0	37.0	6.0	48.6	12.0	35.0
Max Q Clear Time (g_c+I1), s	31.0	25.7	12.0	16.9	8.0	50.4	14.0	37.0
Green Ext Time (p_c), s	0.0	0.0	0.0	15.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	155.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	594	29	179	626	12	29	828	162	5	286	13
Future Volume (veh/h)	104	594	29	179	626	12	29	828	162	5	286	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1759	1759	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	104	594	29	179	626	12	29	828	162	5	286	13
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	8	8	8	3	3	3	3	3	3
Cap, veh/h	136	630	31	208	717	14	67	916	179	67	549	25
Arrive On Green	0.08	0.37	0.37	0.12	0.42	0.42	0.04	0.31	0.31	0.04	0.31	0.31
Sat Flow, veh/h	1707	1695	83	1675	1720	33	1757	2924	572	1757	1751	80
Grp Volume(v), veh/h	104	0	623	179	0	638	29	496	494	5	0	299
Grp Sat Flow(s),veh/h/ln	1707	0	1778	1675	0	1753	1757	1752	1744	1757	0	1831
Q Serve(g_s), s	6.3	0.0	35.6	11.0	0.0	35.0	1.7	28.5	28.5	0.3	0.0	14.1
Cycle Q Clear(g_c), s	6.3	0.0	35.6	11.0	0.0	35.0	1.7	28.5	28.5	0.3	0.0	14.1
Prop In Lane	1.00		0.05	1.00		0.02	1.00		0.33	1.00		0.04
Lane Grp Cap(c), veh/h	136	0	661	208	0	730	67	549	546	67	0	574
V/C Ratio(X)	0.76	0.00	0.94	0.86	0.00	0.87	0.43	0.90	0.90	0.07	0.00	0.52
Avail Cap(c_a), veh/h	228	0	711	223	0	730	234	568	565	234	0	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.3	0.0	31.9	45.1	0.0	28.1	49.4	34.5	34.5	48.7	0.0	29.6
Incr Delay (d2), s/veh	8.6	0.0	20.1	25.9	0.0	11.4	4.4	17.6	17.7	0.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	21.2	6.6	0.0	19.1	0.9	16.5	16.4	0.1	0.0	7.2
LnGrp Delay(d),s/veh	55.9	0.0	52.0	70.9	0.0	39.5	53.8	52.1	52.2	49.2	0.0	30.3
LnGrp LOS	E		D	E		D	D	D	D	D		C
Approach Vol, veh/h		727			817			1019			304	
Approach Delay, s/veh		52.6			46.4			52.2			30.7	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	36.9	17.0	43.1	8.0	36.9	12.4	47.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	34.0	14.0	42.0	14.0	34.0	14.0	42.0
Max Q Clear Time (g_c+I1), s	2.3	30.5	13.0	37.6	3.7	16.1	8.3	37.0
Green Ext Time (p_c), s	0.0	2.4	0.0	1.5	0.0	8.2	0.1	3.3

Intersection Summary			
HCM 2010 Ctrl Delay		48.4	
HCM 2010 LOS		D	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	538	47	971	25	63	161	999	1153	13	105	1699	1114
Future Volume (veh/h)	538	47	971	25	63	161	999	1153	13	105	1699	1114
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	572	0	971	25	63	161	999	1153	13	105	1699	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	712	0	318	19	48	57	549	2813	32	126	1536	478
Arrive On Green	0.20	0.00	0.20	0.04	0.04	0.04	0.32	0.55	0.55	0.07	0.31	0.00
Sat Flow, veh/h	3480	0	1553	517	1302	1568	1740	5084	57	1740	4988	1553
Grp Volume(v), veh/h	572	0	971	88	0	161	999	754	412	105	1699	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1819	0	1568	1740	1663	1817	1740	1663	1553
Q Serve(g_s), s	23.5	0.0	30.7	5.5	0.0	5.5	47.3	19.7	19.7	8.9	46.2	0.0
Cycle Q Clear(g_c), s	23.5	0.0	30.7	5.5	0.0	5.5	47.3	19.7	19.7	8.9	46.2	0.0
Prop In Lane	1.00		1.00	0.28		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	712	0	318	67	0	57	549	1839	1005	126	1536	478
V/C Ratio(X)	0.80	0.00	3.06	1.32	0.00	2.80	1.82	0.41	0.41	0.84	1.11	0.00
Avail Cap(c_a), veh/h	712	0	318	67	0	57	549	1839	1005	194	1536	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.8	0.0	59.6	72.3	0.0	72.3	51.3	19.4	19.4	68.7	51.9	0.0
Incr Delay (d2), s/veh	6.1	0.0	933.2	217.5	0.0	856.3	376.5	0.1	0.1	10.2	57.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	95.6	6.8	0.0	16.1	80.1	9.0	9.9	4.7	29.4	0.0
LnGrp Delay(d),s/veh	62.9	0.0	992.8	289.7	0.0	928.5	427.9	19.4	19.5	78.9	109.7	0.0
LnGrp LOS	E		F	F		F	F	B	B	E	F	
Approach Vol, veh/h		1543			249			2165			1804	
Approach Delay, s/veh		648.1			702.8			207.9			107.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	52.0	51.0		11.0	15.2	87.8		36.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 47	46.2		5.5	* 17	* 77		30.7
Max Q Clear Time (g_c+I1), s	49.3	48.2		7.5	10.9	21.7		32.7
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	13.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	315.9
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	900	52	486	1987	757	92	660	221	463	493	107
Future Volume (veh/h)	234	900	52	486	1987	757	92	660	221	463	493	107
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	234	900	52	486	1987	757	92	660	221	463	493	107
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	261	1659	516	538	2052	639	139	725	324	493	1089	487
Arrive On Green	0.08	0.33	0.33	0.16	0.41	0.41	0.04	0.21	0.21	0.14	0.31	0.31
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	234	900	52	486	1987	757	92	660	221	463	493	107
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	8.7	18.7	2.9	17.9	49.4	52.1	3.4	23.5	16.6	17.2	14.4	6.5
Cycle Q Clear(g_c), s	8.7	18.7	2.9	17.9	49.4	52.1	3.4	23.5	16.6	17.2	14.4	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	1659	516	538	2052	639	139	725	324	493	1089	487
V/C Ratio(X)	0.90	0.54	0.10	0.90	0.97	1.18	0.66	0.91	0.68	0.94	0.45	0.22
Avail Cap(c_a), veh/h	261	1659	516	730	2052	639	365	932	417	493	1089	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	35.0	29.7	52.9	37.1	37.9	60.4	49.5	46.8	54.1	35.3	32.6
Incr Delay (d2), s/veh	29.4	0.2	0.0	9.8	13.1	98.4	2.0	9.4	1.6	25.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	8.7	1.3	9.2	25.3	40.0	1.6	12.3	7.3	9.9	7.0	2.8
LnGrp Delay(d),s/veh	87.9	35.2	29.8	62.6	50.2	136.3	62.4	59.0	48.4	79.8	35.5	32.7
LnGrp LOS	F	D	C	E	D	F	E	E	D	E	D	C
Approach Vol, veh/h		1186			3230			973			1063	
Approach Delay, s/veh		45.4			72.3			56.9			54.5	
Approach LOS		D			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	57.0	10.7	44.8	25.3	47.0	24.0	31.6
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	9.8	* 52	13.7	* 39	* 27	* 35	18.5	* 34
Max Q Clear Time (g_c+I1), s	10.7	54.1	5.4	16.4	19.9	20.7	19.2	25.5
Green Ext Time (p_c), s	0.0	0.0	0.0	1.8	0.3	9.5	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	62.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	341	560	175	40	1828	848	389	2034	20	78	834	632
Future Volume (veh/h)	341	560	175	40	1828	848	389	2034	20	78	834	632
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	341	560	175	40	1828	848	389	2034	20	78	834	632
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	278	2142	667	70	1834	571	299	1824	568	84	1506	469
Arrive On Green	0.08	0.43	0.43	0.02	0.36	0.36	0.09	0.37	0.37	0.02	0.30	0.30
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	341	560	175	40	1828	848	389	2034	20	78	834	632
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	11.5	10.1	10.2	1.6	51.1	51.4	12.5	51.6	1.2	3.3	19.8	42.6
Cycle Q Clear(g_c), s	11.5	10.1	10.2	1.6	51.1	51.4	12.5	51.6	1.2	3.3	19.8	42.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	2142	667	70	1834	571	299	1824	568	84	1506	469
V/C Ratio(X)	1.23	0.26	0.26	0.57	1.00	1.48	1.30	1.12	0.04	0.93	0.55	1.35
Avail Cap(c_a), veh/h	278	2142	667	121	1834	571	299	1824	568	84	1506	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	26.2	26.2	68.5	44.8	44.8	64.3	44.8	28.8	68.7	41.3	49.3
Incr Delay (d2), s/veh	130.0	0.0	0.1	2.7	20.1	227.4	157.7	60.1	0.0	74.7	0.3	170.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	4.7	4.4	0.8	27.1	58.2	12.4	33.8	0.5	2.4	9.1	40.5
LnGrp Delay(d),s/veh	194.8	26.2	26.3	71.2	64.9	272.2	222.0	104.8	28.8	143.4	41.5	219.5
LnGrp LOS	F	C	C	E	E	F	F	F	C	F	D	F
Approach Vol, veh/h		1076			2716			2443			1544	
Approach Delay, s/veh		79.7			129.7			122.9			119.5	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	48.6	17.0	57.5	9.0	57.6	8.4	66.1
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	12.5	42.0	11.5	* 51	3.5	* 52	5.0	* 57
Max Q Clear Time (g_c+I1), s	14.5	44.6	13.5	53.4	5.3	53.6	3.6	12.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6

Intersection Summary	
HCM 2010 Ctrl Delay	118.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	582	806	165	87	1809	926	786	2137	187	177	984	721
Future Volume (veh/h)	582	806	165	87	1809	926	786	2137	187	177	984	721
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	582	806	165	87	1809	926	786	2137	187	177	984	721
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	352	2020	629	126	1617	503	484	1879	585	124	1347	419
Arrive On Green	0.10	0.40	0.40	0.04	0.34	0.34	0.14	0.38	0.38	0.04	0.27	0.27
Sat Flow, veh/h	3408	5036	1568	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	582	806	165	87	1809	926	786	2137	187	177	984	721
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	15.5	17.1	10.6	4.0	50.5	50.5	21.5	56.5	12.8	5.5	26.9	40.5
Cycle Q Clear(g_c), s	15.5	17.1	10.6	4.0	50.5	50.5	21.5	56.5	12.8	5.5	26.9	40.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	2020	629	126	1617	503	484	1879	585	124	1347	419
V/C Ratio(X)	1.65	0.40	0.26	0.69	1.12	1.84	1.62	1.14	0.32	1.43	0.73	1.72
Avail Cap(c_a), veh/h	352	2020	629	186	1617	503	484	1879	585	124	1347	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	32.0	30.1	71.2	49.8	49.7	64.3	46.7	33.1	72.3	49.8	54.8
Incr Delay (d2), s/veh	306.1	0.0	0.1	2.5	62.4	385.4	290.4	69.0	0.1	233.6	1.8	333.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	7.9	4.6	1.8	31.7	74.7	29.5	37.9	5.5	6.6	12.6	56.3
LnGrp Delay(d),s/veh	373.3	32.1	30.1	73.7	112.2	435.1	354.7	115.7	33.2	305.9	51.6	388.5
LnGrp LOS	F	C	C	E	F	F	F	F	C	F	D	F
Approach Vol, veh/h		1553			2822			3110			1882	
Approach Delay, s/veh		159.7			217.0			171.2			204.6	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	46.0	21.0	56.0	11.0	62.0	11.3	65.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	21.5	40.5	15.5	50.5	5.5	56.5	8.6	57.4
Max Q Clear Time (g_c+I1), s	23.5	42.5	17.5	52.5	7.5	58.5	6.0	19.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4

Intersection Summary	
HCM 2010 Ctrl Delay	189.8
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	588	536	132	369	1386	329	178	1527	146	116	833	833
Future Volume (veh/h)	588	536	132	369	1386	329	178	1527	146	116	833	833
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1845
Adj Flow Rate, veh/h	588	536	132	369	1386	329	178	1527	146	116	833	833
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	3
Cap, veh/h	540	555	248	1127	1159	519	131	1611	502	132	1650	519
Arrive On Green	0.16	0.16	0.16	0.33	0.33	0.33	0.04	0.32	0.32	0.04	0.33	0.33
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	4988	1553	3375	4988	1568
Grp Volume(v), veh/h	588	536	132	369	1386	329	178	1527	146	116	833	833
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1663	1553	1688	1663	1568
Q Serve(g_s), s	20.6	19.8	10.1	10.6	43.0	23.1	5.0	38.8	9.1	4.4	17.4	43.0
Cycle Q Clear(g_c), s	20.6	19.8	10.1	10.6	43.0	23.1	5.0	38.8	9.1	4.4	17.4	43.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	540	555	248	1127	1159	519	131	1611	502	132	1650	519
V/C Ratio(X)	1.09	0.97	0.53	0.33	1.20	0.63	1.36	0.95	0.29	0.88	0.50	1.61
Avail Cap(c_a), veh/h	540	555	248	1127	1159	519	131	1611	502	132	1650	519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	54.3	50.3	32.6	43.5	36.8	62.5	42.9	32.9	62.1	34.9	43.5
Incr Delay (d2), s/veh	65.0	29.5	2.2	0.2	96.6	2.5	202.5	12.2	0.3	43.5	0.2	281.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	11.8	4.5	5.0	36.3	10.3	6.0	19.6	4.0	2.9	8.1	59.2
LnGrp Delay(d),s/veh	119.7	83.8	52.4	32.8	140.1	39.4	265.0	55.1	33.2	105.6	35.2	325.2
LnGrp LOS	F	F	D	C	F	D	F	E	C	F	D	F
Approach Vol, veh/h		1256			2084			1851			1782	
Approach Delay, s/veh		97.3			105.2			73.6			175.3	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	48.0		26.0	10.0	47.0		47.0
Change Period (Y+Rc), s	4.0	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	5.0	43.0		* 21	* 5.1	42.0		43.0
Max Q Clear Time (g_c+I1), s	7.0	45.0		22.6	6.4	40.8		45.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	1.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	113.3
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	839	61	386	1867	370	83	1214	301	216	711	430
Future Volume (veh/h)	188	839	61	386	1867	370	83	1214	301	216	711	430
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1845	1827	1845	1845
Adj Flow Rate, veh/h	188	839	61	386	1867	370	83	1214	301	216	711	430
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	207	1471	458	457	1839	662	132	1158	518	235	1267	662
Arrive On Green	0.06	0.29	0.29	0.13	0.37	0.37	0.04	0.33	0.33	0.07	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1524	3408	3505	1568	3375	3505	1568
Grp Volume(v), veh/h	188	839	61	386	1867	370	83	1214	301	216	711	430
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1524	1704	1752	1568	1688	1752	1568
Q Serve(g_s), s	6.3	16.3	3.3	12.7	42.0	20.8	2.8	38.0	18.3	7.3	18.7	25.1
Cycle Q Clear(g_c), s	6.3	16.3	3.3	12.7	42.0	20.8	2.8	38.0	18.3	7.3	18.7	25.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	207	1471	458	457	1839	662	132	1158	518	235	1267	662
V/C Ratio(X)	0.91	0.57	0.13	0.85	1.02	0.56	0.63	1.05	0.58	0.92	0.56	0.65
Avail Cap(c_a), veh/h	207	1471	458	593	1839	662	178	1158	518	235	1267	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	34.6	30.0	48.6	36.5	24.3	54.5	38.5	31.9	53.2	29.4	26.4
Incr Delay (d2), s/veh	37.7	0.5	0.1	8.7	24.8	1.1	4.9	40.0	1.6	37.0	0.6	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	7.6	1.4	6.6	23.6	8.9	1.4	24.8	8.2	4.6	9.1	11.2
LnGrp Delay(d),s/veh	91.4	35.1	30.1	57.3	61.3	25.3	59.4	78.5	33.5	90.2	30.0	28.7
LnGrp LOS	F	D	C	E	F	C	E	F	C	F	C	C
Approach Vol, veh/h		1088			2623			1598			1357	
Approach Delay, s/veh		44.6			55.6			69.1			39.2	
Approach LOS		D			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.4	39.6	8.4	47.6	11.0	48.0	12.0	44.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	20.0	29.0	6.0	40.0	7.0	42.0	8.0	38.0
Max Q Clear Time (g_c+I1), s	14.7	18.3	4.8	27.1	8.3	44.0	9.3	40.0
Green Ext Time (p_c), s	0.7	10.1	0.0	10.9	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	609	393	58	58	770	103	2	646	40	94	1017	1130
Future Volume (veh/h)	609	393	58	58	770	103	2	646	40	94	1017	1130
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	609	393	58	58	770	103	2	646	40	94	1017	1130
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	549	1241	555	93	773	346	5	1451	649	139	1588	710
Arrive On Green	0.17	0.36	0.36	0.03	0.23	0.23	0.00	0.42	0.42	0.04	0.46	0.46
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3343	3438	1538	3343	3438	1538
Grp Volume(v), veh/h	609	393	58	58	770	103	2	646	40	94	1017	1130
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1672	1719	1538	1672	1719	1538
Q Serve(g_s), s	24.4	12.2	3.7	2.6	33.3	8.3	0.1	19.7	2.3	4.1	33.3	68.0
Cycle Q Clear(g_c), s	24.4	12.2	3.7	2.6	33.3	8.3	0.1	19.7	2.3	4.1	33.3	68.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	549	1241	555	93	773	346	5	1451	649	139	1588	710
V/C Ratio(X)	1.11	0.32	0.10	0.62	1.00	0.30	0.37	0.45	0.06	0.68	0.64	1.59
Avail Cap(c_a), veh/h	549	1241	555	137	773	346	68	1455	651	198	1588	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.4	33.6	30.9	70.8	56.9	47.2	73.4	30.3	25.3	69.6	30.3	39.6
Incr Delay (d2), s/veh	72.1	0.3	0.2	2.5	31.5	1.0	15.3	0.2	0.0	2.2	0.9	272.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	5.8	1.6	1.2	19.0	3.6	0.1	9.4	1.0	1.9	16.0	82.6
LnGrp Delay(d),s/veh	133.5	33.9	31.1	73.3	88.4	48.2	88.7	30.5	25.3	71.7	31.2	312.1
LnGrp LOS	F	C	C	E	F	D	F	C	C	E	C	F
Approach Vol, veh/h		1060			931			688			2241	
Approach Delay, s/veh		91.0			83.0			30.4			174.5	
Approach LOS		F			F			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	39.4	4.8	74.0	8.7	59.7	10.7	68.1
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	4.6	6.0
Max Green Setting (Gmax), s	24.4	33.4	3.0	68.0	6.1	51.7	8.7	62.3
Max Q Clear Time (g_c+I1), s	26.4	35.3	2.1	70.0	4.6	14.2	6.1	21.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	20.8	0.0	29.2

Intersection Summary	
HCM 2010 Ctrl Delay	119.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	1303	168	229	1446	142	179	1559	217	127	367	127
Future Volume (veh/h)	319	1303	168	229	1446	142	179	1559	217	127	367	127
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	319	1303	168	229	1446	142	179	1559	217	127	367	127
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	307	1451	452	276	1406	438	240	1546	692	123	1426	638
Arrive On Green	0.09	0.29	0.29	0.08	0.28	0.28	0.07	0.45	0.45	0.04	0.41	0.41
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	3471	1553	3375	3471	1553
Grp Volume(v), veh/h	319	1303	168	229	1446	142	179	1559	217	127	367	127
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1736	1553	1688	1736	1553
Q Serve(g_s), s	10.0	27.6	9.5	7.4	31.0	8.0	5.7	49.0	9.9	4.0	7.7	5.8
Cycle Q Clear(g_c), s	10.0	27.6	9.5	7.4	31.0	8.0	5.7	49.0	9.9	4.0	7.7	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	1451	452	276	1406	438	240	1546	692	123	1426	638
V/C Ratio(X)	1.04	0.90	0.37	0.83	1.03	0.32	0.75	1.01	0.31	1.03	0.26	0.20
Avail Cap(c_a), veh/h	307	1451	452	276	1406	438	307	1546	692	123	1426	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	37.4	31.0	49.7	39.5	31.2	50.1	30.5	19.7	53.0	21.3	20.8
Incr Delay (d2), s/veh	62.0	7.8	0.5	18.6	31.7	0.4	7.2	24.9	0.3	90.8	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	13.7	4.1	4.2	18.3	3.4	2.9	28.8	4.3	3.4	3.7	2.5
LnGrp Delay(d),s/veh	112.0	45.3	31.5	68.4	71.2	31.6	57.4	55.4	19.9	144.3	21.4	20.9
LnGrp LOS	F	D	C	E	F	C	E	F	B	F	C	C
Approach Vol, veh/h		1790			1817			1955			621	
Approach Delay, s/veh		55.9			67.7			51.7			46.5	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	53.0	13.0	36.0	11.8	49.2	14.0	35.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	49.0	9.0	32.0	10.0	43.0	10.0	31.0
Max Q Clear Time (g_c+I1), s	6.0	51.0	9.4	29.6	7.7	9.7	12.0	33.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.3	0.1	22.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	163	110	3	1	301	1904	37	0	1609	0
Future Volume (veh/h)	0	1	163	110	3	1	301	1904	37	0	1609	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1759	1845	1845	1845	1792	1792	1900	1792	1792	1900
Adj Flow Rate, veh/h	0	1	163	110	3	1	301	1904	37	0	1609	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	176	185	433	139	146	124	315	2111	41	108	1692	0
Arrive On Green	0.00	0.11	0.11	0.08	0.08	0.08	0.18	0.62	0.62	0.00	0.50	0.00
Sat Flow, veh/h	1675	1759	1495	1757	1845	1568	1707	3417	66	1707	3495	0
Grp Volume(v), veh/h	0	1	163	110	3	1	301	946	995	0	1609	0
Grp Sat Flow(s),veh/h/ln	1675	1759	1495	1757	1845	1568	1707	1703	1781	1707	1703	0
Q Serve(g_s), s	0.0	0.1	10.4	7.3	0.2	0.1	20.8	56.9	57.7	0.0	53.7	0.0
Cycle Q Clear(g_c), s	0.0	0.1	10.4	7.3	0.2	0.1	20.8	56.9	57.7	0.0	53.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	176	185	433	139	146	124	315	1052	1100	108	1692	0
V/C Ratio(X)	0.00	0.01	0.38	0.79	0.02	0.01	0.96	0.90	0.90	0.00	0.95	0.00
Avail Cap(c_a), veh/h	225	236	477	236	248	210	315	1114	1165	108	1714	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	47.8	33.8	53.9	50.6	50.6	48.1	19.6	19.7	0.0	28.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.5	9.5	0.1	0.0	38.8	9.6	9.8	0.0	12.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.4	3.9	0.1	0.0	13.2	29.3	31.2	0.0	27.9	0.0
LnGrp Delay(d),s/veh	0.0	47.8	34.3	63.4	50.7	50.6	86.9	29.2	29.5	0.0	40.6	0.0
LnGrp LOS		D	C	E	D	D	F	C	C		D	
Approach Vol, veh/h		164			114			2242			1609	
Approach Delay, s/veh		34.4			62.9			37.1			40.6	
Approach LOS		C			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.6	77.7		16.5	26.0	63.2		13.5
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	78.0		16.0	22.0	60.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	59.7		12.4	22.8	55.7		9.3
Green Ext Time (p_c), s	0.0	13.9		0.2	0.0	3.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	39.1
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	507	27	21	1789	1648	392
Future Volume (veh/h)	507	27	21	1789	1648	392
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	507	27	21	1789	1648	392
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	659	303	67	2348	2039	912
Arrive On Green	0.19	0.19	0.02	0.67	0.58	0.58
Sat Flow, veh/h	3408	1568	3408	3597	3597	1568
Grp Volume(v), veh/h	507	27	21	1789	1648	392
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1752	1752	1568
Q Serve(g_s), s	8.3	0.8	0.4	20.2	21.7	8.2
Cycle Q Clear(g_c), s	8.3	0.8	0.4	20.2	21.7	8.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	659	303	67	2348	2039	912
V/C Ratio(X)	0.77	0.09	0.31	0.76	0.81	0.43
Avail Cap(c_a), veh/h	931	428	233	2454	2039	912
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	19.4	28.3	6.5	9.7	6.8
Incr Delay (d2), s/veh	2.5	0.1	2.6	1.4	2.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.8	0.2	9.9	11.0	3.6
LnGrp Delay(d),s/veh	24.9	19.5	30.9	7.9	12.2	7.1
LnGrp LOS	C	B	C	A	B	A
Approach Vol, veh/h	534			1810	2040	
Approach Delay, s/veh	24.6			8.2	11.2	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		43.2		15.3	5.2	38.1		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		41.0		16.0	4.0	33.0		
Max Q Clear Time (g_c+I1), s		22.2		10.3	2.4	23.7		
Green Ext Time (p_c), s		17.1		1.1	0.0	9.1		

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	518	588	90	1297	6	242	1029	64	2	1412	336
Future Volume (veh/h)	278	518	588	90	1297	6	242	1029	64	2	1412	336
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	278	518	588	90	1297	6	242	1029	64	2	1412	336
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	262	1348	603	131	1213	543	236	1583	708	7	1348	603
Arrive On Green	0.08	0.38	0.38	0.04	0.35	0.35	0.07	0.45	0.45	0.00	0.38	0.38
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	278	518	588	90	1297	6	242	1029	64	2	1412	336
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	10.0	13.9	48.0	3.4	45.0	0.3	9.0	29.6	3.0	0.1	50.0	21.8
Cycle Q Clear(g_c), s	10.0	13.9	48.0	3.4	45.0	0.3	9.0	29.6	3.0	0.1	50.0	21.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	1348	603	131	1213	543	236	1583	708	7	1348	603
V/C Ratio(X)	1.06	0.38	0.98	0.69	1.07	0.01	1.03	0.65	0.09	0.27	1.05	0.56
Avail Cap(c_a), veh/h	262	1348	603	131	1213	543	236	1583	708	105	1348	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	28.9	39.4	61.7	42.5	27.9	60.5	27.7	20.4	64.8	40.0	31.3
Incr Delay (d2), s/veh	72.4	0.2	30.3	13.9	46.4	0.0	65.4	0.9	0.1	19.0	37.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	6.7	25.8	1.9	29.6	0.1	6.4	14.5	1.3	0.1	31.3	9.6
LnGrp Delay(d),s/veh	132.4	29.1	69.7	75.6	88.9	27.9	126.0	28.6	20.4	83.7	77.9	32.5
LnGrp LOS	F	C	E	E	F	C	F	C	C	F	F	C
Approach Vol, veh/h		1384			1393			1335			1750	
Approach Delay, s/veh		67.1			87.8			45.9			69.2	
Approach LOS		E			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	62.7	9.0	54.0	13.0	54.0	14.0	49.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	55.0	5.0	50.0	9.0	50.0	10.0	45.0
Max Q Clear Time (g_c+I1), s	2.1	31.6	5.4	50.0	11.0	52.0	12.0	47.0
Green Ext Time (p_c), s	0.0	19.8	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	605	301	402	1256	856	661	1097	239	357	329	0
Future Volume (veh/h)	0	605	301	402	1256	856	661	1097	239	357	329	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	605	301	402	1256	856	661	1097	239	357	329	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1076	335	494	2043	636	753	1177	527	400	814	364
Arrive On Green	0.00	0.21	0.21	0.15	0.41	0.41	0.22	0.34	0.34	0.12	0.23	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	605	301	402	1256	856	661	1097	239	357	329	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	9.1	15.9	9.7	16.8	34.6	16.0	25.8	10.2	8.8	6.8	0.0
Cycle Q Clear(g_c), s	0.0	9.1	15.9	9.7	16.8	34.6	16.0	25.8	10.2	8.8	6.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1076	335	494	2043	636	753	1177	527	400	814	364
V/C Ratio(X)	0.00	0.56	0.90	0.81	0.61	1.35	0.88	0.93	0.45	0.89	0.40	0.00
Avail Cap(c_a), veh/h	160	1124	350	640	2043	636	840	1194	534	400	814	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	29.9	32.6	35.3	20.0	25.3	32.1	27.3	22.2	37.0	27.7	0.0
Incr Delay (d2), s/veh	0.0	0.6	24.2	6.2	0.6	165.8	9.7	12.9	0.6	21.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.3	9.1	5.0	7.9	44.1	8.5	14.4	4.4	5.3	3.3	0.0
LnGrp Delay(d),s/veh	0.0	30.5	56.8	41.4	20.6	191.1	41.7	40.2	22.8	58.5	28.0	0.0
LnGrp LOS		C	E	D	C	F	D	D	C	E	C	
Approach Vol, veh/h		906			2514			1997			686	
Approach Delay, s/veh		39.2			82.0			38.6			43.9	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	32.6	16.4	22.2	22.8	23.8	0.0	38.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	29.0	16.0	19.0	21.0	18.0	4.0	31.0
Max Q Clear Time (g_c+I1), s	10.8	27.8	11.7	17.9	18.0	8.8	0.0	36.6
Green Ext Time (p_c), s	0.0	0.8	0.6	0.3	0.9	6.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.2
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	1103	492	231	2150	8	859	600	151	48	635	259
Future Volume (veh/h)	319	1103	492	231	2150	8	859	600	151	48	635	259
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	319	1103	492	231	2150	8	859	600	151	48	635	259
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	292	1993	621	282	1978	616	779	1343	601	81	626	280
Arrive On Green	0.09	0.40	0.40	0.08	0.39	0.39	0.23	0.38	0.38	0.02	0.18	0.18
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	319	1103	492	231	2150	8	859	600	151	48	635	259
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	12.0	23.7	38.7	9.3	55.0	0.4	32.0	17.8	9.2	2.0	25.0	22.8
Cycle Q Clear(g_c), s	12.0	23.7	38.7	9.3	55.0	0.4	32.0	17.8	9.2	2.0	25.0	22.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	292	1993	621	282	1978	616	779	1343	601	81	626	280
V/C Ratio(X)	1.09	0.55	0.79	0.82	1.09	0.01	1.10	0.45	0.25	0.59	1.01	0.93
Avail Cap(c_a), veh/h	292	1993	621	365	1978	616	779	1343	601	122	626	280
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	32.7	37.2	63.2	42.5	25.9	54.0	32.1	29.5	67.6	57.5	56.6
Incr Delay (d2), s/veh	79.5	0.3	7.0	10.8	48.3	0.0	64.1	0.2	0.2	6.6	39.7	34.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	11.1	18.0	4.8	34.3	0.2	22.0	8.7	4.0	1.0	15.5	12.5
LnGrp Delay(d),s/veh	143.5	33.1	44.2	73.9	90.8	25.9	118.1	32.4	29.7	74.3	97.2	91.1
LnGrp LOS	F	C	D	E	F	C	F	C	C	E	F	F
Approach Vol, veh/h		1914			2389			1610			942	
Approach Delay, s/veh		54.3			88.9			77.8			94.3	
Approach LOS		D			F			E			F	

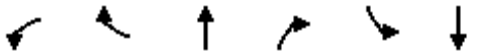
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	57.7	15.6	59.4	36.0	29.0	16.0	59.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	52.0	15.0	52.0	32.0	25.0	12.0	55.0
Max Q Clear Time (g_c+I1), s	4.0	19.8	11.3	40.7	34.0	27.0	14.0	57.0
Green Ext Time (p_c), s	0.0	12.8	0.3	11.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	77.4
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	984	950	35	791	895	0	133	2154	1044	54	691	791
Future Volume (veh/h)	984	950	35	791	895	0	133	2154	1044	54	691	791
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	984	950	35	791	895	0	133	2154	1044	54	691	791
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	909	1007	314	795	839	261	186	2056	640	85	1908	594
Arrive On Green	0.27	0.20	0.20	0.23	0.17	0.00	0.05	0.41	0.41	0.03	0.38	0.38
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	984	950	35	791	895	0	133	2154	1044	54	691	791
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	32.0	22.3	2.2	27.8	20.0	0.0	4.6	49.0	49.0	1.9	11.9	45.5
Cycle Q Clear(g_c), s	32.0	22.3	2.2	27.8	20.0	0.0	4.6	49.0	49.0	1.9	11.9	45.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	909	1007	314	795	839	261	186	2056	640	85	1908	594
V/C Ratio(X)	1.08	0.94	0.11	0.99	1.07	0.00	0.72	1.05	1.63	0.63	0.36	1.33
Avail Cap(c_a), veh/h	909	1007	314	795	839	261	199	2056	640	85	1908	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	47.3	39.3	45.9	50.0	0.0	55.8	35.5	35.5	58.0	26.8	37.3
Incr Delay (d2), s/veh	54.8	16.5	0.2	30.5	50.3	0.0	10.8	33.6	290.9	14.3	0.1	160.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.9	11.9	1.0	16.4	13.2	0.0	2.5	29.1	72.9	1.1	5.5	46.1
LnGrp Delay(d),s/veh	98.8	63.8	39.4	76.4	100.3	0.0	66.6	69.1	326.4	72.3	27.0	197.9
LnGrp LOS	F	E	D	E	F		E	F	F	E	C	F
Approach Vol, veh/h		1969			1686			3331			1536	
Approach Delay, s/veh		80.9			89.1			149.7			116.6	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	53.0	32.0	28.0	10.5	49.5	36.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	49.0	28.0	24.0	7.0	45.0	32.0	20.0
Max Q Clear Time (g_c+I1), s	3.9	51.0	29.8	24.3	6.6	47.5	34.0	22.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

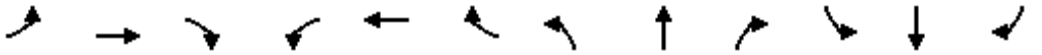
Intersection Summary	
HCM 2010 Ctrl Delay	115.8
HCM 2010 LOS	F



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	365	408	2767	435	710	734
Future Volume (veh/h)	365	408	2767	435	710	734
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	365	408	2767	435	710	734
Adj No. of Lanes	1	1	3	1	1	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	278	248	2224	693	527	3903
Arrive On Green	0.16	0.16	0.44	0.44	0.30	0.77
Sat Flow, veh/h	1757	1568	5202	1568	1757	5202
Grp Volume(v), veh/h	365	408	2767	435	710	734
Grp Sat Flow(s),veh/h/ln	1757	1568	1679	1568	1757	1679
Q Serve(g_s), s	19.0	19.0	53.0	25.7	36.0	4.6
Cycle Q Clear(g_c), s	19.0	19.0	53.0	25.7	36.0	4.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	278	248	2224	693	527	3903
V/C Ratio(X)	1.31	1.64	1.24	0.63	1.35	0.19
Avail Cap(c_a), veh/h	278	248	2224	693	527	3903
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	50.5	33.5	25.9	42.0	3.6
Incr Delay (d2), s/veh	163.8	307.0	113.8	1.8	168.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.9	29.4	47.9	11.5	42.1	2.1
LnGrp Delay(d),s/veh	214.3	357.5	147.3	27.7	210.5	3.6
LnGrp LOS	F	F	F	C	F	A
Approach Vol, veh/h	773		3202			1444
Approach Delay, s/veh	289.9		131.1			105.3
Approach LOS	F		F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	40.0	57.0				97.0		23.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	36.0	53.0				93.0		19.0
Max Q Clear Time (g_c+I1), s	38.0	55.0				6.6		21.0
Green Ext Time (p_c), s	0.0	0.0				78.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	146.9
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	996	631	20	1649	37	1225	741	22	50	782	585
Future Volume (veh/h)	347	996	631	20	1649	37	1225	741	22	50	782	585
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	347	996	631	20	1649	37	1225	741	22	50	782	585
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	288	1722	536	40	1356	422	944	1746	781	85	863	386
Arrive On Green	0.08	0.34	0.34	0.01	0.27	0.27	0.28	0.50	0.50	0.03	0.25	0.25
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	347	996	631	20	1649	37	1225	741	22	50	782	585
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	11.0	21.1	44.5	0.8	35.0	2.3	36.0	17.5	0.9	1.9	28.1	32.0
Cycle Q Clear(g_c), s	11.0	21.1	44.5	0.8	35.0	2.3	36.0	17.5	0.9	1.9	28.1	32.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	288	1722	536	40	1356	422	944	1746	781	85	863	386
V/C Ratio(X)	1.20	0.58	1.18	0.49	1.22	0.09	1.30	0.42	0.03	0.59	0.91	1.52
Avail Cap(c_a), veh/h	288	1722	536	79	1356	422	944	1746	781	131	863	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	35.1	42.8	63.8	47.5	35.6	47.0	20.8	16.6	62.7	47.5	49.0
Incr Delay (d2), s/veh	119.7	0.5	97.7	9.0	104.3	0.1	141.9	0.2	0.0	6.2	13.1	245.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	9.9	33.7	0.4	29.3	1.0	35.5	8.5	0.4	1.0	15.2	40.1
LnGrp Delay(d),s/veh	179.2	35.6	140.5	72.9	151.8	35.6	188.9	20.9	16.6	68.9	60.7	294.0
LnGrp LOS	F	D	F	E	F	D	F	C	B	E	E	F
Approach Vol, veh/h		1974			1706			1988			1417	
Approach Delay, s/veh		94.4			148.3			124.4			157.3	
Approach LOS		F			F			F			F	

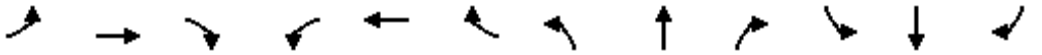
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	68.7	5.5	48.5	40.0	36.0	15.0	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	63.0	3.0	43.0	36.0	32.0	11.0	35.0
Max Q Clear Time (g_c+I1), s	3.9	19.5	2.8	46.5	38.0	34.0	13.0	37.0
Green Ext Time (p_c), s	0.0	20.7	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	128.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Future Volume (veh/h)	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	92	1669	520	369	2078	647	28	1541	689	42	1555	696
Arrive On Green	0.03	0.33	0.33	0.11	0.41	0.41	0.01	0.44	0.44	0.01	0.44	0.44
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	4.0	45.3	7.7	15.4	61.0	0.5	0.4	65.0	6.5	0.6	55.4	4.7
Cycle Q Clear(g_c), s	4.0	45.3	7.7	15.4	61.0	0.5	0.4	65.0	6.5	0.6	55.4	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	1669	520	369	2078	647	28	1541	689	42	1555	696
V/C Ratio(X)	1.11	0.95	0.22	0.97	1.16	0.01	0.32	1.12	0.17	0.35	0.91	0.12
Avail Cap(c_a), veh/h	92	1669	520	369	2078	647	92	1541	689	92	1555	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.9	48.2	35.6	65.6	43.4	25.7	72.9	41.4	25.0	72.4	38.3	24.2
Incr Delay (d2), s/veh	125.3	11.9	0.2	37.6	76.7	0.0	6.2	62.3	0.1	4.9	8.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	22.8	3.4	9.1	42.9	0.2	0.2	44.6	2.8	0.3	28.6	2.1
LnGrp Delay(d),s/veh	197.2	60.1	35.8	103.2	120.1	25.7	79.1	103.7	25.1	77.3	46.3	24.3
LnGrp LOS	F	E	D	F	F	C	E	F	C	E	D	C
Approach Vol, veh/h		1798			2770			1845			1510	
Approach Delay, s/veh		66.3			117.7			98.7			45.4	
Approach LOS		E			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	69.0	20.0	53.0	5.2	69.6	8.0	65.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	65.0	16.0	49.0	4.0	65.0	4.0	61.0
Max Q Clear Time (g_c+I1), s	2.6	67.0	17.4	47.3	2.4	57.4	6.0	63.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	7.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	87.8
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	672	0	1035	708	68	0	699	1197	118	797	238
Future Volume (veh/h)	238	672	0	1035	708	68	0	699	1197	118	797	238
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	238	672	0	1035	708	68	0	699	1197	118	797	238
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	294	620	193	944	1580	492	3	1537	687	131	1779	796
Arrive On Green	0.09	0.12	0.00	0.28	0.31	0.31	0.00	0.44	0.44	0.04	0.51	0.51
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	238	672	0	1035	708	68	0	699	1197	118	797	238
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	8.9	16.0	0.0	36.0	14.6	4.0	0.0	18.2	57.0	4.5	18.8	11.5
Cycle Q Clear(g_c), s	8.9	16.0	0.0	36.0	14.6	4.0	0.0	18.2	57.0	4.5	18.8	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	294	620	193	944	1580	492	3	1537	687	131	1779	796
V/C Ratio(X)	0.81	1.08	0.00	1.10	0.45	0.14	0.00	0.45	1.74	0.90	0.45	0.30
Avail Cap(c_a), veh/h	393	620	193	944	1580	492	105	1537	687	131	1779	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.3	57.0	0.0	47.0	35.6	32.0	0.0	25.6	36.5	62.3	20.4	18.6
Incr Delay (d2), s/veh	9.0	61.1	0.0	59.3	0.2	0.1	0.0	0.2	339.5	49.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	10.9	0.0	24.7	6.8	1.8	0.0	8.8	89.5	3.0	9.1	5.0
LnGrp Delay(d),s/veh	67.3	118.1	0.0	106.3	35.8	32.1	0.0	25.8	376.0	111.9	20.6	18.8
LnGrp LOS	E	F		F	D	C		C	F	F	C	B
Approach Vol, veh/h		910			1811			1896			1153	
Approach Delay, s/veh		104.8			76.0			246.9			29.5	
Approach LOS		F			E			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	61.0	40.0	20.0	0.0	70.0	15.2	44.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	57.0	36.0	16.0	4.0	58.0	15.0	37.0
Max Q Clear Time (g_c+I1), s	6.5	59.0	38.0	18.0	0.0	20.8	10.9	16.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	27.6	0.3	10.2

Intersection Summary	
HCM 2010 Ctrl Delay	127.4
HCM 2010 LOS	F

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	132	917	1033
Demand Flow Rate, veh/h	136	945	1064
Vehicles Circulating, veh/h	986	79	25
Vehicles Exiting, veh/h	103	1043	999
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.8	8.5	8.8
Approach LOS	A	A	A

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	136	444	501	500	564
Cap Entry Lane, veh/h	567	1065	1069	1109	1110
Entry HV Adj Factor	0.971	0.971	0.970	0.971	0.971
Flow Entry, veh/h	132	431	486	486	548
Cap Entry, veh/h	550	1034	1037	1077	1078
V/C Ratio	0.240	0.417	0.469	0.451	0.508
Control Delay, s/veh	9.8	8.0	8.8	8.3	9.3
LOS	A	A	A	A	A
95th %tile Queue, veh	1	2	3	2	3

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	0	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	659	652	152
Demand Flow Rate, veh/h	0	679	671	156
Vehicles Circulating, veh/h	62	671	0	612
Vehicles Exiting, veh/h	706	0	62	738
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	21.5	10.9	9.4
Approach LOS	-	C	B	A

Lane	Left	Right	Left	Left
Designated Moves	LT	R	LT	TR
Assumed Moves	LT	R	LT	TR
RT Channelized				
Lane Util	0.630	0.370	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	428	251	671	156
Cap Entry Lane, veh/h	578	578	1130	613
Entry HV Adj Factor	0.970	0.972	0.971	0.973
Flow Entry, veh/h	415	244	652	152
Cap Entry, veh/h	560	562	1098	596
V/C Ratio	0.741	0.435	0.594	0.255
Control Delay, s/veh	26.3	13.4	10.9	9.4
LOS	D	B	B	A
95th %tile Queue, veh	6	2	4	1

Intersection	
Intersection Delay, s/veh	181.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	0	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	0	314	2552	2097
Demand Flow Rate, veh/h	0	323	2629	2159
Vehicles Circulating, veh/h	2110	2629	0	598
Vehicles Exiting, veh/h	647	0	2110	2354
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	427.5	103.1	239.4
Approach LOS	-	F	F	F

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	323	1236	1393	1015	1144
Cap Entry Lane, veh/h	179	1130	1130	722	743
Entry HV Adj Factor	0.971	0.971	0.971	0.971	0.971
Flow Entry, veh/h	314	1200	1353	985	1111
Cap Entry, veh/h	174	1097	1097	701	722
V/C Ratio	1.800	1.094	1.233	1.407	1.539
Control Delay, s/veh	427.5	74.8	128.2	209.5	265.9
LOS	F	F	F	F	F
95th %tile Queue, veh	23	29	44	44	56

Intersection	
Intersection Delay, s/veh	171.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	0	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	535	0	2405	2049
Demand Flow Rate, veh/h	550	0	2477	2110
Vehicles Circulating, veh/h	2110	2628	331	0
Vehicles Exiting, veh/h	0	180	2329	2628
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	554.4	0.0	201.7	35.4
Approach LOS	F	-	F	E

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	550	1164	1313	992	1118
Cap Entry Lane, veh/h	258	882	896	1130	1130
Entry HV Adj Factor	0.972	0.971	0.971	0.971	0.971
Flow Entry, veh/h	535	1130	1274	963	1086
Cap Entry, veh/h	251	856	870	1097	1097
V/C Ratio	2.132	1.320	1.465	0.878	0.989
Control Delay, s/veh	554.4	169.0	230.7	25.5	44.1
LOS	F	F	F	D	E
95th %tile Queue, veh	40	44	59	12	19

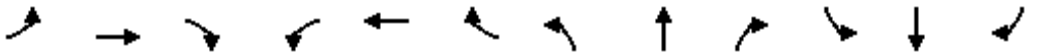
Cumulative Plus All Projects

County Standard Mitigation

PM

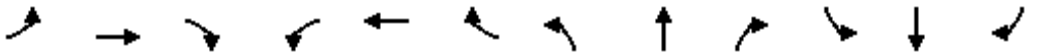
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	571	338	152	934	981	475	1225	49	1391	1798	150
Future Volume (vph)	271	571	338	152	934	981	475	1225	49	1391	1798	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3278		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3278		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	271	571	338	152	934	981	475	1225	49	1391	1798	150
RTOR Reduction (vph)	0	67	0	0	0	755	0	0	37	0	0	63
Lane Group Flow (vph)	271	842	0	152	934	226	475	1225	12	1391	1798	87
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	8.0	32.0		6.0	30.0	30.0	20.6	31.0	31.0	45.0	55.4	55.4
Effective Green, g (s)	8.0	32.0		6.0	30.0	30.0	20.6	31.0	31.0	45.0	55.4	55.4
Actuated g/C Ratio	0.06	0.25		0.05	0.23	0.23	0.16	0.24	0.24	0.35	0.43	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	806		155	801	630	533	1189	370	1165	2125	661
v/s Ratio Prot	c0.08	0.26		0.05	c0.27		0.14	c0.25		c0.41	0.36	
v/s Ratio Perm						0.08			0.01			0.06
v/c Ratio	1.31	1.04		0.98	1.17	0.36	0.89	1.03	0.03	1.19	0.85	0.13
Uniform Delay, d1	61.0	49.0		61.9	50.0	41.9	53.6	49.5	38.0	42.5	33.5	22.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	169.4	43.9		66.2	88.1	0.4	16.9	34.2	0.0	95.9	3.3	0.1
Delay (s)	230.4	92.9		128.2	138.1	42.3	70.5	83.7	38.0	138.4	36.8	22.8
Level of Service	F	F		F	F	D	E	F	D	F	D	C
Approach Delay (s)		124.5			91.9			78.8			78.5	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	88.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	656	259	244	735	531	241	904	190	786	1656	91
Future Volume (vph)	74	656	259	244	735	531	241	904	190	786	1656	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91	0.91	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.96		1.00	0.98	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3356		1736	3244	1413	1736	4858		1736	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3356		1736	3244	1413	1736	4858		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	74	656	259	244	735	531	241	904	190	786	1656	91
RTOR Reduction (vph)	0	28	0	0	10	291	0	21	0	0	0	38
Lane Group Flow (vph)	74	887	0	244	868	97	241	1073	0	786	1656	53
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	11.6	31.0		18.0	37.4	37.4	23.5	31.0		54.0	61.5	61.5
Effective Green, g (s)	11.6	31.0		18.0	37.4	37.4	23.5	31.0		54.0	61.5	61.5
Actuated g/C Ratio	0.08	0.21		0.12	0.25	0.25	0.16	0.21		0.36	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	135	693		208	808	352	271	1003		624	2045	636
v/s Ratio Prot	0.04	c0.26		c0.14	0.27		0.14	c0.22		c0.45	0.33	
v/s Ratio Perm						0.07						0.03
v/c Ratio	0.55	1.28		1.17	1.07	0.28	0.89	1.07		1.26	0.81	0.08
Uniform Delay, d1	66.7	59.5		66.0	56.3	45.4	62.0	59.5		48.0	39.1	27.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.5	137.0		116.9	53.6	0.4	27.7	48.9		129.5	2.5	0.1
Delay (s)	71.2	196.5		182.9	109.9	45.8	89.7	108.4		177.5	41.6	27.1
Level of Service	E	F		F	F	D	F	F		F	D	C
Approach Delay (s)		187.2			105.3			105.0			83.2	
Approach LOS		F			F			F			F	

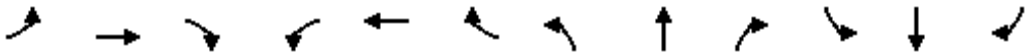
Intersection Summary			
HCM 2000 Control Delay	109.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	118.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	853	161	196	828	364	131	430	116	356	520	22
Future Volume (vph)	65	853	161	196	828	364	131	430	116	356	520	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.6		5.0	4.8	4.8	5.5	4.4	4.4	5.5	4.3	4.3
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3421		1752	3505	1568	1752	1845	1568	1752	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	3421		1752	3505	1568	1752	1845	1568	1752	1845	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	65	853	161	196	828	364	131	430	116	356	520	22
RTOR Reduction (vph)	0	12	0	0	0	233	0	0	89	0	0	14
Lane Group Flow (vph)	65	1002	0	196	828	131	131	430	27	356	520	8
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases						2			8			4
Actuated Green, G (s)	6.5	39.8		14.0	46.9	46.9	11.9	31.0	31.0	26.5	45.7	45.7
Effective Green, g (s)	6.5	39.8		14.0	46.9	46.9	11.9	31.0	31.0	26.5	45.7	45.7
Actuated g/C Ratio	0.05	0.30		0.11	0.36	0.36	0.09	0.24	0.24	0.20	0.35	0.35
Clearance Time (s)	5.2	4.6		5.0	4.8	4.8	5.5	4.4	4.4	5.5	4.3	4.3
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	87	1040		187	1256	562	159	437	371	354	644	547
v/s Ratio Prot	0.04	c0.29		c0.11	0.24		0.07	c0.23		c0.20	0.28	
v/s Ratio Perm						0.08			0.02			0.00
v/c Ratio	0.75	0.96		1.05	0.66	0.23	0.82	0.98	0.07	1.01	0.81	0.01
Uniform Delay, d1	61.3	44.8		58.4	35.2	29.4	58.4	49.7	38.8	52.2	38.6	27.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.9	19.4		79.1	1.0	0.1	26.8	38.5	0.0	49.3	6.9	0.0
Delay (s)	87.2	64.2		137.5	36.2	29.4	85.2	88.1	38.8	101.4	45.5	27.8
Level of Service	F	E		F	D	C	F	F	D	F	D	C
Approach Delay (s)		65.6			48.7			79.1			67.2	
Approach LOS		E			D			E			E	

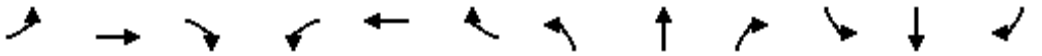
Intersection Summary			
HCM 2000 Control Delay	62.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.8	Sum of lost time (s)	19.9
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



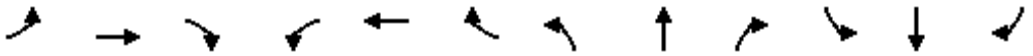
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	196	553	8	2	501	1	9	188	0	1	280	323
Future Volume (vph)	196	553	8	2	501	1	9	188	0	1	280	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			1.00			0.93	
Flt Protected		0.99			1.00			1.00			1.00	
Satd. Flow (prot)		1734			1726			1755			1632	
Flt Permitted		0.99			1.00			0.94			1.00	
Satd. Flow (perm)		1734			1726			1650			1632	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	196	553	8	2	501	1	9	188	0	1	280	323
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	30	0
Lane Group Flow (vph)	0	757	0	0	504	0	0	197	0	0	574	0
Heavy Vehicles (%)	8%	8%	8%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)		52.0			35.0			41.0			41.0	
Effective Green, g (s)		52.0			35.0			41.0			41.0	
Actuated g/C Ratio		0.37			0.25			0.29			0.29	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		644			431			483			477	
v/s Ratio Prot		c0.44			c0.29							
v/s Ratio Perm								0.12			0.35	
v/c Ratio		1.18			1.17			0.41			1.20	
Uniform Delay, d1		44.0			52.5			39.8			49.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		94.6			98.5			0.6			110.3	
Delay (s)		138.6			151.0			40.3			159.8	
Level of Service		F			F			D			F	
Approach Delay (s)		138.6			151.0			40.3			159.8	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	138.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	549	1024	9	2	750	6	7	15	2	5	21	1108
Future Volume (vph)	549	1024	9	2	750	6	7	15	2	5	21	1108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	3303	3406	1524	1719	3434			1798			1810	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)	3303	3406	1524	1719	3434			1798			1810	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	549	1024	9	2	750	6	7	15	2	5	21	1108
RTOR Reduction (vph)	0	0	2	0	0	0	0	2	0	0	0	33
Lane Group Flow (vph)	549	1024	7	2	756	0	0	22	0	0	26	1075
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	70.0	105.0	105.0	0.6	36.5			1.7			3.6	73.6
Effective Green, g (s)	70.0	105.0	105.0	0.6	36.5			1.7			3.6	73.6
Actuated g/C Ratio	0.52	0.77	0.77	0.00	0.27			0.01			0.03	0.54
Clearance Time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	1705	2637	1180	7	924			22			48	842
v/s Ratio Prot	0.17	0.30		0.00	c0.22			c0.01			0.01	c0.66
v/s Ratio Perm			0.00									0.03
v/c Ratio	0.32	0.39	0.01	0.29	0.82			1.00			0.54	1.28
Uniform Delay, d1	19.0	4.9	3.5	67.3	46.4			67.0			65.2	31.0
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.0	0.0	0.0	8.0	5.4			192.2			6.5	133.5
Delay (s)	19.1	5.0	3.5	75.3	51.9			259.2			71.7	164.5
Level of Service	B	A	A	E	D			F			E	F
Approach Delay (s)		9.9			51.9			259.2			162.4	
Approach LOS		A			D			F			F	

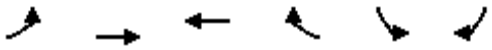
Intersection Summary			
HCM 2000 Control Delay	70.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	135.6	Sum of lost time (s)	24.7
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	13	43	148	6	202	38	1451	183	714	1482	1
Future Volume (vph)	12	13	43	148	6	202	38	1451	183	714	1482	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1632		1752	1845	1568	1752	3446		1752	3504	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1632		1752	1845	1568	1752	3446		1752	3504	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	12	13	43	148	6	202	38	1451	183	714	1482	1
RTOR Reduction (vph)	0	41	0	0	0	180	0	6	0	0	0	0
Lane Group Flow (vph)	12	15	0	148	6	22	38	1628	0	714	1483	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	1.9	7.7		10.0	15.8	15.8	6.1	58.9		50.1	102.9	
Effective Green, g (s)	1.9	7.7		10.0	15.8	15.8	6.1	58.9		50.1	102.9	
Actuated g/C Ratio	0.01	0.05		0.07	0.11	0.11	0.04	0.41		0.35	0.72	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	23	88		122	204	173	74	1422		615	2526	
v/s Ratio Prot	0.01	c0.01		c0.08	0.00		0.02	c0.47		c0.41	0.42	
v/s Ratio Perm						0.01						
v/c Ratio	0.52	0.17		1.21	0.03	0.13	0.51	1.14		1.16	0.59	
Uniform Delay, d1	69.9	64.5		66.3	56.6	57.2	66.8	41.9		46.3	9.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	19.7	0.9		149.7	0.1	0.3	5.9	73.9		89.5	0.4	
Delay (s)	89.7	65.4		216.1	56.7	57.6	72.7	115.8		135.8	10.0	
Level of Service	F	E		F	E	E	E	F		F	A	
Approach Delay (s)		69.7			123.4			114.8			50.9	
Approach LOS		E			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	82.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	142.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	110.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	1215	804	1686	1898	0
Future Volume (vph)	2	1215	804	1686	1898	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	3400	3505	3505	1568	3400	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	3400	3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1215	804	1686	1898	0
RTOR Reduction (vph)	0	0	0	717	0	0
Lane Group Flow (vph)	2	1215	804	969	1898	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	4	5	5		6	
Permitted Phases				5		
Actuated Green, G (s)	1.1	46.0	46.0	46.0	76.1	
Effective Green, g (s)	1.1	46.0	46.0	46.0	76.1	
Actuated g/C Ratio	0.01	0.34	0.34	0.34	0.56	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	27	1192	1192	533	1913	
v/s Ratio Prot	c0.00	0.35	0.23		c0.56	
v/s Ratio Perm				c0.62		
v/c Ratio	0.07	1.02	0.67	1.82	0.99	
Uniform Delay, d1	66.5	44.6	38.2	44.6	29.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	31.0	1.5	375.9	18.6	
Delay (s)	67.7	75.6	39.7	420.5	47.9	
Level of Service	E	E	D	F	D	
Approach Delay (s)		75.6	297.5		47.9	
Approach LOS		E	F		D	

Intersection Summary			
HCM 2000 Control Delay	164.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	135.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	114.4%	ICU Level of Service	H
Analysis Period (min)	15		

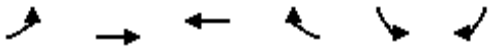
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	390	690	1158	312	475	2678
Future Volume (vph)	390	690	1158	312	475	2678
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1568	5036	1568	1752	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1568	5036	1568	1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	390	690	1158	312	475	2678
RTOR Reduction (vph)	0	393	0	227	0	0
Lane Group Flow (vph)	390	297	1158	85	475	2678
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	15.8	15.8	17.6	17.6	19.4	41.0
Effective Green, g (s)	15.8	15.8	17.6	17.6	19.4	41.0
Actuated g/C Ratio	0.24	0.24	0.27	0.27	0.30	0.63
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	427	382	1367	425	524	3186
v/s Ratio Prot	c0.22		0.23		c0.27	c0.53
v/s Ratio Perm		0.19		0.05		
v/c Ratio	0.91	0.78	0.85	0.20	0.91	0.84
Uniform Delay, d1	23.8	22.9	22.3	18.2	21.8	9.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.7	9.6	5.1	0.2	19.2	2.2
Delay (s)	47.5	32.4	27.4	18.4	41.0	11.5
Level of Service	D	C	C	B	D	B
Approach Delay (s)	37.9		25.5			15.9
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	64.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	818	2167	1641	62	134	761
Future Volume (vph)	818	2167	1641	62	134	761
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.91	0.91		1.00	0.88
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	5036	5008		1752	2760
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	5036	5008		1752	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	818	2167	1641	62	134	761
RTOR Reduction (vph)	0	0	5	0	0	630
Lane Group Flow (vph)	818	2167	1698	0	134	131
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	18.1	47.2	25.1		11.5	11.5
Effective Green, g (s)	18.1	47.2	25.1		11.5	11.5
Actuated g/C Ratio	0.27	0.71	0.38		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	922	3563	1884		302	475
v/s Ratio Prot	c0.24	0.43	c0.34		c0.08	
v/s Ratio Perm						0.05
v/c Ratio	0.89	0.61	0.90		0.44	0.28
Uniform Delay, d1	23.3	5.0	19.6		24.7	24.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	10.3	0.3	6.4		1.0	0.3
Delay (s)	33.6	5.3	26.0		25.8	24.3
Level of Service	C	A	C		C	C
Approach Delay (s)		13.1	26.0		24.5	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	500	145	479	516	787	128	0	288	670	0	403
Future Volume (veh/h)	265	500	145	479	516	787	128	0	288	670	0	403
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	265	500	145	479	516	787	128	0	288	670	0	403
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	319	1041	466	446	1171	835	182	1007	314	669	1727	538
Arrive On Green	0.09	0.30	0.30	0.13	0.33	0.33	0.05	0.00	0.20	0.20	0.00	0.35
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	265	500	145	479	516	787	128	0	288	670	0	403
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	9.1	13.9	8.5	15.5	13.6	39.6	4.4	0.0	21.5	23.5	0.0	27.2
Cycle Q Clear(g_c), s	9.1	13.9	8.5	15.5	13.6	39.6	4.4	0.0	21.5	23.5	0.0	27.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	319	1041	466	446	1171	835	182	1007	314	669	1727	538
V/C Ratio(X)	0.83	0.48	0.31	1.07	0.44	0.94	0.70	0.00	0.92	1.00	0.00	0.75
Avail Cap(c_a), veh/h	379	1094	489	446	1171	835	276	1422	443	669	1994	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.8	34.2	32.3	51.5	30.8	26.0	55.2	0.0	46.3	47.5	0.0	34.2
Incr Delay (d2), s/veh	10.7	0.1	0.1	64.2	0.1	18.6	1.9	0.0	16.0	35.1	0.0	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	6.8	3.7	11.2	6.6	28.2	2.1	0.0	10.6	14.1	0.0	12.1
LnGrp Delay(d),s/veh	63.5	34.3	32.4	115.7	30.9	44.6	57.0	0.0	62.4	82.7	0.0	37.6
LnGrp LOS	E	C	C	F	C	D	E		E	F		D
Approach Vol, veh/h		910			1782			416			1073	
Approach Delay, s/veh		42.5			59.8			60.7			65.8	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	45.9	16.6	44.2	29.0	28.7	21.0	39.8
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	9.7	47.4	13.2	* 40	23.5	* 34	15.5	37.0
Max Q Clear Time (g_c+I1), s	6.4	29.2	11.1	41.6	25.5	23.5	17.5	15.9
Green Ext Time (p_c), s	0.1	0.4	0.1	0.0	0.0	0.4	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	57.6
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	580	23	194	198	704	9	2256	129	749	2558	1
Future Volume (veh/h)	0	580	23	194	198	704	9	2256	129	749	2558	1
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	0	580	23	194	198	704	9	2256	129	749	2558	1
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	627	280	173	941	734	21	2097	653	673	3061	953
Arrive On Green	0.00	0.18	0.18	0.05	0.27	0.27	0.01	0.42	0.42	0.20	0.61	0.61
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	0	580	23	194	198	704	9	2256	129	749	2558	1
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	0.0	24.3	1.8	7.5	6.5	39.7	0.4	62.2	7.8	29.5	60.2	0.0
Cycle Q Clear(g_c), s	0.0	24.3	1.8	7.5	6.5	39.7	0.4	62.2	7.8	29.5	60.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	627	280	173	941	734	21	2097	653	673	3061	953
V/C Ratio(X)	0.00	0.93	0.08	1.12	0.21	0.96	0.43	1.08	0.20	1.11	0.84	0.00
Avail Cap(c_a), veh/h	68	681	304	173	941	734	68	2097	653	673	3061	953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	59.6	50.4	70.2	41.9	38.0	73.2	42.9	27.1	59.2	22.7	11.0
Incr Delay (d2), s/veh	0.0	17.2	0.0	105.2	0.0	23.5	4.9	43.5	0.1	69.8	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.2	0.8	6.0	3.1	32.5	0.2	36.8	3.3	20.2	28.1	0.0
LnGrp Delay(d),s/veh	0.0	76.8	50.5	175.4	42.0	61.5	78.2	86.4	27.1	129.0	24.7	11.0
LnGrp LOS		E	D	F	D	E	E	F	C	F	C	B
Approach Vol, veh/h		603			1096			2394			3308	
Approach Delay, s/veh		75.8			78.1			83.2			48.3	
Approach LOS		E			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	96.1	0.0	45.4	35.0	67.5	13.0	32.4
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	88.6	3.0	* 33	29.5	* 62	7.5	* 29
Max Q Clear Time (g_c+I1), s	2.4	62.2	0.0	41.7	31.5	64.2	9.5	26.3
Green Ext Time (p_c), s	0.0	22.6	0.0	0.0	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	66.2
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	1828	773	61	1518	875	613	1675	106	935	1669	126
Future Volume (veh/h)	153	1828	773	61	1518	875	613	1675	106	935	1669	126
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	153	1828	773	61	1518	0	613	1675	106	935	1669	126
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	154	1673	521	66	1560	486	591	1434	446	741	1633	508
Arrive On Green	0.05	0.34	0.34	0.02	0.32	0.00	0.17	0.29	0.29	0.22	0.33	0.33
Sat Flow, veh/h	3312	4893	1524	3312	4893	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	153	1828	773	61	1518	0	613	1675	106	935	1669	126
Grp Sat Flow(s),veh/h/ln	1656	1631	1524	1656	1631	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	6.9	51.4	51.4	2.8	46.1	0.0	26.3	43.2	7.8	33.0	49.2	8.9
Cycle Q Clear(g_c), s	6.9	51.4	51.4	2.8	46.1	0.0	26.3	43.2	7.8	33.0	49.2	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	1673	521	66	1560	486	591	1434	446	741	1633	508
V/C Ratio(X)	0.99	1.09	1.48	0.92	0.97	0.00	1.04	1.17	0.24	1.26	1.02	0.25
Avail Cap(c_a), veh/h	154	1673	521	66	1560	486	591	1434	446	741	1633	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.6	49.4	49.4	73.5	50.6	0.0	62.0	53.6	41.0	58.7	50.5	37.0
Incr Delay (d2), s/veh	69.9	51.8	227.7	82.6	16.7	0.0	47.2	83.7	0.1	128.5	28.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	31.1	54.5	2.0	23.2	0.0	16.1	30.9	3.4	28.6	26.8	3.8
LnGrp Delay(d),s/veh	141.5	101.2	277.2	156.2	67.3	0.0	109.2	137.2	41.1	187.1	78.6	37.1
LnGrp LOS	F	F	F	F	E		F	F	D	F	F	D
Approach Vol, veh/h		2754			1579			2394			2730	
Approach Delay, s/veh		152.8			70.7			125.8			113.9	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	53.3	31.0	54.0	8.5	56.8	37.0	48.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.0	4.8
Max Green Setting (Gmax), s	7.0	* 48	* 26	49.2	3.0	* 51	33.0	43.2
Max Q Clear Time (g_c+I1), s	8.9	48.1	28.3	51.2	4.8	53.4	35.0	45.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	121.0
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
17: S. Watt Avenue & Fruitridge Road

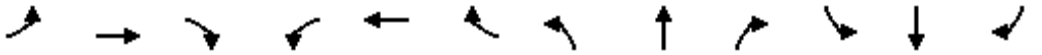
12/07/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	444	839	252	373	704	219	108	1704	446	182	2034	203
Future Volume (veh/h)	444	839	252	373	704	219	108	1704	446	182	2034	203
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	444	839	252	373	704	219	108	1704	446	182	2034	203
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	476	855	383	396	763	341	135	1946	612	213	2091	651
Arrive On Green	0.14	0.24	0.24	0.12	0.22	0.22	0.04	0.39	0.39	0.06	0.42	0.42
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1568	3408	4988	1553
Grp Volume(v), veh/h	444	839	252	373	704	219	108	1704	446	182	2034	203
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1568	1704	1663	1553
Q Serve(g_s), s	14.2	26.2	16.0	12.0	21.7	14.0	3.5	34.9	26.7	5.8	44.1	9.6
Cycle Q Clear(g_c), s	14.2	26.2	16.0	12.0	21.7	14.0	3.5	34.9	26.7	5.8	44.1	9.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	476	855	383	396	763	341	135	1946	612	213	2091	651
V/C Ratio(X)	0.93	0.98	0.66	0.94	0.92	0.64	0.80	0.88	0.73	0.85	0.97	0.31
Avail Cap(c_a), veh/h	476	855	383	396	779	349	135	1946	612	213	2091	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	41.4	37.5	48.3	42.2	39.2	52.5	31.1	28.6	51.1	31.4	21.4
Incr Delay (d2), s/veh	25.0	25.9	3.3	30.5	15.9	2.9	26.4	4.6	3.8	25.7	13.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	15.8	7.2	7.3	12.1	6.3	2.1	16.8	12.2	3.5	22.8	4.1
LnGrp Delay(d),s/veh	71.8	67.3	40.8	78.8	58.1	42.1	78.8	35.8	32.5	76.8	45.1	21.5
LnGrp LOS	E	E	D	E	E	D	E	D	C	E	D	C
Approach Vol, veh/h		1535			1296			2258			2419	
Approach Delay, s/veh		64.3			61.3			37.2			45.5	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	51.0	20.9	29.3	12.2	47.8	18.0	32.2
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 4.4	46.2	15.4	* 25	* 6.9	43.0	* 13	* 27
Max Q Clear Time (g_c+I1), s	5.5	46.1	16.2	23.7	7.8	36.9	14.0	28.2
Green Ext Time (p_c), s	0.0	0.1	0.0	0.3	0.0	5.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.6
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	821	455	804	91	557	9	188	1038	11	22	1978	1340
Future Volume (veh/h)	821	455	804	91	557	9	188	1038	11	22	1978	1340
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	821	455	804	91	557	9	188	1038	11	22	1978	1340
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	817	1171	524	104	625	195	184	2287	712	43	2101	654
Arrive On Green	0.24	0.34	0.34	0.03	0.13	0.13	0.05	0.46	0.46	0.01	0.42	0.42
Sat Flow, veh/h	3375	3471	1553	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	821	455	804	91	557	9	188	1038	11	22	1978	1340
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	31.5	13.0	43.9	3.5	14.3	0.7	7.1	18.5	0.5	0.8	49.5	54.8
Cycle Q Clear(g_c), s	31.5	13.0	43.9	3.5	14.3	0.7	7.1	18.5	0.5	0.8	49.5	54.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	817	1171	524	104	625	195	184	2287	712	43	2101	654
V/C Ratio(X)	1.00	0.39	1.53	0.88	0.89	0.05	1.02	0.45	0.02	0.52	0.94	2.05
Avail Cap(c_a), veh/h	817	1171	524	104	625	195	184	2287	712	140	2101	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	32.9	43.1	62.8	56.0	50.1	61.5	24.1	19.2	63.8	36.1	37.7
Incr Delay (d2), s/veh	32.6	1.0	250.0	50.1	17.4	0.4	71.8	0.7	0.0	3.5	10.0	477.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.3	6.4	55.2	2.4	7.6	0.3	5.1	8.6	0.2	0.4	24.7	110.2
LnGrp Delay(d),s/veh	81.9	33.8	293.1	112.9	73.5	50.5	133.5	24.7	19.2	67.4	46.1	514.8
LnGrp LOS	F	C	F	F	E	D	F	C	B	E	D	F
Approach Vol, veh/h		2080			657			1237			3340	
Approach Delay, s/veh		153.0			78.6			41.2			234.3	
Approach LOS		F			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	60.0	36.6	21.5	7.1	64.9	9.0	49.1
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 7.1	* 55	* 32	* 16	5.4	* 56	4.0	* 44
Max Q Clear Time (g_c+I1), s	9.1	56.8	33.5	16.3	2.8	20.5	5.5	45.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	35.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	164.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	2296	387	153	2224	5	138	30	79	4	32	23
Future Volume (veh/h)	14	2296	387	153	2224	5	138	30	79	4	32	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	14	2296	387	153	2224	5	138	30	79	4	32	23
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	21	2659	432	176	3618	8	162	241	205	7	66	56
Arrive On Green	0.01	0.63	0.63	0.10	0.72	0.72	0.09	0.13	0.13	0.00	0.04	0.04
Sat Flow, veh/h	1707	4244	689	1707	5041	11	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	14	1745	938	153	1439	790	138	30	79	4	32	23
Grp Sat Flow(s),veh/h/ln	1707	1631	1671	1707	1631	1790	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.1	56.5	62.9	11.6	29.3	29.3	10.2	1.9	6.1	0.3	2.2	1.9
Cycle Q Clear(g_c), s	1.1	56.5	62.9	11.6	29.3	29.3	10.2	1.9	6.1	0.3	2.2	1.9
Prop In Lane	1.00		0.41	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	21	2044	1047	176	2341	1285	162	241	205	7	66	56
V/C Ratio(X)	0.67	0.85	0.90	0.87	0.61	0.61	0.85	0.12	0.39	0.55	0.48	0.41
Avail Cap(c_a), veh/h	73	2078	1065	188	2341	1285	172	419	356	53	295	250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	19.7	20.9	58.1	9.4	9.4	58.8	50.5	52.3	65.4	62.2	62.1
Incr Delay (d2), s/veh	22.7	3.9	10.3	30.2	0.6	1.1	29.4	0.2	1.1	37.6	4.9	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	26.3	31.7	7.0	13.2	14.7	6.3	1.0	2.7	0.2	1.2	0.9
LnGrp Delay(d),s/veh	87.4	23.6	31.3	88.3	10.0	10.5	88.3	50.7	53.4	102.9	67.1	66.3
LnGrp LOS	F	C	C	F	B	B	F	D	D	F	E	E
Approach Vol, veh/h		2697			2382			247			59	
Approach Delay, s/veh		26.6			15.2			72.6			69.2	
Approach LOS		C			B			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	88.8	16.5	9.1	5.1	100.8	4.0	21.6
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	14.5	83.8	12.9	* 21	5.6	92.7	4.0	29.9
Max Q Clear Time (g_c+I1), s	13.6	64.9	12.2	4.2	3.1	31.3	2.3	8.1
Green Ext Time (p_c), s	0.0	17.5	0.0	0.5	0.0	61.1	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	1249	518	91	1235	265	575	191	8	318	374	87
Future Volume (veh/h)	77	1249	518	91	1235	265	575	191	8	318	374	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	77	1249	518	91	1235	265	575	191	8	318	374	87
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	82	981	389	70	1132	240	445	476	405	343	369	314
Arrive On Green	0.05	0.40	0.40	0.04	0.39	0.39	0.25	0.26	0.26	0.20	0.20	0.20
Sat Flow, veh/h	1757	2453	972	1757	2878	611	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	77	876	891	91	747	753	575	191	8	318	374	87
Grp Sat Flow(s),veh/h/ln	1757	1752	1673	1757	1752	1737	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	6.6	60.0	60.0	6.0	59.0	59.0	38.0	12.9	0.6	26.7	30.0	7.0
Cycle Q Clear(g_c), s	6.6	60.0	60.0	6.0	59.0	59.0	38.0	12.9	0.6	26.7	30.0	7.0
Prop In Lane	1.00		0.58	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	701	669	70	689	683	445	476	405	343	369	314
V/C Ratio(X)	0.94	1.25	1.33	1.29	1.08	1.10	1.29	0.40	0.02	0.93	1.01	0.28
Avail Cap(c_a), veh/h	82	701	669	70	689	683	445	476	405	422	369	314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.3	45.0	45.0	72.0	45.5	45.5	56.0	46.0	41.5	59.3	60.0	50.8
Incr Delay (d2), s/veh	79.0	123.8	159.4	205.4	59.1	65.9	147.3	0.5	0.0	23.9	50.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
%ile BackOfQ(50%),veh/ln	5.0	53.1	57.3	6.9	39.8	40.8	36.6	6.7	0.2	15.3	20.4	3.1
LnGrp Delay(d),s/veh	150.2	168.8	204.4	277.4	104.6	111.4	203.3	46.6	41.5	83.2	110.4	51.3
LnGrp LOS	F	F	F	F	F	F	F	D	D	F	F	D
Approach Vol, veh/h		1844			1591			774			779	
Approach Delay, s/veh		185.3			117.7			163.0			92.7	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.3	42.7	10.0	64.0	42.0	34.0	11.0	63.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	36.0	32.0	6.0	60.0	38.0	30.0	7.0	59.0
Max Q Clear Time (g_c+I1), s	28.7	14.9	8.0	62.0	40.0	32.0	8.6	61.0
Green Ext Time (p_c), s	0.6	3.5	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	145.8
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	286	2049	114	324	1944	1	229	1489	258	30	1589	212
Future Volume (veh/h)	286	2049	114	324	1944	1	229	1489	258	30	1589	212
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	286	2049	114	324	1944	1	229	1489	258	30	1589	212
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	312	1957	627	312	1957	627	227	1808	563	55	1553	483
Arrive On Green	0.09	0.40	0.40	0.09	0.40	0.40	0.07	0.36	0.36	0.02	0.31	0.31
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	286	2049	114	324	1944	1	229	1489	258	30	1589	212
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	10.0	48.0	5.6	11.0	47.5	0.0	8.0	32.3	15.2	1.0	37.0	13.0
Cycle Q Clear(g_c), s	10.0	48.0	5.6	11.0	47.5	0.0	8.0	32.3	15.2	1.0	37.0	13.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	312	1957	627	312	1957	627	227	1808	563	55	1553	483
V/C Ratio(X)	0.92	1.05	0.18	1.04	0.99	0.00	1.01	0.82	0.46	0.55	1.02	0.44
Avail Cap(c_a), veh/h	312	1957	627	312	1957	627	227	1808	563	114	1553	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	36.0	23.3	54.5	35.8	21.6	56.0	35.0	29.5	58.6	41.5	33.2
Incr Delay (d2), s/veh	30.2	33.9	0.1	60.9	18.7	0.0	61.7	3.2	0.6	8.3	28.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	27.7	2.5	7.8	24.6	0.0	5.7	15.4	6.6	0.6	21.3	5.7
LnGrp Delay(d),s/veh	84.2	69.9	23.4	115.4	54.5	21.6	117.8	38.2	30.1	66.9	70.4	33.8
LnGrp LOS	F	F	C	F	D	C	F	D	C	E	F	C
Approach Vol, veh/h		2449			2269			1976			1831	
Approach Delay, s/veh		69.4			63.2			46.4			66.1	
Approach LOS		E			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	47.1	15.0	52.0	12.0	41.0	15.0	52.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	41.0	11.0	48.0	8.0	37.0	11.0	48.0
Max Q Clear Time (g_c+I1), s	3.0	34.3	13.0	50.0	10.0	39.0	12.0	49.5
Green Ext Time (p_c), s	0.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	805	124	512	971	135	71	1129	660	205	1386	442
Future Volume (veh/h)	240	805	124	512	971	135	71	1129	660	205	1386	442
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	240	805	124	512	971	135	71	1129	660	205	1386	442
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	313	1032	321	476	1273	396	119	1338	599	298	1522	681
Arrive On Green	0.09	0.21	0.21	0.14	0.25	0.25	0.03	0.38	0.38	0.09	0.43	0.43
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	240	805	124	512	971	135	71	1129	660	205	1386	442
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	5.9	13.0	5.9	12.0	15.3	6.0	1.8	25.2	32.8	5.0	31.8	19.1
Cycle Q Clear(g_c), s	5.9	13.0	5.9	12.0	15.3	6.0	1.8	25.2	32.8	5.0	31.8	19.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	1032	321	476	1273	396	119	1338	599	298	1522	681
V/C Ratio(X)	0.77	0.78	0.39	1.08	0.76	0.34	0.60	0.84	1.10	0.69	0.91	0.65
Avail Cap(c_a), veh/h	317	1055	328	476	1289	401	119	1338	599	714	1672	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	32.3	29.5	37.0	29.7	26.2	40.9	24.2	26.6	38.1	22.7	19.2
Incr Delay (d2), s/veh	10.6	3.7	0.8	63.1	2.7	0.5	7.9	5.1	68.0	2.8	7.4	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	6.4	2.6	9.8	7.4	2.7	1.0	13.2	25.5	2.5	16.8	8.5
LnGrp Delay(d),s/veh	48.7	36.1	30.2	100.0	32.4	26.8	48.8	29.3	94.6	40.9	30.2	20.9
LnGrp LOS	D	D	C	F	C	C	D	C	F	D	C	C
Approach Vol, veh/h		1169			1618			1860			2033	
Approach Delay, s/veh		38.0			53.4			53.2			29.3	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	36.8	16.0	21.6	7.0	41.3	11.9	25.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	26.0	12.0	18.0	3.0	41.0	8.0	22.0
Max Q Clear Time (g_c+I1), s	7.0	34.8	14.0	15.0	3.8	33.8	7.9	17.3
Green Ext Time (p_c), s	0.5	0.0	0.0	2.6	0.0	3.5	0.0	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	31	17	472	44	537	48	2143	294	530	2550	59
Future Volume (veh/h)	73	31	17	472	44	537	48	2143	294	530	2550	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	73	31	17	472	44	537	48	2143	294	530	2550	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	81	124	68	531	387	329	61	2207	687	529	2843	65
Arrive On Green	0.05	0.11	0.11	0.16	0.21	0.21	0.04	0.44	0.44	0.16	0.57	0.57
Sat Flow, veh/h	1757	1121	615	3408	1845	1568	1740	4988	1553	3375	5016	116
Grp Volume(v), veh/h	73	0	48	472	44	537	48	2143	294	530	1686	923
Grp Sat Flow(s),veh/h/ln	1757	0	1736	1704	1845	1568	1740	1663	1553	1688	1663	1807
Q Serve(g_s), s	6.2	0.0	3.8	20.3	2.9	31.5	4.1	63.0	19.5	23.5	66.9	67.8
Cycle Q Clear(g_c), s	6.2	0.0	3.8	20.3	2.9	31.5	4.1	63.0	19.5	23.5	66.9	67.8
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	81	0	191	531	387	329	61	2207	687	529	1884	1024
V/C Ratio(X)	0.90	0.00	0.25	0.89	0.11	1.63	0.78	0.97	0.43	1.00	0.89	0.90
Avail Cap(c_a), veh/h	81	0	191	659	387	329	63	2208	688	529	1885	1024
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.2	0.0	61.1	62.0	47.9	59.2	71.8	40.9	28.7	63.2	28.6	28.8
Incr Delay (d2), s/veh	67.1	0.0	0.3	12.1	0.0	297.2	42.3	12.9	0.2	39.6	5.8	10.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	1.8	10.5	1.5	40.9	2.7	31.6	8.4	13.9	32.0	36.6
LnGrp Delay(d),s/veh	138.3	0.0	61.3	74.1	48.0	356.4	114.1	53.8	28.9	102.9	34.4	39.4
LnGrp LOS	F		E	E	D	F	F	D	C	F	C	D
Approach Vol, veh/h		121			1053			2485			3139	
Approach Delay, s/veh		107.8			217.0			52.0			47.4	
Approach LOS		F			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	90.2	27.4	22.0	29.0	71.6	12.4	37.0
Change Period (Y+Rc), s	* 5.1	* 5.2	4.0	5.5	5.5	* 5.2	5.5	5.5
Max Green Setting (Gmax), s	* 5.4	* 85	29.0	10.9	23.5	* 66	6.9	31.5
Max Q Clear Time (g_c+I1), s	6.1	69.8	22.3	5.8	25.5	65.0	8.2	33.5
Green Ext Time (p_c), s	0.0	13.5	1.0	0.4	0.0	1.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	76.4
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Future Volume (veh/h)	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
Arrive On Green	0.06	0.23	0.23	0.15	0.32	0.32	0.13	0.23	0.23	0.24	0.34	0.34
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.1	34.7	34.7	22.5	28.0	48.0	19.5	31.9	12.7	35.9	51.6	13.1
Cycle Q Clear(g_c), s	8.1	34.7	34.7	22.5	28.0	48.0	19.5	31.9	12.7	35.9	51.6	13.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
V/C Ratio(X)	0.88	1.09	1.28	1.13	0.67	1.48	1.13	0.93	0.42	1.03	1.07	0.34
Avail Cap(c_a), veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.2	58.0	58.0	64.1	44.5	51.3	65.6	56.4	49.1	57.4	49.5	36.8
Incr Delay (d2), s/veh	32.0	53.3	147.5	81.9	0.9	226.9	84.5	12.2	0.3	38.3	42.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	21.7	29.8	16.3	13.1	52.3	14.2	16.0	5.5	20.9	30.3	5.6
LnGrp Delay(d),s/veh	102.2	111.2	205.4	146.0	45.4	278.2	150.0	68.6	49.4	95.7	91.8	37.0
LnGrp LOS	F	F	F	F	D	F	F	E	D	F	F	D
Approach Vol, veh/h		1909			2396			1728			2830	
Approach Delay, s/veh		133.3			141.5			90.2			89.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	57.2	14.7	53.7	41.4	40.8	28.0	40.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	19.5	* 52	9.2	* 48	35.9	* 35	22.5	* 34
Max Q Clear Time (g_c+I1), s	21.5	53.6	10.1	50.0	37.9	33.9	24.5	36.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	113.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	2208	58	290	1548	492	476	1059	118	521	2559	161
Future Volume (veh/h)	260	2208	58	290	1548	492	476	1059	118	521	2559	161
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	260	2208	58	290	1548	492	476	1059	118	521	2559	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	297	1655	530	231	1564	487	331	1466	456	563	1804	556
Arrive On Green	0.09	0.34	0.34	0.07	0.32	0.32	0.10	0.29	0.29	0.17	0.36	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	260	2208	58	290	1548	492	476	1059	118	521	2559	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	11.7	50.9	3.8	10.2	47.4	48.1	14.6	28.4	8.7	22.9	53.9	0.0
Cycle Q Clear(g_c), s	11.7	50.9	3.8	10.2	47.4	48.1	14.6	28.4	8.7	22.9	53.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	297	1655	530	231	1564	487	331	1466	456	563	1804	556
V/C Ratio(X)	0.88	1.33	0.11	1.26	0.99	1.01	1.44	0.72	0.26	0.93	1.42	0.00
Avail Cap(c_a), veh/h	297	1655	530	231	1564	487	331	1466	456	628	1804	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.7	49.8	34.2	70.2	51.0	51.2	67.9	47.9	40.9	61.8	48.3	0.0
Incr Delay (d2), s/veh	23.2	154.6	0.0	145.3	20.3	43.4	214.3	1.8	0.3	17.9	191.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	46.5	1.7	9.4	24.3	26.1	16.7	13.4	3.8	12.1	56.9	0.0
LnGrp Delay(d),s/veh	90.8	204.4	34.3	215.4	71.2	94.6	282.3	49.7	41.2	79.7	240.1	0.0
LnGrp LOS	F	F	C	F	E	F	F	D	D	E	F	
Approach Vol, veh/h		2526			2330			1653			3080	
Approach Delay, s/veh		188.8			94.1			116.0			213.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	59.0	17.8	53.7	30.1	48.9	15.0	56.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 15	53.9	* 14	47.6	28.0	40.9	* 10	* 51
Max Q Clear Time (g_c+I1), s	16.6	55.9	13.7	50.1	24.9	30.4	12.2	52.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	9.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	161.0
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	990	322	121	782	54	118	1246	458	17	2647	150
Future Volume (veh/h)	46	990	322	121	782	54	118	1246	458	17	2647	150
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	46	990	322	121	782	54	118	1246	458	17	2647	150
Adj No. of Lanes	2	3	1	2	3	1	1	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	79	1108	345	139	1197	373	126	2907	905	35	2598	809
Arrive On Green	0.02	0.22	0.22	0.04	0.24	0.24	0.07	0.58	0.58	0.01	0.52	0.52
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	1757	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	46	990	322	121	782	54	118	1246	458	17	2647	150
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1757	1679	1568	1704	1679	1568
Q Serve(g_s), s	1.9	26.7	28.2	4.9	19.6	3.8	9.3	19.4	24.4	0.7	72.1	7.2
Cycle Q Clear(g_c), s	1.9	26.7	28.2	4.9	19.6	3.8	9.3	19.4	24.4	0.7	72.1	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	79	1108	345	139	1197	373	126	2907	905	35	2598	809
V/C Ratio(X)	0.59	0.89	0.93	0.87	0.65	0.14	0.94	0.43	0.51	0.48	1.02	0.19
Avail Cap(c_a), veh/h	93	1117	348	139	1197	373	126	2907	905	83	2598	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.6	52.9	53.5	66.6	48.1	42.0	64.6	16.6	17.6	68.8	33.8	18.1
Incr Delay (d2), s/veh	6.8	9.4	31.6	40.8	1.3	0.2	61.4	0.1	0.5	9.8	22.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	13.3	15.2	3.1	9.3	1.7	6.7	9.0	10.6	0.4	38.6	3.1
LnGrp Delay(d),s/veh	74.4	62.3	85.1	107.4	49.3	42.2	125.9	16.7	18.1	78.6	56.3	18.1
LnGrp LOS	E	E	F	F	D	D	F	B	B	E	F	B
Approach Vol, veh/h		1358			957			1822			2814	
Approach Delay, s/veh		68.1			56.3			24.1			54.4	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	77.1	11.2	35.9	6.9	85.7	8.7	38.4
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	10.0	72.1	5.7	* 31	3.4	78.7	3.8	* 33
Max Q Clear Time (g_c+I1), s	11.3	74.1	6.9	30.2	2.7	26.4	3.9	21.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.6	0.0	42.5	0.0	8.8

Intersection Summary	
HCM 2010 Ctrl Delay	49.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	863	364	95	966	107	228	1076	100	201	2253	584
Future Volume (veh/h)	372	863	364	95	966	107	228	1076	100	201	2253	584
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1832	1900	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	372	863	364	95	966	107	228	1076	100	201	2253	584
Adj No. of Lanes	2	2	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	3	3	3	3	3	3	3
Cap, veh/h	420	769	323	114	1134	363	231	2117	659	252	2147	669
Arrive On Green	0.12	0.32	0.32	0.03	0.23	0.23	0.07	0.42	0.42	0.07	0.43	0.43
Sat Flow, veh/h	3408	2392	1004	3408	4893	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	372	627	600	95	966	107	228	1076	100	201	2253	584
Grp Sat Flow(s),veh/h/ln	1704	1741	1655	1704	1631	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	15.0	45.0	45.0	3.9	26.5	7.9	9.4	22.0	5.5	8.1	59.7	47.7
Cycle Q Clear(g_c), s	15.0	45.0	45.0	3.9	26.5	7.9	9.4	22.0	5.5	8.1	59.7	47.7
Prop In Lane	1.00		0.61	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	420	559	532	114	1134	363	231	2117	659	252	2147	669
V/C Ratio(X)	0.89	1.12	1.13	0.83	0.85	0.29	0.99	0.51	0.15	0.80	1.05	0.87
Avail Cap(c_a), veh/h	450	559	532	114	1134	363	231	2117	659	341	2147	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.4	47.5	47.5	67.3	51.5	44.3	65.2	29.9	25.1	63.8	40.2	36.7
Incr Delay (d2), s/veh	17.9	75.7	79.3	37.8	6.1	0.2	55.0	0.2	0.1	9.2	33.8	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	33.4	32.3	2.4	12.5	3.4	6.2	10.2	2.4	4.1	34.4	22.9
LnGrp Delay(d),s/veh	78.2	123.2	126.8	105.0	57.6	44.5	120.2	30.1	25.2	73.0	74.0	49.0
LnGrp LOS	E	F	F	F	E	D	F	C	C	E	F	D
Approach Vol, veh/h		1599			1168			1404			3038	
Approach Delay, s/veh		114.1			60.2			44.4			69.1	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	64.0	22.8	37.4	15.0	64.8	10.2	50.0
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	14.0	* 55	18.5	* 31	9.5	* 60	4.7	* 45
Max Q Clear Time (g_c+I1), s	10.1	24.0	17.0	28.5	11.4	61.7	5.9	47.0
Green Ext Time (p_c), s	0.2	29.6	0.2	1.9	0.0	0.0	0.0	0.0

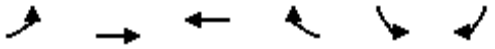
Intersection Summary	
HCM 2010 Ctrl Delay	72.8
HCM 2010 LOS	E

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	689	182	775	773	232	570
Future Volume (veh/h)	689	182	775	773	232	570
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	689	182	775	773	232	570
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	671	177	781	2570	312	976
Arrive On Green	0.24	0.24	0.44	0.73	0.18	0.18
Sat Flow, veh/h	2837	725	1757	3597	1757	1568
Grp Volume(v), veh/h	440	431	775	773	232	570
Grp Sat Flow(s),veh/h/ln	1752	1717	1757	1752	1757	1568
Q Serve(g_s), s	22.0	22.0	39.5	6.8	11.3	16.0
Cycle Q Clear(g_c), s	22.0	22.0	39.5	6.8	11.3	16.0
Prop In Lane		0.42	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	428	420	781	2570	312	976
V/C Ratio(X)	1.03	1.03	0.99	0.30	0.74	0.58
Avail Cap(c_a), veh/h	428	420	781	2570	312	976
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	34.0	24.9	4.1	35.1	10.1
Incr Delay (d2), s/veh	50.5	51.1	30.3	0.1	9.2	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	16.3	25.5	3.2	6.3	8.5
LnGrp Delay(d),s/veh	84.5	85.1	55.1	4.2	44.3	11.0
LnGrp LOS	F	F	E	A	D	B
Approach Vol, veh/h	871			1548	802	
Approach Delay, s/veh	84.8			29.7	20.6	
Approach LOS	F			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		20.0	44.0	26.0				70.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	40.0	22.0				66.0
Max Q Clear Time (g_c+I1), s		18.0	41.5	24.0				8.8
Green Ext Time (p_c), s		0.0	0.0	0.0				17.7

Intersection Summary	
HCM 2010 Ctrl Delay	42.3
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	2274	1641	657	777	316
Future Volume (veh/h)	141	2274	1641	657	777	316
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	141	2274	1641	657	777	316
Adj No. of Lanes	1	3	3	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	132	2644	1493	573	717	640
Arrive On Green	0.08	0.52	0.42	0.42	0.41	0.41
Sat Flow, veh/h	1757	5202	3749	1376	1757	1568
Grp Volume(v), veh/h	141	2274	1533	765	777	316
Grp Sat Flow(s),veh/h/ln	1757	1679	1679	1602	1757	1568
Q Serve(g_s), s	9.0	46.9	50.0	50.0	49.0	17.9
Cycle Q Clear(g_c), s	9.0	46.9	50.0	50.0	49.0	17.9
Prop In Lane	1.00			0.86	1.00	1.00
Lane Grp Cap(c), veh/h	132	2644	1399	667	717	640
V/C Ratio(X)	1.07	0.86	1.10	1.15	1.08	0.49
Avail Cap(c_a), veh/h	132	2644	1399	667	717	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	24.7	35.0	35.0	35.5	26.3
Incr Delay (d2), s/veh	98.4	3.1	54.8	82.5	58.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	22.4	33.8	37.4	35.3	16.8
LnGrp Delay(d),s/veh	153.9	27.8	89.8	117.5	93.9	26.9
LnGrp LOS	F	C	F	F	F	C
Approach Vol, veh/h		2415	2298		1093	
Approach Delay, s/veh		35.2	99.0		74.5	
Approach LOS		D	F		E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				67.0		53.0	13.0	54.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				63.0		49.0	9.0	50.0
Max Q Clear Time (g_c+I1), s				48.9		51.0	11.0	52.0
Green Ext Time (p_c), s				14.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	1805	98	956	1148	361	89	625	769	411	838	82
Future Volume (veh/h)	283	1805	98	956	1148	361	89	625	769	411	838	82
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	283	1805	98	956	1148	361	89	625	769	411	838	82
Adj No. of Lanes	2	3	1	2	3	1	1	1	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	333	1553	498	704	2085	668	109	492	418	295	1021	457
Arrive On Green	0.10	0.32	0.32	0.21	0.43	0.43	0.06	0.27	0.27	0.09	0.29	0.29
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	1757	1845	1568	3408	3505	1568
Grp Volume(v), veh/h	283	1805	98	956	1148	361	89	625	769	411	838	82
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1757	1845	1568	1704	1752	1568
Q Serve(g_s), s	12.3	47.6	6.8	31.0	26.4	25.7	7.5	40.0	40.0	13.0	33.4	5.9
Cycle Q Clear(g_c), s	12.3	47.6	6.8	31.0	26.4	25.7	7.5	40.0	40.0	13.0	33.4	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	333	1553	498	704	2085	668	109	492	418	295	1021	457
V/C Ratio(X)	0.85	1.16	0.20	1.36	0.55	0.54	0.82	1.27	1.84	1.39	0.82	0.18
Avail Cap(c_a), veh/h	432	1553	498	704	2085	668	129	492	418	295	1021	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.6	51.2	37.3	59.5	32.3	32.1	69.5	55.0	55.0	68.5	49.5	39.7
Incr Delay (d2), s/veh	11.9	80.6	0.3	169.9	0.4	1.1	28.3	137.0	386.8	195.6	5.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	33.0	3.0	31.2	12.0	11.4	4.5	39.1	62.2	14.1	16.9	2.6
LnGrp Delay(d),s/veh	78.4	131.8	37.6	229.4	32.7	33.2	97.8	192.0	441.8	264.1	54.9	39.9
LnGrp LOS	E	F	D	F	C	C	F	F	F	F	D	D
Approach Vol, veh/h		2186			2465			1483			1331	
Approach Delay, s/veh		120.7			109.1			315.9			118.6	
Approach LOS		F			F			F			F	

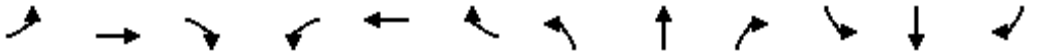
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	54.0	13.3	47.7	18.7	70.3	17.0	44.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	31.0	47.6	11.0	42.0	19.0	59.6	13.0	40.0
Max Q Clear Time (g_c+I1), s	33.0	49.6	9.5	35.4	14.3	28.4	15.0	42.0
Green Ext Time (p_c), s	0.0	0.0	0.0	5.6	0.4	30.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	155.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	577	37	168	638	12	39	299	157	2	657	123
Future Volume (veh/h)	9	577	37	168	638	12	39	299	157	2	657	123
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1759	1759	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	9	577	37	168	638	12	39	299	157	2	657	123
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	8	8	8	3	3	3	3	3	3
Cap, veh/h	48	579	37	166	720	14	64	924	474	50	611	114
Arrive On Green	0.03	0.35	0.35	0.10	0.42	0.42	0.04	0.41	0.41	0.03	0.40	0.40
Sat Flow, veh/h	1707	1667	107	1675	1721	32	1757	2244	1150	1757	1512	283
Grp Volume(v), veh/h	9	0	614	168	0	650	39	232	224	2	0	780
Grp Sat Flow(s),veh/h/ln	1707	0	1774	1675	0	1754	1757	1752	1642	1757	0	1795
Q Serve(g_s), s	0.7	0.0	48.8	14.0	0.0	48.4	3.1	12.7	13.1	0.2	0.0	57.0
Cycle Q Clear(g_c), s	0.7	0.0	48.8	14.0	0.0	48.4	3.1	12.7	13.1	0.2	0.0	57.0
Prop In Lane	1.00		0.06	1.00		0.02	1.00		0.70	1.00		0.16
Lane Grp Cap(c), veh/h	48	0	616	166	0	733	64	722	676	50	0	725
V/C Ratio(X)	0.19	0.00	1.00	1.01	0.00	0.89	0.61	0.32	0.33	0.04	0.00	1.08
Avail Cap(c_a), veh/h	169	0	616	166	0	733	174	722	676	174	0	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.0	0.0	46.0	63.6	0.0	38.0	67.0	28.1	28.3	66.7	0.0	42.1
Incr Delay (d2), s/veh	1.8	0.0	35.5	72.6	0.0	12.6	9.1	0.3	0.3	0.3	0.0	55.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	29.9	9.8	0.0	26.0	1.7	6.2	6.0	0.1	0.0	39.4
LnGrp Delay(d),s/veh	68.8	0.0	81.5	136.3	0.0	50.6	76.2	28.4	28.6	67.0	0.0	97.8
LnGrp LOS	E		F	F		D	E	C	C	E		F
Approach Vol, veh/h		623			818			495			782	
Approach Delay, s/veh		81.3			68.2			32.2			97.7	
Approach LOS		F			E			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	62.1	18.0	53.0	9.1	61.0	8.0	63.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	57.0	14.0	49.0	14.0	57.0	14.0	49.0
Max Q Clear Time (g_c+I1), s	2.2	15.1	16.0	50.8	5.1	59.0	2.7	50.4
Green Ext Time (p_c), s	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	73.1
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1059	44	925	27	77	110	645	2110	17	146	1045	974
Future Volume (veh/h)	1059	44	925	27	77	110	645	2110	17	146	1045	974
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	1090	0	925	27	77	110	645	2110	17	146	1045	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	982	0	438	22	62	72	427	2249	18	111	1279	398
Arrive On Green	0.28	0.00	0.28	0.05	0.05	0.05	0.25	0.44	0.44	0.06	0.26	0.00
Sat Flow, veh/h	3480	0	1553	473	1348	1568	1740	5104	41	1740	4988	1553
Grp Volume(v), veh/h	1090	0	925	104	0	110	645	1374	753	146	1045	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1821	0	1568	1740	1663	1820	1740	1663	1553
Q Serve(g_s), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.1	47.1	7.6	23.5	0.0
Cycle Q Clear(g_c), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.1	47.1	7.6	23.5	0.0
Prop In Lane	1.00		1.00	0.26		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	982	0	438	84	0	72	427	1465	802	111	1279	398
V/C Ratio(X)	1.11	0.00	2.11	1.24	0.00	1.52	1.51	0.94	0.94	1.32	0.82	0.00
Avail Cap(c_a), veh/h	982	0	438	84	0	72	427	1487	814	111	1303	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	0.0	42.9	57.0	0.0	57.0	45.1	31.8	31.9	55.9	41.8	0.0
Incr Delay (d2), s/veh	63.9	0.0	507.6	176.1	0.0	293.7	241.8	11.4	18.0	193.3	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.8	0.0	76.2	6.9	0.0	8.3	42.7	23.9	27.6	9.6	11.3	0.0
LnGrp Delay(d),s/veh	106.7	0.0	550.5	233.0	0.0	350.7	286.9	43.2	49.8	249.2	45.6	0.0
LnGrp LOS	F		F	F		F	F	D	D	F	D	
Approach Vol, veh/h		2015			214			2772			1191	
Approach Delay, s/veh		310.4			293.5			101.7			70.5	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	34.0	35.4		11.0	12.0	57.4		39.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 29	31.2		5.5	* 7.6	* 53		33.7
Max Q Clear Time (g_c+I1), s	31.3	25.5		7.5	9.6	49.1		35.7
Green Ext Time (p_c), s	0.0	4.5		0.0	0.0	3.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	170.3
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
58: Zinfandel Drive & Douglas Road

12/07/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1594	135	456	1143	436	80	503	412	624	692	266
Future Volume (veh/h)	159	1594	135	456	1143	436	80	503	412	624	692	266
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	159	1594	135	456	1143	436	80	503	412	624	692	266
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	204	1556	485	457	1916	597	121	820	367	617	1330	595
Arrive On Green	0.06	0.31	0.31	0.13	0.38	0.38	0.04	0.23	0.23	0.18	0.38	0.38
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	159	1594	135	456	1143	436	80	503	412	624	692	266
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	6.7	44.9	9.5	19.4	26.4	34.7	3.4	18.6	34.0	26.3	22.2	18.4
Cycle Q Clear(g_c), s	6.7	44.9	9.5	19.4	26.4	34.7	3.4	18.6	34.0	26.3	22.2	18.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	1556	485	457	1916	597	121	820	367	617	1330	595
V/C Ratio(X)	0.78	1.02	0.28	1.00	0.60	0.73	0.66	0.61	1.12	1.01	0.52	0.45
Avail Cap(c_a), veh/h	277	1556	485	457	1916	597	171	820	367	617	1330	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	50.2	38.0	62.9	36.1	38.6	69.2	49.8	55.7	59.5	34.9	33.7
Incr Delay (d2), s/veh	6.3	29.2	0.1	41.2	0.4	4.0	2.3	1.0	84.6	39.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	25.0	4.1	11.7	12.3	15.7	1.6	9.1	23.3	15.7	10.8	8.0
LnGrp Delay(d),s/veh	73.7	79.4	38.1	104.1	36.4	42.6	71.5	50.8	140.3	98.6	35.0	33.9
LnGrp LOS	E	F	D	F	D	D	E	D	F	F	D	C
Approach Vol, veh/h		1888			2035			995			1582	
Approach Delay, s/veh		76.0			52.9			89.5			59.9	
Approach LOS		E			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	60.2	10.7	60.2	24.6	49.8	31.8	39.1
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	11.8	* 52	7.3	* 53	* 20	* 45	26.3	* 34
Max Q Clear Time (g_c+I1), s	8.7	36.7	5.4	24.2	21.4	46.9	28.3	36.0
Green Ext Time (p_c), s	0.0	9.2	0.0	2.5	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.9
HCM 2010 LOS	E

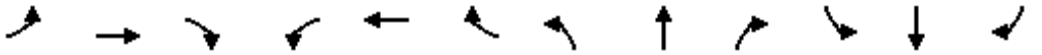
Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	706	1569	392	42	860	300	283	1290	46	729	1761	372
Future Volume (veh/h)	706	1569	392	42	860	300	283	1290	46	729	1761	372
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	706	1569	392	42	860	300	283	1290	46	729	1761	372
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	625	1923	599	72	1106	344	277	1230	383	664	1801	561
Arrive On Green	0.18	0.38	0.38	0.02	0.22	0.22	0.08	0.25	0.25	0.20	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	706	1569	392	42	860	300	283	1290	46	729	1761	372
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	27.5	42.0	30.9	1.8	24.1	27.7	12.3	37.0	3.5	29.5	52.3	30.2
Cycle Q Clear(g_c), s	27.5	42.0	30.9	1.8	24.1	27.7	12.3	37.0	3.5	29.5	52.3	30.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	625	1923	599	72	1106	344	277	1230	383	664	1801	561
V/C Ratio(X)	1.13	0.82	0.65	0.58	0.78	0.87	1.02	1.05	0.12	1.10	0.98	0.66
Avail Cap(c_a), veh/h	625	1923	599	84	1141	355	277	1230	383	664	1801	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	41.7	38.2	72.8	55.1	56.5	68.9	56.5	43.9	60.3	47.3	40.3
Incr Delay (d2), s/veh	77.5	2.7	2.1	2.8	3.0	19.0	60.1	39.5	0.1	65.0	16.1	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.7	19.9	13.7	0.9	11.5	13.8	8.0	21.5	1.5	19.7	26.7	13.3
LnGrp Delay(d),s/veh	138.8	44.3	40.3	75.6	58.1	75.5	129.0	96.0	43.9	125.3	63.4	42.6
LnGrp LOS	F	D	D	E	E	E	F	F	D	F	E	D
Approach Vol, veh/h		2667			1202			1619			2862	
Approach Delay, s/veh		68.7			63.1			100.3			76.5	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	60.2	33.0	39.1	35.0	43.0	8.7	63.4
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	12.3	53.6	27.5	* 34	29.5	* 37	3.7	* 57
Max Q Clear Time (g_c+I1), s	14.3	54.3	29.5	29.7	31.5	39.0	3.8	44.0
Green Ext Time (p_c), s	0.0	0.0	0.0	3.2	0.0	0.0	0.0	7.5

Intersection Summary	
HCM 2010 Ctrl Delay	76.7
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	677	1598	347	112	865	360	264	1249	102	701	1858	829
Future Volume (veh/h)	677	1598	347	112	865	360	264	1249	102	701	1858	829
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	677	1598	347	112	865	360	264	1249	102	701	1858	829
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
Arrive On Green	0.20	0.34	0.34	0.04	0.18	0.18	0.08	0.26	0.26	0.20	0.38	0.38
Sat Flow, veh/h	3408	5036	1568	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	677	1598	347	112	865	360	264	1249	102	701	1858	829
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	27.5	43.1	26.4	4.8	25.2	25.5	10.9	34.6	7.3	28.7	51.4	53.5
Cycle Q Clear(g_c), s	27.5	43.1	26.4	4.8	25.2	25.5	10.9	34.6	7.3	28.7	51.4	53.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
V/C Ratio(X)	1.01	0.94	0.66	0.83	0.99	1.32	0.95	0.97	0.25	1.01	0.97	1.40
Avail Cap(c_a), veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	45.1	39.5	66.6	57.1	57.3	64.0	51.2	41.1	55.7	42.6	43.3
Incr Delay (d2), s/veh	37.6	10.8	2.4	32.0	27.5	168.2	40.7	17.3	0.1	37.5	15.0	188.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4	21.7	11.8	2.7	13.4	23.3	6.7	18.0	3.2	17.0	26.2	53.9
LnGrp Delay(d),s/veh	93.9	55.8	41.9	98.7	84.6	225.4	104.7	68.6	41.2	93.1	57.6	232.0
LnGrp LOS	F	E	D	F	F	F	F	E	D	F	E	F
Approach Vol, veh/h		2622			1337			1615			3388	
Approach Delay, s/veh		63.8			123.7			72.8			107.6	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	59.0	33.0	31.0	34.2	41.8	11.3	52.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	11.5	53.5	27.5	25.5	28.7	36.3	5.8	47.2
Max Q Clear Time (g_c+I1), s	12.9	55.5	29.5	27.5	30.7	36.6	6.8	45.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	90.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	759	1164	161	178	787	163	130	885	308	239	1459	455
Future Volume (veh/h)	759	1164	161	178	787	163	130	885	308	239	1459	455
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1845
Adj Flow Rate, veh/h	759	1164	161	178	787	163	130	885	308	239	1459	455
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	3
Cap, veh/h	1068	1098	491	710	730	327	142	1150	358	293	1413	444
Arrive On Green	0.31	0.31	0.31	0.21	0.21	0.21	0.04	0.23	0.23	0.09	0.28	0.28
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	4988	1553	3375	4988	1568
Grp Volume(v), veh/h	759	1164	161	178	787	163	130	885	308	239	1459	455
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1663	1553	1688	1663	1568
Q Serve(g_s), s	23.6	37.6	9.4	5.2	25.0	11.0	4.6	19.9	22.8	8.3	34.0	34.0
Cycle Q Clear(g_c), s	23.6	37.6	9.4	5.2	25.0	11.0	4.6	19.9	22.8	8.3	34.0	34.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1068	1098	491	710	730	327	142	1150	358	293	1413	444
V/C Ratio(X)	0.71	1.06	0.33	0.25	1.08	0.50	0.92	0.77	0.86	0.81	1.03	1.02
Avail Cap(c_a), veh/h	1068	1098	491	710	730	327	142	1150	358	318	1413	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	41.2	31.5	39.7	47.5	42.0	57.3	43.2	44.3	53.8	43.0	43.0
Incr Delay (d2), s/veh	2.2	44.5	0.4	0.2	56.3	1.2	50.9	3.2	18.6	14.1	32.7	49.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	24.9	4.1	2.5	17.8	4.9	3.2	9.5	11.7	4.5	19.8	20.7
LnGrp Delay(d),s/veh	38.6	85.7	31.9	39.9	103.8	43.1	108.2	46.4	62.9	68.0	75.7	92.0
LnGrp LOS	D	F	C	D	F	D	F	D	E	E	F	F
Approach Vol, veh/h		2084			1128			1323			2153	
Approach Delay, s/veh		64.4			84.9			56.3			78.3	
Approach LOS		E			F			E			E	

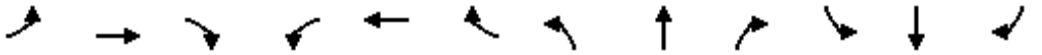
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	39.0		43.0	15.3	32.7		29.0
Change Period (Y+Rc), s	4.0	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	5.0	34.0		* 38	* 11	26.8		25.0
Max Q Clear Time (g_c+I1), s	6.6	36.0		39.6	10.3	24.8		27.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	1.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	70.7
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
70: Jackson Road & Sunrise Boulevard

12/07/2018

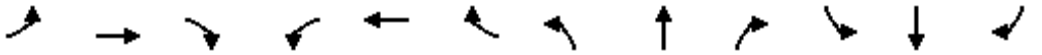


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	364	1698	102	333	951	262	66	704	336	307	1186	293
Future Volume (veh/h)	364	1698	102	333	951	262	66	704	336	307	1186	293
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1845	1827	1845	1845
Adj Flow Rate, veh/h	364	1698	102	333	951	262	66	704	336	307	1186	293
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	428	1643	512	323	1487	578	108	996	446	284	1181	725
Arrive On Green	0.13	0.33	0.33	0.09	0.30	0.30	0.03	0.28	0.28	0.08	0.34	0.34
Sat Flow, veh/h	3408	5036	1568	3408	5036	1524	3408	3505	1568	3375	3505	1568
Grp Volume(v), veh/h	364	1698	102	333	951	262	66	704	336	307	1186	293
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1524	1704	1752	1568	1688	1752	1568
Q Serve(g_s), s	9.9	31.0	4.5	9.0	15.6	12.2	1.8	17.1	18.5	8.0	32.0	11.7
Cycle Q Clear(g_c), s	9.9	31.0	4.5	9.0	15.6	12.2	1.8	17.1	18.5	8.0	32.0	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	428	1643	512	323	1487	578	108	996	446	284	1181	725
V/C Ratio(X)	0.85	1.03	0.20	1.03	0.64	0.45	0.61	0.71	0.75	1.08	1.00	0.40
Avail Cap(c_a), veh/h	431	1643	512	323	1487	578	108	996	446	284	1181	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	32.0	23.1	43.0	29.1	22.1	45.4	30.5	31.0	43.5	31.5	16.9
Incr Delay (d2), s/veh	14.8	31.3	0.2	58.4	0.9	0.6	9.9	2.3	7.1	76.3	27.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	19.1	2.0	6.8	7.3	5.3	1.0	8.5	8.9	6.7	19.9	5.1
LnGrp Delay(d),s/veh	55.4	63.3	23.2	101.4	30.0	22.6	55.3	32.8	38.1	119.8	58.8	17.2
LnGrp LOS	E	F	C	F	C	C	E	C	D	F	F	B
Approach Vol, veh/h		2164			1546			1106			1786	
Approach Delay, s/veh		60.1			44.1			35.7			62.5	
Approach LOS		E			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	37.0	7.0	38.0	15.9	34.1	12.0	33.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	9.0	31.0	3.0	32.0	12.0	28.0	8.0	27.0
Max Q Clear Time (g_c+I1), s	11.0	33.0	3.8	34.0	11.9	17.6	10.0	20.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	9.7	0.0	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	52.9
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	976	768	4	64	442	80	54	847	73	86	686	690
Future Volume (veh/h)	976	768	4	64	442	80	54	847	73	86	686	690
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	976	768	4	64	442	80	54	847	73	86	686	690
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	989	1672	748	107	765	342	93	837	375	116	861	385
Arrive On Green	0.30	0.49	0.49	0.03	0.22	0.22	0.03	0.24	0.24	0.03	0.25	0.25
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3343	3438	1538	3343	3438	1538
Grp Volume(v), veh/h	976	768	4	64	442	80	54	847	73	86	686	690
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1672	1719	1538	1672	1719	1538
Q Serve(g_s), s	31.3	15.8	0.1	2.0	12.3	4.6	1.7	26.0	4.0	2.7	19.9	26.7
Cycle Q Clear(g_c), s	31.3	15.8	0.1	2.0	12.3	4.6	1.7	26.0	4.0	2.7	19.9	26.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	989	1672	748	107	765	342	93	837	375	116	861	385
V/C Ratio(X)	0.99	0.46	0.01	0.60	0.58	0.23	0.58	1.01	0.19	0.74	0.80	1.79
Avail Cap(c_a), veh/h	989	1706	763	174	868	388	94	837	375	116	861	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	17.9	13.9	51.0	36.9	33.9	51.3	40.4	32.1	51.1	37.5	40.0
Incr Delay (d2), s/veh	25.2	0.4	0.0	2.0	1.5	0.7	5.7	34.0	0.3	20.1	5.3	366.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	7.5	0.1	1.0	5.9	2.0	0.9	16.2	1.7	1.6	10.1	50.5
LnGrp Delay(d),s/veh	62.4	18.3	13.9	53.0	38.4	34.6	57.0	74.4	32.3	71.1	42.7	406.3
LnGrp LOS	E	B	B	D	D	C	E	F	C	E	D	F
Approach Vol, veh/h		1748			586			974			1462	
Approach Delay, s/veh		42.9			39.5			70.3			216.0	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.5	30.0	7.6	32.7	8.0	58.4	8.3	32.0
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	4.6	6.0
Max Green Setting (Gmax), s	31.9	27.2	3.0	26.7	5.6	53.5	3.7	26.0
Max Q Clear Time (g_c+I1), s	33.3	14.3	3.7	28.7	4.0	17.8	4.7	28.0
Green Ext Time (p_c), s	0.0	9.6	0.0	0.0	0.0	20.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	101.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	1214	465	44	1647	192	186	747	77	53	1388	148
Future Volume (veh/h)	185	1214	465	44	1647	192	186	747	77	53	1388	148
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	185	1214	465	44	1647	192	186	747	77	53	1388	148
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	188	1736	541	100	1607	500	188	1429	639	110	1350	604
Arrive On Green	0.06	0.35	0.35	0.03	0.32	0.32	0.06	0.41	0.41	0.03	0.39	0.39
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	3471	1553	3375	3471	1553
Grp Volume(v), veh/h	185	1214	465	44	1647	192	186	747	77	53	1388	148
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1736	1553	1688	1736	1553
Q Serve(g_s), s	4.9	18.9	25.1	1.2	29.0	8.6	5.0	14.5	2.8	1.4	35.0	5.8
Cycle Q Clear(g_c), s	4.9	18.9	25.1	1.2	29.0	8.6	5.0	14.5	2.8	1.4	35.0	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	1736	541	100	1607	500	188	1429	639	110	1350	604
V/C Ratio(X)	0.99	0.70	0.86	0.44	1.02	0.38	0.99	0.52	0.12	0.48	1.03	0.25
Avail Cap(c_a), veh/h	188	1736	541	150	1607	500	188	1429	639	150	1350	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	25.3	27.3	42.9	30.5	23.6	42.5	19.8	16.4	42.8	27.5	18.6
Incr Delay (d2), s/veh	61.6	1.3	13.2	3.0	29.0	0.5	63.2	0.3	0.1	3.2	32.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	8.9	12.7	0.6	17.6	3.7	3.9	7.0	1.2	0.7	22.7	2.5
LnGrp Delay(d),s/veh	104.1	26.5	40.5	45.9	59.5	24.1	105.7	20.2	16.5	46.0	59.5	18.8
LnGrp LOS	F	C	D	D	F	C	F	C	B	D	F	B
Approach Vol, veh/h		1864			1883			1010			1589	
Approach Delay, s/veh		37.7			55.6			35.7			55.2	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	41.1	6.7	35.3	9.0	39.0	9.0	33.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	36.0	4.0	30.0	5.0	35.0	5.0	29.0
Max Q Clear Time (g_c+I1), s	3.4	16.5	3.2	27.1	7.0	37.0	6.9	31.0
Green Ext Time (p_c), s	0.0	15.3	0.0	2.9	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	6	262	50	9	1	194	1515	55	1	1895	0
Future Volume (veh/h)	1	6	262	50	9	1	194	1515	55	1	1895	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1759	1845	1845	1845	1792	1792	1900	1792	1792	1900
Adj Flow Rate, veh/h	1	6	262	50	9	1	194	1515	55	1	1895	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	208	219	372	78	81	69	212	1777	64	302	1986	0
Arrive On Green	0.12	0.12	0.12	0.04	0.04	0.04	0.12	0.53	0.53	0.18	0.58	0.00
Sat Flow, veh/h	1675	1759	1495	1757	1845	1568	1707	3352	121	1707	3495	0
Grp Volume(v), veh/h	1	6	262	50	9	1	194	768	802	1	1895	0
Grp Sat Flow(s),veh/h/ln	1675	1759	1495	1757	1845	1568	1707	1703	1771	1707	1703	0
Q Serve(g_s), s	0.1	0.4	16.0	3.6	0.6	0.1	14.5	49.7	50.1	0.1	67.3	0.0
Cycle Q Clear(g_c), s	0.1	0.4	16.0	3.6	0.6	0.1	14.5	49.7	50.1	0.1	67.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.00
Lane Grp Cap(c), veh/h	208	219	372	78	81	69	212	903	939	302	1986	0
V/C Ratio(X)	0.00	0.03	0.71	0.64	0.11	0.01	0.91	0.85	0.85	0.00	0.95	0.00
Avail Cap(c_a), veh/h	208	219	372	218	229	195	212	1164	1210	302	2010	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.4	49.5	44.1	60.5	59.1	58.9	55.7	25.9	26.0	43.6	25.2	0.0
Incr Delay (d2), s/veh	0.0	0.1	6.0	8.6	0.6	0.1	39.0	4.9	4.9	0.0	11.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	9.1	1.9	0.3	0.0	9.1	24.5	25.6	0.0	34.4	0.0
LnGrp Delay(d),s/veh	49.4	49.6	50.0	69.2	59.7	58.9	94.8	30.8	30.9	43.6	36.4	0.0
LnGrp LOS	D	D	D	E	E	E	F	C	C	D	D	
Approach Vol, veh/h		269			60			1764			1896	
Approach Delay, s/veh		50.0			67.6			37.9			36.4	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.8	72.3		20.0	20.0	79.1		9.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	88.0		16.0	16.0	76.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	52.1		18.0	16.5	69.3		5.6
Green Ext Time (p_c), s	1.8	16.2		0.0	0.0	5.7		0.1

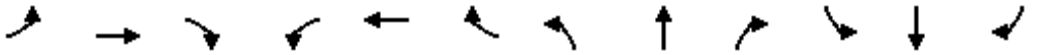
Intersection Summary	
HCM 2010 Ctrl Delay	38.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	361	47	22	1333	1729	487
Future Volume (veh/h)	361	47	22	1333	1729	487
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	361	47	22	1333	1729	487
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	526	242	71	2454	2125	951
Arrive On Green	0.15	0.15	0.02	0.70	0.61	0.61
Sat Flow, veh/h	3408	1568	3408	3597	3597	1568
Grp Volume(v), veh/h	361	47	22	1333	1729	487
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1752	1752	1568
Q Serve(g_s), s	5.5	1.4	0.3	10.1	21.0	9.7
Cycle Q Clear(g_c), s	5.5	1.4	0.3	10.1	21.0	9.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	526	242	71	2454	2125	951
V/C Ratio(X)	0.69	0.19	0.31	0.54	0.81	0.51
Avail Cap(c_a), veh/h	993	457	248	2618	2125	951
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	20.2	26.5	4.0	8.4	6.2
Incr Delay (d2), s/veh	1.6	0.4	2.5	0.2	2.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	1.3	0.2	4.9	10.6	4.3
LnGrp Delay(d),s/veh	23.6	20.6	28.9	4.2	10.9	6.6
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	408			1355	2216	
Approach Delay, s/veh	23.2			4.6	10.0	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		42.4		12.5	5.1	37.3		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		41.0		16.0	4.0	33.0		
Max Q Clear Time (g_c+I1), s		12.1		7.5	2.3	23.0		
Green Ext Time (p_c), s		26.3		1.0	0.0	9.7		

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	1103	319	76	721	6	585	1248	78	36	1015	366
Future Volume (veh/h)	360	1103	319	76	721	6	585	1248	78	36	1015	366
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	360	1103	319	76	721	6	585	1248	78	36	1015	366
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	381	1101	493	129	842	377	571	1552	694	90	1057	473
Arrive On Green	0.11	0.31	0.31	0.04	0.24	0.24	0.17	0.44	0.44	0.03	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	360	1103	319	76	721	6	585	1248	78	36	1015	366
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	9.4	28.1	15.7	2.0	17.6	0.3	15.0	27.6	2.6	0.9	25.5	19.0
Cycle Q Clear(g_c), s	9.4	28.1	15.7	2.0	17.6	0.3	15.0	27.6	2.6	0.9	25.5	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	1101	493	129	842	377	571	1552	694	90	1057	473
V/C Ratio(X)	0.95	1.00	0.65	0.59	0.86	0.02	1.02	0.80	0.11	0.40	0.96	0.77
Avail Cap(c_a), veh/h	381	1101	493	152	861	385	571	1552	694	152	1057	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	30.7	26.4	42.4	32.5	25.9	37.3	21.6	14.6	42.9	30.7	28.5
Incr Delay (d2), s/veh	32.4	27.6	3.0	4.2	8.4	0.0	44.0	3.2	0.1	2.8	18.8	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	17.7	7.2	1.0	9.5	0.1	10.5	13.9	1.1	0.5	15.0	9.2
LnGrp Delay(d),s/veh	71.8	58.3	29.4	46.6	40.9	25.9	81.2	24.8	14.7	45.7	49.5	36.3
LnGrp LOS	E	F	C	D	D	C	F	C	B	D	D	D
Approach Vol, veh/h		1782			803			1911			1417	
Approach Delay, s/veh		55.8			41.3			41.6			46.0	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	43.6	7.4	32.1	19.0	31.0	14.0	25.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.0	4.0	28.0	15.0	27.0	10.0	22.0
Max Q Clear Time (g_c+I1), s	2.9	29.6	4.0	30.1	17.0	27.5	11.4	19.6
Green Ext Time (p_c), s	0.0	7.6	0.0	0.0	0.0	0.0	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	46.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	986	643	205	657	673	338	490	391	785	976	0
Future Volume (veh/h)	0	986	643	205	657	673	338	490	391	785	976	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	986	643	205	657	673	338	490	391	785	976	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	5	1276	397	227	1880	585	409	794	355	818	1215	544
Arrive On Green	0.00	0.25	0.25	0.07	0.37	0.37	0.12	0.23	0.23	0.24	0.35	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	986	643	205	657	673	338	490	391	785	976	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	13.6	19.0	4.5	7.1	28.0	7.3	9.4	17.0	17.1	18.9	0.0
Cycle Q Clear(g_c), s	0.0	13.6	19.0	4.5	7.1	28.0	7.3	9.4	17.0	17.1	18.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	5	1276	397	227	1880	585	409	794	355	818	1215	544
V/C Ratio(X)	0.00	0.77	1.62	0.90	0.35	1.15	0.83	0.62	1.10	0.96	0.80	0.00
Avail Cap(c_a), veh/h	182	1276	397	227	1880	585	409	794	355	818	1215	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	26.0	28.0	34.8	16.9	23.5	32.2	26.1	29.0	28.1	22.2	0.0
Incr Delay (d2), s/veh	0.0	3.0	289.8	34.6	0.1	85.9	13.1	1.4	77.4	22.1	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.7	40.1	3.2	3.2	26.0	4.2	4.7	15.0	10.5	9.8	0.0
LnGrp Delay(d),s/veh	0.0	29.0	317.8	69.4	17.0	109.4	45.3	27.5	106.4	50.3	26.2	0.0
LnGrp LOS		C	F	E	B	F	D	C	F	D	C	
Approach Vol, veh/h		1629			1535			1219			1761	
Approach Delay, s/veh		143.0			64.5			57.8			36.9	
Approach LOS		F			E			E			D	

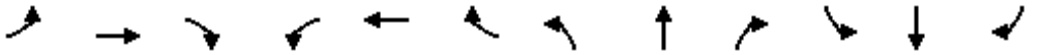
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	21.0	9.0	23.0	13.0	30.0	0.0	32.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	17.0	5.0	19.0	9.0	26.0	4.0	20.0
Max Q Clear Time (g_c+I1), s	19.1	19.0	6.5	21.0	9.3	20.9	0.0	30.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	76.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	314	1972	703	216	1299	0	621	518	228	86	613	276
Future Volume (veh/h)	314	1972	703	216	1299	0	621	518	228	86	613	276
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	314	1972	703	216	1299	0	621	518	228	86	613	276
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	387	1958	610	227	1723	536	606	1139	510	142	662	296
Arrive On Green	0.11	0.39	0.39	0.07	0.34	0.00	0.18	0.32	0.32	0.04	0.19	0.19
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	314	1972	703	216	1299	0	621	518	228	86	613	276
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	8.1	35.0	35.0	5.7	20.6	0.0	16.0	10.5	10.3	2.2	15.5	15.6
Cycle Q Clear(g_c), s	8.1	35.0	35.0	5.7	20.6	0.0	16.0	10.5	10.3	2.2	15.5	15.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	387	1958	610	227	1723	536	606	1139	510	142	662	296
V/C Ratio(X)	0.81	1.01	1.15	0.95	0.75	0.00	1.02	0.45	0.45	0.61	0.93	0.93
Avail Cap(c_a), veh/h	417	1958	610	227	1723	536	606	1139	510	189	662	296
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	27.5	27.5	41.9	26.2	0.0	37.0	24.1	24.0	42.4	35.9	35.9
Incr Delay (d2), s/veh	11.0	22.0	86.5	45.9	1.9	0.0	43.0	0.3	0.6	4.1	19.1	34.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	20.1	29.7	4.1	9.8	0.0	11.1	5.2	4.6	1.1	9.2	9.6
LnGrp Delay(d),s/veh	49.9	49.5	114.0	87.8	28.2	0.0	80.0	24.3	24.6	46.5	55.0	70.7
LnGrp LOS	D	F	F	F	C		F	C	C	D	D	E
Approach Vol, veh/h		2989			1515			1367			975	
Approach Delay, s/veh		64.7			36.7			49.7			58.7	
Approach LOS		E			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	33.2	10.0	39.0	20.0	21.0	14.2	34.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	28.0	6.0	35.0	16.0	17.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	4.2	12.5	7.7	37.0	18.0	17.6	10.1	22.6
Green Ext Time (p_c), s	0.0	8.5	0.0	0.0	0.0	0.0	0.1	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	54.7
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	851	822	72	1075	768	0	154	819	843	40	2036	759
Future Volume (veh/h)	851	822	72	1075	768	0	154	819	843	40	2036	759
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	851	822	72	1075	768	0	154	819	843	40	2036	759
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	880	755	235	994	923	287	142	2035	634	71	1930	601
Arrive On Green	0.26	0.15	0.15	0.29	0.18	0.00	0.04	0.40	0.40	0.02	0.38	0.38
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	851	822	72	1075	768	0	154	819	843	40	2036	759
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	29.6	18.0	4.9	35.0	17.6	0.0	5.0	13.9	48.5	1.4	46.0	46.0
Cycle Q Clear(g_c), s	29.6	18.0	4.9	35.0	17.6	0.0	5.0	13.9	48.5	1.4	46.0	46.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	880	755	235	994	923	287	142	2035	634	71	1930	601
V/C Ratio(X)	0.97	1.09	0.31	1.08	0.83	0.00	1.08	0.40	1.33	0.56	1.05	1.26
Avail Cap(c_a), veh/h	880	755	235	994	923	287	142	2035	634	85	1930	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	51.0	45.4	42.5	47.2	0.0	57.5	25.4	35.8	58.2	37.0	37.0
Incr Delay (d2), s/veh	22.5	59.3	0.7	53.2	6.5	0.0	99.9	0.1	159.3	6.8	36.7	131.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.7	12.5	2.2	23.8	8.7	0.0	4.3	6.5	48.9	0.7	27.8	41.8
LnGrp Delay(d),s/veh	66.4	110.3	46.2	95.7	53.8	0.0	157.4	25.6	195.0	65.0	73.7	168.2
LnGrp LOS	E	F	D	F	D		F	C	F	E	F	F
Approach Vol, veh/h		1745			1843			1816			2835	
Approach Delay, s/veh		86.3			78.2			115.4			98.9	
Approach LOS		F			E			F			F	

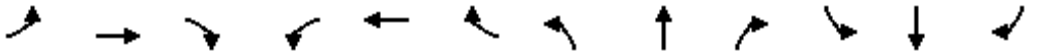
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	52.5	39.0	22.0	9.0	50.0	35.0	26.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	48.0	35.0	18.0	5.0	46.0	31.0	22.0
Max Q Clear Time (g_c+I1), s	3.4	50.5	37.0	20.0	7.0	48.0	31.6	19.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	95.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	553	1543	1044	34	1123	23	851	743	59	86	732	392
Future Volume (veh/h)	553	1543	1044	34	1123	23	851	743	59	86	732	392
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	553	1543	1044	34	1123	23	851	743	59	86	732	392
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	611	2015	627	63	1204	375	786	1333	596	139	668	299
Arrive On Green	0.18	0.40	0.40	0.02	0.24	0.24	0.23	0.38	0.38	0.04	0.19	0.19
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	553	1543	1044	34	1123	23	851	743	59	86	732	392
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	15.9	26.4	39.9	1.0	21.8	1.1	23.0	16.6	2.4	2.5	19.0	19.0
Cycle Q Clear(g_c), s	15.9	26.4	39.9	1.0	21.8	1.1	23.0	16.6	2.4	2.5	19.0	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	611	2015	627	63	1204	375	786	1333	596	139	668	299
V/C Ratio(X)	0.90	0.77	1.66	0.54	0.93	0.06	1.08	0.56	0.10	0.62	1.10	1.31
Avail Cap(c_a), veh/h	615	2015	627	103	1212	377	786	1333	596	171	668	299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	25.9	29.9	48.5	37.2	29.3	38.4	24.3	19.9	47.1	40.4	40.4
Incr Delay (d2), s/veh	16.8	1.8	305.9	7.2	12.9	0.1	56.8	0.5	0.1	4.5	64.1	162.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	12.5	70.5	0.5	11.5	0.5	16.9	8.1	1.1	1.3	15.0	21.7
LnGrp Delay(d),s/veh	56.9	27.7	335.8	55.7	50.0	29.4	95.2	24.8	20.0	51.6	104.5	202.8
LnGrp LOS	E	C	F	E	D	C	F	C	B	D	F	F
Approach Vol, veh/h		3140			1180			1653			1210	
Approach Delay, s/veh		135.3			49.8			60.9			132.6	
Approach LOS		F			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	41.9	5.8	43.9	27.0	23.0	21.9	27.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	37.0	3.0	39.0	23.0	19.0	18.0	24.0
Max Q Clear Time (g_c+I1), s	4.5	18.6	3.0	41.9	25.0	21.0	17.9	23.8
Green Ext Time (p_c), s	0.0	11.6	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	103.7
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	2168	47	170	1793	6	32	1488	251	14	1604	99
Future Volume (veh/h)	91	2168	47	170	1793	6	32	1488	251	14	1604	99
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	91	2168	47	170	1793	6	32	1488	251	14	1604	99
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	133	1995	621	160	2036	634	67	1534	686	40	1506	674
Arrive On Green	0.04	0.40	0.40	0.05	0.40	0.40	0.02	0.44	0.44	0.01	0.43	0.43
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	91	2168	47	170	1793	6	32	1488	251	14	1604	99
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.9	59.0	2.8	7.0	49.1	0.3	1.4	61.8	16.0	0.6	64.0	5.7
Cycle Q Clear(g_c), s	3.9	59.0	2.8	7.0	49.1	0.3	1.4	61.8	16.0	0.6	64.0	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	1995	621	160	2036	634	67	1534	686	40	1506	674
V/C Ratio(X)	0.69	1.09	0.08	1.06	0.88	0.01	0.48	0.97	0.37	0.35	1.07	0.15
Avail Cap(c_a), veh/h	137	1995	621	160	2036	634	92	1534	686	92	1506	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.7	45.0	28.0	71.0	41.0	26.5	72.2	40.9	28.0	73.0	42.5	25.9
Incr Delay (d2), s/veh	12.9	48.2	0.1	88.3	4.9	0.0	5.2	16.4	0.3	5.1	42.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	36.2	1.2	5.3	23.7	0.1	0.7	33.2	6.9	0.3	39.9	2.5
LnGrp Delay(d),s/veh	83.5	93.2	28.0	159.3	45.9	26.5	77.4	57.3	28.4	78.1	85.1	26.0
LnGrp LOS	F	F	C	F	D	C	E	E	C	E	F	C
Approach Vol, veh/h		2306			1969			1771			1717	
Approach Delay, s/veh		91.5			55.6			53.6			81.7	
Approach LOS		F			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	69.2	11.0	63.0	6.9	68.0	9.8	64.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	64.0	7.0	59.0	4.0	64.0	6.0	60.0
Max Q Clear Time (g_c+I1), s	2.6	63.8	9.0	61.0	3.4	66.0	5.9	51.1
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	0.0	0.0	8.8

Intersection Summary	
HCM 2010 Ctrl Delay	71.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	672	0	1044	749	123	3	799	947	98	732	304
Future Volume (veh/h)	301	672	0	1044	749	123	3	799	947	98	732	304
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	301	672	0	1044	749	123	3	799	947	98	732	304
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	384	815	254	1042	1788	557	11	1072	480	154	1219	546
Arrive On Green	0.11	0.16	0.00	0.31	0.36	0.36	0.00	0.31	0.31	0.05	0.35	0.35
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	301	672	0	1044	749	123	3	799	947	98	732	304
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	7.6	11.4	0.0	27.0	9.9	4.8	0.1	18.1	27.0	2.5	15.2	13.8
Cycle Q Clear(g_c), s	7.6	11.4	0.0	27.0	9.9	4.8	0.1	18.1	27.0	2.5	15.2	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	384	815	254	1042	1788	557	11	1072	480	154	1219	546
V/C Ratio(X)	0.78	0.82	0.00	1.00	0.42	0.22	0.27	0.75	1.97	0.63	0.60	0.56
Avail Cap(c_a), veh/h	502	913	284	1042	1788	557	154	1072	480	154	1219	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	35.8	0.0	30.6	21.6	19.9	43.9	27.6	30.6	41.4	23.7	23.3
Incr Delay (d2), s/veh	6.0	5.7	0.0	28.3	0.2	0.2	12.9	2.9	446.2	8.2	0.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.7	0.0	16.7	4.6	2.1	0.1	9.2	71.1	1.3	7.5	6.2
LnGrp Delay(d),s/veh	44.1	41.5	0.0	58.9	21.7	20.1	56.8	30.4	476.8	49.7	24.5	24.5
LnGrp LOS	D	D		F	C	C	E	C	F	D	C	C
Approach Vol, veh/h		973			1916			1749			1134	
Approach Delay, s/veh		42.3			41.9			272.2			26.7	
Approach LOS		D			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	31.0	31.0	18.3	4.3	34.7	13.9	35.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	27.0	27.0	16.0	4.0	27.0	13.0	30.0
Max Q Clear Time (g_c+I1), s	4.5	29.0	29.0	13.4	2.1	17.2	9.6	11.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	8.6	0.4	9.9

Intersection Summary	
HCM 2010 Ctrl Delay	108.8
HCM 2010 LOS	F

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Approach	EB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	110	965	1279
Demand Flow Rate, veh/h	113	994	1317
Vehicles Circulating, veh/h	1166	76	46
Vehicles Exiting, veh/h	197	1203	1024
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.7	8.8	11.5
Approach LOS	B	A	B

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	113	467	527	619	698
Cap Entry Lane, veh/h	500	1067	1071	1092	1094
Entry HV Adj Factor	0.973	0.972	0.971	0.971	0.971
Flow Entry, veh/h	110	454	512	601	678
Cap Entry, veh/h	486	1037	1040	1060	1063
V/C Ratio	0.226	0.438	0.492	0.567	0.638
Control Delay, s/veh	10.7	8.3	9.2	10.6	12.3
LOS	B	A	A	B	B
95th %tile Queue, veh	1	2	3	4	5

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	0	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	414	76	520
Demand Flow Rate, veh/h	0	427	78	536
Vehicles Circulating, veh/h	429	78	0	289
Vehicles Exiting, veh/h	396	0	429	216
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	5.6	3.9	14.8
Approach LOS	-	A	A	B

Lane	Left	Right	Left	Left
Designated Moves	LT	R	LT	TR
Assumed Moves	LT	R	LT	TR
RT Channelized				
Lane Util	0.590	0.410	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	252	175	78	536
Cap Entry Lane, veh/h	1045	1045	1130	846
Entry HV Adj Factor	0.970	0.971	0.972	0.971
Flow Entry, veh/h	244	170	76	520
Cap Entry, veh/h	1013	1015	1098	821
V/C Ratio	0.241	0.167	0.069	0.633
Control Delay, s/veh	5.9	5.1	3.9	14.8
LOS	A	A	A	B
95th %tile Queue, veh	1	1	0	5

Intersection	
Intersection Delay, s/veh	106.4
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	0	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	0	246	2192	2059
Demand Flow Rate, veh/h	0	254	2258	2121
Vehicles Circulating, veh/h	1978	2258	0	450
Vehicles Exiting, veh/h	593	0	1978	2062
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	132.6	49.5	163.8
Approach LOS	-	F	E	F

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	254	1061	1197	997	1124
Cap Entry Lane, veh/h	233	1130	1130	806	825
Entry HV Adj Factor	0.969	0.971	0.971	0.971	0.971
Flow Entry, veh/h	246	1030	1162	968	1091
Cap Entry, veh/h	225	1097	1097	783	801
V/C Ratio	1.092	0.939	1.059	1.237	1.363
Control Delay, s/veh	132.6	33.9	63.4	136.3	188.3
LOS	F	D	F	F	F
95th %tile Queue, veh	11	16	25	34	45

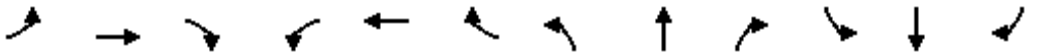
Intersection	
Intersection Delay, s/veh	215.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	0	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	749	0	2094	1920
Demand Flow Rate, veh/h	771	0	2157	1978
Vehicles Circulating, veh/h	1978	2257	452	0
Vehicles Exiting, veh/h	0	352	2297	2257
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	814.4	0.0	173.9	26.6
Approach LOS	F	-	F	D

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	771	1014	1143	930	1048
Cap Entry Lane, veh/h	283	805	823	1130	1130
Entry HV Adj Factor	0.971	0.971	0.971	0.971	0.971
Flow Entry, veh/h	749	984	1110	903	1018
Cap Entry, veh/h	275	781	800	1097	1097
V/C Ratio	2.725	1.260	1.388	0.823	0.927
Control Delay, s/veh	814.4	145.6	199.0	20.5	32.0
LOS	F	F	F	C	D
95th %tile Queue, veh	64	36	48	10	15

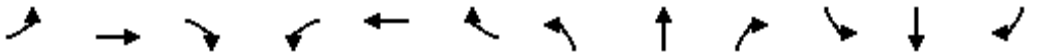
Cumulative Plus All Projects

Ultimate Mitigation AM



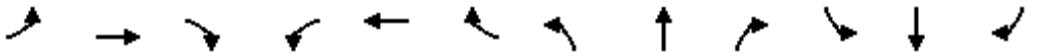
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	527	162	90	1149	805	577	1716	87	1265	1678	95
Future Volume (vph)	149	527	162	90	1149	805	577	1716	87	1265	1678	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3349		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3349		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	149	527	162	90	1149	805	577	1716	87	1265	1678	95
RTOR Reduction (vph)	0	22	0	0	0	479	0	0	60	0	0	56
Lane Group Flow (vph)	149	667	0	90	1149	326	577	1716	27	1265	1678	39
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	4.0	32.4		8.6	37.0	37.0	25.7	43.0	43.0	40.0	57.3	57.3
Effective Green, g (s)	4.0	32.4		8.6	37.0	37.0	25.7	43.0	43.0	40.0	57.3	57.3
Actuated g/C Ratio	0.03	0.23		0.06	0.26	0.26	0.18	0.31	0.31	0.29	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	96	775		206	917	722	618	1532	476	962	2041	635
v/s Ratio Prot	c0.04	0.20		0.03	c0.33		0.17	c0.34		c0.38	0.34	
v/s Ratio Perm						0.12			0.02			0.03
v/c Ratio	1.55	0.86		0.44	1.25	0.45	0.93	1.12	0.06	1.31	0.82	0.06
Uniform Delay, d1	68.0	51.6		63.4	51.5	43.0	56.3	48.5	34.2	50.0	36.8	25.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	293.1	9.7		1.5	122.9	0.5	21.3	63.4	0.0	149.2	2.8	0.0
Delay (s)	361.1	61.3		64.8	174.4	43.5	77.6	111.9	34.2	199.2	39.6	25.1
Level of Service	F	E		E	F	D	E	F	C	F	D	C
Approach Delay (s)		114.6			118.0			100.7			105.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	108.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



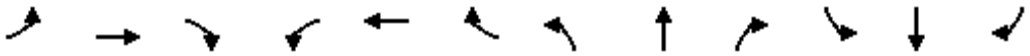
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	659	221	182	829	840	199	1837	190	505	814	71
Future Volume (vph)	39	659	221	182	829	840	199	1837	190	505	814	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91	0.91	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.96		1.00	0.96	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3373		1736	3184	1413	1736	4917		1736	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3373		1736	3184	1413	1736	4917		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	39	659	221	182	829	840	199	1837	190	505	814	71
RTOR Reduction (vph)	0	22	0	0	24	335	0	8	0	0	0	42
Lane Group Flow (vph)	39	858	0	182	1133	177	199	2019	0	505	814	29
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	7.6	39.8		16.0	48.2	48.2	21.8	48.0		31.0	57.2	57.2
Effective Green, g (s)	7.6	39.8		16.0	48.2	48.2	21.8	48.0		31.0	57.2	57.2
Actuated g/C Ratio	0.05	0.26		0.11	0.32	0.32	0.14	0.32		0.21	0.38	0.38
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	88	890		184	1017	451	250	1565		356	1892	589
v/s Ratio Prot	0.02	0.25		c0.10	c0.36		0.11	c0.41		c0.29	0.16	
v/s Ratio Perm						0.13						0.02
v/c Ratio	0.44	0.96		0.99	1.11	0.39	0.80	1.29		1.42	0.43	0.05
Uniform Delay, d1	69.5	54.8		67.3	51.3	39.9	62.4	51.4		59.9	34.7	29.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.5	21.7		62.5	65.1	0.6	15.9	135.4		204.2	0.2	0.0
Delay (s)	73.1	76.5		129.8	116.4	40.5	78.3	186.8		264.1	34.9	29.6
Level of Service	E	E		F	F	D	E	F		F	C	C
Approach Delay (s)		76.3			96.7			177.1			117.9	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	126.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	150.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	116.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	489	131	236	492	716	64	0	456	591	0	532
Future Volume (vph)	330	489	131	236	492	716	64	0	456	591	0	532
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	4.6	4.6	5.5	4.3	5.5		4.6	4.6	5.5	4.8	4.8
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00		0.95	0.95	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3400	3505	1568	3400	3505	1568		1520	1475	1649	1649	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.85	1.00	0.95	0.40	1.00
Satd. Flow (perm)	3400	3505	1568	3400	3505	1568		1306	1475	1649	688	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	330	489	131	236	492	716	64	0	456	591	0	532
RTOR Reduction (vph)	0	0	108	0	0	457	0	104	167	0	0	131
Lane Group Flow (vph)	330	489	23	236	492	259	0	161	88	295	296	401
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	9.5	17.6	17.6	9.1	17.5	36.0		34.2	34.2	18.5	58.0	58.0
Effective Green, g (s)	9.5	17.6	17.6	9.1	17.5	36.0		34.2	34.2	18.5	58.0	58.0
Actuated g/C Ratio	0.10	0.18	0.18	0.09	0.18	0.36		0.34	0.34	0.19	0.58	0.58
Clearance Time (s)	5.5	4.6	4.6	5.5	4.3	5.5		4.6	4.6	5.5	4.8	4.8
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	2.0		1.0	1.0	2.0	1.0	1.0
Lane Grp Cap (vph)	324	619	277	310	615	566		448	506	306	579	904
v/s Ratio Prot	c0.10	0.14		0.07	c0.14	0.08				c0.18	0.09	
v/s Ratio Perm			0.01			0.08		0.12	0.06		c0.20	0.26
v/c Ratio	1.02	0.79	0.08	0.76	0.80	0.46		0.36	0.17	0.96	0.51	0.44
Uniform Delay, d1	45.0	39.2	34.3	44.2	39.4	24.3		24.5	22.8	40.2	12.4	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.8	6.2	0.0	9.5	7.0	0.2		0.2	0.1	41.2	0.3	0.1
Delay (s)	99.8	45.4	34.3	53.7	46.3	24.5		24.7	22.9	81.5	12.7	11.8
Level of Service	F	D	C	D	D	C		C	C	F	B	B
Approach Delay (s)		62.8			36.7			23.8			30.4	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	20.4
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

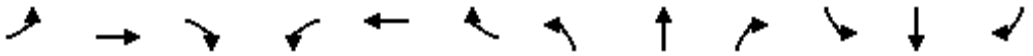


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	412	1	0	648	7	5	302	0	0	168	188
Future Volume (vph)	331	412	1	0	648	7	5	302	0	0	168	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	
Frt	1.00	1.00			1.00		1.00	1.00			0.92	
Flt Protected	0.95	1.00			1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1671	1759			1725		1671	1759			1620	
Flt Permitted	0.95	1.00			1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1671	1759			1725		1671	1759			1620	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	331	412	1	0	648	7	5	302	0	0	168	188
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	44	0
Lane Group Flow (vph)	331	413	0	0	654	0	5	302	0	0	312	0
Heavy Vehicles (%)	8%	8%	8%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	18.0	56.1			34.1		0.7	22.7			18.0	
Effective Green, g (s)	18.0	56.1			34.1		0.7	22.7			18.0	
Actuated g/C Ratio	0.21	0.65			0.39		0.01	0.26			0.21	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	346	1136			677		13	460			335	
v/s Ratio Prot	c0.20	0.23			c0.38		0.00	c0.17			c0.19	
v/s Ratio Perm												
v/c Ratio	0.96	0.36			0.97		0.38	0.66			0.93	
Uniform Delay, d1	34.0	7.1			25.8		42.8	28.6			33.8	
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2	36.7	0.2			26.2		17.9	3.4			31.7	
Delay (s)	70.7	7.3			52.0		60.7	31.9			65.4	
Level of Service	E	A			D		E	C			E	
Approach Delay (s)		35.5			52.0			32.4			65.4	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	45.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1183	701	7	0	1122	15	8	30	5	7	6	541
Future Volume (vph)	1183	701	7	0	1122	15	8	30	5	7	6	541
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Lane Util. Factor	0.97	0.95	1.00		0.95			1.00			1.00	0.88
Frt	1.00	1.00	0.85		1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (prot)	3303	3406	1524		3431			1799			1779	2733
Flt Permitted	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (perm)	3303	3406	1524		3431			1799			1779	2733
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1183	701	7	0	1122	15	8	30	5	7	6	541
RTOR Reduction (vph)	0	0	1	0	1	0	0	3	0	0	0	74
Lane Group Flow (vph)	1183	701	6	0	1136	0	0	40	0	0	13	467
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	51.6	103.5	103.5		47.3			3.3			2.1	53.7
Effective Green, g (s)	51.6	103.5	103.5		47.3			3.3			2.1	53.7
Actuated g/C Ratio	0.40	0.81	0.81		0.37			0.03			0.02	0.42
Clearance Time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0		1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	1330	2751	1231		1266			46			29	1145
v/s Ratio Prot	c0.36	0.21			c0.33			c0.02			c0.01	0.16
v/s Ratio Perm			0.00									0.01
v/c Ratio	0.89	0.25	0.00		0.90			0.87			0.45	0.41
Uniform Delay, d1	35.6	3.0	2.4		38.1			62.2			62.4	26.1
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	7.4	0.0	0.0		8.4			83.2			4.0	0.1
Delay (s)	43.0	3.0	2.4		46.6			145.4			66.4	26.2
Level of Service	D	A	A		D			F			E	C
Approach Delay (s)		28.0			46.6			145.4			27.1	
Approach LOS		C			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	35.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	128.1	Sum of lost time (s)	24.7
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	19	205	4	610	19	1807	107	224	1589	0
Future Volume (vph)	0	1	19	205	4	610	19	1807	107	224	1589	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.86		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1582		1752	1845	1568	1752	3505	1568	1752	3505	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1582		1752	1845	1568	1752	3505	1568	1752	3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1	19	205	4	610	19	1807	107	224	1589	0
RTOR Reduction (vph)	0	18	0	0	0	167	0	0	51	0	0	0
Lane Group Flow (vph)	0	2	0	205	4	443	19	1807	56	224	1589	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)		5.8		28.8	38.6	38.6	3.0	75.6	75.6	19.0	91.6	
Effective Green, g (s)		5.8		28.8	38.6	38.6	3.0	75.6	75.6	19.0	91.6	
Actuated g/C Ratio		0.04		0.20	0.27	0.27	0.02	0.52	0.52	0.13	0.63	
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		63		347	490	416	36	1824	816	229	2211	
v/s Ratio Prot		0.00		0.12	0.00		0.01	c0.52		c0.13	0.45	
v/s Ratio Perm						c0.28			0.04			
v/c Ratio		0.03		0.59	0.01	1.06	0.53	0.99	0.07	0.98	0.72	
Uniform Delay, d1		67.0		52.8	39.2	53.3	70.4	34.5	17.3	62.9	18.1	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2		2.7	0.0	62.1	13.3	18.8	0.0	52.7	1.1	
Delay (s)		67.2		55.5	39.2	115.4	83.7	53.3	17.3	115.6	19.2	
Level of Service		E		E	D	F	F	D	B	F	B	
Approach Delay (s)		67.2			100.1			51.6			31.1	
Approach LOS		E			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	52.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	145.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	365	408	2767	435	710	734
Future Volume (vph)	365	408	2767	435	710	734
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5036	1568	3400	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5036	1568	3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	365	408	2767	435	710	734
RTOR Reduction (vph)	0	258	0	189	0	0
Lane Group Flow (vph)	365	150	2767	246	710	734
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	11.0	11.0	49.0	49.0	18.0	71.0
Effective Green, g (s)	11.0	11.0	49.0	49.0	18.0	71.0
Actuated g/C Ratio	0.12	0.12	0.54	0.54	0.20	0.79
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	415	191	2741	853	680	3972
v/s Ratio Prot	c0.11		c0.55		c0.21	0.15
v/s Ratio Perm		0.10		0.16		
v/c Ratio	0.88	0.78	1.01	0.29	1.04	0.18
Uniform Delay, d1	38.8	38.4	20.5	11.1	36.0	2.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.7	18.8	19.5	0.2	46.6	0.0
Delay (s)	57.5	57.1	40.0	11.3	82.6	2.4
Level of Service	E	E	D	B	F	A
Approach Delay (s)	57.3		36.1			41.8
Approach LOS	E		D			D

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	329	23	149	410	832	34	2829	206	422	2387	0
Future Volume (veh/h)	0	329	23	149	410	832	34	2829	206	422	2387	0
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	0	329	23	149	410	832	34	2829	206	422	2387	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	512	229	136	796	573	60	2448	174	468	3171	0
Arrive On Green	0.00	0.15	0.15	0.04	0.23	0.23	0.02	0.51	0.51	0.14	0.64	0.00
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4754	338	3375	5152	0
Grp Volume(v), veh/h	0	329	23	149	410	832	34	1959	1076	422	2387	0
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1767	1688	1663	0
Q Serve(g_s), s	0.0	12.3	1.8	5.5	14.2	31.4	1.4	71.2	71.2	17.0	46.2	0.0
Cycle Q Clear(g_c), s	0.0	12.3	1.8	5.5	14.2	31.4	1.4	71.2	71.2	17.0	46.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.00
Lane Grp Cap(c), veh/h	2	512	229	136	796	573	60	1712	910	468	3171	0
V/C Ratio(X)	0.00	0.64	0.10	1.10	0.52	1.45	0.56	1.14	1.18	0.90	0.75	0.00
Avail Cap(c_a), veh/h	73	728	326	136	796	573	103	1712	910	549	3225	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	55.5	51.0	66.4	46.8	43.9	67.4	33.5	33.5	58.6	17.6	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.1	106.3	0.3	212.5	3.1	72.3	93.5	15.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.0	0.8	4.6	6.9	55.6	0.7	49.8	58.3	9.0	21.3	0.0
LnGrp Delay(d),s/veh	0.0	56.0	51.1	172.7	47.0	256.3	70.4	105.8	127.0	73.7	18.5	0.0
LnGrp LOS		E	D	F	D	F	E	F	F	E	B	
Approach Vol, veh/h		352			1391			3069			2809	
Approach Delay, s/veh		55.7			185.7			112.9			26.8	
Approach LOS		E			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	93.2	0.0	37.1	24.7	76.5	11.0	26.1
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	4.2	89.4	3.0	* 31	22.5	* 71	5.5	* 29
Max Q Clear Time (g_c+I1), s	3.4	48.2	0.0	33.4	19.0	73.2	7.5	14.3
Green Ext Time (p_c), s	0.0	35.2	0.0	0.0	0.2	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	91.8
HCM 2010 LOS	F

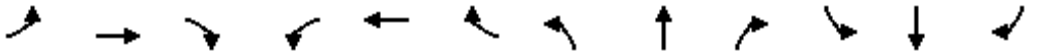
Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1488	677	98	1960	977	763	1984	74	1096	1563	188
Future Volume (veh/h)	85	1488	677	98	1960	977	763	1984	74	1096	1563	188
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	85	1488	677	98	1960	0	763	1984	74	1096	1563	188
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	3	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	66	1664	518	117	1755	546	591	1633	508	816	1566	488
Arrive On Green	0.02	0.34	0.34	0.04	0.36	0.00	0.17	0.33	0.33	0.17	0.31	0.31
Sat Flow, veh/h	3312	4893	1524	3312	4893	1524	3375	4988	1553	4907	4988	1553
Grp Volume(v), veh/h	85	1488	677	98	1960	0	763	1984	74	1096	1563	188
Grp Sat Flow(s),veh/h/ln	1656	1631	1524	1656	1631	1524	1688	1663	1553	1636	1663	1553
Q Serve(g_s), s	3.0	43.3	51.1	4.4	53.9	0.0	26.3	49.2	5.1	25.0	47.1	14.2
Cycle Q Clear(g_c), s	3.0	43.3	51.1	4.4	53.9	0.0	26.3	49.2	5.1	25.0	47.1	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1664	518	117	1755	546	591	1633	508	816	1566	488
V/C Ratio(X)	1.29	0.89	1.31	0.84	1.12	0.00	1.29	1.22	0.15	1.34	1.00	0.39
Avail Cap(c_a), veh/h	66	1664	518	117	1755	546	591	1633	508	816	1566	488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.7	47.0	49.6	72.1	48.2	0.0	62.0	50.5	35.7	62.7	51.5	40.2
Incr Delay (d2), s/veh	205.4	6.5	151.6	37.3	61.1	0.0	143.6	102.7	0.0	162.5	22.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	20.6	43.3	2.6	34.1	0.0	24.0	38.1	2.2	23.5	24.8	6.1
LnGrp Delay(d),s/veh	279.0	53.5	201.2	109.4	109.3	0.0	205.6	153.3	35.8	225.2	73.7	40.4
LnGrp LOS	F	D	F	F	F		F	F	D	F	E	D
Approach Vol, veh/h		2250			2058			2821			2847	
Approach Delay, s/veh		106.5			109.3			164.3			129.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	59.3	31.0	52.0	10.8	56.5	29.0	54.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.0	4.8
Max Green Setting (Gmax), s	3.0	* 54	* 26	47.2	5.3	* 51	25.0	49.2
Max Q Clear Time (g_c+I1), s	5.0	55.9	28.3	49.1	6.4	53.1	27.0	51.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	130.1
HCM 2010 LOS	F

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1342	414	134	13	510	7	933	2195	129	9	816	800
Future Volume (veh/h)	1342	414	134	13	510	7	933	2195	129	9	816	800
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	1342	414	134	13	510	7	933	2195	129	9	816	800
Adj No. of Lanes	3	2	1	2	2	0	2	3	1	2	3	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	1303	1388	621	29	498	7	903	2176	677	21	894	490
Arrive On Green	0.27	0.40	0.40	0.01	0.14	0.14	0.27	0.44	0.44	0.01	0.18	0.18
Sat Flow, veh/h	4907	3471	1553	3375	3506	48	3375	4988	1553	3375	4988	2733
Grp Volume(v), veh/h	1342	414	134	13	252	265	933	2195	129	9	816	800
Grp Sat Flow(s),veh/h/ln	1636	1736	1553	1688	1736	1818	1688	1663	1553	1688	1663	1367
Q Serve(g_s), s	37.2	11.4	7.9	0.5	19.9	19.9	37.5	61.1	7.2	0.4	22.5	25.1
Cycle Q Clear(g_c), s	37.2	11.4	7.9	0.5	19.9	19.9	37.5	61.1	7.2	0.4	22.5	25.1
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1303	1388	621	29	247	258	903	2176	677	21	894	490
V/C Ratio(X)	1.03	0.30	0.22	0.45	1.02	1.02	1.03	1.01	0.19	0.42	0.91	1.63
Avail Cap(c_a), veh/h	1303	1388	621	72	247	258	903	2176	677	72	894	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	28.7	27.6	69.1	60.1	60.1	51.3	39.5	24.3	69.4	56.4	57.5
Incr Delay (d2), s/veh	33.0	0.6	0.8	4.1	63.5	62.5	38.6	21.5	0.6	4.8	15.2	294.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.7	5.6	3.5	0.3	13.9	14.5	22.3	32.3	3.2	0.2	11.6	29.5
LnGrp Delay(d),s/veh	84.4	29.2	28.4	73.2	123.8	122.7	89.9	61.0	24.9	74.2	71.7	351.9
LnGrp LOS	F	C	C	E	F	F	F	F	C	E	E	F
Approach Vol, veh/h		1890			530			3257			1625	
Approach Delay, s/veh		68.3			122.0			67.9			209.6	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	42.4	30.3	42.3	25.1	6.4	66.3	6.2	61.2
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 38	* 25	* 37	* 20	3.0	* 59	3.0	* 54
Max Q Clear Time (g_c+I1), s	39.5	27.1	39.2	21.9	2.4	63.1	2.5	13.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.4

Intersection Summary	
HCM 2010 Ctrl Delay	103.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1326	686	5	1390	461	608	422	107	253	235	76
Future Volume (veh/h)	69	1326	686	5	1390	461	608	422	107	253	235	76
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	69	1326	686	5	1390	461	608	422	107	253	235	76
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	76	1358	634	7	1370	451	591	589	501	277	259	220
Arrive On Green	0.04	0.40	0.40	0.00	0.37	0.37	0.34	0.32	0.32	0.16	0.14	0.14
Sat Flow, veh/h	1757	3357	1568	1757	3750	1234	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	69	1326	686	5	1243	608	608	422	107	253	235	76
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1757	1679	1627	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	5.5	54.3	56.5	0.4	51.0	51.0	47.0	28.2	7.0	19.8	17.5	6.1
Cycle Q Clear(g_c), s	5.5	54.3	56.5	0.4	51.0	51.0	47.0	28.2	7.0	19.8	17.5	6.1
Prop In Lane	1.00		1.00	1.00		0.76	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	76	1358	634	7	1226	594	591	589	501	277	259	220
V/C Ratio(X)	0.91	0.98	1.08	0.75	1.01	1.02	1.03	0.72	0.21	0.91	0.91	0.35
Avail Cap(c_a), veh/h	76	1358	634	38	1226	594	591	589	501	315	264	225
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.5	40.9	41.6	69.5	44.3	44.3	46.3	41.9	34.7	57.9	59.1	54.2
Incr Delay (d2), s/veh	74.7	19.0	59.8	95.4	29.2	42.7	44.3	4.1	0.2	27.7	31.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	28.6	34.9	0.4	28.5	29.8	30.0	15.1	3.0	11.8	11.2	2.7
LnGrp Delay(d),s/veh	141.3	59.9	101.4	164.8	73.5	87.0	90.7	46.1	34.9	85.6	90.9	55.1
LnGrp LOS	F	E	F	F	F	F	F	D	C	F	F	E
Approach Vol, veh/h		2081			1856			1137			564	
Approach Delay, s/veh		76.3			78.2			68.9			83.7	
Approach LOS		E			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	48.6	4.5	60.5	51.0	23.6	10.0	55.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	25.0	42.0	3.0	54.0	47.0	20.0	6.0	51.0
Max Q Clear Time (g_c+I1), s	21.8	30.2	2.4	58.5	49.0	19.5	7.5	53.0
Green Ext Time (p_c), s	0.2	3.7	0.0	0.0	0.0	0.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	76.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	40	32	307	30	388	57	2863	368	680	1890	59
Future Volume (veh/h)	76	40	32	307	30	388	57	2863	368	680	1890	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	76	40	32	307	30	388	57	2863	368	680	1890	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	64	35	28	545	295	251	72	2470	769	551	3080	96
Arrive On Green	0.04	0.04	0.04	0.16	0.16	0.16	0.04	0.50	0.50	0.16	0.62	0.62
Sat Flow, veh/h	1757	950	760	3408	1845	1568	1740	4988	1553	3375	4970	155
Grp Volume(v), veh/h	76	0	72	307	30	388	57	2863	368	680	1264	685
Grp Sat Flow(s),veh/h/ln	1757	0	1711	1704	1845	1568	1740	1663	1553	1688	1663	1800
Q Serve(g_s), s	5.5	0.0	5.5	12.5	2.1	24.0	4.9	74.3	23.5	24.5	35.0	35.1
Cycle Q Clear(g_c), s	5.5	0.0	5.5	12.5	2.1	24.0	4.9	74.3	23.5	24.5	35.0	35.1
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	64	0	63	545	295	251	72	2470	769	551	2061	1115
V/C Ratio(X)	1.18	0.00	1.15	0.56	0.10	1.55	0.79	1.16	0.48	1.23	0.61	0.61
Avail Cap(c_a), veh/h	64	0	63	545	295	251	123	2470	769	551	2061	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	0.0	72.3	58.2	53.8	63.0	71.2	37.8	25.0	62.8	17.5	17.5
Incr Delay (d2), s/veh	168.8	0.0	159.5	0.8	0.1	264.8	6.9	76.5	0.2	120.1	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	5.4	5.9	1.1	28.8	2.5	51.6	10.1	20.6	16.1	17.5
LnGrp Delay(d),s/veh	241.1	0.0	231.9	59.0	53.9	327.8	78.1	114.3	25.2	182.9	17.9	18.3
LnGrp LOS	F		F	E	D	F	E	F	C	F	B	B
Approach Vol, veh/h		148			725			3288			2629	
Approach Delay, s/veh		236.6			202.6			103.7			60.7	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	98.2		11.0	30.0	79.5		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 89		5.5	24.5	* 74		24.0
Max Q Clear Time (g_c+I1), s	6.9	37.1		7.5	26.5	76.3		26.0
Green Ext Time (p_c), s	0.0	38.5		0.0	0.0	0.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		100.5	
HCM 2010 LOS		F	

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	1179	429	252	1471	826	359	2029	361	577	839	158
Future Volume (veh/h)	224	1179	429	252	1471	826	359	2029	361	577	839	158
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	224	1179	429	252	1471	826	359	2029	361	577	839	158
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	193	1413	440	294	1564	487	403	1771	551	438	1823	567
Arrive On Green	0.06	0.28	0.28	0.09	0.31	0.31	0.12	0.36	0.36	0.13	0.37	0.37
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	224	1179	429	252	1471	826	359	2029	361	577	839	158
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.5	33.1	40.8	11.0	42.8	46.7	15.8	53.4	29.4	19.5	19.3	10.8
Cycle Q Clear(g_c), s	8.5	33.1	40.8	11.0	42.8	46.7	15.8	53.4	29.4	19.5	19.3	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	1413	440	294	1564	487	403	1771	551	438	1823	567
V/C Ratio(X)	1.16	0.83	0.97	0.86	0.94	1.70	0.89	1.15	0.65	1.32	0.46	0.28
Avail Cap(c_a), veh/h	193	1413	440	315	1564	487	532	1771	551	438	1823	567
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.9	50.8	53.6	67.8	50.5	51.9	65.3	48.5	40.8	65.4	36.4	33.7
Incr Delay (d2), s/veh	115.6	4.2	36.1	18.0	11.4	322.2	11.9	72.8	2.2	158.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	15.8	22.1	5.9	21.5	63.8	8.0	36.4	13.0	18.7	8.9	4.6
LnGrp Delay(d),s/veh	186.6	55.0	89.7	85.7	61.9	374.1	77.2	121.3	43.0	224.1	36.5	33.8
LnGrp LOS	F	E	F	F	E	F	E	F	D	F	D	C
Approach Vol, veh/h		1832			2549			2749			1574	
Approach Delay, s/veh		79.2			165.4			105.3			105.0	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.4	60.6	14.0	52.4	25.0	59.0	18.5	47.9
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	23.7	* 49	8.5	* 47	19.5	* 53	13.9	* 41
Max Q Clear Time (g_c+I1), s	17.8	21.3	10.5	48.7	21.5	55.4	13.0	42.8
Green Ext Time (p_c), s	0.2	13.5	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	117.3
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	1491	494	163	2278	530	71	2559	158	521	865	90
Future Volume (veh/h)	350	1491	494	163	2278	530	71	2559	158	521	865	90
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	350	1491	494	163	2278	530	71	2559	158	521	865	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	258	1679	538	207	1612	502	110	1810	563	338	2137	659
Arrive On Green	0.08	0.34	0.34	0.06	0.33	0.33	0.03	0.36	0.36	0.10	0.42	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	350	1491	494	163	2278	530	71	2559	158	521	865	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	11.7	43.2	45.3	7.1	49.4	49.4	3.1	53.9	10.8	15.0	17.9	0.0
Cycle Q Clear(g_c), s	11.7	43.2	45.3	7.1	49.4	49.4	3.1	53.9	10.8	15.0	17.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	1679	538	207	1612	502	110	1810	563	338	2137	659
V/C Ratio(X)	1.35	0.89	0.92	0.79	1.41	1.06	0.65	1.41	0.28	1.54	0.40	0.00
Avail Cap(c_a), veh/h	258	1679	538	232	1612	502	204	1810	563	338	2137	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	69.1	46.5	47.2	69.5	50.3	50.3	71.7	48.1	34.2	67.5	30.0	0.0
Incr Delay (d2), s/veh	182.9	6.0	20.5	14.8	189.8	55.9	2.4	189.7	0.3	258.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	20.4	22.6	3.8	50.6	28.5	1.5	56.8	4.7	19.1	8.3	0.0
LnGrp Delay(d),s/veh	252.1	52.5	67.7	84.3	240.1	106.2	74.1	237.8	34.5	326.4	30.0	0.0
LnGrp LOS	F	D	E	F	F	F	E	F	C	F	C	
Approach Vol, veh/h		2335			2971			2788			1386	
Approach Delay, s/veh		85.7			207.7			222.1			141.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	68.8	16.0	55.0	20.0	59.0	13.9	57.1
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 9	59.5	* 12	49.4	15.0	53.9	* 10	* 51
Max Q Clear Time (g_c+I1), s	5.1	19.9	13.7	51.4	17.0	55.9	9.1	47.3
Green Ext Time (p_c), s	0.0	35.1	0.0	0.0	0.0	0.0	0.1	3.3

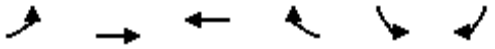
Intersection Summary	
HCM 2010 Ctrl Delay	172.2
HCM 2010 LOS	F

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	725	266	506	730	144	751
Future Volume (veh/h)	725	266	506	730	144	751
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	725	266	506	730	144	751
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	738	271	545	2296	426	867
Arrive On Green	0.29	0.29	0.31	0.66	0.24	0.24
Sat Flow, veh/h	2605	922	1757	3597	1757	1568
Grp Volume(v), veh/h	506	485	506	730	144	751
Grp Sat Flow(s),veh/h/ln	1752	1682	1757	1752	1757	1568
Q Serve(g_s), s	22.4	22.4	21.8	7.1	5.3	19.0
Cycle Q Clear(g_c), s	22.4	22.4	21.8	7.1	5.3	19.0
Prop In Lane		0.55	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	515	494	545	2296	426	867
V/C Ratio(X)	0.98	0.98	0.93	0.32	0.34	0.87
Avail Cap(c_a), veh/h	515	494	584	2373	426	867
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	27.4	26.2	5.9	24.4	15.0
Incr Delay (d2), s/veh	34.9	35.7	20.7	0.1	0.5	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.8	15.3	13.7	3.4	2.6	16.0
LnGrp Delay(d),s/veh	62.4	63.2	46.9	6.0	24.9	24.2
LnGrp LOS	E	E	D	A	C	C
Approach Vol, veh/h	991			1236	895	
Approach Delay, s/veh	62.7			22.7	24.3	
Approach LOS	E			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		23.0	28.3	27.0				55.3
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		19.0	26.0	23.0				53.0
Max Q Clear Time (g_c+I1), s		21.0	23.8	24.4				9.1
Green Ext Time (p_c), s		0.0	0.4	0.0				17.8

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	309	1368	2592	849	562	193
Future Volume (veh/h)	309	1368	2592	849	562	193
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	309	1368	2592	849	562	193
Adj No. of Lanes	1	3	3	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	234	3458	2031	602	457	408
Arrive On Green	0.13	0.69	0.53	0.53	0.26	0.26
Sat Flow, veh/h	1757	5202	4023	1143	1757	1568
Grp Volume(v), veh/h	309	1368	2221	1220	562	193
Grp Sat Flow(s),veh/h/ln	1757	1679	1679	1643	1757	1568
Q Serve(g_s), s	20.0	17.5	79.0	79.0	39.0	15.6
Cycle Q Clear(g_c), s	20.0	17.5	79.0	79.0	39.0	15.6
Prop In Lane	1.00			0.70	1.00	1.00
Lane Grp Cap(c), veh/h	234	3458	1768	865	457	408
V/C Ratio(X)	1.32	0.40	1.26	1.41	1.23	0.47
Avail Cap(c_a), veh/h	234	3458	1768	865	457	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	10.1	35.5	35.5	55.5	46.8
Incr Delay (d2), s/veh	170.4	0.1	120.0	191.5	121.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.8	8.1	65.8	81.6	34.3	14.0
LnGrp Delay(d),s/veh	235.4	10.2	155.5	227.0	177.1	47.7
LnGrp LOS	F	B	F	F	F	D
Approach Vol, veh/h		1677	3441		755	
Approach Delay, s/veh		51.7	180.8		144.0	
Approach LOS		D	F		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				107.0		43.0	24.0	83.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				103.0		39.0	20.0	79.0
Max Q Clear Time (g_c+I1), s				19.5		41.0	22.0	81.0
Green Ext Time (p_c), s				82.1		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	139.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	981	84	886	1977	331	160	953	869	352	534	132
Future Volume (veh/h)	171	981	84	886	1977	331	160	953	869	352	534	132
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	171	981	84	886	1977	331	160	953	869	352	534	132
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	186	1050	336	868	2029	650	220	924	812	341	1048	469
Arrive On Green	0.05	0.21	0.21	0.25	0.41	0.41	0.06	0.26	0.26	0.10	0.30	0.30
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	171	981	84	886	1977	331	160	953	869	352	534	132
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	5.5	21.7	4.9	28.0	43.7	17.2	5.1	29.0	29.0	11.0	13.9	7.1
Cycle Q Clear(g_c), s	5.5	21.7	4.9	28.0	43.7	17.2	5.1	29.0	29.0	11.0	13.9	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	1050	336	868	2029	650	220	924	812	341	1048	469
V/C Ratio(X)	0.92	0.93	0.25	1.02	0.97	0.51	0.73	1.03	1.07	1.03	0.51	0.28
Avail Cap(c_a), veh/h	186	1050	336	868	2029	650	279	924	812	341	1048	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	42.4	35.9	41.0	31.6	23.9	50.5	40.5	26.5	49.5	31.9	29.5
Incr Delay (d2), s/veh	43.8	14.8	0.5	36.0	14.5	0.9	6.8	37.9	51.9	57.5	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	11.2	2.2	17.5	22.3	7.6	2.6	18.9	36.1	7.9	6.7	3.1
LnGrp Delay(d),s/veh	95.6	57.2	36.4	77.0	46.1	24.8	57.3	78.4	78.4	107.0	32.3	29.8
LnGrp LOS	F	E	D	F	D	C	E	F	F	F	C	C
Approach Vol, veh/h		1236			3194			1982			1018	
Approach Delay, s/veh		61.1			52.5			76.7			57.8	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.0	30.0	11.1	36.9	10.0	52.0	15.0	33.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	28.0	23.6	9.0	31.0	6.0	45.6	11.0	29.0
Max Q Clear Time (g_c+I1), s	30.0	23.7	7.1	15.9	7.5	45.7	13.0	31.0
Green Ext Time (p_c), s	0.0	0.0	0.1	11.9	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	538	47	971	25	63	161	999	1153	13	105	1699	1114
Future Volume (veh/h)	538	47	971	25	63	161	999	1153	13	105	1699	1114
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	572	0	971	25	63	161	999	1153	13	105	1699	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	712	0	318	19	48	57	549	2813	32	126	1536	478
Arrive On Green	0.20	0.00	0.20	0.04	0.04	0.04	0.32	0.55	0.55	0.07	0.31	0.00
Sat Flow, veh/h	3480	0	1553	517	1302	1568	1740	5084	57	1740	4988	1553
Grp Volume(v), veh/h	572	0	971	88	0	161	999	754	412	105	1699	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1819	0	1568	1740	1663	1817	1740	1663	1553
Q Serve(g_s), s	23.5	0.0	30.7	5.5	0.0	5.5	47.3	19.7	19.7	8.9	46.2	0.0
Cycle Q Clear(g_c), s	23.5	0.0	30.7	5.5	0.0	5.5	47.3	19.7	19.7	8.9	46.2	0.0
Prop In Lane	1.00		1.00	0.28		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	712	0	318	67	0	57	549	1839	1005	126	1536	478
V/C Ratio(X)	0.80	0.00	3.06	1.32	0.00	2.80	1.82	0.41	0.41	0.84	1.11	0.00
Avail Cap(c_a), veh/h	712	0	318	67	0	57	549	1839	1005	194	1536	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.8	0.0	59.6	72.3	0.0	72.3	51.3	19.4	19.4	68.7	51.9	0.0
Incr Delay (d2), s/veh	6.1	0.0	933.2	217.5	0.0	856.3	376.5	0.1	0.1	10.2	57.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	95.6	6.8	0.0	16.1	80.1	9.0	9.9	4.7	29.4	0.0
LnGrp Delay(d),s/veh	62.9	0.0	992.8	289.7	0.0	928.5	427.9	19.4	19.5	78.9	109.7	0.0
LnGrp LOS	E		F	F		F	F	B	B	E	F	
Approach Vol, veh/h		1543			249			2165			1804	
Approach Delay, s/veh		648.1			702.8			207.9			107.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	52.0	51.0		11.0	15.2	87.8		36.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 47	46.2		5.5	* 17	* 77		30.7
Max Q Clear Time (g_c+I1), s	49.3	48.2		7.5	10.9	21.7		32.7
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	13.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	315.9
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	341	560	175	40	1828	848	389	2034	20	78	834	632
Future Volume (veh/h)	341	560	175	40	1828	848	389	2034	20	78	834	632
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	341	560	175	40	1828	848	389	2034	20	78	834	632
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	278	2142	667	70	1834	571	299	1824	568	84	1506	469
Arrive On Green	0.08	0.43	0.43	0.02	0.36	0.36	0.09	0.37	0.37	0.02	0.30	0.30
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	341	560	175	40	1828	848	389	2034	20	78	834	632
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	11.5	10.1	10.2	1.6	51.1	51.4	12.5	51.6	1.2	3.3	19.8	42.6
Cycle Q Clear(g_c), s	11.5	10.1	10.2	1.6	51.1	51.4	12.5	51.6	1.2	3.3	19.8	42.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	2142	667	70	1834	571	299	1824	568	84	1506	469
V/C Ratio(X)	1.23	0.26	0.26	0.57	1.00	1.48	1.30	1.12	0.04	0.93	0.55	1.35
Avail Cap(c_a), veh/h	278	2142	667	121	1834	571	299	1824	568	84	1506	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	26.2	26.2	68.5	44.8	44.8	64.3	44.8	28.8	68.7	41.3	49.3
Incr Delay (d2), s/veh	130.0	0.0	0.1	2.7	20.1	227.4	157.7	60.1	0.0	74.7	0.3	170.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	4.7	4.4	0.8	27.1	58.2	12.4	33.8	0.5	2.4	9.1	40.5
LnGrp Delay(d),s/veh	194.8	26.2	26.3	71.2	64.9	272.2	222.0	104.8	28.8	143.4	41.5	219.5
LnGrp LOS	F	C	C	E	E	F	F	F	C	F	D	F
Approach Vol, veh/h		1076			2716			2443			1544	
Approach Delay, s/veh		79.7			129.7			122.9			119.5	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	48.6	17.0	57.5	9.0	57.6	8.4	66.1
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	12.5	42.0	11.5	* 51	3.5	* 52	5.0	* 57
Max Q Clear Time (g_c+I1), s	14.5	44.6	13.5	53.4	5.3	53.6	3.6	12.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6

Intersection Summary	
HCM 2010 Ctrl Delay	118.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	582	806	165	87	1809	926	786	2137	187	177	984	721
Future Volume (veh/h)	582	806	165	87	1809	926	786	2137	187	177	984	721
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	582	806	165	87	1809	926	786	2137	187	177	984	721
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	352	2020	629	126	1617	503	484	1879	585	124	1347	419
Arrive On Green	0.10	0.40	0.40	0.04	0.34	0.34	0.14	0.38	0.38	0.04	0.27	0.27
Sat Flow, veh/h	3408	5036	1568	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	582	806	165	87	1809	926	786	2137	187	177	984	721
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	15.5	17.1	10.6	4.0	50.5	50.5	21.5	56.5	12.8	5.5	26.9	40.5
Cycle Q Clear(g_c), s	15.5	17.1	10.6	4.0	50.5	50.5	21.5	56.5	12.8	5.5	26.9	40.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	2020	629	126	1617	503	484	1879	585	124	1347	419
V/C Ratio(X)	1.65	0.40	0.26	0.69	1.12	1.84	1.62	1.14	0.32	1.43	0.73	1.72
Avail Cap(c_a), veh/h	352	2020	629	186	1617	503	484	1879	585	124	1347	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	32.0	30.1	71.2	49.8	49.7	64.3	46.7	33.1	72.3	49.8	54.8
Incr Delay (d2), s/veh	306.1	0.0	0.1	2.5	62.4	385.4	290.4	69.0	0.1	233.6	1.8	333.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	7.9	4.6	1.8	31.7	74.7	29.5	37.9	5.5	6.6	12.6	56.3
LnGrp Delay(d),s/veh	373.3	32.1	30.1	73.7	112.2	435.1	354.7	115.7	33.2	305.9	51.6	388.5
LnGrp LOS	F	C	C	E	F	F	F	F	C	F	D	F
Approach Vol, veh/h		1553			2822			3110			1882	
Approach Delay, s/veh		159.7			217.0			171.2			204.6	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	46.0	21.0	56.0	11.0	62.0	11.3	65.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	21.5	40.5	15.5	50.5	5.5	56.5	8.6	57.4
Max Q Clear Time (g_c+I1), s	23.5	42.5	17.5	52.5	7.5	58.5	6.0	19.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4

Intersection Summary	
HCM 2010 Ctrl Delay	189.8
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	609	393	58	58	770	103	2	646	40	94	1017	1130
Future Volume (veh/h)	609	393	58	58	770	103	2	646	40	94	1017	1130
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	609	393	58	58	770	103	2	646	40	94	1017	1130
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	477	1396	625	101	1009	451	5	941	421	132	1072	844
Arrive On Green	0.14	0.41	0.41	0.03	0.30	0.30	0.00	0.27	0.27	0.04	0.31	0.31
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3343	3438	1538	3343	3438	2707
Grp Volume(v), veh/h	609	393	58	58	770	103	2	646	40	94	1017	1130
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1672	1719	1538	1672	1719	1354
Q Serve(g_s), s	12.4	6.6	2.0	1.5	17.7	4.4	0.1	14.5	1.7	2.4	24.9	26.8
Cycle Q Clear(g_c), s	12.4	6.6	2.0	1.5	17.7	4.4	0.1	14.5	1.7	2.4	24.9	26.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	477	1396	625	101	1009	451	5	941	421	132	1072	844
V/C Ratio(X)	1.28	0.28	0.09	0.58	0.76	0.23	0.37	0.69	0.09	0.71	0.95	1.34
Avail Cap(c_a), veh/h	477	1396	625	165	1068	478	117	1039	465	132	1072	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	16.9	15.6	41.2	27.5	22.9	42.9	27.9	23.3	40.9	29.0	29.6
Incr Delay (d2), s/veh	139.9	0.2	0.1	1.9	3.9	0.5	14.7	1.7	0.1	14.2	16.7	160.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	3.2	0.9	0.7	8.9	1.9	0.0	7.0	0.7	1.4	14.2	28.8
LnGrp Delay(d),s/veh	176.7	17.2	15.7	43.1	31.4	23.4	57.6	29.6	23.4	55.1	45.6	190.3
LnGrp LOS	F	B	B	D	C	C	E	C	C	E	D	F
Approach Vol, veh/h		1060			931			688			2241	
Approach Delay, s/veh		108.7			31.3			29.3			119.0	
Approach LOS		F			C			C			F	

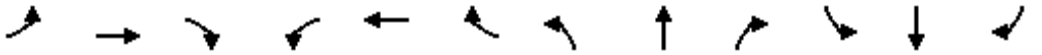
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	31.5	4.7	32.8	7.2	41.3	8.0	29.6
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	4.6	6.0
Max Green Setting (Gmax), s	12.4	27.0	3.0	26.4	4.3	35.1	3.4	26.0
Max Q Clear Time (g_c+I1), s	14.4	19.7	2.1	28.8	3.5	8.6	4.4	16.5
Green Ext Time (p_c), s	0.0	5.8	0.0	0.0	0.0	16.7	0.0	7.1

Intersection Summary	
HCM 2010 Ctrl Delay	87.6
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	518	588	90	1297	6	242	1029	64	2	1412	336
Future Volume (veh/h)	278	518	588	90	1297	6	242	1029	64	2	1412	336
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	278	518	588	90	1297	6	242	1029	64	2	1412	336
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	262	1348	603	131	1213	543	236	1583	708	7	1348	603
Arrive On Green	0.08	0.38	0.38	0.04	0.35	0.35	0.07	0.45	0.45	0.00	0.38	0.38
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	278	518	588	90	1297	6	242	1029	64	2	1412	336
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	10.0	13.9	48.0	3.4	45.0	0.3	9.0	29.6	3.0	0.1	50.0	21.8
Cycle Q Clear(g_c), s	10.0	13.9	48.0	3.4	45.0	0.3	9.0	29.6	3.0	0.1	50.0	21.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	1348	603	131	1213	543	236	1583	708	7	1348	603
V/C Ratio(X)	1.06	0.38	0.98	0.69	1.07	0.01	1.03	0.65	0.09	0.27	1.05	0.56
Avail Cap(c_a), veh/h	262	1348	603	131	1213	543	236	1583	708	105	1348	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	28.9	39.4	61.7	42.5	27.9	60.5	27.7	20.4	64.8	40.0	31.3
Incr Delay (d2), s/veh	72.4	0.2	30.3	13.9	46.4	0.0	65.4	0.9	0.1	19.0	37.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	6.7	25.8	1.9	29.6	0.1	6.4	14.5	1.3	0.1	31.3	9.6
LnGrp Delay(d),s/veh	132.4	29.1	69.7	75.6	88.9	27.9	126.0	28.6	20.4	83.7	77.9	32.5
LnGrp LOS	F	C	E	E	F	C	F	C	C	F	F	C
Approach Vol, veh/h		1384			1393			1335			1750	
Approach Delay, s/veh		67.1			87.8			45.9			69.2	
Approach LOS		E			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	62.7	9.0	54.0	13.0	54.0	14.0	49.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	55.0	5.0	50.0	9.0	50.0	10.0	45.0
Max Q Clear Time (g_c+I1), s	2.1	31.6	5.4	50.0	11.0	52.0	12.0	47.0
Green Ext Time (p_c), s	0.0	19.8	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	605	301	402	1256	856	661	1097	239	357	329	0
Future Volume (veh/h)	0	605	301	402	1256	856	661	1097	239	357	329	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	605	301	402	1256	856	661	1097	239	357	329	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	5	1071	333	408	1941	818	787	1118	500	463	786	351
Arrive On Green	0.00	0.21	0.21	0.12	0.39	0.39	0.23	0.32	0.32	0.14	0.22	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	605	301	402	1256	856	661	1097	239	357	329	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	8.1	14.1	8.9	15.4	29.0	13.9	23.3	9.2	7.6	6.0	0.0
Cycle Q Clear(g_c), s	0.0	8.1	14.1	8.9	15.4	29.0	13.9	23.3	9.2	7.6	6.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	5	1071	333	408	1941	818	787	1118	500	463	786	351
V/C Ratio(X)	0.00	0.56	0.90	0.99	0.65	1.05	0.84	0.98	0.48	0.77	0.42	0.00
Avail Cap(c_a), veh/h	181	1071	333	408	1941	818	997	1118	500	680	792	354
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	26.5	28.9	33.1	18.9	18.0	27.6	25.4	20.6	31.4	25.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	26.4	40.7	0.8	44.5	5.3	22.3	0.7	3.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.8	8.5	6.4	7.2	26.9	7.1	14.7	4.1	3.8	3.0	0.0
LnGrp Delay(d),s/veh	0.0	27.2	55.3	73.8	19.7	62.5	32.9	47.7	21.3	34.6	25.3	0.0
LnGrp LOS		C	E	E	B	F	C	D	C	C	C	
Approach Vol, veh/h		906			2514			1997			686	
Approach Delay, s/veh		36.5			42.9			39.7			30.2	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	28.0	13.0	20.0	21.4	20.9	0.0	33.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	24.0	9.0	16.0	22.0	17.0	4.0	21.0
Max Q Clear Time (g_c+I1), s	9.6	25.3	10.9	16.1	15.9	8.0	0.0	31.0
Green Ext Time (p_c), s	0.6	0.0	0.0	0.0	1.4	6.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	984	950	35	791	895	0	133	2154	1044	54	691	791
Future Volume (veh/h)	984	950	35	791	895	0	133	2154	1044	54	691	791
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	984	950	35	791	895	0	133	2154	1044	54	691	791
Adj No. of Lanes	3	3	1	2	3	1	2	3	1	2	3	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1032	923	287	767	1007	314	188	2182	679	85	2031	1113
Arrive On Green	0.21	0.18	0.18	0.22	0.20	0.00	0.06	0.43	0.43	0.03	0.40	0.40
Sat Flow, veh/h	4954	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	2760
Grp Volume(v), veh/h	984	950	35	791	895	0	133	2154	1044	54	691	791
Grp Sat Flow(s),veh/h/ln	1651	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1380
Q Serve(g_s), s	23.5	22.0	2.2	27.0	20.7	0.0	4.6	50.8	52.0	1.9	11.4	28.8
Cycle Q Clear(g_c), s	23.5	22.0	2.2	27.0	20.7	0.0	4.6	50.8	52.0	1.9	11.4	28.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1032	923	287	767	1007	314	188	2182	679	85	2031	1113
V/C Ratio(X)	0.95	1.03	0.12	1.03	0.89	0.00	0.71	0.99	1.54	0.63	0.34	0.71
Avail Cap(c_a), veh/h	1032	923	287	767	1007	314	256	2182	679	85	2031	1113
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	49.0	40.9	46.5	46.7	0.0	55.8	33.7	34.0	58.0	24.8	29.9
Incr Delay (d2), s/veh	17.9	37.3	0.2	40.8	9.8	0.0	5.6	16.3	248.8	14.3	0.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	13.4	1.0	17.0	10.5	0.0	2.3	26.8	69.4	1.1	5.3	11.3
LnGrp Delay(d),s/veh	64.8	86.3	41.1	87.3	56.5	0.0	61.3	49.9	282.8	72.3	24.9	32.1
LnGrp LOS	E	F	D	F	E		E	D	F	E	C	C
Approach Vol, veh/h		1969			1686			3331			1536	
Approach Delay, s/veh		74.7			71.0			123.4			30.2	
Approach LOS		E			E			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	56.0	31.0	26.0	10.6	52.4	29.0	28.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	52.0	27.0	22.0	9.0	46.0	25.0	24.0
Max Q Clear Time (g_c+I1), s	3.9	54.0	29.0	24.0	6.6	30.8	25.5	22.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	15.0	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	85.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	996	631	20	1649	37	1225	741	22	50	782	585
Future Volume (veh/h)	347	996	631	20	1649	37	1225	741	22	50	782	585
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	347	996	631	20	1649	37	1225	741	22	50	782	585
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	288	1722	536	40	1356	422	944	1746	781	85	863	386
Arrive On Green	0.08	0.34	0.34	0.01	0.27	0.27	0.28	0.50	0.50	0.03	0.25	0.25
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	347	996	631	20	1649	37	1225	741	22	50	782	585
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	11.0	21.1	44.5	0.8	35.0	2.3	36.0	17.5	0.9	1.9	28.1	32.0
Cycle Q Clear(g_c), s	11.0	21.1	44.5	0.8	35.0	2.3	36.0	17.5	0.9	1.9	28.1	32.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	288	1722	536	40	1356	422	944	1746	781	85	863	386
V/C Ratio(X)	1.20	0.58	1.18	0.49	1.22	0.09	1.30	0.42	0.03	0.59	0.91	1.52
Avail Cap(c_a), veh/h	288	1722	536	79	1356	422	944	1746	781	131	863	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	35.1	42.8	63.8	47.5	35.6	47.0	20.8	16.6	62.7	47.5	49.0
Incr Delay (d2), s/veh	119.7	0.5	97.7	9.0	104.3	0.1	141.9	0.2	0.0	6.2	13.1	245.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	9.9	33.7	0.4	29.3	1.0	35.5	8.5	0.4	1.0	15.2	40.1
LnGrp Delay(d),s/veh	179.2	35.6	140.5	72.9	151.8	35.6	188.9	20.9	16.6	68.9	60.7	294.0
LnGrp LOS	F	D	F	E	F	D	F	C	B	E	E	F
Approach Vol, veh/h		1974			1706			1988			1417	
Approach Delay, s/veh		94.4			148.3			124.4			157.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	68.7	5.5	48.5	40.0	36.0	15.0	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	63.0	3.0	43.0	36.0	32.0	11.0	35.0
Max Q Clear Time (g_c+I1), s	3.9	19.5	2.8	46.5	38.0	34.0	13.0	37.0
Green Ext Time (p_c), s	0.0	20.7	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	128.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Future Volume (veh/h)	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	107	1963	611	407	2407	749	29	1775	553	44	1797	559
Arrive On Green	0.03	0.39	0.39	0.12	0.48	0.48	0.01	0.35	0.35	0.01	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	102	1582	114	356	2405	9	9	1722	114	15	1410	85
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	3.8	35.7	6.1	13.1	60.9	0.4	0.3	42.9	6.5	0.6	31.9	4.7
Cycle Q Clear(g_c), s	3.8	35.7	6.1	13.1	60.9	0.4	0.3	42.9	6.5	0.6	31.9	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	1963	611	407	2407	749	29	1775	553	44	1797	559
V/C Ratio(X)	0.95	0.81	0.19	0.87	1.00	0.01	0.31	0.97	0.21	0.34	0.78	0.15
Avail Cap(c_a), veh/h	107	1963	611	427	2407	749	107	1776	553	107	1797	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.7	34.6	25.6	55.3	33.3	17.5	62.9	40.7	28.9	62.4	36.7	27.9
Incr Delay (d2), s/veh	72.5	2.6	0.1	17.4	18.1	0.0	5.8	14.9	0.2	4.5	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	17.0	2.7	7.2	32.1	0.2	0.2	22.4	2.8	0.3	15.1	2.1
LnGrp Delay(d),s/veh	134.2	37.2	25.8	72.7	51.4	17.5	68.7	55.6	29.0	66.9	39.0	28.0
LnGrp LOS	F	D	C	E	D	B	E	E	C	E	D	C
Approach Vol, veh/h		1798			2770			1845			1510	
Approach Delay, s/veh		42.0			54.0			54.0			38.7	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.6	49.0	19.2	53.8	5.1	49.5	8.0	65.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	45.0	16.0	49.0	4.0	45.0	4.0	61.0
Max Q Clear Time (g_c+I1), s	2.6	44.9	15.1	37.7	2.3	33.9	5.8	62.9
Green Ext Time (p_c), s	0.0	0.0	0.1	11.2	0.0	10.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	672	0	1035	708	68	0	699	1197	118	797	238
Future Volume (veh/h)	238	672	0	1035	708	68	0	699	1197	118	797	238
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	238	672	0	1035	708	68	0	699	1197	118	797	238
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	315	830	258	1190	2123	661	4	963	978	144	1259	563
Arrive On Green	0.09	0.16	0.00	0.35	0.42	0.42	0.00	0.27	0.27	0.04	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	238	672	0	1035	708	68	0	699	1197	118	797	238
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	6.4	12.2	0.0	26.9	9.0	2.5	0.0	17.1	26.0	3.3	17.9	10.9
Cycle Q Clear(g_c), s	6.4	12.2	0.0	26.9	9.0	2.5	0.0	17.1	26.0	3.3	17.9	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	315	830	258	1190	2123	661	4	963	978	144	1259	563
V/C Ratio(X)	0.75	0.81	0.00	0.87	0.33	0.10	0.00	0.73	1.22	0.82	0.63	0.42
Avail Cap(c_a), veh/h	468	851	265	1728	2713	845	144	963	978	144	1259	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	38.1	0.0	28.8	18.4	16.6	0.0	31.1	17.8	45.0	25.2	22.9
Incr Delay (d2), s/veh	3.9	5.8	0.0	3.5	0.1	0.1	0.0	2.8	109.8	29.7	1.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	6.1	0.0	13.2	4.1	1.1	0.0	8.6	55.0	2.1	8.8	4.8
LnGrp Delay(d),s/veh	45.8	43.9	0.0	32.3	18.5	16.6	0.0	33.9	127.6	74.7	26.2	23.4
LnGrp LOS	D	D		C	B	B		C	F	E	C	C
Approach Vol, veh/h		910			1811			1896			1153	
Approach Delay, s/veh		44.4			26.3			93.1			30.6	
Approach LOS		D			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	30.0	37.1	19.6	0.0	38.0	12.8	43.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	26.0	48.0	16.0	4.0	26.0	13.0	51.0
Max Q Clear Time (g_c+I1), s	5.3	28.0	28.9	14.2	0.0	19.9	8.4	11.0
Green Ext Time (p_c), s	0.0	0.0	4.2	1.4	0.0	5.7	0.3	13.5

Intersection Summary	
HCM 2010 Ctrl Delay	52.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	242	80	213	0	213	101	267	2043	95	10	1948	149
Future Volume (veh/h)	242	80	213	0	213	101	267	2043	95	10	1948	149
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	242	80	213	0	213	101	267	2043	95	10	1948	149
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	250	614	521	2	264	224	83	2542	118	17	2282	174
Arrive On Green	0.14	0.33	0.33	0.00	0.14	0.14	0.05	0.52	0.52	0.01	0.48	0.48
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	4933	229	1757	4774	363
Grp Volume(v), veh/h	242	80	213	0	213	101	267	1388	750	10	1367	730
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1679	1804	1757	1679	1781
Q Serve(g_s), s	11.6	2.6	8.9	0.0	9.4	5.0	4.0	28.9	29.1	0.5	30.3	30.6
Cycle Q Clear(g_c), s	11.6	2.6	8.9	0.0	9.4	5.0	4.0	28.9	29.1	0.5	30.3	30.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.20
Lane Grp Cap(c), veh/h	250	614	521	2	264	224	83	1730	930	17	1604	851
V/C Ratio(X)	0.97	0.13	0.41	0.00	0.81	0.45	3.21	0.80	0.81	0.57	0.85	0.86
Avail Cap(c_a), veh/h	250	614	521	83	350	297	83	1730	930	83	1670	886
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	19.7	21.8	0.0	35.0	33.1	40.2	16.9	17.0	41.6	19.4	19.5
Incr Delay (d2), s/veh	48.2	0.1	0.5	0.0	9.9	1.4	1024.1	2.8	5.3	26.5	4.3	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	1.3	3.9	0.0	5.5	2.2	25.6	14.0	15.7	0.4	14.8	16.9
LnGrp Delay(d),s/veh	84.2	19.8	22.3	0.0	45.0	34.5	1064.3	19.7	22.2	68.1	23.8	27.7
LnGrp LOS	F	B	C		D	C	F	B	C	E	C	C
Approach Vol, veh/h		535			314			2405			2107	
Approach Delay, s/veh		49.9			41.6			136.5			25.3	
Approach LOS		D			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.8	47.5	0.0	32.1	8.0	44.4	16.0	16.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	42.0	4.0	24.0	4.0	42.0	12.0	16.0
Max Q Clear Time (g_c+I1), s	2.5	31.1	0.0	10.9	6.0	32.6	13.6	11.4
Green Ext Time (p_c), s	0.0	10.8	0.0	2.3	0.0	7.7	0.0	0.6

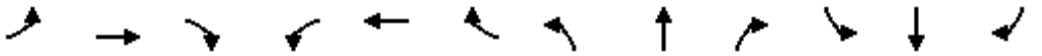
Intersection Summary	
HCM 2010 Ctrl Delay	78.6
HCM 2010 LOS	E

Cumulative Plus All Projects

Ultimate Mitigation PM

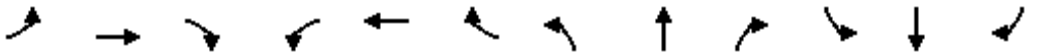
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	571	338	152	934	981	475	1225	49	1391	1798	150
Future Volume (vph)	271	571	338	152	934	981	475	1225	49	1391	1798	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3278		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3278		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	271	571	338	152	934	981	475	1225	49	1391	1798	150
RTOR Reduction (vph)	0	67	0	0	0	755	0	0	37	0	0	63
Lane Group Flow (vph)	271	842	0	152	934	226	475	1225	12	1391	1798	87
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	8.0	32.0		6.0	30.0	30.0	20.6	31.0	31.0	45.0	55.4	55.4
Effective Green, g (s)	8.0	32.0		6.0	30.0	30.0	20.6	31.0	31.0	45.0	55.4	55.4
Actuated g/C Ratio	0.06	0.25		0.05	0.23	0.23	0.16	0.24	0.24	0.35	0.43	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	806		155	801	630	533	1189	370	1165	2125	661
v/s Ratio Prot	c0.08	0.26		0.05	c0.27		0.14	c0.25		c0.41	0.36	
v/s Ratio Perm						0.08			0.01			0.06
v/c Ratio	1.31	1.04		0.98	1.17	0.36	0.89	1.03	0.03	1.19	0.85	0.13
Uniform Delay, d1	61.0	49.0		61.9	50.0	41.9	53.6	49.5	38.0	42.5	33.5	22.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	169.4	43.9		66.2	88.1	0.4	16.9	34.2	0.0	95.9	3.3	0.1
Delay (s)	230.4	92.9		128.2	138.1	42.3	70.5	83.7	38.0	138.4	36.8	22.8
Level of Service	F	F		F	F	D	E	F	D	F	D	C
Approach Delay (s)		124.5			91.9			78.8			78.5	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	88.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



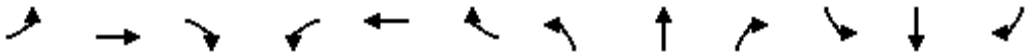
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	656	259	244	735	531	241	904	190	786	1656	91
Future Volume (vph)	74	656	259	244	735	531	241	904	190	786	1656	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91	0.91	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.96		1.00	0.98	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3356		1736	3244	1413	1736	4858		1736	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3356		1736	3244	1413	1736	4858		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	74	656	259	244	735	531	241	904	190	786	1656	91
RTOR Reduction (vph)	0	28	0	0	10	291	0	21	0	0	0	38
Lane Group Flow (vph)	74	887	0	244	868	97	241	1073	0	786	1656	53
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	11.6	31.0		18.0	37.4	37.4	23.5	31.0		54.0	61.5	61.5
Effective Green, g (s)	11.6	31.0		18.0	37.4	37.4	23.5	31.0		54.0	61.5	61.5
Actuated g/C Ratio	0.08	0.21		0.12	0.25	0.25	0.16	0.21		0.36	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	135	693		208	808	352	271	1003		624	2045	636
v/s Ratio Prot	0.04	c0.26		c0.14	0.27		0.14	c0.22		c0.45	0.33	
v/s Ratio Perm						0.07						0.03
v/c Ratio	0.55	1.28		1.17	1.07	0.28	0.89	1.07		1.26	0.81	0.08
Uniform Delay, d1	66.7	59.5		66.0	56.3	45.4	62.0	59.5		48.0	39.1	27.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.5	137.0		116.9	53.6	0.4	27.7	48.9		129.5	2.5	0.1
Delay (s)	71.2	196.5		182.9	109.9	45.8	89.7	108.4		177.5	41.6	27.1
Level of Service	E	F		F	F	D	F	F		F	D	C
Approach Delay (s)		187.2			105.3			105.0			83.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	109.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	118.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	500	145	479	516	787	128	0	288	670	0	403
Future Volume (vph)	265	500	145	479	516	787	128	0	288	670	0	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	4.6	4.6	5.5	4.3	5.5		4.6	4.6	4.8	4.8	4.8
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00		0.95	0.95	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3400	3505	1568	3400	3505	1568		1584	1475	1649	1649	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3400	3505	1568	3400	3505	1568		1584	1475	1649	1649	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	265	500	145	479	516	787	128	0	288	670	0	403
RTOR Reduction (vph)	0	0	116	0	0	556	0	115	183	0	0	289
Lane Group Flow (vph)	265	500	29	479	516	231	0	99	19	335	335	114
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	custom	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4	5	6	6		2	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.0	19.3	19.3	18.9	26.5	31.9		10.2	10.2	29.9	29.9	29.9
Effective Green, g (s)	12.0	19.3	19.3	18.9	26.5	31.9		10.2	10.2	29.9	29.9	29.9
Actuated g/C Ratio	0.11	0.18	0.18	0.17	0.24	0.29		0.09	0.09	0.28	0.28	0.28
Clearance Time (s)	5.5	4.6	4.6	5.5	4.3	5.5		4.6	4.6	4.8	4.8	4.8
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	2.0		1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	375	622	278	591	854	460		148	138	453	453	427
v/s Ratio Prot	0.08	c0.14		c0.14	0.15	c0.02		c0.06		c0.20	0.20	
v/s Ratio Perm			0.02			0.12			0.01			0.07
v/c Ratio	0.71	0.80	0.10	0.81	0.60	0.50		0.67	0.14	0.74	0.74	0.27
Uniform Delay, d1	46.7	42.9	37.5	43.2	36.4	31.8		47.6	45.2	35.9	35.9	30.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.9	7.0	0.1	7.8	0.8	0.3		8.5	0.2	5.4	5.4	0.1
Delay (s)	51.6	49.9	37.5	51.0	37.3	32.1		56.1	45.4	41.2	41.2	31.0
Level of Service	D	D	D	D	D	C		E	D	D	D	C
Approach Delay (s)		48.4			38.7			50.9			37.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	108.7	Sum of lost time (s)	25.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

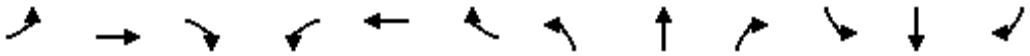


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	553	8	2	501	1	9	188	0	1	280	323
Future Volume (vph)	196	553	8	2	501	1	9	188	0	1	280	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1755		1641	1727		1671	1759		1671	1618	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	1755		1641	1727		1671	1759		1671	1618	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	196	553	8	2	501	1	9	188	0	1	280	323
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	47	0
Lane Group Flow (vph)	196	560	0	2	502	0	9	188	0	1	556	0
Heavy Vehicles (%)	8%	8%	8%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	11.0	40.4		0.7	30.1		0.7	31.4		0.7	31.4	
Effective Green, g (s)	11.0	40.4		0.7	30.1		0.7	31.4		0.7	31.4	
Actuated g/C Ratio	0.12	0.45		0.01	0.34		0.01	0.35		0.01	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	206	794		12	582		13	619		13	569	
v/s Ratio Prot	c0.12	0.32		0.00	c0.29		c0.01	0.11		0.00	c0.34	
v/s Ratio Perm												
v/c Ratio	0.95	0.71		0.17	0.86		0.69	0.30		0.08	0.98	
Uniform Delay, d1	38.8	19.6		44.0	27.6		44.1	21.0		43.9	28.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	48.8	2.9		6.5	12.5		96.3	0.3		2.5	31.7	
Delay (s)	87.6	22.5		50.4	40.1		140.4	21.2		46.5	60.3	
Level of Service	F	C		D	D		F	C		D	E	
Approach Delay (s)		39.4			40.2			26.7			60.3	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	89.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	549	1024	9	2	750	6	7	15	2	5	21	1108
Future Volume (vph)	549	1024	9	2	750	6	7	15	2	5	21	1108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	6.2
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95			1.00			1.00	0.88
Frt	1.00	1.00	0.85	1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	3303	3406	1524	1719	3434			1798			1810	2733
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)	3303	3406	1524	1719	3434			1798			1810	2733
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	549	1024	9	2	750	6	7	15	2	5	21	1108
RTOR Reduction (vph)	0	0	4	0	0	0	0	2	0	0	0	997
Lane Group Flow (vph)	549	1024	5	2	756	0	0	22	0	0	26	111
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6									4
Actuated Green, G (s)	17.6	49.5	49.5	0.5	33.3			1.6			8.5	8.5
Effective Green, g (s)	17.6	49.5	49.5	0.5	33.3			1.6			8.5	8.5
Actuated g/C Ratio	0.21	0.58	0.58	0.01	0.39			0.02			0.10	0.10
Clearance Time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	6.2
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	685	1988	889	10	1348			33			181	273
v/s Ratio Prot	c0.17	0.30		0.00	c0.22			c0.01			0.01	
v/s Ratio Perm			0.00									c0.04
v/c Ratio	0.80	0.52	0.01	0.20	0.56			0.67			0.14	0.41
Uniform Delay, d1	31.9	10.5	7.4	42.0	20.1			41.3			34.8	35.8
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	6.3	0.1	0.0	3.6	0.3			33.0			0.1	0.4
Delay (s)	38.3	10.6	7.4	45.5	20.4			74.4			35.0	36.1
Level of Service	D	B	A	D	C			E			C	D
Approach Delay (s)		20.2			20.4			74.4			36.1	
Approach LOS		C			C			E			D	

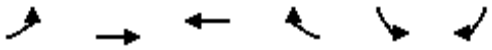
Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	24.7
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	13	43	148	6	202	38	1451	183	714	1482	1
Future Volume (vph)	12	13	43	148	6	202	38	1451	183	714	1482	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.88		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1632		1752	1576		1752	3505	1568	1752	3504	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	1632		1752	1576		1752	3505	1568	1752	3504	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	12	13	43	148	6	202	38	1451	183	714	1482	1
RTOR Reduction (vph)	0	41	0	0	180	0	0	0	75	0	0	0
Lane Group Flow (vph)	12	15	0	148	28	0	38	1451	108	714	1483	0
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	1.9	7.7		10.0	15.8		6.1	56.9	56.9	52.1	102.9	
Effective Green, g (s)	1.9	7.7		10.0	15.8		6.1	56.9	56.9	52.1	102.9	
Actuated g/C Ratio	0.01	0.05		0.07	0.11		0.04	0.40	0.40	0.37	0.72	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	23	88		122	174		74	1397	625	639	2526	
v/s Ratio Prot	0.01	0.01		c0.08	c0.02		0.02	c0.41		c0.41	0.42	
v/s Ratio Perm									0.07			
v/c Ratio	0.52	0.17		1.21	0.16		0.51	1.04	0.17	1.12	0.59	
Uniform Delay, d1	69.9	64.5		66.3	57.5		66.8	42.9	27.7	45.3	9.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	19.7	0.9		149.7	0.4		5.9	34.7	0.1	72.4	0.4	
Delay (s)	89.7	65.4		216.1	57.9		72.7	77.6	27.8	117.7	10.0	
Level of Service	F	E		F	E		E	E	C	F	A	
Approach Delay (s)		69.7			123.7			72.1			45.0	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	62.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	142.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	1215	804	1686	1898	0
Future Volume (vph)	2	1215	804	1686	1898	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	3400	3505	3505	1568	3400	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	3400	3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1215	804	1686	1898	0
RTOR Reduction (vph)	0	0	0	717	0	0
Lane Group Flow (vph)	2	1215	804	969	1898	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	4	5	5		6	
Permitted Phases				5		
Actuated Green, G (s)	1.1	46.0	46.0	46.0	76.1	
Effective Green, g (s)	1.1	46.0	46.0	46.0	76.1	
Actuated g/C Ratio	0.01	0.34	0.34	0.34	0.56	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	27	1192	1192	533	1913	
v/s Ratio Prot	c0.00	0.35	0.23		c0.56	
v/s Ratio Perm				c0.62		
v/c Ratio	0.07	1.02	0.67	1.82	0.99	
Uniform Delay, d1	66.5	44.6	38.2	44.6	29.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	31.0	1.5	375.9	18.6	
Delay (s)	67.7	75.6	39.7	420.5	47.9	
Level of Service	E	E	D	F	D	
Approach Delay (s)		75.6	297.5		47.9	
Approach LOS		E	F		D	

Intersection Summary			
HCM 2000 Control Delay	164.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	135.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	114.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	390	690	1158	312	475	2678
Future Volume (vph)	390	690	1158	312	475	2678
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5036	1568	3400	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5036	1568	3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	390	690	1158	312	475	2678
RTOR Reduction (vph)	0	408	0	194	0	0
Lane Group Flow (vph)	390	282	1158	118	475	2678
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	13.8	13.8	24.1	24.1	14.0	42.1
Effective Green, g (s)	13.8	13.8	24.1	24.1	14.0	42.1
Actuated g/C Ratio	0.22	0.22	0.38	0.38	0.22	0.66
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	734	338	1899	591	744	3317
v/s Ratio Prot	0.11		0.23		0.14	c0.53
v/s Ratio Perm		c0.18		0.08		
v/c Ratio	0.53	0.84	0.61	0.20	0.64	0.81
Uniform Delay, d1	22.2	24.0	16.1	13.4	22.7	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	16.1	0.6	0.2	1.8	1.5
Delay (s)	22.9	40.1	16.7	13.6	24.5	9.5
Level of Service	C	D	B	B	C	A
Approach Delay (s)	33.9		16.0			11.7
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	580	23	194	198	704	9	2256	129	749	2558	1
Future Volume (veh/h)	0	580	23	194	198	704	9	2256	129	749	2558	1
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	0	580	23	194	198	704	9	2256	129	749	2558	1
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	627	280	173	941	712	21	2096	119	628	3160	1
Arrive On Green	0.00	0.18	0.18	0.05	0.27	0.27	0.01	0.43	0.43	0.19	0.61	0.61
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4829	274	3375	5150	2
Grp Volume(v), veh/h	0	580	23	194	198	704	9	1548	837	749	1652	907
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1779	1688	1663	1827
Q Serve(g_s), s	0.0	24.3	1.8	7.5	6.5	39.7	0.4	64.2	64.2	27.5	56.4	56.4
Cycle Q Clear(g_c), s	0.0	24.3	1.8	7.5	6.5	39.7	0.4	64.2	64.2	27.5	56.4	56.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.00
Lane Grp Cap(c), veh/h	2	627	280	173	941	712	21	1443	772	628	2041	1121
V/C Ratio(X)	0.00	0.93	0.08	1.12	0.21	0.99	0.43	1.07	1.08	1.19	0.81	0.81
Avail Cap(c_a), veh/h	68	681	304	173	941	712	68	1443	772	628	2041	1121
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	59.6	50.4	70.2	41.9	40.0	73.2	41.9	41.9	60.2	21.9	21.9
Incr Delay (d2), s/veh	0.0	17.2	0.0	105.2	0.0	30.6	4.9	45.8	57.6	102.1	2.4	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.2	0.8	6.0	3.1	34.4	0.2	38.4	43.7	21.6	26.4	29.5
LnGrp Delay(d),s/veh	0.0	76.8	50.5	175.4	42.0	70.6	78.2	87.7	99.5	162.3	24.3	26.1
LnGrp LOS		E	D	F	D	E	E	F	F	F	C	C
Approach Vol, veh/h		603			1096			2394			3308	
Approach Delay, s/veh		75.8			83.9			91.7			56.1	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	96.1	0.0	45.4	33.0	69.5	13.0	32.4
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	88.6	3.0	* 33	27.5	* 64	7.5	* 29
Max Q Clear Time (g_c+I1), s	2.4	58.4	0.0	41.7	29.5	66.2	9.5	26.3
Green Ext Time (p_c), s	0.0	24.1	0.0	0.0	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	73.3
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	1828	773	61	1518	875	613	1675	106	935	1669	126
Future Volume (veh/h)	153	1828	773	61	1518	875	613	1675	106	935	1669	126
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	153	1828	773	61	1518	0	613	1675	106	935	1669	126
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	3	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	154	1745	543	77	1647	513	575	1576	491	849	1566	488
Arrive On Green	0.05	0.36	0.36	0.02	0.34	0.00	0.17	0.32	0.32	0.17	0.31	0.31
Sat Flow, veh/h	3312	4893	1524	3312	4893	1524	3375	4988	1553	4907	4988	1553
Grp Volume(v), veh/h	153	1828	773	61	1518	0	613	1675	106	935	1669	126
Grp Sat Flow(s),veh/h/ln	1656	1631	1524	1656	1631	1524	1688	1663	1553	1636	1663	1553
Q Serve(g_s), s	6.9	53.6	53.6	2.8	44.8	0.0	25.6	47.5	7.5	26.0	47.2	9.1
Cycle Q Clear(g_c), s	6.9	53.6	53.6	2.8	44.8	0.0	25.6	47.5	7.5	26.0	47.2	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	1745	543	77	1647	513	575	1576	491	849	1566	488
V/C Ratio(X)	0.99	1.05	1.42	0.79	0.92	0.00	1.07	1.06	0.22	1.10	1.07	0.26
Avail Cap(c_a), veh/h	154	1745	543	77	1647	513	575	1576	491	849	1566	488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.6	48.4	48.4	73.0	47.9	0.0	62.3	51.4	37.7	62.2	51.6	38.5
Incr Delay (d2), s/veh	69.9	35.2	200.8	38.6	8.8	0.0	56.4	41.4	0.1	62.5	42.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	29.8	52.9	1.7	21.6	0.0	16.4	27.8	3.2	16.6	27.8	3.9
LnGrp Delay(d),s/veh	141.5	83.5	249.1	111.6	56.7	0.0	118.8	92.8	37.8	124.7	94.0	38.6
LnGrp LOS	F	F	F	F	E		F	F	D	F	F	D
Approach Vol, veh/h		2754			1579			2394			2730	
Approach Delay, s/veh		133.2			58.8			97.0			102.0	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	56.0	30.3	52.0	9.0	59.0	30.0	52.3
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.0	4.8
Max Green Setting (Gmax), s	7.0	* 50	* 26	47.2	3.5	* 54	26.0	47.5
Max Q Clear Time (g_c+I1), s	8.9	46.8	27.6	49.2	4.8	55.6	28.0	49.5
Green Ext Time (p_c), s	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	102.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	821	455	804	91	557	9	188	1038	11	22	1978	1340
Future Volume (veh/h)	821	455	804	91	557	9	188	1038	11	22	1978	1340
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	821	455	804	91	557	9	188	1038	11	22	1978	1340
Adj No. of Lanes	3	2	1	2	2	0	2	3	1	2	3	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	903	1287	576	92	745	12	156	1987	619	45	1850	1014
Arrive On Green	0.18	0.37	0.37	0.03	0.21	0.21	0.05	0.40	0.40	0.01	0.37	0.37
Sat Flow, veh/h	4907	3471	1553	3375	3496	56	3375	4988	1553	3375	4988	2733
Grp Volume(v), veh/h	821	455	804	91	276	290	188	1038	11	22	1978	1340
Grp Sat Flow(s),veh/h/ln	1636	1736	1553	1688	1736	1817	1688	1663	1553	1688	1663	1367
Q Serve(g_s), s	18.0	10.4	40.8	3.0	16.4	16.4	5.1	17.4	0.5	0.7	40.8	40.8
Cycle Q Clear(g_c), s	18.0	10.4	40.8	3.0	16.4	16.4	5.1	17.4	0.5	0.7	40.8	40.8
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	903	1287	576	92	370	387	156	1987	619	45	1850	1014
V/C Ratio(X)	0.91	0.35	1.40	0.99	0.75	0.75	1.20	0.52	0.02	0.49	1.07	1.32
Avail Cap(c_a), veh/h	959	1287	576	92	370	387	156	1987	619	104	1850	1014
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	25.1	34.6	53.5	40.5	40.5	52.5	25.1	20.0	53.9	34.6	34.6
Incr Delay (d2), s/veh	11.4	0.8	188.6	89.7	12.9	12.4	136.2	1.0	0.1	3.0	42.2	151.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	5.1	47.6	2.5	9.2	9.5	5.3	8.2	0.2	0.4	25.9	36.7
LnGrp Delay(d),s/veh	55.4	25.8	223.2	143.2	53.4	52.9	188.7	26.1	20.1	56.9	76.8	186.4
LnGrp LOS	E	C	F	F	D	D	F	C	C	E	F	F
Approach Vol, veh/h		2080			657			1237			3340	
Approach Delay, s/veh		113.8			65.6			50.8			120.7	
Approach LOS		F			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	46.0	25.4	28.6	7.0	49.0	8.0	46.0
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 5.1	* 41	* 22	* 22	3.4	* 42	3.0	* 41
Max Q Clear Time (g_c+I1), s	7.1	42.8	20.0	18.4	2.7	19.4	5.0	42.8
Green Ext Time (p_c), s	0.0	0.0	0.2	3.8	0.0	22.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	101.9
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	1249	518	91	1235	265	575	191	8	318	374	87
Future Volume (veh/h)	77	1249	518	91	1235	265	575	191	8	318	374	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	77	1249	518	91	1235	265	575	191	8	318	374	87
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	94	1157	477	94	1372	294	518	231	196	612	329	280
Arrive On Green	0.05	0.33	0.33	0.05	0.33	0.33	0.29	0.12	0.12	0.35	0.18	0.18
Sat Flow, veh/h	1757	3503	1444	1757	4153	891	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	77	1197	570	91	998	502	575	191	8	318	374	87
Grp Sat Flow(s),veh/h/ln	1757	1679	1590	1757	1679	1687	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.9	37.0	37.0	5.8	31.7	31.7	33.0	11.3	0.4	16.1	20.0	5.4
Cycle Q Clear(g_c), s	4.9	37.0	37.0	5.8	31.7	31.7	33.0	11.3	0.4	16.1	20.0	5.4
Prop In Lane	1.00		0.91	1.00		0.53	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	1109	525	94	1109	557	518	231	196	612	329	280
V/C Ratio(X)	0.82	1.08	1.09	0.97	0.90	0.90	1.11	0.83	0.04	0.52	1.14	0.31
Avail Cap(c_a), veh/h	94	1109	525	94	1109	557	518	379	322	612	329	280
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	37.5	37.5	52.9	35.7	35.7	39.5	47.8	31.7	29.0	46.0	40.0
Incr Delay (d2), s/veh	41.0	51.0	64.5	81.7	10.1	17.6	73.5	7.6	0.1	0.8	91.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	25.0	25.6	4.9	16.2	17.5	26.5	6.3	0.2	7.9	18.5	2.4
LnGrp Delay(d),s/veh	93.4	88.5	102.0	134.6	45.8	53.4	113.0	55.5	31.7	29.8	137.5	40.6
LnGrp LOS	F	F	F	F	D	D	F	E	C	C	F	D
Approach Vol, veh/h		1844			1591			774			779	
Approach Delay, s/veh		92.9			53.3			98.0			82.7	
Approach LOS		F			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	43.0	18.0	10.0	41.0	37.0	24.0	10.0	41.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	23.0	6.0	37.0	33.0	20.0	6.0	37.0
Max Q Clear Time (g_c+I1), s	18.1	13.3	7.8	39.0	35.0	22.0	6.9	33.7
Green Ext Time (p_c), s	2.9	0.7	0.0	0.0	0.0	0.0	0.0	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	79.5
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	31	17	472	44	537	48	2143	294	530	2550	59
Future Volume (veh/h)	73	31	17	472	44	537	48	2143	294	530	2550	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	73	31	17	472	44	537	48	2143	294	530	2550	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	66	42	23	560	303	258	61	2396	746	570	3095	71
Arrive On Green	0.04	0.04	0.04	0.16	0.16	0.16	0.04	0.48	0.48	0.17	0.62	0.62
Sat Flow, veh/h	1757	1121	615	3408	1845	1568	1740	4988	1553	3375	5016	116
Grp Volume(v), veh/h	73	0	48	472	44	537	48	2143	294	530	1686	923
Grp Sat Flow(s),veh/h/ln	1757	0	1736	1704	1845	1568	1740	1663	1553	1688	1663	1807
Q Serve(g_s), s	5.5	0.0	4.0	19.6	3.0	24.0	4.0	57.2	17.7	22.6	57.6	58.4
Cycle Q Clear(g_c), s	5.5	0.0	4.0	19.6	3.0	24.0	4.0	57.2	17.7	22.6	57.6	58.4
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	66	0	65	560	303	258	61	2396	746	570	2051	1115
V/C Ratio(X)	1.10	0.00	0.73	0.84	0.15	2.08	0.78	0.89	0.39	0.93	0.82	0.83
Avail Cap(c_a), veh/h	66	0	65	560	303	258	126	2503	779	589	2051	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	0.0	69.6	59.2	52.2	61.0	69.9	34.6	24.3	59.8	21.7	21.9
Incr Delay (d2), s/veh	141.8	0.0	30.9	10.6	0.1	501.0	7.8	4.3	0.1	20.5	2.6	5.0
Initial Q Delay(d3),s/veh	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	2.5	10.1	1.5	46.2	2.1	27.1	7.6	12.2	27.0	30.5
LnGrp Delay(d),s/veh	213.0	0.0	100.4	69.8	52.3	562.0	77.7	38.8	24.4	80.4	24.4	26.9
LnGrp LOS	F		F	E	D	F	E	D	C	F	C	C
Approach Vol, veh/h		121			1053			2485			3139	
Approach Delay, s/veh		168.4			320.1			37.9			34.6	
Approach LOS		F			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.2	95.3		11.0	30.2	75.4		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 89		5.5	25.5	* 73		24.0
Max Q Clear Time (g_c+I1), s	6.0	60.4		7.5	24.6	59.2		26.0
Green Ext Time (p_c), s	0.0	23.1		0.0	0.1	11.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	82.4
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Future Volume (veh/h)	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
Arrive On Green	0.06	0.23	0.23	0.15	0.32	0.32	0.13	0.23	0.23	0.24	0.34	0.34
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	184	1261	464	577	1079	740	495	1079	154	825	1824	181
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.1	34.7	34.7	22.5	28.0	48.0	19.5	31.9	12.7	35.9	51.6	13.1
Cycle Q Clear(g_c), s	8.1	34.7	34.7	22.5	28.0	48.0	19.5	31.9	12.7	35.9	51.6	13.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
V/C Ratio(X)	0.88	1.09	1.28	1.13	0.67	1.48	1.13	0.93	0.42	1.03	1.07	0.34
Avail Cap(c_a), veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.2	58.0	58.0	64.1	44.5	51.3	65.6	56.4	49.1	57.4	49.5	36.8
Incr Delay (d2), s/veh	32.0	53.3	147.5	81.9	0.9	226.9	84.5	12.2	0.3	38.3	42.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	21.7	29.8	16.3	13.1	52.3	14.2	16.0	5.5	20.9	30.3	5.6
LnGrp Delay(d),s/veh	102.2	111.2	205.4	146.0	45.4	278.2	150.0	68.6	49.4	95.7	91.8	37.0
LnGrp LOS	F	F	F	F	D	F	F	E	D	F	F	D
Approach Vol, veh/h		1909			2396			1728			2830	
Approach Delay, s/veh		133.3			141.5			90.2			89.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	57.2	14.7	53.7	41.4	40.8	28.0	40.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	19.5	* 52	9.2	* 48	35.9	* 35	22.5	* 34
Max Q Clear Time (g_c+I1), s	21.5	53.6	10.1	50.0	37.9	33.9	24.5	36.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	113.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	2208	58	290	1548	492	476	1059	118	521	2559	161
Future Volume (veh/h)	260	2208	58	290	1548	492	476	1059	118	521	2559	161
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	260	2208	58	290	1548	492	476	1059	118	521	2559	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	297	1655	530	231	1564	487	331	1466	456	563	1804	556
Arrive On Green	0.09	0.34	0.34	0.07	0.32	0.32	0.10	0.29	0.29	0.17	0.36	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	260	2208	58	290	1548	492	476	1059	118	521	2559	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	11.7	50.9	3.8	10.2	47.4	48.1	14.6	28.4	8.7	22.9	53.9	0.0
Cycle Q Clear(g_c), s	11.7	50.9	3.8	10.2	47.4	48.1	14.6	28.4	8.7	22.9	53.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	297	1655	530	231	1564	487	331	1466	456	563	1804	556
V/C Ratio(X)	0.88	1.33	0.11	1.26	0.99	1.01	1.44	0.72	0.26	0.93	1.42	0.00
Avail Cap(c_a), veh/h	297	1655	530	231	1564	487	331	1466	456	628	1804	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.7	49.8	34.2	70.2	51.0	51.2	67.9	47.9	40.9	61.8	48.3	0.0
Incr Delay (d2), s/veh	23.2	154.6	0.0	145.3	20.3	43.4	214.3	1.8	0.3	17.9	191.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	46.5	1.7	9.4	24.3	26.1	16.7	13.4	3.8	12.1	56.9	0.0
LnGrp Delay(d),s/veh	90.8	204.4	34.3	215.4	71.2	94.6	282.3	49.7	41.2	79.7	240.1	0.0
LnGrp LOS	F	F	C	F	E	F	F	D	D	E	F	
Approach Vol, veh/h		2526			2330			1653			3080	
Approach Delay, s/veh		188.8			94.1			116.0			213.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	59.0	17.8	53.7	30.1	48.9	15.0	56.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 15	53.9	* 14	47.6	28.0	40.9	* 10	* 51
Max Q Clear Time (g_c+I1), s	16.6	55.9	13.7	50.1	24.9	30.4	12.2	52.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	9.5	0.0	0.0

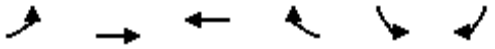
Intersection Summary	
HCM 2010 Ctrl Delay	161.0
HCM 2010 LOS	F

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	689	182	755	773	232	570
Future Volume (veh/h)	689	182	755	773	232	570
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	689	182	755	773	232	570
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	671	177	761	2531	332	976
Arrive On Green	0.24	0.24	0.43	0.72	0.19	0.19
Sat Flow, veh/h	2837	725	1757	3597	1757	1568
Grp Volume(v), veh/h	440	431	755	773	232	570
Grp Sat Flow(s),veh/h/ln	1752	1717	1757	1752	1757	1568
Q Serve(g_s), s	22.0	22.0	38.4	7.1	11.1	17.0
Cycle Q Clear(g_c), s	22.0	22.0	38.4	7.1	11.1	17.0
Prop In Lane		0.42	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	428	420	761	2531	332	976
V/C Ratio(X)	1.03	1.03	0.99	0.31	0.70	0.58
Avail Cap(c_a), veh/h	428	420	761	2531	332	976
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	34.0	25.3	4.5	34.1	10.1
Incr Delay (d2), s/veh	50.5	51.1	30.5	0.1	6.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	16.3	24.9	3.4	5.9	8.5
LnGrp Delay(d),s/veh	84.5	85.1	55.8	4.5	40.5	11.0
LnGrp LOS	F	F	E	A	D	B
Approach Vol, veh/h	871			1528	802	
Approach Delay, s/veh	84.8			29.9	19.5	
Approach LOS	F			C	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		21.0	43.0	26.0				69.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		17.0	39.0	22.0				65.0
Max Q Clear Time (g_c+I1), s		19.0	40.4	24.0				9.1
Green Ext Time (p_c), s		0.0	0.0	0.0				17.6

Intersection Summary	
HCM 2010 Ctrl Delay	42.2
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	2274	1641	657	777	316
Future Volume (veh/h)	141	2274	1641	657	777	316
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	141	2274	1641	657	777	316
Adj No. of Lanes	1	3	3	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	132	2644	1493	573	717	640
Arrive On Green	0.08	0.52	0.42	0.42	0.41	0.41
Sat Flow, veh/h	1757	5202	3749	1376	1757	1568
Grp Volume(v), veh/h	141	2274	1533	765	777	316
Grp Sat Flow(s),veh/h/ln	1757	1679	1679	1602	1757	1568
Q Serve(g_s), s	9.0	46.9	50.0	50.0	49.0	17.9
Cycle Q Clear(g_c), s	9.0	46.9	50.0	50.0	49.0	17.9
Prop In Lane	1.00			0.86	1.00	1.00
Lane Grp Cap(c), veh/h	132	2644	1399	667	717	640
V/C Ratio(X)	1.07	0.86	1.10	1.15	1.08	0.49
Avail Cap(c_a), veh/h	132	2644	1399	667	717	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	24.7	35.0	35.0	35.5	26.3
Incr Delay (d2), s/veh	98.4	3.1	54.8	82.5	58.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	22.4	33.8	37.4	35.3	16.8
LnGrp Delay(d),s/veh	153.9	27.8	89.8	117.5	93.9	26.9
LnGrp LOS	F	C	F	F	F	C
Approach Vol, veh/h		2415	2298		1093	
Approach Delay, s/veh		35.2	99.0		74.5	
Approach LOS		D	F		E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				67.0		53.0	13.0	54.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				63.0		49.0	9.0	50.0
Max Q Clear Time (g_c+I1), s				48.9		51.0	11.0	52.0
Green Ext Time (p_c), s				14.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	1805	98	956	1148	361	89	625	769	411	838	82
Future Volume (veh/h)	283	1805	98	956	1148	361	89	625	769	411	838	82
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	283	1805	98	956	1148	361	89	625	769	411	838	82
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	341	1754	562	839	2470	791	131	539	627	341	755	338
Arrive On Green	0.10	0.36	0.36	0.25	0.50	0.50	0.04	0.15	0.15	0.10	0.22	0.22
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	283	1805	98	956	1148	361	89	625	769	411	838	82
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	10.6	46.6	5.6	32.0	19.7	19.3	3.4	20.0	20.0	13.0	28.0	5.6
Cycle Q Clear(g_c), s	10.6	46.6	5.6	32.0	19.7	19.3	3.4	20.0	20.0	13.0	28.0	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	1754	562	839	2470	791	131	539	627	341	755	338
V/C Ratio(X)	0.83	1.03	0.17	1.14	0.46	0.46	0.68	1.16	1.23	1.21	1.11	0.24
Avail Cap(c_a), veh/h	446	1754	562	839	2470	791	131	539	627	341	755	338
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	41.7	28.5	49.0	20.8	20.7	61.7	55.0	39.0	58.5	51.0	42.2
Incr Delay (d2), s/veh	9.8	29.3	0.2	77.1	0.2	0.6	13.2	90.8	115.5	117.1	67.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	25.7	2.4	24.0	8.9	8.4	1.8	16.5	42.6	11.7	20.6	2.5
LnGrp Delay(d),s/veh	67.2	71.0	28.7	126.1	21.0	21.3	74.9	145.8	154.5	175.6	118.3	42.6
LnGrp LOS	E	F	C	F	C	C	E	F	F	F	F	D
Approach Vol, veh/h		2186			2465			1483			1331	
Approach Delay, s/veh		68.6			61.8			146.0			131.3	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.0	53.0	9.0	32.0	17.0	72.0	17.0	24.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	32.0	46.6	5.0	28.0	17.0	61.6	13.0	20.0
Max Q Clear Time (g_c+I1), s	34.0	48.6	5.4	30.0	12.6	21.7	15.0	22.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.4	37.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	92.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1059	44	925	27	77	110	645	2110	17	146	1045	974
Future Volume (veh/h)	1059	44	925	27	77	110	645	2110	17	146	1045	974
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	1090	0	925	27	77	110	645	2110	17	146	1045	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	982	0	438	22	62	72	427	2249	18	111	1279	398
Arrive On Green	0.28	0.00	0.28	0.05	0.05	0.05	0.25	0.44	0.44	0.06	0.26	0.00
Sat Flow, veh/h	3480	0	1553	473	1348	1568	1740	5104	41	1740	4988	1553
Grp Volume(v), veh/h	1090	0	925	104	0	110	645	1374	753	146	1045	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1821	0	1568	1740	1663	1820	1740	1663	1553
Q Serve(g_s), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.1	47.1	7.6	23.5	0.0
Cycle Q Clear(g_c), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.1	47.1	7.6	23.5	0.0
Prop In Lane	1.00		1.00	0.26		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	982	0	438	84	0	72	427	1465	802	111	1279	398
V/C Ratio(X)	1.11	0.00	2.11	1.24	0.00	1.52	1.51	0.94	0.94	1.32	0.82	0.00
Avail Cap(c_a), veh/h	982	0	438	84	0	72	427	1487	814	111	1303	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	0.0	42.9	57.0	0.0	57.0	45.1	31.8	31.9	55.9	41.8	0.0
Incr Delay (d2), s/veh	63.9	0.0	507.6	176.1	0.0	293.7	241.8	11.4	18.0	193.3	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.8	0.0	76.2	6.9	0.0	8.3	42.7	23.9	27.6	9.6	11.3	0.0
LnGrp Delay(d),s/veh	106.7	0.0	550.5	233.0	0.0	350.7	286.9	43.2	49.8	249.2	45.6	0.0
LnGrp LOS	F		F	F		F	F	D	D	F	D	
Approach Vol, veh/h		2015			214			2772			1191	
Approach Delay, s/veh		310.4			293.5			101.7			70.5	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	34.0	35.4		11.0	12.0	57.4		39.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 29	31.2		5.5	* 7.6	* 53		33.7
Max Q Clear Time (g_c+I1), s	31.3	25.5		7.5	9.6	49.1		35.7
Green Ext Time (p_c), s	0.0	4.5		0.0	0.0	3.5		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		170.3	
HCM 2010 LOS		F	

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	706	1569	392	42	860	300	283	1290	46	729	1761	372
Future Volume (veh/h)	706	1569	392	42	860	300	283	1290	46	729	1761	372
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	706	1569	392	42	860	300	283	1290	46	729	1761	372
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	625	1923	599	72	1106	344	277	1230	383	664	1801	561
Arrive On Green	0.18	0.38	0.38	0.02	0.22	0.22	0.08	0.25	0.25	0.20	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	706	1569	392	42	860	300	283	1290	46	729	1761	372
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	27.5	42.0	30.9	1.8	24.1	27.7	12.3	37.0	3.5	29.5	52.3	30.2
Cycle Q Clear(g_c), s	27.5	42.0	30.9	1.8	24.1	27.7	12.3	37.0	3.5	29.5	52.3	30.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	625	1923	599	72	1106	344	277	1230	383	664	1801	561
V/C Ratio(X)	1.13	0.82	0.65	0.58	0.78	0.87	1.02	1.05	0.12	1.10	0.98	0.66
Avail Cap(c_a), veh/h	625	1923	599	84	1141	355	277	1230	383	664	1801	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	41.7	38.2	72.8	55.1	56.5	68.9	56.5	43.9	60.3	47.3	40.3
Incr Delay (d2), s/veh	77.5	2.7	2.1	2.8	3.0	19.0	60.1	39.5	0.1	65.0	16.1	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.7	19.9	13.7	0.9	11.5	13.8	8.0	21.5	1.5	19.7	26.7	13.3
LnGrp Delay(d),s/veh	138.8	44.3	40.3	75.6	58.1	75.5	129.0	96.0	43.9	125.3	63.4	42.6
LnGrp LOS	F	D	D	E	E	E	F	F	D	F	E	D
Approach Vol, veh/h		2667			1202			1619			2862	
Approach Delay, s/veh		68.7			63.1			100.3			76.5	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	60.2	33.0	39.1	35.0	43.0	8.7	63.4
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	12.3	53.6	27.5	* 34	29.5	* 37	3.7	* 57
Max Q Clear Time (g_c+I1), s	14.3	54.3	29.5	29.7	31.5	39.0	3.8	44.0
Green Ext Time (p_c), s	0.0	0.0	0.0	3.2	0.0	0.0	0.0	7.5

Intersection Summary	
HCM 2010 Ctrl Delay	76.7
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	677	1598	347	112	865	360	264	1249	102	701	1858	829
Future Volume (veh/h)	677	1598	347	112	865	360	264	1249	102	701	1858	829
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	677	1598	347	112	865	360	264	1249	102	701	1858	829
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
Arrive On Green	0.20	0.34	0.34	0.04	0.18	0.18	0.08	0.26	0.26	0.20	0.38	0.38
Sat Flow, veh/h	3408	5036	1568	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	677	1598	347	112	865	360	264	1249	102	701	1858	829
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	27.5	43.1	26.4	4.8	25.2	25.5	10.9	34.6	7.3	28.7	51.4	53.5
Cycle Q Clear(g_c), s	27.5	43.1	26.4	4.8	25.2	25.5	10.9	34.6	7.3	28.7	51.4	53.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
V/C Ratio(X)	1.01	0.94	0.66	0.83	0.99	1.32	0.95	0.97	0.25	1.01	0.97	1.40
Avail Cap(c_a), veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	45.1	39.5	66.6	57.1	57.3	64.0	51.2	41.1	55.7	42.6	43.3
Incr Delay (d2), s/veh	37.6	10.8	2.4	32.0	27.5	168.2	40.7	17.3	0.1	37.5	15.0	188.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4	21.7	11.8	2.7	13.4	23.3	6.7	18.0	3.2	17.0	26.2	53.9
LnGrp Delay(d),s/veh	93.9	55.8	41.9	98.7	84.6	225.4	104.7	68.6	41.2	93.1	57.6	232.0
LnGrp LOS	F	E	D	F	F	F	F	E	D	F	E	F
Approach Vol, veh/h		2622			1337			1615			3388	
Approach Delay, s/veh		63.8			123.7			72.8			107.6	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	59.0	33.0	31.0	34.2	41.8	11.3	52.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	11.5	53.5	27.5	25.5	28.7	36.3	5.8	47.2
Max Q Clear Time (g_c+I1), s	12.9	55.5	29.5	27.5	30.7	36.6	6.8	45.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	90.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	976	768	4	64	442	80	54	847	73	86	686	690
Future Volume (veh/h)	976	768	4	64	442	80	54	847	73	86	686	690
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	976	768	4	64	442	80	54	847	73	86	686	690
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	3	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	989	1672	748	107	765	342	93	837	375	116	1237	678
Arrive On Green	0.30	0.49	0.49	0.03	0.22	0.22	0.03	0.24	0.24	0.03	0.25	0.25
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3343	3438	1538	3343	4940	2707
Grp Volume(v), veh/h	976	768	4	64	442	80	54	847	73	86	686	690
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1672	1719	1538	1672	1647	1354
Q Serve(g_s), s	31.3	15.8	0.1	2.0	12.3	4.6	1.7	26.0	4.0	2.7	12.9	26.7
Cycle Q Clear(g_c), s	31.3	15.8	0.1	2.0	12.3	4.6	1.7	26.0	4.0	2.7	12.9	26.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	989	1672	748	107	765	342	93	837	375	116	1237	678
V/C Ratio(X)	0.99	0.46	0.01	0.60	0.58	0.23	0.58	1.01	0.19	0.74	0.55	1.02
Avail Cap(c_a), veh/h	989	1706	763	174	868	388	94	837	375	116	1237	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	17.9	13.9	51.0	36.9	33.9	51.3	40.4	32.1	51.1	34.8	40.0
Incr Delay (d2), s/veh	25.2	0.4	0.0	2.0	1.5	0.7	5.7	34.0	0.3	20.1	0.5	39.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	7.5	0.1	1.0	5.9	2.0	0.9	16.2	1.7	1.6	5.9	13.7
LnGrp Delay(d),s/veh	62.4	18.3	13.9	53.0	38.4	34.6	57.0	74.4	32.3	71.1	35.4	79.1
LnGrp LOS	E	B	B	D	D	C	E	F	C	E	D	F
Approach Vol, veh/h		1748			586			974			1462	
Approach Delay, s/veh		42.9			39.5			70.3			58.1	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.5	30.0	7.6	32.7	8.0	58.4	8.3	32.0
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	4.6	6.0
Max Green Setting (Gmax), s	31.9	27.2	3.0	26.7	5.6	53.5	3.7	26.0
Max Q Clear Time (g_c+I1), s	33.3	14.3	3.7	28.7	4.0	17.8	4.7	28.0
Green Ext Time (p_c), s	0.0	9.6	0.0	0.0	0.0	20.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	52.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	1103	319	76	721	6	585	1248	78	36	1015	366
Future Volume (veh/h)	360	1103	319	76	721	6	585	1248	78	36	1015	366
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	360	1103	319	76	721	6	585	1248	78	36	1015	366
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	381	1101	493	129	842	377	571	1552	694	90	1057	473
Arrive On Green	0.11	0.31	0.31	0.04	0.24	0.24	0.17	0.44	0.44	0.03	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	360	1103	319	76	721	6	585	1248	78	36	1015	366
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	9.4	28.1	15.7	2.0	17.6	0.3	15.0	27.6	2.6	0.9	25.5	19.0
Cycle Q Clear(g_c), s	9.4	28.1	15.7	2.0	17.6	0.3	15.0	27.6	2.6	0.9	25.5	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	1101	493	129	842	377	571	1552	694	90	1057	473
V/C Ratio(X)	0.95	1.00	0.65	0.59	0.86	0.02	1.02	0.80	0.11	0.40	0.96	0.77
Avail Cap(c_a), veh/h	381	1101	493	152	861	385	571	1552	694	152	1057	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	30.7	26.4	42.4	32.5	25.9	37.3	21.6	14.6	42.9	30.7	28.5
Incr Delay (d2), s/veh	32.4	27.6	3.0	4.2	8.4	0.0	44.0	3.2	0.1	2.8	18.8	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	17.7	7.2	1.0	9.5	0.1	10.5	13.9	1.1	0.5	15.0	9.2
LnGrp Delay(d),s/veh	71.8	58.3	29.4	46.6	40.9	25.9	81.2	24.8	14.7	45.7	49.5	36.3
LnGrp LOS	E	F	C	D	D	C	F	C	B	D	D	D
Approach Vol, veh/h		1782			803			1911			1417	
Approach Delay, s/veh		55.8			41.3			41.6			46.0	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	43.6	7.4	32.1	19.0	31.0	14.0	25.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.0	4.0	28.0	15.0	27.0	10.0	22.0
Max Q Clear Time (g_c+I1), s	2.9	29.6	4.0	30.1	17.0	27.5	11.4	19.6
Green Ext Time (p_c), s	0.0	7.6	0.0	0.0	0.0	0.0	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	46.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	986	643	205	657	673	338	490	391	785	976	0
Future Volume (veh/h)	0	986	643	205	657	673	338	490	391	785	976	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	986	643	205	657	673	338	490	391	785	976	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	5	1223	381	243	1870	941	427	801	358	779	1163	520
Arrive On Green	0.00	0.24	0.24	0.07	0.37	0.37	0.13	0.23	0.23	0.23	0.33	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	986	643	205	657	673	338	490	391	785	976	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	12.9	17.0	4.2	6.6	21.1	6.7	8.8	16.0	16.0	18.0	0.0
Cycle Q Clear(g_c), s	0.0	12.9	17.0	4.2	6.6	21.1	6.7	8.8	16.0	16.0	18.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	5	1223	381	243	1870	941	427	801	358	779	1163	520
V/C Ratio(X)	0.00	0.81	1.69	0.84	0.35	0.72	0.79	0.61	1.09	1.01	0.84	0.00
Avail Cap(c_a), veh/h	195	1223	381	243	1870	941	438	801	358	779	1163	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	24.9	26.5	32.1	15.9	9.8	29.7	24.2	27.0	27.0	21.7	0.0
Incr Delay (d2), s/veh	0.0	4.1	321.1	22.5	0.1	2.6	9.4	1.4	74.2	34.1	5.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.4	41.3	2.7	3.1	9.7	3.7	4.4	14.3	11.2	9.6	0.0
LnGrp Delay(d),s/veh	0.0	29.0	347.6	54.6	16.0	12.4	39.1	25.6	101.2	61.2	27.2	0.0
LnGrp LOS		C	F	D	B	B	D	C	F	F	C	
Approach Vol, veh/h		1629			1535			1219			1761	
Approach Delay, s/veh		154.8			19.6			53.6			42.4	
Approach LOS		F			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	20.0	9.0	21.0	12.8	27.2	0.0	30.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	16.0	5.0	17.0	9.0	23.0	4.0	18.0
Max Q Clear Time (g_c+I1), s	18.0	18.0	6.2	19.0	8.7	20.0	0.0	23.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	68.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	851	822	72	1075	768	0	154	819	843	40	2036	759
Future Volume (veh/h)	851	822	72	1075	768	0	154	819	843	40	2036	759
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	851	822	72	1075	768	0	154	819	843	40	2036	759
Adj No. of Lanes	3	3	1	2	3	1	2	3	1	2	3	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	977	755	235	994	1231	383	142	2035	634	71	1930	1058
Arrive On Green	0.20	0.15	0.15	0.29	0.24	0.00	0.04	0.40	0.40	0.02	0.38	0.38
Sat Flow, veh/h	4954	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	2760
Grp Volume(v), veh/h	851	822	72	1075	768	0	154	819	843	40	2036	759
Grp Sat Flow(s),veh/h/ln	1651	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1380
Q Serve(g_s), s	20.0	18.0	4.9	35.0	16.3	0.0	5.0	13.9	48.5	1.4	46.0	28.1
Cycle Q Clear(g_c), s	20.0	18.0	4.9	35.0	16.3	0.0	5.0	13.9	48.5	1.4	46.0	28.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	977	755	235	994	1231	383	142	2035	634	71	1930	1058
V/C Ratio(X)	0.87	1.09	0.31	1.08	0.62	0.00	1.08	0.40	1.33	0.56	1.05	0.72
Avail Cap(c_a), veh/h	1115	755	235	994	1231	383	142	2035	634	85	1930	1058
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	51.0	45.4	42.5	40.4	0.0	57.5	25.4	35.8	58.2	37.0	31.5
Incr Delay (d2), s/veh	7.0	59.3	0.7	53.2	1.0	0.0	99.9	0.1	159.3	6.8	36.7	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	12.5	2.2	23.8	7.7	0.0	4.3	6.5	48.9	0.7	27.8	11.0
LnGrp Delay(d),s/veh	53.6	110.3	46.2	95.7	41.4	0.0	157.4	25.6	195.0	65.0	73.7	33.8
LnGrp LOS	D	F	D	F	D		F	C	F	E	F	C
Approach Vol, veh/h		1745			1843			1816			2835	
Approach Delay, s/veh		80.0			73.1			115.4			62.9	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	52.5	39.0	22.0	9.0	50.0	27.7	33.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	48.0	35.0	18.0	5.0	46.0	27.0	26.0
Max Q Clear Time (g_c+I1), s	3.4	50.5	37.0	20.0	7.0	48.0	22.0	18.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	1.7	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	80.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	553	1543	1044	34	1123	23	851	743	59	86	732	392
Future Volume (veh/h)	553	1543	1044	34	1123	23	851	743	59	86	732	392
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	553	1543	1044	34	1123	23	851	743	59	86	732	392
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	611	2015	627	63	1204	375	786	1333	596	139	668	299
Arrive On Green	0.18	0.40	0.40	0.02	0.24	0.24	0.23	0.38	0.38	0.04	0.19	0.19
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	553	1543	1044	34	1123	23	851	743	59	86	732	392
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	15.9	26.4	39.9	1.0	21.8	1.1	23.0	16.6	2.4	2.5	19.0	19.0
Cycle Q Clear(g_c), s	15.9	26.4	39.9	1.0	21.8	1.1	23.0	16.6	2.4	2.5	19.0	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	611	2015	627	63	1204	375	786	1333	596	139	668	299
V/C Ratio(X)	0.90	0.77	1.66	0.54	0.93	0.06	1.08	0.56	0.10	0.62	1.10	1.31
Avail Cap(c_a), veh/h	615	2015	627	103	1212	377	786	1333	596	171	668	299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	25.9	29.9	48.5	37.2	29.3	38.4	24.3	19.9	47.1	40.4	40.4
Incr Delay (d2), s/veh	16.8	1.8	305.9	7.2	12.9	0.1	56.8	0.5	0.1	4.5	64.1	162.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	12.5	70.5	0.5	11.5	0.5	16.9	8.1	1.1	1.3	15.0	21.7
LnGrp Delay(d),s/veh	56.9	27.7	335.8	55.7	50.0	29.4	95.2	24.8	20.0	51.6	104.5	202.8
LnGrp LOS	E	C	F	E	D	C	F	C	B	D	F	F
Approach Vol, veh/h		3140			1180			1653			1210	
Approach Delay, s/veh		135.3			49.8			60.9			132.6	
Approach LOS		F			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	41.9	5.8	43.9	27.0	23.0	21.9	27.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	37.0	3.0	39.0	23.0	19.0	18.0	24.0
Max Q Clear Time (g_c+I1), s	4.5	18.6	3.0	41.9	25.0	21.0	17.9	23.8
Green Ext Time (p_c), s	0.0	11.6	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	103.7
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	268	47	170	1793	6	32	1488	251	14	1604	99
Future Volume (veh/h)	91	268	47	170	1793	6	32	1488	251	14	1604	99
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	91	268	47	170	1793	6	32	1488	251	14	1604	99
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	149	1805	562	244	1944	605	84	1879	585	45	1820	567
Arrive On Green	0.04	0.36	0.36	0.07	0.39	0.39	0.02	0.37	0.37	0.01	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	91	268	47	170	1793	6	32	1488	251	14	1604	99
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	2.3	3.1	1.7	4.2	29.5	0.2	0.8	22.9	10.4	0.4	26.0	3.7
Cycle Q Clear(g_c), s	2.3	3.1	1.7	4.2	29.5	0.2	0.8	22.9	10.4	0.4	26.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	1805	562	244	1944	605	84	1879	585	45	1820	567
V/C Ratio(X)	0.61	0.15	0.08	0.70	0.92	0.01	0.38	0.79	0.43	0.31	0.88	0.17
Avail Cap(c_a), veh/h	157	1805	562	313	1968	613	157	1879	585	157	1852	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	18.9	18.5	39.5	25.5	16.5	41.8	24.3	20.4	42.5	26.0	18.9
Incr Delay (d2), s/veh	6.2	0.0	0.1	4.6	7.7	0.0	2.8	2.4	0.5	3.9	5.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.4	0.8	2.1	15.0	0.1	0.4	11.0	4.6	0.2	12.9	1.6
LnGrp Delay(d),s/veh	47.1	19.0	18.5	44.1	33.2	16.5	44.6	26.7	20.9	46.4	31.3	19.1
LnGrp LOS	D	B	B	D	C	B	D	C	C	D	C	B
Approach Vol, veh/h		406			1969			1771			1717	
Approach Delay, s/veh		25.2			34.1			26.2			30.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	36.5	10.2	35.2	6.2	35.5	7.8	37.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	32.0	8.0	30.0	4.0	32.0	4.0	34.0
Max Q Clear Time (g_c+I1), s	2.4	24.9	6.2	5.1	2.8	28.0	4.3	31.5
Green Ext Time (p_c), s	0.0	6.9	0.1	17.6	0.0	3.5	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	30.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	672	0	1044	749	123	3	799	947	98	732	304
Future Volume (veh/h)	301	672	0	1044	749	123	3	799	947	98	732	304
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	301	672	0	1044	749	123	3	799	947	98	732	304
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	385	866	270	1140	1982	617	11	925	938	156	1075	481
Arrive On Green	0.11	0.17	0.00	0.33	0.39	0.39	0.00	0.26	0.26	0.05	0.31	0.31
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	301	672	0	1044	749	123	3	799	947	98	732	304
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	7.5	11.1	0.0	25.6	9.2	4.5	0.1	18.9	23.0	2.5	15.9	14.5
Cycle Q Clear(g_c), s	7.5	11.1	0.0	25.6	9.2	4.5	0.1	18.9	23.0	2.5	15.9	14.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	385	866	270	1140	1982	617	11	925	938	156	1075	481
V/C Ratio(X)	0.78	0.78	0.00	0.92	0.38	0.20	0.27	0.86	1.01	0.63	0.68	0.63
Avail Cap(c_a), veh/h	509	925	288	1213	1982	617	156	925	938	156	1075	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	34.5	0.0	27.8	18.8	17.4	43.3	30.6	17.5	40.8	26.5	26.0
Incr Delay (d2), s/veh	5.7	4.0	0.0	10.5	0.1	0.2	12.9	8.5	31.7	7.6	1.8	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.5	0.0	13.7	4.3	2.0	0.1	10.2	30.4	1.3	8.0	6.6
LnGrp Delay(d),s/veh	43.3	38.4	0.0	38.3	18.9	17.5	56.2	39.1	49.1	48.5	28.2	28.7
LnGrp LOS	D	D		D	B	B	E	D	F	D	C	C
Approach Vol, veh/h		973			1916			1749			1134	
Approach Delay, s/veh		39.9			29.4			44.6			30.1	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	27.0	33.1	19.0	4.3	30.7	13.8	38.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	23.0	31.0	16.0	4.0	23.0	13.0	34.0
Max Q Clear Time (g_c+I1), s	4.5	25.0	27.6	13.1	2.1	17.9	9.5	11.2
Green Ext Time (p_c), s	0.0	0.0	1.5	1.9	0.0	4.6	0.4	11.3

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	249	310	120	126	10	190	1811	93	10	1800	259
Future Volume (veh/h)	190	249	310	120	126	10	190	1811	93	10	1800	259
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	190	249	310	120	126	10	190	1811	93	10	1800	259
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	195	348	296	150	300	255	195	2472	127	78	1947	278
Arrive On Green	0.11	0.19	0.19	0.09	0.16	0.16	0.11	0.50	0.50	0.04	0.44	0.44
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	4906	252	1757	4454	636
Grp Volume(v), veh/h	190	249	310	120	126	10	190	1238	666	10	1353	706
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1679	1800	1757	1679	1732
Q Serve(g_s), s	9.7	11.4	17.0	6.0	5.5	0.5	9.7	26.1	26.2	0.5	34.2	34.8
Cycle Q Clear(g_c), s	9.7	11.4	17.0	6.0	5.5	0.5	9.7	26.1	26.2	0.5	34.2	34.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.37
Lane Grp Cap(c), veh/h	195	348	296	150	300	255	195	1691	907	78	1467	757
V/C Ratio(X)	0.97	0.71	1.05	0.80	0.42	0.04	0.97	0.73	0.73	0.13	0.92	0.93
Avail Cap(c_a), veh/h	195	348	296	176	328	279	195	1691	907	78	1467	757
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	34.2	36.5	40.4	33.8	31.7	39.9	17.6	17.6	41.3	23.9	24.1
Incr Delay (d2), s/veh	56.5	6.8	65.0	20.1	0.9	0.1	56.5	2.8	5.2	0.7	11.1	19.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	6.5	12.7	3.8	2.9	0.2	7.8	12.7	14.3	0.3	18.0	20.6
LnGrp Delay(d),s/veh	96.4	41.0	101.5	60.5	34.8	31.8	96.4	20.4	22.8	42.1	34.9	43.8
LnGrp LOS	F	D	F	E	C	C	F	C	C	D	C	D
Approach Vol, veh/h		749			256			2094			2069	
Approach Delay, s/veh		80.1			46.7			28.1			38.0	
Approach LOS		F			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	49.3	11.7	21.0	14.0	43.3	14.0	18.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	44.0	9.0	17.0	10.0	38.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	2.5	28.2	8.0	19.0	11.7	36.8	11.7	7.5
Green Ext Time (p_c), s	0.0	15.4	0.0	0.0	0.0	1.2	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	40.5
HCM 2010 LOS	D

Appendix D

Freeway Analysis

US-50 Freeway System

Mainline Analysis – Summary Tables

Table D-1
Existing Peak Hour Freeway Mainline Operations

		AM Peak Hour													
		Number of Lanes		Volume		Peak Hour Factor		Heavy Vehicles		Lowest 15-minute Average Speed		Density (pcplph)		LOS	
Direction	US 50 Segment	Mixed-Flow	HOV	Mixed-Flow	HOV	Mixed-Flow	HOV	Mixed-Flow	HOV	Mixed-Flow	HOV	Mixed-Flow	HOV	Mixed-Flow	HOV
Eastbound	SR 99 / SR 51 to Stockton Boulevard	5		7,068		0.96		4%		61		23.46		C	
	Stockton Boulevard to 59th Street	5		7,470		0.96		4%		44		35.05		F	
	59th Street to 65th Street	4		6,767		0.97		4%		62		27.40		D	
	65th Street to Howe Avenue	5		7,962		0.98		4%		57		28.05		D	
	Howe Avenue to Watt Avenue	4		7,405		0.96		4%		60		31.77		D	
	Watt Avenue to Bradshaw Road	4	1	7,935	297	0.95	0.83	4%	0%	75	75	27.22	4.78	D	A
	Bradshaw Road to Mather Field Road	4	1	7,725	370	0.96	0.81	4%	0%	44	73	45.10	6.23	F	A
	Mather Field Road to Zinfandel Drive	5	1	7,275	291	0.94	0.87	4%	0%	79	73	19.18	4.56	C	A
	Zinfandel Drive to Sunrise Boulevard	4	1	5,121	279	0.96	0.87	4%	0%	65	58	20.08	5.52	C	A
	Sunrise Boulevard to Hazel Avenue	3	1	4,985	278	0.94	0.85	6%	0%	62	61	27.67	5.34	D	A
Westbound	Hazel Avenue to Sunrise Boulevard	3	1	6,068	1,109	0.95	0.93	6%	0%	63	61	32.91	19.38	D	C
	Sunrise Boulevard to Zinfandel Drive	4	1	7,502	891	0.96	0.84	4%	0%	58	54	33.31	19.60	D	C
	Zinfandel Drive to Mather Field Road	5	1	7,548	1,028	0.96	0.78	4%	0%	70	66	21.96	20.04	C	C
	Mather Field Road to Bradshaw Road	4	1	7,859	1,121	0.95	0.79	4%	0%	46	62	44.40	23.04	F	C
	Bradshaw Road to Watt Avenue	4	1	7,550	1,235	0.90	0.80	4%	0%	38	38	54.37	40.40	F	F
	Watt Avenue to Howe Avenue	5		7,376		0.93		4%		29		53.44		F	
	Howe Avenue to 65th Street	5		8,157		0.96		4%		47		35.68		F	
	65th Street to 59th Street	4		8,278		0.98		4%		46		44.85		F	
	59th Street to Stockton Boulevard	5		9,115		0.99		4%		61		29.39		D	
	Stockton Boulevard to SR 99 / SR 51	5		8,546		0.95		4%		55		31.89		D	
		PM Peak Hour													
		Number of Lanes		Volume		Peak Hour Factor		Heavy Vehicles		Lowest 15-minute Average Speed		Density (pcplph)		LOS	
Direction	US 50 Segment	Mixed-Flow	HOV	Mixed-Flow	HOV	Mixed-Flow	HOV	Mixed-Flow	HOV	Mixed-Flow	HOV	Mixed-Flow	HOV	Mixed-Flow	HOV
Eastbound	SR 99 / SR 51 to Stockton Boulevard	5		6,415		0.98		4%		55		23.33		C	
	Stockton Boulevard to 59th Street	5		7,228		0.99		4%		35		41.46		F	
	59th Street to 65th Street	4		6,641		0.95		4%		60		28.36		D	
	65th Street to Howe Avenue	5		7,562		0.99		4%		50		29.71		D	
	Howe Avenue to Watt Avenue	4		7,602		0.98		4%		57		33.01		D	
	Watt Avenue to Bradshaw Road	4	1	7,176	568	0.98	0.98	4%	0%	72	71	24.80	8.20	C	A
	Bradshaw Road to Mather Field Road	4	1	7,366	749	1.00	0.99	4%	0%	71	75	25.50	10.13	C	A
	Mather Field Road to Zinfandel Drive	5	1	7,224	779	0.97	0.93	4%	0%	72	68	20.13	12.30	C	B
	Zinfandel Drive to Sunrise Boulevard	4	1	6,649	865	0.95	0.95	4%	0%	41	46	42.12	19.76	F	F
	Sunrise Boulevard to Hazel Avenue	3	1	5,323	961	0.94	0.95	6%	0%	49	60	37.30	16.96	F	B
Westbound	Hazel Avenue to Sunrise Boulevard	3	1	4,370	1,321	0.97	0.98	6%	0%	63	60	23.17	22.59	C	C
	Sunrise Boulevard to Zinfandel Drive	4	1	4,762	422	0.93	0.88	4%	0%	65	61	19.30	7.90	C	A
	Zinfandel Drive to Mather Field Road	5	1	5,765	487	0.95	0.84	4%	0%	80	74	14.85	7.82	B	A
	Mather Field Road to Bradshaw Road	4	1	6,939	591	0.99	0.82	4%	0%	60	49	28.66	14.66	D	F
	Bradshaw Road to Watt Avenue	4	1	6,466	773	0.96	0.82	4%	0%	50	61	32.91	15.58	D	B
	Watt Avenue to Howe Avenue	5		5,106		0.98		4%		44		22.96		F	
	Howe Avenue to 65th Street	5		7,407		0.99		4%		35		41.55		F	
	65th Street to 59th Street	4		7,358		0.99		4%		35		51.56		F	
	59th Street to Stockton Boulevard	5		7,945		0.99		4%		49		32.31		F	
	Stockton Boulevard to SR 99 / SR 51	5		8,136		0.96		4%		50		33.25		F	

Source: DKS Associates, 2013. Revised December 10, 2018.

Table D-2
Peak Hour Freeway Mainline Operations - Existing Scenarios

Direction	US 50 Segment	Number of Lanes		AM Peak Hour					
				Existing		Existing Plus Jackson Township		Existing Plus FOUR PROJECTS	
		Mixed-Flow	HOV	Mixed-Flow Volume	Level of Service	Mixed-Flow Volume	Level of Service	Mixed-Flow Volume	Level of Service
Eastbound	SR 99 / SR 51 to Stockton Boulevard	5		7,068	C	7,156	C	7,705	C
	Stockton Boulevard to 59th Street	5		7,470	**F**	7,564	**F**	8,136	**F**
	59th Street to 65th Street	4		6,767	D	6,856	D	7,439	D
	65th Street to Howe Avenue	5		7,962	D	8,084	D	8,668	D
	Howe Avenue to Watt Avenue	4		7,405	D	7,477	D	7,609	D
	Watt Avenue to Bradshaw Road	4	1	7,935	D	8,002	D	8,145	D
	Bradshaw Road to Mather Field Road	4	1	7,725	**F**	7,712	**F**	7,761	**F**
	Mather Field Road to Zinfandel Drive	5	1	7,275	C	7,268	C	7,713	C
	Zinfandel Drive to Sunrise Boulevard	4	1	5,121	C	5,289	C	5,726	C
	Sunrise Boulevard to Hazel Avenue	3	1	4,985	C	5,132	C	5,461	C
Westbound	Hazel Avenue to Sunrise Boulevard	3	1	6,068	D	6,121	D	6,334	E
	Sunrise Boulevard to Zinfandel Drive	4	1	7,502	D	7,540	D	7,846	E
	Zinfandel Drive to Mather Field Road	5	1	7,548	C	7,551	C	7,829	C
	Mather Field Road to Bradshaw Road	4	1	7,859	**F**	7,857	**F**	7,810	**F**
	Bradshaw Road to Watt Avenue	4	1	7,550	**F**	7,522	**F**	7,424	**F**
	Watt Avenue to Howe Avenue	5		7,376	**F**	7,326	**F**	7,192	**F**
	Howe Avenue to 65th Street	5		8,157	**F**	8,182	**F**	8,489	**F**
	65th Street to 59th Street	4		8,278	**F**	8,281	**F**	8,605	**F**
	59th Street to Stockton Boulevard	5		9,115	D	9,125	D	9,448	D
	Stockton Boulevard to SR 99 / SR 51	5		8,546	D	8,536	D	8,836	D

Direction	US 50 Segment	Number of Lanes		PM Peak Hour					
				Existing		Existing Plus Jackson Township		Existing Plus FOUR PROJECTS	
		Mixed-Flow	HOV	Mixed-Flow Volume	Level of Service	Mixed-Flow Volume	Level of Service	Mixed-Flow Volume	Level of Service
Eastbound	SR 99 / SR 51 to Stockton Boulevard	5		6,415	C	6,475	C	6,711	C
	Stockton Boulevard to 59th Street	5		7,228	**F**	7,290	**F**	7,546	**F**
	59th Street to 65th Street	4		6,641	D	6,689	D	6,931	D
	65th Street to Howe Avenue	5		7,562	D	7,611	D	7,854	D
	Howe Avenue to Watt Avenue	4		7,602	D	7,711	D	7,700	D
	Watt Avenue to Bradshaw Road	4	1	7,176	C	7,284	C	7,310	C
	Bradshaw Road to Mather Field Road	4	1	7,366	C	7,407	C	7,248	C
	Mather Field Road to Zinfandel Drive	5	1	7,224	C	7,264	C	7,560	C
	Zinfandel Drive to Sunrise Boulevard	4	1	6,649	**F**	6,708	**F**	7,083	**F**
	Sunrise Boulevard to Hazel Avenue	3	1	5,323	**F**	5,366	**F**	5,611	**F**
Westbound	Hazel Avenue to Sunrise Boulevard	3	1	4,370	C	4,481	C	4,707	C
	Sunrise Boulevard to Zinfandel Drive	4	1	4,762	C	4,902	C	5,134	C
	Zinfandel Drive to Mather Field Road	5	1	5,765	B	5,710	B	5,928	B
	Mather Field Road to Bradshaw Road	4	1	6,939	D	6,869	D	6,892	D
	Bradshaw Road to Watt Avenue	4	1	6,466	D	6,556	D	6,913	E
	Watt Avenue to Howe Avenue	5		5,106	**F**	5,165	**F**	5,395	**F**
	Howe Avenue to 65th Street	5		7,407	**F**	7,469	**F**	8,031	**F**
	65th Street to 59th Street	4		7,358	**F**	7,413	**F**	7,953	**F**
	59th Street to Stockton Boulevard	5		7,945	**F**	8,008	**F**	8,537	**F**
	Stockton Boulevard to SR 99 / SR 51	5		8,136	**F**	8,194	**F**	8,635	**F**

Source: DKS Associates, 2014. Revised December 10, 2018.

Table D-3
Peak Hour Freeway Mainline Operations - Cumulative Scenarios

Direction	US 50 Segment	Number of Lanes		MTP Cumulative		MTP Cumulative Plus FOUR PROJECTS		CEQA Cumulative		CEQA Cumulative Plus FOUR PROJECTS	
		Mixed-Flow	HOV	Mixed-Flow Volume	Level of Service	Mixed-Flow Volume	Level of Service	Mixed-Flow Volume	Level of Service	Mixed-Flow Volume	Level of Service
AM Peak Hour											
Eastbound	SR 99 / SR 51 to Stockton Boulevard	5	1	8,582	D	9,245	D	8,751	D	9,295	D
	Stockton Boulevard to 59th Street	5	1	8,024	**F**	8,627	**F**	8,168	**F**	8,642	**F**
	59th Street to 65th Street	4	1	7,506	D	8,094	E	7,637	D	8,099	E
	65th Street to Howe Avenue	5	1	7,971	D	8,166	D	8,019	D	8,272	D
	Howe Avenue to Watt Avenue	5	1	7,147	C	7,149	C	7,213	C	7,366	C
	Watt Avenue to Bradshaw Road	4	1	9,583	**F**	9,596	**F**	9,633	**F**	9,825	**F**
	Bradshaw Road to Mather Field Road	5	1	9,362	**F**	8,922	**F**	9,467	**F**	9,483	**F**
	Mather Field Road to Zinfandel Drive	5	1	8,935	D	8,490	C	9,072	D	9,211	D
	Zinfandel Drive to Sunrise Boulevard	5	1	6,237	C	5,990	C	6,313	C	6,400	C
	Sunrise Boulevard to Rancho Cordova Pkwy	4	1	5,335	C	4,943	C	5,835	C	5,892	C
	Rancho Cordova Pkwy to Hazel Avenue	4	1	6,571	D	6,074	C	7,170	D	7,249	D
Westbound	Hazel Avenue to Rancho Cordova Pkwy	4	1	5,240	B	5,695	B	5,376	B	5,643	B
	Rancho Cordova Pkwy to Sunrise Boulevard	4	1	6,587	C	7,048	C	6,906	C	7,103	C
	Sunrise Boulevard to Zinfandel Drive	5	1	8,392	D	8,891	D	8,587	D	8,801	D
	Zinfandel Drive to Mather Field Road	5	1	8,942	D	9,330	D	9,480	D	9,493	D
	Mather Field Road to Bradshaw Road	5	1	8,996	**F**	9,065	**F**	9,560	**F**	9,406	**F**
	Bradshaw Road to Watt Avenue	4	1	8,662	**F**	8,415	E	9,001	**F**	8,854	**F**
	Watt Avenue to Howe Avenue	5	1	7,604	**F**	7,111	**F**	7,880	**F**	7,679	**F**
	Howe Avenue to 65th Street	5	1	8,577	**F**	8,539	**F**	8,761	**F**	8,972	**F**
	65th Street to 59th Street	4	1	8,621	**F**	8,601	**F**	8,809	**F**	9,012	**F**
	59th Street to Stockton Boulevard	5	1	9,516	D	9,426	D	9,692	D	9,890	D
	Stockton Boulevard to SR 99 / SR 51	5	1	10,023	E	9,930	E	10,187	E	10,300	E
PM Peak Hour											
Eastbound	SR 99 / SR 51 to Stockton Boulevard	5	1	8,297	D	8,246	D	8,621	D	8,855	D
	Stockton Boulevard to 59th Street	5	1	7,539	**F**	7,473	**F**	7,811	**F**	8,051	**F**
	59th Street to 65th Street	4	1	7,088	D	7,033	D	7,341	D	7,521	D
	65th Street to Howe Avenue	5	1	7,455	D	7,302	D	7,658	D	7,812	D
	Howe Avenue to Watt Avenue	5	1	6,393	C	6,150	C	6,680	C	6,679	C
	Watt Avenue to Bradshaw Road	4	1	8,662	E	8,437	D	8,976	E	9,056	E
	Bradshaw Road to Mather Field Road	5	1	8,502	C	8,510	C	9,033	C	9,015	C
	Mather Field Road to Zinfandel Drive	5	1	8,234	C	8,548	C	8,765	D	8,916	D
	Zinfandel Drive to Sunrise Boulevard	5	1	6,181	**F**	6,487	**F**	6,367	**F**	6,551	**F**
	Sunrise Boulevard to Rancho Cordova Pkwy	4	1	5,450	**F**	5,894	**F**	5,875	**F**	6,121	**F**
	Rancho Cordova Pkwy to Hazel Avenue	4	1	6,395	**F**	6,887	**F**	6,651	**F**	6,929	**F**
Westbound	Hazel Avenue to Rancho Cordova Pkwy	4	1	4,367	B	3,934	B	5,168	C	5,218	C
	Rancho Cordova Pkwy to Sunrise Boulevard	4	1	3,883	B	3,515	B	4,367	B	4,461	B
	Sunrise Boulevard to Zinfandel Drive	5	1	4,914	B	4,555	B	5,211	B	5,378	B
	Zinfandel Drive to Mather Field Road	5	1	7,154	C	6,703	B	7,384	C	7,454	C
	Mather Field Road to Bradshaw Road	5	1	8,442	D	7,995	C	8,696	D	8,544	D
	Bradshaw Road to Watt Avenue	4	1	7,703	D	7,847	D	7,871	D	8,099	E
	Watt Avenue to Howe Avenue	5	1	5,740	**F**	5,836	**F**	5,864	**F**	6,132	**F**
	Howe Avenue to 65th Street	5	1	7,896	**F**	8,148	**F**	8,080	**F**	8,384	**F**
	65th Street to 59th Street	4	1	7,827	**F**	8,270	**F**	7,970	**F**	8,296	**F**
	59th Street to Stockton Boulevard	5	1	8,137	**F**	8,631	**F**	8,290	**F**	8,656	**F**
	Stockton Boulevard to SR 99 / SR 51	5	1	9,566	**F**	9,855	**F**	9,660	**F**	9,916	**F**

Source: DKS Associates, 2014. Revised December 10, 2018.

US-50 Freeway System

Mainline Analysis – Calculation Sheets

US 50 Eastbound - SR 51 / SR 99 to Stockton Boulevard						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	5	5	5	5	5	5
Volume (Vehicles)	7,068	7,156	7,705	6,415	6,475	6,711
Peak Hour Factor	0.96	0.96	0.96	0.98	0.98	0.98
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	16	16	16	16	16	16
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.67	2.67	2.67	2.67	2.67	2.67
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,497	1,515	1,632	1,341	1,353	1,402
Speed (S) (mph)	69	69	68	70	70	70
Calculated Density	21.70	22.01	24.05	19.21	19.41	20.17
Observed Existing Density	23.46	23.46	23.46	23.33	23.33	23.33
Estimated Density	23.46	23.77	25.81	23.33	23.53	24.29
Observed Existing LOS	C	C	C	C	C	C
LOS	C	C	C	C	C	C

US 50 Eastbound - SR 51 / SR 99 to Stockton Boulevard								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	8,582	9,245	8,751	9,295	8,297	8,246	8,621	8,855
Peak Hour Factor	0.96	0.96	0.96	0.96	0.98	0.98	0.98	0.98
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	16	16	16	16	16	16	16	16
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,817	1,958	1,853	1,968	1,734	1,723	1,802	1,851
Speed (S) (mph)	66	63	65	63	67	67	66	65
Calculated Density	27.71	30.91	28.49	31.17	26.00	25.79	27.38	28.43
Density Adjustment	1.76	1.76	1.76	1.76	4.12	4.12	4.12	4.12
Estimated Density	29.48	32.67	30.25	32.93	30.12	29.91	31.50	32.55
Observed Existing LOS	C	C	C	C	C	C	C	C
LOS	D	D	D	D	D	D	D	D

US 50 Eastbound - Stockton Boulevard to 59th Street						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	5	5	5	5	5	5
Volume (Vehicles)	7,470	7,564	8,136	7,228	7,290	7,546
Peak Hour Factor	0.96	0.96	0.96	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	16	16	16	16	16	16
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.67	2.67	2.67	2.67	2.67	2.67
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,594	1,614	1,736	1,491	1,504	1,556
Speed (S) (mph)	68	68	67	69	69	69
Calculated Density	23.37	23.73	26.04	21.60	21.81	22.71
Observed Existing Density	35.05	35.05	35.05	41.46	41.46	41.46
Estimated Density	35.05	35.41	37.72	41.46	41.67	42.57
Observed Existing LOS	F	F	F	F	F	F
LOS	F	F	**F**	F	F	F

US 50 Eastbound - Stockton Boulevard to 59th Street								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	8,024	8,627	8,168	8,642	7,539	7,473	7,811	8,051
Peak Hour Factor	0.96	0.96	0.96	0.96	0.99	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	16	16	16	16	16	16	16	16
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,712	1,841	1,743	1,844	1,555	1,541	1,611	1,661
Speed (S) (mph)	67	65	67	65	69	69	68	68
Calculated Density	25.57	28.22	26.18	28.29	22.69	22.45	23.68	24.59
Density Adjustment	11.68	11.68	11.68	11.68	19.86	19.86	19.86	19.86
Estimated Density	37.25	39.90	37.86	39.97	42.54	42.31	43.54	44.44
Observed Existing LOS	F	F	F	F	F	F	F	F
LOS	F	**F**	F	**F**	F	F	F	F

US 50 Eastbound - 59th Street to 65th Street						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	4	4	4	4	4	4
Volume (Vehicles)	6,767	6,856	7,439	6,641	6,689	6,931
Peak Hour Factor	0.97	0.97	0.97	0.95	0.95	0.95
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	14	14	14	14	14	14
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.33	2.33	2.33	2.33	2.33	2.33
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,778	1,801	1,954	1,778	1,791	1,856
Speed (S) (mph)	66	66	63	66	66	65
Calculated Density	26.88	27.37	30.82	26.89	27.17	28.55
Observed Existing Density	27.40	27.40	27.40	28.36	28.36	28.36
Estimated Density	27.40	27.88	31.34	28.36	28.63	30.02
Observed Existing LOS	D	D	D	D	D	D
LOS	D	D	D	D	D	D

US 50 Eastbound - 59th Street to 65th Street								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	4	4	4	4	4	4	4	4
Volume (Vehicles)	7,506	8,094	7,637	8,099	7,088	7,033	7,341	7,521
Peak Hour Factor	0.97	0.97	0.97	0.97	0.95	0.95	0.95	0.95
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	14	14	14	14	14	14	14	14
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,972	2,126	2,006	2,128	1,898	1,883	1,966	2,014
Speed (S) (mph)	63	60	62	60	64	65	63	62
Calculated Density	31.25	35.41	32.12	35.45	29.50	29.16	31.11	32.33
Density Adjustment	0.52	0.52	0.52	0.52	1.46	1.46	1.46	1.46
Estimated Density	31.77	35.93	32.64	35.96	30.96	30.63	32.57	33.79
Observed Existing LOS	D	D	D	D	D	D	D	D
LOS	D	E	D	E	D	D	D	D

US 50 Eastbound - 65th Street to Howe Avenue						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	5	5	5	5	5	5
Volume (Vehicles)	7,962	8,084	8,668	7,562	7,611	7,854
Peak Hour Factor	0.98	0.98	0.98	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	12	12	12	12	12	12
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.00	2.00	2.00	2.00	2.00	2.00
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,657	1,682	1,803	1,554	1,564	1,614
Speed (S) (mph)	68	67	66	69	68	68
Calculated Density	24.51	24.99	27.42	22.67	22.85	23.73
Observed Existing Density	28.05	28.05	28.05	29.71	29.71	29.71
Estimated Density	28.05	28.53	30.96	29.71	29.88	30.77
Observed Existing LOS	D	D	D	D	D	D
LOS	D	D	D	D	D	D

US 50 Eastbound - 65th Street to Howe Avenue								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	7,971	8,166	8,019	8,272	7,455	7,302	7,658	7,812
Peak Hour Factor	0.98	0.98	0.98	0.98	0.99	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	12	12	12	12	12	12	12	12
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,658	1,699	1,668	1,721	1,532	1,501	1,574	1,605
Speed (S) (mph)	68	67	67	67	69	69	68	68
Calculated Density	24.55	25.32	24.73	25.74	22.29	21.76	23.02	23.58
Density Adjustment	3.54	3.54	3.54	3.54	7.04	7.04	7.04	7.04
Estimated Density	28.08	28.85	28.27	29.28	29.33	28.80	30.05	30.61
Observed Existing LOS	D	D	D	D	D	D	D	D
LOS	D	D	D	D	D	D	D	D

US 50 Eastbound - Howe Avenue to Watt Avenue						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	4	4	4	4	4	4
Volume (Vehicles)	7,405	7,477	7,609	7,602	7,711	7,700
Peak Hour Factor	0.96	0.96	0.96	0.98	0.98	0.98
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,974	1,993	2,028	1,971	1,999	1,996
Speed (S) (mph)	63	63	62	63	63	63
Calculated Density	31.30	31.78	32.68	31.22	31.93	31.86
Observed Existing Density	31.77	31.77	31.77	33.01	33.01	33.01
Estimated Density	31.77	32.25	33.15	33.01	33.72	33.65
Observed Existing LOS	D	D	D	D	D	D
LOS	D	D	D	D	D	D

US 50 Eastbound - Howe Avenue to Watt Avenue								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	7,147	7,149	7,213	7,366	6,393	6,150	6,680	6,679
Peak Hour Factor	0.96	0.96	0.96	0.96	0.98	0.98	0.98	0.98
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10	10	10
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,524	1,524	1,538	1,571	1,326	1,275	1,385	1,385
Speed (S) (mph)	69	69	69	68	70	70	70	70
Calculated Density	22.15	22.16	22.40	22.96	18.99	18.24	19.90	19.90
Density Adjustment	0.47	0.47	0.47	0.47	1.79	1.79	1.79	1.79
Estimated Density	22.62	22.63	22.87	23.43	20.78	20.03	21.69	21.69
Observed Existing LOS	D	D	D	D	D	D	D	D
LOS	C	C	C	C	C	C	C	C

US 50 Eastbound - Watt Avenue to Bradshaw Road						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	4	4	4	4	4	4
Volume (Vehicles)	7,935	8,002	8,145	7,176	7,284	7,310
Peak Hour Factor	0.95	0.95	0.95	0.98	0.98	0.98
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	9	9	9	9	9	9
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.50	1.50	1.50	1.50	1.50	1.50
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	2,132	2,150	2,188	1,865	1,893	1,900
Speed (S) (mph)	60	60	59	65	64	64
Calculated Density	35.57	36.11	37.29	28.75	29.39	29.54
Observed Existing Density	27.22	27.22	27.22	24.80	24.80	24.80
Estimated Density	27.22	27.76	28.95	24.80	25.43	25.59
Observed Existing LOS	D	D	D	C	C	C
LOS	D	D	D	C	C	C

US 50 Eastbound - Watt Avenue to Bradshaw Road								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	4	4	4	4	4	4	4	4
Volume (Vehicles)	9,583	9,596	9,633	9,825	8,662	8,437	8,976	9,056
Peak Hour Factor	0.95	0.95	0.95	0.95	0.98	0.98	0.98	0.98
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	9	9	9	9	9	9	9	9
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	2,574	2,578	2,588	2,640	2,252	2,193	2,333	2,354
Speed (S) (mph)	48	48	48	46	57	59	55	55
Calculated Density	53.54	53.74	54.31	57.43	39.38	37.45	42.34	43.14
Density Adjustment	-8.35	-8.35	-8.35	-8.35	-3.96	-3.96	-3.96	-3.96
Estimated Density	45.19	45.40	45.97	49.08	35.42	33.49	38.38	39.18
Observed Existing LOS	D	D	D	D	C	C	C	C
LOS	F	F	F	F	E	D	E	E

US 50 Eastbound - Bradshaw Road to Mather Field Road						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	4	4	4	4	4	4
Volume (Vehicles)	7,725	7,712	7,761	7,366	7,407	7,248
Peak Hour Factor	0.96	0.96	0.96	1.00	1.00	1.00
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	2,062	2,059	2,072	1,883	1,893	1,852
Speed (S) (mph)	61	61	61	65	64	65
Calculated Density	33.60	33.51	33.86	29.14	29.38	28.47
Observed Existing Density	45.10	45.10	45.10	25.50	25.50	25.50
Estimated Density	45.10	45.00	45.36	25.50	25.74	24.83
Observed Existing LOS	F	F	F	C	C	C
LOS	F	F	F	C	C	C

US 50 Eastbound - Bradshaw Road to Mather Field Road								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	9,362	8,922	9,467	9,483	8,502	8,510	9,033	9,015
Peak Hour Factor	0.96	0.96	0.96	0.96	1.00	1.00	1.00	1.00
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10	10	10
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,999	1,906	2,022	2,025	1,738	1,740	1,847	1,843
Speed (S) (mph)	63	64	62	62	67	67	65	65
Calculated Density	31.94	29.67	32.52	32.61	26.09	26.12	28.35	28.27
Density Adjustment	11.49	11.49	11.49	11.49	-3.64	-3.64	-3.64	-3.64
Estimated Density	43.44	41.16	44.02	44.11	22.45	22.48	24.71	24.63
Observed Existing LOS	F	F	F	F	C	C	C	C
LOS	F	F	F	F	C	C	C	C

US 50 Eastbound - Mather Field Road to Zinfandel Drive						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	5	5	5	5	5	5
Volume (Vehicles)	7,275	7,268	7,713	7,224	7,264	7,560
Peak Hour Factor	0.94	0.94	0.94	0.97	0.97	0.97
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	11	11	11	11	11	11
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.83	1.83	1.83	1.83	1.83	1.83
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,570	1,569	1,665	1,512	1,520	1,582
Speed (S) (mph)	68	68	67	69	69	68
Calculated Density	22.96	22.93	24.67	21.95	22.09	23.16
Observed Existing Density	19.18	19.18	19.18	20.13	20.13	20.13
Estimated Density	19.18	19.15	20.89	20.13	20.27	21.34
Observed Existing LOS	C	C	C	C	C	C
LOS	C	C	C	C	C	C

US 50 Eastbound - Mather Field Road to Zinfandel Drive								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	8,935	8,490	9,072	9,211	8,234	8,548	8,765	8,916
Peak Hour Factor	0.94	0.94	0.94	0.94	0.97	0.97	0.97	0.97
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	11	11	11	11	11	11	11	11
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,929	1,833	1,959	1,988	1,723	1,789	1,834	1,866
Speed (S) (mph)	64	65	63	63	67	66	65	65
Calculated Density	30.21	28.05	30.93	31.67	25.79	27.12	28.08	28.77
Density Adjustment	-3.78	-3.78	-3.78	-3.78	-1.82	-1.82	-1.82	-1.82
Estimated Density	26.43	24.27	27.15	27.89	23.96	25.29	26.25	26.95
Observed Existing LOS	C	C	C	C	C	C	C	C
LOS	D	C	D	D	C	C	D	D

US 50 Eastbound - Zinfandel Drive to Sunrise Boulevard						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	4	4	4	4	4	4
Volume (Vehicles)	5,121	5,289	5,726	6,649	6,708	7,083
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	8	8	8	8	8	8
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.33	1.33	1.33	1.33	1.33	1.33
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,365	1,410	1,526	1,786	1,802	1,902
Speed (S) (mph)	70	69	69	66	66	64
Calculated Density	19.59	20.29	22.19	27.05	27.38	29.60
Observed Existing Density	20.08	20.08	20.08	42.12	42.12	42.12
Estimated Density	20.08	20.78	22.68	42.12	42.45	44.66
Observed Existing LOS	C	C	C	F	F	F
LOS	C	C	C	F	F	**F**

US 50 Eastbound - Zinfandel Drive to Sunrise Boulevard								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	6,237	5,990	6,313	6,400	6,181	6,487	6,367	6,551
Peak Hour Factor	0.96	0.96	0.96	0.96	0.95	0.95	0.95	0.95
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	13	13	13	13	13	13	13	13
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,330	1,277	1,346	1,365	1,328	1,394	1,368	1,408
Speed (S) (mph)	70	70	70	70	70	70	70	70
Calculated Density	19.05	18.26	19.30	19.58	19.03	20.04	19.64	20.25
Density Adjustment	0.49	0.49	0.49	0.49	15.07	15.07	15.07	15.07
Estimated Density	19.54	18.75	19.79	20.07	34.09	35.10	34.70	35.32
Observed Existing LOS	C	C	C	C	F	F	F	F
LOS	C	C	C	C	F	F	F	F

US 50 Eastbound - Sunrise Boulevard to Hazel Avenue						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	3	3	3	3	3	3
Volume (Vehicles)	4,985	5,132	5,461	5,323	5,366	5,611
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	7	7	7	7	7	7
Truck Percentage	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.17	1.17	1.17	1.17	1.17	1.17
FFS	70	70	70	70	70	70
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97
Demand Flow Rate per Lane (v_p)	1,811	1,864	1,984	1,938	1,953	2,043
Speed (S) (mph)	66	65	63	64	63	62
Calculated Density	27.58	28.74	31.56	30.43	30.81	33.08
Observed Existing Density	27.67	27.67	27.67	37.30	37.30	37.30
Estimated Density	27.67	28.83	31.66	37.30	37.67	39.94
Observed Existing LOS	D	D	D	F	F	F
LOS	D	D	D	F	F	**F**

US 50 Eastbound - Sunrise Boulevard to Rancho Cordova Parkway								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	4	4	4	4	4	4	4	4
Volume (Vehicles)	5,335	4,943	5,835	5,892	5,450	5,894	5,875	6,121
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10	10	10
Truck Percentage	6%	6%	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Demand Flow Rate per Lane (v_p)	1,454	1,347	1,590	1,605	1,488	1,609	1,604	1,671
Speed (S) (mph)	69	70	68	68	69	68	68	67
Calculated Density	20.99	19.31	23.30	23.58	21.55	23.65	23.55	24.79
Density Adjustment	0.09	0.09	0.09	0.09	6.87	6.87	6.87	6.87
Estimated Density	21.09	19.41	23.39	23.67	28.42	30.51	30.42	31.65
Observed Existing LOS	D	D	D	D	F	F	F	F
LOS	C	C	C	C	F	**F**	F	F

US 50 Eastbound - Rancho Cordova Parkway to Hazel Avenue								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	4	4	4	4	4	4	4	4
Volume (Vehicles)	6,571	6,074	7,170	7,249	6,395	6,887	6,651	6,929
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	9	9	9	9	9	9	9	9
Truck Percentage	6%	6%	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Demand Flow Rate per Lane (v_p)	1,791	1,655	1,954	1,975	1,746	1,880	1,816	1,892
Speed (S) (mph)	66	68	63	63	67	65	66	64
Calculated Density	27.15	24.49	30.81	31.34	26.24	29.10	27.69	29.36
Density Adjustment	0.09	0.09	0.09	0.09	6.87	6.87	6.87	6.87
Estimated Density	27.24	24.58	30.91	31.43	33.11	35.96	34.55	36.22
Observed Existing LOS	D	D	D	D	F	F	F	F
LOS	D	C	D	D	F	**F**	F	F

US 50 Westbound - Hazel Avenue to Sunrise Boulevard						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	3	3	3	3	3	3
Volume (Vehicles)	6,068	6,121	6,334	4,370	4,481	4,707
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	8	8	8	8	8	8
Truck Percentage	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.33	1.33	1.33	1.33	1.33	1.33
FFS	70	70	70	70	70	70
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97
Demand Flow Rate per Lane (v_p)	2,199	2,218	2,295	1,545	1,584	1,664
Speed (S) (mph)	58	58	56	69	68	67
Calculated Density	37.62	38.24	40.92	22.52	23.20	24.66
Observed Existing Density	32.91	32.91	32.91	23.17	23.17	23.17
Estimated Density	32.91	33.53	36.21	23.17	23.85	25.30
Observed Existing LOS	D	D	D	C	C	C
LOS	D	D	E	C	C	C

US 50 Westbound - Hazel Avenue to Rancho Cordova Parkway								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	4	4	4	4	4	4	4	4
Volume (Vehicles)	5,240	5,695	5,376	5,643	4,367	3,934	5,168	5,218
Peak Hour Factor	0.95	0.95	0.95	0.95	0.97	0.97	0.97	0.97
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	9	9	9	9	9	9	9	9
Truck Percentage	6%	6%	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Demand Flow Rate per Lane (v_p)	1,424	1,548	1,461	1,533	1,158	1,043	1,371	1,384
Speed (S) (mph)	69	69	69	69	70	70	70	70
Calculated Density	20.51	22.56	21.11	22.32	16.54	14.91	19.67	19.88
Density Adjustment	-4.71	-4.71	-4.71	-4.71	0.65	0.65	0.65	0.65
Estimated Density	15.80	17.85	16.40	17.61	17.19	15.55	20.32	20.53
Observed Existing LOS	D	D	D	D	C	C	C	C
LOS	B	B	B	B	B	B	C	C

US 50 Westbound - Rancho Cordova Parkway to Sunrise Boulevard								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	4	4	4	4	4	4	4	4
Volume (Vehicles)	6,587	7,048	6,906	7,103	3,883	3,515	4,367	4,461
Peak Hour Factor	0.95	0.95	0.95	0.95	0.97	0.97	0.97	0.97
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10	10	10
Truck Percentage	6%	6%	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Demand Flow Rate per Lane (v_p)	1,790	1,915	1,877	1,930	1,030	932	1,158	1,183
Speed (S) (mph)	66	64	65	64	70	70	70	70
Calculated Density	27.14	29.90	29.01	30.25	14.71	13.32	16.54	16.90
Density Adjustment	-4.71	-4.71	-4.71	-4.71	0.65	0.65	0.65	0.65
Estimated Density	22.43	25.19	24.30	25.54	15.36	13.96	17.19	17.55
Observed Existing LOS	D	D	D	D	C	C	C	C
LOS	C	C	C	C	B	B	B	B

US 50 Westbound - Sunrise Boulevard to Zinfandel Drive						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	4	4	4	4	4	4
Volume (Vehicles)	7,502	7,540	7,846	4,762	4,902	5,134
Peak Hour Factor	0.96	0.96	0.96	0.93	0.93	0.93
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	8	8	8	8	8	8
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.33	1.33	1.33	1.33	1.33	1.33
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,994	2,004	2,085	1,306	1,344	1,408
Speed (S) (mph)	63	63	61	70	70	69
Calculated Density	31.81	32.06	34.24	18.69	19.27	20.26
Observed Existing Density	33.31	33.31	33.31	19.30	19.30	19.30
Estimated Density	33.31	33.57	35.75	19.30	19.88	20.87
Observed Existing LOS	D	D	D	C	C	C
LOS	D	D	E	C	C	C

US 50 Westbound - Sunrise Boulevard to Zinfandel Drive								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	8,392	8,891	8,587	8,801	4,914	4,555	5,211	5,378
Peak Hour Factor	0.96	0.96	0.96	0.96	0.93	0.93	0.93	0.93
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10	10	10
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,784	1,891	1,826	1,871	1,078	999	1,143	1,180
Speed (S) (mph)	66	64	65	65	70	70	70	70
Calculated Density	27.02	29.32	27.89	28.89	15.40	14.28	16.33	16.86
Density Adjustment	1.51	1.51	1.51	1.51	0.61	0.61	0.61	0.61
Estimated Density	28.53	30.83	29.40	30.40	16.01	14.89	16.94	17.47
Observed Existing LOS	D	D	D	D	C	C	C	C
LOS	D	D	D	D	B	B	B	B

US 50 Westbound - Zinfandel Drive to Mather Field Road						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	5	5	5	5	5	5
Volume (Vehicles)	7,548	7,551	7,829	5,765	5,710	5,928
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	11	11	11	11	11	11
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.83	1.83	1.83	1.83	1.83	1.83
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,601	1,601	1,660	1,239	1,227	1,274
Speed (S) (mph)	68	68	68	70	70	70
Calculated Density	23.49	23.50	24.58	17.70	17.53	18.22
Observed Existing Density	21.96	21.96	21.96	14.85	14.85	14.85
Estimated Density	21.96	21.97	23.05	14.85	14.68	15.36
Observed Existing LOS	C	C	C	B	B	B
LOS	C	C	C	B	B	B

US 50 Westbound - Zinfandel Drive to Mather Field Road								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	8,942	9,330	9,480	9,493	7,154	6,703	7,384	7,454
Peak Hour Factor	0.96	0.96	0.96	0.96	0.95	0.95	0.95	0.95
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	11	11	11	11	11	11	11	11
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,896	1,979	2,011	2,013	1,538	1,440	1,587	1,602
Speed (S) (mph)	64	63	62	62	69	69	68	68
Calculated Density	29.46	31.43	32.23	32.31	22.39	20.78	23.25	23.52
Density Adjustment	-1.54	-1.54	-1.54	-1.54	-2.86	-2.86	-2.86	-2.86
Estimated Density	27.92	29.89	30.70	30.77	19.53	17.92	20.39	20.66
Observed Existing LOS	C	C	C	C	B	B	B	B
LOS	D	D	D	D	C	B	C	C

US 50 Westbound - Mather Field Road to Bradshaw Road						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	4	4	4	4	4	4
Volume (Vehicles)	7,859	7,857	7,810	6,939	6,869	6,892
Peak Hour Factor	0.95	0.95	0.95	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	2,102	2,101	2,089	1,787	1,769	1,775
Speed (S) (mph)	61	61	61	66	66	66
Calculated Density	34.70	34.69	34.33	27.07	26.70	26.82
Observed Existing Density	44.40	44.40	44.40	28.66	28.66	28.66
Estimated Density	44.40	44.39	44.03	28.66	28.30	28.42
Observed Existing LOS	F	F	F	D	D	D
LOS	F	F	F	D	D	D

US 50 Westbound - Mather Field Road to Bradshaw Road								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	8,996	9,065	9,560	9,406	8,442	7,995	8,696	8,544
Peak Hour Factor	0.95	0.95	0.95	0.95	0.99	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10	10	10
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,925	1,940	2,046	2,013	1,739	1,647	1,791	1,760
Speed (S) (mph)	64	64	62	62	67	68	66	66
Calculated Density	30.12	30.47	33.15	32.28	26.09	24.33	27.16	26.52
Density Adjustment	9.70	9.70	9.70	9.70	1.60	1.60	1.60	1.60
Estimated Density	39.81	40.17	42.85	41.98	27.69	25.93	28.76	28.12
Observed Existing LOS	F	F	F	F	D	D	D	D
LOS	F	F	F	F	D	C	D	D

US 50 Westbound - Bradshaw Road to Watt Avenue						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	4	4	4	4	4	4
Volume (Vehicles)	7,550	7,522	7,424	6,466	6,556	6,913
Peak Hour Factor	0.90	0.90	0.90	0.96	0.96	0.96
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	2,134	2,126	2,099	1,721	1,745	1,840
Speed (S) (mph)	60	60	61	67	67	65
Calculated Density	35.64	35.41	34.61	25.74	26.22	28.20
Observed Existing Density	54.37	54.37	54.37	32.91	32.91	32.91
Estimated Density	54.37	54.13	53.34	32.91	33.39	35.36
Observed Existing LOS	F	F	F	D	D	D
LOS	F	F	F	D	D	E

US 50 Westbound - Bradshaw Road to Watt Avenue								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	4	4	4	4	4	4	4	4
Volume (Vehicles)	8,662	8,415	9,001	8,854	7,703	7,847	7,871	8,099
Peak Hour Factor	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.96
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10	10	10
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	2,448	2,379	2,544	2,503	2,050	2,089	2,095	2,156
Speed (S) (mph)	52	54	49	50	62	61	61	59
Calculated Density	47.16	44.15	51.89	49.74	33.27	34.33	34.50	36.28
Observed Existing Density	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Estimated Density	47.16	44.15	51.89	49.74	33.27	34.33	34.50	36.28
Observed Existing LOS	F	F	F	F	D	D	D	D
LOS	F	F	F	F	D	D	D	E

US 50 Westbound - Watt Avenue to Howe Avenue						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	5	5	5	5	5	5
Volume (Vehicles)	7,376	7,326	7,192	5,106	5,165	5,395
Peak Hour Factor	0.93	0.93	0.93	0.98	0.98	0.98
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,617	1,605	1,576	1,059	1,071	1,119
Speed (S) (mph)	68	68	68	70	70	70
Calculated Density	23.78	23.58	23.06	15.13	15.30	15.98
Observed Existing Density	53.44	53.44	53.44	22.96	22.96	22.96
Estimated Density	53.44	53.25	52.73	22.96	23.14	23.82
Observed Existing LOS	F	F	F	F	F	F
LOS	F	F	F	F	F	**F**

US 50 Westbound - Watt Avenue to Howe Avenue								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	7,604	7,111	7,880	7,679	5,740	5,836	5,864	6,132
Peak Hour Factor	0.93	0.93	0.93	0.93	0.98	0.98	0.98	0.98
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	10	10	10	10	10	10	10	10
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,666	1,558	1,727	1,683	1,190	1,210	1,216	1,272
Speed (S) (mph)	67	69	67	67	70	70	70	70
Calculated Density	24.70	22.75	25.86	25.01	17.01	17.29	17.37	18.18
Density Adjustment	29.67	29.67	29.67	29.67	7.84	7.84	7.84	7.84
Estimated Density	54.36	52.41	55.53	54.68	24.84	25.12	25.21	26.02
Observed Existing LOS	F	F	F	F	F	F	F	F
LOS	F	F	F	F	F	F	F	F

US 50 Westbound - Howe Avenue to 65th Street						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	5	5	5	5	5	5
Volume (Vehicles)	8,157	8,182	8,489	7,407	7,469	8,031
Peak Hour Factor	0.96	0.96	0.96	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	15	15	15	15	15	15
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.50	2.50	2.50	2.50	2.50	2.50
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,739	1,745	1,810	1,527	1,540	1,656
Speed (S) (mph)	67	67	66	69	69	68
Calculated Density	26.11	26.21	27.56	22.21	22.43	24.49
Observed Existing Density	35.68	35.68	35.68	41.55	41.55	41.55
Estimated Density	35.68	35.79	37.14	41.55	41.77	43.83
Observed Existing LOS	F	F	F	F	F	F
LOS	F	F	F	F	F	**F**

US 50 Westbound - Howe Avenue to 65th Street								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	8,577	8,539	8,761	8,972	7,896	8,148	8,080	8,384
Peak Hour Factor	0.96	0.96	0.96	0.96	0.99	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	15	15	15	15	15	15	15	15
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,829	1,821	1,868	1,913	1,628	1,680	1,666	1,728
Speed (S) (mph)	65	66	65	64	68	67	67	67
Calculated Density	27.96	27.79	28.82	29.85	23.98	24.95	24.68	25.89
Density Adjustment	9.58	9.58	9.58	9.58	19.34	19.34	19.34	19.34
Estimated Density	37.54	37.36	38.40	39.43	43.32	44.29	44.02	45.23
Observed Existing LOS	F	F	F	F	F	F	F	F
LOS	F	F	F	F	F	F	F	F

US 50 Westbound - 65th Street to 59th Street						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	4	4	4	4	4	4
Volume (Vehicles)	8,278	8,281	8,605	7,358	7,413	7,953
Peak Hour Factor	0.98	0.98	0.98	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	16	16	16	16	16	16
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.67	2.67	2.67	2.67	2.67	2.67
FFS	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	2,157	2,158	2,242	1,904	1,918	2,058
Speed (S) (mph)	59	59	57	64	64	61
Calculated Density	36.32	36.34	39.05	29.63	29.96	33.48
Observed Existing Density	44.85	44.85	44.85	51.56	51.56	51.56
Estimated Density	44.85	44.88	47.59	51.56	51.88	55.41
Observed Existing LOS	F	F	F	F	F	F
LOS	F	F	F	F	F	**F**

US 50 Westbound - 65th Street to 59th Street								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 70 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	4	4	4	4	4	4	4	4
Volume (Vehicles)	8,621	8,601	8,809	9,012	7,827	8,270	7,970	8,296
Peak Hour Factor	0.98	0.98	0.98	0.98	0.99	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	16	16	16	16	16	16	16	16
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
FFS	70	70	70	70	70	70	70	70
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	2,246	2,241	2,295	2,348	2,025	2,140	2,062	2,147
Speed (S) (mph)	57	57	56	55	62	60	61	60
Calculated Density	39.19	39.02	40.91	42.91	32.61	35.81	33.60	36.01
Density Adjustment	8.53	8.53	8.53	8.53	21.92	21.92	21.92	21.92
Estimated Density	47.73	47.55	49.45	51.44	54.53	57.74	55.52	57.94
Observed Existing LOS	F	F	F	F	F	F	F	F
LOS	F	F	F	F	F	**F**	F	F

US 50 Westbound - 59th Street to Stockton Boulevard						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 65 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	5	5	5	5	5	5
Volume (Vehicles)	9,115	9,125	9,448	7,945	8,008	8,537
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	18	18	18	18	18	18
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	3.00	3.00	3.00	3.00	3.00	3.00
FFS	65	65	65	65	65	65
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,880	1,882	1,949	1,643	1,656	1,766
Speed (S) (mph)	62	62	61	64	64	63
Calculated Density	30.45	30.50	32.09	25.61	25.85	27.98
Observed Existing Density	29.39	29.39	29.39	32.31	32.31	32.31
Estimated Density	29.39	29.44	31.02	32.31	32.55	34.68
Observed Existing LOS	D	D	D	F	F	F
LOS	D	D	D	F	F	**F**

US 50 Westbound - 59th Street to Stockton Boulevard								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 65 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	9,516	9,426	9,692	9,890	8,137	8,631	8,290	8,656
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	18	18	18	18	18	18	18	18
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
FFS	65	65	65	65	65	65	65	65
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,963	1,944	1,999	2,040	1,683	1,785	1,715	1,790
Speed (S) (mph)	61	61	60	59	64	63	64	63
Calculated Density	32.43	31.98	33.36	34.46	26.35	28.38	26.96	28.49
Density Adjustment	-1.07	-1.07	-1.07	-1.07	6.70	6.70	6.70	6.70
Estimated Density	31.37	30.91	32.30	33.39	33.05	35.08	33.66	35.19
Observed Existing LOS	D	D	D	D	F	F	F	F
LOS	D	D	D	D	F	**F**	F	F

US 50 Westbound - Stockton Boulevard to SR 51 / SR 99						
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 65 MPH Free Flow Speed**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Mixed Flow Frwy Lanes	5	5	5	5	5	5
Volume (Vehicles)	8,546	8,536	8,836	8,136	8,194	8,635
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96
Average Lane Width (ft)	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12
Ramps within three miles	19	19	19	19	19	19
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000
Calculations						
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0
TRD	3.17	3.17	3.17	3.17	3.17	3.17
FFS	65	65	65	65	65	65
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	1,830	1,828	1,892	1,723	1,736	1,829
Speed (S) (mph)	62	62	62	64	63	62
Calculated Density	29.33	29.29	30.73	27.13	27.38	29.32
Observed Existing Density	31.89	31.89	31.89	33.25	33.25	33.25
Estimated Density	31.89	31.85	33.29	33.25	33.49	35.43
Observed Existing LOS	D	D	D	F	F	F
LOS	D	D	D	F	F	**F**

US 50 Westbound - Stockton Boulevard to SR 51 / SR 99								
Highway Capacity Manual 2010 Edition **Basic Freeway Segment Analysis - Level Terrain - 65 MPH Free Flow Speed**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Mixed Flow Frwy Lanes	5	5	5	5	5	5	5	5
Volume (Vehicles)	10,023	9,930	10,187	10,300	9,566	9,855	9,660	9,916
Peak Hour Factor	0.95	0.95	0.95	0.95	0.96	0.96	0.96	0.96
Average Lane Width (ft)	12	12	12	12	12	12	12	12
Right side lateral clearance (ft)	12	12	12	12	12	12	12	12
Ramps within three miles	19	19	19	19	19	19	19	19
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor (f_P)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Calculations								
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
f_{LC}	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRD	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17
FFS	65	65	65	65	65	65	65	65
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Demand Flow Rate per Lane (v_p)	2,146	2,126	2,181	2,205	2,026	2,087	2,046	2,101
Speed (S) (mph)	57	58	56	56	59	58	59	58
Calculated Density	37.58	36.97	38.72	39.52	34.09	35.81	34.63	36.19
Density Adjustment	2.56	2.56	2.56	2.56	6.12	6.12	6.12	6.12
Estimated Density	40.14	39.53	41.27	42.08	40.21	41.92	40.75	42.31
Observed Existing LOS	D	D	D	D	F	F	F	F
LOS	E	E	E	E	F	F	F	F

US-50 Freeway System

Merge/Diverge Analysis – Summary Tables

Table D-4								
Peak Hour Freeway Ramp Operations - Existing Scenarios - AM Peak Hour								
			Existing		**Existing Plus Jackson Township**		**Existing Plus FOUR PROJECTS**	
Direction	**US 50 Ramp**	**Junction Type**	**Ramp Volume**	**Level of Service**	**Ramp Volume**	**Level of Service**	**Ramp Volume**	**Level of Service**
Eastbound	Northbound 65th Street Slip Entrance	Weave	765	D	771	D	730	**F**
	Howe Avenue / Hornet Drive Exit		1,631		1,681		2,175	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	484	C	485	C	556	C
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	419	C	435	C	390	C
	Watt Avenue Exit	Two-Lane Diverge	1,317	B	1,333	B	1,149	B
	Watt Avenue Entrance	One-Lane Merge	2,134	**F**	2,143	**F**	1,951	E
	Bradshaw Road Exit	Two-Lane Diverge	1,520	B	1,572	B	1,891	C
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	220	C	224	C	151	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	971	C	923	C	1,280	D
	Mather Field Road Exit	Two-Lane Diverge	1,266	B	1,275	B	1,188	B
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	125	C	134	C	121	C
	Northbound Mather Field Road Slip Entrance	Weave	317	**F**	325	**F**	634	**F**
	Zinfandel Drive Exit		2,932		2,945		2,918	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	182	B	176	B	177	B
	Northbound Zinfandel Drive Slip Entrance	One-Lane Merge	348	B	562	B	522	C
	Sunrise Boulevard Exit	Major Diverge	1,773	C	1,821	C	1,953	C
	Sunrise Boulevard Entrance	One-Lane Merge	992	C	1,011	C	1,028	C
	Hazel Avenue Exit	Two-Lane Diverge	933	B	993	B	1,094	C
	Hazel Avenue Entrance	Weave	804	C	803	C	704	C
	Aerojet Road Exit		241		242		241	
Westbound	Hazel Avenue Exit	Two-Lane Diverge	631	A	686	A	622	A
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	160	B	166	B	174	B
	Southbound Hazel Avenue Slip Entrance	One-Lane Merge	1,550	B	1,608	B	1,748	C
	Sunrise Boulevard Exit	One-Lane Diverge	749	E	729	E	655	E
	Sunrise Boulevard Entrance	Lane Addition	2,183	**F**	2,186	**F**	2,192	**F**
	Zinfandel Drive Exit	One-Lane Diverge	1,034	E	1,060	E	1,088	E
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	585	B	599	B	532	B
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	442	C	437	C	410	C
	Mather Field Road Exit	One-Lane Drop	1,093	C	1,110	C	1,496	C
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	515	B	511	B	385	B
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	387	B	390	B	519	B
	Bradshaw Road Exit	Two-Lane Diverge	1,236	B	1,277	B	1,583	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	914	D	932	D	1,236	D
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	338	D	334	D	365	D
	Watt Avenue Exit	Major Diverge	1,373	D	1,357	D	1,257	D
	Northbound Watt Avenue Entrance	One-Lane Merge	820	D	803	D	788	D
	Southbound Watt Avenue Slip Entrance	Lane Addition / Weave	1,232	C	1,211	C	1,091	C
	Howe Avenue Exit	Major Diverge / Weave	1,531	D	1,549	D	1,349	D
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	654	D	665	D	689	D
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	574	C	575	C	688	C
Source: DKS Associates, 2018.								

Table D-5

Peak Hour Freeway Ramp Operations - Existing Scenarios - PM Peak Hour

Direction	US 50 Ramp	Junction Type	Existing		Existing Plus Jackson Township		Existing Plus FOUR PROJECTS	
			Ramp Volume	Level of Service	Ramp Volume	Level of Service	Ramp Volume	Level of Service
Eastbound	Northbound 65th Street Slip Entrance	Weave	653	C	636	C	576	C
	Howe Avenue / Hornet Drive Exit		1,417		1,354		1,627	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	881	C	853	C	927	D
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	431	C	426	C	401	C
	Watt Avenue Exit	Two-Lane Diverge	1,634	B	1,641	B	1,470	B
	Watt Avenue Entrance	One-Lane Merge	1,724	D	1,739	D	1,553	D
	Bradshaw Road Exit	Two-Lane Diverge	1,228	B	1,284	B	1,574	B
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	422	C	425	C	423	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	918	C	910	C	1,105	C
	Mather Field Road Exit	Two-Lane Diverge	1,062	A	1,092	A	987	A
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	101	B	100	B	107	B
	Northbound Mather Field Road Slip Entrance	Weave	816	C	828	C	1,187	D
	Zinfandel Drive Exit		1,452		1,471		1,419	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	129	C	132	C	116	C
	Northbound Zinfandel Drive Slip Entrance	One-Lane Merge	540	C	591	C	627	C
	Sunrise Boulevard Exit	Major Diverge	1,959	D	1,954	D	2,073	D
	Sunrise Boulevard Entrance	One-Lane Merge	889	D	870	D	834	D
	Hazel Avenue Exit	Two-Lane Diverge	1,541	C	1,555	C	1,673	C
	Hazel Avenue Entrance	Weave	945	C	949	C	945	C
	Aerojet Road Exit		55		58		52	
Westbound	Hazel Avenue Exit	Two-Lane Diverge	869	A	877	B	849	B
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	600	B	595	B	593	B
	Southbound Hazel Avenue Slip Entrance	One-Lane Merge	800	B	868	B	962	B
	Sunrise Boulevard Exit	One-Lane Diverge	758	D	780	D	763	D
	Sunrise Boulevard Entrance	Lane Addition	1,656	D	1,685	D	1,686	D
	Zinfandel Drive Exit	One-Lane Diverge	608	C	764	C	759	C
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	1,197	B	1,194	B	1,118	B
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	561	B	533	B	550	B
	Mather Field Road Exit	One-Lane Drop	556	A	575	A	740	A
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	861	B	889	B	843	B
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	380	B	370	B	363	B
	Bradshaw Road Exit	Two-Lane Diverge	1,327	B	1,266	B	1,510	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	910	C	959	C	1,523	D
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	590	C	633	C	669	D
	Watt Avenue Exit	Major Diverge	1,188	C	1,209	C	1,181	C
	Northbound Watt Avenue Entrance	One-Lane Merge	943	C	936	C	900	C
	Southbound Watt Avenue Slip Entrance	Lane Addition / Weave	1,317	D	1,313	**F**	1,196	B
	Howe Avenue Exit	Major Diverge / Weave	1,419		1,467		1,313	D
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	602	C	621	C	647	C
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	574	C	569	C	484	C

Source: DKS Associates, 2018.

Table D-6
Peak Hour Freeway Ramp Operations - Cumulative Scenarios

			Ramp Volume				Level of Service			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Direction	US 50 Ramp	Junction Type	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus PROJECT	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS
Eastbound	Northbound 65th Street Slip Entrance	Weave	956	902	799	665	**F**	**F**	**F**	**F**
	Howe Avenue / Hornet Drive Exit		2,070	2,322	2,201	2,237				
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	731	808	1,291	1,152	D	D	D	D
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	591	463	582	555	D	D	D	C
	Watt Avenue Exit	Two-Lane Diverge	1,553	1,518	1,762	1,609	B	B	B	A
	Southbound Watt Avenue Entrance	One-Lane Merge	1,644	1,582	1,306	1,101	D	D	C	C
	Northbound Watt Avenue Entrance	One-Lane Merge	733	667	684	773	D	D	C	C
	Bradshaw Road Exit	Two-Lane Diverge	2,035	2,366	1,608	1,789	**F**	**F**	B	B
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	253	216	399	564	D	C	C	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	1,409	1,340	843	1,173	D	C	C	C
	Mather Field Road Exit	Two-Lane Diverge	1,492	1,464	1,462	1,400	B	B	B	B
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	236	206	197	167	C	C	C	C
	Northbound Mather Field Road Slip Entrance	Weave	432	447	920	1,210	**F**	**F**	D	**F**
	Zinfandel Drive Exit		3,097	3,052	1,759	1,708				
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	187	183	170	161	C	C	C	C
	Northbound Zinfandel Drive Slip Entrance	Lane Addition	644	661	819	938	A	A	B	B
	Sunrise Boulevard Exit	Major Diverge	2,135	2,085	2,353	2,421	C	C	C	C
	Sunrise Boulevard Entrance	Lane Addition / Weave	1,152	1,101	1,145	1,182	B	A	C	C
	Rancho Cordova Parkway Exit	Two-Lane Diverge / Weave	78	25	448	535	C	C		
	Rancho Cordova Parkway Entrance	Weave	1,342	1,202	1,499	1,651	**F**	**F**	**F**	**F**
	Hazel Avenue Exit		1,869	1,710	2,657	2,826				
	Hazel Avenue Entrance	Weave	1,088	1,048	2,320	2,087	D	D	**F**	D
	Aerojet Road Exit		674	736	122	130				
Westbound	Hazel Avenue Exit	Two-Lane Diverge	1,077	905	959	951	B	B	B	B
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	52	124	434	434	B	C	C	B
	Southbound Hazel Avenue Slip Entrance	Weave	2,283	2,376	1,814	1,725	**F**	**F**	**F**	**F**
	Rancho Cordova Parkway Exit		1,512	1,644	1,595	1,479				
	Rancho Cordova Parkway Entrance	Lane Addition / Weave	875	897	791	747	A	A	A	A
	Sunrise Boulevard Exit	Two-Lane Diverge / Weave	623	611	627	580	C	C	C	C
	Northbound Sunrise Boulevard Entrance	Lane Addition	167	169	197	106	A	A	A	A
	Southbound Sunrise Boulevard Entrance	Lane Addition	2,334	2,345	1,673	1,746	**F**	**F**	C	D
	Zinfandel Drive Exit	One-Lane Diverge	1,478	1,488	1,124	1,097	E	E	D	C
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	780	689	1,314	1,178	B	C	C	B
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	1,349	1,219	723	708	D	D	B	B
	Mather Field Road Exit	One-Lane Drop	1,372	1,768	809	848	D	E	C	B
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	578	439	1,189	1,185	B	B	C	B
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	343	481	474	467	C	C	B	B
	Bradshaw Road Exit	Two-Lane Diverge	1,376	1,788	1,733	1,724	C	C	B	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	1,091	1,313	1,023	1,667	D	D	D	D
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	385	387	836	894	**F**	**F**	D	D
	Watt Avenue Exit	Major Diverge	1,577	1,381	1,167	1,054	D	D	D	D
	Northbound Watt Avenue Entrance	One-Lane Merge	806	738	1,104	1,050	D	D	D	D
	Southbound Watt Avenue Slip Entrance	Lane Addition	1,224	845	1,201	1,098	D	D	C	C
	Howe Avenue Exit	Major Diverge	1,806	1,520	1,677	1,694	E	D	D	D
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	582	668	503	519	D	D	C	D
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	732	781	763	689	**F**	**F**	C	C

Source: DKS Associates, 2018.

Table D-7
Peak Hour Freeway Ramp Operations - Cumulative Scenarios

			Ramp Volume				Level of Service			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Direction	US 50 Ramp	Junction Type	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Eastbound	Northbound 65th Street Slip Entrance	Weave	945	918	777	724	**F**	**F**	**F**	**F**
	Howe Avenue / Hornet Drive Exit		2,088	2,120	2,140	2,267				
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	729	750	1,342	1,332	D	D	D	D
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	609	528	532	524	D	D	D	D
	Watt Avenue Exit	Two-Lane Diverge	1,538	1,532	1,705	1,604	B	B	B	A
	Southbound Watt Avenue Entrance	One-Lane Merge	1,615	1,551	1,368	1,213	D	D	C	C
	Northbound Watt Avenue Entrance	One-Lane Merge	682	608	588	597	D	D	C	C
	Bradshaw Road Exit	Two-Lane Diverge	2,068	2,264	1,631	1,835	**F**	**F**	B	C
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	268	274	422	505	D	D	D	D
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	1,486	1,511	1,029	1,102	D	D	C	C
	Mather Field Road Exit	Two-Lane Diverge	1,490	1,481	1,530	1,489	B	B	B	B
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	252	252	222	169	C	C	C	C
	Northbound Mather Field Road Slip Entrance	Weave	431	571	894	1,123	**F**	**F**	**F**	**F**
	Zinfandel Drive Exit		3,083	3,082	1,861	1,797				
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	183	185	173	151	C	C	C	C
	Northbound Zinfandel Drive Slip Entrance	Lane Addition	665	656	714	784	A	B	B	B
	Sunrise Boulevard Exit	Major Diverge	1,878	1,899	2,308	2,364	C	C	C	C
	Sunrise Boulevard Entrance	Lane Addition / Weave	1,233	1,174	1,122	1,162	D	B	C	C
	Rancho Cordova Parkway Exit	Two-Lane Diverge / Weave	374	327	763	816		C		
	Rancho Cordova Parkway Entrance	Weave	1,787	1,748	1,748	1,823	**F**	**F**	**F**	**F**
	Hazel Avenue Exit		1,904	1,950	2,611	2,718				
	Hazel Avenue Entrance	Weave	1,174	1,072	2,148	2,091	E	D	**F**	D
	Aerojet Road Exit		584	613	203	171				
Westbound	Hazel Avenue Exit	Two-Lane Diverge	1,098	1,057	1,031	1,032	B	B	C	C
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	69	93	434	434	B	B	C	C
	Southbound Hazel Avenue Slip Entrance	Weave	2,306	2,369	2,263	2,302	**F**	**F**	**F**	**F**
	Rancho Cordova Parkway Exit		1,800	1,867	2,225	2,173				
	Rancho Cordova Parkway Entrance	Lane Addition / Weave	1,428	1,389	1,165	1,138	C	C	B	B
	Sunrise Boulevard Exit	Two-Lane Diverge / Weave	729	760	751	729			C	C
	Northbound Sunrise Boulevard Entrance	Lane Addition	169	170	259	234	A	A	A	A
	Southbound Sunrise Boulevard Entrance	Lane Addition	2,323	2,354	1,524	1,613	**F**	**F**	C	C
	Zinfandel Drive Exit	One-Lane Diverge	1,384	1,393	1,183	1,200	E	E	D	D
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	909	803	1,443	1,295	C	C	D	C
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	1,544	1,349	663	663	D	D	B	B
	Mather Field Road Exit	One-Lane Drop	1,350	1,581	826	1,025	D	D	C	C
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	626	499	1,192	1,193	C	C	C	C
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	303	427	504	428	C	C	C	B
	Bradshaw Road Exit	Two-Lane Diverge	1,533	1,692	1,756	1,809	C	C	B	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	999	1,318	927	1,593	**F**	**F**	D	D
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	385	391	851	816	**F**	**F**	D	D
	Watt Avenue Exit	Major Diverge	1,568	1,364	1,112	991	E	E	D	D
	Northbound Watt Avenue Entrance	One-Lane Merge	774	726	1,125	1,100	D	D	D	D
	Southbound Watt Avenue Slip Entrance	Lane Addition	1,134	919	1,062	1,006	D	D	C	D
	Howe Avenue Exit	Major Diverge	1,879	1,709	1,687	1,695	E	E	D	D
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	613	607	572	563	D	D	D	D
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	668	807	699	646	**F**	**F**	C	C

Source: DKS Associates, 2018.

US-50 Freeway System

Merge/Diverge Analysis – Calculation Sheets

US 50 Eastbound Weave - 65th Street to Howe Avenue

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain

Existing Conditions

Input Data

Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Upstream Ramp Lanes	1	1	1	1	1	1
Downstream Ramp Lanes	2	2	2	2	2	2
N - Number of Lanes	5	5	5	5	5	5
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	7,197	7,312	7,938	6,909	6,975	7,278
PHF	0.98	0.98	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	765	771	730	653	636	576
Exiting Ramp Volume (vehicles)	1,631	1,681	2,175	1,417	1,354	1,627
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	2,480	2,480	2,480	2,480	2,480	2,480
ID (Interchange Density within 3 miles)	1.0	1.0	1.0	1.0	1.0	1.0
Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,331	6,402	6,493	6,145	6,257	6,227
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Upstream Freeway Volume (pc/h)	7,487	7,607	8,258	7,191	7,260	7,575
Entering Ramp Volume (pc/h)	796	803	759	680	662	600
Exiting Ramp Volume (pc/h))	1,697	1,749	2,263	1,475	1,409	1,694
Downstream Freeway Volume (pc/h)	6,586	6,660	6,754	6,396	6,512	6,481
v_{FF}	5,953	6,025	6,186	5,844	5,968	6,005
v_{RF}	633	636	569	552	544	475
v_{FR}	1,534	1,582	2,073	1,347	1,292	1,569
v_{RR}	163	167	191	127	118	124
v_W	2,167	2,218	2,641	1,900	1,836	2,045
v_{NW}	6,116	6,192	6,376	5,971	6,086	6,130
v	8,283	8,409	9,017	7,871	7,922	8,174
VR	0.262	0.264	0.293	0.241	0.232	0.250
LC_{RF}	1	1	1	1	1	1
LC_{FR}	0	0	0	0	0	0
LC_{MIN}	633	636	569	552	544	475
L_{MAX}	5,175	5,198	5,508	4,964	4,863	5,055
Weaving Operations?	YES	YES	YES	YES	YES	YES
Capacity Controlled by Density (pc/h)	10,969	10,960	10,842	11,050	11,088	11,015
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)	9,176	9,101	8,194	9,943	10,356	9,594
Capacity (pc/h)	9,176	9,101	8,194	9,943	10,356	9,594
Volume-to-Capacity Ratio	0.90	0.92	1.10	0.79	0.76	0.85
LC_W	1,425	1,428	1,361	1,345	1,337	1,268
I_{NW}	1,517	1,536	1,581	1,481	1,509	1,520
LC_{NW1}	1,641	1,657	1,695	1,611	1,635	1,644
LC_{NW2}	3,053	3,070	3,111	3,021	3,046	3,056
LC_{NW3}	2,112	2,169	2,307	2,003	2,089	2,122
LC_{NW}	2,112	2,169	2,307	2,003	2,089	2,122
LC_{ALL}	3,538	3,597	3,669	3,348	3,426	3,390
W - Weaving Intensity	0.299	0.303	0.308	0.286	0.292	0.289
S_W	57.3	57.2	57.1	57.8	57.6	57.7
S_{NW}	57.5	57.4	57.2	58.5	58.5	58.7
S	57.5	57.3	57.2	58.3	58.3	58.5
D	28.8	29.3	31.5	27.0	27.2	28.0
LOS	D	D	F	C	C	C

US 50 Eastbound Weave - 65th Street to Howe Avenue

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain
Cumulative Conditions
Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Upstream Ramp Lanes	1	1	1	1	1	1	1	1
Downstream Ramp Lanes	2	2	2	2	2	2	2	2
N - Number of Lanes	5	5	5	5	5	5	5	5
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	7,971	8,166	8,019	8,272	7,455	7,302	7,658	7,812
PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	956	902	945	918	799	665	777	724
Exiting Ramp Volume (vehicles)	2,070	2,322	2,088	2,120	2,201	2,237	2,140	2,267
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	2,480	2,480	2,480	2,480	2,480	2,480	2,480	2,480
ID (Interchange Density within 3 miles)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	6,857	6,746	6,877	7,069	6,053	5,730	6,295	6,270
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Upstream Freeway Volume (pc/h)	8,292	8,495	8,342	8,605	7,759	7,600	7,971	8,131
Entering Ramp Volume (pc/h)	995	938	984	954	832	693	809	754
Exiting Ramp Volume (pc/h))	2,154	2,415	2,172	2,205	2,291	2,329	2,227	2,359
Downstream Freeway Volume (pc/h)	7,133	7,018	7,154	7,354	6,300	5,964	6,552	6,526
v_{FF}	6,369	6,320	6,399	6,620	5,690	5,466	5,949	5,972
v_{RF}	764	698	754	734	610	498	603	554
v_{FR}	1,923	2,175	1,943	1,985	2,069	2,134	2,022	2,159
v_{RR}	231	240	229	220	222	194	205	200
v_W	2,687	2,873	2,697	2,719	2,679	2,632	2,626	2,713
v_{NW}	6,600	6,560	6,628	6,840	5,912	5,660	6,154	6,172
v	9,287	9,433	9,326	9,559	8,591	8,293	8,779	8,885
VR	0.289	0.305	0.289	0.284	0.312	0.317	0.299	0.305
LC_{RF}	1	1	1	1	1	1	1	1
LC_{FR}	0	0	0	0	0	0	0	0
LC_{MIN}	764	698	754	734	610	498	603	554
L_{MAX}	5,470	5,633	5,469	5,418	5,711	5,772	5,574	5,641
Weaving Operations?	YES	YES	YES	YES	YES	YES	YES	YES
Capacity Controlled by Density (pc/h)	10,856	10,794	10,857	10,876	10,764	10,741	10,816	10,791
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)	8,294	7,880	8,298	8,437	7,697	7,561	8,024	7,861
Capacity (pc/h)	8,294	7,880	8,298	8,437	7,697	7,561	8,024	7,861
Volume-to-Capacity Ratio	1.12	1.20	1.12	1.13	1.12	1.10	1.09	1.13
LC_W	1,557	1,491	1,547	1,527	1,403	1,291	1,396	1,346
I_{NW}	1,637	1,627	1,644	1,696	1,466	1,404	1,526	1,531
LC_{NW1}	1,741	1,733	1,747	1,790	1,599	1,547	1,649	1,653
LC_{NW2}	3,161	3,152	3,167	3,214	3,007	2,951	3,061	3,065
LC_{NW3}	2,476	2,446	2,498	2,659	1,959	1,771	2,140	2,154
LC_{NW}	2,476	2,446	2,498	2,659	1,959	1,771	2,140	2,154
LC_{ALL}	4,033	3,937	4,045	4,186	3,362	3,062	3,536	3,500
W - Weaving Intensity	0.332	0.325	0.332	0.342	0.287	0.267	0.299	0.297
S_W	56.3	56.5	56.3	56.0	57.7	58.4	57.3	57.4
S_{NW}	55.6	55.9	55.6	55.5	57.4	58.5	57.2	57.5
S	55.8	56.1	55.8	55.7	57.5	58.4	57.3	57.5
D	33.3	33.6	33.4	34.3	29.9	28.4	30.7	30.9
LOS	F	F	F	F	F	F	F	F

US 50 Eastbound Merge - Howe Avenue Loop Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,331	6,402	6,493	6,145	6,257	6,227
PHF	0.98	0.98	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	484	485	556	881	853	927
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	700	700	700	700	700	700
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,815	6,888	7,049	7,026	7,110	7,154
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	6,586	6,660	6,754	6,396	6,512	6,481
v_R - Entering Ramp Volume (pc/h)	504	505	579	917	888	965
Downstream Freeway Volume (pc/h)	7,090	7,165	7,333	7,313	7,400	7,446
v_F / S_{FR}	263	266	270	256	260	259
P_{FM}	0.155	0.155	0.145	0.103	0.107	0.097
v_{12}	1,020	1,030	982	660	696	630
v_{av34}	2,783	2,815	2,886	2,868	2,908	2,925
v_{12a}	1,186	1,260	1,354	996	1,112	1,081
v_{12a}	2,634	2,664	2,702	2,558	2,605	2,592
v_{R12}	3,138	3,169	3,281	3,475	3,493	3,557
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.74	0.75	0.76	0.76	0.77	0.78
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.27	0.27	0.30	0.48	0.47	0.51
D_R	25.3	25.6	26.4	27.8	27.9	28.4
LOS	C	C	C	C	C	D

US 50 Eastbound Merge - Howe Avenue Loop Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,857	6,746	6,877	7,069	6,053	5,730	6,295	6,270
PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	731	808	729	750	1,291	1,152	1,342	1,332
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	700	700	700	700	700	700	700	700
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,588	7,554	7,605	7,820	7,344	6,882	7,637	7,602
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,133	7,018	7,154	7,354	6,300	5,964	6,552	6,526
v_R - Entering Ramp Volume (pc/h)	761	841	758	781	1,344	1,199	1,396	1,387
Downstream Freeway Volume (pc/h)	7,894	7,859	7,912	8,135	7,644	7,162	7,948	7,912
v_F / S_{FR}	285	281	286	294	252	239	262	261
P_{FM}	0.123	0.113	0.123	0.120	0.050	0.068	0.043	0.044
v_{12}	875	791	880	884	314	405	283	290
v_{av34}	3,129	3,113	3,137	3,235	2,993	2,779	3,134	3,118
v_{12a}	1,733	1,618	1,754	1,954	900	564	1,152	1,126
v_{12a}	2,853	2,807	2,862	2,942	2,520	2,386	2,621	2,610
v_{R12}	3,614	3,648	3,619	3,722	3,864	3,584	4,017	3,997
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.82	0.82	0.82	0.85	0.80	0.75	0.83	0.82
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.40	0.44	0.40	0.41	0.71	0.63	0.73	0.73
D_R	28.9	29.2	29.0	29.8	30.6	28.5	31.8	31.6
LOS	D	D	D	D	D	D	D	D

US 50 Eastbound Merge - Howe Avenue Slip Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,815	6,888	7,049	7,026	7,110	7,154
PHF	0.98	0.98	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	419	435	390	431	426	401
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	775	775	775	775	775	775
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	7,234	7,323	7,439	7,457	7,535	7,555
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,090	7,165	7,333	7,313	7,400	7,446
v_R - Entering Ramp Volume (pc/h)	436	453	406	449	443	418
Downstream Freeway Volume (pc/h)	7,526	7,618	7,739	7,761	7,843	7,863
v_F / S_{FR}	177	179	183	183	185	186
P_{FM}	0.163	0.161	0.167	0.162	0.162	0.166
v_{12}	1,158	1,155	1,225	1,183	1,202	1,233
v_{av34}	2,966	3,005	3,054	3,065	3,099	3,106
v_{12a}	1,690	1,765	1,933	1,913	2,000	2,046
v_{12a}	2,836	2,866	2,933	2,925	2,960	2,978
v_{R12}	3,272	3,319	3,339	3,374	3,403	3,396
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.78	0.79	0.81	0.81	0.82	0.82
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.22	0.23	0.20	0.22	0.22	0.21
D_R	25.9	26.3	26.5	26.7	27.0	26.9
LOS	C	C	C	C	C	C

US 50 Eastbound Merge - Howe Avenue Slip Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,588	7,554	7,605	7,820	7,344	6,882	7,637	7,602
PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	591	463	609	528	582	555	532	524
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	775	775	775	775	775	775	775	775
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	8,179	8,018	8,214	8,348	7,926	7,437	8,169	8,126
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,894	7,859	7,912	8,135	7,644	7,162	7,948	7,912
v_R - Entering Ramp Volume (pc/h)	615	482	633	549	606	578	554	545
Downstream Freeway Volume (pc/h)	8,509	8,341	8,545	8,685	8,250	7,740	8,502	8,458
v_F / S_{FR}	197	196	198	203	191	179	199	198
P_{FM}	0.141	0.158	0.139	0.149	0.142	0.146	0.149	0.150
v_{12}	1,113	1,238	1,097	1,213	1,086	1,043	1,181	1,184
v_{av34}	3,391	3,310	3,407	3,461	3,279	3,060	3,384	3,364
v_{12a}	2,494	2,459	2,512	2,735	2,244	1,762	2,548	2,512
v_{12a}	3,157	3,143	3,165	3,254	3,058	2,865	3,179	3,165
v_{R12}	3,772	3,626	3,798	3,803	3,663	3,443	3,733	3,710
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.89	0.87	0.89	0.90	0.86	0.81	0.89	0.88
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.31	0.24	0.32	0.27	0.30	0.29	0.28	0.27
D_R	29.8	28.7	29.9	30.0	28.9	27.2	29.5	29.3
LOS	D	D	D	D	D	C	D	D

US 50 Eastbound Diverge - Watt Avenue						
Highway Capacity Manual 2010 Edition **Two-Lane Diverge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	7,405	7,477	7,609	7,602	7,711	7,700
PHF	0.96	0.96	0.96	0.98	0.98	0.98
Exiting Ramp Volume (vehicles)	1,317	1,333	1,149	1,634	1,641	1,470
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_D - Deceleration Lane Length (ft)	2,290	2,290	2,290	2,290	2,290	2,290
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,088	6,144	6,460	5,968	6,071	6,230
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,895	7,971	8,112	7,882	7,995	7,984
v_R - Exiting Ramp Volume (pc/h)	1,404	1,421	1,225	1,694	1,701	1,524
Downstream Freeway Volume (pc/h)	6,491	6,550	6,887	6,188	6,294	6,460
P_{FD}	0.260	0.260	0.260	0.260	0.260	0.260
v_{12}	3,092	3,124	3,016	3,303	3,338	3,203
v_{av34}	2,402	2,424	2,548	2,290	2,329	2,390
v_{12a}	3,092	3,124	3,016	3,303	3,338	3,203
v_{12a}	3,158	3,188	3,245	3,303	3,338	3,203
Upstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Upstream Volume-to-Capacity Ratio	0.82	0.83	0.84	0.82	0.83	0.83
Ramp Capacity (pc/h)	4,400	4,400	4,400	4,400	4,400	4,400
Ramp Volume-to-Capacity Ratio	0.32	0.32	0.28	0.39	0.39	0.35
D_R	10.8	11.1	11.5	12.0	12.3	11.2
LOS	B	B	B	B	B	B

US 50 Eastbound Diverge - Watt Avenue

Highway Capacity Manual
2010 Edition
Two-Lane Diverge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	5	5	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	7,147	7,149	7,213	7,366	6,393	6,150	6,680	6,679
PHF	0.96	0.96	0.96	0.96	0.98	0.98	0.98	0.98
Exiting Ramp Volume (vehicles)	1,553	1,518	1,538	1,532	1,762	1,609	1,705	1,604
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_D - Deceleration Lane Length (ft)	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	5,594	5,631	5,675	5,834	4,630	4,541	4,976	5,075
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,619	7,621	7,690	7,853	6,628	6,376	6,927	6,925
v_R - Exiting Ramp Volume (pc/h)	1,656	1,618	1,640	1,633	1,827	1,668	1,767	1,663
Downstream Freeway Volume (pc/h)	5,964	6,003	6,050	6,219	4,801	4,708	5,159	5,262
P_{FD}	0.260	0.260	0.260	0.260	0.260	0.260	0.260	0.260
v_{12}	3,206	3,179	3,213	3,250	3,075	2,892	3,109	3,031
v_{av34}	2,207	2,221	2,239	2,301	1,776	1,742	1,909	1,947
v_{12a}	3,206	3,179	3,213	3,250	3,075	2,892	3,109	3,031
v_{12a}	3,206	3,179	3,213	3,250	3,075	2,892	3,109	3,031
Upstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Upstream Volume-to-Capacity Ratio	0.63	0.64	0.64	0.65	0.55	0.53	0.58	0.58
Ramp Capacity (pc/h)	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400
Ramp Volume-to-Capacity Ratio	0.38	0.37	0.37	0.37	0.42	0.38	0.40	0.38
D_R	11.2	11.0	11.3	11.6	10.1	8.5	10.4	9.7
LOS	B	B	B	B	B	A	B	A

US 50 Eastbound Merge - Watt Avenue						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,088	6,144	6,460	5,968	6,071	6,230
PHF	0.96	0.96	0.96	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	2,134	2,143	1,951	1,724	1,739	1,553
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	775	775	775	775	775	775
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	8,222	8,286	8,411	7,692	7,809	7,783
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	6,491	6,550	6,887	6,188	6,294	6,460
v_R - Entering Ramp Volume (pc/h)	2,275	2,284	2,080	1,788	1,803	1,610
Downstream Freeway Volume (pc/h)	8,766	8,834	8,967	7,975	8,097	8,070
v_F / S_{FR}	118	119	125	113	114	117
P_{FM}	-0.067	-0.068	-0.042	-0.006	-0.008	0.017
v_{12}	-432	-444	-291	-35	-48	107
v_{av34}	3,461	3,497	3,589	3,111	3,171	3,176
v_{12a}	1,091	1,150	1,487	788	894	1,060
v_{12a}	2,596	2,620	2,755	2,475	2,518	2,584
v_{R12}	4,871	4,904	4,835	4,263	4,321	4,194
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.91	0.92	0.93	0.83	0.84	0.84
Ramp Capacity (pc/h)	2,200	2,200	2,200	2,200	2,200	2,200
Ramp Volume-to-Capacity Ratio	1.03	1.04	0.95	0.81	0.82	0.73
D_R	37.6	37.8	37.4	33.0	33.5	32.6
LOS	F	F	E	D	D	D

US 50 Eastbound Merge - Watt Avenue Loop Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	5,594	5,631	5,675	5,834	4,630	4,541	4,976	5,075
PHF	0.96	0.96	0.96	0.96	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	1,644	1,582	1,615	1,551	1,306	1,101	1,368	1,213
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	775	775	775	775	775	775	775	775
S_{FR} - Ramp Free-flow Speed (mph)	30	30	30	30	30	30	30	30
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,238	7,213	7,291	7,384	5,936	5,642	6,344	6,288
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	5,964	6,003	6,050	6,219	4,801	4,708	5,159	5,262
v_R - Entering Ramp Volume (pc/h)	1,753	1,687	1,722	1,653	1,354	1,142	1,419	1,257
Downstream Freeway Volume (pc/h)	7,716	7,690	7,773	7,873	6,155	5,850	6,578	6,520
v_F / S_{FR}	199	200	202	207	160	157	172	175
P_{FM}	-0.001	0.007	0.003	0.011	0.049	0.075	0.040	0.061
v_{12}	-8	42	15	69	233	353	209	319
v_{av34}	2,986	2,981	3,018	3,075	2,284	2,177	2,475	2,472
v_{12a}	564	603	650	819	233	353	209	319
v_{12a}	2,385	2,401	2,420	2,488	1,920	1,883	2,064	2,105
v_{R12}	4,138	4,088	4,142	4,141	3,275	3,025	3,482	3,362
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.80	0.80	0.81	0.82	0.64	0.61	0.69	0.68
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.92	0.89	0.91	0.87	0.71	0.60	0.75	0.66
D_R	32.1	31.7	32.1	32.2	25.5	23.7	27.1	26.3
LOS	D	D	D	D	C	C	C	C

US 50 Eastbound Merge - Watt Avenue Slip Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,238	7,213	7,291	7,384	5,936	5,642	6,344	6,288
PHF	0.96	0.96	0.96	0.96	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	733	667	682	608	684	773	588	597
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	775	775	775	775	775	775	775	775
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,971	7,880	7,973	7,992	6,620	6,415	6,932	6,885
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,716	7,690	7,773	7,873	6,155	5,850	6,578	6,520
v_R - Entering Ramp Volume (pc/h)	782	711	727	648	709	801	610	619
Downstream Freeway Volume (pc/h)	8,498	8,402	8,500	8,521	6,864	6,651	7,188	7,139
v_F / S_{FR}	193	192	194	197	154	146	164	163
P_{FM}	0.120	0.129	0.127	0.137	0.129	0.118	0.142	0.140
v_{12}	927	991	986	1,077	795	688	931	915
v_{av34}	3,395	3,350	3,393	3,398	2,680	2,581	2,823	2,802
v_{12a}	2,316	2,290	2,373	2,473	795	688	1,178	1,120
v_{12a}	3,086	3,076	3,109	3,149	2,462	2,340	2,631	2,608
v_{R12}	3,868	3,787	3,836	3,797	3,171	3,141	3,241	3,227
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.89	0.88	0.89	0.89	0.72	0.69	0.75	0.74
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.39	0.36	0.36	0.32	0.35	0.40	0.30	0.31
D_R	30.4	29.8	30.2	29.9	25.0	24.7	25.6	25.5
LOS	D	D	D	D	C	C	C	C

US 50 Eastbound Diverge - Watt Avenue						
Highway Capacity Manual 2010 Edition **Two-Lane Diverge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	7,935	8,002	8,145	7,176	7,284	7,310
PHF	0.95	0.95	0.95	0.98	0.98	0.98
Exiting Ramp Volume (vehicles)	1,520	1,572	1,891	1,228	1,284	1,574
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_D - Deceleration Lane Length (ft)	1,830	1,830	1,830	1,830	1,830	1,830
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,415	6,429	6,254	5,948	6,000	5,736
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,527	8,599	8,752	7,461	7,573	7,600
v_R - Exiting Ramp Volume (pc/h)	1,633	1,690	2,032	1,277	1,335	1,636
Downstream Freeway Volume (pc/h)	6,894	6,909	6,720	6,184	6,238	5,964
P_{FD}	0.260	0.260	0.260	0.260	0.260	0.260
v_{12}	3,426	3,486	3,779	2,885	2,957	3,187
v_{av34}	2,551	2,556	2,487	2,288	2,308	2,207
v_{12a}	3,426	3,486	3,779	2,885	2,957	3,187
v_{12a}	3,426	3,486	3,779	2,984	3,029	3,187
Upstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Upstream Volume-to-Capacity Ratio	0.89	0.90	0.91	0.78	0.79	0.79
Ramp Capacity (pc/h)	4,000	4,000	4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.41	0.42	0.51	0.32	0.33	0.41
D_R	17.2	17.8	20.3	13.4	13.8	15.2
LOS	B	B	C	B	B	B

US 50 Eastbound Diverge - Bradshaw Road								
Highway Capacity Manual 2010 Edition **Two-Lane Diverge - 8-Lane Freeway - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	9,583	9,596	9,633	9,825	8,662	8,437	8,976	9,056
PHF	0.95	0.95	0.95	0.95	0.98	0.98	0.98	0.98
Exiting Ramp Volume (vehicles)	2,035	2,366	2,068	2,264	1,608	1,789	1,631	1,835
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_D - Deceleration Lane Length (ft)	1,830	1,830	1,830	1,830	1,830	1,830	1,830	1,830
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,547	7,230	7,566	7,561	7,054	6,648	7,345	7,221
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	10,298	10,312	10,352	10,558	9,006	8,772	9,332	9,415
v_R - Exiting Ramp Volume (pc/h)	2,187	2,543	2,222	2,433	1,672	1,861	1,696	1,907
Downstream Freeway Volume (pc/h)	8,110	7,769	8,130	8,125	7,334	6,912	7,637	7,508
P_{FD}	0.260	0.260	0.260	0.260	0.260	0.260	0.260	0.260
v_{12}	4,296	4,563	4,336	4,546	3,579	3,658	3,681	3,859
v_{av34}	3,001	2,875	3,008	3,006	2,714	2,557	2,826	2,778
v_{12a}	4,898	4,912	4,952	5,158	3,606	3,658	3,932	4,015
v_{12a}	4,898	4,912	4,952	5,158	3,603	3,658	3,733	4,015
Upstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Upstream Volume-to-Capacity Ratio	1.07	1.07	1.08	1.10	0.94	0.91	0.97	0.98
Ramp Capacity (pc/h)	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.55	0.64	0.56	0.61	0.42	0.47	0.42	0.48
D_R	29.9	30.0	30.4	32.1	18.8	19.2	19.9	22.3
LOS	F	**F**	F	F	B	B	B	C

US 50 Eastbound Merge - Bradshaw Road Loop Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,415	6,429	6,254	5,948	6,000	5,736
PHF	0.95	0.95	0.95	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	220	224	151	422	425	423
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	615	615	615	615	615	615
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,635	6,653	6,405	6,370	6,425	6,159
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	6,894	6,909	6,720	6,184	6,238	5,964
v_R - Entering Ramp Volume (pc/h)	236	240	163	439	442	440
Downstream Freeway Volume (pc/h)	7,130	7,150	6,883	6,623	6,680	6,404
v_F / S_{FR}	276	276	269	247	250	239
P_{FM}	0.188	0.188	0.197	0.163	0.163	0.163
v_{12}	1,298	1,297	1,327	1,008	1,014	971
v_{av34}	2,798	2,806	2,697	2,588	2,612	2,496
v_{12a}	1,494	1,509	1,327	1,008	1,014	971
v_{12a}	2,757	2,764	2,688	2,474	2,495	2,386
v_{R12}	2,994	3,004	2,851	2,912	2,937	2,825
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.74	0.74	0.72	0.69	0.70	0.67
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.12	0.13	0.09	0.23	0.23	0.23
D_R	24.9	24.9	23.8	24.1	24.3	23.5
LOS	C	C	C	C	C	C

US 50 Eastbound Weave - Bradshaw Road to Mather Field Road

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain
Cumulative Conditions
Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus PROJECT	CEQA Cumulative	CEQA Cumulative Plus PROJECT	MTP Cumulative	MTP Cumulative Plus PROJECT	CEQA Cumulative	CEQA Cumulative Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Upstream Ramp Lanes	1	1	1	1	1	1	1	1
Downstream Ramp Lanes	2	2	2	2	2	2	2	2
N - Number of Lanes	5	5	5	5	5	5	5	5
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	7,547	7,230	7,566	7,561	7,054	6,648	7,345	7,221
PHF	0.95	0.95	0.95	0.95	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	1,409	1,340	1,486	1,511	843	1,173	1,029	1,102
Exiting Ramp Volume (vehicles)	1,492	1,464	1,490	1,481	1,462	1,400	1,530	1,489
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	7,020	7,020	7,020	7,020	7,020	7,020	7,020	7,020
ID (Interchange Density within 3 miles)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,464	7,106	7,562	7,591	6,436	6,421	6,844	6,835
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Upstream Freeway Volume (pc/h)	8,110	7,769	8,130	8,125	7,334	6,912	7,637	7,508
Entering Ramp Volume (pc/h)	1,514	1,440	1,597	1,624	876	1,220	1,070	1,146
Exiting Ramp Volume (pc/h))	1,603	1,574	1,601	1,592	1,520	1,456	1,591	1,548
Downstream Freeway Volume (pc/h)	8,021	7,636	8,126	8,157	6,691	6,676	7,116	7,106
v_{FF}	6,759	6,442	6,792	6,799	5,977	5,674	6,241	6,165
v_{RF}	1,262	1,194	1,334	1,359	714	1,002	874	941
v_{FR}	1,351	1,327	1,338	1,326	1,357	1,237	1,395	1,343
v_{RR}	252	246	263	265	162	218	195	205
v_W	2,613	2,522	2,672	2,685	2,072	2,239	2,270	2,284
v_{NW}	7,012	6,688	7,055	7,064	6,139	5,893	6,437	6,370
v	9,624	9,210	9,727	9,749	8,211	8,132	8,707	8,654
VR	0.271	0.274	0.275	0.275	0.252	0.275	0.261	0.264
LC_{RF}	1	1	1	1	1	1	1	1
LC_{FR}	0	0	0	0	0	0	0	0
LC_{MIN}	1,262	1,194	1,334	1,359	714	1,002	874	941
L_{MAX}	5,280	5,305	5,315	5,322	5,078	5,321	5,166	5,200
Weaving Operations?	NO	NO	NO	NO	NO	NO	NO	NO
Capacity Controlled by Density (pc/h)	12,666	12,656	12,652	12,649	12,743	12,650	12,709	12,696
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)	8,841	8,765	8,736	8,713	9,512	8,716	9,206	9,094
Capacity (pc/h)	8,841	8,765	8,736	8,713	9,512	8,716	9,206	9,094
Volume-to-Capacity Ratio	1.09	1.05	1.11	1.12	0.86	0.93	0.95	0.95
LC_W	2,653	2,586	2,726	2,750	2,106	2,393	2,266	2,333
I_{NW}	4,922	4,695	4,952	4,959	4,310	4,137	4,519	4,472
LC_{NW1}	4,286	4,220	4,295	4,297	4,107	4,056	4,168	4,154
LC_{NW2}	3,253	3,180	3,262	3,264	3,058	3,003	3,124	3,109
LC_{NW3}	-1,474	-1,208	-1,509	-1,516	-748	-538	-999	-943
LC_{NW}	3,253	3,180	3,262	3,264	3,058	3,003	3,124	3,109
LC_{ALL}	5,906	5,766	5,988	6,015	5,164	5,396	5,390	5,442
W - Weaving Intensity	0.197	0.194	0.199	0.200	0.177	0.184	0.183	0.185
S_W	60.9	61.1	60.9	60.8	61.7	61.5	61.5	61.4
S_{NW}	51.7	52.6	51.1	50.9	57.0	55.0	55.3	54.9
S	53.9	54.6	53.4	53.3	58.1	56.6	56.8	56.5
D	35.7	33.7	36.4	36.6	28.3	28.7	30.6	30.6
LOS	F	F	F	F	D	D	D	D

US 50 Eastbound Merge - Bradshaw Road Loop Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,547	7,230	7,566	7,561	7,054	6,648	7,345	7,221
PHF	0.95	0.95	0.95	0.95	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	253	216	268	274	399	564	422	505
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	615	615	615	615	615	615	615	615
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,800	7,446	7,834	7,835	7,453	7,212	7,768	7,726
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,110	7,769	8,130	8,125	7,334	6,912	7,637	7,508
v_R - Entering Ramp Volume (pc/h)	272	232	288	294	415	587	439	525
Downstream Freeway Volume (pc/h)	8,382	8,002	8,418	8,419	7,749	7,498	8,076	8,033
v_F / S_{FR}	324	311	325	325	293	276	305	300
P_{FM}	0.184	0.189	0.182	0.181	0.166	0.144	0.163	0.152
v_{12}	1,491	1,467	1,478	1,471	1,217	999	1,244	1,143
v_{av34}	3,310	3,151	3,326	3,327	3,059	2,957	3,196	3,183
v_{12a}	2,710	2,369	2,730	2,725	1,934	1,512	2,237	2,108
v_{12a}	3,244	3,108	3,252	3,250	2,934	2,765	3,055	3,003
v_{R12}	3,516	3,340	3,540	3,544	3,349	3,351	3,494	3,528
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.87	0.83	0.88	0.88	0.81	0.78	0.84	0.84
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.14	0.12	0.15	0.15	0.22	0.31	0.23	0.28
D_R	28.9	27.6	29.1	29.1	27.5	27.5	28.7	28.9
LOS	D	C	D	D	C	C	D	D

US 50 Eastbound Merge - Bradshaw Road Slip Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,635	6,653	6,405	6,370	6,425	6,159
PHF	0.95	0.95	0.95	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	971	923	1,280	918	910	1,105
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	1,400	1,400	1,400	1,400	1,400	1,400
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	7,606	7,576	7,686	7,288	7,335	7,264
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,130	7,150	6,883	6,623	6,680	6,404
v_R - Entering Ramp Volume (pc/h)	1,043	992	1,376	954	946	1,149
Downstream Freeway Volume (pc/h)	8,173	8,142	8,259	7,577	7,626	7,553
v_F / S_{FR}	178	179	172	166	167	160
P_{FM}	0.087	0.094	0.046	0.098	0.100	0.074
v_{12}	623	671	315	652	665	475
v_{av34}	3,254	3,239	3,284	2,985	3,008	2,964
v_{12a}	1,730	1,750	1,483	1,223	1,280	1,004
v_{12a}	2,852	2,860	2,753	2,649	2,672	2,561
v_{R12}	3,895	3,852	4,129	3,604	3,618	3,711
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.85	0.85	0.86	0.79	0.79	0.79
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.52	0.50	0.69	0.48	0.47	0.57
D_R	26.6	26.3	28.3	24.4	24.5	25.1
LOS	C	C	D	C	C	C

US 50 Eastbound Ramp Addition - Northbound Bradshaw Road								
Highway Capacity Manual 2010 Edition **Lane Addition - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	5	5	5	5	5	5	5	5
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,800	7,446	7,834	7,835	7,453	7,212	7,768	7,726
PHF	0.95	0.95	0.95	0.95	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	1,409	1,340	1,486	1,511	843	1,173	1,029	1,102
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	9,209	8,787	9,320	9,346	8,296	8,386	8,797	8,828
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,382	8,002	8,418	8,419	7,749	7,498	8,076	8,033
v_R - Entering Ramp Volume (pc/h)	1,514	1,440	1,597	1,624	876	1,220	1,070	1,146
Downstream Freeway Volume (pc/h)	9,896	9,442	10,015	10,043	8,626	8,718	9,146	9,179
Downstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Downstream Volume-to-Capacity Ratio	0.82	0.79	0.83	0.84	0.72	0.73	0.76	0.76
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.76	0.72	0.80	0.81	0.44	0.61	0.53	0.57
V/C_{MAX}	0.82	0.79	0.83	0.84	0.72	0.73	0.76	0.76
LOS	D	C	D	D	C	C	C	C

US 50 Eastbound Diverge - Mather Field Road

Highway Capacity Manual
2010 Edition
Two-Lane Diverge - 8-Lane Freeway - Level Terrain

Existing Conditions

Input Data

Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	7,725	7,712	7,761	7,366	7,407	7,248
PHF	0.96	0.96	0.96	1.00	1.00	1.00
Exiting Ramp Volume (vehicles)	1,266	1,275	1,188	1,062	1,092	987
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_D - Deceleration Lane Length (ft)	2,400	2,400	2,400	2,400	2,400	2,400
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,459	6,437	6,572	6,304	6,315	6,261
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,249	8,235	8,287	7,530	7,573	7,410
v_R - Exiting Ramp Volume (pc/h)	1,352	1,361	1,269	1,086	1,117	1,009
Downstream Freeway Volume (pc/h)	6,897	6,874	7,018	6,445	6,456	6,401
P_{FD}	0.260	0.260	0.260	0.260	0.260	0.260
v_{12}	3,145	3,148	3,094	2,761	2,795	2,673
v_{av34}	2,552	2,543	2,597	2,385	2,389	2,368
v_{12a}	3,145	3,148	3,094	2,761	2,795	2,673
v_{12a}	3,300	3,294	3,315	3,012	3,029	2,964
Upstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Upstream Volume-to-Capacity Ratio	0.86	0.86	0.86	0.78	0.79	0.77
Ramp Capacity (pc/h)	4,000	4,000	4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.34	0.34	0.32	0.27	0.28	0.25
D_R	11.0	11.0	11.2	8.6	8.7	8.1
LOS	B	B	B	A	A	A

US 50 Eastbound Diverge - Mather Field Road

Highway Capacity Manual
2010 Edition
Two-Lane Diverge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	5	5	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	9,362	8,922	9,467	9,483	8,502	8,510	9,033	9,015
PHF	0.96	0.96	0.96	0.96	1.00	1.00	1.00	1.00
Exiting Ramp Volume (vehicles)	1,492	1,464	1,490	1,481	1,462	1,400	1,530	1,489
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_D - Deceleration Lane Length (ft)	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,870	7,458	7,977	8,002	7,040	7,110	7,503	7,526
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	9,997	9,528	10,109	10,126	8,692	8,700	9,234	9,216
v_R - Exiting Ramp Volume (pc/h)	1,593	1,564	1,591	1,582	1,494	1,432	1,564	1,522
Downstream Freeway Volume (pc/h)	8,404	7,964	8,518	8,544	7,197	7,269	7,670	7,694
P_{FD}	0.260	0.260	0.260	0.260	0.260	0.260	0.260	0.260
v_{12}	3,778	3,634	3,806	3,803	3,366	3,321	3,559	3,522
v_{av34}	3,109	2,947	3,152	3,161	2,663	2,689	2,838	2,847
v_{12a}	4,597	4,128	4,709	4,726	3,366	3,321	3,834	3,816
v_{12a}	3,999	3,811	4,044	4,050	3,477	3,480	3,694	3,687
Upstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Upstream Volume-to-Capacity Ratio	0.83	0.79	0.84	0.84	0.72	0.73	0.77	0.77
Ramp Capacity (pc/h)	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.40	0.39	0.40	0.40	0.37	0.36	0.39	0.38
D_R	17.0	15.4	17.4	17.5	12.6	12.6	14.4	14.4
LOS	B	B	B	B	B	B	B	B

US 50 Eastbound Merge - Mather Field Road Loop Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,459	6,437	6,572	6,304	6,315	6,261
PHF	0.96	0.96	0.96	1.00	1.00	1.00
Entering Ramp Volume (vehicles)	125	134	121	101	100	107
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	1,100	1,100	1,100	1,100	1,100	1,100
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,584	6,572	6,694	6,405	6,415	6,369
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	6,897	6,874	7,018	6,445	6,456	6,401
v_R - Entering Ramp Volume (pc/h)	133	143	130	103	103	110
Downstream Freeway Volume (pc/h)	7,031	7,017	7,148	6,548	6,558	6,511
v_F / S_{FR}	276	275	281	258	258	256
P_{FM}	0.201	0.200	0.202	0.205	0.205	0.204
v_{12}	1,387	1,374	1,415	1,320	1,323	1,306
v_{av34}	2,755	2,750	2,802	2,562	2,566	2,547
v_{12a}	1,497	1,474	1,618	1,320	1,323	1,306
v_{12a}	2,759	2,750	2,807	2,578	2,582	2,560
v_{R12}	2,892	2,893	2,937	2,681	2,685	2,670
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.73	0.73	0.74	0.68	0.68	0.68
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.07	0.08	0.07	0.05	0.05	0.06
D_R	21.1	21.1	21.4	19.4	19.5	19.4
LOS	C	C	C	B	B	B

US 50 Eastbound Merge - Mather Field Road Loop Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,870	7,458	7,977	8,002	7,040	7,110	7,503	7,526
PHF	0.96	0.96	0.96	0.96	1.00	1.00	1.00	1.00
Entering Ramp Volume (vehicles)	236	206	252	252	197	167	222	169
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	8,106	7,664	8,229	8,254	7,238	7,277	7,725	7,695
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,404	7,964	8,518	8,544	7,197	7,269	7,670	7,694
v_R - Entering Ramp Volume (pc/h)	252	220	269	269	202	171	227	172
Downstream Freeway Volume (pc/h)	8,656	8,184	8,787	8,814	7,399	7,440	7,898	7,867
v_F / S_{FR}	336	319	341	342	288	291	307	308
P_{FM}	0.186	0.190	0.184	0.184	0.193	0.196	0.189	0.196
v_{12}	1,565	1,515	1,568	1,574	1,386	1,428	1,453	1,510
v_{av34}	3,419	3,224	3,475	3,485	2,906	2,920	3,109	3,092
v_{12a}	3,004	2,564	3,118	3,144	1,797	1,869	2,270	2,294
v_{12a}	3,361	3,186	3,407	3,418	2,879	2,907	3,068	3,078
v_{R12}	3,614	3,406	3,677	3,687	3,081	3,078	3,295	3,250
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.90	0.85	0.92	0.92	0.77	0.77	0.82	0.82
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.13	0.12	0.14	0.14	0.11	0.09	0.12	0.09
D_R	26.6	25.0	27.1	27.2	22.5	22.5	24.2	23.8
LOS	C	C	C	C	C	C	C	C

US 50 Eastbound Weave - Mather Field Road to Zinfandel Drive

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain

Existing Conditions

Input Data

Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Upstream Ramp Lanes	1	1	1	1	1	1
Downstream Ramp Lanes	2	2	2	2	2	2
N - Number of Lanes	5	5	5	5	5	5
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	6,958	6,943	7,079	6,408	6,436	6,373
PHF	0.94	0.94	0.94	0.97	0.97	0.97
Entering Ramp Volume (vehicles)	317	325	634	816	828	1,187
Exiting Ramp Volume (vehicles)	2,932	2,945	2,918	1,452	1,471	1,419
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	4,955	4,955	4,955	4,955	4,955	4,955
ID (Interchange Density within 3 miles)	0.5	0.5	0.5	0.5	0.5	0.5
Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	4,343	4,323	4,795	5,772	5,793	6,141
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Upstream Freeway Volume (pc/h)	7,510	7,494	7,641	6,706	6,735	6,669
Entering Ramp Volume (pc/h)	342	350	684	854	866	1,242
Exiting Ramp Volume (pc/h))	3,165	3,178	3,150	1,519	1,539	1,485
Downstream Freeway Volume (pc/h)	4,688	4,666	5,176	6,040	6,062	6,426
v_{FF}	4,483	4,458	4,750	5,358	5,371	5,417
v_{RF}	204	208	425	682	691	1,009
v_{FR}	3,027	3,036	2,891	1,348	1,364	1,252
v_{RR}	138	142	259	172	175	233
v_W	3,231	3,245	3,317	2,030	2,055	2,261
v_{NW}	4,621	4,600	5,009	5,529	5,546	5,650
v	7,852	7,844	8,326	7,559	7,601	7,911
VR	0.411	0.414	0.398	0.269	0.270	0.286
LC_{RF}	1	1	1	1	1	1
LC_{FR}	0	0	0	0	0	0
LC_{MIN}	204	208	425	682	691	1,009
L_{MAX}	6,810	6,835	6,663	5,249	5,268	5,432
Weaving Operations?	YES	YES	YES	YES	YES	YES
Capacity Controlled by Density (pc/h)	11,290	11,281	11,347	11,888	11,880	11,817
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)	5,833	5,802	6,025	8,937	8,879	8,398
Capacity (pc/h)	5,833	5,802	6,025	8,937	8,879	8,398
Volume-to-Capacity Ratio	1.35	1.35	1.38	0.85	0.86	0.94
LC_W	1,124	1,129	1,345	1,602	1,611	1,929
I_{NW}	1,145	1,140	1,241	1,370	1,374	1,400
LC_{NW1}	2,675	2,670	2,754	2,862	2,865	2,886
LC_{NW2}	2,720	2,715	2,806	2,922	2,926	2,949
LC_{NW3}	2,664	2,659	2,750	2,868	2,872	2,896
LC_{NW}	2,675	2,670	2,754	2,868	2,872	2,896
LC_{ALL}	3,799	3,799	4,100	4,471	4,483	4,825
W - Weaving Intensity	0.183	0.183	0.195	0.208	0.209	0.221
S_W	61.5	61.5	61.0	60.5	60.5	60.0
S_{NW}	61.0	61.0	58.9	57.8	57.7	55.1
S	61.2	61.2	59.8	58.5	58.5	56.5
D	25.7	25.6	27.9	25.8	26.0	28.0
LOS	F	F	F	C	C	D

US 50 Eastbound Weave - Mather Field Road to Zinfandel Drive

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Upstream Ramp Lanes	1	1	1	1	1	1	1	1
Downstream Ramp Lanes	2	2	2	2	2	2	2	2
N - Number of Lanes	5	5	5	5	5	5	5	5
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	8,503	8,043	8,641	8,640	7,314	7,339	7,871	7,793
PHF	0.94	0.94	0.94	0.94	0.97	0.97	0.97	0.97
Entering Ramp Volume (vehicles)	432	447	431	571	920	1,210	894	1,123
Exiting Ramp Volume (vehicles)	3,097	3,052	3,083	3,082	1,759	1,708	1,861	1,797
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	4,955	4,955	4,955	4,955	4,955	4,955	4,955	4,955
ID (Interchange Density within 3 miles)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	5,838	5,438	5,990	6,128	6,475	6,840	6,903	7,120
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Upstream Freeway Volume (pc/h)	9,178	8,682	9,327	9,326	7,654	7,679	8,236	8,155
Entering Ramp Volume (pc/h)	466	483	465	616	962	1,266	935	1,175
Exiting Ramp Volume (pc/h))	3,343	3,295	3,327	3,327	1,840	1,788	1,948	1,880
Downstream Freeway Volume (pc/h)	6,301	5,870	6,465	6,615	6,776	7,158	7,224	7,450
v_{FF}	5,996	5,561	6,158	6,205	6,019	6,145	6,487	6,512
v_{RF}	305	309	307	410	757	1,013	737	939
v_{FR}	3,181	3,121	3,169	3,121	1,635	1,535	1,749	1,643
v_{RR}	162	173	158	206	206	253	199	237
v_W	3,486	3,430	3,476	3,531	2,391	2,548	2,486	2,582
v_{NW}	6,158	5,734	6,316	6,411	6,224	6,398	6,686	6,749
v	9,644	9,164	9,793	9,942	8,616	8,945	9,172	9,330
VR	0.361	0.374	0.355	0.355	0.278	0.285	0.271	0.277
LC_{RF}	1	1	1	1	1	1	1	1
LC_{FR}	0	0	0	0	0	0	0	0
LC_{MIN}	305	309	307	410	757	1,013	737	939
L_{MAX}	6,252	6,395	6,181	6,183	5,344	5,421	5,275	5,335
Weaving Operations?	YES	YES	YES	YES	YES	YES	YES	YES
Capacity Controlled by Density (pc/h)	11,504	11,449	11,531	11,530	11,851	11,822	11,878	11,854
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)	6,640	6,412	6,761	6,758	8,647	8,427	8,856	8,674
Capacity (pc/h)	6,640	6,412	6,761	6,758	8,647	8,427	8,856	8,674
Volume-to-Capacity Ratio	1.45	1.43	1.45	1.47	1.00	1.06	1.04	1.08
LC_W	1,225	1,229	1,227	1,330	1,677	1,933	1,657	1,859
I_{NW}	1,526	1,421	1,565	1,588	1,542	1,585	1,656	1,672
LC_{NW1}	2,991	2,904	3,024	3,043	3,005	3,041	3,100	3,113
LC_{NW2}	3,062	2,968	3,098	3,119	3,077	3,116	3,180	3,194
LC_{NW3}	3,016	2,916	3,054	3,077	3,032	3,073	3,144	3,159
LC_{NW}	3,016	2,916	3,054	3,077	3,032	3,073	3,144	3,159
LC_{ALL}	4,240	4,145	4,281	4,407	4,709	5,007	4,800	5,018
W - Weaving Intensity	0.200	0.196	0.201	0.206	0.217	0.228	0.220	0.228
S_W	60.8	61.0	60.8	60.6	60.2	59.8	60.1	59.8
S_{NW}	58.5	59.0	58.4	57.5	56.3	54.1	55.9	54.3
S	59.4	59.7	59.2	58.6	57.3	55.6	57.0	55.7
D	32.5	30.7	33.1	33.9	30.1	32.2	32.2	33.5
LOS	F	F	F	F	D	F	F	F

US 50 Eastbound Merge - Zinfandel Drive Loop Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	4,343	4,323	4,795	5,772	5,793	6,141
PHF	0.94	0.94	0.94	0.97	0.97	0.97
Entering Ramp Volume (vehicles)	182	176	177	129	132	116
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	520	520	520	520	520	520
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	4,525	4,499	4,971	5,901	5,925	6,257
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	4,688	4,666	5,176	6,040	6,062	6,426
v_R - Entering Ramp Volume (pc/h)	196	190	191	135	138	122
Downstream Freeway Volume (pc/h)	4,884	4,857	5,366	6,175	6,200	6,547
v_F / S_{FR}	188	187	207	242	242	257
P_{FM}	0.193	0.194	0.194	0.201	0.201	0.203
v_{12}	906	905	1,004	1,214	1,215	1,302
v_{av34}	1,891	1,880	2,086	2,413	2,423	2,562
v_{12a}	906	905	1,004	1,214	1,215	1,302
v_{12a}	1,875	1,866	2,070	2,416	2,425	2,570
v_{R12}	2,072	2,057	2,261	2,551	2,563	2,692
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.51	0.51	0.56	0.64	0.65	0.68
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.10	0.10	0.10	0.07	0.07	0.06
D_R	18.3	18.2	19.8	22.1	22.1	23.2
LOS	B	B	B	C	C	C

US 50 Eastbound Merge - Zinfandel Drive Loop Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	5,838	5,438	5,990	6,128	6,475	6,840	6,903	7,120
PHF	0.94	0.94	0.94	0.94	0.97	0.97	0.97	0.97
Entering Ramp Volume (vehicles)	187	183	183	185	170	161	173	151
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	520	520	520	520	520	520	520	520
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	6,025	5,621	6,173	6,314	6,645	7,001	7,076	7,271
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	6,301	5,870	6,465	6,615	6,776	7,158	7,224	7,450
v_R - Entering Ramp Volume (pc/h)	202	198	198	200	177	168	181	158
Downstream Freeway Volume (pc/h)	6,503	6,068	6,663	6,815	6,953	7,326	7,405	7,608
v_F / S_{FR}	252	235	259	265	271	286	289	298
P_{FM}	0.193	0.193	0.193	0.193	0.196	0.197	0.195	0.198
v_{12}	1,213	1,133	1,248	1,275	1,325	1,408	1,410	1,476
v_{av34}	2,544	2,368	2,609	2,670	2,725	2,875	2,907	2,987
v_{12a}	1,213	1,133	1,248	1,275	1,376	1,758	1,824	2,050
v_{12a}	2,520	2,348	2,586	2,646	2,710	2,863	2,890	2,980
v_{R12}	2,723	2,546	2,784	2,846	2,888	3,031	3,070	3,138
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.68	0.63	0.69	0.71	0.72	0.76	0.77	0.79
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.11	0.10	0.10	0.11	0.09	0.09	0.10	0.08
D_R	23.4	22.0	23.8	24.3	24.7	25.8	26.1	26.6
LOS	C	C	C	C	C	C	C	C

US 50 Eastbound Merge - Zinfandel Drive Slip Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	4,525	4,499	4,971	5,901	5,925	6,257
PHF	0.94	0.94	0.94	0.97	0.97	0.97
Entering Ramp Volume (vehicles)	348	562	522	540	591	627
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	840	840	840	840	840	840
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	4,873	5,062	5,494	6,441	6,516	6,884
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	4,884	4,857	5,366	6,175	6,200	6,547
v_R - Entering Ramp Volume (pc/h)	376	607	564	565	619	656
Downstream Freeway Volume (pc/h)	5,260	5,463	5,930	6,740	6,819	7,204
v_F / S_{FR}	122	121	134	154	155	164
P_{FM}	0.171	0.142	0.147	0.147	0.140	0.136
v_{12}	834	689	791	909	871	889
v_{av34}	2,025	2,084	2,288	2,633	2,665	2,829
v_{12a}	834	689	791	909	871	1,147
v_{12a}	1,954	1,943	2,146	2,470	2,480	2,619
v_{R12}	2,329	2,549	2,710	3,035	3,099	3,275
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.55	0.57	0.62	0.70	0.71	0.75
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.19	0.30	0.28	0.28	0.31	0.33
D_R	18.2	19.8	21.1	23.6	24.1	25.5
LOS	B	B	C	C	C	C

US 50 Eastbound Ramp Addition - Northbound Zinfandel Drive								
Highway Capacity Manual 2010 Edition **Lane Addition - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	5	5	5	5	5	5	5	5
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,025	5,621	6,173	6,314	6,645	7,001	7,076	7,271
PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	644	661	665	656	819	938	714	784
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	6,669	6,282	6,838	6,970	7,464	7,939	7,790	8,054
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	6,269	5,848	6,423	6,569	6,913	7,284	7,362	7,564
v_R - Entering Ramp Volume (pc/h)	670	688	692	682	852	976	743	815
Downstream Freeway Volume (pc/h)	6,938	6,536	7,115	7,251	7,765	8,259	8,105	8,380
Downstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Downstream Volume-to-Capacity Ratio	0.58	0.54	0.59	0.60	0.65	0.69	0.68	0.70
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.33	0.34	0.35	0.34	0.43	0.49	0.37	0.41
V/C_{MAX}	0.58	0.54	0.59	0.60	0.65	0.69	0.68	0.70
LOS	A	A	A	B	B	B	B	B

US 50 Eastbound Diverge - Sunrise Boulevard						
Highway Capacity Manual 2010 Edition **Major Diverge - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3
Ramp Lanes	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	5,121	5,289	5,726	6,649	6,708	7,083
PHF	0.96	0.96	0.96	0.95	0.95	0.95
Exiting Ramp Volume (vehicles)	1,773	1,821	1,953	1,959	1,954	2,073
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	3,348	3,469	3,773	4,690	4,755	5,010
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	5,459	5,639	6,104	7,144	7,207	7,610
v_R - Exiting Ramp Volume (pc/h)	1,890	1,941	2,082	2,105	2,099	2,227
Downstream Freeway Volume (pc/h)	3,569	3,698	4,022	5,039	5,108	5,383
Upstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Upstream Volume-to-Capacity Ratio	0.57	0.59	0.64	0.74	0.75	0.79
Downstream Capacity (pc/h)	7,200	7,200	7,200	7,200	7,200	7,200
Downstream Volume-to-Capacity Ratio	0.50	0.51	0.56	0.70	0.71	0.75
Ramp Capacity (pc/h)	4,000	4,000	4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.47	0.49	0.52	0.53	0.52	0.56
D_R	23.9	24.7	26.7	31.3	31.5	33.3
LOS	C	C	C	D	D	D

US 50 Eastbound Diverge - Sunrise Boulevard

Highway Capacity Manual
2010 Edition
Major Diverge - Level Terrain
Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	5	5	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3	3	3
Ramp Lanes	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	6,237	5,990	6,313	6,400	6,181	6,487	6,367	6,551
PHF	0.96	0.96	0.96	0.96	0.95	0.95	0.95	0.95
Exiting Ramp Volume (vehicles)	2,135	2,085	1,878	1,899	2,353	2,421	2,308	2,364
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	4,103	3,905	4,435	4,501	3,828	4,066	4,059	4,187
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	6,649	6,386	6,730	6,823	6,641	6,969	6,840	7,038
v_R - Exiting Ramp Volume (pc/h)	2,276	2,223	2,002	2,024	2,528	2,601	2,480	2,540
Downstream Freeway Volume (pc/h)	4,373	4,163	4,728	4,798	4,113	4,368	4,361	4,498
Upstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Upstream Volume-to-Capacity Ratio	0.55	0.53	0.56	0.57	0.55	0.58	0.57	0.59
Downstream Capacity (pc/h)	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200
Downstream Volume-to-Capacity Ratio	0.61	0.58	0.66	0.67	0.57	0.61	0.61	0.62
Ramp Capacity (pc/h)	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.57	0.56	0.50	0.51	0.63	0.65	0.62	0.63
D_R	23.3	22.4	23.6	23.9	23.2	24.4	23.9	24.6
LOS	C	C	C	C	C	C	C	C

US 50 Eastbound Merge - Sunrise Boulevard						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 6-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	3,348	3,469	3,773	4,690	4,755	5,010
PHF	0.96	0.96	0.96	0.95	0.95	0.95
Entering Ramp Volume (vehicles)	992	1,011	1,028	889	870	834
Truck Percentage	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_{UP} - Distance to Upstream Exit Ramp (ft)	3,895	3,895	3,895	3,895	3,895	3,895
L_A - Acceleration Lane Length (ft)	1,475	1,475	1,475	1,475	1,475	1,475
S_{FR} - Ramp Free-flow Speed (mph)	50	50	50	50	50	50
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	4,340	4,480	4,800	5,579	5,624	5,844
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97
v_F - Upstream Freeway Volume (pc/h)	3,604	3,734	4,061	5,088	5,159	5,436
v_R - Entering Ramp Volume (pc/h)	1,068	1,088	1,106	964	944	905
Downstream Freeway Volume (pc/h)	4,672	4,823	5,168	6,053	6,102	6,341
v_F / S_{FR}	72	75	81	102	103	109
P_{FM} (13-3)	0.619	0.619	0.619	0.619	0.619	0.619
P_{FM} (13-4)	0.746	0.744	0.740	0.728	0.727	0.724
P_{FM}	0.746	0.744	0.740	0.728	0.727	0.724
v_{12}	2,690	2,780	3,004	3,703	3,751	3,935
v_{av34}	457	477	529	693	704	750
v_{12a}	2,690	2,780	3,004	3,703	3,751	3,935
v_{12a}	2,690	2,780	3,004	3,703	3,751	3,935
v_{R12}	3,758	3,868	4,110	4,668	4,694	4,840
Downstream Capacity (pc/h)	7,200	7,200	7,200	7,200	7,200	7,200
Downstream Volume-to-Capacity Ratio	0.65	0.67	0.72	0.84	0.85	0.88
Ramp Capacity (pc/h)	2,100	2,100	2,100	2,100	2,100	2,100
Ramp Volume-to-Capacity Ratio	0.51	0.52	0.53	0.46	0.45	0.43
D_R	25.0	25.9	27.8	32.2	32.4	33.6
LOS	C	C	C	D	D	D

US 50 Eastbound Weave - Sunrise Boulevard to Rancho Cordova Parkway

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain
Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	3	3	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3	3	3
Upstream Ramp Lanes	1	1	1	1	1	1	1	1
Downstream Ramp Lanes	2	2	2	2	2	2	2	2
N - Number of Lanes	4	4	4	4	4	4	4	4
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	4,103	3,905	4,435	4,501	3,828	4,066	4,059	4,187
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Entering Ramp Volume (vehicles)	1,152	1,101	1,233	1,174	1,145	1,182	1,122	1,162
Exiting Ramp Volume (vehicles)	78	25	374	327	448	535	763	816
Truck Percentage	6%	6%	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	5,052	5,052	5,052	5,052	5,052	5,052	5,052	5,052
ID (Interchange Density within 3 miles)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	5,176	4,981	5,294	5,347	4,525	4,712	4,418	4,532
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Upstream Freeway Volume (pc/h)	4,472	4,256	4,834	4,906	4,181	4,440	4,433	4,573
Entering Ramp Volume (pc/h)	1,255	1,200	1,344	1,279	1,250	1,291	1,225	1,269
Exiting Ramp Volume (pc/h))	85	27	408	356	489	585	833	891
Downstream Freeway Volume (pc/h)	5,642	5,429	5,770	5,828	4,943	5,147	4,825	4,950
v_{FF}	4,405	4,235	4,515	4,623	3,805	3,987	3,780	3,875
v_{RF}	1,237	1,194	1,255	1,205	1,138	1,159	1,045	1,075
v_{FR}	67	21	319	283	377	453	653	698
v_{RR}	19	6	89	74	113	132	180	194
v_W	1,303	1,215	1,574	1,488	1,514	1,612	1,697	1,773
v_{NW}	4,424	4,241	4,604	4,697	3,917	4,119	3,961	4,068
v	5,727	5,456	6,178	6,185	5,432	5,731	5,658	5,841
VR	0.228	0.223	0.255	0.241	0.279	0.281	0.300	0.303
LC_{RF}	1	1	1	1	1	1	1	1
LC_{FR}	0	0	0	0	0	0	0	0
LC_{MIN}	1,237	1,194	1,255	1,205	1,138	1,159	1,045	1,075
L_{MAX}	4,820	4,770	5,104	4,956	5,358	5,384	5,584	5,621
Weaving Operations?	NO	NO	YES	NO	YES	YES	YES	YES
Capacity Controlled by Density (pc/h)			9,584		9,506	9,498	9,437	9,426
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)			9,418		8,608	8,532	8,000	7,908
Capacity (pc/h)			9,418		8,608	8,532	8,000	7,908
Volume-to-Capacity Ratio			0.66		0.63	0.67	0.71	0.74
LC_W			1,850		1,733	1,754	1,640	1,670
I_{NW}			1,163		990	1,041	1,000	1,028
LC_{NW1}			2,916		2,775	2,816	2,784	2,806
LC_{NW2}			2,716		2,563	2,608	2,572	2,596
LC_{NW3}			2,958		2,876	2,900	2,881	2,894
LC_{NW}			2,916		2,775	2,816	2,784	2,806
LC_{ALL}			4,766		4,508	4,571	4,424	4,476
W - Weaving Intensity			0.216		0.207	0.209	0.204	0.205
S_W			60.2		60.6	60.5	60.7	60.6
S_{NW}			53.5		55.3	54.8	55.7	55.2
S			55.1		56.7	56.3	57.1	56.8
D			28.0		24.0	25.5	24.8	25.7
LOS			D		C	C	C	C

US 50 Eastbound Ramp Addition - Sunrise Boulevard

Highway Capacity Manual
2010 Edition
Lane Addition - Level Terrain
Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	3	3		3				
Existing Dnstrm Frwy Lanes	4	4		4				
Ramp Lanes	1	1		1				
Upstream Freeway Volume (vehicles)	4,103	3,905		4,501				
PHF	0.98	0.98		0.98				
Entering Ramp Volume (vehicles)	1,152	1,101		1,174				
Truck Percentage	6%	6%		6%				
RV Percentage	0%	0%		0%				
Driver Population Factor	1.000	1.000		1.000				
S_{FR} - Ramp Free-flow Speed (mph)	40	40		40				
Freeway Free-flow Speed (mph)	70	70		70				
Calculations								
Downstream Freeway Volume (vehicles)	5,254	5,006		5,674				
f_{HV}	0.97	0.97		0.97				
v_F - Upstream Freeway Volume (pc/h)	4,310	4,103		4,729				
v_R - Entering Ramp Volume (pc/h)	1,210	1,157		1,233				
Downstream Freeway Volume (pc/h)	5,520	5,259		5,961				
Downstream Capacity (pc/h)	9,600	9,600		9,600				
Downstream Volume-to-Capacity Ratio	0.58	0.55		0.62				
Ramp Capacity (pc/h)	2,000	2,000		2,000				
Ramp Volume-to-Capacity Ratio	0.60	0.58		0.62				
V/C_{MAX}	0.60	0.58		0.62				
LOS	B	A		B				

US 50 Eastbound Diverge - Rancho Cordova Parkway								
Highway Capacity Manual 2010 Edition **Major Diverge - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4		4				
Existing Dnstrm Frwy Lanes	3	3		3				
Ramp Lanes	2	2		2				
Upstream Freeway Volume (vehicles)	5,254	5,006		5,674				
PHF	0.97	0.97		0.97				
Exiting Ramp Volume (vehicles)	78	25		327				
Truck Percentage	6%	6%		6%				
RV Percentage	0%	0%		0%				
Driver Population Factor	1.000	1.000		1.000				
S_{FR} - Ramp Free-flow Speed (mph)	40	40		40				
Freeway Free-flow Speed (mph)	70	70		70				
Calculations								
Downstream Freeway Volume (vehicles)	5,176	4,981		5,347				
f_{HV}	0.97	0.97		0.97				
v_F - Upstream Freeway Volume (pc/h)	5,574	5,311		6,020				
v_R - Exiting Ramp Volume (pc/h)	83	27		347				
Downstream Freeway Volume (pc/h)	5,491	5,284		5,673				
Upstream Capacity (pc/h)	9,600	9,600		9,600				
Upstream Volume-to-Capacity Ratio	0.58	0.55		0.63				
Downstream Capacity (pc/h)	7,200	7,200		7,200				
Downstream Volume-to-Capacity Ratio	0.76	0.73		0.79				
Ramp Capacity (pc/h)	4,000	4,000		4,000				
Ramp Volume-to-Capacity Ratio	0.02	0.01		0.09				
D_R	24.4	23.2		26.3				
LOS	C	C		C				

US 50 Eastbound Weave - Rancho Cordova Parkway to Hazel Avenue

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain
Cumulative Conditions
Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	3	3	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3	3	3
Upstream Ramp Lanes	1	1	1	1	1	1	1	1
Downstream Ramp Lanes	2	2	2	2	2	2	2	2
N - Number of Lanes	4	4	4	4	4	4	4	4
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	5,176	4,981	5,294	5,347	4,525	4,712	4,418	4,532
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Entering Ramp Volume (vehicles)	1,342	1,202	1,787	1,748	1,499	1,651	1,748	1,823
Exiting Ramp Volume (vehicles)	1,869	1,710	1,904	1,950	2,657	2,826	2,611	2,718
Truck Percentage	6%	6%	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	4,780	4,780	4,780	4,780	4,780	4,780	4,780	4,780
ID (Interchange Density within 3 miles)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	4,649	4,473	5,177	5,146	3,368	3,538	3,555	3,637
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Upstream Freeway Volume (pc/h)	5,642	5,429	5,770	5,828	4,943	5,147	4,825	4,950
Entering Ramp Volume (pc/h)	1,462	1,310	1,948	1,906	1,637	1,803	1,909	1,991
Exiting Ramp Volume (pc/h))	2,037	1,864	2,075	2,125	2,902	3,086	2,852	2,969
Downstream Freeway Volume (pc/h)	5,067	4,876	5,643	5,609	3,678	3,864	3,882	3,973
v_{FF}	4,024	3,928	4,219	4,227	2,763	2,861	2,782	2,833
v_{RF}	1,043	948	1,424	1,382	915	1,003	1,100	1,140
v_{FR}	1,618	1,501	1,551	1,601	2,180	2,286	2,043	2,117
v_{RR}	419	362	524	524	722	801	808	852
v_W	2,661	2,449	2,976	2,983	3,095	3,288	3,144	3,257
v_{NW}	4,443	4,290	4,742	4,751	3,485	3,662	3,590	3,685
v	7,104	6,739	7,718	7,734	6,580	6,950	6,734	6,941
VR	0.375	0.363	0.386	0.386	0.470	0.473	0.467	0.469
LC_{RF}	1	1	1	1	1	1	1	1
LC_{FR}	0	0	0	0	0	0	0	0
LC_{MIN}	1,043	948	1,424	1,382	915	1,003	1,100	1,140
L_{MAX}	6,397	6,274	6,520	6,522	7,482	7,514	7,442	7,468
Weaving Operations?	YES	YES	YES	YES	YES	YES	YES	YES
Capacity Controlled by Density (pc/h)	9,105	9,143	9,068	9,067	8,773	8,763	8,786	8,777
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)	6,408	6,604	6,225	6,222	5,102	5,073	5,141	5,115
Capacity (pc/h)	6,408	6,604	6,225	6,222	5,102	5,073	5,141	5,115
Volume-to-Capacity Ratio	1.11	1.02	1.24	1.24	1.29	1.37	1.31	1.36
LC_W	1,621	1,526	2,002	1,960	1,493	1,580	1,678	1,717
I_{NW}	1,062	1,025	1,133	1,135	833	875	858	881
LC_{NW1}	2,736	2,704	2,797	2,799	2,538	2,575	2,560	2,579
LC_{NW2}	2,680	2,646	2,747	2,748	2,466	2,506	2,490	2,511
LC_{NW3}	2,756	2,729	2,810	2,812	2,590	2,620	2,608	2,624
LC_{NW}	2,736	2,704	2,797	2,799	2,538	2,575	2,560	2,579
LC_{ALL}	4,356	4,230	4,799	4,759	4,031	4,155	4,238	4,297
W - Weaving Intensity	0.210	0.205	0.227	0.225	0.198	0.202	0.206	0.208
S_W	60.5	60.6	59.8	59.9	60.9	60.7	60.6	60.5
S_{NW}	54.0	55.1	50.5	50.8	55.5	54.4	54.0	53.5
S	56.2	57.0	53.7	53.9	57.9	57.3	56.9	56.6
D	31.6	29.6	35.9	35.8	28.4	30.3	29.6	30.7
LOS	F	F	F	F	F	F	F	F

US 50 Eastbound Diverge - Hazel Avenue						
Highway Capacity Manual 2010 Edition **Two-Lane Diverge - 6-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3
Ramp Lanes	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	4,985	5,132	5,461	5,323	5,366	5,611
PHF	0.94	0.94	0.94	0.94	0.94	0.94
Exiting Ramp Volume (vehicles)	933	993	1,094	1,541	1,555	1,673
Truck Percentage	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_{UP} - Distance to Upstream Entrance Ramp (ft)	14,015	14,015	14,015	14,015	14,015	14,015
L_{UP} - Distance to Downstream Entrance Ramp (ft)	2,305	2,305	2,305	2,305	2,305	2,305
L_D - Deceleration Lane Length (ft)	1,800	1,800	1,800	1,800	1,800	1,800
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	4,052	4,138	4,367	3,782	3,811	3,938
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97
v_F - Upstream Freeway Volume (pc/h)	5,434	5,593	5,953	5,814	5,860	6,129
v_R - Exiting Ramp Volume (pc/h)	1,017	1,083	1,192	1,683	1,698	1,828
v_U - Upstream Ramp Volume (pc/h)	1,068	1,088	1,106	964	944	905
Downstream Freeway Volume (pc/h)	4,417	4,511	4,760	4,131	4,162	4,301
P_{FD} (13-9)	0.577	0.570	0.556	0.537	0.535	0.523
P_{FD} (13-10)	0.549	0.546	0.536	0.563	0.562	0.557
P_{FD}	0.577	0.570	0.556	0.563	0.562	0.557
v_{12}	3,567	3,655	3,841	4,008	4,036	4,222
v_{av34}	933	969	1,056	903	912	953
v_{12a}	3,567	3,655	3,841	4,008	4,036	4,222
v_{12a}	3,567	3,655	3,841	4,008	4,036	4,222
Upstream Capacity (pc/h)	7,200	7,200	7,200	7,200	7,200	7,200
Upstream Volume-to-Capacity Ratio	0.75	0.78	0.83	0.81	0.81	0.85
Ramp Capacity (pc/h)	4,000	4,000	4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.25	0.27	0.30	0.42	0.42	0.46
D_R	18.7	19.5	21.1	22.5	22.8	24.4
LOS	B	B	C	C	C	C

US 50 Eastbound Weave - Hazel Avenue to Aerojet Road

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain

Existing Conditions

Input Data

Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3
Upstream Ramp Lanes	1	1	1	1	1	1
Downstream Ramp Lanes	3	3	3	3	3	3
N - Number of Lanes	4	4	4	4	4	4
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	4,052	4,138	4,367	3,782	3,811	3,938
PHF	0.94	0.94	0.94	0.94	0.94	0.94
Entering Ramp Volume (vehicles)	804	803	704	945	949	945
Exiting Ramp Volume (vehicles)	241	242	241	55	58	52
Truck Percentage	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	615	615	615	615	615	615
ID (Interchange Density within 3 miles)	0.5	0.5	0.5	0.5	0.5	0.5
Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	4,615	4,700	4,831	4,672	4,702	4,831
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97
Upstream Freeway Volume (pc/h)	4,417	4,511	4,760	4,131	4,162	4,301
Entering Ramp Volume (pc/h)	876	876	767	1,032	1,036	1,032
Exiting Ramp Volume (pc/h))	263	264	262	60	63	57
Downstream Freeway Volume (pc/h)	5,030	5,123	5,265	5,103	5,135	5,276
v_{FF}	4,197	4,290	4,534	4,083	4,111	4,255
v_{RF}	833	833	731	1,020	1,024	1,021
v_{FR}	219	221	226	48	51	46
v_{RR}	43	43	36	12	13	11
v_W	1,052	1,054	957	1,068	1,075	1,067
v_{NW}	4,241	4,333	4,571	4,095	4,124	4,266
v	5,293	5,386	5,527	5,163	5,199	5,333
VR	0.199	0.196	0.173	0.207	0.207	0.200
LC_{RF}	1	1	1	1	1	1
LC_{FR}	1	1	1	1	1	1
LC_{MIN}	1,052	1,054	957	1,068	1,075	1,067
L_{MAX}	4,524	4,492	4,263	4,607	4,605	4,537
Weaving Operations?	YES	YES	YES	YES	YES	YES
Capacity Controlled by Density (pc/h)	8,404	8,414	8,484	8,378	8,379	8,400
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)	12,075	12,266	13,867	11,600	11,610	11,998
Capacity (pc/h)	8,404	8,414	8,484	8,378	8,379	8,400
Volume-to-Capacity Ratio	0.63	0.64	0.65	0.62	0.62	0.63
LC_W	1,205	1,207	1,110	1,221	1,228	1,220
I_{NW}	130	133	141	126	127	131
LC_{NW1}	437	455	505	406	412	442
LC_{NW2}	2,635	2,655	2,708	2,602	2,609	2,640
LC_{NW3}	-3,519	-3,493	-3,426	-3,560	-3,551	-3,512
LC_{NW}	437	455	505	406	412	442
LC_{ALL}	1,642	1,663	1,614	1,628	1,640	1,662
W - Weaving Intensity	0.490	0.495	0.484	0.487	0.490	0.495
S_W	51.9	51.8	52.1	52.0	51.9	51.8
S_{NW}	56.1	55.9	56.5	56.1	56.0	55.9
S	55.2	55.1	55.7	55.2	55.1	55.0
D	24.0	24.4	24.8	23.4	23.6	24.2
LOS	C	C	**C**	C	C	C

US 50 Eastbound Weave - Hazel Avenue to Aerojet Road

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain
Cumulative Conditions
Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	3	3	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Upstream Ramp Lanes	1	1	1	1	1	1	1	1
Downstream Ramp Lanes	3	3	3	3	3	3	3	3
N - Number of Lanes	4	4	4	4	4	4	4	4
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	4,649	4,473	5,177	5,146	3,368	3,538	3,555	3,637
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Entering Ramp Volume (vehicles)	1,088	1,048	1,174	1,072	2,320	2,087	2,148	2,091
Exiting Ramp Volume (vehicles)	674	736	584	613	122	130	203	171
Truck Percentage	6%	6%	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	615	615	615	615	615	615	615	615
ID (Interchange Density within 3 miles)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	5,063	4,786	5,767	5,605	5,565	5,495	5,499	5,557
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Upstream Freeway Volume (pc/h)	5,067	4,876	5,643	5,609	3,678	3,864	3,882	3,973
Entering Ramp Volume (pc/h)	1,186	1,143	1,279	1,168	2,533	2,279	2,346	2,284
Exiting Ramp Volume (pc/h))	734	802	636	668	133	142	222	187
Downstream Freeway Volume (pc/h)	5,519	5,217	6,286	6,109	6,078	6,001	6,006	6,070
v_{FF}	4,472	4,226	5,124	5,056	3,599	3,775	3,744	3,854
v_{RF}	1,047	990	1,162	1,053	2,479	2,226	2,262	2,216
v_{FR}	595	649	519	553	79	89	138	119
v_{RR}	139	152	118	115	54	53	84	68
v_W	1,642	1,640	1,680	1,606	2,558	2,316	2,400	2,335
v_{NW}	4,611	4,378	5,242	5,171	3,654	3,827	3,828	3,922
v	6,253	6,018	6,922	6,777	6,211	6,143	6,228	6,257
VR	0.263	0.272	0.243	0.237	0.412	0.377	0.385	0.373
LC_{RF}	1	1	1	1	1	1	1	1
LC_{FR}	1	1	1	1	1	1	1	1
LC_{MIN}	1,642	1,640	1,680	1,606	2,558	2,316	2,400	2,335
L_{MAX}	5,186	5,291	4,978	4,918	6,814	6,424	6,518	6,382
Weaving Operations?	YES	YES	YES	YES	YES	YES	YES	YES
Capacity Controlled by Density (pc/h)	8,201	8,169	8,265	8,283	7,703	7,822	7,794	7,835
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)	9,140	8,808	9,887	10,128	5,828	6,367	6,227	6,432
Capacity (pc/h)	8,201	8,169	8,265	8,283	5,828	6,367	6,227	6,432
Volume-to-Capacity Ratio	0.76	0.74	0.84	0.82	1.07	0.96	1.00	0.97
LC_W	1,795	1,793	1,834	1,759	2,711	2,469	2,554	2,488
I_{NW}	142	135	161	159	112	118	118	121
LC_{NW1}	513	465	643	628	316	351	351	371
LC_{NW2}	2,717	2,665	2,858	2,842	2,504	2,542	2,543	2,564
LC_{NW3}	-3,415	-3,480	-3,238	-3,258	-3,683	-3,634	-3,634	-3,608
LC_{NW}	513	465	643	628	316	351	351	371
LC_{ALL}	2,308	2,258	2,476	2,387	3,027	2,820	2,905	2,859
W - Weaving Intensity	0.642	0.631	0.678	0.659	0.795	0.752	0.769	0.760
S_W	48.5	48.7	47.8	48.2	45.6	46.4	46.1	46.3
S_{NW}	50.7	51.0	49.6	50.3	44.1	46.0	45.2	45.7
S	50.1	50.3	49.1	49.8	44.7	46.1	45.6	45.9
D	31.2	29.9	35.2	34.0	34.7	33.3	34.2	34.1
LOS	D	D	E	D	F	D	F	D

US 50 Westbound Diverge - Hazel Avenue						
Highway Capacity Manual 2010 Edition **Two-Lane Diverge - 6-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3
Ramp Lanes	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	3,108	3,099	3,173	2,803	2,862	2,981
PHF	0.96	0.96	0.96	0.93	0.93	0.93
Exiting Ramp Volume (vehicles)	631	686	622	869	877	849
Upstream Ramp Volume (vehicles)	1,588	1,603	1,619	1,340	1,353	1,420
Truck Percentage	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_{UP} - Distance to Upstream Entrance Ramp (ft)	3,420	3,420	3,420	3,420	3,420	3,420
L_{UP} - Distance to Downstream Entrance Ramp (ft)	1,745	1,745	1,745	1,745	1,745	1,745
L_D - Deceleration Lane Length (ft)	1,880	1,880	1,880	1,880	1,880	1,880
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	2,477	2,413	2,552	1,934	1,985	2,132
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97
v_F - Upstream Freeway Volume (pc/h)	3,348	3,338	3,418	3,112	3,177	3,309
v_R - Exiting Ramp Volume (pc/h)	680	739	670	965	974	942
v_U - Upstream Ramp Volume (pc/h)	1,710	1,727	1,744	1,488	1,502	1,576
Downstream Freeway Volume (pc/h)	2,668	2,599	2,748	2,147	2,203	2,367
P_{FD} (13-9)	0.645	0.643	0.644	0.638	0.636	0.634
P_{FD} (13-10)	0.706	0.717	0.702	0.766	0.765	0.754
P_{FD}	0.706	0.717	0.702	0.766	0.765	0.754
v_{12}	2,564	2,604	2,599	2,609	2,660	2,728
v_{av34}	392	367	410	251	259	291
v_{12a}	2,564	2,604	2,599	2,609	2,660	2,728
v_{12a}	2,564	2,604	2,599	2,609	2,660	2,728
Upstream Capacity (pc/h)	7,200	7,200	7,200	7,200	7,200	7,200
Upstream Volume-to-Capacity Ratio	0.46	0.46	0.47	0.43	0.44	0.46
Ramp Capacity (pc/h)	4,000	4,000	4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.17	0.18	0.17	0.24	0.24	0.24
D_R	9.4	9.7	9.7	9.8	10.2	10.8
LOS	A	A	A	A	B	B

US 50 Westbound Diverge - Hazel Avenue

Highway Capacity Manual
2010 Edition
Two-Lane Diverge - 6-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3	3	3
Ramp Lanes	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	4,198	4,352	4,242	4,408	4,100	3,767	4,420	4,458
PHF	0.96	0.96	0.96	0.96	0.93	0.93	0.93	0.93
Exiting Ramp Volume (vehicles)	1,077	905	1,098	1,057	959	951	1,031	1,032
Upstream Ramp Volume (vehicles)	1,708	1,749	1,725	1,778	1,671	1,613	1,729	1,784
Truck Percentage	6%	6%	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_{UP} - Distance to Upstream Entrance Ramp (ft)	3,420	3,420	3,420	3,420	3,420	3,420	3,420	3,420
L_{UP} - Distance to Downstream Entrance Ramp (ft)	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745
L_D - Deceleration Lane Length (ft)	1,880	1,880	1,880	1,880	1,880	1,880	1,880	1,880
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	3,121	3,447	3,144	3,352	3,141	2,816	3,389	3,426
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
v_F - Upstream Freeway Volume (pc/h)	4,521	4,687	4,569	4,748	4,551	4,181	4,907	4,949
v_R - Exiting Ramp Volume (pc/h)	1,160	975	1,182	1,138	1,065	1,056	1,144	1,146
v_U - Upstream Ramp Volume (pc/h)	1,840	1,884	1,858	1,915	1,855	1,791	1,920	1,981
Downstream Freeway Volume (pc/h)	3,361	3,713	3,387	3,610	3,487	3,125	3,763	3,803
P_{FD} (13-9)	0.594	0.598	0.591	0.589	0.597	0.607	0.585	0.584
P_{FD} (13-10)	0.746	0.706	0.748	0.733	0.728	0.740	0.728	0.726
P_{FD}	0.746	0.706	0.748	0.733	0.728	0.740	0.728	0.726
v_{12}	3,666	3,597	3,714	3,784	3,601	3,370	3,882	3,908
v_{av34}	428	545	427	482	475	406	512	520
v_{12a}	3,666	3,597	3,714	3,784	3,601	3,370	3,882	3,908
v_{12a}	3,666	3,597	3,714	3,784	3,601	3,370	3,882	3,908
Upstream Capacity (pc/h)	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200
Upstream Volume-to-Capacity Ratio	0.63	0.65	0.63	0.66	0.63	0.58	0.68	0.69
Ramp Capacity (pc/h)	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.29	0.24	0.30	0.28	0.27	0.26	0.29	0.29
D_R	18.9	18.3	19.3	19.9	18.3	16.3	20.7	20.9
LOS	B	B	B	B	B	B	C	C

US 50 Westbound Merge - Hazel Avenue Loop Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 6-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	2,477	2,413	2,552	1,934	1,985	2,132
PHF	0.96	0.96	0.96	0.93	0.93	0.93
Entering Ramp Volume (vehicles)	160	166	174	600	595	593
Truck Percentage	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_{UP} - Distance to Upstream Exit Ramp (ft)	1,745	1,745	1,745	1,745	1,745	1,745
L_A - Acceleration Lane Length (ft)	1,040	1,040	1,040	1,040	1,040	1,040
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	2,637	2,580	2,726	2,534	2,580	2,725
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97
v_F - Upstream Freeway Volume (pc/h)	2,668	2,599	2,748	2,147	2,203	2,367
v_R - Entering Ramp Volume (pc/h)	172	179	188	666	661	658
Downstream Freeway Volume (pc/h)	2,840	2,779	2,936	2,813	2,864	3,025
v_F / S_{FR}	107	104	110	86	88	95
P_{FM} (13-3)	0.607	0.607	0.607	0.607	0.607	0.607
P_{FM} (13-4)	0.718	0.719	0.717	0.718	0.718	0.716
P_{FM}	0.718	0.719	0.717	0.718	0.718	0.716
v_{12}	1,916	1,869	1,970	1,542	1,581	1,694
v_{av34}	376	365	389	302	311	337
v_{12a}	1,916	1,869	1,970	1,542	1,581	1,694
v_{12a}	1,916	1,869	1,970	1,542	1,581	1,694
v_{R12}	2,088	2,048	2,158	2,209	2,242	2,352
Downstream Capacity (pc/h)	7,200	7,200	7,200	7,200	7,200	7,200
Downstream Volume-to-Capacity Ratio	0.39	0.39	0.41	0.39	0.40	0.42
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.09	0.09	0.10	0.35	0.35	0.35
D_R	15.2	14.8	15.7	15.9	16.1	17.0
LOS	B	B	B	B	B	B

US 50 Westbound Merge - Hazel Avenue Loop Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 6-Lane Freeway - Level Terrain
Cumulative Conditions

Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	3	3	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3	3	3
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	3,121	3,447	3,144	3,352	3,141	2,816	3,389	3,426
PHF	0.96	0.96	0.96	0.96	0.93	0.93	0.93	0.93
Entering Ramp Volume (vehicles)	52	124	69	93	434	434	434	434
Truck Percentage	6%	6%	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_{UP} - Distance to Upstream Exit Ramp (ft)	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745
L_A - Acceleration Lane Length (ft)	1,040	1,040	1,040	1,040	1,040	1,040	1,040	1,040
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	3,173	3,571	3,213	3,445	3,575	3,249	3,823	3,860
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
v_F - Upstream Freeway Volume (pc/h)	3,361	3,713	3,387	3,610	3,487	3,125	3,763	3,803
v_R - Entering Ramp Volume (pc/h)	56	134	74	100	481	481	481	481
Downstream Freeway Volume (pc/h)	3,417	3,846	3,461	3,710	3,968	3,607	4,244	4,285
v_F / S_{FR}	134	149	135	144	139	125	151	152
P_{FM} (13-3)	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607
P_{FM} (13-4)	0.710	0.705	0.710	0.706	0.703	0.708	0.699	0.699
P_{FM}	0.710	0.705	0.710	0.706	0.703	0.708	0.699	0.699
v_{12}	2,387	2,616	2,404	2,550	2,451	2,212	2,631	2,657
v_{av34}	487	549	492	530	518	457	566	573
v_{12a}	2,387	2,616	2,404	2,550	2,451	2,212	2,631	2,657
v_{12a}	2,387	2,616	2,404	2,550	2,451	2,212	2,631	2,657
v_{R12}	2,444	2,749	2,478	2,650	2,932	2,693	3,112	3,139
Downstream Capacity (pc/h)	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200
Downstream Volume-to-Capacity Ratio	0.47	0.53	0.48	0.52	0.55	0.50	0.59	0.60
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.03	0.07	0.04	0.05	0.25	0.25	0.25	0.25
D_R	18.0	20.3	18.2	19.6	21.6	19.7	23.0	23.2
LOS	B	C	B	B	C	B	C	C

US 50 Westbound Merge - Hazel Avenue Slip Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 6-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	2,637	2,580	2,726	2,534	2,580	2,725
PHF	0.96	0.96	0.96	0.93	0.93	0.93
Entering Ramp Volume (vehicles)	1,550	1,608	1,748	800	868	962
Truck Percentage	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_{UP} - Distance to Upstream Ramp (ft)	1,900	1,900	1,900	1,900	1,900	1,900
L_{DOWN} - Distance to Downstream Ramp (ft)	13,410	13,410	13,410	13,410	13,410	13,410
L_A - Acceleration Lane Length (ft)	2,010	2,010	2,010	2,010	2,010	2,010
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	4,187	4,188	4,474	3,334	3,448	3,687
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97
v_F - Upstream Freeway Volume (pc/h)	2,840	2,779	2,936	2,813	2,864	3,025
v_R - Entering Ramp Volume (pc/h)	1,669	1,732	1,883	888	964	1,068
v_D - Downstream Ramp Volume (pc/h)	805	784	704	841	865	847
Downstream Freeway Volume (pc/h)	4,510	4,510	4,819	3,701	3,828	4,093
v_F / S_{FR}	71	69	73	70	72	76
P_{FM} (13-3)	0.634	0.634	0.634	0.634	0.634	0.634
P_{FM} (13-5)	0.564	0.564	0.563	0.565	0.566	0.565
P_{FM}	0.634	0.634	0.634	0.634	0.634	0.634
v_{12}	1,800	1,761	1,861	1,783	1,815	1,917
v_{av34}	520	509	538	515	524	554
v_{12a}	1,800	1,761	1,861	1,783	1,815	1,917
v_{12a}	1,800	1,761	1,861	1,783	1,815	1,917
v_{R12}	3,470	3,493	3,744	2,671	2,779	2,985
Downstream Capacity (pc/h)	7,200	7,200	7,200	7,200	7,200	7,200
Downstream Volume-to-Capacity Ratio	0.63	0.63	0.67	0.51	0.53	0.57
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.83	0.87	0.94	0.44	0.48	0.53
D_R	19.2	19.3	21.2	13.3	14.1	15.7
LOS	B	B	C	B	B	B

US 50 Westbound Weave - Hazel Avenue to Rancho Cordova Parkway

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain
Cumulative Conditions
Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	3	3	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3	3	3
Upstream Ramp Lanes	1	1	1	1	1	1	1	1
Downstream Ramp Lanes	2	2	2	2	2	2	2	2
N - Number of Lanes	4	4	4	4	4	4	4	4
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	3,173	3,571	3,213	3,445	3,575	3,249	3,823	3,860
PHF	0.96	0.96	0.96	0.96	0.93	0.93	0.93	0.93
Entering Ramp Volume (vehicles)	2,283	2,376	2,306	2,369	1,814	1,725	2,263	2,302
Exiting Ramp Volume (vehicles)	1,512	1,644	1,800	1,867	1,595	1,479	2,225	2,173
Truck Percentage	6%	6%	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	5,823	5,823	5,823	5,823	5,823	5,823	5,823	5,823
ID (Interchange Density within 3 miles)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	3,944	4,304	3,719	3,947	3,794	3,496	3,861	3,990
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Upstream Freeway Volume (pc/h)	3,417	3,846	3,461	3,710	3,968	3,607	4,244	4,285
Entering Ramp Volume (pc/h)	2,459	2,559	2,483	2,551	2,013	1,915	2,512	2,555
Exiting Ramp Volume (pc/h))	1,628	1,770	1,938	2,010	1,770	1,642	2,470	2,412
Downstream Freeway Volume (pc/h)	4,248	4,635	4,006	4,251	4,211	3,880	4,286	4,429
v_{FF}	2,471	2,783	2,332	2,519	2,794	2,535	2,692	2,774
v_{RF}	1,778	1,852	1,674	1,732	1,418	1,346	1,594	1,654
v_{FR}	947	1,063	1,129	1,191	1,174	1,072	1,552	1,511
v_{RR}	681	707	810	819	596	569	919	901
v_W	2,725	2,915	2,802	2,923	2,592	2,418	3,146	3,165
v_{NW}	3,152	3,491	3,142	3,338	3,390	3,104	3,611	3,675
v	5,877	6,406	5,944	6,262	5,982	5,522	6,757	6,840
VR	0.464	0.455	0.471	0.467	0.433	0.438	0.466	0.463
LC_{RF}	1	1	1	1	1	1	1	1
LC_{FR}	0	0	0	0	0	0	0	0
LC_{MIN}	1,778	1,852	1,674	1,732	1,418	1,346	1,594	1,654
L_{MAX}	7,405	7,306	7,494	7,442	7,057	7,109	7,427	7,394
Weaving Operations?	YES	YES	YES	YES	YES	YES	YES	YES
Capacity Controlled by Density (pc/h)	9,116	9,146	9,089	9,105	9,222	9,206	9,109	9,119
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)	5,176	5,274	5,091	5,140	5,539	5,481	5,155	5,187
Capacity (pc/h)	5,176	5,274	5,091	5,140	5,539	5,481	5,155	5,187
Volume-to-Capacity Ratio	1.14	1.21	1.17	1.22	1.08	1.01	1.31	1.32
LC_W	2,419	2,493	2,315	2,374	2,059	1,987	2,235	2,296
I_{NW}	918	1,016	915	972	987	904	1,051	1,070
LC_{NW1}	3,035	3,105	3,033	3,073	3,084	3,025	3,130	3,143
LC_{NW2}	2,392	2,467	2,390	2,433	2,445	2,381	2,494	2,509
LC_{NW3}	3,413	3,383	3,414	3,396	3,392	3,418	3,373	3,367
LC_{NW}	3,035	3,105	3,033	3,073	3,084	3,025	3,130	3,143
LC_{ALL}	5,454	5,598	5,348	5,447	5,143	5,012	5,365	5,439
W - Weaving Intensity	0.215	0.219	0.211	0.214	0.205	0.201	0.212	0.214
S_W	60.3	60.1	60.4	60.3	60.6	60.8	60.4	60.3
S_{NW}	50.1	49.0	50.8	50.0	52.6	53.7	50.4	49.9
S	54.4	53.5	54.9	54.3	55.8	56.6	54.6	54.2
D	27.0	29.9	27.1	28.8	26.8	24.4	30.9	31.5
LOS	F	F	F	F	F	F	F	F

US 50 Westbound Weave - Rancho Cordova Parkway to Sunrise Boulevard

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain
Cumulative Conditions

Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	3	3	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3	3	3
Upstream Ramp Lanes	1	1	1	1	1	1	1	1
Downstream Ramp Lanes	2	2	2	2	2	2	2	2
N - Number of Lanes	4	4	4	4	4	4	4	4
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	3,944	4,304	3,719	3,947	3,794	3,496	3,861	3,990
PHF	0.96	0.96	0.96	0.96	0.93	0.93	0.93	0.93
Entering Ramp Volume (vehicles)	875	897	1,428	1,389	791	747	1,165	1,138
Exiting Ramp Volume (vehicles)	623	611	729	760	627	580	751	729
Truck Percentage	6%	6%	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	5,850	5,850	5,850	5,850	5,850	5,850	5,850	5,850
ID (Interchange Density within 3 miles)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	4,197	4,590	4,418	4,576	3,957	3,663	4,275	4,399
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Upstream Freeway Volume (pc/h)	4,248	4,635	4,006	4,251	4,211	3,880	4,286	4,429
Entering Ramp Volume (pc/h)	942	966	1,538	1,496	878	830	1,293	1,264
Exiting Ramp Volume (pc/h))	671	658	786	818	696	644	834	809
Downstream Freeway Volume (pc/h)	4,520	4,943	4,758	4,929	4,393	4,066	4,746	4,883
v_{FF}	3,699	4,091	3,438	3,646	3,635	3,350	3,646	3,799
v_{RF}	821	853	1,320	1,283	758	716	1,100	1,084
v_{FR}	549	545	568	605	576	531	641	630
v_{RR}	122	114	218	213	120	113	193	180
v_W	1,369	1,398	1,888	1,888	1,334	1,247	1,740	1,714
v_{NW}	3,821	4,204	3,656	3,859	3,755	3,463	3,839	3,979
v	5,191	5,602	5,544	5,747	5,089	4,710	5,579	5,692
VR	0.264	0.249	0.340	0.329	0.262	0.265	0.312	0.301
LC_{RF}	1	1	1	1	1	1	1	1
LC_{FR}	0	0	0	0	0	0	0	0
LC_{MIN}	821	853	1,320	1,283	758	716	1,100	1,084
L_{MAX}	5,199	5,048	6,022	5,892	5,181	5,209	5,712	5,595
Weaving Operations?	NO	NO	YES	YES	NO	NO	NO	NO
Capacity Controlled by Density (pc/h)			9,547	9,587				
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)			7,049	7,305				
Capacity (pc/h)			7,049	7,305				
Volume-to-Capacity Ratio			0.79	0.79				
LC_W			1,963	1,926				
I_{NW}			1,069	1,129				
LC_{NW1}			3,153	3,195				
LC_{NW2}			2,504	2,550				
LC_{NW3}			3,384	3,365				
LC_{NW}			3,153	3,195				
LC_{ALL}			5,116	5,121				
W - Weaving Intensity			0.203	0.203				
S_W			60.7	60.7				
S_{NW}			53.8	53.9				
S			56.0	55.9				
D			24.7	25.7				
LOS			C	C				

US 50 Westbound Ramp Addition - Rancho Cordova Parkway

Highway Capacity Manual
2010 Edition
Lane Addition - Level Terrain
Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	3	3			3	3	3	3
Existing Dnstrm Frwy Lanes	4	4			4	4	4	4
Ramp Lanes	1	1			1	1	1	1
Upstream Freeway Volume (vehicles)	3,944	4,304			3,794	3,496	3,861	3,990
PHF	0.96	0.96			0.93	0.93	0.93	0.93
Entering Ramp Volume (vehicles)	875	897			791	747	1,165	1,138
Truck Percentage	6%	6%			6%	6%	6%	6%
RV Percentage	0%	0%			0%	0%	0%	0%
Driver Population Factor	1.000	1.000			1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	40	40			40	40	40	40
Freeway Free-flow Speed (mph)	70	70			70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	4,819	5,201			4,585	4,243	5,026	5,128
f_{HV}	0.97	0.97			0.97	0.97	0.97	0.97
v_F - Upstream Freeway Volume (pc/h)	4,248	4,635			4,211	3,880	4,286	4,429
v_R - Entering Ramp Volume (pc/h)	942	966			878	830	1,293	1,264
Downstream Freeway Volume (pc/h)	5,191	5,602			5,089	4,710	5,579	5,692
Downstream Capacity (pc/h)	9,600	9,600			9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.54	0.58			0.53	0.49	0.58	0.59
Ramp Capacity (pc/h)	2,000	2,000			2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.47	0.48			0.44	0.41	0.65	0.63
V/C_{MAX}	0.54	0.58			0.53	0.49	0.65	0.63
LOS	A	A			A	A	B	B

US 50 Westbound Diverge - Sunrise Boulevard

Highway Capacity Manual
2010 Edition
Major Diverge - Level Terrain
Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4			4	4	4	4
Existing Dnstrm Frwy Lanes	3	3			3	3	3	3
Ramp Lanes	2	2			2	2	2	2
Upstream Freeway Volume (vehicles)	4,819	5,201			4,585	4,243	5,026	5,128
PHF	0.96	0.96			0.93	0.93	0.93	0.93
Exiting Ramp Volume (vehicles)	623	611			627	580	751	729
Truck Percentage	6%	6%			6%	6%	6%	6%
RV Percentage	0%	0%			0%	0%	0%	0%
Driver Population Factor	1.000	1.000			1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	40	40			40	40	40	40
Freeway Free-flow Speed (mph)	70	70			70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	4,197	4,590			3,957	3,663	4,275	4,399
f_{HV}	0.97	0.97			0.97	0.97	0.97	0.97
v_F - Upstream Freeway Volume (pc/h)	5,191	5,602			5,089	4,710	5,579	5,692
v_R - Exiting Ramp Volume (pc/h)	671	658			696	644	834	809
Downstream Freeway Volume (pc/h)	4,520	4,943			4,393	4,066	4,746	4,883
Upstream Capacity (pc/h)	9,600	9,600			9,600	9,600	9,600	9,600
Upstream Volume-to-Capacity Ratio	0.54	0.58			0.53	0.49	0.58	0.59
Downstream Capacity (pc/h)	7,200	7,200			7,200	7,200	7,200	7,200
Downstream Volume-to-Capacity Ratio	0.63	0.69			0.61	0.56	0.66	0.68
Ramp Capacity (pc/h)	4,000	4,000			4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.17	0.16			0.17	0.16	0.21	0.20
D_R	22.7	24.5			22.3	20.6	24.4	24.9
LOS	C	C			C	C	C	C

US 50 Westbound Diverge - Sunrise Boulevard						
Highway Capacity Manual 2010 Edition **One-Lane Diverge - 6-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	3	3	3	3	3	3
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,068	6,121	6,334	4,370	4,481	4,707
PHF	0.96	0.96	0.96	0.93	0.93	0.93
Exiting Ramp Volume (vehicles)	749	729	655	758	780	763
Upstream Ramp Volume (vehicles)	1,550	1,608	1,748	800	868	962
Truck Percentage	6%	6%	6%	6%	6%	6%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_{UP} - Distance to Upstream Entrance Ramp (ft)	13,410	13,410	13,410	13,410	13,410	13,410
L_{UP} - Distance to Downstream Entrance Ramp (ft)	3,620	3,620	3,620	3,620	3,620	3,620
L_D - Deceleration Lane Length (ft)	150	150	150	150	150	150
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	5,319	5,392	5,679	3,612	3,701	3,943
f_{HV}	0.97	0.97	0.97	0.97	0.97	0.97
v_F - Upstream Freeway Volume (pc/h)	6,525	6,582	6,811	4,846	4,969	5,219
v_R - Exiting Ramp Volume (pc/h)	805	784	704	841	865	847
v_U - Upstream Ramp Volume (pc/h)	1,667	1,729	1,880	887	963	1,067
Downstream Freeway Volume (pc/h)	5,719	5,798	6,107	4,005	4,104	4,373
P_{FD} (13-9)	0.560	0.559	0.557	0.600	0.596	0.591
P_{FD} (13-10)	0.499	0.496	0.483	0.566	0.562	0.552
P_{FD}	0.560	0.559	0.557	0.600	0.596	0.591
v_{12}	4,007	4,027	4,108	3,245	3,311	3,429
v_{av34}	1,259	1,277	1,352	801	829	895
v_{12a}	4,007	4,027	4,108	3,245	3,311	3,429
v_{12a}	4,007	4,027	4,108	3,245	3,311	3,429
Upstream Capacity (pc/h)	7,200	7,200	7,200	7,200	7,200	7,200
Upstream Volume-to-Capacity Ratio	0.91	0.91	0.95	0.67	0.69	0.72
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.40	0.39	0.35	0.42	0.43	0.42
D_R	37.4	37.5	38.2	30.8	31.4	32.4
LOS	E	E	E	D	D	D

US 50 Westbound Ramp Addition - Sunrise Boulevard						
Highway Capacity Manual 2010 Edition **Lane Addition - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	5,319	5,392	5,679	3,612	3,701	3,943
PHF	0.96	0.96	0.96	0.93	0.93	0.93
Entering Ramp Volume (vehicles)	2,183	2,186	2,192	1,656	1,685	1,686
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	7,502	7,578	7,871	5,268	5,385	5,630
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	5,664	5,741	6,048	3,967	4,064	4,330
v_R - Entering Ramp Volume (pc/h)	2,325	2,328	2,334	1,819	1,850	1,852
Downstream Freeway Volume (pc/h)	7,989	8,069	8,382	5,785	5,914	6,182
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.83	0.84	0.87	0.60	0.62	0.64
Ramp Capacity (pc/h)	2,200	2,200	2,200	2,200	2,200	2,200
Ramp Volume-to-Capacity Ratio	1.06	1.06	1.06	0.83	0.84	0.84
V/C_{MAX}	1.06	1.06	1.06	0.83	0.84	0.84
LOS	**F**	F	F	D	D	D

US 50 Westbound Ramp Addition - Sunrise Boulevard Loop Ramp								
Highway Capacity Manual 2010 Edition **Lane Addition - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	3	3	3	3	3	3	3	3
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	4,197	4,590	4,418	4,576	3,957	3,663	4,275	4,399
PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Entering Ramp Volume (vehicles)	167	169	169	170	197	106	259	234
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	4,364	4,759	4,586	4,746	4,154	3,769	4,534	4,633
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	4,409	4,822	4,641	4,808	4,158	3,848	4,491	4,622
v_R - Entering Ramp Volume (pc/h)	175	177	177	179	207	111	272	246
Downstream Freeway Volume (pc/h)	4,584	4,999	4,819	4,986	4,365	3,959	4,763	4,867
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.48	0.52	0.50	0.52	0.45	0.41	0.50	0.51
Ramp Capacity (pc/h)	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200
Ramp Volume-to-Capacity Ratio	0.08	0.08	0.08	0.08	0.09	0.05	0.12	0.11
V/C_{MAX}	0.48	0.52	0.50	0.52	0.45	0.41	0.50	0.51
LOS	A	A	A	A	A	A	A	A

US 50 Westbound Ramp Addition - Sunrise Boulevard Slip Ramp								
Highway Capacity Manual 2010 Edition **Lane Addition - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	5	5	5	5	5	5	5	5
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	4,364	4,759	4,586	4,746	4,154	3,769	4,534	4,633
PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Entering Ramp Volume (vehicles)	2,334	2,345	2,323	2,354	1,673	1,746	1,524	1,613
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	6,697	7,103	6,909	7,100	5,828	5,515	6,058	6,245
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	4,584	4,999	4,819	4,986	4,365	3,959	4,763	4,867
v_R - Entering Ramp Volume (pc/h)	2,452	2,463	2,441	2,473	1,758	1,835	1,601	1,694
Downstream Freeway Volume (pc/h)	7,036	7,463	7,259	7,459	6,122	5,794	6,364	6,561
Downstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Downstream Volume-to-Capacity Ratio	0.59	0.62	0.60	0.62	0.51	0.48	0.53	0.55
Ramp Capacity (pc/h)	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200
Ramp Volume-to-Capacity Ratio	1.11	1.12	1.11	1.12	0.80	0.83	0.73	0.77
V/C_{MAX}	1.11	1.12	1.11	1.12	0.80	0.83	0.73	0.77
LOS	F	F	F	F	C	D	C	C

US 50 Westbound Diverge - Zinfandel Drive						
Highway Capacity Manual 2010 Edition **One-Lane Diverge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,502	7,540	7,846	4,762	4,902	5,134
PHF	0.96	0.96	0.96	0.93	0.93	0.93
Exiting Ramp Volume (vehicles)	1,034	1,060	1,088	608	764	759
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
L_D - Deceleration Lane Length (ft)	175	175	175	175	175	175
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,468	6,480	6,758	4,154	4,138	4,375
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,975	8,015	8,341	5,224	5,377	5,632
v_R - Exiting Ramp Volume (pc/h)	1,099	1,127	1,157	667	838	833
Downstream Freeway Volume (pc/h)	6,876	6,889	7,185	4,557	4,540	4,800
P_{FD}	0.436	0.436	0.436	0.436	0.436	0.436
v_{12}	4,097	4,130	4,289	2,654	2,817	2,925
v_{av34}	1,939	1,943	2,026	1,285	1,280	1,353
v_{12a}	4,097	4,130	4,289	2,654	2,817	2,925
v_{12a}	4,097	4,130	4,289	2,654	2,817	2,925
Upstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Upstream Volume-to-Capacity Ratio	0.83	0.83	0.87	0.54	0.56	0.59
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.55	0.56	0.58	0.33	0.42	0.42
D_R	37.9	38.2	39.6	25.5	26.9	27.8
LOS	E	E	E	C	C	C

US 50 Westbound Diverge - Zinfandel Drive								
Highway Capacity Manual 2010 Edition **One-Lane Diverge - 8-Lane Freeway - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	5	5	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	8,392	8,891	8,587	8,801	4,914	4,555	5,211	5,378
PHF	0.96	0.96	0.96	0.96	0.93	0.93	0.93	0.93
Exiting Ramp Volume (vehicles)	1,478	1,488	1,384	1,393	1,124	1,097	1,183	1,200
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
L_D - Deceleration Lane Length (ft)	175	175	175	175	175	175	175	175
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	6,914	7,404	7,203	7,408	3,790	3,457	4,028	4,178
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,922	9,453	9,128	9,356	5,391	4,997	5,716	5,900
v_R - Exiting Ramp Volume (pc/h)	1,571	1,582	1,471	1,481	1,233	1,204	1,297	1,317
Downstream Freeway Volume (pc/h)	7,351	7,871	7,657	7,876	4,158	3,793	4,419	4,583
P_{FD}	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436
v_{12}	4,776	5,013	4,810	4,914	3,046	2,858	3,224	3,315
v_{av34}	2,073	2,220	2,159	2,221	1,173	1,070	1,246	1,293
v_{12a}	4,776	5,013	4,810	4,914	3,046	2,858	3,224	3,315
v_{12a}	4,776	5,013	4,810	4,914	3,046	2,858	3,224	3,315
Upstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Upstream Volume-to-Capacity Ratio	0.74	0.79	0.76	0.78	0.45	0.42	0.48	0.49
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.79	0.79	0.74	0.74	0.62	0.60	0.65	0.66
D_R	43.7	45.8	44.0	44.9	28.9	27.3	30.4	31.2
LOS	E	E	E	E	D	C	D	D

US 50 Westbound Ramp Addition - Zinfandel Boulevard Loop Ramp						
Highway Capacity Manual 2010 Edition **Lane Addition - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	5	5	5	5	5	5
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,468	6,480	6,758	4,154	4,138	4,375
PHF	0.96	0.96	0.96	0.93	0.93	0.93
Entering Ramp Volume (vehicles)	585	599	532	1,197	1,194	1,118
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	7,053	7,079	7,291	5,351	5,332	5,493
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	6,876	6,889	7,185	4,557	4,540	4,800
v_R - Entering Ramp Volume (pc/h)	622	637	566	1,313	1,310	1,227
Downstream Freeway Volume (pc/h)	7,498	7,525	7,751	5,870	5,849	6,026
Downstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000
Downstream Volume-to-Capacity Ratio	0.62	0.63	0.65	0.49	0.49	0.50
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.33	0.34	0.30	0.69	0.69	0.65
V/C_{MAX}	0.62	0.63	0.65	0.69	0.69	0.65
LOS	B	B	B	B	B	B

US 50 Westbound Ramp Addition - Zinfandel Boulevard Loop Ramp

Highway Capacity Manual
2010 Edition
Lane Addition - Level Terrain
Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	5	5	5	5	5	5	5	5
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,914	7,404	7,203	7,408	3,790	3,457	4,028	4,178
PHF	0.96	0.96	0.96	0.96	0.93	0.93	0.93	0.93
Entering Ramp Volume (vehicles)	780	689	909	803	1,314	1,178	1,443	1,295
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,694	8,092	8,111	8,211	5,104	4,636	5,471	5,473
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,351	7,871	7,657	7,876	4,158	3,793	4,419	4,583
v_R - Entering Ramp Volume (pc/h)	829	732	966	854	1,442	1,292	1,583	1,420
Downstream Freeway Volume (pc/h)	8,180	8,603	8,623	8,730	5,600	5,085	6,002	6,004
Downstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Downstream Volume-to-Capacity Ratio	0.68	0.72	0.72	0.73	0.47	0.42	0.50	0.50
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.44	0.39	0.51	0.45	0.76	0.68	0.83	0.75
V/C_{MAX}	0.68	0.72	0.72	0.73	0.76	0.68	0.83	0.75
LOS	B	C	C	C	C	B	D	C

US 50 Westbound Merge - Zinfandel Drive Slip Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 10-Lane Freeway - Level Terrain

Existing Conditions

Input Data

Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	5	5	5	5	5	5
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,053	7,079	7,291	5,351	5,332	5,493
PHF	0.96	0.96	0.96	0.93	0.93	0.93
Entering Ramp Volume (vehicles)	442	437	410	561	533	550
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	850	850	850	850	850	850
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	7,495	7,515	7,701	5,912	5,865	6,044
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,498	7,525	7,751	5,870	5,849	6,026
v_5 - Upstream Freeway Lane 5 Volume (pc/h)	2,024	2,145	2,209	1,409	1,404	1,446
v_R - Entering Ramp Volume (pc/h)	470	464	436	615	585	604
Downstream Freeway Volume (pc/h)	7,968	7,989	8,187	6,486	6,435	6,630
v_F / S_{FR}	137	135	139	112	111	114
P_{FM}	0.159	0.160	0.163	0.141	0.145	0.142
v_{12}	871	860	905	628	643	652
v_{av34}	2,301	2,260	2,319	1,916	1,901	1,964
v_{12a}	871	860	905	628	643	652
v_{12a}	2,189	2,152	2,217	1,785	1,778	1,832
v_{R12}	2,659	2,616	2,653	2,400	2,363	2,436
Downstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000
Downstream Volume-to-Capacity Ratio	0.66	0.67	0.68	0.54	0.54	0.55
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.23	0.23	0.22	0.31	0.29	0.30
D_R	20.7	20.3	20.6	18.6	18.3	18.9
LOS	C	C	C	B	B	B

US 50 Westbound Merge - Zinfandel Drive Slip Ramp

Highway Capacity Manual
2010 Edition

One-Lane Merge - 10-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	5	5	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	5	5	5	5	5	5	5	5
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,694	8,092	8,111	8,211	5,104	4,636	5,471	5,473
PHF	0.96	0.96	0.96	0.96	0.93	0.93	0.93	0.93
Entering Ramp Volume (vehicles)	1,349	1,219	1,544	1,349	723	708	663	663
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	850	850	850	850	850	850	850	850
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	9,044	9,312	9,655	9,561	5,828	5,343	6,135	6,136
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,180	8,603	8,623	8,730	5,600	5,085	6,002	6,004
v_5 - Upstream Freeway Lane 5 Volume (pc/h)	2,331	2,500	2,500	2,500	1,344	1,119	1,441	1,441
v_R - Entering Ramp Volume (pc/h)	1,434	1,296	1,641	1,434	794	777	727	727
Downstream Freeway Volume (pc/h)	9,614	9,899	10,264	10,164	6,393	5,862	6,730	6,731
v_F / S_{FR}	146	153	153	156	106	99	114	114
P_{FM}	0.038	0.056	0.013	0.039	0.119	0.121	0.127	0.127
v_{12}	225	340	78	240	505	479	579	579
v_{av34}	2,812	2,881	3,023	2,995	1,875	1,744	1,992	1,992
v_{12a}	449	703	723	830	505	479	579	579
v_{12a}	2,339	2,441	2,449	2,492	1,702	1,587	1,825	1,825
v_{R12}	3,774	3,737	4,090	3,926	2,496	2,363	2,552	2,553
Downstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Downstream Volume-to-Capacity Ratio	0.80	0.82	0.86	0.85	0.53	0.49	0.56	0.56
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.72	0.65	0.82	0.72	0.40	0.39	0.36	0.36
D_R	28.9	28.7	31.3	30.1	19.2	18.2	19.7	19.7
LOS	D	D	D	D	B	B	B	B

US 50 Westbound Ramp Drop - Mather Field Road						
Highway Capacity Manual 2010 Edition **Lane drop - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,548	7,551	7,829	5,765	5,710	5,928
PHF	0.96	0.96	0.96	0.95	0.95	0.95
Exiting Ramp Volume (vehicles)	1,093	1,110	1,496	556	575	740
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,455	6,441	6,333	5,209	5,135	5,188
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,004	8,007	8,302	6,195	6,136	6,370
v_R - Exiting Ramp Volume (pc/h)	1,159	1,177	1,586	597	618	795
Downstream Freeway Volume (pc/h)	6,845	6,830	6,716	5,598	5,518	5,575
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.71	0.71	0.70	0.58	0.57	0.58
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.58	0.59	0.79	0.30	0.31	0.40
V/C_{MAX}	0.71	0.71	0.79	0.58	0.57	0.58
LOS	C	C	C	A	A	A

US 50 Westbound Ramp Drop - Mather Field Road								
Highway Capacity Manual 2010 Edition **Lane drop - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	5	5	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	8,942	9,330	9,480	9,493	7,154	6,703	7,384	7,454
PHF	0.96	0.96	0.96	0.96	0.95	0.95	0.95	0.95
Exiting Ramp Volume (vehicles)	1,372	1,768	1,350	1,581	809	848	826	1,025
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,570	7,561	8,131	7,912	6,345	5,855	6,558	6,430
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	9,482	9,894	10,053	10,067	7,688	7,202	7,935	8,010
v_R - Exiting Ramp Volume (pc/h)	1,455	1,875	1,431	1,677	870	911	887	1,101
Downstream Freeway Volume (pc/h)	8,027	8,018	8,622	8,390	6,818	6,291	7,047	6,909
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.84	0.84	0.90	0.87	0.71	0.66	0.73	0.72
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.73	0.94	0.72	0.84	0.43	0.46	0.44	0.55
V/C_{MAX}	0.84	0.94	0.90	0.87	0.71	0.66	0.73	0.72
LOS	D	E	D	D	C	B	C	C

US 50 Westbound Merge - Mather Field Road Loop Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,455	6,441	6,333	5,209	5,135	5,188
PHF	0.96	0.96	0.96	0.95	0.95	0.95
Entering Ramp Volume (vehicles)	515	511	385	861	889	843
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	2,450	2,450	2,450	2,450	2,450	2,450
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,970	6,952	6,718	6,070	6,024	6,031
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	6,845	6,830	6,716	5,598	5,518	5,575
v_R - Entering Ramp Volume (pc/h)	546	542	408	925	956	906
Downstream Freeway Volume (pc/h)	7,391	7,372	7,124	6,523	6,474	6,481
v_F / S_{FR}	274	273	269	224	221	223
P_{FM}	0.150	0.150	0.167	0.102	0.098	0.105
v_{12}	1,024	1,025	1,120	572	543	583
v_{av34}	2,911	2,903	2,798	2,513	2,488	2,496
v_{12a}	1,445	1,430	1,316	572	543	583
v_{12a}	2,738	2,732	2,686	2,239	2,207	2,230
v_{R12}	3,284	3,274	3,095	3,164	3,163	3,136
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.77	0.77	0.74	0.68	0.67	0.68
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.29	0.29	0.21	0.49	0.50	0.48
D_R	15.5	15.4	14.1	14.4	14.3	14.2
LOS	B	B	B	B	B	B

US 50 Westbound Merge - Mather Field Road Loop Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,570	7,561	8,131	7,912	6,345	5,855	6,558	6,430
PHF	0.96	0.96	0.96	0.96	0.95	0.95	0.95	0.95
Entering Ramp Volume (vehicles)	578	439	626	499	1,189	1,185	1,192	1,193
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	8,148	8,001	8,757	8,411	7,533	7,040	7,750	7,622
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,027	8,018	8,622	8,390	6,818	6,291	7,047	6,909
v_R - Entering Ramp Volume (pc/h)	613	466	664	529	1,277	1,273	1,281	1,282
Downstream Freeway Volume (pc/h)	8,640	8,484	9,286	8,920	8,095	7,565	8,328	8,191
v_F / S_{FR}	321	321	345	336	273	252	282	276
P_{FM}	0.141	0.160	0.135	0.152	0.058	0.059	0.058	0.058
v_{12}	1,133	1,280	1,162	1,272	396	369	407	398
v_{av34}	3,447	3,369	3,730	3,559	3,211	2,961	3,320	3,256
v_{12a}	2,627	2,618	3,222	2,990	1,418	891	1,647	1,509
v_{12a}	3,211	3,207	3,449	3,356	2,727	2,517	2,819	2,764
v_{R12}	3,824	3,673	4,113	3,885	4,005	3,790	4,100	4,045
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.90	0.88	0.97	0.93	0.84	0.79	0.87	0.85
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.32	0.25	0.35	0.28	0.67	0.67	0.67	0.67
D_R	19.7	18.5	21.9	20.2	20.8	19.1	21.5	21.1
LOS	B	B	C	C	C	B	C	C

US 50 Westbound Merge - Mather Field Road Slip Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,970	6,952	6,718	6,070	6,024	6,031
PHF	0.96	0.96	0.96	0.95	0.95	0.95
Entering Ramp Volume (vehicles)	387	390	519	380	370	363
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	2,500	2,500	2,500	2,500	2,500	2,500
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	7,357	7,342	7,237	6,450	6,394	6,394
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,391	7,372	7,124	6,523	6,474	6,481
v_R - Entering Ramp Volume (pc/h)	410	414	550	408	397	391
Downstream Freeway Volume (pc/h)	7,802	7,786	7,674	6,931	6,871	6,871
v_F / S_{FR}	185	184	178	163	162	162
P_{FM}	0.167	0.166	0.149	0.167	0.168	0.169
v_{12}	1,231	1,224	1,062	1,088	1,089	1,095
v_{av34}	3,080	3,074	3,031	2,718	2,693	2,693
v_{12a}	1,991	1,972	1,724	1,123	1,089	1,095
v_{12a}	2,956	2,949	2,850	2,609	2,589	2,592
v_{R12}	3,367	3,363	3,400	3,017	2,987	2,983
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.81	0.81	0.80	0.72	0.72	0.72
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.21	0.21	0.28	0.20	0.20	0.20
D_R	15.9	15.8	16.1	13.1	12.9	12.9
LOS	B	B	B	B	B	B

US 50 Westbound Ramp Addition - Mather Field Road Slip Ramp								
Highway Capacity Manual 2010 Edition **Lane Addition - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	5	5	5	5	5	5	5	5
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	8,148	8,001	8,757	8,411	7,533	7,040	7,750	7,622
PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entering Ramp Volume (vehicles)	343	481	303	427	474	467	504	428
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	8,490	8,481	9,060	8,839	8,008	7,507	8,255	8,050
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,477	8,324	9,111	8,751	7,838	7,324	8,063	7,930
v_R - Entering Ramp Volume (pc/h)	356	500	315	445	494	486	525	445
Downstream Freeway Volume (pc/h)	8,833	8,824	9,426	9,196	8,331	7,810	8,588	8,375
Downstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Downstream Volume-to-Capacity Ratio	0.74	0.74	0.79	0.77	0.69	0.65	0.72	0.70
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.18	0.25	0.16	0.22	0.25	0.24	0.26	0.22
V/C_{MAX}	0.74	0.74	0.79	0.77	0.69	0.65	0.72	0.70
LOS	C	C	C	C	B	B	C	B

US 50 Westbound Diverge - Bradshaw Road

Highway Capacity Manual
2010 Edition
Two-Lane Diverge - 8-Lane Freeway - Level Terrain

Existing Conditions

Input Data

Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	7,859	7,857	7,810	6,939	6,869	6,892
PHF	0.95	0.95	0.95	0.99	0.99	0.99
Exiting Ramp Volume (vehicles)	1,236	1,277	1,583	1,327	1,266	1,510
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_D - Deceleration Lane Length (ft)	1,765	1,765	1,765	1,765	1,765	1,765
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,623	6,581	6,227	5,612	5,603	5,383
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,407	8,405	8,355	7,146	7,075	7,098
v_R - Exiting Ramp Volume (pc/h)	1,322	1,366	1,694	1,367	1,304	1,555
Downstream Freeway Volume (pc/h)	7,085	7,040	6,661	5,780	5,771	5,544
P_{FD}	0.260	0.260	0.260	0.260	0.260	0.260
v_{12}	3,164	3,196	3,426	2,869	2,804	2,996
v_{av34}	2,622	2,605	2,465	2,138	2,135	2,051
v_{12a}	3,164	3,196	3,426	2,869	2,804	2,996
v_{12a}	3,363	3,362	3,426	2,869	2,830	2,996
Upstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Upstream Volume-to-Capacity Ratio	0.88	0.88	0.87	0.74	0.74	0.74
Ramp Capacity (pc/h)	4,000	4,000	4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.33	0.34	0.42	0.34	0.33	0.39
D_R	17.3	17.3	17.8	13.0	12.7	14.1
LOS	B	B	B	B	B	B

US 50 Westbound Diverge - Bradshaw Road

Highway Capacity Manual
2010 Edition
Two-Lane Diverge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	5	5	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	8,996	9,065	9,560	9,406	8,442	7,995	8,696	8,544
PHF	0.95	0.95	0.95	0.95	0.99	0.99	0.99	0.99
Exiting Ramp Volume (vehicles)	1,376	1,788	1,533	1,692	1,733	1,724	1,756	1,809
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_D - Deceleration Lane Length (ft)	1,765	1,765	1,765	1,765	1,765	1,765	1,765	1,765
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,620	7,277	8,027	7,714	6,709	6,271	6,940	6,735
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	9,624	9,698	10,228	10,063	8,694	8,234	8,956	8,800
v_R - Exiting Ramp Volume (pc/h)	1,472	1,913	1,640	1,810	1,784	1,776	1,808	1,863
Downstream Freeway Volume (pc/h)	8,152	7,785	8,587	8,252	6,909	6,458	7,147	6,936
P_{FD}	0.260	0.260	0.260	0.260	0.260	0.260	0.260	0.260
v_{12}	3,591	3,937	3,873	3,956	3,581	3,455	3,667	3,667
v_{av34}	3,016	2,880	3,177	3,053	2,556	2,389	2,644	2,566
v_{12a}	4,224	4,298	4,828	4,663	3,581	3,455	3,667	3,667
v_{12a}	3,849	4,298	4,091	4,025	3,581	3,455	3,667	3,667
Upstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Upstream Volume-to-Capacity Ratio	0.80	0.81	0.85	0.84	0.72	0.69	0.75	0.73
Ramp Capacity (pc/h)	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Ramp Volume-to-Capacity Ratio	0.37	0.48	0.41	0.45	0.45	0.44	0.45	0.47
D_R	21.5	25.3	23.5	23.0	19.2	18.1	19.9	19.9
LOS	C	C	C	C	B	B	B	B

US 50 Westbound Merge - Bradshaw Road Loop Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,623	6,581	6,227	5,612	5,603	5,383
PHF	0.95	0.95	0.95	0.99	0.99	0.99
Entering Ramp Volume (vehicles)	914	932	1,236	910	959	1,523
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	815	815	815	815	815	815
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	7,537	7,512	7,463	6,522	6,562	6,906
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,085	7,040	6,661	5,780	5,771	5,544
v_R - Entering Ramp Volume (pc/h)	978	997	1,322	937	987	1,569
Downstream Freeway Volume (pc/h)	8,063	8,036	7,983	6,717	6,758	7,112
v_F / S_{FR}	283	282	266	231	231	222
P_{FM}	0.096	0.093	0.053	0.101	0.094	0.022
v_{12}	677	656	350	582	545	120
v_{av34}	3,204	3,192	3,156	2,599	2,613	2,712
v_{12a}	1,685	1,640	1,261	582	545	144
v_{12a}	2,834	2,816	2,665	2,312	2,308	2,217
v_{R12}	3,812	3,812	3,987	3,249	3,295	3,786
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.84	0.84	0.83	0.70	0.70	0.74
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.51	0.52	0.70	0.49	0.52	0.83
D_R	29.6	29.6	30.9	25.3	25.6	29.2
LOS	D	D	D	C	C	D

US 50 Westbound Merge - Bradshaw Road Loop Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,620	7,277	8,027	7,714	6,709	6,271	6,940	6,735
PHF	0.95	0.95	0.95	0.95	0.99	0.99	0.99	0.99
Entering Ramp Volume (vehicles)	1,091	1,313	999	1,318	1,023	1,667	927	1,593
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	815	815	815	815	815	815	815	815
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	8,711	8,590	9,027	9,032	7,732	7,937	7,867	8,328
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,152	7,785	8,587	8,252	6,909	6,458	7,147	6,936
v_R - Entering Ramp Volume (pc/h)	1,167	1,404	1,069	1,410	1,053	1,717	955	1,641
Downstream Freeway Volume (pc/h)	9,318	9,189	9,657	9,662	7,963	8,175	8,102	8,577
v_F / S_{FR}	326	311	343	330	276	258	286	277
P_{FM}	0.072	0.042	0.084	0.042	0.086	0.003	0.098	0.013
v_{12}	587	329	723	343	595	21	704	88
v_{av34}	3,783	3,728	3,932	3,955	3,157	3,219	3,222	3,424
v_{12a}	2,752	2,385	3,187	2,852	1,509	1,058	1,747	1,536
v_{12a}	3,261	3,114	3,435	3,301	2,764	2,583	2,859	2,775
v_{R12}	4,427	4,518	4,504	4,711	3,817	4,300	3,813	4,415
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.97	0.96	1.01	1.01	0.83	0.85	0.84	0.89
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.61	0.74	0.56	0.74	0.55	0.90	0.50	0.86
D_R	34.4	35.0	35.0	36.5	29.7	33.1	29.7	34.0
LOS	D	D	F	**F**	D	D	D	D

US 50 Westbound Merge - Bradshaw Road Slip Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,537	7,512	7,463	6,522	6,562	6,906
PHF	0.95	0.95	0.95	0.99	0.99	0.99
Entering Ramp Volume (vehicles)	338	334	365	590	633	669
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	705	705	705	705	705	705
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	7,875	7,846	7,828	7,112	7,195	7,575
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,063	8,036	7,983	6,717	6,758	7,112
v_R - Entering Ramp Volume (pc/h)	362	357	390	608	652	689
Downstream Freeway Volume (pc/h)	8,425	8,394	8,374	7,324	7,410	7,801
v_F / S_{FR}	202	201	200	168	169	178
P_{FM}	0.173	0.173	0.169	0.142	0.136	0.132
v_{12}	1,392	1,391	1,349	953	921	937
v_{av34}	3,336	3,322	3,317	2,882	2,918	3,088
v_{12a}	2,663	2,636	2,583	1,317	1,358	1,712
v_{12a}	3,225	3,215	3,193	2,687	2,703	2,845
v_{R12}	3,587	3,572	3,584	3,294	3,355	3,534
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.88	0.87	0.87	0.76	0.77	0.81
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.18	0.18	0.20	0.30	0.33	0.34
D_R	28.9	28.7	28.8	26.5	26.9	28.3
LOS	D	D	D	C	C	D

US 50 Westbound Merge - Bradshaw Road Slip Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	8,711	8,590	9,027	9,032	7,732	7,937	7,867	8,328
PHF	0.95	0.95	0.95	0.95	0.99	0.99	0.99	0.99
Entering Ramp Volume (vehicles)	385	387	385	391	836	894	851	816
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	705	705	705	705	705	705	705	705
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	9,096	8,977	9,412	9,423	8,568	8,831	8,718	9,144
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	9,318	9,189	9,657	9,662	7,963	8,175	8,102	8,577
v_R - Entering Ramp Volume (pc/h)	412	414	412	418	861	921	876	840
Downstream Freeway Volume (pc/h)	9,731	9,603	10,069	10,081	8,824	9,095	8,978	9,417
v_F / S_{FR}	233	230	241	242	199	204	203	214
P_{FM}	0.166	0.166	0.166	0.165	0.110	0.103	0.108	0.113
v_{12}	1,550	1,526	1,606	1,599	877	840	877	967
v_{av34}	3,884	3,832	4,025	4,032	3,543	3,667	3,612	3,805
v_{12a}	3,918	3,789	4,257	4,262	2,563	2,775	2,702	3,177
v_{12a}	3,727	3,676	3,863	3,865	3,185	3,270	3,241	3,431
v_{R12}	4,139	4,090	4,275	4,283	4,046	4,190	4,117	4,271
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	1.01	1.00	1.05	1.05	0.92	0.95	0.94	0.98
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.21	0.21	0.21	0.21	0.43	0.46	0.44	0.42
D_R	33.2	32.8	34.2	34.3	32.2	33.3	32.8	34.0
LOS	F	F	F	F	D	D	D	D

US 50 Westbound Diverge - Watt Avenue						
Highway Capacity Manual 2010 Edition **Major Diverge - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	7,550	7,522	7,424	6,466	6,556	6,913
PHF	0.90	0.90	0.90	0.96	0.96	0.96
Exiting Ramp Volume (vehicles)	1,373	1,357	1,257	1,188	1,209	1,181
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,177	6,164	6,167	5,278	5,348	5,732
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,537	8,504	8,394	6,884	6,980	7,359
v_R - Exiting Ramp Volume (pc/h)	1,552	1,535	1,421	1,265	1,287	1,257
Downstream Freeway Volume (pc/h)	6,984	6,970	6,973	5,619	5,693	6,102
Upstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000
Upstream Volume-to-Capacity Ratio	0.71	0.71	0.70	0.57	0.58	0.61
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.73	0.73	0.73	0.59	0.59	0.64
Ramp Capacity (pc/h)	4,400	4,400	4,400	4,400	4,400	4,400
Ramp Volume-to-Capacity Ratio	0.35	0.35	0.32	0.29	0.29	0.29
D_R	29.9	29.8	29.4	24.1	24.4	25.8
LOS	D	D	D	C	C	C

US 50 Westbound Diverge - Watt Avenue

Highway Capacity Manual
2010 Edition
Major Diverge - Level Terrain
Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	5	5	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	8,662	8,415	9,001	8,854	7,703	7,847	7,871	8,099
PHF	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.96
Exiting Ramp Volume (vehicles)	1,577	1,381	1,568	1,364	1,167	1,054	1,112	991
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,085	7,034	7,433	7,490	6,537	6,794	6,758	7,108
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	9,794	9,515	10,178	10,011	8,201	8,354	8,379	8,622
v_R - Exiting Ramp Volume (pc/h)	1,783	1,562	1,773	1,542	1,242	1,122	1,184	1,055
Downstream Freeway Volume (pc/h)	8,011	7,953	8,404	8,469	6,959	7,232	7,195	7,568
Upstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Upstream Volume-to-Capacity Ratio	0.82	0.79	0.85	0.83	0.68	0.70	0.70	0.72
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.83	0.83	0.88	0.88	0.72	0.75	0.75	0.79
Ramp Capacity (pc/h)	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400
Ramp Volume-to-Capacity Ratio	0.41	0.35	0.40	0.35	0.28	0.25	0.27	0.24
D_R	34.3	33.3	35.6	35.0	28.7	29.2	29.3	30.2
LOS	D	D	E	E	D	D	D	D

US 50 Westbound Merge - Northbound Watt Avenue						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,177	6,164	6,167	5,278	5,348	5,732
PHF	0.90	0.90	0.90	0.96	0.96	0.96
Entering Ramp Volume (vehicles)	820	803	788	943	936	900
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	865	865	865	865	865	865
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,997	6,968	6,955	6,221	6,284	6,632
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	6,984	6,970	6,973	5,619	5,693	6,102
v_R - Entering Ramp Volume (pc/h)	927	908	891	1,004	996	958
Downstream Freeway Volume (pc/h)	7,911	7,878	7,864	6,623	6,690	7,060
v_F / S_{FR}	127	127	127	102	104	111
P_{FM}	0.102	0.104	0.106	0.092	0.093	0.098
v_{12}	712	727	742	519	531	598
v_{av34}	3,136	3,122	3,116	2,550	2,581	2,752
v_{12a}	1,584	1,570	1,573	519	531	702
v_{12a}	2,794	2,788	2,789	2,248	2,277	2,441
v_{R12}	3,721	3,696	3,680	3,251	3,274	3,399
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.82	0.82	0.82	0.69	0.70	0.74
Ramp Capacity (pc/h)	2,200	2,200	2,200	2,200	2,200	2,200
Ramp Volume-to-Capacity Ratio	0.42	0.41	0.41	0.46	0.45	0.44
D_R	28.6	28.5	28.3	25.0	25.1	26.1
LOS	D	D	D	C	C	C

US 50 Westbound Merge - Northbound Watt Avenue

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,085	7,034	7,433	7,490	6,537	6,794	6,758	7,108
PHF	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.96
Entering Ramp Volume (vehicles)	806	738	774	726	1,104	1,050	1,125	1,100
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	865	865	865	865	865	865	865	865
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,891	7,772	8,207	8,217	7,641	7,844	7,883	8,208
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,011	7,953	8,404	8,469	6,959	7,232	7,195	7,568
v_R - Entering Ramp Volume (pc/h)	912	834	875	821	1,176	1,118	1,197	1,171
Downstream Freeway Volume (pc/h)	8,923	8,787	9,279	9,290	8,134	8,351	8,392	8,738
v_F / S_{FR}	146	145	153	154	127	131	131	138
P_{FM}	0.104	0.114	0.108	0.115	0.071	0.078	0.068	0.071
v_{12}	832	903	911	976	493	564	490	541
v_{av34}	3,590	3,525	3,747	3,747	3,233	3,334	3,352	3,513
v_{12a}	2,611	2,553	3,004	3,069	1,559	1,832	1,795	2,168
v_{12a}	3,204	3,181	3,362	3,388	2,783	2,893	2,878	3,027
v_{R12}	4,116	4,015	4,237	4,209	3,959	4,011	4,075	4,198
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.93	0.92	0.97	0.97	0.85	0.87	0.87	0.91
Ramp Capacity (pc/h)	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200
Ramp Volume-to-Capacity Ratio	0.41	0.38	0.40	0.37	0.53	0.51	0.54	0.53
D_R	31.7	31.0	32.7	32.5	30.4	30.8	31.3	32.3
LOS	D	D	D	D	D	D	D	D

US 50 Westbound Weave - Watt Avenue to Howe Avenue

Highway Capacity Manual
2010 Edition
One-Sided Weave - Level Terrain

Existing Conditions

Input Data

Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Upstream Ramp Lanes	1	1	1	1	1	1
Downstream Ramp Lanes	2	2	2	2	2	2
N - Number of Lanes	5	5	5	5	5	5
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	6,997	6,968	6,955	6,221	6,284	6,632
PHF	0.90	0.90	0.90	0.96	0.96	0.96
Entering Ramp Volume (vehicles)	1,232	1,211	1,091	1,317	1,313	1,196
Exiting Ramp Volume (vehicles)	1,531	1,549	1,349	1,419	1,467	1,313
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	5,485	5,485	5,485	5,485	5,485	5,485
ID (Interchange Density within 3 miles)	0.67	0.67	0.67	0.67	0.67	0.67
Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,698	6,630	6,697	6,119	6,130	6,514
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
Upstream Freeway Volume (pc/h)	7,911	7,878	7,864	6,623	6,690	7,060
Entering Ramp Volume (pc/h)	1,393	1,370	1,234	1,402	1,398	1,273
Exiting Ramp Volume (pc/h))	1,731	1,751	1,526	1,511	1,561	1,398
Downstream Freeway Volume (pc/h)	7,573	7,497	7,572	6,514	6,526	6,935
v_{FF}	6,439	6,387	6,545	5,376	5,398	5,876
v_{RF}	1,134	1,110	1,027	1,138	1,128	1,059
v_{FR}	1,472	1,492	1,319	1,247	1,291	1,184
v_{RR}	259	259	207	264	270	214
v_W	2,606	2,602	2,346	2,385	2,420	2,244
v_{NW}	6,699	6,646	6,752	5,640	5,668	6,089
v	9,304	9,248	9,098	8,025	8,088	8,333
VR	0.280	0.281	0.258	0.297	0.299	0.269
LC_{RF}	1	1	1	1	1	1
LC_{FR}	0	0	0	0	0	0
LC_{MIN}	1,134	1,110	1,027	1,138	1,128	1,059
L_{MAX}	5,371	5,385	5,136	5,554	5,575	5,257
Weaving Operations?	NO	NO	NO	YES	YES	NO
Capacity Controlled by Density (pc/h)				11,974	11,966	
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)				8,076	8,022	
Capacity (pc/h)				8,076	8,022	
Volume-to-Capacity Ratio				0.99	1.01	
LC_W				2,195	2,185	
I_{NW}				2,062	2,073	
LC_{NW1}				3,172	3,177	
LC_{NW2}				2,947	2,953	
LC_{NW3}				2,908	2,911	
LC_{NW}				2,947	2,953	
LC_{ALL}				5,141	5,138	
W - Weaving Intensity				0.215	0.215	
S_W				60.3	60.3	
S_{NW}				54.1	54.1	
S				55.8	55.8	
D				28.8	29.0	
LOS				D	F	

US 50 Westbound Weave - Watt Avenue to Howe Avenue								
Highway Capacity Manual 2010 Edition **One-Sided Weave - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus PROJECT	CEQA Cumulative	CEQA Cumulative Plus PROJECT	MTP Cumulative	MTP Cumulative Plus PROJECT	CEQA Cumulative	CEQA Cumulative Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Upstream Ramp Lanes	1	1	1	1	1	1	1	1
Downstream Ramp Lanes	2	2	2	2	2	2	2	2
N - Number of Lanes	5	5	5	5	5	5	5	5
N_{WL} - Number of Lanes in Weaving Section	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	7,891	7,772	8,207	8,217	7,641	7,844	7,883	8,208
PHF	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.96
Entering Ramp Volume (vehicles)	1,224	845	1,134	919	1,201	1,098	1,062	1,006
Exiting Ramp Volume (vehicles)	1,806	1,520	1,879	1,709	1,677	1,694	1,687	1,695
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_S - Weaving Length (ft)	5,485	5,485	5,485	5,485	5,485	5,485	5,485	5,485
ID (Interchange Density within 3 miles)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,310	7,097	7,462	7,426	7,166	7,247	7,258	7,520
c_{IFL}	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Upstream Freeway Volume (pc/h)	8,923	8,787	9,279	9,290	8,134	8,351	8,392	8,738
Entering Ramp Volume (pc/h)	1,384	956	1,282	1,039	1,279	1,169	1,131	1,071
Exiting Ramp Volume (pc/h))	2,042	1,718	2,125	1,933	1,785	1,804	1,796	1,804
Downstream Freeway Volume (pc/h)	8,265	8,025	8,437	8,397	7,628	7,716	7,727	8,005
v_{FF}	7,155	7,237	7,413	7,552	6,592	6,768	6,809	7,131
v_{RF}	1,110	787	1,024	845	1,036	947	918	874
v_{FR}	1,767	1,550	1,867	1,738	1,542	1,582	1,583	1,607
v_{RR}	274	169	258	194	243	222	213	197
v_W	2,877	2,337	2,891	2,583	2,579	2,530	2,501	2,481
v_{NW}	7,429	7,406	7,671	7,746	6,835	6,990	7,023	7,328
v	10,307	9,743	10,561	10,329	9,413	9,519	9,523	9,810
VR	0.279	0.240	0.274	0.250	0.274	0.266	0.263	0.253
LC_{RF}	1	1	1	1	1	1	1	1
LC_{FR}	0	0	0	0	0	0	0	0
LC_{MIN}	1,110	787	1,024	845	1,036	947	918	874
L_{MAX}	5,362	4,948	5,303	5,054	5,306	5,219	5,186	5,085
Weaving Operations?	NO	NO	NO	NO	NO	NO	NO	NO
Capacity Controlled by Density (pc/h)								
Capacity Controllled by Maximum Weaving Flow Rate (pc/h)								
Capacity (pc/h)								
Volume-to-Capacity Ratio								
LC_W								
I_{NW}								
LC_{NW1}								
LC_{NW2}								
LC_{NW3}								
LC_{NW}								
LC_{ALL}								
W - Weaving Intensity								
S_W								
S_{NW}								
S								
D								
LOS								

US 50 Westbound Ramp Addition - Southbound Watt Avenue						
Highway Capacity Manual 2010 Edition **Lane Addition - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	5	5	5	5	5	5
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,997	6,968	6,955	6,221	6,284	6,632
PHF	0.90	0.90	0.90	0.96	0.96	0.96
Entering Ramp Volume (vehicles)	1,232	1,211	1,091	1,317	1,313	1,196
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	8,229	8,179	8,047			7,827
f_{HV}	0.98	0.98	0.98			0.98
v_F - Upstream Freeway Volume (pc/h)	7,911	7,878	7,864			7,060
v_R - Entering Ramp Volume (pc/h)	1,393	1,370	1,234			1,273
Downstream Freeway Volume (pc/h)	9,304	9,248	9,098			8,333
Downstream Capacity (pc/h)	12,000	12,000	12,000			12,000
Downstream Volume-to-Capacity Ratio	0.78	0.77	0.76			0.69
Ramp Capacity (pc/h)	1,900	1,900	1,900			1,900
Ramp Volume-to-Capacity Ratio	0.73	0.72	0.65			0.67
V/C_{MAX}	0.78	0.77	0.76			0.69
LOS	C	C	C			B

US 50 Westbound Ramp Addition - Southbound Watt Avenue								
Highway Capacity Manual 2010 Edition **Lane Addition - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	5	5	5	5	5	5	5	5
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,891	7,772	8,207	8,217	7,641	7,844	7,883	8,208
PHF	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.96
Entering Ramp Volume (vehicles)	1,224	845	1,134	919	1,201	1,098	1,062	1,006
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	9,116	8,617	9,341	9,136	8,842	8,942	8,946	9,214
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,923	8,787	9,279	9,290	8,134	8,351	8,392	8,738
v_R - Entering Ramp Volume (pc/h)	1,384	956	1,282	1,039	1,279	1,169	1,131	1,071
Downstream Freeway Volume (pc/h)	10,307	9,743	10,561	10,329	9,413	9,519	9,523	9,810
Downstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Downstream Volume-to-Capacity Ratio	0.86	0.81	0.88	0.86	0.78	0.79	0.79	0.82
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.73	0.50	0.67	0.55	0.67	0.62	0.60	0.56
V/C_{MAX}	0.86	0.81	0.88	0.86	0.78	0.79	0.79	0.82
LOS	D	D	D	D	C	C	C	D

US 50 Westbound Diverge - Howe Avenue						
Highway Capacity Manual 2010 Edition **Major Diverge - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	8,229	8,179	8,047	7,538	7,597	7,827
PHF	0.90	0.90	0.90	0.96	0.96	0.96
Exiting Ramp Volume (vehicles)	1,531	1,549	1,349	1,419	1,467	1,313
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	6,698	6,630	6,697			6,514
f_{HV}	0.98	0.98	0.98			0.98
v_F - Upstream Freeway Volume (pc/h)	9,304	9,248	9,098			8,333
v_R - Exiting Ramp Volume (pc/h)	1,731	1,751	1,526			1,398
Downstream Freeway Volume (pc/h)	7,573	7,497	7,572			6,935
Upstream Capacity (pc/h)	12,000	12,000	12,000			12,000
Upstream Volume-to-Capacity Ratio	0.78	0.77	0.76			0.69
Downstream Capacity (pc/h)	9,600	9,600	9,600			9,600
Downstream Volume-to-Capacity Ratio	0.79	0.78	0.79			0.72
Ramp Capacity (pc/h)	4,400	4,400	4,400			4,400
Ramp Volume-to-Capacity Ratio	0.39	0.40	0.35			0.32
D_R	32.6	32.4	31.8			29.2
LOS	D	D	D			D

US 50 Westbound Diverge - Howe Avenue

Highway Capacity Manual
2010 Edition
Major Diverge - Level Terrain
Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	5	5	5	5	5	5	5	5
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	2	2	2	2	2	2	2	2
Upstream Freeway Volume (vehicles)	9,116	8,617	9,341	9,136	8,842	8,942	8,946	9,214
PHF	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.96
Exiting Ramp Volume (vehicles)	1,806	1,520	1,879	1,709	1,677	1,694	1,687	1,695
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
S_{FR} - Ramp Free-flow Speed (mph)	55	55	55	55	55	55	55	55
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,310	7,097	7,462	7,426	7,166	7,247	7,258	7,520
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	10,307	9,743	10,561	10,329	9,413	9,519	9,523	9,810
v_R - Exiting Ramp Volume (pc/h)	2,042	1,718	2,125	1,933	1,785	1,804	1,796	1,804
Downstream Freeway Volume (pc/h)	8,265	8,025	8,437	8,397	7,628	7,716	7,727	8,005
Upstream Capacity (pc/h)	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Upstream Volume-to-Capacity Ratio	0.86	0.81	0.88	0.86	0.78	0.79	0.79	0.82
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.86	0.84	0.88	0.87	0.79	0.80	0.80	0.83
Ramp Capacity (pc/h)	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400
Ramp Volume-to-Capacity Ratio	0.46	0.39	0.48	0.44	0.41	0.41	0.41	0.41
D_R	36.1	34.1	37.0	36.2	32.9	33.3	33.3	34.3
LOS	E	D	E	E	D	D	D	D

US 50 Westbound Merge - Howe Avenue Loop Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	6,698	6,630	6,697	6,119	6,130	6,514
PHF	0.90	0.90	0.90	0.96	0.96	0.96
Entering Ramp Volume (vehicles)	654	665	689	602	621	647
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	850	850	850	850	850	850
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	7,352	7,295	7,386	6,721	6,751	7,161
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	7,573	7,497	7,572	6,514	6,526	6,935
v_R - Entering Ramp Volume (pc/h)	739	752	779	641	661	689
Downstream Freeway Volume (pc/h)	8,313	8,249	8,351	7,155	7,187	7,624
v_F / S_{FR}	303	300	303	261	261	277
P_{FM}	0.125	0.124	0.120	0.138	0.135	0.132
v_{12}	949	928	912	897	882	913
v_{av34}	3,312	3,284	3,330	2,809	2,822	3,011
v_{12a}	2,173	2,097	2,172	1,114	1,126	1,535
v_{12a}	3,029	2,999	3,029	2,606	2,610	2,774
v_{R12}	3,769	3,751	3,808	3,247	3,271	3,463
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.87	0.86	0.87	0.75	0.75	0.79
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.39	0.40	0.41	0.34	0.35	0.36
D_R	29.2	29.1	29.5	25.2	25.4	26.8
LOS	D	D	D	C	C	C

US 50 Westbound Merge - Howe Avenue Loop Ramp

Highway Capacity Manual
2010 Edition
One-Lane Merge - 8-Lane Freeway - Level Terrain

Cumulative Conditions

Input Data

Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,310	7,097	7,462	7,426	7,166	7,247	7,258	7,520
PHF	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.96
Entering Ramp Volume (vehicles)	582	668	613	607	503	519	572	563
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	850	850	850	850	850	850	850	850
S_{FR} - Ramp Free-flow Speed (mph)	25	25	25	25	25	25	25	25
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	7,892	7,765	8,074	8,033	7,669	7,767	7,830	8,082
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,265	8,025	8,437	8,397	7,628	7,716	7,727	8,005
v_R - Entering Ramp Volume (pc/h)	658	755	693	686	535	553	609	599
Downstream Freeway Volume (pc/h)	8,923	8,780	9,129	9,083	8,164	8,268	8,336	8,604
v_F / S_{FR}	331	321	337	336	305	309	309	320
P_{FM}	0.136	0.123	0.131	0.132	0.151	0.149	0.142	0.143
v_{12}	1,121	990	1,107	1,109	1,151	1,148	1,095	1,144
v_{av34}	3,572	3,517	3,665	3,644	3,239	3,284	3,316	3,431
v_{12a}	2,865	2,625	3,037	2,997	2,228	2,316	2,327	2,605
v_{12a}	3,306	3,210	3,375	3,359	3,051	3,086	3,091	3,202
v_{R12}	3,964	3,965	4,067	4,045	3,587	3,639	3,700	3,801
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.93	0.91	0.95	0.95	0.85	0.86	0.87	0.90
Ramp Capacity (pc/h)	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Ramp Volume-to-Capacity Ratio	0.35	0.40	0.36	0.36	0.28	0.29	0.32	0.32
D_R	30.8	30.7	31.6	31.4	27.9	28.3	28.7	29.5
LOS	D	D	D	D	C	D	D	D

US 50 Westbound Merge - Howe Avenue Loop Ramp						
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**						
Existing Conditions						
Input Data						
Peak Hour:	A.M. Peak Hour			P.M. Peak Hour		
Alternative:	Existing	Existing Plus Jackson Township	Existing Plus PROJECT	Existing	Existing Plus Jackson Township	Existing Plus PROJECT
Existing Upstrm Frwy Lanes	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,352	7,295	7,386	6,721	6,751	7,161
PHF	0.90	0.90	0.90	0.96	0.96	0.96
Entering Ramp Volume (vehicles)	574	575	688	574	569	484
Truck Percentage	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	1,850	1,850	1,850	1,850	1,850	1,850
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70
Calculations						
Downstream Freeway Volume (vehicles)	7,926	7,871	8,074	7,295	7,320	7,645
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,313	8,249	8,351	7,155	7,187	7,624
v_R - Entering Ramp Volume (pc/h)	649	650	778	611	605	515
Downstream Freeway Volume (pc/h)	8,962	8,899	9,129	7,766	7,792	8,139
v_F / S_{FR}	208	206	209	179	180	191
P_{FM}	0.137	0.137	0.121	0.141	0.142	0.153
v_{12}	1,136	1,126	1,007	1,012	1,021	1,170
v_{av34}	3,588	3,561	3,672	3,072	3,083	3,227
v_{12a}	2,913	2,849	2,951	1,755	1,787	2,224
v_{12a}	3,325	3,300	3,340	2,862	2,875	3,049
v_{R12}	3,974	3,950	4,119	3,473	3,480	3,565
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	0.93	0.93	0.95	0.81	0.81	0.85
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.32	0.33	0.39	0.31	0.30	0.26
D_R	24.6	24.4	25.6	20.7	20.7	21.4
LOS	C	C	C	C	C	C

US 50 Westbound Merge - Howe Avenue Loop Ramp								
Highway Capacity Manual 2010 Edition **One-Lane Merge - 8-Lane Freeway - Level Terrain**								
Cumulative Conditions								
Input Data								
Peak Hour:	A.M. Peak Hour				P.M. Peak Hour			
Alternative:	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS	MTP Cumulative	MTP Cumulative Plus FOUR PROJECTS	CEQA Cumulative	CEQA Cumulative Plus FOUR PROJECTS
Existing Upstrm Frwy Lanes	4	4	4	4	4	4	4	4
Existing Dnstrm Frwy Lanes	4	4	4	4	4	4	4	4
Ramp Lanes	1	1	1	1	1	1	1	1
Upstream Freeway Volume (vehicles)	7,892	7,765	8,074	8,033	7,669	7,767	7,830	8,082
PHF	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.96
Entering Ramp Volume (vehicles)	732	781	668	807	763	689	699	646
Truck Percentage	4%	4%	4%	4%	4%	4%	4%	4%
RV Percentage	0%	0%	0%	0%	0%	0%	0%	0%
Driver Population Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
L_A - Acceleration Lane Length (ft)	1,850	1,850	1,850	1,850	1,850	1,850	1,850	1,850
S_{FR} - Ramp Free-flow Speed (mph)	40	40	40	40	40	40	40	40
Freeway Free-flow Speed (mph)	70	70	70	70	70	70	70	70
Calculations								
Downstream Freeway Volume (vehicles)	8,623	8,546	8,742	8,839	8,431	8,456	8,529	8,729
f_{HV}	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
v_F - Upstream Freeway Volume (pc/h)	8,923	8,780	9,129	9,083	8,164	8,268	8,336	8,604
v_R - Entering Ramp Volume (pc/h)	827	883	755	912	812	734	744	688
Downstream Freeway Volume (pc/h)	9,750	9,663	9,884	9,995	8,976	9,002	9,080	9,293
v_F / S_{FR}	223	220	228	227	204	207	208	215
P_{FM}	0.114	0.107	0.123	0.104	0.116	0.126	0.125	0.132
v_{12}	1,021	944	1,127	943	950	1,042	1,041	1,134
v_{av34}	3,951	3,918	4,001	4,070	3,607	3,613	3,648	3,735
v_{12a}	3,523	3,380	3,729	3,683	2,764	2,868	2,936	3,204
v_{12a}	3,569	3,512	3,652	3,633	3,266	3,307	3,334	3,442
v_{R12}	4,396	4,395	4,407	4,545	4,077	4,041	4,078	4,130
Downstream Capacity (pc/h)	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Downstream Volume-to-Capacity Ratio	1.02	1.01	1.03	1.04	0.93	0.94	0.95	0.97
Ramp Capacity (pc/h)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Ramp Volume-to-Capacity Ratio	0.41	0.44	0.38	0.46	0.41	0.37	0.37	0.34
D_R	27.8	27.7	27.9	28.9	25.3	25.1	25.3	25.8
LOS	F	F	F	**F**	C	C	C	C

Appendix E

CEQA Cumulative

(Jackson Township Proposed Project)

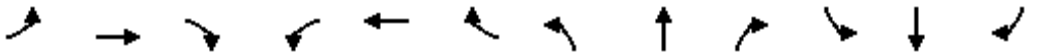
Synchro Reports

CEQA Cumulative

Plus All Projects

(Proposed Project)

AM

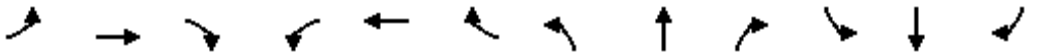


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	0	353	130	419	1195	0	1859	777	0	1868	502
Future Volume (vph)	162	0	353	130	419	1195	0	1859	777	0	1868	502
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		0.88	0.86	0.81	0.91		0.91	1.00		0.86	1.00
Frt	1.00		0.85	1.00	0.91	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1752		2760	2985	2700	1413		4988	1553		6285	1553
Flt Permitted	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1752		2760	2985	2700	1413		4988	1553		6285	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	162	0	353	130	419	1195	0	1859	777	0	1868	502
RTOR Reduction (vph)	0	0	308	0	45	45	0	0	0	0	0	179
Lane Group Flow (vph)	162	0	45	117	985	552	0	1859	777	0	1868	323
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm	Split	NA	Perm		NA	Free		NA	Perm
Protected Phases	4			8	8			2			6	
Permitted Phases			4			8			Free			6
Actuated Green, G (s)	13.8		13.8	40.0	40.0	40.0		42.0	107.8		42.0	42.0
Effective Green, g (s)	13.8		13.8	40.0	40.0	40.0		42.0	107.8		42.0	42.0
Actuated g/C Ratio	0.13		0.13	0.37	0.37	0.37		0.39	1.00		0.39	0.39
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	224		353	1107	1001	524		1943	1553		2448	605
v/s Ratio Prot	c0.09			0.04	0.36			c0.37			0.30	
v/s Ratio Perm			0.02			c0.39			0.50			0.21
v/c Ratio	0.72		0.13	0.11	1.11dr	1.05		0.96	0.50		0.76	0.53
Uniform Delay, d1	45.2		41.7	22.2	33.6	33.9		32.0	0.0		28.6	25.3
Progression Factor	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	11.0		0.2	0.0	24.5	54.3		11.8	1.2		1.5	0.9
Delay (s)	56.1		41.8	22.2	58.1	88.2		43.8	1.2		30.0	26.3
Level of Service	E		D	C	E	F		D	A		C	C
Approach Delay (s)		46.3			66.0			31.2			29.2	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	107.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.2%	ICU Level of Service	G
Analysis Period (min)	15		

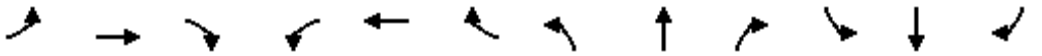
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



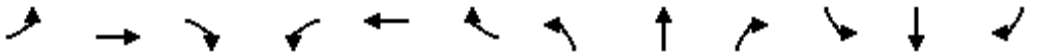
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	568	0	1678	0	0	0	0	2022	654	0	1215	662
Future Volume (vph)	568	0	1678	0	0	0	0	2022	654	0	1215	662
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	568	0	1678	0	0	0	0	2022	654	0	1215	662
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	568	0	1665	0	0	0	0	2022	654	0	1215	662
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	59.0		59.0					43.0	110.0		43.0	110.0
Effective Green, g (s)	59.0		59.0					43.0	110.0		43.0	110.0
Actuated g/C Ratio	0.54		0.54					0.39	1.00		0.39	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1805		1465					1949	1553		1949	1553
v/s Ratio Prot								c0.41			0.24	
v/s Ratio Perm	0.17		c0.61						0.42			0.43
v/c Ratio	0.31		1.14					1.04	0.42		0.62	0.43
Uniform Delay, d1	14.2		25.5					33.5	0.0		27.0	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1		70.5					30.8	0.8		0.6	0.9
Delay (s)	14.3		96.0					64.3	0.8		27.6	0.9
Level of Service	B		F					E	A		C	A
Approach Delay (s)		75.3			0.0			48.8			18.2	
Approach LOS		E			A			D			B	

Intersection Summary			
HCM 2000 Control Delay	49.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



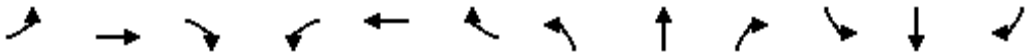
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	567	120	91	1052	907	674	1610	84	1209	1695	95
Future Volume (vph)	156	567	120	91	1052	907	674	1610	84	1209	1695	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3380		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3380		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	156	567	120	91	1052	907	674	1610	84	1209	1695	95
RTOR Reduction (vph)	0	14	0	0	0	635	0	0	59	0	0	58
Lane Group Flow (vph)	156	673	0	91	1052	272	674	1610	25	1209	1695	37
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	4.0	30.1		6.9	33.0	33.0	27.0	39.0	39.0	38.0	50.0	50.0
Effective Green, g (s)	4.0	30.1		6.9	33.0	33.0	27.0	39.0	39.0	38.0	50.0	50.0
Actuated g/C Ratio	0.03	0.23		0.05	0.25	0.25	0.21	0.30	0.30	0.29	0.38	0.38
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	103	782		178	881	693	699	1496	465	984	1918	597
v/s Ratio Prot	c0.05	0.20		0.03	c0.30		0.20	c0.32		c0.36	0.34	
v/s Ratio Perm						0.10			0.02			0.02
v/c Ratio	1.51	0.86		0.51	1.19	0.39	0.96	1.08	0.05	1.23	0.88	0.06
Uniform Delay, d1	63.0	47.9		59.9	48.5	40.2	51.0	45.5	32.4	46.0	37.3	25.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	274.9	9.6		2.5	98.5	0.4	25.3	46.8	0.0	111.9	5.2	0.0
Delay (s)	337.9	57.5		62.4	147.0	40.6	76.3	92.3	32.4	157.9	42.5	25.3
Level of Service	F	E		E	F	D	E	F	C	F	D	C
Approach Delay (s)		109.4			96.1			85.6			88.5	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	91.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	112.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	275	1259	5	556	27	1249	12	2	20	14	135
Future Volume (vph)	104	275	1259	5	556	27	1249	12	2	20	14	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1792	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.97	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1792	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	104	275	1259	5	556	27	1249	12	2	20	14	135
RTOR Reduction (vph)	0	0	297	0	0	21	0	0	1	0	0	123
Lane Group Flow (vph)	104	275	962	5	556	6	624	637	1	0	34	12
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	23.1	55.1	0.8	18.9	18.9	32.0	32.0	32.0		7.0	7.0
Effective Green, g (s)	5.0	23.1	55.1	0.8	18.9	18.9	32.0	32.0	32.0		7.0	7.0
Actuated g/C Ratio	0.06	0.29	0.70	0.01	0.24	0.24	0.41	0.41	0.41		0.09	0.09
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	110	1016	1163	17	831	372	656	658	618		158	139
v/s Ratio Prot	c0.06	0.08	c0.34	0.00	0.16		0.39	c0.39			c0.02	
v/s Ratio Perm			0.28			0.00			0.00			0.01
v/c Ratio	0.95	0.27	0.83	0.29	0.67	0.02	0.95	0.97	0.00		0.22	0.09
Uniform Delay, d1	36.8	21.4	8.5	38.8	27.2	22.9	22.7	23.0	13.9		33.4	33.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	68.0	0.1	5.0	9.4	2.1	0.0	23.7	27.0	0.0		0.7	0.3
Delay (s)	104.8	21.6	13.5	48.2	29.2	22.9	46.4	49.9	13.9		34.1	33.3
Level of Service	F	C	B	D	C	C	D	D	B		C	C
Approach Delay (s)		20.6			29.1			48.1			33.4	
Approach LOS		C			C			D			C	

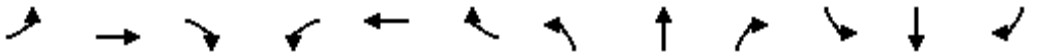
Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	78.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	190	81	377	325	72	294	171	380	112	184	34
Future Volume (vph)	26	190	81	377	325	72	294	171	380	112	184	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00		0.98	
Satd. Flow (prot)	1752	3505	1568	1752	3410		1665	1729	1568		3393	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00		0.98	
Satd. Flow (perm)	1752	3505	1568	1752	3410		1665	1729	1568		3393	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	26	190	81	377	325	72	294	171	380	112	184	34
RTOR Reduction (vph)	0	0	68	0	20	0	0	0	306	0	10	0
Lane Group Flow (vph)	26	190	13	377	377	0	229	236	74	0	320	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	1.8	12.0	12.0	20.0	30.2		14.6	14.6	14.6		12.1	
Effective Green, g (s)	1.8	12.0	12.0	20.0	30.2		14.6	14.6	14.6		12.1	
Actuated g/C Ratio	0.02	0.16	0.16	0.27	0.40		0.20	0.20	0.20		0.16	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	42	563	251	469	1378		325	337	306		549	
v/s Ratio Prot	0.01	c0.05		c0.22	0.11		c0.14	0.14			c0.09	
v/s Ratio Perm			0.01						0.05			
v/c Ratio	0.62	0.34	0.05	0.80	0.27		0.70	0.70	0.24		0.58	
Uniform Delay, d1	36.1	27.8	26.5	25.5	14.9		28.0	28.0	25.4		29.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	24.2	0.4	0.1	9.6	0.1		6.8	6.4	0.4		1.6	
Delay (s)	60.3	28.2	26.6	35.2	15.0		34.8	34.4	25.8		30.5	
Level of Service	E	C	C	D	B		C	C	C		C	
Approach Delay (s)		30.6			24.8			30.7			30.5	
Approach LOS		C			C			C			C	

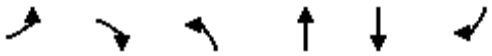
Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	74.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	2443	38	54	2492	8	433	42	218	7	16	55
Future Volume (vph)	14	2443	38	54	2492	8	433	42	218	7	16	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.4	6.4	3.5	6.4	6.4	4.4	4.4	4.4	3.5	3.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3406	1524	1703	3406	1524	1752	1845	1568	1752	1630	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3406	1524	1703	3406	1524	1752	1845	1568	1752	1630	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	2443	38	54	2492	8	433	42	218	7	16	55
RTOR Reduction (vph)	0	0	16	0	0	3	0	0	65	0	48	0
Lane Group Flow (vph)	14	2443	22	54	2492	5	433	42	153	7	23	0
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	1.5	82.3	82.3	4.5	85.3	85.3	26.6	34.3	34.3	0.8	8.5	
Effective Green, g (s)	1.5	82.3	82.3	4.5	85.3	85.3	26.6	34.3	34.3	0.8	8.5	
Actuated g/C Ratio	0.01	0.59	0.59	0.03	0.61	0.61	0.19	0.25	0.25	0.01	0.06	
Clearance Time (s)	3.5	6.4	6.4	3.5	6.4	6.4	4.4	4.4	4.4	3.5	3.5	
Vehicle Extension (s)	2.4	4.5	4.5	2.4	4.5	4.5	2.4	2.8	2.8	2.4	2.8	
Lane Grp Cap (vph)	18	2006	897	54	2079	930	333	452	384	10	99	
v/s Ratio Prot	0.01	0.72		c0.03	c0.73		c0.25	0.02		0.00	0.01	
v/s Ratio Perm			0.01			0.00			c0.10			
v/c Ratio	0.78	1.22	0.02	1.00	1.20	0.01	1.30	0.09	0.40	0.70	0.23	
Uniform Delay, d1	68.9	28.7	12.0	67.6	27.2	10.6	56.5	40.7	44.1	69.3	62.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	103.9	102.8	0.0	122.5	94.3	0.0	155.5	0.1	0.6	109.2	1.1	
Delay (s)	172.9	131.5	12.0	190.1	121.5	10.6	212.0	40.8	44.7	178.5	63.6	
Level of Service	F	F	B	F	F	B	F	D	D	F	E	
Approach Delay (s)		129.9			122.6			149.0			73.9	
Approach LOS		F			F			F			E	

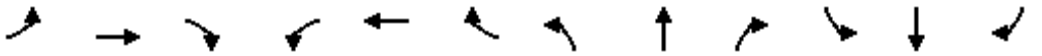
Intersection Summary			
HCM 2000 Control Delay	128.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	139.7	Sum of lost time (s)	17.8
Intersection Capacity Utilization	108.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	781	96	90	1699	1482	684
Future Volume (vph)	781	96	90	1699	1482	684
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	3400	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	3400	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	781	96	90	1699	1482	684
RTOR Reduction (vph)	0	68	0	0	0	354
Lane Group Flow (vph)	781	28	90	1699	1482	330
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	16.8	16.8	3.1	33.8	26.7	26.7
Effective Green, g (s)	16.8	16.8	3.1	33.8	26.7	26.7
Actuated g/C Ratio	0.29	0.29	0.05	0.58	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	974	449	179	2021	1596	714
v/s Ratio Prot	c0.23		0.03	c0.48	c0.42	
v/s Ratio Perm		0.02				0.21
v/c Ratio	0.80	0.06	0.50	0.84	0.93	0.46
Uniform Delay, d1	19.4	15.2	27.0	10.2	15.1	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.1	2.2	3.3	9.8	0.5
Delay (s)	24.2	15.2	29.2	13.5	24.8	11.5
Level of Service	C	B	C	B	C	B
Approach Delay (s)	23.2			14.3	20.6	
Approach LOS	C			B	C	

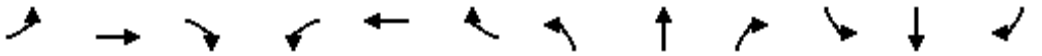
Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



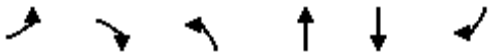
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	645	368	197	641	19	680	48	76	28	144	39
Future Volume (vph)	21	645	368	197	641	19	680	48	76	28	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3152		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3152		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	645	368	197	641	19	680	48	76	28	144	39
RTOR Reduction (vph)	0	0	244	0	0	11	0	56	0	0	0	36
Lane Group Flow (vph)	21	645	124	197	641	8	680	68	0	28	144	3
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	1.3	27.4	27.4	7.0	33.0	33.0	21.1	21.1		6.7	6.7	6.7
Effective Green, g (s)	1.3	27.4	27.4	7.0	33.0	33.0	21.1	21.1		6.7	6.7	6.7
Actuated g/C Ratio	0.02	0.34	0.34	0.09	0.41	0.41	0.26	0.26		0.08	0.08	0.08
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.1	4.1	2.0	2.0		1.0	1.0	1.0
Lane Grp Cap (vph)	28	1185	530	293	1427	638	877	821		144	289	129
v/s Ratio Prot	0.01	c0.18		c0.06	0.18		c0.20	0.02		0.02	c0.04	
v/s Ratio Perm			0.08			0.00						0.00
v/c Ratio	0.75	0.54	0.23	0.67	0.45	0.01	0.78	0.08		0.19	0.50	0.03
Uniform Delay, d1	39.7	21.7	19.3	35.9	17.4	14.3	27.8	22.6		34.6	35.5	34.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	65.7	0.9	0.5	4.7	0.3	0.0	4.0	0.0		0.2	0.5	0.0
Delay (s)	105.4	22.6	19.7	40.6	17.7	14.3	31.7	22.7		34.9	36.0	34.2
Level of Service	F	C	B	D	B	B	C	C		C	D	C
Approach Delay (s)		23.3			22.9			30.3			35.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	22.9
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	674	0	1756	0	0	0	0	1890	1447	0	1480	252
Future Volume (vph)	674	0	1756	0	0	0	0	1890	1447	0	1480	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	674	0	1756	0	0	0	0	1890	1447	0	1480	252
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	674	0	1748	0	0	0	0	1890	1447	0	1480	252
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	71.6		71.6					46.9	130.0		47.4	130.0
Effective Green, g (s)	71.6		71.6					46.9	130.0		47.4	130.0
Actuated g/C Ratio	0.55		0.55					0.36	1.00		0.36	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1854		1505					1799	1553		1818	1553
v/s Ratio Prot								c0.38			0.30	
v/s Ratio Perm	0.20		c0.64						0.93			0.16
v/c Ratio	0.36		1.16					1.05	0.93		0.81	0.16
Uniform Delay, d1	16.4		29.2					41.5	0.0		37.3	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0		80.4					35.9	11.5		2.8	0.2
Delay (s)	16.4		109.6					77.5	11.5		40.1	0.2
Level of Service	B		F					E	B		D	A
Approach Delay (s)		83.8			0.0			48.9			34.3	
Approach LOS		F			A			D			C	

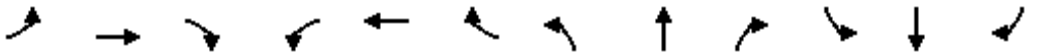
Intersection Summary			
HCM 2000 Control Delay	56.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1037	29	55	945	335	1033
Future Volume (vph)	1037	29	55	945	335	1033
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1752	1568	1752	1845	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1752	1568	1752	1845	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1037	29	55	945	335	1033
RTOR Reduction (vph)	0	9	0	0	0	638
Lane Group Flow (vph)	1037	20	55	945	335	395
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	64.0	64.0	5.0	58.0	49.0	49.0
Effective Green, g (s)	64.0	64.0	5.0	58.0	49.0	49.0
Actuated g/C Ratio	0.49	0.49	0.04	0.45	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	862	771	67	823	1321	591
v/s Ratio Prot	c0.59		0.03	c0.51	0.10	
v/s Ratio Perm		0.01				0.25
v/c Ratio	1.20	0.03	0.82	1.15	0.25	0.67
Uniform Delay, d1	33.0	17.0	62.1	36.0	27.9	33.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	102.4	0.0	52.9	80.7	0.1	2.9
Delay (s)	135.4	17.0	115.0	116.7	28.0	36.6
Level of Service	F	B	F	F	C	D
Approach Delay (s)	132.2			116.6	34.5	
Approach LOS	F			F	C	

Intersection Summary			
HCM 2000 Control Delay	88.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.9%	ICU Level of Service	H
Analysis Period (min)	15		

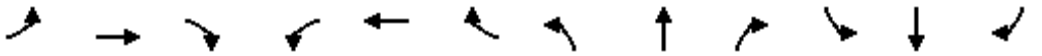
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	2	13	8	1	1	34	626	2	0	233	189
Future Volume (vph)	363	2	13	8	1	1	34	626	2	0	233	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		1.00	0.95			0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1665	1670	1568	1752	1706		1752	3503			3505	1568
Flt Permitted	0.95	0.95	1.00	0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)	1665	1670	1568	1752	1706		1752	3503			3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	363	2	13	8	1	1	34	626	2	0	233	189
RTOR Reduction (vph)	0	0	10	0	1	0	0	0	0	0	0	124
Lane Group Flow (vph)	181	184	3	8	1	0	34	628	0	0	233	65
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	10.3	10.3	10.3	0.8	0.8		0.6	19.0			14.4	14.4
Effective Green, g (s)	10.3	10.3	10.3	0.8	0.8		0.6	19.0			14.4	14.4
Actuated g/C Ratio	0.24	0.24	0.24	0.02	0.02		0.01	0.45			0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	407	408	383	33	32		24	1580			1198	536
v/s Ratio Prot	0.11	c0.11		c0.00	0.00		0.02	c0.18			0.07	
v/s Ratio Perm			0.00									0.04
v/c Ratio	0.44	0.45	0.01	0.24	0.03		1.42	0.40			0.19	0.12
Uniform Delay, d1	13.5	13.5	12.0	20.4	20.3		20.8	7.7			9.8	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	0.8	0.8	0.0	3.8	0.4		331.7	0.2			0.1	0.1
Delay (s)	14.3	14.3	12.0	24.1	20.7		352.4	7.9			9.8	9.6
Level of Service	B	B	B	C	C		F	A			A	A
Approach Delay (s)		14.2			23.5			25.6			9.7	
Approach LOS		B			C			C			A	

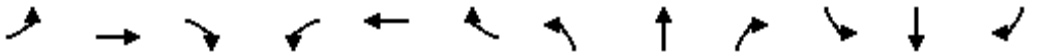
Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	42.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



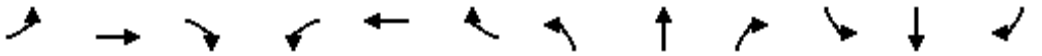
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1174	0	403	0	1201	482	0	1042	367
Future Volume (vph)	0	0	0	1174	0	403	0	1201	482	0	1042	367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.91	1.00		0.91	1.00
Frt				1.00	0.92			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.98			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1562			4988	1553		4988	1553
Flt Permitted				0.95	0.98			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1562			4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1174	0	403	0	1201	482	0	1042	367
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	810	752	0	0	1201	482	0	1042	367
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Perm	NA			NA	Free		NA	Free
Protected Phases					8			2			6	
Permitted Phases				8					Free			Free
Actuated Green, G (s)				30.2	30.2			16.1	56.0		16.1	56.0
Effective Green, g (s)				30.2	30.2			16.1	56.0		16.1	56.0
Actuated g/C Ratio				0.54	0.54			0.29	1.00		0.29	1.00
Clearance Time (s)				4.9	4.9			4.8			4.8	
Vehicle Extension (s)				1.0	1.0			1.0			1.0	
Lane Grp Cap (vph)				889	842			1434	1553		1434	1553
v/s Ratio Prot								c0.24			0.21	
v/s Ratio Perm				c0.49	0.48				0.31			0.24
v/c Ratio				0.91	0.89			0.84	0.31		0.73	0.24
Uniform Delay, d1				11.7	11.5			18.7	0.0		18.0	0.0
Progression Factor				1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2				13.1	11.5			4.2	0.5		1.6	0.4
Delay (s)				24.8	23.0			23.0	0.5		19.5	0.4
Level of Service				C	C			C	A		B	A
Approach Delay (s)		0.0			23.9			16.5			14.6	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



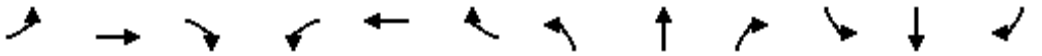
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	378	0	1095	0	0	0	0	1356	603	0	1817	350
Future Volume (vph)	378	0	1095	0	0	0	0	1356	603	0	1817	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.91	1.00
Frt	1.00	0.86	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1425	1475					4988	1553		4988	1553
Flt Permitted	0.95	1.00	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1425	1475					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	378	0	1095	0	0	0	0	1356	603	0	1817	350
RTOR Reduction (vph)	0	21	21	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	340	543	548	0	0	0	0	1356	603	0	1817	350
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA	Perm					NA	Free		NA	Free
Protected Phases		4						2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	23.6	23.6	23.6					23.9	57.5		24.0	57.5
Effective Green, g (s)	23.6	23.6	23.6					23.9	57.5		24.0	57.5
Actuated g/C Ratio	0.41	0.41	0.41					0.42	1.00		0.42	1.00
Clearance Time (s)	5.1	5.1	5.1					4.9			4.8	
Vehicle Extension (s)	1.0	1.0	1.0					1.0			1.0	
Lane Grp Cap (vph)	676	584	605					2073	1553		2081	1553
v/s Ratio Prot								0.27			c0.36	
v/s Ratio Perm	0.21	0.38	0.37						0.39			0.23
v/c Ratio	0.50	0.93	0.91					0.65	0.39		0.87	0.23
Uniform Delay, d1	12.6	16.2	15.9					13.5	0.0		15.4	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	21.4	16.9					0.6	0.7		4.2	0.3
Delay (s)	12.8	37.6	32.8					14.1	0.7		19.6	0.3
Level of Service	B	D	C					B	A		B	A
Approach Delay (s)		30.0			0.0			10.0			16.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



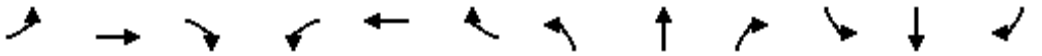
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1345	0	190	0	835	945	0	982	1393
Future Volume (vph)	0	0	0	1345	0	190	0	835	945	0	982	1393
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		5036	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1345	0	190	0	835	945	0	982	1393
RTOR Reduction (vph)	0	0	0	0	0	15	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1345	0	175	0	835	945	0	982	1393
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				22.3		22.3		13.7	47.4		13.7	47.4
Effective Green, g (s)				22.3		22.3		13.7	47.4		13.7	47.4
Actuated g/C Ratio				0.47		0.47		0.29	1.00		0.29	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1599		737		1455	1568		1455	1568
v/s Ratio Prot								0.17			0.19	
v/s Ratio Perm				0.40		0.11			0.60			c0.89
v/c Ratio				0.84		0.24		0.57	0.60		0.67	0.89
Uniform Delay, d1				11.0		7.5		14.4	0.0		14.9	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				4.0		0.1		0.3	1.7		1.0	7.9
Delay (s)				15.0		7.5		14.7	1.7		15.9	7.9
Level of Service				B		A		B	A		B	A
Approach Delay (s)		0.0			14.1			7.8			11.2	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	47.4	Sum of lost time (s)	11.4
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



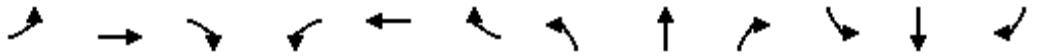
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	876	1627	0	0	98	0	3304	9	0	2153	185
Future Volume (vph)	172	876	1627	0	0	98	0	3304	9	0	2153	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		0.86			0.91	1.00
Frt	1.00	0.93	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	2944	1427			2733		6343			5036	1568
Flt Permitted	0.95	1.00	1.00			1.00		1.00			1.00	1.00
Satd. Flow (perm)	1595	2944	1427			2733		6343			5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	172	876	1627	0	0	98	0	3304	9	0	2153	185
RTOR Reduction (vph)	0	1	20	0	0	95	0	0	0	0	0	45
Lane Group Flow (vph)	155	1706	793	0	0	3	0	3313	0	0	2153	140
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA			NA	custom
Protected Phases	4	4				1		2			6	
Permitted Phases			4									2
Actuated Green, G (s)	68.0	68.0	68.0			4.0		66.0			74.0	66.0
Effective Green, g (s)	68.0	68.0	68.0			4.0		66.0			74.0	66.0
Actuated g/C Ratio	0.45	0.45	0.45			0.03		0.44			0.49	0.44
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	723	1334	646			72		2790			2484	689
v/s Ratio Prot	0.10	c0.58				0.00		c0.52			c0.43	
v/s Ratio Perm			0.56									0.09
v/c Ratio	0.21	1.28	1.23			0.04		1.19			0.87	0.20
Uniform Delay, d1	24.8	41.0	41.0			71.1		42.0			33.6	25.8
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	1.00
Incremental Delay, d2	0.1	131.4	115.9			0.2		88.3			3.5	0.1
Delay (s)	25.0	172.4	156.9			71.3		130.3			37.1	26.0
Level of Service	C	F	F			E		F			D	C
Approach Delay (s)		159.1			71.3			130.3			36.2	
Approach LOS		F			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	112.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	115.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	226	0	499	0	2853	253	0	1894	2225
Future Volume (vph)	0	0	0	226	0	499	0	2853	253	0	1894	2225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	226	0	499	0	2853	253	0	1894	2225
RTOR Reduction (vph)	0	0	0	0	0	34	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	226	0	465	0	2853	253	0	1894	2225
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				10.3		10.3		35.4	54.0		35.1	54.0
Effective Green, g (s)				10.3		10.3		35.4	54.0		35.1	54.0
Actuated g/C Ratio				0.19		0.19		0.66	1.00		0.65	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				630		511		3269	1553		3242	1553
v/s Ratio Prot								0.57			0.38	
v/s Ratio Perm				0.07		0.17			0.16			c1.43
v/c Ratio				0.36		0.91		0.87	0.16		0.58	1.43
Uniform Delay, d1				19.0		21.4		7.5	0.0		5.3	27.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.1		20.0		2.8	0.2		0.2	198.5
Delay (s)				19.1		41.4		10.2	0.2		5.5	225.5
Level of Service				B		D		B	A		A	F
Approach Delay (s)		0.0			34.4			9.4			124.3	
Approach LOS		A			C			A			F	

Intersection Summary			
HCM 2000 Control Delay	71.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.70		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



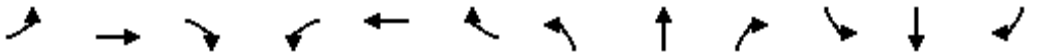
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	962	0	716	0	0	0	0	2152	422	0	1767	350
Future Volume (vph)	962	0	716	0	0	0	0	2152	422	0	1767	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	962	0	716	0	0	0	0	2152	422	0	1767	350
RTOR Reduction (vph)	0	0	32	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	962	0	684	0	0	0	0	2152	422	0	1767	350
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	13.7		13.7					22.2	44.2		21.9	44.2
Effective Green, g (s)	13.7		13.7					22.2	44.2		21.9	44.2
Actuated g/C Ratio	0.31		0.31					0.50	1.00		0.50	1.00
Clearance Time (s)	3.5		3.5					4.8			5.1	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1516		847					3156	1553		2471	1553
v/s Ratio Prot								0.34			c0.35	
v/s Ratio Perm	0.20		c0.25						0.27			0.23
v/c Ratio	0.63		0.81					0.68	0.27		0.72	0.23
Uniform Delay, d1	13.1		14.0					8.3	0.0		8.7	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6		5.4					0.5	0.4		0.8	0.3
Delay (s)	13.7		19.4					8.8	0.4		9.5	0.3
Level of Service	B		B					A	A		A	A
Approach Delay (s)		16.2			0.0			7.4			8.0	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	44.2	Sum of lost time (s)	8.6
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



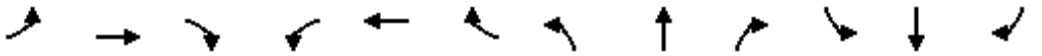
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	480	459	2361	162	68	1111
Future Volume (vph)	480	459	2361	162	68	1111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	4988	1553	3367	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	4988	1553	3367	3471
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	480	459	2361	162	68	1111
RTOR Reduction (vph)	0	282	0	47	0	0
Lane Group Flow (vph)	480	177	2361	115	68	1111
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA	Perm	Prot	NA
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Actuated Green, G (s)	13.0	13.0	42.1	42.1	4.2	51.8
Effective Green, g (s)	13.0	13.0	42.1	42.1	4.2	51.8
Actuated g/C Ratio	0.17	0.17	0.56	0.56	0.06	0.69
Clearance Time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	586	270	2788	868	187	2387
v/s Ratio Prot	c0.14	0.11	c0.47		0.02	c0.32
v/s Ratio Perm				0.07		
v/c Ratio	0.82	0.66	0.85	0.13	0.36	0.47
Uniform Delay, d1	30.0	29.1	13.9	7.9	34.3	5.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	4.3	2.5	0.0	0.4	0.1
Delay (s)	38.3	33.4	16.4	7.9	34.7	5.4
Level of Service	D	C	B	A	C	A
Approach Delay (s)	35.9		15.8			7.1
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



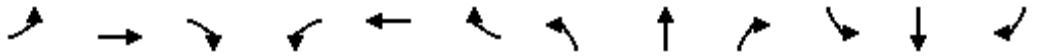
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1198	679	7	0	1154	15	8	30	5	7	6	547
Future Volume (vph)	1198	679	7	0	1154	15	8	30	5	7	6	547
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Lane Util. Factor	1.00	0.95	1.00		0.95			1.00			1.00	1.00
Frt	1.00	1.00	0.85		1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (prot)	1703	3406	1524		3431			1799			1779	1553
Flt Permitted	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (perm)	1703	3406	1524		3431			1799			1779	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1198	679	7	0	1154	15	8	30	5	7	6	547
RTOR Reduction (vph)	0	0	1	0	1	0	0	3	0	0	0	37
Lane Group Flow (vph)	1198	679	6	0	1168	0	0	40	0	0	13	510
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	62.6	106.0	106.0		38.8			3.0			2.1	64.7
Effective Green, g (s)	62.6	106.0	106.0		38.8			3.0			2.1	64.7
Actuated g/C Ratio	0.48	0.81	0.81		0.30			0.02			0.02	0.50
Clearance Time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0		1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	818	2770	1239		1021			41			28	771
v/s Ratio Prot	c0.70	0.20			c0.34			c0.02			0.01	c0.32
v/s Ratio Perm			0.00									0.01
v/c Ratio	1.46	0.25	0.00		1.14			0.98			0.46	0.66
Uniform Delay, d1	33.9	2.8	2.3		45.8			63.6			63.5	24.6
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	215.8	0.0	0.0		76.7			130.1			4.4	1.7
Delay (s)	249.6	2.8	2.3		122.5			193.8			67.9	26.3
Level of Service	F	A	A		F			F			E	C
Approach Delay (s)		159.8			122.5			193.8			27.2	
Approach LOS		F			F			F			C	

Intersection Summary			
HCM 2000 Control Delay	127.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	130.3	Sum of lost time (s)	24.7
Intersection Capacity Utilization	122.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	277	55	172	877	433	3310	0	0	4871	99
Future Volume (vph)	0	0	277	55	172	877	433	3310	0	0	4871	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1771	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1771	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	277	55	172	877	433	3310	0	0	4871	99
RTOR Reduction (vph)	0	0	173	0	0	40	0	0	0	0	0	25
Lane Group Flow (vph)	0	0	104	0	227	837	433	3310	0	0	4871	74
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			20.0		29.8	29.8	20.0	109.0			84.1	84.1
Effective Green, g (s)			20.0		29.8	29.8	20.0	109.0			84.1	84.1
Actuated g/C Ratio			0.13		0.20	0.20	0.13	0.73			0.56	0.56
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Vehicle Extension (s)			3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			212		351	532	440	3555			3457	854
v/s Ratio Prot			0.06		0.13		0.13	c0.68			c0.79	
v/s Ratio Perm						c0.31						0.05
v/c Ratio			0.49		0.65	1.57	0.98	0.93			1.41	0.09
Uniform Delay, d1			60.3		55.3	60.1	64.8	17.3			33.0	15.2
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			1.8		4.1	266.9	38.4	5.2			185.8	0.0
Delay (s)			62.0		59.3	327.0	103.3	22.5			218.8	15.3
Level of Service			E		E	F	F	C			F	B
Approach Delay (s)		62.0			272.0			31.9			214.7	
Approach LOS		E			F			C			F	

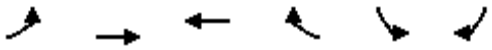
Intersection Summary			
HCM 2000 Control Delay	149.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	113.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2030	0	161	0	0	0	0	1848	49	0	1747	1023
Future Volume (vph)	2030	0	161	0	0	0	0	1848	49	0	1747	1023
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0			4.0	4.0
Lane Util. Factor	0.94		0.88					0.91			0.91	1.00
Frt	1.00		0.85					1.00			1.00	0.85
Flt Protected	0.95		1.00					1.00			1.00	1.00
Satd. Flow (prot)	4942		2760					5016			5036	1568
Flt Permitted	0.95		1.00					1.00			1.00	1.00
Satd. Flow (perm)	4942		2760					5016			5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2030	0	161	0	0	0	0	1848	49	0	1747	1023
RTOR Reduction (vph)	0	0	11	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	2030	0	150	0	0	0	0	1892	0	0	1747	1023
Turn Type	Prot		Perm					NA			NA	Free
Protected Phases	4							2			6	
Permitted Phases			4									Free
Actuated Green, G (s)	24.0		24.0					23.0			23.0	55.0
Effective Green, g (s)	24.0		24.0					23.0			23.0	55.0
Actuated g/C Ratio	0.44		0.44					0.42			0.42	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	2156		1204					2097			2105	1568
v/s Ratio Prot	c0.41							c0.38			0.35	
v/s Ratio Perm			0.05									0.65
v/c Ratio	0.94		0.12					0.90			0.83	0.65
Uniform Delay, d1	14.8		9.2					14.9			14.3	0.0
Progression Factor	1.00		1.00					1.00			1.00	1.00
Incremental Delay, d2	9.0		0.0					5.9			2.9	2.1
Delay (s)	23.9		9.3					20.8			17.1	2.1
Level of Service	C		A					C			B	A
Approach Delay (s)		22.8			0.0			20.8			11.6	
Approach LOS		C			A			C			B	

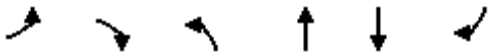
Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1082	1558	1605	213	15	750
Future Volume (vph)	1082	1558	1605	213	15	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3242	3343	3343	1495	3400	2760
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3242	3343	3343	1495	3400	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1082	1558	1605	213	15	750
RTOR Reduction (vph)	0	0	0	42	0	701
Lane Group Flow (vph)	1082	1558	1605	171	15	49
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	48.0	121.1	69.1	69.1	9.0	9.0
Effective Green, g (s)	48.0	121.1	69.1	69.1	9.0	9.0
Actuated g/C Ratio	0.35	0.88	0.50	0.50	0.07	0.07
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1126	2931	1672	748	221	179
v/s Ratio Prot	c0.33	0.47	c0.48		0.00	
v/s Ratio Perm				0.11		c0.02
v/c Ratio	0.96	0.53	0.96	0.23	0.07	0.27
Uniform Delay, d1	44.1	2.0	33.2	19.5	60.6	61.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.1	0.2	13.5	0.2	0.1	0.8
Delay (s)	62.3	2.1	46.7	19.6	60.7	62.3
Level of Service	E	A	D	B	E	E
Approach Delay (s)		26.8	43.5		62.2	
Approach LOS		C	D		E	

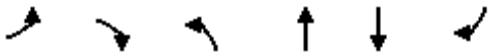
Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	138.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	601	13	90	2072	1327	1012
Future Volume (vph)	601	13	90	2072	1327	1012
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	601	13	90	2072	1327	1012
RTOR Reduction (vph)	0	9	0	0	0	66
Lane Group Flow (vph)	601	4	90	2072	1327	946
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	16.5	21.3	4.8	45.9	37.1	53.6
Effective Green, g (s)	16.5	21.3	4.8	45.9	37.1	53.6
Actuated g/C Ratio	0.23	0.30	0.07	0.65	0.53	0.76
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	796	563	119	2285	1847	1282
v/s Ratio Prot	0.18	0.00	0.05	c0.59	0.38	c0.17
v/s Ratio Perm		0.00				0.43
v/c Ratio	0.76	0.01	0.76	0.91	0.72	0.74
Uniform Delay, d1	25.1	17.2	32.2	10.4	12.7	4.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.0	23.6	5.7	1.4	2.3
Delay (s)	29.2	17.2	55.8	16.1	14.0	6.8
Level of Service	C	B	E	B	B	A
Approach Delay (s)	28.9			17.8	10.9	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	70.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

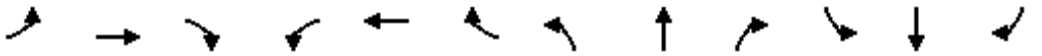
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	439	615	1016	1711	1127	213
Future Volume (vph)	439	615	1016	1711	1127	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1752	1568	3400	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1752	1568	3400	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	439	615	1016	1711	1127	213
RTOR Reduction (vph)	0	401	0	0	0	144
Lane Group Flow (vph)	439	214	1016	1711	1127	69
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	22.0	22.0	27.0	60.0	29.0	29.0
Effective Green, g (s)	22.0	22.0	27.0	60.0	29.0	29.0
Actuated g/C Ratio	0.24	0.24	0.30	0.67	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	428	383	1020	2336	1129	505
v/s Ratio Prot	c0.25		c0.30	0.49	c0.32	
v/s Ratio Perm		0.14				0.04
v/c Ratio	1.03	0.56	1.00	0.73	1.00	0.14
Uniform Delay, d1	34.0	29.7	31.4	9.8	30.5	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	50.2	1.8	27.0	1.2	26.2	0.1
Delay (s)	84.2	31.5	58.5	11.0	56.6	21.7
Level of Service	F	C	E	B	E	C
Approach Delay (s)	53.5			28.7	51.1	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay	39.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

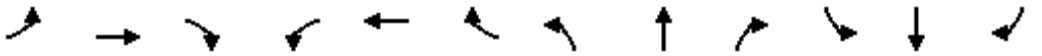
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	651	0	929	0	0	0	0	3847	650	0	1790	1584
Future Volume (vph)	651	0	929	0	0	0	0	3847	650	0	1790	1584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.95	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4540	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4540	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	651	0	929	0	0	0	0	3847	650	0	1790	1584
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	0	0	80	0
Lane Group Flow (vph)	651	0	905	0	0	0	0	3847	650	0	2502	792
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	31.0		31.0					61.0	100.0		61.0	100.0
Effective Green, g (s)	31.0		31.0					61.0	100.0		61.0	100.0
Actuated g/C Ratio	0.31		0.31					0.61	1.00		0.61	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1054		855					3871	1568		2769	1348
v/s Ratio Prot	0.19							c0.61			0.55	
v/s Ratio Perm			c0.33						0.41			0.59
v/c Ratio	0.62		1.06					0.99	0.41		0.90	0.59
Uniform Delay, d1	29.4		34.5					19.3	0.0		16.9	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1		47.4					13.0	0.8		4.6	1.9
Delay (s)	30.5		81.9					32.3	0.8		21.6	1.9
Level of Service	C		F					C	A		C	A
Approach Delay (s)		60.7			0.0			27.7			17.0	
Approach LOS		E			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	507	0	1211	0	2001	2493	0	4213	1039
Future Volume (vph)	0	0	0	507	0	1211	0	2001	2493	0	4213	1039
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		0.94	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4485	1348		5953	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4485	1348		5953	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	507	0	1211	0	2001	2493	0	4213	1039
RTOR Reduction (vph)	0	0	0	0	0	27	0	86	0	0	2	0
Lane Group Flow (vph)	0	0	0	507	0	1184	0	3162	1246	0	4325	925
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				37.0		37.0		85.0	130.0		85.0	130.0
Effective Green, g (s)				37.0		37.0		85.0	130.0		85.0	130.0
Actuated g/C Ratio				0.28		0.28		0.65	1.00		0.65	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Vehicle Extension (s)				3.0		3.0		3.0			3.0	
Lane Grp Cap (vph)				967		1017		2932	1348		3892	1270
v/s Ratio Prot				0.15				0.70			c0.73	
v/s Ratio Perm						c0.33			0.92			0.73
v/c Ratio				0.52		1.16		1.18dr	0.92		1.11	0.73
Uniform Delay, d1				39.1		46.5		22.5	0.0		22.5	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.5		84.8		42.3	12.0		54.3	3.7
Delay (s)				39.6		131.3		64.8	12.0		76.8	3.7
Level of Service				D		F		E	B		E	A
Approach Delay (s)		0.0			104.2			50.2			63.9	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	64.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

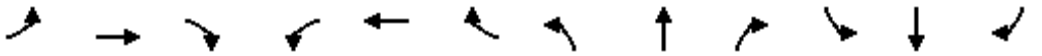
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	776	492	384	929	490	309
Future Volume (vph)	776	492	384	929	490	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	776	492	384	929	490	309
RTOR Reduction (vph)	0	254	0	0	0	239
Lane Group Flow (vph)	776	238	384	929	490	70
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	20.0	20.0	19.6	43.6	15.1	15.1
Effective Green, g (s)	20.0	20.0	19.6	43.6	15.1	15.1
Actuated g/C Ratio	0.30	0.30	0.29	0.65	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	945	423	463	2061	692	319
v/s Ratio Prot	c0.25		c0.24	0.29	c0.16	
v/s Ratio Perm		0.17				0.05
v/c Ratio	0.82	0.56	0.83	0.45	0.71	0.22
Uniform Delay, d1	21.7	19.7	22.0	5.7	23.8	21.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	1.7	11.7	0.2	3.3	0.3
Delay (s)	27.5	21.4	33.7	5.8	27.1	21.4
Level of Service	C	C	C	A	C	C
Approach Delay (s)	25.1			14.0	24.9	
Approach LOS	C			B	C	

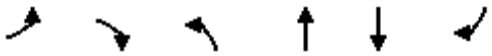
Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	478	0	1	471	241	1	1	0	61	2	455
Future Volume (vph)	219	478	0	1	471	241	1	1	0	61	2	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.95			1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (prot)	1736	3471		1736	3295			1800		1665	1674	1568
Flt Permitted	0.95	1.00		0.95	1.00			0.98		0.95	0.96	1.00
Satd. Flow (perm)	1736	3471		1736	3295			1800		1665	1674	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	219	478	0	1	471	241	1	1	0	61	2	455
RTOR Reduction (vph)	0	0	0	0	76	0	0	0	0	0	0	388
Lane Group Flow (vph)	219	478	0	1	636	0	0	2	0	32	31	67
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	10.8	28.9		0.7	18.8			5.7		8.9	8.9	8.9
Effective Green, g (s)	10.8	28.9		0.7	18.8			5.7		8.9	8.9	8.9
Actuated g/C Ratio	0.18	0.48		0.01	0.31			0.09		0.15	0.15	0.15
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	311	1666		20	1029			170		246	247	231
v/s Ratio Prot	c0.13	0.14		0.00	c0.19			c0.00		0.02	0.02	
v/s Ratio Perm												c0.04
v/c Ratio	0.70	0.29		0.05	0.62			0.01		0.13	0.13	0.29
Uniform Delay, d1	23.2	9.4		29.4	17.6			24.7		22.3	22.3	22.8
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	7.1	0.1		1.0	1.1			0.0		0.2	0.2	0.7
Delay (s)	30.3	9.5		30.5	18.8			24.7		22.5	22.5	23.5
Level of Service	C	A		C	B			C		C	C	C
Approach Delay (s)		16.0			18.8			24.7			23.4	
Approach LOS		B			B			C			C	

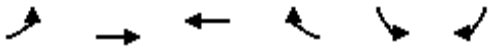
Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	491	27	21	1793	1644	421
Future Volume (vph)	491	27	21	1793	1644	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3398	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3398	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	491	27	21	1793	1644	421
RTOR Reduction (vph)	0	18	0	0	18	0
Lane Group Flow (vph)	491	9	21	1793	2047	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	33.0	33.0	1.5	76.6	71.1	
Effective Green, g (s)	33.0	33.0	1.5	76.6	71.1	
Actuated g/C Ratio	0.28	0.28	0.01	0.65	0.60	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	491	440	22	2283	2054	
v/s Ratio Prot	c0.28		0.01	c0.51	c0.60	
v/s Ratio Perm		0.01				
v/c Ratio	1.00	0.02	0.95	0.79	1.00	
Uniform Delay, d1	42.3	30.6	58.0	14.6	23.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	40.6	0.0	169.9	1.8	18.9	
Delay (s)	82.9	30.6	227.9	16.5	42.0	
Level of Service	F	C	F	B	D	
Approach Delay (s)	80.2			18.9	42.0	
Approach LOS	F			B	D	

Intersection Summary			
HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	117.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	601	1365	2134	1713	0
Future Volume (vph)	0	601	1365	2134	1713	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	1.00	0.97	
Frt		1.00	1.00	0.85	1.00	
Flt Protected		1.00	1.00	1.00	0.95	
Satd. Flow (prot)		3505	3505	1568	3400	
Flt Permitted		1.00	1.00	1.00	0.95	
Satd. Flow (perm)		3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	601	1365	2134	1713	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	601	1365	2134	1713	0
Turn Type	Prot	NA	NA	custom	Prot	
Protected Phases	4	5	5	2	6	
Permitted Phases						
Actuated Green, G (s)		46.0	46.0	130.0	76.0	
Effective Green, g (s)		46.0	46.0	130.0	76.0	
Actuated g/C Ratio		0.35	0.35	1.00	0.58	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1240	1240	1568	1987	
v/s Ratio Prot		0.17	0.39	c1.36	0.50	
v/s Ratio Perm						
v/c Ratio		0.48	1.10	1.36	0.86	
Uniform Delay, d1		32.8	42.0	65.0	22.6	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	57.8	166.7	4.1	
Delay (s)		33.1	99.8	231.7	26.7	
Level of Service		C	F	F	C	
Approach Delay (s)		33.1	180.2		26.7	
Approach LOS		C	F		C	

Intersection Summary			
HCM 2000 Control Delay	119.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	135.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0
Turn Type			Prot		Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)						
Effective Green, g (s)						
Actuated g/C Ratio						
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)						
v/s Ratio Prot						
v/s Ratio Perm						
v/c Ratio						
Uniform Delay, d1						
Progression Factor						
Incremental Delay, d2						
Delay (s)						
Level of Service						
Approach Delay (s)	0.0			0.0	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	0.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	24.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

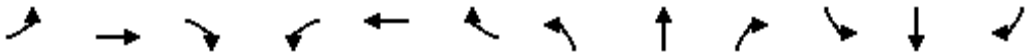
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	2225	0	1653	0
Future Volume (vph)	0	0	2225	0	1653	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	
Lane Util. Factor			0.95	0.95	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	0.95	0.95	
Satd. Flow (prot)			1665	1665	3400	
Flt Permitted			0.95	0.95	0.95	
Satd. Flow (perm)			1665	1665	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	2225	0	1653	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1112	1113	1653	0
Turn Type			Split	NA	Prot	
Protected Phases			4	4	2	
Permitted Phases						
Actuated Green, G (s)			81.0	81.0	61.0	
Effective Green, g (s)			81.0	81.0	61.0	
Actuated g/C Ratio			0.54	0.54	0.41	
Clearance Time (s)			4.0	4.0	4.0	
Vehicle Extension (s)			3.0	3.0	3.0	
Lane Grp Cap (vph)			899	899	1382	
v/s Ratio Prot			0.67	c0.67	c0.49	
v/s Ratio Perm						
v/c Ratio			1.24	1.24	1.20	
Uniform Delay, d1			34.5	34.5	44.5	
Progression Factor			1.00	1.00	1.00	
Incremental Delay, d2			116.2	116.7	95.6	
Delay (s)			150.7	151.2	140.1	
Level of Service			F	F	F	
Approach Delay (s)	0.0			150.9	140.1	
Approach LOS	A			F	F	

Intersection Summary			
HCM 2000 Control Delay	146.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	407	0	0	0	0	1653	2097	0	2225	0
Future Volume (vph)	0	0	407	0	0	0	0	1653	2097	0	2225	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95					0.91	0.91		0.95	
Frt		0.85	0.85					0.95	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		1490	1490					3177	1427		3505	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		1490	1490					3177	1427		3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	407	0	0	0	0	1653	2097	0	2225	0
RTOR Reduction (vph)	0	32	0	0	0	0	0	35	182	0	0	0
Lane Group Flow (vph)	0	172	203	0	0	0	0	2541	992	0	2225	0
Turn Type		NA	Free					NA	Perm	Prot	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			Free						2			
Actuated Green, G (s)		16.0	143.6					119.6	119.6		119.6	
Effective Green, g (s)		16.0	143.6					119.6	119.6		119.6	
Actuated g/C Ratio		0.11	1.00					0.83	0.83		0.83	
Clearance Time (s)		4.0						4.0	4.0		4.0	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		166	1490					2646	1188		2919	
v/s Ratio Prot		c0.12						c0.80			0.63	
v/s Ratio Perm			0.14						0.70			
v/c Ratio		1.04	0.14					0.96	0.83		0.76	
Uniform Delay, d1		63.8	0.0					10.0	6.6		5.5	
Progression Factor		1.00	1.00					1.00	1.00		1.00	
Incremental Delay, d2		79.7	0.2					9.9	5.2		1.2	
Delay (s)		143.5	0.2					19.9	11.8		6.7	
Level of Service		F	A					B	B		A	
Approach Delay (s)		72.0			0.0			17.4			6.7	
Approach LOS		E			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	143.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	115.5%	ICU Level of Service	H
Analysis Period (min)	15		

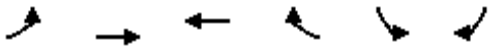
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	367	312	3652	168	6	2771
Future Volume (vph)	367	312	3652	168	6	2771
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5036	1568	3400	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5036	1568	3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	367	312	3652	168	6	2771
RTOR Reduction (vph)	0	33	0	25	0	0
Lane Group Flow (vph)	367	279	3652	143	6	2771
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	25.0	25.0	113.8	113.8	0.8	118.6
Effective Green, g (s)	25.0	25.0	113.8	113.8	0.8	118.6
Actuated g/C Ratio	0.16	0.16	0.75	0.75	0.01	0.78
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	560	258	3780	1177	17	3939
v/s Ratio Prot	0.11		c0.73		0.00	c0.55
v/s Ratio Perm		c0.18		0.09		
v/c Ratio	0.66	1.08	0.97	0.12	0.35	0.70
Uniform Delay, d1	59.3	63.3	17.2	5.2	75.1	8.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	79.9	8.3	0.0	12.2	0.6
Delay (s)	62.0	143.2	25.4	5.2	87.3	8.6
Level of Service	E	F	C	A	F	A
Approach Delay (s)	99.3		24.5			8.7
Approach LOS	F		C			A

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	151.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	241	1374	2082	86	131	426
Future Volume (vph)	241	1374	2082	86	131	426
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	241	1374	2082	86	131	426
RTOR Reduction (vph)	0	0	0	26	0	183
Lane Group Flow (vph)	241	1374	2082	60	131	243
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	14.0	76.0	58.0	58.0	16.0	16.0
Effective Green, g (s)	14.0	76.0	58.0	58.0	16.0	16.0
Actuated g/C Ratio	0.14	0.76	0.58	0.58	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	245	2663	2032	909	280	250
v/s Ratio Prot	c0.14	0.39	c0.59		0.07	
v/s Ratio Perm				0.04		c0.15
v/c Ratio	0.98	0.52	1.02	0.07	0.47	0.97
Uniform Delay, d1	42.9	4.7	21.0	9.2	38.1	41.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.6	0.2	26.5	0.0	1.2	48.7
Delay (s)	95.4	4.9	47.5	9.2	39.4	90.5
Level of Service	F	A	D	A	D	F
Approach Delay (s)		18.4	46.0		78.5	
Approach LOS		B	D		E	

Intersection Summary			
HCM 2000 Control Delay	39.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		

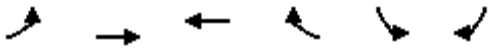
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	606	84	221	1219	131	63
Future Volume (vph)	606	84	221	1219	131	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	1752	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	606	84	221	1219	131	63
RTOR Reduction (vph)	0	53	0	0	0	50
Lane Group Flow (vph)	606	31	221	1219	131	14
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	14.3	14.3	4.5	22.8	8.4	8.4
Effective Green, g (s)	14.3	14.3	4.5	22.8	8.4	8.4
Actuated g/C Ratio	0.36	0.36	0.11	0.58	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1278	572	390	2038	375	336
v/s Ratio Prot	0.17		0.07	c0.35	c0.07	
v/s Ratio Perm		0.02				0.01
v/c Ratio	0.47	0.05	0.57	0.60	0.35	0.04
Uniform Delay, d1	9.6	8.1	16.4	5.3	13.1	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	1.9	0.5	0.6	0.0
Delay (s)	9.8	8.1	18.3	5.7	13.6	12.3
Level of Service	A	A	B	A	B	B
Approach Delay (s)	9.6			7.7	13.2	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	39.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

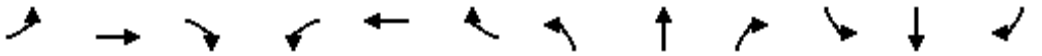
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	154	213	453	18	55	380
Future Volume (vph)	154	213	453	18	55	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	0.99		0.88	
Flt Protected		0.98	1.00		0.99	
Satd. Flow (prot)		1807	1835		1617	
Flt Permitted		0.66	1.00		0.99	
Satd. Flow (perm)		1209	1835		1617	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	154	213	453	18	55	380
RTOR Reduction (vph)	0	0	3	0	221	0
Lane Group Flow (vph)	0	367	468	0	214	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		15.5	15.5		9.3	
Effective Green, g (s)		15.5	15.5		9.3	
Actuated g/C Ratio		0.47	0.47		0.28	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		571	867		458	
v/s Ratio Prot			0.25		c0.13	
v/s Ratio Perm		c0.30				
v/c Ratio		0.64	0.54		0.47	
Uniform Delay, d1		6.6	6.1		9.7	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		2.5	0.7		0.8	
Delay (s)		9.0	6.8		10.5	
Level of Service		A	A		B	
Approach Delay (s)		9.0	6.8		10.5	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	32.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

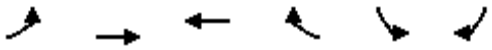
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	343	69	251	67	95	111	612	1617	185	261	1725	294
Future Volume (vph)	343	69	251	67	95	111	612	1617	185	261	1725	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	1845	1568	3400	3505	1568	3400	3505	1568	3400	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	1845	1568	3400	3505	1568	3400	3505	1568	3400	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	343	69	251	67	95	111	612	1617	185	261	1725	294
RTOR Reduction (vph)	0	0	191	0	0	103	0	0	45	0	0	68
Lane Group Flow (vph)	343	69	60	67	95	8	612	1617	140	261	1725	226
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	26.0	31.3	31.3	4.8	10.1	10.1	24.0	78.3	78.3	13.7	68.0	68.0
Effective Green, g (s)	26.0	31.3	31.3	4.8	10.1	10.1	24.0	78.3	78.3	13.7	68.0	68.0
Actuated g/C Ratio	0.18	0.22	0.22	0.03	0.07	0.07	0.17	0.54	0.54	0.10	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	316	400	340	113	245	109	566	1904	852	323	1653	739
v/s Ratio Prot	c0.20	0.04		0.02	c0.03		c0.18	0.46		0.08	c0.49	
v/s Ratio Perm			0.04			0.00			0.09			0.14
v/c Ratio	1.09	0.17	0.18	0.59	0.39	0.07	1.08	0.85	0.16	0.81	1.04	0.31
Uniform Delay, d1	59.0	45.9	45.9	68.7	64.0	62.6	60.0	27.9	16.5	63.9	38.0	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	75.4	0.2	0.2	8.1	1.0	0.3	61.7	3.8	0.1	13.8	34.4	0.2
Delay (s)	134.4	46.1	46.2	76.8	65.1	62.9	121.7	31.7	16.6	77.7	72.5	23.7
Level of Service	F	D	D	E	E	E	F	C	B	E	E	C
Approach Delay (s)		91.8			67.1			53.3			66.8	
Approach LOS		F			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	64.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	144.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		

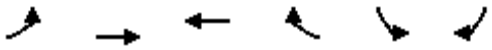
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	461	839	1305	361	29	136
Future Volume (vph)	461	839	1305	361	29	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	3391		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	3391		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	461	839	1305	361	29	136
RTOR Reduction (vph)	0	0	27	0	0	122
Lane Group Flow (vph)	461	839	1639	0	29	14
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	12.0	55.0	39.0		7.1	7.1
Effective Green, g (s)	12.0	55.0	39.0		7.1	7.1
Actuated g/C Ratio	0.17	0.78	0.56		0.10	0.10
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	582	2750	1886		177	158
v/s Ratio Prot	c0.14	0.24	c0.48		c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.79	0.31	0.87		0.16	0.09
Uniform Delay, d1	27.9	2.1	13.4		28.8	28.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.3	0.1	4.6		0.4	0.2
Delay (s)	35.1	2.2	17.9		29.2	28.8
Level of Service	D	A	B		C	C
Approach Delay (s)		13.9	17.9		28.9	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	158	896	1498	893	315	81
Future Volume (vph)	158	896	1498	893	315	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	158	896	1498	893	315	81
RTOR Reduction (vph)	0	0	0	441	0	62
Lane Group Flow (vph)	158	896	1498	452	315	19
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.0	40.1	29.1	29.1	14.9	14.9
Effective Green, g (s)	7.0	40.1	29.1	29.1	14.9	14.9
Actuated g/C Ratio	0.11	0.64	0.46	0.46	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	194	2230	1618	724	414	370
v/s Ratio Prot	c0.09	0.26	c0.43		c0.18	
v/s Ratio Perm				0.29		0.01
v/c Ratio	0.81	0.40	0.93	0.62	0.76	0.05
Uniform Delay, d1	27.4	5.6	15.9	12.8	22.4	18.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.4	0.1	9.4	1.7	8.0	0.1
Delay (s)	49.7	5.7	25.4	14.5	30.4	18.6
Level of Service	D	A	C	B	C	B
Approach Delay (s)		12.3	21.3		28.0	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

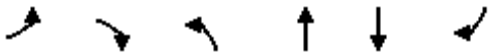
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2694	24	19	2522	91	63
Future Volume (vph)	2694	24	19	2522	91	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3500		1752	3505	1752	1568
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3500		1752	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2694	24	19	2522	91	63
RTOR Reduction (vph)	0	0	0	0	0	57
Lane Group Flow (vph)	2718	0	19	2522	91	6
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	115.4		3.4	122.8	12.5	12.5
Effective Green, g (s)	115.4		3.4	122.8	12.5	12.5
Actuated g/C Ratio	0.81		0.02	0.86	0.09	0.09
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2818		41	3003	152	136
v/s Ratio Prot	c0.78		0.01	c0.72	c0.05	
v/s Ratio Perm						0.00
v/c Ratio	0.96		0.46	0.84	0.60	0.05
Uniform Delay, d1	12.2		69.0	5.2	63.0	59.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	10.0		8.1	2.2	6.2	0.1
Delay (s)	22.1		77.1	7.5	69.2	60.1
Level of Service	C		E	A	E	E
Approach Delay (s)	22.1			8.0	65.5	
Approach LOS	C			A	E	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	143.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	37	66	1891	1588	88
Future Volume (vph)	33	37	66	1891	1588	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	1845	3477	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	1845	3477	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	33	37	66	1891	1588	88
RTOR Reduction (vph)	0	35	0	0	2	0
Lane Group Flow (vph)	33	2	66	1891	1674	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	6.9	6.9	8.6	128.1	115.5	
Effective Green, g (s)	6.9	6.9	8.6	128.1	115.5	
Actuated g/C Ratio	0.05	0.05	0.06	0.90	0.81	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	84	75	105	1652	2808	
v/s Ratio Prot	c0.02		0.04	c1.03	0.48	
v/s Ratio Perm		0.00				
v/c Ratio	0.39	0.02	0.63	1.14	0.60	
Uniform Delay, d1	66.0	64.8	65.6	7.5	5.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.0	0.1	11.2	72.8	0.3	
Delay (s)	69.0	65.0	76.8	80.3	5.4	
Level of Service	E	E	E	F	A	
Approach Delay (s)	66.9			80.1	5.4	
Approach LOS	E			F	A	

Intersection Summary			
HCM 2000 Control Delay	46.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	143.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	109.5%	ICU Level of Service	H
Analysis Period (min)	15		

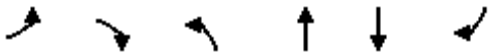
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	38	452	2265	36	151	2089
Future Volume (vph)	38	452	2265	36	151	2089
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.91		0.97	0.91
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	5024		3400	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	5024		3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	452	2265	36	151	2089
RTOR Reduction (vph)	0	204	2	0	0	0
Lane Group Flow (vph)	38	248	2299	0	151	2089
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	14.0	14.0	42.0		8.8	54.8
Effective Green, g (s)	14.0	14.0	42.0		8.8	54.8
Actuated g/C Ratio	0.18	0.18	0.55		0.11	0.71
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	319	285	2747		389	3593
v/s Ratio Prot	0.02		c0.46		0.04	c0.41
v/s Ratio Perm		c0.16				
v/c Ratio	0.12	0.87	0.84		0.39	0.58
Uniform Delay, d1	26.2	30.5	14.5		31.5	5.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	24.0	2.4		0.6	0.2
Delay (s)	26.4	54.5	16.9		32.1	5.6
Level of Service	C	D	B		C	A
Approach Delay (s)	52.3		16.9			7.4
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	540	12	224	1446	858	607
Future Volume (vph)	540	12	224	1446	858	607
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.94	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3287	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3287	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	540	12	224	1446	858	607
RTOR Reduction (vph)	0	4	0	0	160	0
Lane Group Flow (vph)	540	8	224	1446	1305	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	24.0	24.0	11.0	48.0	33.0	
Effective Green, g (s)	24.0	24.0	11.0	48.0	33.0	
Actuated g/C Ratio	0.30	0.30	0.14	0.60	0.41	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	525	470	240	2103	1355	
v/s Ratio Prot	c0.31		c0.13	0.41	c0.40	
v/s Ratio Perm		0.00				
v/c Ratio	1.03	0.02	0.93	0.69	0.96	
Uniform Delay, d1	28.0	19.7	34.1	10.9	22.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	46.8	0.0	40.0	1.0	16.4	
Delay (s)	74.8	19.7	74.1	11.8	39.3	
Level of Service	E	B	E	B	D	
Approach Delay (s)	73.6			20.2	39.3	
Approach LOS	E			C	D	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	103	3033	16	169	1293
Future Volume (vph)	0	103	3033	16	169	1293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.91		1.00	0.91
Frt		0.85	1.00		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1568	5032		1752	5036
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1568	5032		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	103	3033	16	169	1293
RTOR Reduction (vph)	0	97	0	0	0	0
Lane Group Flow (vph)	0	6	3049	0	169	1293
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		6		5	2
Permitted Phases		8				
Actuated Green, G (s)		4.7	56.0		9.0	69.0
Effective Green, g (s)		4.7	56.0		9.0	69.0
Actuated g/C Ratio		0.06	0.69		0.11	0.84
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		90	3449		192	4253
v/s Ratio Prot			c0.61		c0.10	0.26
v/s Ratio Perm		c0.00				
v/c Ratio		0.07	0.88		0.88	0.30
Uniform Delay, d1		36.4	10.3		35.8	1.3
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	3.0		34.1	0.0
Delay (s)		36.7	13.3		69.9	1.4
Level of Service		D	B		E	A
Approach Delay (s)	36.7		13.3			9.3
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	63	0	3015	146	84	1582
Future Volume (vph)	63	0	3015	146	84	1582
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.91		1.00	0.91
Frt	1.00		0.99		1.00	1.00
Flt Protected	0.95		1.00		0.95	1.00
Satd. Flow (prot)	1752		5001		1752	5036
Flt Permitted	0.95		1.00		0.95	1.00
Satd. Flow (perm)	1752		5001		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	63	0	3015	146	84	1582
RTOR Reduction (vph)	0	0	4	0	0	0
Lane Group Flow (vph)	63	0	3157	0	84	1582
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	7.4		64.2		5.0	73.2
Effective Green, g (s)	7.4		64.2		5.0	73.2
Actuated g/C Ratio	0.08		0.72		0.06	0.83
Clearance Time (s)	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	146		3623		98	4160
v/s Ratio Prot	c0.04		c0.63		c0.05	0.31
v/s Ratio Perm						
v/c Ratio	0.43		0.87		0.86	0.38
Uniform Delay, d1	38.6		9.1		41.4	2.0
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	2.0		2.6		48.0	0.1
Delay (s)	40.6		11.7		89.4	2.0
Level of Service	D		B		F	A
Approach Delay (s)	40.6		11.7			6.4
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

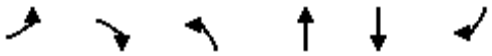
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	356	423	2840	459	697	733
Future Volume (vph)	356	423	2840	459	697	733
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	4931		1752	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	4931		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	356	423	2840	459	697	733
RTOR Reduction (vph)	0	114	15	0	0	0
Lane Group Flow (vph)	356	309	3284	0	697	733
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3				
Actuated Green, G (s)	22.0	22.0	73.0		43.0	120.0
Effective Green, g (s)	22.0	22.0	73.0		43.0	120.0
Actuated g/C Ratio	0.15	0.15	0.49		0.29	0.80
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	256	229	2399		502	4028
v/s Ratio Prot	c0.20		c0.67		c0.40	0.15
v/s Ratio Perm		0.20				
v/c Ratio	1.39	1.35	1.37		1.39	0.18
Uniform Delay, d1	64.0	64.0	38.5		53.5	3.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	198.0	182.6	168.8		186.8	0.0
Delay (s)	262.0	246.6	207.3		240.3	3.5
Level of Service	F	F	F		F	A
Approach Delay (s)	253.7		207.3			118.9
Approach LOS	F		F			F

Intersection Summary			
HCM 2000 Control Delay	190.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	133.4%	ICU Level of Service	H
Analysis Period (min)	15		

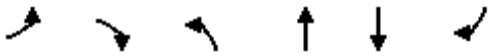
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	118	104	83	2976	915	82
Future Volume (vph)	118	104	83	2976	915	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	5036	4974	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	5036	4974	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	118	104	83	2976	915	82
RTOR Reduction (vph)	0	90	0	0	13	0
Lane Group Flow (vph)	118	14	83	2976	984	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	7.9	7.9	4.3	43.0	34.7	
Effective Green, g (s)	7.9	7.9	4.3	43.0	34.7	
Actuated g/C Ratio	0.13	0.13	0.07	0.73	0.59	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	234	210	127	3676	2930	
v/s Ratio Prot	c0.07		0.05	c0.59	0.20	
v/s Ratio Perm		0.01				
v/c Ratio	0.50	0.07	0.65	0.81	0.34	
Uniform Delay, d1	23.7	22.3	26.6	5.2	6.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.1	11.5	1.4	0.1	
Delay (s)	25.4	22.4	38.0	6.6	6.3	
Level of Service	C	C	D	A	A	
Approach Delay (s)	24.0			7.5	6.3	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

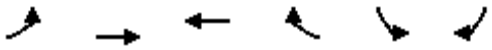
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	127	203	617	1701	1253	346
Future Volume (vph)	127	203	617	1701	1253	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3391	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3391	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	127	203	617	1701	1253	346
RTOR Reduction (vph)	0	166	0	0	18	0
Lane Group Flow (vph)	127	37	617	1701	1581	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	13.6	13.6	49.0	117.0	64.0	
Effective Green, g (s)	13.6	13.6	49.0	117.0	64.0	
Actuated g/C Ratio	0.10	0.10	0.35	0.84	0.46	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	171	153	619	2958	1565	
v/s Ratio Prot	c0.07		c0.35	0.49	c0.47	
v/s Ratio Perm		0.02				
v/c Ratio	0.74	0.24	1.00	0.58	1.01	
Uniform Delay, d1	60.8	57.7	44.7	3.3	37.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.9	0.8	35.1	0.3	25.3	
Delay (s)	76.7	58.6	79.8	3.5	62.6	
Level of Service	E	E	E	A	E	
Approach Delay (s)	65.6			23.8	62.6	
Approach LOS	E			C	E	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	138.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

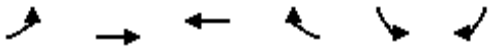
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	996	1289	2654	95	78	589
Future Volume (vph)	996	1289	2654	95	78	589
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	5010		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	5010		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	996	1289	2654	95	78	589
RTOR Reduction (vph)	0	0	3	0	0	314
Lane Group Flow (vph)	996	1289	2746	0	78	275
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	39.0	117.0	74.0		25.0	25.0
Effective Green, g (s)	39.0	117.0	74.0		25.0	25.0
Actuated g/C Ratio	0.26	0.78	0.49		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	884	2733	2471		292	261
v/s Ratio Prot	c0.29	0.37	c0.55		0.04	
v/s Ratio Perm						c0.18
v/c Ratio	1.13	0.47	1.11		0.27	1.05
Uniform Delay, d1	55.5	5.7	38.0		54.5	62.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	71.5	0.1	56.6		0.5	70.3
Delay (s)	127.0	5.9	94.6		55.0	132.8
Level of Service	F	A	F		E	F
Approach Delay (s)		58.7	94.6		123.7	
Approach LOS		E	F		F	

Intersection Summary			
HCM 2000 Control Delay	83.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		

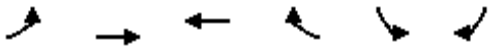
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	371	997	2520	31	179	208
Future Volume (vph)	371	997	2520	31	179	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	3505	3505	1568	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	3505	3505	1568	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	371	997	2520	31	179	208
RTOR Reduction (vph)	0	0	0	5	0	129
Lane Group Flow (vph)	371	997	2520	26	179	79
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	15.0	127.0	108.0	108.0	12.8	12.8
Effective Green, g (s)	15.0	127.0	108.0	108.0	12.8	12.8
Actuated g/C Ratio	0.10	0.86	0.73	0.73	0.09	0.09
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	345	3011	2561	1145	294	135
v/s Ratio Prot	c0.11	0.28	c0.72		c0.05	
v/s Ratio Perm				0.02		0.05
v/c Ratio	1.08	0.33	0.98	0.02	0.61	0.59
Uniform Delay, d1	66.4	2.0	19.1	5.4	65.1	65.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	70.0	0.1	14.1	0.0	3.5	6.4
Delay (s)	136.4	2.1	33.2	5.5	68.6	71.3
Level of Service	F	A	C	A	E	E
Approach Delay (s)		38.5	32.9		70.1	
Approach LOS		D	C		E	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	147.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	89	1085	2296	3	6	139
Future Volume (vph)	89	1085	2296	3	6	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3504		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3504		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	89	1085	2296	3	6	139
RTOR Reduction (vph)	0	0	0	0	0	82
Lane Group Flow (vph)	89	1085	2299	0	6	57
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	6.0	84.7	74.7		9.3	9.3
Effective Green, g (s)	6.0	84.7	74.7		9.3	9.3
Actuated g/C Ratio	0.06	0.83	0.73		0.09	0.09
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	103	2910	2566		159	142
v/s Ratio Prot	c0.05	0.31	c0.66		0.00	
v/s Ratio Perm						c0.04
v/c Ratio	0.86	0.37	0.90		0.04	0.40
Uniform Delay, d1	47.6	2.1	10.6		42.3	43.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	48.2	0.1	4.5		0.1	1.9
Delay (s)	95.8	2.2	15.2		42.4	45.6
Level of Service	F	A	B		D	D
Approach Delay (s)		9.3	15.2		45.5	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	807	166	325	1257	189	454
Future Volume (vph)	807	166	325	1257	189	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	3400	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	807	166	325	1257	189	454
RTOR Reduction (vph)	0	108	0	0	0	284
Lane Group Flow (vph)	807	58	325	1257	189	170
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	16.3	16.3	7.9	28.2	10.1	10.1
Effective Green, g (s)	16.3	16.3	7.9	28.2	10.1	10.1
Actuated g/C Ratio	0.35	0.35	0.17	0.61	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1233	552	580	2134	741	342
v/s Ratio Prot	0.23		0.10	c0.36	0.06	
v/s Ratio Perm		0.04				c0.11
v/c Ratio	0.65	0.11	0.56	0.59	0.26	0.50
Uniform Delay, d1	12.6	10.1	17.6	5.5	15.0	15.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	1.2	0.4	0.2	1.1
Delay (s)	13.9	10.2	18.8	5.9	15.2	17.0
Level of Service	B	B	B	A	B	B
Approach Delay (s)	13.3			8.6	16.5	
Approach LOS	B			A	B	

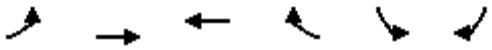
Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1261	0	310	1581	0	123
Future Volume (vph)	1261	0	310	1581	0	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.95		1.00	0.95		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	3505		1752	3505		1568
Flt Permitted	1.00		0.21	1.00		1.00
Satd. Flow (perm)	3505		382	3505		1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1261	0	310	1581	0	123
RTOR Reduction (vph)	0	0	0	0	0	113
Lane Group Flow (vph)	1261	0	310	1581	0	10
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Actuated Green, G (s)	76.0		76.0	76.0		7.0
Effective Green, g (s)	76.0		76.0	76.0		7.0
Actuated g/C Ratio	0.84		0.84	0.84		0.08
Clearance Time (s)	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2927		319	2927		120
v/s Ratio Prot	0.36			0.45		
v/s Ratio Perm			c0.81			c0.01
v/c Ratio	0.43		0.97	0.54		0.09
Uniform Delay, d1	1.9		6.6	2.3		39.0
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		42.5	0.2		0.3
Delay (s)	2.0		49.1	2.5		39.3
Level of Service	A		D	A		D
Approach Delay (s)	2.0			10.1	39.3	
Approach LOS	A			B	D	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	180	919	2179	42	215	167
Future Volume (vph)	180	919	2179	42	215	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3495		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3495		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	180	919	2179	42	215	167
RTOR Reduction (vph)	0	0	1	0	0	123
Lane Group Flow (vph)	180	919	2220	0	215	44
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	10.0	86.0	72.0		15.5	15.5
Effective Green, g (s)	10.0	86.0	72.0		15.5	15.5
Actuated g/C Ratio	0.09	0.79	0.66		0.14	0.14
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	160	2752	2298		248	221
v/s Ratio Prot	c0.10	0.26	c0.64		c0.12	
v/s Ratio Perm						0.03
v/c Ratio	1.12	0.33	0.97		0.87	0.20
Uniform Delay, d1	49.8	3.4	17.6		46.0	41.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	108.7	0.1	11.8		25.7	0.4
Delay (s)	158.4	3.5	29.4		71.7	42.0
Level of Service	F	A	C		E	D
Approach Delay (s)		28.9	29.4		58.7	
Approach LOS		C	C		E	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	109.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	651	170	180	813	860	239	1794	159	468	811	72
Future Volume (veh/h)	53	651	170	180	813	860	239	1794	159	468	811	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	53	651	170	180	813	860	239	1794	159	468	811	72
Adj No. of Lanes	1	2	0	1	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	78	741	193	204	625	531	265	1448	128	331	1737	541
Arrive On Green	0.04	0.27	0.27	0.12	0.34	0.34	0.15	0.31	0.31	0.19	0.35	0.35
Sat Flow, veh/h	1757	2752	718	1740	1827	1553	1740	4667	412	1740	4988	1553
Grp Volume(v), veh/h	53	414	407	180	813	860	239	1276	677	468	811	72
Grp Sat Flow(s),veh/h/ln	1757	1752	1718	1740	1827	1553	1740	1663	1754	1740	1663	1553
Q Serve(g_s), s	4.2	32.1	32.1	14.4	48.5	30.3	19.1	44.0	44.0	27.0	17.9	4.5
Cycle Q Clear(g_c), s	4.2	32.1	32.1	14.4	48.5	30.3	19.1	44.0	44.0	27.0	17.9	4.5
Prop In Lane	1.00		0.42	1.00		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	78	472	463	204	625	531	265	1032	544	331	1737	541
V/C Ratio(X)	0.68	0.88	0.88	0.88	1.30	1.62	0.90	1.24	1.24	1.41	0.47	0.13
Avail Cap(c_a), veh/h	198	531	521	245	625	531	380	1032	544	331	1737	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.8	49.6	49.6	61.6	46.6	18.2	59.0	48.9	48.9	57.4	36.0	31.6
Incr Delay (d2), s/veh	10.0	14.2	14.6	26.1	146.7	286.9	18.3	115.1	124.1	202.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	17.4	17.1	8.4	49.8	55.2	10.6	36.6	39.9	31.5	8.3	1.9
LnGrp Delay(d),s/veh	76.8	63.8	64.2	87.7	193.4	305.1	77.3	164.0	173.0	260.0	36.2	31.7
LnGrp LOS	E	E	E	F	F	F	E	F	F	F	D	C
Approach Vol, veh/h		874			1853			2192			1351	
Approach Delay, s/veh		64.8			235.0			157.3			113.5	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	48.0	20.6	42.2	25.6	53.4	10.3	52.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	27.0	44.0	20.0	43.0	31.0	40.0	16.0	47.0
Max Q Clear Time (g_c+I1), s	29.0	46.0	16.4	34.1	21.1	19.9	6.2	50.5
Green Ext Time (p_c), s	0.0	0.0	0.2	4.0	0.5	7.7	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	157.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	376	687	25	23	605	602	71	1392	85	287	502	208
Future Volume (veh/h)	376	687	25	23	605	602	71	1392	85	287	502	208
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	376	687	25	23	605	602	71	1392	85	287	502	208
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	340	1415	51	29	818	366	109	1308	80	248	1507	674
Arrive On Green	0.19	0.41	0.41	0.02	0.23	0.23	0.03	0.39	0.39	0.07	0.43	0.43
Sat Flow, veh/h	1757	3449	125	1757	3505	1568	3375	3324	202	3375	3471	1553
Grp Volume(v), veh/h	376	349	363	23	605	602	71	725	752	287	502	208
Grp Sat Flow(s),veh/h/ln	1757	1752	1823	1757	1752	1568	1688	1736	1791	1688	1736	1553
Q Serve(g_s), s	29.0	22.0	22.0	2.0	24.0	35.0	3.1	59.0	59.0	11.0	14.3	13.1
Cycle Q Clear(g_c), s	29.0	22.0	22.0	2.0	24.0	35.0	3.1	59.0	59.0	11.0	14.3	13.1
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	340	719	748	29	818	366	109	683	705	248	1507	674
V/C Ratio(X)	1.11	0.49	0.49	0.80	0.74	1.65	0.65	1.06	1.07	1.16	0.33	0.31
Avail Cap(c_a), veh/h	340	719	748	70	818	366	135	683	705	248	1507	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.5	32.6	32.6	73.5	53.3	57.5	71.7	45.5	45.5	69.5	28.1	27.7
Incr Delay (d2), s/veh	80.8	0.5	0.5	37.4	3.6	302.5	7.4	52.1	53.4	107.2	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.7	10.8	11.2	1.3	12.0	45.9	1.6	38.1	39.6	8.8	6.9	5.6
LnGrp Delay(d),s/veh	141.3	33.1	33.1	110.9	56.9	360.0	79.2	97.6	98.9	176.7	28.2	28.0
LnGrp LOS	F	C	C	F	E	F	E	F	F	F	C	C
Approach Vol, veh/h		1088			1230			1548			997	
Approach Delay, s/veh		70.5			206.2			97.3			70.9	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	63.0	6.5	65.5	8.9	69.1	33.0	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	59.0	6.0	58.0	6.0	64.0	29.0	35.0
Max Q Clear Time (g_c+I1), s	13.0	61.0	4.0	24.0	5.1	16.3	31.0	37.0
Green Ext Time (p_c), s	0.0	0.0	0.0	15.1	0.0	25.3	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		113.5
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1397	107	260	1572	145	62	622	181	74	497	3
Future Volume (veh/h)	11	1397	107	260	1572	145	62	622	181	74	497	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	11	1397	107	260	1572	145	62	622	181	74	497	3
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	18	1369	613	286	1764	161	79	694	310	95	738	4
Arrive On Green	0.01	0.40	0.40	0.17	0.56	0.56	0.05	0.20	0.20	0.05	0.21	0.21
Sat Flow, veh/h	1707	3406	1524	1707	3156	288	1757	3505	1568	1757	3572	22
Grp Volume(v), veh/h	11	1397	107	260	842	875	62	622	181	74	244	256
Grp Sat Flow(s),veh/h/ln	1707	1703	1524	1707	1703	1742	1757	1752	1568	1757	1752	1841
Q Serve(g_s), s	0.6	36.0	4.0	13.4	38.6	39.9	3.1	15.5	9.4	3.7	11.5	11.5
Cycle Q Clear(g_c), s	0.6	36.0	4.0	13.4	38.6	39.9	3.1	15.5	9.4	3.7	11.5	11.5
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	18	1369	613	286	952	973	79	694	310	95	362	380
V/C Ratio(X)	0.60	1.02	0.17	0.91	0.88	0.90	0.78	0.90	0.58	0.78	0.67	0.67
Avail Cap(c_a), veh/h	76	1369	613	286	952	973	118	705	315	98	362	380
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	26.8	17.2	36.6	17.2	17.5	42.3	35.0	32.6	41.8	32.7	32.7
Incr Delay (d2), s/veh	27.9	29.5	0.1	30.8	9.9	11.2	17.9	14.1	2.7	31.9	4.8	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	22.4	1.7	8.7	20.6	22.0	1.9	8.9	4.3	2.6	6.0	6.3
LnGrp Delay(d),s/veh	72.0	56.3	17.4	67.4	27.2	28.7	60.2	49.1	35.2	73.7	37.6	37.4
LnGrp LOS	E	F	B	E	C	C	E	D	D	E	D	D
Approach Vol, veh/h		1515			1977			865			574	
Approach Delay, s/veh		53.7			33.1			47.0			42.1	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	21.7	19.0	40.0	8.0	22.5	5.0	54.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	18.0	15.0	36.0	6.0	17.0	4.0	47.0
Max Q Clear Time (g_c+I1), s	5.7	17.5	15.4	38.0	5.1	13.5	2.6	41.9
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	2.3	0.0	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	608	264	124	975	125	439	431	103	23	455	33
Future Volume (veh/h)	39	608	264	124	975	125	439	431	103	23	455	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	39	608	264	124	975	125	439	431	103	23	455	33
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	50	978	437	156	1060	136	475	1480	662	35	602	269
Arrive On Green	0.03	0.28	0.28	0.09	0.34	0.34	0.27	0.42	0.42	0.02	0.17	0.17
Sat Flow, veh/h	1757	3505	1568	1757	3126	401	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	39	608	264	124	546	554	439	431	103	23	455	33
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1774	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	1.9	12.7	12.3	5.8	25.1	25.2	20.4	6.8	3.4	1.1	10.4	1.5
Cycle Q Clear(g_c), s	1.9	12.7	12.3	5.8	25.1	25.2	20.4	6.8	3.4	1.1	10.4	1.5
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	50	978	437	156	594	601	475	1480	662	35	602	269
V/C Ratio(X)	0.78	0.62	0.60	0.80	0.92	0.92	0.92	0.29	0.16	0.66	0.76	0.12
Avail Cap(c_a), veh/h	84	978	437	209	605	613	502	1480	662	126	710	318
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	26.4	26.2	37.5	26.6	26.7	29.8	16.0	15.0	40.9	33.1	29.4
Incr Delay (d2), s/veh	22.5	1.2	2.3	14.2	19.2	19.1	22.5	0.1	0.1	19.4	3.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.3	5.6	3.4	15.3	15.5	12.8	3.3	1.5	0.7	5.3	0.7
LnGrp Delay(d),s/veh	63.0	27.6	28.6	51.7	45.9	45.8	52.3	16.1	15.1	60.3	37.0	29.6
LnGrp LOS	E	C	C	D	D	D	D	B	B	E	D	C
Approach Vol, veh/h		911			1224			973			511	
Approach Delay, s/veh		29.4			46.4			32.3			37.6	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	39.4	11.4	27.4	26.7	18.4	6.4	32.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	35.0	10.0	23.0	24.0	17.0	4.0	29.0
Max Q Clear Time (g_c+I1), s	3.1	8.8	7.8	14.7	22.4	12.4	3.9	27.2
Green Ext Time (p_c), s	0.0	7.1	0.1	6.4	0.3	2.0	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	719	87	121	839	239	59	855	208	152	317	22
Future Volume (veh/h)	90	719	87	121	839	239	59	855	208	152	317	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	90	719	87	121	839	239	59	855	208	152	317	22
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	114	926	414	149	995	445	74	977	437	178	1186	531
Arrive On Green	0.07	0.26	0.26	0.08	0.28	0.28	0.04	0.28	0.28	0.10	0.34	0.34
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	90	719	87	121	839	239	59	855	208	152	317	22
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	3.0	11.2	2.6	4.0	13.3	7.6	2.0	13.8	6.5	5.0	3.9	0.6
Cycle Q Clear(g_c), s	3.0	11.2	2.6	4.0	13.3	7.6	2.0	13.8	6.5	5.0	3.9	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	114	926	414	149	995	445	74	977	437	178	1186	531
V/C Ratio(X)	0.79	0.78	0.21	0.81	0.84	0.54	0.80	0.87	0.48	0.85	0.27	0.04
Avail Cap(c_a), veh/h	119	949	425	149	1008	451	178	1008	451	178	1186	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	20.1	16.9	26.6	19.9	17.9	28.1	20.3	17.7	26.1	14.2	13.1
Incr Delay (d2), s/veh	27.9	4.0	0.2	28.1	6.6	1.2	17.6	8.5	0.8	30.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	5.9	1.1	3.1	7.3	3.4	1.3	7.8	2.9	4.0	1.9	0.2
LnGrp Delay(d),s/veh	55.1	24.1	17.2	54.7	26.5	19.1	45.7	28.8	18.5	56.7	14.3	13.1
LnGrp LOS	E	C	B	D	C	B	D	C	B	E	B	B
Approach Vol, veh/h		896			1199			1122			491	
Approach Delay, s/veh		26.6			27.9			27.8			27.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	20.5	9.0	19.6	6.5	24.0	7.8	20.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	17.0	5.0	16.0	6.0	17.0	4.0	17.0
Max Q Clear Time (g_c+I1), s	7.0	15.8	6.0	13.2	4.0	5.9	5.0	15.3
Green Ext Time (p_c), s	0.0	0.7	0.0	2.3	0.0	6.4	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	27.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	491	132	253	482	724	72	3426	490	574	2962	531
Future Volume (veh/h)	347	491	132	253	482	724	72	3426	490	574	2962	531
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	347	491	132	253	482	724	72	3426	490	574	2962	531
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	192	885	396	192	885	547	78	2290	713	325	2654	826
Arrive On Green	0.06	0.25	0.25	0.06	0.25	0.25	0.02	0.46	0.46	0.10	0.53	0.53
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	347	491	132	253	482	724	72	3426	490	574	2962	531
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.5	18.3	10.3	8.5	17.9	38.0	3.2	69.1	37.5	14.5	80.1	36.6
Cycle Q Clear(g_c), s	8.5	18.3	10.3	8.5	17.9	38.0	3.2	69.1	37.5	14.5	80.1	36.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	885	396	192	885	547	78	2290	713	325	2654	826
V/C Ratio(X)	1.80	0.55	0.33	1.31	0.54	1.32	0.92	1.50	0.69	1.77	1.12	0.64
Avail Cap(c_a), veh/h	192	885	396	192	885	547	78	2290	713	325	2654	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	48.9	45.9	71.0	48.8	49.0	73.4	40.7	32.2	68.0	35.2	25.0
Incr Delay (d2), s/veh	381.1	0.5	0.2	173.4	0.4	158.1	72.9	225.6	2.3	356.6	58.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	8.9	4.5	8.6	8.8	46.7	2.3	79.4	16.6	22.8	50.9	16.0
LnGrp Delay(d),s/veh	452.1	49.4	46.1	244.4	49.1	207.1	146.2	266.3	34.5	424.6	93.2	26.3
LnGrp LOS	F	D	D	F	D	F	F	F	C	F	F	C
Approach Vol, veh/h		970			1459			3988			4067	
Approach Delay, s/veh		193.0			161.4			235.6			131.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	84.9	14.0	42.6	20.0	73.9	14.0	42.6
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	3.5	79.9	8.5	* 38	14.5	* 69	8.5	37.7
Max Q Clear Time (g_c+I1), s	5.2	82.1	10.5	40.0	16.5	71.1	10.5	20.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1

Intersection Summary		
HCM 2010 Ctrl Delay		180.9
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	2	27	0	87	0	3397	150	18	2712	6
Future Volume (veh/h)	10	0	2	27	0	87	0	3397	150	18	2712	6
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	10	0	2	27	0	87	0	3397	150	18	2712	6
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	12	0	2	79	0	141	2	3675	1144	21	4093	9
Arrive On Green	0.01	0.00	0.01	0.04	0.00	0.04	0.00	0.74	0.74	0.01	0.80	0.80
Sat Flow, veh/h	1435	0	287	1757	0	3136	1740	4988	1553	1740	5139	11
Grp Volume(v), veh/h	12	0	0	27	0	87	0	3397	150	18	1754	964
Grp Sat Flow(s),veh/h/ln	1722	0	0	1757	0	1568	1740	1663	1553	1740	1663	1825
Q Serve(g_s), s	0.7	0.0	0.0	1.6	0.0	2.9	0.0	59.9	3.0	1.1	24.2	24.3
Cycle Q Clear(g_c), s	0.7	0.0	0.0	1.6	0.0	2.9	0.0	59.9	3.0	1.1	24.2	24.3
Prop In Lane	0.83		0.17	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	14	0	0	79	0	141	2	3675	1144	21	2649	1454
V/C Ratio(X)	0.83	0.00	0.00	0.34	0.00	0.62	0.00	0.92	0.13	0.86	0.66	0.66
Avail Cap(c_a), veh/h	48	0	0	198	0	353	49	3795	1182	49	2649	1454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	0.0	49.4	0.0	50.0	0.0	11.6	4.1	52.6	4.7	4.7
Incr Delay (d2), s/veh	33.4	0.0	0.0	1.0	0.0	1.6	0.0	4.9	0.2	29.1	1.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.8	0.0	1.3	0.0	28.4	1.3	0.7	11.1	12.6
LnGrp Delay(d),s/veh	86.1	0.0	0.0	50.3	0.0	51.7	0.0	16.5	4.3	81.6	5.7	6.6
LnGrp LOS	F			D		D		B	A	F	A	A
Approach Vol, veh/h		12			114			3547			2736	
Approach Delay, s/veh		86.1			51.3			16.0			6.5	
Approach LOS		F			D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	89.9		6.4	6.4	83.5		10.3
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 3	81.4		3.0	* 3	* 81		12.0
Max Q Clear Time (g_c+I1), s	0.0	26.3		2.7	3.1	61.9		4.9
Green Ext Time (p_c), s	0.0	54.9		0.0	0.0	16.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	308	23	151	409	890	34	2803	226	507	2340	0
Future Volume (veh/h)	0	308	23	151	409	890	34	2803	226	507	2340	0
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	0	308	23	151	409	890	34	2803	226	507	2340	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	500	224	132	777	597	60	2371	186	536	3212	0
Arrive On Green	0.00	0.14	0.14	0.04	0.22	0.22	0.02	0.50	0.50	0.16	0.64	0.00
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4716	371	3375	5152	0
Grp Volume(v), veh/h	0	308	23	151	409	890	34	1955	1074	507	2340	0
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1762	1688	1663	0
Q Serve(g_s), s	0.0	11.8	1.8	5.5	14.6	31.4	1.4	71.2	71.2	21.1	44.6	0.0
Cycle Q Clear(g_c), s	0.0	11.8	1.8	5.5	14.6	31.4	1.4	71.2	71.2	21.1	44.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.00
Lane Grp Cap(c), veh/h	2	500	224	132	777	597	60	1672	886	536	3212	0
V/C Ratio(X)	0.00	0.62	0.10	1.14	0.53	1.49	0.57	1.17	1.21	0.95	0.73	0.00
Avail Cap(c_a), veh/h	72	711	318	132	777	597	100	1672	886	536	3212	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	56.9	52.6	68.1	48.5	43.9	69.0	35.2	35.2	58.9	16.9	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.1	121.0	0.3	229.8	3.1	83.0	106.2	25.6	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.7	0.8	4.8	7.1	61.4	0.7	51.8	60.6	11.8	20.6	0.0
LnGrp Delay(d),s/veh	0.0	57.4	52.7	189.0	48.9	273.7	72.1	118.2	141.4	84.5	17.7	0.0
LnGrp LOS		E	D	F	D	F	E	F	F	F	B	
Approach Vol, veh/h		331			1450			3063			2847	
Approach Delay, s/veh		57.1			201.5			125.8			29.6	
Approach LOS		E			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	96.5	0.0	37.1	28.0	76.5	11.0	26.1
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	4.2	89.4	3.0	* 31	22.5	* 71	5.5	* 29
Max Q Clear Time (g_c+I1), s	3.4	46.6	0.0	33.4	23.1	73.2	7.5	13.8
Green Ext Time (p_c), s	0.0	36.1	0.0	0.0	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	101.5
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	46	103	2891	24	61	2503
Future Volume (veh/h)	46	103	2891	24	61	2503
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	46	103	2891	24	61	2503
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	103	92	3585	30	77	2804
Arrive On Green	0.06	0.06	0.70	0.70	0.04	0.81
Sat Flow, veh/h	1757	1568	5267	42	1740	3563
Grp Volume(v), veh/h	46	103	1881	1034	61	2503
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1819	1740	1736
Q Serve(g_s), s	2.0	4.5	29.9	30.1	2.7	38.3
Cycle Q Clear(g_c), s	2.0	4.5	29.9	30.1	2.7	38.3
Prop In Lane	1.00	1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	103	92	2336	1278	77	2804
V/C Ratio(X)	0.45	1.12	0.81	0.81	0.79	0.89
Avail Cap(c_a), veh/h	103	92	2336	1278	361	2937
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	36.3	7.9	7.9	36.5	5.1
Incr Delay (d2), s/veh	1.1	131.7	2.0	3.7	6.6	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.3	14.0	16.0	1.4	18.8
LnGrp Delay(d),s/veh	36.2	168.0	9.9	11.6	43.0	8.7
LnGrp LOS	D	F	A	B	D	A
Approach Vol, veh/h	149		2915			2564
Approach Delay, s/veh	127.3		10.5			9.5
Approach LOS	F		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		67.0			8.1	58.9		10.0
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		65.2			* 16	53.4		4.5
Max Q Clear Time (g_c+I1), s		40.3			4.7	32.1		6.5
Green Ext Time (p_c), s		22.0			0.0	19.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	1543	601	101	1965	990	778	1964	67	1065	1570	189
Future Volume (veh/h)	89	1543	601	101	1965	990	778	1964	67	1065	1570	189
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	89	1543	601	101	1965	990	778	1964	67	1065	1570	189
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	68	1334	597	80	1357	607	425	1380	430	569	1586	494
Arrive On Green	0.02	0.39	0.39	0.02	0.40	0.40	0.13	0.28	0.28	0.17	0.32	0.32
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	89	1543	601	101	1965	990	778	1964	67	1065	1570	189
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	3.0	56.9	56.9	3.5	57.9	57.9	18.3	40.2	4.7	24.5	45.5	13.7
Cycle Q Clear(g_c), s	3.0	56.9	56.9	3.5	57.9	57.9	18.3	40.2	4.7	24.5	45.5	13.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	1334	597	80	1357	607	425	1380	430	569	1586	494
V/C Ratio(X)	1.30	1.16	1.01	1.27	1.45	1.63	1.83	1.42	0.16	1.87	0.99	0.38
Avail Cap(c_a), veh/h	68	1334	597	80	1357	607	425	1380	430	569	1586	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.2	44.2	44.2	70.9	43.7	43.7	63.5	52.5	39.7	60.4	49.3	38.5
Incr Delay (d2), s/veh	209.4	79.5	38.7	188.1	205.8	291.3	382.6	194.8	0.1	398.7	20.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	41.4	30.3	3.7	65.9	73.5	31.1	43.3	2.0	42.9	23.9	5.9
LnGrp Delay(d),s/veh	280.5	123.7	82.9	259.0	249.5	335.0	446.1	247.3	39.8	459.1	69.5	38.7
LnGrp LOS	F	F	F	F	F	F	F	F	D	F	E	D
Approach Vol, veh/h		2233			3056			2809			2824	
Approach Delay, s/veh		118.9			277.5			297.4			214.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	63.3	23.0	51.0	9.0	62.3	29.0	45.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.5	4.8
Max Green Setting (Gmax), s	3.0	* 58	* 18	46.2	3.5	* 57	24.5	40.2
Max Q Clear Time (g_c+I1), s	5.0	59.9	20.3	47.5	5.5	58.9	26.5	42.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	233.9
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	508	95	245	718	301	404	2078	347	141	1692	427
Future Volume (veh/h)	107	508	95	245	718	301	404	2078	347	141	1692	427
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	107	508	95	245	718	301	404	2078	347	141	1692	427
Adj No. of Lanes	1	1	1	2	2	1	1	3	1	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	122	457	388	222	844	378	354	2149	676	149	1588	494
Arrive On Green	0.07	0.25	0.25	0.07	0.24	0.24	0.20	0.43	0.43	0.09	0.32	0.32
Sat Flow, veh/h	1757	1845	1568	3408	3505	1568	1740	4988	1568	1757	4988	1553
Grp Volume(v), veh/h	107	508	95	245	718	301	404	2078	347	141	1692	427
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	1752	1568	1740	1663	1568	1757	1663	1553
Q Serve(g_s), s	7.2	29.7	5.8	7.8	23.5	21.6	24.4	48.8	19.4	9.6	38.2	31.0
Cycle Q Clear(g_c), s	7.2	29.7	5.8	7.8	23.5	21.6	24.4	48.8	19.4	9.6	38.2	31.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	457	388	222	844	378	354	2149	676	149	1588	494
V/C Ratio(X)	0.88	1.11	0.24	1.11	0.85	0.80	1.14	0.97	0.51	0.94	1.07	0.86
Avail Cap(c_a), veh/h	122	457	388	222	865	387	354	2149	676	149	1588	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	45.2	36.2	56.1	43.5	42.8	47.8	33.3	25.0	54.6	40.9	38.5
Incr Delay (d2), s/veh	45.9	76.5	0.1	91.7	7.5	10.0	92.2	12.5	0.3	56.4	42.4	14.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	24.8	2.5	6.5	12.2	10.4	20.8	24.8	8.5	7.0	23.7	15.2
LnGrp Delay(d),s/veh	101.3	121.7	36.3	147.8	51.0	52.8	140.0	45.8	25.3	111.0	83.3	52.5
LnGrp LOS	F	F	D	F	D	D	F	D	C	F	F	D
Approach Vol, veh/h		710			1264			2829			2260	
Approach Delay, s/veh		107.2			70.2			56.8			79.2	
Approach LOS		F			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	43.0	13.8	34.2	15.5	56.5	13.0	35.0
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 24	38.2	8.3	* 30	* 10	51.7	* 7.8	* 30
Max Q Clear Time (g_c+I1), s	26.4	40.2	9.2	25.5	11.6	50.8	9.8	31.7
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	0.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	71.4
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	819	95	73	1102	734	274	2094	413	787	941	315
Future Volume (veh/h)	234	819	95	73	1102	734	274	2094	413	787	941	315
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	234	819	95	73	1102	734	274	2094	413	787	941	315
Adj No. of Lanes	2	1	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	227	639	544	47	1075	481	323	1729	544	591	2117	659
Arrive On Green	0.07	0.35	0.35	0.03	0.31	0.31	0.10	0.35	0.35	0.17	0.42	0.42
Sat Flow, veh/h	3408	1845	1568	1757	3505	1568	3375	4988	1568	3408	4988	1553
Grp Volume(v), veh/h	234	819	95	73	1102	734	274	2094	413	787	941	315
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1757	1752	1568	1688	1663	1568	1704	1663	1553
Q Serve(g_s), s	10.0	52.0	6.3	4.0	46.0	46.0	12.0	52.0	35.0	26.0	20.1	22.0
Cycle Q Clear(g_c), s	10.0	52.0	6.3	4.0	46.0	46.0	12.0	52.0	35.0	26.0	20.1	22.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	639	544	47	1075	481	323	1729	544	591	2117	659
V/C Ratio(X)	1.03	1.28	0.17	1.56	1.03	1.53	0.85	1.21	0.76	1.33	0.44	0.48
Avail Cap(c_a), veh/h	227	639	544	47	1075	481	405	1729	544	591	2117	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.0	49.0	34.1	73.0	52.0	52.0	66.8	49.0	43.5	62.0	30.6	31.2
Incr Delay (d2), s/veh	67.7	138.1	0.2	332.3	34.1	247.3	13.0	100.6	6.2	160.8	0.1	0.5
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	51.0	2.8	6.3	27.3	52.9	6.2	40.0	16.1	25.4	9.3	9.5
LnGrp Delay(d),s/veh	137.8	187.1	34.2	405.3	86.1	299.3	79.7	149.6	49.6	222.8	30.8	31.7
LnGrp LOS	F	F	C	F	F	F	E	F	D	F	C	C
Approach Vol, veh/h		1148			1909			2781			2043	
Approach Delay, s/veh		164.4			180.3			127.9			104.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.3	67.7	14.0	50.0	30.0	56.0	8.0	56.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	60.0	10.0	46.0	26.0	52.0	4.0	52.0
Max Q Clear Time (g_c+I1), s	14.0	24.0	12.0	48.0	28.0	54.0	6.0	54.0
Green Ext Time (p_c), s	0.4	33.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	139.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1201	470	131	13	840	26	824	2331	129	9	864	607
Future Volume (veh/h)	1201	470	131	13	840	26	824	2331	129	9	864	607
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	1201	470	131	13	840	26	824	2331	129	9	864	607
Adj No. of Lanes	1	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	613	1748	782	15	553	247	430	1707	531	21	1123	350
Arrive On Green	0.35	0.50	0.50	0.01	0.16	0.16	0.13	0.34	0.34	0.01	0.23	0.23
Sat Flow, veh/h	1740	3471	1553	1740	3471	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	1201	470	131	13	840	26	824	2331	129	9	864	607
Grp Sat Flow(s),veh/h/ln	1740	1736	1553	1740	1736	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	52.9	11.7	6.9	1.1	23.9	2.1	19.1	51.4	8.9	0.4	24.4	33.8
Cycle Q Clear(g_c), s	52.9	11.7	6.9	1.1	23.9	2.1	19.1	51.4	8.9	0.4	24.4	33.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	613	1748	782	15	553	247	430	1707	531	21	1123	350
V/C Ratio(X)	1.96	0.27	0.17	0.86	1.52	0.11	1.92	1.37	0.24	0.43	0.77	1.74
Avail Cap(c_a), veh/h	613	1748	782	58	553	247	430	1707	531	67	1123	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.6	21.4	20.2	74.3	63.1	54.0	65.5	49.4	35.4	74.3	54.5	58.2
Incr Delay (d2), s/veh	437.3	0.4	0.5	36.8	243.1	0.9	421.9	168.5	1.1	5.0	5.1	342.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	99.9	5.7	3.0	0.7	30.1	1.0	34.1	50.2	4.0	0.2	11.7	47.8
LnGrp Delay(d),s/veh	485.9	21.8	20.7	111.1	306.2	54.8	487.4	217.9	36.5	79.3	59.6	401.0
LnGrp LOS	F	C	C	F	F	D	F	F	D	E	E	F
Approach Vol, veh/h		1802			879			3284			1480	
Approach Delay, s/veh		331.0			295.9			278.4			199.7	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	39.0	58.0	29.1	6.4	56.6	6.3	80.8
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 19	* 34	* 53	* 24	3.0	* 50	5.0	* 72
Max Q Clear Time (g_c+I1), s	21.1	35.8	54.9	25.9	2.4	53.4	3.1	13.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.2

Intersection Summary			
HCM 2010 Ctrl Delay		277.5	
HCM 2010 LOS		F	

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	735	355	105	958	284	508	2780	207	125	989	83
Future Volume (veh/h)	85	735	355	105	958	284	508	2780	207	125	989	83
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	85	735	355	105	958	284	508	2780	207	125	989	83
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	104	818	366	151	867	388	556	2675	833	75	1963	611
Arrive On Green	0.03	0.23	0.23	0.04	0.25	0.25	0.16	0.54	0.54	0.02	0.39	0.39
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	85	735	355	105	958	284	508	2780	207	125	989	83
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	3.3	27.5	30.3	4.1	33.4	22.5	20.0	72.4	9.6	3.0	20.2	4.6
Cycle Q Clear(g_c), s	3.3	27.5	30.3	4.1	33.4	22.5	20.0	72.4	9.6	3.0	20.2	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	818	366	151	867	388	556	2675	833	75	1963	611
V/C Ratio(X)	0.82	0.90	0.97	0.69	1.10	0.73	0.91	1.04	0.25	1.67	0.50	0.14
Avail Cap(c_a), veh/h	104	818	366	167	867	388	708	2675	833	75	1963	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.1	50.2	51.3	63.6	50.8	46.7	55.4	31.3	16.7	66.0	31.0	26.2
Incr Delay (d2), s/veh	36.8	14.7	40.0	8.2	63.4	9.9	12.4	28.7	0.5	351.1	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	14.9	17.1	2.1	23.8	10.8	10.3	40.0	4.2	5.1	9.4	2.0
LnGrp Delay(d),s/veh	101.9	64.9	91.3	71.8	114.2	56.5	67.8	60.0	17.2	417.1	31.6	26.5
LnGrp LOS	F	E	F	E	F	E	E	F	B	F	C	C
Approach Vol, veh/h		1175			1347			3495			1197	
Approach Delay, s/veh		75.6			98.8			58.6			71.5	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.8	58.6	9.6	39.0	8.5	77.9	11.5	37.1
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	28.3	* 47	4.1	33.4	3.0	* 72	6.6	* 31
Max Q Clear Time (g_c+I1), s	22.0	22.2	5.3	35.4	5.0	74.4	6.1	32.3
Green Ext Time (p_c), s	0.3	24.9	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	71.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	709	24	162	896	79	262	246	202	52	93	49
Future Volume (veh/h)	123	709	24	162	896	79	262	246	202	52	93	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	123	709	24	162	896	79	262	246	202	52	93	49
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	156	1108	38	204	1134	100	314	487	414	64	225	191
Arrive On Green	0.09	0.32	0.32	0.12	0.35	0.35	0.18	0.26	0.26	0.04	0.12	0.12
Sat Flow, veh/h	1757	3459	117	1757	3259	287	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	123	359	374	162	482	493	262	246	202	52	93	49
Grp Sat Flow(s),veh/h/ln	1757	1752	1824	1757	1752	1794	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.2	10.7	10.7	5.5	15.1	15.1	8.8	6.9	6.6	1.8	2.8	1.7
Cycle Q Clear(g_c), s	4.2	10.7	10.7	5.5	15.1	15.1	8.8	6.9	6.6	1.8	2.8	1.7
Prop In Lane	1.00		0.06	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	156	561	584	204	610	624	314	487	414	64	225	191
V/C Ratio(X)	0.79	0.64	0.64	0.79	0.79	0.79	0.83	0.50	0.49	0.81	0.41	0.26
Avail Cap(c_a), veh/h	173	561	584	288	662	677	404	878	747	173	636	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	17.7	17.7	26.2	17.9	17.9	24.1	19.0	18.9	29.1	24.7	24.2
Incr Delay (d2), s/veh	19.5	2.4	2.3	9.6	6.0	5.9	11.3	0.8	0.9	20.8	1.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	5.5	5.7	3.2	8.2	8.4	5.2	3.6	3.0	1.2	1.5	0.8
LnGrp Delay(d),s/veh	46.7	20.1	20.0	35.8	23.9	23.7	35.4	19.8	19.8	49.9	25.9	24.9
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	C	C
Approach Vol, veh/h		856			1137			710			194	
Approach Delay, s/veh		23.9			25.5			25.6			32.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	20.1	11.1	23.5	14.9	11.4	9.4	25.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	29.0	10.0	19.0	14.0	21.0	6.0	23.0
Max Q Clear Time (g_c+I1), s	3.8	8.9	7.5	12.7	10.8	4.8	6.2	17.1
Green Ext Time (p_c), s	0.0	2.8	0.1	4.7	0.2	2.6	0.0	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1224	722	5	1316	264	607	466	20	127	191	54
Future Volume (veh/h)	82	1224	722	5	1316	264	607	466	20	127	191	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	82	1224	722	5	1316	264	607	466	20	127	191	54
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	48	1079	579	7	1360	269	491	575	489	151	218	185
Arrive On Green	0.03	0.49	0.49	0.00	0.47	0.47	0.28	0.31	0.31	0.09	0.12	0.12
Sat Flow, veh/h	1757	2205	1183	1757	2917	578	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	82	948	998	5	784	796	607	466	20	127	191	54
Grp Sat Flow(s),veh/h/ln	1757	1752	1636	1757	1752	1743	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.0	71.8	71.8	0.4	63.4	65.9	41.0	34.1	1.3	10.5	14.9	4.6
Cycle Q Clear(g_c), s	4.0	71.8	71.8	0.4	63.4	65.9	41.0	34.1	1.3	10.5	14.9	4.6
Prop In Lane	1.00		0.72	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	48	858	801	7	817	812	491	575	489	151	218	185
V/C Ratio(X)	1.71	1.11	1.25	0.76	0.96	0.98	1.24	0.81	0.04	0.84	0.88	0.29
Avail Cap(c_a), veh/h	48	858	801	36	824	819	491	575	489	263	251	214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.4	37.5	37.5	73.0	37.8	38.5	52.9	46.5	35.2	66.1	63.6	59.1
Incr Delay (d2), s/veh	394.1	63.7	121.2	96.5	21.9	26.5	123.1	8.5	0.0	11.9	25.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	49.7	59.2	0.4	35.7	37.6	36.6	18.7	0.6	5.6	9.2	2.0
LnGrp Delay(d),s/veh	465.5	101.1	158.6	169.5	59.7	65.0	176.0	55.0	35.2	78.0	88.6	59.9
LnGrp LOS	F	F	F	F	E	E	F	D	D	E	F	E
Approach Vol, veh/h		2028			1585			1093			372	
Approach Delay, s/veh		144.2			62.7			121.8			80.8	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	49.8	4.6	75.8	45.0	21.4	8.0	72.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	39.0	3.0	70.0	41.0	20.0	4.0	69.0
Max Q Clear Time (g_c+I1), s	12.5	36.1	2.4	73.8	43.0	16.9	6.0	67.9
Green Ext Time (p_c), s	0.2	1.2	0.0	0.0	0.0	0.4	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	109.3
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	428	5	75	839	0	10	55	189	11	28	30
Future Volume (veh/h)	176	428	5	75	839	0	10	55	189	11	28	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1900	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	176	428	5	75	839	0	10	55	189	11	28	30
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	224	2087	24	518	1277	0	97	82	255	126	177	155
Arrive On Green	0.13	0.59	0.59	0.37	0.37	0.00	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1740	3514	41	933	3563	0	27	388	1206	114	836	731
Grp Volume(v), veh/h	176	211	222	75	839	0	254	0	0	69	0	0
Grp Sat Flow(s),veh/h/ln	1740	1736	1820	933	1736	0	1621	0	0	1681	0	0
Q Serve(g_s), s	4.0	2.3	2.3	2.3	8.3	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.0	2.3	2.3	2.3	8.3	0.0	6.0	0.0	0.0	1.4	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.00	0.04		0.74	0.16		0.43
Lane Grp Cap(c), veh/h	224	1031	1081	518	1277	0	434	0	0	457	0	0
V/C Ratio(X)	0.78	0.20	0.21	0.14	0.66	0.00	0.59	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	338	1265	1326	583	1518	0	562	0	0	582	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.4	3.9	3.9	8.9	10.8	0.0	15.2	0.0	0.0	13.3	0.0	0.0
Incr Delay (d2), s/veh	6.8	0.1	0.1	0.1	0.8	0.0	1.3	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.1	1.1	0.6	4.1	0.0	2.8	0.0	0.0	0.7	0.0	0.0
LnGrp Delay(d),s/veh	24.2	4.0	4.0	9.1	11.6	0.0	16.4	0.0	0.0	13.5	0.0	0.0
LnGrp LOS	C	A	A	A	B		B			B		
Approach Vol, veh/h		609			914			254			69	
Approach Delay, s/veh		9.8			11.4			16.4			13.5	
Approach LOS		A			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		12.7		28.5		12.7	9.3	19.1
Change Period (Y+Rc), s		4.0		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		12.0		30.0		12.0	8.0	18.0
Max Q Clear Time (g_c+I1), s		8.0		4.3		3.4	6.0	10.3
Green Ext Time (p_c), s		0.7		10.3		1.3	0.1	4.9

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	896	101	171	1075	376	110	636	184	309	410	71
Future Volume (veh/h)	56	896	101	171	1075	376	110	636	184	309	410	71
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	56	896	101	171	1075	376	110	636	184	309	410	71
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	56	1021	115	176	993	342	131	548	466	264	688	585
Arrive On Green	0.03	0.32	0.32	0.10	0.39	0.39	0.07	0.30	0.30	0.15	0.37	0.37
Sat Flow, veh/h	1757	3176	358	1757	2559	883	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	56	494	503	171	731	720	110	636	184	309	410	71
Grp Sat Flow(s),veh/h/ln	1757	1752	1781	1757	1752	1689	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.8	40.0	40.0	14.6	58.2	58.2	9.3	44.6	14.0	22.5	26.9	4.5
Cycle Q Clear(g_c), s	4.8	40.0	40.0	14.6	58.2	58.2	9.3	44.6	14.0	22.5	26.9	4.5
Prop In Lane	1.00		0.20	1.00		0.52	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	56	563	572	176	680	655	131	548	466	264	688	585
V/C Ratio(X)	1.00	0.88	0.88	0.97	1.08	1.10	0.84	1.16	0.39	1.17	0.60	0.12
Avail Cap(c_a), veh/h	56	565	575	176	680	655	206	548	466	264	688	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.6	48.1	48.1	67.3	45.9	45.9	68.5	52.7	42.0	63.8	37.9	30.9
Incr Delay (d2), s/veh	118.5	14.1	13.9	59.6	56.7	65.0	9.1	90.7	0.2	110.3	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	21.6	21.9	10.0	38.8	39.0	4.9	36.5	6.1	19.0	13.9	1.9
LnGrp Delay(d),s/veh	191.1	62.2	62.0	126.9	102.6	110.9	77.6	143.4	42.2	174.1	38.9	30.9
LnGrp LOS	F	E	E	F	F	F	E	F	D	F	D	C
Approach Vol, veh/h		1053			1622			930			790	
Approach Delay, s/veh		69.0			108.8			115.6			91.1	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	63.0	16.7	60.3	20.0	53.0	28.0	49.0
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 4.8	58.2	17.6	* 50	15.0	* 48	22.5	* 45
Max Q Clear Time (g_c+I1), s	6.8	60.2	11.3	28.9	16.6	42.0	24.5	46.6
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.0	3.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	97.5
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	324	2145	155	233	2230	3	122	2081	200	33	1828	164
Future Volume (veh/h)	324	2145	155	233	2230	3	122	2081	200	33	1828	164
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	324	2145	155	233	2230	3	122	2081	200	33	1828	164
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	295	1859	596	227	1762	564	91	1505	673	58	1472	659
Arrive On Green	0.09	0.38	0.38	0.07	0.36	0.36	0.03	0.43	0.43	0.02	0.42	0.42
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	324	2145	155	233	2230	3	122	2081	200	33	1828	164
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	13.0	57.0	10.2	10.0	54.0	0.2	4.0	64.4	12.5	1.4	63.0	10.2
Cycle Q Clear(g_c), s	13.0	57.0	10.2	10.0	54.0	0.2	4.0	64.4	12.5	1.4	63.0	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	1859	596	227	1762	564	91	1505	673	58	1472	659
V/C Ratio(X)	1.10	1.15	0.26	1.03	1.27	0.01	1.34	1.38	0.30	0.56	1.24	0.25
Avail Cap(c_a), veh/h	295	1859	596	227	1762	564	91	1505	673	91	1472	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	46.5	32.0	70.0	48.0	30.8	73.0	42.8	28.0	73.2	43.5	28.2
Incr Delay (d2), s/veh	80.8	75.7	0.2	66.5	124.3	0.0	210.8	176.3	0.2	8.3	114.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	38.7	4.5	6.8	44.6	0.1	4.5	68.0	5.5	0.7	53.9	4.5
LnGrp Delay(d),s/veh	149.3	122.2	32.2	136.6	172.3	30.8	283.8	219.1	28.2	81.4	158.3	28.4
LnGrp LOS	F	F	C	F	F	C	F	F	C	F	F	C
Approach Vol, veh/h		2624			2466			2403			2025	
Approach Delay, s/veh		120.3			168.8			206.5			146.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	68.4	14.0	61.0	8.0	67.0	17.0	58.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	63.0	10.0	57.0	4.0	63.0	13.0	54.0
Max Q Clear Time (g_c+I1), s	3.4	66.4	12.0	59.0	6.0	65.0	15.0	56.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	160.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	519	1052	812	1	1069	240	238	1601	452	108	1102	209
Future Volume (veh/h)	519	1052	812	1	1069	240	238	1601	452	108	1102	209
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	519	1052	812	1	1069	240	238	1601	452	108	1102	209
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	223	684	476	1	627	140	727	748	334	55	558	523
Arrive On Green	0.13	0.35	0.35	0.00	0.22	0.22	0.21	0.21	0.21	0.33	0.33	0.33
Sat Flow, veh/h	1757	1977	1377	1757	2848	637	3408	3505	1568	164	1673	1568
Grp Volume(v), veh/h	519	919	945	1	656	653	238	1601	452	1210	0	209
Grp Sat Flow(s),veh/h/ln	1757	1752	1602	1757	1752	1732	1704	1752	1568	1836	0	1568
Q Serve(g_s), s	19.0	51.9	51.9	0.1	33.0	33.0	8.9	32.0	32.0	50.0	0.0	15.4
Cycle Q Clear(g_c), s	19.0	51.9	51.9	0.1	33.0	33.0	8.9	32.0	32.0	50.0	0.0	15.4
Prop In Lane	1.00		0.86	1.00		0.37	1.00		1.00	0.09		1.00
Lane Grp Cap(c), veh/h	223	606	554	1	386	381	727	748	334	612	0	523
V/C Ratio(X)	2.33	1.52	1.71	0.70	1.70	1.71	0.33	2.14	1.35	1.98	0.00	0.40
Avail Cap(c_a), veh/h	223	606	554	35	386	381	727	748	334	612	0	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.5	49.1	49.1	74.9	58.5	58.5	49.9	59.0	59.0	50.0	0.0	38.5
Incr Delay (d2), s/veh	613.4	241.0	325.0	231.5	326.5	332.1	0.3	518.0	176.6	445.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	47.1	65.7	72.9	0.1	50.9	50.9	4.2	69.3	30.3	101.1	0.0	6.7
LnGrp Delay(d),s/veh	678.9	290.1	374.1	306.4	385.0	390.6	50.2	577.0	235.6	495.4	0.0	39.0
LnGrp LOS	F	F	F	F	F	F	D	F	F	F		D
Approach Vol, veh/h		2383			1310			2291			1419	
Approach Delay, s/veh		408.1			387.8			454.9			428.1	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		36.0	4.1	55.9		54.0	23.0	37.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		32.0	3.0	49.0		50.0	19.0	33.0
Max Q Clear Time (g_c+I1), s		34.0	2.1	53.9		52.0	21.0	35.0
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	422.8
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1189	0	628	0	1202	1359	0	546	400
Future Volume (veh/h)	0	0	0	1189	0	628	0	1202	1359	0	546	400
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1827	0	1827	0	1827	1827	0	1827	1827
Adj Flow Rate, veh/h				1189	0	628	0	1202	0	0	546	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				4	0	4	0	4	4	0	4	4
Cap, veh/h				1372	0	1111	0	1832	570	0	1832	570
Arrive On Green				0.41	0.00	0.41	0.00	0.37	0.00	0.00	0.37	0.00
Sat Flow, veh/h				3375	0	2733	0	5152	1553	0	5152	1553
Grp Volume(v), veh/h				1189	0	628	0	1202	0	0	546	0
Grp Sat Flow(s),veh/h/ln				1688	0	1367	0	1663	1553	0	1663	1553
Q Serve(g_s), s				13.8	0.0	7.6	0.0	8.6	0.0	0.0	3.3	0.0
Cycle Q Clear(g_c), s				13.8	0.0	7.6	0.0	8.6	0.0	0.0	3.3	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1372	0	1111	0	1832	570	0	1832	570
V/C Ratio(X)				0.87	0.00	0.57	0.00	0.66	0.00	0.00	0.30	0.00
Avail Cap(c_a), veh/h				2080	0	1684	0	2969	924	0	2782	866
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.7	0.0	9.8	0.0	11.3	0.0	0.0	9.6	0.0
Incr Delay (d2), s/veh				1.8	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.6	0.0	2.8	0.0	3.9	0.0	0.0	1.5	0.0
LnGrp Delay(d),s/veh				13.4	0.0	10.0	0.0	11.4	0.0	0.0	9.7	0.0
LnGrp LOS				B		A		B			A	
Approach Vol, veh/h					1817			1202			546	
Approach Delay, s/veh					12.2			11.4			9.7	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		20.8		22.0		20.8		
Change Period (Y+Rc), s		5.1		4.6		* 5.1		
Max Green Setting (Gmax), s		23.9		26.4		* 26		
Max Q Clear Time (g_c+I1), s		5.3		15.8		10.6		
Green Ext Time (p_c), s		5.5		1.6		5.1		

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	40	32	332	30	387	57	2903	403	682	1898	59
Future Volume (veh/h)	76	40	32	332	30	387	57	2903	403	682	1898	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	76	40	32	332	30	387	57	2903	403	682	1898	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	64	35	28	545	295	251	72	2470	769	551	3080	96
Arrive On Green	0.04	0.04	0.04	0.16	0.16	0.16	0.04	0.50	0.50	0.16	0.62	0.62
Sat Flow, veh/h	1757	950	760	3408	1845	1568	1740	4988	1553	3375	4970	154
Grp Volume(v), veh/h	76	0	72	332	30	387	57	2903	403	682	1269	688
Grp Sat Flow(s),veh/h/ln	1757	0	1711	1704	1845	1568	1740	1663	1553	1688	1663	1800
Q Serve(g_s), s	5.5	0.0	5.5	13.6	2.1	24.0	4.9	74.3	26.5	24.5	35.2	35.3
Cycle Q Clear(g_c), s	5.5	0.0	5.5	13.6	2.1	24.0	4.9	74.3	26.5	24.5	35.2	35.3
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	64	0	63	545	295	251	72	2470	769	551	2061	1115
V/C Ratio(X)	1.18	0.00	1.15	0.61	0.10	1.54	0.79	1.18	0.52	1.24	0.62	0.62
Avail Cap(c_a), veh/h	64	0	63	545	295	251	123	2470	769	551	2061	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	0.0	72.3	58.6	53.8	63.0	71.2	37.8	25.8	62.8	17.5	17.6
Incr Delay (d2), s/veh	168.8	0.0	159.5	1.4	0.1	263.1	6.9	83.4	0.3	121.6	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	5.4	6.5	1.1	28.7	2.5	53.2	11.4	20.7	16.2	17.6
LnGrp Delay(d),s/veh	241.1	0.0	231.9	60.1	53.9	326.1	78.1	121.3	26.1	184.4	17.9	18.3
LnGrp LOS	F		F	E	D	F	E	F	C	F	B	B
Approach Vol, veh/h		148			749			3363			2639	
Approach Delay, s/veh		236.6			197.3			109.1			61.0	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	98.2		11.0	30.0	79.5		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 89		5.5	24.5	* 74		24.0
Max Q Clear Time (g_c+I1), s	6.9	37.3		7.5	26.5	76.3		26.0
Green Ext Time (p_c), s	0.0	39.1		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		103.0
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	1183	433	243	1482	844	374	2057	363	563	883	165
Future Volume (veh/h)	225	1183	433	243	1482	844	374	2057	363	563	883	165
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	225	1183	433	243	1482	844	374	2057	363	563	883	165
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	170	1109	496	240	1181	529	418	1738	541	393	1701	530
Arrive On Green	0.05	0.32	0.32	0.07	0.34	0.34	0.12	0.35	0.35	0.12	0.34	0.34
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	225	1183	433	243	1482	844	374	2057	363	563	883	165
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	7.5	47.6	39.2	10.6	50.7	50.7	16.4	52.4	29.9	17.5	21.3	11.8
Cycle Q Clear(g_c), s	7.5	47.6	39.2	10.6	50.7	50.7	16.4	52.4	29.9	17.5	21.3	11.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	1109	496	240	1181	529	418	1738	541	393	1701	530
V/C Ratio(X)	1.32	1.07	0.87	1.01	1.25	1.60	0.90	1.18	0.67	1.43	0.52	0.31
Avail Cap(c_a), veh/h	170	1109	496	240	1181	529	550	1738	541	393	1701	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.5	51.4	48.5	69.9	49.9	49.9	64.9	49.0	41.7	66.5	39.7	36.5
Incr Delay (d2), s/veh	180.7	46.6	15.1	61.1	121.5	277.4	12.1	88.9	2.6	209.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	30.1	19.0	7.0	44.4	62.7	8.4	38.3	13.2	19.5	9.8	5.1
LnGrp Delay(d),s/veh	252.1	98.0	63.6	131.1	171.4	327.2	77.0	137.9	44.3	275.6	39.8	36.7
LnGrp LOS	F	F	E	F	F	F	E	F	D	F	D	D
Approach Vol, veh/h		1841			2569			2794			1611	
Approach Delay, s/veh		108.8			218.8			117.6			121.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.1	56.9	13.0	56.4	23.0	58.0	16.1	53.3
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	24.5	* 46	7.5	* 51	17.5	* 52	10.6	* 47
Max Q Clear Time (g_c+I1), s	18.4	23.3	9.5	52.7	19.5	54.4	12.6	49.6
Green Ext Time (p_c), s	0.2	12.5	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	146.0
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	342	1413	670	185	2277	544	138	2334	224	507	694	90
Future Volume (veh/h)	342	1413	670	185	2277	544	138	2334	224	507	694	90
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	342	1413	670	185	2277	544	138	2334	224	507	694	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	235	1684	540	211	1655	515	182	1804	562	336	2024	624
Arrive On Green	0.07	0.34	0.34	0.06	0.34	0.34	0.05	0.36	0.36	0.10	0.40	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	342	1413	670	185	2277	544	138	2334	224	507	694	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	10.7	40.1	51.8	8.1	50.9	50.9	6.0	53.9	16.1	15.0	14.4	0.0
Cycle Q Clear(g_c), s	10.7	40.1	51.8	8.1	50.9	50.9	6.0	53.9	16.1	15.0	14.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	1684	540	211	1655	515	182	1804	562	336	2024	624
V/C Ratio(X)	1.45	0.84	1.24	0.88	1.38	1.06	0.76	1.29	0.40	1.51	0.34	0.00
Avail Cap(c_a), veh/h	235	1684	540	211	1655	515	251	1804	562	336	2024	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	69.9	45.5	49.3	70.0	49.8	49.8	70.3	48.3	36.2	67.7	31.2	0.0
Incr Delay (d2), s/veh	225.8	3.7	123.7	31.7	173.0	55.2	5.1	136.6	0.5	243.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	18.6	41.0	4.8	49.3	29.3	3.0	47.7	7.0	18.3	6.7	0.0
LnGrp Delay(d),s/veh	295.7	49.2	173.1	101.7	222.8	105.0	75.4	184.9	36.6	310.8	31.3	0.0
LnGrp LOS	F	D	F	F	F	F	E	F	D	F	C	
Approach Vol, veh/h		2425			3006			2696			1201	
Approach Delay, s/veh		118.2			194.0			167.0			149.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	65.6	15.0	56.5	20.0	59.0	14.1	57.4
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 11	57.4	* 11	50.4	15.0	53.9	* 9.3	* 52
Max Q Clear Time (g_c+I1), s	8.0	16.4	12.7	52.9	17.0	55.9	10.1	53.8
Green Ext Time (p_c), s	0.0	33.8	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary			
HCM 2010 Ctrl Delay		160.7	
HCM 2010 LOS		F	

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	401	1000	197	261	1301	40	534	2626	129	50	849	175
Future Volume (veh/h)	401	1000	197	261	1301	40	534	2626	129	50	849	175
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	401	1000	197	261	1301	40	534	2626	129	50	849	175
Adj No. of Lanes	2	1	0	2	2	1	1	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	290	490	96	285	1141	511	373	2081	101	83	1183	368
Arrive On Green	0.09	0.33	0.33	0.08	0.33	0.33	0.21	0.42	0.42	0.02	0.23	0.23
Sat Flow, veh/h	3408	1498	295	3408	3505	1568	1757	4921	239	3408	5036	1568
Grp Volume(v), veh/h	401	0	1197	261	1301	40	534	1781	974	50	849	175
Grp Sat Flow(s),veh/h/ln	1704	0	1793	1704	1752	1568	1757	1679	1803	1704	1679	1568
Q Serve(g_s), s	12.7	0.0	48.8	11.3	48.6	2.6	31.7	63.1	63.1	2.2	23.2	14.3
Cycle Q Clear(g_c), s	12.7	0.0	48.8	11.3	48.6	2.6	31.7	63.1	63.1	2.2	23.2	14.3
Prop In Lane	1.00		0.16	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	290	0	586	285	1141	511	373	1420	762	83	1183	368
V/C Ratio(X)	1.38	0.00	2.04	0.91	1.14	0.08	1.43	1.25	1.28	0.60	0.72	0.48
Avail Cap(c_a), veh/h	290	0	586	285	1141	511	373	1420	762	103	1208	376
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.3	0.0	50.2	67.9	50.3	34.8	58.8	43.1	43.1	72.1	52.5	49.2
Incr Delay (d2), s/veh	192.3	0.0	475.0	31.9	74.0	0.1	208.9	120.5	135.0	6.8	1.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	0.0	101.4	6.6	35.2	1.1	37.0	52.9	59.9	1.1	11.0	6.3
LnGrp Delay(d),s/veh	260.6	0.0	525.3	99.8	124.3	34.9	267.7	163.6	178.1	78.9	54.3	49.5
LnGrp LOS	F		F	F	F	C	F	F	F	E	D	D
Approach Vol, veh/h		1598			1602			3289			1074	
Approach Delay, s/veh		458.8			118.1			184.8			54.6	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.2	40.1	18.0	54.0	9.1	68.1	18.2	53.8
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	31.7	35.8	12.5	* 49	4.5	63.0	12.7	* 49
Max Q Clear Time (g_c+I1), s	33.7	25.2	13.3	50.8	4.2	65.1	14.7	50.6
Green Ext Time (p_c), s	0.0	9.9	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	210.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	572	88	138	825	376	119	2686	191	159	699	125
Future Volume (veh/h)	298	572	88	138	825	376	119	2686	191	159	699	125
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1829	1900	1845	1808	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	298	572	88	138	825	376	119	2686	191	159	699	125
Adj No. of Lanes	2	2	0	2	2	0	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	6	3	3	3	3	3	3
Cap, veh/h	239	915	140	183	659	299	163	2313	720	148	2290	713
Arrive On Green	0.07	0.30	0.30	0.05	0.29	0.29	0.05	0.46	0.46	0.04	0.45	0.45
Sat Flow, veh/h	3408	3022	464	3408	2299	1043	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	298	328	332	138	616	585	119	2686	191	159	699	125
Grp Sat Flow(s),veh/h/ln	1704	1738	1747	1704	1718	1624	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	10.5	24.4	24.5	6.0	43.0	43.0	5.2	68.9	11.2	6.5	13.2	7.1
Cycle Q Clear(g_c), s	10.5	24.4	24.5	6.0	43.0	43.0	5.2	68.9	11.2	6.5	13.2	7.1
Prop In Lane	1.00		0.27	1.00		0.64	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	526	529	183	493	466	163	2313	720	148	2290	713
V/C Ratio(X)	1.25	0.62	0.63	0.75	1.25	1.26	0.73	1.16	0.27	1.08	0.31	0.18
Avail Cap(c_a), veh/h	239	526	529	252	493	466	227	2313	720	148	2290	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.8	44.9	45.0	70.0	53.5	53.5	70.4	40.5	25.0	71.7	25.9	24.2
Incr Delay (d2), s/veh	142.0	1.7	1.8	8.1	128.5	132.2	7.1	77.8	0.2	96.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	11.9	12.1	3.0	38.0	36.4	2.6	48.6	4.9	5.0	6.1	3.1
LnGrp Delay(d),s/veh	211.7	46.7	46.8	78.0	182.0	185.7	77.5	118.3	25.2	167.7	26.0	24.3
LnGrp LOS	F	D	D	E	F	F	E	F	C	F	C	C
Approach Vol, veh/h		958			1339			2996			983	
Approach Delay, s/veh		98.0			172.9			110.7			48.7	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	74.0	16.0	48.0	12.7	73.3	13.6	50.4
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	6.5	* 69	10.5	* 43	10.0	* 65	11.1	* 42
Max Q Clear Time (g_c+I1), s	8.5	70.9	12.5	45.0	7.2	15.2	8.0	26.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	46.3	0.1	4.7

Intersection Summary		
HCM 2010 Ctrl Delay		112.4
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

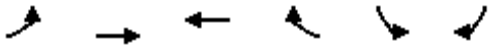
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	362	158	51	430	596	100	2243	500	183	914	99
Future Volume (veh/h)	349	362	158	51	430	596	100	2243	500	183	914	99
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1845	1827	1845	1845	1845
Adj Flow Rate, veh/h	349	362	158	51	430	596	100	2243	500	183	914	99
Adj No. of Lanes	2	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	3	4	3	3	3
Cap, veh/h	399	1037	464	65	757	339	151	2179	672	174	2203	686
Arrive On Green	0.12	0.30	0.30	0.04	0.22	0.22	0.04	0.43	0.43	0.05	0.44	0.44
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	3375	5036	1553	3408	5036	1568
Grp Volume(v), veh/h	349	362	158	51	430	596	100	2243	500	183	914	99
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1688	1679	1553	1704	1679	1568
Q Serve(g_s), s	11.6	9.4	9.1	3.3	12.6	24.9	3.4	49.9	31.1	5.9	14.4	4.4
Cycle Q Clear(g_c), s	11.6	9.4	9.1	3.3	12.6	24.9	3.4	49.9	31.1	5.9	14.4	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	399	1037	464	65	757	339	151	2179	672	174	2203	686
V/C Ratio(X)	0.87	0.35	0.34	0.78	0.57	1.76	0.66	1.03	0.74	1.05	0.41	0.14
Avail Cap(c_a), veh/h	399	1037	464	96	757	339	296	2179	672	174	2203	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	31.9	31.8	55.0	40.4	45.2	54.2	32.7	27.4	54.7	22.3	19.5
Incr Delay (d2), s/veh	18.9	0.1	0.2	12.1	0.6	353.9	1.8	27.2	4.5	81.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	4.5	3.9	1.8	6.2	44.1	1.6	28.5	14.1	4.7	6.7	1.9
LnGrp Delay(d),s/veh	69.0	31.9	31.9	67.2	41.0	399.1	56.0	59.9	31.8	136.5	22.4	19.6
LnGrp LOS	E	C	C	E	D	F	E	F	C	F	C	B
Approach Vol, veh/h		869			1077			2843			1196	
Approach Delay, s/veh		46.8			240.4			54.8			39.6	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	55.0	19.0	30.3	10.5	55.5	9.8	39.5
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 5.9	49.9	13.5	* 25	* 10	45.5	6.3	* 32
Max Q Clear Time (g_c+I1), s	7.9	51.9	13.6	26.9	5.4	16.4	5.3	11.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	27.3	0.0	2.5

Intersection Summary			
HCM 2010 Ctrl Delay		84.0	
HCM 2010 LOS		F	

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	309	1348	2599	851	557	192
Future Volume (veh/h)	309	1348	2599	851	557	192
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	309	1348	2599	851	557	192
Adj No. of Lanes	1	3	3	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	234	3458	2032	602	457	408
Arrive On Green	0.13	0.69	0.53	0.53	0.26	0.26
Sat Flow, veh/h	1757	5202	4023	1143	1757	1568
Grp Volume(v), veh/h	309	1348	2227	1223	557	192
Grp Sat Flow(s),veh/h/ln	1757	1679	1679	1643	1757	1568
Q Serve(g_s), s	20.0	17.2	79.0	79.0	39.0	15.5
Cycle Q Clear(g_c), s	20.0	17.2	79.0	79.0	39.0	15.5
Prop In Lane	1.00			0.70	1.00	1.00
Lane Grp Cap(c), veh/h	234	3458	1768	865	457	408
V/C Ratio(X)	1.32	0.39	1.26	1.41	1.22	0.47
Avail Cap(c_a), veh/h	234	3458	1768	865	457	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	10.1	35.5	35.5	55.5	46.8
Incr Delay (d2), s/veh	170.4	0.1	121.4	193.1	117.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.8	7.9	66.2	82.0	33.8	14.0
LnGrp Delay(d),s/veh	235.4	10.1	156.9	228.6	172.7	47.6
LnGrp LOS	F	B	F	F	F	D
Approach Vol, veh/h		1657	3450		749	
Approach Delay, s/veh		52.1	182.3		140.6	
Approach LOS		D	F		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				107.0		43.0	24.0	83.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				103.0		39.0	20.0	79.0
Max Q Clear Time (g_c+I1), s				19.2		41.0	22.0	81.0
Green Ext Time (p_c), s				82.5		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	140.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	878	18	73	1442	0	6	294	33	0	0	0
Future Volume (veh/h)	0	878	18	73	1442	0	6	294	33	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	878	18	73	1442	0	6	294	33	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1623	33	90	2121	0	8	390	332	4	213	181
Arrive On Green	0.00	0.46	0.46	0.05	0.61	0.00	0.00	0.21	0.21	0.00	0.00	0.00
Sat Flow, veh/h	1757	3512	72	1757	3597	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	0	438	458	73	1442	0	6	294	33	0	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1832	1757	1752	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.0	7.8	7.8	1.8	12.1	0.0	0.1	6.5	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.8	7.8	1.8	12.1	0.0	0.1	6.5	0.7	0.0	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	810	847	90	2121	0	8	390	332	4	213	181
V/C Ratio(X)	0.00	0.54	0.54	0.81	0.68	0.00	0.71	0.75	0.10	0.00	0.00	0.00
Avail Cap(c_a), veh/h	121	923	965	241	2121	0	121	549	467	80	507	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.4	8.4	20.5	5.8	0.0	21.7	16.1	13.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.5	15.4	0.9	0.0	72.0	3.7	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.8	3.9	1.2	5.9	0.0	0.2	3.7	0.3	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	9.0	9.0	35.9	6.7	0.0	93.7	19.8	14.0	0.0	0.0	0.0
LnGrp LOS		A	A	D	A		F	B	B			
Approach Vol, veh/h		896			1515			333			0	
Approach Delay, s/veh		9.0			8.1			20.6			0.0	
Approach LOS		A			A			C				

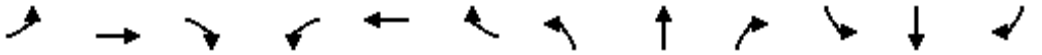
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	13.2	6.2	24.2	4.2	9.0	0.0	30.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	2.0	13.0	6.0	23.0	3.0	12.0	3.0	26.0
Max Q Clear Time (g_c+I1), s	0.0	8.5	3.8	9.8	2.1	0.0	0.0	14.1
Green Ext Time (p_c), s	0.0	0.7	0.0	10.4	0.0	0.0	0.0	10.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	1002	87	889	2010	312	177	935	933	350	539	122
Future Volume (veh/h)	154	1002	87	889	2010	312	177	935	933	350	539	122
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	154	1002	87	889	2010	312	177	935	933	350	539	122
Adj No. of Lanes	2	3	1	2	3	1	1	1	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	73	895	287	414	1384	444	202	436	435	170	1574	704
Arrive On Green	0.02	0.18	0.18	0.12	0.28	0.28	0.12	0.51	0.51	0.05	0.45	0.45
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	1757	849	847	3408	3505	1568
Grp Volume(v), veh/h	154	1002	87	889	2010	312	177	0	1868	350	539	122
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1757	0	1695	1704	1752	1568
Q Serve(g_s), s	3.0	25.6	6.7	17.0	39.6	24.9	13.9	0.0	72.0	7.0	14.0	6.5
Cycle Q Clear(g_c), s	3.0	25.6	6.7	17.0	39.6	24.9	13.9	0.0	72.0	7.0	14.0	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	73	895	287	414	1384	444	202	0	872	170	1574	704
V/C Ratio(X)	2.11	1.12	0.30	2.15	1.45	0.70	0.87	0.00	2.14	2.05	0.34	0.17
Avail Cap(c_a), veh/h	73	895	287	414	1384	444	289	0	872	170	1574	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	57.2	49.5	61.5	50.2	44.9	60.9	0.0	34.0	66.5	25.1	23.0
Incr Delay (d2), s/veh	542.0	68.7	0.8	524.7	207.6	5.5	18.5	0.0	518.0	494.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	17.2	3.0	38.1	44.4	11.5	7.8	0.0	158.9	15.0	6.8	2.8
LnGrp Delay(d),s/veh	610.5	125.9	50.3	586.2	257.8	50.4	79.4	0.0	552.0	560.5	25.2	23.1
LnGrp LOS	F	F	D	F	F	D	E		F	F	C	C
Approach Vol, veh/h		1243			3211			2045			1011	
Approach Delay, s/veh		180.6			328.5			511.1			210.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	32.0	20.1	66.9	7.0	46.0	11.0	76.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	17.0	25.6	23.0	56.0	3.0	39.6	7.0	72.0
Max Q Clear Time (g_c+I1), s	19.0	27.6	15.9	16.0	5.0	41.6	9.0	74.0
Green Ext Time (p_c), s	0.0	0.0	0.3	39.5	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	337.9
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	586	27	156	684	16	31	809	160	11	282	14
Future Volume (veh/h)	89	586	27	156	684	16	31	809	160	11	282	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1759	1759	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	89	586	27	156	684	16	31	809	160	11	282	14
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	8	8	8	3	3	3	3	3	3
Cap, veh/h	110	557	26	171	625	15	39	665	131	18	752	37
Arrive On Green	0.06	0.33	0.33	0.10	0.37	0.37	0.02	0.44	0.44	0.01	0.43	0.43
Sat Flow, veh/h	1707	1700	78	1675	1712	40	1757	1496	296	1757	1743	87
Grp Volume(v), veh/h	89	0	613	156	0	700	31	0	969	11	0	296
Grp Sat Flow(s),veh/h/ln	1707	0	1779	1675	0	1752	1757	0	1792	1757	0	1829
Q Serve(g_s), s	7.1	0.0	45.0	12.7	0.0	50.2	2.4	0.0	61.0	0.9	0.0	15.1
Cycle Q Clear(g_c), s	7.1	0.0	45.0	12.7	0.0	50.2	2.4	0.0	61.0	0.9	0.0	15.1
Prop In Lane	1.00		0.04	1.00		0.02	1.00		0.17	1.00		0.05
Lane Grp Cap(c), veh/h	110	0	583	171	0	640	39	0	796	18	0	790
V/C Ratio(X)	0.81	0.00	1.05	0.91	0.00	1.09	0.79	0.00	1.22	0.63	0.00	0.37
Avail Cap(c_a), veh/h	174	0	583	171	0	640	179	0	796	179	0	812
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.4	0.0	46.2	61.1	0.0	43.6	66.8	0.0	38.2	67.7	0.0	26.5
Incr Delay (d2), s/veh	14.1	0.0	51.7	44.8	0.0	63.9	28.3	0.0	109.2	31.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	30.4	8.0	0.0	35.5	1.5	0.0	54.2	0.6	0.0	7.6
LnGrp Delay(d),s/veh	77.6	0.0	97.9	105.9	0.0	107.5	95.1	0.0	147.4	99.2	0.0	26.8
LnGrp LOS	E		F	F		F	F		F	F		C
Approach Vol, veh/h		702			856			1000			307	
Approach Delay, s/veh		95.3			107.2			145.8			29.4	
Approach LOS		F			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	65.0	18.0	49.0	7.1	63.3	12.8	54.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	61.0	14.0	45.0	14.0	61.0	14.0	45.0
Max Q Clear Time (g_c+I1), s	2.9	63.0	14.7	47.0	4.4	17.1	9.1	52.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	13.9	0.1	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		109.4
HCM 2010 LOS		F

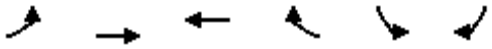
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	525	47	944	25	63	161	986	1181	13	105	1715	1101
Future Volume (veh/h)	525	47	944	25	63	161	986	1181	13	105	1715	1101
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	559	0	944	25	63	161	986	1181	13	105	1715	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	712	0	318	19	48	57	549	2814	31	126	1536	478
Arrive On Green	0.20	0.00	0.20	0.04	0.04	0.04	0.32	0.55	0.55	0.07	0.31	0.00
Sat Flow, veh/h	3480	0	1553	517	1302	1568	1740	5086	56	1740	4988	1553
Grp Volume(v), veh/h	559	0	944	88	0	161	986	772	422	105	1715	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1819	0	1568	1740	1663	1817	1740	1663	1553
Q Serve(g_s), s	22.8	0.0	30.7	5.5	0.0	5.5	47.3	20.3	20.3	8.9	46.2	0.0
Cycle Q Clear(g_c), s	22.8	0.0	30.7	5.5	0.0	5.5	47.3	20.3	20.3	8.9	46.2	0.0
Prop In Lane	1.00		1.00	0.28		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	712	0	318	67	0	57	549	1839	1005	126	1536	478
V/C Ratio(X)	0.78	0.00	2.97	1.32	0.00	2.80	1.80	0.42	0.42	0.84	1.12	0.00
Avail Cap(c_a), veh/h	712	0	318	67	0	57	549	1839	1005	194	1536	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.5	0.0	59.6	72.3	0.0	72.3	51.3	19.5	19.5	68.7	51.9	0.0
Incr Delay (d2), s/veh	5.3	0.0	895.0	217.5	0.0	856.3	366.0	0.1	0.1	10.2	61.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	0.0	92.2	6.8	0.0	16.1	78.5	9.3	10.2	4.7	30.0	0.0
LnGrp Delay(d),s/veh	61.8	0.0	954.7	289.7	0.0	928.5	417.3	19.6	19.6	78.9	113.8	0.0
LnGrp LOS	E		F	F		F	F	B	B	E	F	
Approach Vol, veh/h		1503			249			2180			1820	
Approach Delay, s/veh		622.6			702.8			199.5			111.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	52.0	51.0		11.0	15.2	87.8		36.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 47	46.2		5.5	* 17	* 77		30.7
Max Q Clear Time (g_c+I1), s	49.3	48.2		7.5	10.9	22.3		32.7
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	14.1		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		304.1	
HCM 2010 LOS		F	

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	386	1068	1481	727	151	37
Future Volume (veh/h)	386	1068	1481	727	151	37
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	386	1068	1481	727	151	37
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	297	2959	1518	689	175	156
Arrive On Green	0.17	0.84	0.65	0.65	0.10	0.10
Sat Flow, veh/h	1757	3597	2438	1064	1757	1568
Grp Volume(v), veh/h	386	1068	1076	1132	151	37
Grp Sat Flow(s),veh/h/ln	1757	1752	1752	1657	1757	1568
Q Serve(g_s), s	24.0	9.7	79.7	92.0	12.0	3.1
Cycle Q Clear(g_c), s	24.0	9.7	79.7	92.0	12.0	3.1
Prop In Lane	1.00			0.64	1.00	1.00
Lane Grp Cap(c), veh/h	297	2959	1134	1073	175	156
V/C Ratio(X)	1.30	0.36	0.95	1.06	0.86	0.24
Avail Cap(c_a), veh/h	297	2959	1134	1073	198	177
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.1	2.5	22.9	25.1	63.1	59.0
Incr Delay (d2), s/veh	158.0	0.1	15.9	43.4	28.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.6	4.6	43.3	54.6	7.2	2.8
LnGrp Delay(d),s/veh	217.1	2.6	38.8	68.5	91.4	59.8
LnGrp LOS	F	A	D	F	F	E
Approach Vol, veh/h		1454	2208		188	
Approach Delay, s/veh		59.5	54.0		85.2	
Approach LOS		E	D		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		124.0		18.1	28.0	96.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		120.0		16.0	24.0	92.0		
Max Q Clear Time (g_c+I1), s		11.7		14.0	26.0	94.0		
Green Ext Time (p_c), s		88.3		0.1	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	57.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	342	228	35	78	307	777	37	2203	90	522	2360	899
Future Volume (veh/h)	342	228	35	78	307	777	37	2203	90	522	2360	899
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	342	228	35	78	307	777	37	2203	90	522	2360	899
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	306	1130	168	119	368	1052	65	2118	86	464	2739	853
Arrive On Green	0.09	0.26	0.26	0.03	0.20	0.20	0.02	0.43	0.43	0.14	0.54	0.54
Sat Flow, veh/h	3408	4428	658	3514	1845	3136	3408	4964	202	3408	5036	1568
Grp Volume(v), veh/h	342	171	92	78	307	777	37	1487	806	522	2360	899
Grp Sat Flow(s),veh/h/ln	1704	1679	1729	1757	1845	1568	1704	1679	1809	1704	1679	1568
Q Serve(g_s), s	13.5	6.0	6.3	3.3	24.1	30.0	1.6	64.2	64.2	20.5	60.5	81.9
Cycle Q Clear(g_c), s	13.5	6.0	6.3	3.3	24.1	30.0	1.6	64.2	64.2	20.5	60.5	81.9
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	306	857	441	119	368	1052	65	1432	772	464	2739	853
V/C Ratio(X)	1.12	0.20	0.21	0.65	0.83	0.74	0.57	1.04	1.04	1.12	0.86	1.05
Avail Cap(c_a), veh/h	306	857	441	170	368	1052	70	1432	772	464	2739	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	44.0	44.1	71.8	57.9	44.2	73.2	43.1	43.2	65.0	29.5	34.3
Incr Delay (d2), s/veh	87.3	0.0	0.1	2.3	14.4	2.5	4.7	34.3	44.7	80.4	2.9	46.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	2.8	3.0	1.6	13.8	14.6	0.8	36.5	41.5	14.8	28.7	46.1
LnGrp Delay(d),s/veh	155.8	44.0	44.2	74.1	72.3	46.6	78.0	77.4	87.8	145.4	32.4	80.4
LnGrp LOS	F	D	D	E	E	D	E	F	F	F	C	F
Approach Vol, veh/h		605			1162			2330			3781	
Approach Delay, s/veh		107.3			55.2			81.0			59.4	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	87.5	19.0	35.7	26.0	69.8	10.6	44.1
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	3.1	81.3	13.5	* 30	20.5	* 64	7.3	* 36
Max Q Clear Time (g_c+I1), s	3.6	83.9	15.5	32.0	22.5	66.2	5.3	8.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	68.9
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	64	13	38	46	66	37	2194	63	133	1792	215
Future Volume (veh/h)	105	64	13	38	46	66	37	2194	63	133	1792	215
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	91	84	13	38	46	66	37	2194	63	133	1792	215
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	131	117	18	109	114	97	46	2811	80	167	2852	340
Arrive On Green	0.07	0.07	0.07	0.06	0.06	0.06	0.03	0.56	0.56	0.09	0.63	0.63
Sat Flow, veh/h	1757	1561	242	1757	1845	1568	1757	5032	144	1757	4562	544
Grp Volume(v), veh/h	91	0	97	38	46	66	37	1462	795	133	1316	691
Grp Sat Flow(s),veh/h/ln	1757	0	1802	1757	1845	1568	1757	1679	1819	1757	1679	1749
Q Serve(g_s), s	4.9	0.0	5.1	2.0	2.3	4.0	2.0	33.1	33.3	7.2	23.5	23.8
Cycle Q Clear(g_c), s	4.9	0.0	5.1	2.0	2.3	4.0	2.0	33.1	33.3	7.2	23.5	23.8
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.08	1.00		0.31
Lane Grp Cap(c), veh/h	131	0	135	109	114	97	46	1875	1016	167	2099	1093
V/C Ratio(X)	0.69	0.00	0.72	0.35	0.40	0.68	0.80	0.78	0.78	0.80	0.63	0.63
Avail Cap(c_a), veh/h	508	0	521	490	514	437	112	2159	1170	215	2349	1224
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	0.0	44.0	43.7	43.9	44.6	47.1	16.8	16.8	43.1	11.2	11.3
Incr Delay (d2), s/veh	2.4	0.0	2.7	0.7	0.8	3.1	11.3	1.4	2.6	11.3	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	2.7	1.0	1.2	1.8	1.1	15.6	17.3	4.0	10.9	11.5
LnGrp Delay(d),s/veh	46.3	0.0	46.7	44.4	44.7	47.7	58.3	18.1	19.4	54.4	11.5	11.8
LnGrp LOS	D		D	D	D	D	E	B	B	D	B	B
Approach Vol, veh/h		188			150			2294			2140	
Approach Delay, s/veh		46.5			46.0			19.2			14.3	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	65.6		11.5	13.8	59.1		12.8
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 6.2	68.0		27.1	* 12	62.5		28.1
Max Q Clear Time (g_c+I1), s	4.0	25.8		6.0	9.2	35.3		7.1
Green Ext Time (p_c), s	0.0	25.0		0.1	0.0	19.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

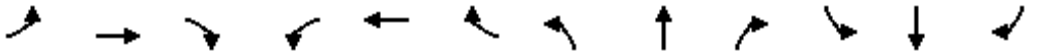
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	837	547	150	1323	856	560	1383	196	231	1176	172
Future Volume (veh/h)	44	837	547	150	1323	856	560	1383	196	231	1176	172
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	44	837	547	150	1323	856	560	1383	196	231	1176	172
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	77	1150	537	202	1911	595	490	1692	527	266	1199	175
Arrive On Green	0.02	0.34	0.34	0.06	0.38	0.38	0.14	0.34	0.34	0.08	0.27	0.27
Sat Flow, veh/h	3408	3357	1568	3408	5036	1568	3408	5036	1568	3408	4438	649
Grp Volume(v), veh/h	44	837	547	150	1323	856	560	1383	196	231	889	459
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1730
Q Serve(g_s), s	1.6	26.6	41.7	5.3	26.9	46.2	17.5	30.6	11.6	8.2	32.0	32.0
Cycle Q Clear(g_c), s	1.6	26.6	41.7	5.3	26.9	46.2	17.5	30.6	11.6	8.2	32.0	32.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	77	1150	537	202	1911	595	490	1692	527	266	907	468
V/C Ratio(X)	0.57	0.73	1.02	0.74	0.69	1.44	1.14	0.82	0.37	0.87	0.98	0.98
Avail Cap(c_a), veh/h	84	1150	537	221	1911	595	490	1692	527	266	907	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.9	35.0	40.0	56.3	31.8	37.8	52.1	37.0	30.7	55.5	44.1	44.1
Incr Delay (d2), s/veh	3.8	2.0	43.5	9.6	0.9	206.9	86.3	3.1	0.2	24.1	25.0	36.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	12.7	24.4	2.7	12.7	54.1	14.0	14.7	5.0	4.7	18.0	20.0
LnGrp Delay(d),s/veh	62.7	37.1	83.5	65.9	32.7	244.7	138.4	40.1	30.8	79.6	69.1	80.5
LnGrp LOS	E	D	F	E	C	F	F	D	C	E	E	F
Approach Vol, veh/h		1428			2329			2139			1579	
Approach Delay, s/veh		55.6			112.8			65.0			73.9	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	38.5	8.3	52.0	15.0	46.5	12.7	47.5
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	17.5	* 33	3.0	46.2	9.5	* 41	7.9	41.3
Max Q Clear Time (g_c+I1), s	19.5	34.0	3.6	48.2	10.2	32.6	7.3	43.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	80.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	921	47	489	1987	744	98	667	234	452	482	122
Future Volume (veh/h)	252	921	47	489	1987	744	98	667	234	452	482	122
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	252	921	47	489	1987	744	98	667	234	452	482	122
Adj No. of Lanes	1	2	0	2	2	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	127	1069	55	499	1355	606	119	433	152	223	607	516
Arrive On Green	0.07	0.31	0.31	0.15	0.39	0.39	0.07	0.33	0.33	0.07	0.33	0.33
Sat Flow, veh/h	1757	3393	173	3408	3505	1568	1757	1306	458	3408	1845	1568
Grp Volume(v), veh/h	252	476	492	489	1987	744	98	0	901	452	482	122
Grp Sat Flow(s),veh/h/ln	1757	1752	1814	1704	1752	1568	1757	0	1764	1704	1845	1568
Q Serve(g_s), s	10.5	37.1	37.1	20.8	56.2	56.2	8.0	0.0	48.2	9.5	34.5	8.2
Cycle Q Clear(g_c), s	10.5	37.1	37.1	20.8	56.2	56.2	8.0	0.0	48.2	9.5	34.5	8.2
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	127	552	571	499	1355	606	119	0	585	223	607	516
V/C Ratio(X)	1.99	0.86	0.86	0.98	1.47	1.23	0.83	0.00	1.54	2.03	0.79	0.24
Avail Cap(c_a), veh/h	127	552	571	499	1355	606	139	0	585	223	607	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	46.8	46.8	61.8	44.6	44.6	66.9	0.0	48.6	68.0	44.3	35.5
Incr Delay (d2), s/veh	470.8	12.6	12.2	34.7	214.1	116.5	24.9	0.0	251.9	478.8	6.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.7	19.9	20.5	12.2	67.4	43.9	4.7	0.0	64.3	19.3	18.7	3.6
LnGrp Delay(d),s/veh	538.2	59.4	59.0	96.6	258.7	161.1	91.9	0.0	300.5	546.8	50.9	35.6
LnGrp LOS	F	E	E	F	F	F	F		F	F	D	D
Approach Vol, veh/h		1220			3220			999			1056	
Approach Delay, s/veh		158.2			211.6			280.0			261.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	61.1	15.3	53.0	26.4	50.7	15.0	53.3
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	10.5	* 56	11.5	* 46	* 21	* 46	9.5	* 48
Max Q Clear Time (g_c+I1), s	12.5	58.2	10.0	36.5	22.8	39.1	11.5	50.2
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	5.2	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		220.2
HCM 2010 LOS		F

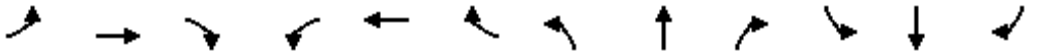
Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	1011	35	71	1264	130	133	358	223	93	211	494
Future Volume (veh/h)	339	1011	35	71	1264	130	133	358	223	93	211	494
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	339	1011	35	71	1264	130	133	358	223	93	211	494
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	386	1573	704	162	1341	600	172	900	403	155	883	395
Arrive On Green	0.11	0.45	0.45	0.05	0.38	0.38	0.05	0.26	0.26	0.05	0.25	0.25
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	339	1011	35	71	1264	130	133	358	223	93	211	494
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	7.8	17.7	1.0	1.6	27.6	4.4	3.1	6.7	9.8	2.1	3.8	20.0
Cycle Q Clear(g_c), s	7.8	17.7	1.0	1.6	27.6	4.4	3.1	6.7	9.8	2.1	3.8	20.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	386	1573	704	162	1341	600	172	900	403	155	883	395
V/C Ratio(X)	0.88	0.64	0.05	0.44	0.94	0.22	0.77	0.40	0.55	0.60	0.24	1.25
Avail Cap(c_a), veh/h	386	1573	704	644	1369	612	172	900	403	215	883	395
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	17.0	12.3	36.8	23.7	16.5	37.2	24.4	25.6	37.2	23.6	29.7
Incr Delay (d2), s/veh	19.8	0.9	0.0	1.9	12.9	0.2	19.5	0.3	1.7	3.7	0.1	132.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	8.8	0.4	0.8	15.7	1.9	1.9	3.3	4.4	1.1	1.9	23.1
LnGrp Delay(d),s/veh	54.4	17.9	12.4	38.7	36.5	16.7	56.8	24.7	27.2	40.8	23.8	161.8
LnGrp LOS	D	B	B	D	D	B	E	C	C	D	C	F
Approach Vol, veh/h		1385			1465			714			798	
Approach Delay, s/veh		26.7			34.9			31.5			111.2	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	24.4	7.8	39.6	8.0	24.0	13.0	34.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	19.0	15.0	25.0	4.0	20.0	9.0	31.0
Max Q Clear Time (g_c+I1), s	4.1	11.8	3.6	19.7	5.1	22.0	9.8	29.6
Green Ext Time (p_c), s	0.0	3.3	0.2	4.8	0.0	0.0	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	45.7
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	960	34	61	2121	160	28	538	67	72	303	152
Future Volume (veh/h)	77	960	34	61	2121	160	28	538	67	72	303	152
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1759	1845	1845	1759	1845
Adj Flow Rate, veh/h	77	960	34	61	2121	160	28	538	67	72	303	152
Adj No. of Lanes	2	2	0	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	8	3	3	8	3
Cap, veh/h	91	1874	66	77	1963	878	35	504	449	68	504	449
Arrive On Green	0.03	0.54	0.54	0.04	0.56	0.56	0.02	0.29	0.29	0.02	0.29	0.29
Sat Flow, veh/h	3408	3453	122	1757	3505	1568	1757	1759	1568	3408	1759	1568
Grp Volume(v), veh/h	77	487	507	61	2121	160	28	538	67	72	303	152
Grp Sat Flow(s),veh/h/ln	1704	1752	1823	1757	1752	1568	1757	1759	1568	1704	1759	1568
Q Serve(g_s), s	3.4	26.4	26.4	5.2	84.0	7.5	2.4	43.0	4.8	3.0	22.3	11.5
Cycle Q Clear(g_c), s	3.4	26.4	26.4	5.2	84.0	7.5	2.4	43.0	4.8	3.0	22.3	11.5
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	951	989	77	1963	878	35	504	449	68	504	449
V/C Ratio(X)	0.85	0.51	0.51	0.79	1.08	0.18	0.79	1.07	0.15	1.06	0.60	0.34
Avail Cap(c_a), veh/h	91	951	989	105	1963	878	70	504	449	68	504	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.7	21.7	21.7	71.0	33.0	16.2	73.2	53.5	39.9	73.5	46.1	42.3
Incr Delay (d2), s/veh	48.8	0.5	0.4	23.5	46.0	0.1	31.4	59.1	0.2	125.4	2.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	12.8	13.4	3.0	52.9	3.3	1.5	29.1	2.1	2.6	11.1	5.0
LnGrp Delay(d),s/veh	121.5	22.2	22.2	94.5	79.0	16.3	104.5	112.6	40.0	200.3	48.1	42.7
LnGrp LOS	F	C	C	F	F	B	F	F	D	F	D	D
Approach Vol, veh/h		1071			2342			633			527	
Approach Delay, s/veh		29.3			75.1			104.5			67.3	
Approach LOS		C			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	47.0	10.6	85.4	7.0	47.0	8.0	88.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	43.0	9.0	79.0	6.0	40.0	4.0	84.0
Max Q Clear Time (g_c+I1), s	5.0	45.0	7.2	28.4	4.4	24.3	5.4	86.0
Green Ext Time (p_c), s	0.0	0.0	0.0	43.9	0.0	5.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	314	196	189	116	446	181	374	2021	149	232	2018	282
Future Volume (veh/h)	314	196	189	116	446	181	374	2021	149	232	2018	282
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	314	196	189	116	446	181	374	2021	149	232	2018	282
Adj No. of Lanes	2	2	1	2	2	1	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	350	838	375	163	674	416	417	2985	737	278	2164	674
Arrive On Green	0.10	0.24	0.24	0.05	0.18	0.18	0.12	0.47	0.47	0.08	0.43	0.43
Sat Flow, veh/h	3408	3505	1568	3514	3689	1568	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	314	196	189	116	446	181	374	2021	149	232	2018	282
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	12.9	6.4	14.7	4.6	15.9	13.5	15.4	35.1	7.9	9.6	54.3	17.7
Cycle Q Clear(g_c), s	12.9	6.4	14.7	4.6	15.9	13.5	15.4	35.1	7.9	9.6	54.3	17.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	350	838	375	163	674	416	417	2985	737	278	2164	674
V/C Ratio(X)	0.90	0.23	0.50	0.71	0.66	0.44	0.90	0.68	0.20	0.83	0.93	0.42
Avail Cap(c_a), veh/h	350	943	422	214	836	485	418	2985	737	404	2254	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.6	43.3	46.5	66.4	53.6	43.1	61.0	28.7	21.5	63.8	38.0	27.6
Incr Delay (d2), s/veh	23.9	0.2	1.5	4.2	3.2	2.0	20.9	0.5	0.0	6.4	8.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	3.1	6.5	2.3	8.4	6.1	8.4	15.3	3.4	4.7	26.6	7.9
LnGrp Delay(d),s/veh	86.6	43.5	48.0	70.6	56.8	45.1	81.9	29.2	21.6	70.2	46.5	29.1
LnGrp LOS	F	D	D	E	E	D	F	C	C	E	D	C
Approach Vol, veh/h		699			743			2544			2532	
Approach Delay, s/veh		64.1			56.1			36.5			46.7	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.9	66.7	20.0	31.6	17.1	72.5	12.0	39.5
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	17.5	* 64	14.5	32.0	16.9	* 64	8.6	* 38
Max Q Clear Time (g_c+I1), s	17.4	56.3	14.9	17.9	11.6	37.1	6.6	16.7
Green Ext Time (p_c), s	0.0	5.0	0.0	7.9	0.1	27.0	0.0	10.3

Intersection Summary	
HCM 2010 Ctrl Delay	45.7
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	484	305	633	1270	29	860	2024	314	110	769	329
Future Volume (veh/h)	209	484	305	633	1270	29	860	2024	314	110	769	329
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	209	484	305	633	1270	29	860	2024	314	110	769	329
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	252	700	313	641	1575	490	866	2091	651	133	1008	314
Arrive On Green	0.07	0.20	0.20	0.19	0.32	0.32	0.26	0.42	0.42	0.04	0.20	0.20
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	209	484	305	633	1270	29	860	2024	314	110	769	329
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	9.1	19.2	29.0	28.1	35.1	2.0	38.2	59.6	22.1	4.9	21.8	30.3
Cycle Q Clear(g_c), s	9.1	19.2	29.0	28.1	35.1	2.0	38.2	59.6	22.1	4.9	21.8	30.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	252	700	313	641	1575	490	866	2091	651	133	1008	314
V/C Ratio(X)	0.83	0.69	0.97	0.99	0.81	0.06	0.99	0.97	0.48	0.83	0.76	1.05
Avail Cap(c_a), veh/h	275	700	313	641	1575	490	866	2093	652	133	1008	314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.6	55.8	59.7	60.6	47.2	35.8	55.7	42.6	31.7	71.6	56.5	59.9
Incr Delay (d2), s/veh	16.1	3.7	43.8	32.3	4.1	0.2	28.9	13.1	1.1	31.9	4.1	64.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	9.7	16.4	16.0	16.7	0.9	21.3	29.9	9.6	2.9	10.4	18.6
LnGrp Delay(d),s/veh	84.7	59.4	103.5	93.0	51.3	36.0	84.6	55.8	32.9	103.6	60.6	124.0
LnGrp LOS	F	E	F	F	D	D	F	E	C	F	E	F
Approach Vol, veh/h		998			1932			3198			1208	
Approach Delay, s/veh		78.2			64.7			61.3			81.8	
Approach LOS		E			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.0	36.1	16.6	53.4	11.4	68.7	34.0	36.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	38.5	* 30	12.1	* 47	5.9	* 63	28.5	30.0
Max Q Clear Time (g_c+I1), s	40.2	32.3	11.1	37.1	6.9	61.6	30.1	31.0
Green Ext Time (p_c), s	0.0	0.0	0.0	9.1	0.0	1.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	316	562	158	39	1823	838	408	2031	20	82	816	608
Future Volume (veh/h)	316	562	158	39	1823	838	408	2031	20	82	816	608
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	316	562	158	39	1823	838	408	2031	20	82	816	608
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	259	2163	674	68	1880	585	346	1868	582	78	1472	458
Arrive On Green	0.08	0.43	0.43	0.02	0.37	0.37	0.10	0.37	0.37	0.02	0.30	0.30
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	316	562	158	39	1823	838	408	2031	20	82	816	608
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	11.5	10.8	9.7	1.7	53.7	56.4	15.5	56.6	1.2	3.5	20.8	44.6
Cycle Q Clear(g_c), s	11.5	10.8	9.7	1.7	53.7	56.4	15.5	56.6	1.2	3.5	20.8	44.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	2163	674	68	1880	585	346	1868	582	78	1472	458
V/C Ratio(X)	1.22	0.26	0.23	0.58	0.97	1.43	1.18	1.09	0.03	1.05	0.55	1.33
Avail Cap(c_a), veh/h	259	2163	674	115	1880	585	346	1868	582	78	1472	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.8	27.7	27.3	73.4	46.5	47.4	67.8	47.2	29.9	73.8	44.9	53.3
Incr Delay (d2), s/veh	127.9	0.0	0.1	2.9	14.2	204.0	106.2	48.8	0.0	115.8	0.3	161.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	5.0	4.2	0.8	27.5	57.5	12.3	34.4	0.5	2.9	9.6	39.7
LnGrp Delay(d),s/veh	197.7	27.7	27.4	76.3	60.7	251.4	174.0	96.1	29.9	190.6	45.1	214.7
LnGrp LOS	F	C	C	E	E	F	F	F	C	F	D	F
Approach Vol, veh/h		1036			2700			2459			1506	
Approach Delay, s/veh		79.5			120.1			108.5			121.5	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	50.6	17.0	62.5	9.0	62.6	8.5	71.0
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	15.5	44.0	11.5	* 56	3.5	* 57	5.1	* 62
Max Q Clear Time (g_c+I1), s	17.5	46.6	13.5	58.4	5.5	58.6	3.7	12.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6

Intersection Summary	
HCM 2010 Ctrl Delay	111.2
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	616	797	163	96	1814	925	760	2133	202	149	970	733
Future Volume (veh/h)	616	797	163	96	1814	925	760	2133	202	149	970	733
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	616	797	163	96	1814	925	760	2133	202	149	970	733
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	375	1700	345	136	1617	503	461	1845	575	124	1347	419
Arrive On Green	0.11	0.40	0.40	0.04	0.34	0.34	0.14	0.37	0.37	0.04	0.27	0.27
Sat Flow, veh/h	3408	4199	852	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	616	636	324	96	1814	925	760	2133	202	149	970	733
Grp Sat Flow(s),veh/h/ln	1704	1679	1694	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	16.5	20.9	21.1	4.4	50.5	50.5	20.5	55.5	14.1	5.5	26.4	40.5
Cycle Q Clear(g_c), s	16.5	20.9	21.1	4.4	50.5	50.5	20.5	55.5	14.1	5.5	26.4	40.5
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	1359	686	136	1617	503	461	1845	575	124	1347	419
V/C Ratio(X)	1.64	0.47	0.47	0.71	1.12	1.84	1.65	1.16	0.35	1.20	0.72	1.75
Avail Cap(c_a), veh/h	375	1359	686	195	1617	503	461	1845	575	124	1347	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.8	32.8	32.8	71.0	49.8	49.7	64.8	47.2	34.2	72.3	49.6	54.8
Incr Delay (d2), s/veh	301.2	0.1	0.2	2.5	63.7	384.5	301.0	76.7	0.1	145.8	1.6	346.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.4	9.6	9.9	2.0	31.8	74.5	28.8	38.6	6.1	5.1	12.3	57.8
LnGrp Delay(d),s/veh	367.9	32.9	33.0	73.5	113.4	434.2	365.7	124.0	34.4	218.0	51.3	401.2
LnGrp LOS	F	C	C	E	F	F	F	F	C	F	D	F
Approach Vol, veh/h		1576			2835			3095			1852	
Approach Delay, s/veh		163.9			216.7			177.5			203.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	46.0	22.0	56.0	11.0	61.0	11.8	66.2
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	20.5	40.5	16.5	50.5	5.5	55.5	9.0	58.0
Max Q Clear Time (g_c+I1), s	22.5	42.5	18.5	52.5	7.5	57.5	6.4	23.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4

Intersection Summary	
HCM 2010 Ctrl Delay	192.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	601	553	129	383	1372	324	185	1555	158	117	817	860
Future Volume (veh/h)	601	553	129	383	1372	324	185	1555	158	117	817	860
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845	1845	1827	1827	1827	1836	1900
Adj Flow Rate, veh/h	601	553	129	383	1372	324	185	1555	158	117	817	860
Adj No. of Lanes	2	2	1	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	4
Cap, veh/h	468	481	215	173	618	679	94	949	424	92	442	395
Arrive On Green	0.14	0.14	0.14	0.43	0.43	0.43	0.05	0.27	0.27	0.03	0.25	0.25
Sat Flow, veh/h	3408	3505	1568	398	1427	1568	1757	3471	1553	3375	1744	1561
Grp Volume(v), veh/h	601	553	129	1755	0	324	185	1555	158	117	817	860
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1825	0	1568	1757	1736	1553	1688	1744	1561
Q Serve(g_s), s	20.6	20.6	11.6	65.0	0.0	22.1	8.0	41.0	12.3	4.1	38.0	38.0
Cycle Q Clear(g_c), s	20.6	20.6	11.6	65.0	0.0	22.1	8.0	41.0	12.3	4.1	38.0	38.0
Prop In Lane	1.00		1.00	0.22		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	468	481	215	791	0	679	94	949	424	92	442	395
V/C Ratio(X)	1.28	1.15	0.60	2.22	0.00	0.48	1.97	1.64	0.37	1.27	1.85	2.18
Avail Cap(c_a), veh/h	468	481	215	791	0	679	94	949	424	92	442	395
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	64.7	60.8	42.5	0.0	30.4	71.0	54.5	44.1	72.9	56.0	56.0
Incr Delay (d2), s/veh	143.3	88.8	4.5	552.9	0.0	0.5	474.5	292.3	0.5	181.9	390.7	537.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.0	15.9	5.3	154.2	0.0	9.6	16.2	58.2	5.4	4.2	66.2	75.4
LnGrp Delay(d),s/veh	208.0	153.5	65.3	595.4	0.0	30.9	545.5	346.8	44.6	254.8	446.7	593.2
LnGrp LOS	F	F	E	F		C	F	F	D	F	F	F
Approach Vol, veh/h		1283			2079			1898			1794	
Approach Delay, s/veh		170.2			507.4			341.0			504.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	43.0		26.0	9.0	46.0		69.0
Change Period (Y+Rc), s	4.0	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	8.0	38.0		* 21	* 4.1	41.0		65.0
Max Q Clear Time (g_c+I1), s	10.0	40.0		22.6	6.1	43.0		67.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		400.5	
HCM 2010 LOS		F	

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	876	55	364	1869	393	81	1238	297	205	734	417
Future Volume (veh/h)	186	876	55	364	1869	393	81	1238	297	205	734	417
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1845	1827	1845	1845
Adj Flow Rate, veh/h	186	876	55	364	1869	393	81	1238	297	205	734	417
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	141	1381	618	420	1668	799	123	1039	465	163	1082	549
Arrive On Green	0.04	0.39	0.39	0.12	0.48	0.48	0.04	0.30	0.30	0.05	0.31	0.31
Sat Flow, veh/h	3408	3505	1568	3408	3505	1524	3408	3505	1568	3375	3505	1568
Grp Volume(v), veh/h	186	876	55	364	1869	393	81	1238	297	205	734	417
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1524	1704	1752	1568	1688	1752	1568
Q Serve(g_s), s	6.0	29.3	3.2	15.2	69.0	24.0	3.4	43.0	23.8	7.0	26.5	34.1
Cycle Q Clear(g_c), s	6.0	29.3	3.2	15.2	69.0	24.0	3.4	43.0	23.8	7.0	26.5	34.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	1381	618	420	1668	799	123	1039	465	163	1082	549
V/C Ratio(X)	1.32	0.63	0.09	0.87	1.12	0.49	0.66	1.19	0.64	1.26	0.68	0.76
Avail Cap(c_a), veh/h	141	1381	618	541	1668	799	165	1039	465	163	1082	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.5	35.5	27.6	62.4	38.0	22.1	69.0	51.0	44.3	69.0	43.8	41.7
Incr Delay (d2), s/veh	184.5	1.0	0.1	11.4	62.9	0.5	5.9	95.7	2.9	156.2	1.7	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	14.3	1.4	7.8	47.9	10.1	1.7	34.6	10.7	6.8	13.1	15.7
LnGrp Delay(d),s/veh	254.0	36.5	27.7	73.8	100.9	22.6	74.9	146.7	47.2	225.2	45.5	47.8
LnGrp LOS	F	D	C	E	F	C	E	F	D	F	D	D
Approach Vol, veh/h		1117			2626			1616			1356	
Approach Delay, s/veh		72.3			85.4			124.8			73.4	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.9	63.1	9.2	50.8	10.0	75.0	11.0	49.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	23.0	52.0	7.0	43.0	6.0	69.0	7.0	43.0
Max Q Clear Time (g_c+I1), s	17.2	31.3	5.4	36.1	8.0	71.0	9.0	45.0
Green Ext Time (p_c), s	0.7	19.0	0.0	6.2	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	90.3
HCM 2010 LOS	F

Notes

User approved changes to right turn type.

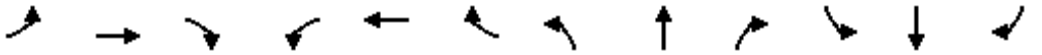
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	399	14	30	1199	542	615
Future Volume (veh/h)	399	14	30	1199	542	615
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	399	14	30	1199	542	615
Adj No. of Lanes	0	0	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	450	16	35	1848	709	634
Arrive On Green	0.29	0.29	0.02	0.53	0.41	0.41
Sat Flow, veh/h	1579	55	1740	3563	1827	1553
Grp Volume(v), veh/h	414	0	30	1199	542	615
Grp Sat Flow(s),veh/h/ln	1639	0	1740	1736	1736	1553
Q Serve(g_s), s	12.8	0.0	0.9	13.1	14.3	20.6
Cycle Q Clear(g_c), s	12.8	0.0	0.9	13.1	14.3	20.6
Prop In Lane	0.96	0.03	1.00			1.00
Lane Grp Cap(c), veh/h	467	0	35	1848	709	634
V/C Ratio(X)	0.89	0.00	0.85	0.65	0.76	0.97
Avail Cap(c_a), veh/h	524	0	200	2202	709	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	0.0	25.9	8.9	13.5	15.4
Incr Delay (d2), s/veh	15.5	0.0	18.6	0.3	4.5	28.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.6	6.2	7.7	13.6
LnGrp Delay(d),s/veh	33.6	0.0	44.6	9.2	18.0	43.4
LnGrp LOS	C		D	A	B	D
Approach Vol, veh/h	414			1229	1157	
Approach Delay, s/veh	33.6			10.0	31.5	
Approach LOS	C			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.6	27.4		19.1		34.0		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.1	* 22		17.0		* 34		
Max Q Clear Time (g_c+I1), s	2.9	22.6		14.8		15.1		
Green Ext Time (p_c), s	0.0	0.0		0.3		7.6		

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	25	52	4	32	48	8	1263	26	22	1847	416
Future Volume (veh/h)	246	25	52	4	32	48	8	1263	26	22	1847	416
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1583	1845	1845	1845	1845	1810	1845	1845	1845
Adj Flow Rate, veh/h	246	25	52	4	32	48	8	1263	26	22	1847	416
Adj No. of Lanes	2	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	20	3	3	3	3	5	3	3	3
Cap, veh/h	320	276	234	6	110	94	28	2145	941	34	2185	978
Arrive On Green	0.09	0.15	0.15	0.00	0.06	0.06	0.01	0.61	0.61	0.02	0.62	0.62
Sat Flow, veh/h	3408	1845	1568	1508	1845	1568	3408	3505	1538	1757	3505	1568
Grp Volume(v), veh/h	246	25	52	4	32	48	8	1263	26	22	1847	416
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1508	1845	1568	1704	1752	1538	1757	1752	1568
Q Serve(g_s), s	5.3	0.9	2.2	0.2	1.2	2.2	0.2	16.3	0.5	0.9	31.3	10.1
Cycle Q Clear(g_c), s	5.3	0.9	2.2	0.2	1.2	2.2	0.2	16.3	0.5	0.9	31.3	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	320	276	234	6	110	94	28	2145	941	34	2185	978
V/C Ratio(X)	0.77	0.09	0.22	0.62	0.29	0.51	0.29	0.59	0.03	0.64	0.85	0.43
Avail Cap(c_a), veh/h	320	470	400	81	396	336	183	2162	949	118	2209	988
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.0	27.3	27.9	37.1	33.5	34.0	36.8	8.8	5.7	36.3	11.2	7.2
Incr Delay (d2), s/veh	10.8	0.1	0.5	70.4	1.4	4.3	5.5	0.4	0.0	17.9	3.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.5	1.0	0.2	0.7	1.1	0.1	7.8	0.2	0.6	15.8	4.4
LnGrp Delay(d),s/veh	43.8	27.5	28.4	107.4	35.0	38.3	42.3	9.2	5.7	54.2	14.4	7.5
LnGrp LOS	D	C	C	F	C	D	D	A	A	D	B	A
Approach Vol, veh/h		323			84			1297			2285	
Approach Delay, s/veh		40.1			40.3			9.3			13.5	
Approach LOS		D			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	49.6	4.3	15.1	4.6	50.5	11.0	8.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	46.0	4.0	19.0	4.0	47.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	2.9	18.3	2.2	4.2	2.2	33.3	7.3	4.2
Green Ext Time (p_c), s	0.0	25.9	0.0	0.5	0.0	13.2	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	609	404	58	61	775	97	2	621	43	93	1047	1120
Future Volume (veh/h)	609	404	58	61	775	97	2	621	43	93	1047	1120
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	609	404	58	61	775	97	2	621	43	93	1047	1120
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	549	1237	554	97	773	346	5	1452	649	138	1588	710
Arrive On Green	0.17	0.36	0.36	0.03	0.23	0.23	0.00	0.42	0.42	0.04	0.46	0.46
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3343	3438	1538	3343	3438	1538
Grp Volume(v), veh/h	609	404	58	61	775	97	2	621	43	93	1047	1120
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1672	1719	1538	1672	1719	1538
Q Serve(g_s), s	24.4	12.6	3.7	2.7	33.4	7.7	0.1	18.8	2.4	4.0	34.7	68.0
Cycle Q Clear(g_c), s	24.4	12.6	3.7	2.7	33.4	7.7	0.1	18.8	2.4	4.0	34.7	68.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	549	1237	554	97	773	346	5	1452	649	138	1588	710
V/C Ratio(X)	1.11	0.33	0.10	0.63	1.00	0.28	0.37	0.43	0.07	0.67	0.66	1.58
Avail Cap(c_a), veh/h	549	1237	554	151	773	346	68	1457	652	195	1588	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.4	33.9	31.0	70.7	56.9	47.0	73.4	30.0	25.3	69.6	30.7	39.6
Incr Delay (d2), s/veh	72.1	0.3	0.2	2.5	33.1	0.9	15.3	0.2	0.0	2.1	1.0	266.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	6.0	1.6	1.3	19.2	3.3	0.1	8.9	1.0	1.9	16.7	81.4
LnGrp Delay(d),s/veh	133.5	34.2	31.2	73.2	90.1	47.9	88.7	30.2	25.3	71.8	31.7	305.9
LnGrp LOS	F	C	C	E	F	D	F	C	C	E	C	F
Approach Vol, veh/h		1071			933			666			2260	
Approach Delay, s/veh		90.5			84.6			30.1			169.2	
Approach LOS		F			F			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	39.4	4.8	74.0	8.9	59.5	10.7	68.2
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	4.6	6.0
Max Green Setting (Gmax), s	24.4	33.4	3.0	68.0	6.7	51.1	8.6	62.4
Max Q Clear Time (g_c+I1), s	26.4	35.4	2.1	70.0	4.7	14.6	6.0	20.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	20.7	0.0	29.7

Intersection Summary	
HCM 2010 Ctrl Delay	117.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	828	93	283	739	154	96	1085	299	69	763	137
Future Volume (veh/h)	164	828	93	283	739	154	96	1085	299	69	763	137
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	164	828	93	283	739	154	96	1085	299	69	763	137
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	198	902	101	259	1117	500	122	1197	536	80	1113	498
Arrive On Green	0.11	0.28	0.28	0.15	0.32	0.32	0.07	0.34	0.34	0.05	0.32	0.32
Sat Flow, veh/h	1757	3177	357	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	164	457	464	283	739	154	96	1085	299	69	763	137
Grp Sat Flow(s),veh/h/ln	1757	1752	1782	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	8.0	22.2	22.2	13.0	16.0	6.5	4.7	26.0	13.7	3.4	16.7	5.8
Cycle Q Clear(g_c), s	8.0	22.2	22.2	13.0	16.0	6.5	4.7	26.0	13.7	3.4	16.7	5.8
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	498	506	259	1117	500	122	1197	536	80	1113	498
V/C Ratio(X)	0.83	0.92	0.92	1.09	0.66	0.31	0.79	0.91	0.56	0.87	0.69	0.28
Avail Cap(c_a), veh/h	239	517	526	259	1117	500	160	1233	552	80	1113	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	30.6	30.6	37.6	25.9	22.7	40.4	27.7	23.6	41.8	26.2	22.5
Incr Delay (d2), s/veh	17.9	21.0	20.8	82.6	1.5	0.3	17.4	9.6	1.2	58.2	1.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	13.6	13.8	12.2	7.9	2.9	2.9	14.1	6.1	3.0	8.3	2.5
LnGrp Delay(d),s/veh	56.1	51.6	51.3	120.2	27.4	23.0	57.7	37.3	24.8	100.0	28.0	22.8
LnGrp LOS	E	D	D	F	C	C	E	D	C	F	C	C
Approach Vol, veh/h		1085			1176			1480			969	
Approach Delay, s/veh		52.2			49.1			36.1			32.4	
Approach LOS		D			D			D			C	

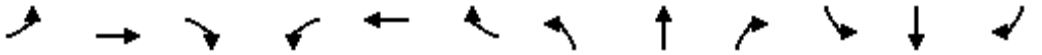
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	34.1	17.0	29.0	10.1	32.0	13.9	32.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	31.0	13.0	26.0	8.0	27.0	12.0	27.0
Max Q Clear Time (g_c+I1), s	5.4	28.0	15.0	24.2	6.7	18.7	10.0	18.0
Green Ext Time (p_c), s	0.0	2.1	0.0	0.8	0.0	7.0	0.1	6.6

Intersection Summary	
HCM 2010 Ctrl Delay	42.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	619	224	68	784	100	170	1642	191	141	439	57
Future Volume (veh/h)	124	619	224	68	784	100	170	1642	191	141	439	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	124	619	224	68	784	100	170	1642	191	141	439	57
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	108	906	405	86	770	98	197	1594	183	107	1410	182
Arrive On Green	0.06	0.26	0.26	0.05	0.25	0.25	0.11	0.51	0.51	0.06	0.46	0.46
Sat Flow, veh/h	1757	3505	1568	1757	3128	399	1740	3139	360	1740	3093	399
Grp Volume(v), veh/h	124	619	224	68	439	445	170	897	936	141	245	251
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1774	1740	1736	1763	1740	1736	1756
Q Serve(g_s), s	8.0	20.7	16.1	5.0	32.0	32.0	12.5	66.0	66.0	8.0	11.6	11.8
Cycle Q Clear(g_c), s	8.0	20.7	16.1	5.0	32.0	32.0	12.5	66.0	66.0	8.0	11.6	11.8
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.20	1.00		0.23
Lane Grp Cap(c), veh/h	108	906	405	86	431	437	197	881	895	107	791	801
V/C Ratio(X)	1.15	0.68	0.55	0.79	1.02	1.02	0.86	1.02	1.05	1.32	0.31	0.31
Avail Cap(c_a), veh/h	108	906	405	108	431	437	308	881	895	107	791	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	43.4	41.7	61.1	49.0	49.0	56.6	32.0	32.0	61.0	22.4	22.4
Incr Delay (d2), s/veh	131.5	2.1	1.6	25.5	48.0	47.8	13.9	34.8	42.8	194.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	10.2	7.1	3.0	21.2	21.5	6.8	39.8	42.5	9.6	5.6	5.8
LnGrp Delay(d),s/veh	192.5	45.5	43.3	86.7	97.0	96.8	70.6	66.8	74.8	255.0	22.6	22.7
LnGrp LOS	F	D	D	F	F	F	E	F	F	F	C	C
Approach Vol, veh/h		967			952			2003			637	
Approach Delay, s/veh		63.9			96.2			70.8			74.1	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	70.0	10.4	37.6	18.7	63.3	12.0	36.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	66.0	8.0	32.0	23.0	51.0	8.0	32.0
Max Q Clear Time (g_c+I1), s	10.0	68.0	7.0	22.7	14.5	13.8	10.0	34.0
Green Ext Time (p_c), s	0.0	0.0	0.0	6.5	0.3	26.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	75.1
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	1304	169	175	1505	116	194	1576	174	126	368	126
Future Volume (veh/h)	320	1304	169	175	1505	116	194	1576	174	126	368	126
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	320	1304	169	175	1505	116	194	1576	174	126	368	126
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	255	1401	182	151	1264	393	215	1368	149	104	1283	574
Arrive On Green	0.15	0.31	0.31	0.09	0.25	0.25	0.12	0.43	0.43	0.06	0.37	0.37
Sat Flow, veh/h	1740	4470	579	1740	4988	1553	1740	3157	345	1740	3471	1553
Grp Volume(v), veh/h	320	970	503	175	1505	116	194	858	892	126	368	126
Grp Sat Flow(s),veh/h/ln	1740	1663	1725	1740	1663	1553	1740	1736	1766	1740	1736	1553
Q Serve(g_s), s	22.0	42.4	42.4	13.0	38.0	9.0	16.5	65.0	65.0	9.0	11.2	8.4
Cycle Q Clear(g_c), s	22.0	42.4	42.4	13.0	38.0	9.0	16.5	65.0	65.0	9.0	11.2	8.4
Prop In Lane	1.00		0.34	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	255	1042	540	151	1264	393	215	752	765	104	1283	574
V/C Ratio(X)	1.25	0.93	0.93	1.16	1.19	0.29	0.90	1.14	1.17	1.21	0.29	0.22
Avail Cap(c_a), veh/h	255	1042	540	151	1264	393	232	752	765	104	1283	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	49.9	49.9	68.5	56.0	45.2	64.8	42.5	42.5	70.5	33.3	32.4
Incr Delay (d2), s/veh	142.3	14.2	23.0	122.9	94.1	0.4	32.6	78.9	88.4	154.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.6	21.6	23.7	11.4	28.4	3.9	9.9	47.6	50.5	8.8	5.4	3.6
LnGrp Delay(d),s/veh	206.3	64.2	72.9	191.4	150.1	45.6	97.4	121.4	130.9	224.5	33.5	32.6
LnGrp LOS	F	E	E	F	F	D	F	F	F	F	C	C
Approach Vol, veh/h		1793			1796			1944			620	
Approach Delay, s/veh		92.0			147.4			123.4			72.1	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	69.0	17.0	51.0	22.6	59.4	26.0	42.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	65.0	13.0	47.0	20.0	54.0	22.0	38.0
Max Q Clear Time (g_c+I1), s	11.0	67.0	15.0	44.4	18.5	13.2	24.0	40.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.5	0.1	26.1	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		116.1
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1211	180	95	1807	395	135	1002	266	25	268	186
Future Volume (veh/h)	159	1211	180	95	1807	395	135	1002	266	25	268	186
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	159	1211	180	95	1807	395	135	1002	266	25	268	186
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	151	1572	233	116	1730	774	160	987	442	31	731	327
Arrive On Green	0.09	0.52	0.52	0.07	0.50	0.50	0.09	0.28	0.28	0.02	0.21	0.21
Sat Flow, veh/h	1740	3034	449	1740	3471	1553	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	159	690	701	95	1807	395	135	1002	266	25	268	186
Grp Sat Flow(s),veh/h/ln	1740	1736	1748	1740	1736	1553	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	12.0	44.1	44.7	7.5	69.0	23.7	10.5	39.0	20.3	2.0	9.1	14.7
Cycle Q Clear(g_c), s	12.0	44.1	44.7	7.5	69.0	23.7	10.5	39.0	20.3	2.0	9.1	14.7
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	151	899	906	116	1730	774	160	987	442	31	731	327
V/C Ratio(X)	1.05	0.77	0.77	0.82	1.04	0.51	0.85	1.02	0.60	0.80	0.37	0.57
Avail Cap(c_a), veh/h	151	899	906	138	1730	774	241	987	442	51	731	327
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.2	26.7	26.8	63.8	34.7	23.4	62.0	49.7	43.0	67.8	46.9	49.2
Incr Delay (d2), s/veh	88.5	4.0	4.2	26.7	34.4	0.6	15.7	32.4	2.3	35.2	0.3	2.3
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	22.1	22.5	4.5	41.2	10.3	5.8	23.2	9.1	1.3	4.4	6.6
LnGrp Delay(d),s/veh	151.8	30.7	31.0	90.5	69.1	23.9	77.7	82.2	45.3	103.0	47.3	51.5
LnGrp LOS	F	C	C	F	F	C	E	F	D	F	D	D
Approach Vol, veh/h		1550			2297			1403			479	
Approach Delay, s/veh		43.3			62.2			74.8			51.8	
Approach LOS		D			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	43.0	13.2	75.8	16.6	32.9	16.0	73.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	39.0	11.0	70.0	19.0	24.0	12.0	69.0
Max Q Clear Time (g_c+I1), s	4.0	41.0	9.5	46.7	12.5	16.7	14.0	71.0
Green Ext Time (p_c), s	0.0	0.0	0.0	22.0	0.2	5.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	418	508	33	74	698	278	55	1452	59	92	873	9
Future Volume (veh/h)	418	508	33	74	698	278	55	1452	59	92	873	9
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	418	508	33	74	698	278	55	1452	59	92	873	9
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	453	1374	428	127	893	278	112	1577	64	149	1647	737
Arrive On Green	0.13	0.28	0.28	0.04	0.18	0.18	0.03	0.46	0.46	0.04	0.47	0.47
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	3400	138	3375	3471	1553
Grp Volume(v), veh/h	418	508	33	74	698	278	55	740	771	92	873	9
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1736	1803	1688	1736	1553
Q Serve(g_s), s	10.9	7.3	1.4	1.9	11.9	16.0	1.4	35.6	35.9	2.4	15.8	0.3
Cycle Q Clear(g_c), s	10.9	7.3	1.4	1.9	11.9	16.0	1.4	35.6	35.9	2.4	15.8	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	453	1374	428	127	893	278	112	805	836	149	1647	737
V/C Ratio(X)	0.92	0.37	0.08	0.58	0.78	1.00	0.49	0.92	0.92	0.62	0.53	0.01
Avail Cap(c_a), veh/h	453	1374	428	189	893	278	151	815	847	151	1647	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	26.1	24.0	42.3	35.0	36.7	42.5	22.4	22.5	42.0	16.5	12.4
Incr Delay (d2), s/veh	24.5	0.2	0.1	4.2	4.6	54.1	3.3	15.3	15.4	7.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	3.4	0.6	1.0	5.9	11.0	0.7	20.3	21.3	1.3	7.6	0.1
LnGrp Delay(d),s/veh	62.7	26.3	24.0	46.5	39.6	90.8	45.7	37.7	37.8	49.2	16.8	12.4
LnGrp LOS	E	C	C	D	D	F	D	D	D	D	B	B
Approach Vol, veh/h		959			1050			1566			974	
Approach Delay, s/veh		42.1			53.6			38.0			19.8	
Approach LOS		D			D			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	45.5	7.4	28.6	7.0	46.4	16.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	42.0	5.0	23.0	4.0	42.0	12.0	16.0
Max Q Clear Time (g_c+I1), s	4.4	37.9	3.9	9.3	3.4	17.8	12.9	18.0
Green Ext Time (p_c), s	0.0	3.6	0.0	7.7	0.0	18.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	411	58	1	471	23	170	540	38	8	217	28
Future Volume (veh/h)	142	411	58	1	471	23	170	540	38	8	217	28
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1827	1827	1827	1845	1845	1845
Adj Flow Rate, veh/h	142	411	58	1	471	23	170	540	38	8	217	28
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	3	3	3
Cap, veh/h	179	1006	141	3	766	37	215	656	558	15	451	383
Arrive On Green	0.10	0.33	0.33	0.00	0.23	0.23	0.12	0.36	0.36	0.01	0.24	0.24
Sat Flow, veh/h	1740	3058	429	1740	3369	164	1740	1827	1553	1757	1845	1568
Grp Volume(v), veh/h	142	232	237	1	242	252	170	540	38	8	217	28
Grp Sat Flow(s),veh/h/ln	1740	1736	1751	1740	1736	1798	1740	1827	1553	1757	1845	1568
Q Serve(g_s), s	4.2	5.5	5.6	0.0	6.6	6.7	5.0	14.2	0.9	0.2	5.3	0.7
Cycle Q Clear(g_c), s	4.2	5.5	5.6	0.0	6.6	6.7	5.0	14.2	0.9	0.2	5.3	0.7
Prop In Lane	1.00		0.24	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	571	576	3	394	409	215	656	558	15	451	383
V/C Ratio(X)	0.79	0.41	0.41	0.30	0.61	0.62	0.79	0.82	0.07	0.54	0.48	0.07
Avail Cap(c_a), veh/h	197	590	595	131	525	543	296	794	675	133	627	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	13.8	13.8	26.4	18.4	18.4	22.6	15.4	11.1	26.1	17.1	15.4
Incr Delay (d2), s/veh	18.1	0.5	0.5	45.2	1.6	1.5	9.7	5.9	0.1	27.6	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	2.7	2.8	0.1	3.3	3.5	3.0	8.1	0.4	0.2	2.8	0.3
LnGrp Delay(d),s/veh	41.3	14.2	14.3	71.6	19.9	19.9	32.2	21.3	11.2	53.8	17.9	15.5
LnGrp LOS	D	B	B	E	B	B	C	C	B	D	B	B
Approach Vol, veh/h		611			495			748			253	
Approach Delay, s/veh		20.5			20.0			23.3			18.8	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.4	23.0	4.1	21.4	10.5	16.9	9.4	16.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	23.0	4.0	18.0	9.0	18.0	6.0	16.0
Max Q Clear Time (g_c+I1), s	2.2	16.2	2.0	7.6	7.0	7.3	6.2	8.7
Green Ext Time (p_c), s	0.0	2.8	0.0	4.3	0.1	3.8	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	154	110	3	1	305	1893	37	0	1646	0
Future Volume (veh/h)	0	1	154	110	3	1	305	1893	37	0	1646	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	0	1	154	110	3	1	305	1893	37	0	1646	0
Adj No. of Lanes	0	1	0	1	1	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	0	1	177	139	105	35	307	2073	928	106	1672	0
Arrive On Green	0.00	0.12	0.12	0.08	0.08	0.08	0.18	0.61	0.61	0.00	0.49	0.00
Sat Flow, veh/h	0	10	1487	1757	1325	442	1707	3406	1524	1707	3495	0
Grp Volume(v), veh/h	0	0	155	110	0	4	305	1893	37	0	1646	0
Grp Sat Flow(s),veh/h/ln	0	0	1497	1757	0	1767	1707	1703	1524	1707	1703	0
Q Serve(g_s), s	0.0	0.0	12.4	7.5	0.0	0.3	21.8	59.8	1.2	0.0	58.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	12.4	7.5	0.0	0.3	21.8	59.8	1.2	0.0	58.2	0.0
Prop In Lane	0.00		0.99	1.00		0.25	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	178	139	0	139	307	2073	928	106	1672	0
V/C Ratio(X)	0.00	0.00	0.87	0.79	0.00	0.03	0.99	0.91	0.04	0.00	0.98	0.00
Avail Cap(c_a), veh/h	0	0	196	230	0	231	307	2174	972	106	1672	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	52.9	55.3	0.0	52.0	50.0	21.0	9.6	0.0	30.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	30.0	9.7	0.0	0.1	49.2	6.3	0.0	0.0	18.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	6.7	4.0	0.0	0.1	14.4	29.7	0.5	0.0	31.5	0.0
LnGrp Delay(d),s/veh	0.0	0.0	82.9	65.0	0.0	52.0	99.2	27.3	9.6	0.0	49.0	0.0
LnGrp LOS			F	E		D	F	C	A		D	
Approach Vol, veh/h		155			114			2235			1646	
Approach Delay, s/veh		82.9			64.6			36.8			49.0	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.6	78.4		18.6	26.0	64.0		13.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	78.0		16.0	22.0	60.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	61.8		14.4	23.8	60.2		9.5
Green Ext Time (p_c), s	0.0	12.6		0.1	0.0	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	44.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	3	19	194	6	606	16	1816	105	226	1575	0
Future Volume (veh/h)	0	3	19	194	6	606	16	1816	105	226	1575	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	0	3	19	194	6	606	16	1816	105	226	1575	0
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1	22	139	219	4	394	23	1827	105	210	2274	0
Arrive On Green	0.00	0.10	0.10	0.12	0.25	0.25	0.01	0.54	0.54	0.12	0.65	0.00
Sat Flow, veh/h	1757	218	1382	1757	15	1555	1757	3370	193	1757	3597	0
Grp Volume(v), veh/h	0	0	22	194	0	612	16	936	985	226	1575	0
Grp Sat Flow(s),veh/h/ln	1757	0	1601	1757	0	1570	1757	1752	1811	1757	1752	0
Q Serve(g_s), s	0.0	0.0	1.8	15.4	0.0	36.0	1.3	74.6	77.0	17.0	40.7	0.0
Cycle Q Clear(g_c), s	0.0	0.0	1.8	15.4	0.0	36.0	1.3	74.6	77.0	17.0	40.7	0.0
Prop In Lane	1.00		0.86	1.00		0.99	1.00		0.11	1.00		0.00
Lane Grp Cap(c), veh/h	1	0	161	219	0	398	23	950	982	210	2274	0
V/C Ratio(X)	0.00	0.00	0.14	0.89	0.00	1.54	0.69	0.99	1.00	1.07	0.69	0.00
Avail Cap(c_a), veh/h	49	0	180	297	0	398	62	950	982	210	2274	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	58.2	61.2	0.0	53.0	69.8	31.9	32.5	62.5	15.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.4	20.8	0.0	254.1	30.7	25.5	29.4	83.2	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.8	8.8	0.0	43.7	0.8	42.6	46.2	13.1	19.8	0.0
LnGrp Delay(d),s/veh	0.0	0.0	58.6	81.9	0.0	307.1	100.5	57.5	61.9	145.7	16.8	0.0
LnGrp LOS			E	F		F	F	E	F	F	B	
Approach Vol, veh/h		22			806			1937			1801	
Approach Delay, s/veh		58.6			252.9			60.1			33.0	
Approach LOS		E			F			E			C	

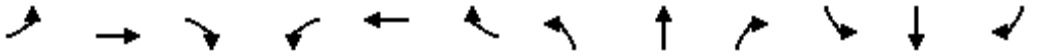
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	81.0	21.7	18.3	5.9	96.1	0.0	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	77.0	24.0	16.0	5.0	89.0	4.0	36.0
Max Q Clear Time (g_c+I1), s	19.0	79.0	17.4	3.8	3.3	42.7	0.0	38.0
Green Ext Time (p_c), s	0.0	0.0	0.3	3.8	0.0	42.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	83.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	6	4	1	5	7	3	1414	1	0	1474	301
Future Volume (veh/h)	339	6	4	1	5	7	3	1414	1	0	1474	301
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	339	6	4	1	5	7	3	1414	1	0	1474	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	391	7	354	2	8	12	6	2088	1	3	1814	812
Arrive On Green	0.23	0.23	0.23	0.01	0.01	0.01	0.00	0.58	0.58	0.00	0.52	0.00
Sat Flow, veh/h	1728	31	1568	129	646	904	1757	3594	3	1757	3505	1568
Grp Volume(v), veh/h	345	0	4	13	0	0	3	689	726	0	1474	0
Grp Sat Flow(s),veh/h/ln	1758	0	1568	1679	0	0	1757	1752	1844	1757	1752	1568
Q Serve(g_s), s	12.6	0.0	0.1	0.5	0.0	0.0	0.1	18.1	18.1	0.0	23.3	0.0
Cycle Q Clear(g_c), s	12.6	0.0	0.1	0.5	0.0	0.0	0.1	18.1	18.1	0.0	23.3	0.0
Prop In Lane	0.98		1.00	0.08		0.54	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	397	0	354	22	0	0	6	1018	1071	3	1814	812
V/C Ratio(X)	0.87	0.00	0.01	0.60	0.00	0.00	0.53	0.68	0.68	0.00	0.81	0.00
Avail Cap(c_a), veh/h	449	0	400	403	0	0	106	1018	1071	106	1947	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	24.8	0.0	20.0	32.7	0.0	0.0	33.1	9.6	9.6	0.0	13.4	0.0
Incr Delay (d2), s/veh	15.1	0.0	0.0	24.2	0.0	0.0	59.4	1.8	1.7	0.0	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	0.1	0.4	0.0	0.0	0.1	9.1	9.6	0.0	11.7	0.0
LnGrp Delay(d),s/veh	39.9	0.0	20.0	56.9	0.0	0.0	92.5	11.5	11.4	0.0	16.0	0.0
LnGrp LOS	D		C	E			F	B	B		B	
Approach Vol, veh/h		349			13			1418			1474	
Approach Delay, s/veh		39.7			56.9			11.6			16.0	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	42.7		19.1	4.2	38.5		4.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	37.0		17.0	4.0	37.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	20.1		14.6	2.1	25.3		2.5
Green Ext Time (p_c), s	0.0	15.3		0.5	0.0	9.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	536	511	86	1274	4	270	1018	63	2	1420	320
Future Volume (veh/h)	255	536	511	86	1274	4	270	1018	63	2	1420	320
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	255	536	511	86	1274	4	270	1018	63	2	1420	320
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	236	1294	579	131	1186	531	262	1637	732	7	1375	615
Arrive On Green	0.07	0.37	0.37	0.04	0.34	0.34	0.08	0.47	0.47	0.00	0.39	0.39
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	255	536	511	86	1274	4	270	1018	63	2	1420	320
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	9.0	14.8	39.6	3.2	44.0	0.2	10.0	28.4	2.9	0.1	51.0	20.3
Cycle Q Clear(g_c), s	9.0	14.8	39.6	3.2	44.0	0.2	10.0	28.4	2.9	0.1	51.0	20.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	1294	579	131	1186	531	262	1637	732	7	1375	615
V/C Ratio(X)	1.08	0.41	0.88	0.66	1.07	0.01	1.03	0.62	0.09	0.27	1.03	0.52
Avail Cap(c_a), veh/h	236	1294	579	131	1186	531	262	1637	732	105	1375	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.5	30.5	38.4	61.7	43.0	28.5	60.0	26.0	19.2	64.8	39.5	30.2
Incr Delay (d2), s/veh	81.7	0.2	14.9	11.3	48.4	0.0	63.5	0.7	0.0	19.0	33.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	7.2	19.6	1.7	29.2	0.1	7.0	13.9	1.3	0.1	31.0	8.9
LnGrp Delay(d),s/veh	142.2	30.7	53.3	72.9	91.4	28.5	123.6	26.7	19.3	83.7	72.6	30.9
LnGrp LOS	F	C	D	E	F	C	F	C	B	F	F	C
Approach Vol, veh/h		1302			1364			1351			1742	
Approach Delay, s/veh		61.4			90.1			45.7			65.0	
Approach LOS		E			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	64.7	9.0	52.0	14.0	55.0	13.0	48.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	57.0	5.0	48.0	10.0	51.0	9.0	44.0
Max Q Clear Time (g_c+I1), s	2.1	30.4	5.2	41.6	12.0	53.0	11.0	46.0
Green Ext Time (p_c), s	0.0	22.0	0.0	5.5	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	2128	45	18	2794	252	445	195	33	203	66	260
Future Volume (veh/h)	140	2128	45	18	2794	252	445	195	33	203	66	260
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	140	2128	45	18	2794	252	445	195	33	203	66	260
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	94	2150	45	25	1867	166	258	295	251	187	221	188
Arrive On Green	0.05	0.61	0.61	0.01	0.57	0.57	0.15	0.16	0.16	0.11	0.12	0.12
Sat Flow, veh/h	1757	3510	74	1757	3257	289	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	140	1059	1114	18	1484	1562	445	195	33	203	66	260
Grp Sat Flow(s),veh/h/ln	1757	1752	1832	1757	1752	1794	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	8.0	88.7	90.3	1.5	86.0	86.0	22.0	14.9	2.7	16.0	4.9	18.0
Cycle Q Clear(g_c), s	8.0	88.7	90.3	1.5	86.0	86.0	22.0	14.9	2.7	16.0	4.9	18.0
Prop In Lane	1.00		0.04	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	1074	1122	25	1005	1028	258	295	251	187	221	188
V/C Ratio(X)	1.49	0.99	0.99	0.73	1.48	1.52	1.73	0.66	0.13	1.08	0.30	1.38
Avail Cap(c_a), veh/h	94	1074	1122	47	1005	1028	258	295	251	187	221	188
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	28.4	28.7	73.7	32.0	32.0	64.0	59.2	54.1	67.0	60.2	66.0
Incr Delay (d2), s/veh	270.2	24.0	25.1	33.2	220.0	238.6	343.0	5.4	0.2	89.7	0.7	201.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	49.8	53.3	1.0	102.7	110.4	35.2	8.0	1.2	12.4	2.5	18.3
LnGrp Delay(d),s/veh	341.2	52.5	53.9	106.8	252.0	270.6	407.0	64.5	54.3	156.7	61.0	267.4
LnGrp LOS	F	D	D	F	F	F	F	E	D	F	E	F
Approach Vol, veh/h		2313			3064			673			529	
Approach Delay, s/veh		70.6			260.6			290.5			199.1	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	28.0	6.1	95.9	26.0	22.0	12.0	90.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	24.0	4.0	90.0	22.0	18.0	8.0	86.0
Max Q Clear Time (g_c+I1), s	18.0	16.9	3.5	92.3	24.0	20.0	10.0	88.0
Green Ext Time (p_c), s	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	191.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	459	617	496	7	1195	413	643	1820	5	281	1256	1598
Future Volume (veh/h)	459	617	496	7	1195	413	643	1820	5	281	1256	1598
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	459	617	496	7	1195	413	643	1820	5	281	1256	1598
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	273	1208	376	23	839	261	364	2767	861	332	2719	847
Arrive On Green	0.08	0.24	0.24	0.01	0.17	0.17	0.11	0.55	0.55	0.10	0.54	0.54
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	459	617	496	7	1195	413	643	1820	5	281	1256	1598
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	12.0	15.9	36.0	0.3	25.0	25.0	16.0	38.3	0.2	12.2	22.9	81.0
Cycle Q Clear(g_c), s	12.0	15.9	36.0	0.3	25.0	25.0	16.0	38.3	0.2	12.2	22.9	81.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	1208	376	23	839	261	364	2767	861	332	2719	847
V/C Ratio(X)	1.68	0.51	1.32	0.30	1.42	1.58	1.77	0.66	0.01	0.85	0.46	1.89
Avail Cap(c_a), veh/h	273	1208	376	91	839	261	364	2767	861	432	2719	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.0	49.4	57.0	74.1	62.5	62.5	67.0	23.8	15.3	66.6	21.1	34.5
Incr Delay (d2), s/veh	323.0	0.4	161.0	7.2	197.6	278.8	357.0	0.6	0.0	11.7	0.1	403.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	7.4	32.4	0.2	26.9	31.1	25.5	17.8	0.1	6.3	10.6	129.8
LnGrp Delay(d),s/veh	392.0	49.7	218.0	81.4	260.1	341.3	424.0	24.4	15.3	78.3	21.3	438.3
LnGrp LOS	F	D	F	F	F	F	F	C	B	E	C	F
Approach Vol, veh/h		1572			1615			2468			3135	
Approach Delay, s/veh		202.8			280.1			128.5			238.9	
Approach LOS		F			F			F			F	

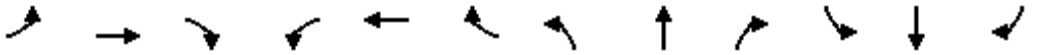
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.6	86.4	5.0	40.0	20.0	85.0	16.0	29.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	78.0	4.0	33.0	16.0	81.0	12.0	25.0
Max Q Clear Time (g_c+I1), s	14.2	40.3	2.3	38.0	18.0	83.0	14.0	27.0
Green Ext Time (p_c), s	0.4	37.1	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		209.0
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	579	272	403	1250	852	641	1107	238	370	326	0
Future Volume (veh/h)	0	579	272	403	1250	852	641	1107	238	370	326	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	579	272	403	1250	852	641	1107	238	370	326	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	999	311	501	2003	624	736	1147	513	402	804	359
Arrive On Green	0.00	0.20	0.20	0.15	0.40	0.40	0.22	0.33	0.33	0.12	0.23	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	579	272	403	1250	852	641	1107	238	370	326	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	8.0	12.9	8.7	15.2	30.4	13.9	23.7	9.2	8.2	6.0	0.0
Cycle Q Clear(g_c), s	0.0	8.0	12.9	8.7	15.2	30.4	13.9	23.7	9.2	8.2	6.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	999	311	501	2003	624	736	1147	513	402	804	359
V/C Ratio(X)	0.00	0.58	0.87	0.80	0.62	1.37	0.87	0.97	0.46	0.92	0.41	0.00
Avail Cap(c_a), veh/h	178	1055	328	625	2003	624	803	1147	513	402	804	359
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	27.7	29.7	31.5	18.4	23.0	28.9	25.3	20.4	33.3	25.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	21.4	6.1	0.6	174.9	9.7	18.7	0.7	26.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.8	7.4	4.5	7.1	43.3	7.5	14.4	4.1	5.3	2.9	0.0
LnGrp Delay(d),s/veh	0.0	28.5	51.1	37.6	19.0	197.9	38.6	44.0	21.0	59.7	25.3	0.0
LnGrp LOS		C	D	D	B	F	D	D	C	E	C	
Approach Vol, veh/h		851			2505			1986			696	
Approach Delay, s/veh		35.7			82.8			39.5			43.6	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	29.0	15.2	19.1	20.5	21.5	0.0	34.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	25.0	14.0	16.0	18.0	16.0	4.0	26.0
Max Q Clear Time (g_c+I1), s	10.2	25.7	10.7	14.9	15.9	8.0	0.0	32.4
Green Ext Time (p_c), s	0.0	0.0	0.5	0.3	0.6	5.8	0.0	0.0

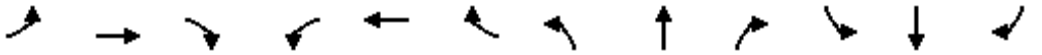
Intersection Summary	
HCM 2010 Ctrl Delay	57.4
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	73	19	159	407	974	112	979	82	347	438	240
Future Volume (veh/h)	48	73	19	159	407	974	112	979	82	347	438	240
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	48	73	19	159	407	974	112	979	82	347	438	240
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	91	1519	679	215	1647	737	165	941	421	343	1124	503
Arrive On Green	0.03	0.43	0.43	0.06	0.47	0.47	0.05	0.27	0.27	0.10	0.32	0.32
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	48	73	19	159	407	974	112	979	82	347	438	240
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	1.7	1.4	0.8	5.5	8.3	56.0	3.9	32.0	4.8	12.0	11.6	14.6
Cycle Q Clear(g_c), s	1.7	1.4	0.8	5.5	8.3	56.0	3.9	32.0	4.8	12.0	11.6	14.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	1519	679	215	1647	737	165	941	421	343	1124	503
V/C Ratio(X)	0.53	0.05	0.03	0.74	0.25	1.32	0.68	1.04	0.19	1.01	0.39	0.48
Avail Cap(c_a), veh/h	114	1519	679	286	1647	737	257	941	421	343	1124	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.3	19.5	19.4	54.9	18.9	31.6	55.8	43.6	33.6	53.6	31.4	32.5
Incr Delay (d2), s/veh	4.7	0.0	0.0	6.8	0.1	154.3	4.8	40.4	0.2	51.4	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.7	0.4	2.8	4.0	55.8	1.9	20.7	2.1	8.1	5.6	6.4
LnGrp Delay(d),s/veh	61.9	19.6	19.4	61.6	19.0	185.9	60.5	83.9	33.9	105.1	31.7	33.2
LnGrp LOS	E	B	B	E	B	F	E	F	C	F	C	C
Approach Vol, veh/h		140			1540			1173			1025	
Approach Delay, s/veh		34.1			129.0			78.2			56.9	
Approach LOS		C			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	36.0	11.5	55.6	9.8	42.2	7.2	60.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	32.0	10.0	50.0	9.0	35.0	4.0	56.0
Max Q Clear Time (g_c+I1), s	14.0	34.0	7.5	3.4	5.9	16.6	3.7	58.0
Green Ext Time (p_c), s	0.0	0.0	0.1	10.7	0.1	10.8	0.0	0.0

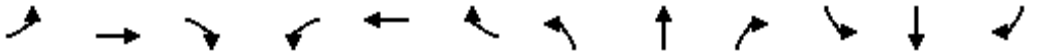
Intersection Summary	
HCM 2010 Ctrl Delay	91.1
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	362	105	31	846	267	252	573	28	81	327	298
Future Volume (veh/h)	124	362	105	31	846	267	252	573	28	81	327	298
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	124	362	105	31	846	267	252	573	28	81	327	298
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	207	1165	521	93	1048	469	357	1071	479	174	882	395
Arrive On Green	0.06	0.33	0.33	0.03	0.30	0.30	0.10	0.31	0.31	0.05	0.25	0.25
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	124	362	105	31	846	267	252	573	28	81	327	298
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	2.0	4.3	2.7	0.5	12.6	8.1	4.0	7.7	0.7	1.3	4.3	9.9
Cycle Q Clear(g_c), s	2.0	4.3	2.7	0.5	12.6	8.1	4.0	7.7	0.7	1.3	4.3	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	207	1165	521	93	1048	469	357	1071	479	174	882	395
V/C Ratio(X)	0.60	0.31	0.20	0.33	0.81	0.57	0.71	0.53	0.06	0.47	0.37	0.75
Avail Cap(c_a), veh/h	242	1165	521	242	1119	500	363	1071	479	302	994	445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	14.0	13.5	26.9	18.3	16.7	24.4	16.3	13.8	26.0	17.4	19.5
Incr Delay (d2), s/veh	3.0	0.2	0.2	2.1	4.2	1.4	6.0	0.5	0.1	1.9	0.3	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.1	1.2	0.3	6.6	3.6	2.2	3.7	0.3	0.7	2.1	4.9
LnGrp Delay(d),s/veh	28.8	14.2	13.7	29.0	22.5	18.1	30.4	16.8	13.9	28.0	17.7	25.9
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	C
Approach Vol, veh/h		591			1144			853			706	
Approach Delay, s/veh		17.2			21.7			20.7			22.3	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	21.2	5.5	22.7	9.9	18.2	7.4	20.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	17.0	4.0	18.0	6.0	16.0	4.0	18.0
Max Q Clear Time (g_c+I1), s	3.3	9.7	2.5	6.3	6.0	11.9	4.0	14.6
Green Ext Time (p_c), s	0.0	4.0	0.0	7.1	0.0	2.3	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.7
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	766	119	25	1275	258	576	193	63	107	50	143
Future Volume (veh/h)	58	766	119	25	1275	258	576	193	63	107	50	143
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	58	766	119	25	1275	258	576	193	63	107	50	143
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	66	1355	606	35	1292	578	581	676	574	134	206	175
Arrive On Green	0.04	0.39	0.39	0.02	0.37	0.37	0.33	0.37	0.37	0.08	0.11	0.11
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	58	766	119	25	1275	258	576	193	63	107	50	143
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	3.5	18.2	5.3	1.5	38.2	13.2	34.5	7.8	2.8	6.3	2.6	9.4
Cycle Q Clear(g_c), s	3.5	18.2	5.3	1.5	38.2	13.2	34.5	7.8	2.8	6.3	2.6	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1355	606	35	1292	578	581	676	574	134	206	175
V/C Ratio(X)	0.87	0.57	0.20	0.72	0.99	0.45	0.99	0.29	0.11	0.80	0.24	0.82
Avail Cap(c_a), veh/h	66	1355	606	83	1292	578	581	676	574	216	279	237
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	25.5	21.5	51.6	33.2	25.2	35.3	23.7	22.1	48.1	42.9	45.9
Incr Delay (d2), s/veh	68.2	0.5	0.2	24.6	21.9	0.5	35.0	0.2	0.1	10.4	0.6	14.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	8.8	2.3	1.0	22.3	5.7	22.3	4.0	1.2	3.5	1.4	4.8
LnGrp Delay(d),s/veh	118.9	26.0	21.7	76.2	55.0	25.8	70.3	24.0	22.2	58.4	43.5	60.6
LnGrp LOS	F	C	C	E	E	C	E	C	C	E	D	E
Approach Vol, veh/h		943			1558			832			300	
Approach Delay, s/veh		31.2			50.5			55.9			57.0	
Approach LOS		C			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	42.8	6.1	44.9	39.0	15.8	8.0	43.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	38.0	5.0	38.0	35.0	16.0	4.0	39.0
Max Q Clear Time (g_c+I1), s	8.3	9.8	3.5	20.2	36.5	11.4	5.5	40.2
Green Ext Time (p_c), s	0.1	2.1	0.0	14.1	0.0	0.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	198	173	36	452	203	181	169	84	40	81	47
Future Volume (veh/h)	24	198	173	36	452	203	181	169	84	40	81	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	24	198	173	36	452	203	181	169	84	40	81	47
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	39	791	673	53	528	237	226	267	133	58	146	85
Arrive On Green	0.02	0.43	0.43	0.03	0.44	0.44	0.13	0.23	0.23	0.03	0.13	0.13
Sat Flow, veh/h	1757	1845	1568	1757	1207	542	1757	1164	579	1757	1096	636
Grp Volume(v), veh/h	24	198	173	36	0	655	181	0	253	40	0	128
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1749	1757	0	1743	1757	0	1732
Q Serve(g_s), s	0.8	3.9	4.1	1.2	0.0	19.4	5.7	0.0	7.5	1.3	0.0	4.0
Cycle Q Clear(g_c), s	0.8	3.9	4.1	1.2	0.0	19.4	5.7	0.0	7.5	1.3	0.0	4.0
Prop In Lane	1.00		1.00	1.00		0.31	1.00		0.33	1.00		0.37
Lane Grp Cap(c), veh/h	39	791	673	53	0	765	226	0	399	58	0	231
V/C Ratio(X)	0.62	0.25	0.26	0.67	0.00	0.86	0.80	0.00	0.63	0.69	0.00	0.55
Avail Cap(c_a), veh/h	122	899	764	153	0	883	275	0	607	184	0	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.8	10.5	10.5	27.6	0.0	14.5	24.3	0.0	20.0	27.5	0.0	23.3
Incr Delay (d2), s/veh	14.8	0.2	0.2	13.7	0.0	7.5	13.1	0.0	1.7	13.8	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.0	1.8	0.8	0.0	10.9	3.6	0.0	3.8	0.8	0.0	2.0
LnGrp Delay(d),s/veh	42.6	10.7	10.7	41.3	0.0	22.0	37.4	0.0	21.6	41.3	0.0	25.3
LnGrp LOS	D	B	B	D		C	D		C	D		C
Approach Vol, veh/h		395			691			434			168	
Approach Delay, s/veh		12.6			23.0			28.2			29.1	
Approach LOS		B			C			C			C	

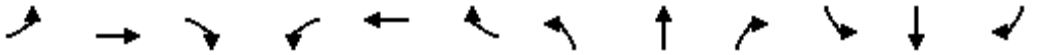
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	17.2	5.7	28.6	11.4	11.7	5.3	29.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	20.0	5.0	28.0	9.0	17.0	4.0	29.0
Max Q Clear Time (g_c+I1), s	3.3	9.5	3.2	6.1	7.7	6.0	2.8	21.4
Green Ext Time (p_c), s	0.0	1.7	0.0	6.8	0.1	1.7	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	69	0	0	633	771	0	0	0	276	0	0
Future Volume (veh/h)	0	69	0	0	633	771	0	0	0	276	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	69	0	0	633	771	0	0	0	276	0	0
Adj No. of Lanes	2	2	1	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	12	2013	901	6	2013	901	6	6	5	514	278	236
Arrive On Green	0.00	0.57	0.00	0.00	0.57	0.57	0.00	0.00	0.00	0.15	0.00	0.00
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	1757	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	0	69	0	0	633	771	0	0	0	276	0	0
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	0.0	0.2	0.0	0.0	2.7	12.0	0.0	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.2	0.0	0.0	2.7	12.0	0.0	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	12	2013	901	6	2013	901	6	6	5	514	278	236
V/C Ratio(X)	0.00	0.03	0.00	0.00	0.31	0.86	0.00	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	469	2168	970	242	2168	970	242	1014	862	1874	1775	1509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	2.7	0.0	0.0	3.2	5.2	0.0	0.0	0.0	11.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	7.3	0.0	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	1.3	6.8	0.0	0.0	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	0.0	2.7	0.0	0.0	3.3	12.4	0.0	0.0	0.0	12.3	0.0	0.0
LnGrp LOS		A			A	B				B		
Approach Vol, veh/h		69			1404			0			276	
Approach Delay, s/veh		2.7			8.3			0.0			12.3	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	0.0	0.0	20.7	0.0	8.4	0.0	20.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	16.0	4.0	18.0	4.0	28.0	4.0	18.0
Max Q Clear Time (g_c+I1), s	4.2	0.0	0.0	2.2	0.0	0.0	0.0	14.0
Green Ext Time (p_c), s	0.7	0.0	0.0	7.5	0.0	0.0	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.7
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	15	64	204	12	82	21	1513	53	109	655	24
Future Volume (veh/h)	119	15	64	204	12	82	21	1513	53	109	655	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	119	15	64	204	12	82	21	1513	53	109	655	24
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	151	129	110	241	224	190	25	1763	62	135	1977	72
Arrive On Green	0.09	0.07	0.07	0.14	0.12	0.12	0.01	0.51	0.51	0.08	0.57	0.57
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3455	121	1757	3449	126
Grp Volume(v), veh/h	119	15	64	204	12	82	21	766	800	109	333	346
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1823	1757	1752	1822
Q Serve(g_s), s	5.2	0.6	3.1	8.8	0.4	3.8	0.9	29.6	29.8	4.8	7.8	7.8
Cycle Q Clear(g_c), s	5.2	0.6	3.1	8.8	0.4	3.8	0.9	29.6	29.8	4.8	7.8	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.07
Lane Grp Cap(c), veh/h	151	129	110	241	224	190	25	894	930	135	1005	1045
V/C Ratio(X)	0.79	0.12	0.58	0.84	0.05	0.43	0.85	0.86	0.86	0.81	0.33	0.33
Avail Cap(c_a), veh/h	248	355	302	248	355	302	113	944	983	135	1005	1045
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.9	34.0	35.1	32.8	30.3	31.7	38.3	16.6	16.7	35.4	8.8	8.8
Incr Delay (d2), s/veh	8.7	0.4	4.8	22.2	0.1	1.5	50.9	7.6	7.5	28.9	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.3	1.5	5.8	0.2	1.7	0.8	16.1	16.8	3.4	3.7	3.9
LnGrp Delay(d),s/veh	43.6	34.4	40.0	55.0	30.4	33.3	89.2	24.1	24.2	64.3	9.0	8.9
LnGrp LOS	D	C	D	E	C	C	F	C	C	E	A	A
Approach Vol, veh/h		198			298			1587			788	
Approach Delay, s/veh		41.7			48.1			25.0			16.6	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	43.8	14.7	9.5	5.1	48.7	10.7	13.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	42.0	11.0	15.0	5.0	43.0	11.0	15.0
Max Q Clear Time (g_c+I1), s	6.8	31.8	10.8	5.1	2.9	9.8	7.2	5.8
Green Ext Time (p_c), s	0.0	7.9	0.0	0.4	0.0	21.9	0.1	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	26.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	6	68	64	2	42	18	1294	89	83	879	72
Future Volume (veh/h)	68	6	68	64	2	42	18	1294	89	83	879	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	68	6	68	64	2	42	18	1294	89	83	879	72
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	85	141	120	80	136	115	23	1798	123	105	1926	158
Arrive On Green	0.05	0.08	0.08	0.05	0.07	0.07	0.01	0.54	0.54	0.06	0.59	0.59
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3328	228	1757	3281	269
Grp Volume(v), veh/h	68	6	68	64	2	42	18	680	703	83	469	482
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1804	1757	1752	1797
Q Serve(g_s), s	2.2	0.2	2.4	2.1	0.1	1.5	0.6	16.8	16.9	2.7	8.7	8.7
Cycle Q Clear(g_c), s	2.2	0.2	2.4	2.1	0.1	1.5	0.6	16.8	16.9	2.7	8.7	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.15
Lane Grp Cap(c), veh/h	85	141	120	80	136	115	23	947	975	105	1029	1055
V/C Ratio(X)	0.80	0.04	0.57	0.80	0.01	0.36	0.79	0.72	0.72	0.79	0.46	0.46
Avail Cap(c_a), veh/h	122	513	436	122	513	436	92	1035	1066	153	1096	1124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	24.6	25.7	27.2	24.7	25.4	28.3	9.9	10.0	26.7	6.7	6.7
Incr Delay (d2), s/veh	20.9	0.1	4.1	19.2	0.0	1.9	43.1	2.2	2.2	15.7	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.1	1.2	1.4	0.0	0.7	0.6	8.5	8.8	1.7	4.3	4.4
LnGrp Delay(d),s/veh	48.0	24.7	29.8	46.4	24.8	27.3	71.4	12.1	12.2	42.4	7.0	7.0
LnGrp LOS	D	C	C	D	C	C	E	B	B	D	A	A
Approach Vol, veh/h		142			108			1401			1034	
Approach Delay, s/veh		38.3			38.6			12.9			9.9	
Approach LOS		D			D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	35.1	6.6	8.4	4.8	37.8	6.8	8.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	34.0	4.0	16.0	3.0	36.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	4.7	18.9	4.1	4.4	2.6	10.7	4.2	3.5
Green Ext Time (p_c), s	0.0	12.2	0.0	0.2	0.0	18.4	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	851	25	101	1599	73	193
Future Volume (veh/h)	851	25	101	1599	73	193
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	851	25	101	1599	73	193
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	2252	66	494	2271	304	272
Arrive On Green	0.65	0.65	0.65	0.65	0.17	0.17
Sat Flow, veh/h	3569	102	624	3597	1757	1568
Grp Volume(v), veh/h	429	447	101	1599	73	193
Grp Sat Flow(s),veh/h/ln	1752	1827	624	1752	1757	1568
Q Serve(g_s), s	5.1	5.1	4.0	13.2	1.6	5.2
Cycle Q Clear(g_c), s	5.1	5.1	9.1	13.2	1.6	5.2
Prop In Lane		0.06	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1135	1183	494	2271	304	272
V/C Ratio(X)	0.38	0.38	0.20	0.70	0.24	0.71
Avail Cap(c_a), veh/h	1216	1267	523	2431	629	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.7	3.7	5.8	5.1	15.9	17.4
Incr Delay (d2), s/veh	0.2	0.2	0.2	0.9	0.4	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.5	0.7	6.5	0.8	2.5
LnGrp Delay(d),s/veh	3.9	3.9	6.0	6.0	16.3	20.9
LnGrp LOS	A	A	A	A	B	C
Approach Vol, veh/h	876			1700	266	
Approach Delay, s/veh	3.9			6.0	19.6	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		11.7		33.0				33.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		31.0				31.0
Max Q Clear Time (g_c+I1), s		7.2		7.1				15.2
Green Ext Time (p_c), s		0.6		19.7				13.7

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	1883	0	68	3025	0	0	3	32	59	0	0
Future Volume (veh/h)	262	1883	0	68	3025	0	0	3	32	59	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	262	1883	0	68	3025	0	0	3	32	59	0	0
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	280	3761	0	87	3207	0	1	67	57	70	199	169
Arrive On Green	0.16	0.75	0.00	0.05	0.64	0.00	0.00	0.04	0.04	0.04	0.00	0.00
Sat Flow, veh/h	1757	5202	0	1757	5202	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	262	1883	0	68	3025	0	0	3	32	59	0	0
Grp Sat Flow(s),veh/h/ln	1757	1679	0	1757	1679	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	18.5	19.0	0.0	4.8	68.5	0.0	0.0	0.2	2.5	4.2	0.0	0.0
Cycle Q Clear(g_c), s	18.5	19.0	0.0	4.8	68.5	0.0	0.0	0.2	2.5	4.2	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	3761	0	87	3207	0	1	67	57	70	199	169
V/C Ratio(X)	0.94	0.50	0.00	0.78	0.94	0.00	0.00	0.04	0.56	0.84	0.00	0.00
Avail Cap(c_a), veh/h	280	3761	0	168	3291	0	42	250	212	70	279	237
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	52.1	6.4	0.0	59.0	20.7	0.0	0.0	58.4	59.5	59.8	0.0	0.0
Incr Delay (d2), s/veh	36.9	0.1	0.0	14.0	6.5	0.0	0.0	0.3	8.4	57.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	8.8	0.0	2.7	33.3	0.0	0.0	0.1	1.2	3.1	0.0	0.0
LnGrp Delay(d),s/veh	89.0	6.5	0.0	73.0	27.2	0.0	0.0	58.6	67.9	117.2	0.0	0.0
LnGrp LOS	F	A		E	C			E	E	F		
Approach Vol, veh/h		2145			3093			35			59	
Approach Delay, s/veh		16.6			28.2			67.1			117.2	
Approach LOS		B			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	8.6	10.2	97.7	0.0	17.6	24.0	83.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	17.0	12.0	90.0	3.0	19.0	20.0	82.0
Max Q Clear Time (g_c+I1), s	6.2	4.5	6.8	21.0	0.0	0.0	20.5	70.5
Green Ext Time (p_c), s	0.0	0.0	0.0	68.1	0.0	0.0	0.0	9.4

Intersection Summary	
HCM 2010 Ctrl Delay	24.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Adj No. of Lanes	2	3	1	2	3	1	2	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h												
V/C Ratio(X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h												
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS												
Approach Vol, veh/h		0			0			0			0	
Approach Delay, s/veh		0.0			0.0			0.0			0.0	
Approach LOS												

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	17.0	3.0	16.0	3.0	17.0	3.0	16.0
Max Q Clear Time (g_c+I1), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	0.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	1125	13	77	2050	2	134	0	0	4	1	57
Future Volume (veh/h)	19	1125	13	77	2050	2	134	0	0	4	1	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	19	1125	13	77	2050	2	134	0	0	4	1	57
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	24	2454	28	97	2701	3	170	308	262	6	136	115
Arrive On Green	0.01	0.48	0.48	0.06	0.52	0.52	0.10	0.00	0.00	0.00	0.07	0.07
Sat Flow, veh/h	1757	5132	59	1757	5196	5	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	19	736	402	77	1325	727	134	0	0	4	1	57
Grp Sat Flow(s),veh/h/ln	1757	1679	1834	1757	1679	1844	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.6	7.9	7.9	2.3	16.9	16.9	4.0	0.0	0.0	0.1	0.0	1.9
Cycle Q Clear(g_c), s	0.6	7.9	7.9	2.3	16.9	16.9	4.0	0.0	0.0	0.1	0.0	1.9
Prop In Lane	1.00		0.03	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	24	1605	877	97	1745	958	170	308	262	6	136	115
V/C Ratio(X)	0.79	0.46	0.46	0.79	0.76	0.76	0.79	0.00	0.00	0.70	0.01	0.49
Avail Cap(c_a), veh/h	98	1605	877	228	1803	990	195	649	552	98	546	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	9.4	9.4	25.2	10.3	10.3	23.9	0.0	0.0	26.9	23.2	24.1
Incr Delay (d2), s/veh	41.2	0.2	0.4	13.2	1.9	3.4	17.1	0.0	0.0	94.9	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.6	4.0	1.5	8.2	9.4	2.7	0.0	0.0	0.2	0.0	0.9
LnGrp Delay(d),s/veh	67.7	9.6	9.8	38.4	12.2	13.6	40.9	0.0	0.0	121.8	23.2	27.3
LnGrp LOS	E	A	A	D	B	B	D			F	C	C
Approach Vol, veh/h		1157			2129			134			62	
Approach Delay, s/veh		10.6			13.6			40.9			33.3	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.2	13.0	7.0	29.8	9.2	8.0	4.7	32.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	19.0	7.0	25.0	6.0	16.0	3.0	29.0
Max Q Clear Time (g_c+I1), s	2.1	0.0	4.3	9.9	6.0	3.9	2.6	18.9
Green Ext Time (p_c), s	0.0	0.0	0.0	14.1	0.0	0.1	0.0	9.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	1049	28	108	1919	34	134	8	89	45	25	76
Future Volume (veh/h)	53	1049	28	108	1919	34	134	8	89	45	25	76
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	53	1049	28	108	1919	34	134	8	89	45	25	76
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	64	2118	56	139	2355	42	170	296	252	54	174	148
Arrive On Green	0.04	0.42	0.42	0.08	0.46	0.46	0.10	0.16	0.16	0.03	0.09	0.09
Sat Flow, veh/h	1757	5044	135	1757	5096	90	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	53	698	379	108	1264	689	134	8	89	45	25	76
Grp Sat Flow(s),veh/h/ln	1757	1679	1821	1757	1679	1829	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.5	7.9	7.9	3.1	16.8	16.8	3.8	0.2	2.6	1.3	0.6	2.4
Cycle Q Clear(g_c), s	1.5	7.9	7.9	3.1	16.8	16.8	3.8	0.2	2.6	1.3	0.6	2.4
Prop In Lane	1.00		0.07	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	64	1410	765	139	1552	845	170	296	252	54	174	148
V/C Ratio(X)	0.82	0.50	0.50	0.78	0.81	0.82	0.79	0.03	0.35	0.84	0.14	0.51
Avail Cap(c_a), veh/h	102	1410	765	272	1626	886	170	572	486	170	572	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	11.0	11.0	23.3	12.0	12.0	22.8	18.3	19.3	24.9	21.5	22.2
Incr Delay (d2), s/veh	24.7	0.3	0.5	9.1	3.2	5.7	21.5	0.0	0.8	27.1	0.4	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.6	4.0	1.8	8.2	9.8	2.9	0.1	1.2	1.0	0.3	1.1
LnGrp Delay(d),s/veh	49.4	11.2	11.5	32.4	15.2	17.7	44.3	18.3	20.1	52.0	21.8	25.0
LnGrp LOS	D	B	B	C	B	B	D	B	C	D	C	C
Approach Vol, veh/h		1130			2061			231			146	
Approach Delay, s/veh		13.1			16.9			34.1			32.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.6	12.3	8.1	25.7	9.0	8.9	5.9	27.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	16.0	8.0	20.0	5.0	16.0	3.0	25.0
Max Q Clear Time (g_c+I1), s	3.3	4.6	5.1	9.9	5.8	4.4	3.5	18.8
Green Ext Time (p_c), s	0.0	0.5	0.1	9.5	0.0	0.5	0.0	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	122	158	644	2612	1251	54
Future Volume (veh/h)	122	158	644	2612	1251	54
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	122	158	644	2612	1251	54
Adj No. of Lanes	1	1	1	3	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	223	199	691	3906	1652	71
Arrive On Green	0.13	0.13	0.39	0.78	0.33	0.33
Sat Flow, veh/h	1757	1568	1757	5202	5117	214
Grp Volume(v), veh/h	122	158	644	2612	848	457
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1679	1679	1807
Q Serve(g_s), s	5.3	8.0	28.8	19.8	18.5	18.5
Cycle Q Clear(g_c), s	5.3	8.0	28.8	19.8	18.5	18.5
Prop In Lane	1.00	1.00	1.00			0.12
Lane Grp Cap(c), veh/h	223	199	691	3906	1120	603
V/C Ratio(X)	0.55	0.79	0.93	0.67	0.76	0.76
Avail Cap(c_a), veh/h	321	287	814	4112	1120	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	34.8	23.8	4.3	24.4	24.4
Incr Delay (d2), s/veh	2.1	9.4	15.8	0.4	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	7.3	17.0	9.1	9.0	10.1
LnGrp Delay(d),s/veh	35.7	44.2	39.7	4.7	27.4	29.9
LnGrp LOS	D	D	D	A	C	C
Approach Vol, veh/h	280			3256	1305	
Approach Delay, s/veh	40.5			11.6	28.3	
Approach LOS	D			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		67.7		14.4	36.3	31.4		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		67.0		15.0	38.0	25.0		
Max Q Clear Time (g_c+I1), s		21.8		10.0	30.8	20.5		
Green Ext Time (p_c), s		41.8		0.4	1.5	4.5		

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	116	16	185	1511	813	496
Future Volume (veh/h)	116	16	185	1511	813	496
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	116	16	185	1511	813	496
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	155	138	234	2529	1038	626
Arrive On Green	0.09	0.09	0.13	0.72	0.49	0.49
Sat Flow, veh/h	1757	1568	1757	3597	2197	1269
Grp Volume(v), veh/h	116	16	185	1511	675	634
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1621
Q Serve(g_s), s	2.7	0.4	4.3	8.9	13.4	13.7
Cycle Q Clear(g_c), s	2.7	0.4	4.3	8.9	13.4	13.7
Prop In Lane	1.00	1.00	1.00			0.78
Lane Grp Cap(c), veh/h	155	138	234	2529	865	800
V/C Ratio(X)	0.75	0.12	0.79	0.60	0.78	0.79
Avail Cap(c_a), veh/h	209	186	292	2666	875	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	17.7	17.7	2.9	8.8	8.9
Incr Delay (d2), s/veh	9.7	0.4	11.1	0.3	4.6	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.4	2.8	4.1	7.5	7.2
LnGrp Delay(d),s/veh	28.4	18.0	28.7	3.2	13.3	14.2
LnGrp LOS	C	B	C	A	B	B
Approach Vol, veh/h	132			1696	1309	
Approach Delay, s/veh	27.1			6.0	13.8	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		34.4		7.7	9.6	24.8		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		32.0		5.0	7.0	21.0		
Max Q Clear Time (g_c+I1), s		10.9		4.7	6.3	15.7		
Green Ext Time (p_c), s		18.6		0.0	0.0	5.1		

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1111	1049	8	669	987	0	132	2018	955	38	645	879
Future Volume (veh/h)	1111	1049	8	669	987	0	132	2018	955	38	645	879
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	1111	1049	8	669	987	0	132	2018	955	38	645	879
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	932	1122	502	682	865	387	136	1782	555	66	1679	523
Arrive On Green	0.27	0.32	0.32	0.20	0.25	0.00	0.04	0.35	0.35	0.02	0.33	0.33
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	1111	1049	8	669	987	0	132	2018	955	38	645	879
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	41.0	43.6	0.5	29.3	37.0	0.0	5.8	53.1	53.1	1.7	14.7	50.0
Cycle Q Clear(g_c), s	41.0	43.6	0.5	29.3	37.0	0.0	5.8	53.1	53.1	1.7	14.7	50.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	932	1122	502	682	865	387	136	1782	555	66	1679	523
V/C Ratio(X)	1.19	0.94	0.02	0.98	1.14	0.00	0.97	1.13	1.72	0.58	0.38	1.68
Avail Cap(c_a), veh/h	932	1122	502	682	865	387	136	1782	555	68	1679	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	49.5	34.9	59.7	56.5	0.0	71.9	48.5	48.5	72.9	38.2	50.0
Incr Delay (d2), s/veh	97.3	14.1	0.0	29.7	77.5	0.0	67.1	67.1	331.9	10.7	0.1	315.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	31.9	23.3	0.2	16.7	27.2	0.0	4.0	35.7	74.1	0.9	6.8	67.4
LnGrp Delay(d),s/veh	151.8	63.6	34.9	89.5	134.0	0.0	139.0	115.6	380.4	83.6	38.4	365.1
LnGrp LOS	F	E	C	F	F		F	F	F	F	D	F
Approach Vol, veh/h		2168			1656			3105			1562	
Approach Delay, s/veh		108.7			116.0			198.0			223.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	57.1	34.0	52.0	10.0	54.0	45.0	41.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	53.0	30.0	48.0	6.0	50.0	41.0	37.0
Max Q Clear Time (g_c+I1), s	3.7	55.1	31.3	45.6	7.8	52.0	43.0	39.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	163.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	747	28	24	835	0	92	0	87	0	0	0
Future Volume (veh/h)	0	747	28	24	835	0	92	0	87	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	747	28	24	835	0	92	0	87	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	6	1621	61	32	2167	0	113	226	192	6	6	5
Arrive On Green	0.00	0.47	0.47	0.02	0.62	0.00	0.06	0.00	0.12	0.00	0.00	0.00
Sat Flow, veh/h	1757	3445	129	1757	3597	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	0	380	395	24	835	0	92	0	87	0	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1822	1757	1752	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.0	4.5	4.5	0.4	3.7	0.0	1.6	0.0	1.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.5	4.5	0.4	3.7	0.0	1.6	0.0	1.6	0.0	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	6	824	857	32	2167	0	113	226	192	6	6	5
V/C Ratio(X)	0.00	0.46	0.46	0.76	0.39	0.00	0.82	0.00	0.45	0.00	0.00	0.00
Avail Cap(c_a), veh/h	171	1080	1123	171	2167	0	342	1137	966	171	957	814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	5.5	5.5	15.1	2.9	0.0	14.2	0.0	12.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.4	29.8	0.1	0.0	13.1	0.0	1.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	2.3	0.5	1.8	0.0	1.2	0.0	0.8	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	5.9	5.9	44.9	3.1	0.0	27.4	0.0	14.2	0.0	0.0	0.0
LnGrp LOS		A	A	D	A		C		B			
Approach Vol, veh/h		775			859			179			0	
Approach Delay, s/veh		5.9			4.2			21.0			0.0	
Approach LOS		A			A			C				

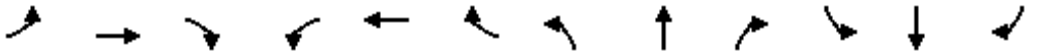
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	7.8	4.6	18.5	6.0	1.8	0.0	23.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	19.0	3.0	19.0	6.0	16.0	3.0	19.0
Max Q Clear Time (g_c+I1), s	0.0	3.6	2.4	6.5	3.6	0.0	0.0	5.7
Green Ext Time (p_c), s	0.0	0.2	0.0	8.0	0.0	0.0	0.0	8.4

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	1669	144	79	2318	97	98	4	0	66	3	75
Future Volume (veh/h)	295	1669	144	79	2318	97	98	4	0	66	3	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	295	1669	144	79	2318	97	98	4	0	66	3	75
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	328	2957	255	102	2464	103	119	142	121	104	127	108
Arrive On Green	0.19	0.63	0.63	0.06	0.50	0.50	0.07	0.08	0.00	0.06	0.07	0.07
Sat Flow, veh/h	1757	4723	407	1757	4959	206	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	295	1186	627	79	1565	850	98	4	0	66	3	75
Grp Sat Flow(s),veh/h/ln	1757	1679	1773	1757	1679	1808	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	14.6	18.2	18.2	3.9	39.1	39.7	4.9	0.2	0.0	3.3	0.1	4.2
Cycle Q Clear(g_c), s	14.6	18.2	18.2	3.9	39.1	39.7	4.9	0.2	0.0	3.3	0.1	4.2
Prop In Lane	1.00		0.23	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	328	2102	1110	102	1668	899	119	142	121	104	127	108
V/C Ratio(X)	0.90	0.56	0.57	0.78	0.94	0.95	0.83	0.03	0.00	0.64	0.02	0.70
Avail Cap(c_a), veh/h	336	2102	1110	198	1737	935	119	311	264	119	311	264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	9.6	9.6	41.3	21.1	21.2	41.0	38.0	0.0	40.9	38.6	40.5
Incr Delay (d2), s/veh	25.3	0.4	0.7	12.0	10.1	17.5	36.1	0.1	0.0	8.7	0.1	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	8.3	8.9	2.2	20.4	24.0	3.6	0.1	0.0	1.8	0.1	2.0
LnGrp Delay(d),s/veh	60.6	10.0	10.3	53.3	31.2	38.7	77.1	38.0	0.0	49.6	38.7	48.3
LnGrp LOS	E	A	B	D	C	D	E	D		D	D	D
Approach Vol, veh/h		2108			2494			102			144	
Approach Delay, s/veh		17.1			34.5			75.5			48.7	
Approach LOS		B			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	10.9	9.1	59.7	10.0	10.1	20.6	48.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	15.0	10.0	53.0	6.0	15.0	17.0	46.0
Max Q Clear Time (g_c+I1), s	5.3	2.2	5.9	20.2	6.9	6.2	16.6	41.7
Green Ext Time (p_c), s	0.0	0.2	0.0	31.8	0.0	0.1	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	28.2
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	325	948	632	23	1695	36	1181	808	21	45	811	575
Future Volume (veh/h)	325	948	632	23	1695	36	1181	808	21	45	811	575
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	325	948	632	23	1695	36	1181	808	21	45	811	575
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	243	2023	630	43	1202	538	828	1573	704	77	801	358
Arrive On Green	0.07	0.40	0.40	0.01	0.34	0.34	0.24	0.45	0.45	0.02	0.23	0.23
Sat Flow, veh/h	3408	5036	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	325	948	632	23	1695	36	1181	808	21	45	811	575
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	10.0	19.4	56.2	0.9	48.0	2.2	34.0	23.1	1.0	1.8	32.0	32.0
Cycle Q Clear(g_c), s	10.0	19.4	56.2	0.9	48.0	2.2	34.0	23.1	1.0	1.8	32.0	32.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	2023	630	43	1202	538	828	1573	704	77	801	358
V/C Ratio(X)	1.34	0.47	1.00	0.53	1.41	0.07	1.43	0.51	0.03	0.58	1.01	1.60
Avail Cap(c_a), veh/h	243	2023	630	73	1202	538	828	1573	704	122	801	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	30.9	41.9	68.7	46.0	30.9	53.0	27.6	21.6	67.8	54.0	54.0
Incr Delay (d2), s/veh	176.0	0.2	36.8	9.8	189.8	0.1	199.1	0.3	0.0	6.8	34.9	284.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	9.1	30.7	0.5	54.9	0.9	38.9	11.3	0.5	0.9	19.3	42.2
LnGrp Delay(d),s/veh	241.0	31.0	78.6	78.5	235.8	31.0	252.1	27.9	21.6	74.6	88.9	338.7
LnGrp LOS	F	C	F	E	F	C	F	C	C	E	F	F
Approach Vol, veh/h		1905			1754			2010			1431	
Approach Delay, s/veh		82.7			229.5			159.6			188.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	66.8	5.8	60.2	38.0	36.0	14.0	52.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	61.0	3.0	55.0	34.0	32.0	10.0	48.0
Max Q Clear Time (g_c+I1), s	3.8	25.1	2.9	58.2	36.0	34.0	12.0	50.0
Green Ext Time (p_c), s	0.0	20.1	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	162.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	717	39	36	1046	227	140	996	182	126	314	435
Future Volume (veh/h)	393	717	39	36	1046	227	140	996	182	126	314	435
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	393	717	39	36	1046	227	140	996	182	126	314	435
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	426	1463	654	70	1096	491	212	1093	489	171	1050	470
Arrive On Green	0.13	0.42	0.42	0.02	0.31	0.31	0.06	0.31	0.31	0.05	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	393	717	39	36	1046	227	140	996	182	126	314	435
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	9.1	12.0	1.2	0.8	23.4	9.3	3.2	21.8	7.2	2.9	5.5	21.5
Cycle Q Clear(g_c), s	9.1	12.0	1.2	0.8	23.4	9.3	3.2	21.8	7.2	2.9	5.5	21.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	426	1463	654	70	1096	491	212	1093	489	171	1050	470
V/C Ratio(X)	0.92	0.49	0.06	0.51	0.95	0.46	0.66	0.91	0.37	0.74	0.30	0.93
Avail Cap(c_a), veh/h	426	1463	654	128	1096	491	213	1096	491	171	1053	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	17.1	13.9	38.7	26.9	22.1	36.6	26.4	21.4	37.4	21.5	27.1
Incr Delay (d2), s/veh	25.3	0.3	0.0	5.6	17.2	0.7	7.2	11.3	0.5	15.5	0.2	24.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	5.8	0.5	0.5	13.8	4.1	1.7	12.2	3.2	1.7	2.7	12.5
LnGrp Delay(d),s/veh	59.9	17.3	14.0	44.4	44.1	22.7	43.9	37.8	21.9	53.0	21.7	51.5
LnGrp LOS	E	B	B	D	D	C	D	D	C	D	C	D
Approach Vol, veh/h		1149			1309			1318			875	
Approach Delay, s/veh		31.8			40.4			36.2			41.0	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	28.9	5.7	37.3	9.0	27.9	14.0	29.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	25.0	3.0	32.0	5.0	24.0	10.0	25.0
Max Q Clear Time (g_c+I1), s	4.9	23.8	2.8	14.0	5.2	23.5	11.1	25.4
Green Ext Time (p_c), s	0.0	1.0	0.0	12.5	0.0	0.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	644	14	17	781	2	64	877	320	7	72	36
Future Volume (veh/h)	161	644	14	17	781	2	64	877	320	7	72	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	161	644	14	17	781	2	64	877	320	7	72	36
Adj No. of Lanes	2	1	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	248	767	652	55	1258	563	138	1058	473	140	1060	474
Arrive On Green	0.07	0.42	0.42	0.02	0.36	0.36	0.04	0.30	0.30	0.04	0.30	0.30
Sat Flow, veh/h	3408	1845	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	161	644	14	17	781	2	64	877	320	7	72	36
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.3	22.2	0.4	0.4	13.0	0.1	1.3	16.5	12.7	0.1	1.0	1.2
Cycle Q Clear(g_c), s	3.3	22.2	0.4	0.4	13.0	0.1	1.3	16.5	12.7	0.1	1.0	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	767	652	55	1258	563	138	1058	473	140	1060	474
V/C Ratio(X)	0.65	0.84	0.02	0.31	0.62	0.00	0.46	0.83	0.68	0.05	0.07	0.08
Avail Cap(c_a), veh/h	384	832	707	192	1383	619	240	1136	508	720	1630	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	18.6	12.2	34.5	18.8	14.6	33.3	23.1	21.7	32.7	17.6	17.7
Incr Delay (d2), s/veh	2.9	7.2	0.0	3.2	0.7	0.0	2.4	5.0	3.3	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	12.8	0.2	0.2	6.4	0.0	0.7	8.6	5.9	0.1	0.5	0.5
LnGrp Delay(d),s/veh	34.9	25.9	12.2	37.7	19.5	14.6	35.7	28.0	25.0	32.8	17.6	17.7
LnGrp LOS	C	C	B	D	B	B	D	C	C	C	B	B
Approach Vol, veh/h		819			800			1261			115	
Approach Delay, s/veh		27.4			19.9			27.7			18.6	
Approach LOS		C			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	25.4	5.1	33.5	6.9	25.5	9.2	29.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	23.0	4.0	32.0	5.0	33.0	8.0	28.0
Max Q Clear Time (g_c+I1), s	2.1	18.5	2.4	24.2	3.3	3.2	5.3	15.0
Green Ext Time (p_c), s	0.0	2.9	0.0	5.2	0.0	9.5	0.1	7.7

Intersection Summary	
HCM 2010 Ctrl Delay	25.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Future Volume (veh/h)	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	92	1669	520	369	2078	647	26	1541	689	42	1558	697
Arrive On Green	0.03	0.33	0.33	0.11	0.41	0.41	0.01	0.44	0.44	0.01	0.44	0.44
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	4.0	44.6	7.7	15.3	61.0	0.5	0.3	65.0	6.3	0.6	54.6	3.8
Cycle Q Clear(g_c), s	4.0	44.6	7.7	15.3	61.0	0.5	0.3	65.0	6.3	0.6	54.6	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	1669	520	369	2078	647	26	1541	689	42	1558	697
V/C Ratio(X)	1.03	0.94	0.22	0.96	1.16	0.01	0.31	1.13	0.16	0.35	0.90	0.10
Avail Cap(c_a), veh/h	92	1669	520	369	2078	647	92	1541	689	92	1558	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.9	47.9	35.6	65.6	43.4	25.7	73.0	41.4	25.0	72.4	38.0	23.9
Incr Delay (d2), s/veh	102.2	10.6	0.2	36.3	77.5	0.0	6.6	66.5	0.1	4.9	7.4	0.1
Initial Q Delay(d3),s/veh	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	22.4	3.4	9.0	43.0	0.2	0.2	45.5	2.8	0.3	28.0	1.7
LnGrp Delay(d),s/veh	174.6	58.6	35.8	101.9	121.0	25.7	79.6	107.9	25.1	77.3	45.3	23.9
LnGrp LOS	F	E	D	F	F	C	E	F	C	E	D	C
Approach Vol, veh/h		1774			2772			1857			1484	
Approach Delay, s/veh		63.3			118.2			102.8			44.6	
Approach LOS		E			F			F			D	

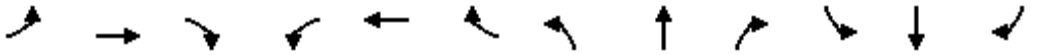
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	69.0	20.0	53.0	5.1	69.7	8.0	65.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	65.0	16.0	49.0	4.0	65.0	4.0	61.0
Max Q Clear Time (g_c+I1), s	2.6	67.0	17.3	46.6	2.3	56.6	6.0	63.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.4	0.0	8.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	88.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	488	1352	0	383	1346	0	0	333	512	0	192	246
Future Volume (veh/h)	488	1352	0	383	1346	0	0	333	512	0	192	246
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	488	1352	0	383	1346	0	0	333	512	0	192	246
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	510	1611	0	408	1408	0	168	373	317	82	373	317
Arrive On Green	0.29	0.46	0.00	0.23	0.40	0.00	0.00	0.20	0.20	0.00	0.20	0.20
Sat Flow, veh/h	1757	3597	0	1757	3597	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	488	1352	0	383	1346	0	0	333	512	0	192	246
Grp Sat Flow(s),veh/h/ln	1757	1752	0	1757	1752	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	31.0	38.6	0.0	24.3	42.4	0.0	0.0	20.0	23.0	0.0	10.5	16.9
Cycle Q Clear(g_c), s	31.0	38.6	0.0	24.3	42.4	0.0	0.0	20.0	23.0	0.0	10.5	16.9
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	510	1611	0	408	1408	0	168	373	317	82	373	317
V/C Ratio(X)	0.96	0.84	0.00	0.94	0.96	0.00	0.00	0.89	1.61	0.00	0.51	0.78
Avail Cap(c_a), veh/h	510	1611	0	417	1418	0	197	373	317	111	373	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	27.0	0.0	42.8	33.0	0.0	0.0	44.1	45.3	0.0	40.4	42.9
Incr Delay (d2), s/veh	29.2	4.1	0.0	28.6	14.6	0.0	0.0	22.6	290.5	0.0	1.2	11.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.2	19.5	0.0	15.1	23.2	0.0	0.0	12.5	35.5	0.0	5.5	8.3
LnGrp Delay(d),s/veh	68.8	31.1	0.0	71.5	47.6	0.0	0.0	66.8	335.9	0.0	41.6	54.3
LnGrp LOS	E	C		E	D			E	F		D	D
Approach Vol, veh/h		1840			1729			845			438	
Approach Delay, s/veh		41.1			52.9			229.8			48.7	
Approach LOS		D			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	27.0	30.4	56.3	0.0	27.0	37.0	49.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	2.0	23.0	27.0	52.0	2.0	23.0	33.0	46.0
Max Q Clear Time (g_c+I1), s	0.0	25.0	26.3	40.6	0.0	18.9	33.0	44.4
Green Ext Time (p_c), s	0.0	0.0	0.1	10.4	0.0	2.3	0.0	1.3

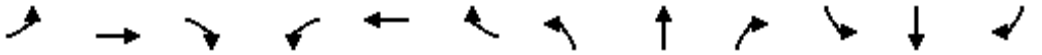
Intersection Summary	
HCM 2010 Ctrl Delay	78.9
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	668	0	1034	709	75	0	688	1213	120	772	240
Future Volume (veh/h)	235	668	0	1034	709	75	0	688	1213	120	772	240
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	235	668	0	1034	709	75	0	688	1213	120	772	240
Adj No. of Lanes	1	2	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	199	654	293	841	590	502	1	1519	679	91	1706	763
Arrive On Green	0.11	0.19	0.00	0.25	0.32	0.32	0.00	0.43	0.43	0.03	0.49	0.49
Sat Flow, veh/h	1757	3505	1568	3408	1845	1568	1757	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	235	668	0	1034	709	75	0	688	1213	120	772	240
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1704	1845	1568	1757	1752	1568	1704	1752	1568
Q Serve(g_s), s	17.0	28.0	0.0	37.0	48.0	5.1	0.0	20.8	65.0	4.0	21.8	13.9
Cycle Q Clear(g_c), s	17.0	28.0	0.0	37.0	48.0	5.1	0.0	20.8	65.0	4.0	21.8	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	654	293	841	590	502	1	1519	679	91	1706	763
V/C Ratio(X)	1.18	1.02	0.00	1.23	1.20	0.15	0.00	0.45	1.79	1.32	0.45	0.31
Avail Cap(c_a), veh/h	199	654	293	841	590	502	47	1519	679	91	1706	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.5	61.0	0.0	56.5	51.0	36.4	0.0	30.0	42.5	73.0	25.3	23.3
Incr Delay (d2), s/veh	120.9	40.6	0.0	113.9	106.0	0.1	0.0	0.2	359.3	202.3	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	17.2	0.0	30.7	41.8	2.2	0.0	10.1	95.9	4.4	10.6	6.0
LnGrp Delay(d),s/veh	187.4	101.6	0.0	170.4	157.0	36.6	0.0	30.2	401.8	275.3	25.5	23.6
LnGrp LOS	F	F		F	F	D		C	F	F	C	C
Approach Vol, veh/h		903			1818			1901			1132	
Approach Delay, s/veh		123.9			159.7			267.3			51.6	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	69.0	41.0	32.0	0.0	77.0	21.0	52.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	65.0	37.0	28.0	4.0	65.0	17.0	48.0
Max Q Clear Time (g_c+I1), s	6.0	67.0	39.0	30.0	0.0	23.8	19.0	50.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	29.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	168.4
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	8	33	94	8	95	21	304	38	17	260	79
Future Volume (veh/h)	47	8	33	94	8	95	21	304	38	17	260	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	47	8	33	94	8	95	21	304	38	17	260	79
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	58	158	134	113	217	184	28	844	105	23	708	211
Arrive On Green	0.03	0.09	0.09	0.06	0.12	0.12	0.02	0.27	0.27	0.01	0.27	0.27
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3139	389	1757	2665	793
Grp Volume(v), veh/h	47	8	33	94	8	95	21	169	173	17	169	170
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1776	1757	1752	1705
Q Serve(g_s), s	0.7	0.1	0.6	1.5	0.1	1.6	0.3	2.2	2.2	0.3	2.2	2.3
Cycle Q Clear(g_c), s	0.7	0.1	0.6	1.5	0.1	1.6	0.3	2.2	2.2	0.3	2.2	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.46
Lane Grp Cap(c), veh/h	58	158	134	113	217	184	28	471	477	23	466	453
V/C Ratio(X)	0.82	0.05	0.25	0.83	0.04	0.52	0.74	0.36	0.36	0.73	0.36	0.37
Avail Cap(c_a), veh/h	312	1113	946	187	982	835	187	995	1008	187	995	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	11.8	12.0	13.0	11.0	11.7	13.8	8.3	8.4	13.9	8.4	8.4
Incr Delay (d2), s/veh	23.4	0.1	0.9	14.3	0.1	2.2	31.0	0.5	0.5	35.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.1	0.3	1.2	0.1	0.8	0.4	1.1	1.1	0.4	1.1	1.1
LnGrp Delay(d),s/veh	36.9	12.0	13.0	27.3	11.1	13.9	44.8	8.8	8.8	48.8	8.9	8.9
LnGrp LOS	D	B	B	C	B	B	D	A	A	D	A	A
Approach Vol, veh/h		88			197			363			356	
Approach Delay, s/veh		25.7			20.2			10.9			10.8	
Approach LOS		C			C			B			B	

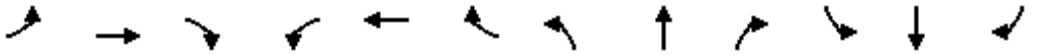
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.4	11.6	5.8	6.4	4.5	11.5	4.9	7.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	16.0	3.0	17.0	3.0	16.0	5.0	15.0
Max Q Clear Time (g_c+I1), s	2.3	4.2	3.5	2.6	2.3	4.3	2.7	3.6
Green Ext Time (p_c), s	0.0	3.2	0.0	0.4	0.0	3.2	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	0	0	0	0	0	0	0	0	0	0	16
Future Volume (veh/h)	22	0	0	0	0	0	0	0	0	0	0	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	22	0	0	0	0	0	0	0	0	0	0	16
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	31	33	28	16	16	14	16	939	0	16	469	420
Arrive On Green	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3597	0	1757	1752	1568
Grp Volume(v), veh/h	22	0	0	0	0	0	0	0	0	0	0	16
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	0	1757	1752	1568
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	31	33	28	16	16	14	16	939	0	16	469	420
V/C Ratio(X)	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Avail Cap(c_a), veh/h	2353	4448	3780	628	2636	2240	471	5947	0	628	3130	2800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
Incr Delay (d2), s/veh	25.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	30.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1
LnGrp LOS	C											A
Approach Vol, veh/h		22			0			0			16	
Approach Delay, s/veh		30.7			0.0			0.0			3.1	
Approach LOS		C									A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	7.0	0.0	4.2	0.0	7.0	4.2	0.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	19.0	4.0	27.0	3.0	20.0	15.0	16.0
Max Q Clear Time (g_c+I1), s	0.0	0.0	0.0	0.0	0.0	2.1	2.1	0.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	42	22	71	21	43	29	525	159	118	292	80
Future Volume (veh/h)	76	42	22	71	21	43	29	525	159	118	292	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	76	42	22	71	21	43	29	525	159	118	292	80
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	92	152	129	86	145	123	37	902	272	150	1104	297
Arrive On Green	0.05	0.08	0.08	0.05	0.08	0.08	0.02	0.34	0.34	0.09	0.40	0.40
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	2655	801	1757	2732	736
Grp Volume(v), veh/h	76	42	22	71	21	43	29	346	338	118	185	187
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1703	1757	1752	1715
Q Serve(g_s), s	1.5	0.8	0.5	1.4	0.4	0.9	0.6	5.8	5.9	2.4	2.5	2.6
Cycle Q Clear(g_c), s	1.5	0.8	0.5	1.4	0.4	0.9	0.6	5.8	5.9	2.4	2.5	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		0.43
Lane Grp Cap(c), veh/h	92	152	129	86	145	123	37	595	579	150	708	693
V/C Ratio(X)	0.82	0.28	0.17	0.83	0.15	0.35	0.79	0.58	0.58	0.79	0.26	0.27
Avail Cap(c_a), veh/h	244	768	653	244	768	653	146	827	803	341	1021	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	15.5	15.4	17.0	15.5	15.7	17.6	9.8	9.8	16.2	7.2	7.2
Incr Delay (d2), s/veh	16.1	1.0	0.6	17.7	0.5	1.7	29.8	0.9	0.9	8.8	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.4	0.2	1.1	0.2	0.5	0.6	2.9	2.9	1.5	1.2	1.3
LnGrp Delay(d),s/veh	33.0	16.5	16.0	34.7	15.9	17.4	47.3	10.7	10.7	25.0	7.4	7.4
LnGrp LOS	C	B	B	C	B	B	D	B	B	C	A	A
Approach Vol, veh/h		140			135			713			490	
Approach Delay, s/veh		25.4			26.3			12.2			11.6	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	16.2	5.8	7.0	4.8	18.6	5.9	6.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	5.0	15.0	3.0	21.0	5.0	15.0
Max Q Clear Time (g_c+I1), s	4.4	7.9	3.4	2.8	2.6	4.6	3.5	2.9
Green Ext Time (p_c), s	0.1	4.3	0.0	0.3	0.0	6.2	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	46	24	689	32	8	309
Future Volume (veh/h)	46	24	689	32	8	309
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	46	24	689	32	8	309
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	115	102	1733	80	661	1781
Arrive On Green	0.07	0.07	0.51	0.51	0.51	0.51
Sat Flow, veh/h	1757	1568	3503	158	722	3597
Grp Volume(v), veh/h	46	24	354	367	8	309
Grp Sat Flow(s),veh/h/ln	1757	1568	1752	1817	722	1752
Q Serve(g_s), s	0.5	0.3	2.3	2.3	0.1	0.9
Cycle Q Clear(g_c), s	0.5	0.3	2.3	2.3	2.5	0.9
Prop In Lane	1.00	1.00		0.09	1.00	
Lane Grp Cap(c), veh/h	115	102	890	923	661	1781
V/C Ratio(X)	0.40	0.23	0.40	0.40	0.01	0.17
Avail Cap(c_a), veh/h	1500	1338	1496	1551	910	2992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.4	8.3	2.8	2.8	3.6	2.5
Incr Delay (d2), s/veh	2.3	1.2	0.3	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	1.2	1.2	0.0	0.4
LnGrp Delay(d),s/veh	10.7	9.5	3.1	3.1	3.6	2.5
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	70		721			317
Approach Delay, s/veh	10.3		3.1			2.6
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.5				13.5		5.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		16.0				16.0		16.0
Max Q Clear Time (g_c+I1), s		4.3				4.5		2.5
Green Ext Time (p_c), s		5.1				5.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	3.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	27	65	222	15	72	132	567	68	28	242	86
Future Volume (veh/h)	83	27	65	222	15	72	132	567	68	28	242	86
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	83	27	65	222	15	72	132	567	68	28	242	86
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	328	219	186	278	690	587	167	1361	163	362	612	212
Arrive On Green	0.12	0.12	0.12	0.16	0.37	0.37	0.10	0.43	0.43	0.24	0.24	0.24
Sat Flow, veh/h	1292	1845	1568	1757	1845	1568	1757	3153	377	782	2556	885
Grp Volume(v), veh/h	83	27	65	222	15	72	132	314	321	28	164	164
Grp Sat Flow(s),veh/h/ln	1292	1845	1568	1757	1845	1568	1757	1752	1778	782	1752	1688
Q Serve(g_s), s	2.5	0.5	1.6	5.0	0.2	1.2	3.0	5.1	5.1	1.2	3.2	3.4
Cycle Q Clear(g_c), s	2.5	0.5	1.6	5.0	0.2	1.2	3.0	5.1	5.1	1.2	3.2	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.52
Lane Grp Cap(c), veh/h	328	219	186	278	690	587	167	757	768	362	420	404
V/C Ratio(X)	0.25	0.12	0.35	0.80	0.02	0.12	0.79	0.42	0.42	0.08	0.39	0.41
Avail Cap(c_a), veh/h	645	671	571	341	1209	1027	213	1063	1079	478	680	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	16.2	16.7	16.7	8.1	8.5	18.2	8.1	8.1	12.4	13.1	13.2
Incr Delay (d2), s/veh	0.4	0.2	1.1	10.4	0.0	0.1	14.2	0.4	0.4	0.1	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.7	3.2	0.1	0.5	2.1	2.5	2.6	0.3	1.6	1.6
LnGrp Delay(d),s/veh	17.5	16.5	17.8	27.1	8.1	8.6	32.4	8.5	8.5	12.4	13.7	13.9
LnGrp LOS	B	B	B	C	A	A	C	A	A	B	B	B
Approach Vol, veh/h		175			309			767			356	
Approach Delay, s/veh		17.5			21.9			12.6			13.7	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		21.8	10.5	8.9	7.9	13.9		19.4
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s		25.0	8.0	15.0	5.0	16.0		27.0
Max Q Clear Time (g_c+I1), s		7.1	7.0	4.5	5.0	5.4		3.2
Green Ext Time (p_c), s		5.9	0.1	0.7	0.0	4.5		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	49.0
Intersection LOS	E

Approach	EB	WB	NB	SB
Entry Lanes	0	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	706	501	80
Demand Flow Rate, veh/h	0	727	516	82
Vehicles Circulating, veh/h	103	516	0	595
Vehicles Exiting, veh/h	574	0	103	648
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	82.6	8.3	7.5
Approach LOS	-	F	A	A

Lane	Left	Left	Left
Designated Moves	LTR	LT	TR
Assumed Moves	LTR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	727	516	82
Cap Entry Lane, veh/h	674	1130	623
Entry HV Adj Factor	0.971	0.971	0.974
Flow Entry, veh/h	706	501	80
Cap Entry, veh/h	655	1097	607
V/C Ratio	1.078	0.457	0.132
Control Delay, s/veh	82.6	8.3	7.5
LOS	F	A	A
95th %tile Queue, veh	20	2	0

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	0	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	196	0	531	256
Demand Flow Rate, veh/h	202	0	547	263
Vehicles Circulating, veh/h	263	516	351	0
Vehicles Exiting, veh/h	0	382	114	516
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.7	0.0	17.7	5.4
Approach LOS	A	-	C	A

Lane	Left	Left	Left
Designated Moves	LTR	TR	LT
Assumed Moves	LTR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	202	547	263
Cap Entry Lane, veh/h	869	795	1130
Entry HV Adj Factor	0.972	0.971	0.972
Flow Entry, veh/h	196	531	256
Cap Entry, veh/h	844	772	1099
V/C Ratio	0.233	0.688	0.233
Control Delay, s/veh	6.7	17.7	5.4
LOS	A	C	A
95th %tile Queue, veh	1	6	1

Intersection	
Intersection Delay, s/veh	297.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	0	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	0	570	2553	2237
Demand Flow Rate, veh/h	0	587	2629	2305
Vehicles Circulating, veh/h	2249	2629	0	669
Vehicles Exiting, veh/h	725	0	2249	2547
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	1077.0	103.1	320.0
Approach LOS	-	F	F	F

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	587	1236	1393	1083	1222
Cap Entry Lane, veh/h	179	1130	1130	684	707
Entry HV Adj Factor	0.971	0.971	0.971	0.971	0.970
Flow Entry, veh/h	570	1200	1353	1052	1186
Cap Entry, veh/h	174	1097	1097	664	686
V/C Ratio	3.272	1.094	1.233	1.583	1.727
Control Delay, s/veh	1077.0	74.8	128.2	286.7	349.6
LOS	F	F	F	F	F
95th %tile Queue, veh	53	29	44	56	69

Intersection	
Intersection Delay, s/veh	191.0
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	0	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	527	0	2468	2183
Demand Flow Rate, veh/h	542	0	2542	2248
Vehicles Circulating, veh/h	2248	2629	340	0
Vehicles Exiting, veh/h	0	253	2450	2629
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	638.7	0.0	221.6	48.4
Approach LOS	F	-	F	E

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	542	1195	1347	1057	1191
Cap Entry Lane, veh/h	234	876	891	1130	1130
Entry HV Adj Factor	0.972	0.971	0.971	0.970	0.971
Flow Entry, veh/h	527	1160	1308	1026	1157
Cap Entry, veh/h	228	850	865	1097	1097
V/C Ratio	2.314	1.365	1.512	0.935	1.054
Control Delay, s/veh	638.7	187.9	251.4	33.3	61.7
LOS	F	F	F	D	F
95th %tile Queue, veh	42	48	63	16	25

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	476	742	1005
Demand Flow Rate, veh/h	490	764	1035
Vehicles Circulating, veh/h	633	273	151
Vehicles Exiting, veh/h	404	913	972
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	18.4	8.9	10.0
Approach LOS	C	A	B

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	490	359	405	486	549
Cap Entry Lane, veh/h	725	921	933	1009	1017
Entry HV Adj Factor	0.971	0.971	0.970	0.972	0.970
Flow Entry, veh/h	476	349	393	472	533
Cap Entry, veh/h	705	894	906	980	986
V/C Ratio	0.675	0.390	0.434	0.482	0.540
Control Delay, s/veh	18.4	8.5	9.2	9.4	10.6
LOS	C	A	A	A	B
95th %tile Queue, veh	5	2	2	3	3

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	221	816	887
Demand Flow Rate, veh/h	228	841	914
Vehicles Circulating, veh/h	638	173	101
Vehicles Exiting, veh/h	376	842	765
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.0	8.5	8.4
Approach LOS	A	A	A

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.443	0.557	0.470	0.530	0.470	0.530
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	101	127	395	446	430	484
Cap Entry Lane, veh/h	700	723	992	1001	1048	1053
Entry HV Adj Factor	0.970	0.969	0.971	0.970	0.970	0.972
Flow Entry, veh/h	98	123	384	433	417	470
Cap Entry, veh/h	679	700	964	971	1016	1023
V/C Ratio	0.144	0.176	0.398	0.446	0.410	0.460
Control Delay, s/veh	6.9	7.1	8.2	8.9	8.0	8.8
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	2	2	2	2

Intersection	
Intersection Delay, s/veh	9.0
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	309	829	817
Demand Flow Rate, veh/h	318	854	842
Vehicles Circulating, veh/h	741	198	218
Vehicles Exiting, veh/h	311	862	841
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.3	8.9	9.0
Approach LOS	A	A	A

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.686	0.314	0.470	0.530	0.470	0.530
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	218	100	401	453	396	446
Cap Entry Lane, veh/h	648	673	974	984	960	970
Entry HV Adj Factor	0.972	0.970	0.972	0.970	0.970	0.971
Flow Entry, veh/h	212	97	390	440	384	433
Cap Entry, veh/h	630	652	947	955	931	942
V/C Ratio	0.336	0.149	0.412	0.461	0.413	0.460
Control Delay, s/veh	10.3	7.2	8.5	9.3	8.6	9.3
LOS	B	A	A	A	A	A
95th %tile Queue, veh	1	1	2	2	2	2

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	118	726	44	122	479
Future Vol, veh/h	47	118	726	44	122	479
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	47	118	726	44	122	479

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1232	385	0	0	770	0
Stage 1	748	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	167	608	-	-	834	-
Stage 1	423	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	143	608	-	-	834	-
Mov Cap-2 Maneuver	273	-	-	-	-	-
Stage 1	423	-	-	-	-	-
Stage 2	495	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	273	608	834	-
HCM Lane V/C Ratio	-	-	0.172	0.194	0.146	-
HCM Control Delay (s)	-	-	20.9	12.3	10.1	-
HCM Lane LOS	-	-	C	B	B	-
HCM 95th %tile Q(veh)	-	-	0.6	0.7	0.5	-

Intersection	
Int Delay, s/veh	20.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	165	36	1888	289	85	646
Future Vol, veh/h	165	36	1888	289	85	646
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	165	36	1888	289	85	646

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2461	1089	0	0	2177	0
Stage 1	2033	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Critical Hdwy	5.76	7.16	-	-	5.38	-
Critical Hdwy Stg 1	6.66	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	3.83	3.93	-	-	3.14	-
Pot Cap-1 Maneuver	~ 52	180	-	-	99	-
Stage 1	~ 53	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	180	-	-	99	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	~ 53	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	154.9	0	43.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	180	99	-
HCM Lane V/C Ratio	-	-	1.117	0.859	-
HCM Control Delay (s)	-	-	154.9	132.3	31.6
HCM Lane LOS	-	-	F	F	D
HCM 95th %tile Q(veh)	-	-	10.1	4.8	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	101.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	2471	2961	34	10	93
Future Vol, veh/h	27	2471	2961	34	10	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	27	2471	2961	34	10	93

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2995	0	-	0	4268	1498
Stage 1	-	-	-	-	2978	-
Stage 2	-	-	-	-	1290	-
Critical Hdwy	4.22	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.26	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	106	-	-	-	~ 1	110
Stage 1	-	-	-	-	25	-
Stage 2	-	-	-	-	220	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	106	-	-	-	~ 1	110
Mov Cap-2 Maneuver	-	-	-	-	~ 1	-
Stage 1	-	-	-	-	25	-
Stage 2	-	-	-	-	164	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	$ 5508.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	106	-	-	-	9
HCM Lane V/C Ratio	0.255	-	-	-	11.444
HCM Control Delay (s)	50.2	-	-	-	$ 5508.6
HCM Lane LOS	F	-	-	-	F
HCM 95th %tile Q(veh)	0.9	-	-	-	14.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	1	0	3	1	6	0	1084	1	1	912	1
Future Vol, veh/h	3	1	0	3	1	6	0	1084	1	1	912	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	1	0	3	1	6	0	1084	1	1	912	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2003	2000	913	2000	2000	1085	913	0	0	1085	0	0
Stage 1	915	915	-	1085	1085	-	-	-	-	-	-	-
Stage 2	1088	1085	-	915	915	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	44	60	330	44	60	262	742	-	-	639	-	-
Stage 1	325	350	-	261	292	-	-	-	-	-	-	-
Stage 2	260	292	-	325	350	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	42	60	330	43	60	262	742	-	-	639	-	-
Mov Cap-2 Maneuver	42	60	-	43	60	-	-	-	-	-	-	-
Stage 1	325	349	-	261	292	-	-	-	-	-	-	-
Stage 2	253	292	-	323	349	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	92.7	49.4	0	0
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	742	-	-	45	91	639	-	-
HCM Lane V/C Ratio	-	-	-	0.089	0.11	0.002	-	-
HCM Control Delay (s)	0	-	-	92.7	49.4	10.6	0	-
HCM Lane LOS	A	-	-	F	E	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.4	0	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	77	58	26	917	947	73
Future Vol, veh/h	77	58	26	917	947	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	77	58	26	917	947	73

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1495	510	1020	0	-	0
Stage 1	984	-	-	-	-	-
Stage 2	511	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	113	506	670	-	-	-
Stage 1	320	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	109	506	670	-	-	-
Mov Cap-2 Maneuver	109	-	-	-	-	-
Stage 1	320	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	85.7	0.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	670	-	164	-	-
HCM Lane V/C Ratio	0.039	-	0.823	-	-
HCM Control Delay (s)	10.6	-	85.7	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.1	-	5.5	-	-

Intersection	
Int Delay, s/veh	356.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	719	289	484	755	148	749
Future Vol, veh/h	719	289	484	755	148	749
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	719	289	484	755	148	749

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1008	0	2210	504
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	1346	-
Critical Hdwy	-	-	4.16	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.23	-	3.53	3.33
Pot Cap-1 Maneuver	-	-	677	-	~ 37	~ 510
Stage 1	-	-	-	-	371	-
Stage 2	-	-	-	-	205	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	677	-	~ 11	~ 510
Mov Cap-2 Maneuver	-	-	-	-	~ 11	-
Stage 1	-	-	-	-	371	-
Stage 2	-	-	-	-	~ 58	-

Approach	EB	WB	NB
HCM Control Delay, s	0	8.8	$ 1237.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	11	510	-	-	677	-
HCM Lane V/C Ratio	13.455	1.469	-	-	0.715	-
HCM Control Delay (s)	$ 6270.5	243.1	-	-	22.5	-
HCM Lane LOS	F	F	-	-	C	-
HCM 95th %tile Q(veh)	19.9	37.4	-	-	6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	322	418	1	1	638	7	7	308	0	0	161	236
Future Vol, veh/h	322	418	1	1	638	7	7	308	0	0	161	236
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	322	418	1	1	638	7	7	308	0	0	161	236

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	645	0	0	419	0	0	1905	1710	419	1861	1707	642
Stage 1	-	-	-	-	-	-	1063	1063	-	644	644	-
Stage 2	-	-	-	-	-	-	842	647	-	1217	1063	-
Critical Hdwy	4.18	-	-	4.2	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.29	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	912	-	-	1098	-	-	50	~ 88	621	54	~ 88	464
Stage 1	-	-	-	-	-	-	263	~ 293	-	451	459	-
Stage 2	-	-	-	-	-	-	350	457	-	215	293	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	912	-	-	1098	-	-	-	~ 47	621	-	~ 47	464
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 47	-	-	~ 47	-
Stage 1	-	-	-	-	-	-	142	~ 158	-	244	459	-
Stage 2	-	-	-	-	-	-	112	457	-	-	~ 158	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.8	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	912	-	-	1098	-	-	-
HCM Lane V/C Ratio	-	0.353	-	-	0.001	-	-	-
HCM Control Delay (s)	-	11.1	0	-	8.3	0	-	-
HCM Lane LOS	-	B	A	-	A	A	-	-
HCM 95th %tile Q(veh)	-	1.6	-	-	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	84	36	35	179	80
Future Vol, veh/h	14	84	36	35	179	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	14	84	36	35	179	80

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	326	219	259	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	107	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	666	818	1300	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	647	818	1300	-	-	-
Mov Cap-2 Maneuver	647	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	889	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1300	-	788	-	-
HCM Lane V/C Ratio	0.028	-	0.124	-	-
HCM Control Delay (s)	7.8	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	5	23	92	233	10
Future Vol, veh/h	3	5	23	92	233	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	5	23	92	233	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	376	238	243	0	-	0
Stage 1	238	-	-	-	-	-
Stage 2	138	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	623	798	1317	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	886	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	612	798	1317	-	-	-
Mov Cap-2 Maneuver	612	-	-	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	870	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	1.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1317	-	716	-	-
HCM Lane V/C Ratio	0.017	-	0.011	-	-
HCM Control Delay (s)	7.8	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	121	177	82	81	229	206
Future Vol, veh/h	121	177	82	81	229	206
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	121	177	82	81	229	206

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	577	332	435	0	-	0
Stage 1	332	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	477	707	1119	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	793	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	440	707	1119	-	-	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	732	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.2	4.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1119	-	567	-	-
HCM Lane V/C Ratio	0.073	-	0.526	-	-
HCM Control Delay (s)	8.5	0	18.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	3	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	24	6	219	194	75
Future Vol, veh/h	50	24	6	219	194	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	50	24	6	219	194	75

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	425	194	194	0	-	0
Stage 1	194	-	-	-	-	-
Stage 2	231	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	584	845	1373	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	581	845	1373	-	-	-
Mov Cap-2 Maneuver	581	-	-	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	801	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.2	0
HCM LOS	B		

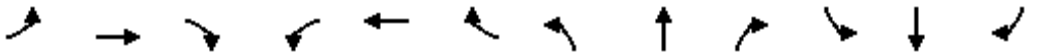
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1373	-	581	845	-	-
HCM Lane V/C Ratio	0.004	-	0.086	0.028	-	-
HCM Control Delay (s)	7.6	-	11.8	9.4	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0.1	-	-

CEQA Cumulative

Plus All Projects

(Proposed Project)

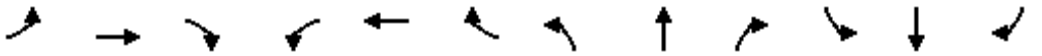
PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	0	500	397	276	1047	0	2068	567	0	2911	490
Future Volume (vph)	363	0	500	397	276	1047	0	2068	567	0	2911	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		0.88	0.86	0.81	0.91		0.91	1.00		0.86	1.00
Frt	1.00		0.85	1.00	0.91	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1752		2760	2985	2676	1413		4988	1553		6285	1553
Flt Permitted	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1752		2760	2985	2676	1413		4988	1553		6285	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	363	0	500	397	276	1047	0	2068	567	0	2911	490
RTOR Reduction (vph)	0	0	98	0	14	36	0	0	0	0	0	114
Lane Group Flow (vph)	363	0	402	357	826	487	0	2068	567	0	2911	376
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm	Split	NA	Perm		NA	Free		NA	Perm
Protected Phases	4			8	8			2			6	
Permitted Phases			4			8			Free			6
Actuated Green, G (s)	19.0		19.0	31.0	31.0	31.0		48.0	110.0		48.0	48.0
Effective Green, g (s)	19.0		19.0	31.0	31.0	31.0		48.0	110.0		48.0	48.0
Actuated g/C Ratio	0.17		0.17	0.28	0.28	0.28		0.44	1.00		0.44	0.44
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	302		476	841	754	398		2176	1553		2742	677
v/s Ratio Prot	c0.21			0.12	0.31			0.41			c0.46	
v/s Ratio Perm			0.15			c0.34			0.37			0.24
v/c Ratio	1.20		0.84	0.42	1.34dr	1.22		0.95	0.37		1.06	0.56
Uniform Delay, d1	45.5		44.1	32.2	39.5	39.5		29.9	0.0		31.0	23.1
Progression Factor	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	118.2		12.8	0.3	61.8	121.3		10.1	0.7		36.4	1.0
Delay (s)	163.7		56.9	32.6	101.3	160.8		39.9	0.7		67.4	24.1
Level of Service	F		E	C	F	F		D	A		E	C
Approach Delay (s)		101.8			105.1			31.5			61.1	
Approach LOS		F			F			C			E	

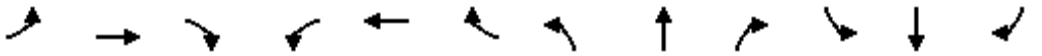
Intersection Summary			
HCM 2000 Control Delay	64.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.3%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



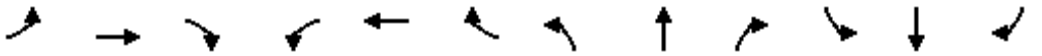
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	770	0	1311	0	0	0	0	1865	598	0	1887	1284
Future Volume (vph)	770	0	1311	0	0	0	0	1865	598	0	1887	1284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	770	0	1311	0	0	0	0	1865	598	0	1887	1284
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	770	0	1303	0	0	0	0	1865	598	0	1887	1284
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	33.0		33.0					29.0	70.0		29.0	70.0
Effective Green, g (s)	33.0		33.0					29.0	70.0		29.0	70.0
Actuated g/C Ratio	0.47		0.47					0.41	1.00		0.41	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	1587		1288					2066	1553		2066	1553
v/s Ratio Prot								0.37			0.38	
v/s Ratio Perm	0.23		c0.48						0.39			c0.83
v/c Ratio	0.49		1.01					0.90	0.39		0.91	0.83
Uniform Delay, d1	12.7		18.5					19.2	0.0		19.3	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2		27.9					6.0	0.7		6.7	5.2
Delay (s)	12.9		46.4					25.2	0.7		26.0	5.2
Level of Service	B		D					C	A		C	A
Approach Delay (s)		34.0			0.0			19.2			17.6	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



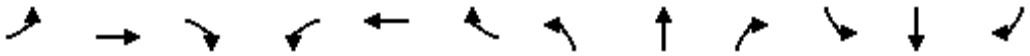
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	671	258	152	959	962	469	1242	38	1284	1880	150
Future Volume (vph)	258	671	258	152	959	962	469	1242	38	1284	1880	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3327		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3327		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	258	671	258	152	959	962	469	1242	38	1284	1880	150
RTOR Reduction (vph)	0	29	0	0	0	686	0	0	29	0	0	58
Lane Group Flow (vph)	258	900	0	152	959	276	469	1242	9	1284	1880	92
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	9.0	36.0		7.0	34.0	34.0	21.6	33.0	33.0	48.0	59.4	59.4
Effective Green, g (s)	9.0	36.0		7.0	34.0	34.0	21.6	33.0	33.0	48.0	59.4	59.4
Actuated g/C Ratio	0.06	0.26		0.05	0.24	0.24	0.15	0.24	0.24	0.34	0.42	0.42
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	216	855		168	842	663	519	1175	366	1154	2116	658
v/s Ratio Prot	0.08	c0.27		0.05	c0.28		0.14	c0.25		c0.38	0.38	
v/s Ratio Perm						0.10			0.01			0.06
v/c Ratio	1.19	1.05		0.90	1.14	0.42	0.90	1.06	0.02	1.11	0.89	0.14
Uniform Delay, d1	65.5	52.0		66.2	53.0	44.6	58.2	53.5	41.1	46.0	37.2	24.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	123.7	45.6		42.8	76.8	0.4	19.0	42.7	0.0	63.1	5.0	0.1
Delay (s)	189.2	97.6		109.0	129.8	45.1	77.2	96.2	41.2	109.1	42.2	24.8
Level of Service	F	F		F	F	D	E	F	D	F	D	C
Approach Delay (s)		117.5			88.9			89.9			67.3	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	84.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	419	1540	12	648	19	1163	6	3	14	14	58
Future Volume (vph)	38	419	1540	12	648	19	1163	6	3	14	14	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.98	1.00
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1800	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		0.98	1.00
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1618	1623	1524		1800	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	419	1540	12	648	19	1163	6	3	14	14	58
RTOR Reduction (vph)	0	0	245	0	0	15	0	0	1	0	0	54
Lane Group Flow (vph)	38	419	1295	12	648	4	581	588	2	0	28	4
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	6%	6%	6%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.2	19.2	62.7	0.7	17.7	17.7	43.5	43.5	43.5		5.5	5.5
Effective Green, g (s)	2.2	19.2	62.7	0.7	17.7	17.7	43.5	43.5	43.5		5.5	5.5
Actuated g/C Ratio	0.03	0.23	0.74	0.01	0.21	0.21	0.51	0.51	0.51		0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	44	784	1220	14	723	323	829	831	780		116	101
v/s Ratio Prot	c0.02	0.12	c0.54	0.01	0.19		0.36	0.36			c0.02	
v/s Ratio Perm			0.29			0.00			0.00			0.00
v/c Ratio	0.86	0.53	1.06	0.86	0.90	0.01	0.70	0.71	0.00		0.24	0.04
Uniform Delay, d1	41.2	28.9	11.1	42.1	32.7	26.7	15.7	15.8	10.1		37.7	37.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	84.6	0.7	43.8	164.6	13.7	0.0	2.7	2.8	0.0		1.1	0.2
Delay (s)	125.8	29.6	54.9	206.7	46.4	26.7	18.4	18.6	10.1		38.8	37.4
Level of Service	F	C	D	F	D	C	B	B	B		D	D
Approach Delay (s)		50.9			48.7			18.5			37.8	
Approach LOS		D			D			B			D	

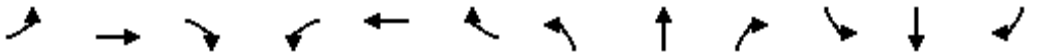
Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	344	154	365	430	110	210	221	361	131	234	37
Future Volume (vph)	38	344	154	365	430	110	210	221	361	131	234	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85		0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1752	3505	1568	1752	3398		1665	1745	1568		3401	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.98	
Satd. Flow (perm)	1752	3505	1568	1752	3398		1665	1745	1568		3401	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	344	154	365	430	110	210	221	361	131	234	37
RTOR Reduction (vph)	0	0	125	0	24	0	0	0	294	0	8	0
Lane Group Flow (vph)	38	344	29	365	516	0	189	242	67	0	394	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.3	14.9	14.9	19.8	31.4		14.7	14.7	14.7		13.7	
Effective Green, g (s)	3.3	14.9	14.9	19.8	31.4		14.7	14.7	14.7		13.7	
Actuated g/C Ratio	0.04	0.19	0.19	0.25	0.40		0.19	0.19	0.19		0.17	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	73	660	295	438	1348		309	324	291		589	
v/s Ratio Prot	0.02	c0.10		c0.21	0.15		0.11	c0.14			c0.12	
v/s Ratio Perm			0.02						0.04			
v/c Ratio	0.52	0.52	0.10	0.83	0.38		0.61	0.75	0.23		0.67	
Uniform Delay, d1	37.1	28.9	26.5	28.1	17.0		29.6	30.4	27.4		30.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	6.5	0.7	0.1	12.8	0.2		3.6	9.1	0.4		2.9	
Delay (s)	43.7	29.6	26.7	40.9	17.1		33.1	39.5	27.8		33.5	
Level of Service	D	C	C	D	B		C	D	C		C	
Approach Delay (s)		29.8			26.7			32.6			33.5	
Approach LOS		C			C			C			C	

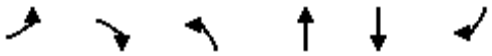
Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	79.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	2366	294	149	2269	5	93	30	92	4	32	23
Future Volume (vph)	14	2366	294	149	2269	5	93	30	92	4	32	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.4	6.4	3.5	6.4	6.4	4.4	4.4	4.4	3.5	3.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3406	1524	1703	3406	1524	1752	1845	1568	1752	1729	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3406	1524	1703	3406	1524	1752	1845	1568	1752	1729	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	2366	294	149	2269	5	93	30	92	4	32	23
RTOR Reduction (vph)	0	0	47	0	0	1	0	0	82	0	19	0
Lane Group Flow (vph)	14	2366	247	149	2269	4	93	30	10	4	36	0
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	1.6	94.5	94.5	11.5	104.4	104.4	7.6	15.9	15.9	0.8	9.1	
Effective Green, g (s)	1.6	94.5	94.5	11.5	104.4	104.4	7.6	15.9	15.9	0.8	9.1	
Actuated g/C Ratio	0.01	0.67	0.67	0.08	0.74	0.74	0.05	0.11	0.11	0.01	0.06	
Clearance Time (s)	3.5	6.4	6.4	3.5	6.4	6.4	4.4	4.4	4.4	3.5	3.5	
Vehicle Extension (s)	2.4	4.5	4.5	2.4	4.5	4.5	2.4	2.8	2.8	2.4	2.8	
Lane Grp Cap (vph)	19	2290	1025	139	2530	1132	94	208	177	9	111	
v/s Ratio Prot	0.01	c0.69		c0.09	0.67		c0.05	0.02		0.00	c0.02	
v/s Ratio Perm			0.16			0.00			0.01			
v/c Ratio	0.74	1.03	0.24	1.07	0.90	0.00	0.99	0.14	0.06	0.44	0.33	
Uniform Delay, d1	69.2	23.0	9.0	64.5	13.9	4.6	66.4	56.2	55.6	69.6	62.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	83.7	28.0	0.2	96.9	4.9	0.0	88.4	0.3	0.1	21.2	1.5	
Delay (s)	152.9	51.0	9.2	161.4	18.8	4.7	154.9	56.5	55.7	90.9	64.3	
Level of Service	F	D	A	F	B	A	F	E	E	F	E	
Approach Delay (s)		46.9			27.5			98.7			66.1	
Approach LOS		D			C			F			E	

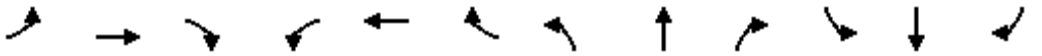
Intersection Summary			
HCM 2000 Control Delay	40.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.5	Sum of lost time (s)	17.8
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	753	166	151	1355	1512	709
Future Volume (vph)	753	166	151	1355	1512	709
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	3400	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	3400	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	753	166	151	1355	1512	709
RTOR Reduction (vph)	0	110	0	0	0	359
Lane Group Flow (vph)	753	56	151	1355	1512	350
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	16.4	16.4	3.0	33.3	26.3	26.3
Effective Green, g (s)	16.4	16.4	3.0	33.3	26.3	26.3
Actuated g/C Ratio	0.28	0.28	0.05	0.58	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	966	445	176	2022	1597	714
v/s Ratio Prot	c0.22		0.04	c0.39	c0.43	
v/s Ratio Perm		0.04				0.22
v/c Ratio	0.78	0.13	0.86	0.67	0.95	0.49
Uniform Delay, d1	19.0	15.3	27.1	8.4	15.0	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.1	31.5	0.9	12.1	0.5
Delay (s)	23.0	15.5	58.6	9.3	27.1	11.5
Level of Service	C	B	E	A	C	B
Approach Delay (s)	21.7			14.2	22.1	
Approach LOS	C			B	C	

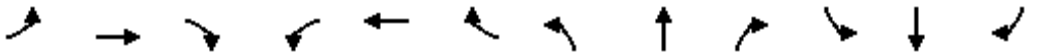
Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



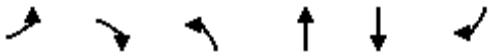
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	720	853	164	833	40	521	160	108	36	80	31
Future Volume (vph)	34	720	853	164	833	40	521	160	108	36	80	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3367	3261		1752	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	3400	3505	1568	3367	3261		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	34	720	853	164	833	40	521	160	108	36	80	31
RTOR Reduction (vph)	0	0	520	0	0	22	0	84	0	0	0	29
Lane Group Flow (vph)	34	720	333	164	833	18	521	184	0	36	80	2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6			2						4
Actuated Green, G (s)	1.7	29.1	29.1	6.0	33.3	33.3	16.3	16.3		4.3	4.3	4.3
Effective Green, g (s)	1.7	29.1	29.1	6.0	33.3	33.3	16.3	16.3		4.3	4.3	4.3
Actuated g/C Ratio	0.02	0.39	0.39	0.08	0.45	0.45	0.22	0.22		0.06	0.06	0.06
Clearance Time (s)	5.5	3.9	3.9	5.5	4.0	4.0	4.3	4.3		5.1	5.1	5.1
Vehicle Extension (s)	1.0	4.9	4.9	1.0	4.1	4.1	2.0	2.0		1.0	1.0	1.0
Lane Grp Cap (vph)	39	1369	612	273	1566	700	736	713		101	202	90
v/s Ratio Prot	0.02	0.21		c0.05	c0.24		c0.15	0.06		0.02	c0.02	
v/s Ratio Perm			0.21			0.01						0.00
v/c Ratio	0.87	0.53	0.54	0.60	0.53	0.03	0.71	0.26		0.36	0.40	0.02
Uniform Delay, d1	36.3	17.4	17.6	33.1	14.9	11.5	26.9	24.1		33.8	33.8	33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	92.4	0.7	1.7	2.5	0.5	0.0	2.6	0.1		0.8	0.5	0.0
Delay (s)	128.7	18.1	19.3	35.6	15.4	11.5	29.5	24.2		34.6	34.3	33.1
Level of Service	F	B	B	D	B	B	C	C		C	C	C
Approach Delay (s)		21.1			18.5			27.7			34.1	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	22.9
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	455	0	1458	0	0	0	0	1878	1036	0	1957	521
Future Volume (vph)	455	0	1458	0	0	0	0	1878	1036	0	1957	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	455	0	1458	0	0	0	0	1878	1036	0	1957	521
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	455	0	1449	0	0	0	0	1878	1036	0	1957	521
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	60.6		60.6					47.9	120.0		48.4	120.0
Effective Green, g (s)	60.6		60.6					47.9	120.0		48.4	120.0
Actuated g/C Ratio	0.51		0.51					0.40	1.00		0.40	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1700		1380					1991	1553		2011	1553
v/s Ratio Prot								0.38			c0.39	
v/s Ratio Perm	0.14		c0.53						0.67			0.34
v/c Ratio	0.27		1.05					0.94	0.67		0.97	0.34
Uniform Delay, d1	17.0		29.7					34.7	0.0		35.2	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0		38.4					9.7	2.3		14.1	0.6
Delay (s)	17.0		68.1					44.5	2.3		49.3	0.6
Level of Service	B		E					D	A		D	A
Approach Delay (s)		56.0			0.0			29.5			39.1	
Approach LOS		E			A			C			D	

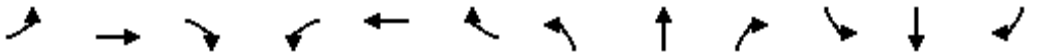
Intersection Summary			
HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1183	24	42	360	800	837
Future Volume (vph)	1183	24	42	360	800	837
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1752	1568	1752	1845	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1752	1568	1752	1845	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1183	24	42	360	800	837
RTOR Reduction (vph)	0	9	0	0	0	556
Lane Group Flow (vph)	1183	15	42	360	800	281
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	54.1	54.1	2.4	27.4	21.0	21.0
Effective Green, g (s)	54.1	54.1	2.4	27.4	21.0	21.0
Actuated g/C Ratio	0.60	0.60	0.03	0.31	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1059	947	46	564	822	367
v/s Ratio Prot	c0.68		0.02	c0.20	c0.23	
v/s Ratio Perm		0.01				0.18
v/c Ratio	1.12	0.02	0.91	0.64	0.97	0.77
Uniform Delay, d1	17.7	7.1	43.4	26.8	34.0	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	65.7	0.0	99.4	2.4	24.8	9.2
Delay (s)	83.4	7.1	142.8	29.2	58.8	41.2
Level of Service	F	A	F	C	E	D
Approach Delay (s)	81.9			41.0	49.8	
Approach LOS	F			D	D	

Intersection Summary			
HCM 2000 Control Delay	60.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		

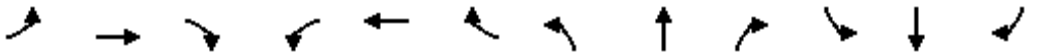
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	3	35	0	1	1	21	233	1	1	473	277
Future Volume (vph)	201	3	35	0	1	1	21	233	1	1	473	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.93		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1665	1671	1568		1706		1752	3503		1752	3505	1568
Flt Permitted	0.95	0.95	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1665	1671	1568		1706		1752	3503		1752	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	201	3	35	0	1	1	21	233	1	1	473	277
RTOR Reduction (vph)	0	0	29	0	1	0	0	1	0	0	0	160
Lane Group Flow (vph)	103	101	6	0	1	0	21	233	0	1	473	117
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	6.8	6.8	6.8		0.7		0.5	17.6		0.5	17.6	17.6
Effective Green, g (s)	6.8	6.8	6.8		0.7		0.5	17.6		0.5	17.6	17.6
Actuated g/C Ratio	0.16	0.16	0.16		0.02		0.01	0.42		0.01	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	272	273	256		28		21	1482		21	1482	663
v/s Ratio Prot	c0.06	0.06			c0.00		c0.01	0.07		0.00	c0.13	
v/s Ratio Perm			0.00									0.07
v/c Ratio	0.38	0.37	0.02		0.04		1.00	0.16		0.05	0.32	0.18
Uniform Delay, d1	15.5	15.5	14.6		20.1		20.6	7.4		20.3	8.0	7.5
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.8	0.0		0.5		196.4	0.0		0.9	0.1	0.1
Delay (s)	16.4	16.3	14.6		20.7		216.9	7.5		21.3	8.1	7.6
Level of Service	B	B	B		C		F	A		C	A	A
Approach Delay (s)		16.1			20.7			24.7			8.0	
Approach LOS		B			C			C			A	

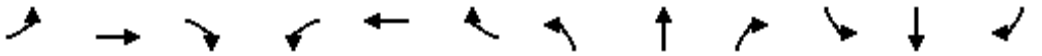
Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



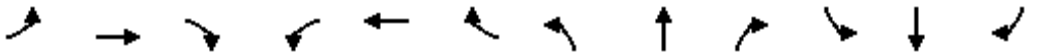
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	586	0	355	0	1186	1388	0	1009	439
Future Volume (vph)	0	0	0	586	0	355	0	1186	1388	0	1009	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9			4.8	4.0		4.8	4.0
Lane Util. Factor				0.95	0.95			0.91	1.00		0.91	1.00
Frt				1.00	0.88			1.00	0.85		1.00	0.85
Flt Protected				0.95	0.99			1.00	1.00		1.00	1.00
Satd. Flow (prot)				1649	1514			4988	1553		4988	1553
Flt Permitted				0.95	0.99			1.00	1.00		1.00	1.00
Satd. Flow (perm)				1649	1514			4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	586	0	355	0	1186	1388	0	1009	439
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	492	422	0	0	1186	1388	0	1009	439
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type				Perm	NA			NA	Free		NA	Free
Protected Phases					8			2			6	
Permitted Phases				8					Free			Free
Actuated Green, G (s)				14.4	14.4			13.2	37.3		13.2	37.3
Effective Green, g (s)				14.4	14.4			13.2	37.3		13.2	37.3
Actuated g/C Ratio				0.39	0.39			0.35	1.00		0.35	1.00
Clearance Time (s)				4.9	4.9			4.8			4.8	
Vehicle Extension (s)				1.0	1.0			1.0			1.0	
Lane Grp Cap (vph)				636	584			1765	1553		1765	1553
v/s Ratio Prot								0.24			0.20	
v/s Ratio Perm				0.30	0.28				c0.89			0.28
v/c Ratio				0.77	0.72			0.67	0.89		0.57	0.28
Uniform Delay, d1				10.0	9.7			10.2	0.0		9.8	0.0
Progression Factor				1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2				5.3	3.7			0.8	8.3		0.3	0.5
Delay (s)				15.4	13.5			11.0	8.3		10.0	0.5
Level of Service				B	B			B	A		B	A
Approach Delay (s)		0.0			14.5			9.6			7.1	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	37.3	Sum of lost time (s)	9.7
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



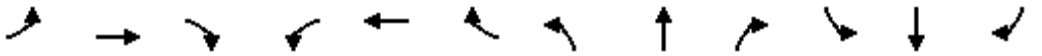
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	531	0	794	0	0	0	0	2080	1196	0	1296	299
Future Volume (vph)	531	0	794	0	0	0	0	2080	1196	0	1296	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.1					4.9	4.0		4.8	4.0
Lane Util. Factor	0.95	0.91	0.95					0.91	1.00		0.91	1.00
Frt	1.00	0.87	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	0.99	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1649	1441	1475					4988	1553		4988	1553
Flt Permitted	0.95	0.99	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1649	1441	1475					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	531	0	794	0	0	0	0	2080	1196	0	1296	299
RTOR Reduction (vph)	0	25	25	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	462	409	404	0	0	0	0	2080	1196	0	1296	299
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm	NA	Perm					NA	Free		NA	Free
Protected Phases		4						2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	17.1	17.1	17.1					24.8	51.9		24.9	51.9
Effective Green, g (s)	17.1	17.1	17.1					24.8	51.9		24.9	51.9
Actuated g/C Ratio	0.33	0.33	0.33					0.48	1.00		0.48	1.00
Clearance Time (s)	5.1	5.1	5.1					4.9			4.8	
Vehicle Extension (s)	1.0	1.0	1.0					1.0			1.0	
Lane Grp Cap (vph)	543	474	485					2383	1553		2393	1553
v/s Ratio Prot								0.42			0.26	
v/s Ratio Perm	0.28	0.28	0.27						c0.77			0.19
v/c Ratio	0.85	0.86	0.83					0.87	0.77		0.54	0.19
Uniform Delay, d1	16.2	16.3	16.1					12.1	0.0		9.5	0.0
Progression Factor	1.00	1.00	1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	11.7	14.4	11.1					3.7	3.7		0.1	0.3
Delay (s)	28.0	30.7	27.2					15.9	3.7		9.6	0.3
Level of Service	C	C	C					B	A		A	A
Approach Delay (s)		28.6			0.0			11.4			7.9	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	51.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	909	0	411	0	1660	1967	0	1260	645
Future Volume (vph)	0	0	0	909	0	411	0	1660	1967	0	1260	645
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.8		6.8		4.6	4.0		4.6	4.0
Lane Util. Factor				0.97		1.00		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		1568		5036	1568		5036	1568
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		1568		5036	1568		5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	909	0	411	0	1660	1967	0	1260	645
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	909	0	387	0	1660	1967	0	1260	645
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				14.8		14.8		19.0	45.2		19.0	45.2
Effective Green, g (s)				14.8		14.8		19.0	45.2		19.0	45.2
Actuated g/C Ratio				0.33		0.33		0.42	1.00		0.42	1.00
Clearance Time (s)				6.8		6.8		4.6			4.6	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				1113		513		2116	1568		2116	1568
v/s Ratio Prot								0.33			0.25	
v/s Ratio Perm				0.27		0.25			c1.25			0.41
v/c Ratio				0.82		0.76		0.78	1.25		0.60	0.41
Uniform Delay, d1				14.0		13.6		11.3	22.6		10.1	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				4.5		5.6		1.8	119.9		0.3	0.8
Delay (s)				18.5		19.1		13.2	142.5		10.4	0.8
Level of Service				B		B		B	F		B	A
Approach Delay (s)		0.0			18.7			83.3			7.2	
Approach LOS		A			B			F			A	

Intersection Summary			
HCM 2000 Control Delay	49.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.68		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	11.4
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

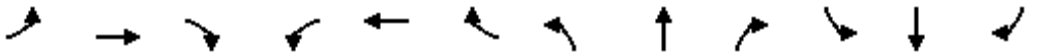


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	533	19	1013	0	0	589	0	3418	8	0	2010	157
Future Volume (vph)	533	19	1013	0	0	589	0	3418	8	0	2010	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Lane Util. Factor	0.91	0.86	0.91			0.88		0.86			0.91	1.00
Frt	1.00	0.89	0.85			0.85		1.00			1.00	0.85
Flt Protected	0.95	0.99	1.00			1.00		1.00			1.00	1.00
Satd. Flow (prot)	1595	2789	1427			2733		6343			5036	1568
Flt Permitted	0.95	0.99	1.00			1.00		1.00			1.00	1.00
Satd. Flow (perm)	1595	2789	1427			2733		6343			5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	533	19	1013	0	0	589	0	3418	8	0	2010	157
RTOR Reduction (vph)	0	13	28	0	0	46	0	0	0	0	0	44
Lane Group Flow (vph)	373	673	478	0	0	543	0	3426	0	0	2010	113
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA	Perm			Prot		NA			NA	custom
Protected Phases	4	4				1		2			6	
Permitted Phases			4									2
Actuated Green, G (s)	39.0	39.0	39.0			22.0		67.0			93.0	67.0
Effective Green, g (s)	39.0	39.0	39.0			22.0		67.0			93.0	67.0
Actuated g/C Ratio	0.28	0.28	0.28			0.16		0.48			0.66	0.48
Clearance Time (s)	4.0	4.0	4.0			4.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	444	776	397			429		3035			3345	750
v/s Ratio Prot	0.23	0.24				c0.20		c0.54			0.40	
v/s Ratio Perm			c0.33									0.07
v/c Ratio	0.84	1.24dr	1.20			1.26		1.13			0.60	0.15
Uniform Delay, d1	47.6	48.0	50.5			59.0		36.5			13.1	20.5
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	1.00
Incremental Delay, d2	13.4	10.1	113.3			136.7		62.8			0.3	0.1
Delay (s)	60.9	58.1	163.8			195.7		99.3			13.4	20.6
Level of Service	E	E	F			F		F			B	C
Approach Delay (s)		93.0			195.7			99.3			14.0	
Approach LOS		F			F			F			B	

Intersection Summary			
HCM 2000 Control Delay	81.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		

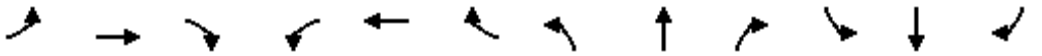
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	70	0	629	0	3368	691	0	1932	1141
Future Volume (vph)	0	0	0	70	0	629	0	3368	691	0	1932	1141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5		3.5		4.8	4.0		5.1	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.91	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3303		2682		4988	1553		4988	1553
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3303		2682		4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	70	0	629	0	3368	691	0	1932	1141
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	70	0	611	0	3368	691	0	1932	1141
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	4%	4%	4%	4%	4%	4%
Turn Type				Perm		Perm		NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases				8		8			Free			Free
Actuated Green, G (s)				22.5		22.5		69.2	100.0		68.9	100.0
Effective Green, g (s)				22.5		22.5		69.2	100.0		68.9	100.0
Actuated g/C Ratio				0.22		0.22		0.69	1.00		0.69	1.00
Clearance Time (s)				3.5		3.5		4.8			5.1	
Vehicle Extension (s)				1.0		1.0		1.0			1.0	
Lane Grp Cap (vph)				743		603		3451	1553		3436	1553
v/s Ratio Prot								c0.68			0.39	
v/s Ratio Perm				0.02		c0.23			0.44			0.73
v/c Ratio				0.09		1.01		0.98	0.44		0.56	0.73
Uniform Delay, d1				30.7		38.8		14.6	0.0		7.9	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.0		40.1		10.3	0.9		0.1	3.1
Delay (s)				30.7		78.8		24.9	0.9		8.0	3.1
Level of Service				C		E		C	A		A	A
Approach Delay (s)		0.0			74.0			20.8			6.2	
Approach LOS		A			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



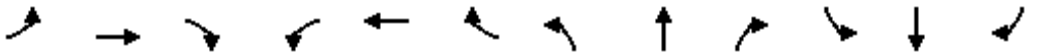
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1608	0	489	0	0	0	0	2451	255	0	1516	485
Future Volume (vph)	1608	0	489	0	0	0	0	2451	255	0	1516	485
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		3.5					4.8	4.0		5.1	4.0
Lane Util. Factor	0.94		0.88					0.86	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	4894		2733					6285	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	4894		2733					6285	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1608	0	489	0	0	0	0	2451	255	0	1516	485
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1608	0	463	0	0	0	0	2451	255	0	1516	485
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								6			2	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	19.7		19.7					24.6	52.6		24.3	52.6
Effective Green, g (s)	19.7		19.7					24.6	52.6		24.3	52.6
Actuated g/C Ratio	0.37		0.37					0.47	1.00		0.46	1.00
Clearance Time (s)	3.5		3.5					4.8			5.1	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1832		1023					2939	1553		2304	1553
v/s Ratio Prot								c0.39			0.30	
v/s Ratio Perm	c0.33		0.17						0.16			0.31
v/c Ratio	0.88		0.45					0.83	0.16		0.66	0.31
Uniform Delay, d1	15.3		12.4					12.2	0.0		10.9	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	5.0		0.1					2.1	0.2		0.5	0.5
Delay (s)	20.3		12.5					14.3	0.2		11.5	0.5
Level of Service	C		B					B	A		B	A
Approach Delay (s)		18.5			0.0			13.0			8.8	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	8.6
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



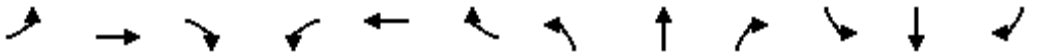
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	163	178	1242	458	238	2026
Future Volume (vph)	163	178	1242	458	238	2026
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	4988	1553	3367	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	4988	1553	3367	3471
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	163	178	1242	458	238	2026
RTOR Reduction (vph)	0	161	0	252	0	0
Lane Group Flow (vph)	163	17	1242	206	238	2026
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	Prot	NA	Perm	Prot	NA
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Actuated Green, G (s)	4.9	4.9	22.9	22.9	7.2	35.6
Effective Green, g (s)	4.9	4.9	22.9	22.9	7.2	35.6
Actuated g/C Ratio	0.10	0.10	0.45	0.45	0.14	0.70
Clearance Time (s)	5.5	5.5	5.0	5.0	5.5	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	326	150	2239	697	475	2422
v/s Ratio Prot	c0.05	0.01	0.25		0.07	c0.58
v/s Ratio Perm				0.13		
v/c Ratio	0.50	0.11	0.55	0.30	0.50	0.84
Uniform Delay, d1	21.9	21.1	10.3	8.9	20.2	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.2	0.1	0.3	2.6
Delay (s)	22.3	21.2	10.5	9.0	20.5	8.1
Level of Service	C	C	B	A	C	A
Approach Delay (s)	21.7		10.1			9.4
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



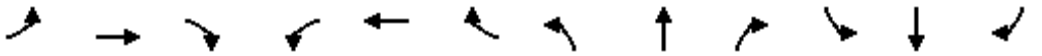
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	547	1011	9	2	722	6	7	15	2	5	21	1089
Future Volume (vph)	547	1011	9	2	722	6	7	15	2	5	21	1089
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1703	3406	1524	1719	3434			1798			1810	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)	1703	3406	1524	1719	3434			1798			1810	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	547	1011	9	2	722	6	7	15	2	5	21	1089
RTOR Reduction (vph)	0	0	2	0	0	0	0	2	0	0	0	33
Lane Group Flow (vph)	547	1011	7	2	728	0	0	22	0	0	26	1056
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	71.0	104.9	104.9	0.6	35.4			1.7			3.6	74.6
Effective Green, g (s)	71.0	104.9	104.9	0.6	35.4			1.7			3.6	74.6
Actuated g/C Ratio	0.52	0.77	0.77	0.00	0.26			0.01			0.03	0.55
Clearance Time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	892	2636	1179	7	897			22			48	855
v/s Ratio Prot	0.32	0.30		0.00	c0.21			c0.01			0.01	c0.65
v/s Ratio Perm			0.00									0.03
v/c Ratio	0.61	0.38	0.01	0.29	0.81			1.00			0.54	1.23
Uniform Delay, d1	22.6	4.9	3.5	67.2	46.9			66.9			65.1	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.9	0.0	0.0	8.0	5.4			192.2			6.5	115.8
Delay (s)	23.5	4.9	3.5	75.3	52.3			259.1			71.7	146.2
Level of Service	C	A	A	E	D			F			E	F
Approach Delay (s)		11.4			52.3			259.1			144.5	
Approach LOS		B			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	65.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	135.5	Sum of lost time (s)	24.7
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	401	39	205	721	236	3823	0	0	4167	61
Future Volume (vph)	0	0	401	39	205	721	236	3823	0	0	4167	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Lane Util. Factor			1.00		1.00	0.88	0.97	0.91			0.86	1.00
Frt			0.86		1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)			1596		1778	2682	3303	4893			6166	1524
Flt Permitted			1.00		0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)			1596		1778	2682	3303	4893			6166	1524
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	401	39	205	721	236	3823	0	0	4167	61
RTOR Reduction (vph)	0	0	193	0	0	40	0	0	0	0	0	25
Lane Group Flow (vph)	0	0	208	0	244	681	236	3823	0	0	4167	36
Heavy Vehicles (%)	3%	3%	3%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type			Over	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases			1	4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)			20.0		29.8	29.8	20.0	109.0			84.1	84.1
Effective Green, g (s)			20.0		29.8	29.8	20.0	109.0			84.1	84.1
Actuated g/C Ratio			0.13		0.20	0.20	0.13	0.73			0.56	0.56
Clearance Time (s)			4.6		6.2	6.2	4.6	5.0			5.3	5.3
Vehicle Extension (s)			3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			212		353	532	440	3555			3457	854
v/s Ratio Prot			0.13		0.14		0.07	c0.78			c0.68	
v/s Ratio Perm						c0.25						0.02
v/c Ratio			0.98		0.69	1.28	0.54	1.08			1.21	0.04
Uniform Delay, d1			64.8		55.8	60.1	60.7	20.5			33.0	14.8
Progression Factor			1.00		1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2			55.3		5.7	139.9	1.3	40.0			95.4	0.0
Delay (s)			120.1		61.6	200.0	61.9	60.5			128.3	14.8
Level of Service			F		E	F	E	E			F	B
Approach Delay (s)		120.1			165.0			60.6			126.7	
Approach LOS		F			F			E			F	

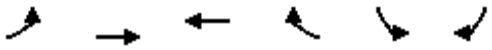
Intersection Summary			
HCM 2000 Control Delay	102.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	111.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2738	0	151	0	0	0	0	1723	222	0	318	1981
Future Volume (vph)	2738	0	151	0	0	0	0	1723	222	0	318	1981
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0			4.0	4.0
Lane Util. Factor	0.94		0.88					0.91			0.91	1.00
Frt	1.00		0.85					0.98			1.00	0.85
Flt Protected	0.95		1.00					1.00			1.00	1.00
Satd. Flow (prot)	4942		2760					4950			5036	1568
Flt Permitted	0.95		1.00					1.00			1.00	1.00
Satd. Flow (perm)	4942		2760					4950			5036	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2738	0	151	0	0	0	0	1723	222	0	318	1981
RTOR Reduction (vph)	0	0	56	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	2738	0	95	0	0	0	0	1930	0	0	318	1981
Turn Type	Prot		Perm					NA			NA	Free
Protected Phases	4							2			6	
Permitted Phases			4									Free
Actuated Green, G (s)	60.0		60.0					42.0			42.0	110.0
Effective Green, g (s)	60.0		60.0					42.0			42.0	110.0
Actuated g/C Ratio	0.55		0.55					0.38			0.38	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	2695		1505					1890			1922	1568
v/s Ratio Prot	0.55							0.39			0.06	
v/s Ratio Perm			0.03									c1.26
v/c Ratio	1.02		0.06					1.02			0.17	1.26
Uniform Delay, d1	25.0		11.8					34.0			22.4	55.0
Progression Factor	1.00		1.00					1.00			1.00	1.00
Incremental Delay, d2	21.4		0.0					26.2			0.0	123.8
Delay (s)	46.4		11.8					60.2			22.5	178.8
Level of Service	D		B					E			C	F
Approach Delay (s)		44.6			0.0			60.2			157.2	
Approach LOS		D			A			E			F	

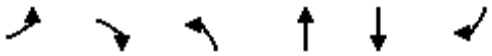
Intersection Summary			
HCM 2000 Control Delay	85.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	812	1439	1321	38	30	1099
Future Volume (vph)	812	1439	1321	38	30	1099
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3242	3343	3343	1495	3400	2760
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3242	3343	3343	1495	3400	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	812	1439	1321	38	30	1099
RTOR Reduction (vph)	0	0	0	15	0	610
Lane Group Flow (vph)	812	1439	1321	23	30	489
Heavy Vehicles (%)	8%	8%	8%	8%	3%	3%
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	23.0	63.1	36.1	36.1	17.6	17.6
Effective Green, g (s)	23.0	63.1	36.1	36.1	17.6	17.6
Actuated g/C Ratio	0.26	0.71	0.41	0.41	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	840	2378	1360	608	674	547
v/s Ratio Prot	c0.25	0.43	c0.40		0.01	
v/s Ratio Perm				0.02		c0.18
v/c Ratio	0.97	0.61	0.97	0.04	0.04	0.89
Uniform Delay, d1	32.5	6.5	25.8	15.8	28.8	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.0	0.4	17.9	0.0	0.0	16.9
Delay (s)	55.4	6.9	43.7	15.9	28.8	51.5
Level of Service	E	A	D	B	C	D
Approach Delay (s)		24.4	42.9		50.9	
Approach LOS		C	D		D	

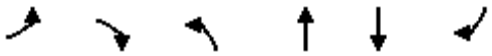
Intersection Summary			
HCM 2000 Control Delay	36.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	883	153	11	1388	1814	605
Future Volume (vph)	883	153	11	1388	1814	605
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	883	153	11	1388	1814	605
RTOR Reduction (vph)	0	8	0	0	0	108
Lane Group Flow (vph)	883	145	11	1388	1814	497
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	24.0	28.0	4.0	58.0	50.0	74.0
Effective Green, g (s)	24.0	28.0	4.0	58.0	50.0	74.0
Actuated g/C Ratio	0.27	0.31	0.04	0.64	0.56	0.82
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	906	557	77	2258	1947	1358
v/s Ratio Prot	c0.26	0.01	0.01	c0.40	c0.52	0.10
v/s Ratio Perm		0.08				0.22
v/c Ratio	0.97	0.26	0.14	0.61	0.93	0.37
Uniform Delay, d1	32.7	23.2	41.4	9.4	18.4	2.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.7	0.2	0.9	0.5	8.7	0.2
Delay (s)	56.3	23.5	42.2	9.9	27.1	2.2
Level of Service	E	C	D	A	C	A
Approach Delay (s)	51.5			10.2	20.9	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		

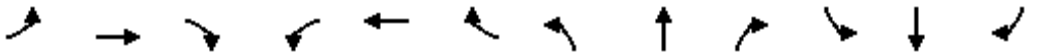
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	244	829	852	1167	1631	287
Future Volume (vph)	244	829	852	1167	1631	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.97	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1752	1568	3400	3505	3505	1568
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1752	1568	3400	3505	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	244	829	852	1167	1631	287
RTOR Reduction (vph)	0	281	0	0	0	143
Lane Group Flow (vph)	244	548	852	1167	1631	144
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	28.0	28.0	24.0	74.0	46.0	46.0
Effective Green, g (s)	28.0	28.0	24.0	74.0	46.0	46.0
Actuated g/C Ratio	0.25	0.25	0.22	0.67	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	445	399	741	2357	1465	655
v/s Ratio Prot	0.14		c0.25	0.33	c0.47	
v/s Ratio Perm		c0.35				0.09
v/c Ratio	0.55	1.37	1.15	0.50	1.11	0.22
Uniform Delay, d1	35.5	41.0	43.0	8.8	32.0	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	183.2	82.6	0.2	61.1	0.2
Delay (s)	36.9	224.2	125.6	9.0	93.1	20.7
Level of Service	D	F	F	A	F	C
Approach Delay (s)	181.6			58.2	82.2	
Approach LOS	F			E	F	

Intersection Summary			
HCM 2000 Control Delay	93.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	103.1%	ICU Level of Service	G
Analysis Period (min)	15		

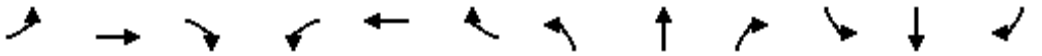
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	759	0	836	0	0	0	0	3544	627	0	1888	1108
Future Volume (vph)	759	0	836	0	0	0	0	3544	627	0	1888	1108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	4.0
Lane Util. Factor	0.97		0.88					0.86	1.00		0.86	0.86
Frt	1.00		0.85					1.00	0.85		0.97	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					6346	1568		4626	1348
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					6346	1568		4626	1348
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	759	0	836	0	0	0	0	3544	627	0	1888	1108
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	48	0
Lane Group Flow (vph)	759	0	817	0	0	0	0	3544	627	0	2272	676
Turn Type	Prot		Perm					NA	Free		NA	Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	20.0		20.0					42.0	70.0		42.0	70.0
Effective Green, g (s)	20.0		20.0					42.0	70.0		42.0	70.0
Actuated g/C Ratio	0.29		0.29					0.60	1.00		0.60	1.00
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	971		788					3807	1568		2775	1348
v/s Ratio Prot	0.22							c0.56			0.49	
v/s Ratio Perm			c0.30						0.40			0.50
v/c Ratio	0.78		1.04					0.93	0.40		0.82	0.50
Uniform Delay, d1	23.0		25.0					12.7	0.0		11.0	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	4.2		42.1					4.9	0.8		2.0	1.3
Delay (s)	27.1		67.1					17.6	0.8		13.0	1.3
Level of Service	C		E					B	A		B	A
Approach Delay (s)		48.1			0.0			15.0			10.4	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	342	0	1123	0	2690	1619	0	4218	386
Future Volume (vph)	0	0	0	342	0	1123	0	2690	1619	0	4218	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.76		0.86	0.86		0.81	0.81
Frt				1.00		0.85		0.97	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		3575		4621	1348		5968	1270
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		3575		4621	1348		5968	1270
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	342	0	1123	0	2690	1619	0	4218	386
RTOR Reduction (vph)	0	0	0	0	0	6	0	26	0	0	1	0
Lane Group Flow (vph)	0	0	0	342	0	1117	0	3312	971	0	4256	347
Turn Type				Prot		Perm		NA	Free		NA	Free
Protected Phases				8				2			6	
Permitted Phases						8			Free			Free
Actuated Green, G (s)				39.0		39.0		93.0	140.0		93.0	140.0
Effective Green, g (s)				39.0		39.0		93.0	140.0		93.0	140.0
Actuated g/C Ratio				0.28		0.28		0.66	1.00		0.66	1.00
Clearance Time (s)				4.0		4.0		4.0			4.0	
Vehicle Extension (s)				3.0		3.0		3.0			3.0	
Lane Grp Cap (vph)				947		995		3069	1348		3964	1270
v/s Ratio Prot				0.10				c0.72			0.71	
v/s Ratio Perm						c0.31			0.72			0.27
v/c Ratio				0.36		1.12		1.08	0.72		1.07	0.27
Uniform Delay, d1				40.5		50.5		23.5	0.0		23.5	0.0
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				0.2		68.3		42.4	3.4		38.8	0.5
Delay (s)				40.7		118.8		65.9	3.4		62.3	0.5
Level of Service				D		F		E	A		E	A
Approach Delay (s)		0.0			100.6			51.8			57.7	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	61.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

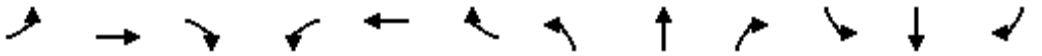
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	798	325	360	1152	521	442
Future Volume (vph)	798	325	360	1152	521	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3154	1411	1577	3154	3060	1411
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3154	1411	1577	3154	3060	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	798	325	360	1152	521	442
RTOR Reduction (vph)	0	175	0	0	0	338
Lane Group Flow (vph)	798	150	360	1152	521	104
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	19.0	19.0	17.2	40.2	14.8	14.8
Effective Green, g (s)	19.0	19.0	17.2	40.2	14.8	14.8
Actuated g/C Ratio	0.30	0.30	0.27	0.64	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	951	425	430	2012	718	331
v/s Ratio Prot	c0.25		c0.23	0.37	c0.17	
v/s Ratio Perm		0.11				0.07
v/c Ratio	0.84	0.35	0.84	0.57	0.73	0.31
Uniform Delay, d1	20.6	17.2	21.6	6.5	22.2	19.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	0.5	13.3	0.4	3.7	0.5
Delay (s)	27.2	17.7	34.8	6.9	25.9	20.5
Level of Service	C	B	C	A	C	C
Approach Delay (s)	24.4			13.6	23.4	
Approach LOS	C			B	C	

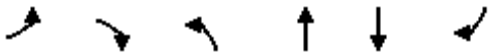
Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	396	1	0	465	48	0	0	0	161	0	247
Future Volume (vph)	309	396	1	0	465	48	0	0	0	161	0	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95					0.95	0.95	1.00
Frt	1.00	1.00			0.99					1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (prot)	1736	3470			3422					1665	1665	1568
Flt Permitted	0.95	1.00			1.00					0.95	0.95	1.00
Satd. Flow (perm)	1736	3470			3422					1665	1665	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	309	396	1	0	465	48	0	0	0	161	0	247
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	210
Lane Group Flow (vph)	309	397	0	0	504	0	0	0	0	80	81	37
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA					Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	15.2	33.0			13.8					8.9	8.9	8.9
Effective Green, g (s)	15.2	33.0			13.8					8.9	8.9	8.9
Actuated g/C Ratio	0.26	0.55			0.23					0.15	0.15	0.15
Clearance Time (s)	4.0	4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	443	1924			793					249	249	234
v/s Ratio Prot	c0.18	0.11			c0.15					0.05	c0.05	
v/s Ratio Perm												0.02
v/c Ratio	0.70	0.21			0.64					0.32	0.33	0.16
Uniform Delay, d1	20.1	6.7			20.6					22.6	22.6	22.0
Progression Factor	1.00	1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2	4.7	0.1			1.7					0.8	0.8	0.3
Delay (s)	24.8	6.7			22.3					23.4	23.4	22.4
Level of Service	C	A			C					C	C	C
Approach Delay (s)		14.6			22.3			0.0			22.8	
Approach LOS		B			C			A			C	

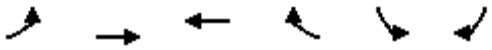
Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	354	47	22	1335	1718	455
Future Volume (vph)	354	47	22	1335	1718	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3395	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3395	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	354	47	22	1335	1718	455
RTOR Reduction (vph)	0	37	0	0	25	0
Lane Group Flow (vph)	354	10	22	1335	2148	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	18.0	18.0	1.5	62.4	56.9	
Effective Green, g (s)	18.0	18.0	1.5	62.4	56.9	
Actuated g/C Ratio	0.20	0.20	0.02	0.71	0.64	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	356	319	29	2474	2185	
v/s Ratio Prot	c0.20		0.01	c0.38	c0.63	
v/s Ratio Perm		0.01				
v/c Ratio	0.99	0.03	0.76	0.54	0.98	
Uniform Delay, d1	35.1	28.2	43.3	6.2	15.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	45.9	0.0	71.7	0.2	15.4	
Delay (s)	81.1	28.2	115.0	6.4	30.6	
Level of Service	F	C	F	A	C	
Approach Delay (s)	74.9			8.2	30.6	
Approach LOS	E			A	C	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	1200	801	1662	1901	0
Future Volume (vph)	2	1200	801	1662	1901	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1752	3505	3505	1568	3400	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1752	3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1200	801	1662	1901	0
RTOR Reduction (vph)	0	0	0	72	0	0
Lane Group Flow (vph)	2	1200	801	1590	1901	0
Turn Type	Prot	NA	NA	custom	Prot	
Protected Phases	4	5	5	2	6	
Permitted Phases						
Actuated Green, G (s)	1.2	46.0	46.0	126.1	76.1	
Effective Green, g (s)	1.2	46.0	46.0	126.1	76.1	
Actuated g/C Ratio	0.01	0.34	0.34	0.93	0.56	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	15	1191	1191	1461	1912	
v/s Ratio Prot	c0.00	0.34	0.23	c1.01	0.56	
v/s Ratio Perm						
v/c Ratio	0.13	1.01	0.67	1.09	0.99	
Uniform Delay, d1	66.5	44.7	38.2	4.6	29.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	27.9	1.5	51.4	19.1	
Delay (s)	70.6	72.6	39.7	56.0	48.5	
Level of Service	E	E	D	E	D	
Approach Delay (s)		72.6	50.7		48.5	
Approach LOS		E	D		D	

Intersection Summary			
HCM 2000 Control Delay	54.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	135.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	112.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0
Turn Type			Prot		Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)						
Effective Green, g (s)						
Actuated g/C Ratio						
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)						
v/s Ratio Prot						
v/s Ratio Perm						
v/c Ratio						
Uniform Delay, d1						
Progression Factor						
Incremental Delay, d2						
Delay (s)						
Level of Service						
Approach Delay (s)	0.0			0.0	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	0.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	24.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

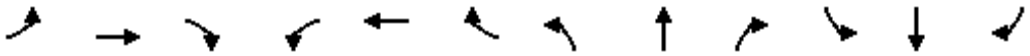
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	2336	0	1205	0
Future Volume (vph)	0	0	2336	0	1205	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	
Lane Util. Factor			0.95	0.95	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	0.95	0.95	
Satd. Flow (prot)			1665	1665	3400	
Flt Permitted			0.95	0.95	0.95	
Satd. Flow (perm)			1665	1665	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	2336	0	1205	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1168	1168	1205	0
Turn Type			Split	NA	Prot	
Protected Phases			4	4	2	
Permitted Phases						
Actuated Green, G (s)			94.0	94.0	48.0	
Effective Green, g (s)			94.0	94.0	48.0	
Actuated g/C Ratio			0.63	0.63	0.32	
Clearance Time (s)			4.0	4.0	4.0	
Vehicle Extension (s)			3.0	3.0	3.0	
Lane Grp Cap (vph)			1043	1043	1088	
v/s Ratio Prot			c0.70	0.70	c0.35	
v/s Ratio Perm						
v/c Ratio			1.12	1.12	1.11	
Uniform Delay, d1			28.0	28.0	51.0	
Progression Factor			1.00	1.00	1.00	
Incremental Delay, d2			66.9	66.9	61.7	
Delay (s)			94.9	94.9	112.7	
Level of Service			F	F	F	
Approach Delay (s)	0.0			94.9	112.7	
Approach LOS	A			F	F	

Intersection Summary			
HCM 2000 Control Delay	101.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	194.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	812	0	0	0	0	1205	1921	0	2336	0
Future Volume (vph)	0	0	812	0	0	0	0	1205	1921	0	2336	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0					4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95					0.91	0.91		0.95	
Frt		0.85	0.85					0.93	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		1490	1490					3136	1427		3505	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		1490	1490					3136	1427		3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	812	0	0	0	0	1205	1921	0	2336	0
RTOR Reduction (vph)	0	32	0	0	0	0	0	89	286	0	0	0
Lane Group Flow (vph)	0	374	406	0	0	0	0	2057	694	0	2336	0
Turn Type		NA	Free					NA	Perm	Prot	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases			Free						2			
Actuated Green, G (s)		30.0	130.0					92.0	92.0		92.0	
Effective Green, g (s)		30.0	130.0					92.0	92.0		92.0	
Actuated g/C Ratio		0.23	1.00					0.71	0.71		0.71	
Clearance Time (s)		4.0						4.0	4.0		4.0	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		343	1490					2219	1009		2480	
v/s Ratio Prot		c0.25						0.66			c0.67	
v/s Ratio Perm			0.27						0.49			
v/c Ratio		1.09	0.27					0.93	0.69		0.94	
Uniform Delay, d1		50.0	0.0					16.1	10.8		16.7	
Progression Factor		1.00	1.00					1.00	1.00		1.00	
Incremental Delay, d2		74.7	0.5					7.3	2.0		8.1	
Delay (s)		124.7	0.5					23.5	12.8		24.8	
Level of Service		F	A					C	B		C	
Approach Delay (s)		62.6			0.0			20.1			24.8	
Approach LOS		E			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	150.7%	ICU Level of Service	H
Analysis Period (min)	15		

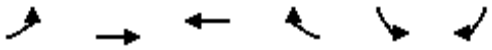
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	343	141	2901	237	99	3193
Future Volume (vph)	343	141	2901	237	99	3193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5036	1568	3400	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5036	1568	3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	343	141	2901	237	99	3193
RTOR Reduction (vph)	0	71	0	81	0	0
Lane Group Flow (vph)	343	70	2901	156	99	3193
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	12.8	12.8	50.1	50.1	3.2	57.3
Effective Green, g (s)	12.8	12.8	50.1	50.1	3.2	57.3
Actuated g/C Ratio	0.16	0.16	0.64	0.64	0.04	0.73
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	557	256	3230	1005	139	3694
v/s Ratio Prot	c0.10		0.58		0.03	c0.63
v/s Ratio Perm		0.04		0.10		
v/c Ratio	0.62	0.27	0.90	0.16	0.71	0.86
Uniform Delay, d1	30.4	28.6	11.8	5.6	37.0	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.6	3.7	0.1	15.8	2.3
Delay (s)	32.4	29.2	15.6	5.6	52.8	9.9
Level of Service	C	C	B	A	D	A
Approach Delay (s)	31.4		14.8			11.2
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	319	1737	1340	99	75	249
Future Volume (vph)	319	1737	1340	99	75	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	319	1737	1340	99	75	249
RTOR Reduction (vph)	0	0	0	54	0	217
Lane Group Flow (vph)	319	1737	1340	45	75	32
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	15.3	49.5	30.2	30.2	8.5	8.5
Effective Green, g (s)	15.3	49.5	30.2	30.2	8.5	8.5
Actuated g/C Ratio	0.23	0.75	0.46	0.46	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	406	2628	1603	717	225	201
v/s Ratio Prot	c0.18	0.50	c0.38		c0.04	
v/s Ratio Perm				0.03		0.02
v/c Ratio	0.79	0.66	0.84	0.06	0.33	0.16
Uniform Delay, d1	23.8	4.1	15.7	10.0	26.2	25.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.6	0.6	4.0	0.0	0.9	0.4
Delay (s)	33.4	4.7	19.7	10.0	27.0	25.9
Level of Service	C	A	B	B	C	C
Approach Delay (s)		9.2	19.0		26.2	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

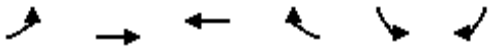
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1163	129	79	690	92	137
Future Volume (vph)	1163	129	79	690	92	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	1752	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1163	129	79	690	92	137
RTOR Reduction (vph)	0	67	0	0	0	111
Lane Group Flow (vph)	1163	62	79	690	92	26
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	20.5	20.5	2.0	26.5	7.9	7.9
Effective Green, g (s)	20.5	20.5	2.0	26.5	7.9	7.9
Actuated g/C Ratio	0.48	0.48	0.05	0.63	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1694	758	160	2190	326	292
v/s Ratio Prot	c0.33		0.02	c0.20	c0.05	
v/s Ratio Perm		0.04				0.02
v/c Ratio	0.69	0.08	0.49	0.32	0.28	0.09
Uniform Delay, d1	8.5	5.9	19.7	3.7	14.8	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0	2.4	0.1	0.5	0.1
Delay (s)	9.6	5.9	22.1	3.8	15.3	14.4
Level of Service	A	A	C	A	B	B
Approach Delay (s)	9.3			5.7	14.8	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	42.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

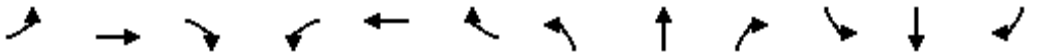
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	289	415	277	39	22	240
Future Volume (vph)	289	415	277	39	22	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	0.98		0.88	
Flt Protected		0.98	1.00		1.00	
Satd. Flow (prot)		1808	1814		1610	
Flt Permitted		0.73	1.00		1.00	
Satd. Flow (perm)		1347	1814		1610	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	289	415	277	39	22	240
RTOR Reduction (vph)	0	0	7	0	200	0
Lane Group Flow (vph)	0	704	309	0	62	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		30.1	30.1		7.6	
Effective Green, g (s)		30.1	30.1		7.6	
Actuated g/C Ratio		0.66	0.66		0.17	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		887	1194		267	
v/s Ratio Prot			0.17		c0.04	
v/s Ratio Perm		c0.52				
v/c Ratio		0.79	0.26		0.23	
Uniform Delay, d1		5.6	3.2		16.5	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		4.9	0.1		0.4	
Delay (s)		10.5	3.3		17.0	
Level of Service		B	A		B	
Approach Delay (s)		10.5	3.3		17.0	
Approach LOS		B	A		B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

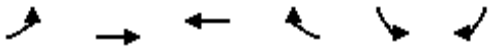
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	113	537	148	83	226	253	1647	85	98	1508	371
Future Volume (vph)	258	113	537	148	83	226	253	1647	85	98	1508	371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	1845	1568	3400	3505	1568	3400	3505	1568	3400	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	1845	1568	3400	3505	1568	3400	3505	1568	3400	3505	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	258	113	537	148	83	226	253	1647	85	98	1508	371
RTOR Reduction (vph)	0	0	72	0	0	119	0	0	44	0	0	151
Lane Group Flow (vph)	258	113	465	148	83	107	253	1647	41	98	1508	220
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	27.0	27.0	5.0	16.0	16.0	8.0	48.0	48.0	4.0	44.0	44.0
Effective Green, g (s)	16.0	27.0	27.0	5.0	16.0	16.0	8.0	48.0	48.0	4.0	44.0	44.0
Actuated g/C Ratio	0.16	0.27	0.27	0.05	0.16	0.16	0.08	0.48	0.48	0.04	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	280	498	423	170	560	250	272	1682	752	136	1542	689
v/s Ratio Prot	c0.15	0.06		0.04	0.02		c0.07	c0.47		0.03	0.43	
v/s Ratio Perm			c0.30			0.07			0.03			0.14
v/c Ratio	0.92	0.23	1.10	0.87	0.15	0.43	0.93	0.98	0.05	0.72	0.98	0.32
Uniform Delay, d1	41.4	28.4	36.5	47.2	36.1	37.9	45.7	25.5	13.9	47.4	27.5	18.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	33.7	0.2	73.7	35.2	0.1	1.2	36.3	17.0	0.0	17.1	17.7	0.3
Delay (s)	75.1	28.6	110.2	82.4	36.3	39.0	82.0	42.5	13.9	64.5	45.2	18.5
Level of Service	E	C	F	F	D	D	F	D	B	E	D	B
Approach Delay (s)		90.1			52.6			46.3			41.2	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

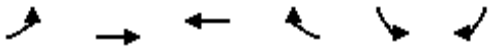
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	242	1215	829	120	250	397
Future Volume (vph)	242	1215	829	120	250	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	3438		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	3438		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	242	1215	829	120	250	397
RTOR Reduction (vph)	0	0	20	0	0	219
Lane Group Flow (vph)	242	1215	929	0	250	178
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	6.1	27.5	17.4		12.4	12.4
Effective Green, g (s)	6.1	27.5	17.4		12.4	12.4
Actuated g/C Ratio	0.13	0.57	0.36		0.26	0.26
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	432	2012	1248		453	405
v/s Ratio Prot	0.07	c0.35	c0.27		c0.14	
v/s Ratio Perm						0.11
v/c Ratio	0.56	0.60	0.74		0.55	0.44
Uniform Delay, d1	19.6	6.6	13.3		15.3	14.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.7	0.5	2.4		1.5	0.8
Delay (s)	21.3	7.2	15.8		16.8	15.6
Level of Service	C	A	B		B	B
Approach Delay (s)		9.5	15.8		16.1	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	47.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	146	1336	888	476	733	187
Future Volume (vph)	146	1336	888	476	733	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1752	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	146	1336	888	476	733	187
RTOR Reduction (vph)	0	0	0	349	0	106
Lane Group Flow (vph)	146	1336	888	127	733	81
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	6.0	26.0	16.0	16.0	26.0	26.0
Effective Green, g (s)	6.0	26.0	16.0	16.0	26.0	26.0
Actuated g/C Ratio	0.10	0.43	0.27	0.27	0.43	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	175	1518	934	418	759	679
v/s Ratio Prot	0.08	c0.38	0.25		c0.42	
v/s Ratio Perm				0.08		0.05
v/c Ratio	0.83	0.88	0.95	0.30	0.97	0.12
Uniform Delay, d1	26.5	15.6	21.6	17.6	16.6	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.5	6.3	18.6	0.4	24.3	0.1
Delay (s)	54.0	21.9	40.2	18.0	40.9	10.2
Level of Service	D	C	D	B	D	B
Approach Delay (s)		25.0	32.5		34.6	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

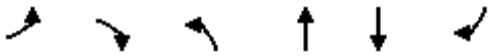
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2461	66	55	2431	33	27
Future Volume (vph)	2461	66	55	2431	33	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3491		1752	3505	1752	1568
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3491		1752	3505	1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2461	66	55	2431	33	27
RTOR Reduction (vph)	1	0	0	0	0	25
Lane Group Flow (vph)	2526	0	55	2431	33	2
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	78.0		4.0	86.0	7.4	7.4
Effective Green, g (s)	78.0		4.0	86.0	7.4	7.4
Actuated g/C Ratio	0.77		0.04	0.85	0.07	0.07
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2685		69	2972	127	114
v/s Ratio Prot	c0.72		0.03	c0.69	c0.02	
v/s Ratio Perm						0.00
v/c Ratio	0.94		0.80	0.82	0.26	0.02
Uniform Delay, d1	9.8		48.3	3.8	44.4	43.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	7.5		45.5	1.9	1.1	0.1
Delay (s)	17.3		93.8	5.7	45.5	43.7
Level of Service	B		F	A	D	D
Approach Delay (s)	17.3			7.6	44.7	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	101.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	81	87	1589	1708	136
Future Volume (vph)	15	81	87	1589	1708	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	1845	3466	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	1845	3466	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	15	81	87	1589	1708	136
RTOR Reduction (vph)	0	77	0	0	3	0
Lane Group Flow (vph)	15	4	87	1589	1841	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	7.3	7.3	11.9	127.0	111.1	
Effective Green, g (s)	7.3	7.3	11.9	127.0	111.1	
Actuated g/C Ratio	0.05	0.05	0.08	0.89	0.78	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	89	80	146	1646	2706	
v/s Ratio Prot	c0.01		0.05	c0.86	0.53	
v/s Ratio Perm		0.00				
v/c Ratio	0.17	0.05	0.60	0.97	0.68	
Uniform Delay, d1	64.6	64.2	62.9	5.9	7.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.3	6.4	14.7	0.7	
Delay (s)	65.5	64.5	69.3	20.6	8.0	
Level of Service	E	E	E	C	A	
Approach Delay (s)	64.6			23.2	8.0	
Approach LOS	E			C	A	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	142.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		

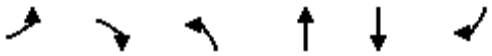
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	55	226	2147	29	520	2066
Future Volume (vph)	55	226	2147	29	520	2066
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.91		0.97	0.91
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	5026		3400	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	5026		3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	55	226	2147	29	520	2066
RTOR Reduction (vph)	0	201	1	0	0	0
Lane Group Flow (vph)	55	25	2175	0	520	2066
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	8.1	8.1	38.1		14.4	56.5
Effective Green, g (s)	8.1	8.1	38.1		14.4	56.5
Actuated g/C Ratio	0.11	0.11	0.52		0.20	0.78
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	195	174	2637		674	3919
v/s Ratio Prot	c0.03		c0.43		c0.15	0.41
v/s Ratio Perm		0.02				
v/c Ratio	0.28	0.14	0.82		0.77	0.53
Uniform Delay, d1	29.6	29.1	14.5		27.5	3.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	0.4	2.2		5.5	0.1
Delay (s)	30.4	29.5	16.7		33.0	3.2
Level of Service	C	C	B		C	A
Approach Delay (s)	29.7		16.7			9.2
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	72.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

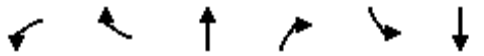
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	621	28	129	1003	1282	534
Future Volume (vph)	621	28	129	1003	1282	534
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.96	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3350	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3350	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	621	28	129	1003	1282	534
RTOR Reduction (vph)	0	5	0	0	38	0
Lane Group Flow (vph)	621	23	129	1003	1778	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	40.0	40.0	8.0	72.0	60.0	
Effective Green, g (s)	40.0	40.0	8.0	72.0	60.0	
Actuated g/C Ratio	0.33	0.33	0.07	0.60	0.50	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	584	522	116	2103	1675	
v/s Ratio Prot	c0.35		c0.07	0.29	c0.53	
v/s Ratio Perm		0.01				
v/c Ratio	1.06	0.04	1.11	0.48	1.06	
Uniform Delay, d1	40.0	27.1	56.0	13.4	30.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	55.2	0.0	116.9	0.2	40.4	
Delay (s)	95.2	27.1	172.9	13.6	70.4	
Level of Service	F	C	F	B	E	
Approach Delay (s)	92.3			31.8	70.4	
Approach LOS	F			C	E	

Intersection Summary			
HCM 2000 Control Delay	62.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	86	1729	47	168	2820
Future Volume (vph)	0	86	1729	47	168	2820
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.91		1.00	0.91
Frt		0.85	1.00		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1568	5016		1752	5036
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1568	5016		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	86	1729	47	168	2820
RTOR Reduction (vph)	0	80	4	0	0	0
Lane Group Flow (vph)	0	6	1772	0	168	2820
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		6		5	2
Permitted Phases		8				
Actuated Green, G (s)		3.3	28.1		7.9	40.0
Effective Green, g (s)		3.3	28.1		7.9	40.0
Actuated g/C Ratio		0.06	0.55		0.15	0.78
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		100	2747		269	3926
v/s Ratio Prot			0.35		0.10	c0.56
v/s Ratio Perm		c0.00				
v/c Ratio		0.06	0.65		0.62	0.72
Uniform Delay, d1		22.5	8.1		20.3	2.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	0.5		4.5	0.6
Delay (s)		22.8	8.6		24.8	3.5
Level of Service		C	A		C	A
Approach Delay (s)	22.8		8.6			4.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	51.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	87	0	1687	55	40	2856
Future Volume (vph)	87	0	1687	55	40	2856
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	1.00		0.91		1.00	0.91
Frt	1.00		1.00		1.00	1.00
Flt Protected	0.95		1.00		0.95	1.00
Satd. Flow (prot)	1752		5012		1752	5036
Flt Permitted	0.95		1.00		0.95	1.00
Satd. Flow (perm)	1752		5012		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	87	0	1687	55	40	2856
RTOR Reduction (vph)	0	0	3	0	0	0
Lane Group Flow (vph)	87	0	1739	0	40	2856
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	5.6		41.4		1.7	47.1
Effective Green, g (s)	5.6		41.4		1.7	47.1
Actuated g/C Ratio	0.09		0.68		0.03	0.78
Clearance Time (s)	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	161		3418		49	3907
v/s Ratio Prot	c0.05		0.35		0.02	c0.57
v/s Ratio Perm						
v/c Ratio	0.54		0.51		0.82	0.73
Uniform Delay, d1	26.3		4.7		29.3	3.5
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	3.7		0.1		64.0	0.7
Delay (s)	30.0		4.8		93.4	4.2
Level of Service	C		A		F	A
Approach Delay (s)	30.0		4.8			5.5
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

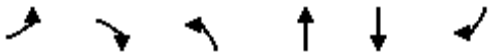
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	412	668	1143	343	461	2720
Future Volume (vph)	412	668	1143	343	461	2720
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1568	4862		1752	5036
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1568	4862		1752	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	412	668	1143	343	461	2720
RTOR Reduction (vph)	0	334	77	0	0	0
Lane Group Flow (vph)	412	334	1409	0	461	2720
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3				
Actuated Green, G (s)	17.0	17.0	22.0		19.0	45.0
Effective Green, g (s)	17.0	17.0	22.0		19.0	45.0
Actuated g/C Ratio	0.24	0.24	0.31		0.27	0.64
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	425	380	1528		475	3237
v/s Ratio Prot	c0.24		0.29		c0.26	c0.54
v/s Ratio Perm		0.21				
v/c Ratio	0.97	0.88	0.92		0.97	0.84
Uniform Delay, d1	26.2	25.5	23.2		25.2	9.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	35.3	20.0	9.5		33.6	2.1
Delay (s)	61.5	45.5	32.7		58.8	11.8
Level of Service	E	D	C		E	B
Approach Delay (s)	51.6		32.7			18.6
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

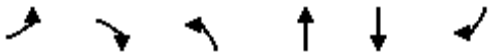
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	106	118	134	1195	2752	140
Future Volume (vph)	106	118	134	1195	2752	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	5036	4999	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	5036	4999	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	106	118	134	1195	2752	140
RTOR Reduction (vph)	0	104	0	0	6	0
Lane Group Flow (vph)	106	14	134	1195	2886	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	10.6	10.6	8.0	69.4	57.4	
Effective Green, g (s)	10.6	10.6	8.0	69.4	57.4	
Actuated g/C Ratio	0.12	0.12	0.09	0.79	0.65	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	211	188	159	3971	3260	
v/s Ratio Prot	c0.06		c0.08	0.24	c0.58	
v/s Ratio Perm		0.01				
v/c Ratio	0.50	0.08	0.84	0.30	0.89	
Uniform Delay, d1	36.2	34.4	39.4	2.6	12.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	0.2	31.3	0.0	3.2	
Delay (s)	38.1	34.5	70.7	2.6	15.8	
Level of Service	D	C	E	A	B	
Approach Delay (s)	36.2			9.5	15.8	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

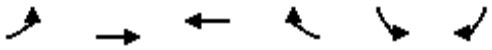
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	295	471	252	1237	1553	161
Future Volume (vph)	295	471	252	1237	1553	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1568	1752	3505	3455	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1568	1752	3505	3455	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	295	471	252	1237	1553	161
RTOR Reduction (vph)	0	215	0	0	9	0
Lane Group Flow (vph)	295	256	252	1237	1705	0
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.0	16.0	14.0	65.9	47.9	
Effective Green, g (s)	16.0	16.0	14.0	65.9	47.9	
Actuated g/C Ratio	0.18	0.18	0.16	0.73	0.53	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	311	279	272	2569	1840	
v/s Ratio Prot	c0.17		c0.14	0.35	c0.49	
v/s Ratio Perm		0.16				
v/c Ratio	0.95	0.92	0.93	0.48	0.93	
Uniform Delay, d1	36.5	36.3	37.4	5.0	19.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	37.1	32.5	35.2	0.1	8.6	
Delay (s)	73.6	68.7	72.7	5.1	27.9	
Level of Service	E	E	E	A	C	
Approach Delay (s)	70.6			16.5	27.9	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

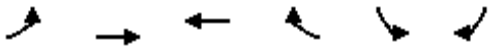
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	819	2149	1723	71	132	772
Future Volume (vph)	819	2149	1723	71	132	772
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	3505	5006		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	3505	5006		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	819	2149	1723	71	132	772
RTOR Reduction (vph)	0	0	5	0	0	326
Lane Group Flow (vph)	819	2149	1789	0	132	446
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	22.0	58.0	32.0		24.0	24.0
Effective Green, g (s)	22.0	58.0	32.0		24.0	24.0
Actuated g/C Ratio	0.24	0.64	0.36		0.27	0.27
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	831	2258	1779		467	418
v/s Ratio Prot	0.24	c0.61	0.36		0.08	
v/s Ratio Perm						c0.28
v/c Ratio	0.99	0.95	1.01		0.28	1.07
Uniform Delay, d1	33.8	14.7	29.0		26.2	33.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	27.4	9.9	22.7		0.3	62.7
Delay (s)	61.3	24.6	51.7		26.5	95.7
Level of Service	E	C	D		C	F
Approach Delay (s)		34.7	51.7		85.6	
Approach LOS		C	D		F	

Intersection Summary			
HCM 2000 Control Delay	48.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

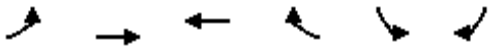
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	294	1988	1299	76	260	216
Future Volume (vph)	294	1988	1299	76	260	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	3505	3505	1568	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	3505	3505	1568	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	294	1988	1299	76	260	216
RTOR Reduction (vph)	0	0	0	40	0	178
Lane Group Flow (vph)	294	1988	1299	36	260	38
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.0	36.7	25.7	25.7	9.6	9.6
Effective Green, g (s)	7.0	36.7	25.7	25.7	9.6	9.6
Actuated g/C Ratio	0.13	0.68	0.47	0.47	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	438	2368	1658	742	601	277
v/s Ratio Prot	0.09	c0.57	0.37		c0.08	
v/s Ratio Perm				0.02		0.02
v/c Ratio	0.67	0.84	0.78	0.05	0.43	0.14
Uniform Delay, d1	22.6	6.6	12.0	7.7	19.9	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	2.8	2.5	0.0	0.5	0.2
Delay (s)	26.6	9.4	14.5	7.7	20.4	19.1
Level of Service	C	A	B	A	C	B
Approach Delay (s)		11.6	14.1		19.8	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	120	2130	1284	2	3	118
Future Volume (vph)	120	2130	1284	2	3	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3504		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3504		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	120	2130	1284	2	3	118
RTOR Reduction (vph)	0	0	0	0	0	104
Lane Group Flow (vph)	120	2130	1286	0	3	14
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	5.6	42.8	33.2		6.6	6.6
Effective Green, g (s)	5.6	42.8	33.2		6.6	6.6
Actuated g/C Ratio	0.10	0.75	0.58		0.11	0.11
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	170	2613	2026		201	180
v/s Ratio Prot	0.07	c0.61	0.37		0.00	
v/s Ratio Perm						c0.01
v/c Ratio	0.71	0.82	0.63		0.01	0.08
Uniform Delay, d1	25.1	4.7	8.1		22.5	22.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	12.5	2.1	0.7		0.0	0.2
Delay (s)	37.6	6.8	8.7		22.5	22.9
Level of Service	D	A	A		C	C
Approach Delay (s)		8.4	8.7		22.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1281	172	418	919	165	286
Future Volume (vph)	1281	172	418	919	165	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1568	3400	3505	3400	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1568	3400	3505	3400	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1281	172	418	919	165	286
RTOR Reduction (vph)	0	95	0	0	0	240
Lane Group Flow (vph)	1281	77	418	919	165	46
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	23.7	23.7	9.0	36.7	8.5	8.5
Effective Green, g (s)	23.7	23.7	9.0	36.7	8.5	8.5
Actuated g/C Ratio	0.45	0.45	0.17	0.69	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1561	698	575	2417	543	250
v/s Ratio Prot	c0.37		c0.12	0.26	c0.05	
v/s Ratio Perm		0.05				0.03
v/c Ratio	0.82	0.11	0.73	0.38	0.30	0.18
Uniform Delay, d1	12.9	8.6	20.9	3.5	19.7	19.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.1	4.6	0.1	0.3	0.4
Delay (s)	16.5	8.7	25.5	3.6	20.1	19.7
Level of Service	B	A	C	A	C	B
Approach Delay (s)	15.6			10.4	19.8	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	53.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

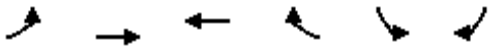
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1567	0	133	1337	0	206
Future Volume (vph)	1567	0	133	1337	0	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.95		1.00	0.95		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	3505		1752	3505		1568
Flt Permitted	1.00		0.12	1.00		1.00
Satd. Flow (perm)	3505		225	3505		1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1567	0	133	1337	0	206
RTOR Reduction (vph)	0	0	0	0	0	53
Lane Group Flow (vph)	1567	0	133	1337	0	153
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Actuated Green, G (s)	53.0		53.0	53.0		12.1
Effective Green, g (s)	53.0		53.0	53.0		12.1
Actuated g/C Ratio	0.73		0.73	0.73		0.17
Clearance Time (s)	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2541		163	2541		259
v/s Ratio Prot	0.45			0.38		
v/s Ratio Perm			c0.59			c0.10
v/c Ratio	0.62		0.82	0.53		0.59
Uniform Delay, d1	5.0		6.8	4.5		28.2
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.5		25.9	0.2		3.6
Delay (s)	5.4		32.7	4.7		31.8
Level of Service	A		C	A		C
Approach Delay (s)	5.4			7.2	31.8	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	73.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

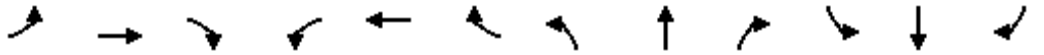
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	197	1909	1123	93	275	174
Future Volume (vph)	197	1909	1123	93	275	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3465		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	3505	3465		1752	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	197	1909	1123	93	275	174
RTOR Reduction (vph)	0	0	7	0	0	137
Lane Group Flow (vph)	197	1909	1209	0	275	37
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	10.3	61.5	47.2		16.5	16.5
Effective Green, g (s)	10.3	61.5	47.2		16.5	16.5
Actuated g/C Ratio	0.12	0.72	0.55		0.19	0.19
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	209	2506	1901		336	300
v/s Ratio Prot	c0.11	c0.54	0.35		c0.16	
v/s Ratio Perm						0.02
v/c Ratio	0.94	0.76	0.64		0.82	0.12
Uniform Delay, d1	37.6	7.7	13.4		33.3	28.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	46.0	1.4	0.7		14.3	0.2
Delay (s)	83.5	9.1	14.1		47.6	28.9
Level of Service	F	A	B		D	C
Approach Delay (s)		16.0	14.1		40.4	
Approach LOS		B	B		D	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	670	242	219	721	518	243	895	182	775	1677	99
Future Volume (veh/h)	81	670	242	219	721	518	243	895	182	775	1677	99
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	81	670	242	219	721	518	243	895	182	775	1677	99
Adj No. of Lanes	1	2	0	1	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	106	685	247	224	621	527	224	773	156	522	1781	555
Arrive On Green	0.06	0.27	0.27	0.13	0.34	0.34	0.13	0.19	0.19	0.30	0.36	0.36
Sat Flow, veh/h	1757	2525	912	1740	1827	1553	1740	4161	842	1740	4988	1553
Grp Volume(v), veh/h	81	465	447	219	721	518	243	714	363	775	1677	99
Grp Sat Flow(s),veh/h/ln	1757	1752	1684	1740	1827	1553	1740	1663	1678	1740	1663	1553
Q Serve(g_s), s	6.4	36.8	36.9	17.6	47.6	21.2	18.0	26.0	26.0	42.0	45.6	6.1
Cycle Q Clear(g_c), s	6.4	36.8	36.9	17.6	47.6	21.2	18.0	26.0	26.0	42.0	45.6	6.1
Prop In Lane	1.00		0.54	1.00		1.00	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	106	476	457	224	621	527	224	618	312	522	1781	555
V/C Ratio(X)	0.76	0.98	0.98	0.98	1.16	0.98	1.09	1.16	1.16	1.48	0.94	0.18
Avail Cap(c_a), veh/h	201	476	457	224	621	527	224	618	312	522	1781	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	50.6	50.6	60.8	46.2	9.7	61.0	57.0	57.0	49.0	43.6	30.9
Incr Delay (d2), s/veh	10.8	35.4	36.3	54.0	89.7	34.5	85.1	87.9	102.9	228.2	10.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	22.5	21.7	11.8	39.4	14.0	13.9	19.5	20.9	53.2	22.7	2.7
LnGrp Delay(d),s/veh	75.6	85.9	86.8	114.8	136.0	44.1	146.1	144.9	159.9	277.2	54.1	31.1
LnGrp LOS	E	F	F	F	F	D	F	F	F	F	D	C
Approach Vol, veh/h		993			1458			1320			2551	
Approach Delay, s/veh		85.5			100.1			149.2			121.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	46.0	30.0	22.0	42.0	22.0	54.0	12.4	51.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	42.0	26.0	18.0	38.0	18.0	50.0	16.0	40.0
Max Q Clear Time (g_c+I1), s	44.0	28.0	19.6	38.9	20.0	47.6	8.4	49.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.2	0.1	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		116.5
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	609	107	168	850	217	100	829	25	519	1226	455
Future Volume (veh/h)	260	609	107	168	850	217	100	829	25	519	1226	455
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	260	609	107	168	850	217	100	829	25	519	1226	455
Adj No. of Lanes	1	2	0	1	2	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	254	850	149	202	896	401	150	916	28	525	1310	586
Arrive On Green	0.14	0.29	0.29	0.12	0.26	0.26	0.04	0.27	0.27	0.16	0.38	0.38
Sat Flow, veh/h	1757	2982	523	1757	3505	1568	3375	3440	104	3375	3471	1553
Grp Volume(v), veh/h	260	357	359	168	850	217	100	418	436	519	1226	455
Grp Sat Flow(s),veh/h/ln	1757	1752	1752	1757	1752	1568	1688	1736	1809	1688	1736	1553
Q Serve(g_s), s	13.0	16.5	16.5	8.4	21.4	10.8	2.6	20.9	21.0	13.8	30.6	23.2
Cycle Q Clear(g_c), s	13.0	16.5	16.5	8.4	21.4	10.8	2.6	20.9	21.0	13.8	30.6	23.2
Prop In Lane	1.00		0.30	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	254	500	500	202	896	401	150	462	481	525	1310	586
V/C Ratio(X)	1.02	0.72	0.72	0.83	0.95	0.54	0.67	0.91	0.91	0.99	0.94	0.78
Avail Cap(c_a), veh/h	254	500	500	254	896	401	150	463	483	525	1312	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	28.9	28.9	38.9	32.9	28.9	42.3	31.9	31.9	37.9	27.0	24.7
Incr Delay (d2), s/veh	62.8	4.8	4.9	16.7	18.8	1.5	10.6	21.1	20.5	36.0	12.5	6.5
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	8.6	8.7	5.0	12.7	4.8	1.4	12.7	13.1	9.0	16.9	10.9
LnGrp Delay(d),s/veh	101.4	33.7	33.8	55.7	51.7	30.4	53.0	53.0	52.4	73.9	39.5	31.1
LnGrp LOS	F	C	C	E	D	C	D	D	D	E	D	C
Approach Vol, veh/h		976			1235			954			2200	
Approach Delay, s/veh		51.8			48.5			52.7			45.9	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.9	14.4	29.6	8.0	37.9	17.0	27.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	24.0	13.0	23.0	4.0	34.0	13.0	23.0
Max Q Clear Time (g_c+I1), s	15.8	23.0	10.4	18.5	4.6	32.6	15.0	23.4
Green Ext Time (p_c), s	0.0	1.0	0.1	3.5	0.0	1.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	1607	108	204	1290	132	61	704	237	67	305	3
Future Volume (veh/h)	22	1607	108	204	1290	132	61	704	237	67	305	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	22	1607	108	204	1290	132	61	704	237	67	305	3
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	32	1551	694	209	1745	178	78	701	314	78	712	7
Arrive On Green	0.02	0.46	0.46	0.12	0.56	0.56	0.04	0.20	0.20	0.04	0.20	0.20
Sat Flow, veh/h	1707	3406	1524	1707	3121	318	1757	3505	1568	1757	3556	35
Grp Volume(v), veh/h	22	1607	108	204	702	720	61	704	237	67	150	158
Grp Sat Flow(s),veh/h/ln	1707	1703	1524	1707	1703	1736	1757	1752	1568	1757	1752	1838
Q Serve(g_s), s	1.2	41.0	3.7	10.7	27.8	28.1	3.1	18.0	12.8	3.4	6.7	6.8
Cycle Q Clear(g_c), s	1.2	41.0	3.7	10.7	27.8	28.1	3.1	18.0	12.8	3.4	6.7	6.8
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	32	1551	694	209	952	971	78	701	314	78	351	368
V/C Ratio(X)	0.69	1.04	0.16	0.98	0.74	0.74	0.78	1.00	0.76	0.86	0.43	0.43
Avail Cap(c_a), veh/h	76	1551	694	209	952	971	117	701	314	78	351	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	24.5	14.4	39.4	14.9	15.0	42.6	36.0	33.9	42.7	31.5	31.5
Incr Delay (d2), s/veh	22.7	32.7	0.1	55.7	3.0	3.1	17.6	35.1	10.0	57.2	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	26.2	1.6	8.3	13.7	14.2	1.9	12.1	6.4	2.9	3.3	3.5
LnGrp Delay(d),s/veh	66.6	57.2	14.5	95.1	17.9	18.1	60.1	71.1	44.0	99.9	32.3	32.3
LnGrp LOS	E	F	B	F	B	B	E	F	D	F	C	C
Approach Vol, veh/h		1737			1626			1002			375	
Approach Delay, s/veh		54.6			27.7			64.0			44.4	
Approach LOS		D			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	22.0	15.0	45.0	8.0	22.0	5.7	54.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	18.0	11.0	41.0	6.0	16.0	4.0	48.0
Max Q Clear Time (g_c+I1), s	5.4	20.0	12.7	43.0	5.1	8.8	3.2	30.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.1	0.0	16.5

Intersection Summary	
HCM 2010 Ctrl Delay	46.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	753	526	76	733	126	101	703	210	84	512	75
Future Volume (veh/h)	38	753	526	76	733	126	101	703	210	84	512	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	38	753	526	76	733	126	101	703	210	84	512	75
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	56	1075	481	96	985	169	129	1016	454	106	971	434
Arrive On Green	0.03	0.31	0.31	0.05	0.33	0.33	0.07	0.29	0.29	0.06	0.28	0.28
Sat Flow, veh/h	1757	3505	1568	1757	2992	514	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	38	753	526	76	429	430	101	703	210	84	512	75
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1754	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	1.2	10.5	17.0	2.4	12.1	12.1	3.1	9.9	6.1	2.6	6.9	2.0
Cycle Q Clear(g_c), s	1.2	10.5	17.0	2.4	12.1	12.1	3.1	9.9	6.1	2.6	6.9	2.0
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	56	1075	481	96	577	577	129	1016	454	106	971	434
V/C Ratio(X)	0.68	0.70	1.09	0.80	0.74	0.74	0.78	0.69	0.46	0.79	0.53	0.17
Avail Cap(c_a), veh/h	127	1075	481	127	577	577	190	1138	509	158	1075	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	17.0	19.2	25.9	16.5	16.5	25.3	17.5	16.1	25.7	17.0	15.2
Incr Delay (d2), s/veh	13.3	2.0	68.9	22.0	5.2	5.2	12.0	1.6	0.7	14.6	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.3	16.5	1.7	6.6	6.6	1.9	5.0	2.7	1.7	3.3	0.9
LnGrp Delay(d),s/veh	39.8	19.0	88.1	47.9	21.7	21.7	37.2	19.1	16.9	40.3	17.4	15.4
LnGrp LOS	D	B	F	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		1317			935			1014			671	
Approach Delay, s/veh		47.2			23.9			20.4			20.0	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	20.1	7.0	21.0	8.1	19.4	5.8	22.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	18.0	4.0	17.0	6.0	17.0	4.0	17.0
Max Q Clear Time (g_c+I1), s	4.6	11.9	4.4	19.0	5.1	8.9	3.2	14.1
Green Ext Time (p_c), s	0.0	4.2	0.0	0.0	0.0	5.3	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	30.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	775	81	195	882	174	86	287	146	229	975	46
Future Volume (veh/h)	99	775	81	195	882	174	86	287	146	229	975	46
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	99	775	81	195	882	174	86	287	146	229	975	46
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	126	864	387	230	1071	479	102	857	383	255	1163	520
Arrive On Green	0.07	0.25	0.25	0.13	0.31	0.31	0.06	0.24	0.24	0.15	0.33	0.33
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	99	775	81	195	882	174	86	287	146	229	975	46
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	3.8	14.7	2.8	7.5	16.1	6.0	3.3	4.6	5.3	8.8	17.7	1.4
Cycle Q Clear(g_c), s	3.8	14.7	2.8	7.5	16.1	6.0	3.3	4.6	5.3	8.8	17.7	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	126	864	387	230	1071	479	102	857	383	255	1163	520
V/C Ratio(X)	0.79	0.90	0.21	0.85	0.82	0.36	0.84	0.33	0.38	0.90	0.84	0.09
Avail Cap(c_a), veh/h	128	867	388	230	1071	479	102	917	410	255	1223	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	25.1	20.6	29.2	22.2	18.6	32.1	21.4	21.6	28.9	21.3	15.8
Incr Delay (d2), s/veh	26.5	12.0	0.3	24.5	5.3	0.5	43.6	0.2	0.6	30.7	5.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	8.5	1.2	5.2	8.5	2.6	2.8	2.3	2.4	6.4	9.4	0.6
LnGrp Delay(d),s/veh	57.9	37.1	20.8	53.7	27.5	19.1	75.7	21.6	22.3	59.6	26.4	15.9
LnGrp LOS	E	D	C	D	C	B	E	C	C	E	C	B
Approach Vol, veh/h		955			1251			519			1250	
Approach Delay, s/veh		37.9			30.4			30.7			32.1	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	20.8	13.0	21.0	8.0	26.8	8.9	25.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	18.0	9.0	17.0	4.0	24.0	5.0	21.0
Max Q Clear Time (g_c+I1), s	10.8	7.3	9.5	16.7	5.3	19.7	5.8	18.1
Green Ext Time (p_c), s	0.0	6.5	0.0	0.2	0.0	3.1	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	32.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	469	138	509	487	776	125	3141	276	687	3065	408
Future Volume (veh/h)	253	469	138	509	487	776	125	3141	276	687	3065	408
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	253	469	138	509	487	776	125	3141	276	687	3065	408
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	170	869	389	260	962	602	101	2147	669	370	2545	792
Arrive On Green	0.05	0.25	0.25	0.08	0.27	0.27	0.03	0.43	0.43	0.11	0.51	0.51
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	253	469	138	509	487	776	125	3141	276	687	3065	408
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	7.5	17.5	10.9	11.5	17.6	41.3	4.5	64.8	18.5	16.5	76.8	26.3
Cycle Q Clear(g_c), s	7.5	17.5	10.9	11.5	17.6	41.3	4.5	64.8	18.5	16.5	76.8	26.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	869	389	260	962	602	101	2147	669	370	2545	792
V/C Ratio(X)	1.49	0.54	0.36	1.95	0.51	1.29	1.24	1.46	0.41	1.86	1.20	0.51
Avail Cap(c_a), veh/h	170	869	389	260	962	602	101	2147	669	370	2545	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.5	49.1	46.7	69.5	46.0	46.4	73.0	42.8	29.7	67.0	36.8	24.5
Incr Delay (d2), s/veh	248.9	0.4	0.2	443.2	0.2	142.1	166.9	210.8	0.2	395.7	95.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	8.5	4.7	21.4	8.5	48.8	4.4	71.5	8.0	28.0	57.7	11.2
LnGrp Delay(d),s/veh	320.4	49.5	46.9	512.7	46.2	188.4	239.9	253.7	29.8	462.7	132.8	24.7
LnGrp LOS	F	D	D	F	D	F	F	F	C	F	F	C
Approach Vol, veh/h		860			1772			3542			4160	
Approach Delay, s/veh		128.8			242.5			235.7			176.7	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	81.6	13.0	45.9	22.0	69.6	17.0	41.9
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	4.5	76.6	7.5	* 41	16.5	* 65	11.5	37.0
Max Q Clear Time (g_c+I1), s	6.5	78.8	9.5	43.3	18.5	66.8	13.5	19.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	204.2
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	78	0	66	0	2763	34	24	3182	4
Future Volume (veh/h)	1	0	1	78	0	66	0	2763	34	24	3182	4
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	1	0	1	78	0	66	0	2763	34	24	3182	4
Adj No. of Lanes	0	1	0	1	0	2	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	1	0	1	109	0	194	2	3606	1123	29	4049	5
Arrive On Green	0.00	0.00	0.00	0.06	0.00	0.06	0.00	0.72	0.72	0.02	0.79	0.79
Sat Flow, veh/h	828	0	828	1757	0	3136	1740	4988	1553	1740	5144	6
Grp Volume(v), veh/h	2	0	0	78	0	66	0	2763	34	24	2056	1130
Grp Sat Flow(s),veh/h/ln	1657	0	0	1757	0	1568	1740	1663	1553	1740	1663	1826
Q Serve(g_s), s	0.1	0.0	0.0	4.7	0.0	2.2	0.0	36.8	0.7	1.5	36.9	37.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	4.7	0.0	2.2	0.0	36.8	0.7	1.5	36.9	37.0
Prop In Lane	0.50		0.50	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	3	0	0	109	0	194	2	3606	1123	29	2617	1437
V/C Ratio(X)	0.75	0.00	0.00	0.72	0.00	0.34	0.00	0.77	0.03	0.83	0.79	0.79
Avail Cap(c_a), veh/h	46	0	0	197	0	351	49	3778	1176	49	2617	1437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	0.0	49.3	0.0	48.1	0.0	9.2	4.2	52.5	6.4	6.4
Incr Delay (d2), s/veh	88.8	0.0	0.0	3.3	0.0	0.4	0.0	1.4	0.0	19.8	2.2	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	2.4	0.0	0.9	0.0	17.1	0.3	0.9	17.3	19.7
LnGrp Delay(d),s/veh	142.2	0.0	0.0	52.6	0.0	48.5	0.0	10.6	4.2	72.3	8.5	10.2
LnGrp LOS	F			D		D		B	A	E	A	B
Approach Vol, veh/h		2			144			2797			3210	
Approach Delay, s/veh		142.2			50.7			10.5			9.6	
Approach LOS		F			D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	89.3		5.7	6.9	82.4		12.1
Change Period (Y+Rc), s	* 4.6	5.0		5.5	* 5.1	* 5		5.5
Max Green Setting (Gmax), s	* 3	81.4		3.0	* 3	* 81		12.0
Max Q Clear Time (g_c+I1), s	0.0	39.0		2.1	3.5	38.8		6.7
Green Ext Time (p_c), s	0.0	42.3		0.0	0.0	38.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	585	23	206	193	715	9	2261	139	749	2580	3
Future Volume (veh/h)	0	585	23	206	193	715	9	2261	139	749	2580	3
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	0	585	23	206	193	715	9	2261	139	749	2580	3
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	631	282	173	945	714	21	2083	127	627	3153	4
Arrive On Green	0.00	0.18	0.18	0.05	0.27	0.27	0.01	0.43	0.43	0.19	0.61	0.61
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4807	293	3375	5145	6
Grp Volume(v), veh/h	0	585	23	206	193	715	9	1558	842	749	1667	916
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1775	1688	1663	1826
Q Serve(g_s), s	0.0	24.6	1.8	7.5	6.3	39.9	0.4	64.2	64.2	27.5	57.7	57.7
Cycle Q Clear(g_c), s	0.0	24.6	1.8	7.5	6.3	39.9	0.4	64.2	64.2	27.5	57.7	57.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		0.00
Lane Grp Cap(c), veh/h	2	631	282	173	945	714	21	1441	769	627	2038	1119
V/C Ratio(X)	0.00	0.93	0.08	1.19	0.20	1.00	0.43	1.08	1.09	1.20	0.82	0.82
Avail Cap(c_a), veh/h	68	680	304	173	945	714	68	1441	769	627	2038	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	59.6	50.3	70.3	41.8	40.3	73.3	42.0	42.0	60.3	22.3	22.3
Incr Delay (d2), s/veh	0.0	17.6	0.0	130.2	0.0	34.1	4.9	49.0	61.2	102.9	2.6	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.3	0.8	6.6	3.1	35.8	0.2	39.2	44.5	21.7	27.1	30.4
LnGrp Delay(d),s/veh	0.0	77.2	50.4	200.5	41.9	74.5	78.3	90.9	103.1	163.2	24.8	26.9
LnGrp LOS		E	D	F	D	F	E	F	F	F	C	C
Approach Vol, veh/h		608			1114			2409			3332	
Approach Delay, s/veh		76.2			92.1			95.2			56.5	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	96.1	0.0	45.6	33.0	69.5	13.0	32.6
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	88.6	3.0	* 33	27.5	* 64	7.5	* 29
Max Q Clear Time (g_c+I1), s	2.4	59.7	0.0	41.9	29.5	66.2	9.5	26.6
Green Ext Time (p_c), s	0.0	23.4	0.0	0.0	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	75.9
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	34	2357	23	79	2729
Future Volume (veh/h)	13	34	2357	23	79	2729
Number	3	18	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1827	1900	1827	1827
Adj Flow Rate, veh/h	13	34	2357	23	79	2729
Adj No. of Lanes	1	1	3	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	4	4	4	4
Cap, veh/h	53	47	3754	37	101	2949
Arrive On Green	0.03	0.03	0.74	0.74	0.06	0.85
Sat Flow, veh/h	1757	1568	5258	50	1740	3563
Grp Volume(v), veh/h	13	34	1538	842	79	2729
Grp Sat Flow(s),veh/h/ln	1757	1568	1663	1818	1740	1736
Q Serve(g_s), s	0.6	1.8	19.4	19.5	3.8	47.4
Cycle Q Clear(g_c), s	0.6	1.8	19.4	19.5	3.8	47.4
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	53	47	2450	1340	101	2949
V/C Ratio(X)	0.25	0.72	0.63	0.63	0.78	0.93
Avail Cap(c_a), veh/h	61	55	2450	1340	199	3106
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	41.2	5.5	5.5	39.9	4.5
Incr Delay (d2), s/veh	0.9	24.4	0.4	0.7	5.0	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.1	8.9	9.9	2.0	23.3
LnGrp Delay(d),s/veh	41.5	65.6	5.9	6.2	44.8	9.6
LnGrp LOS	D	E	A	A	D	A
Approach Vol, veh/h	47		2380			2808
Approach Delay, s/veh	58.9		6.0			10.6
Approach LOS	E		A			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		77.6			9.7	68.0		8.1
Change Period (Y+Rc), s		4.8			* 4.7	4.8		5.5
Max Green Setting (Gmax), s		76.7			* 9.8	62.2		3.0
Max Q Clear Time (g_c+I1), s		49.4			5.8	21.5		3.8
Green Ext Time (p_c), s		23.4			0.0	34.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	1747	810	62	1515	893	624	1673	106	1002	1638	122
Future Volume (veh/h)	158	1747	810	62	1515	893	624	1673	106	1002	1638	122
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	158	1747	810	62	1515	893	624	1673	106	1002	1638	122
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	114	1345	602	68	1310	586	402	1311	408	616	1620	504
Arrive On Green	0.03	0.40	0.40	0.02	0.38	0.38	0.12	0.26	0.26	0.18	0.32	0.32
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	158	1747	810	62	1515	893	624	1673	106	1002	1638	122
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	5.0	57.4	57.4	2.7	55.9	55.9	17.3	38.2	7.8	26.5	47.2	8.4
Cycle Q Clear(g_c), s	5.0	57.4	57.4	2.7	55.9	55.9	17.3	38.2	7.8	26.5	47.2	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	114	1345	602	68	1310	586	402	1311	408	616	1620	504
V/C Ratio(X)	1.39	1.30	1.35	0.91	1.16	1.52	1.55	1.28	0.26	1.63	1.01	0.24
Avail Cap(c_a), veh/h	114	1345	602	68	1310	586	402	1311	408	616	1620	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.1	43.9	43.9	71.0	44.7	44.7	64.0	53.6	42.4	59.4	49.1	35.9
Incr Delay (d2), s/veh	218.9	139.9	166.5	75.6	79.3	244.2	260.7	130.2	0.1	289.8	25.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	53.1	51.9	2.0	40.6	63.3	22.6	33.3	3.4	37.1	25.4	3.6
LnGrp Delay(d),s/veh	289.1	183.9	210.4	146.7	124.0	288.9	324.7	183.8	42.5	349.2	74.1	36.0
LnGrp LOS	F	F	F	F	F	F	F	F	D	F	F	D
Approach Vol, veh/h		2715			2470			2403			2762	
Approach Delay, s/veh		197.9			184.2			214.1			172.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	61.3	22.0	52.0	8.5	62.8	31.0	43.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.5	4.8
Max Green Setting (Gmax), s	5.0	* 56	* 17	47.2	3.0	* 57	26.5	38.2
Max Q Clear Time (g_c+I1), s	7.0	57.9	19.3	49.2	4.7	59.4	28.5	40.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	191.6
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	453	724	305	272	602	199	182	1691	232	307	1910	166
Future Volume (veh/h)	453	724	305	272	602	199	182	1691	232	307	1910	166
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	453	724	305	272	602	199	182	1691	232	307	1910	166
Adj No. of Lanes	1	1	1	2	2	1	1	3	1	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	381	608	517	237	633	283	153	1531	481	258	1850	576
Arrive On Green	0.22	0.33	0.33	0.07	0.18	0.18	0.09	0.31	0.31	0.15	0.37	0.37
Sat Flow, veh/h	1757	1845	1568	3408	3505	1568	1740	4988	1568	1757	4988	1553
Grp Volume(v), veh/h	453	724	305	272	602	199	182	1691	232	307	1910	166
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	1752	1568	1740	1663	1568	1757	1663	1553
Q Serve(g_s), s	30.5	46.4	22.8	9.8	23.9	16.8	12.4	43.2	16.9	20.7	52.2	10.6
Cycle Q Clear(g_c), s	30.5	46.4	22.8	9.8	23.9	16.8	12.4	43.2	16.9	20.7	52.2	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	608	517	237	633	283	153	1531	481	258	1850	576
V/C Ratio(X)	1.19	1.19	0.59	1.15	0.95	0.70	1.19	1.10	0.48	1.19	1.03	0.29
Avail Cap(c_a), veh/h	381	608	517	237	633	283	153	1531	481	258	1850	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	47.2	39.2	65.4	57.0	54.1	64.2	48.8	39.6	60.0	44.3	31.2
Incr Delay (d2), s/veh	108.6	101.2	1.2	103.4	24.1	6.5	131.7	57.1	0.3	116.5	29.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.2	40.6	10.0	8.0	13.7	7.8	11.5	27.8	7.4	18.3	28.9	4.6
LnGrp Delay(d),s/veh	163.7	148.4	40.5	168.9	81.2	60.6	195.9	105.9	39.9	176.5	74.0	31.3
LnGrp LOS	F	F	D	F	F	E	F	F	D	F	F	C
Approach Vol, veh/h		1482			1073			2105			2383	
Approach Delay, s/veh		130.8			99.6			106.4			84.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	57.0	36.0	30.7	26.0	48.0	15.0	51.7
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 12	52.2	30.5	* 25	* 21	43.2	* 9.8	* 46
Max Q Clear Time (g_c+I1), s	14.4	54.2	32.5	25.9	22.7	45.2	11.8	48.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	103.0
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	1001	338	199	966	659	149	1234	111	636	1926	214
Future Volume (veh/h)	245	1001	338	199	966	659	149	1234	111	636	1926	214
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	245	1001	338	199	966	659	149	1234	111	636	1926	214
Adj No. of Lanes	2	1	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	296	726	617	164	1401	627	135	1097	345	636	1829	569
Arrive On Green	0.09	0.39	0.39	0.09	0.40	0.40	0.04	0.22	0.22	0.19	0.37	0.37
Sat Flow, veh/h	3408	1845	1568	1757	3505	1568	3375	4988	1568	3408	4988	1553
Grp Volume(v), veh/h	245	1001	338	199	966	659	149	1234	111	636	1926	214
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1757	1752	1568	1688	1663	1568	1704	1663	1553
Q Serve(g_s), s	10.6	59.0	25.0	14.0	34.3	60.0	6.0	33.0	8.9	28.0	55.0	15.2
Cycle Q Clear(g_c), s	10.6	59.0	25.0	14.0	34.3	60.0	6.0	33.0	8.9	28.0	55.0	15.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	726	617	164	1401	627	135	1097	345	636	1829	569
V/C Ratio(X)	0.83	1.38	0.55	1.21	0.69	1.05	1.10	1.12	0.32	1.00	1.05	0.38
Avail Cap(c_a), veh/h	432	726	617	164	1401	627	135	1097	345	636	1829	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.4	45.5	35.2	68.0	37.3	45.0	72.0	58.5	49.1	61.0	47.5	34.9
Incr Delay (d2), s/veh	8.4	179.4	1.0	139.2	1.4	50.2	107.9	68.2	0.5	35.6	36.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	66.2	11.0	13.1	16.9	34.7	4.8	22.1	3.9	16.3	31.4	6.6
LnGrp Delay(d),s/veh	75.8	224.9	36.2	207.2	38.8	95.2	179.9	126.7	49.6	96.6	84.2	35.3
LnGrp LOS	E	F	D	F	D	F	F	F	D	F	F	D
Approach Vol, veh/h		1584			1824			1494			2776	
Approach Delay, s/veh		161.6			77.5			126.3			83.2	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	59.0	17.0	64.0	32.0	37.0	18.0	63.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	55.0	19.0	54.0	28.0	33.0	14.0	59.0
Max Q Clear Time (g_c+I1), s	8.0	57.0	12.6	62.0	30.0	35.0	16.0	61.0
Green Ext Time (p_c), s	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	106.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	808	610	679	91	743	56	189	1125	11	115	2135	1109
Future Volume (veh/h)	808	610	679	91	743	56	189	1125	11	115	2135	1109
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	808	610	679	91	743	56	189	1125	11	115	2135	1109
Adj No. of Lanes	1	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	507	1411	631	94	584	261	158	1650	514	163	1679	523
Arrive On Green	0.29	0.41	0.41	0.05	0.17	0.17	0.05	0.33	0.33	0.05	0.34	0.34
Sat Flow, veh/h	1740	3471	1553	1740	3471	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	808	610	679	91	743	56	189	1125	11	115	2135	1109
Grp Sat Flow(s),veh/h/ln	1740	1736	1553	1740	1736	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	37.9	16.5	52.9	6.8	21.9	4.0	6.1	25.4	0.6	4.4	43.8	43.8
Cycle Q Clear(g_c), s	37.9	16.5	52.9	6.8	21.9	4.0	6.1	25.4	0.6	4.4	43.8	43.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	507	1411	631	94	584	261	158	1650	514	163	1679	523
V/C Ratio(X)	1.59	0.43	1.08	0.97	1.27	0.21	1.19	0.68	0.02	0.71	1.27	2.12
Avail Cap(c_a), veh/h	507	1411	631	94	584	261	158	1650	514	179	1679	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	27.8	38.6	61.5	54.1	46.7	62.0	37.6	29.3	61.0	43.2	43.2
Incr Delay (d2), s/veh	276.6	1.0	57.8	83.3	135.3	1.9	133.3	2.3	0.1	8.6	127.0	511.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	57.1	8.1	32.8	5.4	21.4	1.9	5.8	12.0	0.3	2.2	39.8	93.0
LnGrp Delay(d),s/veh	322.7	28.8	96.4	144.7	189.4	48.5	195.3	39.9	29.4	69.6	170.2	554.2
LnGrp LOS	F	C	F	F	F	D	F	D	C	E	F	F
Approach Vol, veh/h		2097			890			1325			3359	
Approach Delay, s/veh		163.9			175.9			62.0			293.5	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	49.0	43.0	27.1	11.8	48.2	12.0	58.1
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 6.1	* 44	* 38	* 22	6.9	* 43	7.0	* 53
Max Q Clear Time (g_c+I1), s	8.1	45.8	39.9	23.9	6.4	27.4	8.8	54.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	15.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	204.4
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	793	514	145	753	124	326	1209	106	290	2455	103
Future Volume (veh/h)	103	793	514	145	753	124	326	1209	106	290	2455	103
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	103	793	514	145	753	124	326	1209	106	290	2455	103
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	125	799	357	160	835	374	333	2416	752	332	2415	752
Arrive On Green	0.04	0.23	0.23	0.05	0.24	0.24	0.10	0.48	0.48	0.10	0.48	0.48
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	103	793	514	145	753	124	326	1209	106	290	2455	103
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	4.7	35.1	35.4	6.6	32.4	10.2	15.0	25.6	5.9	13.2	75.2	5.7
Cycle Q Clear(g_c), s	4.7	35.1	35.4	6.6	32.4	10.2	15.0	25.6	5.9	13.2	75.2	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	125	799	357	160	835	374	333	2416	752	332	2415	752
V/C Ratio(X)	0.82	0.99	1.44	0.91	0.90	0.33	0.98	0.50	0.14	0.87	1.02	0.14
Avail Cap(c_a), veh/h	125	799	357	160	835	374	333	2416	752	441	2415	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.3	59.8	60.0	73.7	57.4	48.9	69.8	27.3	22.2	69.1	40.1	22.1
Incr Delay (d2), s/veh	32.2	30.1	212.5	43.7	14.1	1.7	43.7	0.5	0.3	11.5	22.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	20.3	36.5	4.1	17.3	4.6	9.0	11.9	2.6	6.7	39.5	2.5
LnGrp Delay(d),s/veh	106.5	89.9	272.4	117.4	71.5	50.6	113.6	27.8	22.4	80.5	62.6	22.4
LnGrp LOS	F	F	F	F	E	D	F	C	C	F	F	C
Approach Vol, veh/h		1410			1022			1641			2848	
Approach Delay, s/veh		157.7			75.5			44.5			63.0	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	80.7	11.2	42.6	20.8	80.7	12.8	41.0
Change Period (Y+Rc), s	5.5	* 5.5	5.5	5.6	5.5	* 5.5	5.5	* 5.6
Max Green Setting (Gmax), s	15.3	* 75	5.7	36.8	20.3	* 70	7.3	* 35
Max Q Clear Time (g_c+I1), s	17.0	77.2	6.7	34.4	15.2	27.6	8.6	37.4
Green Ext Time (p_c), s	0.0	0.0	0.0	2.4	0.1	42.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	855	240	115	753	73	64	107	96	109	174	82
Future Volume (veh/h)	22	855	240	115	753	73	64	107	96	109	174	82
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	22	855	240	115	753	73	64	107	96	109	174	82
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	27	1254	352	147	1718	166	81	222	189	140	285	242
Arrive On Green	0.02	0.46	0.46	0.08	0.53	0.53	0.05	0.12	0.12	0.08	0.15	0.15
Sat Flow, veh/h	1757	2705	759	1757	3229	313	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	22	554	541	115	409	417	64	107	96	109	174	82
Grp Sat Flow(s),veh/h/ln	1757	1752	1711	1757	1752	1789	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.8	15.7	15.7	4.1	9.0	9.0	2.3	3.4	3.6	3.9	5.6	3.0
Cycle Q Clear(g_c), s	0.8	15.7	15.7	4.1	9.0	9.0	2.3	3.4	3.6	3.9	5.6	3.0
Prop In Lane	1.00		0.44	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	27	813	793	147	932	952	81	222	189	140	285	242
V/C Ratio(X)	0.82	0.68	0.68	0.78	0.44	0.44	0.79	0.48	0.51	0.78	0.61	0.34
Avail Cap(c_a), veh/h	139	968	945	194	1024	1045	194	641	545	277	728	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	13.3	13.3	28.5	9.0	9.0	29.9	26.0	26.1	28.6	25.0	23.9
Incr Delay (d2), s/veh	43.8	1.5	1.6	14.1	0.3	0.3	15.7	1.6	2.1	8.8	2.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.9	7.7	2.6	4.4	4.5	1.5	1.9	1.7	2.2	3.0	1.3
LnGrp Delay(d),s/veh	74.9	14.9	14.9	42.6	9.4	9.4	45.7	27.6	28.2	37.4	27.1	24.7
LnGrp LOS	E	B	B	D	A	A	D	C	C	D	C	C
Approach Vol, veh/h		1117			941			267			365	
Approach Delay, s/veh		16.1			13.4			32.2			29.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	11.6	9.3	33.4	6.9	13.8	5.0	37.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	22.0	7.0	35.0	7.0	25.0	5.0	37.0
Max Q Clear Time (g_c+I1), s	5.9	5.6	6.1	17.7	4.3	7.6	2.8	11.0
Green Ext Time (p_c), s	0.1	2.0	0.0	11.7	0.0	2.0	0.0	15.3

Intersection Summary	
HCM 2010 Ctrl Delay	18.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	1210	512	29	1147	166	618	139	8	158	415	90
Future Volume (veh/h)	68	1210	512	29	1147	166	618	139	8	158	415	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	68	1210	512	29	1147	166	618	139	8	158	415	90
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	47	1136	461	35	1415	204	480	560	476	181	246	209
Arrive On Green	0.03	0.47	0.47	0.02	0.46	0.46	0.27	0.30	0.30	0.10	0.13	0.13
Sat Flow, veh/h	1757	2434	988	1757	3075	444	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	68	857	865	29	652	661	618	139	8	158	415	90
Grp Sat Flow(s),veh/h/ln	1757	1752	1670	1757	1752	1766	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.0	70.0	70.0	2.5	48.0	48.4	41.0	8.5	0.5	13.3	20.0	7.9
Cycle Q Clear(g_c), s	4.0	70.0	70.0	2.5	48.0	48.4	41.0	8.5	0.5	13.3	20.0	7.9
Prop In Lane	1.00		0.59	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	818	779	35	806	813	480	560	476	181	246	209
V/C Ratio(X)	1.45	1.05	1.11	0.83	0.81	0.81	1.29	0.25	0.02	0.87	1.69	0.43
Avail Cap(c_a), veh/h	47	818	779	35	806	813	480	560	476	258	246	209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.0	40.0	40.0	73.2	34.8	34.9	54.5	39.4	36.6	66.3	65.0	59.8
Incr Delay (d2), s/veh	289.8	44.7	66.8	84.6	6.2	6.3	144.2	0.2	0.0	19.7	326.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	44.0	46.7	2.0	24.6	24.9	39.1	4.4	0.2	7.4	32.5	3.5
LnGrp Delay(d),s/veh	362.8	84.7	106.8	157.9	41.0	41.3	198.7	39.6	36.6	86.0	391.3	61.2
LnGrp LOS	F	F	F	F	D	D	F	D	D	F	F	E
Approach Vol, veh/h		1790			1342			765			663	
Approach Delay, s/veh		105.9			43.7			168.1			273.7	
Approach LOS		F			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.5	49.5	7.0	74.0	45.0	24.0	8.0	73.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	39.0	3.0	70.0	41.0	20.0	4.0	69.0
Max Q Clear Time (g_c+I1), s	15.3	10.5	4.5	72.0	43.0	22.0	6.0	50.4
Green Ext Time (p_c), s	0.2	4.0	0.0	0.0	0.0	0.0	0.0	17.1

Intersection Summary	
HCM 2010 Ctrl Delay	122.4
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	754	9	140	814	3	10	41	72	65	62	66
Future Volume (veh/h)	0	754	9	140	814	3	10	41	72	65	62	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1900	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	0	754	9	140	814	3	10	41	72	65	62	66
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	5	1981	24	522	2000	7	130	121	189	224	126	107
Arrive On Green	0.00	0.56	0.56	0.56	0.56	0.56	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1740	3513	42	687	3547	13	64	620	965	404	647	546
Grp Volume(v), veh/h	0	372	391	140	398	419	123	0	0	193	0	0
Grp Sat Flow(s),veh/h/ln	1740	1736	1820	687	1736	1825	1649	0	0	1597	0	0
Q Serve(g_s), s	0.0	4.0	4.0	4.7	4.3	4.3	0.0	0.0	0.0	1.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.0	4.0	8.7	4.3	4.3	2.1	0.0	0.0	3.5	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.01	0.08		0.59	0.34		0.34
Lane Grp Cap(c), veh/h	5	979	1026	522	979	1029	439	0	0	457	0	0
V/C Ratio(X)	0.00	0.38	0.38	0.27	0.41	0.41	0.28	0.00	0.00	0.42	0.00	0.00
Avail Cap(c_a), veh/h	209	1567	1643	590	1149	1208	707	0	0	708	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.0	4.0	6.4	4.1	4.1	11.6	0.0	0.0	12.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.3	0.3	0.3	0.3	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.9	2.0	0.9	2.1	2.2	1.0	0.0	0.0	1.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	4.3	4.3	6.7	4.4	4.4	12.0	0.0	0.0	12.7	0.0	0.0
LnGrp LOS		A	A	A	A	A	B			B		
Approach Vol, veh/h		763			957			123			193	
Approach Delay, s/veh		4.3			4.7			12.0			12.7	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		10.5		22.7		10.5	0.0	22.7
Change Period (Y+Rc), s		4.0		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		12.0		30.0		12.0	4.0	22.0
Max Q Clear Time (g_c+I1), s		4.1		6.0		5.5	0.0	10.7
Green Ext Time (p_c), s		1.1		12.8		1.0	0.0	7.7

Intersection Summary	
HCM 2010 Ctrl Delay	5.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	858	161	185	829	363	131	433	129	342	522	24
Future Volume (veh/h)	67	858	161	185	829	363	131	433	129	342	522	24
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	67	858	161	185	829	363	131	433	129	342	522	24
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	81	896	168	189	865	377	155	444	377	345	643	547
Arrive On Green	0.05	0.30	0.30	0.11	0.36	0.36	0.09	0.24	0.24	0.20	0.35	0.35
Sat Flow, veh/h	1757	2947	553	1757	2377	1037	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	67	510	509	185	610	582	131	433	129	342	522	24
Grp Sat Flow(s),veh/h/ln	1757	1752	1747	1757	1752	1662	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.9	37.2	37.2	13.7	44.2	44.5	9.6	30.3	8.9	25.3	33.4	1.3
Cycle Q Clear(g_c), s	4.9	37.2	37.2	13.7	44.2	44.5	9.6	30.3	8.9	25.3	33.4	1.3
Prop In Lane	1.00		0.32	1.00		0.62	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	81	533	531	189	638	605	155	444	377	345	643	547
V/C Ratio(X)	0.83	0.96	0.96	0.98	0.96	0.96	0.85	0.98	0.34	0.99	0.81	0.04
Avail Cap(c_a), veh/h	81	535	533	189	638	605	161	444	377	345	643	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.5	44.4	44.4	57.9	40.4	40.5	58.4	49.0	40.8	52.2	38.5	28.0
Incr Delay (d2), s/veh	45.5	28.2	28.3	58.7	25.1	27.0	29.6	36.0	0.2	46.4	7.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	22.2	22.1	9.7	25.8	24.9	5.9	19.8	3.8	16.7	18.3	0.6
LnGrp Delay(d),s/veh	107.0	72.6	72.7	116.5	65.5	67.5	88.0	85.0	41.0	98.5	45.7	28.0
LnGrp LOS	F	E	E	F	E	E	F	F	D	F	D	C
Approach Vol, veh/h		1086			1377			693			888	
Approach Delay, s/veh		74.8			73.2			77.4			65.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	52.1	17.0	49.7	19.0	44.3	31.0	35.7
Change Period (Y+Rc), s	* 5.2	4.8	5.5	* 4.4	5.0	* 4.8	5.5	* 4.4
Max Green Setting (Gmax), s	* 6	47.3	11.9	* 45	14.0	* 40	25.5	* 31
Max Q Clear Time (g_c+I1), s	6.9	46.5	11.6	35.4	15.7	39.2	27.3	32.3
Green Ext Time (p_c), s	0.0	0.6	0.0	1.9	0.0	0.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	72.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	2137	108	198	2093	1	169	1669	220	5	1865	171
Future Volume (veh/h)	283	2137	108	198	2093	1	169	1669	220	5	1865	171
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	283	2137	108	198	2093	1	169	1669	220	5	1865	171
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	227	1794	575	159	1696	544	114	1669	747	13	1566	700
Arrive On Green	0.07	0.37	0.37	0.05	0.35	0.35	0.03	0.48	0.48	0.00	0.45	0.45
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	283	2137	108	198	2093	1	169	1669	220	5	1865	171
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	10.0	55.0	7.0	7.0	52.0	0.1	5.0	71.4	12.8	0.2	67.0	10.2
Cycle Q Clear(g_c), s	10.0	55.0	7.0	7.0	52.0	0.1	5.0	71.4	12.8	0.2	67.0	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	1794	575	159	1696	544	114	1669	747	13	1566	700
V/C Ratio(X)	1.25	1.19	0.19	1.24	1.23	0.00	1.49	1.00	0.29	0.39	1.19	0.24
Avail Cap(c_a), veh/h	227	1794	575	159	1696	544	114	1669	747	91	1566	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.0	47.5	32.3	71.5	49.0	32.0	72.5	39.3	23.9	74.5	41.5	25.8
Incr Delay (d2), s/veh	141.8	91.8	0.2	151.9	110.5	0.0	260.2	22.0	0.2	18.2	92.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	40.0	3.1	6.6	40.8	0.0	6.5	39.6	5.6	0.1	52.6	4.5
LnGrp Delay(d),s/veh	211.8	139.3	32.5	223.4	159.5	32.0	332.7	61.3	24.1	92.7	134.2	26.0
LnGrp LOS	F	F	C	F	F	C	F	E	C	F	F	C
Approach Vol, veh/h		2528			2292			2058			2041	
Approach Delay, s/veh		142.9			165.0			79.6			125.1	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	75.4	11.0	59.0	9.0	71.0	14.0	56.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	68.0	7.0	55.0	5.0	67.0	10.0	52.0
Max Q Clear Time (g_c+I1), s	2.2	73.4	9.0	57.0	7.0	69.0	12.0	54.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	129.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	817	124	499	947	130	70	1104	652	196	1352	462
Future Volume (veh/h)	233	817	124	499	947	130	70	1104	652	196	1352	462
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1900	1900	1845	1845
Adj Flow Rate, veh/h	233	817	124	499	947	130	70	1104	652	196	1352	462
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	82	468	71	164	619	85	21	335	198	76	523	512
Arrive On Green	0.05	0.15	0.15	0.09	0.20	0.20	0.32	0.32	0.32	0.33	0.33	0.33
Sat Flow, veh/h	1757	3052	463	1757	3097	425	66	1047	619	232	1601	1568
Grp Volume(v), veh/h	233	469	472	499	536	541	1826	0	0	1548	0	462
Grp Sat Flow(s),veh/h/ln	1757	1752	1763	1757	1752	1770	1732	0	0	1833	0	1568
Q Serve(g_s), s	7.0	23.0	23.0	14.0	30.0	30.0	48.0	0.0	0.0	49.0	0.0	42.2
Cycle Q Clear(g_c), s	7.0	23.0	23.0	14.0	30.0	30.0	48.0	0.0	0.0	49.0	0.0	42.2
Prop In Lane	1.00		0.26	1.00		0.24	0.04		0.36	0.13		1.00
Lane Grp Cap(c), veh/h	82	269	270	164	350	354	554	0	0	599	0	512
V/C Ratio(X)	2.84	1.75	1.75	3.04	1.53	1.53	3.29	0.00	0.00	2.59	0.00	0.90
Avail Cap(c_a), veh/h	82	269	270	164	350	354	554	0	0	599	0	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	71.5	63.5	63.5	68.0	60.0	60.0	51.0	0.0	0.0	50.5	0.0	48.2
Incr Delay (d2), s/veh	861.5	350.6	350.5	935.5	251.9	252.1	1037.0	0.0	0.0	718.2	0.0	19.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.0	37.3	37.5	49.4	39.0	39.4	182.6	0.0	0.0	144.2	0.0	20.9
LnGrp Delay(d),s/veh	933.0	414.1	414.0	1003.5	311.9	312.1	1088.0	0.0	0.0	768.7	0.0	67.3
LnGrp LOS	F	F	F	F	F	F	F			F		E
Approach Vol, veh/h		1174			1576			1826			2010	
Approach Delay, s/veh		517.0			530.9			1088.0			607.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		52.0	18.0	27.0		53.0	11.0	34.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		48.0	14.0	23.0		49.0	7.0	30.0
Max Q Clear Time (g_c+I1), s		50.0	16.0	25.0		51.0	9.0	32.0
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	706.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1257	0	450	0	647	1686	0	1224	808
Future Volume (veh/h)	0	0	0	1257	0	450	0	647	1686	0	1224	808
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1827	0	1827	0	1827	1827	0	1827	1827
Adj Flow Rate, veh/h				1257	0	450	0	647	0	0	1224	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				4	0	4	0	4	4	0	4	4
Cap, veh/h				1417	0	1147	0	1820	567	0	1820	567
Arrive On Green				0.42	0.00	0.42	0.00	0.36	0.00	0.00	0.36	0.00
Sat Flow, veh/h				3375	0	2733	0	5152	1553	0	5152	1553
Grp Volume(v), veh/h				1257	0	450	0	647	0	0	1224	0
Grp Sat Flow(s),veh/h/ln				1688	0	1367	0	1663	1553	0	1663	1553
Q Serve(g_s), s				15.5	0.0	5.2	0.0	4.3	0.0	0.0	9.3	0.0
Cycle Q Clear(g_c), s				15.5	0.0	5.2	0.0	4.3	0.0	0.0	9.3	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1417	0	1147	0	1820	567	0	1820	567
V/C Ratio(X)				0.89	0.00	0.39	0.00	0.36	0.00	0.00	0.67	0.00
Avail Cap(c_a), veh/h				1978	0	1602	0	2823	879	0	2646	824
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				12.1	0.0	9.1	0.0	10.4	0.0	0.0	12.0	0.0
Incr Delay (d2), s/veh				3.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.8	0.0	2.0	0.0	1.9	0.0	0.0	4.2	0.0
LnGrp Delay(d),s/veh				15.2	0.0	9.2	0.0	10.5	0.0	0.0	12.2	0.0
LnGrp LOS				B		A		B			B	
Approach Vol, veh/h					1707			647			1224	
Approach Delay, s/veh					13.6			10.5			12.2	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		21.5		23.5		21.5		
Change Period (Y+Rc), s		5.1		4.6		* 5.1		
Max Green Setting (Gmax), s		23.9		26.4		* 26		
Max Q Clear Time (g_c+I1), s		11.3		17.5		6.3		
Green Ext Time (p_c), s		5.1		1.4		6.1		

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	31	17	531	44	548	48	2122	349	520	2580	59
Future Volume (veh/h)	73	31	17	531	44	548	48	2122	349	520	2580	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	73	31	17	531	44	548	48	2122	349	520	2580	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	66	42	23	561	304	258	61	2406	749	561	3092	70
Arrive On Green	0.04	0.04	0.04	0.16	0.16	0.16	0.04	0.48	0.48	0.17	0.62	0.62
Sat Flow, veh/h	1757	1121	615	3408	1845	1568	1740	4988	1553	3375	5018	114
Grp Volume(v), veh/h	73	0	48	531	44	548	48	2122	349	520	1706	933
Grp Sat Flow(s),veh/h/ln	1757	0	1736	1704	1845	1568	1740	1663	1553	1688	1663	1807
Q Serve(g_s), s	5.5	0.0	4.0	22.5	3.0	24.0	4.0	55.9	21.9	22.1	58.9	59.8
Cycle Q Clear(g_c), s	5.5	0.0	4.0	22.5	3.0	24.0	4.0	55.9	21.9	22.1	58.9	59.8
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	66	0	66	561	304	258	61	2406	749	561	2049	1113
V/C Ratio(X)	1.10	0.00	0.73	0.95	0.14	2.12	0.78	0.88	0.47	0.93	0.83	0.84
Avail Cap(c_a), veh/h	66	0	66	561	304	258	127	2508	781	591	2049	1113
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.1	0.0	69.4	60.2	52.1	60.9	69.7	34.0	25.2	59.9	22.0	22.2
Incr Delay (d2), s/veh	140.9	0.0	30.5	25.0	0.1	517.9	7.8	3.7	0.2	19.8	2.9	5.5
Initial Q Delay(d3),s/veh	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	2.5	12.6	1.5	47.5	2.1	26.4	9.4	11.9	27.6	31.3
LnGrp Delay(d),s/veh	212.0	0.0	99.9	85.2	52.2	578.8	77.6	37.7	25.3	79.6	24.9	27.7
LnGrp LOS	F		F	F	D	F	E	D	C	E	C	C
Approach Vol, veh/h		121			1123			2519			3159	
Approach Delay, s/veh		167.5			324.8			36.8			34.8	
Approach LOS		F			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.2	95.0		11.0	29.7	75.5		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 89		5.5	25.5	* 73		24.0
Max Q Clear Time (g_c+I1), s	6.0	61.8		7.5	24.1	57.9		26.0
Green Ext Time (p_c), s	0.0	22.2		0.0	0.1	12.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	84.9
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Future Volume (veh/h)	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	224	1040	465	419	1240	555	370	1245	388	616	1610	501
Arrive On Green	0.07	0.30	0.30	0.12	0.35	0.35	0.11	0.25	0.25	0.18	0.32	0.32
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.7	44.7	44.7	18.5	41.4	53.3	16.5	32.0	12.3	27.5	48.6	13.7
Cycle Q Clear(g_c), s	8.7	44.7	44.7	18.5	41.4	53.3	16.5	32.0	12.3	27.5	48.6	13.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	1040	465	419	1240	555	370	1245	388	616	1610	501
V/C Ratio(X)	0.89	1.20	1.03	1.34	0.84	1.31	1.39	0.88	0.39	1.38	1.16	0.37
Avail Cap(c_a), veh/h	224	1040	465	419	1240	555	370	1245	388	616	1610	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.8	53.0	53.0	66.1	44.8	48.7	67.1	54.4	47.0	61.5	51.0	39.2
Incr Delay (d2), s/veh	31.3	97.7	49.4	166.4	5.2	150.6	190.2	7.6	0.2	181.3	80.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	35.6	25.8	18.3	21.0	46.2	17.4	15.6	5.3	28.3	34.3	5.9
LnGrp Delay(d),s/veh	101.1	150.6	102.4	232.4	50.0	199.2	257.2	62.0	47.2	242.9	131.9	39.4
LnGrp LOS	F	F	F	F	D	F	F	E	D	F	F	D
Approach Vol, veh/h		1922			2331			1766			2908	
Approach Delay, s/veh		133.5			140.2			117.4			158.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	54.2	15.4	59.0	33.0	43.2	24.0	50.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	16.5	* 49	9.9	* 53	27.5	* 37	18.5	* 44
Max Q Clear Time (g_c+I1), s	18.5	50.6	10.7	55.3	29.5	34.0	20.5	46.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	140.2
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	2158	132	441	1460	511	579	903	128	555	2277	161
Future Volume (veh/h)	253	2158	132	441	1460	511	579	903	128	555	2277	161
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	253	2158	132	441	1460	511	579	903	128	555	2277	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	294	1622	520	322	1666	519	399	1316	410	596	1603	494
Arrive On Green	0.09	0.33	0.33	0.09	0.34	0.34	0.12	0.26	0.26	0.18	0.32	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	253	2158	132	441	1460	511	579	903	128	555	2277	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	11.3	49.9	9.2	14.2	42.2	50.1	17.6	24.3	9.9	24.4	47.9	0.0
Cycle Q Clear(g_c), s	11.3	49.9	9.2	14.2	42.2	50.1	17.6	24.3	9.9	24.4	47.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	294	1622	520	322	1666	519	399	1316	410	596	1603	494
V/C Ratio(X)	0.86	1.33	0.25	1.37	0.88	0.99	1.45	0.69	0.31	0.93	1.42	0.00
Avail Cap(c_a), veh/h	319	1622	520	322	1666	519	399	1316	410	650	1603	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.6	50.3	36.7	68.2	46.7	49.3	66.4	50.0	44.7	61.1	51.3	0.0
Incr Delay (d2), s/veh	18.1	152.9	0.1	185.7	5.4	35.5	217.3	1.5	0.4	18.6	193.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	45.4	4.0	14.9	19.9	26.2	20.3	11.5	4.3	13.0	50.8	0.0
LnGrp Delay(d),s/veh	85.7	203.2	36.8	253.9	52.1	84.8	283.7	51.5	45.1	79.7	244.3	0.0
LnGrp LOS	F	F	D	F	D	F	F	D	D	E	F	
Approach Vol, veh/h		2543			2412			1610			2832	
Approach Delay, s/veh		182.9			95.9			134.5			212.1	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	53.0	17.7	56.8	31.6	44.4	19.0	55.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 18	47.9	* 15	49.6	29.0	36.9	* 14	* 50
Max Q Clear Time (g_c+I1), s	19.6	49.9	13.3	52.1	26.4	26.3	16.2	51.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	9.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	161.1
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	1180	370	112	1086	50	176	1163	290	40	2521	321
Future Volume (veh/h)	158	1180	370	112	1086	50	176	1163	290	40	2521	321
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	158	1180	370	112	1086	50	176	1163	290	40	2521	321
Adj No. of Lanes	2	1	0	2	2	1	1	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	123	591	185	80	1493	668	76	1515	378	68	1779	554
Arrive On Green	0.04	0.44	0.44	0.02	0.43	0.43	0.04	0.38	0.38	0.02	0.35	0.35
Sat Flow, veh/h	3408	1348	423	3408	3505	1568	1757	4022	1003	3408	5036	1568
Grp Volume(v), veh/h	158	0	1550	112	1086	50	176	971	482	40	2521	321
Grp Sat Flow(s),veh/h/ln	1704	0	1770	1704	1752	1568	1757	1679	1668	1704	1679	1568
Q Serve(g_s), s	5.4	0.0	65.8	3.5	38.7	2.8	6.5	38.0	38.0	1.7	53.0	25.0
Cycle Q Clear(g_c), s	5.4	0.0	65.8	3.5	38.7	2.8	6.5	38.0	38.0	1.7	53.0	25.0
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	123	0	776	80	1493	668	76	1265	628	68	1779	554
V/C Ratio(X)	1.29	0.00	2.00	1.41	0.73	0.07	2.31	0.77	0.77	0.59	1.42	0.58
Avail Cap(c_a), veh/h	123	0	776	80	1493	668	76	1265	628	68	1779	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	0.0	42.1	73.2	35.8	25.5	71.8	41.0	41.0	72.9	48.5	39.4
Incr Delay (d2), s/veh	177.4	0.0	452.9	242.8	1.8	0.0	629.4	2.9	5.7	12.4	190.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	129.8	4.3	19.1	1.2	16.5	18.2	18.5	0.9	56.0	10.9
LnGrp Delay(d),s/veh	249.7	0.0	495.0	316.1	37.6	25.6	701.2	43.9	46.7	85.3	239.4	40.4
LnGrp LOS	F		F	F	D	C	F	D	D	F	F	D
Approach Vol, veh/h		1708			1248			1629			2882	
Approach Delay, s/veh		472.3			62.1			115.7			215.1	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	58.0	9.0	71.0	8.5	61.5	10.9	69.1
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	6.5	53.0	3.5	* 66	3.0	56.5	5.4	* 64
Max Q Clear Time (g_c+I1), s	8.5	55.0	5.5	67.8	3.7	40.0	7.4	40.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	15.0	0.0	22.0

Intersection Summary		
HCM 2010 Ctrl Delay		226.7
HCM 2010 LOS		F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	725	168	123	768	193	66	904	137	320	2297	311
Future Volume (veh/h)	228	725	168	123	768	193	66	904	137	320	2297	311
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1830	1900	1845	1803	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	228	725	168	123	768	193	66	904	137	320	2297	311
Adj No. of Lanes	2	2	0	2	2	0	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	4	4	3	6	6	3	3	3	3	3	3
Cap, veh/h	250	828	192	163	732	184	92	1928	600	380	2354	733
Arrive On Green	0.07	0.30	0.30	0.05	0.27	0.27	0.03	0.38	0.38	0.11	0.47	0.47
Sat Flow, veh/h	3408	2805	650	3408	2713	682	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	228	449	444	123	485	476	66	904	137	320	2297	311
Grp Sat Flow(s),veh/h/ln	1704	1739	1716	1704	1713	1682	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	8.6	31.9	31.9	4.6	35.0	35.0	2.5	17.5	7.7	11.9	58.0	17.1
Cycle Q Clear(g_c), s	8.6	31.9	31.9	4.6	35.0	35.0	2.5	17.5	7.7	11.9	58.0	17.1
Prop In Lane	1.00		0.38	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	250	513	506	163	462	454	92	1928	600	380	2354	733
V/C Ratio(X)	0.91	0.88	0.88	0.76	1.05	1.05	0.72	0.47	0.23	0.84	0.98	0.42
Avail Cap(c_a), veh/h	250	513	506	163	462	454	92	1928	600	504	2364	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.7	43.5	43.5	61.0	47.4	47.4	62.6	30.1	27.1	56.5	33.8	23.0
Incr Delay (d2), s/veh	34.8	15.0	15.2	18.0	55.4	55.8	23.4	0.2	0.2	9.5	13.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	17.5	17.3	2.6	23.5	23.2	1.5	8.2	3.3	6.1	29.7	7.4
LnGrp Delay(d),s/veh	94.5	58.5	58.7	79.1	102.8	103.1	86.1	30.3	27.3	66.0	47.1	23.3
LnGrp LOS	F	E	E	E	F	F	F	C	C	E	D	C
Approach Vol, veh/h		1121			1084			1107			2928	
Approach Delay, s/veh		65.9			100.2			33.2			46.7	
Approach LOS		E			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	54.8	15.0	40.0	9.0	65.7	11.7	43.3
Change Period (Y+Rc), s	5.5	* 5.1	5.5	* 5	5.5	* 5.1	5.5	* 5
Max Green Setting (Gmax), s	19.2	* 45	9.5	* 35	3.5	* 61	6.2	* 38
Max Q Clear Time (g_c+I1), s	13.9	19.5	10.6	37.0	4.5	60.0	6.6	33.9
Green Ext Time (p_c), s	0.5	24.2	0.0	0.0	0.0	0.7	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	57.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

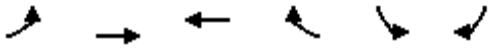
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	349	131	433	325	219	76	1050	47	502	1998	233
Future Volume (veh/h)	96	349	131	433	325	219	76	1050	47	502	1998	233
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1845	1827	1845	1845	1845
Adj Flow Rate, veh/h	96	349	131	433	325	219	76	1050	47	502	1998	233
Adj No. of Lanes	2	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	3	4	3	3	3
Cap, veh/h	144	441	197	453	1198	536	101	1472	454	549	2125	662
Arrive On Green	0.04	0.13	0.13	0.26	0.34	0.34	0.03	0.29	0.29	0.16	0.42	0.42
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	3375	5036	1553	3408	5036	1568
Grp Volume(v), veh/h	96	349	131	433	325	219	76	1050	47	502	1998	233
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1688	1679	1553	1704	1679	1568
Q Serve(g_s), s	3.6	12.5	10.3	31.5	8.7	13.9	2.9	24.2	2.9	18.8	49.4	13.1
Cycle Q Clear(g_c), s	3.6	12.5	10.3	31.5	8.7	13.9	2.9	24.2	2.9	18.8	49.4	13.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	441	197	453	1198	536	101	1472	454	549	2125	662
V/C Ratio(X)	0.67	0.79	0.66	0.96	0.27	0.41	0.75	0.71	0.10	0.91	0.94	0.35
Avail Cap(c_a), veh/h	223	837	374	453	1520	680	101	1472	454	588	2145	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	55.1	54.1	47.4	31.0	32.7	62.5	41.1	33.5	53.6	36.0	25.5
Incr Delay (d2), s/veh	5.2	1.2	1.4	30.7	0.0	0.2	23.7	1.7	0.1	17.5	8.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	6.1	4.6	19.1	4.3	6.0	1.7	11.4	1.2	10.2	24.5	5.7
LnGrp Delay(d),s/veh	66.5	56.3	55.5	78.2	31.0	32.9	86.1	42.7	33.6	71.1	44.9	25.8
LnGrp LOS	E	E	E	E	C	C	F	D	C	E	D	C
Approach Vol, veh/h		576			977			1173			2733	
Approach Delay, s/veh		57.8			52.3			45.2			48.1	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	43.1	11.0	49.8	9.2	59.9	39.0	21.7
Change Period (Y+Rc), s	* 5.1	5.1	5.5	* 5.4	* 5.3	5.1	5.5	* 5.4
Max Green Setting (Gmax), s	* 22	37.0	8.5	* 56	* 3.9	55.3	33.5	* 31
Max Q Clear Time (g_c+I1), s	20.8	26.2	5.6	15.9	4.9	51.4	33.5	14.5
Green Ext Time (p_c), s	0.1	10.3	0.1	1.9	0.0	3.4	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	49.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	2268	1668	647	801	316
Future Volume (veh/h)	141	2268	1668	647	801	316
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	141	2268	1668	647	801	316
Adj No. of Lanes	1	3	3	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	132	2644	1508	561	717	640
Arrive On Green	0.08	0.52	0.42	0.42	0.41	0.41
Sat Flow, veh/h	1757	5202	3784	1346	1757	1568
Grp Volume(v), veh/h	141	2268	1542	773	801	316
Grp Sat Flow(s),veh/h/ln	1757	1679	1679	1607	1757	1568
Q Serve(g_s), s	9.0	46.7	50.0	50.0	49.0	17.9
Cycle Q Clear(g_c), s	9.0	46.7	50.0	50.0	49.0	17.9
Prop In Lane	1.00			0.84	1.00	1.00
Lane Grp Cap(c), veh/h	132	2644	1399	670	717	640
V/C Ratio(X)	1.07	0.86	1.10	1.15	1.12	0.49
Avail Cap(c_a), veh/h	132	2644	1399	670	717	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	24.6	35.0	35.0	35.5	26.3
Incr Delay (d2), s/veh	98.4	3.0	57.3	85.5	70.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	22.2	34.3	38.0	37.7	16.8
LnGrp Delay(d),s/veh	153.9	27.7	92.3	120.5	105.9	26.9
LnGrp LOS	F	C	F	F	F	C
Approach Vol, veh/h		2409	2315		1117	
Approach Delay, s/veh		35.1	101.7		83.5	
Approach LOS		D	F		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				67.0		53.0	13.0	54.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				63.0		49.0	9.0	50.0
Max Q Clear Time (g_c+I1), s				48.7		51.0	11.0	52.0
Green Ext Time (p_c), s				14.2		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	70.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1420	53	68	1019	0	13	0	137	0	148	0
Future Volume (veh/h)	0	1420	53	68	1019	0	13	0	137	0	148	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	1420	53	68	1019	0	13	0	137	0	148	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1657	62	84	2142	0	17	412	350	4	241	205
Arrive On Green	0.00	0.48	0.48	0.05	0.61	0.00	0.01	0.00	0.22	0.00	0.13	0.00
Sat Flow, veh/h	1757	3446	128	1757	3597	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	0	721	752	68	1019	0	13	0	137	0	148	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1822	1757	1752	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.0	17.5	17.6	1.9	7.7	0.0	0.4	0.0	3.6	0.0	3.7	0.0
Cycle Q Clear(g_c), s	0.0	17.5	17.6	1.9	7.7	0.0	0.4	0.0	3.6	0.0	3.7	0.0
Prop In Lane	1.00		0.07	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	842	876	84	2142	0	17	412	350	4	241	205
V/C Ratio(X)	0.00	0.86	0.86	0.81	0.48	0.00	0.74	0.00	0.39	0.00	0.61	0.00
Avail Cap(c_a), veh/h	109	942	980	109	2142	0	109	496	422	73	458	389
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	11.1	11.1	22.8	5.2	0.0	23.9	0.0	16.0	0.0	19.9	0.0
Incr Delay (d2), s/veh	0.0	7.2	7.1	28.3	0.2	0.0	46.3	0.0	0.7	0.0	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.1	10.5	1.5	3.7	0.0	0.4	0.0	1.6	0.0	2.0	0.0
LnGrp Delay(d),s/veh	0.0	18.3	18.2	51.1	5.3	0.0	70.1	0.0	16.7	0.0	22.4	0.0
LnGrp LOS		B	B	D	A		E		B		C	
Approach Vol, veh/h		1473			1087			150			148	
Approach Delay, s/veh		18.3			8.2			21.3			22.4	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	14.8	6.3	27.2	4.5	10.3	0.0	33.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	2.0	13.0	3.0	26.0	3.0	12.0	3.0	26.0
Max Q Clear Time (g_c+I1), s	0.0	5.6	3.9	19.6	2.4	5.7	0.0	9.7
Green Ext Time (p_c), s	0.0	0.7	0.0	3.6	0.0	0.7	0.0	13.8

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	282	1789	102	1020	1188	350	76	642	784	395	811	90
Future Volume (veh/h)	282	1789	102	1020	1188	350	76	642	784	395	811	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	282	1789	102	1020	1188	350	76	642	784	395	811	90
Adj No. of Lanes	2	3	1	2	3	1	1	1	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	325	1259	403	477	1477	473	95	318	388	204	1493	668
Arrive On Green	0.10	0.26	0.26	0.14	0.30	0.30	0.05	0.42	0.42	0.06	0.43	0.43
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	1757	757	924	3408	3505	1568
Grp Volume(v), veh/h	282	1789	102	1020	1188	350	76	0	1426	395	811	90
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1757	0	1682	1704	1752	1568
Q Serve(g_s), s	12.2	38.6	7.8	21.0	33.6	30.1	6.4	0.0	63.0	9.0	25.9	5.2
Cycle Q Clear(g_c), s	12.2	38.6	7.8	21.0	33.6	30.1	6.4	0.0	63.0	9.0	25.9	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.55	1.00		1.00
Lane Grp Cap(c), veh/h	325	1259	403	477	1477	473	95	0	706	204	1493	668
V/C Ratio(X)	0.87	1.42	0.25	2.14	0.80	0.74	0.80	0.00	2.02	1.93	0.54	0.13
Avail Cap(c_a), veh/h	341	1259	403	477	1477	473	164	0	706	204	1493	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.9	55.7	44.2	64.5	48.3	47.1	70.1	0.0	43.5	70.5	32.2	26.2
Incr Delay (d2), s/veh	19.7	194.0	0.5	518.9	3.5	6.5	14.1	0.0	463.6	436.7	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	40.0	3.4	44.3	15.7	13.9	3.5	0.0	120.2	16.6	12.6	2.3
LnGrp Delay(d),s/veh	86.6	249.7	44.7	583.4	51.8	53.6	84.2	0.0	507.1	507.2	32.6	26.3
LnGrp LOS	F	F	D	F	D	D	F		F	F	C	C
Approach Vol, veh/h		2173			2558			1502			1296	
Approach Delay, s/veh		218.9			264.0			485.7			176.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	45.0	12.1	67.9	18.3	51.7	13.0	67.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	21.0	38.6	14.0	58.0	15.0	44.6	9.0	63.0
Max Q Clear Time (g_c+I1), s	23.0	40.6	8.4	27.9	14.2	35.6	11.0	65.0
Green Ext Time (p_c), s	0.0	0.0	0.1	26.0	0.1	8.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	280.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	592	33	162	623	19	37	287	160	4	647	91
Future Volume (veh/h)	22	592	33	162	623	19	37	287	160	4	647	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1759	1759	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	22	592	33	162	623	19	37	287	160	4	647	91
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	8	8	8	3	3	3	3	3	3
Cap, veh/h	48	597	33	166	723	22	62	450	251	50	629	88
Arrive On Green	0.03	0.35	0.35	0.10	0.43	0.43	0.04	0.40	0.40	0.03	0.40	0.40
Sat Flow, veh/h	1707	1682	94	1675	1698	52	1757	1114	621	1757	1583	223
Grp Volume(v), veh/h	22	0	625	162	0	642	37	0	447	4	0	738
Grp Sat Flow(s),veh/h/ln	1707	0	1776	1675	0	1750	1757	0	1735	1757	0	1805
Q Serve(g_s), s	1.8	0.0	49.4	13.6	0.0	46.9	2.9	0.0	29.2	0.3	0.0	56.0
Cycle Q Clear(g_c), s	1.8	0.0	49.4	13.6	0.0	46.9	2.9	0.0	29.2	0.3	0.0	56.0
Prop In Lane	1.00		0.05	1.00		0.03	1.00		0.36	1.00		0.12
Lane Grp Cap(c), veh/h	48	0	630	166	0	745	62	0	701	50	0	717
V/C Ratio(X)	0.45	0.00	0.99	0.97	0.00	0.86	0.60	0.00	0.64	0.08	0.00	1.03
Avail Cap(c_a), veh/h	170	0	630	166	0	745	174	0	701	174	0	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.4	0.0	45.3	63.3	0.0	36.7	67.0	0.0	33.7	66.7	0.0	42.5
Incr Delay (d2), s/veh	6.5	0.0	33.8	61.7	0.0	10.1	9.0	0.0	1.9	0.7	0.0	41.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	30.0	9.2	0.0	24.7	1.6	0.0	14.3	0.2	0.0	36.1
LnGrp Delay(d),s/veh	73.9	0.0	79.1	125.0	0.0	46.9	76.0	0.0	35.6	67.4	0.0	83.7
LnGrp LOS	E		E	F		D	E		D	E		F
Approach Vol, veh/h		647			804			484			742	
Approach Delay, s/veh		78.9			62.6			38.7			83.6	
Approach LOS		E			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	61.0	18.0	54.0	9.0	60.0	8.0	64.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	56.0	14.0	50.0	14.0	56.0	14.0	50.0
Max Q Clear Time (g_c+I1), s	2.3	31.2	15.6	51.4	4.9	58.0	3.8	48.9
Green Ext Time (p_c), s	0.0	9.5	0.0	0.0	0.0	0.0	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	68.0
HCM 2010 LOS	E

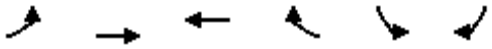
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1023	44	920	27	77	110	654	2127	17	146	1016	934
Future Volume (veh/h)	1023	44	920	27	77	110	654	2127	17	146	1016	934
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	1054	0	920	27	77	110	654	2127	17	146	1016	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	981	0	438	22	62	72	426	2253	18	111	1284	400
Arrive On Green	0.28	0.00	0.28	0.05	0.05	0.05	0.25	0.44	0.44	0.06	0.26	0.00
Sat Flow, veh/h	3480	0	1553	473	1348	1568	1740	5104	41	1740	4988	1553
Grp Volume(v), veh/h	1054	0	920	104	0	110	654	1385	759	146	1016	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1821	0	1568	1740	1663	1820	1740	1663	1553
Q Serve(g_s), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.7	47.8	7.6	22.7	0.0
Cycle Q Clear(g_c), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.7	47.8	7.6	22.7	0.0
Prop In Lane	1.00		1.00	0.26		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	981	0	438	84	0	72	426	1468	803	111	1284	400
V/C Ratio(X)	1.07	0.00	2.10	1.24	0.00	1.53	1.53	0.94	0.94	1.32	0.79	0.00
Avail Cap(c_a), veh/h	981	0	438	84	0	72	426	1485	813	111	1301	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	0.0	42.9	57.0	0.0	57.0	45.1	32.0	32.0	56.0	41.4	0.0
Incr Delay (d2), s/veh	51.1	0.0	503.8	176.8	0.0	294.6	251.9	12.2	19.0	194.0	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.0	0.0	75.7	6.9	0.0	8.3	43.8	24.2	28.1	9.6	10.8	0.0
LnGrp Delay(d),s/veh	94.0	0.0	546.7	233.8	0.0	351.6	297.1	44.2	51.0	250.0	44.5	0.0
LnGrp LOS	F		F	F		F	F	D	D	F	D	
Approach Vol, veh/h		1974			214			2798			1162	
Approach Delay, s/veh		305.0			294.4			105.1			70.3	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	34.0	35.6		11.0	12.0	57.6		39.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 29	31.2		5.5	* 7.6	* 53		33.7
Max Q Clear Time (g_c+I1), s	31.3	24.7		7.5	9.6	49.8		35.7
Green Ext Time (p_c), s	0.0	5.0		0.0	0.0	3.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		169.3	
HCM 2010 LOS		F	

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	1297	1256	285	675	258
Future Volume (veh/h)	31	1297	1256	285	675	258
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	31	1297	1256	285	675	258
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	58	1884	1347	302	702	627
Arrive On Green	0.03	0.54	0.47	0.47	0.40	0.40
Sat Flow, veh/h	1757	3597	2939	638	1757	1568
Grp Volume(v), veh/h	31	1297	767	774	675	258
Grp Sat Flow(s),veh/h/ln	1757	1752	1752	1732	1757	1568
Q Serve(g_s), s	2.2	34.7	52.4	54.4	47.8	15.1
Cycle Q Clear(g_c), s	2.2	34.7	52.4	54.4	47.8	15.1
Prop In Lane	1.00			0.37	1.00	1.00
Lane Grp Cap(c), veh/h	58	1884	829	819	702	627
V/C Ratio(X)	0.53	0.69	0.93	0.94	0.96	0.41
Avail Cap(c_a), veh/h	220	2169	829	819	729	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.7	21.7	31.5	32.1	37.3	27.5
Incr Delay (d2), s/veh	7.3	0.8	16.1	19.3	23.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	17.0	28.8	30.2	27.7	14.7
LnGrp Delay(d),s/veh	68.0	22.4	47.6	51.4	61.1	28.0
LnGrp LOS	E	C	D	D	E	C
Approach Vol, veh/h		1328	1541		933	
Approach Delay, s/veh		23.5	49.5		51.9	
Approach LOS		C	D		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		72.6		55.0	8.2	64.4		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		79.0		53.0	16.0	59.0		
Max Q Clear Time (g_c+I1), s		36.7		49.8	4.2	56.4		
Green Ext Time (p_c), s		32.0		1.2	0.0	2.5		

Intersection Summary	
HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	527	388	31	99	293	722	56	2184	54	905	1643	475
Future Volume (veh/h)	527	388	31	99	293	722	56	2184	54	905	1643	475
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	527	388	31	99	293	722	56	2184	54	905	1643	475
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	374	1275	101	142	367	1197	91	1822	45	623	2601	810
Arrive On Green	0.11	0.27	0.27	0.04	0.20	0.20	0.03	0.36	0.36	0.18	0.52	0.52
Sat Flow, veh/h	3408	4760	375	3514	1845	3136	3408	5055	125	3408	5036	1568
Grp Volume(v), veh/h	527	272	147	99	293	722	56	1449	789	905	1643	475
Grp Sat Flow(s),veh/h/ln	1704	1679	1778	1757	1845	1568	1704	1679	1823	1704	1679	1568
Q Serve(g_s), s	16.5	9.7	9.9	4.2	22.8	27.8	2.4	54.2	54.2	27.5	35.2	31.6
Cycle Q Clear(g_c), s	16.5	9.7	9.9	4.2	22.8	27.8	2.4	54.2	54.2	27.5	35.2	31.6
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	374	899	476	142	367	1197	91	1210	657	623	2601	810
V/C Ratio(X)	1.41	0.30	0.31	0.69	0.80	0.60	0.61	1.20	1.20	1.45	0.63	0.59
Avail Cap(c_a), veh/h	374	899	476	206	368	1199	134	1210	657	623	2601	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.9	43.9	43.9	71.2	57.4	37.4	72.4	48.1	48.1	61.4	26.1	25.2
Incr Delay (d2), s/veh	199.5	0.1	0.1	2.3	10.9	0.6	2.5	97.0	104.8	212.3	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.1	4.5	4.9	2.1	12.7	12.1	1.2	41.3	46.3	31.3	16.4	13.9
LnGrp Delay(d),s/veh	266.4	43.9	44.1	73.5	68.3	38.0	74.9	145.1	152.8	273.7	26.5	26.0
LnGrp LOS	F	D	D	E	E	D	E	F	F	F	C	C
Approach Vol, veh/h		946			1114			2294			3023	
Approach Delay, s/veh		167.9			49.1			146.1			100.4	
Approach LOS		F			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	83.3	22.0	35.6	33.0	59.8	11.6	46.0
Change Period (Y+Rc), s	5.5	5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	5.9	75.5	16.5	* 30	27.5	* 54	8.8	* 38
Max Q Clear Time (g_c+I1), s	4.4	37.2	18.5	29.8	29.5	56.2	6.2	11.9
Green Ext Time (p_c), s	0.0	22.4	0.0	0.1	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	115.5
HCM 2010 LOS	F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	103	44	69	49	159	17	1681	31	71	1627	51
Future Volume (veh/h)	311	103	44	69	49	159	17	1681	31	71	1627	51
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	229	218	44	59	63	159	17	1681	31	71	1627	51
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	301	255	52	218	229	195	20	2071	38	110	2285	72
Arrive On Green	0.17	0.17	0.17	0.12	0.12	0.12	0.01	0.41	0.41	0.06	0.46	0.46
Sat Flow, veh/h	1757	1491	301	1757	1845	1568	1757	5091	94	1757	5017	157
Grp Volume(v), veh/h	229	0	262	59	63	159	17	1108	604	71	1089	589
Grp Sat Flow(s),veh/h/ln	1757	0	1792	1757	1845	1568	1757	1679	1828	1757	1679	1817
Q Serve(g_s), s	10.8	0.0	12.3	2.6	2.7	8.6	0.8	25.4	25.4	3.4	22.7	22.7
Cycle Q Clear(g_c), s	10.8	0.0	12.3	2.6	2.7	8.6	0.8	25.4	25.4	3.4	22.7	22.7
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.05	1.00		0.09
Lane Grp Cap(c), veh/h	301	0	307	218	229	195	20	1366	744	110	1529	827
V/C Ratio(X)	0.76	0.00	0.85	0.27	0.28	0.82	0.83	0.81	0.81	0.65	0.71	0.71
Avail Cap(c_a), veh/h	569	0	581	549	576	490	65	1494	814	118	1587	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	0.0	34.9	34.4	34.4	37.0	42.8	22.8	22.8	39.7	19.0	19.0
Incr Delay (d2), s/veh	1.5	0.0	2.6	0.2	0.2	3.2	26.0	2.9	5.2	7.7	1.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	6.3	1.3	1.4	3.9	0.5	12.2	13.8	1.9	10.7	11.8
LnGrp Delay(d),s/veh	35.7	0.0	37.5	34.7	34.7	40.2	68.8	25.7	27.9	47.5	20.2	21.3
LnGrp LOS	D		D	C	C	D	E	C	C	D	C	C
Approach Vol, veh/h		491			281			1729			1749	
Approach Delay, s/veh		36.7			37.8			26.9			21.7	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	44.3		16.3	10.0	40.1		20.4
Change Period (Y+Rc), s	* 4.8	4.8		5.5	* 4.6	4.8		5.5
Max Green Setting (Gmax), s	* 3.2	41.0		27.1	* 5.8	38.6		28.1
Max Q Clear Time (g_c+I1), s	2.8	24.7		10.6	5.4	27.4		14.3
Green Ext Time (p_c), s	0.0	10.3		0.2	0.0	7.9		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	1493	551	266	1244	334	538	1211	157	489	1175	57
Future Volume (veh/h)	73	1493	551	266	1244	334	538	1211	157	489	1175	57
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	73	1493	551	266	1244	334	538	1211	157	489	1175	57
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	116	1324	480	249	2025	631	485	1294	403	459	1227	59
Arrive On Green	0.03	0.36	0.36	0.07	0.40	0.40	0.14	0.26	0.26	0.13	0.25	0.25
Sat Flow, veh/h	3408	3648	1321	3408	5036	1568	3408	5036	1568	3408	4921	239
Grp Volume(v), veh/h	73	1372	672	266	1244	334	538	1211	157	489	801	431
Grp Sat Flow(s),veh/h/ln	1704	1679	1612	1704	1679	1568	1704	1679	1568	1704	1679	1803
Q Serve(g_s), s	2.7	47.2	47.2	9.5	25.5	21.0	18.5	30.6	10.7	17.5	30.6	30.6
Cycle Q Clear(g_c), s	2.7	47.2	47.2	9.5	25.5	21.0	18.5	30.6	10.7	17.5	30.6	30.6
Prop In Lane	1.00		0.82	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	116	1219	585	249	2025	631	485	1294	403	459	837	449
V/C Ratio(X)	0.63	1.13	1.15	1.07	0.61	0.53	1.11	0.94	0.39	1.07	0.96	0.96
Avail Cap(c_a), veh/h	173	1219	585	249	2025	631	485	1294	403	459	837	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.0	41.4	41.4	60.3	30.8	29.5	55.7	47.3	39.9	56.3	48.1	48.1
Incr Delay (d2), s/veh	2.1	67.5	85.5	76.2	0.4	0.4	74.1	12.5	0.2	60.6	21.3	31.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	33.3	34.9	7.1	11.8	9.1	13.7	15.6	4.7	12.1	16.6	19.1
LnGrp Delay(d),s/veh	64.1	108.9	126.9	136.4	31.3	29.9	129.9	59.8	40.1	116.9	69.4	79.8
LnGrp LOS	E	F	F	F	C	C	F	E	D	F	E	E
Approach Vol, veh/h		2117			1844			1906			1721	
Approach Delay, s/veh		113.1			46.2			77.9			85.5	
Approach LOS		F			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	38.0	9.9	58.1	23.0	39.0	15.0	53.0
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	18.5	* 32	6.6	50.1	17.5	* 33	9.5	47.2
Max Q Clear Time (g_c+I1), s	20.5	32.6	4.7	27.5	19.5	32.6	11.5	49.2
Green Ext Time (p_c), s	0.0	0.0	0.0	13.4	0.0	0.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	81.7
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1656	130	438	1173	428	85	515	427	580	714	299
Future Volume (veh/h)	159	1656	130	438	1173	428	85	515	427	580	714	299
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	159	1656	130	438	1173	428	85	515	427	580	714	299
Adj No. of Lanes	1	2	0	2	2	1	1	1	0	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	156	1160	90	232	1152	515	92	322	267	316	712	605
Arrive On Green	0.09	0.35	0.35	0.07	0.33	0.33	0.05	0.35	0.35	0.09	0.39	0.39
Sat Flow, veh/h	1757	3295	256	3408	3505	1568	1757	934	774	3408	1845	1568
Grp Volume(v), veh/h	159	873	913	438	1173	428	85	0	942	580	714	299
Grp Sat Flow(s),veh/h/ln	1757	1752	1799	1704	1752	1568	1757	0	1708	1704	1845	1568
Q Serve(g_s), s	12.9	51.2	51.2	9.9	47.8	36.6	7.0	0.0	50.2	13.5	56.1	21.0
Cycle Q Clear(g_c), s	12.9	51.2	51.2	9.9	47.8	36.6	7.0	0.0	50.2	13.5	56.1	21.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	156	617	634	232	1152	515	92	0	590	316	712	605
V/C Ratio(X)	1.02	1.42	1.44	1.89	1.02	0.83	0.93	0.00	1.60	1.83	1.00	0.49
Avail Cap(c_a), veh/h	156	617	634	232	1152	515	92	0	590	316	712	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.3	47.1	47.1	67.8	48.8	45.1	68.6	0.0	47.6	66.0	44.7	33.9
Incr Delay (d2), s/veh	77.5	196.4	207.0	415.2	31.1	10.3	68.9	0.0	276.8	386.9	34.5	0.2
Initial Q Delay(d3),s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	58.4	61.8	18.0	28.0	17.4	5.2	0.0	68.9	23.3	35.3	9.1
LnGrp Delay(d),s/veh	143.9	243.5	254.1	483.0	79.9	55.4	137.5	0.0	324.4	452.9	79.2	34.1
LnGrp LOS	F	F	F	F	F	E	F		F	F	F	C
Approach Vol, veh/h		1945			2039			1027			1593	
Approach Delay, s/veh		240.3			161.4			308.9			206.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.4	52.7	13.1	61.2	15.0	56.1	19.0	55.3
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	12.9	* 48	7.6	* 56	* 9.9	* 51	13.5	* 50
Max Q Clear Time (g_c+I1), s	14.9	49.8	9.0	58.1	11.9	53.2	15.5	52.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	218.5
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	464	1250	60	178	966	94	74	236	81	156	433	429
Future Volume (veh/h)	464	1250	60	178	966	94	74	236	81	156	433	429
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	464	1250	60	178	966	94	74	236	81	156	433	429
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	578	1545	691	290	1249	559	146	687	307	190	731	327
Arrive On Green	0.17	0.44	0.44	0.08	0.36	0.36	0.04	0.20	0.20	0.06	0.21	0.21
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	464	1250	60	178	966	94	74	236	81	156	433	429
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	9.4	22.3	1.6	3.6	17.6	3.0	1.5	4.2	3.1	3.3	8.0	15.0
Cycle Q Clear(g_c), s	9.4	22.3	1.6	3.6	17.6	3.0	1.5	4.2	3.1	3.3	8.0	15.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	578	1545	691	290	1249	559	146	687	307	190	731	327
V/C Ratio(X)	0.80	0.81	0.09	0.61	0.77	0.17	0.51	0.34	0.26	0.82	0.59	1.31
Avail Cap(c_a), veh/h	758	1545	691	711	1414	632	190	731	327	190	731	327
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	17.5	11.7	31.8	20.6	15.8	33.7	24.9	24.5	33.6	25.7	28.4
Incr Delay (d2), s/veh	4.7	3.3	0.1	2.1	2.4	0.1	2.7	0.3	0.5	24.4	1.3	160.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	11.3	0.7	1.8	8.9	1.3	0.8	2.1	1.4	2.2	4.0	21.0
LnGrp Delay(d),s/veh	33.4	20.8	11.7	33.9	23.0	16.0	36.3	25.2	25.0	58.0	27.0	188.8
LnGrp LOS	C	C	B	C	C	B	D	C	C	E	C	F
Approach Vol, veh/h		1774			1238			391			1018	
Approach Delay, s/veh		23.8			24.0			27.3			99.9	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	18.1	10.1	35.7	7.1	19.0	16.2	29.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	15.0	15.0	30.0	4.0	15.0	16.0	29.0
Max Q Clear Time (g_c+I1), s	5.3	6.2	5.6	24.3	3.5	17.0	11.4	19.6
Green Ext Time (p_c), s	0.0	3.6	0.5	5.2	0.0	0.0	0.8	6.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	1932	27	55	1127	123	49	325	31	142	518	135
Future Volume (veh/h)	189	1932	27	55	1127	123	49	325	31	142	518	135
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1759	1845	1845	1759	1845
Adj Flow Rate, veh/h	189	1932	27	55	1127	123	49	325	31	142	518	135
Adj No. of Lanes	2	2	0	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	8	3	3	8	3
Cap, veh/h	239	1845	26	63	1707	764	63	481	429	188	515	459
Arrive On Green	0.07	0.52	0.52	0.04	0.49	0.49	0.04	0.27	0.27	0.06	0.29	0.29
Sat Flow, veh/h	3408	3539	49	1757	3505	1568	1757	1759	1568	3408	1759	1568
Grp Volume(v), veh/h	189	954	1005	55	1127	123	49	325	31	142	518	135
Grp Sat Flow(s),veh/h/ln	1704	1752	1836	1757	1752	1568	1757	1759	1568	1704	1759	1568
Q Serve(g_s), s	7.6	73.0	73.0	4.4	34.0	6.1	3.9	23.1	2.1	5.8	41.0	9.3
Cycle Q Clear(g_c), s	7.6	73.0	73.0	4.4	34.0	6.1	3.9	23.1	2.1	5.8	41.0	9.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	914	957	63	1707	764	63	481	429	188	515	459
V/C Ratio(X)	0.79	1.04	1.05	0.88	0.66	0.16	0.78	0.68	0.07	0.75	1.01	0.29
Avail Cap(c_a), veh/h	316	914	957	63	1707	764	63	481	429	195	515	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	33.5	33.5	67.2	27.2	20.0	67.0	45.3	37.7	65.2	49.5	38.3
Incr Delay (d2), s/veh	9.5	42.0	42.9	71.7	1.0	0.1	45.8	3.7	0.1	14.9	41.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	45.7	48.1	3.4	16.7	2.7	2.7	11.7	0.9	3.1	25.8	4.1
LnGrp Delay(d),s/veh	73.6	75.5	76.4	138.9	28.1	20.1	112.8	49.1	37.8	80.1	90.5	38.7
LnGrp LOS	E	F	F	F	C	C	F	D	D	F	F	D
Approach Vol, veh/h		2148			1305			405			795	
Approach Delay, s/veh		75.8			32.0			55.9			79.8	
Approach LOS		E			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	42.3	9.0	77.0	9.0	45.0	13.8	72.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	38.0	5.0	73.0	5.0	41.0	13.0	65.0
Max Q Clear Time (g_c+I1), s	7.8	25.1	6.4	75.0	5.9	43.0	9.6	36.0
Green Ext Time (p_c), s	0.0	5.0	0.0	0.0	0.0	0.0	0.2	26.3

Intersection Summary	
HCM 2010 Ctrl Delay	62.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	554	274	207	284	332	150	2100	107	347	1359	298
Future Volume (veh/h)	275	554	274	207	284	332	150	2100	107	347	1359	298
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	275	554	274	207	269	342	150	2100	107	347	1359	298
Adj No. of Lanes	2	2	1	2	1	2	2	4	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	293	921	412	272	468	1141	210	2122	524	371	1923	599
Arrive On Green	0.09	0.26	0.26	0.08	0.25	0.25	0.06	0.34	0.34	0.11	0.39	0.39
Sat Flow, veh/h	3408	3505	1568	3514	1845	3136	3375	6285	1553	3375	4988	1553
Grp Volume(v), veh/h	275	554	274	207	269	342	150	2100	107	347	1359	298
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1845	1568	1688	1571	1553	1688	1663	1553
Q Serve(g_s), s	8.4	14.5	16.3	6.0	13.3	8.1	4.6	34.7	5.1	10.7	24.1	15.3
Cycle Q Clear(g_c), s	8.4	14.5	16.3	6.0	13.3	8.1	4.6	34.7	5.1	10.7	24.1	15.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	293	921	412	272	468	1141	210	2122	524	371	1923	599
V/C Ratio(X)	0.94	0.60	0.67	0.76	0.57	0.30	0.72	0.99	0.20	0.93	0.71	0.50
Avail Cap(c_a), veh/h	293	982	439	397	565	1305	236	2122	524	371	1923	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	33.8	34.4	47.3	34.1	23.7	48.1	34.4	24.6	46.1	27.1	24.4
Incr Delay (d2), s/veh	35.7	1.2	4.1	2.5	3.0	0.4	6.8	17.0	0.1	30.1	1.9	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	7.2	7.6	3.0	7.2	3.6	2.3	17.5	2.2	6.5	11.4	6.9
LnGrp Delay(d),s/veh	83.2	34.9	38.6	49.8	37.1	24.1	54.9	51.5	24.7	76.2	29.0	26.6
LnGrp LOS	F	C	D	D	D	C	D	D	C	E	C	C
Approach Vol, veh/h		1103			818			2357			2004	
Approach Delay, s/veh		47.9			34.9			50.5			36.8	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	45.7	14.5	32.3	17.0	40.7	13.6	33.3
Change Period (Y+Rc), s	5.5	* 5.4	5.5	5.8	5.5	* 5.4	5.5	* 5.8
Max Green Setting (Gmax), s	7.3	* 40	9.0	32.0	11.5	* 35	11.8	* 29
Max Q Clear Time (g_c+I1), s	6.6	26.1	10.4	15.3	12.7	36.7	8.0	18.3
Green Ext Time (p_c), s	0.0	13.1	0.0	11.2	0.0	0.0	0.1	8.1

Intersection Summary	
HCM 2010 Ctrl Delay	43.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	522	1183	795	497	678	146	541	1061	670	60	1676	154
Future Volume (veh/h)	522	1183	795	497	678	146	541	1061	670	60	1676	154
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	522	1183	795	497	678	146	541	1061	670	60	1676	154
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	566	1074	480	393	1281	399	416	1980	616	96	1507	469
Arrive On Green	0.17	0.31	0.31	0.12	0.26	0.26	0.12	0.40	0.40	0.03	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	522	1183	795	497	678	146	541	1061	670	60	1676	154
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	22.6	46.0	46.0	17.5	17.6	11.6	18.5	24.5	59.6	2.6	45.4	11.5
Cycle Q Clear(g_c), s	22.6	46.0	46.0	17.5	17.6	11.6	18.5	24.5	59.6	2.6	45.4	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	566	1074	480	393	1281	399	416	1980	616	96	1507	469
V/C Ratio(X)	0.92	1.10	1.66	1.26	0.53	0.37	1.30	0.54	1.09	0.63	1.11	0.33
Avail Cap(c_a), veh/h	715	1074	480	393	1281	399	416	1980	616	97	1507	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.6	52.1	52.1	66.3	48.0	45.8	65.8	34.7	45.3	72.2	52.4	40.6
Incr Delay (d2), s/veh	13.6	59.7	304.0	137.5	1.2	1.9	152.1	0.5	62.2	9.0	60.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	31.1	60.5	15.7	8.2	5.2	17.4	11.3	36.1	1.4	29.2	5.1
LnGrp Delay(d),s/veh	75.3	111.8	356.1	203.8	49.2	47.7	217.9	35.2	107.4	81.2	112.9	41.4
LnGrp LOS	E	F	F	F	D	D	F	D	F	F	F	D
Approach Vol, veh/h		2500			1321			2272			1890	
Approach Delay, s/veh		181.9			107.2			100.0			106.1	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	51.2	30.4	44.6	9.8	65.4	23.0	52.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	* 6	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	18.5	* 45	31.5	* 32	4.3	* 60	17.5	46.0
Max Q Clear Time (g_c+I1), s	20.5	47.4	24.6	19.6	4.6	61.6	19.5	48.0
Green Ext Time (p_c), s	0.0	0.0	0.3	12.4	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	128.3
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	709	1573	416	38	917	292	281	1314	39	772	1755	342
Future Volume (veh/h)	709	1573	416	38	917	292	281	1314	39	772	1755	342
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	709	1573	416	38	917	292	281	1314	39	772	1755	342
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	603	1892	589	66	1099	342	291	1265	394	665	1818	566
Arrive On Green	0.18	0.38	0.38	0.02	0.22	0.22	0.09	0.25	0.25	0.20	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	709	1573	416	38	917	292	281	1314	39	772	1755	342
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	26.5	42.5	33.8	1.7	26.1	26.8	12.4	38.0	2.9	29.5	51.7	26.9
Cycle Q Clear(g_c), s	26.5	42.5	33.8	1.7	26.1	26.8	12.4	38.0	2.9	29.5	51.7	26.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	603	1892	589	66	1099	342	291	1265	394	665	1818	566
V/C Ratio(X)	1.18	0.83	0.71	0.58	0.83	0.85	0.97	1.04	0.10	1.16	0.97	0.60
Avail Cap(c_a), veh/h	603	1896	590	82	1143	356	291	1265	394	665	1818	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.6	42.4	39.7	72.8	56.0	56.3	68.2	55.9	42.8	60.1	46.7	38.8
Incr Delay (d2), s/veh	95.6	3.1	3.3	2.9	4.9	16.4	43.3	35.8	0.0	88.5	13.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	20.2	15.2	0.8	12.6	13.2	7.5	21.5	1.2	21.8	26.0	11.7
LnGrp Delay(d),s/veh	157.2	45.5	43.0	75.7	60.9	72.7	111.5	91.7	42.8	148.6	60.4	40.1
LnGrp LOS	F	D	D	E	E	E	F	F	D	F	E	D
Approach Vol, veh/h		2698			1247			1634			2869	
Approach Delay, s/veh		74.5			64.1			94.0			81.7	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.4	60.6	32.0	38.8	35.0	44.0	8.4	62.4
Change Period (Y+Rc), s	5.5	6.0	5.5	* 6.1	5.5	* 6	5.5	* 6.1
Max Green Setting (Gmax), s	12.9	54.0	26.5	* 34	29.5	* 38	3.6	* 56
Max Q Clear Time (g_c+I1), s	14.4	53.7	28.5	28.8	31.5	40.0	3.7	44.5
Green Ext Time (p_c), s	0.0	0.3	0.0	3.9	0.0	0.0	0.0	7.2

Intersection Summary	
HCM 2010 Ctrl Delay	79.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	725	1572	357	116	867	372	253	1286	104	729	1852	841
Future Volume (veh/h)	725	1572	357	116	867	372	253	1286	104	729	1852	841
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	725	1572	357	116	867	372	253	1286	104	729	1852	841
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	713	1466	331	132	903	281	252	1260	392	686	1902	592
Arrive On Green	0.21	0.36	0.36	0.04	0.19	0.19	0.07	0.25	0.25	0.20	0.38	0.38
Sat Flow, veh/h	3408	4112	927	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	725	1281	648	116	867	372	253	1286	104	729	1852	841
Grp Sat Flow(s),veh/h/ln	1704	1679	1681	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	31.4	53.5	53.5	5.3	26.8	28.2	11.2	37.9	8.0	30.5	54.8	57.2
Cycle Q Clear(g_c), s	31.4	53.5	53.5	5.3	26.8	28.2	11.2	37.9	8.0	30.5	54.8	57.2
Prop In Lane	1.00		0.55	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	713	1197	600	132	903	281	252	1260	392	686	1902	592
V/C Ratio(X)	1.02	1.07	1.08	0.88	0.96	1.32	1.00	1.02	0.27	1.06	0.97	1.42
Avail Cap(c_a), veh/h	713	1197	600	132	903	281	252	1260	392	686	1902	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	48.2	48.3	71.6	60.3	60.9	69.4	56.0	44.9	59.8	45.7	46.4
Incr Delay (d2), s/veh	37.8	47.0	60.2	42.6	20.7	168.1	57.7	30.6	0.1	52.1	14.8	198.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.5	32.6	34.8	3.2	13.6	24.7	7.2	21.0	3.5	19.2	27.8	57.2
LnGrp Delay(d),s/veh	97.1	95.2	108.5	114.2	81.0	229.0	127.1	86.7	45.0	111.8	60.5	245.3
LnGrp LOS	F	F	F	F	F	F	F	F	D	F	E	F
Approach Vol, veh/h		2654			1355			1643			3422	
Approach Delay, s/veh		99.0			124.5			90.3			116.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	62.7	36.9	33.7	36.0	43.4	11.6	59.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	11.2	57.2	31.4	28.2	30.5	37.9	6.1	53.5
Max Q Clear Time (g_c+I1), s	13.2	59.2	33.4	30.2	32.5	39.9	7.3	55.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	107.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	770	1155	171	169	798	163	139	896	318	252	1431	465
Future Volume (veh/h)	770	1155	171	169	798	163	139	896	318	252	1431	465
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845	1845	1827	1827	1827	1831	1900
Adj Flow Rate, veh/h	770	1155	171	169	798	163	139	896	318	252	1431	465
Adj No. of Lanes	2	2	1	0	1	1	1	2	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	4
Cap, veh/h	718	738	330	94	443	460	82	1000	447	268	855	265
Arrive On Green	0.21	0.21	0.21	0.29	0.29	0.29	0.05	0.29	0.29	0.08	0.33	0.33
Sat Flow, veh/h	3408	3505	1568	320	1509	1568	1757	3471	1553	3375	2617	811
Grp Volume(v), veh/h	770	1155	171	967	0	163	139	896	318	252	928	968
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1829	0	1568	1757	1736	1553	1688	1740	1688
Q Serve(g_s), s	31.6	31.6	14.5	44.0	0.0	12.3	7.0	37.2	27.5	11.1	49.0	49.0
Cycle Q Clear(g_c), s	31.6	31.6	14.5	44.0	0.0	12.3	7.0	37.2	27.5	11.1	49.0	49.0
Prop In Lane	1.00		1.00	0.17		1.00	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	718	738	330	536	0	460	82	1000	447	268	568	551
V/C Ratio(X)	1.07	1.56	0.52	1.80	0.00	0.35	1.70	0.90	0.71	0.94	1.63	1.76
Avail Cap(c_a), veh/h	718	738	330	536	0	460	82	1000	447	268	568	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.2	59.2	52.4	53.0	0.0	41.8	71.5	51.2	47.8	68.7	50.5	50.5
Incr Delay (d2), s/veh	54.7	260.5	1.4	368.6	0.0	0.5	359.5	10.6	5.2	39.3	292.5	347.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.3	42.0	6.4	77.1	0.0	5.4	11.6	19.3	12.5	6.7	69.7	76.1
LnGrp Delay(d),s/veh	113.9	319.7	53.9	421.6	0.0	42.3	431.0	61.9	53.0	108.0	343.0	398.1
LnGrp LOS	F	F	D	F		D	F	E	D	F	F	F
Approach Vol, veh/h		2096			1130			1353			2148	
Approach Delay, s/veh		222.4			366.9			97.7			340.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	54.0		37.0	16.8	48.2		48.0
Change Period (Y+Rc), s	4.0	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	7.0	49.0		* 32	* 12	43.2		44.0
Max Q Clear Time (g_c+I1), s	9.0	51.0		33.6	13.1	39.2		46.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	3.9		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		259.2	
HCM 2010 LOS		F	

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	409	1696	105	330	996	256	63	695	346	302	1169	288
Future Volume (veh/h)	409	1696	105	330	996	256	63	695	346	302	1169	288
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1845	1827	1845	1845
Adj Flow Rate, veh/h	409	1696	105	330	996	256	63	695	346	302	1169	288
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	467	1532	685	303	1363	739	76	805	360	325	1064	691
Arrive On Green	0.14	0.44	0.44	0.09	0.39	0.39	0.02	0.23	0.23	0.10	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3408	3505	1524	3408	3505	1568	3375	3505	1568
Grp Volume(v), veh/h	409	1696	105	330	996	256	63	695	346	302	1169	288
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1524	1704	1752	1568	1688	1752	1568
Q Serve(g_s), s	15.9	59.0	5.5	12.0	32.8	14.0	2.5	25.7	29.4	12.0	41.0	17.0
Cycle Q Clear(g_c), s	15.9	59.0	5.5	12.0	32.8	14.0	2.5	25.7	29.4	12.0	41.0	17.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	467	1532	685	303	1363	739	76	805	360	325	1064	691
V/C Ratio(X)	0.88	1.11	0.15	1.09	0.73	0.35	0.83	0.86	0.96	0.93	1.10	0.42
Avail Cap(c_a), veh/h	555	1532	685	303	1363	739	76	805	360	325	1064	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	38.0	22.9	61.5	35.2	21.5	65.7	50.0	51.4	60.5	47.0	25.9
Incr Delay (d2), s/veh	12.9	58.3	0.1	77.7	2.0	0.3	51.5	9.6	37.1	31.7	58.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	40.9	2.4	8.9	16.2	5.9	1.7	13.5	16.5	7.0	28.5	7.4
LnGrp Delay(d),s/veh	70.1	96.3	23.0	139.2	37.3	21.8	117.2	59.6	88.5	92.2	105.5	26.3
LnGrp LOS	E	F	C	F	D	C	F	E	F	F	F	C
Approach Vol, veh/h		2210			1582			1104			1759	
Approach Delay, s/veh		88.0			56.0			71.9			90.2	
Approach LOS		F			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	65.0	7.0	47.0	22.5	58.5	17.0	37.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	12.0	59.0	3.0	41.0	22.0	49.0	13.0	31.0
Max Q Clear Time (g_c+I1), s	14.0	61.0	4.5	43.0	17.9	34.8	14.0	31.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.6	13.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	78.3
HCM 2010 LOS	E

Notes

User approved changes to right turn type.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	552	15	19	543	1124	484
Future Volume (veh/h)	552	15	19	543	1124	484
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1727	1900	1827	1827	1827	1900
Adj Flow Rate, veh/h	552	15	19	543	1124	484
Adj No. of Lanes	0	0	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	4	4	4	4
Cap, veh/h	560	15	22	1931	1173	490
Arrive On Green	0.35	0.35	0.01	0.56	0.49	0.49
Sat Flow, veh/h	1594	43	1740	3563	2480	998
Grp Volume(v), veh/h	568	0	19	543	807	801
Grp Sat Flow(s),veh/h/ln	1640	0	1740	1736	1736	1651
Q Serve(g_s), s	36.2	0.0	1.1	8.7	46.6	50.4
Cycle Q Clear(g_c), s	36.2	0.0	1.1	8.7	46.6	50.4
Prop In Lane	0.97	0.03	1.00			0.60
Lane Grp Cap(c), veh/h	577	0	22	1931	853	811
V/C Ratio(X)	0.99	0.00	0.86	0.28	0.95	0.99
Avail Cap(c_a), veh/h	577	0	101	2101	853	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	0.0	51.9	12.3	25.5	26.4
Incr Delay (d2), s/veh	33.6	0.0	27.3	0.0	18.9	28.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.6	0.0	0.7	4.2	26.7	29.3
LnGrp Delay(d),s/veh	67.4	0.0	79.1	12.3	44.4	54.8
LnGrp LOS	E		E	B	D	D
Approach Vol, veh/h	568			562	1608	
Approach Delay, s/veh	67.4			14.6	49.6	
Approach LOS	E			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.8	57.4		41.0		64.2		
Change Period (Y+Rc), s	5.5	* 5.7		4.0		* 5.7		
Max Green Setting (Gmax), s	6.1	* 52		37.0		* 64		
Max Q Clear Time (g_c+I1), s	3.1	52.4		38.2		10.7		
Green Ext Time (p_c), s	0.0	0.0		0.0		7.9		

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D

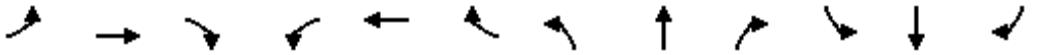
Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	365	46	15	18	27	12	39	1631	0	25	1268	288
Future Volume (veh/h)	365	46	15	18	27	12	39	1631	0	25	1268	288
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1583	1845	1845	1845	1845	1810	1845	1845	1845
Adj Flow Rate, veh/h	365	46	15	18	27	12	39	1631	0	25	1268	288
Adj No. of Lanes	2	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	20	3	3	3	3	5	3	3	3
Cap, veh/h	449	303	257	25	91	77	102	2037	894	38	2009	899
Arrive On Green	0.13	0.16	0.16	0.02	0.05	0.05	0.03	0.58	0.00	0.02	0.57	0.57
Sat Flow, veh/h	3408	1845	1568	1508	1845	1568	3408	3505	1538	1757	3505	1568
Grp Volume(v), veh/h	365	46	15	18	27	12	39	1631	0	25	1268	288
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1508	1845	1568	1704	1752	1538	1757	1752	1568
Q Serve(g_s), s	7.7	1.6	0.6	0.9	1.0	0.5	0.8	27.0	0.0	1.0	17.9	7.1
Cycle Q Clear(g_c), s	7.7	1.6	0.6	0.9	1.0	0.5	0.8	27.0	0.0	1.0	17.9	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	449	303	257	25	91	77	102	2037	894	38	2009	899
V/C Ratio(X)	0.81	0.15	0.06	0.71	0.30	0.16	0.38	0.80	0.00	0.66	0.63	0.32
Avail Cap(c_a), veh/h	460	548	466	81	398	339	184	2082	914	95	2082	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	26.5	26.1	36.2	34.0	33.7	35.3	12.1	0.0	36.0	10.6	8.3
Incr Delay (d2), s/veh	10.5	0.2	0.1	31.1	1.8	0.9	2.4	2.3	0.0	17.4	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.8	0.3	0.6	0.6	0.3	0.4	13.6	0.0	0.7	8.8	3.1
LnGrp Delay(d),s/veh	41.8	26.8	26.2	67.3	35.8	34.7	37.6	14.4	0.0	53.4	11.2	8.5
LnGrp LOS	D	C	C	E	D	C	D	B		D	B	A
Approach Vol, veh/h		426			57			1670			1581	
Approach Delay, s/veh		39.6			45.5			15.0			11.3	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.6	47.1	5.2	16.2	6.2	46.5	13.8	7.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	44.0	4.0	22.0	4.0	44.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	3.0	29.0	2.9	3.6	2.8	19.9	9.7	3.0
Green Ext Time (p_c), s	0.0	14.1	0.0	0.4	0.0	21.9	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	984	765	4	62	455	87	53	835	72	85	660	713
Future Volume (veh/h)	984	765	4	62	455	87	53	835	72	85	660	713
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	984	765	4	62	455	87	53	835	72	85	660	713
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	993	1680	752	104	766	343	91	835	373	116	860	385
Arrive On Green	0.30	0.49	0.49	0.03	0.22	0.22	0.03	0.24	0.24	0.03	0.25	0.25
Sat Flow, veh/h	3312	3406	1524	3312	3406	1524	3343	3438	1538	3343	3438	1538
Grp Volume(v), veh/h	984	765	4	62	455	87	53	835	72	85	660	713
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1656	1703	1524	1672	1719	1538	1672	1719	1538
Q Serve(g_s), s	31.7	15.7	0.1	2.0	12.8	5.0	1.7	26.0	4.0	2.7	19.1	26.8
Cycle Q Clear(g_c), s	31.7	15.7	0.1	2.0	12.8	5.0	1.7	26.0	4.0	2.7	19.1	26.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	993	1680	752	104	766	343	91	835	373	116	860	385
V/C Ratio(X)	0.99	0.46	0.01	0.60	0.59	0.25	0.58	1.00	0.19	0.74	0.77	1.85
Avail Cap(c_a), veh/h	993	1705	763	170	859	384	94	835	373	116	860	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	17.7	13.8	51.2	37.1	34.1	51.5	40.5	32.2	51.2	37.3	40.1
Incr Delay (d2), s/veh	26.3	0.4	0.0	2.0	1.7	0.8	5.4	31.2	0.2	19.2	4.2	393.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.1	7.4	0.1	0.9	6.2	2.2	0.8	15.9	1.7	1.6	9.6	53.5
LnGrp Delay(d),s/veh	63.6	18.1	13.8	53.2	38.8	34.9	56.9	71.7	32.5	70.4	41.5	434.1
LnGrp LOS	E	B	B	D	D	C	E	F	C	E	D	F
Approach Vol, veh/h		1753			604			960			1458	
Approach Delay, s/veh		43.7			39.7			68.0			235.1	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.7	30.1	7.5	32.8	8.0	58.8	8.3	32.0
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	4.6	6.0
Max Green Setting (Gmax), s	32.1	27.0	3.0	26.7	5.5	53.6	3.7	26.0
Max Q Clear Time (g_c+I1), s	33.7	14.8	3.7	28.8	4.0	17.7	4.7	28.0
Green Ext Time (p_c), s	0.0	9.3	0.0	0.0	0.0	20.5	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		106.5
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	764	54	412	908	111	89	568	164	161	870	202
Future Volume (veh/h)	135	764	54	412	908	111	89	568	164	161	870	202
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	135	764	54	412	908	111	89	568	164	161	870	202
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	166	779	55	432	1352	605	98	808	362	193	998	447
Arrive On Green	0.09	0.23	0.23	0.25	0.39	0.39	0.06	0.23	0.23	0.11	0.28	0.28
Sat Flow, veh/h	1757	3321	235	1757	3505	1568	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	135	403	415	412	908	111	89	568	164	161	870	202
Grp Sat Flow(s),veh/h/ln	1757	1752	1803	1757	1752	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	6.7	20.5	20.5	20.7	19.2	4.2	4.5	13.3	8.0	8.0	21.1	9.5
Cycle Q Clear(g_c), s	6.7	20.5	20.5	20.7	19.2	4.2	4.5	13.3	8.0	8.0	21.1	9.5
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	166	411	423	432	1352	605	98	808	362	193	998	447
V/C Ratio(X)	0.81	0.98	0.98	0.95	0.67	0.18	0.91	0.70	0.45	0.83	0.87	0.45
Avail Cap(c_a), veh/h	196	411	423	432	1352	605	98	822	368	196	1018	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	34.0	34.0	33.2	22.8	18.2	42.0	31.6	29.6	39.0	30.4	26.3
Incr Delay (d2), s/veh	19.3	39.0	38.5	31.7	1.3	0.1	61.6	2.7	0.9	25.0	8.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	14.3	14.7	13.8	9.5	1.8	3.9	6.8	3.5	5.2	11.3	4.2
LnGrp Delay(d),s/veh	59.1	73.0	72.6	64.9	24.1	18.3	103.7	34.3	30.5	64.0	38.7	27.0
LnGrp LOS	E	E	E	E	C	B	F	C	C	E	D	C
Approach Vol, veh/h		953			1431			821			1233	
Approach Delay, s/veh		70.8			35.4			41.0			40.1	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	24.6	26.0	25.0	9.0	29.5	12.5	38.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	21.0	22.0	21.0	5.0	26.0	10.0	33.0
Max Q Clear Time (g_c+I1), s	10.0	15.3	22.7	22.5	6.5	23.1	8.7	21.2
Green Ext Time (p_c), s	0.0	4.4	0.0	0.0	0.0	2.4	0.0	8.4

Intersection Summary	
HCM 2010 Ctrl Delay	45.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	643	153	135	693	110	277	795	125	150	1227	187
Future Volume (veh/h)	60	643	153	135	693	110	277	795	125	150	1227	187
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	60	643	153	135	693	110	277	795	125	150	1227	187
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	76	662	296	137	676	107	271	1352	213	184	1209	183
Arrive On Green	0.04	0.19	0.19	0.08	0.22	0.22	0.16	0.45	0.45	0.11	0.40	0.40
Sat Flow, veh/h	1757	3505	1568	1757	3031	481	1740	3006	473	1740	3023	458
Grp Volume(v), veh/h	60	643	153	135	400	403	277	459	461	150	702	712
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1760	1740	1736	1744	1740	1736	1746
Q Serve(g_s), s	3.0	16.4	7.9	6.9	20.1	20.1	14.0	17.8	17.8	7.6	36.0	36.0
Cycle Q Clear(g_c), s	3.0	16.4	7.9	6.9	20.1	20.1	14.0	17.8	17.8	7.6	36.0	36.0
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.27	1.00		0.26
Lane Grp Cap(c), veh/h	76	662	296	137	391	393	271	780	784	184	694	698
V/C Ratio(X)	0.78	0.97	0.52	0.99	1.02	1.03	1.02	0.59	0.59	0.81	1.01	1.02
Avail Cap(c_a), veh/h	78	662	296	137	391	393	271	780	784	290	694	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	36.3	32.8	41.5	35.0	35.0	38.0	18.5	18.5	39.4	27.0	27.0
Incr Delay (d2), s/veh	38.9	27.8	1.6	73.1	51.8	52.1	60.9	1.2	1.2	9.4	36.8	39.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	10.5	3.5	6.1	15.3	15.4	11.3	8.8	8.8	4.1	24.3	24.9
LnGrp Delay(d),s/veh	81.5	64.1	34.4	114.6	86.7	87.0	98.9	19.7	19.7	48.7	63.8	66.2
LnGrp LOS	F	E	C	F	F	F	F	B	B	D	F	F
Approach Vol, veh/h		856			938			1197			1564	
Approach Delay, s/veh		60.0			90.9			38.0			63.5	
Approach LOS		E			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	44.5	11.0	21.0	18.0	40.0	7.9	24.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	35.0	7.0	17.0	14.0	36.0	4.0	20.0
Max Q Clear Time (g_c+I1), s	9.6	19.8	8.9	18.4	16.0	38.0	5.0	22.1
Green Ext Time (p_c), s	0.2	12.3	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	1202	449	45	1624	199	186	771	64	32	1395	152
Future Volume (veh/h)	188	1202	449	45	1624	199	186	771	64	32	1395	152
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	188	1202	449	45	1624	199	186	771	64	32	1395	152
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	174	1314	490	57	1496	466	174	1473	122	40	1308	585
Arrive On Green	0.10	0.37	0.37	0.03	0.30	0.30	0.10	0.45	0.45	0.02	0.38	0.38
Sat Flow, veh/h	1740	3581	1335	1740	4988	1553	1740	3246	269	1740	3471	1553
Grp Volume(v), veh/h	188	1116	535	45	1624	199	186	412	423	32	1395	152
Grp Sat Flow(s),veh/h/ln	1740	1663	1591	1740	1663	1553	1740	1736	1779	1740	1736	1553
Q Serve(g_s), s	13.0	41.6	41.7	3.3	39.0	13.4	13.0	22.1	22.1	2.4	49.0	8.8
Cycle Q Clear(g_c), s	13.0	41.6	41.7	3.3	39.0	13.4	13.0	22.1	22.1	2.4	49.0	8.8
Prop In Lane	1.00		0.84	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	174	1220	584	57	1496	466	174	788	808	40	1308	585
V/C Ratio(X)	1.08	0.91	0.92	0.78	1.09	0.43	1.07	0.52	0.52	0.80	1.07	0.26
Avail Cap(c_a), veh/h	174	1220	584	67	1496	466	174	788	808	80	1308	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	39.2	39.2	62.4	45.5	36.5	58.5	25.4	25.4	63.2	40.5	28.0
Incr Delay (d2), s/veh	91.3	10.7	19.4	39.5	50.1	0.6	87.8	0.6	0.6	28.7	44.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	20.9	21.4	2.2	24.8	5.8	10.5	10.7	10.9	1.5	31.5	3.8
LnGrp Delay(d),s/veh	149.8	49.9	58.6	101.9	95.6	37.2	146.3	26.1	26.1	91.9	85.1	28.2
LnGrp LOS	F	D	E	F	F	D	F	C	C	F	F	C
Approach Vol, veh/h		1839			1868			1021			1579	
Approach Delay, s/veh		62.6			89.6			48.0			79.8	
Approach LOS		E			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	63.0	8.3	51.7	17.0	53.0	17.0	43.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	56.0	5.0	47.0	13.0	49.0	13.0	39.0
Max Q Clear Time (g_c+I1), s	4.4	24.1	5.3	43.7	15.0	51.0	15.0	41.0
Green Ext Time (p_c), s	0.0	22.3	0.0	3.2	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	72.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	1434	136	278	1394	10	248	288	140	302	1162	147
Future Volume (veh/h)	152	1434	136	278	1394	10	248	288	140	302	1162	147
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	152	1434	136	278	1394	10	248	288	140	302	1162	147
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	139	1304	123	174	1481	663	164	703	315	327	1028	460
Arrive On Green	0.08	0.41	0.41	0.10	0.43	0.43	0.09	0.20	0.20	0.19	0.29	0.29
Sat Flow, veh/h	1740	3207	302	1740	3471	1553	1757	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	152	772	798	278	1394	10	248	288	140	302	1162	147
Grp Sat Flow(s),veh/h/ln	1740	1736	1774	1740	1736	1553	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	12.0	61.0	61.0	15.0	57.7	0.6	14.0	10.7	11.8	25.3	44.0	11.0
Cycle Q Clear(g_c), s	12.0	61.0	61.0	15.0	57.7	0.6	14.0	10.7	11.8	25.3	44.0	11.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	706	721	174	1481	663	164	703	315	327	1028	460
V/C Ratio(X)	1.09	1.09	1.11	1.60	0.94	0.02	1.51	0.41	0.45	0.92	1.13	0.32
Avail Cap(c_a), veh/h	139	706	721	174	1481	663	164	703	315	410	1028	460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.0	44.5	44.5	67.5	41.2	24.8	68.0	52.2	52.6	60.0	53.0	41.3
Incr Delay (d2), s/veh	103.1	62.4	66.5	294.3	12.1	0.0	259.4	0.4	1.0	23.3	71.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	41.5	43.2	21.4	30.2	0.2	18.6	5.2	5.2	14.5	31.4	4.8
LnGrp Delay(d),s/veh	172.1	106.9	111.0	361.8	53.3	24.8	327.4	52.6	53.6	83.3	124.1	41.7
LnGrp LOS	F	F	F	F	D	C	F	D	D	F	F	D
Approach Vol, veh/h		1722			1682			676			1611	
Approach Delay, s/veh		114.5			104.1			153.6			109.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.9	34.1	19.0	65.0	18.0	48.0	16.0	68.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	35.0	23.0	15.0	61.0	14.0	44.0	12.0	64.0
Max Q Clear Time (g_c+I1), s	27.3	13.8	17.0	63.0	16.0	46.0	14.0	59.7
Green Ext Time (p_c), s	0.6	6.7	0.0	0.0	0.0	0.0	0.0	4.1

Intersection Summary		
HCM 2010 Ctrl Delay		114.5
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	590	41	70	596	51	61	967	84	181	1391	641
Future Volume (veh/h)	61	590	41	70	596	51	61	967	84	181	1391	641
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	61	590	41	70	596	51	61	967	84	181	1391	641
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	139	1024	319	149	1039	324	139	1366	119	271	1603	717
Arrive On Green	0.04	0.21	0.21	0.04	0.21	0.21	0.04	0.42	0.42	0.08	0.46	0.46
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	3232	281	3375	3471	1553
Grp Volume(v), veh/h	61	590	41	70	596	51	61	519	532	181	1391	641
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1736	1777	1688	1736	1553
Q Serve(g_s), s	1.1	6.9	1.4	1.3	6.9	1.7	1.1	15.9	15.9	3.4	23.3	24.5
Cycle Q Clear(g_c), s	1.1	6.9	1.4	1.3	6.9	1.7	1.1	15.9	15.9	3.4	23.3	24.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	139	1024	319	149	1039	324	139	734	751	271	1603	717
V/C Ratio(X)	0.44	0.58	0.13	0.47	0.57	0.16	0.44	0.71	0.71	0.67	0.87	0.89
Avail Cap(c_a), veh/h	209	1234	384	209	1234	384	209	751	770	313	1610	720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	23.2	21.0	30.2	23.0	20.9	30.3	15.4	15.4	28.9	15.6	15.9
Incr Delay (d2), s/veh	2.2	0.5	0.2	2.3	0.5	0.2	2.2	3.0	2.9	4.4	5.3	13.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.2	0.6	0.7	3.2	0.8	0.6	8.1	8.3	1.7	12.2	13.0
LnGrp Delay(d),s/veh	32.4	23.7	21.2	32.4	23.5	21.2	32.4	18.4	18.3	33.3	20.9	29.6
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	C	C
Approach Vol, veh/h		692			717			1112			2213	
Approach Delay, s/veh		24.3			24.2			19.1			24.4	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	31.3	6.9	17.3	6.7	33.9	6.7	17.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	28.0	4.0	16.0	4.0	30.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	5.4	17.9	3.3	8.9	3.1	26.5	3.1	8.9
Green Ext Time (p_c), s	0.0	9.3	0.0	4.4	0.0	3.4	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	392	166	30	401	3	70	225	10	18	459	87
Future Volume (veh/h)	36	392	166	30	401	3	70	225	10	18	459	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1827	1827	1827	1845	1845	1845
Adj Flow Rate, veh/h	36	392	166	30	401	3	70	225	10	18	459	87
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	3	3	3
Cap, veh/h	55	619	259	48	901	7	88	652	554	31	598	508
Arrive On Green	0.03	0.26	0.26	0.03	0.26	0.26	0.05	0.36	0.36	0.02	0.32	0.32
Sat Flow, veh/h	1740	2388	998	1740	3531	26	1740	1827	1553	1757	1845	1568
Grp Volume(v), veh/h	36	284	274	30	197	207	70	225	10	18	459	87
Grp Sat Flow(s),veh/h/ln	1740	1736	1651	1740	1736	1822	1740	1827	1553	1757	1845	1568
Q Serve(g_s), s	1.0	6.8	7.0	0.8	4.5	4.5	1.9	4.3	0.2	0.5	10.6	1.9
Cycle Q Clear(g_c), s	1.0	6.8	7.0	0.8	4.5	4.5	1.9	4.3	0.2	0.5	10.6	1.9
Prop In Lane	1.00		0.60	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	55	450	428	48	443	465	88	652	554	31	598	508
V/C Ratio(X)	0.65	0.63	0.64	0.63	0.44	0.45	0.79	0.34	0.02	0.58	0.77	0.17
Avail Cap(c_a), veh/h	147	587	558	147	587	616	147	772	657	149	780	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	15.5	15.6	22.8	14.8	14.8	22.2	11.2	9.8	23.1	14.4	11.4
Incr Delay (d2), s/veh	12.1	1.5	1.6	12.6	0.7	0.7	14.4	0.3	0.0	15.6	3.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.4	3.3	0.6	2.2	2.3	1.2	2.2	0.1	0.4	5.9	0.8
LnGrp Delay(d),s/veh	34.7	17.0	17.2	35.4	15.5	15.5	36.6	11.5	9.9	38.6	17.8	11.6
LnGrp LOS	C	B	B	D	B	B	D	B	A	D	B	B
Approach Vol, veh/h		594			434			305			564	
Approach Delay, s/veh		18.1			16.9			17.2			17.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.8	20.9	5.3	16.3	6.4	19.3	5.5	16.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	20.0	4.0	16.0	4.0	20.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	2.5	6.3	2.8	9.0	3.9	12.6	3.0	6.5
Green Ext Time (p_c), s	0.0	3.9	0.0	3.3	0.0	2.7	0.0	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	6	258	50	9	1	193	1512	55	1	1853	0
Future Volume (veh/h)	1	6	258	50	9	1	193	1512	55	1	1853	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1759	1900	1845	1845	1900	1792	1792	1792	1792	1792	1900
Adj Flow Rate, veh/h	1	6	258	50	9	1	193	1512	55	1	1853	0
Adj No. of Lanes	0	1	0	1	1	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	1	4	183	78	72	8	214	1793	802	306	1976	0
Arrive On Green	0.13	0.13	0.13	0.04	0.04	0.04	0.13	0.53	0.53	0.18	0.58	0.00
Sat Flow, veh/h	6	34	1461	1757	1631	181	1707	3406	1524	1707	3495	0
Grp Volume(v), veh/h	265	0	0	50	0	10	193	1512	55	1	1853	0
Grp Sat Flow(s),veh/h/ln	1501	0	0	1757	0	1813	1707	1703	1524	1707	1703	0
Q Serve(g_s), s	16.0	0.0	0.0	3.6	0.0	0.7	14.3	48.3	2.3	0.1	64.0	0.0
Cycle Q Clear(g_c), s	16.0	0.0	0.0	3.6	0.0	0.7	14.3	48.3	2.3	0.1	64.0	0.0
Prop In Lane	0.00		0.97	1.00		0.10	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	188	0	0	78	0	80	214	1793	802	306	1976	0
V/C Ratio(X)	1.41	0.00	0.00	0.64	0.00	0.12	0.90	0.84	0.07	0.00	0.94	0.00
Avail Cap(c_a), veh/h	188	0	0	220	0	227	214	2344	1049	306	2024	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.9	0.0	0.0	60.1	0.0	58.7	55.2	25.8	14.9	43.1	24.7	0.0
Incr Delay (d2), s/veh	213.3	0.0	0.0	8.6	0.0	0.7	36.4	2.3	0.0	0.0	9.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	0.0	0.0	1.9	0.0	0.4	8.9	23.3	1.0	0.0	32.3	0.0
LnGrp Delay(d),s/veh	269.3	0.0	0.0	68.7	0.0	59.4	91.6	28.1	14.9	43.1	33.7	0.0
LnGrp LOS	F			E		E	F	C	B	D	C	
Approach Vol, veh/h		265			60			1760			1854	
Approach Delay, s/veh		269.3			67.1			34.6			33.7	
Approach LOS		F			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.9	71.3		20.0	20.0	78.2		9.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	88.0		16.0	16.0	76.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	50.3		18.0	16.3	66.0		5.6
Green Ext Time (p_c), s	1.8	17.0		0.0	0.0	8.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	50.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	15	38	145	6	210	41	1466	172	715	1465	6
Future Volume (veh/h)	11	15	38	145	6	210	41	1466	172	715	1465	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	11	15	38	145	6	210	41	1466	172	715	1465	6
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	17	42	107	119	7	228	53	1245	145	596	2516	10
Arrive On Green	0.01	0.09	0.09	0.07	0.15	0.15	0.03	0.39	0.39	0.34	0.70	0.70
Sat Flow, veh/h	1757	463	1174	1757	44	1531	1757	3164	368	1757	3580	15
Grp Volume(v), veh/h	11	0	53	145	0	216	41	806	832	715	717	754
Grp Sat Flow(s),veh/h/ln	1757	0	1637	1757	0	1575	1757	1752	1780	1757	1752	1842
Q Serve(g_s), s	0.9	0.0	4.5	10.0	0.0	19.9	3.4	58.0	58.0	50.0	30.3	30.4
Cycle Q Clear(g_c), s	0.9	0.0	4.5	10.0	0.0	19.9	3.4	58.0	58.0	50.0	30.3	30.4
Prop In Lane	1.00		0.72	1.00		0.97	1.00		0.21	1.00		0.01
Lane Grp Cap(c), veh/h	17	0	149	119	0	235	53	690	700	596	1231	1294
V/C Ratio(X)	0.64	0.00	0.36	1.22	0.00	0.92	0.78	1.17	1.19	1.20	0.58	0.58
Avail Cap(c_a), veh/h	48	0	178	119	0	235	107	690	700	596	1231	1294
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.7	0.0	62.9	68.7	0.0	61.9	71.0	44.7	44.7	48.7	11.0	11.0
Incr Delay (d2), s/veh	32.8	0.0	1.4	151.9	0.0	37.9	21.4	91.0	98.7	105.4	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.1	9.9	0.0	11.2	2.0	45.4	47.6	41.6	14.8	15.5
LnGrp Delay(d),s/veh	105.5	0.0	64.4	220.6	0.0	99.7	92.4	135.7	143.4	154.1	11.7	11.7
LnGrp LOS	F		E	F		F	F	F	F	F	B	B
Approach Vol, veh/h		64			361			1679			2186	
Approach Delay, s/veh		71.4			148.3			138.4			58.3	
Approach LOS		E			F			F			E	

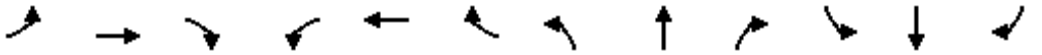
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	54.0	62.0	14.0	17.4	8.4	107.6	5.5	26.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	50.0	58.0	10.0	16.0	9.0	99.0	4.0	22.0
Max Q Clear Time (g_c+I1), s	52.0	60.0	12.0	6.5	5.4	32.4	2.9	21.9
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	51.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	97.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	324	12	14	1	6	4	10	1278	0	3	1357	355
Future Volume (veh/h)	324	12	14	1	6	4	10	1278	0	3	1357	355
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	324	12	14	1	6	4	10	1278	0	3	1357	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	374	14	346	2	10	7	18	1854	0	6	1830	819
Arrive On Green	0.22	0.22	0.22	0.01	0.01	0.01	0.01	0.53	0.00	0.00	0.52	0.00
Sat Flow, veh/h	1697	63	1568	157	941	628	1757	3597	0	1757	3505	1568
Grp Volume(v), veh/h	336	0	14	11	0	0	10	1278	0	3	1357	0
Grp Sat Flow(s),veh/h/ln	1760	0	1568	1726	0	0	1757	1752	0	1757	1752	1568
Q Serve(g_s), s	12.5	0.0	0.5	0.4	0.0	0.0	0.4	18.3	0.0	0.1	20.5	0.0
Cycle Q Clear(g_c), s	12.5	0.0	0.5	0.4	0.0	0.0	0.4	18.3	0.0	0.1	20.5	0.0
Prop In Lane	0.96		1.00	0.09		0.36	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	388	0	346	19	0	0	18	1854	0	6	1830	819
V/C Ratio(X)	0.87	0.00	0.04	0.58	0.00	0.00	0.56	0.69	0.00	0.53	0.74	0.00
Avail Cap(c_a), veh/h	441	0	393	407	0	0	104	1913	0	104	1913	856
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.4	0.0	20.8	33.4	0.0	0.0	33.4	11.8	0.0	33.7	12.6	0.0
Incr Delay (d2), s/veh	14.9	0.0	0.0	24.7	0.0	0.0	24.9	1.0	0.0	59.5	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	0.2	0.3	0.0	0.0	0.3	9.0	0.0	0.1	10.2	0.0
LnGrp Delay(d),s/veh	40.4	0.0	20.8	58.0	0.0	0.0	58.3	12.9	0.0	93.2	14.1	0.0
LnGrp LOS	D		C	E			E	B		F	B	
Approach Vol, veh/h		350			11			1288			1360	
Approach Delay, s/veh		39.6			58.0			13.2			14.3	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.2	39.9		19.0	4.7	39.4		4.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	37.0		17.0	4.0	37.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	20.3		14.5	2.4	22.5		2.4
Green Ext Time (p_c), s	0.0	14.6		0.5	0.0	12.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	1107	309	76	721	3	566	1221	90	4	1036	328
Future Volume (veh/h)	334	1107	309	76	721	3	566	1221	90	4	1036	328
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	334	1107	309	76	721	3	566	1221	90	4	1036	328
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	381	1101	493	129	842	377	571	1630	729	14	1057	473
Arrive On Green	0.11	0.31	0.31	0.04	0.24	0.24	0.17	0.46	0.46	0.00	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	334	1107	309	76	721	3	566	1221	90	4	1036	328
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	8.6	28.1	15.1	2.0	17.6	0.1	14.8	25.6	2.9	0.1	26.2	16.5
Cycle Q Clear(g_c), s	8.6	28.1	15.1	2.0	17.6	0.1	14.8	25.6	2.9	0.1	26.2	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	1101	493	129	842	377	571	1630	729	14	1057	473
V/C Ratio(X)	0.88	1.01	0.63	0.59	0.86	0.01	0.99	0.75	0.12	0.28	0.98	0.69
Avail Cap(c_a), veh/h	381	1101	493	152	861	385	571	1630	729	152	1057	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	30.7	26.2	42.4	32.5	25.9	37.2	19.7	13.6	44.4	31.0	27.6
Incr Delay (d2), s/veh	20.0	28.5	2.5	4.2	8.4	0.0	35.3	2.0	0.1	10.0	22.8	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	17.8	6.8	1.0	9.5	0.1	9.7	12.7	1.3	0.1	16.0	7.7
LnGrp Delay(d),s/veh	59.2	59.2	28.7	46.6	40.9	25.9	72.5	21.6	13.7	54.5	53.8	31.9
LnGrp LOS	E	F	C	D	D	C	E	C	B	D	D	C
Approach Vol, veh/h		1750			800			1877			1368	
Approach Delay, s/veh		53.8			41.4			36.6			48.6	
Approach LOS		D			D			D			D	

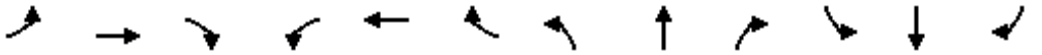
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.4	45.6	7.4	32.1	19.0	31.0	14.0	25.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.0	4.0	28.0	15.0	27.0	10.0	22.0
Max Q Clear Time (g_c+I1), s	2.1	27.6	4.0	30.1	16.8	28.2	10.6	19.6
Green Ext Time (p_c), s	0.0	9.3	0.0	0.0	0.0	0.0	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	45.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	2471	418	31	2146	213	126	79	27	250	222	191
Future Volume (veh/h)	212	2471	418	31	2146	213	126	79	27	250	222	191
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	212	2471	418	31	2146	213	126	79	27	250	222	191
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	167	1976	325	39	1882	184	131	193	164	191	256	218
Arrive On Green	0.09	0.66	0.66	0.02	0.58	0.58	0.07	0.10	0.10	0.11	0.14	0.14
Sat Flow, veh/h	1757	3014	496	1757	3226	315	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	212	1407	1482	31	1149	1210	126	79	27	250	222	191
Grp Sat Flow(s),veh/h/ln	1757	1752	1757	1757	1752	1789	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	14.0	96.7	96.7	2.6	86.0	86.0	10.5	5.9	2.3	16.0	17.4	17.6
Cycle Q Clear(g_c), s	14.0	96.7	96.7	2.6	86.0	86.0	10.5	5.9	2.3	16.0	17.4	17.6
Prop In Lane	1.00		0.28	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	1149	1152	39	1022	1043	131	193	164	191	256	218
V/C Ratio(X)	1.27	1.22	1.29	0.79	1.12	1.16	0.96	0.41	0.16	1.31	0.87	0.88
Avail Cap(c_a), veh/h	167	1149	1152	48	1022	1043	131	225	191	191	288	245
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.7	25.4	25.4	71.7	30.7	30.7	68.0	61.7	60.1	65.7	62.2	62.3
Incr Delay (d2), s/veh	160.5	109.1	135.3	50.4	69.0	82.7	66.6	1.4	0.5	172.5	21.6	26.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	81.1	89.7	1.8	61.0	66.3	7.5	3.1	1.0	16.9	10.4	9.2
LnGrp Delay(d),s/veh	227.2	134.5	160.7	122.2	99.7	113.4	134.6	63.1	60.6	238.2	83.8	88.6
LnGrp LOS	F	F	F	F	F	F	F	E	E	F	F	F
Approach Vol, veh/h		3101			2390			232			663	
Approach Delay, s/veh		153.3			106.9			101.6			143.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	19.5	7.3	100.7	15.0	24.5	18.0	90.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	18.0	4.0	96.0	11.0	23.0	14.0	86.0
Max Q Clear Time (g_c+I1), s	18.0	7.9	4.6	98.7	12.5	19.6	16.0	88.0
Green Ext Time (p_c), s	0.0	1.8	0.0	0.0	0.0	0.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	133.1
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1359	1159	590	4	709	282	599	1283	3	372	1573	769
Future Volume (veh/h)	1359	1159	590	4	709	282	599	1283	3	372	1573	769
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	1359	1159	590	4	709	282	599	1283	3	372	1573	769
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1101	2226	693	14	620	193	498	1550	483	419	1433	446
Arrive On Green	0.32	0.44	0.44	0.00	0.12	0.12	0.15	0.31	0.31	0.12	0.28	0.28
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	1359	1159	590	4	709	282	599	1283	3	372	1573	769
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	42.0	21.7	43.8	0.2	16.0	16.0	19.0	30.8	0.2	14.0	37.0	37.0
Cycle Q Clear(g_c), s	42.0	21.7	43.8	0.2	16.0	16.0	19.0	30.8	0.2	14.0	37.0	37.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1101	2226	693	14	620	193	498	1550	483	419	1433	446
V/C Ratio(X)	1.23	0.52	0.85	0.28	1.14	1.46	1.20	0.83	0.01	0.89	1.10	1.72
Avail Cap(c_a), veh/h	1101	2226	693	105	620	193	498	1550	483	419	1433	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	26.3	32.4	64.5	57.0	57.0	55.5	41.8	31.2	56.1	46.5	46.5
Incr Delay (d2), s/veh	113.4	0.2	9.9	10.6	82.8	233.8	109.1	3.9	0.0	20.1	55.1	334.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.1	10.1	20.8	0.1	12.2	19.4	16.5	14.8	0.1	7.7	24.4	57.5
LnGrp Delay(d),s/veh	157.4	26.5	42.4	75.1	139.8	290.8	164.6	45.7	31.2	76.2	101.6	381.3
LnGrp LOS	F	C	D	E	F	F	F	D	C	E	F	F
Approach Vol, veh/h		3108			995			1885			2714	
Approach Delay, s/veh		86.8			182.3			83.4			177.4	
Approach LOS		F			F			F			F	

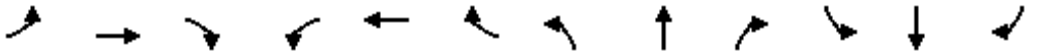
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	44.0	4.5	61.5	23.0	41.0	46.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	40.0	4.0	54.0	19.0	37.0	42.0	16.0
Max Q Clear Time (g_c+I1), s	16.0	32.8	2.2	45.8	21.0	39.0	44.0	18.0
Green Ext Time (p_c), s	0.0	7.0	0.0	7.3	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		125.2
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	988	632	220	663	701	335	511	377	809	971	0
Future Volume (veh/h)	0	988	632	220	663	701	335	511	377	809	971	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	988	632	220	663	701	335	511	377	809	971	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1259	392	256	1888	588	413	789	353	852	1240	555
Arrive On Green	0.00	0.25	0.25	0.08	0.38	0.38	0.12	0.22	0.22	0.25	0.35	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	988	632	220	663	701	335	511	377	809	971	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	14.6	20.0	5.1	7.6	30.0	7.7	10.6	18.0	18.7	19.8	0.0
Cycle Q Clear(g_c), s	0.0	14.6	20.0	5.1	7.6	30.0	7.7	10.6	18.0	18.7	19.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1259	392	256	1888	588	413	789	353	852	1240	555
V/C Ratio(X)	0.00	0.78	1.61	0.86	0.35	1.19	0.81	0.65	1.07	0.95	0.78	0.00
Avail Cap(c_a), veh/h	170	1259	392	256	1888	588	426	789	353	852	1240	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	28.0	30.0	36.6	18.0	25.0	34.3	28.1	31.0	29.5	23.1	0.0
Incr Delay (d2), s/veh	0.0	3.3	287.1	24.5	0.1	102.5	11.0	1.9	67.3	19.6	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.2	39.9	3.3	3.5	29.6	4.2	5.3	14.3	11.1	10.2	0.0
LnGrp Delay(d),s/veh	0.0	31.3	317.1	61.0	18.1	127.5	45.2	30.0	98.3	49.1	26.5	0.0
LnGrp LOS		C	F	E	B	F	D	C	F	D	C	
Approach Vol, veh/h		1620			1584			1223			1780	
Approach Delay, s/veh		142.8			72.5			55.2			36.8	
Approach LOS		F			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	22.0	10.0	24.0	13.7	32.3	0.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	18.0	6.0	20.0	10.0	28.0	4.0	22.0
Max Q Clear Time (g_c+I1), s	20.7	20.0	7.1	22.0	9.7	21.8	0.0	32.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	77.2
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	219	24	103	91	496	14	540	140	859	928	48
Future Volume (veh/h)	200	219	24	103	91	496	14	540	140	859	928	48
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	200	219	24	103	91	496	14	540	140	859	928	48
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	251	362	162	704	827	370	47	713	319	855	1544	691
Arrive On Green	0.07	0.10	0.10	0.21	0.24	0.24	0.01	0.20	0.20	0.25	0.44	0.44
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	200	219	24	103	91	496	14	540	140	859	928	48
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.9	4.1	0.8	1.7	1.4	16.0	0.3	9.8	3.1	17.0	13.7	1.2
Cycle Q Clear(g_c), s	3.9	4.1	0.8	1.7	1.4	16.0	0.3	9.8	3.1	17.0	13.7	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	362	162	704	827	370	47	713	319	855	1544	691
V/C Ratio(X)	0.80	0.61	0.15	0.15	0.11	1.34	0.30	0.76	0.44	1.01	0.60	0.07
Avail Cap(c_a), veh/h	251	827	370	704	827	370	201	827	370	855	1544	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	29.1	20.2	22.0	20.3	25.9	33.1	25.4	8.3	25.4	14.4	10.9
Incr Delay (d2), s/veh	16.1	1.6	0.4	0.1	0.1	170.4	3.5	3.5	0.9	32.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.0	0.4	0.8	0.7	24.4	0.2	5.1	2.1	11.6	6.7	0.5
LnGrp Delay(d),s/veh	47.0	30.7	20.6	22.1	20.4	196.3	36.7	28.9	9.2	57.5	15.1	11.0
LnGrp LOS	D	C	C	C	C	F	D	C	A	F	B	B
Approach Vol, veh/h		443			690			694			1835	
Approach Delay, s/veh		37.5			147.1			25.1			34.8	
Approach LOS		D			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	17.8	18.0	11.0	4.9	33.9	9.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	16.0	5.0	16.0	4.0	29.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	19.0	11.8	3.7	6.1	2.3	15.7	5.9	18.0
Green Ext Time (p_c), s	0.0	2.0	0.5	0.9	0.0	8.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	680	216	28	505	125	143	347	28	243	488	148
Future Volume (veh/h)	245	680	216	28	505	125	143	347	28	243	488	148
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	245	680	216	28	505	125	143	347	28	243	488	148
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	370	1340	600	85	1048	469	236	757	339	367	892	399
Arrive On Green	0.11	0.38	0.38	0.02	0.30	0.30	0.07	0.22	0.22	0.11	0.25	0.25
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	245	680	216	28	505	125	143	347	28	243	488	148
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	4.1	8.8	5.9	0.5	7.0	3.6	2.4	5.1	0.8	4.1	7.2	4.6
Cycle Q Clear(g_c), s	4.1	8.8	5.9	0.5	7.0	3.6	2.4	5.1	0.8	4.1	7.2	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	370	1340	600	85	1048	469	236	757	339	367	892	399
V/C Ratio(X)	0.66	0.51	0.36	0.33	0.48	0.27	0.61	0.46	0.08	0.66	0.55	0.37
Avail Cap(c_a), veh/h	745	2061	922	229	1531	685	458	1296	580	745	1590	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	14.1	13.2	28.5	17.1	15.9	26.9	20.3	18.6	25.5	19.2	18.3
Incr Delay (d2), s/veh	2.0	0.3	0.4	2.2	0.3	0.3	2.5	0.4	0.1	2.0	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.3	2.6	0.3	3.4	1.6	1.2	2.5	0.4	2.0	3.5	2.1
LnGrp Delay(d),s/veh	27.5	14.4	13.5	30.8	17.4	16.2	29.4	20.7	18.7	27.6	19.7	18.8
LnGrp LOS	C	B	B	C	B	B	C	C	B	C	B	B
Approach Vol, veh/h		1141			658			518			879	
Approach Delay, s/veh		17.0			17.8			23.0			21.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	16.9	5.5	26.8	8.1	19.1	10.5	21.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	22.0	4.0	35.0	8.0	27.0	13.0	26.0
Max Q Clear Time (g_c+I1), s	6.1	7.1	2.5	10.8	4.4	9.2	6.1	9.0
Green Ext Time (p_c), s	0.5	5.5	0.0	10.5	0.1	6.0	0.5	8.8

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	1109	509	51	1014	91	180	39	26	208	182	57
Future Volume (veh/h)	109	1109	509	51	1014	91	180	39	26	208	182	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	109	1109	509	51	1014	91	180	39	26	208	182	57
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	139	1457	652	68	1315	588	223	237	201	253	269	229
Arrive On Green	0.08	0.42	0.42	0.04	0.38	0.38	0.13	0.13	0.13	0.14	0.15	0.15
Sat Flow, veh/h	1757	3505	1568	1757	3505	1568	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	109	1109	509	51	1014	91	180	39	26	208	182	57
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1568	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	3.6	15.8	16.5	1.7	14.9	2.3	5.8	1.1	0.9	6.7	5.5	1.9
Cycle Q Clear(g_c), s	3.6	15.8	16.5	1.7	14.9	2.3	5.8	1.1	0.9	6.7	5.5	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	1457	652	68	1315	588	223	237	201	253	269	229
V/C Ratio(X)	0.79	0.76	0.78	0.75	0.77	0.15	0.81	0.16	0.13	0.82	0.68	0.25
Avail Cap(c_a), veh/h	150	1457	652	120	1376	616	240	535	455	270	567	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	14.6	14.8	27.9	16.1	12.1	24.9	22.7	22.6	24.3	23.7	22.2
Incr Delay (d2), s/veh	22.2	2.4	6.1	15.5	2.6	0.1	17.2	0.3	0.3	17.2	3.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	8.0	8.1	1.1	7.7	1.0	3.9	0.6	0.4	4.4	3.0	0.8
LnGrp Delay(d),s/veh	48.7	17.0	20.9	43.3	18.7	12.3	42.1	23.1	22.9	41.5	26.7	22.7
LnGrp LOS	D	B	C	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1727			1156			245			447	
Approach Delay, s/veh		20.2			19.3			37.1			33.1	
Approach LOS		C			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	11.5	6.3	28.4	11.4	12.5	8.6	26.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	17.0	4.0	24.0	8.0	18.0	5.0	23.0
Max Q Clear Time (g_c+I1), s	8.7	3.1	3.7	18.5	7.8	7.5	5.6	16.9
Green Ext Time (p_c), s	0.0	1.2	0.0	5.1	0.0	1.1	0.0	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	22.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	321	149	139	191	33	212	64	35	205	201	16
Future Volume (veh/h)	46	321	149	139	191	33	212	64	35	205	201	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	46	321	149	139	191	33	212	64	35	205	201	16
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	450	383	176	469	81	256	200	109	254	298	24
Arrive On Green	0.04	0.24	0.24	0.10	0.31	0.31	0.15	0.18	0.18	0.14	0.18	0.18
Sat Flow, veh/h	1757	1845	1568	1757	1533	265	1757	1122	614	1757	1687	134
Grp Volume(v), veh/h	46	321	149	139	0	224	212	0	99	205	0	217
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	0	1798	1757	0	1736	1757	0	1821
Q Serve(g_s), s	1.2	7.7	3.8	3.7	0.0	4.7	5.6	0.0	2.4	5.4	0.0	5.3
Cycle Q Clear(g_c), s	1.2	7.7	3.8	3.7	0.0	4.7	5.6	0.0	2.4	5.4	0.0	5.3
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.35	1.00		0.07
Lane Grp Cap(c), veh/h	67	450	383	176	0	550	256	0	309	254	0	322
V/C Ratio(X)	0.69	0.71	0.39	0.79	0.00	0.41	0.83	0.00	0.32	0.81	0.00	0.67
Avail Cap(c_a), veh/h	183	614	522	183	0	599	256	0	578	256	0	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.8	16.6	15.2	21.1	0.0	13.2	19.9	0.0	17.2	19.9	0.0	18.5
Incr Delay (d2), s/veh	11.7	2.5	0.6	19.7	0.0	0.5	19.7	0.0	0.6	17.0	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.1	1.7	2.7	0.0	2.4	4.1	0.0	1.2	3.8	0.0	2.9
LnGrp Delay(d),s/veh	34.5	19.1	15.8	40.8	0.0	13.7	39.7	0.0	17.8	36.9	0.0	20.9
LnGrp LOS	C	B	B	D		B	D		B	D		C
Approach Vol, veh/h		516			363			311			422	
Approach Delay, s/veh		19.5			24.1			32.7			28.7	
Approach LOS		B			C			C			C	

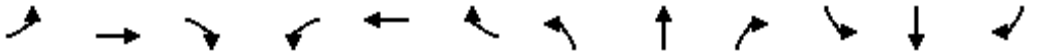
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	12.6	8.8	15.7	11.0	12.5	5.8	18.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	16.0	5.0	16.0	7.0	16.0	5.0	16.0
Max Q Clear Time (g_c+I1), s	7.4	4.4	5.7	9.7	7.6	7.3	3.2	6.7
Green Ext Time (p_c), s	0.0	1.4	0.0	2.1	0.0	1.1	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	257	0	0	379	202	0	0	0	518	0	0
Future Volume (veh/h)	0	257	0	0	379	202	0	0	0	518	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	257	0	0	379	202	0	0	0	518	0	0
Adj No. of Lanes	2	2	1	1	2	1	1	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	15	1258	563	8	1258	563	8	8	7	951	515	438
Arrive On Green	0.00	0.36	0.00	0.00	0.36	0.36	0.00	0.00	0.00	0.28	0.00	0.00
Sat Flow, veh/h	3408	3505	1568	1757	3505	1568	1757	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	0	257	0	0	379	202	0	0	0	518	0	0
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1757	1752	1568	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	0.0	1.1	0.0	0.0	1.7	2.1	0.0	0.0	0.0	2.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.1	0.0	0.0	1.7	2.1	0.0	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	15	1258	563	8	1258	563	8	8	7	951	515	438
V/C Ratio(X)	0.00	0.20	0.00	0.00	0.30	0.36	0.00	0.00	0.00	0.54	0.00	0.00
Avail Cap(c_a), veh/h	617	2537	1135	318	2537	1135	318	1419	1206	2622	2504	2128
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.9	0.0	0.0	5.1	5.2	0.0	0.0	0.0	6.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.1	0.4	0.0	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.5	0.0	0.0	0.8	0.9	0.0	0.0	0.0	1.4	0.0	0.0
LnGrp Delay(d),s/veh	0.0	5.0	0.0	0.0	5.2	5.6	0.0	0.0	0.0	7.3	0.0	0.0
LnGrp LOS		A			A	A				A		
Approach Vol, veh/h		257			581			0			518	
Approach Delay, s/veh		5.0			5.4			0.0			7.3	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	0.0	0.0	11.9	0.0	10.2	0.0	11.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	17.0	4.0	16.0	4.0	30.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	4.9	0.0	0.0	3.1	0.0	0.0	0.0	4.1
Green Ext Time (p_c), s	1.6	0.0	0.0	4.0	0.0	0.0	0.0	3.9

Intersection Summary		
HCM 2010 Ctrl Delay		6.0
HCM 2010 LOS		A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	5	28	200	21	70	58	1134	75	162	1182	88
Future Volume (veh/h)	50	5	28	200	21	70	58	1134	75	162	1182	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	50	5	28	200	21	70	58	1134	75	162	1182	88
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	62	92	78	243	282	240	72	1512	100	201	1740	129
Arrive On Green	0.04	0.05	0.05	0.14	0.15	0.15	0.04	0.45	0.45	0.11	0.53	0.53
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3338	221	1757	3308	246
Grp Volume(v), veh/h	50	5	28	200	21	70	58	595	614	162	626	644
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1806	1757	1752	1801
Q Serve(g_s), s	1.8	0.2	1.1	7.2	0.6	2.6	2.1	18.4	18.4	5.9	17.2	17.3
Cycle Q Clear(g_c), s	1.8	0.2	1.1	7.2	0.6	2.6	2.1	18.4	18.4	5.9	17.2	17.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.14
Lane Grp Cap(c), veh/h	62	92	78	243	282	240	72	794	818	201	922	948
V/C Ratio(X)	0.81	0.05	0.36	0.82	0.07	0.29	0.80	0.75	0.75	0.81	0.68	0.68
Avail Cap(c_a), veh/h	161	423	360	269	536	455	81	831	856	215	965	991
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	29.6	30.1	27.4	23.7	24.6	31.1	14.8	14.8	28.3	11.4	11.4
Incr Delay (d2), s/veh	21.2	0.2	2.7	17.1	0.1	0.7	39.0	3.7	3.6	18.9	1.8	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.6	4.7	0.3	1.2	1.8	9.6	9.9	3.9	8.6	8.9
LnGrp Delay(d),s/veh	52.5	29.8	32.8	44.5	23.9	25.2	70.1	18.5	18.4	47.2	13.3	13.2
LnGrp LOS	D	C	C	D	C	C	E	B	B	D	B	B
Approach Vol, veh/h		83			291			1267			1432	
Approach Delay, s/veh		44.5			38.4			20.8			17.1	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	33.6	13.0	7.3	6.7	38.4	6.3	14.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	31.0	10.0	15.0	3.0	36.0	6.0	19.0
Max Q Clear Time (g_c+I1), s	7.9	20.4	9.2	3.1	4.1	19.3	3.8	4.6
Green Ext Time (p_c), s	0.0	9.2	0.0	0.3	0.0	13.8	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	9	99	49	7	99	44	1136	94	63	1148	61
Future Volume (veh/h)	101	9	99	49	7	99	44	1136	94	63	1148	61
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	101	9	99	49	7	99	44	1136	94	63	1148	61
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	118	247	210	60	186	158	53	1703	141	79	1808	96
Arrive On Green	0.07	0.13	0.13	0.03	0.10	0.10	0.03	0.52	0.52	0.04	0.53	0.53
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3278	271	1757	3386	180
Grp Volume(v), veh/h	101	9	99	49	7	99	44	607	623	63	594	615
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1797	1757	1752	1813
Q Serve(g_s), s	3.4	0.3	3.5	1.7	0.2	3.6	1.5	15.2	15.2	2.1	14.3	14.3
Cycle Q Clear(g_c), s	3.4	0.3	3.5	1.7	0.2	3.6	1.5	15.2	15.2	2.1	14.3	14.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.10
Lane Grp Cap(c), veh/h	118	247	210	60	186	158	53	910	933	79	936	968
V/C Ratio(X)	0.86	0.04	0.47	0.82	0.04	0.63	0.83	0.67	0.67	0.80	0.63	0.64
Avail Cap(c_a), veh/h	118	494	420	118	494	420	88	997	1023	147	1056	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	22.5	23.9	28.7	24.2	25.8	28.8	10.6	10.6	28.3	9.8	9.8
Incr Delay (d2), s/veh	43.1	0.1	1.6	22.9	0.1	4.0	26.3	1.5	1.5	16.7	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.1	1.6	1.2	0.1	1.7	1.1	7.6	7.8	1.4	7.0	7.3
LnGrp Delay(d),s/veh	70.7	22.6	25.6	51.6	24.3	29.8	55.1	12.1	12.0	44.9	10.9	10.8
LnGrp LOS	E	C	C	D	C	C	E	B	B	D	B	B
Approach Vol, veh/h		209			155			1274			1272	
Approach Delay, s/veh		47.3			36.4			13.5			12.5	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	35.0	6.0	12.0	5.8	35.9	8.0	10.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	34.0	4.0	16.0	3.0	36.0	4.0	16.0
Max Q Clear Time (g_c+I1), s	4.1	17.2	3.7	5.5	3.5	16.3	5.4	5.6
Green Ext Time (p_c), s	0.0	13.6	0.0	0.5	0.0	15.6	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1454	51	207	883	63	112
Future Volume (veh/h)	1454	51	207	883	63	112
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	1454	51	207	883	63	112
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	2884	101	312	2926	160	142
Arrive On Green	0.83	0.83	0.83	0.83	0.09	0.09
Sat Flow, veh/h	3547	121	343	3597	1757	1568
Grp Volume(v), veh/h	736	769	207	883	63	112
Grp Sat Flow(s),veh/h/ln	1752	1823	343	1752	1757	1568
Q Serve(g_s), s	12.9	13.0	46.6	6.0	3.6	7.5
Cycle Q Clear(g_c), s	12.9	13.0	59.6	6.0	3.6	7.5
Prop In Lane		0.07	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1463	1522	312	2926	160	142
V/C Ratio(X)	0.50	0.51	0.66	0.30	0.39	0.79
Avail Cap(c_a), veh/h	1563	1626	332	3125	261	233
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.5	2.5	11.0	2.0	46.1	47.9
Incr Delay (d2), s/veh	0.3	0.3	4.5	0.1	1.6	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	6.5	4.8	2.8	1.8	3.6
LnGrp Delay(d),s/veh	2.8	2.8	15.6	2.0	47.7	57.1
LnGrp LOS	A	A	B	A	D	E
Approach Vol, veh/h	1505			1090	175	
Approach Delay, s/veh	2.8			4.6	53.7	
Approach LOS	A			A	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		13.8		93.9				93.9
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		96.0				96.0
Max Q Clear Time (g_c+I1), s		9.5		15.0				61.6
Green Ext Time (p_c), s		0.3		53.5				28.3

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	2696	0	64	2266	0	0	4	79	116	0	0
Future Volume (veh/h)	147	2696	0	64	2266	0	0	4	79	116	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	147	2696	0	64	2266	0	0	4	79	116	0	0
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	176	3034	0	81	2763	0	2	140	119	132	371	315
Arrive On Green	0.10	0.60	0.00	0.05	0.55	0.00	0.00	0.08	0.08	0.08	0.00	0.00
Sat Flow, veh/h	1757	5202	0	1757	5202	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	147	2696	0	64	2266	0	0	4	79	116	0	0
Grp Sat Flow(s),veh/h/ln	1757	1679	0	1757	1679	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	6.6	36.6	0.0	2.9	29.5	0.0	0.0	0.2	3.9	5.2	0.0	0.0
Cycle Q Clear(g_c), s	6.6	36.6	0.0	2.9	29.5	0.0	0.0	0.2	3.9	5.2	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	3034	0	81	2763	0	2	140	119	132	371	315
V/C Ratio(X)	0.84	0.89	0.00	0.79	0.82	0.00	0.00	0.03	0.67	0.88	0.00	0.00
Avail Cap(c_a), veh/h	176	3034	0	88	2775	0	66	370	314	132	439	373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	35.3	13.6	0.0	37.7	14.8	0.0	0.0	34.2	35.9	36.6	0.0	0.0
Incr Delay (d2), s/veh	27.9	3.6	0.0	34.3	2.1	0.0	0.0	0.1	6.3	44.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	17.7	0.0	2.2	14.0	0.0	0.0	0.1	1.9	4.1	0.0	0.0
LnGrp Delay(d),s/veh	63.2	17.2	0.0	72.0	16.9	0.0	0.0	34.3	42.2	80.8	0.0	0.0
LnGrp LOS	E	B		E	B			C	D	F		
Approach Vol, veh/h		2843			2330			83			116	
Approach Delay, s/veh		19.6			18.4			41.8			80.8	
Approach LOS		B			B			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	10.0	7.7	52.1	0.0	20.0	12.0	47.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	16.0	4.0	48.0	3.0	19.0	8.0	44.0
Max Q Clear Time (g_c+I1), s	7.2	5.9	4.9	38.6	0.0	0.0	8.6	31.5
Green Ext Time (p_c), s	0.0	0.1	0.0	9.4	0.0	0.0	0.0	12.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Adj No. of Lanes	2	3	1	2	3	1	2	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4504072	6625	1144	4072	6625	1144	4072	2420	770	2542	2420	1051648
V/C Ratio(X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	6756108	9937	1716	6108	9937	1716	6108	3630	1155	3813	3630	1577472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS												
Approach Vol, veh/h		0			0			0			0	
Approach Delay, s/veh		0.0			0.0			0.0			0.0	
Approach LOS												

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	53.0	7.0	45.0	21.0	41.0	15.0	37.0
Max Q Clear Time (g_c+I1), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	0.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	2079	40	49	1239	2	168	0	0	2	0	22
Future Volume (veh/h)	47	2079	40	49	1239	2	168	0	0	2	0	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	47	2079	40	49	1239	2	168	0	0	2	0	22
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	57	2637	51	60	2699	4	210	313	266	3	96	81
Arrive On Green	0.03	0.52	0.52	0.03	0.52	0.52	0.12	0.00	0.00	0.00	0.00	0.05
Sat Flow, veh/h	1757	5087	98	1757	5192	8	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	47	1371	748	49	801	440	168	0	0	2	0	22
Grp Sat Flow(s),veh/h/ln	1757	1679	1827	1757	1679	1843	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.5	19.3	19.3	1.6	8.7	8.7	5.4	0.0	0.0	0.1	0.0	0.8
Cycle Q Clear(g_c), s	1.5	19.3	19.3	1.6	8.7	8.7	5.4	0.0	0.0	0.1	0.0	0.8
Prop In Lane	1.00		0.05	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	1741	947	60	1745	958	210	313	266	3	96	81
V/C Ratio(X)	0.82	0.79	0.79	0.82	0.46	0.46	0.80	0.00	0.00	0.66	0.00	0.27
Avail Cap(c_a), veh/h	152	1797	978	91	1745	958	243	701	596	91	541	460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.8	11.4	11.4	27.8	8.8	8.8	24.8	0.0	0.0	28.9	0.0	26.4
Incr Delay (d2), s/veh	24.3	2.4	4.3	28.4	0.2	0.3	15.2	0.0	0.0	132.9	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	9.3	10.7	1.2	4.1	4.5	3.5	0.0	0.0	0.1	0.0	0.4
LnGrp Delay(d),s/veh	52.1	13.7	15.7	56.2	9.0	9.1	40.0	0.0	0.0	161.8	0.0	28.2
LnGrp LOS	D	B	B	E	A	A	D			F		C
Approach Vol, veh/h		2166			1290			168			24	
Approach Delay, s/veh		15.2			10.8			40.0			39.3	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	13.8	6.0	34.0	10.9	7.0	5.9	34.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	22.0	3.0	31.0	8.0	17.0	5.0	29.0
Max Q Clear Time (g_c+I1), s	2.1	0.0	3.6	21.3	7.4	2.8	3.5	10.7
Green Ext Time (p_c), s	0.0	0.0	0.0	8.7	0.0	0.0	0.0	17.1

Intersection Summary	
HCM 2010 Ctrl Delay	15.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	1926	77	104	1156	25	92	13	101	36	27	42
Future Volume (veh/h)	77	1926	77	104	1156	25	92	13	101	36	27	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	77	1926	77	104	1156	25	92	13	101	36	27	42
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	97	2443	97	132	2595	56	117	210	179	42	132	112
Arrive On Green	0.06	0.49	0.49	0.08	0.51	0.51	0.07	0.11	0.11	0.02	0.07	0.07
Sat Flow, veh/h	1757	4969	198	1757	5073	110	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	77	1300	703	104	765	416	92	13	101	36	27	42
Grp Sat Flow(s),veh/h/ln	1757	1679	1810	1757	1679	1825	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	2.3	17.4	17.5	3.2	7.8	7.8	2.8	0.3	3.3	1.1	0.7	1.4
Cycle Q Clear(g_c), s	2.3	17.4	17.5	3.2	7.8	7.8	2.8	0.3	3.3	1.1	0.7	1.4
Prop In Lane	1.00		0.11	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	97	1651	890	132	1717	934	117	210	179	42	132	112
V/C Ratio(X)	0.79	0.79	0.79	0.79	0.45	0.45	0.79	0.06	0.56	0.85	0.20	0.37
Avail Cap(c_a), veh/h	227	1734	934	162	1717	934	130	578	492	130	578	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	11.4	11.5	24.6	8.4	8.4	24.9	21.4	22.7	26.4	23.7	24.0
Incr Delay (d2), s/veh	13.2	2.4	4.4	18.5	0.2	0.3	25.0	0.1	2.8	35.1	0.8	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.5	9.7	2.2	3.7	4.0	2.2	0.2	1.6	0.9	0.4	0.7
LnGrp Delay(d),s/veh	38.5	13.8	15.9	43.1	8.6	8.7	49.9	21.6	25.5	61.4	24.5	26.1
LnGrp LOS	D	B	B	D	A	A	D	C	C	E	C	C
Approach Vol, veh/h		2080			1285			206			105	
Approach Delay, s/veh		15.4			11.4			36.2			37.8	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	10.2	8.1	30.7	7.6	7.9	7.0	31.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	17.0	5.0	28.0	4.0	17.0	7.0	26.0
Max Q Clear Time (g_c+I1), s	3.1	5.3	5.2	19.5	4.8	3.4	4.3	9.8
Green Ext Time (p_c), s	0.0	0.5	0.0	7.2	0.0	0.5	0.0	15.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	103	577	331	1457	2589	194
Future Volume (veh/h)	103	577	331	1457	2589	194
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	103	577	331	1457	2589	194
Adj No. of Lanes	1	1	1	3	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	351	588	307	3693	2514	185
Arrive On Green	0.20	0.20	0.17	0.73	0.52	0.52
Sat Flow, veh/h	1757	1568	1757	5202	4954	352
Grp Volume(v), veh/h	103	577	331	1457	1800	983
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1679	1679	1783
Q Serve(g_s), s	6.0	22.7	21.0	13.0	63.0	63.0
Cycle Q Clear(g_c), s	6.0	22.7	21.0	13.0	63.0	63.0
Prop In Lane	1.00	1.00	1.00			0.20
Lane Grp Cap(c), veh/h	351	588	307	3693	1763	936
V/C Ratio(X)	0.29	0.98	1.08	0.39	1.02	1.05
Avail Cap(c_a), veh/h	351	588	307	3693	1763	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	37.1	49.5	6.0	28.5	28.5
Incr Delay (d2), s/veh	0.5	32.3	73.2	0.1	27.0	43.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	30.6	16.4	6.0	35.5	42.0
LnGrp Delay(d),s/veh	41.2	69.3	122.7	6.1	55.5	72.0
LnGrp LOS	D	E	F	A	F	F
Approach Vol, veh/h	680			1788	2783	
Approach Delay, s/veh	65.1			27.7	61.3	
Approach LOS	E			C	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		92.0		28.0	25.0	67.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		88.0		24.0	21.0	63.0		
Max Q Clear Time (g_c+I1), s		15.0		24.7	23.0	65.0		
Green Ext Time (p_c), s		20.1		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	50.3
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	398	106	82	889	1379	200
Future Volume (veh/h)	398	106	82	889	1379	200
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	398	106	82	889	1379	200
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	441	394	102	2216	1587	228
Arrive On Green	0.25	0.25	0.06	0.63	0.52	0.52
Sat Flow, veh/h	1757	1568	1757	3597	3169	442
Grp Volume(v), veh/h	398	106	82	889	780	799
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1767
Q Serve(g_s), s	15.1	3.7	3.2	8.6	26.7	27.5
Cycle Q Clear(g_c), s	15.1	3.7	3.2	8.6	26.7	27.5
Prop In Lane	1.00	1.00	1.00			0.25
Lane Grp Cap(c), veh/h	441	394	102	2216	904	911
V/C Ratio(X)	0.90	0.27	0.80	0.40	0.86	0.88
Avail Cap(c_a), veh/h	460	411	102	2244	918	926
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	20.7	32.0	6.2	14.5	14.7
Incr Delay (d2), s/veh	20.2	0.4	35.2	0.1	8.4	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	3.6	2.5	4.1	14.9	15.5
LnGrp Delay(d),s/veh	45.1	21.0	67.1	6.3	22.9	24.2
LnGrp LOS	D	C	E	A	C	C
Approach Vol, veh/h	504			971	1579	
Approach Delay, s/veh	40.0			11.5	23.5	
Approach LOS	D			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		47.4		21.3	8.0	39.4		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		44.0		18.0	4.0	36.0		
Max Q Clear Time (g_c+I1), s		10.6		17.1	5.2	29.5		
Green Ext Time (p_c), s		24.8		0.2	0.0	6.0		

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	958	912	90	946	894	0	75	759	762	41	1914	934
Future Volume (veh/h)	958	912	90	946	894	0	75	759	762	41	1914	934
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	958	912	90	946	894	0	75	759	762	41	1914	934
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	891	836	374	865	809	362	79	1831	570	72	1821	567
Arrive On Green	0.26	0.24	0.24	0.25	0.23	0.00	0.02	0.36	0.36	0.02	0.36	0.36
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	958	912	90	946	894	0	75	759	762	41	1914	934
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	34.0	31.0	6.0	33.0	30.0	0.0	2.9	14.7	47.3	1.5	47.0	47.0
Cycle Q Clear(g_c), s	34.0	31.0	6.0	33.0	30.0	0.0	2.9	14.7	47.3	1.5	47.0	47.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	891	836	374	865	809	362	79	1831	570	72	1821	567
V/C Ratio(X)	1.07	1.09	0.24	1.09	1.11	0.00	0.95	0.41	1.34	0.57	1.05	1.65
Avail Cap(c_a), veh/h	891	836	374	865	809	362	79	1831	570	79	1821	567
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	49.5	40.0	48.5	50.0	0.0	63.4	31.0	41.4	63.0	41.5	41.5
Incr Delay (d2), s/veh	52.3	59.0	0.3	59.3	64.5	0.0	85.5	0.2	163.2	8.0	36.0	299.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.4	21.8	2.6	22.6	21.7	0.0	2.3	6.8	46.2	0.8	27.8	67.4
LnGrp Delay(d),s/veh	100.3	108.5	40.3	107.8	114.5	0.0	149.0	31.2	204.6	71.0	77.5	340.8
LnGrp LOS	F	F	D	F	F		F	C	F	E	F	F
Approach Vol, veh/h		1960			1840			1596			2889	
Approach Delay, s/veh		101.4			111.1			119.5			162.6	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	51.3	37.0	35.0	7.0	51.0	38.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	47.0	33.0	31.0	3.0	47.0	34.0	30.0
Max Q Clear Time (g_c+I1), s	3.5	49.3	35.0	33.0	4.9	49.0	36.0	32.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	128.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	844	85	68	791	0	38	0	30	0	0	0
Future Volume (veh/h)	0	844	85	68	791	0	38	0	30	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	844	85	68	791	0	38	0	30	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	5	1578	159	81	2314	0	47	171	145	5	6	5
Arrive On Green	0.00	0.49	0.49	0.05	0.66	0.00	0.03	0.00	0.09	0.00	0.00	0.00
Sat Flow, veh/h	1757	3216	324	1757	3597	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	0	460	469	68	791	0	38	0	30	0	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1788	1757	1752	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	0.0	5.9	5.9	1.2	3.2	0.0	0.7	0.0	0.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.9	5.9	1.2	3.2	0.0	0.7	0.0	0.6	0.0	0.0	0.0
Prop In Lane	1.00		0.18	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	5	860	877	81	2314	0	47	171	145	5	6	5
V/C Ratio(X)	0.00	0.53	0.53	0.84	0.34	0.00	0.81	0.00	0.21	0.00	0.00	0.00
Avail Cap(c_a), veh/h	163	1083	1104	217	2314	0	217	969	824	163	912	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	5.7	5.7	15.3	2.4	0.0	15.7	0.0	13.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.5	20.1	0.1	0.0	26.4	0.0	0.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.9	3.0	1.0	1.6	0.0	0.7	0.0	0.3	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	6.2	6.2	35.4	2.5	0.0	42.0	0.0	14.3	0.0	0.0	0.0
LnGrp LOS		A	A	D	A		D		B			
Approach Vol, veh/h		929			859			68			0	
Approach Delay, s/veh		6.2			5.1			29.8			0.0	
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	7.0	5.5	19.9	4.9	2.1	0.0	25.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	17.0	4.0	20.0	4.0	16.0	3.0	21.0
Max Q Clear Time (g_c+I1), s	0.0	2.6	3.2	7.9	2.7	0.0	0.0	5.2
Green Ext Time (p_c), s	0.0	0.0	0.0	8.0	0.0	0.0	0.0	10.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	2108	71	50	1807	75	217	4	0	118	7	116
Future Volume (veh/h)	69	2108	71	50	1807	75	217	4	0	118	7	116
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	69	2108	71	50	1807	75	217	4	0	118	7	116
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	87	2420	81	62	2327	96	259	287	244	166	190	161
Arrive On Green	0.05	0.48	0.48	0.04	0.47	0.47	0.15	0.16	0.00	0.09	0.10	0.10
Sat Flow, veh/h	1757	5004	168	1757	4960	206	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	69	1412	767	50	1222	660	217	4	0	118	7	116
Grp Sat Flow(s),veh/h/ln	1757	1679	1815	1757	1679	1808	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	2.7	26.0	26.2	2.0	21.1	21.1	8.3	0.1	0.0	4.5	0.2	5.0
Cycle Q Clear(g_c), s	2.7	26.0	26.2	2.0	21.1	21.1	8.3	0.1	0.0	4.5	0.2	5.0
Prop In Lane	1.00		0.09	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	87	1624	878	62	1575	848	259	287	244	166	190	161
V/C Ratio(X)	0.79	0.87	0.87	0.81	0.78	0.78	0.84	0.01	0.00	0.71	0.04	0.72
Avail Cap(c_a), veh/h	127	1647	890	76	1575	848	279	506	430	203	426	362
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	16.0	16.0	33.2	15.4	15.4	28.7	24.8	0.0	30.5	28.0	30.1
Incr Delay (d2), s/veh	18.4	5.3	9.5	38.7	2.5	4.6	18.7	0.0	0.0	8.6	0.1	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	13.2	15.3	1.6	10.2	11.5	5.4	0.1	0.0	2.6	0.1	2.4
LnGrp Delay(d),s/veh	50.9	21.2	25.5	71.9	17.9	20.0	47.4	24.8	0.0	39.0	28.1	36.0
LnGrp LOS	D	C	C	E	B	B	D	C		D	C	D
Approach Vol, veh/h		2248			1932			221			241	
Approach Delay, s/veh		23.6			20.0			47.0			37.3	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	14.8	6.4	37.5	14.2	11.1	7.5	36.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	19.0	3.0	34.0	11.0	16.0	5.0	32.0
Max Q Clear Time (g_c+I1), s	6.5	2.1	4.0	28.2	10.3	7.0	4.7	23.1
Green Ext Time (p_c), s	0.0	0.3	0.0	5.3	0.0	0.2	0.0	8.8

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	534	1562	973	34	1124	18	833	788	46	89	810	359
Future Volume (veh/h)	534	1562	973	34	1124	18	833	788	46	89	810	359
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	534	1562	973	34	1124	18	833	788	46	89	810	359
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	498	2118	659	61	1024	458	760	1398	625	135	755	338
Arrive On Green	0.15	0.42	0.42	0.02	0.29	0.29	0.22	0.40	0.40	0.04	0.22	0.22
Sat Flow, veh/h	3408	5036	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	534	1562	973	34	1124	18	833	788	46	89	810	359
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	19.0	33.9	54.7	1.3	38.0	1.1	29.0	22.7	2.4	3.3	28.0	28.0
Cycle Q Clear(g_c), s	19.0	33.9	54.7	1.3	38.0	1.1	29.0	22.7	2.4	3.3	28.0	28.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	498	2118	659	61	1024	458	760	1398	625	135	755	338
V/C Ratio(X)	1.07	0.74	1.48	0.56	1.10	0.04	1.10	0.56	0.07	0.66	1.07	1.06
Avail Cap(c_a), veh/h	498	2118	659	79	1024	458	760	1398	625	184	755	338
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	31.6	37.7	63.3	46.0	32.9	50.5	30.3	24.2	61.5	51.0	51.0
Incr Delay (d2), s/veh	61.0	1.4	222.1	7.8	58.5	0.0	61.9	0.5	0.0	5.3	54.1	66.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	15.9	64.2	0.7	26.7	0.5	20.2	11.0	1.0	1.7	19.2	18.4
LnGrp Delay(d),s/veh	116.5	33.0	259.8	71.1	104.5	33.0	112.4	30.8	24.3	66.9	105.1	117.6
LnGrp LOS	F	C	F	E	F	C	F	C	C	E	F	F
Approach Vol, veh/h		3069			1176			1667			1258	
Approach Delay, s/veh		119.4			102.5			71.4			106.0	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	55.8	6.3	58.7	33.0	32.0	23.0	42.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	50.0	3.0	54.0	29.0	28.0	19.0	38.0
Max Q Clear Time (g_c+I1), s	5.3	24.7	3.3	56.7	31.0	30.0	21.0	40.0
Green Ext Time (p_c), s	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	103.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	1024	109	102	713	177	74	357	26	240	862	441
Future Volume (veh/h)	410	1024	109	102	713	177	74	357	26	240	862	441
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	410	1024	109	102	713	177	74	357	26	240	862	441
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	461	1175	526	173	878	393	132	907	406	288	1067	477
Arrive On Green	0.14	0.34	0.34	0.05	0.25	0.25	0.04	0.26	0.26	0.08	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	410	1024	109	102	713	177	74	357	26	240	862	441
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	7.0	16.2	2.9	1.7	11.3	5.6	1.3	5.0	0.7	4.1	13.4	16.1
Cycle Q Clear(g_c), s	7.0	16.2	2.9	1.7	11.3	5.6	1.3	5.0	0.7	4.1	13.4	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	1175	526	173	878	393	132	907	406	288	1067	477
V/C Ratio(X)	0.89	0.87	0.21	0.59	0.81	0.45	0.56	0.39	0.06	0.83	0.81	0.92
Avail Cap(c_a), veh/h	461	1186	531	173	889	398	173	949	424	288	1067	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	18.5	14.0	27.5	20.8	18.7	27.9	18.1	16.5	26.6	19.0	19.9
Incr Delay (d2), s/veh	18.7	7.3	0.2	5.2	5.7	0.8	3.7	0.3	0.1	18.4	4.7	23.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	9.0	1.3	0.9	6.1	2.5	0.7	2.4	0.3	2.7	7.2	10.0
LnGrp Delay(d),s/veh	43.9	25.7	14.2	32.6	26.5	19.5	31.6	18.4	16.6	45.0	23.6	43.6
LnGrp LOS	D	C	B	C	C	B	C	B	B	D	C	D
Approach Vol, veh/h		1543			992			457			1543	
Approach Delay, s/veh		29.7			25.9			20.4			32.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	19.3	7.0	23.8	6.3	22.0	12.0	18.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	16.0	3.0	20.0	3.0	18.0	8.0	15.0
Max Q Clear Time (g_c+I1), s	6.1	7.0	3.7	18.2	3.3	18.1	9.0	13.3
Green Ext Time (p_c), s	0.0	6.1	0.0	1.6	0.0	0.0	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	29.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	764	47	328	756	7	15	146	39	3	659	138
Future Volume (veh/h)	37	764	47	328	756	7	15	146	39	3	659	138
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	37	764	47	328	756	7	15	146	39	3	659	138
Adj No. of Lanes	2	1	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	72	798	679	343	1796	804	48	796	356	129	879	393
Arrive On Green	0.02	0.43	0.43	0.10	0.51	0.51	0.01	0.23	0.23	0.04	0.25	0.25
Sat Flow, veh/h	3408	1845	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	37	764	47	328	756	7	15	146	39	3	659	138
Grp Sat Flow(s),veh/h/ln	1704	1845	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.9	31.8	1.4	7.6	10.6	0.2	0.3	2.7	1.6	0.1	13.8	5.7
Cycle Q Clear(g_c), s	0.9	31.8	1.4	7.6	10.6	0.2	0.3	2.7	1.6	0.1	13.8	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	72	798	679	343	1796	804	48	796	356	129	879	393
V/C Ratio(X)	0.52	0.96	0.07	0.96	0.42	0.01	0.31	0.18	0.11	0.02	0.75	0.35
Avail Cap(c_a), veh/h	129	813	691	343	1796	804	172	796	356	644	1192	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	21.8	13.2	35.5	12.0	9.5	38.8	24.7	24.3	36.8	27.4	24.4
Incr Delay (d2), s/veh	5.6	21.5	0.0	36.8	0.2	0.0	3.6	0.1	0.1	0.1	1.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	20.9	0.6	5.3	5.2	0.1	0.2	1.3	0.7	0.0	6.9	2.5
LnGrp Delay(d),s/veh	44.1	43.3	13.2	72.4	12.2	9.5	42.3	24.9	24.5	36.9	29.3	25.0
LnGrp LOS	D	D	B	E	B	A	D	C	C	D	C	C
Approach Vol, veh/h		848			1091			200			800	
Approach Delay, s/veh		41.7			30.3			26.1			28.5	
Approach LOS		D			C			C			C	

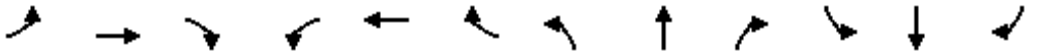
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	22.0	12.0	38.4	5.1	23.9	5.7	44.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	16.0	8.0	35.0	4.0	27.0	3.0	40.0
Max Q Clear Time (g_c+I1), s	2.1	4.7	9.6	33.8	2.3	15.8	2.9	12.6
Green Ext Time (p_c), s	0.0	4.6	0.0	0.5	0.0	4.1	0.0	13.4

Intersection Summary	
HCM 2010 Ctrl Delay	32.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Future Volume (veh/h)	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	115	2071	645	115	2071	645	53	1526	683	40	1512	677
Arrive On Green	0.03	0.41	0.41	0.03	0.41	0.41	0.02	0.44	0.44	0.01	0.43	0.43
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.3	61.0	3.0	5.0	49.0	0.3	0.9	61.2	14.8	0.6	64.0	5.6
Cycle Q Clear(g_c), s	3.3	61.0	3.0	5.0	49.0	0.3	0.9	61.2	14.8	0.6	64.0	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	2071	645	115	2071	645	53	1526	683	40	1512	677
V/C Ratio(X)	0.66	1.05	0.08	1.56	0.87	0.01	0.39	0.97	0.35	0.35	1.06	0.14
Avail Cap(c_a), veh/h	115	2071	645	115	2071	645	92	1526	683	92	1512	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.8	43.7	26.6	71.7	40.1	25.8	72.3	40.9	27.8	72.7	42.2	25.5
Incr Delay (d2), s/veh	13.2	35.3	0.1	289.1	4.5	0.0	4.7	16.4	0.3	5.1	39.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	35.0	1.3	7.0	23.5	0.1	0.5	33.1	6.5	0.3	39.2	2.4
LnGrp Delay(d),s/veh	84.0	79.0	26.6	360.7	44.6	25.8	77.0	57.4	28.1	77.8	81.9	25.6
LnGrp LOS	F	F	C	F	D	C	E	E	C	E	F	C
Approach Vol, veh/h		2308			1995			1737			1709	
Approach Delay, s/veh		77.9			72.9			53.6			78.7	
Approach LOS		E			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	68.6	9.0	65.0	6.3	68.0	9.0	65.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	64.0	5.0	61.0	4.0	64.0	5.0	61.0
Max Q Clear Time (g_c+I1), s	2.6	63.2	7.0	63.0	2.9	66.0	5.3	51.0
Green Ext Time (p_c), s	0.0	0.8	0.0	0.0	0.0	0.0	0.0	9.9

Intersection Summary	
HCM 2010 Ctrl Delay	71.4
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	361	1283	0	460	1283	0	1	257	383	0	345	480
Future Volume (veh/h)	361	1283	0	460	1283	0	1	257	383	0	345	480
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	361	1283	0	460	1283	0	1	257	383	0	345	480
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	379	1274	0	459	1433	0	2	441	375	2	356	303
Arrive On Green	0.22	0.36	0.00	0.26	0.41	0.00	0.00	0.24	0.24	0.00	0.19	0.19
Sat Flow, veh/h	1757	3597	0	1757	3597	0	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	361	1283	0	460	1283	0	1	257	383	0	345	480
Grp Sat Flow(s),veh/h/ln	1757	1752	0	1757	1752	0	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	17.9	32.0	0.0	23.0	30.1	0.0	0.1	10.8	21.0	0.0	16.3	17.0
Cycle Q Clear(g_c), s	17.9	32.0	0.0	23.0	30.1	0.0	0.1	10.8	21.0	0.0	16.3	17.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	379	1274	0	459	1433	0	2	441	375	2	356	303
V/C Ratio(X)	0.95	1.01	0.00	1.00	0.90	0.00	0.50	0.58	1.02	0.00	0.97	1.59
Avail Cap(c_a), veh/h	379	1274	0	459	1433	0	40	441	375	40	356	303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	28.0	0.0	32.5	24.3	0.0	44.0	29.6	33.5	0.0	35.3	35.5
Incr Delay (d2), s/veh	34.0	27.0	0.0	42.6	7.7	0.0	125.6	2.0	52.1	0.0	39.3	278.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	20.2	0.0	16.5	16.0	0.0	0.1	5.7	14.5	0.0	12.2	30.8
LnGrp Delay(d),s/veh	68.0	55.0	0.0	75.1	32.0	0.0	169.6	31.6	85.6	0.0	74.5	314.2
LnGrp LOS	E	F		F	C		F	C	F		E	F
Approach Vol, veh/h		1644			1743			641			825	
Approach Delay, s/veh		57.9			43.4			64.1			214.0	
Approach LOS		E			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	25.0	27.0	36.0	4.0	21.0	23.0	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	2.0	17.0	23.0	32.0	2.0	17.0	19.0	36.0
Max Q Clear Time (g_c+I1), s	0.0	23.0	25.0	34.0	2.1	19.0	19.9	32.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7

Intersection Summary		
HCM 2010 Ctrl Delay		80.0
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	666	0	1076	718	120	0	795	952	91	719	287
Future Volume (veh/h)	298	666	0	1076	718	120	0	795	952	91	719	287
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	298	666	0	1076	718	120	0	795	952	91	719	287
Adj No. of Lanes	1	2	1	2	2	1	1	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	330	666	298	1057	1093	489	2	1087	486	102	1332	596
Arrive On Green	0.19	0.19	0.00	0.31	0.31	0.31	0.00	0.31	0.31	0.03	0.38	0.38
Sat Flow, veh/h	1757	3505	1568	3408	3505	1568	1757	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	298	666	0	1076	718	120	0	795	952	91	719	287
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1704	1752	1568	1757	1752	1568	1704	1752	1568
Q Serve(g_s), s	16.6	19.0	0.0	31.0	17.7	5.7	0.0	20.2	31.0	2.7	16.0	13.9
Cycle Q Clear(g_c), s	16.6	19.0	0.0	31.0	17.7	5.7	0.0	20.2	31.0	2.7	16.0	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	666	298	1057	1093	489	2	1087	486	102	1332	596
V/C Ratio(X)	0.90	1.00	0.00	1.02	0.66	0.25	0.00	0.73	1.96	0.89	0.54	0.48
Avail Cap(c_a), veh/h	369	666	298	1057	1093	489	35	1087	486	102	1332	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	40.5	0.0	34.5	29.8	25.6	0.0	30.8	34.5	48.3	24.2	23.5
Incr Delay (d2), s/veh	23.0	34.9	0.0	32.4	1.4	0.3	0.0	2.6	438.8	55.5	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	12.4	0.0	19.3	8.8	2.5	0.0	10.1	72.6	2.0	7.8	6.1
LnGrp Delay(d),s/veh	62.7	75.4	0.0	66.9	31.2	25.9	0.0	33.4	473.3	103.9	24.6	24.1
LnGrp LOS	E	F		F	C	C		C	F	F	C	C
Approach Vol, veh/h		964			1914			1747			1097	
Approach Delay, s/veh		71.5			50.9			273.1			31.1	
Approach LOS		E			D			F			C	

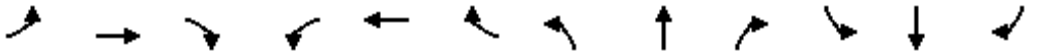
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	35.0	35.0	23.0	0.0	42.0	22.8	35.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	31.0	31.0	19.0	2.0	32.0	21.0	29.0
Max Q Clear Time (g_c+I1), s	4.7	33.0	33.0	21.0	0.0	18.0	18.6	19.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	11.7	0.2	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	118.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	14	117	27	8	37	10	180	138	36	351	73
Future Volume (veh/h)	130	14	117	27	8	37	10	180	138	36	351	73
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	130	14	117	27	8	37	10	180	138	36	351	73
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	164	290	247	35	156	132	14	505	366	46	805	166
Arrive On Green	0.09	0.16	0.16	0.02	0.08	0.08	0.01	0.26	0.26	0.03	0.28	0.28
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	1942	1407	1757	2896	596
Grp Volume(v), veh/h	130	14	117	27	8	37	10	161	157	36	211	213
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1596	1757	1752	1740
Q Serve(g_s), s	2.2	0.2	2.0	0.5	0.1	0.7	0.2	2.2	2.4	0.6	2.9	3.0
Cycle Q Clear(g_c), s	2.2	0.2	2.0	0.5	0.1	0.7	0.2	2.2	2.4	0.6	2.9	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.88	1.00		0.34
Lane Grp Cap(c), veh/h	164	290	247	35	156	132	14	456	415	46	487	484
V/C Ratio(X)	0.79	0.05	0.47	0.76	0.05	0.28	0.71	0.35	0.38	0.79	0.43	0.44
Avail Cap(c_a), veh/h	353	1113	946	177	928	788	177	881	803	177	881	875
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	10.7	11.4	14.5	12.6	12.8	14.8	9.0	9.1	14.4	8.8	8.9
Incr Delay (d2), s/veh	8.4	0.1	1.4	27.9	0.1	1.1	49.5	0.5	0.6	25.3	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.1	0.9	0.5	0.1	0.3	0.3	1.1	1.1	0.6	1.5	1.5
LnGrp Delay(d),s/veh	21.7	10.7	12.9	42.5	12.7	13.9	64.2	9.5	9.6	39.8	9.4	9.5
LnGrp LOS	C	B	B	D	B	B	E	A	A	D	A	A
Approach Vol, veh/h		261			72			328			460	
Approach Delay, s/veh		17.1			24.5			11.2			11.8	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.8	11.8	4.6	8.7	4.2	12.3	6.8	6.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	15.0	3.0	18.0	3.0	15.0	6.0	15.0
Max Q Clear Time (g_c+I1), s	2.6	4.4	2.5	4.0	2.2	5.0	4.2	2.7
Green Ext Time (p_c), s	0.0	3.4	0.0	0.5	0.0	3.2	0.1	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	0	0	0	0	0	0	0	0	0	0	11
Future Volume (veh/h)	11	0	0	0	0	0	0	0	0	0	0	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	11	0	0	0	0	0	0	0	0	0	0	11
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	16	17	14	16	17	14	16	947	424	649	474	424
Arrive On Green	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	3505	1568	1757	1752	1568
Grp Volume(v), veh/h	11	0	0	0	0	0	0	0	0	0	0	11
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1568	1757	1752	1568
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	16	17	14	16	17	14	16	947	424	649	474	424
V/C Ratio(X)	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Avail Cap(c_a), veh/h	2374	4487	3814	633	2659	2260	475	6947	3108	2548	2368	2119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
Incr Delay (d2), s/veh	42.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	48.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
LnGrp LOS	D											A
Approach Vol, veh/h		11			0			0			11	
Approach Delay, s/veh		48.1			0.0			0.0			3.0	
Approach LOS		D									A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		7.0	0.0	4.1	0.0	7.0	4.1	0.0
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s		22.0	4.0	27.0	3.0	15.0	15.0	16.0
Max Q Clear Time (g_c+I1), s		0.0	0.0	0.0	0.0	2.1	2.1	0.0
Green Ext Time (p_c), s		0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	15	27	164	26	94	23	327	77	54	443	93
Future Volume (veh/h)	30	15	27	164	26	94	23	327	77	54	443	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	30	15	27	164	26	94	23	327	77	54	443	93
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	38	137	117	213	320	272	30	830	193	63	902	188
Arrive On Green	0.02	0.07	0.07	0.12	0.17	0.17	0.02	0.29	0.29	0.04	0.31	0.31
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	2825	656	1757	2889	602
Grp Volume(v), veh/h	30	15	27	164	26	94	23	201	203	54	268	268
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1752	1729	1757	1752	1738
Q Serve(g_s), s	0.6	0.3	0.5	3.0	0.4	1.8	0.4	3.1	3.2	1.0	4.2	4.2
Cycle Q Clear(g_c), s	0.6	0.3	0.5	3.0	0.4	1.8	0.4	3.1	3.2	1.0	4.2	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		0.35
Lane Grp Cap(c), veh/h	38	137	117	213	320	272	30	515	508	63	547	543
V/C Ratio(X)	0.78	0.11	0.23	0.77	0.08	0.35	0.76	0.39	0.40	0.86	0.49	0.49
Avail Cap(c_a), veh/h	261	822	699	470	1041	885	157	833	822	209	885	878
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	14.5	14.7	14.3	11.7	12.2	16.5	9.5	9.5	16.1	9.4	9.4
Incr Delay (d2), s/veh	28.4	0.3	1.0	5.8	0.1	0.8	31.4	0.5	0.5	26.7	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.3	1.8	0.2	0.8	0.5	1.5	1.5	0.9	2.1	2.1
LnGrp Delay(d),s/veh	44.8	14.9	15.7	20.2	11.8	13.0	47.9	10.0	10.0	42.8	10.1	10.1
LnGrp LOS	D	B	B	C	B	B	D	A	B	D	B	B
Approach Vol, veh/h		72			284			427			590	
Approach Delay, s/veh		27.7			17.0			12.0			13.1	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.2	13.9	8.1	6.5	4.6	14.5	4.7	9.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	9.0	15.0	3.0	17.0	5.0	19.0
Max Q Clear Time (g_c+I1), s	3.0	5.2	5.0	2.5	2.4	6.2	2.6	3.8
Green Ext Time (p_c), s	0.0	4.3	0.1	0.4	0.0	4.3	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	13	377	49	22	647
Future Volume (veh/h)	40	13	377	49	22	647
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	40	13	377	49	22	647
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	91	81	1613	208	815	1810
Arrive On Green	0.05	0.05	0.52	0.52	0.52	0.52
Sat Flow, veh/h	1757	1568	3215	403	948	3597
Grp Volume(v), veh/h	40	13	210	216	22	647
Grp Sat Flow(s),veh/h/ln	1757	1568	1752	1774	948	1752
Q Serve(g_s), s	0.4	0.1	1.2	1.2	0.2	2.0
Cycle Q Clear(g_c), s	0.4	0.1	1.2	1.2	1.5	2.0
Prop In Lane	1.00	1.00		0.23	1.00	
Lane Grp Cap(c), veh/h	91	81	905	916	815	1810
V/C Ratio(X)	0.44	0.16	0.23	0.24	0.03	0.36
Avail Cap(c_a), veh/h	1518	1355	1514	1533	1145	3029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.5	8.4	2.5	2.5	2.9	2.7
Incr Delay (d2), s/veh	3.4	0.9	0.1	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.6	0.6	0.1	0.9
LnGrp Delay(d),s/veh	11.9	9.3	2.6	2.6	2.9	2.8
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	53		426			669
Approach Delay, s/veh	11.2		2.6			2.8
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.6				13.6		5.0
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		16.0				16.0		16.0
Max Q Clear Time (g_c+I1), s		3.2				4.0		2.4
Green Ext Time (p_c), s		5.8				5.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	3.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	40	94	142	28	31	92	304	198	70	521	97
Future Volume (veh/h)	91	40	94	142	28	31	92	304	198	70	521	97
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	91	40	94	142	28	31	92	304	198	70	521	97
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	344	233	198	182	604	514	115	981	623	453	925	171
Arrive On Green	0.13	0.13	0.13	0.10	0.33	0.33	0.07	0.48	0.48	0.31	0.31	0.31
Sat Flow, veh/h	1325	1845	1568	1757	1845	1568	1757	2059	1308	884	2953	548
Grp Volume(v), veh/h	91	40	94	142	28	31	92	258	244	70	308	310
Grp Sat Flow(s),veh/h/ln	1325	1845	1568	1757	1845	1568	1757	1752	1614	884	1752	1748
Q Serve(g_s), s	2.6	0.8	2.3	3.2	0.4	0.6	2.1	3.7	3.8	2.4	6.0	6.0
Cycle Q Clear(g_c), s	2.6	0.8	2.3	3.2	0.4	0.6	2.1	3.7	3.8	2.4	6.0	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.81	1.00		0.31
Lane Grp Cap(c), veh/h	344	233	198	182	604	514	115	835	769	453	549	547
V/C Ratio(X)	0.26	0.17	0.47	0.78	0.05	0.06	0.80	0.31	0.32	0.15	0.56	0.57
Avail Cap(c_a), veh/h	663	677	576	301	1174	998	215	1115	1027	544	729	727
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	15.9	16.6	17.9	9.4	9.4	18.8	6.6	6.6	10.5	11.7	11.7
Incr Delay (d2), s/veh	0.4	0.3	1.8	7.1	0.0	0.0	12.0	0.2	0.2	0.2	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.4	1.1	1.9	0.2	0.2	1.4	1.8	1.7	0.6	3.0	3.0
LnGrp Delay(d),s/veh	17.1	16.3	18.3	25.0	9.4	9.5	30.8	6.8	6.8	10.6	12.6	12.6
LnGrp LOS	B	B	B	C	A	A	C	A	A	B	B	B
Approach Vol, veh/h		225			201			594			688	
Approach Delay, s/veh		17.5			20.4			10.5			12.4	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		23.5	8.2	9.2	6.7	16.8		17.4
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s		26.0	7.0	15.0	5.0	17.0		26.0
Max Q Clear Time (g_c+I1), s		5.8	5.2	4.6	4.1	8.0		2.6
Green Ext Time (p_c), s		7.7	0.1	0.7	0.0	4.8		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	0	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	446	181	425
Demand Flow Rate, veh/h	0	459	187	437
Vehicles Circulating, veh/h	459	187	0	305
Vehicles Exiting, veh/h	283	0	459	341
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	10.1	4.8	11.9
Approach LOS	-	B	A	B

Lane	Left	Left	Left
Designated Moves	LTR	LT	TR
Assumed Moves	LTR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	459	187	437
Cap Entry Lane, veh/h	937	1130	833
Entry HV Adj Factor	0.971	0.970	0.972
Flow Entry, veh/h	446	181	425
Cap Entry, veh/h	910	1096	809
V/C Ratio	0.490	0.165	0.525
Control Delay, s/veh	10.1	4.8	11.9
LOS	B	A	B
95th %tile Queue, veh	3	1	3

Intersection	
Intersection Delay, s/veh	28.5
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	0	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	648	0	52	446
Demand Flow Rate, veh/h	668	0	54	460
Vehicles Circulating, veh/h	460	32	710	0
Vehicles Exiting, veh/h	0	732	418	32
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	44.5	0.0	7.9	7.6
Approach LOS	E	-	A	A

Lane	Left	Left	Left
Designated Moves	LTR	TR	LT
Assumed Moves	LTR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	668	54	460
Cap Entry Lane, veh/h	713	556	1130
Entry HV Adj Factor	0.971	0.969	0.971
Flow Entry, veh/h	648	52	446
Cap Entry, veh/h	692	538	1097
V/C Ratio	0.936	0.097	0.407
Control Delay, s/veh	44.5	7.9	7.6
LOS	E	A	A
95th %tile Queue, veh	13	0	2

Intersection	
Intersection Delay, s/veh	210.1
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	0	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	0	470	2291	2190
Demand Flow Rate, veh/h	0	484	2360	2256
Vehicles Circulating, veh/h	2299	2360	0	621
Vehicles Exiting, veh/h	578	0	2299	2223
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	607.2	62.0	279.7
Approach LOS	-	F	F	F

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	484	1109	1251	1060	1196
Cap Entry Lane, veh/h	217	1130	1130	709	732
Entry HV Adj Factor	0.972	0.971	0.971	0.971	0.971
Flow Entry, veh/h	470	1077	1214	1030	1161
Cap Entry, veh/h	210	1097	1097	689	710
V/C Ratio	2.235	0.981	1.107	1.495	1.635
Control Delay, s/veh	607.2	42.3	79.5	247.6	308.2
LOS	F	E	F	F	F
95th %tile Queue, veh	37	19	30	50	63

Intersection	
Intersection Delay, s/veh	341.5
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	0	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	776	0	2213	2231
Demand Flow Rate, veh/h	798	0	2279	2298
Vehicles Circulating, veh/h	2298	2359	715	0
Vehicles Exiting, veh/h	0	635	2381	2359
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	1181.5	0.0	336.8	54.2
Approach LOS	F	-	F	F

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	798	1071	1208	1080	1218
Cap Entry Lane, veh/h	226	661	685	1130	1130
Entry HV Adj Factor	0.972	0.971	0.971	0.971	0.971
Flow Entry, veh/h	776	1040	1173	1049	1182
Cap Entry, veh/h	220	642	665	1097	1097
V/C Ratio	3.528	1.620	1.763	0.956	1.078
Control Delay, s/veh	1181.5	303.7	366.1	37.0	69.4
LOS	F	F	F	E	F
95th %tile Queue, veh	73	57	70	17	27

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	381	866	1178
Demand Flow Rate, veh/h	393	892	1214
Vehicles Circulating, veh/h	755	331	124
Vehicles Exiting, veh/h	468	1007	1024
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	16.2	10.8	11.6
Approach LOS	C	B	B

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	393	419	473	571	643
Cap Entry Lane, veh/h	666	882	896	1030	1036
Entry HV Adj Factor	0.969	0.971	0.970	0.970	0.971
Flow Entry, veh/h	381	407	459	554	624
Cap Entry, veh/h	646	856	870	999	1006
V/C Ratio	0.590	0.475	0.528	0.555	0.621
Control Delay, s/veh	16.2	10.3	11.3	10.8	12.3
LOS	C	B	B	B	B
95th %tile Queue, veh	4	3	3	4	4

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	354	819	977
Demand Flow Rate, veh/h	364	844	1006
Vehicles Circulating, veh/h	713	145	185
Vehicles Exiting, veh/h	276	1046	892
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.9	8.3	10.2
Approach LOS	A	A	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.508	0.492	0.470	0.530	0.470	0.530
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	185	179	397	447	473	533
Cap Entry Lane, veh/h	662	686	1014	1021	984	993
Entry HV Adj Factor	0.973	0.972	0.970	0.971	0.971	0.971
Flow Entry, veh/h	180	174	385	434	459	518
Cap Entry, veh/h	644	667	983	992	955	964
V/C Ratio	0.279	0.261	0.392	0.438	0.481	0.537
Control Delay, s/veh	9.1	8.6	8.0	8.6	9.6	10.7
LOS	A	A	A	A	A	B
95th %tile Queue, veh	1	1	2	2	3	3

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	350	816	1016
Demand Flow Rate, veh/h	361	841	1046
Vehicles Circulating, veh/h	642	139	159
Vehicles Exiting, veh/h	338	1066	844
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.3	8.2	10.2
Approach LOS	A	A	B

Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.440	0.560	0.470	0.530	0.470	0.530
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	159	202	395	446	492	554
Cap Entry Lane, veh/h	698	721	1018	1025	1003	1011
Entry HV Adj Factor	0.969	0.970	0.971	0.970	0.970	0.972
Flow Entry, veh/h	154	196	384	433	477	538
Cap Entry, veh/h	676	700	989	994	973	982
V/C Ratio	0.228	0.280	0.388	0.435	0.491	0.548
Control Delay, s/veh	8.0	8.5	7.9	8.6	9.7	10.8
LOS	A	A	A	A	A	B
95th %tile Queue, veh	1	1	2	2	3	3

Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	110	823	60	296	216
Future Vol, veh/h	41	110	823	60	296	216
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	70	0	-	-	85	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	41	110	823	60	296	216

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1553	442	0	0	883	0
Stage 1	853	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.16	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.23	-
Pot Cap-1 Maneuver	102	558	-	-	756	-
Stage 1	373	-	-	-	-	-
Stage 2	448	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	62	558	-	-	756	-
Mov Cap-2 Maneuver	171	-	-	-	-	-
Stage 1	373	-	-	-	-	-
Stage 2	273	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.3	0	7.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	171	558	756	-
HCM Lane V/C Ratio	-	-	0.24	0.197	0.392	-
HCM Control Delay (s)	-	-	32.6	13	12.8	-
HCM Lane LOS	-	-	D	B	B	-
HCM 95th %tile Q(veh)	-	-	0.9	0.7	1.9	-

Intersection	
Int Delay, s/veh	10

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	299	73	945	158	62	1543
Future Vol, veh/h	299	73	945	158	62	1543
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	299	73	945	158	62	1543

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1765	552	0	0	1103	0
Stage 1	1024	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Critical Hdwy	5.76	7.16	-	-	5.38	-
Critical Hdwy Stg 1	6.66	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	3.83	3.93	-	-	3.14	-
Pot Cap-1 Maneuver	~ 124	407	-	-	343	-
Stage 1	~ 232	-	-	-	-	-
Stage 2	390	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	407	-	-	343	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	~ 232	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	57.8	0	5.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	407	343	-
HCM Lane V/C Ratio	-	-	0.914	0.181	-
HCM Control Delay (s)	-	-	57.8	17.8	5.3
HCM Lane LOS	-	-	F	C	A
HCM 95th %tile Q(veh)	-	-	9.8	0.7	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	34.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	2696	2336	25	14	30
Future Vol, veh/h	83	2696	2336	25	14	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	190	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	6	6	3	3
Mvmt Flow	83	2696	2336	25	14	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2361	0	-	0	3863	1181
Stage 1	-	-	-	-	2349	-
Stage 2	-	-	-	-	1514	-
Critical Hdwy	4.22	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.26	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	192	-	-	-	~ 3	181
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	167	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	192	-	-	-	~ 2	181
Mov Cap-2 Maneuver	-	-	-	-	~ 2	-
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	95	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	$ 4032.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	192	-	-	-	6
HCM Lane V/C Ratio	0.432	-	-	-	7.333
HCM Control Delay (s)	37.3	-	-	-	$ 4032.7
HCM Lane LOS	E	-	-	-	F
HCM 95th %tile Q(veh)	2	-	-	-	7.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	2	0	2	0	762	6	1	949	4
Future Vol, veh/h	2	0	1	2	0	2	0	762	6	1	949	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	0	1	2	0	2	0	762	6	1	949	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1719	1721	951	1719	1720	765	953	0	0	768	0	0
Stage 1	953	953	-	765	765	-	-	-	-	-	-	-
Stage 2	766	768	-	954	955	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	70	89	314	70	89	402	717	-	-	841	-	-
Stage 1	310	336	-	394	411	-	-	-	-	-	-	-
Stage 2	394	409	-	310	336	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	69	89	314	70	89	402	717	-	-	841	-	-
Mov Cap-2 Maneuver	69	89	-	70	89	-	-	-	-	-	-	-
Stage 1	310	335	-	394	411	-	-	-	-	-	-	-
Stage 2	392	409	-	308	335	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	45	36.3	0	0
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	717	-	-	93	119	841	-	-
HCM Lane V/C Ratio	-	-	-	0.032	0.034	0.001	-	-
HCM Control Delay (s)	0	-	-	45	36.3	9.3	0	-
HCM Lane LOS	A	-	-	E	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	12.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	76	42	45	950	1137	141
Future Vol, veh/h	76	42	45	950	1137	141
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	76	42	45	950	1137	141

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1773	639	1278	0	-	0
Stage 1	1208	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	~ 73	416	534	-	-	-
Stage 1	244	-	-	-	-	-
Stage 2	530	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 67	416	534	-	-	-
Mov Cap-2 Maneuver	~ 67	-	-	-	-	-
Stage 1	244	-	-	-	-	-
Stage 2	485	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	247	0.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	534	-	96	-	-
HCM Lane V/C Ratio	0.084	-	1.229	-	-
HCM Control Delay (s)	12.4	-	247	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.3	-	8.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	7772.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	693	179	715	762	225	558
Future Vol, veh/h	693	179	715	762	225	558
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	693	179	715	762	225	558

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	872	0	2594	436
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	1811	-
Critical Hdwy	-	-	4.16	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.23	-	3.53	3.33
Pot Cap-1 Maneuver	-	-	763	-	~ 20	565
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	~ 114	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	763	-	~ 1	565
Mov Cap-2 Maneuver	-	-	-	-	~ 1	-
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	~ 7	-

Approach	EB	WB	NB
HCM Control Delay, s	0	20.5	$ 31049.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	1	565	-	-	763	-
HCM Lane V/C Ratio	225	0.988	-	-	0.937	-
HCM Control Delay (s)	$ 107899.9	61.9	-	-	42.4	-
HCM Lane LOS	F	F	-	-	E	-
HCM 95th %tile Q(veh)	30.7	14	-	-	13.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	216	550	7	1	502	2	8	188	0	1	276	306
Future Vol, veh/h	216	550	7	1	502	2	8	188	0	1	276	306
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	8	8	10	10	10	8	8	8	8	8	8
Mvmt Flow	216	550	7	1	502	2	8	188	0	1	276	306

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	504	0	0	557	0	0	1782	1492	554	1585	1494	503
Stage 1	-	-	-	-	-	-	986	986	-	505	505	-
Stage 2	-	-	-	-	-	-	796	506	-	1080	989	-
Critical Hdwy	4.18	-	-	4.2	-	-	7.18	6.58	6.28	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.18	5.58	-	6.18	5.58	-
Follow-up Hdwy	2.272	-	-	2.29	-	-	3.572	4.072	3.372	3.572	4.072	3.372
Pot Cap-1 Maneuver	1030	-	-	975	-	-	61	~ 120	521	85	~ 119	557
Stage 1	-	-	-	-	-	-	291	318	-	538	531	-
Stage 2	-	-	-	-	-	-	372	530	-	257	317	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1030	-	-	975	-	-	-	~ 83	521	-	~ 83	557
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 83	-	-	~ 83	-
Stage 1	-	-	-	-	-	-	203	221	-	374	530	-
Stage 2	-	-	-	-	-	-	80	529	-	27	~ 221	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	0		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1030	-	-	975	-	-	-
HCM Lane V/C Ratio	-	0.21	-	-	0.001	-	-	-
HCM Control Delay (s)	-	9.4	0	-	8.7	0	-	-
HCM Lane LOS	-	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-	0	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	65	50	61	137	61	30
Future Vol, veh/h	65	50	61	137	61	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	65	50	61	137	61	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	335	76	91	0	-	0
Stage 1	76	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	658	982	1498	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	629	982	1498	-	-	-
Mov Cap-2 Maneuver	629	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	2.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1498	-	746	-	-
HCM Lane V/C Ratio	0.041	-	0.154	-	-
HCM Control Delay (s)	7.5	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	22	12	187	125	7
Future Vol, veh/h	12	22	12	187	125	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	12	22	12	187	125	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	340	129	132	0	-	0
Stage 1	129	-	-	-	-	-
Stage 2	211	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	654	918	1447	-	-	-
Stage 1	894	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	648	918	1447	-	-	-
Mov Cap-2 Maneuver	648	-	-	-	-	-
Stage 1	894	-	-	-	-	-
Stage 2	815	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1447	-	800	-	-
HCM Lane V/C Ratio	0.008	-	0.043	-	-
HCM Control Delay (s)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	12.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	204	108	177	171	104	165
Future Vol, veh/h	204	108	177	171	104	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	204	108	177	171	104	165

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	712	187	269	0	-	0
Stage 1	187	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	397	852	1289	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	337	852	1289	-	-	-
Mov Cap-2 Maneuver	337	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	501	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33.3	4.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1289	-	426	-	-
HCM Lane V/C Ratio	0.137	-	0.732	-	-
HCM Control Delay (s)	8.2	0	33.3	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.5	-	5.8	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	14	23	210	189	55
Future Vol, veh/h	71	14	23	210	189	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	71	14	23	210	189	55

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	445	189	189	0	-	0
Stage 1	189	-	-	-	-	-
Stage 2	256	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	569	850	1379	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	784	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	560	850	1379	-	-	-
Mov Cap-2 Maneuver	560	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	771	-	-	-	-	-

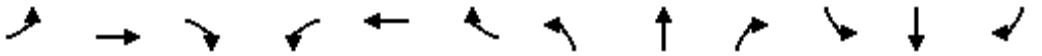
Approach	EB	NB	SB
HCM Control Delay, s	11.9	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1379	-	560	850	-	-
HCM Lane V/C Ratio	0.017	-	0.127	0.016	-	-
HCM Control Delay (s)	7.7	-	12.4	9.3	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	0.1	-	-

Cumulative Plus All Projects

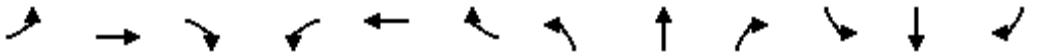
(Proposed Project)

County Standard Mitigation AM



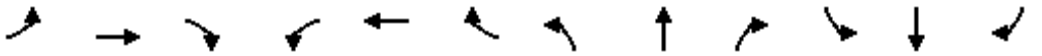
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	567	120	91	1052	907	674	1610	84	1209	1695	95
Future Volume (vph)	156	567	120	91	1052	907	674	1610	84	1209	1695	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3380		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3380		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	156	567	120	91	1052	907	674	1610	84	1209	1695	95
RTOR Reduction (vph)	0	13	0	0	0	589	0	0	58	0	0	56
Lane Group Flow (vph)	156	674	0	91	1052	318	674	1610	26	1209	1695	39
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	4.0	32.4		8.6	37.0	37.0	26.0	43.0	43.0	40.0	57.0	57.0
Effective Green, g (s)	4.0	32.4		8.6	37.0	37.0	26.0	43.0	43.0	40.0	57.0	57.0
Actuated g/C Ratio	0.03	0.23		0.06	0.26	0.26	0.19	0.31	0.31	0.29	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	96	782		206	917	722	625	1532	476	962	2030	632
v/s Ratio Prot	c0.05	0.20		0.03	c0.30		0.20	c0.32		c0.36	0.34	
v/s Ratio Perm						0.12			0.02			0.02
v/c Ratio	1.62	0.86		0.44	1.15	0.44	1.08	1.05	0.05	1.26	0.83	0.06
Uniform Delay, d1	68.0	51.7		63.4	51.5	42.9	57.0	48.5	34.2	50.0	37.3	25.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	323.6	9.6		1.5	79.1	0.4	59.0	37.7	0.0	124.1	3.1	0.0
Delay (s)	391.6	61.3		64.9	130.6	43.3	116.0	86.2	34.2	174.1	40.4	25.3
Level of Service	F	E		E	F	D	F	F	C	F	D	C
Approach Delay (s)		122.4			89.0			92.8			93.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	95.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	112.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	651	170	180	813	860	239	1794	159	468	811	72
Future Volume (vph)	53	651	170	180	813	860	239	1794	159	468	811	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91	0.91	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.97		1.00	0.96	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3396		1736	3177	1413	1736	4927		1736	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3396		1736	3177	1413	1736	4927		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	53	651	170	180	813	860	239	1794	159	468	811	72
RTOR Reduction (vph)	0	16	0	0	26	327	0	7	0	0	0	43
Lane Group Flow (vph)	53	805	0	180	1131	189	239	1946	0	468	811	29
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	8.7	39.0		16.0	46.3	46.3	24.1	48.0		31.0	54.9	54.9
Effective Green, g (s)	8.7	39.0		16.0	46.3	46.3	24.1	48.0		31.0	54.9	54.9
Actuated g/C Ratio	0.06	0.26		0.11	0.31	0.31	0.16	0.32		0.21	0.37	0.37
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	101	882		185	980	436	278	1576		358	1825	568
v/s Ratio Prot	0.03	0.24		c0.10	c0.36		0.14	c0.40		c0.27	0.16	
v/s Ratio Perm						0.13						0.02
v/c Ratio	0.52	0.91		0.97	1.15	0.43	0.86	1.23		1.31	0.44	0.05
Uniform Delay, d1	68.6	53.9		66.8	51.9	41.4	61.3	51.0		59.5	36.0	30.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.8	13.6		57.9	81.0	0.7	22.3	111.4		157.1	0.2	0.0
Delay (s)	73.5	67.5		124.7	132.8	42.1	83.6	162.4		216.6	36.2	30.8
Level of Service	E	E		F	F	D	F	F		F	D	C
Approach Delay (s)		67.8			106.8			153.8			98.4	
Approach LOS		E			F			F			F	

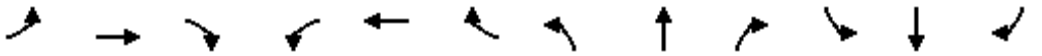
Intersection Summary			
HCM 2000 Control Delay	116.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	112.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	896	101	171	1075	376	110	636	184	309	410	71
Future Volume (vph)	56	896	101	171	1075	376	110	636	184	309	410	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.6		5.0	4.8	4.8	5.5	4.4	4.4	5.5	4.3	4.3
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3452		1752	3505	1568	1752	1845	1568	1752	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	3452		1752	3505	1568	1752	1845	1568	1752	1845	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	56	896	101	171	1075	376	110	636	184	309	410	71
RTOR Reduction (vph)	0	8	0	0	0	228	0	0	86	0	0	45
Lane Group Flow (vph)	56	989	0	171	1075	148	110	636	98	309	410	26
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases						2			8			4
Actuated Green, G (s)	4.2	32.3		8.0	35.7	35.7	9.9	33.6	33.6	16.5	40.3	40.3
Effective Green, g (s)	4.2	32.3		8.0	35.7	35.7	9.9	33.6	33.6	16.5	40.3	40.3
Actuated g/C Ratio	0.04	0.29		0.07	0.32	0.32	0.09	0.31	0.31	0.15	0.37	0.37
Clearance Time (s)	5.2	4.6		5.0	4.8	4.8	5.5	4.4	4.4	5.5	4.3	4.3
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	66	1014		127	1138	509	157	564	479	263	676	574
v/s Ratio Prot	0.03	0.29		c0.10	c0.31		0.06	c0.34		c0.18	0.22	
v/s Ratio Perm						0.09			0.06			0.02
v/c Ratio	0.85	0.98		1.35	0.94	0.29	0.70	1.13	0.20	1.17	0.61	0.05
Uniform Delay, d1	52.5	38.4		51.0	36.1	27.7	48.6	38.2	28.3	46.7	28.3	22.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	58.5	22.2		199.0	15.0	0.1	10.9	78.2	0.1	111.2	1.1	0.0
Delay (s)	111.1	60.6		250.0	51.2	27.8	59.5	116.3	28.3	157.9	29.4	22.4
Level of Service	F	E		F	D	C	E	F	C	F	C	C
Approach Delay (s)		63.3			66.7			92.2			79.1	
Approach LOS		E			E			F			E	

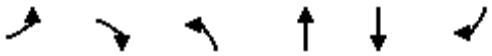
Intersection Summary			
HCM 2000 Control Delay	73.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	109.9	Sum of lost time (s)	19.9
Intersection Capacity Utilization	104.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	674	0	1756	0	0	0	0	1890	1447	0	1480	252
Future Volume (vph)	674	0	1756	0	0	0	0	1890	1447	0	1480	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	674	0	1756	0	0	0	0	1890	1447	0	1480	252
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	674	0	1748	0	0	0	0	1890	1447	0	1480	252
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	71.6		71.6					46.9	130.0		47.4	130.0
Effective Green, g (s)	71.6		71.6					46.9	130.0		47.4	130.0
Actuated g/C Ratio	0.55		0.55					0.36	1.00		0.36	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1854		1505					1799	1553		1818	1553
v/s Ratio Prot								c0.38			0.30	
v/s Ratio Perm	0.20		c0.64						0.93			0.16
v/c Ratio	0.36		1.16					1.05	0.93		0.81	0.16
Uniform Delay, d1	16.4		29.2					41.5	0.0		37.3	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0		80.4					35.9	11.5		2.8	0.2
Delay (s)	16.4		109.6					77.5	11.5		40.1	0.2
Level of Service	B		F					E	B		D	A
Approach Delay (s)		83.8			0.0			48.9			34.3	
Approach LOS		F			A			D			C	

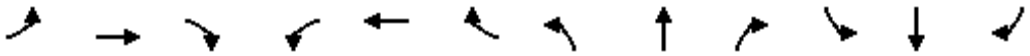
Intersection Summary			
HCM 2000 Control Delay	56.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1037	29	55	945	335	1033
Future Volume (vph)	1037	29	55	945	335	1033
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	3505	3505	2760
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	3505	3505	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1037	29	55	945	335	1033
RTOR Reduction (vph)	0	18	0	0	0	685
Lane Group Flow (vph)	1037	11	55	945	335	348
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	17.1	17.1	1.6	21.2	15.6	15.6
Effective Green, g (s)	17.1	17.1	1.6	21.2	15.6	15.6
Actuated g/C Ratio	0.37	0.37	0.03	0.46	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1255	579	60	1604	1180	929
v/s Ratio Prot	c0.31		0.03	c0.27	0.10	
v/s Ratio Perm		0.01				0.13
v/c Ratio	0.83	0.02	0.92	0.59	0.28	0.37
Uniform Delay, d1	13.3	9.3	22.3	9.3	11.3	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	0.0	85.9	0.6	0.1	0.3
Delay (s)	17.8	9.3	108.1	9.9	11.4	11.9
Level of Service	B	A	F	A	B	B
Approach Delay (s)	17.6			15.3	11.8	
Approach LOS	B			B	B	

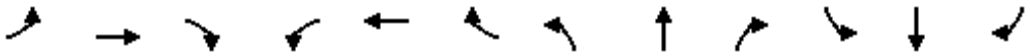
Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	322	418	1	1	638	7	7	308	0	0	161	236
Future Volume (vph)	322	418	1	1	638	7	7	308	0	0	161	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			1.00			0.92	
Flt Protected		0.98			1.00			1.00			1.00	
Satd. Flow (prot)		1722			1725			1757			1618	
Flt Permitted		0.98			1.00			0.63			1.00	
Satd. Flow (perm)		1722			1725			1111			1618	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	322	418	1	1	638	7	7	308	0	0	161	236
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	44	0
Lane Group Flow (vph)	0	741	0	0	646	0	0	315	0	0	353	0
Heavy Vehicles (%)	8%	8%	8%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Split	NA		Split	NA		Perm	NA			NA	
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)		44.0			39.0			25.0			25.0	
Effective Green, g (s)		44.0			39.0			25.0			25.0	
Actuated g/C Ratio		0.37			0.32			0.21			0.21	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		631			560			231			337	
v/s Ratio Prot		c0.43			c0.37						0.22	
v/s Ratio Perm								c0.28				
v/c Ratio		1.17			1.15			1.36			1.05	
Uniform Delay, d1		38.0			40.5			47.5			47.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		94.4			88.1			188.9			61.7	
Delay (s)		132.4			128.6			236.4			109.2	
Level of Service		F			F			F			F	
Approach Delay (s)		132.4			128.6			236.4			109.2	
Approach LOS		F			F			F			F	

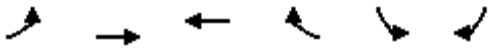
Intersection Summary			
HCM 2000 Control Delay	142.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	3	19	194	6	606	16	1816	105	226	1575	0
Future Volume (vph)	0	3	19	194	6	606	16	1816	105	226	1575	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.87		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1606		1752	1845	1568	1752	3476		1752	3505	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1606		1752	1845	1568	1752	3476		1752	3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	3	19	194	6	606	16	1816	105	226	1575	0
RTOR Reduction (vph)	0	18	0	0	0	160	0	3	0	0	0	0
Lane Group Flow (vph)	0	4	0	194	6	446	16	1918	0	226	1575	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		6.1		27.5	37.6	37.6	2.0	78.4		18.0	94.4	
Effective Green, g (s)		6.1		27.5	37.6	37.6	2.0	78.4		18.0	94.4	
Actuated g/C Ratio		0.04		0.19	0.26	0.26	0.01	0.54		0.12	0.65	
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		67		330	475	403	24	1866		216	2266	
v/s Ratio Prot		0.00		0.11	0.00		0.01	c0.55		c0.13	0.45	
v/s Ratio Perm						c0.28						
v/c Ratio		0.06		0.59	0.01	1.11	0.67	1.03		1.05	0.70	
Uniform Delay, d1		67.2		54.1	40.4	54.2	71.7	33.8		64.0	16.6	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4		2.7	0.0	77.2	52.8	28.3		73.9	0.9	
Delay (s)		67.5		56.7	40.4	131.4	124.5	62.1		137.9	17.5	
Level of Service		E		E	D	F	F	E		F	B	
Approach Delay (s)		67.5			112.8			62.7			32.6	
Approach LOS		E			F			E			C	

Intersection Summary			
HCM 2000 Control Delay	59.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	146.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		

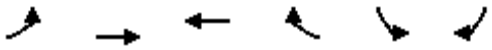
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	601	1365	2134	1713	0
Future Volume (vph)	0	601	1365	2134	1713	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	1.00	0.97	
Frt		1.00	1.00	0.85	1.00	
Flt Protected		1.00	1.00	1.00	0.95	
Satd. Flow (prot)		3505	3505	1568	3400	
Flt Permitted		1.00	1.00	1.00	0.95	
Satd. Flow (perm)		3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	601	1365	2134	1713	0
RTOR Reduction (vph)	0	0	0	518	0	0
Lane Group Flow (vph)	0	601	1365	1616	1713	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	4	5	5		6	
Permitted Phases				5		
Actuated Green, G (s)		63.0	63.0	63.0	49.0	
Effective Green, g (s)		63.0	63.0	63.0	49.0	
Actuated g/C Ratio		0.52	0.52	0.52	0.41	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1840	1840	823	1388	
v/s Ratio Prot		0.17	0.39		c0.50	
v/s Ratio Perm				c1.03		
v/c Ratio		0.33	0.74	1.96	1.23	
Uniform Delay, d1		16.3	22.2	28.5	35.5	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1	1.7	437.9	111.8	
Delay (s)		16.4	23.8	466.4	147.3	
Level of Service		B	C	F	F	
Approach Delay (s)		16.4	293.7		147.3	
Approach LOS		B	F		F	

Intersection Summary			
HCM 2000 Control Delay	221.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	135.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	996	1289	2654	95	78	589
Future Volume (vph)	996	1289	2654	95	78	589
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.91	0.91		1.00	0.88
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	5036	5010		1752	2760
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	5036	5010		1752	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	996	1289	2654	95	78	589
RTOR Reduction (vph)	0	0	2	0	0	540
Lane Group Flow (vph)	996	1289	2747	0	78	49
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	42.0	125.1	79.1		12.0	12.0
Effective Green, g (s)	42.0	125.1	79.1		12.0	12.0
Actuated g/C Ratio	0.29	0.86	0.55		0.08	0.08
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	984	4341	2731		144	228
v/s Ratio Prot	c0.29	0.26	c0.55		c0.04	
v/s Ratio Perm						0.02
v/c Ratio	1.01	0.30	1.01		0.54	0.21
Uniform Delay, d1	51.5	1.9	33.0		63.9	62.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	31.7	0.0	18.6		4.1	0.5
Delay (s)	83.3	1.9	51.6		68.0	62.6
Level of Service	F	A	D		E	E
Approach Delay (s)		37.4	51.6		63.2	
Approach LOS		D	D		E	

Intersection Summary			
HCM 2000 Control Delay	47.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	145.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	491	132	253	482	724	72	3426	490	574	2962	531
Future Volume (veh/h)	347	491	132	253	482	724	72	3426	490	574	2962	531
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	347	491	132	253	482	724	72	3426	490	574	2962	531
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	192	932	417	147	885	547	67	2290	713	325	2671	832
Arrive On Green	0.06	0.27	0.27	0.04	0.25	0.25	0.02	0.46	0.46	0.10	0.54	0.54
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	347	491	132	253	482	724	72	3426	490	574	2962	531
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.5	18.0	10.2	6.5	17.9	38.0	3.0	69.1	37.5	14.5	80.6	36.3
Cycle Q Clear(g_c), s	8.5	18.0	10.2	6.5	17.9	38.0	3.0	69.1	37.5	14.5	80.6	36.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	932	417	147	885	547	67	2290	713	325	2671	832
V/C Ratio(X)	1.80	0.53	0.32	1.72	0.54	1.32	1.07	1.50	0.69	1.77	1.11	0.64
Avail Cap(c_a), veh/h	192	932	417	147	885	547	67	2290	713	325	2671	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	47.2	44.3	72.0	48.8	49.0	73.8	40.7	32.2	68.0	35.0	24.7
Incr Delay (d2), s/veh	381.1	0.3	0.2	350.4	0.4	158.1	130.4	225.6	2.3	356.6	55.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	8.8	4.4	10.2	8.8	46.7	2.6	79.4	16.6	22.8	50.5	15.8
LnGrp Delay(d),s/veh	452.1	47.5	44.5	422.4	49.1	207.1	205.7	266.3	34.5	424.6	90.1	25.9
LnGrp LOS	F	D	D	F	D	F	F	F	C	F	F	C
Approach Vol, veh/h		970			1459			3988			4067	
Approach Delay, s/veh		191.8			192.2			236.7			128.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	85.4	14.0	42.6	20.0	73.9	12.0	44.6
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	3.0	80.4	8.5	* 38	14.5	* 69	6.5	39.7
Max Q Clear Time (g_c+I1), s	5.0	82.6	10.5	40.0	16.5	71.1	8.5	20.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1

Intersection Summary		
HCM 2010 Ctrl Delay		184.5
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	308	23	151	409	890	34	2803	226	507	2340	0
Future Volume (veh/h)	0	308	23	151	409	890	34	2803	226	507	2340	0
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	0	308	23	151	409	890	34	2803	226	507	2340	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	3	554	248	117	826	590	60	2486	774	475	3098	965
Arrive On Green	0.00	0.16	0.16	0.03	0.24	0.24	0.02	0.50	0.50	0.14	0.62	0.00
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	0	308	23	151	409	890	34	2803	226	507	2340	0
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	0.0	10.8	1.7	4.5	13.3	31.0	1.3	65.6	11.2	18.5	44.1	0.0
Cycle Q Clear(g_c), s	0.0	10.8	1.7	4.5	13.3	31.0	1.3	65.6	11.2	18.5	44.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	3	554	248	117	826	590	60	2486	774	475	3098	965
V/C Ratio(X)	0.00	0.56	0.09	1.30	0.50	1.51	0.56	1.13	0.29	1.07	0.76	0.00
Avail Cap(c_a), veh/h	77	781	349	117	826	590	77	2486	774	475	3098	965
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	51.0	47.2	63.6	43.5	41.1	64.1	33.0	19.4	56.6	17.8	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.1	182.4	0.2	237.8	3.0	63.2	0.1	60.8	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.2	0.7	5.1	6.4	60.3	0.6	44.5	4.9	12.6	20.4	0.0
LnGrp Delay(d),s/veh	0.0	51.3	47.2	246.0	43.7	278.8	67.1	96.2	19.4	117.4	18.8	0.0
LnGrp LOS		D	D	F	D	F	E	F	B	F	B	
Approach Vol, veh/h		331			1450			3063			2847	
Approach Delay, s/veh		51.0			209.1			90.2			36.3	
Approach LOS		D			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	87.0	0.0	36.7	24.0	70.9	10.0	26.7
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	81.0	3.0	* 31	18.5	* 66	4.5	* 30
Max Q Clear Time (g_c+I1), s	3.3	46.1	0.0	33.0	20.5	67.6	6.5	12.8
Green Ext Time (p_c), s	0.0	30.4	0.0	0.0	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	91.0
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	1543	601	101	1965	990	778	1964	67	1065	1570	189
Future Volume (veh/h)	89	1543	601	101	1965	990	778	1964	67	1065	1570	189
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	89	1543	601	101	1965	0	778	1964	67	1065	1570	189
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	66	1537	478	115	1625	506	710	1533	477	719	1523	474
Arrive On Green	0.02	0.31	0.31	0.03	0.33	0.00	0.21	0.31	0.31	0.21	0.31	0.31
Sat Flow, veh/h	3312	4893	1524	3312	4893	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	89	1543	601	101	1965	0	778	1964	67	1065	1570	189
Grp Sat Flow(s),veh/h/ln	1656	1631	1524	1656	1631	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	3.0	47.2	47.2	4.6	49.9	0.0	31.6	46.2	4.7	32.0	45.9	14.5
Cycle Q Clear(g_c), s	3.0	47.2	47.2	4.6	49.9	0.0	31.6	46.2	4.7	32.0	45.9	14.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1537	478	115	1625	506	710	1533	477	719	1523	474
V/C Ratio(X)	1.35	1.00	1.26	0.88	1.21	0.00	1.10	1.28	0.14	1.48	1.03	0.40
Avail Cap(c_a), veh/h	66	1537	478	115	1625	506	710	1533	477	719	1523	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.7	51.6	51.6	72.2	50.2	0.0	59.4	52.1	37.7	59.2	52.2	41.3
Incr Delay (d2), s/veh	228.2	23.9	131.4	48.1	100.3	0.0	63.1	131.6	0.0	224.3	31.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	24.6	37.3	2.9	37.5	0.0	20.9	39.8	2.0	37.3	25.4	6.2
LnGrp Delay(d),s/veh	301.8	75.5	183.0	120.3	150.5	0.0	122.5	183.7	37.7	283.5	83.5	41.5
LnGrp LOS	F	F	F	F	F		F	F	D	F	F	D
Approach Vol, veh/h		2233			2066			2809			2824	
Approach Delay, s/veh		113.4			149.0			163.2			156.1	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	55.3	36.3	50.7	10.7	52.6	36.0	51.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.0	4.8
Max Green Setting (Gmax), s	3.0	* 50	* 32	45.9	5.2	* 47	32.0	46.2
Max Q Clear Time (g_c+I1), s	5.0	51.9	33.6	47.9	6.6	49.2	34.0	48.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	147.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	508	95	245	718	301	404	2078	347	141	1692	427
Future Volume (veh/h)	107	508	95	245	718	301	404	2078	347	141	1692	427
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	107	508	95	245	718	301	404	2078	347	141	1692	427
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	148	665	298	312	823	368	362	2282	717	165	2024	630
Arrive On Green	0.04	0.19	0.19	0.09	0.23	0.23	0.11	0.46	0.46	0.05	0.41	0.41
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1568	3408	4988	1553
Grp Volume(v), veh/h	107	508	95	245	718	301	404	2078	347	141	1692	427
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1568	1704	1663	1553
Q Serve(g_s), s	3.0	13.3	5.1	6.8	19.1	17.6	10.4	37.5	14.9	4.0	29.6	21.8
Cycle Q Clear(g_c), s	3.0	13.3	5.1	6.8	19.1	17.6	10.4	37.5	14.9	4.0	29.6	21.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	665	298	312	823	368	362	2282	717	165	2024	630
V/C Ratio(X)	0.72	0.76	0.32	0.78	0.87	0.82	1.11	0.91	0.48	0.85	0.84	0.68
Avail Cap(c_a), veh/h	148	665	298	429	944	422	362	2307	725	165	2049	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	37.2	33.8	43.1	35.7	35.1	43.2	24.4	18.3	45.7	25.9	23.6
Incr Delay (d2), s/veh	14.1	4.7	0.2	4.2	7.4	9.2	82.0	5.8	0.2	31.2	3.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.9	2.2	3.4	10.1	8.6	8.9	18.3	6.5	2.6	14.0	9.7
LnGrp Delay(d),s/veh	59.9	41.9	34.1	47.3	43.0	44.3	125.3	30.2	18.5	77.0	28.8	25.9
LnGrp LOS	E	D	C	D	D	D	F	C	B	E	C	C
Approach Vol, veh/h		710			1264			2829			2260	
Approach Delay, s/veh		43.6			44.2			42.3			31.3	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	44.1	9.7	28.1	10.0	49.1	14.1	23.7
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 10	39.8	4.2	* 26	* 4.7	44.8	* 12	* 18
Max Q Clear Time (g_c+I1), s	12.4	31.6	5.0	21.1	6.0	39.5	8.8	15.3
Green Ext Time (p_c), s	0.0	7.2	0.0	1.7	0.0	4.8	0.1	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	39.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1201	470	131	13	840	26	824	2331	129	9	864	607
Future Volume (veh/h)	1201	470	131	13	840	26	824	2331	129	9	864	607
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	1201	470	131	13	840	26	824	2331	129	9	864	607
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	1055	1985	618	28	465	145	744	2235	696	21	1186	369
Arrive On Green	0.31	0.40	0.40	0.01	0.09	0.09	0.22	0.45	0.45	0.01	0.24	0.24
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	1201	470	131	13	840	26	824	2331	129	9	864	607
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	46.9	9.4	8.3	0.6	14.0	2.3	33.1	67.3	7.5	0.4	24.0	35.7
Cycle Q Clear(g_c), s	46.9	9.4	8.3	0.6	14.0	2.3	33.1	67.3	7.5	0.4	24.0	35.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1055	1985	618	28	465	145	744	2235	696	21	1186	369
V/C Ratio(X)	1.14	0.24	0.21	0.46	1.81	0.18	1.11	1.04	0.19	0.43	0.73	1.64
Avail Cap(c_a), veh/h	1055	1985	618	67	465	145	744	2235	696	67	1186	369
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	30.0	29.7	74.1	68.1	62.8	58.5	41.4	24.9	74.3	52.7	57.2
Incr Delay (d2), s/veh	74.2	0.3	0.8	4.3	371.0	2.7	66.3	31.4	0.6	5.0	3.9	301.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.7	4.4	3.7	0.3	22.4	1.1	22.3	37.3	3.3	0.2	11.5	46.3
LnGrp Delay(d),s/veh	125.8	30.3	30.5	78.4	439.1	65.5	124.8	72.8	25.5	79.3	56.7	358.7
LnGrp LOS	F	C	C	E	F	E	F	F	C	E	E	F
Approach Vol, veh/h		1802			879			3284			1480	
Approach Delay, s/veh		94.0			422.7			84.0			180.7	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	38.0	40.9	52.0	19.2	6.4	72.5	6.3	64.9
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 33	* 36	* 47	* 14	3.0	* 65	3.0	* 58
Max Q Clear Time (g_c+I1), s	35.1	37.7	48.9	16.0	2.4	69.3	2.6	11.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.3

Intersection Summary	
HCM 2010 Ctrl Delay	145.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	2443	38	54	2492	8	433	42	218	7	16	55
Future Volume (veh/h)	14	2443	38	54	2492	8	433	42	218	7	16	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	14	2443	38	54	2492	8	433	42	218	7	16	55
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	21	2535	39	52	2663	9	458	585	497	12	104	89
Arrive On Green	0.01	0.51	0.51	0.03	0.53	0.53	0.26	0.32	0.32	0.01	0.06	0.06
Sat Flow, veh/h	1707	4964	77	1707	5036	16	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	14	1603	878	54	1614	886	433	42	218	7	16	55
Grp Sat Flow(s),veh/h/ln	1707	1631	1779	1707	1631	1790	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.1	62.4	62.9	4.0	60.9	61.0	31.9	2.1	14.6	0.5	1.1	4.5
Cycle Q Clear(g_c), s	1.1	62.4	62.9	4.0	60.9	61.0	31.9	2.1	14.6	0.5	1.1	4.5
Prop In Lane	1.00		0.04	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	21	1666	909	52	1725	946	458	585	497	12	104	89
V/C Ratio(X)	0.67	0.96	0.97	1.04	0.94	0.94	0.95	0.07	0.44	0.58	0.15	0.62
Avail Cap(c_a), veh/h	52	1696	925	52	1725	946	514	777	661	53	294	250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.9	31.1	31.2	64.0	29.0	29.0	47.9	31.5	35.7	65.3	59.2	60.9
Incr Delay (d2), s/veh	22.7	14.1	21.7	138.0	10.3	16.3	24.8	0.0	0.6	26.6	0.6	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	31.3	36.2	3.9	29.8	34.3	18.7	1.1	6.4	0.3	0.6	2.1
LnGrp Delay(d),s/veh	87.7	45.1	52.9	202.9	39.2	45.4	72.7	31.5	36.3	91.9	59.8	67.1
LnGrp LOS	F	D	D	F	D	D	E	C	D	F	E	E
Approach Vol, veh/h		2495			2554			693			78	
Approach Delay, s/veh		48.1			44.8			58.8			67.8	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	73.8	38.8	11.9	5.1	76.2	4.4	46.3
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	4.0	68.6	38.6	* 21	4.0	68.6	4.0	55.6
Max Q Clear Time (g_c+I1), s	6.0	64.9	33.9	6.5	3.1	63.0	2.5	16.6
Green Ext Time (p_c), s	0.0	2.5	0.5	0.9	0.0	5.6	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	48.2
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1224	722	5	1316	264	607	466	20	127	191	54
Future Volume (veh/h)	82	1224	722	5	1316	264	607	466	20	127	191	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	82	1224	722	5	1316	264	607	466	20	127	191	54
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	48	1079	579	7	1360	269	491	575	489	151	218	185
Arrive On Green	0.03	0.49	0.49	0.00	0.47	0.47	0.28	0.31	0.31	0.09	0.12	0.12
Sat Flow, veh/h	1757	2205	1183	1757	2917	578	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	82	948	998	5	784	796	607	466	20	127	191	54
Grp Sat Flow(s),veh/h/ln	1757	1752	1636	1757	1752	1743	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	4.0	71.8	71.8	0.4	63.4	65.9	41.0	34.1	1.3	10.5	14.9	4.6
Cycle Q Clear(g_c), s	4.0	71.8	71.8	0.4	63.4	65.9	41.0	34.1	1.3	10.5	14.9	4.6
Prop In Lane	1.00		0.72	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	48	858	801	7	817	812	491	575	489	151	218	185
V/C Ratio(X)	1.71	1.11	1.25	0.76	0.96	0.98	1.24	0.81	0.04	0.84	0.88	0.29
Avail Cap(c_a), veh/h	48	858	801	36	824	819	491	575	489	263	251	214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.4	37.5	37.5	73.0	37.8	38.5	52.9	46.5	35.2	66.1	63.6	59.1
Incr Delay (d2), s/veh	394.1	63.7	121.2	96.5	21.9	26.5	123.1	8.5	0.0	11.9	25.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	49.7	59.2	0.4	35.7	37.6	36.6	18.7	0.6	5.6	9.2	2.0
LnGrp Delay(d),s/veh	465.5	101.1	158.6	169.5	59.7	65.0	176.0	55.0	35.2	78.0	88.6	59.9
LnGrp LOS	F	F	F	F	E	E	F	D	D	E	F	E
Approach Vol, veh/h		2028			1585			1093			372	
Approach Delay, s/veh		144.2			62.7			121.8			80.8	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	49.8	4.6	75.8	45.0	21.4	8.0	72.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	39.0	3.0	70.0	41.0	20.0	4.0	69.0
Max Q Clear Time (g_c+I1), s	12.5	36.1	2.4	73.8	43.0	16.9	6.0	67.9
Green Ext Time (p_c), s	0.2	1.2	0.0	0.0	0.0	0.4	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	109.3
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	324	2145	155	233	2230	3	122	2081	200	33	1828	164
Future Volume (veh/h)	324	2145	155	233	2230	3	122	2081	200	33	1828	164
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	324	2145	155	233	2230	3	122	2081	200	33	1828	164
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	341	2132	683	268	2027	650	122	1783	555	59	1691	526
Arrive On Green	0.10	0.44	0.44	0.08	0.41	0.41	0.04	0.35	0.35	0.02	0.34	0.34
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	324	2145	155	233	2230	3	122	2081	200	33	1828	164
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	13.2	61.0	8.7	9.5	58.0	0.2	5.0	49.6	13.2	1.3	47.0	10.9
Cycle Q Clear(g_c), s	13.2	61.0	8.7	9.5	58.0	0.2	5.0	49.6	13.2	1.3	47.0	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	2132	683	268	2027	650	122	1783	555	59	1691	526
V/C Ratio(X)	0.95	1.01	0.23	0.87	1.10	0.00	1.00	1.17	0.36	0.56	1.08	0.31
Avail Cap(c_a), veh/h	341	2132	683	268	2027	650	122	1783	555	97	1691	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.7	39.5	24.7	63.8	41.0	24.1	67.5	45.2	33.5	68.3	46.5	34.5
Incr Delay (d2), s/veh	35.9	21.0	0.2	25.1	53.3	0.0	82.2	81.6	0.4	8.1	47.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	31.6	3.8	5.4	36.1	0.1	3.7	36.4	5.8	0.7	29.2	4.7
LnGrp Delay(d),s/veh	98.5	60.5	24.9	88.9	94.3	24.1	149.7	126.8	33.9	76.3	94.0	34.8
LnGrp LOS	F	F	C	F	F	C	F	F	C	E	F	C
Approach Vol, veh/h		2624			2466			2403			2025	
Approach Delay, s/veh		63.1			93.7			120.2			88.9	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	53.6	15.0	65.0	9.0	51.0	18.0	62.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	48.0	11.0	61.0	5.0	47.0	14.0	58.0
Max Q Clear Time (g_c+I1), s	3.3	51.6	11.5	63.0	7.0	49.0	15.2	60.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	90.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	519	1052	812	142	1069	240	238	1601	452	108	1102	209
Future Volume (veh/h)	519	1052	812	142	1069	240	238	1601	452	108	1102	209
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	519	1052	812	142	1069	240	238	1601	452	108	1102	209
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	574	1809	563	136	1161	362	288	1572	703	156	1436	643
Arrive On Green	0.17	0.36	0.36	0.04	0.23	0.23	0.08	0.45	0.45	0.05	0.41	0.41
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	519	1052	812	142	1069	240	238	1601	452	108	1102	209
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	22.4	25.4	54.0	6.0	31.2	20.9	10.3	67.4	33.6	4.7	40.7	13.6
Cycle Q Clear(g_c), s	22.4	25.4	54.0	6.0	31.2	20.9	10.3	67.4	33.6	4.7	40.7	13.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	574	1809	563	136	1161	362	288	1572	703	156	1436	643
V/C Ratio(X)	0.90	0.58	1.44	1.04	0.92	0.66	0.83	1.02	0.64	0.69	0.77	0.33
Avail Cap(c_a), veh/h	658	1809	563	136	1161	362	408	1572	703	408	1539	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	39.0	48.2	72.2	56.5	52.5	67.7	41.5	32.1	70.7	38.2	30.2
Incr Delay (d2), s/veh	14.7	0.5	208.6	89.3	11.8	4.5	9.2	27.5	2.0	5.3	2.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	11.9	56.0	4.5	15.7	9.5	5.2	38.5	14.9	2.3	20.2	6.0
LnGrp Delay(d),s/veh	76.0	39.5	256.8	161.8	68.3	57.0	76.9	68.9	34.1	76.0	40.4	30.5
LnGrp LOS	E	D	F	F	E	E	E	F	C	E	D	C
Approach Vol, veh/h		2383			1451			2291			1419	
Approach Delay, s/veh		121.5			75.6			62.9			41.7	
Approach LOS		F			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	71.4	10.0	58.0	16.7	65.6	29.3	38.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	66.0	6.0	54.0	18.0	66.0	29.0	31.0
Max Q Clear Time (g_c+I1), s	6.7	69.4	8.0	56.0	12.3	42.7	24.4	33.2
Green Ext Time (p_c), s	0.2	0.0	0.0	0.0	0.4	18.9	0.9	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	40	32	332	30	387	57	2903	403	682	1898	59
Future Volume (veh/h)	76	40	32	332	30	387	57	2903	403	682	1898	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	76	40	32	332	30	387	57	2903	403	682	1898	59
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	64	430	366	503	295	251	72	2470	769	551	3080	96
Arrive On Green	0.04	0.23	0.23	0.16	0.16	0.16	0.04	0.50	0.50	0.16	0.62	0.62
Sat Flow, veh/h	1757	1845	1568	2541	1845	1568	1740	4988	1553	3375	4970	154
Grp Volume(v), veh/h	76	40	32	332	30	387	57	2903	403	682	1269	688
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1271	1845	1568	1740	1663	1553	1688	1663	1800
Q Serve(g_s), s	5.5	2.5	2.4	18.9	2.1	24.0	4.9	74.3	26.5	24.5	35.2	35.3
Cycle Q Clear(g_c), s	5.5	2.5	2.4	18.9	2.1	24.0	4.9	74.3	26.5	24.5	35.2	35.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	64	430	366	503	295	251	72	2470	769	551	2061	1115
V/C Ratio(X)	1.18	0.09	0.09	0.66	0.10	1.54	0.79	1.18	0.52	1.24	0.62	0.62
Avail Cap(c_a), veh/h	64	430	366	503	295	251	123	2470	769	551	2061	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	45.1	45.0	60.9	53.8	63.0	71.2	37.8	25.8	62.8	17.5	17.6
Incr Delay (d2), s/veh	168.8	0.0	0.0	2.6	0.1	263.1	6.9	83.4	0.3	121.6	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	1.3	1.0	6.8	1.1	28.7	2.5	53.2	11.5	20.7	16.2	17.6
LnGrp Delay(d),s/veh	241.1	45.1	45.0	63.4	53.9	326.1	78.1	121.3	26.1	184.4	17.9	18.3
LnGrp LOS	F	D	D	E	D	F	E	F	C	F	B	B
Approach Vol, veh/h		148			749			3363			2639	
Approach Delay, s/veh		145.7			198.8			109.1			61.0	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	98.2		40.5	30.0	79.5	11.0	29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2	5.5	5.5
Max Green Setting (Gmax), s	* 11	* 89		35.0	24.5	* 74	5.5	24.0
Max Q Clear Time (g_c+I1), s	6.9	37.3		4.5	26.5	76.3	7.5	26.0
Green Ext Time (p_c), s	0.0	39.1		0.7	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		101.3
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	1183	433	243	1482	844	374	2057	363	563	883	165
Future Volume (veh/h)	225	1183	433	243	1482	844	374	2057	363	563	883	165
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	225	1183	433	243	1482	844	374	2057	363	563	883	165
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	193	1426	444	286	1564	487	417	1771	551	438	1801	561
Arrive On Green	0.06	0.28	0.28	0.08	0.31	0.31	0.12	0.36	0.36	0.13	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	225	1183	433	243	1482	844	374	2057	363	563	883	165
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.5	33.1	41.1	10.6	43.2	46.7	16.4	53.4	29.6	19.5	20.7	11.4
Cycle Q Clear(g_c), s	8.5	33.1	41.1	10.6	43.2	46.7	16.4	53.4	29.6	19.5	20.7	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	1426	444	286	1564	487	417	1771	551	438	1801	561
V/C Ratio(X)	1.17	0.83	0.98	0.85	0.95	1.73	0.90	1.16	0.66	1.29	0.49	0.29
Avail Cap(c_a), veh/h	193	1426	444	315	1564	487	532	1771	551	438	1801	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	50.5	53.4	68.0	50.7	51.9	65.0	48.5	40.8	65.5	37.3	34.3
Incr Delay (d2), s/veh	117.5	4.0	36.0	16.6	12.4	338.6	13.2	79.4	2.3	145.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	15.9	22.2	5.7	21.8	66.0	8.5	37.5	13.1	17.9	9.5	4.9
LnGrp Delay(d),s/veh	188.4	54.5	89.4	84.6	63.0	390.5	78.1	127.9	43.1	210.7	37.4	34.5
LnGrp LOS	F	D	F	F	E	F	E	F	D	F	D	C
Approach Vol, veh/h		1841			2569			2794			1611	
Approach Delay, s/veh		79.1			172.6			110.2			97.7	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.1	59.9	14.0	52.4	25.0	59.0	18.1	48.3
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	23.7	* 49	8.5	* 47	19.5	* 53	13.9	* 41
Max Q Clear Time (g_c+I1), s	18.4	22.7	10.5	48.7	21.5	55.4	12.6	43.1
Green Ext Time (p_c), s	0.2	13.7	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	119.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	342	1413	670	185	2277	544	138	2334	224	507	694	90
Future Volume (veh/h)	342	1413	670	185	2277	544	138	2334	224	507	694	90
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	342	1413	670	185	2277	544	138	2334	224	507	694	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	258	1657	531	228	1619	504	181	1805	562	337	2027	625
Arrive On Green	0.08	0.34	0.34	0.07	0.33	0.33	0.05	0.36	0.36	0.10	0.40	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	342	1413	670	185	2277	544	138	2334	224	507	694	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	11.7	40.4	50.9	8.1	49.8	49.8	6.0	53.9	16.1	15.0	14.4	0.0
Cycle Q Clear(g_c), s	11.7	40.4	50.9	8.1	49.8	49.8	6.0	53.9	16.1	15.0	14.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	1657	531	228	1619	504	181	1805	562	337	2027	625
V/C Ratio(X)	1.33	0.85	1.26	0.81	1.41	1.08	0.76	1.29	0.40	1.51	0.34	0.00
Avail Cap(c_a), veh/h	258	1657	531	231	1619	504	204	1805	562	337	2027	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	69.3	46.2	49.7	69.2	50.3	50.3	70.2	48.2	36.1	67.7	31.1	0.0
Incr Delay (d2), s/veh	171.5	4.3	132.5	19.1	186.5	63.0	11.6	136.1	0.5	242.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	18.8	41.6	4.4	50.3	29.8	3.1	47.6	7.0	18.3	6.7	0.0
LnGrp Delay(d),s/veh	240.8	50.6	182.3	88.3	236.8	113.3	81.8	184.3	36.6	310.1	31.2	0.0
LnGrp LOS	F	D	F	F	F	F	F	F	D	F	C	
Approach Vol, veh/h		2425			3006			2696			1201	
Approach Delay, s/veh		113.8			205.3			166.8			148.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	65.6	16.0	55.4	20.0	59.0	14.9	56.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 9	59.5	* 12	49.4	15.0	53.9	* 10	* 51
Max Q Clear Time (g_c+I1), s	8.0	16.4	13.7	51.8	17.0	55.9	10.1	52.9
Green Ext Time (p_c), s	0.0	35.2	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	163.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	401	1000	197	261	1301	40	534	2626	129	50	849	175
Future Volume (veh/h)	401	1000	197	261	1301	40	534	2626	129	50	849	175
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	401	1000	197	261	1301	40	534	2626	129	50	849	175
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	156	1164	362	312	1395	434	582	2588	806	69	1831	570
Arrive On Green	0.05	0.23	0.23	0.09	0.28	0.28	0.17	0.51	0.51	0.02	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	401	1000	197	261	1301	40	534	2626	129	50	849	175
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	6.8	28.2	16.4	11.2	37.3	2.8	22.8	76.2	6.5	2.2	19.1	11.9
Cycle Q Clear(g_c), s	6.8	28.2	16.4	11.2	37.3	2.8	22.8	76.2	6.5	2.2	19.1	11.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	156	1164	362	312	1395	434	582	2588	806	69	1831	570
V/C Ratio(X)	2.57	0.86	0.54	0.84	0.93	0.09	0.92	1.01	0.16	0.72	0.46	0.31
Avail Cap(c_a), veh/h	156	1164	362	428	1454	453	616	2588	806	69	1831	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.7	54.7	50.1	66.2	52.3	39.8	60.5	36.0	19.1	72.2	36.1	33.8
Incr Delay (d2), s/veh	722.7	6.6	1.7	10.0	11.0	0.1	18.3	21.4	0.1	31.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.9	13.8	7.3	5.7	18.8	1.2	12.2	40.4	2.8	1.3	8.9	5.1
LnGrp Delay(d),s/veh	793.5	61.3	51.8	76.3	63.2	39.9	78.8	57.4	19.2	103.5	36.2	33.9
LnGrp LOS	F	E	D	E	E	D	E	F	B	F	D	C
Approach Vol, veh/h		1598			1602			3289			1074	
Approach Delay, s/veh		243.9			64.8			59.4			38.9	
Approach LOS		F			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.8	58.9	19.1	39.5	8.5	81.2	12.3	46.3
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	26.8	52.4	18.6	* 31	3.0	76.2	6.8	* 43
Max Q Clear Time (g_c+I1), s	24.8	21.1	13.2	30.2	4.2	78.2	8.8	39.3
Green Ext Time (p_c), s	0.5	28.7	0.4	0.7	0.0	0.0	0.0	1.7

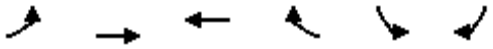
Intersection Summary	
HCM 2010 Ctrl Delay	96.6
HCM 2010 LOS	F

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	719	289	484	755	148	749
Future Volume (veh/h)	719	289	484	755	148	749
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	719	289	484	755	148	749
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	771	310	531	2350	394	825
Arrive On Green	0.32	0.32	0.30	0.67	0.22	0.22
Sat Flow, veh/h	2535	982	1757	3597	1757	1568
Grp Volume(v), veh/h	516	492	484	755	148	749
Grp Sat Flow(s),veh/h/ln	1752	1671	1757	1752	1757	1568
Q Serve(g_s), s	21.7	21.7	20.1	6.9	5.4	17.0
Cycle Q Clear(g_c), s	21.7	21.7	20.1	6.9	5.4	17.0
Prop In Lane		0.59	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	553	528	531	2350	394	825
V/C Ratio(X)	0.93	0.93	0.91	0.32	0.38	0.91
Avail Cap(c_a), veh/h	554	529	625	2540	394	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	25.2	25.5	5.2	24.9	16.3
Incr Delay (d2), s/veh	22.8	23.6	16.1	0.1	0.6	13.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.0	13.4	12.1	3.3	2.7	17.1
LnGrp Delay(d),s/veh	48.0	48.8	41.7	5.3	25.5	30.1
LnGrp LOS	D	D	D	A	C	C
Approach Vol, veh/h	1008			1239	897	
Approach Delay, s/veh	48.4			19.5	29.4	
Approach LOS	D			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		21.0	26.9	28.0				54.9
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		17.0	27.0	24.0				55.0
Max Q Clear Time (g_c+I1), s		19.0	22.1	23.7				8.9
Green Ext Time (p_c), s		0.0	0.8	0.3				18.8

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	309	1348	2599	851	557	192
Future Volume (veh/h)	309	1348	2599	851	557	192
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	309	1348	2599	851	557	192
Adj No. of Lanes	1	3	3	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	234	3458	2032	602	457	408
Arrive On Green	0.13	0.69	0.53	0.53	0.26	0.26
Sat Flow, veh/h	1757	5202	4023	1143	1757	1568
Grp Volume(v), veh/h	309	1348	2227	1223	557	192
Grp Sat Flow(s),veh/h/ln	1757	1679	1679	1643	1757	1568
Q Serve(g_s), s	20.0	17.2	79.0	79.0	39.0	15.5
Cycle Q Clear(g_c), s	20.0	17.2	79.0	79.0	39.0	15.5
Prop In Lane	1.00			0.70	1.00	1.00
Lane Grp Cap(c), veh/h	234	3458	1768	865	457	408
V/C Ratio(X)	1.32	0.39	1.26	1.41	1.22	0.47
Avail Cap(c_a), veh/h	234	3458	1768	865	457	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	10.1	35.5	35.5	55.5	46.8
Incr Delay (d2), s/veh	170.4	0.1	121.4	193.1	117.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.8	7.9	66.2	82.0	33.8	14.0
LnGrp Delay(d),s/veh	235.4	10.1	156.9	228.6	172.7	47.6
LnGrp LOS	F	B	F	F	F	D
Approach Vol, veh/h		1657	3450		749	
Approach Delay, s/veh		52.1	182.3		140.6	
Approach LOS		D	F		F	

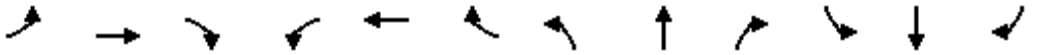
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				107.0		43.0	24.0	83.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				103.0		39.0	20.0	79.0
Max Q Clear Time (g_c+I1), s				19.2		41.0	22.0	81.0
Green Ext Time (p_c), s				82.5		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	140.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	1002	87	889	2010	312	177	935	933	350	539	122
Future Volume (veh/h)	154	1002	87	889	2010	312	177	935	933	350	539	122
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	154	1002	87	889	2010	312	177	935	933	350	539	122
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	170	1044	334	824	1982	635	233	1469	457	341	1628	507
Arrive On Green	0.05	0.21	0.21	0.24	0.41	0.41	0.07	0.29	0.29	0.10	0.32	0.32
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	154	1002	87	889	2010	312	177	935	933	350	539	122
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	5.4	24.3	5.5	29.0	48.6	17.7	6.1	19.4	35.0	12.0	9.7	6.9
Cycle Q Clear(g_c), s	5.4	24.3	5.5	29.0	48.6	17.7	6.1	19.4	35.0	12.0	9.7	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	1044	334	824	1982	635	233	1469	457	341	1628	507
V/C Ratio(X)	0.90	0.96	0.26	1.08	1.01	0.49	0.76	0.64	2.04	1.03	0.33	0.24
Avail Cap(c_a), veh/h	170	1044	334	824	1982	635	284	1469	457	341	1628	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	46.7	39.3	45.5	35.7	26.5	54.9	37.0	42.5	54.0	30.8	29.8
Incr Delay (d2), s/veh	42.5	19.0	0.6	55.0	23.8	0.8	9.2	0.9	475.7	55.8	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	12.8	2.5	19.9	26.2	7.8	3.2	9.1	75.5	8.3	4.5	3.0
LnGrp Delay(d),s/veh	99.2	65.7	39.9	100.5	59.5	27.4	64.2	37.9	518.2	109.8	30.9	30.0
LnGrp LOS	F	E	D	F	F	C	E	D	F	F	C	C
Approach Vol, veh/h		1243			3211			2045			1011	
Approach Delay, s/veh		68.0			67.7			259.3			58.1	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	32.0	12.2	42.8	10.0	55.0	16.0	39.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	29.0	25.6	10.0	37.0	6.0	48.6	12.0	35.0
Max Q Clear Time (g_c+I1), s	31.0	26.3	8.1	11.7	7.4	50.6	14.0	37.0
Green Ext Time (p_c), s	0.0	0.0	0.1	17.9	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		118.6
HCM 2010 LOS		F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	586	27	156	684	16	31	809	160	11	282	14
Future Volume (veh/h)	89	586	27	156	684	16	31	809	160	11	282	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1759	1759	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	89	586	27	156	684	16	31	809	160	11	282	14
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	8	8	8	3	3	3	3	3	3
Cap, veh/h	122	644	30	187	717	17	69	918	181	69	548	27
Arrive On Green	0.07	0.38	0.38	0.11	0.42	0.42	0.04	0.31	0.31	0.04	0.31	0.31
Sat Flow, veh/h	1707	1700	78	1675	1712	40	1757	2918	577	1757	1743	87
Grp Volume(v), veh/h	89	0	613	156	0	700	31	486	483	11	0	296
Grp Sat Flow(s),veh/h/ln	1707	0	1779	1675	0	1752	1757	1752	1743	1757	0	1829
Q Serve(g_s), s	5.2	0.0	33.5	9.3	0.0	39.6	1.8	26.9	26.9	0.6	0.0	13.5
Cycle Q Clear(g_c), s	5.2	0.0	33.5	9.3	0.0	39.6	1.8	26.9	26.9	0.6	0.0	13.5
Prop In Lane	1.00		0.04	1.00		0.02	1.00		0.33	1.00		0.05
Lane Grp Cap(c), veh/h	122	0	673	187	0	734	69	551	548	69	0	575
V/C Ratio(X)	0.73	0.00	0.91	0.83	0.00	0.95	0.45	0.88	0.88	0.16	0.00	0.51
Avail Cap(c_a), veh/h	233	0	730	229	0	734	240	582	579	240	0	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.6	0.0	30.2	44.5	0.0	28.8	48.1	33.3	33.3	47.6	0.0	28.7
Incr Delay (d2), s/veh	8.0	0.0	14.9	19.2	0.0	22.6	4.6	14.2	14.3	1.1	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	19.1	5.3	0.0	23.7	0.9	15.1	15.1	0.3	0.0	6.9
LnGrp Delay(d),s/veh	54.6	0.0	45.1	63.7	0.0	51.4	52.7	47.5	47.6	48.6	0.0	29.4
LnGrp LOS	D		D	E		D	D	D	D	D		C
Approach Vol, veh/h		702			856			1000			307	
Approach Delay, s/veh		46.3			53.6			47.7			30.1	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	36.2	15.4	42.8	8.0	36.2	11.3	46.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	34.0	14.0	42.0	14.0	34.0	14.0	42.0
Max Q Clear Time (g_c+I1), s	2.6	28.9	11.3	35.5	3.8	15.5	7.2	41.6
Green Ext Time (p_c), s	0.0	3.3	0.1	3.3	0.0	8.1	0.1	0.3

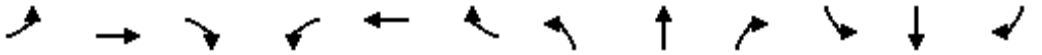
Intersection Summary	
HCM 2010 Ctrl Delay	47.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	525	47	944	25	63	161	986	1181	13	105	1715	1101
Future Volume (veh/h)	525	47	944	25	63	161	986	1181	13	105	1715	1101
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	559	0	944	25	63	161	986	1181	13	105	1715	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	712	0	318	19	48	57	549	2814	31	126	1536	478
Arrive On Green	0.20	0.00	0.20	0.04	0.04	0.04	0.32	0.55	0.55	0.07	0.31	0.00
Sat Flow, veh/h	3480	0	1553	517	1302	1568	1740	5086	56	1740	4988	1553
Grp Volume(v), veh/h	559	0	944	88	0	161	986	772	422	105	1715	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1819	0	1568	1740	1663	1817	1740	1663	1553
Q Serve(g_s), s	22.8	0.0	30.7	5.5	0.0	5.5	47.3	20.3	20.3	8.9	46.2	0.0
Cycle Q Clear(g_c), s	22.8	0.0	30.7	5.5	0.0	5.5	47.3	20.3	20.3	8.9	46.2	0.0
Prop In Lane	1.00		1.00	0.28		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	712	0	318	67	0	57	549	1839	1005	126	1536	478
V/C Ratio(X)	0.78	0.00	2.97	1.32	0.00	2.80	1.80	0.42	0.42	0.84	1.12	0.00
Avail Cap(c_a), veh/h	712	0	318	67	0	57	549	1839	1005	194	1536	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.5	0.0	59.6	72.3	0.0	72.3	51.3	19.5	19.5	68.7	51.9	0.0
Incr Delay (d2), s/veh	5.3	0.0	895.0	217.5	0.0	856.3	366.0	0.1	0.1	10.2	61.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	0.0	92.2	6.8	0.0	16.1	78.5	9.3	10.2	4.7	30.0	0.0
LnGrp Delay(d),s/veh	61.8	0.0	954.7	289.7	0.0	928.5	417.3	19.6	19.6	78.9	113.8	0.0
LnGrp LOS	E		F	F		F	F	B	B	E	F	
Approach Vol, veh/h		1503			249			2180			1820	
Approach Delay, s/veh		622.6			702.8			199.5			111.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	52.0	51.0		11.0	15.2	87.8		36.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 47	46.2		5.5	* 17	* 77		30.7
Max Q Clear Time (g_c+I1), s	49.3	48.2		7.5	10.9	22.3		32.7
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	14.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	304.1
HCM 2010 LOS	F

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	921	47	489	1987	744	98	667	234	452	482	122
Future Volume (veh/h)	252	921	47	489	1987	744	98	667	234	452	482	122
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	252	921	47	489	1987	744	98	667	234	452	482	122
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	261	1649	513	541	2047	637	146	732	327	492	1088	487
Arrive On Green	0.08	0.33	0.33	0.16	0.41	0.41	0.04	0.21	0.21	0.14	0.31	0.31
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	252	921	47	489	1987	744	98	667	234	452	482	122
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	9.5	19.3	2.7	18.1	49.6	52.1	3.6	23.8	17.8	16.8	14.1	7.5
Cycle Q Clear(g_c), s	9.5	19.3	2.7	18.1	49.6	52.1	3.6	23.8	17.8	16.8	14.1	7.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	1649	513	541	2047	637	146	732	327	492	1088	487
V/C Ratio(X)	0.97	0.56	0.09	0.90	0.97	1.17	0.67	0.91	0.71	0.92	0.44	0.25
Avail Cap(c_a), veh/h	261	1649	513	729	2047	637	364	930	416	492	1088	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.0	35.5	29.9	52.9	37.3	38.0	60.4	49.5	47.1	54.1	35.3	33.1
Incr Delay (d2), s/veh	46.2	0.3	0.0	10.0	13.6	91.5	2.0	9.8	2.6	22.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	9.0	1.2	9.2	25.6	38.7	1.8	12.6	7.9	9.4	6.8	3.2
LnGrp Delay(d),s/veh	105.2	35.7	29.9	63.0	50.8	129.5	62.4	59.3	49.8	76.1	35.4	33.2
LnGrp LOS	F	D	C	E	D	F	E	E	D	E	D	C
Approach Vol, veh/h		1220			3220			999			1056	
Approach Delay, s/veh		49.9			70.9			57.4			52.6	
Approach LOS		D			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	57.0	11.0	44.9	25.4	46.9	24.0	31.9
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	9.8	* 52	13.7	* 39	* 27	* 35	18.5	* 34
Max Q Clear Time (g_c+I1), s	11.5	54.1	5.6	16.1	20.1	21.3	18.8	25.8
Green Ext Time (p_c), s	0.0	0.0	0.0	1.8	0.3	9.2	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	61.9
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	616	797	163	96	1814	925	760	2133	202	149	970	733
Future Volume (veh/h)	616	797	163	96	1814	925	760	2133	202	149	970	733
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	616	797	163	96	1814	925	760	2133	202	149	970	733
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	352	2005	624	136	1617	503	484	1879	585	124	1347	419
Arrive On Green	0.10	0.40	0.40	0.04	0.34	0.34	0.14	0.38	0.38	0.04	0.27	0.27
Sat Flow, veh/h	3408	5036	1568	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	616	797	163	96	1814	925	760	2133	202	149	970	733
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	15.5	17.0	10.5	4.4	50.5	50.5	21.5	56.5	14.0	5.5	26.4	40.5
Cycle Q Clear(g_c), s	15.5	17.0	10.5	4.4	50.5	50.5	21.5	56.5	14.0	5.5	26.4	40.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	2005	624	136	1617	503	484	1879	585	124	1347	419
V/C Ratio(X)	1.75	0.40	0.26	0.71	1.12	1.84	1.57	1.14	0.35	1.20	0.72	1.75
Avail Cap(c_a), veh/h	352	2005	624	186	1617	503	484	1879	585	124	1347	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	32.3	30.3	71.0	49.8	49.7	64.3	46.7	33.5	72.3	49.6	54.8
Incr Delay (d2), s/veh	348.6	0.0	0.1	3.4	63.7	384.5	266.7	68.1	0.1	145.8	1.6	346.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.3	7.9	4.6	2.0	31.8	74.5	27.9	37.8	6.0	5.1	12.3	57.8
LnGrp Delay(d),s/veh	415.9	32.3	30.4	74.3	113.4	434.2	331.0	114.9	33.6	218.0	51.3	401.2
LnGrp LOS	F	C	C	E	F	F	F	F	C	F	D	F
Approach Vol, veh/h		1576			2835			3095			1852	
Approach Delay, s/veh		182.0			216.8			162.6			203.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	46.0	21.0	56.0	11.0	62.0	11.8	65.2
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	21.5	40.5	15.5	50.5	5.5	56.5	8.6	57.4
Max Q Clear Time (g_c+I1), s	23.5	42.5	17.5	52.5	7.5	58.5	6.4	19.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4

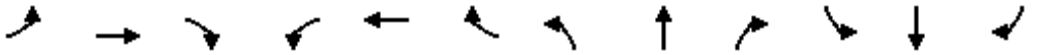
Intersection Summary	
HCM 2010 Ctrl Delay	190.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	601	553	129	383	1372	324	185	1555	158	117	817	860
Future Volume (veh/h)	601	553	129	383	1372	324	185	1555	158	117	817	860
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1845
Adj Flow Rate, veh/h	601	553	129	383	1372	324	185	1555	158	117	817	860
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	3
Cap, veh/h	540	555	248	1127	1159	519	131	1611	502	132	1650	519
Arrive On Green	0.16	0.16	0.16	0.33	0.33	0.33	0.04	0.32	0.32	0.04	0.33	0.33
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	4988	1553	3375	4988	1568
Grp Volume(v), veh/h	601	553	129	383	1372	324	185	1555	158	117	817	860
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1663	1553	1688	1663	1568
Q Serve(g_s), s	20.6	20.5	9.8	11.0	43.0	22.7	5.0	39.9	10.0	4.5	17.0	43.0
Cycle Q Clear(g_c), s	20.6	20.5	9.8	11.0	43.0	22.7	5.0	39.9	10.0	4.5	17.0	43.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	540	555	248	1127	1159	519	131	1611	502	132	1650	519
V/C Ratio(X)	1.11	1.00	0.52	0.34	1.18	0.62	1.41	0.97	0.31	0.88	0.50	1.66
Avail Cap(c_a), veh/h	540	555	248	1127	1159	519	131	1611	502	132	1650	519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	54.7	50.2	32.8	43.5	36.7	62.5	43.3	33.2	62.2	34.8	43.5
Incr Delay (d2), s/veh	73.5	37.0	1.9	0.2	91.6	2.3	224.0	14.9	0.4	45.2	0.2	304.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	12.8	4.4	5.2	35.5	10.1	6.4	20.5	4.3	2.9	7.8	62.5
LnGrp Delay(d),s/veh	128.2	91.7	52.1	33.0	135.1	39.0	286.5	58.2	33.5	107.4	35.0	348.2
LnGrp LOS	F	F	D	C	F	D	F	E	C	F	D	F
Approach Vol, veh/h		1283			2079			1898			1794	
Approach Delay, s/veh		104.8			101.3			78.4			189.9	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	48.0		26.0	10.0	47.0		47.0
Change Period (Y+Rc), s	4.0	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	5.0	43.0		* 21	* 5.1	42.0		43.0
Max Q Clear Time (g_c+I1), s	7.0	45.0		22.6	6.5	41.9		45.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.1		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		118.3
HCM 2010 LOS		F

Notes

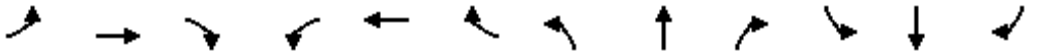


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	876	55	364	1869	393	81	1238	297	205	734	417
Future Volume (veh/h)	186	876	55	364	1869	393	81	1238	297	205	734	417
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1845	1827	1845	1845
Adj Flow Rate, veh/h	186	876	55	364	1869	393	81	1238	297	205	734	417
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	207	1502	468	435	1839	662	129	1158	518	235	1269	663
Arrive On Green	0.06	0.30	0.30	0.13	0.37	0.37	0.04	0.33	0.33	0.07	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1524	3408	3505	1568	3375	3505	1568
Grp Volume(v), veh/h	186	876	55	364	1869	393	81	1238	297	205	734	417
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1524	1704	1752	1568	1688	1752	1568
Q Serve(g_s), s	6.2	17.0	2.9	12.0	42.0	22.6	2.7	38.0	18.0	6.9	19.4	24.0
Cycle Q Clear(g_c), s	6.2	17.0	2.9	12.0	42.0	22.6	2.7	38.0	18.0	6.9	19.4	24.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	207	1502	468	435	1839	662	129	1158	518	235	1269	663
V/C Ratio(X)	0.90	0.58	0.12	0.84	1.02	0.59	0.63	1.07	0.57	0.87	0.58	0.63
Avail Cap(c_a), veh/h	207	1502	468	593	1839	662	178	1158	518	235	1269	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.6	34.3	29.3	49.0	36.5	24.8	54.5	38.5	31.8	53.0	29.6	26.1
Incr Delay (d2), s/veh	35.7	0.6	0.1	7.6	25.1	1.4	4.9	47.0	1.5	27.3	0.7	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	7.9	1.3	6.1	23.7	9.8	1.4	25.9	8.0	4.1	9.5	10.7
LnGrp Delay(d),s/veh	89.3	34.8	29.4	56.5	61.6	26.2	59.4	85.5	33.3	80.3	30.3	28.0
LnGrp LOS	F	C	C	E	F	C	E	F	C	F	C	C
Approach Vol, veh/h		1117			2626			1616			1356	
Approach Delay, s/veh		43.7			55.6			74.6			37.1	
Approach LOS		D			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.7	40.3	8.4	47.6	11.0	48.0	12.0	44.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	20.0	29.0	6.0	40.0	7.0	42.0	8.0	38.0
Max Q Clear Time (g_c+I1), s	14.0	19.0	4.7	26.0	8.2	44.0	8.9	40.0
Green Ext Time (p_c), s	0.7	9.5	0.0	11.8	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.4
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1198	679	7	0	1154	15	8	30	5	7	6	547
Future Volume (veh/h)	1198	679	7	0	1154	15	8	30	5	7	6	547
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1810	1810	1900	1900	1845	1900	1900	1827	1827
Adj Flow Rate, veh/h	1198	679	0	0	1154	15	8	30	5	7	6	547
Adj No. of Lanes	2	2	1	1	2	0	0	1	0	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	5	5	5	3	3	3	4	4	4
Cap, veh/h	1161	2379	1064	1	1082	14	9	36	6	140	120	771
Arrive On Green	0.35	0.70	0.00	0.00	0.31	0.31	0.03	0.03	0.03	0.15	0.15	0.15
Sat Flow, veh/h	3312	3406	1524	1723	3475	45	333	1250	208	958	821	1553
Grp Volume(v), veh/h	1198	679	0	0	571	598	43	0	0	13	0	547
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1723	1719	1802	1791	0	0	1779	0	1553
Q Serve(g_s), s	52.9	11.3	0.0	0.0	47.0	47.0	3.6	0.0	0.0	0.9	0.0	22.0
Cycle Q Clear(g_c), s	52.9	11.3	0.0	0.0	47.0	47.0	3.6	0.0	0.0	0.9	0.0	22.0
Prop In Lane	1.00		1.00	1.00		0.03	0.19		0.12	0.54		1.00
Lane Grp Cap(c), veh/h	1161	2379	1064	1	535	561	51	0	0	259	0	771
V/C Ratio(X)	1.03	0.29	0.00	0.00	1.07	1.07	0.84	0.00	0.00	0.05	0.00	0.71
Avail Cap(c_a), veh/h	1161	2379	1064	34	535	561	51	0	0	259	0	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.0	8.6	0.0	0.0	52.0	52.0	73.0	0.0	0.0	55.5	0.0	29.5
Incr Delay (d2), s/veh	34.9	0.0	0.0	0.0	57.7	56.8	68.2	0.0	0.0	0.0	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	29.7	5.3	0.0	0.0	30.7	32.1	2.7	0.0	0.0	0.5	0.0	18.2
LnGrp Delay(d),s/veh	83.9	8.6	0.0	0.0	109.6	108.8	141.2	0.0	0.0	55.5	0.0	32.2
LnGrp LOS	F	A			F	F	F			E		C
Approach Vol, veh/h		1877			1169			43			560	
Approach Delay, s/veh		56.7			109.2			141.2			32.7	
Approach LOS		E			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	58.4	53.9		28.2	0.0	112.3		10.4
Change Period (Y+Rc), s	5.5	* 6.9		* 6.2	5.5	* 6.9		6.1
Max Green Setting (Gmax), s	52.9	* 47		* 22	3.0	* 96		4.3
Max Q Clear Time (g_c+I1), s	54.9	49.0		24.0	0.0	13.3		5.6
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	5.6		0.0

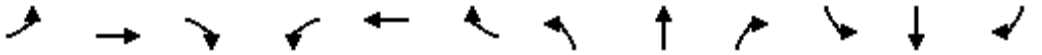
Intersection Summary		
HCM 2010 Ctrl Delay		70.8
HCM 2010 LOS		E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	609	404	58	61	775	97	2	621	43	93	1047	1120
Future Volume (veh/h)	609	404	58	61	775	97	2	621	43	93	1047	1120
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	609	404	58	61	775	97	2	621	43	93	1047	1120
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	490	1942	605	106	1373	428	5	1371	427	136	1564	857
Arrive On Green	0.15	0.40	0.40	0.03	0.28	0.28	0.00	0.28	0.28	0.04	0.32	0.32
Sat Flow, veh/h	3312	4893	1524	3312	4893	1524	3343	4940	1538	3343	4940	2707
Grp Volume(v), veh/h	609	404	58	61	775	97	2	621	43	93	1047	1120
Grp Sat Flow(s),veh/h/ln	1656	1631	1524	1656	1631	1524	1672	1647	1538	1672	1647	1354
Q Serve(g_s), s	12.4	4.5	2.0	1.5	11.3	4.1	0.1	8.7	1.7	2.3	15.4	26.5
Cycle Q Clear(g_c), s	12.4	4.5	2.0	1.5	11.3	4.1	0.1	8.7	1.7	2.3	15.4	26.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	490	1942	605	106	1373	428	5	1371	427	136	1564	857
V/C Ratio(X)	1.24	0.21	0.10	0.58	0.56	0.23	0.37	0.45	0.10	0.69	0.67	1.31
Avail Cap(c_a), veh/h	490	2051	638	170	1577	491	120	1533	477	136	1564	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	16.6	15.8	40.0	25.7	23.1	41.8	25.0	22.5	39.7	24.8	28.6
Incr Delay (d2), s/veh	125.3	0.1	0.1	1.8	0.8	0.6	14.6	0.2	0.1	11.3	1.1	146.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	2.1	0.9	0.7	5.2	1.8	0.0	4.0	0.7	1.3	7.1	27.4
LnGrp Delay(d),s/veh	161.0	16.7	16.0	41.8	26.5	23.7	56.4	25.2	22.6	50.9	25.9	175.2
LnGrp LOS	F	B	B	D	C	C	E	C	C	D	C	F
Approach Vol, veh/h		1071			933			666			2260	
Approach Delay, s/veh		98.7			27.2			25.2			100.9	
Approach LOS		F			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	29.5	4.7	32.5	7.3	39.2	8.0	29.2
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	4.6	6.0
Max Green Setting (Gmax), s	12.4	27.0	3.0	26.4	4.3	35.1	3.4	26.0
Max Q Clear Time (g_c+I1), s	14.4	13.3	2.1	28.5	3.5	6.5	4.3	10.7
Green Ext Time (p_c), s	0.0	10.2	0.0	0.0	0.0	17.6	0.0	12.5

Intersection Summary	
HCM 2010 Ctrl Delay	76.3
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	1304	169	175	1505	116	194	1576	174	126	368	126
Future Volume (veh/h)	320	1304	169	175	1505	116	194	1576	174	126	368	126
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	320	1304	169	175	1505	116	194	1576	174	126	368	126
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	307	1513	471	234	1406	438	254	1546	692	123	1411	631
Arrive On Green	0.09	0.30	0.30	0.07	0.28	0.28	0.08	0.45	0.45	0.04	0.41	0.41
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	3471	1553	3375	3471	1553
Grp Volume(v), veh/h	320	1304	169	175	1505	116	194	1576	174	126	368	126
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1736	1553	1688	1736	1553
Q Serve(g_s), s	10.0	27.1	9.4	5.6	31.0	6.4	6.2	49.0	7.7	4.0	7.7	5.8
Cycle Q Clear(g_c), s	10.0	27.1	9.4	5.6	31.0	6.4	6.2	49.0	7.7	4.0	7.7	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	1513	471	234	1406	438	254	1546	692	123	1411	631
V/C Ratio(X)	1.04	0.86	0.36	0.75	1.07	0.27	0.76	1.02	0.25	1.03	0.26	0.20
Avail Cap(c_a), veh/h	307	1513	471	276	1406	438	307	1546	692	123	1411	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	36.1	30.0	50.2	39.5	30.7	49.9	30.5	19.0	53.0	21.7	21.1
Incr Delay (d2), s/veh	63.0	5.4	0.5	8.9	45.4	0.3	8.9	27.8	0.2	88.5	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	13.2	4.1	2.9	20.1	2.8	3.2	29.4	3.3	3.4	3.7	2.5
LnGrp Delay(d),s/veh	113.0	41.5	30.4	59.2	84.9	31.0	58.8	58.3	19.2	141.8	21.8	21.2
LnGrp LOS	F	D	C	E	F	C	E	F	B	F	C	C
Approach Vol, veh/h		1793			1796			1944			620	
Approach Delay, s/veh		53.2			78.9			54.9			46.1	
Approach LOS		D			E			D			D	

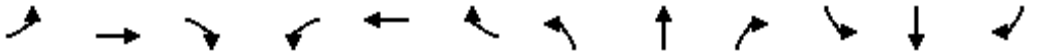
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	53.0	11.6	37.4	12.3	48.7	14.0	35.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	49.0	9.0	32.0	10.0	43.0	10.0	31.0
Max Q Clear Time (g_c+I1), s	6.0	51.0	7.6	29.1	8.2	9.7	12.0	33.0
Green Ext Time (p_c), s	0.0	0.0	0.1	2.8	0.1	21.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	60.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1211	180	95	1807	395	135	1002	266	25	268	186
Future Volume (veh/h)	159	1211	180	95	1807	395	135	1002	266	25	268	186
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	159	1211	180	95	1807	395	135	1002	266	25	268	186
Adj No. of Lanes	1	2	0	1	2	1	2	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	151	1572	233	116	1730	774	183	987	442	31	861	385
Arrive On Green	0.09	0.52	0.52	0.07	0.50	0.50	0.05	0.28	0.28	0.02	0.25	0.25
Sat Flow, veh/h	1740	3034	449	1740	3471	1553	3408	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	159	690	701	95	1807	395	135	1002	266	25	268	186
Grp Sat Flow(s),veh/h/ln	1740	1736	1748	1740	1736	1553	1704	1752	1568	1757	1752	1568
Q Serve(g_s), s	12.0	44.1	44.7	7.5	69.0	23.7	5.4	39.0	20.3	2.0	8.6	14.1
Cycle Q Clear(g_c), s	12.0	44.1	44.7	7.5	69.0	23.7	5.4	39.0	20.3	2.0	8.6	14.1
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	151	899	906	116	1730	774	183	987	442	31	861	385
V/C Ratio(X)	1.05	0.77	0.77	0.82	1.04	0.51	0.74	1.02	0.60	0.80	0.31	0.48
Avail Cap(c_a), veh/h	151	899	906	138	1730	774	246	987	442	51	861	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.2	26.7	26.8	63.8	34.7	23.4	64.5	49.7	43.0	67.8	42.7	44.7
Incr Delay (d2), s/veh	88.5	4.0	4.2	26.7	34.4	0.6	7.5	32.4	2.3	35.2	0.2	0.9
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	22.1	22.5	4.5	41.2	10.3	2.7	23.2	9.1	1.3	4.2	6.2
LnGrp Delay(d),s/veh	151.8	30.7	31.0	90.5	69.1	23.9	72.1	82.2	45.3	103.0	42.9	45.6
LnGrp LOS	F	C	C	F	F	C	E	F	D	F	D	D
Approach Vol, veh/h		1550			2297			1403			479	
Approach Delay, s/veh		43.3			62.2			74.2			47.1	
Approach LOS		D			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	43.0	13.2	75.8	11.5	38.0	16.0	73.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	39.0	11.0	70.0	10.0	33.0	12.0	69.0
Max Q Clear Time (g_c+I1), s	4.0	41.0	9.5	46.7	7.4	16.1	14.0	71.0
Green Ext Time (p_c), s	0.0	0.0	0.0	22.0	0.1	9.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	58.8
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	154	110	3	1	305	1893	37	0	1646	0
Future Volume (veh/h)	0	1	154	110	3	1	305	1893	37	0	1646	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1759	1845	1845	1845	1792	1792	1900	1792	1792	1900
Adj Flow Rate, veh/h	0	1	154	110	3	1	305	1893	37	0	1646	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	164	173	434	137	144	122	328	2134	42	128	1727	0
Arrive On Green	0.00	0.10	0.10	0.08	0.08	0.08	0.19	0.62	0.62	0.00	0.51	0.00
Sat Flow, veh/h	1675	1759	1495	1757	1845	1568	1707	3417	67	1707	3495	0
Grp Volume(v), veh/h	0	1	154	110	3	1	305	940	990	0	1646	0
Grp Sat Flow(s),veh/h/ln	1675	1759	1495	1757	1845	1568	1707	1703	1781	1707	1703	0
Q Serve(g_s), s	0.0	0.1	10.5	7.9	0.2	0.1	22.6	59.5	60.4	0.0	59.3	0.0
Cycle Q Clear(g_c), s	0.0	0.1	10.5	7.9	0.2	0.1	22.6	59.5	60.4	0.0	59.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	164	173	434	137	144	122	328	1064	1112	128	1727	0
V/C Ratio(X)	0.00	0.01	0.35	0.80	0.02	0.01	0.93	0.88	0.89	0.00	0.95	0.00
Avail Cap(c_a), veh/h	209	219	474	219	230	195	345	1166	1219	128	1748	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	52.3	36.1	58.3	54.7	54.7	51.0	20.2	20.4	0.0	30.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.5	10.5	0.1	0.0	30.1	7.8	7.9	0.0	12.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.4	4.2	0.1	0.0	13.4	30.0	31.9	0.0	30.6	0.0
LnGrp Delay(d),s/veh	0.0	52.3	36.6	68.8	54.8	54.7	81.1	28.1	28.3	0.0	42.5	0.0
LnGrp LOS		D	D	E	D	D	F	C	C		D	
Approach Vol, veh/h		155			114			2235			1646	
Approach Delay, s/veh		36.7			68.3			35.4			42.5	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.6	84.3		16.6	28.7	69.2		14.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	88.0		16.0	26.0	66.0		16.0
Max Q Clear Time (g_c+I1), s	0.0	62.4		12.5	24.6	61.3		9.9
Green Ext Time (p_c), s	0.0	17.9		0.1	0.1	3.9		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		39.2
HCM 2010 LOS		D



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	491	27	21	1793	1644	421
Future Volume (veh/h)	491	27	21	1793	1644	421
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	491	27	21	1793	1644	421
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	645	297	67	2360	2050	917
Arrive On Green	0.19	0.19	0.02	0.67	0.59	0.59
Sat Flow, veh/h	3408	1568	3408	3597	3597	1568
Grp Volume(v), veh/h	491	27	21	1793	1644	421
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1752	1752	1568
Q Serve(g_s), s	7.9	0.8	0.4	19.9	21.4	8.9
Cycle Q Clear(g_c), s	7.9	0.8	0.4	19.9	21.4	8.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	645	297	67	2360	2050	917
V/C Ratio(X)	0.76	0.09	0.31	0.76	0.80	0.46
Avail Cap(c_a), veh/h	936	431	234	2467	2050	917
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	19.5	28.2	6.4	9.4	6.9
Incr Delay (d2), s/veh	2.2	0.1	2.6	1.4	2.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.8	0.2	9.9	10.7	3.8
LnGrp Delay(d),s/veh	24.6	19.6	30.7	7.7	11.8	7.2
LnGrp LOS	C	B	C	A	B	A
Approach Vol, veh/h	518			1814	2065	
Approach Delay, s/veh	24.3			8.0	10.9	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		43.2		15.0	5.2	38.1		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		41.0		16.0	4.0	33.0		
Max Q Clear Time (g_c+I1), s		21.9		9.9	2.4	23.4		
Green Ext Time (p_c), s		17.3		1.1	0.0	9.5		

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	536	511	86	1274	4	270	1018	63	2	1420	320
Future Volume (veh/h)	255	536	511	86	1274	4	270	1018	63	2	1420	320
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	255	536	511	86	1274	4	270	1018	63	2	1420	320
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	262	1348	603	131	1213	543	236	1583	708	7	1348	603
Arrive On Green	0.08	0.38	0.38	0.04	0.35	0.35	0.07	0.45	0.45	0.00	0.38	0.38
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	255	536	511	86	1274	4	270	1018	63	2	1420	320
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	9.7	14.4	38.7	3.2	45.0	0.2	9.0	29.2	3.0	0.1	50.0	20.5
Cycle Q Clear(g_c), s	9.7	14.4	38.7	3.2	45.0	0.2	9.0	29.2	3.0	0.1	50.0	20.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	1348	603	131	1213	543	236	1583	708	7	1348	603
V/C Ratio(X)	0.97	0.40	0.85	0.66	1.05	0.01	1.14	0.64	0.09	0.27	1.05	0.53
Avail Cap(c_a), veh/h	262	1348	603	131	1213	543	236	1583	708	105	1348	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.9	29.1	36.5	61.7	42.5	27.9	60.5	27.5	20.4	64.8	40.0	30.9
Incr Delay (d2), s/veh	47.8	0.2	10.9	11.3	40.1	0.0	103.0	0.9	0.1	19.0	39.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	7.0	18.6	1.7	28.5	0.1	7.6	14.3	1.3	0.1	31.6	9.0
LnGrp Delay(d),s/veh	107.7	29.2	47.4	72.9	82.6	27.9	163.5	28.4	20.4	83.7	79.9	31.8
LnGrp LOS	F	C	D	E	F	C	F	C	C	F	F	C
Approach Vol, veh/h		1302			1364			1351			1742	
Approach Delay, s/veh		51.7			81.8			55.1			71.1	
Approach LOS		D			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	62.7	9.0	54.0	13.0	54.0	14.0	49.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	55.0	5.0	50.0	9.0	50.0	10.0	45.0
Max Q Clear Time (g_c+I1), s	2.1	31.2	5.2	40.7	11.0	52.0	11.7	47.0
Green Ext Time (p_c), s	0.0	20.0	0.0	7.8	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	579	272	403	1250	852	641	1107	238	370	326	0
Future Volume (veh/h)	0	579	272	403	1250	852	641	1107	238	370	326	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	579	272	403	1250	852	641	1107	238	370	326	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1012	315	498	1989	619	741	1196	535	409	855	382
Arrive On Green	0.00	0.20	0.20	0.15	0.39	0.39	0.22	0.34	0.34	0.12	0.24	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	579	272	403	1250	852	641	1107	238	370	326	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	8.7	14.0	9.6	16.7	32.9	15.1	25.4	9.8	8.9	6.5	0.0
Cycle Q Clear(g_c), s	0.0	8.7	14.0	9.6	16.7	32.9	15.1	25.4	9.8	8.9	6.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1012	315	498	1989	619	741	1196	535	409	855	382
V/C Ratio(X)	0.00	0.57	0.86	0.81	0.63	1.38	0.87	0.93	0.44	0.91	0.38	0.00
Avail Cap(c_a), veh/h	163	1147	357	654	1989	619	858	1218	545	409	855	382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	30.1	32.2	34.5	20.3	25.2	31.5	26.5	21.3	36.2	26.3	0.0
Incr Delay (d2), s/veh	0.0	0.5	17.6	5.7	0.6	179.2	8.3	11.8	0.6	23.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	7.6	4.9	7.8	45.0	8.0	14.1	4.3	5.5	3.2	0.0
LnGrp Delay(d),s/veh	0.0	30.6	49.8	40.2	20.9	204.4	39.8	38.3	21.9	59.5	26.6	0.0
LnGrp LOS		C	D	D	C	F	D	D	C	E	C	
Approach Vol, veh/h		851			2505			1986			696	
Approach Delay, s/veh		36.8			86.4			36.8			44.1	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	32.5	16.2	20.8	22.1	24.3	0.0	36.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	29.0	16.0	19.0	21.0	18.0	4.0	31.0
Max Q Clear Time (g_c+I1), s	10.9	27.4	11.6	16.0	17.1	8.5	0.0	34.9
Green Ext Time (p_c), s	0.0	1.1	0.6	0.8	1.0	6.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	58.2
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h												
V/C Ratio(X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h												
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS												
Approach Vol, veh/h		0			0			0			0	
Approach Delay, s/veh		0.0			0.0			0.0			0.0	
Approach LOS												

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	52.0	15.0	52.0	32.0	25.0	12.0	55.0
Max Q Clear Time (g_c+I1), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	0.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1111	1049	8	669	987	0	132	2018	955	38	645	879
Future Volume (veh/h)	1111	1049	8	669	987	0	132	2018	955	38	645	879
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	1111	1049	8	669	987	0	132	2018	955	38	645	879
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	913	1105	344	735	843	262	185	2070	644	68	1897	591
Arrive On Green	0.27	0.22	0.22	0.22	0.17	0.00	0.05	0.41	0.41	0.02	0.38	0.38
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	1111	1049	8	669	987	0	132	2018	955	38	645	879
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	32.0	24.5	0.5	22.9	20.0	0.0	4.6	47.1	49.1	1.3	10.9	45.0
Cycle Q Clear(g_c), s	32.0	24.5	0.5	22.9	20.0	0.0	4.6	47.1	49.1	1.3	10.9	45.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	913	1105	344	735	843	262	185	2070	644	68	1897	591
V/C Ratio(X)	1.22	0.95	0.02	0.91	1.17	0.00	0.71	0.98	1.48	0.56	0.34	1.49
Avail Cap(c_a), veh/h	913	1105	344	799	843	262	200	2070	644	86	1897	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	46.0	36.6	45.7	49.7	0.0	55.6	34.6	35.2	58.0	26.6	37.2
Incr Delay (d2), s/veh	107.8	16.3	0.0	13.8	89.5	0.0	10.5	14.3	225.2	7.0	0.1	228.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.6	13.0	0.2	12.2	16.2	0.0	2.4	24.4	61.5	0.7	5.1	57.0
LnGrp Delay(d),s/veh	151.5	62.3	36.6	59.5	139.2	0.0	66.1	48.9	260.4	65.1	26.7	266.0
LnGrp LOS	F	E	D	E	F		E	D	F	E	C	F
Approach Vol, veh/h		2168			1656			3105			1562	
Approach Delay, s/veh		107.9			107.0			114.7			162.3	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	53.1	29.8	30.2	10.5	49.0	36.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	49.0	28.0	24.0	7.0	45.0	32.0	20.0
Max Q Clear Time (g_c+I1), s	3.3	51.1	24.9	26.5	6.6	47.0	34.0	22.0
Green Ext Time (p_c), s	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	120.2
HCM 2010 LOS	F



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	356	423	2840	459	697	733
Future Volume (veh/h)	356	423	2840	459	697	733
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	356	423	2840	459	697	733
Adj No. of Lanes	2	1	3	1	2	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	417	192	2742	854	682	3973
Arrive On Green	0.12	0.12	0.54	0.54	0.20	0.79
Sat Flow, veh/h	3408	1568	5202	1568	3408	5202
Grp Volume(v), veh/h	356	423	2840	459	697	733
Grp Sat Flow(s),veh/h/ln	1704	1568	1679	1568	1704	1679
Q Serve(g_s), s	9.2	11.0	49.0	17.0	18.0	3.2
Cycle Q Clear(g_c), s	9.2	11.0	49.0	17.0	18.0	3.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	417	192	2742	854	682	3973
V/C Ratio(X)	0.85	2.21	1.04	0.54	1.02	0.18
Avail Cap(c_a), veh/h	417	192	2742	854	682	3973
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	39.5	20.5	13.2	36.0	2.3
Incr Delay (d2), s/veh	15.8	559.9	27.3	0.7	40.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	34.5	29.3	7.4	12.2	1.5
LnGrp Delay(d),s/veh	54.5	599.4	47.8	13.9	76.3	2.4
LnGrp LOS	D	F	F	B	F	A
Approach Vol, veh/h	779		3299			1430
Approach Delay, s/veh	350.4		43.1			38.4
Approach LOS	F		D			D

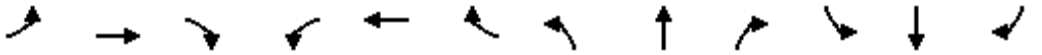
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	22.0	53.0				75.0		15.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	18.0	49.0				71.0		11.0
Max Q Clear Time (g_c+I1), s	20.0	51.0				5.2		13.0
Green Ext Time (p_c), s	0.0	0.0				61.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	85.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	325	948	632	23	1695	36	1181	808	21	45	811	575
Future Volume (veh/h)	325	948	632	23	1695	36	1181	808	21	45	811	575
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	325	948	632	23	1695	36	1181	808	21	45	811	575
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	288	1716	534	44	1356	422	944	1753	784	78	863	386
Arrive On Green	0.08	0.34	0.34	0.01	0.27	0.27	0.28	0.50	0.50	0.02	0.25	0.25
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	325	948	632	23	1695	36	1181	808	21	45	811	575
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	11.0	19.9	44.3	0.9	35.0	2.2	36.0	19.5	0.9	1.7	29.5	32.0
Cycle Q Clear(g_c), s	11.0	19.9	44.3	0.9	35.0	2.2	36.0	19.5	0.9	1.7	29.5	32.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	288	1716	534	44	1356	422	944	1753	784	78	863	386
V/C Ratio(X)	1.13	0.55	1.18	0.52	1.25	0.09	1.25	0.46	0.03	0.58	0.94	1.49
Avail Cap(c_a), veh/h	288	1716	534	79	1356	422	944	1753	784	131	863	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	34.8	42.8	63.7	47.5	35.5	47.0	21.1	16.5	62.9	48.1	49.0
Incr Delay (d2), s/veh	91.7	0.4	100.1	9.1	118.9	0.1	121.9	0.2	0.0	6.6	17.8	233.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	9.3	34.0	0.5	31.1	1.0	32.9	9.5	0.4	0.9	16.4	38.9
LnGrp Delay(d),s/veh	151.2	35.2	142.9	72.8	166.4	35.6	168.9	21.3	16.5	69.4	65.9	282.8
LnGrp LOS	F	D	F	E	F	D	F	C	B	E	E	F
Approach Vol, veh/h		1905			1754			2010			1431	
Approach Delay, s/veh		90.7			162.4			108.0			153.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	69.0	5.7	48.3	40.0	36.0	15.0	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	63.0	3.0	43.0	36.0	32.0	11.0	35.0
Max Q Clear Time (g_c+I1), s	3.7	21.5	2.9	46.3	38.0	34.0	13.0	37.0
Green Ext Time (p_c), s	0.0	21.7	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	125.9
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Future Volume (veh/h)	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	92	1669	520	369	2078	647	26	1541	689	42	1558	697
Arrive On Green	0.03	0.33	0.33	0.11	0.41	0.41	0.01	0.44	0.44	0.01	0.44	0.44
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	4.0	44.6	7.7	15.3	61.0	0.5	0.3	65.0	6.3	0.6	54.6	3.8
Cycle Q Clear(g_c), s	4.0	44.6	7.7	15.3	61.0	0.5	0.3	65.0	6.3	0.6	54.6	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	1669	520	369	2078	647	26	1541	689	42	1558	697
V/C Ratio(X)	1.03	0.94	0.22	0.96	1.16	0.01	0.31	1.13	0.16	0.35	0.90	0.10
Avail Cap(c_a), veh/h	92	1669	520	369	2078	647	92	1541	689	92	1558	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.9	47.9	35.6	65.6	43.4	25.7	73.0	41.4	25.0	72.4	38.0	23.9
Incr Delay (d2), s/veh	102.2	10.6	0.2	36.3	77.5	0.0	6.6	66.5	0.1	4.9	7.4	0.1
Initial Q Delay(d3),s/veh	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	22.4	3.4	9.0	43.0	0.2	0.2	45.5	2.8	0.3	28.0	1.7
LnGrp Delay(d),s/veh	174.6	58.6	35.8	101.9	121.0	25.7	79.6	107.9	25.1	77.3	45.3	23.9
LnGrp LOS	F	E	D	F	F	C	E	F	C	E	D	C
Approach Vol, veh/h		1774			2772			1857			1484	
Approach Delay, s/veh		63.3			118.2			102.8			44.6	
Approach LOS		E			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	69.0	20.0	53.0	5.1	69.7	8.0	65.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	65.0	16.0	49.0	4.0	65.0	4.0	61.0
Max Q Clear Time (g_c+I1), s	2.6	67.0	17.3	46.6	2.3	56.6	6.0	63.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.4	0.0	8.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	88.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	668	0	1034	709	75	0	688	1213	120	772	240
Future Volume (veh/h)	235	668	0	1034	709	75	0	688	1213	120	772	240
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	235	668	0	1034	709	75	0	688	1213	120	772	240
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	291	620	193	944	1584	493	3	1537	687	131	1779	796
Arrive On Green	0.09	0.12	0.00	0.28	0.31	0.31	0.00	0.44	0.44	0.04	0.51	0.51
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	235	668	0	1034	709	75	0	688	1213	120	772	240
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	8.8	16.0	0.0	36.0	14.6	4.5	0.0	17.8	57.0	4.6	18.1	11.6
Cycle Q Clear(g_c), s	8.8	16.0	0.0	36.0	14.6	4.5	0.0	17.8	57.0	4.6	18.1	11.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	620	193	944	1584	493	3	1537	687	131	1779	796
V/C Ratio(X)	0.81	1.08	0.00	1.10	0.45	0.15	0.00	0.45	1.76	0.92	0.43	0.30
Avail Cap(c_a), veh/h	393	620	193	944	1584	493	105	1537	687	131	1779	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	57.0	0.0	47.0	35.5	32.1	0.0	25.5	36.5	62.3	20.2	18.6
Incr Delay (d2), s/veh	8.7	58.9	0.0	58.9	0.2	0.1	0.0	0.2	349.9	53.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	10.8	0.0	24.6	6.8	2.0	0.0	8.6	91.5	3.1	8.7	5.0
LnGrp Delay(d),s/veh	67.1	115.9	0.0	105.9	35.7	32.2	0.0	25.7	386.4	115.8	20.4	18.8
LnGrp LOS	E	F		F	D	C		C	F	F	C	B
Approach Vol, veh/h		903			1818			1901			1132	
Approach Delay, s/veh		103.2			75.5			255.9			30.2	
Approach LOS		F			E			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	61.0	40.0	20.0	0.0	70.0	15.1	44.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	57.0	36.0	16.0	4.0	58.0	15.0	37.0
Max Q Clear Time (g_c+I1), s	6.6	59.0	38.0	18.0	0.0	20.1	10.8	16.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	27.8	0.3	10.2

Intersection Summary	
HCM 2010 Ctrl Delay	130.5
HCM 2010 LOS	F

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

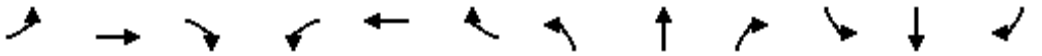
Approach	EB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	135	943	1020
Demand Flow Rate, veh/h	139	972	1050
Vehicles Circulating, veh/h	975	79	27
Vehicles Exiting, veh/h	102	1035	1024
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.8	8.7	8.7
Approach LOS	A	A	A

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	139	457	515	494	556
Cap Entry Lane, veh/h	571	1065	1069	1107	1109
Entry HV Adj Factor	0.971	0.970	0.971	0.970	0.972
Flow Entry, veh/h	135	443	500	479	540
Cap Entry, veh/h	555	1033	1038	1074	1078
V/C Ratio	0.243	0.429	0.482	0.446	0.501
Control Delay, s/veh	9.8	8.2	9.1	8.3	9.2
LOS	A	A	A	A	A
95th %tile Queue, veh	1	2	3	2	3

Cumulative Plus All Projects

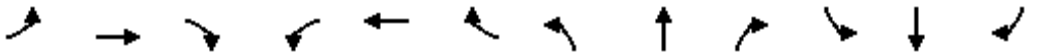
(Proposed Project)

County Standard Mitigation PM



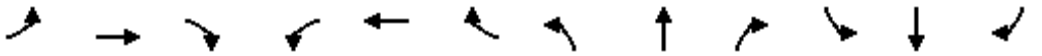
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	671	258	152	959	962	469	1242	38	1284	1880	150
Future Volume (vph)	258	671	258	152	959	962	469	1242	38	1284	1880	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3327		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3327		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	258	671	258	152	959	962	469	1242	38	1284	1880	150
RTOR Reduction (vph)	0	31	0	0	0	738	0	0	29	0	0	62
Lane Group Flow (vph)	258	898	0	152	959	224	469	1242	9	1284	1880	88
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	8.0	32.0		6.0	30.0	30.0	20.5	31.0	31.0	45.0	55.5	55.5
Effective Green, g (s)	8.0	32.0		6.0	30.0	30.0	20.5	31.0	31.0	45.0	55.5	55.5
Actuated g/C Ratio	0.06	0.25		0.05	0.23	0.23	0.16	0.24	0.24	0.35	0.43	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	818		155	801	630	530	1189	370	1165	2129	663
v/s Ratio Prot	0.08	c0.27		0.05	c0.28		0.14	c0.25		c0.38	0.38	
v/s Ratio Perm						0.08			0.01			0.06
v/c Ratio	1.25	1.10		0.98	1.20	0.35	0.88	1.04	0.02	1.10	0.88	0.13
Uniform Delay, d1	61.0	49.0		61.9	50.0	41.9	53.6	49.5	37.9	42.5	34.3	22.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	144.6	61.7		66.2	100.8	0.3	16.1	38.5	0.0	59.0	4.7	0.1
Delay (s)	205.6	110.7		128.2	150.8	42.2	69.7	88.0	37.9	101.5	39.0	22.7
Level of Service	F	F		F	F	D	E	F	D	F	D	C
Approach Delay (s)		131.3			98.7			82.0			62.5	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	85.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	670	242	219	721	518	243	895	182	775	1677	99
Future Volume (vph)	81	670	242	219	721	518	243	895	182	775	1677	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91	0.91	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.96		1.00	0.98	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3365		1736	3244	1413	1736	4861		1736	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3365		1736	3244	1413	1736	4861		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	81	670	242	219	721	518	243	895	182	775	1677	99
RTOR Reduction (vph)	0	25	0	0	10	285	0	21	0	0	0	38
Lane Group Flow (vph)	81	887	0	219	851	93	243	1056	0	775	1677	61
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	12.1	31.0		18.0	36.9	36.9	23.6	31.0		54.0	61.4	61.4
Effective Green, g (s)	12.1	31.0		18.0	36.9	36.9	23.6	31.0		54.0	61.4	61.4
Actuated g/C Ratio	0.08	0.21		0.12	0.25	0.25	0.16	0.21		0.36	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	141	695		208	798	347	273	1004		624	2041	635
v/s Ratio Prot	0.05	c0.26		c0.13	0.26		0.14	c0.22		c0.45	0.34	
v/s Ratio Perm						0.07						0.04
v/c Ratio	0.57	1.28		1.05	1.07	0.27	0.89	1.05		1.24	0.82	0.10
Uniform Delay, d1	66.5	59.5		66.0	56.6	45.6	61.9	59.5		48.0	39.4	27.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.6	135.6		77.0	51.2	0.4	28.1	43.1		122.1	2.8	0.1
Delay (s)	72.0	195.1		143.0	107.7	46.1	90.0	102.6		170.1	42.2	27.3
Level of Service	E	F		F	F	D	F	F		F	D	C
Approach Delay (s)		185.0			97.0			100.3			80.5	
Approach LOS		F			F			F			F	

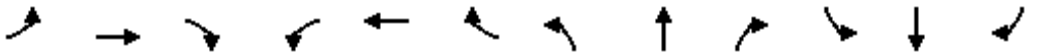
Intersection Summary			
HCM 2000 Control Delay	104.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	116.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	858	161	185	829	363	131	433	129	342	522	24
Future Volume (vph)	67	858	161	185	829	363	131	433	129	342	522	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.6		5.0	4.8	4.8	5.5	4.4	4.4	5.5	4.3	4.3
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3422		1752	3505	1568	1752	1845	1568	1752	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	3422		1752	3505	1568	1752	1845	1568	1752	1845	1568
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	67	858	161	185	829	363	131	433	129	342	522	24
RTOR Reduction (vph)	0	12	0	0	0	233	0	0	98	0	0	16
Lane Group Flow (vph)	67	1007	0	185	829	130	131	433	31	342	522	8
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases						2			8			4
Actuated Green, G (s)	6.6	39.9		14.0	46.9	46.9	11.9	31.1	31.1	26.0	45.3	45.3
Effective Green, g (s)	6.6	39.9		14.0	46.9	46.9	11.9	31.1	31.1	26.0	45.3	45.3
Actuated g/C Ratio	0.05	0.31		0.11	0.36	0.36	0.09	0.24	0.24	0.20	0.35	0.35
Clearance Time (s)	5.2	4.6		5.0	4.8	4.8	5.5	4.4	4.4	5.5	4.3	4.3
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	88	1046		187	1259	563	159	439	373	349	640	544
v/s Ratio Prot	0.04	c0.29		c0.11	0.24		0.07	c0.23		c0.20	0.28	
v/s Ratio Perm						0.08			0.02			0.01
v/c Ratio	0.76	0.96		0.99	0.66	0.23	0.82	0.99	0.08	0.98	0.82	0.02
Uniform Delay, d1	61.2	44.6		58.2	35.1	29.2	58.3	49.5	38.6	52.0	38.8	28.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.8	19.3		61.9	1.0	0.1	26.8	38.9	0.0	42.1	7.5	0.0
Delay (s)	90.0	63.8		120.1	36.0	29.3	85.0	88.4	38.6	94.1	46.3	28.0
Level of Service	F	E		F	D	C	F	F	D	F	D	C
Approach Delay (s)		65.4			45.5			78.5			64.2	
Approach LOS		E			D			E			E	

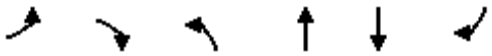
Intersection Summary			
HCM 2000 Control Delay	60.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	130.5	Sum of lost time (s)	19.9
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	455	0	1458	0	0	0	0	1878	1036	0	1957	521
Future Volume (vph)	455	0	1458	0	0	0	0	1878	1036	0	1957	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	455	0	1458	0	0	0	0	1878	1036	0	1957	521
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	455	0	1446	0	0	0	0	1878	1036	0	1957	521
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	49.6		49.6					38.9	100.0		39.4	100.0
Effective Green, g (s)	49.6		49.6					38.9	100.0		39.4	100.0
Actuated g/C Ratio	0.50		0.50					0.39	1.00		0.39	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1670		1355					1940	1553		1965	1553
v/s Ratio Prot								0.38			c0.39	
v/s Ratio Perm	0.14		c0.53						0.67			0.34
v/c Ratio	0.27		1.07					0.97	0.67		1.00	0.34
Uniform Delay, d1	14.7		25.2					29.9	0.0		30.2	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0		44.6					13.5	2.3		19.2	0.6
Delay (s)	14.7		69.8					43.4	2.3		49.4	0.6
Level of Service	B		E					D	A		D	A
Approach Delay (s)		56.7			0.0			28.8			39.1	
Approach LOS		E			A			C			D	

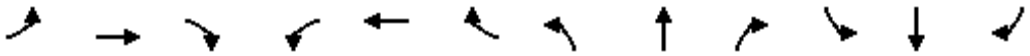
Intersection Summary			
HCM 2000 Control Delay	39.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1183	24	42	360	800	837
Future Volume (vph)	1183	24	42	360	800	837
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	3505	3505	2760
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	3505	3505	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1183	24	42	360	800	837
RTOR Reduction (vph)	0	14	0	0	0	546
Lane Group Flow (vph)	1183	10	42	360	800	291
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	22.6	22.6	1.6	24.9	19.3	19.3
Effective Green, g (s)	22.6	22.6	1.6	24.9	19.3	19.3
Actuated g/C Ratio	0.41	0.41	0.03	0.45	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1384	638	50	1572	1218	959
v/s Ratio Prot	c0.35		c0.02	0.10	c0.23	
v/s Ratio Perm		0.01				0.11
v/c Ratio	0.85	0.02	0.84	0.23	0.66	0.30
Uniform Delay, d1	15.0	9.8	26.8	9.4	15.3	13.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	0.0	69.8	0.1	1.3	0.2
Delay (s)	20.3	9.8	96.7	9.5	16.6	13.4
Level of Service	C	A	F	A	B	B
Approach Delay (s)	20.1			18.6	14.9	
Approach LOS	C			B	B	

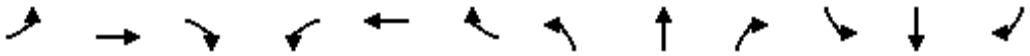
Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	550	7	1	502	2	8	188	0	1	276	306
Future Volume (vph)	216	550	7	1	502	2	8	188	0	1	276	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			1.00			0.93	
Flt Protected		0.99			1.00			1.00			1.00	
Satd. Flow (prot)		1733			1726			1756			1634	
Flt Permitted		0.99			1.00			0.96			1.00	
Satd. Flow (perm)		1733			1726			1682			1634	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	216	550	7	1	502	2	8	188	0	1	276	306
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	773	0	0	505	0	0	196	0	0	555	0
Heavy Vehicles (%)	8%	8%	8%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Split	NA		Split	NA		Perm	NA		Perm	NA	
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)		52.0			35.0			41.0			41.0	
Effective Green, g (s)		52.0			35.0			41.0			41.0	
Actuated g/C Ratio		0.37			0.25			0.29			0.29	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		643			431			492			478	
v/s Ratio Prot		c0.45			c0.29							
v/s Ratio Perm								0.12			0.34	
v/c Ratio		1.20			1.17			0.40			1.16	
Uniform Delay, d1		44.0			52.5			39.6			49.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		105.4			99.4			0.5			93.3	
Delay (s)		149.4			151.9			40.2			142.8	
Level of Service		F			F			D			F	
Approach Delay (s)		149.4			151.9			40.2			142.8	
Approach LOS		F			F			D			F	

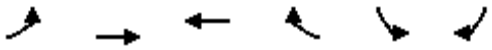
Intersection Summary			
HCM 2000 Control Delay	137.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	15	38	145	6	210	41	1466	172	715	1465	6
Future Volume (vph)	11	15	38	145	6	210	41	1466	172	715	1465	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1646		1752	1845	1568	1752	3450		1752	3503	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	1646		1752	1845	1568	1752	3450		1752	3503	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	11	15	38	145	6	210	41	1466	172	715	1465	6
RTOR Reduction (vph)	0	36	0	0	0	187	0	6	0	0	0	0
Lane Group Flow (vph)	11	17	0	145	6	23	41	1632	0	715	1471	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	1.9	7.7		10.0	15.8	15.8	6.2	58.9		50.1	102.8	
Effective Green, g (s)	1.9	7.7		10.0	15.8	15.8	6.2	58.9		50.1	102.8	
Actuated g/C Ratio	0.01	0.05		0.07	0.11	0.11	0.04	0.41		0.35	0.72	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	23	88		122	204	173	76	1424		615	2523	
v/s Ratio Prot	0.01	c0.01		c0.08	0.00		0.02	c0.47		c0.41	0.42	
v/s Ratio Perm						0.01						
v/c Ratio	0.48	0.19		1.19	0.03	0.13	0.54	1.15		1.16	0.58	
Uniform Delay, d1	69.9	64.5		66.3	56.6	57.3	66.9	41.9		46.3	9.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.8	1.1		140.9	0.1	0.4	7.2	74.5		90.2	0.3	
Delay (s)	84.8	65.6		207.2	56.7	57.6	74.0	116.4		136.5	10.0	
Level of Service	F	E		F	E	E	E	F		F	A	
Approach Delay (s)		68.9			117.7			115.4			51.3	
Approach LOS		E			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	82.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	142.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	110.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	1200	801	1662	1901	0
Future Volume (vph)	2	1200	801	1662	1901	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	3400	3505	3505	1568	3400	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	3400	3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1200	801	1662	1901	0
RTOR Reduction (vph)	0	0	0	717	0	0
Lane Group Flow (vph)	2	1200	801	945	1901	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	4	5	5		6	
Permitted Phases				5		
Actuated Green, G (s)	1.1	46.0	46.0	46.0	76.1	
Effective Green, g (s)	1.1	46.0	46.0	46.0	76.1	
Actuated g/C Ratio	0.01	0.34	0.34	0.34	0.56	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	27	1192	1192	533	1913	
v/s Ratio Prot	c0.00	0.34	0.23		c0.56	
v/s Ratio Perm				c0.60		
v/c Ratio	0.07	1.01	0.67	1.77	0.99	
Uniform Delay, d1	66.5	44.6	38.1	44.6	29.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	27.7	1.5	355.8	19.0	
Delay (s)	67.7	72.3	39.7	400.4	48.3	
Level of Service	E	E	D	F	D	
Approach Delay (s)		72.3	283.1		48.3	
Approach LOS		E	F		D	

Intersection Summary			
HCM 2000 Control Delay	157.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	135.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	112.9%	ICU Level of Service	H
Analysis Period (min)	15		

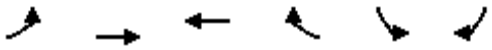
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	412	668	1143	343	461	2720
Future Volume (vph)	412	668	1143	343	461	2720
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5036	1568	3400	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5036	1568	3400	5036
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	412	668	1143	343	461	2720
RTOR Reduction (vph)	0	293	0	226	0	0
Lane Group Flow (vph)	412	375	1143	117	461	2720
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	12.0	12.0	17.0	17.0	9.0	30.0
Effective Green, g (s)	12.0	12.0	17.0	17.0	9.0	30.0
Actuated g/C Ratio	0.24	0.24	0.34	0.34	0.18	0.60
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	816	376	1712	533	612	3021
v/s Ratio Prot	0.12		0.23		0.14	c0.54
v/s Ratio Perm		c0.24		0.07		
v/c Ratio	0.50	1.00	0.67	0.22	0.75	0.90
Uniform Delay, d1	16.4	19.0	14.1	11.8	19.4	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	45.6	1.0	0.2	5.2	4.1
Delay (s)	16.9	64.6	15.1	12.0	24.7	12.8
Level of Service	B	E	B	B	C	B
Approach Delay (s)	46.4		14.4			14.6
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	819	2149	1723	71	132	772
Future Volume (vph)	819	2149	1723	71	132	772
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.91	0.91		1.00	0.88
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	5036	5006		1752	2760
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	5036	5006		1752	2760
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	819	2149	1723	71	132	772
RTOR Reduction (vph)	0	0	6	0	0	639
Lane Group Flow (vph)	819	2149	1788	0	132	133
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Actuated Green, G (s)	18.1	47.2	25.1		11.5	11.5
Effective Green, g (s)	18.1	47.2	25.1		11.5	11.5
Actuated g/C Ratio	0.27	0.71	0.38		0.17	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	922	3563	1883		302	475
v/s Ratio Prot	c0.24	0.43	c0.36		c0.08	
v/s Ratio Perm						0.05
v/c Ratio	0.89	0.60	0.95		0.44	0.28
Uniform Delay, d1	23.3	5.0	20.2		24.7	24.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	10.4	0.3	11.0		1.0	0.3
Delay (s)	33.7	5.3	31.2		25.7	24.3
Level of Service	C	A	C		C	C
Approach Delay (s)		13.1	31.2		24.5	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	469	138	509	487	776	125	3141	276	687	3065	408
Future Volume (veh/h)	253	469	138	509	487	776	125	3141	276	687	3065	408
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	253	469	138	509	487	776	125	3141	276	687	3065	408
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	303	968	433	410	1078	768	175	1309	408	616	1961	611
Arrive On Green	0.09	0.28	0.28	0.12	0.31	0.31	0.05	0.26	0.26	0.18	0.39	0.39
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	253	469	138	509	487	776	125	3141	276	687	3065	408
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	9.4	14.4	9.0	15.5	14.4	39.6	4.7	33.8	20.5	23.5	50.6	27.8
Cycle Q Clear(g_c), s	9.4	14.4	9.0	15.5	14.4	39.6	4.7	33.8	20.5	23.5	50.6	27.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	968	433	410	1078	768	175	1309	408	616	1961	611
V/C Ratio(X)	0.83	0.48	0.32	1.24	0.45	1.01	0.71	2.40	0.68	1.12	1.56	0.67
Avail Cap(c_a), veh/h	349	1007	451	410	1078	768	254	1309	408	616	1961	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	38.9	37.0	56.6	35.8	32.8	60.1	47.5	42.6	52.6	39.1	32.1
Incr Delay (d2), s/veh	12.6	0.1	0.2	127.4	0.1	34.9	2.0	631.8	3.7	72.1	255.7	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	7.0	3.9	14.5	7.0	34.7	2.2	92.0	9.2	17.0	69.5	12.3
LnGrp Delay(d),s/veh	70.4	39.1	37.1	184.1	36.0	67.7	62.1	679.3	46.2	124.7	294.8	34.4
LnGrp LOS	E	D	D	F	D	F	E	F	D	F	F	C
Approach Vol, veh/h		860			1772			3542			4160	
Approach Delay, s/veh		48.0			92.4			608.2			241.2	
Approach LOS		D			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	55.4	16.9	44.2	29.0	38.6	21.0	40.1
Change Period (Y+Rc), s	5.5	4.8	5.5	* 4.6	5.5	* 4.8	5.5	4.6
Max Green Setting (Gmax), s	9.7	47.4	13.2	* 40	23.5	* 34	15.5	37.0
Max Q Clear Time (g_c+I1), s	6.7	52.6	11.4	41.6	25.5	35.8	17.5	16.4
Green Ext Time (p_c), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	325.4
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	585	23	206	193	715	9	2261	139	749	2580	3
Future Volume (veh/h)	0	585	23	206	193	715	9	2261	139	749	2580	3
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	0	585	23	206	193	715	9	2261	139	749	2580	3
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	631	282	173	945	735	21	2094	652	672	3056	952
Arrive On Green	0.00	0.18	0.18	0.05	0.27	0.27	0.01	0.42	0.42	0.20	0.61	0.61
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	0	585	23	206	193	715	9	2261	139	749	2580	3
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	0.0	24.6	1.8	7.5	6.3	39.9	0.4	62.2	8.4	29.5	61.5	0.1
Cycle Q Clear(g_c), s	0.0	24.6	1.8	7.5	6.3	39.9	0.4	62.2	8.4	29.5	61.5	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	631	282	173	945	735	21	2094	652	672	3056	952
V/C Ratio(X)	0.00	0.93	0.08	1.19	0.20	0.97	0.43	1.08	0.21	1.11	0.84	0.00
Avail Cap(c_a), veh/h	68	680	304	173	945	735	68	2094	652	672	3056	952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	59.6	50.3	70.3	41.8	38.4	73.3	43.0	27.4	59.3	23.0	11.1
Incr Delay (d2), s/veh	0.0	17.6	0.0	130.2	0.0	26.4	4.9	45.1	0.1	70.4	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.3	0.8	6.6	3.1	33.9	0.2	37.2	3.6	20.3	28.6	0.0
LnGrp Delay(d),s/veh	0.0	77.2	50.4	200.5	41.9	64.8	78.3	88.0	27.4	129.8	25.2	11.1
LnGrp LOS		E	D	F	D	E	E	F	C	F	C	B
Approach Vol, veh/h		608			1114			2409			3332	
Approach Delay, s/veh		76.2			85.9			84.5			48.7	
Approach LOS		E			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	96.1	0.0	45.6	35.0	67.5	13.0	32.6
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	88.6	3.0	* 33	29.5	* 62	7.5	* 29
Max Q Clear Time (g_c+I1), s	2.4	63.5	0.0	41.9	31.5	64.2	9.5	26.6
Green Ext Time (p_c), s	0.0	21.8	0.0	0.0	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	68.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	1747	810	62	1515	893	624	1673	106	1002	1638	122
Future Volume (veh/h)	158	1747	810	62	1515	893	624	1673	106	1002	1638	122
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	158	1747	810	62	1515	0	624	1673	106	1002	1638	122
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	154	1673	521	66	1560	486	591	1434	446	741	1633	508
Arrive On Green	0.05	0.34	0.34	0.02	0.32	0.00	0.17	0.29	0.29	0.22	0.33	0.33
Sat Flow, veh/h	3312	4893	1524	3312	4893	1524	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	158	1747	810	62	1515	0	624	1673	106	1002	1638	122
Grp Sat Flow(s),veh/h/ln	1656	1631	1524	1656	1631	1524	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	7.0	51.4	51.4	2.8	45.9	0.0	26.3	43.2	7.8	33.0	49.2	8.6
Cycle Q Clear(g_c), s	7.0	51.4	51.4	2.8	45.9	0.0	26.3	43.2	7.8	33.0	49.2	8.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	1673	521	66	1560	486	591	1434	446	741	1633	508
V/C Ratio(X)	1.02	1.04	1.55	0.94	0.97	0.00	1.06	1.17	0.24	1.35	1.00	0.24
Avail Cap(c_a), veh/h	154	1673	521	66	1560	486	591	1434	446	741	1633	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.7	49.4	49.4	73.6	50.5	0.0	62.0	53.6	41.0	58.7	50.5	36.9
Incr Delay (d2), s/veh	79.0	34.4	258.9	87.9	16.4	0.0	52.8	83.1	0.1	167.2	23.1	0.1
Initial Q Delay(d3),s/veh	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	28.4	59.0	2.1	23.0	0.0	16.6	30.8	3.4	32.6	26.0	3.7
LnGrp Delay(d),s/veh	151.0	83.9	308.3	161.4	66.9	0.0	114.8	136.7	41.1	225.9	73.6	37.0
LnGrp LOS	F	F	F	F	E		F	F	D	F	F	D
Approach Vol, veh/h		2715			1577			2403			2762	
Approach Delay, s/veh		154.8			70.6			126.8			127.2	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	53.3	31.0	54.0	8.5	56.8	37.0	48.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4	4.0	4.8
Max Green Setting (Gmax), s	7.0	* 48	* 26	49.2	3.0	* 51	33.0	43.2
Max Q Clear Time (g_c+I1), s	9.0	47.9	28.3	51.2	4.8	53.4	35.0	45.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	125.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	453	724	305	272	602	199	182	1691	232	307	1910	166
Future Volume (veh/h)	453	724	305	272	602	199	182	1691	232	307	1910	166
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1845	1845	1827	1827
Adj Flow Rate, veh/h	453	724	305	272	602	199	182	1691	232	307	1910	166
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	3	3	4	4
Cap, veh/h	490	880	394	332	708	317	139	1968	619	220	2117	659
Arrive On Green	0.14	0.25	0.25	0.10	0.20	0.20	0.04	0.39	0.39	0.06	0.42	0.42
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3375	4988	1568	3408	4988	1553
Grp Volume(v), veh/h	453	724	305	272	602	199	182	1691	232	307	1910	166
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1688	1663	1568	1704	1663	1553
Q Serve(g_s), s	14.1	20.9	19.4	8.4	17.7	12.4	4.4	33.3	11.3	6.9	38.3	7.4
Cycle Q Clear(g_c), s	14.1	20.9	19.4	8.4	17.7	12.4	4.4	33.3	11.3	6.9	38.3	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	490	880	394	332	708	317	139	1968	619	220	2117	659
V/C Ratio(X)	0.92	0.82	0.77	0.82	0.85	0.63	1.31	0.86	0.38	1.40	0.90	0.25
Avail Cap(c_a), veh/h	490	880	394	407	802	359	139	2003	630	220	2152	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	37.8	37.3	47.4	41.2	39.0	51.3	29.7	23.0	50.1	28.8	19.9
Incr Delay (d2), s/veh	23.0	5.9	8.5	8.6	7.1	1.7	182.5	3.8	0.1	204.3	5.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	10.8	9.3	4.3	9.3	5.5	5.6	15.9	4.9	9.5	18.6	3.2
LnGrp Delay(d),s/veh	68.3	43.8	45.7	56.0	48.2	40.8	233.8	33.5	23.2	254.4	34.3	19.9
LnGrp LOS	E	D	D	E	D	D	F	C	C	F	C	B
Approach Vol, veh/h		1482			1073			2105			2383	
Approach Delay, s/veh		51.7			48.8			49.7			61.6	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	50.2	20.9	26.9	12.2	47.0	15.6	32.2
Change Period (Y+Rc), s	* 4.6	4.8	5.5	* 5.3	* 5.3	4.8	* 5.2	* 5.3
Max Green Setting (Gmax), s	* 4.4	46.2	15.4	* 25	* 6.9	43.0	* 13	* 27
Max Q Clear Time (g_c+I1), s	6.4	40.3	16.1	19.7	8.9	35.3	10.4	22.9
Green Ext Time (p_c), s	0.0	5.2	0.0	1.9	0.0	6.6	0.1	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	54.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	808	610	679	91	743	56	189	1125	11	115	2135	1109
Future Volume (veh/h)	808	610	679	91	743	56	189	1125	11	115	2135	1109
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	808	610	679	91	743	56	189	1125	11	115	2135	1109
Adj No. of Lanes	2	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	817	1171	524	104	625	195	184	2144	667	140	2101	654
Arrive On Green	0.24	0.34	0.34	0.03	0.13	0.13	0.05	0.43	0.43	0.04	0.42	0.42
Sat Flow, veh/h	3375	3471	1553	3375	4988	1553	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	808	610	679	91	743	56	189	1125	11	115	2135	1109
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1688	1663	1553	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	31.0	18.4	43.9	3.5	16.3	4.3	7.1	21.6	0.5	4.4	54.8	54.8
Cycle Q Clear(g_c), s	31.0	18.4	43.9	3.5	16.3	4.3	7.1	21.6	0.5	4.4	54.8	54.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	817	1171	524	104	625	195	184	2144	667	140	2101	654
V/C Ratio(X)	0.99	0.52	1.30	0.88	1.19	0.29	1.03	0.52	0.02	0.82	1.02	1.69
Avail Cap(c_a), veh/h	817	1171	524	104	625	195	184	2150	669	140	2101	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	34.7	43.1	62.8	56.9	51.6	61.5	27.3	21.3	61.9	37.7	37.7
Incr Delay (d2), s/veh	28.6	1.7	146.9	50.2	100.5	3.7	73.3	0.9	0.0	29.1	23.7	319.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	9.1	40.2	2.4	13.3	2.0	5.2	10.1	0.2	2.6	29.7	81.5
LnGrp Delay(d),s/veh	77.7	36.3	190.0	113.0	157.4	55.3	135.1	28.2	21.4	90.9	61.4	356.9
LnGrp LOS	E	D	F	F	F	E	F	C	C	F	F	F
Approach Vol, veh/h		2097			890			1325			3359	
Approach Delay, s/veh		102.0			146.5			43.4			160.0	
Approach LOS		F			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	60.0	36.6	21.5	10.9	61.1	9.0	49.1
Change Period (Y+Rc), s	* 4.9	* 5.2	* 5.1	* 5.2	5.5	* 5.2	5.0	* 5.2
Max Green Setting (Gmax), s	* 7.1	* 55	* 32	* 16	5.4	* 56	4.0	* 44
Max Q Clear Time (g_c+I1), s	9.1	56.8	33.0	18.3	6.4	23.6	5.5	45.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	32.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	122.4
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	2366	294	149	2269	5	93	30	92	4	32	23
Future Volume (veh/h)	14	2366	294	149	2269	5	93	30	92	4	32	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1792	1792	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	14	2366	294	149	2269	5	93	30	92	4	32	23
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	3	3	3	3	3	3
Cap, veh/h	21	2873	348	173	3723	8	116	194	165	7	68	58
Arrive On Green	0.01	0.65	0.65	0.10	0.74	0.74	0.07	0.11	0.11	0.00	0.04	0.04
Sat Flow, veh/h	1707	4425	535	1707	5042	11	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	14	1728	932	149	1468	806	93	30	92	4	32	23
Grp Sat Flow(s),veh/h/ln	1707	1631	1698	1707	1631	1790	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	1.0	50.3	54.4	10.9	27.3	27.3	6.6	1.9	7.1	0.3	2.2	1.8
Cycle Q Clear(g_c), s	1.0	50.3	54.4	10.9	27.3	27.3	6.6	1.9	7.1	0.3	2.2	1.8
Prop In Lane	1.00		0.32	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	21	2118	1102	173	2409	1322	116	194	165	7	68	58
V/C Ratio(X)	0.67	0.82	0.85	0.86	0.61	0.61	0.81	0.15	0.56	0.55	0.47	0.40
Avail Cap(c_a), veh/h	75	2147	1118	194	2409	1322	178	433	368	55	304	259
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.6	16.7	17.4	56.3	7.9	7.9	58.7	51.8	54.1	63.3	60.1	59.9
Incr Delay (d2), s/veh	22.1	2.7	6.5	27.0	0.6	1.1	10.6	0.3	2.6	37.3	4.6	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	23.1	27.1	6.5	12.2	13.6	3.6	1.0	3.2	0.2	1.2	0.9
LnGrp Delay(d),s/veh	84.8	19.4	23.9	83.3	8.5	9.0	69.3	52.1	56.8	100.6	64.7	64.0
LnGrp LOS	F	B	C	F	A	A	E	D	E	F	E	E
Approach Vol, veh/h		2674			2423			215			59	
Approach Delay, s/veh		21.3			13.3			61.5			66.8	
Approach LOS		C			B			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	89.1	12.8	9.1	5.1	100.4	4.0	17.8
Change Period (Y+Rc), s	3.5	6.4	4.4	* 4.4	3.5	6.4	3.5	4.4
Max Green Setting (Gmax), s	14.5	83.8	12.9	* 21	5.6	92.7	4.0	29.9
Max Q Clear Time (g_c+I1), s	12.9	56.4	8.6	4.2	3.0	29.3	2.3	9.1
Green Ext Time (p_c), s	0.0	26.3	0.0	0.5	0.0	63.1	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	1210	512	29	1147	166	618	139	8	158	415	90
Future Volume (veh/h)	68	1210	512	29	1147	166	618	139	8	158	415	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	68	1210	512	29	1147	166	618	139	8	158	415	90
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	83	1006	408	37	1190	172	450	652	554	184	373	317
Arrive On Green	0.05	0.41	0.41	0.02	0.39	0.39	0.26	0.35	0.35	0.10	0.20	0.20
Sat Flow, veh/h	1757	2434	988	1757	3075	444	1757	1845	1568	1757	1845	1568
Grp Volume(v), veh/h	68	857	865	29	652	661	618	139	8	158	415	90
Grp Sat Flow(s),veh/h/ln	1757	1752	1670	1757	1752	1766	1757	1845	1568	1757	1845	1568
Q Serve(g_s), s	5.7	61.3	61.3	2.4	53.9	54.4	38.0	7.8	0.5	13.1	30.0	7.2
Cycle Q Clear(g_c), s	5.7	61.3	61.3	2.4	53.9	54.4	38.0	7.8	0.5	13.1	30.0	7.2
Prop In Lane	1.00		0.59	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	83	724	690	37	678	684	450	652	554	184	373	317
V/C Ratio(X)	0.82	1.18	1.25	0.79	0.96	0.97	1.37	0.21	0.01	0.86	1.11	0.28
Avail Cap(c_a), veh/h	83	724	690	71	696	702	450	652	554	426	373	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.1	43.5	43.5	72.4	44.4	44.6	55.2	33.5	31.2	65.4	59.2	50.1
Incr Delay (d2), s/veh	45.7	96.2	125.7	30.3	24.7	25.6	182.0	0.2	0.0	11.1	80.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	48.9	52.3	1.5	30.7	31.3	41.1	4.0	0.2	7.0	23.6	3.2
LnGrp Delay(d),s/veh	115.8	139.7	169.3	102.6	69.1	70.2	237.2	33.7	31.2	76.5	140.1	50.6
LnGrp LOS	F	F	F	F	E	E	F	C	C	E	F	D
Approach Vol, veh/h		1790			1342			765			663	
Approach Delay, s/veh		153.1			70.4			198.1			112.8	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.5	56.5	7.1	65.3	42.0	34.0	11.0	61.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	36.0	32.0	6.0	60.0	38.0	30.0	7.0	59.0
Max Q Clear Time (g_c+I1), s	15.1	9.8	4.4	63.3	40.0	32.0	7.7	56.4
Green Ext Time (p_c), s	0.4	3.8	0.0	0.0	0.0	0.0	0.0	1.1

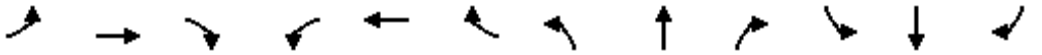
Intersection Summary	
HCM 2010 Ctrl Delay	130.4
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	2137	108	198	2093	1	169	1669	220	5	1865	171
Future Volume (veh/h)	283	2137	108	198	2093	1	169	1669	220	5	1865	171
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	283	2137	108	198	2093	1	169	1669	220	5	1865	171
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	313	2044	655	255	1960	628	223	1865	581	13	1555	484
Arrive On Green	0.09	0.42	0.42	0.07	0.40	0.40	0.07	0.37	0.37	0.00	0.31	0.31
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	283	2137	108	198	2093	1	169	1669	220	5	1865	171
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	9.9	50.0	5.2	6.8	48.0	0.0	5.8	37.4	12.3	0.2	37.0	10.1
Cycle Q Clear(g_c), s	9.9	50.0	5.2	6.8	48.0	0.0	5.8	37.4	12.3	0.2	37.0	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	2044	655	255	1960	628	223	1865	581	13	1555	484
V/C Ratio(X)	0.90	1.05	0.16	0.78	1.07	0.00	0.76	0.90	0.38	0.38	1.20	0.35
Avail Cap(c_a), veh/h	313	2044	655	313	1960	628	228	1865	581	114	1555	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.9	34.9	21.8	54.5	35.9	21.5	55.1	35.5	27.6	59.5	41.4	32.1
Incr Delay (d2), s/veh	28.0	33.1	0.1	9.5	41.2	0.0	13.5	6.1	0.4	17.3	96.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	28.6	2.3	3.6	28.9	0.0	3.2	18.4	5.4	0.1	30.8	4.5
LnGrp Delay(d),s/veh	81.9	68.0	21.9	64.0	77.1	21.5	68.6	41.6	28.0	76.9	137.6	32.6
LnGrp LOS	F	F	C	E	F	C	E	D	C	E	F	C
Approach Vol, veh/h		2528			2292			2058			2041	
Approach Delay, s/veh		67.6			75.9			42.4			128.7	
Approach LOS		E			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.5	48.4	13.0	54.0	11.8	41.0	15.0	52.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	41.0	11.0	48.0	8.0	37.0	11.0	48.0
Max Q Clear Time (g_c+I1), s	2.2	39.4	8.8	52.0	7.8	39.0	11.9	50.0
Green Ext Time (p_c), s	0.0	1.6	0.1	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	77.9
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	817	124	499	947	130	70	1104	652	196	1352	462
Future Volume (veh/h)	233	817	124	499	947	130	70	1104	652	196	1352	462
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	233	817	124	499	947	130	70	1104	652	196	1352	462
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	307	1041	324	480	1295	403	120	1333	596	289	1506	674
Arrive On Green	0.09	0.21	0.21	0.14	0.26	0.26	0.04	0.38	0.38	0.08	0.43	0.43
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	233	817	124	499	947	130	70	1104	652	196	1352	462
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	5.7	13.1	5.8	12.0	14.7	5.7	1.7	24.3	32.4	4.8	30.5	20.3
Cycle Q Clear(g_c), s	5.7	13.1	5.8	12.0	14.7	5.7	1.7	24.3	32.4	4.8	30.5	20.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	1041	324	480	1295	403	120	1333	596	289	1506	674
V/C Ratio(X)	0.76	0.78	0.38	1.04	0.73	0.32	0.58	0.83	1.09	0.68	0.90	0.69
Avail Cap(c_a), veh/h	320	1063	331	480	1299	404	120	1333	596	719	1685	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	32.0	29.1	36.6	29.0	25.7	40.5	23.9	26.4	37.9	22.6	19.7
Incr Delay (d2), s/veh	9.7	3.9	0.7	52.0	2.1	0.5	7.1	4.5	64.9	2.8	6.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	6.4	2.6	9.1	7.0	2.5	0.9	12.5	24.6	2.3	16.0	9.1
LnGrp Delay(d),s/veh	47.6	35.9	29.9	88.7	31.1	26.1	47.6	28.4	91.4	40.7	28.9	21.9
LnGrp LOS	D	D	C	F	C	C	D	C	F	D	C	C
Approach Vol, veh/h		1174			1576			1826			2010	
Approach Delay, s/veh		37.6			48.9			51.6			28.5	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	36.4	16.0	21.6	7.0	40.7	11.7	25.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	26.0	12.0	18.0	3.0	41.0	8.0	22.0
Max Q Clear Time (g_c+I1), s	6.8	34.4	14.0	15.1	3.7	32.5	7.7	16.7
Green Ext Time (p_c), s	0.5	0.0	0.0	2.5	0.0	4.1	0.0	4.5

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	31	17	531	44	548	48	2122	349	520	2580	59
Future Volume (veh/h)	73	31	17	531	44	548	48	2122	349	520	2580	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	73	31	17	531	44	548	48	2122	349	520	2580	59
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	81	174	148	586	388	329	61	2206	687	529	2843	65
Arrive On Green	0.05	0.09	0.09	0.17	0.21	0.21	0.04	0.44	0.44	0.16	0.57	0.57
Sat Flow, veh/h	1757	1845	1568	3408	1845	1568	1740	4988	1553	3375	5018	114
Grp Volume(v), veh/h	73	31	17	531	44	548	48	2122	349	520	1706	933
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	1845	1568	1740	1663	1553	1688	1663	1807
Q Serve(g_s), s	6.2	2.3	1.5	22.9	2.9	31.5	4.1	61.9	24.2	23.0	68.4	69.5
Cycle Q Clear(g_c), s	6.2	2.3	1.5	22.9	2.9	31.5	4.1	61.9	24.2	23.0	68.4	69.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	81	174	148	586	388	329	61	2206	687	529	1884	1024
V/C Ratio(X)	0.90	0.18	0.11	0.91	0.11	1.66	0.78	0.96	0.51	0.98	0.91	0.91
Avail Cap(c_a), veh/h	81	174	148	659	388	329	63	2209	688	529	1885	1024
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.2	62.5	62.2	60.9	47.9	59.2	71.8	40.6	30.1	63.0	28.9	29.1
Incr Delay (d2), s/veh	67.1	0.2	0.1	15.3	0.0	311.7	42.3	11.4	0.3	34.5	6.5	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	1.2	0.7	12.0	1.5	42.2	2.7	30.6	10.4	13.3	33.0	37.8
LnGrp Delay(d),s/veh	138.2	62.7	62.3	76.2	48.0	370.9	114.0	52.0	30.3	97.5	35.4	40.9
LnGrp LOS	F	E	E	E	D	F	F	D	C	F	D	D
Approach Vol, veh/h		121			1123			2519			3159	
Approach Delay, s/veh		108.2			218.9			50.2			47.3	
Approach LOS		F			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	90.1	29.8	19.6	29.0	71.5	12.4	37.0
Change Period (Y+Rc), s	* 5.1	* 5.2	4.0	5.5	5.5	* 5.2	5.5	5.5
Max Green Setting (Gmax), s	* 5.4	* 85	29.0	10.9	23.5	* 66	6.9	31.5
Max Q Clear Time (g_c+I1), s	6.1	71.5	24.9	4.3	25.0	63.9	8.2	33.5
Green Ext Time (p_c), s	0.0	12.2	0.8	0.4	0.0	2.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	77.2
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Future Volume (veh/h)	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
Arrive On Green	0.06	0.23	0.23	0.15	0.32	0.32	0.13	0.23	0.23	0.24	0.34	0.34
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.8	34.7	34.7	22.5	26.9	48.0	19.5	32.7	12.5	35.9	51.6	13.3
Cycle Q Clear(g_c), s	8.8	34.7	34.7	22.5	26.9	48.0	19.5	32.7	12.5	35.9	51.6	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
V/C Ratio(X)	0.96	1.07	1.33	1.10	0.65	1.45	1.17	0.94	0.42	1.06	1.10	0.35
Avail Cap(c_a), veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.5	58.0	58.0	64.1	44.1	51.3	65.6	56.7	49.0	57.4	49.5	36.9
Incr Delay (d2), s/veh	49.3	48.0	164.7	69.2	0.8	213.8	100.0	14.8	0.3	48.1	53.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	21.2	31.6	15.4	12.6	50.5	15.1	16.6	5.4	22.0	32.0	5.7
LnGrp Delay(d),s/veh	119.8	106.0	222.6	133.3	44.9	265.1	165.5	71.5	49.3	105.4	102.5	37.1
LnGrp LOS	F	F	F	F	D	F	F	E	D	F	F	D
Approach Vol, veh/h		1922			2331			1766			2908	
Approach Delay, s/veh		136.5			134.6			96.9			99.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	57.2	14.7	53.7	41.4	40.8	28.0	40.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	19.5	* 52	9.2	* 48	35.9	* 35	22.5	* 34
Max Q Clear Time (g_c+I1), s	21.5	53.6	10.8	50.0	37.9	34.7	24.5	36.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	116.0
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	2158	132	441	1460	511	579	903	128	555	2277	161
Future Volume (veh/h)	253	2158	132	441	1460	511	579	903	128	555	2277	161
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	253	2158	132	441	1460	511	579	903	128	555	2277	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	294	1655	530	231	1569	488	331	1418	442	595	1804	556
Arrive On Green	0.09	0.34	0.34	0.07	0.32	0.32	0.10	0.28	0.28	0.18	0.36	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	253	2158	132	441	1460	511	579	903	128	555	2277	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	11.3	50.9	9.2	10.2	43.5	48.3	14.6	23.6	9.6	24.4	53.9	0.0
Cycle Q Clear(g_c), s	11.3	50.9	9.2	10.2	43.5	48.3	14.6	23.6	9.6	24.4	53.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	294	1655	530	231	1569	488	331	1418	442	595	1804	556
V/C Ratio(X)	0.86	1.30	0.25	1.91	0.93	1.05	1.75	0.64	0.29	0.93	1.26	0.00
Avail Cap(c_a), veh/h	297	1655	530	231	1569	488	331	1418	442	628	1804	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.7	49.8	36.0	70.2	49.5	51.1	67.9	47.3	42.3	61.1	48.3	0.0
Incr Delay (d2), s/veh	20.8	141.3	0.1	424.9	10.1	53.3	350.3	1.0	0.4	19.9	122.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	44.5	4.0	18.4	21.1	27.5	22.9	11.1	4.2	13.1	45.4	0.0
LnGrp Delay(d),s/veh	88.4	191.1	36.1	495.0	59.6	104.4	418.2	48.3	42.7	81.1	171.0	0.0
LnGrp LOS	F	F	D	F	E	F	F	D	D	F	F	
Approach Vol, veh/h		2543			2412			1610			2832	
Approach Delay, s/veh		172.8			148.7			180.9			153.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	59.0	17.6	53.9	31.5	47.5	15.0	56.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 15	53.9	* 14	47.6	28.0	40.9	* 10	* 51
Max Q Clear Time (g_c+I1), s	16.6	55.9	13.3	50.3	26.4	25.6	12.2	52.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	12.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	162.2
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	1180	370	112	1086	50	176	1163	290	40	2521	321
Future Volume (veh/h)	158	1180	370	112	1086	50	176	1163	290	40	2521	321
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	158	1180	370	112	1086	50	176	1163	290	40	2521	321
Adj No. of Lanes	2	3	1	2	3	1	1	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	93	1117	348	139	1185	369	126	2847	886	70	2590	806
Arrive On Green	0.03	0.22	0.22	0.04	0.24	0.24	0.07	0.57	0.57	0.02	0.51	0.51
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	1757	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	158	1180	370	112	1086	50	176	1163	290	40	2521	321
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1757	1679	1568	1704	1679	1568
Q Serve(g_s), s	3.8	31.0	31.0	4.6	29.4	3.5	10.0	18.2	13.8	1.6	68.1	17.5
Cycle Q Clear(g_c), s	3.8	31.0	31.0	4.6	29.4	3.5	10.0	18.2	13.8	1.6	68.1	17.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	1117	348	139	1185	369	126	2847	886	70	2590	806
V/C Ratio(X)	1.71	1.06	1.06	0.81	0.92	0.14	1.40	0.41	0.33	0.57	0.97	0.40
Avail Cap(c_a), veh/h	93	1117	348	139	1185	369	126	2847	886	83	2597	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.0	54.4	54.4	66.5	52.1	42.2	64.9	17.2	16.2	67.9	33.0	20.7
Incr Delay (d2), s/veh	359.0	43.2	66.3	28.3	11.1	0.2	221.0	0.1	0.2	7.2	12.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	18.7	19.8	2.7	14.9	1.5	12.5	8.4	6.0	0.8	34.4	7.6
LnGrp Delay(d),s/veh	427.0	97.6	120.7	94.8	63.3	42.4	285.9	17.3	16.4	75.1	45.0	20.9
LnGrp LOS	F	F	F	F	E	D	F	B	B	E	D	C
Approach Vol, veh/h		1708			1248			1629			2882	
Approach Delay, s/veh		133.1			65.2			46.1			42.8	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	76.9	11.2	36.2	8.4	84.0	9.3	38.1
Change Period (Y+Rc), s	5.5	5.0	5.5	* 5.2	5.5	5.0	5.5	* 5.2
Max Green Setting (Gmax), s	10.0	72.1	5.7	* 31	3.4	78.7	3.8	* 33
Max Q Clear Time (g_c+I1), s	12.0	70.1	6.6	33.0	3.6	20.2	5.8	31.4
Green Ext Time (p_c), s	0.0	1.8	0.0	0.0	0.0	42.3	0.0	1.4

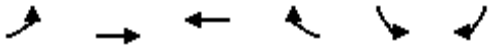
Intersection Summary	
HCM 2010 Ctrl Delay	67.9
HCM 2010 LOS	E

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	693	179	715	762	225	558
Future Volume (veh/h)	693	179	715	762	225	558
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	693	179	715	762	225	558
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	695	179	752	2542	322	958
Arrive On Green	0.25	0.25	0.43	0.73	0.18	0.18
Sat Flow, veh/h	2851	712	1757	3597	1757	1568
Grp Volume(v), veh/h	440	432	715	762	225	558
Grp Sat Flow(s),veh/h/ln	1752	1719	1757	1752	1757	1568
Q Serve(g_s), s	21.9	21.9	34.3	6.7	10.5	16.0
Cycle Q Clear(g_c), s	21.9	21.9	34.3	6.7	10.5	16.0
Prop In Lane		0.41	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	441	433	752	2542	322	958
V/C Ratio(X)	1.00	1.00	0.95	0.30	0.70	0.58
Avail Cap(c_a), veh/h	441	433	804	2647	322	958
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	32.7	24.1	4.2	33.4	10.3
Incr Delay (d2), s/veh	42.1	42.7	20.2	0.1	6.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.7	15.5	20.7	3.2	5.6	8.3
LnGrp Delay(d),s/veh	74.8	75.4	44.3	4.3	40.0	11.2
LnGrp LOS	E	E	D	A	D	B
Approach Vol, veh/h	872			1477	783	
Approach Delay, s/veh	75.1			23.6	19.5	
Approach LOS	E			C	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		20.0	41.4	26.0				67.4
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	40.0	22.0				66.0
Max Q Clear Time (g_c+I1), s		18.0	36.3	23.9				8.7
Green Ext Time (p_c), s		0.0	1.1	0.0				17.5

Intersection Summary	
HCM 2010 Ctrl Delay	36.9
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	2268	1668	647	801	316
Future Volume (veh/h)	141	2268	1668	647	801	316
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	141	2268	1668	647	801	316
Adj No. of Lanes	1	3	3	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	132	2644	1508	561	717	640
Arrive On Green	0.08	0.52	0.42	0.42	0.41	0.41
Sat Flow, veh/h	1757	5202	3784	1346	1757	1568
Grp Volume(v), veh/h	141	2268	1542	773	801	316
Grp Sat Flow(s),veh/h/ln	1757	1679	1679	1607	1757	1568
Q Serve(g_s), s	9.0	46.7	50.0	50.0	49.0	17.9
Cycle Q Clear(g_c), s	9.0	46.7	50.0	50.0	49.0	17.9
Prop In Lane	1.00			0.84	1.00	1.00
Lane Grp Cap(c), veh/h	132	2644	1399	670	717	640
V/C Ratio(X)	1.07	0.86	1.10	1.15	1.12	0.49
Avail Cap(c_a), veh/h	132	2644	1399	670	717	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	24.6	35.0	35.0	35.5	26.3
Incr Delay (d2), s/veh	98.4	3.0	57.3	85.5	70.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	22.2	34.3	38.0	37.7	16.8
LnGrp Delay(d),s/veh	153.9	27.7	92.3	120.5	105.9	26.9
LnGrp LOS	F	C	F	F	F	C
Approach Vol, veh/h		2409	2315		1117	
Approach Delay, s/veh		35.1	101.7		83.5	
Approach LOS		D	F		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				67.0		53.0	13.0	54.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				63.0		49.0	9.0	50.0
Max Q Clear Time (g_c+I1), s				48.7		51.0	11.0	52.0
Green Ext Time (p_c), s				14.2		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	70.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	282	1789	102	1020	1188	350	76	642	784	395	811	90
Future Volume (veh/h)	282	1789	102	1020	1188	350	76	642	784	395	811	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	282	1789	102	1020	1188	350	76	642	784	395	811	90
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	336	1629	522	755	2230	715	118	1079	336	341	1408	439
Arrive On Green	0.10	0.33	0.33	0.22	0.46	0.46	0.03	0.21	0.21	0.10	0.28	0.28
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	282	1789	102	1020	1188	350	76	642	784	395	811	90
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	11.4	46.6	6.5	31.0	24.4	21.9	3.1	16.1	30.0	14.0	19.4	6.1
Cycle Q Clear(g_c), s	11.4	46.6	6.5	31.0	24.4	21.9	3.1	16.1	30.0	14.0	19.4	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	1629	522	755	2230	715	118	1079	336	341	1408	439
V/C Ratio(X)	0.84	1.10	0.20	1.35	0.53	0.49	0.64	0.59	2.33	1.16	0.58	0.21
Avail Cap(c_a), veh/h	438	1629	522	755	2230	715	170	1079	336	341	1408	439
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.0	46.7	33.3	54.5	27.4	26.7	66.7	49.5	55.0	63.0	43.3	38.5
Incr Delay (d2), s/veh	10.8	54.3	0.3	166.9	0.3	0.7	5.8	0.9	609.3	99.3	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	29.2	2.9	32.1	11.1	9.6	1.6	7.5	69.8	11.3	9.1	2.7
LnGrp Delay(d),s/veh	72.8	101.0	33.6	221.4	27.7	27.4	72.5	50.4	664.3	162.3	43.9	38.8
LnGrp LOS	E	F	C	F	C	C	E	D	F	F	D	D
Approach Vol, veh/h		2173			2558			1502			1296	
Approach Delay, s/veh		94.2			104.9			371.9			79.6	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	53.0	8.8	43.2	17.8	70.2	18.0	34.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	31.0	46.6	7.0	37.0	18.0	59.6	14.0	30.0
Max Q Clear Time (g_c+I1), s	33.0	48.6	5.1	21.4	13.4	26.4	16.0	32.0
Green Ext Time (p_c), s	0.0	0.0	0.0	11.6	0.4	31.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	150.7
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	592	33	162	623	19	37	287	160	4	647	91
Future Volume (veh/h)	22	592	33	162	623	19	37	287	160	4	647	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1900	1759	1759	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	22	592	33	162	623	19	37	287	160	4	647	91
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	8	8	8	3	3	3	3	3	3
Cap, veh/h	48	585	33	166	711	22	62	903	490	50	640	90
Arrive On Green	0.03	0.35	0.35	0.10	0.42	0.42	0.04	0.41	0.41	0.03	0.40	0.40
Sat Flow, veh/h	1707	1682	94	1675	1698	52	1757	2195	1191	1757	1583	223
Grp Volume(v), veh/h	22	0	625	162	0	642	37	228	219	4	0	738
Grp Sat Flow(s),veh/h/ln	1707	0	1776	1675	0	1750	1757	1752	1634	1757	0	1805
Q Serve(g_s), s	1.8	0.0	49.0	13.6	0.0	47.5	2.9	12.4	12.9	0.3	0.0	57.0
Cycle Q Clear(g_c), s	1.8	0.0	49.0	13.6	0.0	47.5	2.9	12.4	12.9	0.3	0.0	57.0
Prop In Lane	1.00		0.05	1.00		0.03	1.00		0.73	1.00		0.12
Lane Grp Cap(c), veh/h	48	0	617	166	0	733	62	721	672	50	0	730
V/C Ratio(X)	0.45	0.00	1.01	0.97	0.00	0.88	0.60	0.32	0.33	0.08	0.00	1.01
Avail Cap(c_a), veh/h	170	0	617	166	0	733	174	721	672	174	0	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.4	0.0	46.0	63.3	0.0	37.6	67.0	28.1	28.2	66.7	0.0	42.0
Incr Delay (d2), s/veh	6.5	0.0	39.3	61.7	0.0	11.6	9.0	0.2	0.3	0.7	0.0	36.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	30.8	9.2	0.0	25.2	1.6	6.1	5.8	0.2	0.0	35.7
LnGrp Delay(d),s/veh	73.9	0.0	85.3	125.0	0.0	49.2	76.0	28.3	28.5	67.4	0.0	78.0
LnGrp LOS	E		F	F		D	E	C	C	E		F
Approach Vol, veh/h		647			804			484			742	
Approach Delay, s/veh		84.9			64.5			32.1			77.9	
Approach LOS		F			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	62.0	18.0	53.0	9.0	61.0	8.0	63.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	57.0	14.0	49.0	14.0	57.0	14.0	49.0
Max Q Clear Time (g_c+I1), s	2.3	14.9	15.6	51.0	4.9	59.0	3.8	49.5
Green Ext Time (p_c), s	0.0	10.8	0.0	0.0	0.0	0.0	0.0	0.0

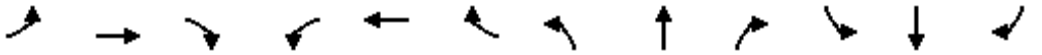
Intersection Summary	
HCM 2010 Ctrl Delay	67.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1023	44	920	27	77	110	654	2127	17	146	1016	934
Future Volume (veh/h)	1023	44	920	27	77	110	654	2127	17	146	1016	934
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	1054	0	920	27	77	110	654	2127	17	146	1016	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	981	0	438	22	62	72	426	2253	18	111	1284	400
Arrive On Green	0.28	0.00	0.28	0.05	0.05	0.05	0.25	0.44	0.44	0.06	0.26	0.00
Sat Flow, veh/h	3480	0	1553	473	1348	1568	1740	5104	41	1740	4988	1553
Grp Volume(v), veh/h	1054	0	920	104	0	110	654	1385	759	146	1016	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1821	0	1568	1740	1663	1820	1740	1663	1553
Q Serve(g_s), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.7	47.8	7.6	22.7	0.0
Cycle Q Clear(g_c), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.7	47.8	7.6	22.7	0.0
Prop In Lane	1.00		1.00	0.26		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	981	0	438	84	0	72	426	1468	803	111	1284	400
V/C Ratio(X)	1.07	0.00	2.10	1.24	0.00	1.53	1.53	0.94	0.94	1.32	0.79	0.00
Avail Cap(c_a), veh/h	981	0	438	84	0	72	426	1485	813	111	1301	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	0.0	42.9	57.0	0.0	57.0	45.1	32.0	32.0	56.0	41.4	0.0
Incr Delay (d2), s/veh	51.1	0.0	503.8	176.8	0.0	294.6	251.9	12.2	19.0	194.0	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.0	0.0	75.7	6.9	0.0	8.3	43.8	24.2	28.1	9.6	10.8	0.0
LnGrp Delay(d),s/veh	94.0	0.0	546.7	233.8	0.0	351.6	297.1	44.2	51.0	250.0	44.5	0.0
LnGrp LOS	F		F	F		F	F	D	D	F	D	
Approach Vol, veh/h		1974			214			2798			1162	
Approach Delay, s/veh		305.0			294.4			105.1			70.3	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	34.0	35.6		11.0	12.0	57.6		39.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 29	31.2		5.5	* 7.6	* 53		33.7
Max Q Clear Time (g_c+I1), s	31.3	24.7		7.5	9.6	49.8		35.7
Green Ext Time (p_c), s	0.0	5.0		0.0	0.0	3.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		169.3	
HCM 2010 LOS		F	

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1656	130	438	1173	428	85	515	427	580	714	299
Future Volume (veh/h)	159	1656	130	438	1173	428	85	515	427	580	714	299
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	159	1656	130	438	1173	428	85	515	427	580	714	299
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	204	1556	485	457	1916	597	127	820	367	617	1324	592
Arrive On Green	0.06	0.31	0.31	0.13	0.38	0.38	0.04	0.23	0.23	0.18	0.38	0.38
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	159	1656	130	438	1173	428	85	515	427	580	714	299
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	6.7	44.9	9.1	18.6	27.3	33.8	3.6	19.2	34.0	24.4	23.1	21.3
Cycle Q Clear(g_c), s	6.7	44.9	9.1	18.6	27.3	33.8	3.6	19.2	34.0	24.4	23.1	21.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	1556	485	457	1916	597	127	820	367	617	1324	592
V/C Ratio(X)	0.78	1.06	0.27	0.96	0.61	0.72	0.67	0.63	1.16	0.94	0.54	0.50
Avail Cap(c_a), veh/h	277	1556	485	457	1916	597	171	820	367	617	1324	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	50.2	37.8	62.5	36.3	38.3	69.1	50.0	55.7	58.7	35.3	34.8
Incr Delay (d2), s/veh	6.3	42.0	0.1	31.1	0.4	3.6	2.3	1.2	99.5	22.3	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	26.8	3.9	10.7	12.8	15.2	1.7	9.4	24.9	13.4	11.3	9.3
LnGrp Delay(d),s/veh	73.7	92.2	37.9	93.6	36.8	41.9	71.3	51.1	155.2	81.0	35.6	35.0
LnGrp LOS	E	F	D	F	D	D	E	D	F	F	D	D
Approach Vol, veh/h		1945			2039			1027			1593	
Approach Delay, s/veh		87.1			50.1			96.1			52.0	
Approach LOS		F			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	60.2	10.9	60.0	24.6	49.8	31.8	39.1
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	11.8	* 52	7.3	* 53	* 20	* 45	26.3	* 34
Max Q Clear Time (g_c+I1), s	8.7	35.8	5.6	25.1	20.6	46.9	26.4	36.0
Green Ext Time (p_c), s	0.0	9.8	0.0	2.7	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	68.6
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	725	1572	357	116	867	372	253	1286	104	729	1852	841
Future Volume (veh/h)	725	1572	357	116	867	372	253	1286	104	729	1852	841
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	725	1572	357	116	867	372	253	1286	104	729	1852	841
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
Arrive On Green	0.20	0.34	0.34	0.04	0.18	0.18	0.08	0.26	0.26	0.20	0.38	0.38
Sat Flow, veh/h	3408	5036	1568	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	725	1572	357	116	867	372	253	1286	104	729	1852	841
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	27.5	42.1	27.4	5.0	25.2	25.5	10.4	36.0	7.4	28.7	51.1	53.5
Cycle Q Clear(g_c), s	27.5	42.1	27.4	5.0	25.2	25.5	10.4	36.0	7.4	28.7	51.1	53.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
V/C Ratio(X)	1.08	0.93	0.68	0.86	0.99	1.37	0.91	0.99	0.26	1.05	0.97	1.42
Avail Cap(c_a), veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	44.7	39.8	66.7	57.1	57.3	63.8	51.7	41.2	55.7	42.5	43.3
Incr Delay (d2), s/veh	59.4	9.0	2.8	38.3	28.1	186.4	31.5	23.6	0.1	49.2	14.4	197.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	20.9	12.3	3.0	13.4	24.7	6.1	19.4	3.2	18.1	26.0	55.4
LnGrp Delay(d),s/veh	115.6	53.7	42.6	105.0	85.2	243.6	95.3	75.4	41.3	104.8	56.9	240.8
LnGrp LOS	F	D	D	F	F	F	F	E	D	F	E	F
Approach Vol, veh/h		2654			1355			1643			3422	
Approach Delay, s/veh		69.1			130.4			76.3			112.3	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	59.0	33.0	31.0	34.2	41.8	11.3	52.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	11.5	53.5	27.5	25.5	28.7	36.3	5.8	47.2
Max Q Clear Time (g_c+I1), s	12.4	55.5	29.5	27.5	30.7	38.0	7.0	44.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	95.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	770	1155	171	169	798	163	139	896	318	252	1431	465
Future Volume (veh/h)	770	1155	171	169	798	163	139	896	318	252	1431	465
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1845
Adj Flow Rate, veh/h	770	1155	171	169	798	163	139	896	318	252	1431	465
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	4	4	4	4	3
Cap, veh/h	1068	1098	491	710	730	327	142	1133	353	305	1413	444
Arrive On Green	0.31	0.31	0.31	0.21	0.21	0.21	0.04	0.23	0.23	0.09	0.28	0.28
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	4988	1553	3375	4988	1568
Grp Volume(v), veh/h	770	1155	171	169	798	163	139	896	318	252	1431	465
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1663	1553	1688	1663	1568
Q Serve(g_s), s	24.0	37.6	10.1	5.0	25.0	11.0	4.9	20.3	23.9	8.8	34.0	34.0
Cycle Q Clear(g_c), s	24.0	37.6	10.1	5.0	25.0	11.0	4.9	20.3	23.9	8.8	34.0	34.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1068	1098	491	710	730	327	142	1133	353	305	1413	444
V/C Ratio(X)	0.72	1.05	0.35	0.24	1.09	0.50	0.98	0.79	0.90	0.83	1.01	1.05
Avail Cap(c_a), veh/h	1068	1098	491	710	730	327	142	1133	353	318	1413	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	41.2	31.8	39.6	47.5	42.0	57.4	43.7	45.1	53.6	43.0	43.0
Incr Delay (d2), s/veh	2.4	41.8	0.4	0.2	61.5	1.2	68.9	3.9	25.2	15.7	27.1	55.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	24.5	4.4	2.3	18.3	4.9	3.7	9.7	12.7	4.8	19.1	21.5
LnGrp Delay(d),s/veh	39.0	83.0	32.2	39.7	109.0	43.1	126.3	47.6	70.3	69.4	70.1	98.4
LnGrp LOS	D	F	C	D	F	D	F	D	E	E	F	F
Approach Vol, veh/h		2096			1130			1353			2148	
Approach Delay, s/veh		62.7			89.1			61.0			76.2	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	39.0		43.0	15.8	32.2		29.0
Change Period (Y+Rc), s	4.0	5.0		* 5.4	* 4.9	5.0		4.0
Max Green Setting (Gmax), s	5.0	34.0		* 38	* 11	26.8		25.0
Max Q Clear Time (g_c+I1), s	6.9	36.0		39.6	10.8	25.9		27.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	71.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	409	1696	105	330	996	256	63	695	346	302	1169	288
Future Volume (veh/h)	409	1696	105	330	996	256	63	695	346	302	1169	288
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1792	1845	1845	1845	1827	1845	1845
Adj Flow Rate, veh/h	409	1696	105	330	996	256	63	695	346	302	1169	288
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	6	3	3	3	4	3	3
Cap, veh/h	431	1643	512	323	1484	577	108	996	446	284	1181	726
Arrive On Green	0.13	0.33	0.33	0.09	0.29	0.29	0.03	0.28	0.28	0.08	0.34	0.34
Sat Flow, veh/h	3408	5036	1568	3408	5036	1524	3408	3505	1568	3375	3505	1568
Grp Volume(v), veh/h	409	1696	105	330	996	256	63	695	346	302	1169	288
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1524	1704	1752	1568	1688	1752	1568
Q Serve(g_s), s	11.3	31.0	4.6	9.0	16.5	11.9	1.7	16.8	19.3	8.0	31.5	11.5
Cycle Q Clear(g_c), s	11.3	31.0	4.6	9.0	16.5	11.9	1.7	16.8	19.3	8.0	31.5	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	431	1643	512	323	1484	577	108	996	446	284	1181	726
V/C Ratio(X)	0.95	1.03	0.21	1.02	0.67	0.44	0.59	0.70	0.78	1.06	0.99	0.40
Avail Cap(c_a), veh/h	431	1643	512	323	1484	577	108	996	446	284	1181	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	32.0	23.1	43.0	29.5	22.0	45.4	30.4	31.2	43.5	31.3	16.8
Incr Delay (d2), s/veh	30.9	30.9	0.2	55.8	1.2	0.5	7.9	2.2	8.4	70.8	23.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	19.0	2.0	6.7	7.8	5.1	0.9	8.4	9.3	6.5	19.2	5.0
LnGrp Delay(d),s/veh	72.1	62.9	23.3	98.9	30.6	22.6	53.3	32.5	39.6	114.3	55.1	17.1
LnGrp LOS	E	F	C	F	C	C	D	C	D	F	E	B
Approach Vol, veh/h		2210			1582			1104			1759	
Approach Delay, s/veh		62.7			43.6			35.9			59.0	
Approach LOS		E			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	37.0	7.0	38.0	16.0	34.0	12.0	33.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	9.0	31.0	3.0	32.0	12.0	28.0	8.0	27.0
Max Q Clear Time (g_c+I1), s	11.0	33.0	3.7	33.5	13.3	18.5	10.0	21.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	8.9	0.0	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	52.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	547	1011	9	2	722	6	7	15	2	5	21	1089
Future Volume (veh/h)	547	1011	9	2	722	6	7	15	2	5	21	1089
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1810	1810	1900	1900	1845	1900	1900	1827	1827
Adj Flow Rate, veh/h	547	1011	0	2	722	6	7	15	2	5	21	1089
Adj No. of Lanes	2	2	1	1	2	0	0	1	0	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	5	5	5	3	3	3	4	4	4
Cap, veh/h	623	1533	686	3	921	8	8	18	2	87	366	681
Arrive On Green	0.19	0.45	0.00	0.00	0.26	0.26	0.02	0.02	0.02	0.25	0.25	0.25
Sat Flow, veh/h	3312	3406	1524	1723	3494	29	523	1120	149	348	1462	1553
Grp Volume(v), veh/h	547	1011	0	2	355	373	24	0	0	26	0	1089
Grp Sat Flow(s),veh/h/ln	1656	1703	1524	1723	1719	1804	1792	0	0	1810	0	1553
Q Serve(g_s), s	14.1	20.4	0.0	0.1	16.8	16.8	1.2	0.0	0.0	1.0	0.0	22.0
Cycle Q Clear(g_c), s	14.1	20.4	0.0	0.1	16.8	16.8	1.2	0.0	0.0	1.0	0.0	22.0
Prop In Lane	1.00		1.00	1.00		0.02	0.29		0.08	0.19		1.00
Lane Grp Cap(c), veh/h	623	1533	686	3	453	476	29	0	0	454	0	681
V/C Ratio(X)	0.88	0.66	0.00	0.71	0.78	0.78	0.84	0.00	0.00	0.06	0.00	1.60
Avail Cap(c_a), veh/h	2623	3777	1690	59	621	652	61	0	0	454	0	681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.6	18.9	0.0	43.8	30.0	30.0	43.0	0.0	0.0	25.0	0.0	24.6
Incr Delay (d2), s/veh	1.6	0.2	0.0	79.2	3.0	2.8	20.2	0.0	0.0	0.0	0.0	276.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	9.6	0.0	0.1	8.4	8.8	0.7	0.0	0.0	0.5	0.0	68.6
LnGrp Delay(d),s/veh	36.3	19.0	0.0	123.0	32.9	32.8	63.2	0.0	0.0	25.0	0.0	300.6
LnGrp LOS	D	B		F	C	C	E			C		F
Approach Vol, veh/h		1558			730			24			1115	
Approach Delay, s/veh		25.1			33.1			63.2			294.2	
Approach LOS		C			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	22.0	30.0		28.2	5.6	46.4		7.5
Change Period (Y+Rc), s	5.5	* 6.9		* 6.2	5.5	* 6.9		6.1
Max Green Setting (Gmax), s	69.5	* 32		* 22	3.0	* 97		3.0
Max Q Clear Time (g_c+I1), s	16.1	18.8		24.0	2.1	22.4		3.2
Green Ext Time (p_c), s	0.4	4.3		0.0	0.0	5.4		0.0

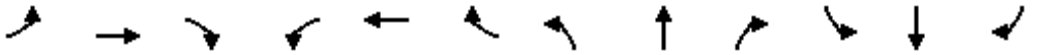
Intersection Summary		
HCM 2010 Ctrl Delay		114.6
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	984	765	4	62	455	87	53	835	72	85	660	713
Future Volume (veh/h)	984	765	4	62	455	87	53	835	72	85	660	713
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	984	765	4	62	455	87	53	835	72	85	660	713
Adj No. of Lanes	3	3	1	2	3	1	2	3	1	2	3	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	5	5	5	5	5	5
Cap, veh/h	1143	2137	665	106	1132	352	92	1331	414	130	1387	760
Arrive On Green	0.24	0.44	0.44	0.03	0.23	0.23	0.03	0.27	0.27	0.04	0.28	0.28
Sat Flow, veh/h	4814	4893	1524	3312	4893	1524	3343	4940	1538	3343	4940	2707
Grp Volume(v), veh/h	984	765	4	62	455	87	53	835	72	85	660	713
Grp Sat Flow(s),veh/h/ln	1605	1631	1524	1656	1631	1524	1672	1647	1538	1672	1647	1354
Q Serve(g_s), s	18.6	9.9	0.1	1.8	7.5	4.4	1.5	14.1	3.4	2.4	10.5	24.5
Cycle Q Clear(g_c), s	18.6	9.9	0.1	1.8	7.5	4.4	1.5	14.1	3.4	2.4	10.5	24.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1143	2137	665	106	1132	352	92	1331	414	130	1387	760
V/C Ratio(X)	0.86	0.36	0.01	0.59	0.40	0.25	0.57	0.63	0.17	0.65	0.48	0.94
Avail Cap(c_a), veh/h	1615	2754	857	195	1400	436	106	1351	421	130	1387	760
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	17.9	15.1	45.4	31.0	29.8	45.7	30.5	26.6	45.0	28.4	33.4
Incr Delay (d2), s/veh	2.6	0.2	0.0	1.9	0.5	0.8	2.2	0.9	0.2	8.9	0.3	19.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	4.5	0.1	0.8	3.4	1.9	0.7	6.5	1.5	1.3	4.8	11.2
LnGrp Delay(d),s/veh	37.4	18.1	15.1	47.3	31.5	30.6	47.9	31.4	26.8	54.0	28.6	52.6
LnGrp LOS	D	B	B	D	C	C	D	C	C	D	C	D
Approach Vol, veh/h		1753			604			960			1458	
Approach Delay, s/veh		28.9			33.0			32.0			41.8	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.2	28.0	7.2	32.7	7.6	47.5	8.3	31.6
Change Period (Y+Rc), s	4.6	6.0	4.6	6.0	4.6	6.0	4.6	6.0
Max Green Setting (Gmax), s	31.9	27.2	3.0	26.7	5.6	53.5	3.7	26.0
Max Q Clear Time (g_c+I1), s	20.6	9.5	3.5	26.5	3.8	11.9	4.4	16.1
Green Ext Time (p_c), s	1.9	12.5	0.0	0.2	0.0	22.1	0.0	7.9

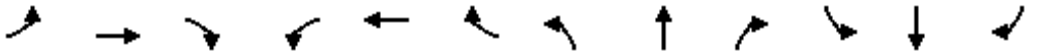
Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	1202	449	45	1624	199	186	771	64	32	1395	152
Future Volume (veh/h)	188	1202	449	45	1624	199	186	771	64	32	1395	152
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	188	1202	449	45	1624	199	186	771	64	32	1395	152
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	188	1734	540	101	1607	500	188	1458	652	83	1350	604
Arrive On Green	0.06	0.35	0.35	0.03	0.32	0.32	0.06	0.42	0.42	0.02	0.39	0.39
Sat Flow, veh/h	3375	4988	1553	3375	4988	1553	3375	3471	1553	3375	3471	1553
Grp Volume(v), veh/h	188	1202	449	45	1624	199	186	771	64	32	1395	152
Grp Sat Flow(s),veh/h/ln	1688	1663	1553	1688	1663	1553	1688	1736	1553	1688	1736	1553
Q Serve(g_s), s	5.0	18.6	23.9	1.2	29.0	9.0	5.0	14.9	2.2	0.8	35.0	6.0
Cycle Q Clear(g_c), s	5.0	18.6	23.9	1.2	29.0	9.0	5.0	14.9	2.2	0.8	35.0	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	1734	540	101	1607	500	188	1458	652	83	1350	604
V/C Ratio(X)	1.00	0.69	0.83	0.44	1.01	0.40	0.99	0.53	0.10	0.39	1.03	0.25
Avail Cap(c_a), veh/h	188	1734	540	150	1607	500	188	1458	652	150	1350	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	25.2	26.9	42.9	30.5	23.7	42.5	19.5	15.8	43.2	27.5	18.6
Incr Delay (d2), s/veh	66.4	1.2	10.6	3.0	25.1	0.5	63.2	0.4	0.1	2.9	33.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	8.8	11.8	0.6	17.0	3.9	3.9	7.1	1.0	0.4	23.0	2.6
LnGrp Delay(d),s/veh	108.9	26.4	37.5	45.9	55.6	24.2	105.7	19.8	15.9	46.2	61.0	18.8
LnGrp LOS	F	C	D	D	F	C	F	B	B	D	F	B
Approach Vol, veh/h		1839			1868			1021			1579	
Approach Delay, s/veh		37.6			52.0			35.2			56.7	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	41.8	6.7	35.3	9.0	39.0	9.0	33.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	36.0	4.0	30.0	5.0	35.0	5.0	29.0
Max Q Clear Time (g_c+I1), s	2.8	16.9	3.2	25.9	7.0	37.0	7.0	31.0
Green Ext Time (p_c), s	0.0	15.2	0.0	4.0	0.0	0.0	0.0	0.0

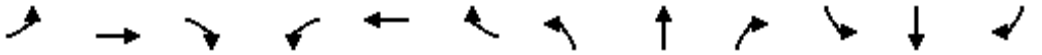
Intersection Summary	
HCM 2010 Ctrl Delay	46.2
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	1434	136	278	1394	10	248	288	140	302	1162	147
Future Volume (veh/h)	152	1434	136	278	1394	10	248	288	140	302	1162	147
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1827	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	152	1434	136	278	1394	10	248	288	140	302	1162	147
Adj No. of Lanes	1	2	0	1	2	1	2	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	4	4	4	3	3	3	3	3	3
Cap, veh/h	149	1260	119	236	1537	688	170	603	270	325	1076	482
Arrive On Green	0.09	0.39	0.39	0.14	0.44	0.44	0.05	0.17	0.17	0.19	0.31	0.31
Sat Flow, veh/h	1740	3207	302	1740	3471	1553	3408	3505	1568	1757	3505	1568
Grp Volume(v), veh/h	152	772	798	278	1394	10	248	288	140	302	1162	147
Grp Sat Flow(s),veh/h/ln	1740	1736	1774	1740	1736	1553	1704	1752	1568	1757	1752	1568
Q Serve(g_s), s	12.0	55.0	55.0	19.0	52.3	0.5	7.0	10.4	11.4	23.7	43.0	10.0
Cycle Q Clear(g_c), s	12.0	55.0	55.0	19.0	52.3	0.5	7.0	10.4	11.4	23.7	43.0	10.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	682	697	236	1537	688	170	603	270	325	1076	482
V/C Ratio(X)	1.02	1.13	1.15	1.18	0.91	0.01	1.46	0.48	0.52	0.93	1.08	0.31
Avail Cap(c_a), veh/h	149	682	697	236	1537	688	170	603	270	351	1076	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	42.5	42.5	60.5	36.3	21.9	66.5	52.3	52.7	56.1	48.5	37.1
Incr Delay (d2), s/veh	78.8	77.1	81.6	114.9	8.1	0.0	234.4	0.6	1.8	29.4	51.5	0.4
Initial Q Delay(d3),s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	40.9	42.7	16.7	26.7	0.2	8.8	5.1	5.1	14.1	28.5	4.4
LnGrp Delay(d),s/veh	143.0	119.6	124.1	175.4	44.5	21.9	300.9	52.9	54.4	85.5	100.0	37.4
LnGrp LOS	F	F	F	F	D	C	F	D	D	F	F	D
Approach Vol, veh/h		1722			1682			676			1611	
Approach Delay, s/veh		123.7			66.0			144.2			91.6	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.9	28.1	23.0	59.0	11.0	47.0	16.0	66.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	28.0	22.0	19.0	55.0	7.0	43.0	12.0	62.0
Max Q Clear Time (g_c+I1), s	25.7	13.4	21.0	57.0	9.0	45.0	14.0	54.3
Green Ext Time (p_c), s	0.2	6.3	0.0	0.0	0.0	0.0	0.0	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	100.0
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	6	258	50	9	1	193	1512	55	1	1853	0
Future Volume (veh/h)	1	6	258	50	9	1	193	1512	55	1	1853	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1759	1759	1845	1845	1845	1792	1792	1900	1792	1792	1900
Adj Flow Rate, veh/h	1	6	258	50	9	1	193	1512	55	1	1853	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	8	8	3	3	3	6	6	6	6	6	6
Cap, veh/h	210	220	374	78	82	69	214	1777	65	299	1976	0
Arrive On Green	0.13	0.13	0.13	0.04	0.04	0.04	0.13	0.53	0.53	0.18	0.58	0.00
Sat Flow, veh/h	1675	1759	1495	1757	1845	1568	1707	3352	122	1707	3495	0
Grp Volume(v), veh/h	1	6	258	50	9	1	193	766	801	1	1853	0
Grp Sat Flow(s),veh/h/ln	1675	1759	1495	1757	1845	1568	1707	1703	1771	1707	1703	0
Q Serve(g_s), s	0.1	0.4	16.0	3.6	0.6	0.1	14.3	49.2	49.6	0.1	64.0	0.0
Cycle Q Clear(g_c), s	0.1	0.4	16.0	3.6	0.6	0.1	14.3	49.2	49.6	0.1	64.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.00
Lane Grp Cap(c), veh/h	210	220	374	78	82	69	214	903	939	299	1976	0
V/C Ratio(X)	0.00	0.03	0.69	0.64	0.11	0.01	0.90	0.85	0.85	0.00	0.94	0.00
Avail Cap(c_a), veh/h	210	220	374	220	231	196	214	1172	1219	299	2024	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.0	49.1	43.4	60.1	58.7	58.4	55.2	25.7	25.8	43.5	24.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	5.3	8.6	0.6	0.1	36.4	4.8	4.8	0.0	9.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	8.8	1.9	0.3	0.0	8.9	24.2	25.3	0.0	32.3	0.0
LnGrp Delay(d),s/veh	49.0	49.1	48.7	68.7	59.3	58.5	91.6	30.4	30.5	43.5	33.7	0.0
LnGrp LOS	D	D	D	E	E	E	F	C	C	D	C	
Approach Vol, veh/h		265			60			1760			1854	
Approach Delay, s/veh		48.7			67.1			37.2			33.7	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.4	71.8		20.0	20.0	78.2		9.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	88.0		16.0	16.0	76.0		16.0
Max Q Clear Time (g_c+I1), s	2.1	51.6		18.0	16.3	66.0		5.6
Green Ext Time (p_c), s	1.8	16.2		0.0	0.0	8.2		0.1

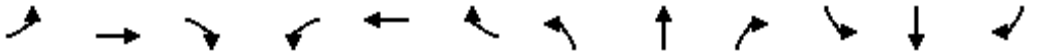
Intersection Summary	
HCM 2010 Ctrl Delay	36.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	354	47	22	1335	1718	455
Future Volume (veh/h)	354	47	22	1335	1718	455
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	354	47	22	1335	1718	455
Adj No. of Lanes	2	1	2	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	519	239	71	2459	2130	953
Arrive On Green	0.15	0.15	0.02	0.70	0.61	0.61
Sat Flow, veh/h	3408	1568	3408	3597	3597	1568
Grp Volume(v), veh/h	354	47	22	1335	1718	455
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1752	1752	1568
Q Serve(g_s), s	5.4	1.4	0.3	10.0	20.6	8.8
Cycle Q Clear(g_c), s	5.4	1.4	0.3	10.0	20.6	8.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	519	239	71	2459	2130	953
V/C Ratio(X)	0.68	0.20	0.31	0.54	0.81	0.48
Avail Cap(c_a), veh/h	997	458	249	2626	2130	953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	20.3	26.4	3.9	8.3	5.9
Incr Delay (d2), s/veh	1.6	0.4	2.5	0.2	2.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	1.3	0.2	4.7	10.5	3.8
LnGrp Delay(d),s/veh	23.5	20.7	28.9	4.1	10.6	6.3
LnGrp LOS	C	C	C	A	B	A
Approach Vol, veh/h	401			1357	2173	
Approach Delay, s/veh	23.2			4.5	9.7	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		42.4		12.3	5.1	37.3		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		41.0		16.0	4.0	33.0		
Max Q Clear Time (g_c+I1), s		12.0		7.4	2.3	22.6		
Green Ext Time (p_c), s		26.3		1.0	0.0	10.0		

Intersection Summary	
HCM 2010 Ctrl Delay	9.3
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	1107	309	76	721	3	566	1221	90	4	1036	328
Future Volume (veh/h)	334	1107	309	76	721	3	566	1221	90	4	1036	328
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	334	1107	309	76	721	3	566	1221	90	4	1036	328
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	381	1101	493	129	842	377	571	1630	729	14	1057	473
Arrive On Green	0.11	0.31	0.31	0.04	0.24	0.24	0.17	0.46	0.46	0.00	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	334	1107	309	76	721	3	566	1221	90	4	1036	328
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	8.6	28.1	15.1	2.0	17.6	0.1	14.8	25.6	2.9	0.1	26.2	16.5
Cycle Q Clear(g_c), s	8.6	28.1	15.1	2.0	17.6	0.1	14.8	25.6	2.9	0.1	26.2	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	1101	493	129	842	377	571	1630	729	14	1057	473
V/C Ratio(X)	0.88	1.01	0.63	0.59	0.86	0.01	0.99	0.75	0.12	0.28	0.98	0.69
Avail Cap(c_a), veh/h	381	1101	493	152	861	385	571	1630	729	152	1057	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	30.7	26.2	42.4	32.5	25.9	37.2	19.7	13.6	44.4	31.0	27.6
Incr Delay (d2), s/veh	20.0	28.5	2.5	4.2	8.4	0.0	35.3	2.0	0.1	10.0	22.8	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	17.8	6.8	1.0	9.5	0.1	9.7	12.7	1.3	0.1	16.0	7.7
LnGrp Delay(d),s/veh	59.2	59.2	28.7	46.6	40.9	25.9	72.5	21.6	13.7	54.5	53.8	31.9
LnGrp LOS	E	F	C	D	D	C	E	C	B	D	D	C
Approach Vol, veh/h		1750			800			1877			1368	
Approach Delay, s/veh		53.8			41.4			36.6			48.6	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.4	45.6	7.4	32.1	19.0	31.0	14.0	25.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.0	4.0	28.0	15.0	27.0	10.0	22.0
Max Q Clear Time (g_c+I1), s	2.1	27.6	4.0	30.1	16.8	28.2	10.6	19.6
Green Ext Time (p_c), s	0.0	9.3	0.0	0.0	0.0	0.0	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	45.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	988	632	220	663	701	335	511	377	809	971	0
Future Volume (veh/h)	0	988	632	220	663	701	335	511	377	809	971	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	988	632	220	663	701	335	511	377	809	971	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	5	1276	397	227	1880	585	409	794	355	818	1215	544
Arrive On Green	0.00	0.25	0.25	0.07	0.37	0.37	0.12	0.23	0.23	0.24	0.35	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	988	632	220	663	701	335	511	377	809	971	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	13.7	19.0	4.8	7.1	28.0	7.2	9.9	17.0	17.7	18.8	0.0
Cycle Q Clear(g_c), s	0.0	13.7	19.0	4.8	7.1	28.0	7.2	9.9	17.0	17.7	18.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	5	1276	397	227	1880	585	409	794	355	818	1215	544
V/C Ratio(X)	0.00	0.77	1.59	0.97	0.35	1.20	0.82	0.64	1.06	0.99	0.80	0.00
Avail Cap(c_a), veh/h	182	1276	397	227	1880	585	409	794	355	818	1215	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	26.0	28.0	34.9	17.0	23.5	32.2	26.3	29.0	28.4	22.1	0.0
Incr Delay (d2), s/veh	0.0	3.0	277.7	50.6	0.1	104.7	12.4	1.8	64.7	28.7	3.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.7	38.8	3.9	3.3	29.1	4.1	5.0	13.7	11.6	9.7	0.0
LnGrp Delay(d),s/veh	0.0	29.0	305.7	85.5	17.1	128.2	44.6	28.0	93.7	57.1	26.0	0.0
LnGrp LOS		C	F	F	B	F	D	C	F	E	C	
Approach Vol, veh/h		1620			1584			1223			1780	
Approach Delay, s/veh		137.0			75.8			52.8			40.1	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	21.0	9.0	23.0	13.0	30.0	0.0	32.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	17.0	5.0	19.0	9.0	26.0	4.0	20.0
Max Q Clear Time (g_c+I1), s	19.7	19.0	6.8	21.0	9.2	20.8	0.0	30.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	77.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999	9999
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h												
V/C Ratio(X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h												
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS												
Approach Vol, veh/h		0			0			0			0	
Approach Delay, s/veh		0.0			0.0			0.0			0.0	
Approach LOS												

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	28.0	6.0	35.0	16.0	17.0	11.0	30.0
Max Q Clear Time (g_c+I1), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	0.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	958	912	90	946	894	0	75	759	762	41	1914	934
Future Volume (veh/h)	958	912	90	946	894	0	75	759	762	41	1914	934
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	958	912	90	946	894	0	75	759	762	41	1914	934
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	884	768	239	992	927	289	120	2022	630	73	1952	608
Arrive On Green	0.26	0.15	0.15	0.29	0.18	0.00	0.04	0.40	0.40	0.02	0.39	0.39
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	958	912	90	946	894	0	75	759	762	41	1914	934
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	31.0	18.2	6.2	32.6	21.1	0.0	2.6	12.7	48.0	1.4	44.9	46.3
Cycle Q Clear(g_c), s	31.0	18.2	6.2	32.6	21.1	0.0	2.6	12.7	48.0	1.4	44.9	46.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	884	768	239	992	927	289	120	2022	630	73	1952	608
V/C Ratio(X)	1.08	1.19	0.38	0.95	0.96	0.00	0.62	0.38	1.21	0.56	0.98	1.54
Avail Cap(c_a), veh/h	884	768	239	998	927	289	143	2022	630	86	1952	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	50.7	45.6	41.6	48.4	0.0	56.9	25.2	35.8	58.0	36.2	36.6
Incr Delay (d2), s/veh	55.6	97.5	1.0	18.4	21.4	0.0	6.1	0.1	109.0	6.7	16.0	249.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.3	15.3	2.7	17.8	11.6	0.0	1.3	5.9	39.8	0.7	23.6	62.1
LnGrp Delay(d),s/veh	99.9	148.2	46.5	60.0	69.8	0.0	63.0	25.3	144.7	64.7	52.2	286.5
LnGrp LOS	F	F	D	E	E		E	C	F	E	D	F
Approach Vol, veh/h		1960			1840			1596			2889	
Approach Delay, s/veh		119.9			64.7			84.1			128.1	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	52.0	38.8	22.2	8.2	50.3	35.0	26.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	48.0	35.0	18.0	5.0	46.0	31.0	22.0
Max Q Clear Time (g_c+I1), s	3.4	50.0	34.6	20.2	4.6	48.3	33.0	23.1
Green Ext Time (p_c), s	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	103.6
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	534	1562	973	34	1124	18	833	788	46	89	810	359
Future Volume (veh/h)	534	1562	973	34	1124	18	833	788	46	89	810	359
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	534	1562	973	34	1124	18	833	788	46	89	810	359
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	598	1998	622	63	1207	376	791	1337	598	143	672	300
Arrive On Green	0.18	0.40	0.40	0.02	0.24	0.24	0.23	0.38	0.38	0.04	0.19	0.19
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	534	1562	973	34	1124	18	833	788	46	89	810	359
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	15.2	26.9	39.3	1.0	21.7	0.9	23.0	17.8	1.9	2.5	19.0	19.0
Cycle Q Clear(g_c), s	15.2	26.9	39.3	1.0	21.7	0.9	23.0	17.8	1.9	2.5	19.0	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	598	1998	622	63	1207	376	791	1337	598	143	672	300
V/C Ratio(X)	0.89	0.78	1.56	0.54	0.93	0.05	1.05	0.59	0.08	0.62	1.21	1.19
Avail Cap(c_a), veh/h	619	1998	622	103	1219	380	791	1337	598	172	672	300
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	26.2	29.9	48.3	36.9	29.0	38.1	24.5	19.5	46.7	40.1	40.1
Incr Delay (d2), s/veh	15.0	2.1	261.8	7.1	12.6	0.1	47.1	0.7	0.1	4.9	106.4	115.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	12.8	62.1	0.5	11.4	0.4	15.9	8.7	0.8	1.3	19.1	17.8
LnGrp Delay(d),s/veh	55.0	28.2	291.7	55.4	49.5	29.0	85.2	25.1	19.6	51.6	146.5	155.6
LnGrp LOS	E	C	F	E	D	C	F	C	B	D	F	F
Approach Vol, veh/h		3069			1176			1667			1258	
Approach Delay, s/veh		116.4			49.4			55.0			142.4	
Approach LOS		F			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	41.8	5.8	43.3	27.0	23.0	21.4	27.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	37.0	3.0	39.0	23.0	19.0	18.0	24.0
Max Q Clear Time (g_c+I1), s	4.5	19.8	3.0	41.3	25.0	21.0	17.2	23.7
Green Ext Time (p_c), s	0.0	11.6	0.0	0.0	0.0	0.0	0.2	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	95.7
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Future Volume (veh/h)	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	116	2003	624	161	2070	644	53	1526	683	40	1512	677
Arrive On Green	0.03	0.40	0.40	0.05	0.41	0.41	0.02	0.44	0.44	0.01	0.43	0.43
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	3.3	59.0	3.1	7.0	49.0	0.3	0.9	61.2	14.8	0.6	64.0	5.6
Cycle Q Clear(g_c), s	3.3	59.0	3.1	7.0	49.0	0.3	0.9	61.2	14.8	0.6	64.0	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	2003	624	161	2070	644	53	1526	683	40	1512	677
V/C Ratio(X)	0.66	1.09	0.08	1.11	0.87	0.01	0.39	0.97	0.35	0.35	1.06	0.14
Avail Cap(c_a), veh/h	138	2003	624	161	2070	644	92	1526	683	92	1512	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.8	44.7	27.8	70.7	40.2	25.8	72.3	40.9	27.8	72.7	42.2	25.5
Incr Delay (d2), s/veh	8.3	48.7	0.1	104.4	4.5	0.0	4.7	16.4	0.3	5.1	39.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	36.3	1.3	5.6	23.5	0.1	0.5	33.1	6.5	0.3	39.2	2.4
LnGrp Delay(d),s/veh	79.1	93.4	27.9	175.1	44.7	25.8	77.0	57.4	28.1	77.8	81.9	25.6
LnGrp LOS	E	F	C	F	D	C	E	E	C	E	F	C
Approach Vol, veh/h		2308			1995			1737			1709	
Approach Delay, s/veh		91.4			56.3			53.6			78.7	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	68.6	11.0	63.0	6.3	68.0	9.0	65.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	64.0	7.0	59.0	4.0	64.0	6.0	60.0
Max Q Clear Time (g_c+I1), s	2.6	63.2	9.0	61.0	2.9	66.0	5.3	51.0
Green Ext Time (p_c), s	0.0	0.8	0.0	0.0	0.0	0.0	0.0	8.9

Intersection Summary	
HCM 2010 Ctrl Delay	71.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	666	0	1076	718	120	0	795	952	91	719	287
Future Volume (veh/h)	298	666	0	1076	718	120	0	795	952	91	719	287
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	298	666	0	1076	718	120	0	795	952	91	719	287
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	381	812	253	1045	1793	558	4	1075	481	149	1387	621
Arrive On Green	0.11	0.16	0.00	0.31	0.36	0.36	0.00	0.31	0.31	0.04	0.40	0.40
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	298	666	0	1076	718	120	0	795	952	91	719	287
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	7.5	11.3	0.0	27.0	9.4	4.7	0.0	17.9	27.0	2.3	13.7	11.9
Cycle Q Clear(g_c), s	7.5	11.3	0.0	27.0	9.4	4.7	0.0	17.9	27.0	2.3	13.7	11.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	812	253	1045	1793	558	4	1075	481	149	1387	621
V/C Ratio(X)	0.78	0.82	0.00	1.03	0.40	0.21	0.00	0.74	1.98	0.61	0.52	0.46
Avail Cap(c_a), veh/h	503	915	285	1045	1793	558	155	1075	481	155	1387	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	35.7	0.0	30.5	21.3	19.8	0.0	27.4	30.5	41.4	20.2	19.7
Incr Delay (d2), s/veh	5.8	5.4	0.0	35.6	0.1	0.2	0.0	2.7	448.3	6.5	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.7	0.0	17.8	4.3	2.1	0.0	9.0	71.5	1.2	6.7	5.2
LnGrp Delay(d),s/veh	43.8	41.1	0.0	66.1	21.4	20.0	0.0	30.1	478.8	47.8	20.6	20.2
LnGrp LOS	D	D		F	C	B		C	F	D	C	C
Approach Vol, veh/h		964			1914			1747			1097	
Approach Delay, s/veh		42.0			46.5			274.6			22.7	
Approach LOS		D			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	31.0	31.0	18.2	0.0	38.8	13.8	35.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	27.0	27.0	16.0	4.0	27.0	13.0	30.0
Max Q Clear Time (g_c+I1), s	4.3	29.0	29.0	13.3	0.0	15.7	9.5	11.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	9.7	0.4	9.8

Intersection Summary	
HCM 2010 Ctrl Delay	110.8
HCM 2010 LOS	F

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

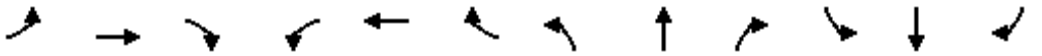
Approach	EB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	118	995	1278
Demand Flow Rate, veh/h	121	1024	1316
Vehicles Circulating, veh/h	1171	78	46
Vehicles Exiting, veh/h	191	1214	1057
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	11.0	9.1	11.5
Approach LOS	B	A	B

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	121	481	543	619	697
Cap Entry Lane, veh/h	498	1066	1070	1092	1094
Entry HV Adj Factor	0.975	0.972	0.971	0.970	0.972
Flow Entry, veh/h	118	467	527	601	677
Cap Entry, veh/h	485	1036	1039	1059	1063
V/C Ratio	0.243	0.451	0.508	0.567	0.637
Control Delay, s/veh	11.0	8.6	9.5	10.6	12.3
LOS	B	A	A	B	B
95th %tile Queue, veh	1	2	3	4	5

Cumulative Plus All Projects

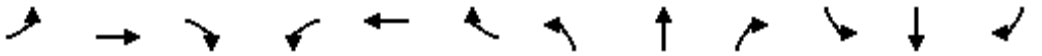
(Proposed Project)

Ultimate Mitigation AM



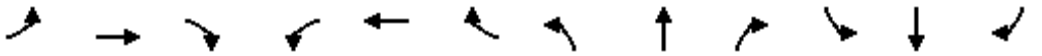
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	567	120	91	1052	907	674	1610	84	1209	1695	95
Future Volume (vph)	156	567	120	91	1052	907	674	1610	84	1209	1695	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3380		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3380		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	156	567	120	91	1052	907	674	1610	84	1209	1695	95
RTOR Reduction (vph)	0	13	0	0	0	589	0	0	58	0	0	56
Lane Group Flow (vph)	156	674	0	91	1052	318	674	1610	26	1209	1695	39
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	4.0	32.4		8.6	37.0	37.0	26.0	43.0	43.0	40.0	57.0	57.0
Effective Green, g (s)	4.0	32.4		8.6	37.0	37.0	26.0	43.0	43.0	40.0	57.0	57.0
Actuated g/C Ratio	0.03	0.23		0.06	0.26	0.26	0.19	0.31	0.31	0.29	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	96	782		206	917	722	625	1532	476	962	2030	632
v/s Ratio Prot	c0.05	0.20		0.03	c0.30		0.20	c0.32		c0.36	0.34	
v/s Ratio Perm						0.12			0.02			0.02
v/c Ratio	1.62	0.86		0.44	1.15	0.44	1.08	1.05	0.05	1.26	0.83	0.06
Uniform Delay, d1	68.0	51.7		63.4	51.5	42.9	57.0	48.5	34.2	50.0	37.3	25.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	323.6	9.6		1.5	79.1	0.4	59.0	37.7	0.0	124.1	3.1	0.0
Delay (s)	391.6	61.3		64.9	130.6	43.3	116.0	86.2	34.2	174.1	40.4	25.3
Level of Service	F	E		E	F	D	F	F	C	F	D	C
Approach Delay (s)		122.4			89.0			92.8			93.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	95.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	112.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



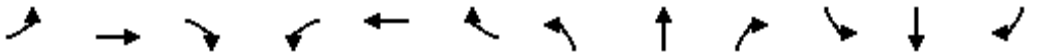
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	651	170	180	813	860	239	1794	159	468	811	72
Future Volume (vph)	53	651	170	180	813	860	239	1794	159	468	811	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91	0.91	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.97		1.00	0.96	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3396		1736	3177	1413	1736	4927		1736	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3396		1736	3177	1413	1736	4927		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	53	651	170	180	813	860	239	1794	159	468	811	72
RTOR Reduction (vph)	0	16	0	0	26	327	0	7	0	0	0	43
Lane Group Flow (vph)	53	805	0	180	1131	189	239	1946	0	468	811	29
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	8.7	39.0		16.0	46.3	46.3	24.1	48.0		31.0	54.9	54.9
Effective Green, g (s)	8.7	39.0		16.0	46.3	46.3	24.1	48.0		31.0	54.9	54.9
Actuated g/C Ratio	0.06	0.26		0.11	0.31	0.31	0.16	0.32		0.21	0.37	0.37
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	101	882		185	980	436	278	1576		358	1825	568
v/s Ratio Prot	0.03	0.24		c0.10	c0.36		0.14	c0.40		c0.27	0.16	
v/s Ratio Perm						0.13						0.02
v/c Ratio	0.52	0.91		0.97	1.15	0.43	0.86	1.23		1.31	0.44	0.05
Uniform Delay, d1	68.6	53.9		66.8	51.9	41.4	61.3	51.0		59.5	36.0	30.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.8	13.6		57.9	81.0	0.7	22.3	111.4		157.1	0.2	0.0
Delay (s)	73.5	67.5		124.7	132.8	42.1	83.6	162.4		216.6	36.2	30.8
Level of Service	E	E		F	F	D	F	F		F	D	C
Approach Delay (s)		67.8			106.8			153.8			98.4	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	116.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	112.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



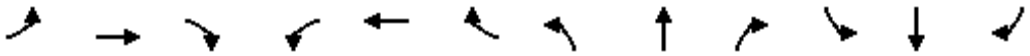
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	491	132	253	482	724	72	0	490	574	0	531
Future Volume (vph)	347	491	132	253	482	724	72	0	490	574	0	531
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	4.6	4.6	5.5	4.3	5.5		4.6	4.6	5.5	4.8	4.8
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00		0.95	0.95	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3400	3505	1568	3400	3505	1568		1522	1475	1649	1649	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.84	1.00	0.95	0.37	1.00
Satd. Flow (perm)	3400	3505	1568	3400	3505	1568		1295	1475	1649	648	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	347	491	132	253	482	724	72	0	490	574	0	531
RTOR Reduction (vph)	0	0	109	0	0	460	0	104	171	0	0	135
Lane Group Flow (vph)	347	491	23	253	482	264	0	179	108	287	287	396
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	9.5	17.6	17.6	9.7	18.1	36.6		34.2	34.2	18.5	58.0	58.0
Effective Green, g (s)	9.5	17.6	17.6	9.7	18.1	36.6		34.2	34.2	18.5	58.0	58.0
Actuated g/C Ratio	0.09	0.18	0.18	0.10	0.18	0.37		0.34	0.34	0.18	0.58	0.58
Clearance Time (s)	5.5	4.6	4.6	5.5	4.3	5.5		4.6	4.6	5.5	4.8	4.8
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	2.0		1.0	1.0	2.0	1.0	1.0
Lane Grp Cap (vph)	322	615	275	329	633	572		442	503	304	559	898
v/s Ratio Prot	c0.10	c0.14		0.07	0.14	0.09				c0.17	0.09	
v/s Ratio Perm			0.01			0.08		0.14	0.07		c0.20	0.25
v/c Ratio	1.08	0.80	0.08	0.77	0.76	0.46		0.40	0.21	0.94	0.51	0.44
Uniform Delay, d1	45.4	39.6	34.6	44.2	39.0	24.3		25.2	23.5	40.3	12.6	11.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	72.4	6.7	0.0	9.4	4.9	0.2		0.2	0.1	36.4	0.3	0.1
Delay (s)	117.7	46.3	34.6	53.5	43.9	24.5		25.4	23.5	76.8	13.0	12.1
Level of Service	F	D	C	D	D	C		C	C	E	B	B
Approach Delay (s)		70.3			35.9			24.5			29.1	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.2	Sum of lost time (s)	20.4
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



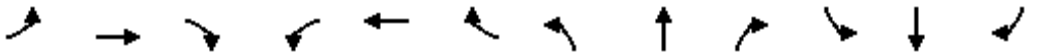
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	674	0	1756	0	0	0	0	1890	1447	0	1480	252
Future Volume (vph)	674	0	1756	0	0	0	0	1890	1447	0	1480	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	674	0	1756	0	0	0	0	1890	1447	0	1480	252
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	674	0	1748	0	0	0	0	1890	1447	0	1480	252
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	71.6		71.6					46.9	130.0		47.4	130.0
Effective Green, g (s)	71.6		71.6					46.9	130.0		47.4	130.0
Actuated g/C Ratio	0.55		0.55					0.36	1.00		0.36	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1854		1505					1799	1553		1818	1553
v/s Ratio Prot								c0.38			0.30	
v/s Ratio Perm	0.20		c0.64						0.93			0.16
v/c Ratio	0.36		1.16					1.05	0.93		0.81	0.16
Uniform Delay, d1	16.4		29.2					41.5	0.0		37.3	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0		80.4					35.9	11.5		2.8	0.2
Delay (s)	16.4		109.6					77.5	11.5		40.1	0.2
Level of Service	B		F					E	B		D	A
Approach Delay (s)		83.8			0.0			48.9			34.3	
Approach LOS		F			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	56.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



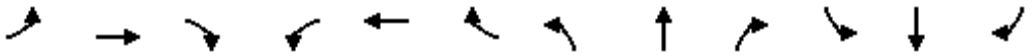
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	322	418	1	1	638	7	7	308	0	0	161	236
Future Volume (vph)	322	418	1	1	638	7	7	308	0	0	161	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00			0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1671	1759		1641	1724		1671	1759			1602	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1671	1759		1641	1724		1671	1759			1602	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	322	418	1	1	638	7	7	308	0	0	161	236
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	58	0
Lane Group Flow (vph)	322	419	0	1	644	0	7	308	0	0	339	0
Heavy Vehicles (%)	8%	8%	8%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	18.0	54.6		0.7	37.3		0.7	22.7			18.0	
Effective Green, g (s)	18.0	54.6		0.7	37.3		0.7	22.7			18.0	
Actuated g/C Ratio	0.20	0.61		0.01	0.41		0.01	0.25			0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	334	1067		12	714		12	443			320	
v/s Ratio Prot	c0.19	0.24		0.00	c0.37		0.00	c0.18			c0.21	
v/s Ratio Perm												
v/c Ratio	0.96	0.39		0.08	0.90		0.58	0.70			1.06	
Uniform Delay, d1	35.7	9.1		44.3	24.6		44.5	30.5			36.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	39.4	0.2		3.0	14.7		56.2	4.7			66.5	
Delay (s)	75.1	9.4		47.3	39.3		100.7	35.2			102.5	
Level of Service	E	A		D	D		F	D			F	
Approach Delay (s)		37.9			39.4			36.7			102.5	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	50.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1198	679	7	0	1154	15	8	30	5	7	6	547
Future Volume (vph)	1198	679	7	0	1154	15	8	30	5	7	6	547
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Lane Util. Factor	0.97	0.95	1.00		0.95			1.00			1.00	0.88
Frt	1.00	1.00	0.85		1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (prot)	3303	3406	1524		3431			1799			1779	2733
Flt Permitted	0.95	1.00	1.00		1.00			0.99			0.97	1.00
Satd. Flow (perm)	3303	3406	1524		3431			1799			1779	2733
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1198	679	7	0	1154	15	8	30	5	7	6	547
RTOR Reduction (vph)	0	0	1	0	1	0	0	3	0	0	0	72
Lane Group Flow (vph)	1198	679	6	0	1168	0	0	40	0	0	13	475
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	53.0	104.8	104.8		47.2			3.4			2.1	55.1
Effective Green, g (s)	53.0	104.8	104.8		47.2			3.4			2.1	55.1
Actuated g/C Ratio	0.41	0.81	0.81		0.36			0.03			0.02	0.43
Clearance Time (s)	5.5	6.9	6.9		6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0		1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	1351	2756	1233		1250			47			28	1162
v/s Ratio Prot	c0.36	0.20			c0.34			c0.02			c0.01	0.17
v/s Ratio Perm			0.00									0.01
v/c Ratio	0.89	0.25	0.00		0.93			0.85			0.46	0.41
Uniform Delay, d1	35.5	2.9	2.4		39.7			62.8			63.1	25.9
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	7.2	0.0	0.0		12.6			75.6			4.4	0.1
Delay (s)	42.6	3.0	2.4		52.3			138.4			67.5	26.0
Level of Service	D	A	A		D			F			E	C
Approach Delay (s)		28.2			52.3			138.4			26.9	
Approach LOS		C			D			F			C	

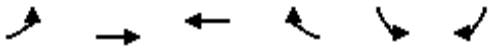
Intersection Summary			
HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	129.5	Sum of lost time (s)	24.7
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	3	19	194	6	606	16	1816	105	226	1575	0
Future Volume (vph)	0	3	19	194	6	606	16	1816	105	226	1575	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00		0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	
Frt		0.87		1.00	0.85	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1606		3400	1495	1490	1752	3505	1568	3400	3505	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1606		3400	1495	1490	1752	3505	1568	3400	3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	3	19	194	6	606	16	1816	105	226	1575	0
RTOR Reduction (vph)	0	18	0	0	137	137	0	0	43	0	0	0
Lane Group Flow (vph)	0	4	0	194	172	166	16	1816	62	226	1575	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)		3.0		8.8	15.8	15.8	0.8	49.5	49.5	6.0	54.7	
Effective Green, g (s)		3.0		8.8	15.8	15.8	0.8	49.5	49.5	6.0	54.7	
Actuated g/C Ratio		0.04		0.11	0.19	0.19	0.01	0.59	0.59	0.07	0.66	
Clearance Time (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		57		359	283	282	16	2082	931	244	2301	
v/s Ratio Prot		0.00		0.06	c0.12		0.01	c0.52		c0.07	0.45	
v/s Ratio Perm						0.11			0.04			
v/c Ratio		0.06		0.54	0.61	0.59	1.00	0.87	0.07	0.93	0.68	
Uniform Delay, d1		38.8		35.3	30.9	30.8	41.2	14.2	7.1	38.4	8.9	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5		1.7	3.7	3.1	225.0	4.3	0.0	37.8	0.9	
Delay (s)		39.3		37.0	34.6	33.9	266.2	18.6	7.2	76.2	9.8	
Level of Service		D		D	C	C	F	B	A	E	A	
Approach Delay (s)		39.3			34.9			20.0			18.1	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	83.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	601	1365	2134	1713	0
Future Volume (vph)	0	601	1365	2134	1713	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	0.95	1.00	0.97	
Frt		1.00	1.00	0.85	1.00	
Flt Protected		1.00	1.00	1.00	0.95	
Satd. Flow (prot)		3505	3505	1568	3400	
Flt Permitted		1.00	1.00	1.00	0.95	
Satd. Flow (perm)		3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	601	1365	2134	1713	0
RTOR Reduction (vph)	0	0	0	700	0	0
Lane Group Flow (vph)	0	601	1365	1434	1713	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	4	5	5		6	
Permitted Phases				5		
Actuated Green, G (s)		46.0	46.0	46.0	74.4	
Effective Green, g (s)		46.0	46.0	46.0	74.4	
Actuated g/C Ratio		0.36	0.36	0.36	0.58	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1255	1255	561	1970	
v/s Ratio Prot		0.17	0.39		c0.50	
v/s Ratio Perm				c0.91		
v/c Ratio		0.48	1.09	2.56	0.87	
Uniform Delay, d1		31.9	41.2	41.2	22.9	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3	52.8	705.4	4.4	
Delay (s)		32.2	94.0	746.6	27.3	
Level of Service		C	F	F	C	
Approach Delay (s)		32.2	492.0		27.3	
Approach LOS		C	F		C	

Intersection Summary			
HCM 2000 Control Delay	307.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.56		
Actuated Cycle Length (s)	128.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	135.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	308	23	151	409	890	34	2803	226	507	2340	0
Future Volume (veh/h)	0	308	23	151	409	890	34	2803	226	507	2340	0
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	0	308	23	151	409	890	34	2803	226	507	2340	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	500	224	132	777	597	60	2371	186	536	3212	0
Arrive On Green	0.00	0.14	0.14	0.04	0.22	0.22	0.02	0.50	0.50	0.16	0.64	0.00
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4716	371	3375	5152	0
Grp Volume(v), veh/h	0	308	23	151	409	890	34	1955	1074	507	2340	0
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1762	1688	1663	0
Q Serve(g_s), s	0.0	11.8	1.8	5.5	14.6	31.4	1.4	71.2	71.2	21.1	44.6	0.0
Cycle Q Clear(g_c), s	0.0	11.8	1.8	5.5	14.6	31.4	1.4	71.2	71.2	21.1	44.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.00
Lane Grp Cap(c), veh/h	2	500	224	132	777	597	60	1672	886	536	3212	0
V/C Ratio(X)	0.00	0.62	0.10	1.14	0.53	1.49	0.57	1.17	1.21	0.95	0.73	0.00
Avail Cap(c_a), veh/h	72	711	318	132	777	597	100	1672	886	536	3212	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	56.9	52.6	68.1	48.5	43.9	69.0	35.2	35.2	58.9	16.9	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.1	121.0	0.3	229.8	3.1	83.0	106.2	25.6	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.7	0.8	4.8	7.1	61.4	0.7	51.8	60.6	11.8	20.6	0.0
LnGrp Delay(d),s/veh	0.0	57.4	52.7	189.0	48.9	273.7	72.1	118.2	141.4	84.5	17.7	0.0
LnGrp LOS		E	D	F	D	F	E	F	F	F	B	
Approach Vol, veh/h		331			1450			3063			2847	
Approach Delay, s/veh		57.1			201.5			125.8			29.6	
Approach LOS		E			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	96.5	0.0	37.1	28.0	76.5	11.0	26.1
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	4.2	89.4	3.0	* 31	22.5	* 71	5.5	* 29
Max Q Clear Time (g_c+I1), s	3.4	46.6	0.0	33.4	23.1	73.2	7.5	13.8
Green Ext Time (p_c), s	0.0	36.1	0.0	0.0	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	101.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	1543	601	101	1965	990	778	1964	67	1065	1570	189
Future Volume (veh/h)	89	1543	601	101	1965	990	778	1964	67	1065	1570	189
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	89	1543	601	101	1965	0	778	1964	67	1065	1570	189
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	3	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	66	1364	425	77	1397	435	321	2960	922	333	2329	725
Arrive On Green	0.02	0.28	0.28	0.02	0.29	0.00	0.10	0.59	0.59	0.47	0.47	0.47
Sat Flow, veh/h	3312	4893	1524	3312	4893	1524	3375	4988	1553	575	4988	1553
Grp Volume(v), veh/h	89	1543	601	101	1965	0	778	1964	67	1065	1570	189
Grp Sat Flow(s),veh/h/ln	1656	1631	1524	1656	1631	1524	1688	1663	1553	192	1663	1553
Q Serve(g_s), s	3.0	41.9	41.9	3.5	42.9	0.0	14.3	39.7	2.8	49.5	36.8	11.1
Cycle Q Clear(g_c), s	3.0	41.9	41.9	3.5	42.9	0.0	14.3	39.7	2.8	70.2	36.8	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1364	425	77	1397	435	321	2960	922	333	2329	725
V/C Ratio(X)	1.35	1.13	1.41	1.31	1.41	0.00	2.42	0.66	0.07	3.20	0.67	0.26
Avail Cap(c_a), veh/h	66	1364	425	77	1397	435	321	2960	922	333	2329	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.7	54.2	54.2	73.4	53.7	0.0	68.0	20.5	13.0	61.1	31.1	24.3
Incr Delay (d2), s/veh	228.2	68.8	200.2	206.1	187.4	0.0	649.5	0.5	0.0	996.1	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	27.5	41.2	3.8	43.5	0.0	35.6	18.3	1.2	35.3	17.0	4.7
LnGrp Delay(d),s/veh	301.8	123.0	254.4	279.5	241.1	0.0	717.5	20.9	13.0	1057.2	31.8	24.4
LnGrp LOS	F	F	F	F	F		F	C	B	F	C	C
Approach Vol, veh/h		2233			2066			2809			2824	
Approach Delay, s/veh		165.5			243.0			213.7			418.0	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	48.3	19.0	75.0	9.0	47.3		94.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4		4.8
Max Green Setting (Gmax), s	3.0	* 43	* 14	70.2	3.5	* 42		89.2
Max Q Clear Time (g_c+I1), s	5.0	44.9	16.3	72.2	5.5	43.9		41.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0		47.3

Intersection Summary			
HCM 2010 Ctrl Delay		267.0	
HCM 2010 LOS		F	

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1224	722	5	1316	264	607	466	20	127	191	54
Future Volume (veh/h)	82	1224	722	5	1316	264	607	466	20	127	191	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	82	1224	722	5	1316	264	607	466	20	127	191	54
Adj No. of Lanes	1	2	0	1	2	0	2	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	85	1288	691	7	1574	312	611	462	393	174	225	192
Arrive On Green	0.05	0.58	0.58	0.00	0.54	0.54	0.18	0.25	0.25	0.05	0.12	0.12
Sat Flow, veh/h	1757	2205	1183	1757	2917	578	3408	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	82	948	998	5	784	796	607	466	20	127	191	54
Grp Sat Flow(s),veh/h/ln	1757	1752	1636	1757	1752	1743	1704	1845	1568	1704	1845	1568
Q Serve(g_s), s	6.8	71.0	84.7	0.4	54.0	56.1	25.8	36.3	1.4	5.3	14.7	4.5
Cycle Q Clear(g_c), s	6.8	71.0	84.7	0.4	54.0	56.1	25.8	36.3	1.4	5.3	14.7	4.5
Prop In Lane	1.00		0.72	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	85	1024	956	7	946	941	611	462	393	174	225	192
V/C Ratio(X)	0.97	0.93	1.04	0.75	0.83	0.85	0.99	1.01	0.05	0.73	0.85	0.28
Avail Cap(c_a), veh/h	85	1024	956	36	967	962	611	462	393	259	267	227
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.9	27.3	30.1	72.1	27.8	28.3	59.4	54.3	41.2	67.8	62.3	57.8
Incr Delay (d2), s/veh	86.2	13.8	41.3	96.2	6.0	7.0	34.5	43.8	0.1	5.8	19.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	38.1	48.9	0.4	27.7	28.8	15.1	24.1	0.6	2.6	8.7	2.0
LnGrp Delay(d),s/veh	155.1	41.1	71.5	168.3	33.8	35.3	93.9	98.2	41.3	73.6	81.4	58.6
LnGrp LOS	F	D	F	F	C	D	F	F	D	E	F	E
Approach Vol, veh/h		2028			1585			1093			372	
Approach Delay, s/veh		60.6			35.0			94.7			75.4	
Approach LOS		E			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	40.3	4.5	88.7	30.0	21.7	11.0	82.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	36.0	3.0	84.0	26.0	21.0	7.0	80.0
Max Q Clear Time (g_c+I1), s	7.3	38.3	2.4	86.7	27.8	16.7	8.8	58.1
Green Ext Time (p_c), s	0.1	0.0	0.0	0.0	0.0	1.0	0.0	20.1

Intersection Summary	
HCM 2010 Ctrl Delay	61.0
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	40	32	332	30	387	57	2903	403	682	1898	59
Future Volume (veh/h)	76	40	32	332	30	387	57	2903	403	682	1898	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	76	40	32	332	30	387	57	2903	403	682	1898	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	64	35	28	545	295	251	72	2437	759	574	3080	96
Arrive On Green	0.04	0.04	0.04	0.16	0.16	0.16	0.04	0.49	0.49	0.17	0.62	0.62
Sat Flow, veh/h	1757	950	760	3408	1845	1568	1740	4988	1553	3375	4970	154
Grp Volume(v), veh/h	76	0	72	332	30	387	57	2903	403	682	1269	688
Grp Sat Flow(s),veh/h/ln	1757	0	1711	1704	1845	1568	1740	1663	1553	1688	1663	1800
Q Serve(g_s), s	5.5	0.0	5.5	13.6	2.1	24.0	4.9	73.3	26.9	25.5	35.2	35.3
Cycle Q Clear(g_c), s	5.5	0.0	5.5	13.6	2.1	24.0	4.9	73.3	26.9	25.5	35.2	35.3
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	64	0	63	545	295	251	72	2437	759	574	2061	1115
V/C Ratio(X)	1.18	0.00	1.15	0.61	0.10	1.54	0.79	1.19	0.53	1.19	0.62	0.62
Avail Cap(c_a), veh/h	64	0	63	545	295	251	123	2437	759	574	2061	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	0.0	72.3	58.6	53.8	63.0	71.2	38.3	26.5	62.3	17.5	17.6
Incr Delay (d2), s/veh	168.8	0.0	159.5	1.4	0.1	263.1	6.9	90.4	0.4	101.4	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	5.4	6.5	1.1	28.7	2.5	54.0	11.6	20.0	16.2	17.6
LnGrp Delay(d),s/veh	241.1	0.0	231.9	60.1	53.9	326.1	78.1	128.7	26.9	163.6	17.9	18.3
LnGrp LOS	F		F	E	D	F	E	F	C	F	B	B
Approach Vol, veh/h		148			749			3363			2639	
Approach Delay, s/veh		236.6			197.3			115.7			55.7	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	98.2		11.0	31.0	78.5		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 89		5.5	25.5	* 73		24.0
Max Q Clear Time (g_c+I1), s	6.9	37.3		7.5	27.5	75.3		26.0
Green Ext Time (p_c), s	0.0	39.1		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		104.2
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	1183	433	243	1482	844	374	2057	363	563	883	165
Future Volume (veh/h)	225	1183	433	243	1482	844	374	2057	363	563	883	165
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	225	1183	433	243	1482	844	374	2057	363	563	883	165
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	193	1426	444	286	1564	487	417	1771	551	438	1801	561
Arrive On Green	0.06	0.28	0.28	0.08	0.31	0.31	0.12	0.36	0.36	0.13	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	225	1183	433	243	1482	844	374	2057	363	563	883	165
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.5	33.1	41.1	10.6	43.2	46.7	16.4	53.4	29.6	19.5	20.7	11.4
Cycle Q Clear(g_c), s	8.5	33.1	41.1	10.6	43.2	46.7	16.4	53.4	29.6	19.5	20.7	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	1426	444	286	1564	487	417	1771	551	438	1801	561
V/C Ratio(X)	1.17	0.83	0.98	0.85	0.95	1.73	0.90	1.16	0.66	1.29	0.49	0.29
Avail Cap(c_a), veh/h	193	1426	444	315	1564	487	532	1771	551	438	1801	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	50.5	53.4	68.0	50.7	51.9	65.0	48.5	40.8	65.5	37.3	34.3
Incr Delay (d2), s/veh	117.5	4.0	36.0	16.6	12.4	338.6	13.2	79.4	2.3	145.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	15.9	22.2	5.7	21.8	66.0	8.5	37.5	13.1	17.9	9.5	4.9
LnGrp Delay(d),s/veh	188.4	54.5	89.4	84.6	63.0	390.5	78.1	127.9	43.1	210.7	37.4	34.5
LnGrp LOS	F	D	F	F	E	F	E	F	D	F	D	C
Approach Vol, veh/h		1841			2569			2794			1611	
Approach Delay, s/veh		79.1			172.6			110.2			97.7	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.1	59.9	14.0	52.4	25.0	59.0	18.1	48.3
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	23.7	* 49	8.5	* 47	19.5	* 53	13.9	* 41
Max Q Clear Time (g_c+I1), s	18.4	22.7	10.5	48.7	21.5	55.4	12.6	43.1
Green Ext Time (p_c), s	0.2	13.7	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	119.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	342	1413	670	185	2277	544	138	2334	224	507	694	90
Future Volume (veh/h)	342	1413	670	185	2277	544	138	2334	224	507	694	90
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	342	1413	670	185	2277	544	138	2334	224	507	694	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	258	1657	531	228	1619	504	181	1805	562	337	2027	625
Arrive On Green	0.08	0.34	0.34	0.07	0.33	0.33	0.05	0.36	0.36	0.10	0.40	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	342	1413	670	185	2277	544	138	2334	224	507	694	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	11.7	40.4	50.9	8.1	49.8	49.8	6.0	53.9	16.1	15.0	14.4	0.0
Cycle Q Clear(g_c), s	11.7	40.4	50.9	8.1	49.8	49.8	6.0	53.9	16.1	15.0	14.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	1657	531	228	1619	504	181	1805	562	337	2027	625
V/C Ratio(X)	1.33	0.85	1.26	0.81	1.41	1.08	0.76	1.29	0.40	1.51	0.34	0.00
Avail Cap(c_a), veh/h	258	1657	531	231	1619	504	204	1805	562	337	2027	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	69.3	46.2	49.7	69.2	50.3	50.3	70.2	48.2	36.1	67.7	31.1	0.0
Incr Delay (d2), s/veh	171.5	4.3	132.5	19.1	186.5	63.0	11.6	136.1	0.5	242.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	18.8	41.6	4.4	50.3	29.8	3.1	47.6	7.0	18.3	6.7	0.0
LnGrp Delay(d),s/veh	240.8	50.6	182.3	88.3	236.8	113.3	81.8	184.3	36.6	310.1	31.2	0.0
LnGrp LOS	F	D	F	F	F	F	F	F	D	F	C	
Approach Vol, veh/h		2425			3006			2696			1201	
Approach Delay, s/veh		113.8			205.3			166.8			148.9	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	65.6	16.0	55.4	20.0	59.0	14.9	56.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 9	59.5	* 12	49.4	15.0	53.9	* 10	* 51
Max Q Clear Time (g_c+I1), s	8.0	16.4	13.7	51.8	17.0	55.9	10.1	52.9
Green Ext Time (p_c), s	0.0	35.2	0.0	0.0	0.0	0.0	0.0	0.0

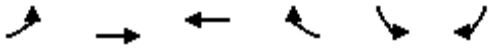
Intersection Summary	
HCM 2010 Ctrl Delay	163.1
HCM 2010 LOS	F

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	719	289	484	755	148	749
Future Volume (veh/h)	719	289	484	755	148	749
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	719	289	484	755	148	749
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	728	293	527	2278	433	857
Arrive On Green	0.30	0.30	0.30	0.65	0.25	0.25
Sat Flow, veh/h	2535	982	1757	3597	1757	1568
Grp Volume(v), veh/h	516	492	484	755	148	749
Grp Sat Flow(s),veh/h/ln	1752	1671	1757	1752	1757	1568
Q Serve(g_s), s	22.6	22.6	20.5	7.4	5.3	19.0
Cycle Q Clear(g_c), s	22.6	22.6	20.5	7.4	5.3	19.0
Prop In Lane		0.59	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	523	498	527	2278	433	857
V/C Ratio(X)	0.99	0.99	0.92	0.33	0.34	0.87
Avail Cap(c_a), veh/h	523	498	592	2408	433	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	26.9	26.1	6.0	23.9	15.2
Incr Delay (d2), s/veh	36.0	36.9	18.3	0.1	0.5	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	15.5	12.6	3.6	2.6	16.1
LnGrp Delay(d),s/veh	62.9	63.9	44.4	6.1	24.4	25.2
LnGrp LOS	E	E	D	A	C	C
Approach Vol, veh/h	1008			1239	897	
Approach Delay, s/veh	63.4			21.1	25.1	
Approach LOS	E			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		23.0	27.1	27.0				54.1
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		19.0	26.0	23.0				53.0
Max Q Clear Time (g_c+I1), s		21.0	22.5	24.6				9.4
Green Ext Time (p_c), s		0.0	0.6	0.0				18.4

Intersection Summary	
HCM 2010 Ctrl Delay	35.8
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	309	1348	2599	851	557	192
Future Volume (veh/h)	309	1348	2599	851	557	192
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	309	1348	2599	851	557	192
Adj No. of Lanes	2	3	3	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	353	3519	2737	852	674	310
Arrive On Green	0.10	0.70	0.54	0.54	0.20	0.20
Sat Flow, veh/h	3408	5202	5202	1568	3408	1568
Grp Volume(v), veh/h	309	1348	2599	851	557	192
Grp Sat Flow(s),veh/h/ln	1704	1679	1679	1568	1704	1568
Q Serve(g_s), s	6.9	8.5	37.6	41.9	12.1	8.7
Cycle Q Clear(g_c), s	6.9	8.5	37.6	41.9	12.1	8.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	353	3519	2737	852	674	310
V/C Ratio(X)	0.88	0.38	0.95	1.00	0.83	0.62
Avail Cap(c_a), veh/h	353	3519	2737	852	794	365
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	4.8	16.6	17.6	29.7	28.3
Incr Delay (d2), s/veh	21.0	0.1	8.3	30.5	6.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.9	19.2	33.8	6.3	7.6
LnGrp Delay(d),s/veh	55.2	4.9	25.0	48.1	36.0	30.7
LnGrp LOS	E	A	C	D	D	C
Approach Vol, veh/h		1657	3450		749	
Approach Delay, s/veh		14.2	30.7		34.6	
Approach LOS		B	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				58.0		19.3	12.0	46.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				54.0		18.0	8.0	42.0
Max Q Clear Time (g_c+I1), s				10.5		14.1	8.9	43.9
Green Ext Time (p_c), s				42.6		1.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	1002	87	889	2010	312	177	935	933	350	539	122
Future Volume (veh/h)	154	1002	87	889	2010	312	177	935	933	350	539	122
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	154	1002	87	889	2010	312	177	935	933	350	539	122
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	170	1044	334	824	1982	635	233	1469	457	341	1628	507
Arrive On Green	0.05	0.21	0.21	0.24	0.41	0.41	0.07	0.29	0.29	0.10	0.32	0.32
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	154	1002	87	889	2010	312	177	935	933	350	539	122
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	5.4	24.3	5.5	29.0	48.6	17.7	6.1	19.4	35.0	12.0	9.7	6.9
Cycle Q Clear(g_c), s	5.4	24.3	5.5	29.0	48.6	17.7	6.1	19.4	35.0	12.0	9.7	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	1044	334	824	1982	635	233	1469	457	341	1628	507
V/C Ratio(X)	0.90	0.96	0.26	1.08	1.01	0.49	0.76	0.64	2.04	1.03	0.33	0.24
Avail Cap(c_a), veh/h	170	1044	334	824	1982	635	284	1469	457	341	1628	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	46.7	39.3	45.5	35.7	26.5	54.9	37.0	42.5	54.0	30.8	29.8
Incr Delay (d2), s/veh	42.5	19.0	0.6	55.0	23.8	0.8	9.2	0.9	475.7	55.8	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	12.8	2.5	19.9	26.2	7.8	3.2	9.1	75.5	8.3	4.5	3.0
LnGrp Delay(d),s/veh	99.2	65.7	39.9	100.5	59.5	27.4	64.2	37.9	518.2	109.8	30.9	30.0
LnGrp LOS	F	E	D	F	F	C	E	D	F	F	C	C
Approach Vol, veh/h		1243			3211			2045			1011	
Approach Delay, s/veh		68.0			67.7			259.3			58.1	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	32.0	12.2	42.8	10.0	55.0	16.0	39.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	29.0	25.6	10.0	37.0	6.0	48.6	12.0	35.0
Max Q Clear Time (g_c+I1), s	31.0	26.3	8.1	11.7	7.4	50.6	14.0	37.0
Green Ext Time (p_c), s	0.0	0.0	0.1	17.9	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		118.6
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	525	47	944	25	63	161	986	1181	13	105	1715	1101
Future Volume (veh/h)	525	47	944	25	63	161	986	1181	13	105	1715	1101
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	559	0	944	25	63	161	986	1181	13	105	1715	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	712	0	318	19	48	57	549	2814	31	126	1536	478
Arrive On Green	0.20	0.00	0.20	0.04	0.04	0.04	0.32	0.55	0.55	0.07	0.31	0.00
Sat Flow, veh/h	3480	0	1553	517	1302	1568	1740	5086	56	1740	4988	1553
Grp Volume(v), veh/h	559	0	944	88	0	161	986	772	422	105	1715	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1819	0	1568	1740	1663	1817	1740	1663	1553
Q Serve(g_s), s	22.8	0.0	30.7	5.5	0.0	5.5	47.3	20.3	20.3	8.9	46.2	0.0
Cycle Q Clear(g_c), s	22.8	0.0	30.7	5.5	0.0	5.5	47.3	20.3	20.3	8.9	46.2	0.0
Prop In Lane	1.00		1.00	0.28		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	712	0	318	67	0	57	549	1839	1005	126	1536	478
V/C Ratio(X)	0.78	0.00	2.97	1.32	0.00	2.80	1.80	0.42	0.42	0.84	1.12	0.00
Avail Cap(c_a), veh/h	712	0	318	67	0	57	549	1839	1005	194	1536	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.5	0.0	59.6	72.3	0.0	72.3	51.3	19.5	19.5	68.7	51.9	0.0
Incr Delay (d2), s/veh	5.3	0.0	895.0	217.5	0.0	856.3	366.0	0.1	0.1	10.2	61.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	0.0	92.2	6.8	0.0	16.1	78.5	9.3	10.2	4.7	30.0	0.0
LnGrp Delay(d),s/veh	61.8	0.0	954.7	289.7	0.0	928.5	417.3	19.6	19.6	78.9	113.8	0.0
LnGrp LOS	E		F	F		F	F	B	B	E	F	
Approach Vol, veh/h		1503			249			2180			1820	
Approach Delay, s/veh		622.6			702.8			199.5			111.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	52.0	51.0		11.0	15.2	87.8		36.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 47	46.2		5.5	* 17	* 77		30.7
Max Q Clear Time (g_c+I1), s	49.3	48.2		7.5	10.9	22.3		32.7
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	14.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	304.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	616	797	163	96	1814	925	760	2133	202	149	970	733
Future Volume (veh/h)	616	797	163	96	1814	925	760	2133	202	149	970	733
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	616	797	163	96	1814	925	760	2133	202	149	970	733
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	352	2005	624	136	1617	503	484	1879	585	124	1347	419
Arrive On Green	0.10	0.40	0.40	0.04	0.34	0.34	0.14	0.38	0.38	0.04	0.27	0.27
Sat Flow, veh/h	3408	5036	1568	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	616	797	163	96	1814	925	760	2133	202	149	970	733
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	15.5	17.0	10.5	4.4	50.5	50.5	21.5	56.5	14.0	5.5	26.4	40.5
Cycle Q Clear(g_c), s	15.5	17.0	10.5	4.4	50.5	50.5	21.5	56.5	14.0	5.5	26.4	40.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	2005	624	136	1617	503	484	1879	585	124	1347	419
V/C Ratio(X)	1.75	0.40	0.26	0.71	1.12	1.84	1.57	1.14	0.35	1.20	0.72	1.75
Avail Cap(c_a), veh/h	352	2005	624	186	1617	503	484	1879	585	124	1347	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	32.3	30.3	71.0	49.8	49.7	64.3	46.7	33.5	72.3	49.6	54.8
Incr Delay (d2), s/veh	348.6	0.0	0.1	3.4	63.7	384.5	266.7	68.1	0.1	145.8	1.6	346.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.3	7.9	4.6	2.0	31.8	74.5	27.9	37.8	6.0	5.1	12.3	57.8
LnGrp Delay(d),s/veh	415.9	32.3	30.4	74.3	113.4	434.2	331.0	114.9	33.6	218.0	51.3	401.2
LnGrp LOS	F	C	C	E	F	F	F	F	C	F	D	F
Approach Vol, veh/h		1576			2835			3095			1852	
Approach Delay, s/veh		182.0			216.8			162.6			203.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	46.0	21.0	56.0	11.0	62.0	11.8	65.2
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	21.5	40.5	15.5	50.5	5.5	56.5	8.6	57.4
Max Q Clear Time (g_c+I1), s	23.5	42.5	17.5	52.5	7.5	58.5	6.4	19.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4

Intersection Summary	
HCM 2010 Ctrl Delay	190.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	536	511	86	1274	4	270	1018	63	2	1420	320
Future Volume (veh/h)	255	536	511	86	1274	4	270	1018	63	2	1420	320
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	255	536	511	86	1274	4	270	1018	63	2	1420	320
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	262	1348	603	131	1213	543	236	1583	708	7	1348	603
Arrive On Green	0.08	0.38	0.38	0.04	0.35	0.35	0.07	0.45	0.45	0.00	0.38	0.38
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	255	536	511	86	1274	4	270	1018	63	2	1420	320
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	9.7	14.4	38.7	3.2	45.0	0.2	9.0	29.2	3.0	0.1	50.0	20.5
Cycle Q Clear(g_c), s	9.7	14.4	38.7	3.2	45.0	0.2	9.0	29.2	3.0	0.1	50.0	20.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	1348	603	131	1213	543	236	1583	708	7	1348	603
V/C Ratio(X)	0.97	0.40	0.85	0.66	1.05	0.01	1.14	0.64	0.09	0.27	1.05	0.53
Avail Cap(c_a), veh/h	262	1348	603	131	1213	543	236	1583	708	105	1348	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.9	29.1	36.5	61.7	42.5	27.9	60.5	27.5	20.4	64.8	40.0	30.9
Incr Delay (d2), s/veh	47.8	0.2	10.9	11.3	40.1	0.0	103.0	0.9	0.1	19.0	39.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	7.0	18.6	1.7	28.5	0.1	7.6	14.3	1.3	0.1	31.6	9.0
LnGrp Delay(d),s/veh	107.7	29.2	47.4	72.9	82.6	27.9	163.5	28.4	20.4	83.7	79.9	31.8
LnGrp LOS	F	C	D	E	F	C	F	C	C	F	F	C
Approach Vol, veh/h		1302			1364			1351			1742	
Approach Delay, s/veh		51.7			81.8			55.1			71.1	
Approach LOS		D			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	62.7	9.0	54.0	13.0	54.0	14.0	49.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	55.0	5.0	50.0	9.0	50.0	10.0	45.0
Max Q Clear Time (g_c+I1), s	2.1	31.2	5.2	40.7	11.0	52.0	11.7	47.0
Green Ext Time (p_c), s	0.0	20.0	0.0	7.8	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1111	1049	8	669	987	0	132	2018	955	38	645	879
Future Volume (veh/h)	1111	1049	8	669	987	0	132	2018	955	38	645	879
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	1111	1049	8	669	987	0	132	2018	955	38	645	879
Adj No. of Lanes	3	3	1	2	3	1	2	3	1	2	3	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1101	1068	333	688	966	301	196	2035	633	69	1848	1013
Arrive On Green	0.22	0.21	0.21	0.20	0.19	0.00	0.06	0.40	0.40	0.02	0.37	0.37
Sat Flow, veh/h	4954	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	2760
Grp Volume(v), veh/h	1111	1049	8	669	987	0	132	2018	955	38	645	879
Grp Sat Flow(s),veh/h/ln	1651	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1380
Q Serve(g_s), s	22.0	20.5	0.4	19.3	19.0	0.0	3.8	39.5	40.0	1.1	9.2	29.3
Cycle Q Clear(g_c), s	22.0	20.5	0.4	19.3	19.0	0.0	3.8	39.5	40.0	1.1	9.2	29.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1101	1068	333	688	966	301	196	2035	633	69	1848	1013
V/C Ratio(X)	1.01	0.98	0.02	0.97	1.02	0.00	0.68	0.99	1.51	0.55	0.35	0.87
Avail Cap(c_a), veh/h	1101	1068	333	688	966	301	275	2035	633	103	1848	1013
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	38.8	30.9	39.2	40.0	0.0	45.8	29.3	29.5	48.1	22.8	29.1
Incr Delay (d2), s/veh	29.4	23.2	0.0	27.3	34.4	0.0	4.0	18.0	236.5	6.7	0.1	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	11.8	0.2	11.7	11.9	0.0	1.9	21.5	58.9	0.6	4.3	12.2
LnGrp Delay(d),s/veh	67.9	62.0	30.9	66.5	74.4	0.0	49.8	47.3	266.0	54.7	22.9	37.3
LnGrp LOS	F	E	C	E	F		D	D	F	D	C	D
Approach Vol, veh/h		2168			1656			3105			1562	
Approach Delay, s/veh		64.9			71.2			114.7			31.8	
Approach LOS		E			E			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	44.0	24.0	25.0	9.7	40.3	26.0	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	40.0	20.0	21.0	8.0	35.0	22.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	42.0	21.3	22.5	5.8	31.3	24.0	21.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	3.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	78.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	325	948	632	23	1695	36	1181	808	21	45	811	575
Future Volume (veh/h)	325	948	632	23	1695	36	1181	808	21	45	811	575
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	325	948	632	23	1695	36	1181	808	21	45	811	575
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	288	1716	534	44	1356	422	944	1753	784	78	863	386
Arrive On Green	0.08	0.34	0.34	0.01	0.27	0.27	0.28	0.50	0.50	0.02	0.25	0.25
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	325	948	632	23	1695	36	1181	808	21	45	811	575
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	11.0	19.9	44.3	0.9	35.0	2.2	36.0	19.5	0.9	1.7	29.5	32.0
Cycle Q Clear(g_c), s	11.0	19.9	44.3	0.9	35.0	2.2	36.0	19.5	0.9	1.7	29.5	32.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	288	1716	534	44	1356	422	944	1753	784	78	863	386
V/C Ratio(X)	1.13	0.55	1.18	0.52	1.25	0.09	1.25	0.46	0.03	0.58	0.94	1.49
Avail Cap(c_a), veh/h	288	1716	534	79	1356	422	944	1753	784	131	863	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	34.8	42.8	63.7	47.5	35.5	47.0	21.1	16.5	62.9	48.1	49.0
Incr Delay (d2), s/veh	91.7	0.4	100.1	9.1	118.9	0.1	121.9	0.2	0.0	6.6	17.8	233.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	9.3	34.0	0.5	31.1	1.0	32.9	9.5	0.4	0.9	16.4	38.9
LnGrp Delay(d),s/veh	151.2	35.2	142.9	72.8	166.4	35.6	168.9	21.3	16.5	69.4	65.9	282.8
LnGrp LOS	F	D	F	E	F	D	F	C	B	E	E	F
Approach Vol, veh/h		1905			1754			2010			1431	
Approach Delay, s/veh		90.7			162.4			108.0			153.2	
Approach LOS		F			F			F			F	

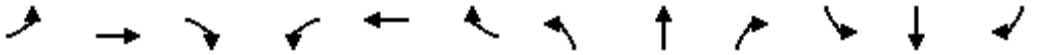
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	69.0	5.7	48.3	40.0	36.0	15.0	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	63.0	3.0	43.0	36.0	32.0	11.0	35.0
Max Q Clear Time (g_c+I1), s	3.7	21.5	2.9	46.3	38.0	34.0	13.0	37.0
Green Ext Time (p_c), s	0.0	21.7	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	125.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Future Volume (veh/h)	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	107	1966	612	405	2407	749	26	1775	553	44	1801	561
Arrive On Green	0.03	0.39	0.39	0.12	0.48	0.48	0.01	0.35	0.35	0.01	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	95	1565	114	354	2409	9	8	1738	111	15	1399	70
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	3.5	35.1	6.1	13.0	61.0	0.4	0.3	43.6	6.3	0.6	31.5	3.8
Cycle Q Clear(g_c), s	3.5	35.1	6.1	13.0	61.0	0.4	0.3	43.6	6.3	0.6	31.5	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	1966	612	405	2407	749	26	1775	553	44	1801	561
V/C Ratio(X)	0.89	0.80	0.19	0.87	1.00	0.01	0.30	0.98	0.20	0.34	0.78	0.12
Avail Cap(c_a), veh/h	107	1966	612	427	2407	749	107	1775	553	107	1801	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.6	34.4	25.6	55.3	33.3	17.5	63.0	40.9	28.8	62.5	36.5	27.6
Incr Delay (d2), s/veh	53.9	2.4	0.1	17.2	18.6	0.0	6.3	16.6	0.2	4.5	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	16.7	2.7	7.1	32.2	0.2	0.2	22.8	2.8	0.3	15.0	1.7
LnGrp Delay(d),s/veh	115.5	36.8	25.7	72.5	51.9	17.5	69.3	57.4	29.0	67.0	38.7	27.7
LnGrp LOS	F	D	C	E	F	B	E	E	C	E	D	C
Approach Vol, veh/h		1774			2772			1857			1484	
Approach Delay, s/veh		40.3			54.4			55.8			38.4	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.6	49.0	19.2	53.8	5.0	49.7	8.0	65.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	45.0	16.0	49.0	4.0	45.0	4.0	61.0
Max Q Clear Time (g_c+I1), s	2.6	45.6	15.0	37.1	2.3	33.5	5.5	63.0
Green Ext Time (p_c), s	0.0	0.0	0.1	11.7	0.0	10.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.6
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	668	0	1034	709	75	0	688	1213	120	772	240
Future Volume (veh/h)	235	668	0	1034	709	75	0	688	1213	120	772	240
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	235	668	0	1034	709	75	0	688	1213	120	772	240
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	312	829	258	1189	2125	662	4	963	978	144	1260	564
Arrive On Green	0.09	0.16	0.00	0.35	0.42	0.42	0.00	0.27	0.27	0.04	0.36	0.36
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	235	668	0	1034	709	75	0	688	1213	120	772	240
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	6.4	12.1	0.0	26.8	9.0	2.7	0.0	16.8	26.0	3.3	17.1	10.9
Cycle Q Clear(g_c), s	6.4	12.1	0.0	26.8	9.0	2.7	0.0	16.8	26.0	3.3	17.1	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	312	829	258	1189	2125	662	4	963	978	144	1260	564
V/C Ratio(X)	0.75	0.81	0.00	0.87	0.33	0.11	0.00	0.71	1.24	0.83	0.61	0.43
Avail Cap(c_a), veh/h	468	852	265	1730	2715	845	144	963	978	144	1260	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	38.0	0.0	28.8	18.4	16.6	0.0	30.9	17.8	45.0	24.9	22.9
Incr Delay (d2), s/veh	3.7	5.6	0.0	3.5	0.1	0.1	0.0	2.5	116.8	32.1	0.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	6.1	0.0	13.1	4.2	1.2	0.0	8.5	56.9	2.2	8.4	4.8
LnGrp Delay(d),s/veh	45.6	43.6	0.0	32.3	18.5	16.7	0.0	33.5	134.6	77.1	25.8	23.4
LnGrp LOS	D	D		C	B	B		C	F	E	C	C
Approach Vol, veh/h		903			1818			1901			1132	
Approach Delay, s/veh		44.2			26.3			98.0			30.7	
Approach LOS		D			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	30.0	37.0	19.6	0.0	38.0	12.7	43.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	26.0	48.0	16.0	4.0	26.0	13.0	51.0
Max Q Clear Time (g_c+I1), s	5.3	28.0	28.8	14.1	0.0	19.1	8.4	11.0
Green Ext Time (p_c), s	0.0	0.0	4.2	1.5	0.0	6.3	0.3	13.5

Intersection Summary	
HCM 2010 Ctrl Delay	53.6
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	297.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	0	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	0	570	2553	2237
Demand Flow Rate, veh/h	0	587	2629	2305
Vehicles Circulating, veh/h	2249	2629	0	669
Vehicles Exiting, veh/h	725	0	2249	2547
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	1077.0	103.1	320.0
Approach LOS	-	F	F	F

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	587	1236	1393	1083	1222
Cap Entry Lane, veh/h	179	1130	1130	684	707
Entry HV Adj Factor	0.971	0.971	0.971	0.971	0.970
Flow Entry, veh/h	570	1200	1353	1052	1186
Cap Entry, veh/h	174	1097	1097	664	686
V/C Ratio	3.272	1.094	1.233	1.583	1.727
Control Delay, s/veh	1077.0	74.8	128.2	286.7	349.6
LOS	F	F	F	F	F
95th %tile Queue, veh	53	29	44	56	69

Intersection	
Intersection Delay, s/veh	191.0
Intersection LOS	F

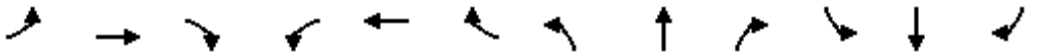
Approach	EB	WB	NB	SB
Entry Lanes	1	0	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	527	0	2468	2183
Demand Flow Rate, veh/h	542	0	2542	2248
Vehicles Circulating, veh/h	2248	2629	340	0
Vehicles Exiting, veh/h	0	253	2450	2629
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	638.7	0.0	221.6	48.4
Approach LOS	F	-	F	E

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	542	1195	1347	1057	1191
Cap Entry Lane, veh/h	234	876	891	1130	1130
Entry HV Adj Factor	0.972	0.971	0.971	0.970	0.971
Flow Entry, veh/h	527	1160	1308	1026	1157
Cap Entry, veh/h	228	850	865	1097	1097
V/C Ratio	2.314	1.365	1.512	0.935	1.054
Control Delay, s/veh	638.7	187.9	251.4	33.3	61.7
LOS	F	F	F	D	F
95th %tile Queue, veh	42	48	63	16	25

Cumulative Plus All Projects

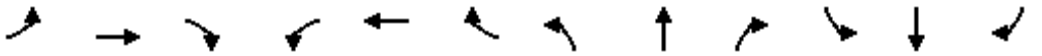
(Proposed Project)

Ultimate Mitigation PM



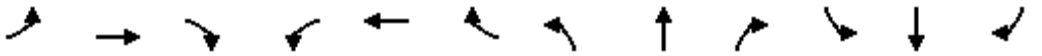
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	671	258	152	959	962	469	1242	38	1284	1880	150
Future Volume (vph)	258	671	258	152	959	962	469	1242	38	1284	1880	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3327		3367	3471	2733	3367	4988	1553	3367	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3327		3367	3471	2733	3367	4988	1553	3367	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	258	671	258	152	959	962	469	1242	38	1284	1880	150
RTOR Reduction (vph)	0	31	0	0	0	738	0	0	29	0	0	62
Lane Group Flow (vph)	258	898	0	152	959	224	469	1242	9	1284	1880	88
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	8.0	32.0		6.0	30.0	30.0	20.5	31.0	31.0	45.0	55.5	55.5
Effective Green, g (s)	8.0	32.0		6.0	30.0	30.0	20.5	31.0	31.0	45.0	55.5	55.5
Actuated g/C Ratio	0.06	0.25		0.05	0.23	0.23	0.16	0.24	0.24	0.35	0.43	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	818		155	801	630	530	1189	370	1165	2129	663
v/s Ratio Prot	0.08	c0.27		0.05	c0.28		0.14	c0.25		c0.38	0.38	
v/s Ratio Perm						0.08			0.01			0.06
v/c Ratio	1.25	1.10		0.98	1.20	0.35	0.88	1.04	0.02	1.10	0.88	0.13
Uniform Delay, d1	61.0	49.0		61.9	50.0	41.9	53.6	49.5	37.9	42.5	34.3	22.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	144.6	61.7		66.2	100.8	0.3	16.1	38.5	0.0	59.0	4.7	0.1
Delay (s)	205.6	110.7		128.2	150.8	42.2	69.7	88.0	37.9	101.5	39.0	22.7
Level of Service	F	F		F	F	D	E	F	D	F	D	C
Approach Delay (s)		131.3			98.7			82.0			62.5	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	85.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



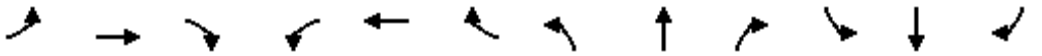
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	670	242	219	721	518	243	895	182	775	1677	99
Future Volume (vph)	81	670	242	219	721	518	243	895	182	775	1677	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91	0.91	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.96		1.00	0.98	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3365		1736	3244	1413	1736	4861		1736	4988	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3365		1736	3244	1413	1736	4861		1736	4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	81	670	242	219	721	518	243	895	182	775	1677	99
RTOR Reduction (vph)	0	25	0	0	10	285	0	21	0	0	0	38
Lane Group Flow (vph)	81	887	0	219	851	93	243	1056	0	775	1677	61
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	12.1	31.0		18.0	36.9	36.9	23.6	31.0		54.0	61.4	61.4
Effective Green, g (s)	12.1	31.0		18.0	36.9	36.9	23.6	31.0		54.0	61.4	61.4
Actuated g/C Ratio	0.08	0.21		0.12	0.25	0.25	0.16	0.21		0.36	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	141	695		208	798	347	273	1004		624	2041	635
v/s Ratio Prot	0.05	c0.26		c0.13	0.26		0.14	c0.22		c0.45	0.34	
v/s Ratio Perm						0.07						0.04
v/c Ratio	0.57	1.28		1.05	1.07	0.27	0.89	1.05		1.24	0.82	0.10
Uniform Delay, d1	66.5	59.5		66.0	56.6	45.6	61.9	59.5		48.0	39.4	27.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.6	135.6		77.0	51.2	0.4	28.1	43.1		122.1	2.8	0.1
Delay (s)	72.0	195.1		143.0	107.7	46.1	90.0	102.6		170.1	42.2	27.3
Level of Service	E	F		F	F	D	F	F		F	D	C
Approach Delay (s)		185.0			97.0			100.3			80.5	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	104.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	116.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



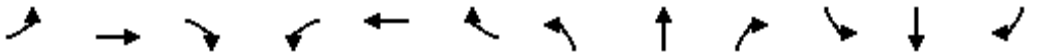
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	253	469	138	509	487	776	125	0	276	687	0	408
Future Volume (vph)	253	469	138	509	487	776	125	0	276	687	0	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	4.6	4.6	5.5	4.3	5.5		4.6	4.6	4.8	4.8	4.8
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00		0.95	0.95	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3400	3505	1568	3400	3505	1568		1584	1475	1649	1649	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3400	3505	1568	3400	3505	1568		1584	1475	1649	1649	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	253	469	138	509	487	776	125	0	276	687	0	408
RTOR Reduction (vph)	0	0	115	0	0	553	0	115	175	0	0	282
Lane Group Flow (vph)	253	469	23	509	487	223	0	93	18	343	344	126
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	custom	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4	5	6	6		2	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	11.5	18.1	18.1	18.7	25.6	30.9		9.8	9.8	30.8	30.8	30.8
Effective Green, g (s)	11.5	18.1	18.1	18.7	25.6	30.9		9.8	9.8	30.8	30.8	30.8
Actuated g/C Ratio	0.11	0.17	0.17	0.17	0.24	0.29		0.09	0.09	0.29	0.29	0.29
Clearance Time (s)	5.5	4.6	4.6	5.5	4.3	5.5		4.6	4.6	4.8	4.8	4.8
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	2.0		1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	363	589	263	590	833	449		144	134	471	471	444
v/s Ratio Prot	0.07	c0.13		c0.15	0.14	c0.02		c0.06		0.21	c0.21	
v/s Ratio Perm			0.01			0.12			0.01			0.08
v/c Ratio	0.70	0.80	0.09	0.86	0.58	0.50		0.64	0.13	0.73	0.73	0.28
Uniform Delay, d1	46.4	43.0	37.8	43.3	36.3	31.9		47.3	45.0	34.7	34.7	29.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	6.9	0.1	12.0	0.7	0.3		7.1	0.2	4.7	5.0	0.1
Delay (s)	51.1	49.9	37.9	55.3	37.0	32.2		54.4	45.2	39.4	39.7	30.0
Level of Service	D	D	D	E	D	C		D	D	D	D	C
Approach Delay (s)		48.3			40.2			50.0			36.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	107.7	Sum of lost time (s)	25.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



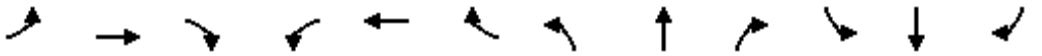
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	455	0	1458	0	0	0	0	1878	1036	0	1957	521
Future Volume (vph)	455	0	1458	0	0	0	0	1878	1036	0	1957	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4		6.4					5.1	4.0		4.6	4.0
Lane Util. Factor	0.97		0.88					0.91	1.00		0.91	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3367		2733					4988	1553		4988	1553
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3367		2733					4988	1553		4988	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	455	0	1458	0	0	0	0	1878	1036	0	1957	521
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	455	0	1449	0	0	0	0	1878	1036	0	1957	521
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Perm		Perm					NA	Free		NA	Free
Protected Phases								2			6	
Permitted Phases	4		4						Free			Free
Actuated Green, G (s)	60.6		60.6					47.9	120.0		48.4	120.0
Effective Green, g (s)	60.6		60.6					47.9	120.0		48.4	120.0
Actuated g/C Ratio	0.51		0.51					0.40	1.00		0.40	1.00
Clearance Time (s)	6.4		6.4					5.1			4.6	
Vehicle Extension (s)	1.0		1.0					1.0			1.0	
Lane Grp Cap (vph)	1700		1380					1991	1553		2011	1553
v/s Ratio Prot								0.38			c0.39	
v/s Ratio Perm	0.14		c0.53						0.67			0.34
v/c Ratio	0.27		1.05					0.94	0.67		0.97	0.34
Uniform Delay, d1	17.0		29.7					34.7	0.0		35.2	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0		38.4					9.7	2.3		14.1	0.6
Delay (s)	17.0		68.1					44.5	2.3		49.3	0.6
Level of Service	B		E					D	A		D	A
Approach Delay (s)		56.0			0.0			29.5			39.1	
Approach LOS		E			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



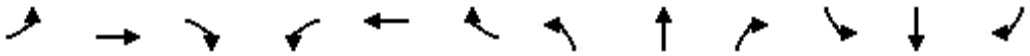
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	550	7	1	502	2	8	188	0	1	276	306
Future Volume (vph)	216	550	7	1	502	2	8	188	0	1	276	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1756		1641	1726		1671	1759		1671	1621	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	1756		1641	1726		1671	1759		1671	1621	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	216	550	7	1	502	2	8	188	0	1	276	306
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	45	0
Lane Group Flow (vph)	216	556	0	1	504	0	8	188	0	1	537	0
Heavy Vehicles (%)	8%	8%	8%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	11.0	40.4		0.7	30.1		0.7	30.5		0.7	30.5	
Effective Green, g (s)	11.0	40.4		0.7	30.1		0.7	30.5		0.7	30.5	
Actuated g/C Ratio	0.12	0.46		0.01	0.34		0.01	0.35		0.01	0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	208	803		13	588		13	607		13	559	
v/s Ratio Prot	c0.13	0.32		0.00	c0.29		c0.00	0.11		0.00	c0.33	
v/s Ratio Perm												
v/c Ratio	1.04	0.69		0.08	0.86		0.62	0.31		0.08	0.96	
Uniform Delay, d1	38.6	19.0		43.5	27.1		43.7	21.2		43.5	28.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	72.8	2.6		2.5	11.8		64.0	0.3		2.5	28.3	
Delay (s)	111.5	21.6		46.0	38.9		107.7	21.5		46.0	56.6	
Level of Service	F	C		D	D		F	C		D	E	
Approach Delay (s)		46.7			38.9			25.0			56.5	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	45.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	547	1011	9	2	722	6	7	15	2	5	21	1089
Future Volume (vph)	547	1011	9	2	722	6	7	15	2	5	21	1089
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	3303	3406	1524	1719	3434			1798			1810	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)	3303	3406	1524	1719	3434			1798			1810	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	547	1011	9	2	722	6	7	15	2	5	21	1089
RTOR Reduction (vph)	0	0	2	0	0	0	0	2	0	0	0	33
Lane Group Flow (vph)	547	1011	7	2	728	0	0	22	0	0	26	1056
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2		8	8		4	4	1
Permitted Phases			6									4
Actuated Green, G (s)	71.0	104.9	104.9	0.6	35.4			1.7			3.6	74.6
Effective Green, g (s)	71.0	104.9	104.9	0.6	35.4			1.7			3.6	74.6
Actuated g/C Ratio	0.52	0.77	0.77	0.00	0.26			0.01			0.03	0.55
Clearance Time (s)	5.5	6.9	6.9	5.5	6.0			6.1			6.2	5.5
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			1.0			1.0	1.0
Lane Grp Cap (vph)	1730	2636	1179	7	897			22			48	855
v/s Ratio Prot	0.17	0.30		0.00	c0.21			c0.01			0.01	c0.65
v/s Ratio Perm			0.00									0.03
v/c Ratio	0.32	0.38	0.01	0.29	0.81			1.00			0.54	1.23
Uniform Delay, d1	18.4	4.9	3.5	67.2	46.9			66.9			65.1	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.0	0.0	0.0	8.0	5.4			192.2			6.5	115.8
Delay (s)	18.4	4.9	3.5	75.3	52.3			259.1			71.7	146.2
Level of Service	B	A	A	E	D			F			E	F
Approach Delay (s)		9.6			52.3			259.1			144.5	
Approach LOS		A			D			F			F	

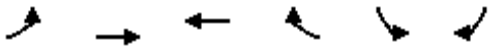
Intersection Summary			
HCM 2000 Control Delay	64.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	135.5	Sum of lost time (s)	24.7
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	15	38	145	6	210	41	1466	172	715	1465	6
Future Volume (vph)	11	15	38	145	6	210	41	1466	172	715	1465	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	
Frt	1.00	0.89		1.00	0.86	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1646		3400	1504	1490	1752	3505	1568	3400	3503	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	1646		3400	1504	1490	1752	3505	1568	3400	3503	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	11	15	38	145	6	210	41	1466	172	715	1465	6
RTOR Reduction (vph)	0	35	0	0	90	94	0	0	86	0	0	0
Lane Group Flow (vph)	11	18	0	145	19	13	41	1466	86	715	1471	0
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	0.7	6.1		4.7	10.1	10.1	2.3	37.9	37.9	18.1	53.7	
Effective Green, g (s)	0.7	6.1		4.7	10.1	10.1	2.3	37.9	37.9	18.1	53.7	
Actuated g/C Ratio	0.01	0.07		0.06	0.12	0.12	0.03	0.46	0.46	0.22	0.65	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	14	121		192	183	181	48	1604	717	743	2271	
v/s Ratio Prot	0.01	c0.01		c0.04	c0.01		0.02	c0.42		c0.21	0.42	
v/s Ratio Perm						0.01			0.06			
v/c Ratio	0.79	0.15		0.76	0.10	0.07	0.85	0.91	0.12	0.96	0.65	
Uniform Delay, d1	41.0	35.9		38.5	32.3	32.2	40.1	20.9	12.9	32.0	8.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	130.6	0.6		15.5	0.2	0.2	76.9	8.4	0.1	24.0	0.6	
Delay (s)	171.5	36.5		54.0	32.6	32.4	117.0	29.3	13.0	56.0	9.5	
Level of Service	F	D		D	C	C	F	C	B	E	A	
Approach Delay (s)		59.7			41.1			29.8			24.7	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	82.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	1200	801	1662	1901	0
Future Volume (vph)	2	1200	801	1662	1901	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1752	3505	3505	1568	3400	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1752	3505	3505	1568	3400	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1200	801	1662	1901	0
RTOR Reduction (vph)	0	0	0	717	0	0
Lane Group Flow (vph)	2	1200	801	945	1901	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	4	5	5		6	
Permitted Phases				5		
Actuated Green, G (s)	1.2	46.0	46.0	46.0	76.1	
Effective Green, g (s)	1.2	46.0	46.0	46.0	76.1	
Actuated g/C Ratio	0.01	0.34	0.34	0.34	0.56	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	15	1191	1191	533	1912	
v/s Ratio Prot	c0.00	0.34	0.23		c0.56	
v/s Ratio Perm				c0.60		
v/c Ratio	0.13	1.01	0.67	1.77	0.99	
Uniform Delay, d1	66.5	44.7	38.2	44.7	29.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	27.9	1.5	355.6	19.1	
Delay (s)	70.6	72.6	39.7	400.3	48.5	
Level of Service	E	E	D	F	D	
Approach Delay (s)		72.6	283.0		48.5	
Approach LOS		E	F		D	

Intersection Summary			
HCM 2000 Control Delay	157.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	135.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	112.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	585	23	206	193	715	9	2261	139	749	2580	3
Future Volume (veh/h)	0	585	23	206	193	715	9	2261	139	749	2580	3
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1845	1845	1845	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	0	585	23	206	193	715	9	2261	139	749	2580	3
Adj No. of Lanes	2	2	1	2	2	1	2	3	0	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	2	631	282	173	945	714	21	2083	127	627	3153	4
Arrive On Green	0.00	0.18	0.18	0.05	0.27	0.27	0.01	0.43	0.43	0.19	0.61	0.61
Sat Flow, veh/h	3375	3471	1553	3408	3505	1568	3375	4807	293	3375	5145	6
Grp Volume(v), veh/h	0	585	23	206	193	715	9	1558	842	749	1667	916
Grp Sat Flow(s),veh/h/ln	1688	1736	1553	1704	1752	1568	1688	1663	1775	1688	1663	1826
Q Serve(g_s), s	0.0	24.6	1.8	7.5	6.3	39.9	0.4	64.2	64.2	27.5	57.7	57.7
Cycle Q Clear(g_c), s	0.0	24.6	1.8	7.5	6.3	39.9	0.4	64.2	64.2	27.5	57.7	57.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		0.00
Lane Grp Cap(c), veh/h	2	631	282	173	945	714	21	1441	769	627	2038	1119
V/C Ratio(X)	0.00	0.93	0.08	1.19	0.20	1.00	0.43	1.08	1.09	1.20	0.82	0.82
Avail Cap(c_a), veh/h	68	680	304	173	945	714	68	1441	769	627	2038	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	59.6	50.3	70.3	41.8	40.3	73.3	42.0	42.0	60.3	22.3	22.3
Incr Delay (d2), s/veh	0.0	17.6	0.0	130.2	0.0	34.1	4.9	49.0	61.2	102.9	2.6	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.3	0.8	6.6	3.1	35.8	0.2	39.2	44.5	21.7	27.1	30.4
LnGrp Delay(d),s/veh	0.0	77.2	50.4	200.5	41.9	74.5	78.3	90.9	103.1	163.2	24.8	26.9
LnGrp LOS		E	D	F	D	F	E	F	F	F	C	C
Approach Vol, veh/h		608			1114			2409			3332	
Approach Delay, s/veh		76.2			92.1			95.2			56.5	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	96.1	0.0	45.6	33.0	69.5	13.0	32.6
Change Period (Y+Rc), s	5.5	5.3	5.5	* 5.7	5.5	* 5.3	5.5	* 5.7
Max Green Setting (Gmax), s	3.0	88.6	3.0	* 33	27.5	* 64	7.5	* 29
Max Q Clear Time (g_c+I1), s	2.4	59.7	0.0	41.9	29.5	66.2	9.5	26.6
Green Ext Time (p_c), s	0.0	23.4	0.0	0.0	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	75.9
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	1747	810	62	1515	893	624	1673	106	1002	1638	122
Future Volume (veh/h)	158	1747	810	62	1515	893	624	1673	106	1002	1638	122
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1792	1792	1792	1792	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	158	1747	810	62	1515	0	624	1673	106	1002	1638	122
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	3	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	6	6	6	6	4	4	4	4	4	4
Cap, veh/h	91	1428	445	68	1411	439	263	2890	900	419	2341	729
Arrive On Green	0.03	0.29	0.29	0.02	0.29	0.00	0.08	0.58	0.58	0.47	0.47	0.47
Sat Flow, veh/h	3312	4893	1524	3312	4893	1524	3375	4988	1553	736	4988	1553
Grp Volume(v), veh/h	158	1747	810	62	1515	0	624	1673	106	1002	1638	122
Grp Sat Flow(s),veh/h/ln	1656	1631	1524	1656	1631	1524	1688	1663	1553	245	1663	1553
Q Serve(g_s), s	4.0	42.4	42.4	2.7	41.9	0.0	11.3	30.8	4.5	53.4	37.7	6.6
Cycle Q Clear(g_c), s	4.0	42.4	42.4	2.7	41.9	0.0	11.3	30.8	4.5	68.2	37.7	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	1428	445	68	1411	439	263	2890	900	419	2341	729
V/C Ratio(X)	1.73	1.22	1.82	0.91	1.07	0.00	2.38	0.58	0.12	2.39	0.70	0.17
Avail Cap(c_a), veh/h	91	1428	445	68	1411	439	263	2890	900	419	2341	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.7	51.5	51.5	71.0	51.7	0.0	67.0	19.3	13.8	55.4	30.5	22.2
Incr Delay (d2), s/veh	371.3	107.0	378.6	75.6	46.4	0.0	631.3	0.2	0.0	633.7	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	33.2	64.5	2.0	24.9	0.0	28.3	14.1	1.9	30.2	17.5	2.8
LnGrp Delay(d),s/veh	442.0	158.5	430.1	146.7	98.1	0.0	698.3	19.5	13.8	689.1	31.3	22.2
LnGrp LOS	F	F	F	F	F		F	B	B	F	C	C
Approach Vol, veh/h		2715			1577			2403			2762	
Approach Delay, s/veh		256.0			100.0			195.5			269.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	47.3	16.0	73.0	8.5	47.8		89.0
Change Period (Y+Rc), s	5.0	* 5.4	* 4.7	4.8	5.5	* 5.4		4.8
Max Green Setting (Gmax), s	4.0	* 42	* 11	68.2	3.0	* 42		84.2
Max Q Clear Time (g_c+I1), s	6.0	43.9	13.3	70.2	4.7	44.4		32.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0		50.1

Intersection Summary	
HCM 2010 Ctrl Delay	218.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	1210	512	29	1147	166	618	139	8	158	415	90
Future Volume (veh/h)	68	1210	512	29	1147	166	618	139	8	158	415	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	68	1210	512	29	1147	166	618	139	8	158	415	90
Adj No. of Lanes	1	2	0	1	2	0	2	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	86	1188	482	36	1413	204	550	574	488	214	392	333
Arrive On Green	0.05	0.49	0.49	0.02	0.46	0.46	0.16	0.31	0.31	0.06	0.21	0.21
Sat Flow, veh/h	1757	2434	988	1757	3075	444	3408	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	68	857	865	29	652	661	618	139	8	158	415	90
Grp Sat Flow(s),veh/h/ln	1757	1752	1670	1757	1752	1766	1704	1845	1568	1704	1845	1568
Q Serve(g_s), s	5.2	66.5	66.5	2.2	43.7	44.0	22.0	7.7	0.5	6.2	29.0	6.5
Cycle Q Clear(g_c), s	5.2	66.5	66.5	2.2	43.7	44.0	22.0	7.7	0.5	6.2	29.0	6.5
Prop In Lane	1.00		0.59	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	855	815	36	806	812	550	574	488	214	392	333
V/C Ratio(X)	0.79	1.00	1.06	0.79	0.81	0.81	1.12	0.24	0.02	0.74	1.06	0.27
Avail Cap(c_a), veh/h	103	855	815	90	835	842	550	574	488	500	392	333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	34.9	34.9	66.5	31.7	31.8	57.2	35.0	32.5	62.8	53.7	44.8
Incr Delay (d2), s/veh	28.3	31.3	49.2	30.9	5.8	6.0	77.2	0.2	0.0	5.0	61.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	39.5	41.7	1.4	22.3	22.8	16.2	3.9	0.2	3.1	21.4	2.9
LnGrp Delay(d),s/veh	92.4	66.2	84.1	97.4	37.5	37.8	134.4	35.2	32.5	67.8	115.2	45.3
LnGrp LOS	F	F	F	F	D	D	F	D	C	E	F	D
Approach Vol, veh/h		1790			1342			765			663	
Approach Delay, s/veh		75.9			39.0			115.3			94.4	
Approach LOS		E			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	46.4	6.8	70.5	26.0	33.0	10.7	66.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	31.0	7.0	66.0	22.0	29.0	8.0	65.0
Max Q Clear Time (g_c+I1), s	8.2	9.7	4.2	68.5	24.0	31.0	7.2	46.0
Green Ext Time (p_c), s	0.4	3.8	0.0	0.0	0.0	0.0	0.0	16.6

Intersection Summary	
HCM 2010 Ctrl Delay	74.3
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	31	17	531	44	548	48	2122	349	520	2580	59
Future Volume (veh/h)	73	31	17	531	44	548	48	2122	349	520	2580	59
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	73	31	17	531	44	548	48	2122	349	520	2580	59
Adj No. of Lanes	1	1	0	2	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	66	42	23	561	304	258	61	2406	749	561	3092	70
Arrive On Green	0.04	0.04	0.04	0.16	0.16	0.16	0.04	0.48	0.48	0.17	0.62	0.62
Sat Flow, veh/h	1757	1121	615	3408	1845	1568	1740	4988	1553	3375	5018	114
Grp Volume(v), veh/h	73	0	48	531	44	548	48	2122	349	520	1706	933
Grp Sat Flow(s),veh/h/ln	1757	0	1736	1704	1845	1568	1740	1663	1553	1688	1663	1807
Q Serve(g_s), s	5.5	0.0	4.0	22.5	3.0	24.0	4.0	55.9	21.9	22.1	58.9	59.8
Cycle Q Clear(g_c), s	5.5	0.0	4.0	22.5	3.0	24.0	4.0	55.9	21.9	22.1	58.9	59.8
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	66	0	66	561	304	258	61	2406	749	561	2049	1113
V/C Ratio(X)	1.10	0.00	0.73	0.95	0.14	2.12	0.78	0.88	0.47	0.93	0.83	0.84
Avail Cap(c_a), veh/h	66	0	66	561	304	258	127	2508	781	591	2049	1113
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.1	0.0	69.4	60.2	52.1	60.9	69.7	34.0	25.2	59.9	22.0	22.2
Incr Delay (d2), s/veh	140.9	0.0	30.5	25.0	0.1	517.9	7.8	3.7	0.2	19.8	2.9	5.5
Initial Q Delay(d3),s/veh	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	2.5	12.6	1.5	47.5	2.1	26.4	9.4	11.9	27.6	31.3
LnGrp Delay(d),s/veh	212.0	0.0	99.9	85.2	52.2	578.8	77.6	37.7	25.3	79.6	24.9	27.7
LnGrp LOS	F		F	F	D	F	E	D	C	E	C	C
Approach Vol, veh/h		121			1123			2519			3159	
Approach Delay, s/veh		167.5			324.8			36.8			34.8	
Approach LOS		F			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.2	95.0		11.0	29.7	75.5		29.5
Change Period (Y+Rc), s	* 5.1	* 5.2		5.5	5.5	* 5.2		5.5
Max Green Setting (Gmax), s	* 11	* 89		5.5	25.5	* 73		24.0
Max Q Clear Time (g_c+I1), s	6.0	61.8		7.5	24.1	57.9		26.0
Green Ext Time (p_c), s	0.0	22.2		0.0	0.1	12.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	84.9
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Future Volume (veh/h)	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
Arrive On Green	0.06	0.23	0.23	0.15	0.32	0.32	0.13	0.23	0.23	0.24	0.34	0.34
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	199	1244	479	559	1047	725	513	1101	152	851	1873	184
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	8.8	34.7	34.7	22.5	26.9	48.0	19.5	32.7	12.5	35.9	51.6	13.3
Cycle Q Clear(g_c), s	8.8	34.7	34.7	22.5	26.9	48.0	19.5	32.7	12.5	35.9	51.6	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
V/C Ratio(X)	0.96	1.07	1.33	1.10	0.65	1.45	1.17	0.94	0.42	1.06	1.10	0.35
Avail Cap(c_a), veh/h	208	1160	361	509	1605	500	437	1166	363	805	1709	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.5	58.0	58.0	64.1	44.1	51.3	65.6	56.7	49.0	57.4	49.5	36.9
Incr Delay (d2), s/veh	49.3	48.0	164.7	69.2	0.8	213.8	100.0	14.8	0.3	48.1	53.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	21.2	31.6	15.4	12.6	50.5	15.1	16.6	5.4	22.0	32.0	5.7
LnGrp Delay(d),s/veh	119.8	106.0	222.6	133.3	44.9	265.1	165.5	71.5	49.3	105.4	102.5	37.1
LnGrp LOS	F	F	F	F	D	F	F	E	D	F	F	D
Approach Vol, veh/h		1922			2331			1766			2908	
Approach Delay, s/veh		136.5			134.6			96.9			99.2	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	57.2	14.7	53.7	41.4	40.8	28.0	40.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 5.7	5.5	* 5.6	5.5	* 5.7
Max Green Setting (Gmax), s	19.5	* 52	9.2	* 48	35.9	* 35	22.5	* 34
Max Q Clear Time (g_c+I1), s	21.5	53.6	10.8	50.0	37.9	34.7	24.5	36.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	116.0
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	2158	132	441	1460	511	579	903	128	555	2277	161
Future Volume (veh/h)	253	2158	132	441	1460	511	579	903	128	555	2277	161
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1792	1845	1845	1792	1792	1845	1845	1845	1827	1845	1827
Adj Flow Rate, veh/h	253	2158	132	441	1460	511	579	903	128	555	2277	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	6	6	3	3	6	6	3	3	3	4	3	4
Cap, veh/h	294	1655	530	231	1569	488	331	1418	442	595	1804	556
Arrive On Green	0.09	0.34	0.34	0.07	0.32	0.32	0.10	0.28	0.28	0.18	0.36	0.00
Sat Flow, veh/h	3312	4893	1568	3408	4893	1524	3408	5036	1568	3375	5036	1553
Grp Volume(v), veh/h	253	2158	132	441	1460	511	579	903	128	555	2277	0
Grp Sat Flow(s),veh/h/ln	1656	1631	1568	1704	1631	1524	1704	1679	1568	1688	1679	1553
Q Serve(g_s), s	11.3	50.9	9.2	10.2	43.5	48.3	14.6	23.6	9.6	24.4	53.9	0.0
Cycle Q Clear(g_c), s	11.3	50.9	9.2	10.2	43.5	48.3	14.6	23.6	9.6	24.4	53.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	294	1655	530	231	1569	488	331	1418	442	595	1804	556
V/C Ratio(X)	0.86	1.30	0.25	1.91	0.93	1.05	1.75	0.64	0.29	0.93	1.26	0.00
Avail Cap(c_a), veh/h	297	1655	530	231	1569	488	331	1418	442	628	1804	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.7	49.8	36.0	70.2	49.5	51.1	67.9	47.3	42.3	61.1	48.3	0.0
Incr Delay (d2), s/veh	20.8	141.3	0.1	424.9	10.1	53.3	350.3	1.0	0.4	19.9	122.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	44.5	4.0	18.4	21.1	27.5	22.9	11.1	4.2	13.1	45.4	0.0
LnGrp Delay(d),s/veh	88.4	191.1	36.1	495.0	59.6	104.4	418.2	48.3	42.7	81.1	171.0	0.0
LnGrp LOS	F	F	D	F	E	F	F	D	D	F	F	
Approach Vol, veh/h		2543			2412			1610			2832	
Approach Delay, s/veh		172.8			148.7			180.9			153.4	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	59.0	17.6	53.9	31.5	47.5	15.0	56.5
Change Period (Y+Rc), s	* 5.4	5.1	* 4.3	5.6	5.0	5.1	* 4.8	* 5.6
Max Green Setting (Gmax), s	* 15	53.9	* 14	47.6	28.0	40.9	* 10	* 51
Max Q Clear Time (g_c+I1), s	16.6	55.9	13.3	50.3	26.4	25.6	12.2	52.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	12.4	0.0	0.0

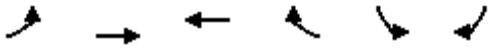
Intersection Summary	
HCM 2010 Ctrl Delay	162.2
HCM 2010 LOS	F

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	693	179	715	762	225	558
Future Volume (veh/h)	693	179	715	762	225	558
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	693	179	715	762	225	558
Adj No. of Lanes	2	0	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	685	177	746	2516	337	967
Arrive On Green	0.25	0.25	0.42	0.72	0.19	0.19
Sat Flow, veh/h	2851	712	1757	3597	1757	1568
Grp Volume(v), veh/h	440	432	715	762	225	558
Grp Sat Flow(s),veh/h/ln	1752	1719	1757	1752	1757	1568
Q Serve(g_s), s	22.0	22.0	35.0	6.9	10.5	17.0
Cycle Q Clear(g_c), s	22.0	22.0	35.0	6.9	10.5	17.0
Prop In Lane		0.41	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	435	427	746	2516	337	967
V/C Ratio(X)	1.01	1.01	0.96	0.30	0.67	0.58
Avail Cap(c_a), veh/h	435	427	773	2570	337	967
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	33.3	24.7	4.5	33.2	10.1
Incr Delay (d2), s/veh	46.1	46.7	22.4	0.1	5.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	15.8	21.5	3.3	5.6	8.3
LnGrp Delay(d),s/veh	79.5	80.1	47.1	4.6	38.2	11.0
LnGrp LOS	F	F	D	A	D	B
Approach Vol, veh/h	872			1477	783	
Approach Delay, s/veh	79.8			25.2	18.8	
Approach LOS	E			C	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		21.0	41.6	26.0				67.6
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		17.0	39.0	22.0				65.0
Max Q Clear Time (g_c+I1), s		19.0	37.0	24.0				8.9
Green Ext Time (p_c), s		0.0	0.6	0.0				17.4

Intersection Summary	
HCM 2010 Ctrl Delay	38.8
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	2268	1668	647	801	316
Future Volume (veh/h)	141	2268	1668	647	801	316
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	141	2268	1668	647	801	316
Adj No. of Lanes	2	3	3	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	233	2780	2049	638	1003	462
Arrive On Green	0.07	0.55	0.41	0.41	0.29	0.29
Sat Flow, veh/h	3408	5202	5202	1568	3408	1568
Grp Volume(v), veh/h	141	2268	1668	647	801	316
Grp Sat Flow(s),veh/h/ln	1704	1679	1679	1568	1704	1568
Q Serve(g_s), s	2.1	19.1	15.3	21.2	11.3	9.3
Cycle Q Clear(g_c), s	2.1	19.1	15.3	21.2	11.3	9.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	233	2780	2049	638	1003	462
V/C Ratio(X)	0.60	0.82	0.81	1.01	0.80	0.68
Avail Cap(c_a), veh/h	262	2804	2049	638	1178	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	9.5	13.7	15.4	17.0	16.2
Incr Delay (d2), s/veh	3.2	2.0	2.6	39.2	3.4	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	9.1	7.5	21.6	5.7	8.2
LnGrp Delay(d),s/veh	26.8	11.5	16.3	54.7	20.4	19.1
LnGrp LOS	C	B	B	F	C	B
Approach Vol, veh/h		2409	2315		1117	
Approach Delay, s/veh		12.4	27.1		20.0	
Approach LOS		B	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				32.8		19.3	7.6	25.2
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				29.0		18.0	4.0	21.0
Max Q Clear Time (g_c+I1), s				21.1		13.3	4.1	23.2
Green Ext Time (p_c), s				7.6		2.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	282	1789	102	1020	1188	350	76	642	784	395	811	90
Future Volume (veh/h)	282	1789	102	1020	1188	350	76	642	784	395	811	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1792	1845	1845	1792	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	282	1789	102	1020	1188	350	76	642	784	395	811	90
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	6	3	3	6	3	3	3	3	3	3	3
Cap, veh/h	336	1629	522	755	2230	715	118	1079	336	341	1408	439
Arrive On Green	0.10	0.33	0.33	0.22	0.46	0.46	0.03	0.21	0.21	0.10	0.28	0.28
Sat Flow, veh/h	3408	4893	1568	3408	4893	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	282	1789	102	1020	1188	350	76	642	784	395	811	90
Grp Sat Flow(s),veh/h/ln	1704	1631	1568	1704	1631	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	11.4	46.6	6.5	31.0	24.4	21.9	3.1	16.1	30.0	14.0	19.4	6.1
Cycle Q Clear(g_c), s	11.4	46.6	6.5	31.0	24.4	21.9	3.1	16.1	30.0	14.0	19.4	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	1629	522	755	2230	715	118	1079	336	341	1408	439
V/C Ratio(X)	0.84	1.10	0.20	1.35	0.53	0.49	0.64	0.59	2.33	1.16	0.58	0.21
Avail Cap(c_a), veh/h	438	1629	522	755	2230	715	170	1079	336	341	1408	439
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.0	46.7	33.3	54.5	27.4	26.7	66.7	49.5	55.0	63.0	43.3	38.5
Incr Delay (d2), s/veh	10.8	54.3	0.3	166.9	0.3	0.7	5.8	0.9	609.3	99.3	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	29.2	2.9	32.1	11.1	9.6	1.6	7.5	69.8	11.3	9.1	2.7
LnGrp Delay(d),s/veh	72.8	101.0	33.6	221.4	27.7	27.4	72.5	50.4	664.3	162.3	43.9	38.8
LnGrp LOS	E	F	C	F	C	C	E	D	F	F	D	D
Approach Vol, veh/h		2173			2558			1502			1296	
Approach Delay, s/veh		94.2			104.9			371.9			79.6	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	53.0	8.8	43.2	17.8	70.2	18.0	34.0
Change Period (Y+Rc), s	4.0	6.4	4.0	4.0	4.0	6.4	4.0	4.0
Max Green Setting (Gmax), s	31.0	46.6	7.0	37.0	18.0	59.6	14.0	30.0
Max Q Clear Time (g_c+I1), s	33.0	48.6	5.1	21.4	13.4	26.4	16.0	32.0
Green Ext Time (p_c), s	0.0	0.0	0.0	11.6	0.4	31.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	150.7
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1023	44	920	27	77	110	654	2127	17	146	1016	934
Future Volume (veh/h)	1023	44	920	27	77	110	654	2127	17	146	1016	934
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1900	1845	1845	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	1054	0	920	27	77	110	654	2127	17	146	1016	0
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	4	4	4
Cap, veh/h	981	0	438	22	62	72	426	2253	18	111	1284	400
Arrive On Green	0.28	0.00	0.28	0.05	0.05	0.05	0.25	0.44	0.44	0.06	0.26	0.00
Sat Flow, veh/h	3480	0	1553	473	1348	1568	1740	5104	41	1740	4988	1553
Grp Volume(v), veh/h	1054	0	920	104	0	110	654	1385	759	146	1016	0
Grp Sat Flow(s),veh/h/ln	1740	0	1553	1821	0	1568	1740	1663	1820	1740	1663	1553
Q Serve(g_s), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.7	47.8	7.6	22.7	0.0
Cycle Q Clear(g_c), s	33.7	0.0	33.7	5.5	0.0	5.5	29.3	47.7	47.8	7.6	22.7	0.0
Prop In Lane	1.00		1.00	0.26		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	981	0	438	84	0	72	426	1468	803	111	1284	400
V/C Ratio(X)	1.07	0.00	2.10	1.24	0.00	1.53	1.53	0.94	0.94	1.32	0.79	0.00
Avail Cap(c_a), veh/h	981	0	438	84	0	72	426	1485	813	111	1301	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	0.0	42.9	57.0	0.0	57.0	45.1	32.0	32.0	56.0	41.4	0.0
Incr Delay (d2), s/veh	51.1	0.0	503.8	176.8	0.0	294.6	251.9	12.2	19.0	194.0	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.0	0.0	75.7	6.9	0.0	8.3	43.8	24.2	28.1	9.6	10.8	0.0
LnGrp Delay(d),s/veh	94.0	0.0	546.7	233.8	0.0	351.6	297.1	44.2	51.0	250.0	44.5	0.0
LnGrp LOS	F		F	F		F	F	D	D	F	D	
Approach Vol, veh/h		1974			214			2798			1162	
Approach Delay, s/veh		305.0			294.4			105.1			70.3	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	34.0	35.6		11.0	12.0	57.6		39.0
Change Period (Y+Rc), s	* 4.7	4.8		5.5	* 4.4	* 4.8		5.3
Max Green Setting (Gmax), s	* 29	31.2		5.5	* 7.6	* 53		33.7
Max Q Clear Time (g_c+I1), s	31.3	24.7		7.5	9.6	49.8		35.7
Green Ext Time (p_c), s	0.0	5.0		0.0	0.0	3.0		0.0

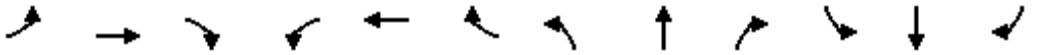
Intersection Summary			
HCM 2010 Ctrl Delay		169.3	
HCM 2010 LOS		F	

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	725	1572	357	116	867	372	253	1286	104	729	1852	841
Future Volume (veh/h)	725	1572	357	116	867	372	253	1286	104	729	1852	841
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1759	1759	1759	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	725	1572	357	116	867	372	253	1286	104	729	1852	841
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	8	8	8	4	4	4	4	4	4
Cap, veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
Arrive On Green	0.20	0.34	0.34	0.04	0.18	0.18	0.08	0.26	0.26	0.20	0.38	0.38
Sat Flow, veh/h	3408	5036	1568	3250	4803	1495	3375	4988	1553	3375	4988	1553
Grp Volume(v), veh/h	725	1572	357	116	867	372	253	1286	104	729	1852	841
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1625	1601	1495	1688	1663	1553	1688	1663	1553
Q Serve(g_s), s	27.5	42.1	27.4	5.0	25.2	25.5	10.4	36.0	7.4	28.7	51.1	53.5
Cycle Q Clear(g_c), s	27.5	42.1	27.4	5.0	25.2	25.5	10.4	36.0	7.4	28.7	51.1	53.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
V/C Ratio(X)	1.08	0.93	0.68	0.86	0.99	1.37	0.91	0.99	0.26	1.05	0.97	1.42
Avail Cap(c_a), veh/h	669	1698	529	135	875	272	277	1293	403	692	1906	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	44.7	39.8	66.7	57.1	57.3	63.8	51.7	41.2	55.7	42.5	43.3
Incr Delay (d2), s/veh	59.4	9.0	2.8	38.3	28.1	186.4	31.5	23.6	0.1	49.2	14.4	197.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	20.9	12.3	3.0	13.4	24.7	6.1	19.4	3.2	18.1	26.0	55.4
LnGrp Delay(d),s/veh	115.6	53.7	42.6	105.0	85.2	243.6	95.3	75.4	41.3	104.8	56.9	240.8
LnGrp LOS	F	D	D	F	F	F	F	E	D	F	E	F
Approach Vol, veh/h		2654			1355			1643			3422	
Approach Delay, s/veh		69.1			130.4			76.3			112.3	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	59.0	33.0	31.0	34.2	41.8	11.3	52.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	11.5	53.5	27.5	25.5	28.7	36.3	5.8	47.2
Max Q Clear Time (g_c+I1), s	12.4	55.5	29.5	27.5	30.7	38.0	7.0	44.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	95.9
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	1107	309	76	721	3	566	1221	90	4	1036	328
Future Volume (veh/h)	334	1107	309	76	721	3	566	1221	90	4	1036	328
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	334	1107	309	76	721	3	566	1221	90	4	1036	328
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	381	1101	493	129	842	377	571	1630	729	14	1057	473
Arrive On Green	0.11	0.31	0.31	0.04	0.24	0.24	0.17	0.46	0.46	0.00	0.30	0.30
Sat Flow, veh/h	3408	3505	1568	3408	3505	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	334	1107	309	76	721	3	566	1221	90	4	1036	328
Grp Sat Flow(s),veh/h/ln	1704	1752	1568	1704	1752	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	8.6	28.1	15.1	2.0	17.6	0.1	14.8	25.6	2.9	0.1	26.2	16.5
Cycle Q Clear(g_c), s	8.6	28.1	15.1	2.0	17.6	0.1	14.8	25.6	2.9	0.1	26.2	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	1101	493	129	842	377	571	1630	729	14	1057	473
V/C Ratio(X)	0.88	1.01	0.63	0.59	0.86	0.01	0.99	0.75	0.12	0.28	0.98	0.69
Avail Cap(c_a), veh/h	381	1101	493	152	861	385	571	1630	729	152	1057	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	30.7	26.2	42.4	32.5	25.9	37.2	19.7	13.6	44.4	31.0	27.6
Incr Delay (d2), s/veh	20.0	28.5	2.5	4.2	8.4	0.0	35.3	2.0	0.1	10.0	22.8	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	17.8	6.8	1.0	9.5	0.1	9.7	12.7	1.3	0.1	16.0	7.7
LnGrp Delay(d),s/veh	59.2	59.2	28.7	46.6	40.9	25.9	72.5	21.6	13.7	54.5	53.8	31.9
LnGrp LOS	E	F	C	D	D	C	E	C	B	D	D	C
Approach Vol, veh/h		1750			800			1877			1368	
Approach Delay, s/veh		53.8			41.4			36.6			48.6	
Approach LOS		D			D			D			D	

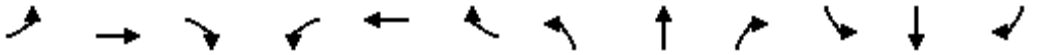
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.4	45.6	7.4	32.1	19.0	31.0	14.0	25.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.0	4.0	28.0	15.0	27.0	10.0	22.0
Max Q Clear Time (g_c+I1), s	2.1	27.6	4.0	30.1	16.8	28.2	10.6	19.6
Green Ext Time (p_c), s	0.0	9.3	0.0	0.0	0.0	0.0	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	45.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	958	912	90	946	894	0	75	759	762	41	1914	934
Future Volume (veh/h)	958	912	90	946	894	0	75	759	762	41	1914	934
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	958	912	90	946	894	0	75	759	762	41	1914	934
Adj No. of Lanes	3	3	1	2	3	1	2	3	1	2	3	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	1062	760	237	992	1147	357	120	2027	631	73	1956	1072
Arrive On Green	0.21	0.15	0.15	0.29	0.23	0.00	0.04	0.40	0.40	0.02	0.39	0.39
Sat Flow, veh/h	4954	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	2760
Grp Volume(v), veh/h	958	912	90	946	894	0	75	759	762	41	1914	934
Grp Sat Flow(s),veh/h/ln	1651	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1380
Q Serve(g_s), s	22.5	18.0	6.2	32.5	19.9	0.0	2.6	12.6	48.0	1.4	44.7	37.3
Cycle Q Clear(g_c), s	22.5	18.0	6.2	32.5	19.9	0.0	2.6	12.6	48.0	1.4	44.7	37.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1062	760	237	992	1147	357	120	2027	631	73	1956	1072
V/C Ratio(X)	0.90	1.20	0.38	0.95	0.78	0.00	0.62	0.37	1.21	0.56	0.98	0.87
Avail Cap(c_a), veh/h	1121	760	237	1000	1147	357	143	2027	631	86	1956	1072
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	50.6	45.6	41.5	43.2	0.0	56.7	25.1	35.6	57.8	36.0	33.7
Incr Delay (d2), s/veh	9.8	102.5	1.0	18.2	3.5	0.0	6.1	0.1	107.8	6.7	15.5	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	15.5	2.7	17.7	9.6	0.0	1.3	5.9	39.6	0.7	23.5	15.3
LnGrp Delay(d),s/veh	55.5	153.1	46.6	59.6	46.8	0.0	62.8	25.2	143.4	64.5	51.5	41.7
LnGrp LOS	E	F	D	E	D		E	C	F	E	D	D
Approach Vol, veh/h		1960			1840			1596			2889	
Approach Delay, s/veh		100.5			53.4			83.4			48.5	
Approach LOS		F			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	52.0	38.7	22.0	8.2	50.3	29.6	31.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.0	48.0	35.0	18.0	5.0	46.0	27.0	26.0
Max Q Clear Time (g_c+I1), s	3.4	50.0	34.5	20.0	4.6	46.7	24.5	21.9
Green Ext Time (p_c), s	0.0	0.0	0.3	0.0	0.0	0.0	1.1	3.5

Intersection Summary	
HCM 2010 Ctrl Delay	68.6
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	534	1562	973	34	1124	18	833	788	46	89	810	359
Future Volume (veh/h)	534	1562	973	34	1124	18	833	788	46	89	810	359
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	534	1562	973	34	1124	18	833	788	46	89	810	359
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	598	1998	622	63	1207	376	791	1337	598	143	672	300
Arrive On Green	0.18	0.40	0.40	0.02	0.24	0.24	0.23	0.38	0.38	0.04	0.19	0.19
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	534	1562	973	34	1124	18	833	788	46	89	810	359
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	15.2	26.9	39.3	1.0	21.7	0.9	23.0	17.8	1.9	2.5	19.0	19.0
Cycle Q Clear(g_c), s	15.2	26.9	39.3	1.0	21.7	0.9	23.0	17.8	1.9	2.5	19.0	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	598	1998	622	63	1207	376	791	1337	598	143	672	300
V/C Ratio(X)	0.89	0.78	1.56	0.54	0.93	0.05	1.05	0.59	0.08	0.62	1.21	1.19
Avail Cap(c_a), veh/h	619	1998	622	103	1219	380	791	1337	598	172	672	300
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	26.2	29.9	48.3	36.9	29.0	38.1	24.5	19.5	46.7	40.1	40.1
Incr Delay (d2), s/veh	15.0	2.1	261.8	7.1	12.6	0.1	47.1	0.7	0.1	4.9	106.4	115.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	12.8	62.1	0.5	11.4	0.4	15.9	8.7	0.8	1.3	19.1	17.8
LnGrp Delay(d),s/veh	55.0	28.2	291.7	55.4	49.5	29.0	85.2	25.1	19.6	51.6	146.5	155.6
LnGrp LOS	E	C	F	E	D	C	F	C	B	D	F	F
Approach Vol, veh/h		3069			1176			1667			1258	
Approach Delay, s/veh		116.4			49.4			55.0			142.4	
Approach LOS		F			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	41.8	5.8	43.3	27.0	23.0	21.4	27.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	37.0	3.0	39.0	23.0	19.0	18.0	24.0
Max Q Clear Time (g_c+I1), s	4.5	19.8	3.0	41.3	25.0	21.0	17.2	23.7
Green Ext Time (p_c), s	0.0	11.6	0.0	0.0	0.0	0.0	0.2	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	95.7
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Future Volume (veh/h)	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	133	1778	554	254	1957	609	63	1881	586	45	1855	578
Arrive On Green	0.04	0.35	0.35	0.07	0.39	0.39	0.02	0.37	0.37	0.01	0.37	0.37
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	76	2180	52	179	1810	6	21	1480	236	14	1598	97
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1679	1568	1704	1679	1568
Q Serve(g_s), s	1.9	30.4	1.9	4.4	29.5	0.2	0.5	22.5	9.6	0.4	25.3	3.6
Cycle Q Clear(g_c), s	1.9	30.4	1.9	4.4	29.5	0.2	0.5	22.5	9.6	0.4	25.3	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	1778	554	254	1957	609	63	1881	586	45	1855	578
V/C Ratio(X)	0.57	1.23	0.09	0.71	0.92	0.01	0.34	0.79	0.40	0.31	0.86	0.17
Avail Cap(c_a), veh/h	158	1778	554	317	1988	619	158	1881	586	158	1871	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	27.9	18.6	38.9	25.1	16.2	41.8	23.9	19.9	42.1	25.2	18.3
Incr Delay (d2), s/veh	3.9	106.9	0.1	5.2	7.9	0.0	3.1	2.3	0.4	3.8	4.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	31.6	0.8	2.3	15.0	0.1	0.3	10.8	4.2	0.2	12.4	1.6
LnGrp Delay(d),s/veh	44.5	134.8	18.7	44.1	33.0	16.2	44.9	26.2	20.3	45.9	29.5	18.5
LnGrp LOS	D	F	B	D	C	B	D	C	C	D	C	B
Approach Vol, veh/h		2308			1995			1737			1709	
Approach Delay, s/veh		129.2			34.0			25.7			29.0	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	36.2	10.4	34.4	5.6	35.7	7.4	37.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	32.0	8.0	30.0	4.0	32.0	4.0	34.0
Max Q Clear Time (g_c+I1), s	2.4	24.5	6.4	32.4	2.5	27.3	3.9	31.5
Green Ext Time (p_c), s	0.0	7.3	0.1	0.0	0.0	4.4	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	59.4
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	666	0	1076	718	120	0	795	952	91	719	287
Future Volume (veh/h)	298	666	0	1076	718	120	0	795	952	91	719	287
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	298	666	0	1076	718	120	0	795	952	91	719	287
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	382	844	263	1162	1997	622	4	925	949	149	1239	554
Arrive On Green	0.11	0.17	0.00	0.34	0.40	0.40	0.00	0.26	0.26	0.04	0.35	0.35
Sat Flow, veh/h	3408	5036	1568	3408	5036	1568	3408	3505	1568	3408	3505	1568
Grp Volume(v), veh/h	298	666	0	1076	718	120	0	795	952	91	719	287
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1704	1679	1568	1704	1752	1568	1704	1752	1568
Q Serve(g_s), s	7.4	11.1	0.0	26.5	8.7	4.4	0.0	18.8	23.0	2.3	14.5	12.6
Cycle Q Clear(g_c), s	7.4	11.1	0.0	26.5	8.7	4.4	0.0	18.8	23.0	2.3	14.5	12.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	382	844	263	1162	1997	622	4	925	949	149	1239	554
V/C Ratio(X)	0.78	0.79	0.00	0.93	0.36	0.19	0.00	0.86	1.00	0.61	0.58	0.52
Avail Cap(c_a), veh/h	508	925	288	1212	1997	622	156	925	949	156	1239	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	34.8	0.0	27.6	18.5	17.2	0.0	30.5	17.2	40.9	22.9	22.3
Incr Delay (d2), s/veh	5.5	4.3	0.0	11.7	0.1	0.1	0.0	8.2	30.1	6.3	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.5	0.0	14.3	4.1	1.9	0.0	10.1	30.4	1.2	7.1	5.6
LnGrp Delay(d),s/veh	43.2	39.1	0.0	39.4	18.6	17.3	0.0	38.7	47.3	47.2	23.6	23.1
LnGrp LOS	D	D		D	B	B		D	F	D	C	C
Approach Vol, veh/h		964			1914			1747			1097	
Approach Delay, s/veh		40.3			30.2			43.4			25.4	
Approach LOS		D			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	27.0	33.7	18.6	0.0	34.8	13.8	38.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	23.0	31.0	16.0	4.0	23.0	13.0	34.0
Max Q Clear Time (g_c+I1), s	4.3	25.0	28.5	13.1	0.0	16.5	9.4	10.7
Green Ext Time (p_c), s	0.0	0.0	1.2	1.6	0.0	5.8	0.4	11.1

Intersection Summary	
HCM 2010 Ctrl Delay	35.0
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	210.1
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	0	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	0	470	2291	2190
Demand Flow Rate, veh/h	0	484	2360	2256
Vehicles Circulating, veh/h	2299	2360	0	621
Vehicles Exiting, veh/h	578	0	2299	2223
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	607.2	62.0	279.7
Approach LOS	-	F	F	F

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	484	1109	1251	1060	1196
Cap Entry Lane, veh/h	217	1130	1130	709	732
Entry HV Adj Factor	0.972	0.971	0.971	0.971	0.971
Flow Entry, veh/h	470	1077	1214	1030	1161
Cap Entry, veh/h	210	1097	1097	689	710
V/C Ratio	2.235	0.981	1.107	1.495	1.635
Control Delay, s/veh	607.2	42.3	79.5	247.6	308.2
LOS	F	E	F	F	F
95th %tile Queue, veh	37	19	30	50	63

Intersection	
Intersection Delay, s/veh	341.5
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	0	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	776	0	2213	2231
Demand Flow Rate, veh/h	798	0	2279	2298
Vehicles Circulating, veh/h	2298	2359	715	0
Vehicles Exiting, veh/h	0	635	2381	2359
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	1181.5	0.0	336.8	54.2
Approach LOS	F	-	F	F

Lane	Left	Left	Right	Left	Right
Designated Moves	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	798	1071	1208	1080	1218
Cap Entry Lane, veh/h	226	661	685	1130	1130
Entry HV Adj Factor	0.972	0.971	0.971	0.971	0.971
Flow Entry, veh/h	776	1040	1173	1049	1182
Cap Entry, veh/h	220	642	665	1097	1097
V/C Ratio	3.528	1.620	1.763	0.956	1.078
Control Delay, s/veh	1181.5	303.7	366.1	37.0	69.4
LOS	F	F	F	E	F
95th %tile Queue, veh	73	57	70	17	27

Appendix TR-2

Transportation Mitigation Strategy (as presented to the Sacramento County Board of Supervisors for the Jackson Corridor Development Projects, July 23, 2019 and amended by the Board of Supervisors on March 9, 2021)

County of Sacramento
Jackson Corridor Development Projects
Transportation Mitigation Strategy

July 23, 2019

Amended March 9, 2021

This Transportation Mitigation Strategy ("Strategy") shall apply to all development projects within the following Jackson Highway Corridor plan areas:

a. West Jackson Highway Master Plan
b. Jackson Township Specific Plan
c. Newbridge Specific Plan
d. Mather South Community Master Plan

Development projects within the plan areas are responsible for implementing roadway segment and intersection improvements that are required to mitigate impacts to the transportation network, as set forth in each project's approved environmental documents and conditions of approval. It is the intent of Sacramento County that impacts to the transportation network be mitigated concurrent with the implementation of the impacting development project. This Strategy will guide the identification, delivery and construction of the regional "Existing plus Project" and "Existing plus Multiple Projects" roadway segment and intersection improvements that will be required to be built with each incremental development project within the above plan areas.

Definitions

Build Improvements: The regional "Existing plus Project" and "Existing plus Multiple Projects" roadway segment and intersection improvement(s) from the plan area's conditions of approval that will be required to be built to mitigate the impacts of the Development Increment for the plan areas above.
Development Increment: A specified portion of development for the plan areas above for which construction will be undertaken and approvals for that specified portion will be required by the County. A Development Increment may not contain non-contiguous parcels separated by more than 1.5 miles, unless approved by the Director.
Director: The Director of the County's Department of Transportation.
Fee Increment: The amount of funding that will be generated by the Development Increment through payment of the regional roadway component of the plan area roadway impact fees for the greater of the Development Increment or 300 dwelling unit equivalents (DUEs).
Tool: The County's Dynamic Implementation Tool; the software and computer model inputs used to determine the impacts to the regional roadway segments and intersections, and the Build Improvements identified to mitigate those impacts. (See Appendix A for detailed description).

Financing of Improvements to Mitigate Transportation Network Impacts

1. Build Improvements will be funded through revenue generated from roadway impact fee programs that have been established by or pursuant to plan area financing plans. Funding

for Build Improvements may also include other transportation infrastructure funding sources, such as Measure A Sales Tax revenues and State and Federal funding programs.

2. The plan area fee programs have recognized Measure A Sales Tax revenues, State and Federal funding programs, and other funding sources that are currently programmed and the adopted roadway impact fees are based on the availability of these funds. It is anticipated that improvement projects utilizing such funding sources will be delivered and constructed by the County. The availability and expenditure of these funds for Build Improvements shall be subject to the requirements applicable to the specific funding source from which they are received.

3. Cost estimates for Build Improvements shall be as set forth in the applicable plan area financing plans and/or the area wide finance document.

4. Any credits or reimbursements due from the construction of Build Improvements shall be in accordance with the applicable fee program or finance plan.

Determining a Development Increment's Build Improvements

5. It is the intent of Sacramento County that impacts to the transportation network be mitigated concurrent with the implementation of the impacting development and that the size of the improvements are commensurate with the size and impact of development and the available funding. The County will determine Build Improvements considering the various improvements identified by the Tool, the estimated cost of the identified improvements, the Fee Increment, and the availability of other funds[1]. (See Appendix B for a hypothetical example.)

6. Each Development Increment will have a Fee Increment based on the size of the Development Increment. The Fee Increment is calculated by multiplying the fee rates per DUE for the regional roadway component set forth in the applicable plan area roadway impact fee program by the number of DUEs, as follows:
    a. For Development Increments with 300 or more DUEs, calculation of the Fee Increment shall be based on the actual number of DUEs.
    b. For Development Increments with fewer than 300 DUEs, calculation of the Fee Increment shall be based on 300 DUEs. The Director may grant an exemption to the requirements of subsection (b) to Development Increments that are independent development projects and not a phase or subset of a larger project or Development Increment. In such a scenario, the Director shall determine how the Development Increment will satisfy its obligation to mitigate transportation impacts generated by that Development Increment, including, but not limited to, the following:

[1] Jackson Road improvements are high priority projects and when triggered by the dynamic implementation tool, the County will work diligently on implementing those projects, including seeking outside funding sources (including Regional Transportation Improvement Program funds), if necessary.

i. Constructing Build Improvements identified by the Tool and based on a Fee Increment that utilizes the Development Increment's actual number of DUEs;
ii. A payment of the Development Increment's full Fee Increment, in lieu of constructing Build Improvements, prior to issuance of the first building permit; or
iii. Payment of the plan area roadway impact fees at time of building permit issuance.

7. The Tool may also be utilized to develop a conceptual set of Build Improvements for the plan area or a Development Increment during the entitlement process to inform the project proponents and the Board of Supervisors. However, the actual Build Improvements required to be constructed by a Development Increment shall be determined by the process described in sections 8 and 9, and may deviate from the conceptual set of Build Improvements previously developed due to a Development Increment's changed circumstances or progress, or changes to the transportation network and/or the Department of Transportation's priority needs.

8. The Build Improvements that the Development Increment will be required to construct shall be determined using the Tool. The Tool will utilize the actual number of DUEs in the Build Increment. The development proponent is responsible for requesting the Tool analysis sufficiently in advance of their Development Increment to allow for timely execution of the agreement described in section 9 and delivery of their Build Improvements as described in section 15.

9. A written agreement between the County and project proponent shall be required to identify the specific Build Improvements assigned to the project and set a date by which construction of the Build Improvements by the project proponent shall commence, or a date for in-lieu payment by the project proponent per section 13 shall occur. The Build Improvements identified by the Tool and the proposed timing of construction may change any time prior to execution of the agreement. The agreement shall be executed prior to recordation of a final small lot subdivision map for a residential Development Increment or initiation of a building permit application for a non-residential Development Increment. If construction is not initiated by the project proponent or the in-lieu payment is not made by the date specified in the agreement, the County, at its discretion, may require different Build Improvements based on changed circumstances or progress, or changes to the transportation network and/or the Department of Transportation's priority needs.

Credits, Reimbursements, and the Cost of Build Improvements

10. A credit and/or reimbursement agreement will likely be needed for each Development Increment that must construct Build Improvements due to the timing of the construction and its acceptance by the County relative to when building permit fees must be paid. Any credit or reimbursement shall be provided in accordance with the associated fee program or finance plan requirements from which the credit or reimbursement is due.

11. When the Development Increment is fewer than 300 DUEs, the Development Increment may be assigned Build Improvements whose cost estimates exceed the fee revenues generated by the actual number of DUEs, as described in section 6. The Development Increment shall be responsible for funding and constructing the Build Improvements assigned by the County, including those improvements which costs exceed the amount of fee revenues generated by the Development Increment's actual number of DUEs. Credit or reimbursement shall be due for the additional eligible costs per the applicable plan area fee program.

12. Constructed Build Improvement costs are unlikely to exactly match the Fee Increment. Lower costs will result in the creation of reserve funding; higher cost Build Improvements will require funds from the reserve, increased funding from the Development Increment, and/or other County funding. It is the County's intent to establish reserve funding to help manage these differences by allocating the Fee Increment as follows: Build Improvements would be assigned based on a target of eighty percent (80%) of the Fee Increment in addition to any other funds the County makes available for that Build Improvement; the remaining (20%) would be placed in reserve to be applied to other transportation mitigation measures (including other assigned Build Improvements) associated with implementation of other development projects in the plan area and other Jackson Highway Corridor plan areas, as determined by the Director. It is anticipated that while the Development Increment's Fee Increment generally will be allocated as noted above, the listed percentages will be adjusted as necessary to conform to Build Improvement costs and address the Department of Transportation's priority needs. The County shall not assign Build Improvements with estimated costs exceeding one hundred percent (100%) of the Fee Increment in addition to any other funds (including available reserve funds noted above). Appendix B includes a hypothetical example of possible Build Improvement scenarios.

Implementing a Development Increment's Build Improvements

13. In lieu of constructing the Build Improvements, the Director may accept an upfront payment up to 100 percent of the full amount of the Fee Increment if the Build Improvements will be constructed by the County or another party. Payment shall be made to the County prior to the recordation of any final map for residential development or issuance of any building permit for non-residential development Increment. This payment shall be considered as satisfying the requirements of section 15.

14. If the project proponent chooses to fund the Build Improvements through a Community Facilities District (CFD) or similar public finance mechanism, the CFD or similar public finance mechanism must be formed prior to the recordation of a small lot final map for a residential Development Increment or issuance of any building permit for a non-residential Development Increment. The formation shall occur regardless of whether the Build Improvements will be constructed concurrent with the Development Increment or an in-lieu amount will be paid up front. An advanced funding agreement with the County for CFD establishment costs must be executed prior to initiation of CFD formation.

15. The delivery and construction of the Build Improvements shall proceed as follows to ensure completion in a timely manner:

    a. The improvement plans for the Build Improvements shall be approved, and construction bonds shall be posted, prior to the recordation of any final map for a residential Development Increment or issuance of any building permit for non-residential Development Increment.
    b. For residential Development Increments, construction of the Build Improvements shall commence by the date identified in the agreement described in section 9 and prior to twenty-five percent (25%) build-out of the Development Increment (as measured by the number of building permit issuances). Build-out of the Development Increment may proceed beyond this percentage if the project proponent demonstrates, to the satisfaction of the Director, that construction has been delayed due to circumstances beyond the project proponent's control and will commence within a time frame acceptable to the Director.
    c. If a residential Development Increment is a phase or a subset of a larger development project, a future phase shall not proceed beyond twenty-five percent (25%) build-out of the Development Increment (as measured by the number of building permit issuances) until construction of the Build Improvements assigned to an earlier Development Increment has been substantially completed, as defined in the most recent version of the Sacramento County Standard Construction Specifications, or the project proponent demonstrates, to the satisfaction of the Director, that construction of the Build Improvements for the earlier Development Increment is progressing at an acceptable rate. For large development projects consisting of multiple Development Increments and Build Improvements, the County and project proponent may enter into an implementation agreement specifying the terms and conditions for the delivery and construction of said Build Improvements.
    d. For non-residential Development Increments, construction shall commence by the date identified in the agreement described in section 9 and be completed prior to County's issuance of a certificate of occupancy, unless otherwise approved by the Director.

Administration and Update of the Strategy

16. The Department of Transportation will manage this Strategy and the Tool. The costs to manage, maintain, update, and conduct Tool analysis, and all other related administrative work tasks, shall be funded by all development projects within the Jackson Highway Corridor plan areas. Funding to support the above efforts will be either in the form of application fees or a development agreement between the County and each project proponent.

17. This Strategy and its components, including the Tool, shall be reviewed and updated as needed, but no less frequently than every five years or at key planning events undertaken by the County including, but not limited to, General Plan updates, and updates to the Jackson Highway Corridor plan area master plans or specific plans. The review and update

of this Strategy and the Tool shall include, but not be limited to, land use changes, revisions to the proposed and completed transportation network, changes in the costs of the Build Improvements, changes in associated escalation values due to inflation, and the securing of new funding sources to supplement the costs of improvements.

18. A project proponent may appeal a determination by Department of Transportation staff concerning the application of this Strategy to its project by submitting a written request for the Director's review. If the project proponent is dissatisfied with the Director's decision following such review, the project proponent may appeal the decision to the County Board of Supervisors by filing a notice of appeal with the Clerk of the Board within fifteen (15) days of the date of the Director's decision. The notice of appeal shall include payment of the applicable appeal fee and the following information: (a) a complete description of the factual basis for the appeal; (b) the legal basis for the appeal; and (c) the remedy sought by the project proponent. The Clerk of the Board shall calendar a hearing on the appeal and notify the person filing the appeal of the date, time and place of such hearing. During the hearing, the project proponent shall be afforded the opportunity to present oral and documentary evidence and offer testimony from any concerned parties as may be necessary for the Board to take action. The Board may affirm, reverse, or modify the decision of the Director. The action of the Board on any such appeal shall be final and conclusive.

Appendix A

The Dynamic Implementation Tool

Sacramento County has developed a new approach for identifying the transportation improvements required to be constructed by a given Development Increment within the Jackson Corridor plan areas that will be much more attuned to the actual location of development and its impacts. This new approach has led to the creation of what is referred to as the Dynamic Implementation Tool (Tool). For any amount of development that is proposed to be implemented in the Jackson Corridor, the Tool is capable of estimating the vehicle trips that would be generated, where those new vehicle trips would go, and whether any of those new vehicle trips would cause specific roadway segments or intersections to operate at an unacceptable Level of Service. The Tool enables Sacramento County and project proponents to monitor and manage the transportation network proactively, and to more effectively identify and assign transportation improvements to County roadways and intersections in support of where incremental growth occurs in the Jackson Corridor.

To accomplish this, the proposed land uses for development projects in the Jackson Corridor plan areas have been subdivided into a geographical network of 64 smaller districts. Each district has a varying mix of residential, employment and commercial land uses but is small enough such that all traffic generated in a district would have a similar trip distribution. These districts are linked to a corresponding spreadsheet-based model — the Tool—that will calculate the amount of traffic generated by a Development Increment in a district and assign this traffic to the roadway network. When an applicant proposes a specific Build Increment and requests an analysis, staff will manually enter the actual number of residential units, or square footage of retail or commercial building space, into the Tool for each district. The Tool will use information contained in the latest edition of *Trip Generation Manual* published by the Institute of Transportation Engineers (ITE) to automatically calculate how much traffic the Development Increment would generate and use the trip distribution information from the Jackson Corridor joint traffic analysis to assign where that traffic will travel on the surrounding roadway network. The Tool also will calculate new roadway traffic volumes and intersection turn movements. County staff will analyze this data to determine which roads and intersections would be impacted and require improvements based on changes in roadway volume to capacity ratios and intersection delays. Staff will use the data generated by the Tool to assign Build Improvements to developers from those listed in each project's conditions of approval consistent with the Transportation Mitigation Strategy.

Appendix B

Transportation Network Mitigation Strategy Examples

Example 1

Project A requests the County run the Tool for 150 dwelling unit equivalents (DUEs) located within the boundaries of district 2.

Step 1 – County staff manually enters 150 DUEs into the Tool for Project A in district 2. The Tool automatically calculates the amount of traffic generated from this number of dwelling units and assigns it to the roads and intersections in the vicinity of district 2. The Tool identifies traffic volume changes on impacted roads and intersections as output and the County staff identifies potential Build Improvements.

Step 2 – Although the size of the Development Increment is 150 DUEs, the Fee Increment is set using the 300 DUEs minimum value. County staff calculates the Fee Increment for this Development Increment, which is the product of the number of Fee Increment DUEs multiplied by the fee rate per DUE identified in the fee program (ex. 300 x $15,000 = $ 4.5M).

Step 3 – County staff calculates the 80%/20% Fee Increment split (ex. $3.6 M/$0.9M).

Step 4 – County staff reviews the impacted roadway locations and assigns Build Improvements to the Development Increment based on the output from the Tool and from the project-specific conditions of approval as follows:

A. If Build Improvements that add up to approximately $3.6M can be identified, then those are assigned. County staff also collects approximately $0.9M for the reserve fund. Or;

B. If Build Improvements that add up to approximately $3.6M cannot be identified, but Build Improvements that add up to the Fee Increment amount of $4.5M can, then the latter Build Improvements may be assigned. The difference between $4.5M and the actual cost of Build Improvements would be placed in reserve. No reserve would be collected if the actual cost of Build Improvements were $4.5M. Or;

C. If the Build Improvements identified exceeds $4.5M, and the County can fund the difference between the total Build Improvement costs and $4.5M via reserve funds or other funds, then those Build Improvements may be assigned. Or;

D. If the County identifies Build Improvements that the County will deliver, then it may choose to collect $4.5M from the Development Increment as an upfront payment for use on the identified Build Improvement. Or;

E. If Build Improvements cannot be identified either because they do not fit these financial constraints or because no improvements are required, then the County may choose to collect $4.5M from the Development Increment and place these funds in reserve.

The situation in Step 4.C is used for the remainder of Example 1.

Step 5 – The project proponent and County then enter into an agreement that identifies the Build Improvements, establishes the commencement date for construction and delivery, and terms regarding reimbursement for costs in excess of the Fee Increment.

Step 6 – The project proponent delivers Build Improvements in accordance with the agreement and the Transportation Mitigation Strategy. If the developer fails to comply with applicable timing and delivery requirements, the County has the right to assign different Build Improvements to the Development Increment based on changing circumstances or priorities.

Example 2

Project B requests the County run the Tool for 350 dwelling units located within the boundaries of district 2. The steps are the same as Example 1 except as follows:

Step 1 – County staff manually enters 350 DUEs into the Tool for Project B in district 2.

Step 2 – The Fee Increment is set using the actual number of DUEs (350) because it is above the minimum value of 300 DUEs. County staff calculates the Fee Increment for this Development Increment (ex. 350 x $15,000 = $ 5.25M).

Step 3 – County staff calculates the 80%/20% Fee Increment split (ex. $4.2 M/$1.05M).

Steps 4 are the same as Example 1 but use the $5.25/$4.2/$1.05 figures. For Example 2, the situation in Step 4.D is used.

Step 5 – The project proponent and County then enter into an agreement that identifies the Build Improvements and establishes the timing of payment of the full Fee Increment.

Step 6 – The project proponent pays the full Fee Increment at first building permit issuance in accordance with the agreement and the Transportation Mitigation Strategy. If the developer fails to comply with applicable timing requirements, the County has the right to assign different Build Improvements to the Development Increment based on changing circumstances or priorities.

Example 3

Project C, a small independent development project, requests the County run the Tool for 15 dwelling units located within the boundaries of district 6.

Step 1 – The Director determines this is a small independent development project and not a phase or subset of a larger project or Development Increment. The Director grants

an exemption from the minimum 300 DUE Fee Increment requirement per section 6c and considers the following options:

A. Assigning Build Improvements identified by the Tool and based on 15 DUEs;
B. Requiring payment of the Development Increment's full Fee Increment based on 15 DUEs, in lieu of constructing Build Improvements, prior to issuance of the first building permit; or
C. Requiring payment of the plan area roadway impact fees at time of building permit issuance.

The County elects not to run the Tool given the small size of this project and selects option B because the County is delivering a nearby improvement that is insufficiently funded.

Step 2 – The project proponent and County then enter into an agreement that identifies the requirement to pay the full Fee Increment (15 DUEs x $15,000 = $225,000) at time of first building permit issuance and establishes the timing of Fee Increment payment.

Step 3 – The project proponent pays the Fee Increment in accordance with the agreement and the Transportation Mitigation Strategy. If the developer fails to comply with applicable timing and delivery requirements, the County has the right to assign different Build Improvements to the Development Increment based on changing circumstances or priorities.

Appendix TR-3

Jackson Township Specific Plan
Revised VMT Analysis

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MEMORANDUM

DATE: July 1, 2022

TO: Todd Smith and Cameron Shew | County of Sacramento

FROM: David Tokarski and Jim Damkowitch | DKS Associates

SUBJECT: SB 743/ VMT Analysis – Jackson Township Project #13049

Pursuant to Senate Bill (SB) 743, transportation impacts under CEQA may no longer be measured with automobile delay and level of service (LOS) post July 1, 2020. CEQA guidelines (Section 15064.3) state that vehicle miles traveled (VMT) is generally the most appropriate metric for determining transportation related impacts under CEQA. While VMT was previously calculated for the proposed Jackson Township development traffic impact analysis, the applied methodologies were not consistent with recently adopted guidance from Sacramento County. The purpose of this technical memorandum is to document revised VMT calculations that are consistent with the County's Transportation Analysis Guidelines published July 1, 2020. Additionally, the proposed project has been re-analyzed using the updated travel demand model based on SACOG's SACSIM19 Activity Based Travel Demand Model.

VMT metrics associated with the residential components (VMT per capita) and commercial (office) components (VMT per employee) of the project are summarized herein. Retail components are not subject to efficiency metrics (VMT per employee), but rather net change in VMT. This memorandum also summarizes the County's thresholds, which are based on regional averages calculated from the SACSIM19 Activity Based Travel Demand Model. The project's VMT-reducing features (i.e. included as part of the project and VMT calculations before mitigation) are documented in **Appendix A**.

The Governor's Office of Planning and Research (OPR) VMT Guidelines do not require VMT analysis as a measure of significance for Draft EIR documents published prior to July 1, 2020. As the Jackson Township Draft EIR was published in advance of this date, the analysis presented in this Memorandum is intended to be informational.

VMT ANALYSIS

Following the County's Transportation Analysis Guidelines (TAG), the applicable metrics are VMT per capita for residential land uses and VMT per employee for commercial (office) and industrial uses. Local retail is screened from further VMT analysis, while for regional retail the OPR recommended efficiency metric is total net change in VMT. Based on the square footage of each of the retail parcels within Jackson Township, it has been determined that all of the proposed retail uses in Jackson Township can be considered to be local serving and therefore screened from further VMT analysis.

For land uses that cannot be screened and are subject to further VMT analysis, the project's VMT per capita and/or VMT per employee are compared to a threshold of 85 percent of the regional average for each metric as applicable. Regional averages are calculated in this memorandum to be consistent with SACOG's SACSIM19 travel demand model.

County guidelines require that each land use be analyzed separately when identifying impacts. The residential, employment, and retail land uses of the project are discussed below.

SIGNIFICANCE THRESHOLDS

Table 3-3 of the County's Transportation Analysis Guidelines lists significance thresholds for various types of development, as follows:

- Project VMT per capita exceeds 85 percent of the regional average VMT per capita.
- Project VMT per employee exceeds 85 percent of the regional average VMT per employee.
- The project's regional retail land uses causes a net increase in regional VMT.
- The project's proposed widening of "regional roadways" is expected to result in an increase in regional VMT.

While each of these project components must be analyzed and documented individually based on their respective threshold of significance, it is important to also consider the project's overall VMT efficiency. Thus, if a project only slightly exceeds the threshold of significance for one project component but falls substantially below the threshold for another, or vice versa, total project impacts can be presented by way of a holistic "VMT Budget" that accounts for the various components of the project.

RESIDENTIAL COMPONENTS (VMT PER CAPITA)

For residential land uses, VMT per capita is the operative metric for CEQA impact analysis. It includes all vehicle tours (both work/commute vehicle tours and non-work vehicle tours) that start and end at a residence. Home-based tours reflect travel for work, school, recreation, and shopping, but exclude travel that begins and ends away from the home location.

An example of a work/commute vehicle tour that is captured in the VMT per capita calculation may start at a residence, include a stop to drop a child off at school before proceeding to the work site, and a return to the residence with a stop to pick up dinner. A midday sub-tour beginning and ending at the work site to eat lunch at a restaurant would not be included. A non-work vehicle tour starts that begins and ends at home may also include intermediate stops. VMT from these tours must include full mileage of the entire tour, including all stops.

VMT per capita is calculated by first combining VMT from home-based tours generated throughout the day at a residential unit. The home-based VMT for all residential units in the project area is summed and divided by the total resident population of the project, resulting in the project's VMT per capita.

Table 3-3 of the County's Transportation Analysis Guidelines identifies the threshold of significance as 85 percent of the baseline (no project) regional average VMT per capita. If the regional VMT per capita from the residential component of the "with-project" model runs exceeds this threshold, the project is determined to require VMT reduction.

In order to calculate the appropriate VMT per Capita metric for the proposed project, all project residential units (and their associated households and population) were incorporated into a modified Existing Plus Project version of the SASIM19 model. Additionally, the residential units were isolated into their own traffic analysis zones (TAZs) so their daily travel "tours" per person could be isolated from other land uses. Consistent with the methodology describe above for what does or does not count in the calculated VMT per Capita, the results of the project's share of the Existing Plus Project model were compared to the results regionwide for the Existing No Project model. The results are as follows:

- Existing (No Project) Regional VMT per Capita: 20.20
    - County Threshold of Significance (85%): 17.17
- Project Specific VMT per Capita: 17.46
    - As Percentage of Regional Average: 86.4%
    - **Exceeds 85% Threshold: Yes**

OFFICE COMPONENTS (VMT PER EMPLOYEE)

For non-residential land uses, VMT per employee is used to evaluate commercial (office) and industrial VMT. It includes all commute vehicle tours that begin and end at an employment location. A commute tour may include intermediate stops. An example commute tour begins at a residence, includes a stop to drop a child off at school, includes a stop for breakfast, and ends at a place of work.

VMT for commute tours are summed to the employment location of each tour. The commute VMT for all employment locations in the project area is summed and divided by the total employment of the plan area.

All office land uses in Jackson Township are included in a single transportation analysis zone (TAZ). As such, office VMT per employee is calculated based on results from that TAZ. There are no screening criteria applicable to the office land uses in Jackson Township.

Results from the "with-project" model runs were compared to the baseline (no project) results to determine if the project's office component exceeds 85 percent of the regional average VMT per Employee, per Table 3-3 of the County's Transportation Analysis Guidelines.

- Existing (No Project) Regional VMT per Employee: 16.04
    - County Threshold of Significance (85%): 13.64
- Project Specific VMT per Employee: 16.48
    - As Percentage of Regional Average: 102.7%
    - **Exceeds 85% Threshold: Yes**

WIDENING OF "REGIONAL ROADWAYS" VMT ASSESSMENT

The proposed project would widen existing roadways and construct new roadways. These roadway capacity enhancements could induce more VMT due to changes in background travel demand and/ or route or mode choice. Per the TAG, all transportation projects that are regionally significant for potential air quality impacts must also be included in the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). The MTP/SCS is the regional plan that demonstrates compliance with air quality conformity requirements and greenhouse gas reduction targets. As such, roadway projects that are consistent with this plan are part of the regional solution for meeting air pollution and greenhouse gas goals. Roadway projects that are deemed to be consistent with the MTP/SCS would have a less than significant cumulative impact on VMT. Conversely, roadway projects that are not included in the MTP/SCS must be evaluated to determine potential transportation impacts.

Consistent with the guidance in the TAG, to determine the net VMT impact of capacity enhancing improvements, existing or future roadways roadway widenings not already identified in SACOG's MTP/SCS were modeled, with and without project added roadway capacity, to yield the net change

in regional VMT. Roadways within and adjacent to Jackson Township that are not reflected in the MTP/SCS are as follows:

- Jackson Highway (from Excelsior Road to 0.35 miles east of Township Drive): 1.75 Miles
  - MTP/SCS: 2 Lanes
  - With Jackson Township: 6 Lanes
- Kiefer Boulevard (from Excelsior Road to 0.50 miles east of Grenville Drive): 1.25 Miles
  - MTP/SCS: 0 Lanes
  - With Jackson Township: 4 Lanes

The above widenings represent an addition of 12.0 lane-miles of roadway to the County's roadway system in excess of the roadway widenings identified in the MTP/SCS. According to the TAG, secondary roadways within the project are normally not expected to induce more travel due to their local-serving nature and are therefore not considered in the induced VMT analysis.

The SACSIM model was run without and with the regional roadway widenings listed above (but with all other components of the Jackson Township project included). Regional VMT was calculated both without and with the roadway widenings and are summarized as follows:

- Region wide VMT: Existing Conditions Plus Jackson Township
  - Without Roadway Widenings: 58,751,247
  - With Roadway Widenings: 58,770,048
  - Difference: +18,801
  - **Increases Total Regionwide VMT: Yes**

RETAIL VMT ASSESSMENT

The County distinguishes between local and regional serving retail land uses. Local serving retail is defined as generally having up to 200,000 square feet of total gross floor area in growth areas, or with a market area of 3 miles or less. Some retail land use designations within Jackson Township were determined to fit within the local serving retail definition and could be screened from further VMT analysis. County staff were consulted and confirmed that two parcels in retail designated TAZs in Jackson Township might potentially be considered regional serving. As such, the likely net VMT change resulting from the remaining two retail parcels were qualitatively assessed. This qualitative assessment is described below.

PROXIMITY TO COMPETING REGIONAL RETAIL SITES

The applicant team identified all regional serving name brand retail stores within a ten-mile radius of the Jackson Township specific plan site. The two regional retail sites (planned to be a hardware store and a discount superstore) are located midway between competing name brand sites, providing intervening opportunities for potential customers. All but one competing retail site is

located further than five linear miles (as the crow flies) from the project. Competing name brand site locations within 10-miles of the project site are provided in **Appendix B**.

As the Jackson Township regional retail sites would effectively fill the gap of like retail purposes in the area, it is expected that vehicle trip-tours produced from currently underserved areas, such as the Rancho Murieta and Independence at Mather communities, would be significantly shortened. Trip lengths from these sites would be further reduced with the completion of the neighboring Mather South Community Master Plan, NewBridge Specific Plan, and West Jackson Highway Master Plan.

Based on this qualitative assessment, the Jackson Township regional retail sites are considered at minimum to be VMT neutral. Given that these sites represent intervening opportunities that will serve to shift travel demand from more distant locations suggests that a net decrease in VMT can be presumed.

PROJECT OVERALL EFFECT ON VMT

The prior sections quantified individual impacts on VMT based on project housing, project employment, project roadway widenings, and project retail. To allow for the project's overall impact on VMT to be evaluated, each of the separate VMT metrics were translated into absolute VMT over or under that allowed by County thresholds and guidelines. In order to translate VMT per Capita and VMT per Employee into absolute VMT, the number of anticipated residents and the number of anticipated office employees have been multiplied by the amount the VMT exceeds or falls below the appropriate threshold. **Table 1** shows the calculations of absolute VMT in excess of thresholds for population and employment within the project. In the case of VMT per Capita, the project's VMT per Capita exceeds the 85% threshold by 0.29, for a total of 4,765 excess VMT based on a population of 16,487. Similarly, for office employment, the project's VMT per employee exceeds the 85% threshold by 2.84, for a total of 16,574 excess VMT based on 5,836 office employees. These, combined with an additional 17,985 VMT due to widened roadways and net zero VMT based on regional retail based on the qualitative analysis above, results in a total of 39,323 VMT beyond County thresholds.

TABLE 1: PROJECT OVERALL EFFECT ON VMT (VMT BUDGET)

MEASURE	NO PROJECT	PLUS JACKSON TOWNSHIP	POPULATION	EMPLOYMENT	VMT OVER THRESHOLD
VMT PER CAPITA	20.20	17.46	16,487		+4,765
% OF REGIONAL AVERAGE		86.4%			
VMT PER OFFICE EMPPLOYEE	16.04	16.48		5,836	+16,574
% OF REGIONAL AVERAGE		102.7%			
PROJECT ROADWAYS					+18,801
REGIONAL RETAIL					+0
TOTAL PROJECT VMT OVER THRESHOLDS					+40,140

Source: DKS Associates, 2022.

Therefore, before mitigations are assumed, the proposed project represents a **significant impact** based on project related VMT. This memorandum does not document recommended or proposed mitigations; those are documented separately in **Appendix C**.

APPENDIX A

VMT REDUCTIONS ASSUMED AS PART OF THE PROJECT

Residential VMT per capita and office VMT per employee associated with the Jackson Township development exceed the County's VMT thresholds, which are defined as 85 percent of the respective regional averages. Exceedance of either of these metrics indicates a transportation impact for projects subject to CEQA after July 1, 2020. The project has identified feasible VMT reduction measures that substantially reduce the project's impact. The VMT mitigation strategies described below have been defined as part of the project and include strategies identified in the County's Transportation Analysis Guidelines and the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures report.

MODELED VMT REDUCTION MEASURES

The Jackson Township project has several VMT reduction measures that have been incorporated into the project design or are required by Jackson Township's Air Quality Mitigation Plan, GHG Reduction Plan, or the project's Development Agreement. These VMT reducing features are already reflected in the "with-project" scenario as part of the project baseline and will not be double-counted when determining the effectiveness of additional VMT mitigation strategies.

The following project VMT reductions from the CAPCOA *Quantifying Greenhouse Gas Mitigation Measures* report are assumed as part of the project description and are included in the model (numbering is presented for informational purposes):

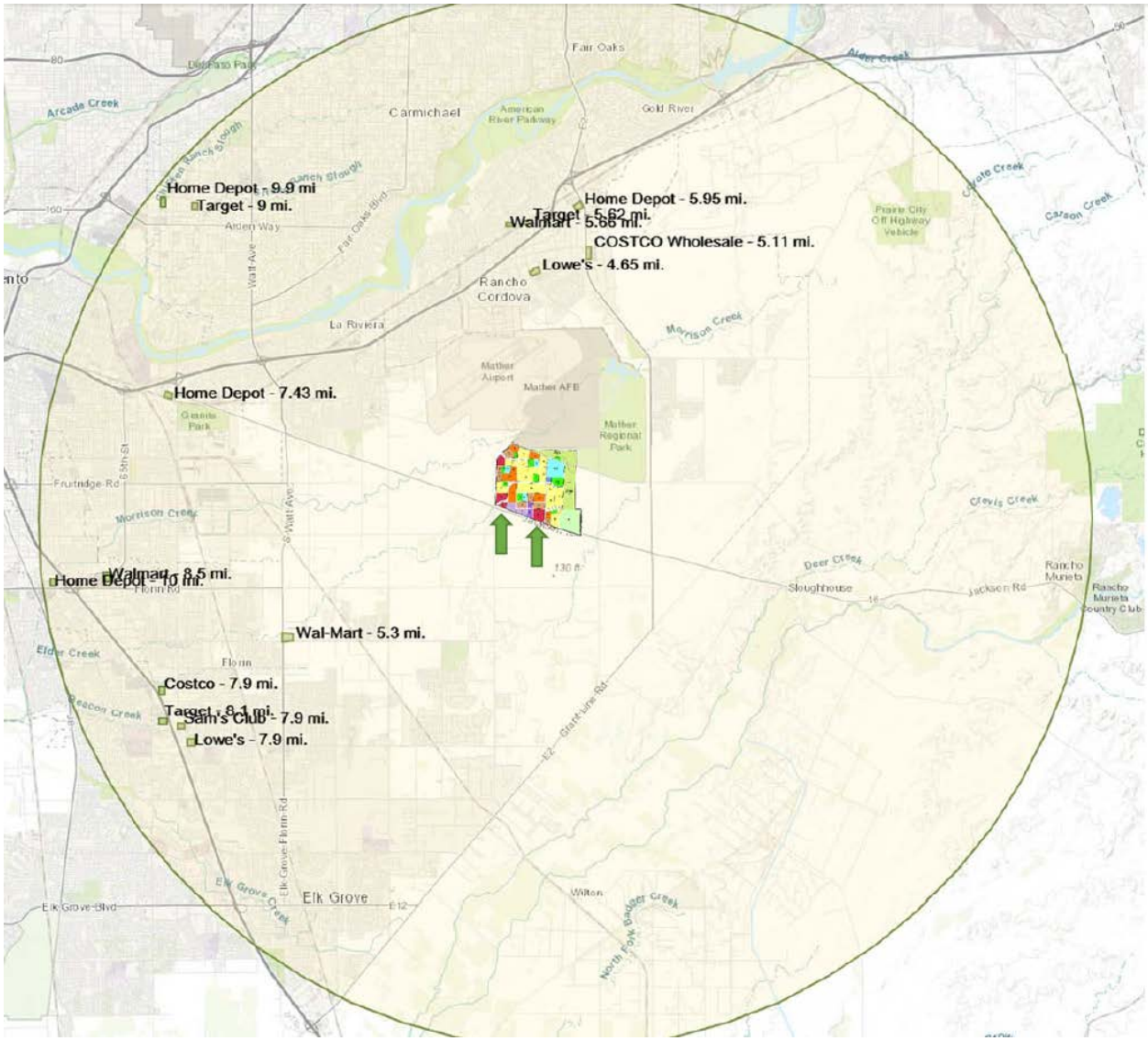
- Project is located in a suburban center within approximately 10 miles of the Sacramento downtown central business district and less than 5 miles from other existing high-density commercial/job center areas (LUT-2 and LUT-3).
- Project is located adjacent to other planned developments such that single-use trips are minimized, i.e., there are more pass-by and diverted trips (LUT-3 and LUT-4).
- Project provides a compact mix of land uses in close proximity to each other with a highly connected street and trail network (LUT-3).
- Project design is for high and medium density housing for over half of the total project dwelling units (LUT-1).
- Housing density is better than 9.5 dwelling units per acre (LUT-1).
- Approximately 15 percent of the total commercial square footage is dedicated to a mixed-use facility that combines residences and commercial/retail uses (LUT-3).
- Most residential units are within 1,320 feet (one-quarter mile) of a neighborhood park, open space, school, and/or bicycle/pedestrian trail (LUT-3).
- Most residential units are less than one-half mile from shopping and services (LUT-4).
- Project design includes locating at least four schools within the project boundaries such that most students can walk to a local school (LUT-3 and LUT-4).
- Project design includes at least eight parks within the project boundaries such that residents can walk/bike to enjoy the parks (LUT -3 and LUT-4).

- Project design is based on a network of streets in a grid pattern (LUT-8).
- Project design includes access to high frequency bus service that connects to the Watt/Manlove light rail station (LUT-5).
- Bus routes are signalized in order to avoid traffic delays (TST-4).
- Project includes an on-site transit center and park and ride facilities along the designated transit route of Jackson Highway (LUT-5, TST-1, TST-2, TST-3, and RPT-4).
- Project funding and design will result in bus headways of 15 minutes or better (TST-1, TST-4, RPT-2, and RPT-3).

Project includes assessments for regional transportation improvements (RPT-3).

APPENDIX B

COMPETING RETAIL LOCATIONS



JACKSON TOWNSHIP

Retail Market Area Study

- Home Depot
    - 2756 Sunrise Blvd, Rancho Cordova, CA 95742
    - 8000 Folsom Blvd, Sacramento, CA 95826
    - 4641 Florin Rd, Sacramento, CA 95823
    - 2000 Howe Ave, Sacramento, CA 95825
- Target
    - 10881 Olson Dr, Rancho Cordova, CA 95670
    - 1919 Fulton Ave, Sacramento, CA 95825
    - 6507 4th Ave, Sacramento, CA 95817
- Walmart
    - 10655 Folsom Blvd, Rancho Cordova, CA 95670
    - 6051 Florin Rd, Sacramento, CA 95823
    - 8915 Gerber Rd, Sacramento, CA 95829
- Costco
    - 11260 White Rock Rd, Rancho Cordova, CA 95742
    - 7981 E Stockton Blvd, Sacramento, CA 95823
- Lowes's
    - 3251 Zinfandel Dr, Rancho Cordova, CA 95670
    - 8369 Power Inn Rd, Elk Grove, CA 95624
- Sam's Club
    - 8250 Power Inn Rd, Sacramento, CA 95828

APPENDIX C

JACKSON TOWNSHIP VMT MITIGATION ANALYSIS

Kimley»Horn

Memorandum

To: Jim Wiley, Taylor & Wiley

From: Chris Gregerson, PE, TE, PTOE, PTP
Matt Weir, PE, TE, PTOE, RSP_1

Re: ***Jackson Township***
VMT Mitigation Analysis

Date: June 21, 2022

As requested, we have completed a Vehicle Miles Traveled (VMT) mitigation analysis for Jackson Township based on DKS Associates' (DKS) VMT analysis provided on March 24, 2022. The following is a summary of our findings.

Legislative Context

SB 743 is part of a long-standing policy effort by the California legislature to improve California's sustainability and reduce greenhouse gas emissions through denser infill development, a reduction in single occupancy vehicles, improved mass transit, and other actions. Recognizing that the current environmental analysis techniques are, at times, encouraging development that is inconsistent with this vision, the legislature has taken the extraordinary step to change the basis of environmental analysis for transportation impacts from Level of Service (LOS) to Vehicle Miles Travelled (VMT). VMT is understood to be a good proxy for evaluating Greenhouse Gas (GHG) and other transportation related impacts that the State is actively trying to address. While the use of VMT to determine significant transportation impacts has only been considered recently, it is by no means a new performance metric and has long been used as a basis for transportation system evaluations and as an important metric for evaluating the performance of Travel Demand Models.

In January 2019, the Natural Resources Agency finalized updates to the CEQA Guidelines including the incorporation of SB 743 modifications. The Guidelines' changes were approved by the Office of Administrative Law and are now in effect. Specific to SB 743, Section 15064.3(c) states, "A lead agency may elect to be governed by the provisions of this section immediately. The provisions apply statewide as of July 1, 2020."

To aid lead agencies with SB 743 implementation, the Governor's Office of Planning and Research (OPR) produced the Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018) that provides guidance about the variety of implementation questions they face with respect to shifting to a VMT metric. Key guidance from this document includes:

- VMT is the most appropriate metric to evaluate a project's transportation impact.
- OPR recommends tour- and trip-based travel models to estimate VMT, but ultimately defers to local agencies to determine the appropriate tools.
- OPR recommends measuring VMT for residential and office projects on a "per rate" basis.
- OPR recommends that a per capita or per employee VMT that is fifteen percent below that of existing development average may be a reasonable threshold. In other words, an office project that generates VMT per employee that is more than 15 percent less than the regional average VMT per employee could result in a significant impact. OPR notes that this threshold is supported by evidence that connects this level of reduction to the State's GHG reduction goals.
- Lead agencies have the discretion to set or apply their own significance thresholds.

Sacramento County released their updated Transportation Analysis Guidelines on September 10, 2020[1]. These updated guidelines include analysis methodology for both VMT and LOS. The VMT methodology outlines both the manner in which practitioners should conduct VMT studies, as well as examples of VMT mitigations and how to analyze their associated VMT reductions. This analysis described in this memorandum is consistent with Sacramento County guidance.

Analysis

DKS provided a summary of the VMT performance for the region's residential and office uses, as well as the associated thresholds, set 15-percent below the regional average. In addition, DKS provided Jackson Township's VMT per capita and VMT per employee metrics for Existing plus Project and Super Cumulative plus Project conditions. Table 1 provides a summary of the region and project's performance, as well as the thresholds and the percentage by which the project would have to reduce its relative VMT per capita or VMT per employee to equal the regional threshold.

Table 1 – Jackson Township Vehicle Miles Traveled (VMT) Summary

Scenario	Average VMT/Capita	Average VMT/Employee (Office)	VMT/Capita Threshold (15% Below Regional Average)	VMT/Employee Threshold (15% Below Regional Average, Office)	% to Reduce to Achieve VMT/Capita Threshold	% to Reduce to Achieve VMT/Employee Threshold
Existing No Project	20.20	16.04	17.17	13.64	-	-
Existing Plus Project	17.46	16.48	-	-	1.7%	17.2%
Super Cumulative No Project	18.40	13.31	15.64	11.31	-	-
Super Cumulative Plus Project	13.97	12.68	-	-	-12.0%	10.8%

As shown in Table 1, Jackson Township would need to reduce its VMT per capita by 1.7-percent to achieve the regional threshold for residential uses for Existing plus Project conditions. In addition, Jackson Township would need to reduce its VMT per employee by 17.2-percent to achieve the regional threshold for office uses for Existing plus Project conditions.

Consistent with Sacramento County guidance, new thresholds were developed for Super Cumulative Conditions. As shown in Table 1, for Super Cumulative No Project Conditions, the regional VMT per capita average is 18.4 and the regional VMT per employee average for office land uses is 13.31. This results in regional thresholds, set 15-percent below the regional averages, of 15.64 VMT per capita and 11.31 VMT per employee.

As shown in Table 1, for Super Cumulative plus Project Conditions, Jackson Township's VMT per capita is 12.0-percent below the regional threshold for residential uses, but its VMT per employee would need to be reduced by 10.8-percent below the regional threshold for office land uses. Therefore, a finding of significant impact is reached for Jackson Township's residential and office land uses for Existing plus Project conditions, a finding of less than significant impact is reached for Jackson Township's residential land uses for Super Cumulative plus Project conditions, and a finding of significant impact is found for office land uses for Super Cumulative plus Project conditions. It should be noted that if the analysis compared Jackson Township's VMT per capita and VMT per employee to the thresholds established for Existing No Project Conditions, consistent with state guidelines, both residential and office uses would result in a less than significant impact for Super Cumulative plus Project Conditions.

[1] *Transportation Analysis Guidelines*. County of Sacramento. September 10, 2020.

As a significant impact was found for each land use for Existing plus Project Conditions, and for the office land use for Super Cumulative plus Project Conditions, it was necessary to analyze potential mitigation measures which, when implemented, could reduce the project's impact to less than significant. Table 2 below summarizes the effectiveness of each mitigation measure.

Table 2 – Jackson Township VMT Mitigation Summary

Mitigation	VMT/Capita Reduction (%)	VMT/Employee Reduction (%)
TMA Participation	2.08%	8.3%
Electric Bikeshare	-0.05%	-
Electric Scootershare	-0.06%	-
Adding Sidewalks	1.0%	-
Carpooling/Rideshare	-	4.0%
Total	**3.0%**	**12.3%**

As shown in Table 2, when implemented, the mitigation measures will result in reducing the project's VMT per capita by 3.0-percent and the VMT per employee by 12.3-percent. Application of these measures would exceed the 1.7-percent reduction required to reduce the project's impact to less than significant for the residential uses. However, application of these measures would not exceed the 17.2-percent reduction required to reduce the project's impact to less than significant for the office uses. Therefore, because the VMT/employee could not be reduced beyond the required 17.2-percent reduction, the impact for the office uses remains significant and unavoidable.

Note that the VMT per employee reductions apply to both Existing plus Project and Super Cumulative plus Project Conditions. Therefore, application of these measures for the project's office land uses for Super Cumulative plus Project Conditions would reduce the project's impact to less than significant. This is due to the fact that the 12.3-percent reduction exceeds the required 10.8-percent reduction for Super Cumulative plus Project Conditions.

The calculations to determine the effectiveness of each mitigation measure are based on two separate methodologies: Sacramento County Transportation Management Association (TMA) participation and calculations provided in CAPCOA's most recent version of its VMT mitigation handbook, *Handbook for analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*[2]. The methodology and calculations for each mitigation measure are outlined below.

TMA Participation

TMA Selection

As shown in Table 3, there are 13 Sacramento area TMAs, of which nine have formal MOUs established with SACOG[3] and 7.2-percent of eligible employees participate. However, all TMAs are not equal in relevance and with concurrence from Sacramento County[4], a subset of TMAs were taken that are more representative of the one to be set up for Jackson Township. The five TMAs chosen to better represent the Jackson Township TMA include the 50 Corridor TMA, the Placer county Transportation Planning Agency (PCTPA) TMA, the Power Inn Alliance TMA, the Sacramento TMA, and the South Natomas TMA.

[2] *Handbook for analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*. California Air Pollution Control Officers Association (CAPCOA). January 2022.
[3] *SACOG Federal Congestion Management Process*. SACOG. June 30, 2017.
[4] *Email with Cameron Shew at Sacramento County*. April 12, 2022.

Table 3 – TMA Participation in the SACOG Region

TMA-TMO ID	TMA NAME	Employers 2012	Employees 2012	TMA Area sq miles	Number of TMA Employers	Number of TMA Employees	Number of TMA Participants	% of Participants in Participating Employers	% Employers in TMA	% of Employees in TMA	% of TMA Participants
1	50 Corridor TMA	6,927	88,024	89	56	24,436	1,875	7.7%	0.8%	27.8%	2.1%
2	City of Elk Grove	7,246	53,070	1,790	1	6	2	33.3%	0.0%	0.0%	0.0%
3	City of Roseville	2,292	21,035	36	61	6,772	149	2.2%	2.7%	32.2%	0.7%
4	El Dorado County Transportation Commission	138	2,134	4	193	2,560	275	10.7%	139.9%	120.0%	12.9%
5	McClellen Park TMA	1,030	8,645	11	42	1,909	63	3.3%	4.1%	22.1%	0.7%
6	North Natomas TMA	8,525	70,196	1,457	2	15,007	18	0.1%	0.0%	21.4%	0.0%
7	Placer County Transportation Planning Agency	4,514	45,572	20	12	2,824	244	8.6%	0.3%	6.2%	0.5%
8	Point West Area TMA	2,698	32,820	16	99	8,357	158	1.9%	3.7%	25.5%	0.5%
9	Power Inn Alliance	4,358	56,558	42	117	37,212	1,160	3.1%	2.7%	65.8%	2.1%
10	Sacramento TMA	11,447	113,192	68	224	103,579	10,327	10.0%	2.0%	91.5%	9.1%
11	South Natomas TMA	785	8,248	6	195	6,869	829	12.1%	24.8%	83.3%	10.1%
12	Yolo TMA	5,833	85,899	1,023	26	19,048	1,361	7.1%	0.4%	22.2%	1.6%
13	Yuba-Sutter TMA	4,276	41,116	1,252	5	2,589	88	3.4%	0.1%	6.3%	0.2%
	TOTAL TMA areas	**60,069**	**626,509**	**5,814**	**1,033**	**231,168**	**16,549**	**7.2%**	**1.7%**	**36.9%**	**2.6%**
	Non TMA areas	**13,571**	**273,660**								
	Regional Totals	**73,640**	**900,169**						**1.4%**	**25.7%**	**1.8%**

Sources: SACOG Employment Inventory 2012; Commuter Club registration June 2016
1 - McClellan park has grown significantly in number of employers and employees between 2012 and 2016.

VMT per Capita and VMT per Employee Reduction Calculations

Using the five TMAs chosen to better represent the Jackson Township, the calculated percent of participants in participating employers is 8.3-percent. Thus, one can infer that if all employees of the employers within the Jackson Township TMA, an 8.3-percent VMT per employee reduction can be taken. Additionally, 56.1-percent of employees work for a participating employer within these five TMAs and based on how Jackson Township's population is represented in SACSIM, 45-percent are workers. Therefore, a 2.1-percent reduction could be applied to VMT per capita based on the calculation of 56.1% x 8.3% x 45% = 2.1%.

Programs/Projects within TMA and Associated Reductions

To determine which types of programs and projects could be considered for inclusion within the Jackson Township TMA, a review was taken of the programs and projects included within the five existing TMAs chosen to be representative of the Jackson Township TMA. SACOG's *Congestion Management Process* report contains a table on page 87 that summarizes the programs and projects within each TMA. After review of the five representative TMAs, three programs and projects were chosen for inclusion that combined, would equal or exceed the calculated 8.3-percent reduction. These programs are outlined below:

- Commute Trip Reduction Marketing: CAPCOA's VMT Mitigation Handbook's mitigation measure T-7 indicates that implementing a commute trip reduction marketing program at eligible employers can reduce VMT by up to 4-percent. As stated in the Handbook, "Information sharing and marketing promote and educate employees about their travel choices to the employment location beyond driving such as carpooling, taking transit, walking, and biking, thereby reducing VMT and GHG emissions." The reduction calculation is based on the percentage of employees that are eligible to get involved with the program. As it is assumed that 100-percent of employees will be eligible to be involved with a ridesharing program, the full 4-percent reduction can be taken. The requirements associated with this mitigation measure include an onside or online commuter information services, employee transportation coordinators, and a guaranteed ride home service as described below. These features of the trip reduction marketing program are generally consistent with how other TMAs operate in the County. For example, the 50 Corridor

TMA has an employer-based marketing where staff time and materials are spent on promoting alternative modes of travel, promoting regional trip reduction programs, encouraging employers to offer incentives to reducing trips, and promoting local trip reduction programs. In addition, training and education is provided for employee transportation coordinators as part of the 50 Corridor TMA.

- Guaranteed Ride Home: While not a standalone measure, the guaranteed ride home program is an essential component of several of the mitigations included both within the TMA and additional measures implemented in addition to the TMA. To ensure that employees have the flexibility to adapt to the challenges and circumstances they are presented with day-to-day, they must be sure that if they are without a personal vehicle, they are always able to return home. For example, if an employee is required to work later than when the last available carpool leaves or transit options are no longer available, the only remaining option would be the guaranteed ride home program. If this is not provided, employees may think they need their personal vehicle for flexibility purposes, even if the situation is rare where no other options exist. Thus, to bolster the effectiveness of the mitigations implemented, a guaranteed ride home program must be included.
- Provide Employer-Sponsored Vanpool: CAPCOA's VMT Mitigation Handbook's mitigation measure T-11 indicates that implementing an employer-sponsored vanpool service can reduce VMT by up to 20.4-percent. This is based on a calculation that uses the percent of employees that participate in the vanpool program, the average length of a one-way vehicle commute trip, and various constants to calculate the VMT reduction. Based on data from the CAPCOA Handbook, the average one-way vehicle commute trip length for the Sacramento-Roseville-Arden Arcade region is 14.23 miles. In addition, CAPCOA indicates that the average percentage of employees that participate in a vanpool program is 2.7-percent. This results in a VMT reduction of 4.6-percent. As the CAPCOA Handbook states that this mitigation measure is more appropriately implemented by the employer rather than the developer, each employer will be required to participate in the Jackson Township TMA and as such, will be required to have an individual monitoring program. This Transportation System Monitoring (TSM) plan that is developed and implemented with each employer will enable the vanpool mitigation measure to be implemented with each employer.

When adding the 4-percent reduction for the commute trip reduction marketing program with the 4.6-percent reduction for the employer-sponsored vanpool, a total TMA reduction of 8.6-percent is obtained. However, the previously calculated 8.3-percent total reduction which is based on existing TMAs in the Sacramento region representative of the Jackson Township TMA was used for this analysis as it is based on local data.

Electric Bikeshare: CAPCOA's VMT Mitigation Handbook's mitigation measure T-22-B indicates that implementing an electric bike share program results in a maximum VMT mitigation of 0.05-percent. This reduction is based on a calculation that uses the percent of the residences that have access to a bike share system with and without the implementation of the program to calculate the reduction. The reduction is also based on the average vehicle trip length within the Sacramento-Roseville-Arden Arcade area. Using this trip distance and the equation to calculate the reduction within the CAPCOA Handbook, a reduction of 0.05-percent was calculated.

Electric Scootershare: CAPCOA's VMT Mitigation Handbook's mitigation measure T-22-C indicates that implementing an electric bike share program results in a maximum VMT mitigation of 0.06-percent. This reduction is based on a calculation that uses the percent of the residences that have access to a scooter share system with and without the implementation of the program to calculate the reduction. The reduction is also based on the average vehicle trip length within the Sacramento-Roseville-Arden Arcade area. Using this trip distance and the equation to calculate the reduction within the CAPCOA Handbook, a reduction of 0.06-percent was calculated.

Provide Pedestrian Network Improvement: CAPCOA's VMT Mitigation Handbook's mitigation measure T-18 indicates that constructing sidewalks to improve pedestrian access within differing land uses can reduce VMT by up to 6.4-percent. This is based on a calculation that uses the existing sidewalk length in the study area and the sidewalk length in the study area with the measure to calculate the reduction. As there are no existing sidewalks within the project area, but it is expected that sidewalks will be constructed to connect the residential and non-residential land uses within the project, it was conservatively assumed that a 1-percent reduction in VMT per capita could be taken with implementation of this measure.

Provide Ridesharing Program: CAPCOA's VMT Mitigation Handbook's mitigation measure T-8 indicates that implementing a ridesharing (carpooling) program can reduce VMT by up to 8-percent. However, according to Table T-8.1, this 8-percent maximum is only applicable in urban contexts while a 4-percent maximum is applicable to suburban contexts. Therefore, the 4-percent maximum rather than the 8-percent maximum was used for this mitigation measure. The VMT maximum reduction is based on the percentage of employees that are eligible to get involved with the program. As it is assumed that 100-percent of employees will be eligible to be involved with a ridesharing program, the full 4-percent reduction can be taken.

Findings

Based on the results of this analysis, the following findings are made:

- As shown in **Table 1**, Jackson Township's VMT per capita will need to be reduced by 1.7-percent to achieve the regional threshold for residential uses and its VMT per employee will need to be reduced by 17.2-percent to achieve the regional threshold for office uses for Existing plus Project conditions. These results indicate that Jackson Township has a finding of a **significant impact** for residential and office land uses for Existing plus Project conditions.
- As shown in **Table 1**, Jackson Township's VMT per capita is 12.0-percent below the regional threshold for residential uses, but its VMT per employee will need to be reduced by 10.8-percent to achieve the regional threshold for office uses for Super Cumulative plus Project conditions. These results indicate that Jackson Township has a finding of a **less than significant impact** for residential land uses, but a finding of a **significant impact** for office land uses for Super Cumulative plus Project conditions.
- As shown in **Table 2**, when implemented, the mitigation measures outlined herein will result in reducing the project's VMT per capita by 3.0-percent and the VMT per employee for office land uses by 12.3-percent. These results exceed the required 1.7-percent and 10.8-percent reductions, respectively, required to mitigate the project's VMT impact for residential uses for Existing plus Project Conditions and the office land uses for Cumulative plus Project Conditions. Therefore, these impacts can be reduced to **less than significant**. However, these results do not exceed the required 17.2-percent reduction required to mitigate the project's VMT impact for office uses for Existing plus Project Conditions. Therefore, this impact remains **significant and unavoidable**.

Appendix TR-4

Roadway and Bicycle Network Characteristics Assumed in the Travel Demand Model for the VMT Analysis

DKS 428 J STREET, SUITE 340 • SACRAMENTO, CA 95814 • 916.368.2000 • DKSASSOCIATES.COM

MEMORANDUM

DATE: September 15, 2022

TO: Cameron Shew | County of Sacramento

FROM: David Tokarski | DKS Associates

SUBJECT: Jackson Township Modeling Assumptions Project #13049-000

As requested by the Jackson Township applicant group, this memorandum summarizes roadway and bicycle network characteristics assumed in our travel demand model used for the VMT analysis. Per direction from Sacramento County, a modified version of SACOG's SACSIM19 Activity-Based Model was applied for this study. This memorandum summarizes model network assumptions including roadway network, pedestrian/ bicycle network, and access control at project intersection locations. The proposed project includes the following roadways, trails, and transit lines:

- Thoroughfare
  - Jackson Road
- Four Lane Arterials
  - Kiefer Boulevard
  - Excelsior Road
  - Grenville Drive (north and south portions)
  - Street A (south most portion)
- Two Lane Collectors
  - Excelsior Road (town center)
  - Grenville Drive (central portion)
  - Street A (north portion and small length to the south)
  - Streets F and H
  - Township Drive (town center portion)
- Two Lane Residential Streets
  - Street A (central portion)
  - Streets I and J

- Class I Regional Bikeway
    - From southwest corner of project (at intersection of Jackson Road and Excelsior Road) to eastern boundary of project (along Township Drive)
- Class I Bikeway (Off-Street Bike Path)
    - Along portions of Street K, Street I, and Street J
    - In eastern portion of project (from Kiefer Boulevard to Township Drive)
- Class II Bikeway (On-Street Bike Path)
    - Along Street H, Street F, Street A, and Street I
- Class I and Class II Bikeway (On-Street Off-Street Bike Path)
    - Along Kiefer Boulevard, Excelsior Road, Jackson Highway, and Grenville Road
- Class II (One Side Only)
    - Along Street E, Street B, and Street C
- Transit Route (Bus)
    - Along portions of Excelsior Road, Kiefer Boulevard, Grenville Drive, Jackson Road, Street A, and Township Drive (15-minute peak, 30-minute off-peak headways)

TRANSPORTATION NETWORK

The transportation network used in the SACSIM19 travel demand model consists of a "stick figure" network representing the roadways of the six-county SACOG region. For each model scenario, the roadway network includes the following main attributes that define the characteristics of the roadways in the region. Roadway characteristics include CAPCLASS (capacity class, or roadway type), LANES (lanes per direction), and SPEED (estimated "free flow speed").

The network also includes links coded as pedestrian/ bicycle paths and coded as Class I, Class II, or Class III, as shown on Figure 1. A transit "line" file is also included among the model runs input and is a text file specifying each route based on model network nodes, peak and off-peak headways, speeds relative to free flow traffic, and vehicle type (i.e., bus or light rail). The model takes into consideration the presence of trails, transit, and roadway "friction" when splitting trips by mode (e.g. walk/bike, transit, drive solo, or carpool), assigning traffic volumes, and calculating vehicle miles traveled (VMT).

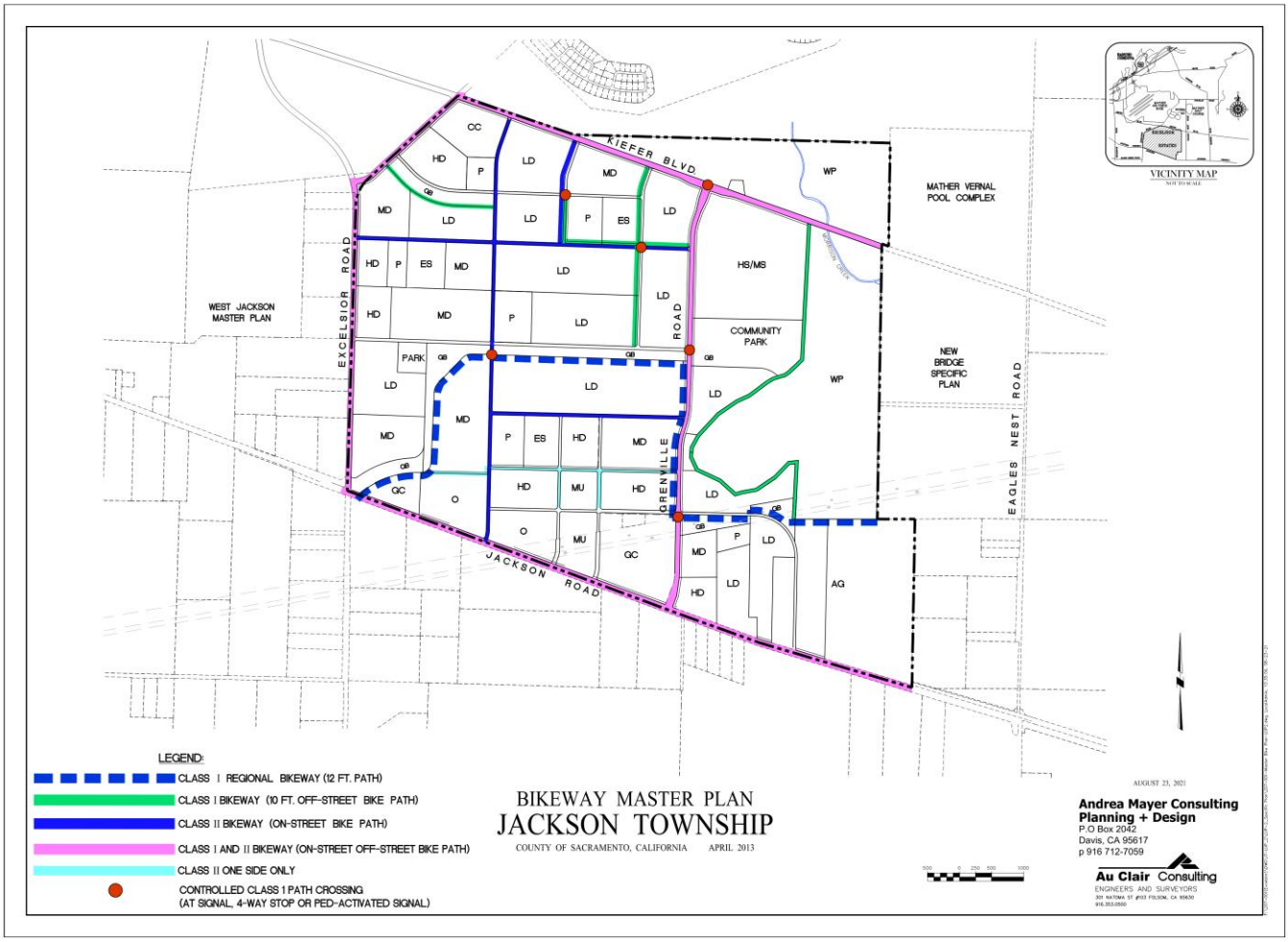


FIGURE 1: JACKSON TOWNSHIP BIKEWAYS

TRANSPORTATION NETWORK ACCESS

In the roadway network, each roadway "link" represents the connection between two "nodes" or points. Nodes can represent multiple aspects of the roadway system, including junctions or intersections between crossing roadway segments, vertices along roadway segments (i.e., to represent roadway curvature), or zone (TAZ) "centroids" representing the estimated center of land use for a given zone. Network access is specified by a number of rules or additional input files. One rule for access is that only vehicles traveling to or from a given zone can access that zone's centroid connectors. Vehicles cannot use centroid connectors as a "cut-through" between two roadways.

Access between roadways or centroid connectors can be controlled by turn prohibitions. Turn prohibitions are coded into a separate text file as an input to the model. This text file consists of one row of text for each prohibited movement. Thus, if an intersection disallows one movement (i.e., a left turn out at a "T" intersection) there would be one row for that intersection. If an intersection disallows two movements (i.e., both a left turn-out and a left turn-in) there would be two rows for that intersection. Each row consists of a set of three nodes (from, through and to) where the

"through" node represents the intersection itself. **Table 1** shows the node numbers for each controlled intersection ("through") and each of the "from" and "to" nodes associated with that intersection as it is represented in the turn prohibitions text file (model input file).

TABLE 1: TURN PROHIBITION LIST – JACKSON TOWNSHIP

INTERSECTION	FROM NODE	THROUGH NODE (INTERSECTION)	TO NODE	PROHIOBITED MOVEMENT
KIEFER BLVD & STREET J	11843	25564	25619	Westbound Left
	25619	25564	25565	Northbound Left
KIEFER BLVD & STREET A	25565	25566	25626	Westbound Left
	25626	25566	25568	Northbound Left
JACKSON ROAD & STREET A	25573	25572	25717	Southbound Left
JACKSON ROAD & STREET B	25580	25579	25572	Southbound Left
	25586	25579	25580	Eastbound Left
JACKSON ROAD & TAZS 1622,1623	1622	25595	25586	Southbound Left
	1623	25595	25586	
	3620	25595	1622	Eastbound Left
	3620	25595	1623	
JACKSON ROAD & STREET D	6017	25596	25597	Eastbound Left
	25597	25596	25769	Southbound Left
EXCELSIOR ROAD & TAZ 1632	1632	25624	25618	Westbound Left
	3649	25624	1632	Southbound Left
JACKSON ROAD & TAZ 1577	1577	25717	6017	Southbound Left
	25572	25717	1577	Eastbound Left

Source: DKS Associates, 2022.

JACKSON ROAD ASSUMPTIONS

Along the southern border of the Jackson Township Specific Plan, Jackson Road is coded as a Major Arterial with two lanes each direction (the travel demand model does not accommodate center two-way left turn lanes) and a free flow speed of 45 mph. The Sacramento County General Plan ultimately identifies this section of roadway as a six-lane roadway. The southern border of Jackson Township comprises approximately 2.0 miles of Jackson Road.

Within that 2-mile span, three signals are assumed, one at Excelsior Road on the western edge of the project, a second approximately 0.43 miles to the east at Street A, and a third approximately 0.57 miles further east at Grenville Drive. An access controlled centroid connector (right-in right-out) is assumed approximately one-third of the distance between Excelsior Road and Street A. It should be noted that this access is nonspecific and merely represents access from project parcels. No left turns are allowed in or out of this zone connector. Two access-controlled intersections and one access-controlled zone connector are assumed between the signals at Street A and Grenville Drive. Street B is located approximately 1/5 mile east of Street A and disallows left turns into or out of the side street. Street C is located approximately 1/8 mile east of Street A and disallows left turns out of the side street but allows left turns into the side street from Jackson Road. Another access controlled centroid connector (right-in right-out) is assumed halfway between Street C and Grenville Drive. A final access-controlled intersection is located at Street D, approximately 1/3 mile east of Grenville Drive.

The intersection spacing identified in the Specific Plan circulation diagram is represented as closely as possible in the SACSIM19 model network, with spacing reviewed by County staff and consistent with County standards.

THOROUGHFARE ANDARTERIAL ROADWAYS – MODERATE ACCESS CONTROL

The County of Sacramento identifies roadways such as Jackson Road, Kiefer Boulevard, and Excelsior Road as thoroughfare or arterial roadways with moderate access control. The County specifies that these roadways have no more than 2 to 4 stops per mile (signals) with limited driveways (per County code) and design speeds of between 35 and 45 miles per hour. The model network has been coded with the following free flow speeds:

- Jackson Road: 45 mph
- Kiefer Road: 40 mph
- Excelsior Road: 40 mph
- Grenville Drive: 40 mph

The model network is consistent with the project circulation diagram and includes three signals along the roughly two miles of Jackson Road project frontage, including full access intersections at Excelsior Road, Street A, and Grenville Drive, with three additional right-in-right-out intersections at Street B, Street C, and Street D. The three signals within a roughly two mile stretch is consistent with the County standard of 2 to 4 stops (including signals or stop signs) per mile. Additional right-in-right-

out controlled access is assumed at a number of traffic analysis zone (TAZ) "centroids" in the model network. Each of these generally represents any smaller access-controlled driveways that might be constructed between the major intersections.

Similarly, the model network is consistent with the project circulation diagram and includes two signals along the roughly two miles of Kiefer Boulevard project frontage, including full access intersections at Excelsior Road and Grenville Drive, with one full access stop sign at Street I and two additional right-in-right-out intersections at Street A and Street J. The three stops (two signals and one stop sign) within a roughly two-mile stretch is consistent with the County standard of 2 to 4 stops per mile.

Along Excelsior Road, the model represents the project circulation diagram with four full access intersections between Jackson Road and Kiefer Boulevard (Kiefer Boulevard, Street H, one unnamed location south of Street G, and Jackson Road). Again, the four stops (signals) along the roughly two mile stretch of roadway is consistent with County standards of 2 to 4 stops per mile.

Grenville Drive, along the eastern boundary of the project, is identified in the circulation diagram as an arterial for the northern and southern portions of the project and as a collector in the middle. The northern arterial section of Grenville Drive is about one mile long and includes three signals (at Kiefer Boulevard, Street H, and Street G). The southern section of Grenville Drive is about ½ mile long and includes two signals (at Township Drive and Jackson Road). Both of these arterial sections of Grenville Drive are consistent with the County's standard of 2 to 4 stops per mile for moderate access arterial roadways.

In general, while a travel demand model does not represent every possible roadway or driveway access point, the model network for Jackson Township's internal roadways and the existing and planned roadways bordering the project is sufficiently detailed to represent the project and its access to the regional roadway network. Roadway free-flow speeds have been coded to be consistent with County standards and access control (prohibiting disallowed movements) has been coded using turn prohibitions in the model. All model tools available for network characteristics have been utilized to best represent the roadway network defined in the project description and project circulation diagram.

Appendix WS-1

Potable Water System Study

Jackson Township
Potable Water System Study

Prepared for:
Tsakopoulos Investments, LLC

Prepared by:
Stantec Consulting Service Inc.

August 10, 2017

Sign-off Sheet

This document entitled Jackson Township Potable Water System Study was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Tsakopoulas Investment, LLC (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.



Approved by _____

(signature)

Mark Smith, P.E.

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Executive Summary

The Jackson Township Specific Plan (SP or Project) contains 1391+/- acres and is proposed to be a self-sustaining, mixed use "complete" community, including a broad range of residential uses, employment, retail, supporting uses, recreational open space, and public uses. The Project is located in southeastern Sacramento County, and lies south of the Mather Specific Plan Area, east of Excelsior Road, north of Jackson Highway, and west of Eagles Nest Road, in the Vineyard Community, refer to **Figure 1-1**.

The purpose of this study is to: 1) Define the potable water system infrastructure needs for the Project, 2) Define what delivery system is needed to serve the Project, 3) Analyze the water system for the Buildout and Existing plus Project scenarios relative to the NSA region, and 4) Verify that the proposed water system is compatible with and a subset of the regional improvements as proposed in the *Zone 40 Water System Infrastructure Plan Update (WSIP),* September *2016, Brown and Caldwell (B&C), Zone 40 Jackson Township Water Supply Master Plan Amendment (JTWSMPA),* September 18, 2015, B&C. The hydraulic modeling performed in this task includes the analysis of the aforementioned scenarios in order to evaluate system performance and to verify that SCWA's operating criteria will be met from initial development stages through Buildout of the Project.

According to the JTWSMPA, available supplies (consisting of surface water, groundwater, and other sources) will be adequate to meet the Project's annual water demands for normal and dry year conditions, since supplies are shown to exceed NSA Buildout demands (source: JTWSMPA, Tables 7-8 and 7-9). Supply and water treatment Improvements are addressed in the JTWSMPA, and the CIP lists the projects needed to serve new growth regions within the NSA. With an initial phase capacity of 50 MGD, the Vineyard Surface Water Treatment Plant (VSWTP) will be capable of supplying treated water needs of the NSA in the near term.

The SCWA is in the process of completing the Phase A (P-10) NSA Project, which will convert the 30-inch Excelsior main to a treated water supply line (capacity of 15.8 MGD), with deliveries made to the Anatoila Terminal Storage and Pumping facility (Anatolia facility), refer to **Figure 6-1**. The initial phases of the Project will rely on use of existing available storage and pumping capacity in the NSA main zone, which includes the facilities as listed in **Table 2-1** and shown on **Figure 2-1**. At Buildout, the Project will incorporate supply deliveries from the regional 54-inch T-main, which will deliver treated water to the future NSA Terminal Storage and Pumping facility and be distributed through other future transmission mains proposed to serve the NSA.

Initial Project phases are proposed to be served by the extension of two independent transmission mains (T-mains) (north and south) and a T-main extension from the Anatolia Development. One T-main will extend from the Project's east boundary in Kiefer Boulevard to the connection point at the intersection of Sunrise and Kiefer Boulevards. The second T-main will extend from the SP east boundary to the east along Jackson Road and then to the north in Sunrise Boulevard to the connection point at the intersection of Kiefer Blvd. The existing 16-/24-inch loop within the Sunrise-Douglas area will need to be completed back to the Anatolia facility

to maintain adequate deliveries through a looped system to the connection point at the intersection of Sunrise/Kiefer Blvds. (**Figure 6-1**). The looped system will meet SCWA and State CCR Title 22 requirements for a secondary connection to serve the Project under normal operating conditions and in the event of a short-term outage of a supply T-main.

Based on the proposed SP land uses as listed in **Table 3-1**, a total of 6,315 D.U.s are proposed with the Project. Utilizing the Unit Water Demand Factors (UWDF) as developed in the *JTWSMPA, Table 9-10,* the Project is anticipated to have an annual average demand of 2,374.6 AF (including 7.5% system losses). Maximum Day Demands (MDD) and Peak Hour Demands (PHD) of 2,944 and 5,888 gpm respectively, are used in network modeling.

Steady-state water distribution modeling was performed utilizing *H2O Net, V12.5, SP1, Update 2* to size the local mains and to evaluate the capabilities of the Buildout and Existing plus Project systems to meet SCWA's operating criteria. The modeling criteria and assumptions are discussed in Sections 4 and 5 and are based on the more conservative boundary conditions as provided by SCWA and B&C for Buildout simulations.

To satisfy CEQA requirements, the Existing Plus Project Buildout scenario is provided to show how water service could be provided to the SP as a standalone project. Since the Existing Plus Project Buildout scenario is highly unlikely to occur, a more typical development scenario is provided in the *JTWSMPA*. The Existing plus Project scenario reflects a 2013 level of growth within the NSA and Buildout of land within the SP. No demands have been included for the AG area or preserves.

For the Existing Plus Project scenario, additional demands were included in the NSA region, east of Sunrise Blvd., to conservatively reflect conditions when the Anatolia facility is operating at its maximum pumping capacity after the installation of three pumps (15,600 gpm - 6 duty and 1 redundant pump). The addition of three booster pumps at this facility is proposed as a Phase 1 improvement in WSIP Table 13. This approach is anticipated to reflect worst-case pressures at the connection point, prior to implementation of the NSA Phase B project. The Anatolia facility piping manifolds and pump curves are utilized in the Existing plus Project network to enhance model accuracy.

The Existing plus Project modeling results indicate that PHD service pressures will drop to 37.80 psi (D-main) and 40.03 psi (T-main) along the east side of the Project, which meets SCWA's operating criteria. The model results show that adequate fire flow deliveries can be maintained to schools and other parcels (**Figure 7-2**) above the minimum residual pressure requirements for fire flows. Once additional future T-mains are constructed as per the JTWSMPA, the modeling shows that minimum pressures above 40 psi can be maintained under PHD conditions.

The Buildout and Existing plus Project simulations reveal that a 20-/18-inch T-main in Kiefer Blvd., 20-/16-inch T-main in Jackson Road, and 16-inch T-main in Sunrise Blvd. will provide adequate service to the SP and will form the backbone transmission system that will also serve the initial project phases (**Figure 7-1**). This system can be expanded as needed to serve Phases 1–4.

The existing NSA main zone supply and storage facilities have adequate capacity to serve the Existing plus Project scenario (2013) as addressed in Section 6. The Existing plus Project scenario utilizes the full capacity of the Anatolia facility, which is assumed to be upgraded to 7 pumps as per the WSIP. Under this scenario, the NSA main zone pumping facilities will have a total capacity of 32.86 MGD, exceeding the Existing plus Project requirements of 23.28 MGD (**Table 6-2**). Adequate storage capacity (5.8 MG) is provided in the existing NSA main zone to meet the storage requirements of 5.35 MG (**Table 6-4**) for the Existing plus Project growth scenario. This study defers to the WSIP and JTWSMP for timing and implementation of the regional projects needed to increase supply, storage, pumping, and transmission capacity in the NSA region, and additional information is provided in Tables 8-9, B-17, and B-18 of the JTWSMPA.

The Existing plus Project and the NSA buildout modeling of the water transmission lines in Kiefer Blvd and Jackson Road as proposed in the Phase 1 development of the Jackson Township SP shows that the system will provide sufficient service capacity under all service conditions of the SP. However, as development occurs in the SP, other projects may be developing within the NSA zone. SCWA Staff monitoring of development may at some point show the subsequent need to develop new storage reservoirs and pumping facilities in the NSA. Should this condition occur, SCWA will commence on the development of the NSA Terminal Storage and Pumping Facility. This new storage and pumping facility will serve as the ultimate supply for the SP and other projects within the NSA. Therefore, it will be necessary to construct the P4 Eagles Nest Pipeline to extend service to the overall region. This line will be extended from the NSA Terminal Storage and Pumping Facility south through the Mather South SPA to a connection point with the 20 inch transmission main in Kiefer Blvd.

The Buildout runs reveal that 20-inch T-mains in the Kiefer Blvd. and Jackson Road (west of Eagles Nest Road), along with 16-inch T-mains in Grenville Drive, Kiefer Blvd., and Jackson Road (west of Grenville Drive) will suffice in meeting SCWA's operating criteria at Buildout. This scenario reflects completion of the looping mains as called for in the JTWSMPA. Twelve (12)-inch mains are proposed to be looped and connected back to the T-mains to form a reliable grid system. The proposed Buildout Water System is shown on **Figures 7-2 & 7-3** and described in Section 7.

Proposed Deviations from the WSIP and JTWSMPA

The water systems and modeling criteria as proposed in this study are a subset of and consistent with those as proposed in the WSIP and JTWSMPA, except for the following:

1. The 18-inch T-main in Kiefer Blvd., between Eagles Nest Road and Sunrise Boulevard as shown on Figure 2-2, is proposed to be shifted to the north to Kiefer Blvd. This will maintain the T-main within an established roadway corridor rather than be aligned through a proposed future development. The timing for dedication of public Rights-of-Way for water main installation within the New Bridge Project is unknown.
2. The water demands as shown in Table 3-1 are within 15% of those listed in the JTWSMPA for buildout of the SP.

Abbreviations

ac.	Acre
ADD	Average Day Demands
AF or ac-ft	acre-feet
ac-ft./yr or AF/yr	acre-feet per year
Agency	Sacramento County Water Agency
CIP	Capital Improvement Plan
City	City of Sacramento
County	Sacramento County
CSA	Central Service Area
CVP	Central Valley Project
DU	dwelling unit
Fps	feet per second
ft.	Feet
fps or ft/Sec	feet per second
Gpd	gallons per day
gpm	gallons per minute
HDR	High Density Residential
HGL	hydraulic grade line
HL	head loss
JTWSMPA	Jackson Township Water Supply Master Plan Amendment
l.f.	lineal feet
Lbs	Pounds
LDR	Medium Density Residential

MDD	Maximum Day Demands
MG	million gallons
MGD	million gallons per day
M&I	municipal and industrial
NSA	North Service Area
P/QP	Public/Quasi Public
PF	Peaking Factor
PL	Public Law
PHD	Peak Hour Demand
Psi	pounds per square inch
Psf	pounds per square foot
SB	Senate Bill
SCWA	Sacramento County Water Agency or Agency
Sec or S	Second
s.f.	square feet
TC	Town Center
USB	Urban Services Boundary
UWDF	Unit Water Demand Factor
WMP	Water Master Plan
WSMP	Water Supply Master Plan
WSIP	Was Supply Infrastructure Plan
WTP	Water Treatment Plant
Zone 40	Sacramento County Water Agency Zone 40

1.0 INTRODUCTION

1.1 PROJECT OVERVIEW

The Jackson Township Specific Plan (Project, Specific Plan, or SP) contains approximately 1391+/- acres. The Project is proposed to be a self-sustaining, mixed use "complete" community, including a broad range of residential uses, employment, retail, supporting uses, recreational open space, and public uses. Development of the land use plan is estimated to result in approximately 6,415 dwelling units and a potential range of 1.3 to 2.9 million s.f. of employment, commercial services, and public land uses.

1.2 STUDY AREA

The Project is located in southeastern Sacramento County, and lies south of the Mather Specific Plan Area, east of Excelsior Road, north of Jackson Highway, and west of Eagles Nest Road in the Vineyard Community. Refer to **Figure 1-1** below for a map of the Specific Plan Area.



Figure 1-1 Jackson Township Location Map

The existing land within the SP is primarily undeveloped and vacant, or is used for cattle grazing. The terrain within the SP gently slopes from the east to the west. Higher existing ground elevations of up to around 138 feet are located along the east side of the SP with low elevations of 74 to 90 feet on the west side of the Project along Excelsior Road.

1.3 PURPOSE

The purpose of this study is to: 1) Define the potable water system infrastructure needs for the Project, 2) Define what delivery system is needed to serve the Project, 3) Analyze the water system for the Buildout and Existing plus Project scenarios relative to the NSA region, and 4) Verify that the proposed water system is compatible with and a subset of the regional improvements as proposed in the *Zone 40 Water System Infrastructure Plan Update (WSIP), September 2016, Brown and Caldwell (B&C), Zone 40 Jackson Township Water Supply Master Plan Amendment (JTWSMPA),* September 18, 2015, B&C. The hydraulic modeling performed in this task includes the analysis of the aforementioned scenarios in order to evaluate system performance and to verify that SCWA's operating criteria will be met from initial development stages through Buildout of the Project.

1.4 OVERALL SYSTEM PLANNING ASSUMPTIONS

Various overall water system planning assumptions were made in this study, which are listed as follows:

- Only potable water system facilities are evaluated in this study. This study does not address non-potable or recycled water systems.
- As per SCWA requirements, the water facilities at Buildout shall maintain consistency with the NSA regional improvements as identified in the WSIP and JTWSMPA. Regional improvements or other alternatives were not evaluated in this study.
- As per SCWA letter, dated July 6, 2016, the SP will be served with water delivered from the Anatolia Terminal Storage and Pumping facility (Anatolia facility), and the connection to the existing system will be at the intersection of Kiefer and Sunrise Boulevards.
- The Vineyard Surface Water Treatment Plant (VSWTP) will provide surface water deliveries to the NSA, and its 50 MGD Phase 1 capacity will be adequate to serve the Project for the phases as identified in the JTWSMPA.
- SCWA is completing the Phase A (P-10) NSA Project to convert the 30-inch Excelsior raw water line to a treated water main, so that treated surface water deliveries can be made from the VSWTP to the Anatolia facility for use in the NSA.

- The SCWA plans to implement improvements to its NSA supply system prior to reaching capacity of the existing 30-inch Excelsior main, which is indicated to have a capacity of 15.8 MGD in the JTWSMPA.

- A secondary connection is required to in order to provide a reliable system meeting SCWA, Blue Book, and CCR Title 22 requirements for new water systems. The secondary connection will supply the Project under normal as well as emergency conditions, during a short-term T-main outage or if a T-main is removed from service for maintenance or repair.

- As per SCWA, Buildout systems modeling is to be based on the more conservative boundary conditions (starting pressures at the connection points) at the two locations as provided by SCWA (refer to **Figure 2-2**) or as provided by B&C for these locations (refer to Appendix A.6).

- The Existing plus Project simulations incorporate the Anatolia pump station piping manifolds, reservoir(s), and pump curves in order to more accurately reflect the existing facility and the flows/pressures that can be maintained at the connection point on Kiefer/Sunrise Boulevards.

- Connections to the existing Mather system are not envisioned with this Project, and flows to/from the Mather system or to projects located west of Excelsior Road are not included in the analyses. It is assumed that the system will ultimately be connected to the Mather system as per the JTWSMPA by others.

2.0 BACKGROUND

2.1 PREVIOUS STUDIES

The SCWA authorized the preparation of the *Jackson Township - Zone 40 Water Supply Master Plan Amendment (JTWSMPA)* (Brown and Caldwell–B&C, September 18, 2015) in order to address the potable water supply facility component of the Jackson Township Project. The JTWSMPA is a comprehensive document that includes information relative to water demand projections, adequacy of water supplies and treatment facilities, proposed water system facilities, and costs for the three scenarios as presented in the report. The major regional water supply, storage, and transmission facilities that are needed to serve the NSA, as well as the SP, are identified in the B&C, Sept. 18, 2015 report.

The past water system studies that are applicable to this effort are listed as follows:

- *Jackson Township - Zone 40 Water Supply Master Plan Amendment (JTWSMPA)* (Brown and Caldwell - B&C, September 2015)
- Zone 40 Water System Infrastructure Plan Update (WSIP) (B&C, September 2016)
- Zone 40 Water Supply Master Plan (MWH, February 2005)
- Zone 40 Water System Infrastructure Plan (MWH, April 2006)

2.2 EXISTING NSA WATER SYSTEM FACILITIES

2.2.1 Existing NSA Storage and Pumping Facilities

The NSA region currently includes several existing storage and pumping facilities as listed below in **Table 2-1**, which are capable of serving new projects within the NSA.

Table 2-1 Existing NSA Storage and Pumping Facilities

Name	Total Volume	Pumping Capacity	Pressure Zone
	(MG)	(mgd)	
Mather 1 Main Base Tank	1.0	5.2	NSA Main Zone
Mather 2 Elevated Tank @ Mather Airport	0.3	0	NSA Main Zone
Mather Housing	0.5	5.2	NSA Main Zone
Anatolia facility[2]	4.0	22.5	NSA Main Zone
North Douglas	3.0	19.4	NSA Upper Zone
Totals	**8.8**	**52.3**	

1. Source: JTWSMPA
2. Anatolia facility is included in the above totals based on completion of the Phase A Project and installation of 3 future pumps to achieve the buildout capacity as listed.

The VSWTP currently has 20 MG of storage and a pumping capacity of 75 MGD to serve the Zone 40 system as per JTWMP, Table 2-1. As currently configured, most of this capacity will serve the CSA region. Upon completion of the Phase A improvements, storage and pumping capacity at the VSWTP will assist serving the NSA region through supply deliveries in the 30-inch Anatolia pipeline to the Anatolia Terminal Storage and Pumping facility.

2.2.2 Existing NSA Pipelines

SCWA's system has been recently expanded to serve the Sunrise-Douglas SPA and other projects along the Douglas and Sunrise Boulevard corridors. The existing transmission and distribution systems in this region are generally proposed to be looped and tied to the Anatolia facility at Buildout. A connection will be made to the North Douglas Storage and Pumping facility located in the NSA upper zone, which will permit flows into the main NSA main zone under short-term fire flow or emergency conditions. SCWA's existing NSA facilities are shown on **Figure 2-1**.

The 16-inch main in Sunrise Boulevard has been extended from the Anatolia facility to the south to Kiefer Blvd., and a 24-inch main in Kiefer has been installed between Sunrise Blvd. and Rancho Cordova Parkway. The 24-inch main then extends north in Rancho Cordova Parkway to a point just south of Chrysanthy Blvd. (**Figure 2-2**).

As part of the Phase A Project, a 66-inch diameter main has been constructed from the VSWTP to the east in Florin Road to Excelsior Road, and a large diameter main was placed in Excelsior Road to connect to the 30-inch Anatolia supply main. SCWA staff indicated that they're securing the necessary permits, and the project is close to being put into service. For the purposes of this study, this project is assumed to be in operation.

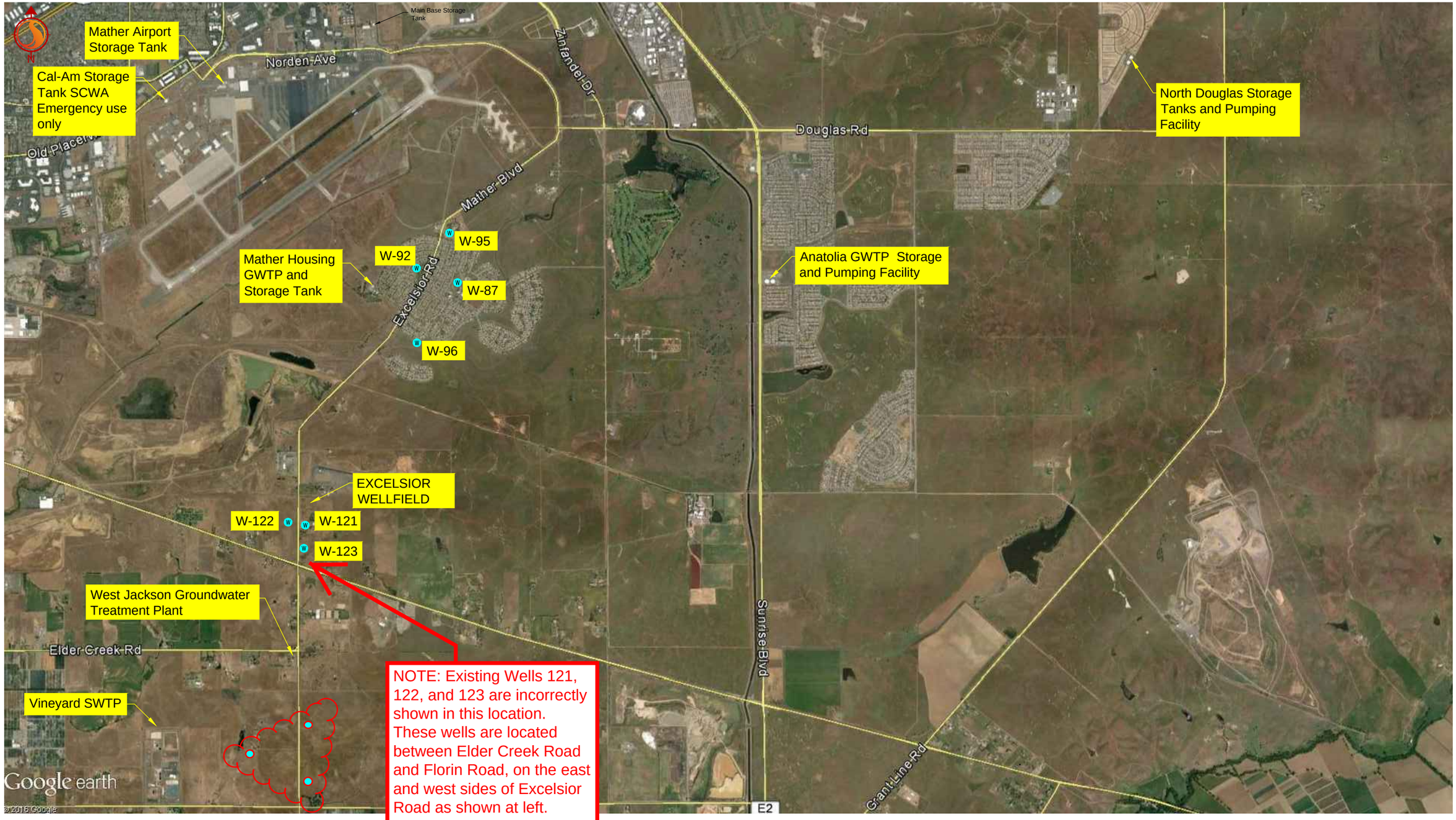
The Mather system has generally been designed as a stand-alone water system with a grid of smaller 6- to 12-inch mains with its own supply, treatment, storage, and pumping systems and is limited in its ability to supply any new growth. Cal Am has a 3 MG storage tank in the NSA that is available to SCWA for emergency purposes through an intertie to the Mather system. Additionally, a 16-inch main has been constructed to interconnect the Mather Housing area with the Main Base system.

2.3 SETTING/BACKGROUND

2.3.1 Zone 40 Service and NSA Service Areas

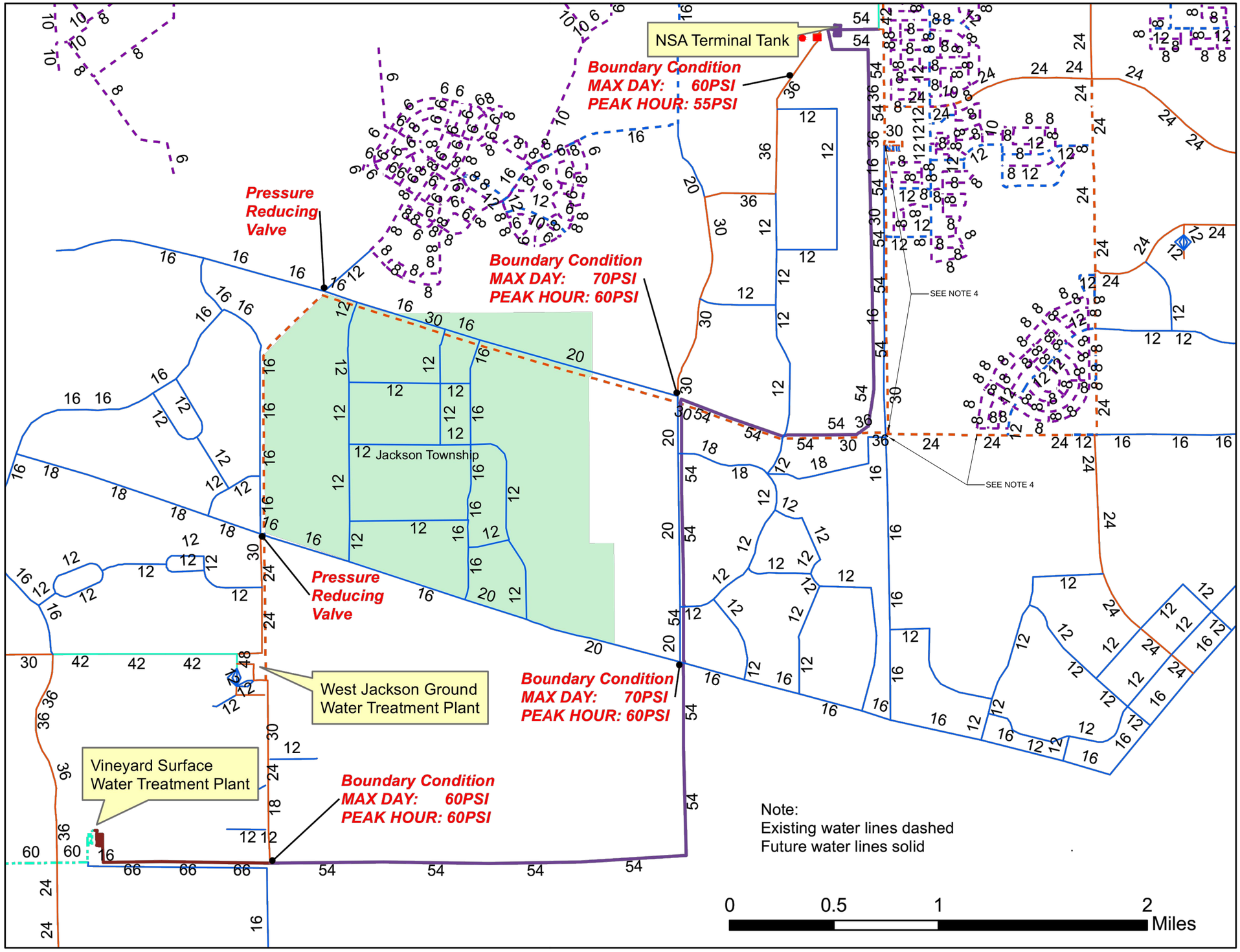
The Jackson Township SP is located within the Zone 40 service area of the Sacramento County Water Agency (SCWA) and the North Service Area (NSA). The NSA region includes the old Mather and Sunrise Corridor systems, Sunridge, and the new growth regions located north of Jackson Road and east of Excelsior Road.

Stantec



Y:\1840\active\184030537 Jackson Township Water Study\Incoming Data\CAD Files And Plans\2016-0422-JT LAND USE\xref\Report\30537-FIGURE 2-1.dwg
2016/09/07 1:35 PM By: Morales, Heather

Jackson Township Water Study
Existing Water System Facilities
Figure 2-1



Notes:
1. Existing water lines are dashed. Future water lines are solid.
2. Water main sizes and alignments as shown on this exhibit were provided by SCWA based on modeling provided by SCWA/B&C. The facilities were not evaluated in this study (provided for reference only).
3. Starting pressure boundary conditions for the buildout water model were provided by SCWA.
4. As per meeting with SCWA, portions of the 16" and 24" T-mains in Sunrise and Kiefer Blvd's have been constructed.

Note: This exhibit was provided by SCWA. The water mains and alignments as shown on this exhibit are not proposed in this study (refer to note 2). This drawing is included for reference purposes only. Refer to Section 7 for the facilities proposed in this study.

SCWA System Map
Existing Water System Mains & Buildout Boundary Conditions
Figure 2-2

2.3.2 NSA Water Supplies

The NSA region has been supplied with groundwater that was treated at the Anatolia GWTP and at other facilities. SCWA indicated that the Phase A (P-10) NSA Project is nearing completion. Once this project has been completed, surface water treated at SCWA's newly constructed Vineyard Surface Water Treatment Plant (VSWTP) will be delivered directly to the Anatolia storage tanks, and the facility will function as a terminal reservoir and pumping facility. The Anatolia groundwater treatment plant will be disconnected, and Excelsior Wells 1-3 will be placed in hibernation.

According to the JTWSMPA, the Phase A Project will allow up to 11,000 gpm (15.8 MGD) of supply to the Anatolia facility to serve the NSA main zone for several years until demand grows beyond the capacity of the pipeline. This flow will be available to meet maximum day (supply) demands in the system. SCWA will need to continue to make upgrades to its system to maintain proper levels of service within the NSA before the capacity of the 30-inch Excelsior pipeline is reached in order to avoid limitations in growth.

The current capacity of the VSWTP is 50 MGD with an ultimate capacity of 100 MGD. The plant's treatment processes include conventional surface water treatment and a large clear well. The plant has adequate capacity to supply the NSA and CSA regions in the near future. As per the JTWSMPA, surface water deliveries to the SP will be made from the VSWTP via the Anatolia Terminal Storage and Pumping facility. According to the JTWSMPA, available water supplies (consisting of surface water, groundwater, and other sources) will be adequate to meet the Project's annual water demands for normal and dry year conditions, since supplies are shown to exceed Buildout demands (source: JTWSMPA, Tables 7-8 and 7-9). Supply and water treatment Improvements are addressed in the JTWSMPA CIP, which includes the projects needed to serve new growth within the NSA through Buildout of the SP.

The Mather Housing area is currently supplied by three wells and a GWTP. SCWA has a memorandum of understanding with the Golden State Water Company (GSWC) to purchase up to 1,000 gpm of water through the Mercantile Intertie, which will serve to provide water to the NSA system in the event of an emergency.

2.3.3 System Development Background

Once the demand for treated surface water in the NSA exceeds the capacity of the 30-inch Excelsior pipeline, a new supply pipeline will need to be constructed. The new pipeline is envisioned to be part of Phase B NSA Project (S-1), which includes a 54-inch main extension from the VSWTP to the NSA Terminal Storage and Pumping facility and other transmission main improvements as shown on Figure 9-9 of the JTWSMPA.

The NSA S-1 Terminal Storage and Pumping facility is shown to be located just west of Sunrise Boulevard, between the Anatolia facility and Douglas Boulevard. The JTWSMPA indicates that there could be alternatives whereby additional storage facilities could be located in the

southern portions of the NSA to be supplied off of either the Phase A or B NSA pipelines that would assist in meeting the maximum day and peak hour demands in lieu of having the water delivered all the way to the NSA Terminal Storage and Pumping facility; however, regional facility improvements such as this option were not evaluated in this study.

Under Buildout of the NSA, the SP transmission system will interconnect with T- and D-mains proposed along and east of Eagles Nest Road and north of Kiefer Blvd. The 54-inch SCWA regional Phase B (S-1) pipeline is proposed in the JTWSMPA to extend along Eagles Nest Road along the east side of the Project and to the north of Kiefer Blvd. to deliver treated water to the NSA Terminal Storage and Pumping facility.

As per initial meetings between the Proponent and the SCWA, Agency staff determined that the SP should be served with deliveries from the Anatolia Terminal Storage and Pumping facility, which will necessitate the completion of the 16-/24" loop to the facility (Project P-5 or P-9) and the extension of off-site water main(s) from SCWA's existing system located at the intersection of Sunrise and Kiefer Boulevards to the Project.

In order to meet SCWA and State CCR Title 22 requirements, a second connection is included to provide normal and emergency service to the Project in the event of a short-term outage, or if a section of T-main needs to be maintained or repaired. This will be provided by the looped and dual feed T-main system.

3.0 PLANNING, LAND USES, AND WATER DEMAND PROJECTIONS

3.1 PROPOSED LAND USE PLAN

The Jackson Township Specific Plan is proposed as a self-sustaining, mixed use "complete" community including a broad range of residential uses, employment, retail and supporting uses, recreational, open space, and public uses, which are in symmetry and balance with the surrounding and planned land uses. The land use plan is estimated to result in approximately 6,415 dwelling units and a potential range of 1.3 to 2.9 million square feet (msf) of employment, commercial services and public land uses.

3.1.1 Buildout Land Uses

The Jackson Township SP is designated by the Sacramento General Plan with land use designations of Extensive Industrial and General Agricultural. The Jackson Township application was accepted and initiated by the Sacramento County Board of Supervisors on June 19, 2012. The SP is proposed to have a total of 6,315 D.U.s with a total acreage of 1,391 acres. The Proposed Land Use Plan acreages are listed in **Table 3-1**, and the proposed Land Use plan is shown on **Figure 3-1**.

3.1.2 Phasing Plan

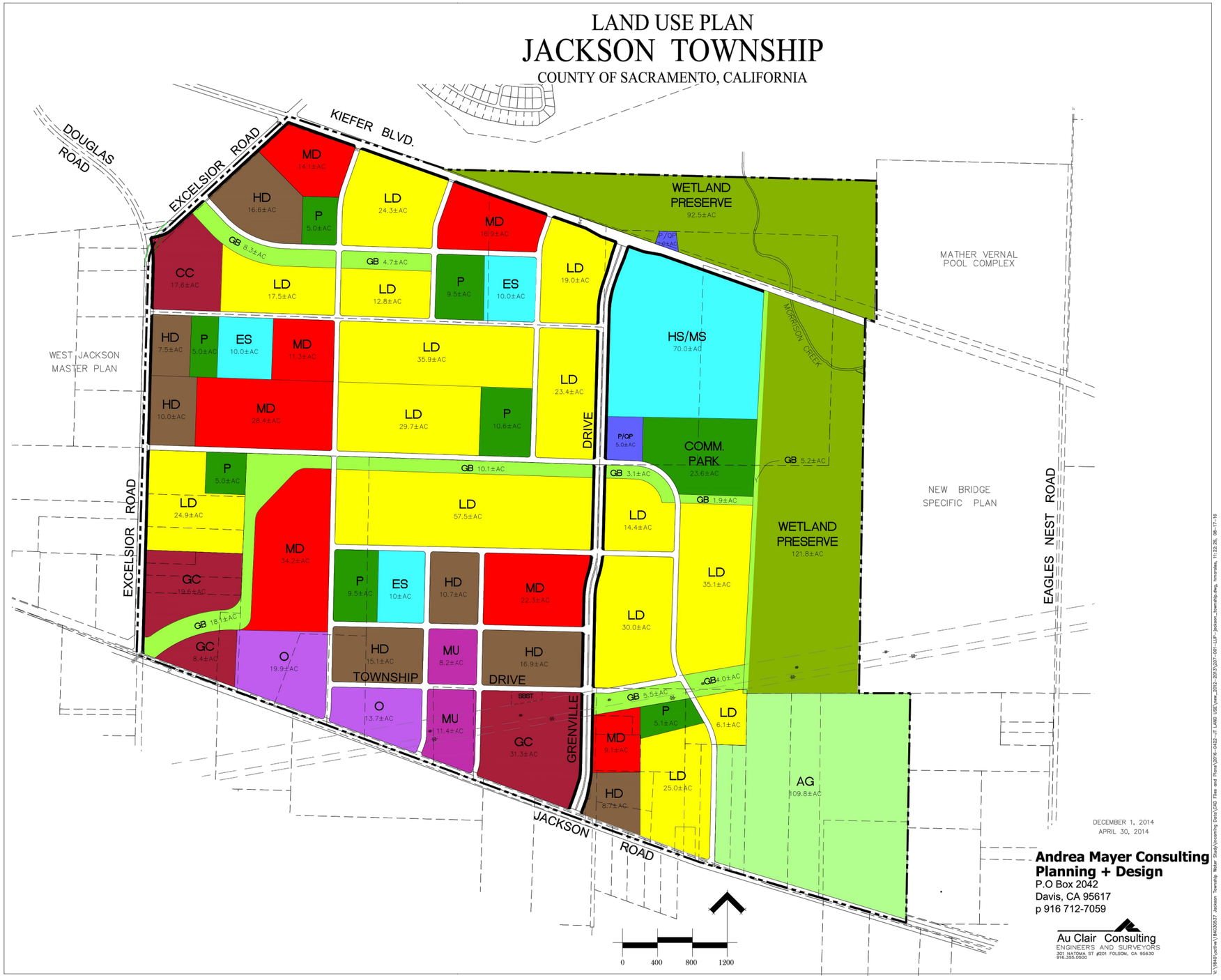
The proponent has developed a phasing plan for Jackson Township, which includes primary Phases 1-4. The initial Phase 1 is broken into two increments, which include: Phase 1A - LDR, MDR, HDR, Parks, and some Commercial. The High School is proposed in Phase 1B. Other phases are shown on the attached *Applicant Phasing Plan for Jackson Township* (Draft); refer to **Figure 3-2**. The system is anticipated to generally develop from the east side to the west with Phase 1 identified in the eastern and southern regions of the SP. Service to initial development phases is discussed in Section 6.

3.2 WATER DEMAND DEVELOPMENT

This study utilizes a land use based methodology to estimate the gross water demands for the Project and is consistent with past studies for areas within the NSA. The gross average annual demands are developed based on multiplying the land use acreage by a Unit Water Demand Factor (UWDF), which is expressed in terms of AF per acre per year (AF/ac/yr).

This methodology maintains consistency with the UWDFs as listed in the *JTWSMPA* for the projection of annual demands used to evaluate water consumption, supply, storage, and treatment facilities. The acres of each land use, UWDFs, and Average Annual Demands are listed below in **Table 3-1**.

LAND USE PLAN
JACKSON TOWNSHIP
COUNTY OF SACRAMENTO, CALIFORNIA



DECEMBER 1, 2014
APRIL 30, 2014

Andrea Mayer Consulting
Planning + Design
P.O Box 2042
Davis, CA 95617
p 916 712-7059

Au Clair Consulting
ENGINEERS AND SURVEYORS
301 NATOMA ST #201 FOLSOM, CA 95630
916.355.0500

Jackson Township Water Study
Land Use Map
Figure 3-1

J:\1840\active\184030537 Jackson Township Water Study\Incoming Data\CAD Files And Plans\2016-0422-JT LAND USE\xref\Report\30537-FIGURE 3-1.dwg
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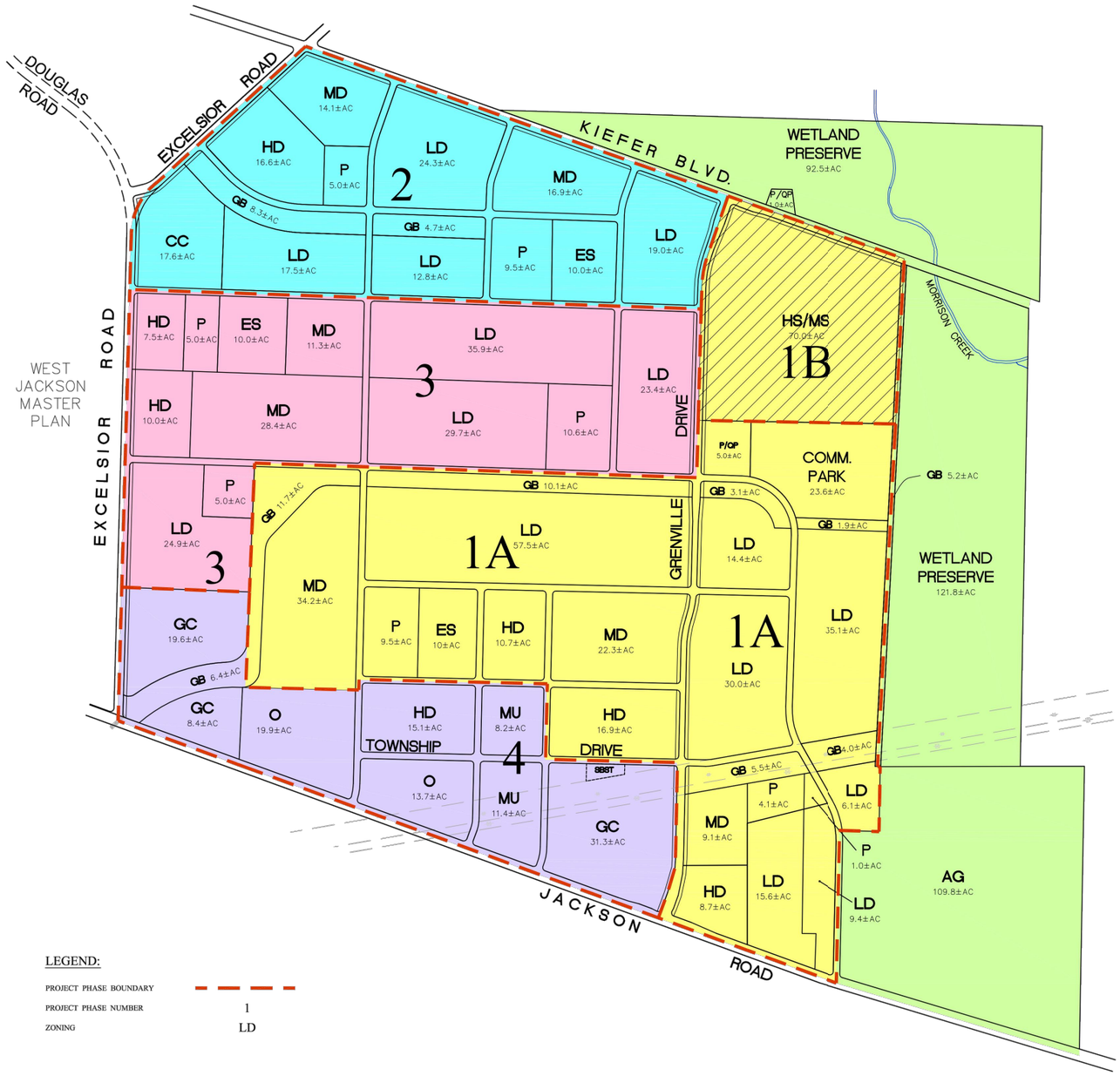
PHASING AREAS

JACKSON TOWNSHIP

COUNTY OF SACRAMENTO, CALIFORNIA



LEGEND:

PROJECT PHASE BOUNDARY

PROJECT PHASE NUMBER 1

ZONING LD

0 400 800 1200

JACKSON TOWNSHIP PHASING DYNAMIC DISTRICT SUMMARY

PHASE	D.O.T. PHASE	ZONING														
		LD ACRE	LD UNIT	MD ACRE	MD UNIT	HD ACRE	HD UNIT	ES	HS/MS	P	GC	CC	MU	PQP	O	WL/ AG	TOTAL
1A	3	0	0	0	0	0	0	0	0	23.6	0	0	0	5.0	0	0	28.6
1A	5	57.5	345	56.5	735	10.7	267	10.0	0	9.5	0	0	0	0	0	0	149.3
1A	6	79.5	477	0	0	0	0	0	0	0	0	0	0	0	0	121.8	206.5
1A	8	31.1	187	9.1	118	8.7	217	0	0	5.1	0	0	0	0	0	0	55.1
1A	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109.8	109.8
1A	12	0	0	0	0	16.9	422	0	0	0	0	0	0	0	0	0	16.9
1B	3	0	0	0	0	0	0	0	70.0	0	0	0	0	0	0	92.5	162.5
2	1	17.5	105	14.1	183	16.6	415	0	0	5.0	0	17.6	0	0	0	0	70.8
2	11	56.1	337	16.9	220	0	0	10.0	0	9.5	0	0	0	0	0	0	92.5
3	2	89.0	534	0	0	0	0	0	0	10.6	0	0	0	0	0	0	99.6
3	4	24.9	149	0	0	0	0	0	0	5.0	0	0	0	0	0	0	29.9
3	10	0	0	39.7	516	17.5	438	10.0	0	5.0	0	0	0	0	0	0	72.2
4	4	0	0	0	0	0	0	0	0	28.0	0	0	0	0	0	0	28.0
4	7	0	0	0	0	15.1	378	0	0	0	0	0	0	0	33.6	0	48.7
4	12	0	0	0	0	0	0	0	0	0	31.3	0	19.6	0	0	0	50.9
TOTAL		355.7	2,134	136.3	1,772	85.5	2,137	30.0	70.0	73.7	59.3	17.6	19.6	5.0	33.6	324.1	1,221.3

APPLICANT DYNAMIC MODEL PHASING

JACKSON TOWNSHIP

COUNTY OF SACRAMENTO, CALIFORNIA

FEBRUARY 19, 2016

Andrea Mayer Consulting Planning + Design
P.O Box 2042
Davis, CA 95617
p 916 712-7059

Au Clair Consulting
ENGINEERS AND SURVEYORS
301 NATOMA ST #103 FOLSOM, CA 95630
916.353.0900

V:\1840\active\184030537 Jackson Township Water Study\Incoming Data\CAD Files And Plans\2016-0422-JT LAND USE\xref\Report\30537-FIGURE 3-2.dwg
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Jackson Township Water Study
Phasing Plan
Figure 3-2

Table 3-1 Land Use and Annual Average Demand Projections (Overall Project)

Land Use	Abbr.	Use	Avg. Density	D.U.	UWDF	Annual Demand
		Acres	Units/ac.	Units	AF/ac./yr.	AF
Low Density Residential	LD	353.1	6	2118.6	2.13	752.10
Medium Density Residential	MD	158.4	13	2059.2	2.44	386.50
High Density Residential	HD	85.5	25	2137.5	3.33	284.72
General Commercial	GC	39.7			2.02	80.19
Community Commercial	CC	17.6			2.02	35.55
Mixed Use	MU	19.6			2.15	42.14
Office	O	33.6			2.02	67.87
Fire Station/Community Center	P/QP	5.0			0.81	4.05
High School/Middle School	HS/MS	70.0			2.80	196.00
Elementary School	ES	30.0			2.80	84.00
Community Park	CP	23.6			2.80	66.08
Neighborhood Park	P	54.7			2.80	153.16
Wetland Preserve	OS	225.2			0.00	0.00
Greenbelt/Drainage Corridor	OS	59.1			0.00	0.00
Landscape Corridor	OS	14.5			2.80	40.60
Detention Basin	OS	3.2			0.00	0.00
Agriculture[5]	AG	109.3			0.00	0.00
Primary Roadways	RW	88.8			0.18	15.98
Subtotals		**1390.9**		**6315**		**2208.94**
Water Loss (7.5%)						**165.68**
Total						**2374.62**

1. Land use designations, density, acreage, and D.U. estimates were obtained from Table 1 of the *Jackson Township Specific Plan – Applicant Prepared Project Description, Revised 4-11-13.*
2. Population calculation is 6,315 D.U. x 2.64 pph, or 16,672 total.
3. UWDFs are consistent with those listed in Table 9-10 of the *JTWSMPA*.
4. School UWDF is assumed to be similar to Public Recreation use.
5. A demand of 0 AF is assigned to the AG property.

The SCWA conducted an analysis of metered residual connections in Zone 40 and developed UWDFs for rural residential, single family, multi-family low density, and multi-family high density uses for the years 2005 through 2012 (SCWA, 2013). The analysis shows a reduction in the UWDFs since the 2005 work was completed. The results show that potable water use has trended down in this time period.

Based on the assumed UWDFs and the Land Use plan, the Project is projected to have a total annual demand of 2,374.62 AF (2.12 MGD), including system losses, to serve an estimated population of 16,672. This equates to a MDD and PHD of 4.24 and 8.48 MGD respectively. The above projection is within 15% of that listed for Jackson Township in Table 9-10 of the *JTWSMPA*.

3.3 PEAKING FACTORS

Maximum daily demands are typically used to determine supply and production requirements, and a maximum day to average day demand factor of 2.0 is assumed. Peak hour demand projections are typically used for sizing pipelines and booster pump facilities, and a peak hour to maximum day demand factor of 2.0 is assumed. These system peaking factors are consistent with those as identified in the JTWSMPA.

3.4 WATER DEMAND PROJECTIONS USED IN HYDRAULIC MODELING

The Average Day Demand (ADD), Maximum Day Demand (MDD), and Peak Hour Demand (PHD) projections are listed below in **Table 3-2** and are based on the information contained in **Table 3-1** and the peaking factors as identified in Section 3.3.

Table 3-2 ADD, MDD, and PHD Projections (Buildout)

Land Use	Abbr.	Annual Demand w/7.5% Losses	ADD	MDD	PHD
		AF/yr.	gpm	gpm	gpm
Low Density Residential	LD	808.51	501.21	1002.42	2004.84
Medium Density Residential	MD	415.49	257.57	515.14	1030.28
High Density Residential	HD	306.07	189.74	379.48	758.96
General Commercial	GC	86.20	53.44	106.88	213.76
Community Commercial	CC	38.22	23.69	47.38	94.76
Mixed Use	MU	45.30	28.08	56.16	112.32
Office	O	72.96	45.23	90.46	180.92
Fire Station/Community Center	P/QP	4.35	2.70	5.40	10.80
High School/Middle School	HS/MS	210.70	130.62	261.24	522.48
Elementary School	ES	90.30	55.98	111.96	223.92
Community Park	CP	71.04	44.04	88.08	176.16
Neighborhood Park	P	164.65	102.07	204.14	408.28
Wetland Preserve	OS	0.00	0.00	0.00	0.00
Greenbelt/Drainage Corridor	OS	0.00	0.00	0.00	0.00
Landscape Corridor	OS	43.65	27.06	54.12	108.24
Detention Basin	OS	0.00	0.00	0.00	0.00
Agriculture	AG	0.00	0.00	0.00	0.00
Primary Roadways	RW	17.18	10.65	21.30	42.60
Totals		**2374.62**	**1472.08**	**2944.16**	**5888.32**

1. UWDFs are consistent with those listed in Table 9-10 of the *JTWSMPA with exceptions as listed in* ***Table 3-1***.
2. Annual average and ADD projections include 7.5% system losses.

4.0 WATER SYSTEM PLANNING CRITERIA

4.1 SCWA WATER SYSTEM OPERATING CRITERIA

The SCWA has established minimum water system operating criteria in order to maintain an appropriate level of service to customers within new growth areas. SCWA's operating criteria are listed in the Sacramento County Development Standards, the JTWSMPA, and the WSIP, in Table 5-14.

4.1.1 General System Criteria and Assumptions

The general system operating criteria assumed for this study are listed as follows:

- Water systems shall have a minimum of two supply connections, according to County Standards, the Blue Book, and CCR Title 22 requirements. This will provide redundancy in the event of a short-term outage or shut-down of a water main for repair/maintenance.
- Minimum system pressures during peak hour demand (PHD) (normal operating conditions) shall be 35 psi and 40 psi for D-mains and T-mains respectively.
- Maximum system pressures shall not exceed 65 and 75 psi for D-mains and T-mains respectively, except under special occurrences as noted herein. Pressures that exceed 65 psi shall be equipped with a pressure reducing valve (PRV) on each service connection.
- The required fire flow is to be provided under the maximum daily demand scenario at a minimum residual pressure of 25 psi and 20 psi for T-mains and D-mains respectively at the hydrant (including hydrant losses with all pipes on-line under normal conditions).
- Maximum velocities for D- and T-mains shall not exceed 5 fps under maximum day demand and 7 fps under peak hour demand conditions. Maximum velocities during maximum day demand plus fire flow conditions shall not exceed 10 fps.
- Maximum head loss shall be in the range of 3 to 5 feet per 1,000 feet of main.

4.2 FIRE FLOW ASSUMPTIONS

The water system must be sized to provide adequate fire flows at minimum residual pressures to all regions of the Project. The SP is located within the Sacramento Metropolitan Fire District (SMFD). The fire flows required by the SMFD are typically established by requirements in the Uniform Building Code (UBC) standards, the Uniform Fire Code (UFC), State, and local district requirements. UFC fire flow requirements are based on the size, type, exposure, and materials of

construction of each structure. The UBC now requires sprinklers within new residential structures, which became effective January 1, 2011.

SCWA typically requires water systems serving very large regions to be capable of supplying fire flows to two simultaneous 3,000 gpm fire flows or a single higher fire flow (based on land use) at Buildout. For Buildout and Existing plus Project growth scenarios, only one fire flow is assumed to be provided. Multiple fire flow scenarios are assumed for multiple large planning regions within the overall NSA. This will comply with SCWA, local, and State fire codes for new construction. The fire flow requirements and duration for each land use designation are listed below in **Table 4-1**.

Table 4-1 Fire Flow Requirements

Land Use	Fire Flow Requirements	Duration
	(gpm)	(hrs.)
Single Family Residential (<3,600 s.f.)	1,500	2
Single Family Residential (=>3,600 s.f.)	2,000	2
High Density Residential	3,000	3
Commercial	3,000	3
Industrial	4,000	4
School	4,000	4

1. Based on discussions with the Developer, proposed single-family residential homes are anticipated to be under 3,600 s.f.
2. Only one fire flow is assumed for Buildout and Existing plus Project scenarios.

4.3 PUMP STATION AND STORAGE FACILITY SIZING

4.3.1 Pump Station Sizing

Pump stations shall have the capacity to supply the higher of peak hour demands or the maximum daily demands plus fire flows, if they are equipped with storage facilities. Pumps that only make supply deliveries must be sized to meet the demands on the maximum day of use.

4.3.2 Storage Reservoir Sizing

The minimum volume of water to be stored is generally the sum of the following three components: 1) Equalization (Peaking) Storage, 2) Emergency Storage, and 3) Fire Flow storage. The volumes of these components are based on unique agency requirements. Based on the JTWSMPA, the criteria to be used for the NSA service area are listed below in **Table 4-2**.

Table 4-2 NSA Storage Reservoir Sizing Criteria

Component	Storage Criteria
Equalization Storage	20% of the MDD
Emergency Storage	33.3% of the ADD
Fire Flow Storage (SP)	Highest Fire Flow over Duration
Fire Flow Storage (overall NSA region)	2-3,000 gpm Fire Flows for 3 Hours

5.0 WATER SYSTEM MODELING

5.1 METHODOLOGY

The water distribution systems were modeled using *Innovyze H2O Net* software, V 12.5, SP1, Update #2. The software works within AutoCAD and is capable of performing comprehensive hydraulic steady-state and dynamic simulations, water quality modeling, energy management, real-time and control simulations, fire flow analysis, etc. The system relies on Bernoulli's equation and the EPA Net pipe flow equations for flow, friction-loss, and head-loss calculations.

Steady-state model runs were run to evaluate the backbone transmission and distribution mains serving Existing plus Project and Buildout growth levels. Extended period simulations were not performed, since the operation of storage reservoirs and pumping facilities were not evaluated in this study. The analysis was based on the criteria as provided by the SCWA and B&C.

5.1.1 ADD, MDD, Fire Flow, and PHD Simulations

Various simulations were run to evaluate the performance of the networks over generally accepted scenarios, which are listed as follows:

- **Average Day Demand (ADD)** scenarios are used to determine the overall average water supply and annual average demand needs of the Project. Low demand scenarios are typically run to evaluate maximum pressures under near static conditions.
- **Maximum Day Demand (MDD)** scenarios evaluate the system on the maximum day of use and to evaluate supply mains, production and storage facilities, and other facilities providing water to the SP.
- **Maximum Day Demand (MDD) plus Fire Flow** scenarios evaluate the performance of the networks during a fire emergency. These scenarios evaluate whether fire flow requirements can be met at the required minimum required residual pressures (refer to Section 4).
- **Peak Hour Demand (PHD)** scenarios represent the system during periods of peak use. PHD simulations are used to evaluate the capabilities of distribution, transmission, storage, and pumping facilities to serve the Project and the worst-case service pressures expected during normal operating conditions.

5.2 BUILDOUT SYSTEM MODELING

5.2.1 Model Development

Buildout model simulations verify that the on-site water transmission facilities are properly sized to meet SCWA's service criteria after implementation of the regional improvements as proposed in the JTWSMPA. The Buildout system model (including junction nodes, pipes, and other elements) is shown on **Figure A-1** in Appendix A.1. The major assumptions used to develop the Buildout system model are listed as follows:

- **Only Backbone Mains** (12-inch and larger mains) are included in the models. Other distribution mains (including 12-inch mains) are not included.

- **Starting Pressures -** SCWA provided starting boundary conditions that were extrapolated from the NSA regional water model. These starting pressures were based on the more conservative boundary conditions as provided by SCWA and by B&C. SCWA identified maximum day demand and peak hour demand simulation pressures of 70 and 60 psi accordingly at the intersections of Kiefer Boulevard/Eagles Nest Road and Jackson/Eagles Nest Roads – (**Figure 2-2**). B&C provided boundary conditions for these locations as per the information contained in Appendix A.6. It is assumed that SCWA's future system will be capable of maintaining these minimum starting pressures to the system.

- **Junction Node Elevations** are based on the proposed elevations taken from the *On-Site Mass Grading Plan Study – Jackson Township,* AuClair Consulting, Inc. (post grading). For regions where no grading is proposed, elevations are based on existing ground.

- **Demands** are apportioned to the nodes based on tributary service areas according to *the Buildout Demand Apportion Spread,* by parcel number/land use. A copy of this spreadsheet is *included* in Appendix A.2. The total demands for each node were compiled by ADD by node number, refer to *Buildout Demand Apportion Spread – Compiled by Node* in the Appendix. MDD and PHD projections are included in the model to reflect the peaking factors as discussed in Section 3.

- **Hazen-Williams "C" value** of 130 is used for pipe friction loss calculations. Minor losses for bends, valves, fittings, etc. are not included in this effort.

- **Analysis Criteria –** Refer to Section 4 – Water System Planning Criteria for additional water system planning assumptions and criteria used in the modeling.

- **Total head-**loss per 1,000 l.f. shall not exceed 5.0 feet for mains, except for potential fire flow events.

- **Hydrant and lead losses** are assumed to be 5 psi. It is assumed that additional hydrant(s) will be opened once the capacity of one or more hydrants is reached.

- **On-site Water Systems** will be sized/designed in the future on a project by project basis. To evaluate the capabilities of the system to serve the larger, more remote parcels, some on-site loops have been included to enhance the model precision. For fire system loops serving Commercial, High Density Residential, Public, and School uses, the on-site loops include head losses for double check backflow preventers, and fire flows are placed at multiple nodes (>1,500 gpm). Check valves are incorporated in the loops so that on-site systems do not contribute to the conveyance capabilities of the public system (refer to info in Appendix A.7).

- **Irrigation Demands** for areas to be irrigated are assumed to be served by the potable water system in this study as a conservative approach. If a non-potable system is developed in the future, it would free up capacity in the potable system.

- **Pressure Zones.** As consistent with the JTWSMPA, the SP systems are modeled as one service zone. PRVs are identified in the JTWSMPA to interconnect the system with the lower zone located on the west side of Excelsior Road. For purposes of modeling, these PRV stations are assumed to off-line during normal operating conditions, since the lower zone system is assumed to have its own supply delivery system.

- **Mather Intertie and Pipeline** are not included in this study.

5.2.2 Model Simulations

The ADD, MDD, and PHD simulations to portray the velocities, head losses, and node pressures under normal system operating conditions with both north and south T-mains in service. Run B4 shows high system pressures at the maximum HGL under very low demand (static) conditions. Runs B5 - B15 evaluate the capabilities of the network to deliver fire flows to the parcels within the SP under MDD conditions utilizing the fire flow criteria as discussed in Section 4. The Buildout system scenarios are listed below in **Table 5-1**.

Table 5-1 Buildout System – Model Scenarios

Run No.	Parcel & Land Use	Description
B1	-	ADD
B2	-	MDD
B3	-	PHD
B4	-	Max. HGL, Low Demand (High Static Pressure)
B5	38 – HS	MDD+4000 FF HS @ J146/J148
B6	43 – ES	MDD+4000 FF ES @ J184/J186
B7	49 – MD	MDD+3000 FF MD @ J216/J218
B8	35 – ES	MDD+4000 FF ES @ J206/J208
B9	27 – MD	MDD+3000 FF MD @ J210/J212
B10	8 – GC	MDD+3000 FF GC @ J164/J166
B11	3 – O	MDD+3000 FF O @ J150/J152
B12	17 – ES	MDD+4000 FF ES @ J170/J172
B13	12 – HD	MDD+3000 FF HD @ J174/J176
B14	15 – LD	MDD+1500 FF LD @ J132/J134
B15	6 – HD	MDD+3000 FF @ J160/J162

1. ADD, MDD, and PHD are considered normal operating conditions.
2. As per SCWA correspondence, emergency scenarios with one supply main offline will not be evaluated.

5.2.3 Model Results

The modeling results are tabulated within *H2O Net* by scenario, and can be viewed in printouts and in graphic color displays. The modeling results for the Buildout system are discussed below:

5.2.3.1 Worst Case Pressures

The worst case pressures within the SP for the Buildout scenarios are summarized below in **Table 5-2** and discussed in the following:

Table 5-2 Buildout System – Worst Case Pressures

Run No.	Node No.	Low Pressure	Notes
		(psi)	
B1 ADD	J160	66.05	-
B2 MDD	J160	65.71	-
B3 PHD	J160	54.13	East side
B4 Max.	J84	-	High pressure = 100.22 psi
B5 FF	J146	50.22	HS
B6 FF	J186	55.44	ES, north, Parcel 43
B7 FF	J218	63.00	MD Parcel 49, NW corner
B8 FF	J206	57.20	ES Parcel 35, NW side
B9 FF	J210	60.48	MD Parcel 27, west side
B10 FF	J164	60.33	GC Parcel 8, SW corner
B11 FF	J152	57.04	O Parcel 3, south side
B12 FF	J170	53.74	ES Parcel 17, south/middle
B13 FF	J174	52.75	HD Parcel 12, south side
B14 FF	J134	58.28	LD Parcel 15, southeast side
B15 FF	J162	54.11	HD Parcel 6, southeast side

1. Refer to Table 5-1 for simulation descriptions and abbreviations.

The results indicate worst-cast pressures of 66.05, 65.71, and 54.13 psi along the east side of the Project for Runs B1-B3 respectively. These pressures are higher than SCWA's minimum criteria of 40 psi by a comfortable margin.

For near static conditions (Run B4), pressures on-site range up to 100.2 psi along Excelsior Road. Service connections will need to be equipped with individual PRVs to reduce pressures to accommodate this operating condition. However, for systems with maximum operating pressures at or below 100 psi, Class 150 pipe and accessories may be acceptable, assuming a 150% maximum test to working pressure factor.

For MDD plus fire flow scenarios (Runs B5-B15), the system meets SCWA criteria in delivering fire flows to the various land uses. A fire flow of 4,000 gpm can be delivered to the schools at residual pressures of above 50.22 psi (not including hydrant losses), with the worst-case pressures at the High School (B5-J146/J148). Fire flows to LD parcels exceed delivery requirements, and 3,000 gpm fire flow deliveries to Office, Commercial, and HD parcels can be achieved at residual pressures at or above 52.75 psi. Since the fire flows can be delivered at residual pressures above 25 psi (with hydrant and lead losses for D-mains), the fire flow delivery requirements are met.

5.2.3.2 Max. Velocity and Head-Loss/1,000 l.f.

The model results show that the Buildout pipe network will exhibit acceptable performance relative to velocity and head-loss criteria. The worst case velocities in the transmission and 12-inch distribution mains are summarized below in **Table 5-3** for the selected runs:

Table 5-3 Buildout System – Max. Velocities

Run No.	Max. Velocities (fps)				
	20" T-main	20" T-main	16" T-main	16" T-main	12"/10" D-main
	Kiefer (E) of Grenville Dr.	Jackson (E) of Grenville Dr.	Grenville Dr.	Remainder Onsite	Remainder Onsite
	Fps	Fps	fps	fps	Fps
B2 MDD	2.46	0.55	2.02	1.64	.96
B3 PHD	3.83	2.18	3.02	2.61	1.48
B5-B15 FF	< 5	< 4	< 4	< 5	< 7

1. Refer to **Table 5-1** for simulation descriptions and abbreviations.
2. Pipe velocities for fire flows less than 3,000 gpm are not listed.

Maximum velocities in the 20-inch Kiefer T-main main east of Grenville Drive ranges from 2.46 to 3.83 fps for MDD and PHD conditions respectively. These velocities are under SCWA's target limits of 5 and 7 fps. Velocities in the 20-inch Jackson main range from 0.55 to 2.18 fps for MDD and PHD conditions, which is under the limit. Generally, velocities are higher in the Kiefer Blvd. than the Jackson Road T-main due to a higher starting HGL and shorter distance to the connection point. For the 16-inch main in Grenville Drive, worst case velocities range from 2.02 to 3.02 fps for MDD and PHD runs respectively. For fire flow deliveries (Runs B5 – B15), velocities remain under 7 fps during fire flow conditions. Velocities and node pressures are shown on the **Pressure-Velocity Maps** included in Appendix A.1.

Overall, the maximum velocities in the Buildout system simulations are under acceptable limits, with most pipelines in the lower velocity ranges. The dual feed grid system shows a good capability to balance flows and pressures to cover potential flow irregularities in one region of the system. Head-loss/1,000 l.f. values are within acceptable limits, which shows the network will exhibit efficient performance, even under high demand conditions.

5.3 EXISTING PLUS PROJECT SYSTEM MODELING

5.3.1 Model Development

Existing plus Project simulations were run to verify that the proposed and existing conveyance systems will provide adequate service of the SP up to the maximum pumping capacity of the Anatolia facility (refer to additional discussion in Section 6). The Existing plus Project System model (including junction nodes, pipes, and other elements) is shown on the **System Map** in Appendix A.1. Steady-state simulations were run to emulate the proposed system.

To satisfy CEQA requirements, the Existing Plus Project Buildout scenario is provided to show how water service could be provided to the SP as a standalone project. Since the Existing Plus Project Buildout scenario is highly unlikely to occur, a more typical development scenario is provided in the *JTWSMPA*. The Existing plus Project scenario reflects a 2013 level of growth within the NSA and Buildout of land within the SP. No demands have been included for the AG area or preserves.

The major assumptions used to develop the model are the same as those used for Buildout system modeling (refer to Section 5.2.1), except for the following:

- **Anatolia Storage and Pumping facility –** In order to enhance accuracy, the Anatolia facility pump station suction and discharge manifolds and reservoir(s) were incorporated into the model based on the as-built drawings, including friction loss and minor loss values. The initial minor loss values were adjusted in order to better reflect the pressures as shown by the SCADA data as provided by SCWA for the current flow ranges.

- **Anatolia pump curves –** The existing pump curves were used to more accurately reflect the operation of the upgraded facility. The model includes a total of 7 pumps (6 duty and 1 redundant pump). For each run, the number of operating pumps was adjusted to match the demands as indicated in **Table 5-4**.

- **NSA demands –** For these simulations, additional demands were included at Nodes J236, J238, and J246, in addition to the SP Buildout demands, to reflect growth in the NSA up to the capacity of the Anatolia facility (15,600 gpm pumping capacity under PHD and 7,800 gpm under MDD conditions). This is assumed to be a conservative approach relative to evaluating available pressures at the connection point to the existing system (Kiefer/Sunrise), since it reflects the full pumping capacity of the Anatolia facility (prior to implementation of the NSA Phase B project). Demands for other projects besides the SP were not included in the Existing plus Project models, since it is assumed that these Projects are incorporated in SCWA's JTWSMPA NSA system-wide modeling effort.

- **Sunrise T-main Loop –** The 16- and 24-inch T-main loop was input into the model to convey flows from the Anatolia Storage and Pumping facility to the connection point – refer to **Figure 6-1.** These projects will be needed to serve the Sunrise Douglas and NSA region and may be constructed by others.

5.3.2 Existing plus Project Model Scenarios

MDD and PHD simulations portray the velocities, head losses, and node pressures under normal system operation conditions with both north and south T-mains in service. The fire flow simulations reflect MDD plus the required fire flow placed at critical nodes in the system to reflect potential fires at schools, commercial, multi-family, and residential projects, and 3,000 and 4,000 gpm fire flows are assigned to two nodes. The Existing plus Project model scenarios for Alternatives A and B are listed below in Table 5-4.

Table 5-4 Existing plus Project System Model Scenarios

Alt. A Run No.	Alt. B Run No.	Parcel & Land Use	Description[1]	Anatolia PS Discharge[3] (gpm)	Anatolia Operating Pumps[4]
EB2	EB22		MDD	7,800	3
EB3	EB23		PHD	15,600	6
EB4	EB24	38 – HS	MDD+4000 FF HS @ J146/J148	11,800	5
EB5	EB25	43 – ES	MDD+4000 FF ES @ J184/J186	11,800	5
EB6	EB26	49 – MD	MDD+3000 FF MD @ J216/J218	10,800	5
EB7	EB27	35 – ES	MDD+4000 FF ES @ J206/J208	11,800	5
EB8	EB28	27 – MD	MDD+3000 FF MD @ J210/J212	10,800	5
EB9	EB29	8 – GC	MDD+3000 FF GC @ J164/J166	10,800	5
EB10	EB30	3 – O	MDD+3000 FF O @ J150/J152	10,800	5
EB11	EB31	17 – ES	MDD+4000 FF ES @ J170/J172	11,800	5
EB12	EB32	12 – HD	MDD+3000 FF HD @ J174/J176	10,800	5
EB13	EB33	15 – LD	MDD+1500 FF LD @ J132/J134	9,300	5
EB14	EB34	6 – HD	MDD+3000 FF @ J160/J162	10,800	4

1. ADD, MDD, and PHD are considered normal operating conditions.
2. As per SCWA correspondence, emergency scenarios with one supply main offline will not be evaluated.
3. Demands in NSA region were adjusted to reflect the maximum capacity of Anatolia Pump Station. This reflects worst case pressures at the connection point prior to implementation of the NSA Phase B project as identified in the JTWSMPA.
4. The existing Anatolia Pump Station includes 3 duty pumps and one redundant pump (4 total pumps). The upgraded Anatolia Pump Station capacity reflects a total of 7 pumps (6 duty pumps @ 2,600 gpm and 1 redundant pump), or 15,600 gpm.

5.3.3 Existing plus Project System Modeling Results

The modeling results are tabulated in *H2O Net* by scenario, and can be viewed in printouts and in graphic color displays. The results of the Existing plus Project system modeling are discussed below:

5.3.3.1 Worst Case Pressures

The worst case pressures within the SP for the Existing plus Project System are summarized below in Table 5-5 and are discussed in this section:

Table 5-5 Existing plus Project – Worst-Case Pressures

Run No.	Node No.	Low Pressure D-main	Low Pressure T-main	Notes
		(psi)	(psi)	
EB2 MDD	J160	64.98	-	HS
EB3 PHD	J160	37.80	-	HD Parcel southwest area
	J36	-	40.03	Southeast corner on Jackson Rd.
EB4 FF	J146	30.91	-	HS
EB5 FF	J186	35.65	-	ES, north, Parcel 43
EB6 FF	J218	50.95	-	MD Parcel 49, NW corner
EB7 FF	J206	37.25	-	ES Parcel 35, NW side
EB8 FF	J210	47.72	-	MD Parcel 27, west side
EB9 FF	J164	47.51	-	GC Parcel 8, SW corner
EB10 FF	J152	43.95	-	O Parcel 3, south side
EB11 FF	J170	32.58	-	ES Parcel 17, south/middle
EB12 FF	J174	39.68	-	HD Parcel 12, south side
EB13 FF	J134	55.95	-	LD Parcel 15, southeast side
EB14 FF	J162	40.59		HD Parcel 6, southeast side

1. Refer to Table 5-4 for simulation descriptions and abbreviations.

The results show worst-case MDD and PHD D-main pressures of 64.98 and 37.80 psi along the east side of the Project for Runs EB2 - EB3 respectively. T-main pressures under PHD conditions drop to 40.03 psi. These pressures are above SCWA's minimum criteria for PHD conditions of 35 and 40 psi for D- and T-mains respectively. The low pressure nodes represent a very limited area along the east side of the SP, and most of the Project will experience pressures greater than the minimum levels under PHD conditions.

For MDD plus fire flow scenarios (Runs EB4 - EB14), the system meets SCWA criteria in delivering fire flows to the SP. A fire flow of 4,000 gpm can be delivered to the schools at residual pressures at or above 30.91 psi (not including hydrant losses), with the worst-case pressures at the High School (J146/J148). Fire flows to LD parcels exceed delivery requirements, and fire flow deliveries to Office, Commercial, HD, and residential parcels can be achieved at residual pressures at or above 39.68 psi. Since the fire flows can be delivered at residual pressures above the required 25 psi, the fire flow delivery requirements are met.

5.3.3.2 Max. Velocity and Head-Loss/1,000 l.f.

The model results show that the Existing plus Project network will exhibit acceptable performance relative to velocity/head-loss criteria. The worst case velocities in the transmission and 12-/10-inch on-site distribution mains are summarized below in **Table 5-6** for the indicated runs:

Table 5-6 Existing plus Project – Max. Velocities

Run No.	Max. Velocities					
	18" T-main	16" T-main	16" T-main	16" T-main	16" T-mains	12"/10" D-mains
	Kiefer (E) of Eagles Nest Rd.	Jackson (E) Eagles Nest Rd.	Sunrise Blvd.	Grenville Dr.	Remainder Onsite	Remainder Onsite
	Fps	Fps	fps	fps	fps	fps
EB2 MDD	2.35	1.73	1.73	1.49	1.30	0.74
EB3 PHD	4.69	3.46	3.46	2.99	2.60	1.48
EB4-EB14 FF	< 6	< 5	< 5	< 4	< 5	< 7

1. Refer to **Table 5-4** for simulation descriptions and abbreviations.

Maximum velocities in the 18-inch Kiefer T-main main east of Eagles Nest Road ranges from 2.35 to 4.69 fps for MDD and PHD conditions respectively. These velocities are under SCWA's limit of 5 and 7 fps for these conditions. Velocities in the 16-inch Jackson and Sunrise mains range from 1.73 to 3.46 fps under MDD and PHD conditions respectively. Generally, velocities are higher in the Kiefer Blvd. than the Jackson Road T-main due to a shorter distance to the connection point. For fire flow deliveries (Runs EB4 – EB14), velocities remain under 7 fps, which is acceptable during short-term fire emergencies.

Overall, the maximum velocities for the Existing plus Project system are within acceptable limits, with most pipelines in the lower velocity ranges. The dual feed grid system has the capability to balance flows and pressures to cover potential flow irregularities in one region of the system. Head-loss/1,000 l.f. values are within acceptable limits, which shows the network will exhibit efficient performance, even under high demand flow conditions. **Pressure Velocity Maps** are included in Appendix A.1.

6.0 JACKSON TOWNSHIP SP WATER SYSTEM FACILITIES

6.1 EXISTING PLUS PROJECT TRANSMISSION SYSTEM

The backbone system represents the minimum off-site and on-site water transmission improvements needed to serve the Project, refer to **Figure 7-1**.

6.1.1 Backbone T-Main Improvements

The backbone system includes a combination 20-/18-inch off-site T-main in Kiefer Boulevard from Grenville Drive to the connection point at the intersection of Sunrise and Kiefer Boulevards and a second 20-/16-inch T-main in Jackson Road, east of Grenville Drive, which will extend to Sunrise Blvd. A 16-inch main is included in Sunrise Boulevard between Jackson Road and Kiefer Blvd, which is consistent with SCWA's modeling as shown on Figure 2-2. A 16-inch main is proposed in Grenville Drive to interconnect the two 20-inch T-mains and to form a reliable backbone T-main loop. These pipe sizes are in conformance with the system as shown on **Figure 2-2** as provided by SCWA, and SCWA's minimum operating pressures under PHD conditions are met.

A 16-/24-inch T-main is required In order to provide peaking and fire flow service from the Anatolia Terminal Storage and Pumping facility. The 16-/24-inch T-main will loop back to the Anatolia facility and will engage the capacity of the existing facility as well as the other storage facilities in the NSA zone. This will include the installation of either the 24-inch P-9 Jaeger pipeline to Douglas Blvd, or the 24-inch main in Chrysanthy Blvd. to the east to connect to the existing 24-inch main in Rancho Cordova Parkway. Only one of these pipeline extensions will be needed to complete the 16-/24-inch loop. These projects are needed to serve other NSA regions and may be constructed by other project developers or by a SCWA sponsored project prior to the installation of the backbone system.

6.1.2 Secondary Connection and Other Facilities

A second T-main extension to the Project will permit both normal and emergency service of the Project in the event that a section of T-main is taken down for short-term service or repair.

6.1.3 System Phasing

The onsite backbone transmission system will need to be expanded to serve various developments in Phases 1–4 by installing additional mains (**Figure 7-2**) that will interconnect with the 16-inch main in Grenville Drive and/or the 20-inch north/south T-mains, as needed. The initial backbone system will permit flexibility in phasing, since any region within the SP may be served by additional T-or D-main loops as needed to meet the needs of each individual project. The Existing plus Project modeling shows that acceptable service will be provided to the SP under this scenario, and the backbone T-main system is adequately sized for any combination of Phases 1-4. It will be the responsibility of each project to provide the hydraulic modeling needed to verify

SCWA's operating criteria will be met with the D- and T-main extensions as proposed to serve each development phase.

6.2 SUPPLY, PUMPING, AND STORAGE REQUIREMENTS

6.2.1 Supply and Pumping Requirements

Based on the demands as listed in **Table 3-1**, the pumping facilities must be sized to meet the higher rate of the Peak Hour Demands (PHD) or Maximum Day Demands (MDD) plus Fire Flows (FF). The required supply and pumping rates needed to serve only Buildout of the SP are listed below in **Table 6-1**.

Table 6-1 Buildout SP Supply and Pumping Requirements

Component	MDD	FF	PHD	Pumping Capacity
	(MGD)	(MGD)	(MGD)	(MGD)
MDD (Supply)	4.24			4.24
PHD			8.48	8.48
MDD+FF	4.24	5.76		10.00
Larger of Above:				**10.00**

The supply and pumping calculations for the Existing plus Project scenario are presented below in **Table 6-2**.

Table 6-2 NSA Main Zone Existing plus Project Pumping Requirements

Item	2013 NSA	Buildout SP	2013 NSA plus Project SP
	(MGD)	(MGD)	(MGD)
Supply Requirements-MDD	7.40[1]	4.24	11.64
Pumping Requirements-PHD	14.80[1]	8.48	23.28
Available Supply Capacity[2]			
30" Excelsior Supply Line Capacity	15.8		15.80
NSA Main Zone Supply Surplus @ 2013			**4.16**
Available Pumping Capacity[2]	**Exist. Anatolia**	**Fut. Anatolia**	
Mather Housing (GWTP)	5.20	5.20	
Mather 1 Main Base	5.20	5.20	
Mather 2 Elevated Tank	0.00	0.00	
Anatolia Facility[3]	11.23	22.46	
Total Available Pumping Capacity	**21.63**	**32.86**	**32.86**
NSA Main Zone Pumping Capacity Surplus			**9.58**

1. 2013 NSA MDD and PHD demands were obtained from JTWSMPA Tables 8-9 and B-18 without review.
2. Existing NSA main zone supply and pumping capacities reflect those as listed in JTWSMPA Table B-18, and conservatively do not include supply available from groundwater wells or interconnections.
3. The Anatolia facility is currently equipped with 4 pumps, and 7 pumps are proposed at Buildout.

Based on the above calculations, the converted 30-inch Excelsior main and supply system is capable of meeting the MDD of the Existing NSA area plus Project with a surplus capacity of 4.16 MGD. This does not include the NSA groundwater supply facilities or the Cal-Am intertie. The timing for implementation of new supply facilities within the NSA is listed in the JTWSMPA and WSIP.

Under the Existing NSA plus Project scenario, the existing Anatolia pumping capacity (3 operating pumps and 1 redundant pump) will have slightly less capacity than needed to meet PHD conditions. The facility is planned to be expanded by adding 3 pumps to achieve a Buildout capacity of 22.46 MGD (6 duty 2,600 gpm pumps and 1 redundant pump). This upgrade will increase the total capacity of NSA pumping facilities to 32.86 MGD and be sufficient to meet near term needs of the Existing NSA area plus Project, with a surplus capacity of 9.58 MGD.

An incremental pumping capacity analysis in five year increments is presented in JTWSMPA Tables 8-9 and B-18, and this analysis shows the timing for implementation of the regional NSA pumping facility projects.

6.2.2 Storage Requirements

In order to meet the NSA storage criteria as established in the JTWSMPA, the Project's storage requirements are listed below in **Table 6-3**.

Table 6-3 Buildout SP Storage Requirements

Component	Demand	Calculations	Volume
	(MGD)		(MG)
Equalization Storage	MDD-4.24	20% of MDD	0.85
Emergency Storage	ADD-2.12	33.3% of ADD	0.71
Fire Flow Storage (Single Project)		4,000 gpm FF @ 4 hrs.[1]	0.96
Total			**2.52**

1. Fire flow storage requirements for the overall NSA main zone are assumed to be two 3,000 gpm fire flows at 3 hours each, or 1.08 MG.

Regional storage facilities can provide fire flow storage volume to serve multiple projects; thus, the SP's Equalization and Emergency storage components equate to 1.56 MG. Water stored and pumped from the existing and proposed regional facilities will be made available to the Project through the proposed transmission system improvements.

For the Existing plus Project scenario, there should be adequate storage capacity in the NSA main zone in order to accommodate the needs of the Project. These calculations are presented below in **Table 6-4**.

Table 6-4 NSA Main Zone Existing plus Project Storage Requirements

Item	2013 NSA[2]	Buildout SP	2013 NSA plus Project SP
	(MG)	(MG)	(MG)
Maximum Day Demand (MGD)	7.40[1]	4.24	11.64
Required Storage			
Equalization (20% MDD)	1.48	0.85	2.33
Emergency (33.3% ADD)	1.23	0.71	1.94
Fire (2 x 3000 gpm FF @ 3 hrs.)[3]	1.08	1.08	1.08[4]
Total Required Storage (MG)	**3.79**	**2.64**	**5.35**
Available Storage Capacity[2]			
Mather Housing (GWTP)	0.50		
Mather 1 Main Base	1.00		
Mather 2 Elevated Tank (Airport)	0.30		
Anatolia Facility	4.00		
Total Available Storage Capacity	**5.80**		**5.80**
NSA Main Zone Storage Capacity Surplus @ 2013			**0.45**

1. 2013 NSA demands were obtained from JTWSMPA Tables 8-9 and B-1 without review.
2. Existing NSA main zone storage capacity reflects the capacities as listed in JTWSMPA Table B-17.
3. Storage capacity for two 3,000 gpm fire flows are included relative to service of the NSA main zone.
4. Required fire flow storage for two 3000 gpm fire flows will be adequate to serve both 2013 NSA and Buildout of SP regions.

The storage capacity needed to serve the initial phases of the Project is assumed to be located at the existing facility sites as listed in **Table 6-4**. The above table shows that the existing storage facilities are adequately sized to serve the Project and a 2013 level of growth within the NSA.

The JTWSMP indicates that storage will be located at numerous sites, including the Anatolia facility, NSA Terminal Storage and Pumping Facility, and at other potential sites within the NSA main zone. As the region develops, additional storage facilities will be needed. Moreover, the JTWSMPA indicates that additional alternatives for placing regional storage in the south area of the NSA as well as other regional options could be considered. The NSA Terminal Storage facility could also bring additional storage capacity online to the existing transmission system through connection to the T-main in Sunrise Blvd., east of the Folsom South Canal.

An incremental water demand and storage capacity analysis in five year increments is presented in JTWSMPA Tables 8-9 and B-15, which shows the timing for implementation of regional NSA storage facilities (It is assumed that SCWA will continue to monitor growth within the NSA and provide additional storage facilities prior to reaching capacity of the existing NSA storage tanks). It may also be possible to utilize storage at the North Douglas Facility (located in

the NSA upper zone) to assist in meeting the emergency/fire needs of the main zone through the use of PRVs, on a short-term basis, until the NSA Phase B Regional project can be implemented.

6.3 BUILDOUT SYSTEM REQUIREMENTS

6.3.1 Zone Development

As per the JTWSMPA, the SP is located within the NSA main pressure zone (ground elevations range from 74 to 215 feet and pressures between 40 and 85 psi.: Source JTWSMPA, Table 2-5). Since ground elevations within the SP are located between 74 and 138 feet (post grading), they are consistent with the NSA main pressure zone requirements of the JTWSMPA. Pressures will generally be higher during periods of low water use. A single pressure zone within the SP will simplify operations, enhance reliability, and reduce the number of PRV stations that SCWA will have to maintain in the future.

Minimum pressures in the zone, under normal conditions, are anticipated to be as indicated in Section 5. Maximum pressures are anticipated to occur under near-static conditions along Excelsior Road, with static pressures in the range of 94 psi near the southwest corner of Jackson/Excelsior Roads to a high pressure of 100.2 psi at J89. In accordance with SCWA requirements, service connections within the SP will need to be equipped with individual pressure reducing valves (set at 50-60 psi maximum) to limit pressures to customers and to minimize the over-consumption of water.

Development will occur in the SP concurrently with other projects within the NSA Zone. SCWA Staff will monitor development in the NSA for the planning and development of new storage and pumping capacity to service the overall region. When this condition occurs, SCWA will initiate the development of the NSA Terminal Storage and Pumping Facility. This new storage and pumping facility will serve as the ultimate supply for the new development projects in the NSA, including the SP. With the completion of the Terminal Tank construction, the P4 Eagles Nest Pipeline will be needed to provide a transmission cross connection. This line will be extended from the NSA Terminal Storage and Pumping Facility south through the Mather South SPA to a connection point with the transmission main in Kiefer Blvd. Substantial portions of the Eagles Nest Pipeline line may be constructed with the development of the Mather South SPA prior to or concurrent with construction of the NSA Terminal Storage and Pumping Facility. If the Eagles Nest Pipeline cross connection has not been constructed, SCWA will look to the Jackson Township SP to construct the Eagles nest Pipeline from the Terminal Storage Tank south to Kiefer Blvd. SCWA shall obtain all permits and Rights-of-Way needed to construct the Eagles Nest cross connection transmission main.

6.3.2 Buildout On-site Water System

On-site water transmission and distribution mains are proposed to be routed through the SP to form a reliable looped grid system. At Buildout, the 20-inch T-mains in Kiefer Boulevard and Jackson Road will connect to other the regional T-mains as identified in the JTWSMPA. The 16-inch P-3 Kiefer Blvd. pipeline is proposed between Grenville Drive and Excelsior Road. A 16-inch T-main loop in Jackson Road, west of Grenville Drive, and the 12-inch main in Excelsior Road will provide a reliable loop around the perimeter of the SP, west of Grenville Drive. A 16-inch T-main will extend in Grenville Drive to form the primary north-south transmission corridor within the Project and will interconnect the two 20-inch T-mains to form the initial phase loop. The distribution system (8- to 12-inch mains) will form the remainder of the public system and be connected to T-mains at regular intervals.

The proposed Buildout Water System Facilities are shown on **Figure 6-1** along with the applicable regional facilities as identified in the JTWSMPA for service of the SP. It is presumed that SCWA will address implementation of the regional facilities as identified in the JTWSMPA and the WSIP.

N

600 0 300 600 1200

Stantec

DOUGLAS RD.

S-1 NSA TERMINAL STORAGE & PUMPING FACILITY SEE NOTE 2

PHASE I P-5 RANCH PIPELINE (WEST OF RANCHO CORDOVA PKWY)

PHASE I P-9 NORTH JAEGER PIPELINE

CONNECT TO EXISTING MAIN

EXISTING ANATOLIA STORAGE & PUMPING FACILITY (GWTP DECOMISSIONED IN PHASE A)

MATHER HOUSING SYSTEM

OFFSITE PIPELINE TO MATHER SYSTEM (BY OTHERS)

SEE NOTE 2

S-1 PHASE B NSA PIPELINE SEE NOTE 2

PRV STATION (SEE NOTE 4)

P-3 KIEFER BLVD PIPELINE

30" EXISTING EXCELSIOR LINE (SEE NOTE 3)

EXISTING 16" IN SUNRISE BLVD

T-MAIN TRANS PT

SEE NOTE 8

EXISTING 24" T-MAIN

KIEFER BLVD.

RANCHO CORDOVA PKWY.

SPA AREA

NSA MAIN ZONE SYSTEM

AG-80(SM)

AG-160

M-1

AQ

WETLAND PRESERVE

COMM. PARK

TOWNSHIP DRIVE

GRENVILLE DRIVE

EAGLES NEST ROAD

EXCELSIOR ROAD

SUNRISE BLVD.

S-1 PHASE B NSA PIPELINE SEE NOTE 2 & 7

CONNECT OFF-SITE MAIN TO EXISTING 24"/16" LOOP SEE NOTE 6

SEE NOTE 5

T-MAIN TRANS PT

SEE NOTE 7

JACKSON RD.

30" EXISTING EXCELSIOR SUPPLY MAIN (SEE NOTE 3)

EXIST. WEST JACKSON GWTP

VINEYARD SURFACE WATER TREATMENT PLANT (VSWTP)

P-10 PHASE A NSA PIPELINE

FLORIN ROAD

S-1 PHASE B NSA PIPELINE SEE NOTE 2

PIPELINE LEGEND

- EXISTING T-MAIN
- EXISTING 30" EXCELSIOR LINE
- PHASE A NSA (EXISTING) PIPELINE
- BUILDOUT WATER SYSTEM PIPELINE
- FUTURE T-MAIN (BY OTHERS)
- S-1 PHASE B OR OTHER REGIONAL FACILITY (SEE NOTE 2)

NOTES:

1. SIZES OF ON-SITE MAINS TO BE EVALUATED THROUGH FURTHER STUDY IN THE DESIGN PHASE.
2. REGIONAL FACILITIES ARE ASSUMED TO BE IMPLEMENTED BY SCWA, AND FACILITY SIZES/ALIGNMENTS WERE OBTAINED FROM THE JTWSMPA WITHOUT FURTHER REVIEW OR EVALUATION.
3. EXISTING 30" EXCELSIOR MAIN TO BE CONVERTED TO A POTABLE SUPPLY MAIN IN P-10 PHASE A. CONNECTIONS TO THIS LINE ARE NOT PROPOSED.
4. REFER TO JTWSMP FOR ADDITIONAL REGIONAL NSA SYSTEM AND FACILITIES, SUCH AS PRV STATIONS AND CONNECTIONS TO LOWER ZONES.
5. FUTURE PIPELINE EXTENSIONS (BY OTHERS).
6. CONNECTION TO PERMIT EMERGENCY SERVICE OF PROJECT WITH ONE T-MAIN OUT OF SERVICE.
7. NO CONNECTIONS TO 54" SUPPLY MAIN.
8. 18" MAIN AS SHOWN IN JTWSMPA IS SHIFTED TO KIEFER BLVD.

V:\1840\active\184030537 Jackson Township Water Study\Incoming Data\CAD Files And Plans\2016-0422-JT LAND USE\xref\Report\30537-FIGURE 6-1.dwg
2017/08/10 8:42 AM By: Morales, Heather

Jackson Township Water Study
Buildout Water System (With Regional Improvements)
Figure 6-1

7.0 PUBLIC FACILITIES FINANCING PLAN – JACKSON TOWNSHIP SP POTABLE WATER SYSTEM COMPONENTS

Potable water facilities are to be addressed in the Project's Public Facilities Financing Plan (PFFP) as per Sacramento County requirements. The potable water facilities that are proposed by the Project proponent are specifically summarized in this section.

Since the potable water system must be adequately sized to serve both initial as well as Buildout levels of growth, the T-main sizes, as identified in the Existing plus Project model are recommended to be included in the PFFP for budget purposes. Credits and reimbursements should also be included in the PFFP. Refer to Section 6 for additional information.

7.1 POTABLE WATER FACILITIES (BACKBONE TRANSMISSION SYSTEM)

The backbone transmission system includes the off-site and on-site T-mains needed to serve the development phases, assuming that growth will occur according to the Jackson Township Phasing Plan as discussed in Section 3.0. Phases 1 – 4 can be served by the backbone T-main system by extending additional T- and D-mains within the Project with connections back to the proposed primary T-mains. The backbone transmission system is described as follows and is shown on **Figure 7-1**:

WATER MAINS

- **Kiefer Blvd. T-main.** This component includes a 20-inch T-main that extends in Kiefer Blvd. from Grenville Drive to Eagles Nest Road, and an 18-inch T-main from that point to the intersection of Sunrise Blvd to tie into the existing 16-/24-inch mains. The main will cross the Folsom South Canal, and the 18-inch T-main is proposed to be shifted to the north to Kiefer Blvd.

- **Jackson Road T-main.** A 20-inch main is proposed to extend in Jackson Road from Grenville Drive to the east to Eagles Nest Road, and a 16-main will extend from Eagles Nest Road to Sunrise Boulevard. The main will cross the Folsom South Canal.

- **Sunrise Blvd. T-main** will include a 16-inch main, which will extend from Jackson Road to the north in Sunrise Blvd. to the connection point at Kiefer and Sunrise Boulevards.

- **Grenville Drive 16-inch Main** will extend in Grenville Drive between Jackson Road and Kiefer Blvd.

- **Completion of 16-/24-inch Loop to Anatolia facility.** This item includes either the completion of Project P-5 24-inch Ranch Pipeline to tie into the existing 24-inch main in Rancho Cordova Parkway or the extension of P-9, North Jaeger Pipeline to Douglas Road to complete the looped T-main system back to the Anatolia facility. These T-mains are

needed to serve other projects within the NSA and may be installed by others prior to construction of the backbone T-main system.

- **Completion of the Eagles Nest 30 and 36 inch Transmission Cross Connection**. A 36 inch transmission main will be extended south from the Terminal Storage and Pumping Facility through the Mather South Project to the intersection of Eagles Nest Road. The line will be reduced to a 30 inch transmission main and extend south in Eagles Nest Road to a connection with the 20 inch transmission main located in the intersection of Eagles Nest Road and Kiefer Blvd. Construction of this line will be necessary when, based upon capacity utilization, SCWA determines it is needed. Once this occurs, SP construction may be suspended, at the discretion of SCWA, until the line is actually in place and operational. SCWA will be responsible to secure all permits and Rights-of-Way for the construction of the cross connector. This is a regional service line; and therefore, any construction funds, engineering costs or other reasonably related expenses fronted by a private party will be jointly shared by all the projects developers actively pursuing land development projects in the NSA.

Facilities

- **Anatolia Pumping and Storage facility.** As discussed in the WSIP, expansion of the Anatolia Pumping and Storage facility is proposed as a Phase 1 improvement in Table 13. This project will add 3 new booster pumps at the facility, which will increase pumping capacity to 15,600 gpm. The timing for implementation of this project is listed in Table I-18 of the WSIP.

N

1200 0 600 1200 2400

MATHER HOUSING SYSTEM

DOUGLAS RD.

PHASE I P-9 NORTH JAEGER PIPELINE SEE NOTE 5

PHASE I P-5 RANCH PIPELINE (WEST OF RANCHO CORDOVA PKWY) SEE NOTE 5

EXISTING ANATOLIA STORAGE & PUMPING FACILITY (GWTP DECOMISSIONED IN PHASE A)

30" EXISTING EXCELSIOR LINE (SEE NOTE 1)

EXISTING 16" IN SUNRISE BLVD

RANCHO CORDOVA PKWY.

PRIMARY T-MAIN (NORTH)

SEE NOTE 6

30" EXISTING EXCELSIOR LINE (SEE NOTE 1)

(SEE NOTE 1)

T-MAIN TRANS PT

KIEFER BLVD.

EXISTING 24" T-MAIN

CONNECT OFF-SITE MAIN TO EXISTING 24"/16" LOOP SEE NOTE 3

KIEFER BLVD.

DOUGLAS ROAD

EXCELSIOR ROAD

UPA

WETLAND PRESERVE

MATHER VERNAL POOL COMPLEX

WEST JACKSON MASTER PLAN

AG-80(SM)

SPA AREA

NSA MAIN ZONE SYSTEM

COMM. PARK

NEW BRIDGE SPECIFIC PLAN

M-1

EAGLES NEST ROAD

TOWNSHIP DRIVE

GRENVILLE

EXISTING EXCELSIOR SUPPLY MAIN (SEE NOTE 3)

AG-160

JACKSON RD.

VINEYARD SURFACE WATER TREATMENT PLANT (VSWTP)

P-10 PHASE A NSA PIPELINE

FLORIN ROAD

PRIMARY T-MAIN (SOUTH)

PIPELINE LEGEND

- EXISTING T-MAIN
- EXISTING 30" EXCELSIOR LINE
- P-10 PHASE A NSA (EXISTING) PIPELINE
- BUILDOUT WATER SYSTEM PIPELINE
- FUTURE T-MAIN (BY OTHERS)

NOTES:

1. NO CONNECTIONS ARE ALLOWED TO EXISTING 30" SUPPLY MAIN.
2. SIZES OF ON-SITE MAINS AND FACILITIES TO BE EVALUATED THROUGH FURTHER STUDY IN THE DESIGN PHASE.
3. CONNECTION TO PERMIT EMERGENCY SERVICE OF PROJECT WITH ONE T-MAIN OUT OF SERVICE.
4. NOT USED.
5. COMPLETE EITHER PROJECT P-5 OR P-9 TO PROVIDE 24" LOOPED MAIN TO ANATOLIA FACILITY.
6. 18" T-MAIN SHIFTED TO KIEFER BLVD.

Jackson Township Water Study
Backbone Transmission System
Figure 7-1

Y:\1840\active\184030537 Jackson Township Water Study\Incoming Data\CAD Files And Plans\2016-0422-JT LAND USE\xref\Report\30537-FIGURE 7-1.dwg
2017/08/10 9:39 AM By: Morales, Heather

7.2 POTABLE WATER FACILITIES (BUILDOUT SYSTEM)

The Buildout potable water facilities includes the elements that are in addition to the proposed backbone transmission system, which are needed to serve the Project at Buildout of all land uses within the SP. The Buildout potable water system components are described as follows and are shown on **Figure 7-2**. **Figure 7-3** provides an enlarged view of the Buildout on-site system:

WATER MAINS

- **Backbone Transmission System** - Refer to the improvements as listed in Section 7.1.
- **Kiefer Blvd. 16-inch Main.** This main will extend in Kiefer Blvd. from Excelsior Road to Grenville Drive.
- **Jackson Road 16-inch Main** will extend in Jackson Road between Excelsior Road and Grenville Drive.
- **Excelsior Road 12-inch Main.** This main is proposed between Jackson Road and Kiefer Boulevard to serve new projects located to the east of Excelsior Road and intertie the Kiefer Blvd. and Jackson Road T-mains.
- **Internal 12-inch Mains**, are proposed within the Project to form a reliable looped grid system and to provide service to the remaining parcels not served by the backbone system. These mains will interconnect with the T-mains as shown on **Figure 7-3**. Additional 8-/10-/12-inch mains will need to be provided for certain roadways, which are not shown on the Buildout Water System plan to extend service to connections, hydrants, and as needed to complete each individual development.

FACILITIES

- **PRV Stubouts** are proposed on the 16-inch mains in Keifer Blvd. and Jackson Road to enable connection to the two future PRV stations along Excelsior Road (by others).
- **Service Connection PRVs.** Pressure Reducing Valves (PRVs) are recommended on the domestic service connections within the SP (downstream of meter) to avoid potential over-pressurization of on-site systems and to limit water over-consumption.

N

1200 0 600 1200 2400

DOUGLAS RD.

PHASE I P-9 NORTH JAEGER PIPELINE SEE NOTE 5

PHASE I P-5 RANCH PIPELINE (WEST OF RANCHO CORDOVA PKWY) SEE NOTE 5

EXISTING ANATOLIA STORAGE & PUMPING FACILITY (GWTP DECOMISSIONED IN PHASE A)

MATHER HOUSING SYSTEM

PRV STATION (SEE NOTE 4)

P-3 KIEFER BLVD PIPELINE

30" EXISTING EXCELSIOR LINE (SEE NOTE 1)

EXISTING 16" IN SUNRISE BLVD

RANCHO CORDOVA PKWY.

PRIMARY T-MAIN (NORTH)

SEE NOTE 6

30" EXISTING EXCELSIOR LINE (SEE NOTE 1)

SEE NOTE 1

T-MAIN TRANS PT

CONNECT OFF-SITE MAIN TO EXISTING 24"/16" LOOP SEE NOTE 3

KIEFER BLVD.

EXISTING 24" T-MAIN

PRV STATION (SEE NOTE 4)

EXISTING EXCELSIOR SUPPLY MAIN (SEE NOTE 1)

VINEYARD SURFACE WATER TREATMENT PLANT (VSWTP)

P-10 PHASE A NSA PIPELINE

FLORIN ROAD

PRIMARY T-MAIN (SOUTH)

SPA AREA

NSA MAIN ZONE SYSTEM

AG-80(SM)

AG-160

JACKSON RD.

KIEFER BLVD.

DOUGLAS ROAD

EXCELSIOR ROAD

EAGLES NEST ROAD

GRENVILLE DRIVE

TOWNSHIP DRIVE

WETLAND PRESERVE

COMM. PARK

MATHER VERNAL POOL COMPLEX

NEW BRIDGE SPECIFIC PLAN

M-1

PIPELINE LEGEND

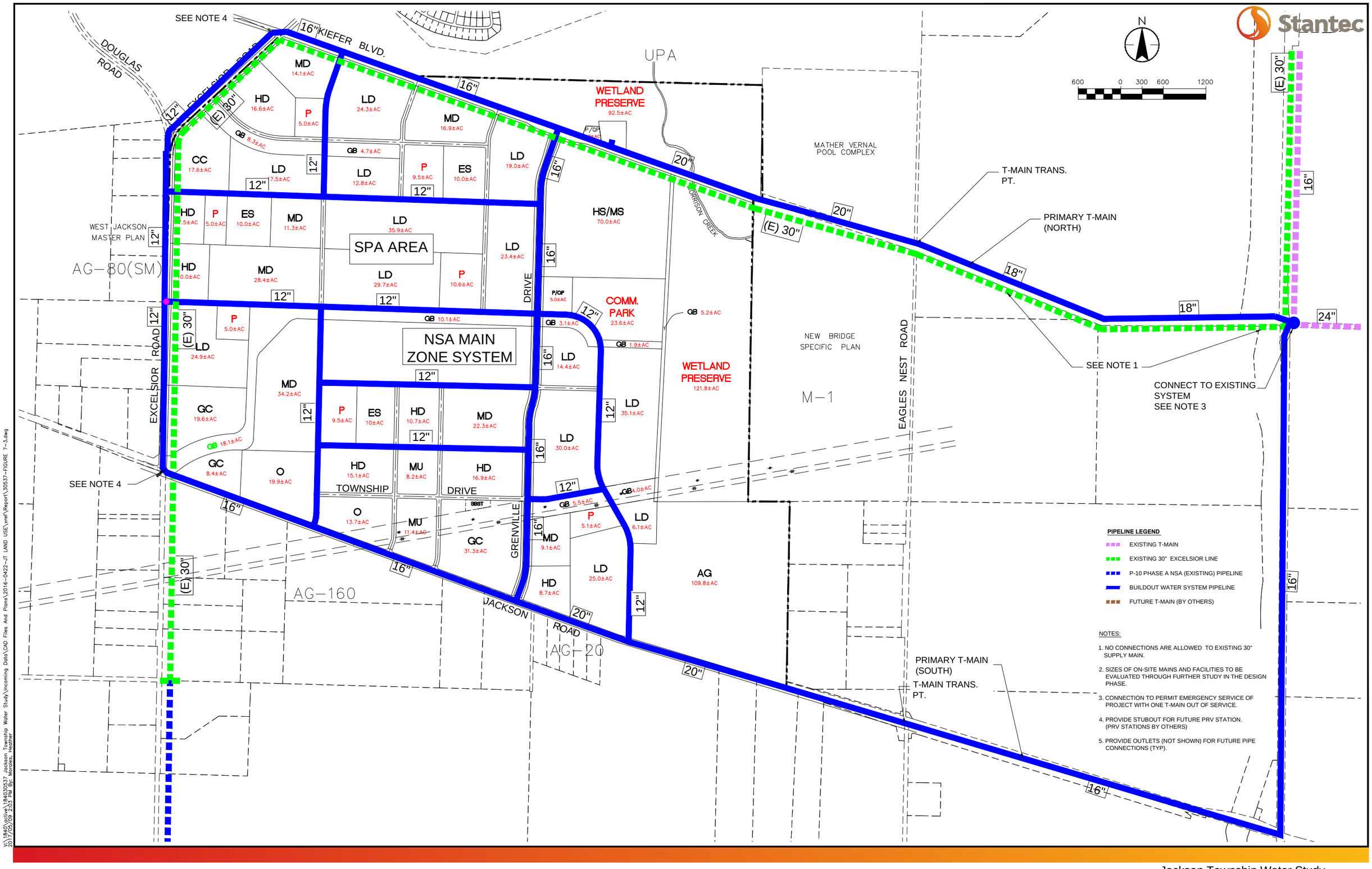
- EXISTING T-MAIN
- EXISTING 30" EXCELSIOR LINE
- P-10 PHASE A NSA (EXISTING) PIPELINE
- BUILDOUT WATER SYSTEM PIPELINE
- FUTURE T-MAIN (BY OTHERS)

NOTES:

1. NO CONNECTIONS ARE ALLOWED TO EXISTING 30" SUPPLY MAIN.
2. SIZES OF ON-SITE MAINS AND FACILITIES TO BE EVALUATED THROUGH FURTHER STUDY IN THE DESIGN PHASE.
3. CONNECTION TO PERMIT EMERGENCY SERVICE OF PROJECT WITH ONE T-MAIN OUT OF SERVICE.
4. PROVIDE STUBOUT FOR FUTURE PRV STATION (PRV STATIONS BY OTHERS).
5. COMPLETE EITHER PROJECT P-5 OR P-9 TO PROVIDE 24" LOOPED MAIN TO ANATOLIA FACILITY.
6. 18" T-MAIN SHIFTED TO KIEFER BLVD.

I:\1840\active\184030637 Jackson Township Water Study\Incoming Data\CAD Files And Plans\2016-0422-JT LAND USE\xref\Report\30537-FIGURE 7-2.dwg
2017/08/10 8:40 AM By: Morales, Heather

Jackson Township Water Study
Existing Plus Buildout System (Without Regional Improvements)
Figure 7-2



Jackson Township Water Study
Buildout Water System (Enlarged View)
Figure 7-3

V:\1840\active\184030537 Jackson Township Water Study\Incoming Data\CAD Files And Plans\2016-0422-JT LAND USE\xref\Report\30537-FIGURE 7-3.dwg
2017/05/09 2:05 PM By: Morales, Heather

APPENDICES

Appendix A

A.1 MODEL SYSTEM AND PRESSURE VELOCITY MAPS

Stantec

600 0 300 600 1200

DOUGLAS ROAD

KIEFER BLVD.

EXCELSIOR ROAD

UPA

WETLAND PRESERVE 92.5±AC

MATHER VERNAL POOL COMPLEX

WEST JACKSON MASTER PLAN

AG-80(SM)

(E) 30"

HD 16.6±AC

MD 14.1±AC

LD 24.3±AC

MD 16.9±AC

CC 17.6±AC

LD 17.5±AC

LD 12.8±AC

P 9.5±AC

ES 20.2±AC

LD 19.0±AC

HD 7.5±AC

P 5.0±AC

ES 10.0±AC

MD 11.3±AC

LD 35.9±AC

HS/MS 70.0±AC

LD 23.4±AC

HD 10.0±AC

MD 18.4±AC

LD 29.7±AC

P 10.6±AC

COMM. PARK 23.6±AC

P 5.0±AC

LD 24.9±AC

LD 57.5±AC

LD 14.4±AC

WETLAND PRESERVE 121.8±AC

NEW BRIDGE SPECIFIC PLAN

MD 34.2±AC

GC 19.6±AC

P 9.5±AC

ES 10±AC

HD 10.7±AC

MD 22.3±AC

LD 35.1±AC

LD 30.0±AC

GC 8.4±AC

O 19.9±AC

HD 15.1±AC

MU 8.2±AC

HD 16.9±AC

TOWNSHIP DRIVE

O 27.7±AC

MU 11.4±AC

GC 31.3±AC

MD 9.1±AC

P 5.1±AC

LD 28.8±AC

AG 109.8±AC

AG-160

JACKSON ROAD

AG-20

M-1

EAGLES NEST ROAD

RES9012

RES9010

Pipe Input View
PIPEHYD->DIAMETER
Below 12.00
12.00 ~ 16.00
16.00 ~ 18.00
18.00 ~ 20.00
20.00 or above

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2017/05/05 9:15 AM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Buildout System Network Map
B1 - ADD - System Map

Stantec

600 0 300 600 1200

DOUGLAS ROAD
KIEFER BLVD.
EXCELSIOR ROAD
UPA
WETLAND PRESERVE 92.5±AC
MATHER VERNAL POOL COMPLEX
WEST JACKSON MASTER PLAN
AG-80(SM)
COMM. PARK 23.6±AC
HS/MS 70.0±AC
NEW BRIDGE SPECIFIC PLAN
WETLAND PRESERVE 121.8±AC
M-1
EAGLES NEST ROAD
TOWNSHIP DRIVE
GRENOBLE DRIVE
JACKSON ROAD
AG-160
AG-20
AG 109.8±AC
MORRISON CREEK
(E) 30"
RES9012
RES9010

Junction Output View
Min. Pressure (psi)
Below 69.57
69.57 ~ 76.61
76.61 ~ 83.65
83.65 ~ 90.69
90.69 or above

Pipe Output View
Velocity (ft/s)
Below 0.10
0.10 ~ 1.00
1.00 ~ 2.00
2.00 ~ 3.00
3.00 ~ 4.00
4.00 ~ 5.00
5.00 or above

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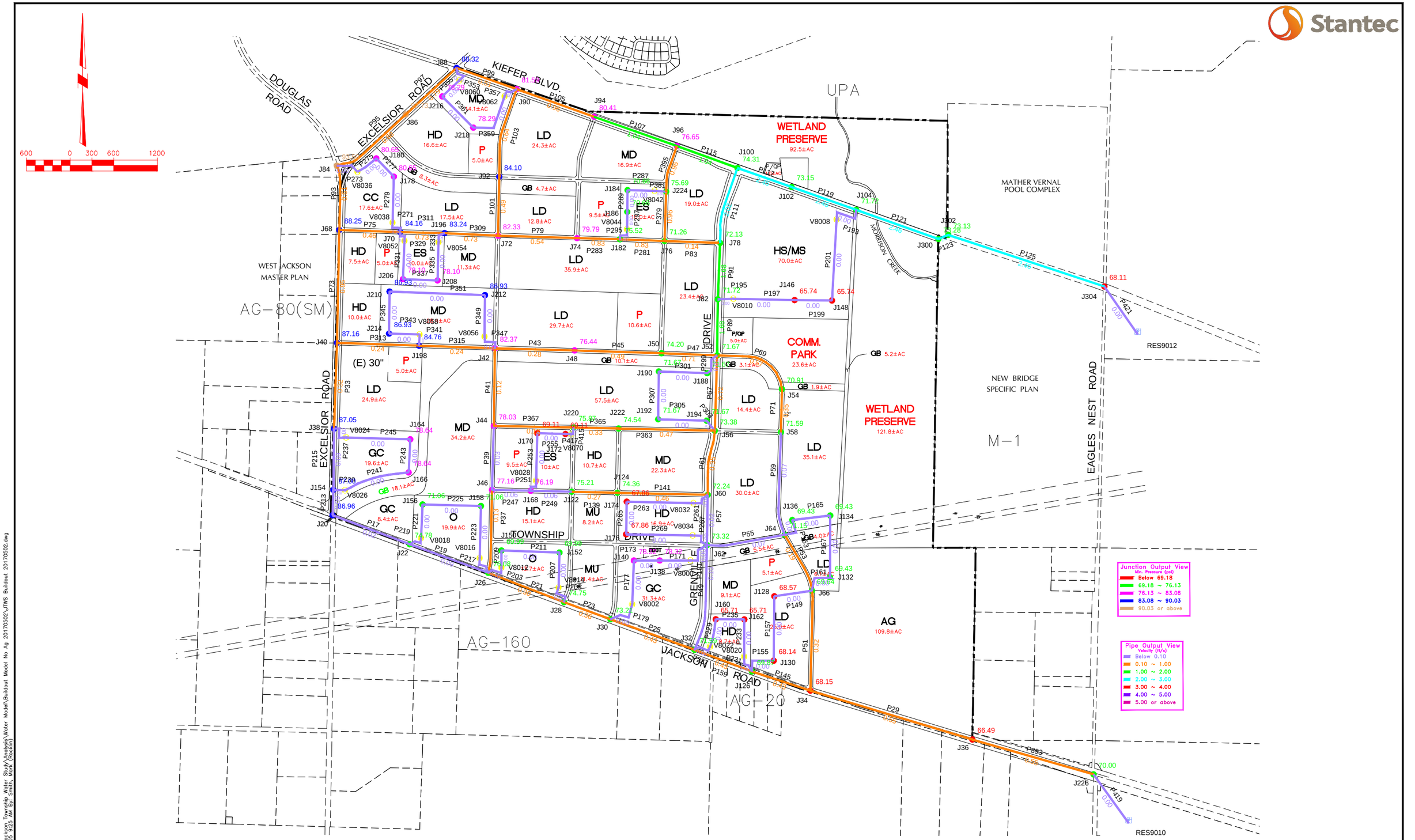
2017/05/05 9:22 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B1 - ADD - Pressure-Velocity Map



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2017/05/05 9:25 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B2 - MDD - Pressure-Velocity Map

Stantec

600 0 300 600 1200

DOUGLAS ROAD
KIEFER BLVD.
EXCELSIOR ROAD
UPA
WETLAND PRESERVE 92.5±AC
MATHER VERNAL POOL COMPLEX
MORRISON CREEK
WEST JACKSON MASTER PLAN
AG-80(SM)
COMM. PARK 23.6±AC
HS/MS 70.0±AC
NEW BRIDGE SPECIFIC PLAN
EAGLES NEST ROAD
WETLAND PRESERVE 121.8±AC
M-1
TOWNSHIP DRIVE
GRENOBLE DRIVE
AG 109.8±AC
AG-160
JACKSON ROAD
AG-20
(E) 30"
RES9012
RES9010

Junction Output View
Min. Pressure (psi)
Below 57.53
57.53 ~ 64.32
64.32 ~ 71.11
71.11 ~ 77.91
77.91 or above

Pipe Output View
Velocity (ft/s)
Below 0.10
0.10 ~ 1.00
1.00 ~ 2.00
2.00 ~ 3.00
3.00 ~ 4.00
4.00 ~ 5.00
5.00 or above

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2017/05/05 9:26 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B3 - PHD - Pressure-Velocity Map

Stantec

600 0 300 600 1200

DOUGLAS ROAD

KIEFER BLVD.

EXCELSIOR ROAD

UPA

WETLAND PRESERVE 92.5±AC

MATHER VERNAL POOL COMPLEX

MORRISON CREEK

WEST JACKSON MASTER PLAN

AG–80(SM)

(E) 30"

COMM. PARK 23.6±AC

NEW BRIDGE SPECIFIC PLAN

WETLAND PRESERVE 121.8±AC

M–1

EAGLES NEST ROAD

RES9012

AG 109.8±AC

AG–160

JACKSON ROAD

AG–20

TOWNSHIP DRIVE

GRENOBLE DRIVE

Junction Output View
Min. Pressure (psi)
- Below 74.56
- 74.56 ~ 81.89
- 81.89 ~ 89.22
- 89.22 ~ 96.56
- 96.56 or above

Pipe Output View
Velocity (ft/s)
- Below 0.10
- 0.10 ~ 1.00
- 1.00 ~ 2.00
- 2.00 ~ 3.00
- 3.00 ~ 4.00
- 4.00 ~ 5.00
- 5.00 or above

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2017/05/05 9:27 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B4 - Max. HGL - Pressure-Velocity Map

Stantec

600 0 300 600 1200

DOUGLAS ROAD
KIEFER BLVD.
EXCELSIOR ROAD
UPA
WETLAND PRESERVE 92.5±AC
MATHER VERNAL POOL COMPLEX
WEST JACKSON MASTER PLAN
AG-80(SM)
MORRISON CREEK
HS/MS 70.0±AC
COMM. PARK 23.6±AC
NEW BRIDGE SPECIFIC PLAN
WETLAND PRESERVE 121.8±AC
M-1
EAGLES NEST ROAD
(E) 30"
TOWNSHIP DRIVE
GRENOBLE DRIVE
AG-160
JACKSON ROAD
AG-20
AG 109.8±AC
RES9012
RES9010

CC 17.6±AC
GC 19.6±AC
GC 8.4±AC
GC 31.3±AC
GB 8.3±AC
GB 4.7±AC
GB 18.1±AC
GB 10.1±AC
GB 5.2±AC
GB 3.1±AC
GB 1.9±AC
HD 16.6±AC
HD 7.5±AC
HD 10.0±AC
HD 10.7±AC
HD 15.1±AC
HD 9.1±AC
HD 23.0±AC
LD 24.3±AC
LD 17.5±AC
LD 12.8±AC
LD 35.9±AC
LD 23.4±AC
LD 29.7±AC
LD 24.9±AC
LD 57.5±AC
LD 14.4±AC
LD 35.1±AC
LD 30.0±AC
LD 19.0±AC
MD 16.9±AC
MD 34.1±AC
MD 11.3±AC
MD 34.2±AC
MD 22.3±AC
P 5.0±AC
P 9.5±AC
P 10.6±AC
P 5.1±AC
P/OP 5.0±AC
ES 10.0±AC
ES 9.2±AC
O 19.9±AC
MU 8.2±AC

Junction Output View
Min. Pressure (psi)
Below 54.33
54.33 ~ 62.56
62.56 ~ 70.78
70.78 ~ 79.00
79.00 or above

Pipe Output View
Velocity (ft/s)
Below 0.10
0.10 ~ 1.00
1.00 ~ 2.00
2.00 ~ 3.00
3.00 ~ 4.00
4.00 ~ 5.00
5.00 or above

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2017/05/05 9:28 AM By: Smith, Mark (Reclam)

Jackson Township Water Study
Buildout System Network Map
B5 - MDD+FF - Pressure-Velocity Map

Stantec

600 0 300 600 1200

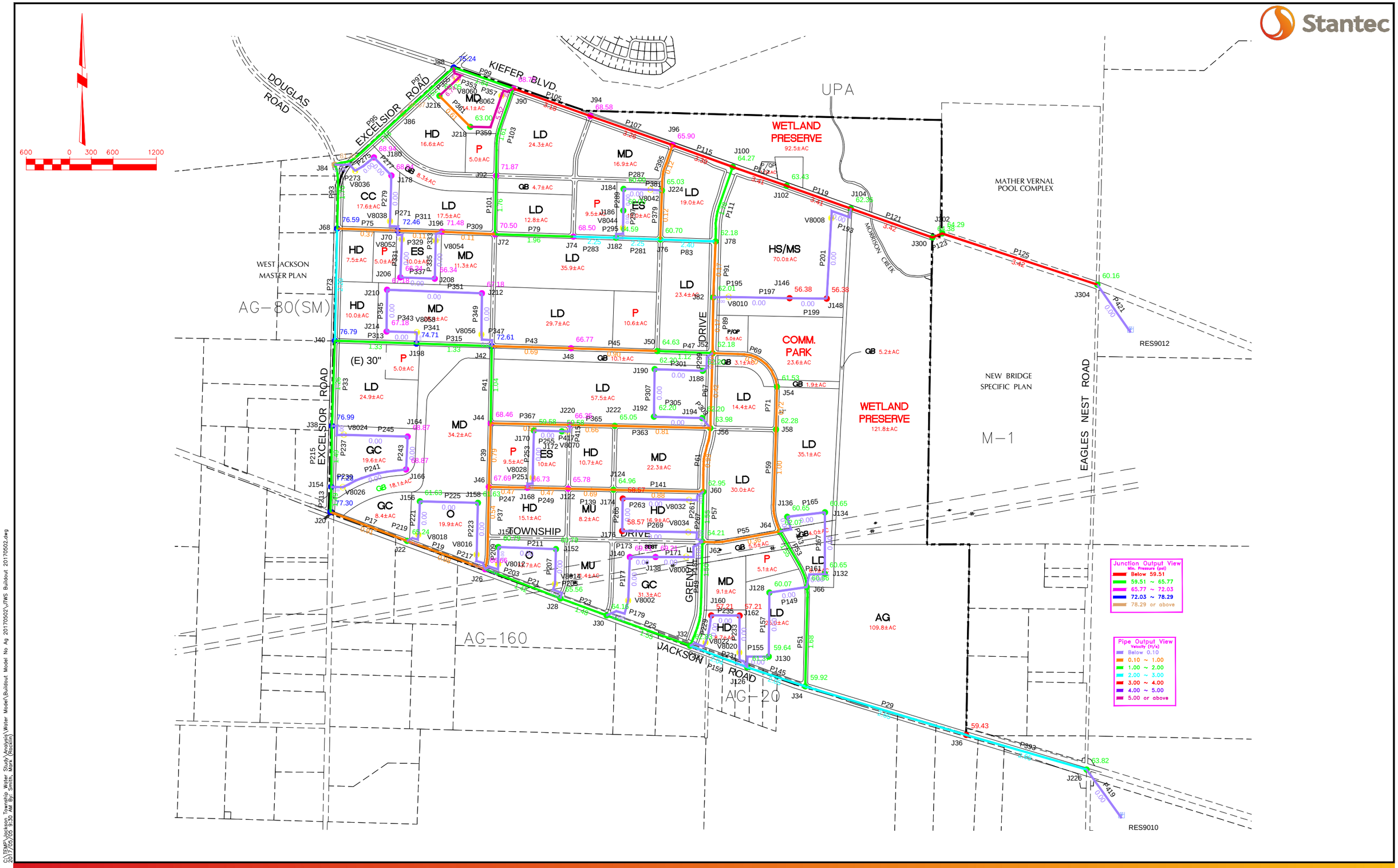
KIEFER BLVD.
DOUGLAS ROAD
EXCELSIOR ROAD
UPA
WETLAND PRESERVE 92.5±AC
MATHER VERNAL POOL COMPLEX
WEST JACKSON MASTER PLAN
AG-80(SM)
COMM. PARK 23.6±AC
HS/MS 70.0±AC
NEW BRIDGE SPECIFIC PLAN
MORRISON CREEK
RES9012
WETLAND PRESERVE 121.8±AC
M-1
EAGLES NEST ROAD
(E) 30"
AG-160
TOWNSHIP DRIVE
GRENOBLE DRIVE
JACKSON ROAD
AG-20
AG 109.8±AC
RES9010

Junction Output View
Min. Pressure (psi)
Below 58.63
58.63 ~ 65.07
65.07 ~ 71.51
71.51 ~ 77.94
77.94 or above

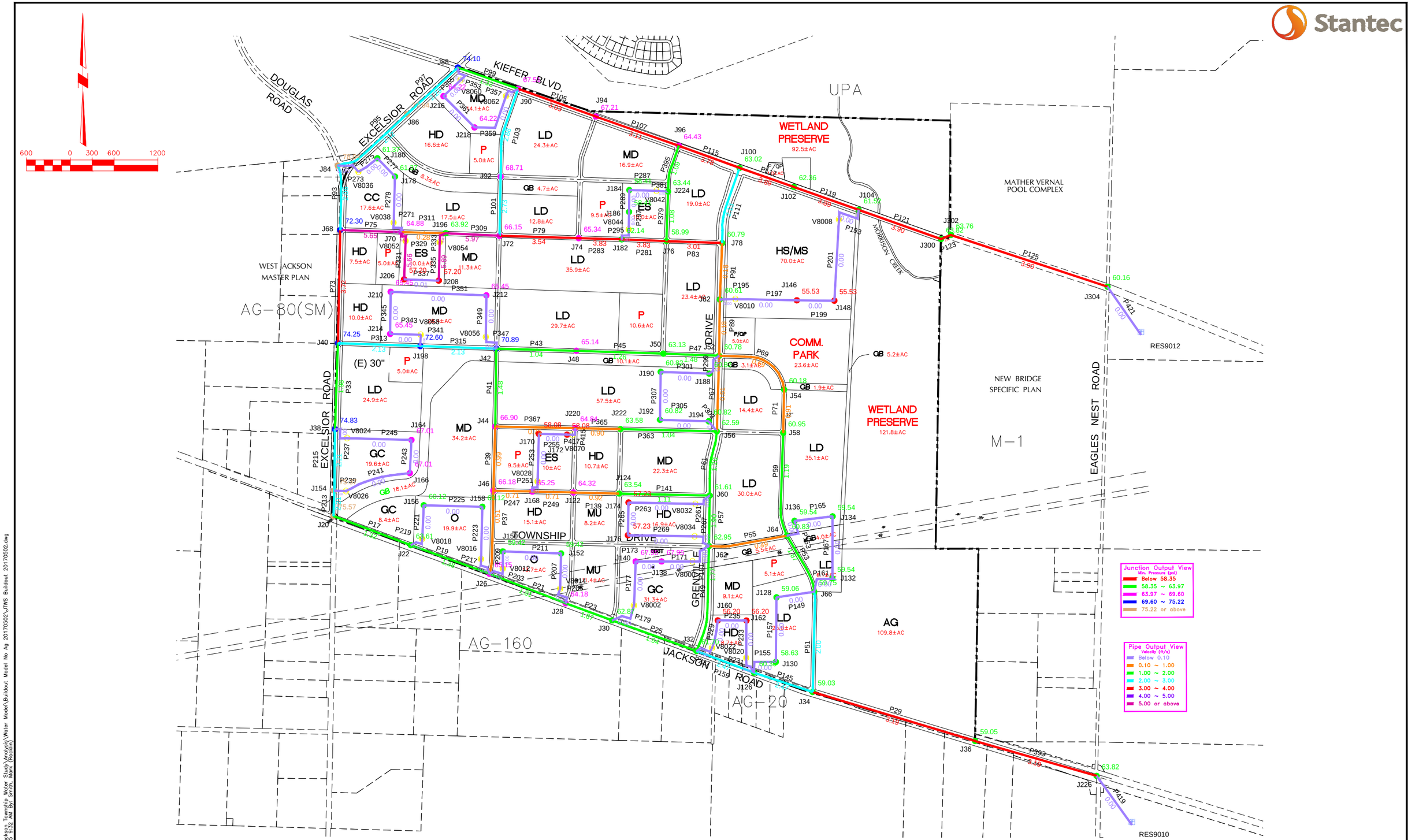
Pipe Output View
Velocity (ft/s)
Below 0.10
0.10 ~ 1.00
1.00 ~ 2.00
2.00 ~ 3.00
3.00 ~ 4.00
4.00 ~ 5.00
5.00 or above

C:\TEMP\Jackson Township Water Study\Modeling\Water Model\Buildout Model No Ag 20170502_VTWS Buildout 20170502.dwg
2017/05/05 9:29 AM By: Smith, Mark (Reclaim)

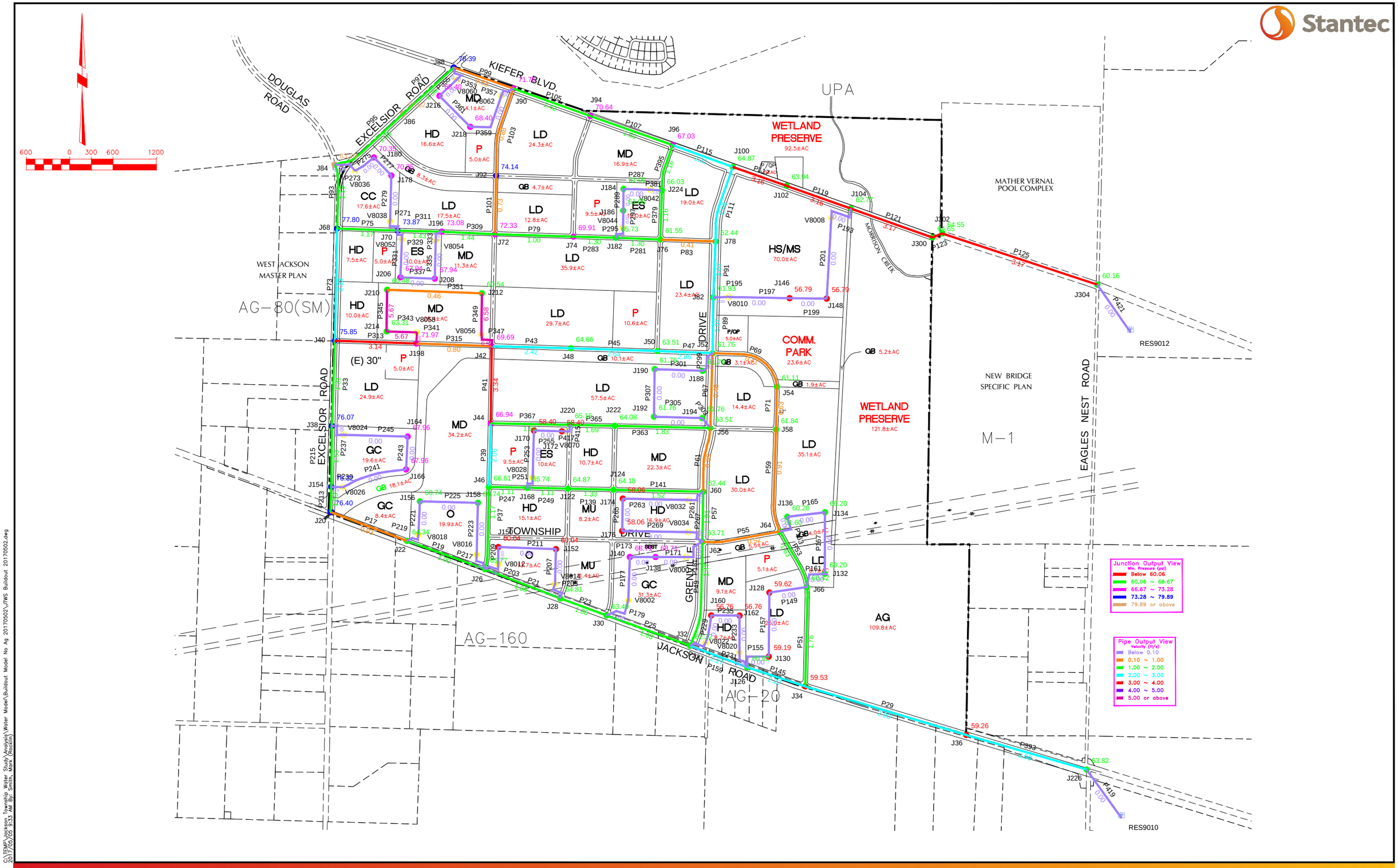
Jackson Township Water Study
Buildout System Network Map
B6 - MDD+FF - Pressure-Velocity Map



Jackson Township Water Study
Buildout System Network Map
B7 - MDD+FF - Pressure-Velocity Map



Jackson Township Water Study
Buildout System Network Map
B8 - MDD+FF - Pressure-Velocity Map



Jackson Township Water Study
Buildout System Network Map
B9 - MDD+FF - Pressure-Velocity Map

Stantec

600 0 300 600 1200

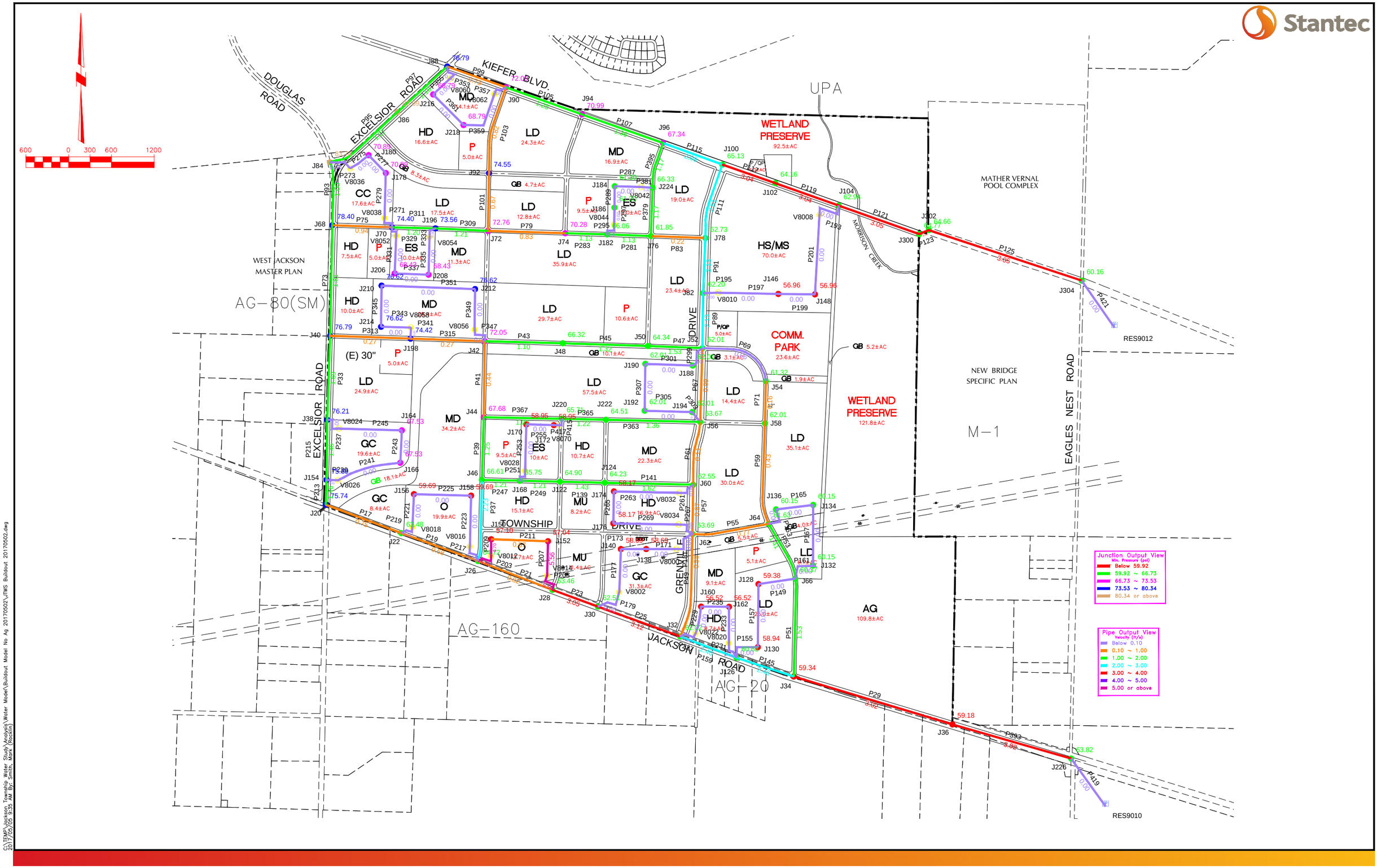
DOUGLAS ROAD
KIEFER BLVD.
EXCELSIOR ROAD
UPA
WETLAND PRESERVE 92.5±AC
MATHER VERNAL POOL COMPLEX
WEST JACKSON MASTER PLAN
AG-80(SM)
MORRISON CREEK
NEW BRIDGE SPECIFIC PLAN
EAGLES NEST ROAD
COMM. PARK 23.6±AC
HS/MS 70.0±AC
WETLAND PRESERVE 121.8±AC
M-1
AG 109.8±AC
AG-160
AG-20
JACKSON ROAD
GRENOBLE DRIVE
TOWNSHIP DRIVE
RES9012
RES9010

Junction Output View
Min. Pressure (psi)
Below 60.00
60.00 ~ 66.60
66.60 ~ 73.19
73.19 ~ 79.79
79.79 or above

Pipe Output View
Velocity (ft/s)
Below 0.10
0.10 ~ 1.00
1.00 ~ 2.00
2.00 ~ 3.00
3.00 ~ 4.00
4.00 ~ 5.00
5.00 or above

C:\TEMP\Jackson Township Water Study\Modeling\Water Model\Buildout Model No Ag 20170502_VTWS Buildout 20170502.dwg
2017/05/05 9:34 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B10 - MDD+FF - Pressure-Velocity Map



C:\TEMP\Jackson Township Water Study\Modeling\Water Model\Buildout Model\No Ag 20170502_VTWS Buildout 20170502.dwg
2017/05/05 8:35 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B11 - MDD+FF - Pressure-Velocity Map

Stantec

600 0 300 600 1200

KIEFER BLVD.
DOUGLAS ROAD
EXCELSIOR ROAD
UPA
WETLAND PRESERVE 92.5±AC
MATHER VERNAL POOL COMPLEX
MORRISON CREEK
WEST JACKSON MASTER PLAN
AG-80(SM)
COMM. PARK 23.6±AC
NEW BRIDGE SPECIFIC PLAN
WETLAND PRESERVE 121.8±AC
M-1
EAGLES NEST ROAD
TOWNSHIP DRIVE
GRENOBLE DRIVE
JACKSON ROAD
AG-160
AG-20
AG 109.8±AC
RES9012
RES9010

Junction Output View
Min. Pressure (psi)
Below 57.30
57.30 ~ 64.43
64.43 ~ 71.56
71.56 ~ 78.68
78.68 or above

Pipe Output View
Velocity (ft/s)
Below 0.10
0.10 ~ 1.00
1.00 ~ 2.00
2.00 ~ 3.00
3.00 ~ 4.00
4.00 ~ 5.00
5.00 or above

C:\TEMP\Jackson Township Water Study\Modeling\Water Model\Buildout Model\No Ag 20170502\JTWS Buildout 20170502.dwg
2017/05/05 8:35 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B12 - MDD+FF - Pressure-Velocity Map

Stantec

600 0 300 600 1200

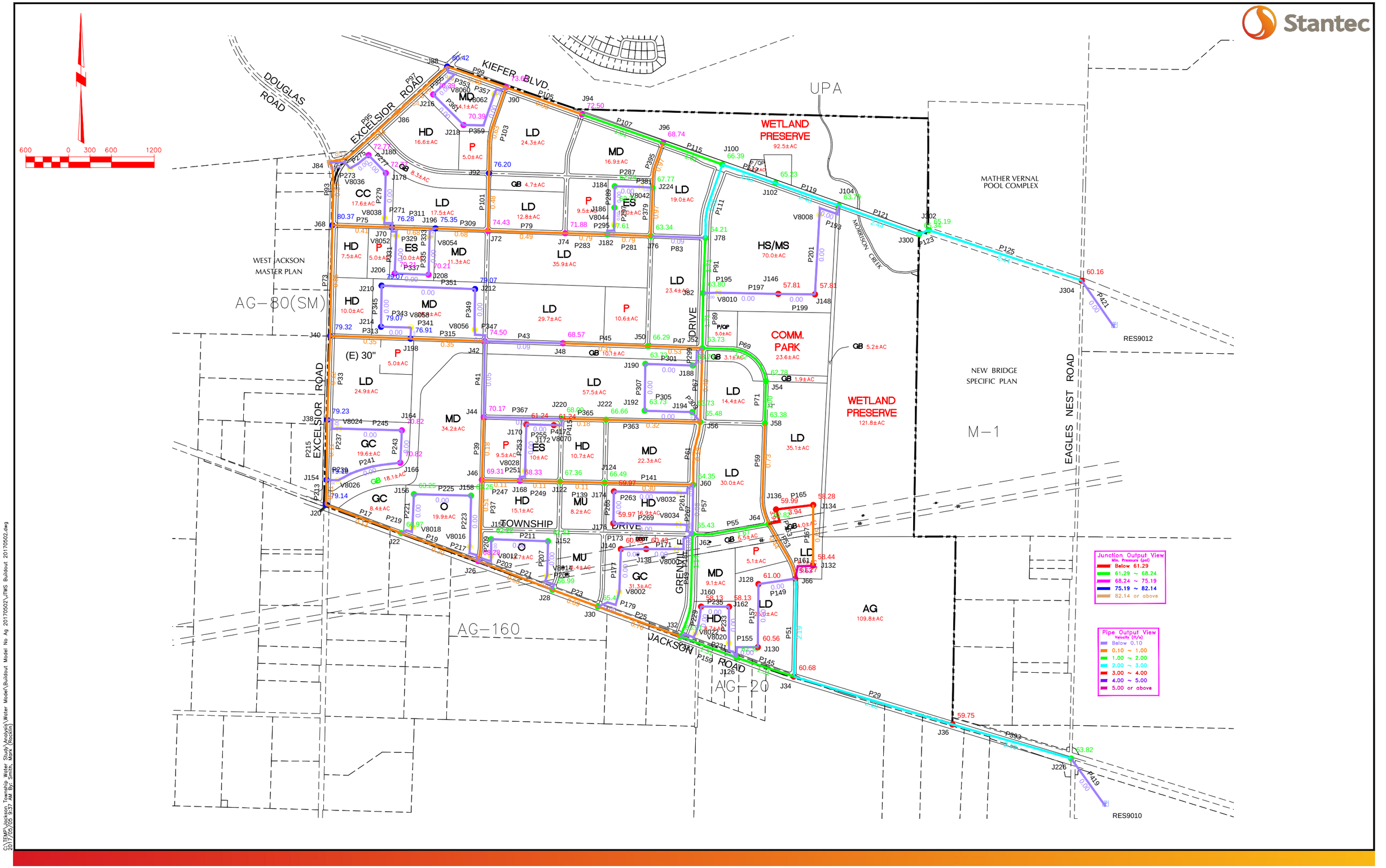
KIEFER BLVD.
DOUGLAS ROAD
EXCELSIOR ROAD
UPA
WETLAND PRESERVE 92.5±AC
MATHER VERNAL POOL COMPLEX
WEST JACKSON MASTER PLAN
AG-80(SM)
AG-160
AG-20
AG 109.8±AC
M-1
NEW BRIDGE SPECIFIC PLAN
MORRISON CREEK
GRENOBLE DRIVE
TOWNSHIP DRIVE
JACKSON ROAD
EAGLES NEST ROAD
COMM. PARK 23.6±AC
WETLAND PRESERVE 121.8±AC
HS/MS 70.0±AC
(E) 30"
RES9012
RES9010

Junction Output View
Min. Pressure (psi)
- Below 56.65
- 56.65 ~ 64.45
- 64.45 ~ 72.25
- 72.25 ~ 80.05
- 80.05 or above

Pipe Output View
Velocity (ft/s)
- Below 0.10
- 0.10 ~ 1.00
- 1.00 ~ 2.00
- 2.00 ~ 3.00
- 3.00 ~ 4.00
- 4.00 ~ 5.00
- 5.00 or above

C:\TEMP\Jackson Township Water Study\Models\Water Model\Buildout Model No Ag 20170502_TWS Buildout 20170502.dwg
2017/05/05 9:36 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B13 - MDD+FF - Pressure-Velocity Map



C:\TEMP\Jackson Township Water Study\Modeling\Water Model\Buildout Model\No Ag 20170502_VTWS Buildout 20170502.dwg
2017/05/05 9:37 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B14 - MDD+FF - Pressure-Velocity Map

Stantec

600 0 300 600 1200

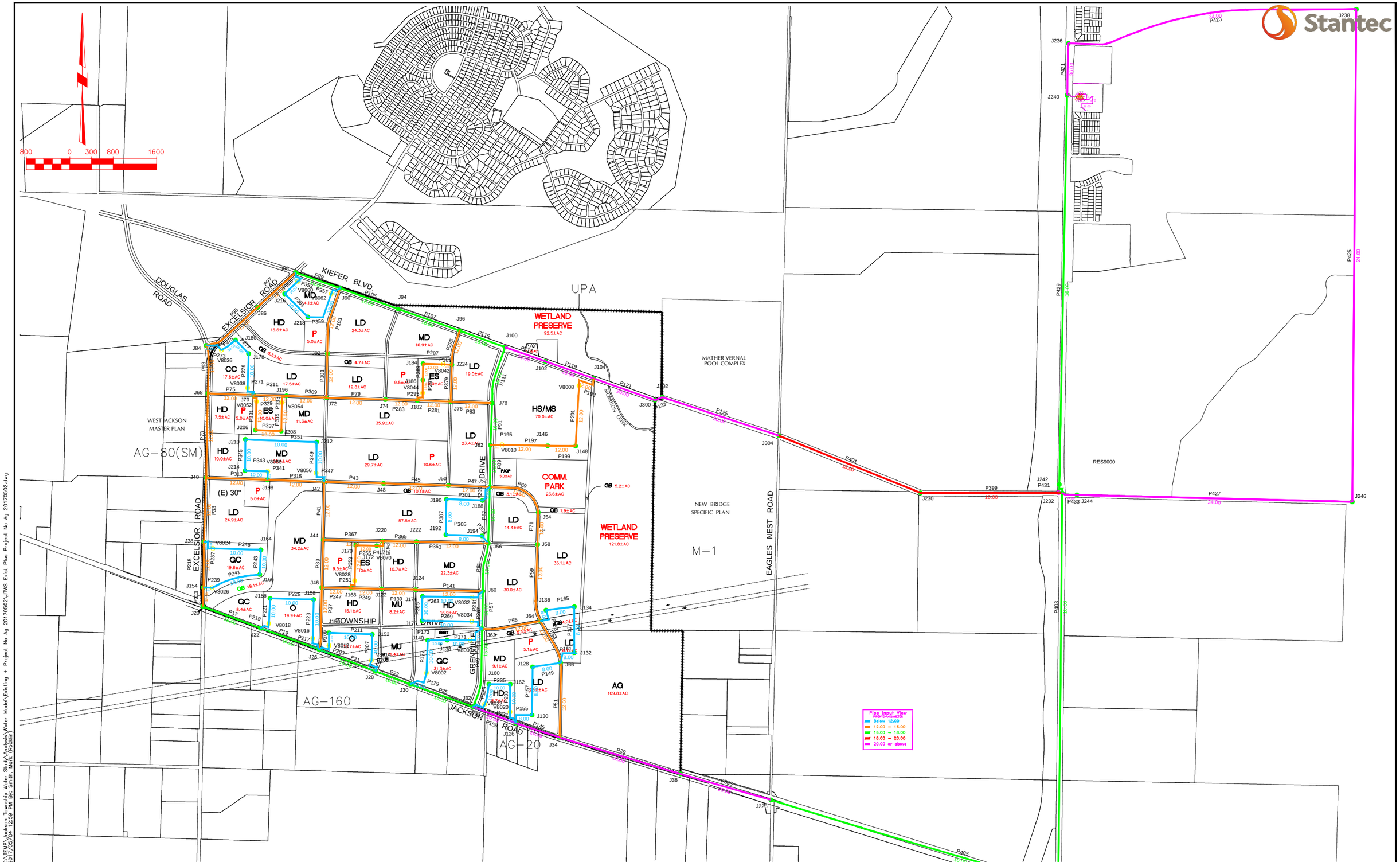
KIEFER BLVD.
DOUGLAS ROAD
EXCELSIOR ROAD
UPA
WEST JACKSON MASTER PLAN
AG-80(SM)
AG-160
AG-20
WETLAND PRESERVE 92.5±AC
WETLAND PRESERVE 121.8±AC
MATHER VERNAL POOL COMPLEX
NEW BRIDGE SPECIFIC PLAN
M-1
AG 109.8±AC
COMM. PARK 23.6±AC
HS/MS 70.0±AC
MORRISON CREEK
EAGLES NEST ROAD
GRENOBLE DRIVE
JACKSON ROAD
TOWNSHIP DRIVE
RES9012
RES9010

Junction Output View
Min. Pressure (psi)
- Below 57.88
- 57.88 ~ 65.43
- 65.43 ~ 72.98
- 72.98 ~ 80.52
- 80.52 or above

Pipe Output View
Velocity (ft/s)
- Below 0.10
- 0.10 ~ 1.00
- 1.00 ~ 2.00
- 2.00 ~ 3.00
- 3.00 ~ 4.00
- 4.00 ~ 5.00
- 5.00 or above

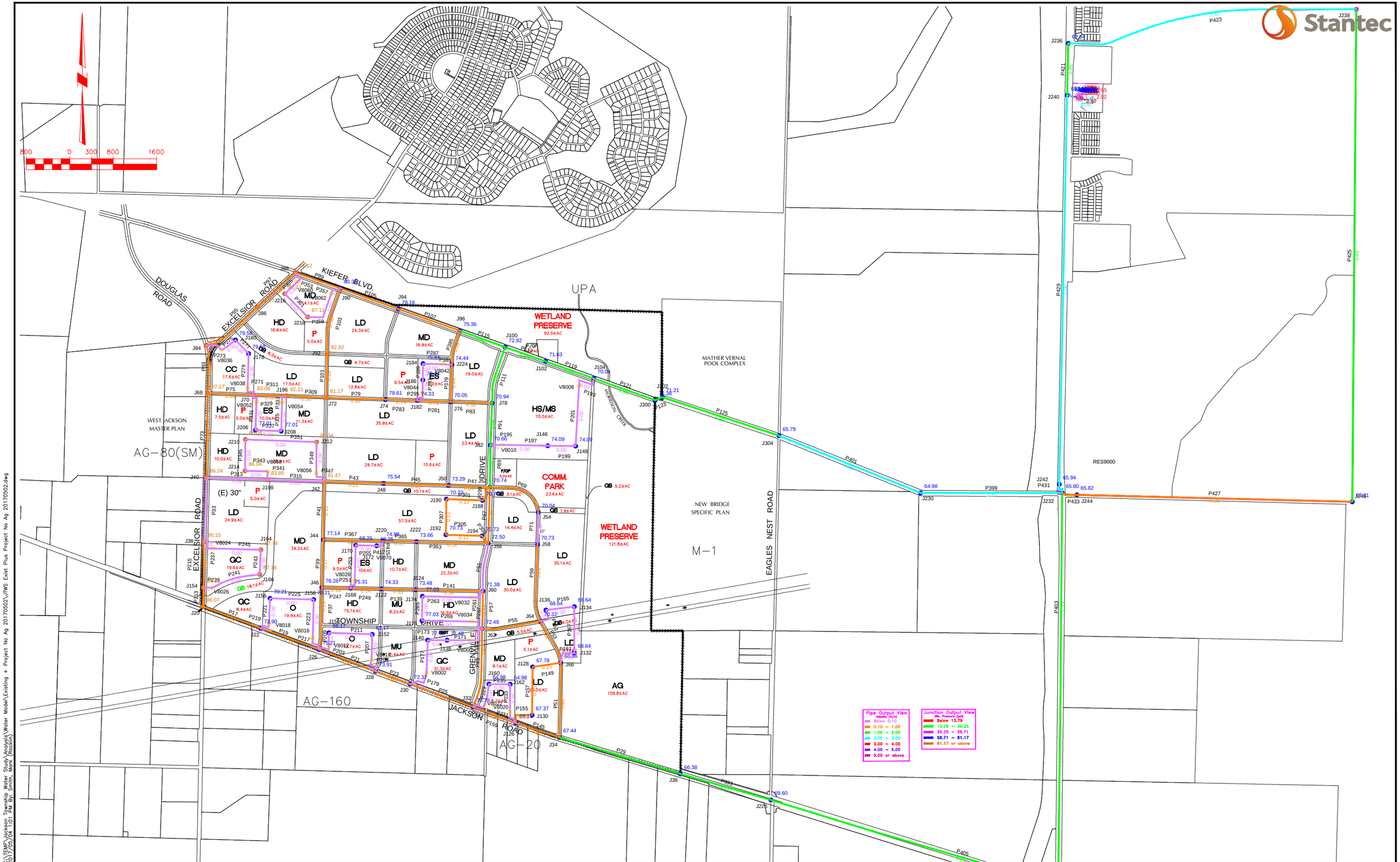
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Buildout Model No Ag 20170502\JTWS Buildout 20170502.dwg
2017/05/05 9:17 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B15 - MDD+FF - Pressure-Velocity Map



C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 12:59 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB2 - MDD - System Map



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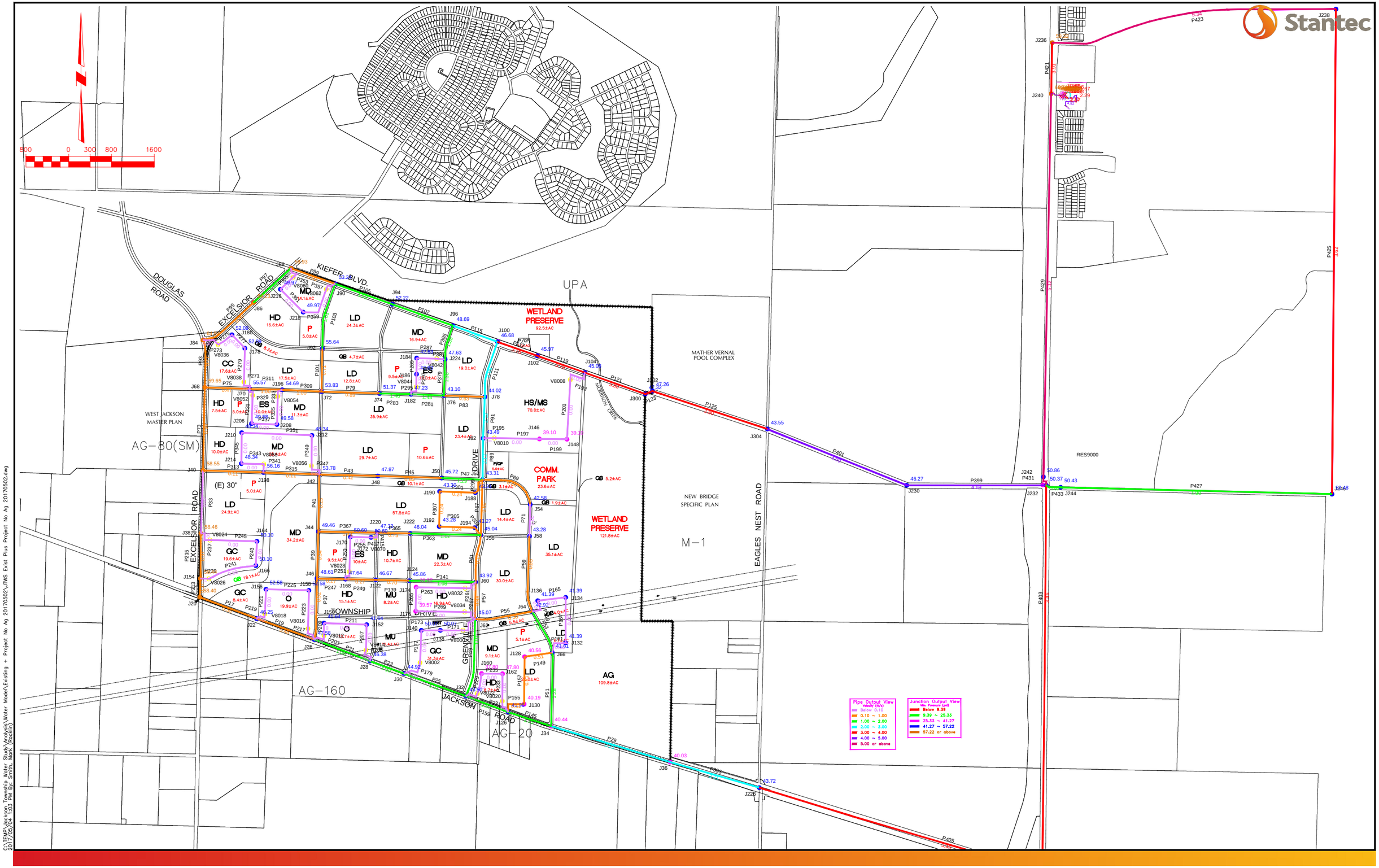
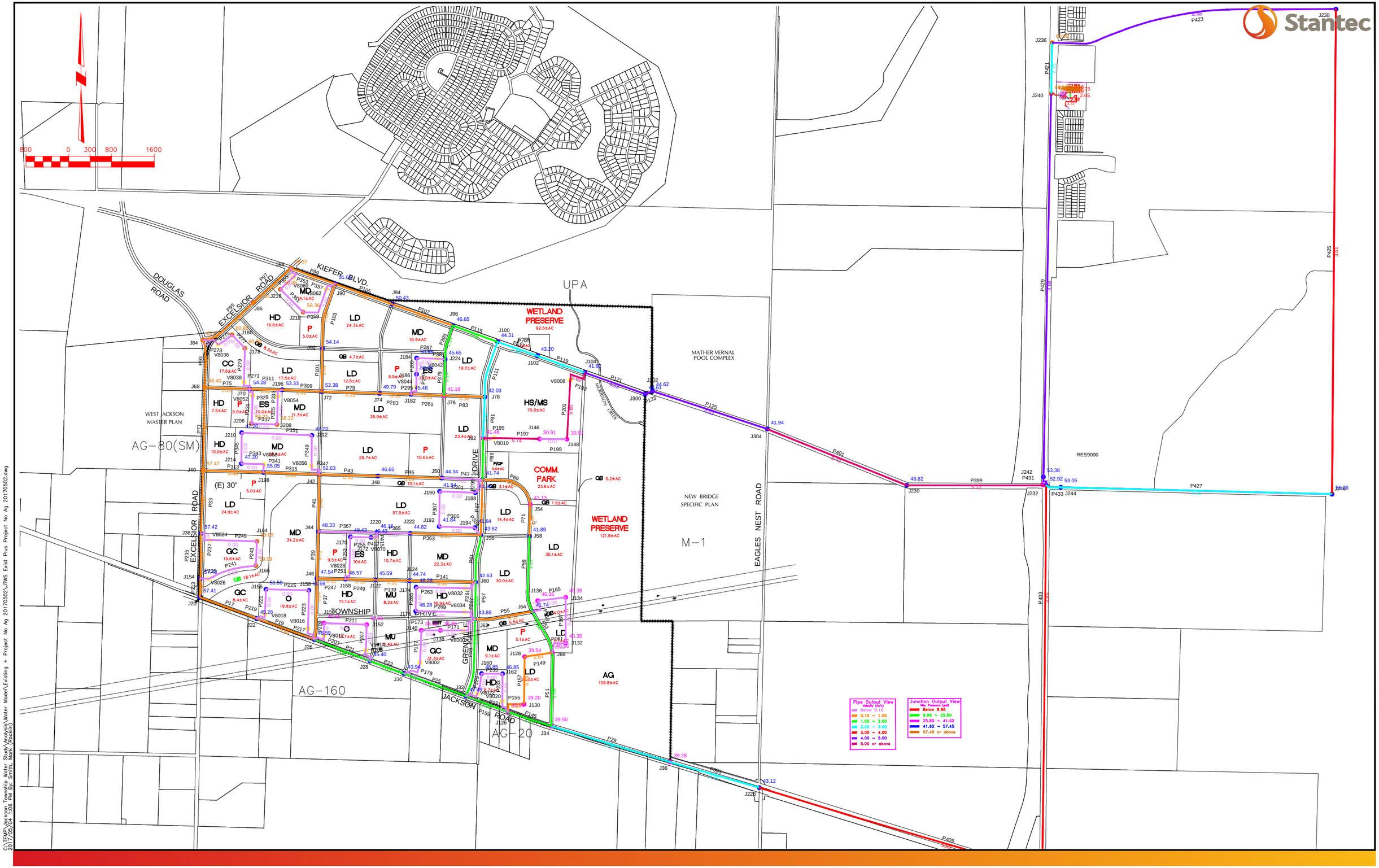
2017/05/04 1:01 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB2 - MDD - Pressure-Velocity Map



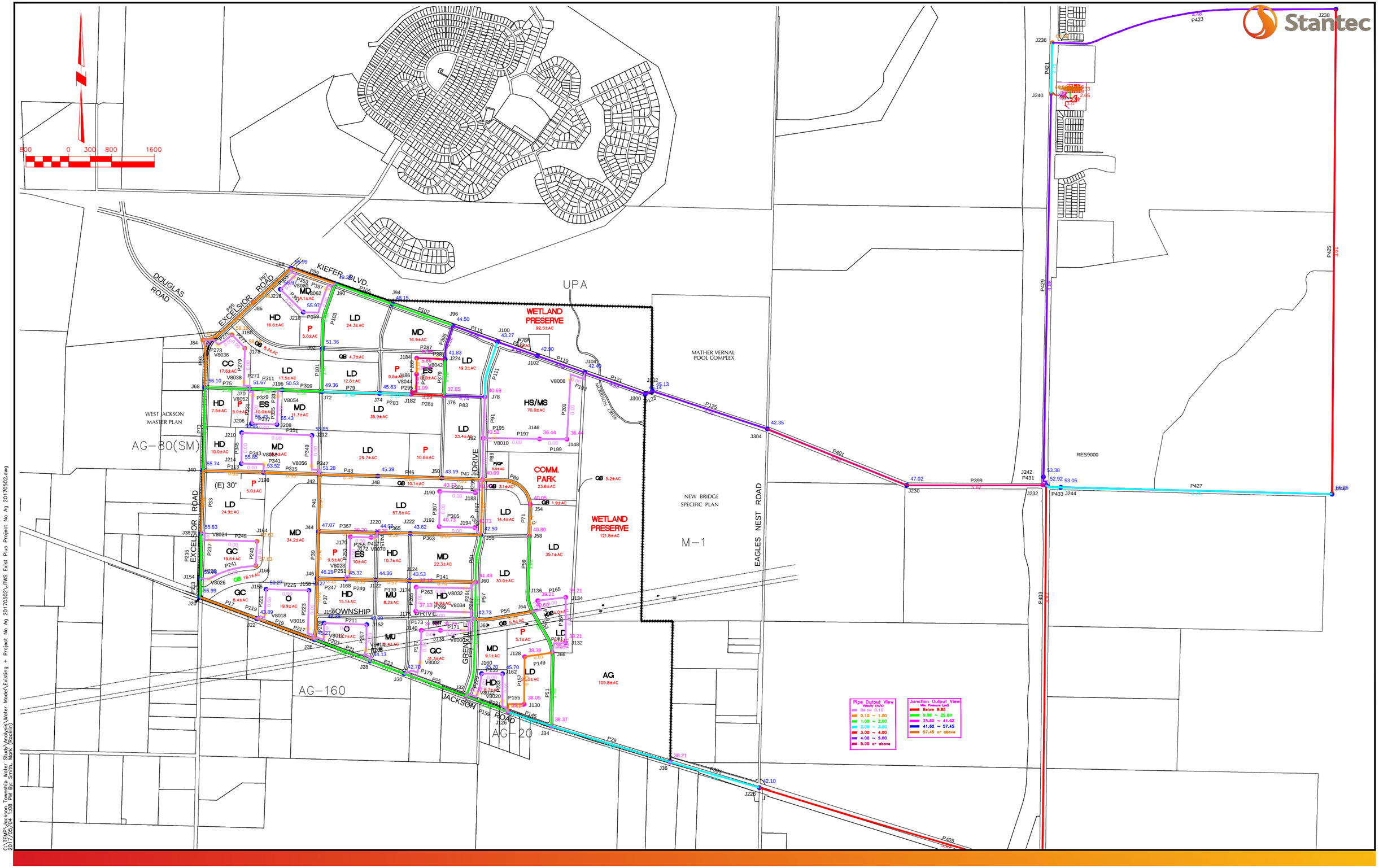
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:03 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB3 - PHD - Pressure-Velocity Map



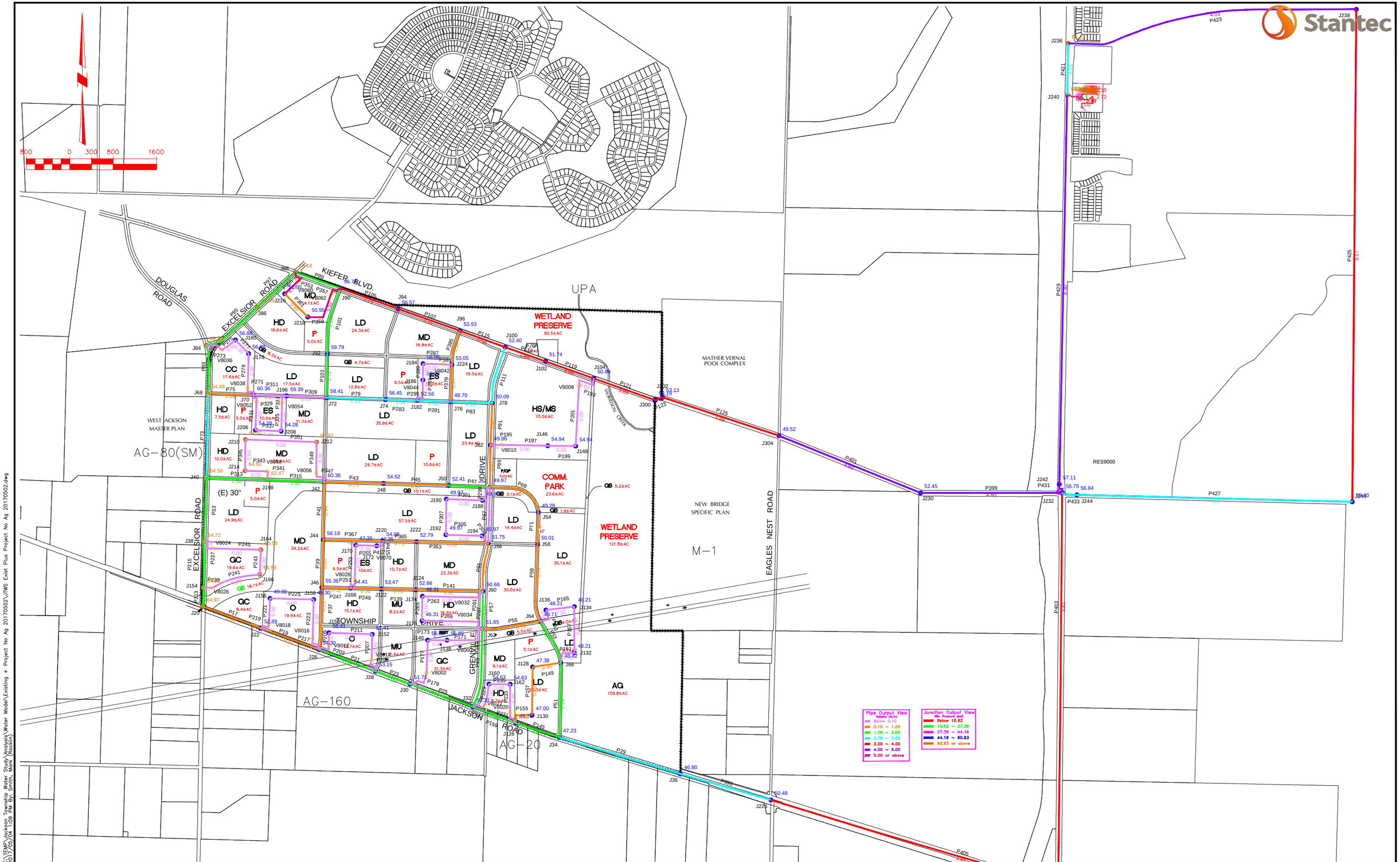
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502.vMS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:06 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB4 - MDD&FF - Pressure-Velocity Map



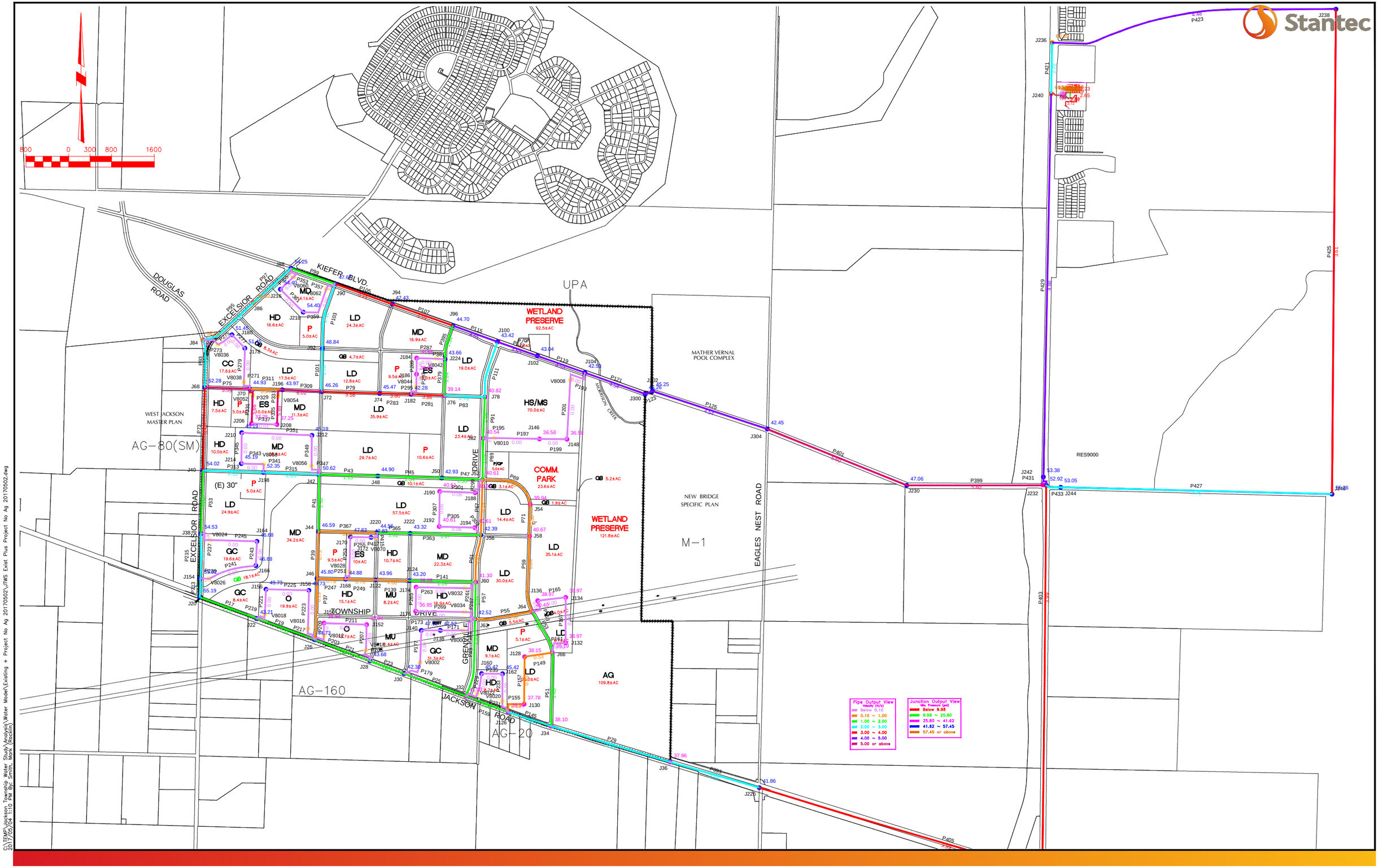
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:08 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB5 - MDD&FF - Pressure-Velocity Map



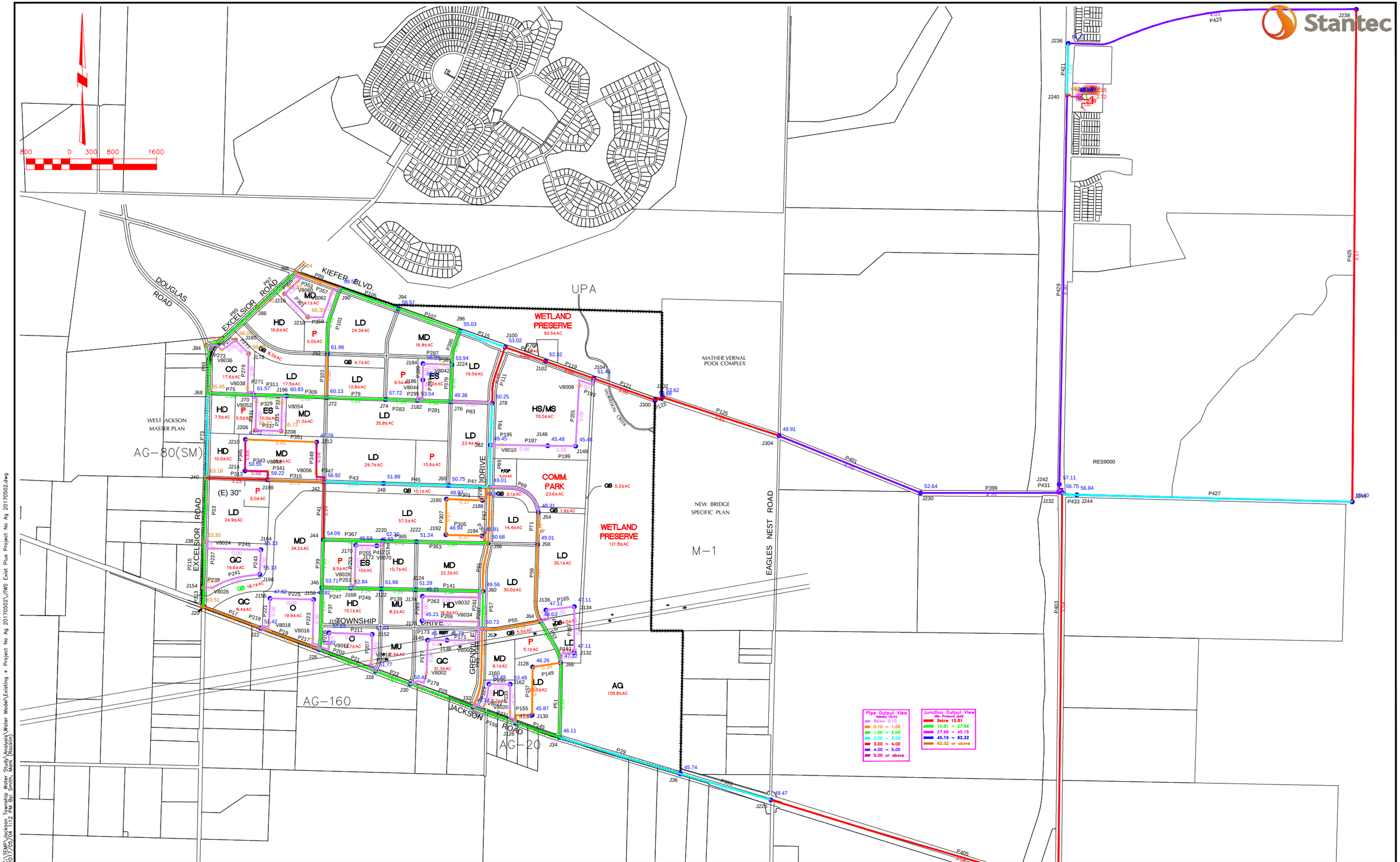
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502.vMS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:09 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB6 - MDD&FF - Pressure-Velocity Map



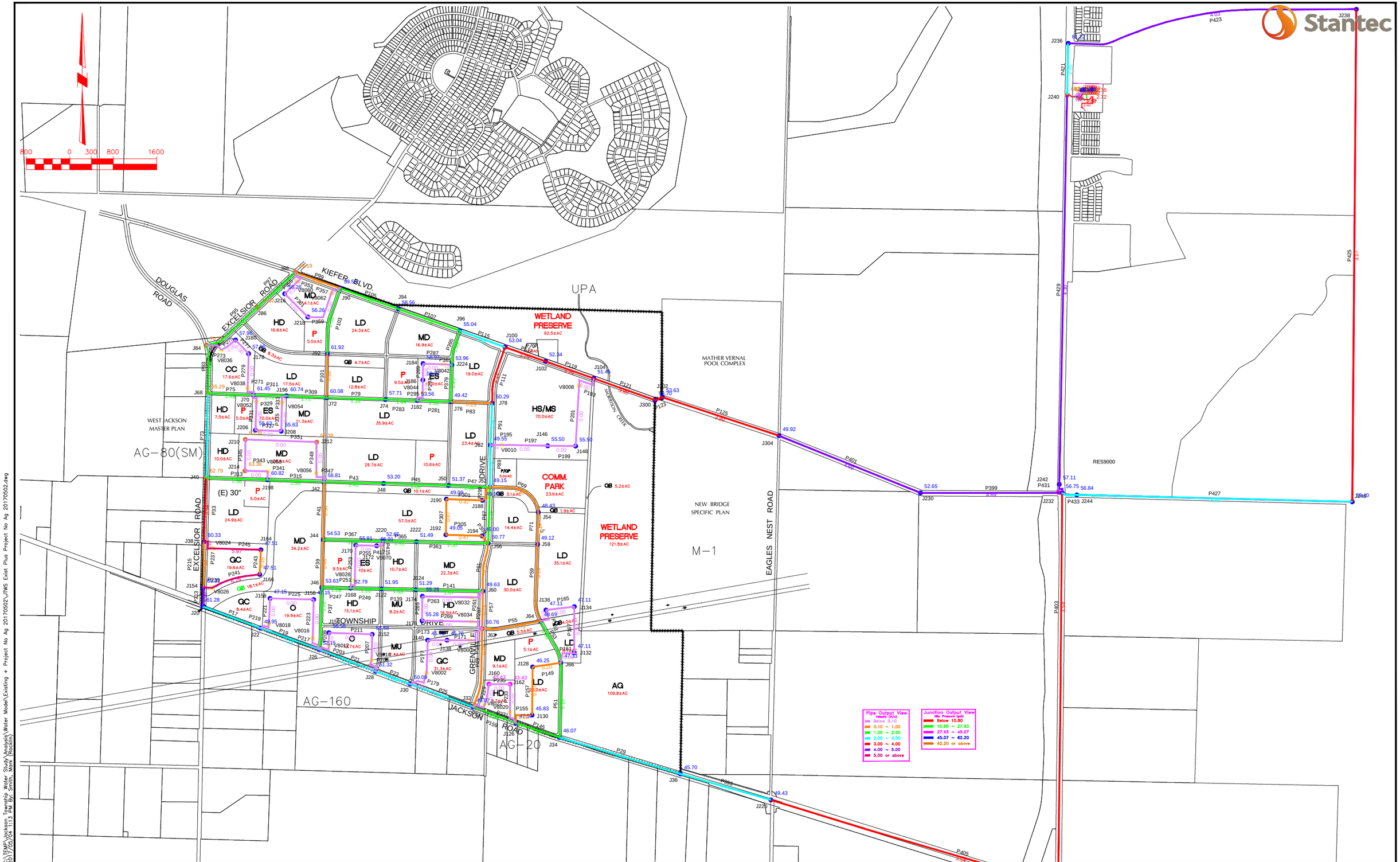
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:10 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB7 - MDD&FF - Pressure-Velocity Map



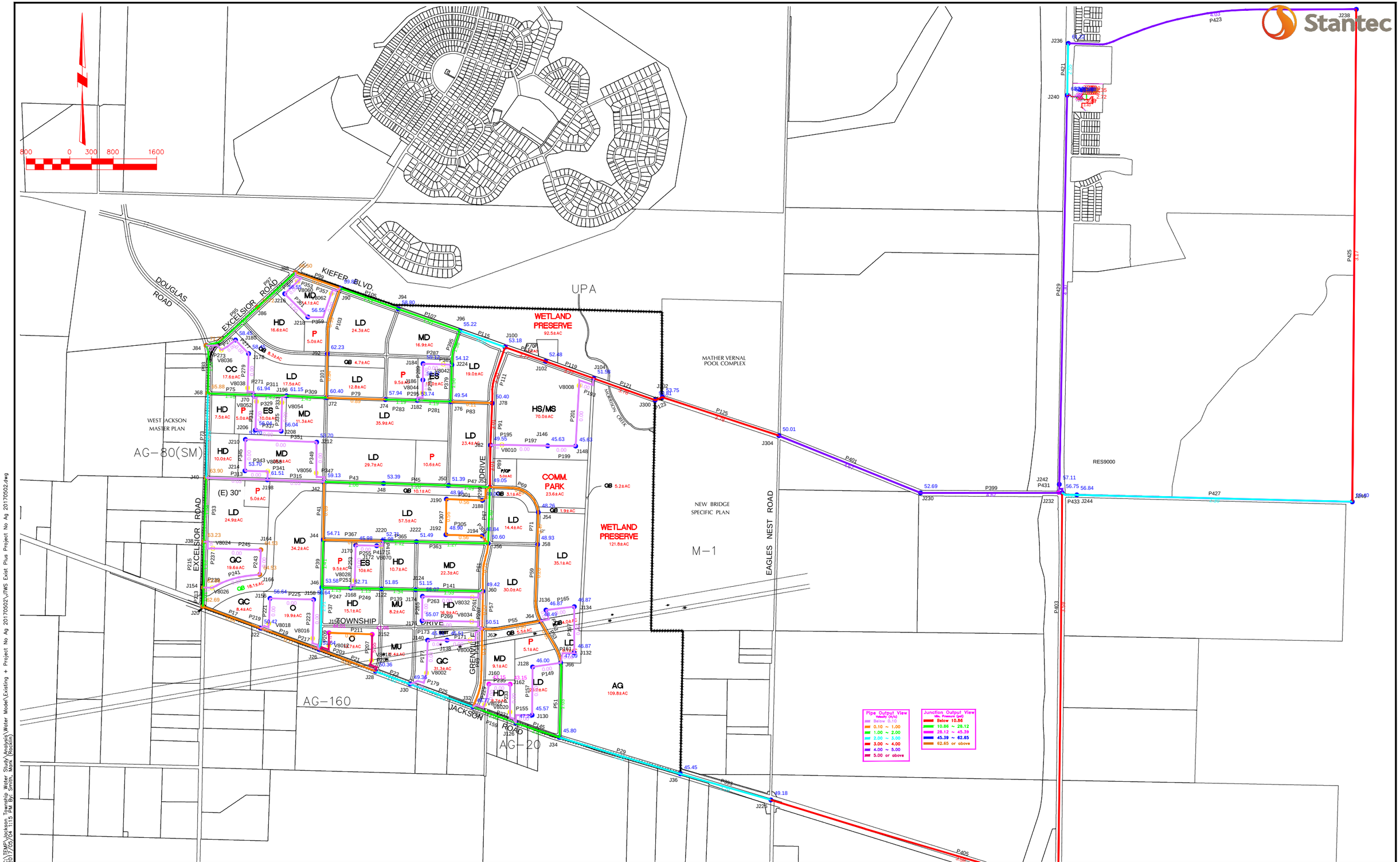
Jackson Township Water Study
Existing plus Project
EB8 - MDD&FF - Pressure-Velocity Map

C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:12 PM By: Smith, Mark (Rocklin)



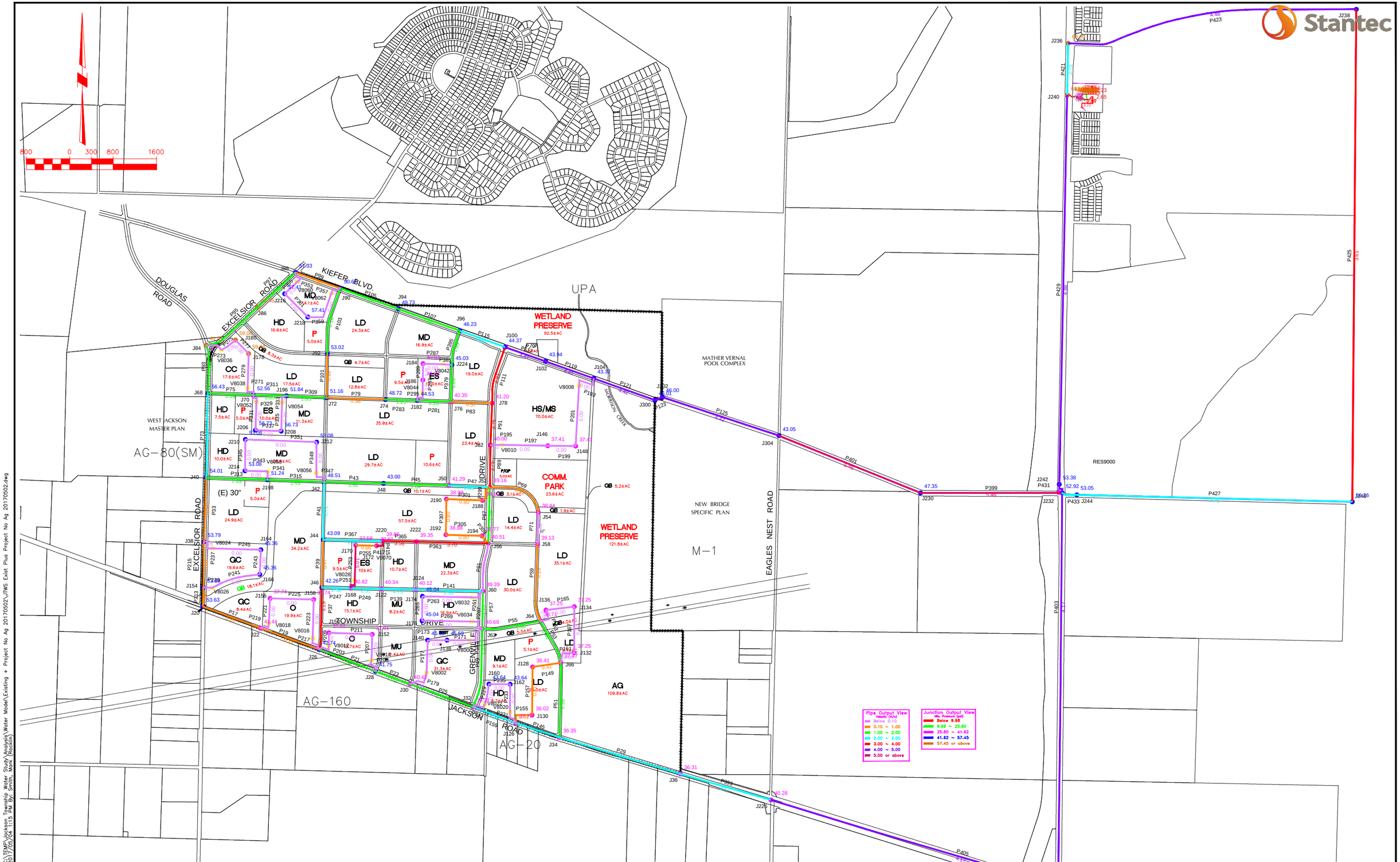
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502.vMS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:13 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB9 - MDD&FF - Pressure-Velocity Map



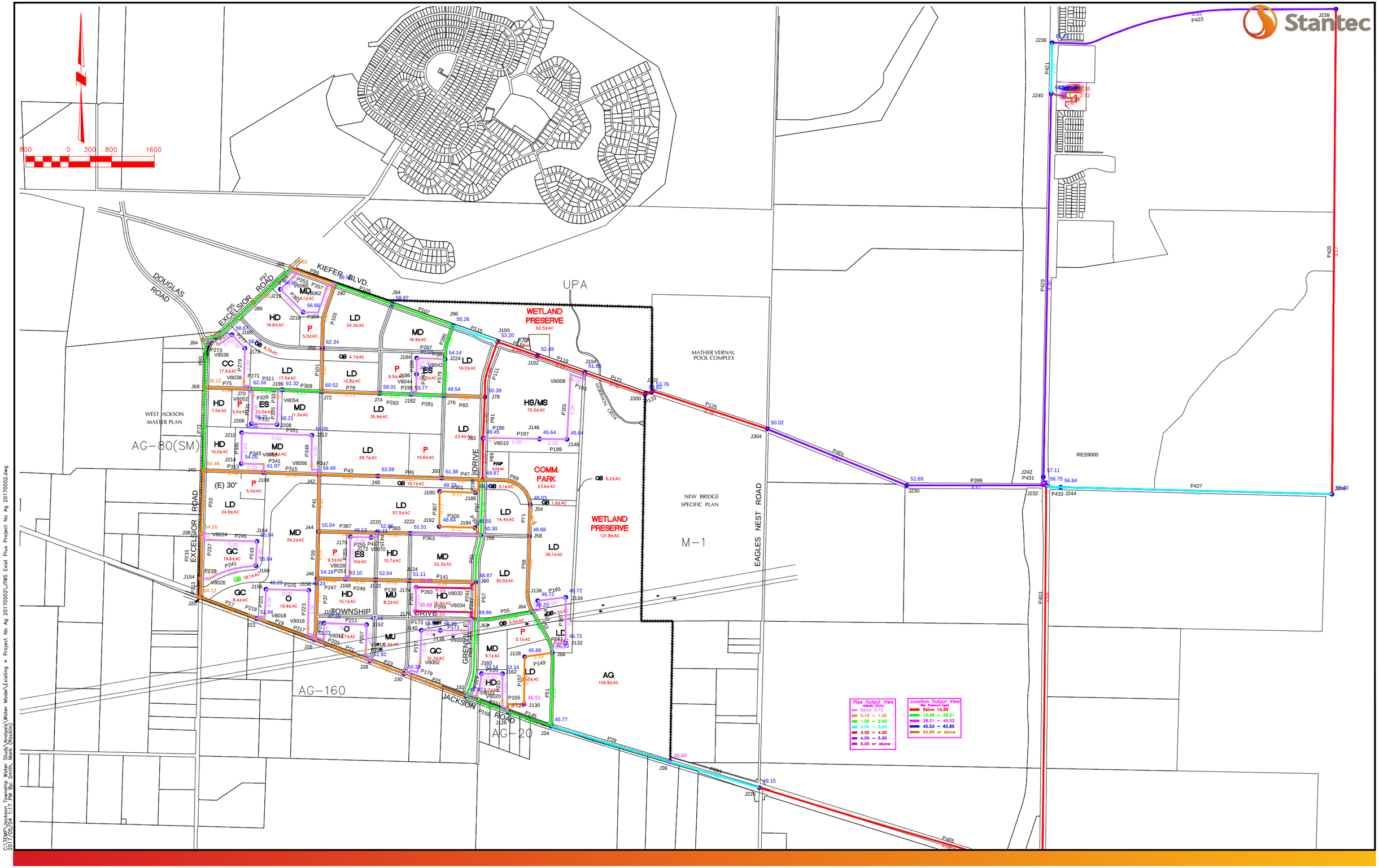
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:15 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB10 - MDD&FF - Pressure-Velocity Map



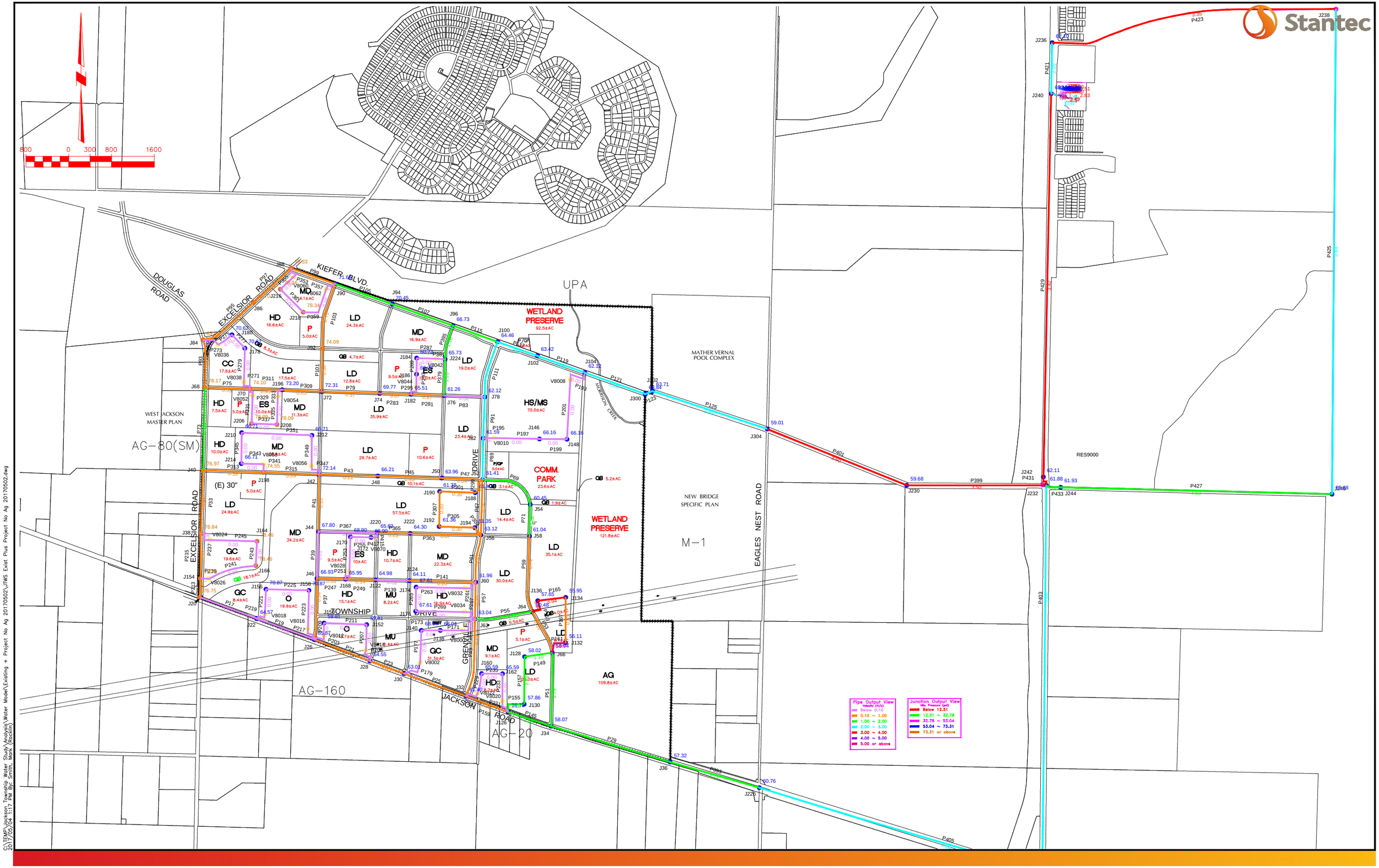
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:15 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB11 - MDD&FF - Pressure-Velocity Map

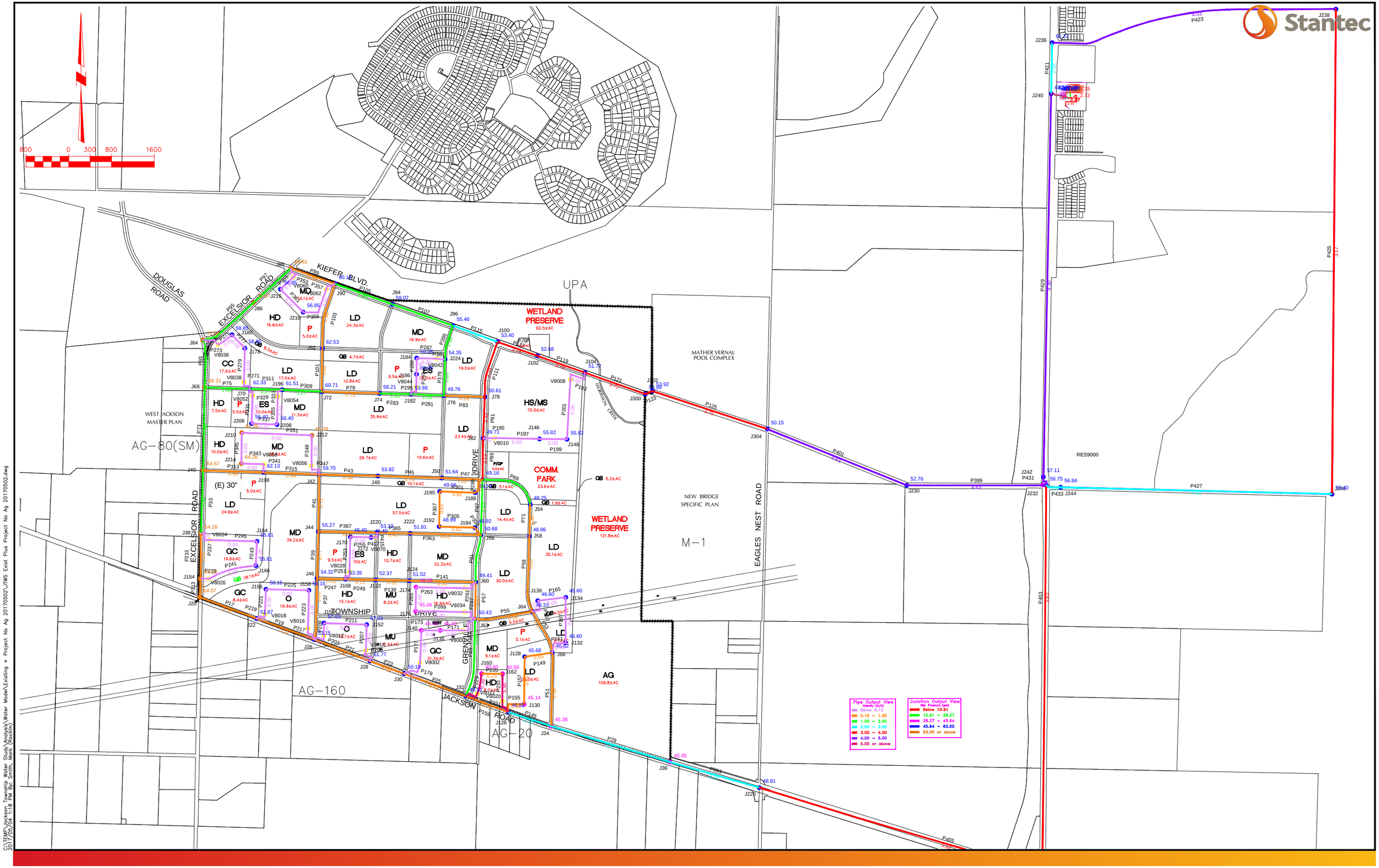


C:\TEMP\Jackson Township Water Study\Modgis\Water Model\Existing + Project No Ag 20170502.vMS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:17 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB12 - MDD&FF - Pressure-Velocity Map



Jackson Township Water Study
Existing plus Project
EB13 - MDD&FF - Pressure-Velocity Map



Jackson Township Water Study
Existing plus Project
EB14 - MDD&FF - Pressure-Velocity Map

A.2 BUILDOUT DEMAND APPORTIONMENT SPREADS

Jackson Township Water Study
Demand Apportionment Spread - By Phase and Parcel Tributary Area to each Node
Average Day Demands (ADD - gpm) **12/1/2016**

Parcel	Phase	Nodes	A. Fac.	Trib. A.	Demand (gpm)	LD	MD	HD	GC	CC	MU	O	P/QP	HS	ES	CP	P	OS-WP	OS-DC	OS-LC	OS-DB	AG	RW	Land Use
						1.41946	1.62604	2.21915	1.34615	1.34615	1.43279	1.34615	0.53979	1.86595	1.86595	1.86595	1.86595	0.00000	0.00000	1.86595	0.00000	0.00000	0.11995	gpm/ac.
1	4	J20	0.333	2.800	3.7692				8.4															
1	4	J22	0.667	5.600	7.5384																			
2	4	J22	0.500	9.950	13.3942							19.9												
2	4	J26	0.500	9.950	13.3942																			
3	4	J26	0.500	6.850	9.2211							13.7												
3	4	J28	0.500	6.850	9.2211																			
4	4	J28	0.500	5.700	8.1669						11.4													
4	4	J30	0.500	5.700	8.1669																			
5	4	J30	0.333	10.433	14.0448				31.3															
5	4	J32	0.333	10.433	14.0448																			
5	4	J62	0.333	10.433	14.0448																			
6	1	J32	0.500	4.350	9.6533			8.7																
6	1	J26	0.500	4.350	9.6533																			
7	1	J32	0.333	8.333	11.8288	25.0																		
7	1	J26	0.333	8.333	11.8288																			
7	1	J66	0.333	8.333	11.8288																			
8	4	J20	0.333	7.367	11.9785		22.1																	
8	4	J38	0.667	14.733	23.9571																			
9	1	J42	0.250	8.550	13.9027		34.2																	
9	1	J44	0.500	17.100	27.8054																			
9	1	J46	0.250	8.550	13.9027																			
10	4	J46	0.500	7.550	16.7546			15.1																
10	4	J122	0.500	7.550	16.7546																			
11	4	J122	0.500	4.100	5.8744						8.2													
11	4	J124	0.500	4.100	5.8744																			
12	4	J60	0.333	5.633	12.5012			16.9																
12	4	J62	0.333	5.633	12.5012																			
12	4	J124	0.333	5.633	12.5012																			
13	1	J32	0.333	3.033	4.9323		9.1																	
13	1	J62	0.667	6.067	9.8647																			
14	1	J64	0.500	2.550	4.7582												5.1							
14	1	J66	0.500	2.550	4.7582																			
15	1	J64	0.333	2.033	2.8862	6.1																	0.0	
15	1	J66	0.667	4.067	5.7725																			
16	1	J44	0.500	4.750	8.8633												9.5							
16	1	J46	0.500	4.750	8.8633																			
17	1	J122	0.500	5.000	9.3298										10.0									
17	1	J220	0.500	5.000	9.3298																			
18	1	J122	0.250	2.675	5.9362			10.7																
18	1	J124	0.250	2.675	5.9362																			
18	1	J220	0.250	2.675	5.9362																			
18	1	J222	0.250	2.675	5.9362																			
19	1	J56	0.250	5.575	9.0652		22.3																	
19	1	J60	0.250	5.575	9.0652																			
19	1	J124	0.250	5.575	9.0652																			
19	1	J222	0.250	5.575	9.0652																			
20	1	J56	0.250	7.500	10.6459	30.0																		
20	1	J62	0.250	7.500	10.6459																			

Jackson Township Water Study
Demand Apportionment Spread - By Phase and Parcel Tributary Area to each Node
Average Day Demands (ADD - gpm) **12/1/2016**

Parcel	Phase	Nodes	A. Fac.	Trib. A.	Demand (gpm)	LD	MD	HD	GC	CC	MU	O	P/QP	HS	ES	CP	P	OS-WP	OS-DC	OS-LC	OS-DB	AG	RW	Land Use
						1.41946	1.62604	2.21915	1.34615	1.34615	1.43279	1.34615	0.53979	1.86595	1.86595	1.86595	1.86595	0.00000	0.00000	1.86595	0.00000	0.00000	0.11995	gpm/ac.
20	1	J64	0.250	7.500	10.6459																			
20	1	J58	0.250	7.500	10.6459																			
21	1	J58	0.667	23.400	33.2153	35.1																		
21	1	J64	0.333	11.700	16.6076																			
22	3	J38	0.500	11.200	15.8979	22.4																		
22	3	J40	0.500	11.200	15.8979																			
23	3	J40	1.000	5.000	9.3298												5.0							
24	1	J52	0.125	7.188	10.2023	57.5																		
24	1	J56	0.125	7.188	10.2023																			
24	1	J50	0.125	7.188	10.2023																			
24	1	J48	0.125	7.188	10.2023																			
24	1	J42	0.125	7.188	10.2023																			
24	1	J44	0.125	7.188	10.2023																			
24	1	J220	0.125	7.188	10.2023																			
24	1	J222	0.125	7.188	10.2023																			
25	1	J52	0.250	3.600	5.1100	14.4																		
25	1	J56	0.250	3.600	5.1100																			
25	1	J54	0.250	3.600	5.1100																			
25	1	J58	0.250	3.600	5.1100																			
26	3	J40	1.000	10.000	22.1915			10.0																
27	3	J40	0.333	9.467	15.3932		28.4																	
27	3	J42	0.667	18.933	30.7864																			
28	3	J42	0.333	9.900	14.0526	29.7																		
28	3	J48	0.667	19.800	28.1052																			
29	3	J50	1.000	10.600	19.7791												10.6							
30	3	J50	0.250	5.850	8.3038	23.4																		
30	3	J52	0.250	5.850	8.3038																			
30	3	J76	0.250	5.850	8.3038																			
30	3	J78	0.250	5.850	8.3038																			
31	1	J52	1.000	5.000	2.6990								5.0											
32	1	J52	0.250	5.900	11.0091											23.6								
32	1	J54	0.750	17.700	33.0274																			
33	3	J68	1.000	7.500	16.6436			7.5																
34	3	J70	1.000	5.000	9.3298												5.0							
35	3	J70	1.000	10.000	18.6595										10.0									
36	3	J72	1.000	11.300	18.3743		11.3																	
37	3	J72	0.250	8.975	12.7396	35.9																		
37	3	J74	0.500	17.950	25.4792																			
37	3	J76	0.250	8.975	12.7396																			
38	1	J52	0.250	17.500	32.6542									70.0										
38	1	J78	0.500	35.000	65.3083																			
38	1	J100	0.250	17.500	32.6542																			
39	2	J68	0.250	4.400	5.9231					17.6														
39	2	J70	0.250	4.400	5.9231																			
39	2	J84	0.500	8.800	11.8461																			
40	2	J70	0.500	8.750	12.4202	17.5																		
40	2	J72	0.500	8.750	12.4202																			
41	2	J72	0.500	6.400	9.0845	12.8																		

Jackson Township Water Study
Demand Apportionment Spread - By Phase and Parcel Tributary Area to each Node
Average Day Demands (ADD - gpm) **12/1/2016**

Parcel	Phase	Nodes	A. Fac.	Trib. A.	Demand (gpm)	LD	MD	HD	GC	CC	MU	O	P/QP	HS	ES	CP	P	OS-WP	OS-DC	OS-LC	OS-DB	AG	RW	Land Use
						1.41946	1.62604	2.21915	1.34615	1.34615	1.43279	1.34615	0.53979	1.86595	1.86595	1.86595	1.86595	0.00000	0.00000	1.86595	0.00000	0.00000	0.11995	gpm/ac.
41	2	J74	0.500	6.400	9.0845																			
42	2	J74	1.000	9.500	17.7265												9.5							
43	2	J76	1.000	10.000	18.6595										10.0									
44	2	J76	0.250	4.750	6.7424	19.0																		
44	2	J78	0.250	4.750	6.7424																			
44	2	J96	0.250	4.750	6.7424																			
44	2	J100	0.250	4.750	6.7424																			
45	2	J86	0.750	10.575	17.1954		14.1																	
45	2	J92	0.250	3.525	5.7318																			
46	2	J92	1.000	5.000	9.3298												5.0							
47	2	J92	0.333	8.100	11.4976	24.3																		
47	2	J90	0.333	8.100	11.4976																			
47	2	J94	0.333	8.100	11.4976																			
48	2	J94	0.500	8.450	13.7401		16.9																	
48	2	J96	0.500	8.450	13.7401																			
49	2	J86	0.200	3.320	7.3676			16.6																
49	2	J88	0.400	6.640	14.7352																			
49	2	J90	0.400	6.640	14.7352																			
50	5	J100	0.500	2.500	4.6649												5.0							
50	5	J104	0.500	2.500	4.6649																			
OS-LC	5	J20	0.167	2.417	4.5094																			
OS-LC	5	J32	0.167	2.417	4.5094																			
OS-LC	5	J40	0.167	2.417	4.5094																			
OS-LC	5	J52	0.167	2.417	4.5094																			
OS-LC	5	J88	0.167	2.417	4.5094																			
OS-LC	5	J100	0.167	2.417	4.5094																			
RW	5	J20	0.167	14.800	1.7753																			
RW	5	J32	0.167	14.800	1.7753																			
RW	5	J40	0.167	14.800	1.7753																			
RW	5	J52	0.167	14.800	1.7753																			
RW	5	J88	0.167	14.800	1.7753																			
RW	5	J100	0.167	14.800	1.7753																			
OS-WP	5			225.200	0.0000																			
OS-DC	5			59.100	0.0000																			
OS-DB	5			3.200	0.0000																			
AG	5			109.300	0.0000																			
Totals			**50.000**	**1390.900**	**1472.0673**	353.1	158.4	85.5	39.7	17.6	19.6	33.6	5.0	70.0	30.0	23.6	54.7	225.2	59.1	14.5	3.2	109.3	88.8	**1390.90 ac.**

Check using Ac/ft/yr	LD	MD	HD	GC	CC	MU	O	P/QP	HS	ES	CP	P	OS-WP	OS-DC	OS-LC	OS-DB	AG	RW	
	2.13	2.44	3.33	2.02	2.02	2.15	2.02	0.81	2.80	2.80	2.80	2.80	0.00	0.00	2.80	0.00	0.00	0.18	
Total	752.10	386.50	284.72	80.19	35.55	42.14	67.87	4.05	196.00	84.00	66.08	153.16	0.00	0.00	40.60	0.00	0.00	15.98	**2208.95 AF**

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)
38	J100	0.25	17.5	32.65
44	J100	0.25	4.75	6.74
50	J100	0.5	2.5	4.66
OS-LC	J100	0.166667	2.416667	4.51
RW	J100	0.166667	14.8	1.78
				50.35
50	J104	0.5	2.5	4.66
				4.66
10	J122	0.5	7.55	16.75
11	J122	0.5	4.1	5.87
17	J122	0.5	5	9.33
18	J122	0.25	2.675	5.94
				37.89
11	J124	0.5	4.1	5.87
12	J124	0.333333	5.633333	12.50
18	J124	0.25	2.675	5.94
19	J124	0.25	5.575	9.07
				33.38
1	J20	0.333333	2.8	3.77
8	J20	0.333333	7.366667	11.98
OS-LC	J20	0.166667	2.416667	4.51
RW	J20	0.166667	14.8	1.78
				22.03
1	J22	0.666667	5.6	7.54
2	J22	0.5	9.95	13.39
				20.93
17	J220	0.5	5	9.33
18	J220	0.25	2.675	5.94
24	J220	0.125	7.1875	10.20
				25.47
18	J222	0.25	2.675	5.94
19	J222	0.25	5.575	9.07
24	J222	0.125	7.1875	10.20
				25.20

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)
2	J26	0.5	9.95	13.39
3	J26	0.5	6.85	9.22
6	J26	0.5	4.35	9.65
7	J26	0.333333	8.333333	11.83
				44.10
3	J28	0.5	6.85	9.22
4	J28	0.5	5.7	8.17
				17.39
4	J30	0.5	5.7	8.17
5	J30	0.333333	10.43333	14.04
				22.21
5	J32	0.333333	10.43333	14.04
6	J32	0.5	4.35	9.65
7	J32	0.333333	8.333333	11.83
13	J32	0.333333	3.033333	4.93
OS-LC	J32	0.166667	2.416667	4.51
RW	J32	0.166667	14.8	1.78
				46.74
8	J38	0.666667	14.73333	23.96
22	J38	0.5	11.2	15.90
				39.85
22	J40	0.5	11.2	15.90
23	J40	1	5	9.33
26	J40	1	10	22.19
27	J40	0.333333	9.466667	15.39
OS-LC	J40	0.166667	2.416667	4.51
RW	J40	0.166667	14.8	1.78
				69.10
9	J42	0.25	8.55	13.90
24	J42	0.125	7.1875	10.20
27	J42	0.666667	18.93333	30.79
28	J42	0.333333	9.9	14.05
				68.94

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)
9	J44	0.5	17.1	27.81
16	J44	0.5	4.75	8.86
24	J44	0.125	7.1875	10.20
				46.87
9	J46	0.25	8.55	13.90
10	J46	0.5	7.55	16.75
16	J46	0.5	4.75	8.86
				39.52
24	J48	0.125	7.1875	10.20
28	J48	0.666667	19.8	28.11
				38.31
24	J50	0.125	7.1875	10.20
29	J50	1	10.6	19.78
30	J50	0.25	5.85	8.30
				38.29
24	J52	0.125	7.1875	10.20
25	J52	0.25	3.6	5.11
30	J52	0.25	5.85	8.30
31	J52	1	5	2.70
32	J52	0.25	5.9	11.01
38	J52	0.25	17.5	32.65
OS-LC	J52	0.166667	2.416667	4.51
RW	J52	0.166667	14.8	1.78
				76.26
25	J54	0.25	3.6	5.11
32	J54	0.75	17.7	33.03
				38.14
19	J56	0.25	5.575	9.07
20	J56	0.25	7.5	10.65
24	J56	0.125	7.1875	10.20
25	J56	0.25	3.6	5.11
				35.02
20	J58	0.25	7.5	10.65
21	J58	0.666667	23.4	33.22

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)
25	J58	0.25	3.6	5.11
				48.97
12	J60	0.333333	5.633333	12.50
19	J60	0.25	5.575	9.07
				21.57
5	J62	0.333333	10.43333	14.04
12	J62	0.333333	5.633333	12.50
13	J62	0.666667	6.066667	9.86
20	J62	0.25	7.5	10.65
				47.06
14	J64	0.5	2.55	4.76
15	J64	0.333333	2.033333	2.89
20	J64	0.25	7.5	10.65
21	J64	0.333333	11.7	16.61
				34.90
7	J66	0.333333	8.333333	11.83
14	J66	0.5	2.55	4.76
15	J66	0.666667	4.066667	5.77
				22.36
33	J68	1	7.5	16.64
39	J68	0.25	4.4	5.92
				22.57
34	J70	1	5	9.33
35	J70	1	10	18.66
39	J70	0.25	4.4	5.92
40	J70	0.5	8.75	12.42
				46.33
36	J72	1	11.3	18.37
37	J72	0.25	8.975	12.74
40	J72	0.5	8.75	12.42
41	J72	0.5	6.4	9.08
				52.62
37	J74	0.5	17.95	25.48

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)
41	J74	0.5	6.4	9.08
42	J74	1	9.5	17.73
				52.29
30	J76	0.25	5.85	8.30
37	J76	0.25	8.975	12.74
43	J76	1	10	18.66
44	J76	0.25	4.75	6.74
				46.45
30	J78	0.25	5.85	8.30
38	J78	0.5	35	65.31
44	J78	0.25	4.75	6.74
				80.35
39	J84	0.5	8.8	11.85
				11.85
45	J86	0.75	10.575	17.20
49	J86	0.2	3.32	7.37
				24.56
49	J88	0.4	6.64	14.74
OS-LC	J88	0.166667	2.416667	4.51
RW	J88	0.166667	14.8	1.78
				21.02
47	J90	0.333333	8.1	11.50
49	J90	0.4	6.64	14.74
				26.23
45	J92	0.25	3.525	5.73
46	J92	1	5	9.33
47	J92	0.333333	8.1	11.50
				26.56
47	J94	0.333333	8.1	11.50
48	J94	0.5	8.45	13.74
				25.24
44	J96	0.25	4.75	6.74

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)	
48	J96	0.5	8.45	13.74	
				20.48	
AG			109.3	0.00	
OS-DB			3.2	0.00	
OS-DC			59.1	0.00	
OS-WP			225.2	0.00	
				1472.07	ADD
				2944.13	MDD
				5888.27	PHD

A.3 BUILDOUT SIMULATION RESULTS PRINTOUTS

Buildout Project Simulation Printouts

5/4/2017

Run B1

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	50.35	122	294.77	74.86
0	J102	0	125.5	295.42	73.63
0	J104	4.66	129.8	296.2	72.1
0	J122	37.89	117.5	292.17	75.68
0	J124	33.38	119.5	292.17	74.82
0	J126	0	130	291.96	70.18
0	J128	0	133	292	68.9
0	J130	0	134	291.98	68.45
0	J132	0	131	292.03	69.78
0	J134	0	131	292.06	69.79
0	J136	0	131	292.08	69.8
0	J138	0	122	280.57	68.71
0	J140	0	122	280.57	68.71
0	J146	0	132	307.74	76.15
0	J148	0	132	307.74	76.15
0	J150	0	118	280.52	70.42
0	J152	0	118	280.52	70.42
0	J154	0	90.3	292.19	87.48
0	J156	0	115.5	280.57	71.52
0	J158	0	115.5	280.57	71.52
0	J160	0	128	280.42	66.05
0	J162	0	128	280.42	66.05
0	J164	0	98	280.65	79.14
0	J166	0	98	280.65	79.14
0	J168	0	115.25	292.17	76.66
0	J170	0	120	280.73	69.64
0	J172	0	120	280.73	69.64
0	J174	0	123	303.73	78.31
0	J176	0	123	303.73	78.31
0	J178	0	94	304.93	91.4
0	J180	0	94	304.93	91.4
0	J182	0	118	293.83	76.19
0	J184	0	118	305.66	81.31
0	J186	0	118	305.66	81.31
0	J188	0	126	292.61	72.19
0	J190	0	126	292.61	72.19
0	J192	0	126	292.61	72.19
0	J194	0	126	292.61	72.19
0	J196	0	99.75	293.52	83.96
0	J198	0	95.5	292.42	85.33
0	J20	22.03	90.4	292.15	87.42
0	J206	0	100	281.98	78.85
0	J208	0	100	281.98	78.85
0	J210	0	102	280.82	77.48
0	J212	0	102	280.82	77.48
0	J214	0	102	280.82	77.48
0	J216	0	100	282.36	79.02
0	J218	0	100	282.36	79.02
0	J22	20.93	118.5	292.13	75.23
0	J220	25.47	116	292.27	76.38
0	J222	25.2	119.1	292.29	75.04
0	J224	0	118	294.12	76.31
0	J226	0	130	291.56	70
0	J26	44.1	115.5	292.11	76.52
0	J28	17.39	118.6	292.06	75.16
0	J30	22.21	122.2	292.04	73.59
0	J300	0	127.5	297.19	73.53

0	J302	0	128	297.31	73.36
0	J304	0	142	299.19	68.11
0	J32	46.74	126	292	71.93
0	J34	0	134	291.92	68.43
0	J36	0	138	291.71	66.6
0	J38	39.85	90.2	292.29	87.56
0	J40	69.1	90	292.48	87.73
0	J42	68.94	101	292.36	82.92
0	J44	46.87	111	292.26	78.54
0	J46	39.52	113	292.17	77.63
0	J48	38.31	114.7	292.42	77
0	J50	38.29	120	292.51	74.75
0	J52	76.26	126	292.61	72.19
0	J54	38.14	127.6	292.35	71.39
0	J56	35.02	121.9	292.33	73.85
0	J58	48.97	126	292.25	72.04
0	J60	21.57	124.5	292.19	72.66
0	J62	47.06	122	292.11	73.71
0	J64	34.9	127	292.09	71.54
0	J66	22.36	130.5	292.02	69.99
0	J68	22.57	88	293.27	88.94
0	J70	46.33	97.5	293.39	84.88
0	J72	52.62	102	293.67	83.05
0	J74	52.29	108	293.75	80.49
0	J76	46.45	128	293.91	71.89
0	J78	80.35	126	293.89	72.74
0	J82	0	126.4	293.24	72.29
0	J84	11.85	76	293.42	94.21
0	J86	24.56	78	293.64	93.44
0	J88	21.02	88.4	293.84	89.02
0	J90	26.23	104	293.9	82.28
0	J92	26.56	98	293.75	84.82
0	J94	25.24	107	294.1	81.07
0	J96	20.48	116	294.33	77.27

	ID	Flow (gpm)	Head (ft)
0	RES9010	625.14	291.56
0	RES9012	-2,097.20	299.19

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	73.71	68.71	0	0	11.54	Open		3
0	V8002	8	122	73.68	68.71	0	0	0	Closed		3
0	V8008	10	132	71.15	76.15	0	0	11.54	Open		2
0	V8010	10	132	69.87	76.15	0	0	0	Closed		2
0	V8012	8	118	75.44	70.42	0	0	0	Closed		3
0	V8014	8	118	75.42	70.42	0	0	11.54	Open		3
0	V8016	8	115.5	76.52	71.52	0	0	11.54	Open		3
0	V8018	8	115.5	76.53	71.52	0	0	0	Closed		3
0	V8020	8	128	71.05	66.05	0	0	11.54	Open		3
0	V8022	8	128	71.06	66.05	0	0	0	Closed		3
0	V8024	8	98	84.18	79.14	0	0	0	Closed		3
0	V8026	8	98	84.14	79.14	0	0	11.54	Open		3
0	V8028	10	120	74.6	69.64	0	0	0	Closed		2
0	V8032	8	123	73.31	78.31	0	0	11.54	Open		3
0	V8034	8	123	73.27	78.31	0	0	0	Closed		3
0	V8036	8	94	86.41	91.4	0	0	0	Closed		3
0	V8038	8	94	86.4	91.4	0	0	11.54	Open		3
0	V8042	10	118	76.31	81.31	0	0	11.54	Open		2
0	V8044	10	118	76.19	81.31	0	0	0	Closed		2
0	V8052	10	100	83.8	78.85	0	0	0	Closed		2
0	V8054	10	100	83.85	78.85	0	0	11.54	Open		2

0	V8056	8	102	82.48	77.48	0	0	11.54	Open	3
0	V8058	8	102	82.51	77.48	0	0	0	Closed	3
0	V8060	8	100	83.99	79.02	0	0	0	Closed	3
0	V8062	8	100	84.02	79.02	0	0	11.54	Open	3
0	V8070	10	120	74.65	69.64	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-166.46	0.47	0.07	0.09
0	P103	J92	J90	1,241.83	12	130	-193.02	0.55	0.15	0.12
0	P105	J90	J94	1,132.34	16	130	-506.11	0.81	0.2	0.18
0	P107	J94	J96	1,204.53	16	130	-531.35	0.85	0.23	0.19
0	P111	J78	J100	1,067.79	16	130	-1,162.90	1.86	0.88	0.83
0	P115	J96	J100	886.7	16	130	-879.29	1.4	0.44	0.49
0	P117	J100	J102	789.56	20	130	-2,092.54	2.14	0.65	0.83
0	P119	J102	J104	941.88	20	130	-2,092.54	2.14	0.78	0.83
0	P121	J104	J300	1,197.93	20	130	-2,097.20	2.14	0.99	0.83
0	P123	J300	J302	147.08	20	130	-2,097.20	2.14	0.12	0.83
0	P125	J302	J304	2,260.56	20	130	-2,097.20	2.14	1.88	0.83
0	P139	J122	J124	627.68	12	130	-26.57	0.08	0	0
0	P141	J124	J60	1,242.80	12	130	-59.95	0.17	0.02	0.01
0	P145	J34	J126	846.23	20	130	-478.62	0.49	0.05	0.05
0	P149	J66	J128	522.48	8	130	30.94	0.2	0.02	0.03
0	P155	J126	J130	441.09	8	130	-30.94	0.2	0.01	0.03
0	P157	J128	J130	886.05	8	130	30.94	0.2	0.03	0.03
0	P159	J126	J32	843.52	20	130	-447.68	0.46	0.04	0.05
0	P161	J66	J132	415.81	8	130	-34.86	0.22	0.02	0.04
0	P163	J64	J136	338.87	8	130	34.86	0.22	0.01	0.04
0	P165	J136	J134	525.67	8	130	34.86	0.22	0.02	0.04
0	P167	J132	J134	848.01	8	130	-34.86	0.22	0.03	0.04
0	P17	J20	J22	1,133.08	16	130	165.39	0.26	0.03	0.02
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	144.46	0.23	0.02	0.02
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	226.84	0.36	0.04	0.04
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-187.42	0.53	0.04	0.11
0	P215	J154	J38	842.54	12	130	-187.42	0.53	0.1	0.11
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	209.45	0.33	0.02	0.03
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0

0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	11.32	0.03	0	0
0	P249	J168	J122	563.66	12	130	11.32	0.03	0	0
0	P25	J30	J32	1,229.93	16	130	187.24	0.3	0.03	0.03
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	198.51	0.56	0.08	0.13
0	P283	J182	J74	589.22	12	130	198.51	0.56	0.07	0.13
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	625.14	0.64	0.21	0.09
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	260.06	0.74	0.15	0.21
0	P311	J196	J70	609.66	12	130	260.06	0.74	0.13	0.21
0	P313	J40	J198	1,129.17	12	130	124.22	0.35	0.06	0.05
0	P315	J198	J42	1,043.66	12	130	124.22	0.35	0.06	0.05
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-227.27	0.64	0.19	0.16
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	102.52	0.29	0.05	0.04
0	P365	J222	J220	621.17	12	130	77.32	0.22	0.01	0.02
0	P367	J220	J44	1,095.19	12	130	51.86	0.15	0.01	0.01
0	P37	J26	J46	1,141.00	12	130	-126.48	0.36	0.06	0.06
0	P379	J76	J224	678.87	12	130	-327.46	0.93	0.22	0.32
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-177.31	0.5	0.09	0.1
0	P393	J226	J36	1,733.97	20	130	-625.14	0.64	0.15	0.09

0	P395	J96	J224	650.52	12	130	327.46	0.93	0.21	0.32
0	P41	J44	J42	1,067.11	12	130	-172.33	0.49	0.1	0.1
0	P415	J220	V8070	123.15	12	130	0	0	0	0
0	P417	V8070	J172	76.51	12	130	0	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	-625.14	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	2,097.20	0	0	0
0	P43	J42	J48	1,096.37	12	130	-117.05	0.33	0.05	0.05
0	P45	J48	J50	1,194.62	12	130	-155.36	0.44	0.1	0.08
0	P47	J50	J52	765.09	12	130	-193.65	0.55	0.09	0.12
0	P49	J32	J62	1,463.77	16	130	-307.18	0.49	0.1	0.07
0	P51	J34	J66	1,373.58	12	130	-146.52	0.42	0.1	0.07
0	P53	J66	J64	862.35	12	130	-164.96	0.47	0.08	0.09
0	P55	J62	J64	1,082.76	12	130	51.55	0.15	0.01	0.01
0	P57	J62	J60	691.6	16	130	-405.79	0.65	0.08	0.12
0	P59	J64	J58	1,424.22	12	130	-183.17	0.52	0.16	0.11
0	P61	J60	J56	890.62	16	130	-487.31	0.78	0.15	0.16
0	P67	J56	J52	1,036.48	16	130	-624.86	1	0.27	0.26
0	P69	J52	J54	1,131.15	12	130	270.28	0.77	0.25	0.22
0	P71	J58	J54	591.64	12	130	-232.14	0.66	0.1	0.17
0	P73	J40	J68	1,551.82	12	130	-420.59	1.19	0.79	0.51
0	P75	J68	J70	838.54	12	130	-213.73	0.61	0.12	0.15
0	P79	J72	J74	1,086.50	12	130	-146.22	0.41	0.08	0.07
0	P83	J76	J78	765.46	12	130	82.49	0.23	0.02	0.02
0	P89	J52	J82	771.55	16	130	-1,165.05	1.86	0.64	0.83
0	P91	J82	J78	774.7	16	130	-1,165.05	1.86	0.64	0.83
0	P93	J68	J84	890.35	12	130	-229.43	0.65	0.15	0.17
0	P95	J84	J86	1,204.21	12	130	-241.28	0.68	0.22	0.18
0	P97	J86	J88	946.69	12	130	-265.84	0.75	0.21	0.22
0	P99	J88	J90	874.98	16	130	-286.86	0.46	0.05	0.06

Run B2

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	293.49	74.31
0	J102	0	125.5	294.33	73.15
0	J104	9.32	129.8	295.33	71.72
0	J122	75.78	117.5	291.08	75.21
0	J124	66.76	119.5	291.1	74.36
0	J126	0	130	291.25	69.87
0	J128	0	133	291.25	68.57
0	J130	0	134	291.25	68.14
0	J132	0	131	291.23	69.43
0	J134	0	131	291.23	69.43
0	J136	0	131	291.23	69.43
0	J138	0	122	302.75	78.32
0	J140	0	122	302.75	78.32
0	J146	0	132	283.72	65.74
0	J148	1	132	283.72	65.74
0	J150	0	118	279.52	69.99
0	J152	1	118	279.52	69.99
0	J154	0	90.3	291.09	87
0	J156	0	115.5	279.49	71.06
0	J158	1	115.5	279.49	71.06
0	J160	0	128	279.65	65.71
0	J162	1	128	279.65	65.71
0	J164	0	98	279.48	78.64
0	J166	1	98	279.48	78.64
0	J168	0	115.25	291.08	76.19
0	J170	1	120	279.49	69.11
0	J172	0	120	279.49	69.11
0	J174	1	123	279.61	67.86
0	J176	0	123	279.61	67.86

0	J178	1	94	280.13	80.65
0	J180	0	94	280.13	80.65
0	J182	0	118	292.29	75.52
0	J184	1	118	281.07	70.66
0	J186	0	118	281.07	70.66
0	J188	0	126	291.39	71.67
0	J190	0	126	291.39	71.67
0	J192	0	126	291.39	71.67
0	J194	0	126	291.39	71.67
0	J196	0	99.75	291.86	83.24
0	J198	0	95.5	291.11	84.76
0	J20	44.06	90.4	291.09	86.96
0	J206	0	100	280.25	78.1
0	J208	1	100	280.25	78.1
0	J210	0	102	302.63	86.93
0	J212	0	102	302.63	86.93
0	J214	0	102	302.63	86.93
0	J216	0	100	280.69	78.29
0	J218	1	100	280.69	78.29
0	J22	41.86	118.5	291.09	74.78
0	J220	50.94	116	291.1	75.87
0	J222	50.4	119.1	291.12	74.54
0	J224	0	118	292.68	75.69
0	J226	0	130	291.56	70
0	J26	88.2	115.5	291.09	76.08
0	J28	34.78	118.6	291.12	74.75
0	J30	44.42	122.2	291.15	73.21
0	J300	0	127.5	296.61	73.28
0	J302	0	128	296.77	73.13
0	J304	0	142	299.19	68.11
0	J32	93.48	126	291.22	71.59
0	J34	0	134	291.29	68.15
0	J36	0	138	291.44	66.49
0	J38	79.7	90.2	291.09	87.05
0	J40	138.2	90	291.14	87.16
0	J42	137.88	101	291.09	82.37
0	J44	93.74	111	291.08	78.03
0	J46	79.04	113	291.08	77.16
0	J48	76.62	114.7	291.13	76.44
0	J50	76.58	120	291.24	74.2
0	J52	152.52	126	291.39	71.67
0	J54	76.28	127.6	291.25	70.91
0	J56	70.04	121.9	291.24	73.38
0	J58	97.94	126	291.22	71.59
0	J60	43.14	124.5	291.21	72.24
0	J62	94.12	122	291.21	73.32
0	J64	69.8	127	291.21	71.15
0	J66	44.72	130.5	291.23	69.64
0	J68	45.14	88	291.66	88.25
0	J70	92.66	97.5	291.73	84.16
0	J72	105.24	102	292.01	82.33
0	J74	104.58	108	292.14	79.79
0	J76	92.9	128	292.45	71.26
0	J78	160.7	126	292.46	72.13
0	J82	0	126.4	291.93	71.72
0	J84	23.7	76	291.79	93.5
0	J86	38.12	78	292	92.73
0	J88	42.04	88.4	292.23	88.32
0	J90	52.46	104	292.29	81.59
0	J92	53.12	98	292.09	84.1
0	J94	50.48	107	292.57	80.41

0	J96	40.96	116	292.91	76.65	

	ID	Flow (gpm)	Head (ft)
0	RES9010	-537.61	291.56
0	RES9012	-2,406.51	299.19

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	73.32	78.32	0	0	11.54	Open		3
0	V8002	8	122	73.29	78.32	0	0	0	Closed		3
0	V8008	10	132	70.77	65.74	1	0	11.61	Open		2
0	V8010	10	132	69.3	65.74	0	0	0	Closed		2
0	V8012	8	118	75	69.99	0	0	0	Closed		3
0	V8014	8	118	75.01	69.99	1	0.01	11.6	Open		3
0	V8016	8	115.5	76.08	71.06	1	0.01	11.6	Open		3
0	V8018	8	115.5	76.08	71.06	0	0	0	Closed		3
0	V8020	8	128	70.74	65.71	1	0.01	11.6	Open		3
0	V8022	8	128	70.72	65.71	0	0	0	Closed		3
0	V8024	8	98	83.67	78.64	0	0	0	Closed		3
0	V8026	8	98	83.66	78.64	1	0.01	11.6	Open		3
0	V8028	10	120	74.13	69.11	0	0	0	Closed		2
0	V8032	8	123	72.89	67.86	1	0.01	11.6	Open		3
0	V8034	8	123	72.89	67.86	0	0	0	Closed		3
0	V8036	8	94	85.7	80.65	0	0	0	Closed		3
0	V8038	8	94	85.68	80.65	1	0.01	11.6	Open		3
0	V8042	10	118	75.69	70.66	1	0	11.61	Open		2
0	V8044	10	118	75.52	70.66	0	0	0	Closed		2
0	V8052	10	100	83.08	78.1	0	0	0	Closed		2
0	V8054	10	100	83.13	78.1	1	0	11.61	Open		2
0	V8056	8	102	81.93	86.93	0	0	11.54	Open		3
0	V8058	8	102	81.94	86.93	0	0	0	Closed		3
0	V8060	8	100	83.29	78.29	0	0	0	Closed		3
0	V8062	8	100	83.32	78.29	1	0.01	11.6	Open		3
0	V8070	10	120	74.14	69.11	1	0	11.61	Open		2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-174.1	0.49	0.08	0.1
0	P103	J92	J90	1,241.83	12	130	-227.22	0.64	0.2	0.16
0	P105	J90	J94	1,132.34	16	130	-599.72	0.96	0.27	0.24
0	P107	J94	J96	1,204.53	16	130	-650.2	1.04	0.34	0.28
0	P111	J78	J100	1,067.79	16	130	-1,265.35	2.02	1.03	0.97
0	P115	J96	J100	886.7	16	130	-1,030.15	1.64	0.58	0.66
0	P117	J100	J102	789.56	20	130	-2,396.19	2.45	0.84	1.06
0	P119	J102	J104	941.88	20	130	-2,396.19	2.45	1	1.06
0	P121	J104	J300	1,197.93	20	130	-2,406.51	2.46	1.28	1.07
0	P123	J300	J302	147.08	20	130	-2,406.51	2.46	0.16	1.07
0	P125	J302	J304	2,260.56	20	130	-2,406.51	2.46	2.42	1.07
0	P139	J122	J124	627.68	12	130	-96.15	0.27	0.02	0.03
0	P141	J124	J60	1,242.80	12	130	-162.91	0.46	0.11	0.09
0	P145	J34	J126	846.23	20	130	425.39	0.43	0.04	0.04
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	424.39	0.43	0.04	0.04
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-12.46	0.02	0	0
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0

0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-54.32	0.09	0	0
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-190.1	0.3	0.03	0.03
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-31.6	0.09	0	0
0	P215	J154	J38	842.54	12	130	-32.6	0.09	0	0
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-225.88	0.36	0.03	0.04
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-20.37	0.06	0	0
0	P249	J168	J122	563.66	12	130	-20.37	0.06	0	0
0	P25	J30	J32	1,229.93	16	130	-270.3	0.43	0.07	0.06
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	294.14	0.83	0.16	0.26
0	P283	J182	J74	589.22	12	130	294.14	0.83	0.15	0.26
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-537.61	0.55	0.16	0.07
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	258.42	0.73	0.15	0.21

0	P311	J196	J70	609.66	12	130	257.42	0.73	0.13	0.21
0	P313	J40	J198	1,129.17	12	130	83.3	0.24	0.03	0.03
0	P315	J198	J42	1,043.66	12	130	83.3	0.24	0.03	0.03
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-112.3	0.32	0.05	0.04
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	165.23	0.47	0.12	0.09
0	P365	J222	J220	621.17	12	130	114.83	0.33	0.03	0.05
0	P367	J220	J44	1,095.19	12	130	62.89	0.18	0.02	0.02
0	P37	J26	J46	1,141.00	12	130	46.58	0.13	0.01	0.01
0	P379	J76	J224	678.87	12	130	-337.99	0.96	0.23	0.34
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	-12.09	0.03	0	0
0	P393	J226	J36	1,733.97	20	130	537.61	0.55	0.12	0.07
0	P395	J96	J224	650.52	12	130	338.99	0.96	0.22	0.34
0	P41	J44	J42	1,067.11	12	130	-42.94	0.12	0.01	0.01
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	537.61	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	2,406.51	0	0	0
0	P43	J42	J48	1,096.37	12	130	-97.52	0.28	0.04	0.03
0	P45	J48	J50	1,194.62	12	130	-174.14	0.49	0.12	0.1
0	P47	J50	J52	765.09	12	130	-250.72	0.71	0.15	0.2
0	P49	J32	J62	1,463.77	16	130	60.6	0.1	0.01	0
0	P51	J34	J66	1,373.58	12	130	112.22	0.32	0.06	0.04
0	P53	J66	J64	862.35	12	130	67.5	0.19	0.01	0.02
0	P55	J62	J64	1,082.76	12	130	-22.94	0.07	0	0
0	P57	J62	J60	691.6	16	130	-10.58	0.02	0	0
0	P59	J64	J58	1,424.22	12	130	-25.24	0.07	0	0
0	P61	J60	J56	890.62	16	130	-217.62	0.35	0.03	0.04
0	P67	J56	J52	1,036.48	16	130	-452.89	0.72	0.15	0.14
0	P69	J52	J54	1,131.15	12	130	199.46	0.57	0.14	0.13
0	P71	J58	J54	591.64	12	130	-123.18	0.35	0.03	0.05
0	P73	J40	J68	1,551.82	12	130	-333.8	0.95	0.52	0.33
0	P75	J68	J70	838.54	12	130	-163.76	0.46	0.07	0.09
0	P79	J72	J74	1,086.50	12	130	-189.56	0.54	0.13	0.12
0	P83	J76	J78	765.46	12	130	-49.05	0.14	0.01	0.01
0	P89	J52	J82	771.55	16	130	-1,055.59	1.68	0.53	0.69
0	P91	J82	J78	774.7	16	130	-1,055.59	1.68	0.53	0.69
0	P93	J68	J84	890.35	12	130	-215.18	0.61	0.13	0.15
0	P95	J84	J86	1,204.21	12	130	-238.88	0.68	0.22	0.18
0	P97	J86	J88	946.69	12	130	-277	0.79	0.22	0.24
0	P99	J88	J90	874.98	16	130	-319.04	0.51	0.07	0.08

Run B3

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	201.4	122	267.52	63.06

0	J102	0	125.5	269.43	62.36
0	J104	18.64	129.8	271.7	61.48
0	J122	151.56	117.5	262.91	63.01
0	J124	133.52	119.5	263.02	62.19
0	J126	0	130	264.54	58.3
0	J128	0	133	264.54	57
0	J130	0	134	264.54	56.56
0	J132	0	131	264.09	57.67
0	J134	0	131	264.09	57.67
0	J136	0	131	264.09	57.67
0	J138	0	122	252.07	56.36
0	J140	1	122	252.07	56.36
0	J146	0	132	260.09	55.5
0	J148	1	132	260.09	55.5
0	J150	0	118	251.72	57.94
0	J152	1	118	251.72	57.94
0	J154	0	90.3	262.87	74.77
0	J156	0	115.5	251.4	58.88
0	J158	1	115.5	251.4	58.88
0	J160	1	128	252.94	54.13
0	J162	0	128	252.94	54.13
0	J164	0	98	251.26	66.41
0	J166	1	98	251.26	66.41
0	J168	0	115.25	262.89	63.97
0	J170	0	120	251.38	56.93
0	J172	0	120	251.38	56.93
0	J174	1	123	251.94	55.87
0	J176	0	123	251.94	55.87
0	J178	1	94	251.89	68.42
0	J180	0	94	251.89	68.42
0	J182	0	118	264.77	63.6
0	J184	1	118	254.09	58.97
0	J186	0	118	254.09	58.97
0	J188	0	126	263.67	59.65
0	J190	0	126	263.67	59.65
0	J192	0	126	263.67	59.65
0	J194	0	126	263.67	59.65
0	J196	0	99.75	263.72	71.05
0	J198	0	95.5	262.82	72.5
0	J20	88.12	90.4	262.88	74.74
0	J206	0	100	252.12	65.91
0	J208	1	100	252.12	65.91
0	J210	0	102	251.2	64.65
0	J212	1	102	251.2	64.65
0	J214	0	102	251.2	64.65
0	J216	0	100	253.03	66.31
0	J218	1	100	253.03	66.31
0	J22	83.72	118.5	262.93	62.58
0	J220	101.88	116	262.92	63.66
0	J222	100.8	119.1	263.04	62.37
0	J224	0	118	265.7	64
0	J226	0	130	268.48	60
0	J26	176.4	115.5	263	63.91
0	J28	69.56	118.6	263.32	62.71
0	J30	88.84	122.2	263.56	61.25
0	J300	0	127.5	274.62	63.75
0	J302	0	128	274.97	63.68
0	J304	0	142	280.48	60
0	J32	186.96	126	264.09	59.83
0	J34	0	134	264.99	56.76
0	J36	0	138	266.99	55.89

0	J38	159.4	90.2	262.82	74.8
0	J40	276.4	90	262.83	74.89
0	J42	275.76	101	262.81	70.11
0	J44	187.48	111	262.83	65.79
0	J46	158.08	113	262.88	64.94
0	J48	153.24	114.7	262.89	64.21
0	J50	153.16	120	263.22	62.06
0	J52	305.04	126	263.67	59.65
0	J54	152.56	127.6	263.56	58.91
0	J56	140.08	121.9	263.54	61.37
0	J58	195.88	126	263.55	59.6
0	J60	86.28	124.5	263.54	60.25
0	J62	188.24	122	263.68	61.39
0	J64	139.6	127	263.7	59.23
0	J66	89.44	130.5	264.09	57.88
0	J68	90.28	88	263.42	76.01
0	J70	185.32	97.5	263.5	71.93
0	J72	210.48	102	264	70.2
0	J74	209.16	108	264.32	67.73
0	J76	185.8	128	265.24	59.47
0	J78	321.4	126	265.35	60.38
0	J82	0	126.4	264.51	59.84
0	J84	47.4	76	263.63	81.3
0	J86	86.24	78	264.02	80.6
0	J88	84.08	88.4	264.49	76.3
0	J90	104.92	104	264.64	69.6
0	J92	106.24	98	264.16	72
0	J94	100.96	107	265.3	68.59
0	J96	81.92	116	266.14	65.06

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,137.42	268.48
0	RES9012	-3,750.82	280.48

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	61.39	56.36	1	0.01	11.6	Open		3
0	V8002	8	122	61.34	56.36	0	0	0	Closed		3
0	V8008	10	132	60.53	55.5	1	0	11.61	Open		2
0	V8010	10	132	57.42	55.5	0	0	0	Closed		2
0	V8012	8	118	62.83	57.94	0	0	0	Closed		3
0	V8014	8	118	62.97	57.94	1	0.01	11.6	Open		3
0	V8016	8	115.5	63.91	58.88	1	0.01	11.6	Open		3
0	V8018	8	115.5	63.88	58.88	0	0	0	Closed		3
0	V8020	8	128	59.16	54.13	1	0.01	11.6	Open		3
0	V8022	8	128	58.97	54.13	0	0	0	Closed		3
0	V8024	8	98	71.42	66.41	0	0	0	Closed		3
0	V8026	8	98	71.44	66.41	1	0.01	11.6	Open		3
0	V8028	10	120	61.91	56.93	0	0	0	Closed		2
0	V8032	8	123	60.9	55.87	1	0.01	11.6	Open		3
0	V8034	8	123	60.96	55.87	0	0	0	Closed		3
0	V8036	8	94	73.5	68.42	0	0	0	Closed		3
0	V8038	8	94	73.44	68.42	1	0.01	11.6	Open		3
0	V8042	10	118	64	58.97	1	0	11.61	Open		2
0	V8044	10	118	63.6	58.97	0	0	0	Closed		2
0	V8052	10	100	70.84	65.91	0	0	0	Closed		2
0	V8054	10	100	70.94	65.91	1	0	11.61	Open		2
0	V8056	8	102	69.68	64.65	1	0.01	11.6	Open		3
0	V8058	8	102	69.68	64.65	0	0	0	Closed		3
0	V8060	8	100	71.27	66.31	0	0	0	Closed		3
0	V8062	8	100	71.34	66.31	1	0.01	11.6	Open		3
0	V8070	10	120	61.93	56.93	0	0	11.54	Open		2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-253.66	0.72	0.16	0.2
0	P103	J92	J90	1,241.83	12	130	-359.9	1.02	0.47	0.38
0	P105	J90	J94	1,132.34	16	130	-963.84	1.54	0.66	0.58
0	P107	J94	J96	1,204.53	16	130	-1,064.80	1.7	0.84	0.7
0	P111	J78	J100	1,067.79	16	130	-1,891.29	3.02	2.17	2.03
0	P115	J96	J100	886.7	16	130	-1,638.50	2.61	1.38	1.56
0	P117	J100	J102	789.56	20	130	-3,731.18	3.81	1.9	2.41
0	P119	J102	J104	941.88	20	130	-3,731.18	3.81	2.27	2.41
0	P121	J104	J300	1,197.93	20	130	-3,750.82	3.83	2.92	2.44
0	P123	J300	J302	147.08	20	130	-3,750.82	3.83	0.36	2.44
0	P125	J302	J304	2,260.56	20	130	-3,750.82	3.83	5.51	2.44
0	P139	J122	J124	627.68	12	130	-242.76	0.69	0.12	0.18
0	P141	J124	J60	1,242.80	12	130	-376.28	1.07	0.52	0.41
0	P145	J34	J126	846.23	20	130	1,654.88	1.69	0.45	0.54
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	1,653.88	1.69	0.45	0.53
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-213.26	0.34	0.04	0.04
0	P171	V8000	J138	423.5	10	130	1	0	0	0
0	P173	J138	J140	355.5	10	130	1	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	1	0	0	0
0	P19	J22	J26	1,147.36	16	130	-296.98	0.47	0.08	0.07
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-658.02	1.05	0.32	0.29
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	125.14	0.36	0.02	0.05
0	P215	J154	J38	842.54	12	130	124.14	0.35	0.04	0.05
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-728.58	1.16	0.24	0.35
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	-1	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-91.2	0.26	0.02	0.03

0	P249	J168	J122	563.66	12	130	-91.2	0.26	0.02	0.03
0	P25	J30	J32	1,229.93	16	130	-817.42	1.3	0.53	0.43
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	522.5	1.48	0.47	0.76
0	P283	J182	J74	589.22	12	130	522.5	1.48	0.45	0.76
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,137.42	2.18	2	0.86
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	356.52	1.01	0.28	0.38
0	P311	J196	J70	609.66	12	130	355.52	1.01	0.23	0.37
0	P313	J40	J198	1,129.17	12	130	47.56	0.13	0.01	0.01
0	P315	J198	J42	1,043.66	12	130	47.56	0.13	0.01	0.01
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-35.26	0.1	0.01	0.01
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	1	0	0	0
0	P349	V8056	J212	569.55	10	130	1	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	354.84	1.01	0.49	0.37
0	P365	J222	J220	621.17	12	130	254.04	0.72	0.12	0.2
0	P367	J220	J44	1,095.19	12	130	152.16	0.43	0.08	0.08
0	P37	J26	J46	1,141.00	12	130	183.64	0.52	0.13	0.11
0	P379	J76	J224	678.87	12	130	-490.78	1.39	0.46	0.68
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	116.76	0.33	0.04	0.05
0	P393	J226	J36	1,733.97	20	130	2,137.42	2.18	1.49	0.86
0	P395	J96	J224	650.52	12	130	491.78	1.4	0.44	0.68
0	P41	J44	J42	1,067.11	12	130	81.43	0.23	0.03	0.02
0	P415	J220	V8070	123.15	12	130	0	0	0	0
0	P417	V8070	J172	76.51	12	130	0	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,137.42	0	0	0

0	P421	RES9012	J304	1	1,000.00	130	3,750.82	0	0	0
0	P43	J42	J48	1,096.37	12	130	-147.77	0.42	0.08	0.07
0	P45	J48	J50	1,194.62	12	130	-301.01	0.85	0.33	0.27
0	P47	J50	J52	765.09	12	130	-454.17	1.29	0.45	0.59
0	P49	J32	J62	1,463.77	16	130	649.5	1.04	0.41	0.28
0	P51	J34	J66	1,373.58	12	130	482.54	1.37	0.9	0.66
0	P53	J66	J64	862.35	12	130	393.1	1.12	0.39	0.45
0	P55	J62	J64	1,082.76	12	130	-77	0.22	0.02	0.02
0	P57	J62	J60	691.6	16	130	537.26	0.86	0.14	0.2
0	P59	J64	J58	1,424.22	12	130	176.5	0.5	0.15	0.1
0	P61	J60	J56	890.62	16	130	73.7	0.12	0	0.01
0	P67	J56	J52	1,036.48	16	130	-421.22	0.67	0.13	0.13
0	P69	J52	J54	1,131.15	12	130	171.94	0.49	0.11	0.1
0	P71	J58	J54	591.64	12	130	-19.38	0.05	0	0
0	P73	J40	J68	1,551.82	12	130	-359.22	1.02	0.59	0.38
0	P75	J68	J70	838.54	12	130	-169.2	0.48	0.08	0.09
0	P79	J72	J74	1,086.50	12	130	-313.34	0.89	0.32	0.3
0	P83	J76	J78	765.46	12	130	-217.52	0.62	0.12	0.15
0	P89	J52	J82	771.55	16	130	-1,352.36	2.16	0.84	1.09
0	P91	J82	J78	774.7	16	130	-1,352.36	2.16	0.85	1.09
0	P93	J68	J84	890.35	12	130	-280.29	0.8	0.21	0.24
0	P95	J84	J86	1,204.21	12	130	-327.7	0.93	0.39	0.32
0	P97	J86	J88	946.69	12	130	-413.94	1.17	0.47	0.49
0	P99	J88	J90	874.98	16	130	-498.02	0.79	0.15	0.17

Run B4

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	1	122	307.3	80.29
0	J102	1	125.5	307.3	78.77
0	J104	1	129.8	307.3	76.91
0	J122	1	117.5	307.3	82.24
0	J124	1	119.5	307.3	81.37
0	J126	1	130	307.3	76.82
0	J128	1	133	307.3	75.52
0	J130	1	134	307.3	75.09
0	J132	1	131	307.3	76.39
0	J134	1	131	307.3	76.39
0	J136	1	131	307.3	76.39
0	J138	1	122	295.63	75.23
0	J140	1	122	295.63	75.23
0	J146	1	132	295.62	70.9
0	J148	1	132	295.62	70.9
0	J150	1	118	295.63	76.97
0	J152	1	118	295.63	76.97
0	J154	1	90.3	307.3	94.02
0	J156	1	115.5	295.63	78.05
0	J158	1	115.5	295.63	78.05
0	J160	1	128	295.63	72.63
0	J162	1	128	295.63	72.63
0	J164	1	98	295.63	85.63
0	J166	1	98	295.63	85.63
0	J168	1	115.25	307.3	83.21
0	J170	1	120	295.62	76.1
0	J172	1	120	295.62	76.1
0	J174	1	123	295.63	74.8
0	J176	1	123	295.63	74.8
0	J178	1	94	295.63	87.37
0	J180	1	94	295.63	87.37
0	J182	1	118	307.3	82.02
0	J184	1	118	295.62	76.96
0	J186	1	118	295.62	76.96

0	J188	1	126	307.3	78.56
0	J190	1	126	307.3	78.56
0	J192	1	126	307.3	78.56
0	J194	1	126	307.3	78.56
0	J196	1	99.75	307.3	89.93
0	J198	1	95.5	307.3	91.77
0	J20	1	90.4	307.3	93.98
0	J206	1	100	295.62	84.76
0	J208	1	100	295.62	84.76
0	J210	1	102	295.57	83.87
0	J212	1	102	295.57	83.87
0	J214	1	102	295.57	83.87
0	J216	1	100	295.63	84.77
0	J218	1	100	295.63	84.77
0	J22	1	118.5	307.3	81.81
0	J220	1	116	307.3	82.89
0	J222	1	119.1	307.3	81.55
0	J224	1	118	307.3	82.02
0	J226	1	130	307.3	76.82
0	J26	1	115.5	307.3	83.11
0	J28	1	118.6	307.3	81.76
0	J30	1	122.2	307.3	80.2
0	J300	1	127.5	307.3	77.91
0	J302	1	128	307.3	77.69
0	J304	1	142	307.3	71.62
0	J32	1	126	307.3	78.56
0	J34	1	134	307.3	75.09
0	J36	1	138	307.3	73.36
0	J38	1	90.2	307.3	94.07
0	J40	1	90	307.3	94.15
0	J42	1	101	307.3	89.39
0	J44	1	111	307.3	85.06
0	J46	1	113	307.3	84.19
0	J48	1	114.7	307.3	83.45
0	J50	1	120	307.3	81.16
0	J52	1	126	307.3	78.56
0	J54	1	127.6	307.3	77.86
0	J56	1	121.9	307.3	80.33
0	J58	1	126	307.3	78.56
0	J60	1	124.5	307.3	79.21
0	J62	1	122	307.3	80.29
0	J64	1	127	307.3	78.12
0	J66	1	130.5	307.3	76.61
0	J68	1	88	307.3	95.02
0	J70	1	97.5	307.3	90.9
0	J72	1	102	307.3	88.95
0	J74	1	108	307.3	86.36
0	J76	1	128	307.3	77.69
0	J78	1	126	307.3	78.56
0	J82	1	126.4	307.3	78.38
0	J84	1	76	307.3	100.22
0	J86	1	78	307.3	99.35
0	J88	1	88.4	307.3	94.85
0	J90	1	104	307.3	88.09
0	J92	1	98	307.3	90.69
0	J94	1	107	307.3	86.79
0	J96	1	116	307.3	82.89

	ID	Flow (gpm)	Head (ft)
0	RES9010	-46.5	307.3
0	RES9012	-44.51	307.3

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	80.29	75.23	2	0.01	11.67	Open	3
0	V8002	8	122	80.29	75.23	0	0	0	Closed	3
0	V8008	10	132	75.96	70.9	2	0.01	11.68	Open	2
0	V8010	10	132	75.96	70.9	0	0	0	Closed	2
0	V8012	8	118	82.02	76.97	0	0	0	Closed	3
0	V8014	8	118	82.02	76.97	2	0.01	11.67	Open	3
0	V8016	8	115.5	83.11	78.05	2	0.01	11.67	Open	3
0	V8018	8	115.5	83.11	78.05	0	0	0	Closed	3
0	V8020	8	128	77.69	72.63	2	0.01	11.67	Open	3
0	V8022	8	128	77.69	72.63	0	0	0	Closed	3
0	V8024	8	98	90.69	85.63	0	0	0	Closed	3
0	V8026	8	98	90.69	85.63	2	0.01	11.67	Open	3
0	V8028	10	120	81.16	76.1	0	0	0	Closed	2
0	V8032	8	123	79.86	74.8	2	0.01	11.67	Open	3
0	V8034	8	123	79.86	74.8	0	0	0	Closed	3
0	V8036	8	94	92.42	87.37	0	0	0	Closed	3
0	V8038	8	94	92.42	87.37	2	0.01	11.67	Open	3
0	V8042	10	118	82.02	76.96	2	0.01	11.68	Open	2
0	V8044	10	118	82.02	76.96	0	0	0	Closed	2
0	V8052	10	100	89.82	84.76	0	0	0	Closed	2
0	V8054	10	100	89.82	84.76	2	0.01	11.68	Open	2
0	V8056	8	102	88.95	83.87	3	0.02	11.73	Open	3
0	V8058	8	102	88.95	83.87	0	0	0	Closed	3
0	V8060	8	100	89.82	84.77	0	0	0	Closed	3
0	V8062	8	100	89.82	84.77	2	0.01	11.67	Open	3
0	V8070	10	120	81.16	76.1	2	0.01	11.68	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-2.02	0.01	0	0
0	P103	J92	J90	1,241.83	12	130	-3.02	0.01	0	0
0	P105	J90	J94	1,132.34	16	130	-11.19	0.02	0	0
0	P107	J94	J96	1,204.53	16	130	-12.19	0.02	0	0
0	P111	J78	J100	1,067.79	16	130	-17.81	0.03	0	0
0	P115	J96	J100	886.7	16	130	-18.7	0.03	0	0
0	P117	J100	J102	789.56	20	130	-37.51	0.04	0	0
0	P119	J102	J104	941.88	20	130	-38.51	0.04	0	0
0	P121	J104	J300	1,197.93	20	130	-41.51	0.04	0	0
0	P123	J300	J302	147.08	20	130	-42.51	0.04	0	0
0	P125	J302	J304	2,260.56	20	130	-43.51	0.04	0	0
0	P139	J122	J124	627.68	12	130	-3.64	0.01	0	0
0	P141	J124	J60	1,242.80	12	130	-4.64	0.01	0	0
0	P145	J34	J126	846.23	20	130	33.54	0.03	0	0
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	2	0.01	0	0
0	P157	J128	J130	886.05	8	130	-1	0.01	0	0
0	P159	J126	J32	843.52	20	130	28.54	0.03	0	0
0	P161	J66	J132	415.81	8	130	3	0.02	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	-1	0.01	0	0
0	P167	J132	J134	848.01	8	130	2	0.01	0	0
0	P17	J20	J22	1,133.08	16	130	-4.79	0.01	0	0
0	P171	V8000	J138	423.5	10	130	2	0.01	0	0
0	P173	J138	J140	355.5	10	130	1	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	2	0.01	0	0
0	P19	J22	J26	1,147.36	16	130	-5.79	0.01	0	0
0	P193	J104	V8008	482.89	12	130	2	0.01	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0

0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	-1	0	0	0
0	P201	V8008	J148	1,114.81	12	130	2	0.01	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	2	0.01	0	0
0	P207	V8014	J152	482.16	10	130	2	0.01	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-10.62	0.02	0	0
0	P211	J152	J150	798.51	10	130	1	0	0	0
0	P213	J20	J154	348.19	12	130	3.79	0.01	0	0
0	P215	J154	J38	842.54	12	130	0.79	0	0	0
0	P217	J26	V8016	273.58	10	130	2	0.01	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	2	0.01	0	0
0	P225	J158	J156	802.77	10	130	1	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-13.62	0.02	0	0
0	P231	J126	V8020	259.39	10	130	2	0.01	0	0
0	P233	V8020	J162	510.51	10	130	2	0.01	0	0
0	P235	J160	J162	392.51	10	130	-1	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	2	0.01	0	0
0	P241	V8026	J166	918.28	10	130	2	0.01	0	0
0	P243	J166	J164	455.03	10	130	1	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-1.64	0	0	0
0	P249	J168	J122	563.66	12	130	-2.64	0.01	0	0
0	P25	J30	J32	1,229.93	16	130	-14.62	0.02	0	0
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	2	0.01	0	0
0	P263	V8032	J174	918.23	10	130	2	0.01	0	0
0	P265	J174	J176	448.57	10	130	1	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	2	0.01	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	-1	0	0	0
0	P279	V8038	J178	632.77	10	130	2	0.01	0	0
0	P281	J76	J182	613.97	12	130	6.34	0.02	0	0
0	P283	J182	J74	589.22	12	130	5.34	0.02	0	0
0	P287	V8042	J184	372.65	12	130	2	0.01	0	0
0	P289	J184	J186	299.52	12	130	1	0	0	0
0	P29	J34	J36	2,325.70	20	130	-44.5	0.05	0	0
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	2	0.01	0	0
0	P301	J188	J190	664.92	8	130	1	0.01	0	0
0	P303	J56	J194	178.12	8	130	2	0.01	0	0
0	P305	J194	J192	667.8	8	130	1	0.01	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	5.36	0.02	0	0
0	P311	J196	J70	609.66	12	130	2.36	0.01	0	0
0	P313	J40	J198	1,129.17	12	130	-0.69	0	0	0
0	P315	J198	J42	1,043.66	12	130	-1.69	0	0	0
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-0.21	0	0	0

0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	2	0.01	0	0
0	P335	V8054	J208	525.19	12	130	2	0.01	0	0
0	P337	J208	J206	475.84	12	130	1	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	-1	0	0	0
0	P347	J42	V8056	297.78	10	130	3	0.01	0	0
0	P349	V8056	J212	569.55	10	130	3	0.01	0	0
0	P351	J212	J210	1,312.90	10	130	2	0.01	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	2	0.01	0	0
0	P359	V8062	J218	739.72	10	130	2	0.01	0	0
0	P361	J218	J216	604.58	10	130	1	0	0	0
0	P363	J56	J222	1,322.36	12	130	4.97	0.01	0	0
0	P365	J222	J220	621.17	12	130	3.97	0.01	0	0
0	P367	J220	J44	1,095.19	12	130	0.97	0	0	0
0	P37	J26	J46	1,141.00	12	130	1.82	0.01	0	0
0	P379	J76	J224	678.87	12	130	-2.51	0.01	0	0
0	P381	J224	V8042	158.85	12	130	2	0.01	0	0
0	P39	J46	J44	879.87	12	130	2.46	0.01	0	0
0	P393	J226	J36	1,733.97	20	130	45.5	0.05	0	0
0	P395	J96	J224	650.52	12	130	5.51	0.02	0	0
0	P41	J44	J42	1,067.11	12	130	2.43	0.01	0	0
0	P415	J220	V8070	123.15	12	130	2	0.01	0	0
0	P417	V8070	J172	76.51	12	130	2	0.01	0	0
0	P419	RES9010	J226	1	1,000.00	130	46.5	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	44.51	0	0	0
0	P43	J42	J48	1,096.37	12	130	-3.25	0.01	0	0
0	P45	J48	J50	1,194.62	12	130	-4.25	0.01	0	0
0	P47	J50	J52	765.09	12	130	-5.25	0.01	0	0
0	P49	J32	J62	1,463.77	16	130	12.93	0.02	0	0
0	P51	J34	J66	1,373.58	12	130	9.95	0.03	0	0
0	P53	J66	J64	862.35	12	130	5.95	0.02	0	0
0	P55	J62	J64	1,082.76	12	130	-1.63	0	0	0
0	P57	J62	J60	691.6	16	130	11.56	0.02	0	0
0	P59	J64	J58	1,424.22	12	130	3.32	0.01	0	0
0	P61	J60	J56	890.62	16	130	3.92	0.01	0	0
0	P67	J56	J52	1,036.48	16	130	-4.05	0.01	0	0
0	P69	J52	J54	1,131.15	12	130	-1.32	0	0	0
0	P71	J58	J54	591.64	12	130	2.32	0.01	0	0
0	P73	J40	J68	1,551.82	12	130	-0.52	0	0	0
0	P75	J68	J70	838.54	12	130	0.64	0	0	0
0	P79	J72	J74	1,086.50	12	130	-4.34	0.01	0	0
0	P83	J76	J78	765.46	12	130	-4.83	0.01	0	0
0	P89	J52	J82	771.55	16	130	-10.98	0.02	0	0
0	P91	J82	J78	774.7	16	130	-11.98	0.02	0	0
0	P93	J68	J84	890.35	12	130	-2.17	0.01	0	0
0	P95	J84	J86	1,204.21	12	130	-3.17	0.01	0	0
0	P97	J86	J88	946.69	12	130	-4.17	0.01	0	0
0	P99	J88	J90	874.98	16	130	-5.17	0.01	0	0

Run B5

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	268.77	63.6
0	J102	0	125.5	269.48	62.38
0	J104	9.32	129.8	270.32	60.89
0	J122	75.78	117.5	268.17	65.29
0	J124	66.76	119.5	268.21	64.43
0	J126	0	130	270.78	61

0	J128	0	133	270.78	59.7
0	J130	0	134	270.78	59.26
0	J132	0	131	269.85	60.16
0	J134	0	131	269.85	60.16
0	J136	0	131	269.85	60.16
0	J138	0	122	257.36	58.65
0	J140	0	122	257.36	58.65
0	J146	2,000.00	132	247.91	50.22
0	J148	2,000.00	132	247.9	50.22
0	J150	0	118	257.53	60.46
0	J152	0	118	257.53	60.46
0	J154	0	90.3	268.23	77.1
0	J156	0	115.5	256.97	61.3
0	J158	1	115.5	256.97	61.3
0	J160	0	128	259.17	56.84
0	J162	1	128	259.17	56.84
0	J164	0	98	256.63	68.73
0	J166	1	98	256.63	68.73
0	J168	0	115.25	268.16	66.26
0	J170	1	120	256.27	59.04
0	J172	0	120	256.27	59.04
0	J174	1	123	256.76	57.96
0	J176	0	123	256.76	57.96
0	J178	1	94	256.18	70.27
0	J180	0	94	256.18	70.27
0	J182	0	118	267.83	64.92
0	J184	0	118	279.65	70.04
0	J186	0	118	279.65	70.04
0	J188	0	126	267.92	61.49
0	J190	0	126	267.92	61.49
0	J192	0	126	267.92	61.49
0	J194	0	126	267.92	61.49
0	J196	0	99.75	267.79	72.81
0	J198	0	95.5	267.75	74.64
0	J20	44.06	90.4	268.33	77.1
0	J206	0	100	256.18	67.67
0	J208	1	100	256.18	67.67
0	J210	0	102	256.18	66.8
0	J212	0	102	256.18	66.8
0	J214	0	102	256.18	66.8
0	J216	0	100	256.38	67.76
0	J218	1	100	256.38	67.76
0	J22	41.86	118.5	268.44	64.97
0	J220	50.94	116	267.88	65.81
0	J222	50.4	119.1	267.88	64.47
0	J224	0	118	268.11	65.04
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	268.57	66.32
0	J28	34.78	118.6	269.07	65.2
0	J30	44.42	122.2	269.4	63.78
0	J300	0	127.5	273.81	63.4
0	J302	0	128	274.24	63.37
0	J304	0	142	280.84	60.16
0	J32	93.48	126	270.05	62.42
0	J34	0	134	271.5	59.58
0	J36	0	138	274.82	59.28
0	J38	79.7	90.2	267.99	77.04
0	J40	138.2	90	267.79	77.04
0	J42	137.88	101	267.72	72.24
0	J44	93.74	111	267.88	67.98
0	J46	79.04	113	268.16	67.23

0	J48	76.62	114.7	267.6	66.25
0	J50	76.58	120	267.56	63.94
0	J52	152.52	126	267.56	61.34
0	J54	76.28	127.6	267.84	60.77
0	J56	70.04	121.9	267.92	63.27
0	J58	97.94	126	268.07	61.56
0	J60	43.14	124.5	268.36	62.34
0	J62	94.12	122	268.9	63.65
0	J64	69.8	127	268.94	61.5
0	J66	44.72	130.5	269.85	60.38
0	J68	45.14	88	267.79	77.9
0	J70	92.66	97.5	267.78	73.78
0	J72	105.24	102	267.8	71.84
0	J74	104.58	108	267.8	69.24
0	J76	92.9	128	267.86	60.6
0	J78	160.7	126	267.82	61.45
0	J82	0	126.4	267.17	61
0	J84	23.7	76	267.82	83.11
0	J86	41.12	78	267.87	82.27
0	J88	42.04	88.4	267.95	77.8
0	J90	52.46	104	267.98	71.05
0	J92	53.12	98	267.84	73.59
0	J94	50.48	107	268.14	69.82
0	J96	40.96	116	268.34	66.01

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,808.65	277.29
0	RES9012	-4,135.47	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	63.65	58.65	0	0	11.54	Open		3
0	V8002	8	122	63.87	58.65	0	0	0	Closed		3
0	V8008	10	132	58.12	54.4	1,941.38	7.93	8.58	Open		2
0	V8010	10	132	57.68	53.75	2,058.62	8.41	9.07	Open		2
0	V8012	8	118	65.24	60.46	0	0	0	Closed		3
0	V8014	8	118	65.46	60.46	0	0	11.54	Open		3
0	V8016	8	115.5	66.32	61.3	1	0.01	11.6	Open		3
0	V8018	8	115.5	66.27	61.3	0	0	0	Closed		3
0	V8020	8	128	61.86	56.84	1	0.01	11.6	Open		3
0	V8022	8	128	61.55	56.84	0	0	0	Closed		3
0	V8024	8	98	73.66	68.73	0	0	0	Closed		3
0	V8026	8	98	73.76	68.73	1	0.01	11.6	Open		3
0	V8028	10	120	64.2	59.04	0	0	0	Closed		2
0	V8032	8	123	62.99	57.96	1	0.01	11.6	Open		3
0	V8034	8	123	63.22	57.96	0	0	0	Closed		3
0	V8036	8	94	75.31	70.27	0	0	0	Closed		3
0	V8038	8	94	75.3	70.27	1	0.01	11.6	Open		3
0	V8042	10	118	65.04	70.04	0	0	11.54	Open		2
0	V8044	10	118	64.92	70.04	0	0	0	Closed		2
0	V8052	10	100	72.7	67.67	0	0	0	Closed		2
0	V8054	10	100	72.7	67.67	1	0	11.61	Open		2
0	V8056	8	102	71.8	66.8	0	0	11.54	Open		3
0	V8058	8	102	71.82	66.8	0	0	0	Closed		3
0	V8060	8	100	72.77	67.76	0	0	0	Closed		3
0	V8062	8	100	72.79	67.76	1	0.01	11.6	Open		3
0	V8070	10	120	64.08	59.04	1	0	11.61	Open		2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-131.98	0.37	0.05	0.06
0	P103	J92	J90	1,241.83	12	130	-185.1	0.53	0.14	0.11
0	P105	J90	J94	1,132.34	16	130	-439.08	0.7	0.15	0.14

0	P107	J94	J96	1,204.53	16	130	-489.56	0.78	0.2	0.17
0	P111	J78	J100	1,067.79	16	130	-1,207.92	1.93	0.95	0.89
0	P115	J96	J100	886.7	16	130	-876.15	1.4	0.43	0.49
0	P117	J100	J102	789.56	20	130	-2,184.77	2.23	0.71	0.9
0	P119	J102	J104	941.88	20	130	-2,184.77	2.23	0.84	0.9
0	P121	J104	J300	1,197.93	20	130	-4,135.47	4.22	3.5	2.92
0	P123	J300	J302	147.08	20	130	-4,135.47	4.22	0.43	2.92
0	P125	J302	J304	2,260.56	20	130	-4,135.47	4.22	6.6	2.92
0	P139	J122	J124	627.68	12	130	-131.13	0.37	0.04	0.06
0	P141	J124	J60	1,242.80	12	130	-197.89	0.56	0.16	0.13
0	P145	J34	J126	846.23	20	130	2,139.69	2.19	0.73	0.86
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,138.69	2.18	0.73	0.86
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-355.84	0.57	0.1	0.09
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-397.7	0.63	0.13	0.11
0	P193	J104	V8008	482.89	12	130	1,941.38	5.51	4.18	8.66
0	P195	J82	V8010	213.6	12	130	2,058.62	5.84	2.06	9.65
0	P197	V8010	J146	842.68	12	130	2,058.62	5.84	8.13	9.65
0	P199	J146	J148	514.03	12	130	58.62	0.17	0.01	0.01
0	P201	V8008	J148	1,114.81	12	130	1,941.38	5.51	9.65	8.66
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-836.01	1.33	0.5	0.45
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	311.78	0.88	0.1	0.29
0	P215	J154	J38	842.54	12	130	310.78	0.88	0.25	0.29
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-870.79	1.39	0.33	0.48
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-55.35	0.16	0.01	0.01
0	P249	J168	J122	563.66	12	130	-55.35	0.16	0.01	0.01
0	P25	J30	J32	1,229.93	16	130	-915.21	1.46	0.65	0.53
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0

0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	127.56	0.36	0.03	0.06
0	P283	J182	J74	589.22	12	130	127.56	0.36	0.03	0.06
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,808.65	2.87	3.31	1.43
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	49.72	0.14	0.01	0.01
0	P311	J196	J70	609.66	12	130	48.72	0.14	0.01	0.01
0	P313	J40	J198	1,129.17	12	130	96.46	0.27	0.04	0.03
0	P315	J198	J42	1,043.66	12	130	96.46	0.27	0.03	0.03
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	231.08	0.66	0.2	0.17
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	88.92	0.25	0.04	0.03
0	P365	J222	J220	621.17	12	130	38.52	0.11	0	0.01
0	P367	J220	J44	1,095.19	12	130	-13.42	0.04	0	0
0	P37	J26	J46	1,141.00	12	130	349.11	0.99	0.41	0.36
0	P379	J76	J224	678.87	12	130	-345.64	0.98	0.24	0.35
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	325.42	0.92	0.28	0.32
0	P393	J226	J36	1,733.97	20	130	2,808.65	2.87	2.47	1.43
0	P395	J96	J224	650.52	12	130	345.64	0.98	0.23	0.35
0	P41	J44	J42	1,067.11	12	130	218.26	0.62	0.16	0.15
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,808.65	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	4,135.47	0	0	0
0	P43	J42	J48	1,096.37	12	130	176.84	0.5	0.11	0.1
0	P45	J48	J50	1,194.62	12	130	100.22	0.28	0.04	0.04
0	P47	J50	J52	765.09	12	130	23.64	0.07	0	0
0	P49	J32	J62	1,463.77	16	130	1,130.00	1.8	1.15	0.78

0	P51	J34	J66	1,373.58	12	130	668.96	1.9	1.65	1.2
0	P53	J66	J64	862.35	12	130	624.24	1.77	0.91	1.06
0	P55	J62	J64	1,082.76	12	130	-92.8	0.26	0.03	0.03
0	P57	J62	J60	691.6	16	130	1,128.68	1.8	0.54	0.78
0	P59	J64	J58	1,424.22	12	130	461.64	1.31	0.86	0.61
0	P61	J60	J56	890.62	16	130	886.64	1.41	0.44	0.5
0	P67	J56	J52	1,036.48	16	130	727.68	1.16	0.36	0.35
0	P69	J52	J54	1,131.15	12	130	-287.42	0.82	0.28	0.25
0	P71	J58	J54	591.64	12	130	363.7	1.03	0.23	0.39
0	P73	J40	J68	1,551.82	12	130	-3.58	0.01	0	0
0	P75	J68	J70	838.54	12	130	44.94	0.13	0.01	0.01
0	P79	J72	J74	1,086.50	12	130	-22.98	0.07	0	0
0	P83	J76	J78	765.46	12	130	125.17	0.36	0.04	0.05
0	P89	J52	J82	771.55	16	130	886.23	1.41	0.39	0.5
0	P91	J82	J78	774.7	16	130	-1,172.39	1.87	0.65	0.84
0	P93	J68	J84	890.35	12	130	-93.66	0.27	0.03	0.03
0	P95	J84	J86	1,204.21	12	130	-117.36	0.33	0.06	0.05
0	P97	J86	J88	946.69	12	130	-158.48	0.45	0.08	0.08
0	P99	J88	J90	874.98	16	130	-200.52	0.32	0.03	0.03

Run B6

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	267.01	62.83
0	J102	0	125.5	269.05	62.2
0	J104	9.32	129.8	271.48	61.39
0	J122	75.78	117.5	266.53	64.58
0	J124	66.76	119.5	266.61	63.74
0	J126	0	130	269.64	60.5
0	J128	0	133	269.64	59.2
0	J130	0	134	269.64	58.77
0	J132	0	131	268.62	59.63
0	J134	0	131	268.62	59.63
0	J136	0	131	268.62	59.63
0	J138	0	122	255.97	58.05
0	J140	0	122	255.97	58.05
0	J146	0	132	259.87	55.41
0	J148	1	132	259.87	55.41
0	J150	0	118	255.88	59.74
0	J152	1	118	255.88	59.74
0	J154	0	90.3	266.09	76.17
0	J156	0	115.5	255.21	60.54
0	J158	1	115.5	255.21	60.54
0	J160	0	128	258.03	56.34
0	J162	1	128	258.03	56.34
0	J164	0	98	254.49	67.81
0	J166	1	98	254.49	67.81
0	J168	0	115.25	266.5	65.54
0	J170	1	120	254.58	58.31
0	J172	0	120	254.58	58.31
0	J174	1	123	255.28	57.32
0	J176	0	123	255.28	57.32
0	J178	1	94	250.95	68.01
0	J180	0	94	250.95	68.01
0	J182	0	118	258.56	60.9
0	J184	2,001.00	118	245.96	55.45
0	J186	2,000.00	118	245.96	55.44
0	J188	0	126	266.41	60.84
0	J190	0	126	266.41	60.84
0	J192	0	126	266.41	60.84
0	J194	0	126	266.41	60.84
0	J196	0	99.75	262.16	70.37

0	J198	0	95.5	265.35	73.6
0	J20	44.06	90.4	266.33	76.23
0	J206	0	100	250.55	65.23
0	J208	1	100	250.55	65.23
0	J210	0	102	254.19	65.94
0	J212	0	102	254.19	65.94
0	J214	0	102	254.19	65.94
0	J216	0	100	251.74	65.75
0	J218	1	100	251.74	65.75
0	J22	41.86	118.5	266.55	64.15
0	J220	50.94	116	266.18	65.07
0	J222	50.4	119.1	266.23	63.75
0	J224	0	118	260.21	61.62
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	266.81	65.56
0	J28	34.78	118.6	267.48	64.51
0	J30	44.42	122.2	267.92	63.14
0	J300	0	127.5	274.59	63.73
0	J302	0	128	274.97	63.68
0	J304	0	142	280.84	60.16
0	J32	93.48	126	268.77	61.86
0	J34	0	134	270.5	59.15
0	J36	0	138	274.39	59.1
0	J38	79.7	90.2	265.52	75.97
0	J40	138.2	90	264.95	75.8
0	J42	137.88	101	265.73	71.38
0	J44	93.74	111	266.14	67.22
0	J46	79.04	113	266.48	66.5
0	J48	76.62	114.7	265.79	65.47
0	J50	76.58	120	265.94	63.24
0	J52	152.52	126	266.12	60.71
0	J54	76.28	127.6	266.43	60.15
0	J56	70.04	121.9	266.41	62.62
0	J58	97.94	126	266.67	60.95
0	J60	43.14	124.5	266.88	61.69
0	J62	94.12	122	267.51	63.05
0	J64	69.8	127	267.57	60.91
0	J66	44.72	130.5	268.62	59.85
0	J68	45.14	88	263.32	75.96
0	J70	92.66	97.5	262.55	71.52
0	J72	105.24	102	261.68	69.19
0	J74	104.58	108	259.49	65.64
0	J76	92.9	128	260.61	57.46
0	J78	160.7	126	265.84	60.59
0	J82	0	126.4	265.98	60.48
0	J84	23.7	76	263.32	81.16
0	J86	38.12	78	263.32	80.3
0	J88	42.04	88.4	263.33	75.8
0	J90	52.46	104	263.34	69.04
0	J92	53.12	98	262.26	71.17
0	J94	50.48	107	263.72	67.91
0	J96	40.96	116	264.18	64.21

	ID	Flow (gpm)	Head (ft)
0	RES9010	-3,062.31	277.29
0	RES9012	-3,881.82	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	63.05	58.05	0	0	11.54	Open	3
0	V8002	8	122	63.23	58.05	0	0	0	Closed	3
0	V8008	10	132	60.44	55.41	1	0	11.61	Open	2

0	V8010	10	132	58.05	55.41	0	0	0	Closed	2
0	V8012	8	118	64.48	59.74	0	0	0	Closed	3
0	V8014	8	118	64.77	59.74	1	0.01	11.6	Open	3
0	V8016	8	115.5	65.56	60.54	1	0.01	11.6	Open	3
0	V8018	8	115.5	65.45	60.54	0	0	0	Closed	3
0	V8020	8	128	61.37	56.34	1	0.01	11.6	Open	3
0	V8022	8	128	61	56.34	0	0	0	Closed	3
0	V8024	8	98	72.59	67.81	0	0	0	Closed	3
0	V8026	8	98	72.83	67.81	1	0.01	11.6	Open	3
0	V8028	10	120	63.48	58.31	0	0	0	Closed	2
0	V8032	8	123	62.34	57.32	1	0.01	11.6	Open	3
0	V8034	8	123	62.62	57.32	0	0	0	Closed	3
0	V8036	8	94	73.36	68.01	0	0	0	Closed	3
0	V8038	8	94	73.03	68.01	1	0.01	11.6	Open	3
0	V8042	10	118	60.95	57.01	2,063.30	8.43	9.09	Open	2
0	V8044	10	118	60.06	56.34	1,937.70	7.92	8.57	Open	2
0	V8052	10	100	70.43	65.23	0	0	0	Closed	2
0	V8054	10	100	70.26	65.23	1	0	11.61	Open	2
0	V8056	8	102	70.94	65.94	0	0	11.54	Open	3
0	V8058	8	102	70.78	65.94	0	0	0	Closed	3
0	V8060	8	100	70.77	65.75	0	0	0	Closed	3
0	V8062	8	100	70.77	65.75	1	0.01	11.6	Open	3
0	V8070	10	120	63.34	58.31	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-507.41	1.44	0.58	0.72
0	P103	J92	J90	1,241.83	12	130	-560.53	1.59	1.08	0.87
0	P105	J90	J94	1,132.34	16	130	-715.79	1.14	0.38	0.34
0	P107	J94	J96	1,204.53	16	130	-766.27	1.22	0.46	0.38
0	P111	J78	J100	1,067.79	16	130	-1,355.84	2.16	1.17	1.1
0	P115	J96	J100	886.7	16	130	-2,414.96	3.85	2.83	3.2
0	P117	J100	J102	789.56	20	130	-3,871.50	3.95	2.04	2.58
0	P119	J102	J104	941.88	20	130	-3,871.50	3.95	2.43	2.58
0	P121	J104	J300	1,197.93	20	130	-3,881.82	3.96	3.11	2.6
0	P123	J300	J302	147.08	20	130	-3,881.82	3.96	0.38	2.6
0	P125	J302	J304	2,260.56	20	130	-3,881.82	3.96	5.87	2.6
0	P139	J122	J124	627.68	12	130	-198.4	0.56	0.08	0.13
0	P141	J124	J60	1,242.80	12	130	-265.16	0.75	0.27	0.22
0	P145	J34	J126	846.23	20	130	2,345.56	2.4	0.86	1.02
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,344.56	2.39	0.86	1.02
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-535.62	0.85	0.22	0.2
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-577.48	0.92	0.26	0.23
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0

0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-979.61	1.56	0.67	0.6
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	491.56	1.39	0.24	0.68
0	P215	J154	J38	842.54	12	130	490.56	1.39	0.57	0.68
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,015.39	1.62	0.44	0.64
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-122.62	0.35	0.03	0.05
0	P249	J168	J122	563.66	12	130	-122.62	0.35	0.03	0.05
0	P25	J30	J32	1,229.93	16	130	-1,059.81	1.69	0.85	0.7
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	1,160.30	3.29	2.05	3.34
0	P283	J182	J74	589.22	12	130	-777.4	2.21	0.94	1.59
0	P287	V8042	J184	372.65	12	130	2,063.30	5.85	3.61	9.69
0	P289	J184	J186	299.52	12	130	62.3	0.18	0	0.01
0	P29	J34	J36	2,325.70	20	130	-3,062.31	3.13	3.89	1.67
0	P295	J182	V8044	226.67	12	130	1,937.70	5.5	1.96	8.63
0	P297	V8044	J186	240.53	12	130	1,937.70	5.5	2.08	8.63
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	-479.81	1.36	0.48	0.65
0	P311	J196	J70	609.66	12	130	-480.81	1.36	0.4	0.65
0	P313	J40	J198	1,129.17	12	130	-349.01	0.99	0.41	0.36
0	P315	J198	J42	1,043.66	12	130	-349.01	0.99	0.38	0.36
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	410.86	1.17	0.58	0.49
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0

0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	202.97	0.58	0.17	0.13
0	P365	J222	J220	621.17	12	130	152.57	0.43	0.05	0.08
0	P367	J220	J44	1,095.19	12	130	100.63	0.29	0.04	0.04
0	P37	J26	J46	1,141.00	12	130	312.93	0.89	0.34	0.29
0	P379	J76	J224	678.87	12	130	455.57	1.29	0.4	0.59
0	P381	J224	V8042	158.85	12	130	2,063.30	5.85	1.54	9.69
0	P39	J46	J44	879.87	12	130	356.51	1.01	0.33	0.38
0	P393	J226	J36	1,733.97	20	130	3,062.31	3.13	2.9	1.67
0	P395	J96	J224	650.52	12	130	1,607.73	4.56	3.97	6.11
0	P41	J44	J42	1,067.11	12	130	363.4	1.03	0.41	0.39
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	3,062.31	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,881.82	0	0	0
0	P43	J42	J48	1,096.37	12	130	-123.49	0.35	0.06	0.05
0	P45	J48	J50	1,194.62	12	130	-200.11	0.57	0.15	0.13
0	P47	J50	J52	765.09	12	130	-276.69	0.78	0.18	0.23
0	P49	J32	J62	1,463.77	16	130	1,191.27	1.9	1.26	0.86
0	P51	J34	J66	1,373.58	12	130	716.75	2.03	1.88	1.37
0	P53	J66	J64	862.35	12	130	672.03	1.91	1.05	1.21
0	P55	J62	J64	1,082.76	12	130	-129.24	0.37	0.06	0.06
0	P57	J62	J60	691.6	16	130	1,226.39	1.96	0.63	0.91
0	P59	J64	J58	1,424.22	12	130	472.98	1.34	0.9	0.63
0	P61	J60	J56	890.62	16	130	917.09	1.46	0.47	0.53
0	P67	J56	J52	1,036.48	16	130	644.08	1.03	0.29	0.28
0	P69	J52	J54	1,131.15	12	130	-298.76	0.85	0.31	0.27
0	P71	J58	J54	591.64	12	130	375.04	1.06	0.24	0.41
0	P73	J40	J68	1,551.82	12	130	621.67	1.76	1.63	1.05
0	P75	J68	J70	838.54	12	130	574.47	1.63	0.76	0.91
0	P79	J72	J74	1,086.50	12	130	881.98	2.5	2.18	2.01
0	P83	J76	J78	765.46	12	130	-1,708.77	4.85	5.23	6.84
0	P89	J52	J82	771.55	16	130	513.63	0.82	0.14	0.18
0	P91	J82	J78	774.7	16	130	513.63	0.82	0.14	0.18
0	P93	J68	J84	890.35	12	130	2.06	0.01	0	0
0	P95	J84	J86	1,204.21	12	130	-21.64	0.06	0	0
0	P97	J86	J88	946.69	12	130	-59.76	0.17	0.01	0.01
0	P99	J88	J90	874.98	16	130	-101.8	0.16	0.01	0.01

Run B7

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	270.33	64.27
0	J102	0	125.5	271.88	63.43
0	J104	9.32	129.8	273.72	62.36
0	J122	75.78	117.5	269.31	65.78
0	J124	66.76	119.5	269.42	64.96
0	J126	0	130	271.64	61.37
0	J128	0	133	271.64	60.07
0	J130	0	134	271.64	59.64
0	J132	0	131	270.97	60.65
0	J134	0	131	270.97	60.65
0	J136	0	131	270.97	60.65

0	J138	0	122	281.73	69.21
0	J140	0	122	281.73	69.21
0	J146	0	132	262.12	56.38
0	J148	1	132	262.12	56.38
0	J150	0	118	258.3	60.79
0	J152	1	118	258.3	60.79
0	J154	0	90.3	268.54	77.23
0	J156	0	115.5	257.74	61.63
0	J158	1	115.5	257.74	61.63
0	J160	0	128	260.04	57.21
0	J162	1	128	260.04	57.21
0	J164	0	98	256.94	68.87
0	J166	1	98	256.94	68.87
0	J168	0	115.25	269.26	66.73
0	J170	1	120	257.51	59.58
0	J172	0	120	257.51	59.58
0	J174	1	123	258.18	58.57
0	J176	0	123	258.18	58.57
0	J178	1	94	253.12	68.94
0	J180	0	94	253.12	68.94
0	J182	0	118	267.07	64.59
0	J184	1	118	256.48	60
0	J186	0	118	256.48	60
0	J188	0	126	269.55	62.2
0	J190	0	126	269.55	62.2
0	J192	0	126	269.55	62.2
0	J194	0	126	269.55	62.2
0	J196	0	99.75	264.71	71.48
0	J198	0	95.5	267.93	74.71
0	J20	44.06	90.4	268.81	77.3
0	J206	0	100	253.11	66.34
0	J208	1	100	253.11	66.34
0	J210	0	102	257.04	67.18
0	J212	0	102	257.04	67.18
0	J214	0	102	257.04	67.18
0	J216	1,500.00	100	245.52	63.05
0	J218	1,501.00	100	245.41	63
0	J22	41.86	118.5	269.06	65.24
0	J220	50.94	116	269.12	66.35
0	J222	50.4	119.1	269.23	65.05
0	J224	0	118	268.09	65.03
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	269.34	66.66
0	J28	34.78	118.6	269.91	65.56
0	J30	44.42	122.2	270.27	64.16
0	J300	0	127.5	276.09	64.38
0	J302	0	128	276.38	64.29
0	J304	0	142	280.84	60.16
0	J32	93.48	126	271	62.83
0	J34	0	134	272.29	59.92
0	J36	0	138	275.15	59.43
0	J38	79.7	90.2	267.89	76.99
0	J40	138.2	90	267.23	76.79
0	J42	137.88	101	268.58	72.61
0	J44	93.74	111	269	68.46
0	J46	79.04	113	269.21	67.69
0	J48	76.62	114.7	268.79	66.77
0	J50	76.58	120	269.15	64.63
0	J52	152.52	126	269.5	62.18
0	J54	76.28	127.6	269.61	61.53
0	J56	70.04	121.9	269.55	63.98

0	J58	97.94	126	269.73	62.28
0	J60	43.14	124.5	269.78	62.95
0	J62	94.12	122	270.19	64.21
0	J64	69.8	127	270.25	62.07
0	J66	44.72	130.5	270.97	60.86
0	J68	45.14	88	264.77	76.59
0	J70	92.66	97.5	264.72	72.46
0	J72	105.24	102	264.71	70.5
0	J74	104.58	108	266.1	68.5
0	J76	92.9	128	268.09	60.7
0	J78	160.7	126	269.51	62.18
0	J82	0	126.4	269.51	62.01
0	J84	23.7	76	263.9	81.41
0	J86	38.12	78	262.8	80.07
0	J88	42.04	88.4	262.04	75.24
0	J90	52.46	104	262.75	68.79
0	J92	53.12	98	263.86	71.87
0	J94	50.48	107	265.28	68.58
0	J96	40.96	116	268.1	65.9

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,595.99	277.29
0	RES9012	-3,348.13	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	64.21	69.21	0	0	11.54	Open		3
0	V8002	8	122	64.25	69.21	0	0	0	Closed		3
0	V8008	10	132	61.41	56.38	1	0	11.61	Open		2
0	V8010	10	132	59.58	56.38	0	0	0	Closed		2
0	V8012	8	118	65.58	60.79	0	0	0	Closed		3
0	V8014	8	118	65.82	60.79	1	0.01	11.6	Open		3
0	V8016	8	115.5	66.66	61.63	1	0.01	11.6	Open		3
0	V8018	8	115.5	66.54	61.63	0	0	0	Closed		3
0	V8020	8	128	62.24	57.21	1	0.01	11.6	Open		3
0	V8022	8	128	61.96	57.21	0	0	0	Closed		3
0	V8024	8	98	73.61	68.87	0	0	0	Closed		3
0	V8026	8	98	73.89	68.87	1	0.01	11.6	Open		3
0	V8028	10	120	64.67	59.58	0	0	0	Closed		2
0	V8032	8	123	63.6	58.57	1	0.01	11.6	Open		3
0	V8034	8	123	63.78	58.57	0	0	0	Closed		3
0	V8036	8	94	73.62	68.94	0	0	0	Closed		3
0	V8038	8	94	73.97	68.94	1	0.01	11.6	Open		3
0	V8042	10	118	65.03	60	1	0	11.61	Open		2
0	V8044	10	118	64.59	60	0	0	0	Closed		2
0	V8052	10	100	71.37	66.34	0	0	0	Closed		2
0	V8054	10	100	71.37	66.34	1	0	11.61	Open		2
0	V8056	8	102	72.18	67.18	0	0	11.54	Open		3
0	V8058	8	102	71.9	67.18	0	0	0	Closed		3
0	V8060	8	100	68.42	65.23	1,649.19	10.53	7.36	Open		3
0	V8062	8	100	69.46	66.46	1,351.81	8.63	6.94	Open		3
0	V8070	10	120	64.61	59.58	1	0	11.61	Open		2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	621.78	1.76	0.85	1.05
0	P103	J92	J90	1,241.83	12	130	568.66	1.61	1.11	0.89
0	P105	J90	J94	1,132.34	16	130	-1,989.75	3.18	2.53	2.23
0	P107	J94	J96	1,204.53	16	130	-2,040.23	3.26	2.82	2.34
0	P111	J78	J100	1,067.79	16	130	-1,114.33	1.78	0.81	0.76
0	P115	J96	J100	886.7	16	130	-2,122.79	3.39	2.23	2.52
0	P117	J100	J102	789.56	20	130	-3,337.81	3.41	1.55	1.96
0	P119	J102	J104	941.88	20	130	-3,337.81	3.41	1.85	1.96

0	P121	J104	J300	1,197.93	20	130	-3,348.13	3.42	2.36	1.97
0	P123	J300	J302	147.08	20	130	-3,348.13	3.42	0.29	1.97
0	P125	J302	J304	2,260.56	20	130	-3,348.13	3.42	4.46	1.97
0	P139	J122	J124	627.68	12	130	-241.76	0.69	0.11	0.18
0	P141	J124	J60	1,242.80	12	130	-308.52	0.88	0.36	0.29
0	P145	J34	J126	846.23	20	130	2,003.30	2.05	0.65	0.76
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,002.30	2.04	0.64	0.76
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-569.32	0.91	0.25	0.22
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-611.18	0.98	0.29	0.25
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-890.59	1.42	0.56	0.5
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	525.26	1.49	0.27	0.77
0	P215	J154	J38	842.54	12	130	524.26	1.49	0.65	0.77
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-926.37	1.48	0.37	0.54
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-165.98	0.47	0.05	0.09
0	P249	J168	J122	563.66	12	130	-165.98	0.47	0.05	0.09
0	P25	J30	J32	1,229.93	16	130	-970.79	1.55	0.73	0.59
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0

0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	794.49	2.25	1.02	1.66
0	P283	J182	J74	589.22	12	130	794.49	2.25	0.98	1.66
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,595.99	2.65	2.86	1.23
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	-37.11	0.11	0	0.01
0	P311	J196	J70	609.66	12	130	-38.11	0.11	0	0.01
0	P313	J40	J198	1,129.17	12	130	-469.46	1.33	0.71	0.62
0	P315	J198	J42	1,043.66	12	130	-469.46	1.33	0.65	0.62
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	444.56	1.26	0.67	0.56
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	1,649.19	6.74	4.15	15.56
0	P355	V8060	J216	322.62	10	130	1,649.19	6.74	5.02	15.56
0	P357	J90	V8062	226.9	10	130	1,351.81	5.52	2.44	10.77
0	P359	V8062	J218	739.72	10	130	1,351.81	5.52	7.96	10.77
0	P361	J218	J216	604.58	10	130	-149.19	0.61	0.11	0.18
0	P363	J56	J222	1,322.36	12	130	284.02	0.81	0.33	0.25
0	P365	J222	J220	621.17	12	130	233.62	0.66	0.11	0.17
0	P367	J220	J44	1,095.19	12	130	181.68	0.52	0.12	0.11
0	P37	J26	J46	1,141.00	12	130	190.21	0.54	0.13	0.12
0	P379	J76	J224	678.87	12	130	-40.6	0.12	0	0.01
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	277.15	0.79	0.21	0.24
0	P393	J226	J36	1,733.97	20	130	2,595.99	2.65	2.14	1.23
0	P395	J96	J224	650.52	12	130	41.6	0.12	0	0.01
0	P41	J44	J42	1,067.11	12	130	365.09	1.04	0.42	0.39
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,595.99	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,348.13	0	0	0
0	P43	J42	J48	1,096.37	12	130	-242.25	0.69	0.2	0.18
0	P45	J48	J50	1,194.62	12	130	-318.87	0.9	0.36	0.31
0	P47	J50	J52	765.09	12	130	-395.45	1.12	0.35	0.45
0	P49	J32	J62	1,463.77	16	130	938.03	1.5	0.81	0.55
0	P51	J34	J66	1,373.58	12	130	592.69	1.68	1.32	0.96
0	P53	J66	J64	862.35	12	130	547.97	1.55	0.72	0.83
0	P55	J62	J64	1,082.76	12	130	-127.21	0.36	0.06	0.06
0	P57	J62	J60	691.6	16	130	971.12	1.55	0.41	0.59
0	P59	J64	J58	1,424.22	12	130	350.96	1	0.52	0.36

0	P61	J60	J56	890.62	16	130	618.46	0.99	0.23	0.26
0	P67	J56	J52	1,036.48	16	130	264.4	0.42	0.06	0.05
0	P69	J52	J54	1,131.15	12	130	-176.74	0.5	0.12	0.1
0	P71	J58	J54	591.64	12	130	253.02	0.72	0.12	0.2
0	P73	J40	J68	1,551.82	12	130	775.83	2.2	2.46	1.58
0	P75	J68	J70	838.54	12	130	131.77	0.37	0.05	0.06
0	P79	J72	J74	1,086.50	12	130	-689.91	1.96	1.38	1.27
0	P83	J76	J78	765.46	12	130	-846.79	2.4	1.43	1.86
0	P89	J52	J82	771.55	16	130	-106.84	0.17	0.01	0.01
0	P91	J82	J78	774.7	16	130	-106.84	0.17	0.01	0.01
0	P93	J68	J84	890.35	12	130	598.91	1.7	0.87	0.98
0	P95	J84	J86	1,204.21	12	130	575.21	1.63	1.1	0.91
0	P97	J86	J88	946.69	12	130	537.09	1.52	0.76	0.8
0	P99	J88	J90	874.98	16	130	-1,154.13	1.84	0.71	0.81

Run B8

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	267.44	63.02
0	J102	0	125.5	269.41	62.36
0	J104	9.32	129.8	271.77	61.52
0	J122	75.78	117.5	265.94	64.32
0	J124	66.76	119.5	266.14	63.54
0	J126	0	130	269.31	60.36
0	J128	0	133	269.31	59.06
0	J130	0	134	269.31	58.63
0	J132	0	131	268.41	59.54
0	J134	0	131	268.41	59.54
0	J136	0	131	268.41	59.54
0	J138	0	122	278.83	67.95
0	J140	0	122	278.83	67.95
0	J146	0	132	260.16	55.53
0	J148	1	132	260.16	55.53
0	J150	0	118	255.13	59.42
0	J152	1	118	255.13	59.42
0	J154	0	90.3	264.25	75.37
0	J156	0	115.5	254.24	60.12
0	J158	1	115.5	254.24	60.12
0	J160	0	128	257.71	56.2
0	J162	1	128	257.71	56.2
0	J164	0	98	252.64	67.01
0	J166	1	98	252.64	67.01
0	J168	0	115.25	265.83	65.25
0	J170	1	120	254.04	58.08
0	J172	0	120	254.04	58.08
0	J174	1	123	255.09	57.23
0	J176	0	123	255.09	57.23
0	J178	1	94	235.64	61.37
0	J180	0	94	235.64	61.37
0	J182	0	118	261.41	62.14
0	J184	1	118	252.81	58.41
0	J186	0	118	252.81	58.41
0	J188	0	126	266.36	60.82
0	J190	0	126	266.36	60.82
0	J192	0	126	266.36	60.82
0	J194	0	126	266.36	60.82
0	J196	0	99.75	247.26	63.92
0	J198	0	95.5	263.04	72.6
0	J20	44.06	90.4	264.8	75.57
0	J206	2,000.00	100	232	57.2
0	J208	2,001.00	100	232	57.2
0	J210	0	102	253.06	65.45

0	J212	0	102	253.06	65.45
0	J214	0	102	253.06	65.45
0	J216	0	100	248.2	64.22
0	J218	1	100	248.2	64.22
0	J22	41.86	118.5	265.3	63.61
0	J220	50.94	116	265.65	64.84
0	J222	50.4	119.1	265.83	63.58
0	J224	0	118	264.42	63.44
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	265.85	65.15
0	J28	34.78	118.6	266.73	64.18
0	J30	44.42	122.2	267.3	62.87
0	J300	0	127.5	274.78	63.82
0	J302	0	128	275.15	63.76
0	J304	0	142	280.84	60.16
0	J32	93.48	126	268.4	61.7
0	J34	0	134	270.23	59.03
0	J36	0	138	274.27	59.05
0	J38	79.7	90.2	262.9	74.83
0	J40	138.2	90	261.36	74.25
0	J42	137.88	101	264.6	70.89
0	J44	93.74	111	265.41	66.9
0	J46	79.04	113	265.73	66.18
0	J48	76.62	114.7	265.03	65.14
0	J50	76.58	120	265.7	63.13
0	J52	152.52	126	266.28	60.78
0	J54	76.28	127.6	266.49	60.18
0	J56	70.04	121.9	266.36	62.59
0	J58	97.94	126	266.68	60.95
0	J60	43.14	124.5	266.69	61.61
0	J62	94.12	122	267.29	62.95
0	J64	69.8	127	267.39	60.83
0	J66	44.72	130.5	268.41	59.75
0	J68	45.14	88	254.85	72.3
0	J70	92.66	97.5	247.24	64.88
0	J72	105.24	102	254.66	66.15
0	J74	104.58	108	258.8	65.34
0	J76	92.9	128	264.13	58.99
0	J78	160.7	126	266.3	60.79
0	J82	0	126.4	266.29	60.61
0	J84	23.7	76	256.1	78.04
0	J86	38.12	78	257.88	77.94
0	J88	42.04	88.4	259.42	74.1
0	J90	52.46	104	259.8	67.51
0	J92	53.12	98	256.57	68.71
0	J94	50.48	107	262.12	67.21
0	J96	40.96	116	264.7	64.43

	ID	Flow (gpm)	Head (ft)
0	RES9010	-3,127.27	277.29
0	RES9012	-3,816.85	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	62.95	67.95	0	0	11.54	Open		3
0	V8002	8	122	62.96	67.95	0	0	0	Closed		3
0	V8008	10	132	60.56	55.53	1	0	11.61	Open		2
0	V8010	10	132	58.19	55.53	0	0	0	Closed		2
0	V8012	8	118	64.06	59.42	0	0	0	Closed		3
0	V8014	8	118	64.44	59.42	1	0.01	11.6	Open		3
0	V8016	8	115.5	65.15	60.12	1	0.01	11.6	Open		3
0	V8018	8	115.5	64.91	60.12	0	0	0	Closed		3

0	V8020	8	128	61.23	56.2	1	0.01	11.6	Open	3
0	V8022	8	128	60.84	56.2	0	0	0	Closed	3
0	V8024	8	98	71.45	67.01	0	0	0	Closed	3
0	V8026	8	98	72.03	67.01	1	0.01	11.6	Open	3
0	V8028	10	120	63.19	58.08	0	0	0	Closed	2
0	V8032	8	123	62.26	57.23	1	0.01	11.6	Open	3
0	V8034	8	123	62.52	57.23	0	0	0	Closed	3
0	V8036	8	94	70.24	61.37	0	0	0	Closed	3
0	V8038	8	94	66.4	61.37	1	0.01	11.6	Open	3
0	V8042	10	118	63.44	58.41	1	0	11.61	Open	2
0	V8044	10	118	62.14	58.41	0	0	0	Closed	2
0	V8052	10	100	63.07	59.27	1,996.06	8.15	8.76	Open	2
0	V8054	10	100	63.1	59.29	2,004.94	8.19	8.8	Open	2
0	V8056	8	102	70.45	65.45	0	0	11.54	Open	3
0	V8058	8	102	69.78	65.45	0	0	0	Closed	3
0	V8060	8	100	69.08	64.22	0	0	0	Closed	3
0	V8062	8	100	69.24	64.22	1	0.01	11.6	Open	3
0	V8070	10	120	63.11	58.08	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-961.61	2.73	1.91	2.36
0	P103	J92	J90	1,241.83	12	130	-1,014.73	2.88	3.23	2.6
0	P105	J90	J94	1,132.34	16	130	-1,896.57	3.03	2.31	2.04
0	P107	J94	J96	1,204.53	16	130	-1,947.05	3.11	2.58	2.14
0	P111	J78	J100	1,067.79	16	130	-1,334.70	2.13	1.14	1.07
0	P115	J96	J100	886.7	16	130	-2,371.14	3.78	2.74	3.09
0	P117	J100	J102	789.56	20	130	-3,806.53	3.89	1.98	2.5
0	P119	J102	J104	941.88	20	130	-3,806.53	3.89	2.36	2.5
0	P121	J104	J300	1,197.93	20	130	-3,816.85	3.9	3.01	2.52
0	P123	J300	J302	147.08	20	130	-3,816.85	3.9	0.37	2.52
0	P125	J302	J304	2,260.56	20	130	-3,816.85	3.9	5.69	2.52
0	P139	J122	J124	627.68	12	130	-324.68	0.92	0.2	0.32
0	P141	J124	J60	1,242.80	12	130	-391.44	1.11	0.55	0.45
0	P145	J34	J126	846.23	20	130	2,422.10	2.47	0.92	1.08
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,421.10	2.47	0.91	1.08
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-824.23	1.32	0.49	0.44
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-866.09	1.38	0.55	0.48
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,135.14	1.81	0.88	0.79
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	780.17	2.21	0.56	1.6

0	P215	J154	J38	842.54	12	130	779.17	2.21	1.35	1.6
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,170.92	1.87	0.57	0.84
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-248.9	0.71	0.1	0.19
0	P249	J168	J122	563.66	12	130	-248.9	0.71	0.11	0.19
0	P25	J30	J32	1,229.93	16	130	-1,215.34	1.94	1.1	0.9
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	1,351.43	3.83	2.72	4.43
0	P283	J182	J74	589.22	12	130	1,351.43	3.83	2.61	4.43
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-3,127.27	3.19	4.04	1.74
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	2,103.23	5.97	7.4	10.04
0	P311	J196	J70	609.66	12	130	98.28	0.28	0.02	0.03
0	P313	J40	J198	1,129.17	12	130	-750.79	2.13	1.68	1.49
0	P315	J198	J42	1,043.66	12	130	-750.79	2.13	1.56	1.49
0	P329	J70	V8052	185.71	12	130	1,996.06	5.66	1.69	9.12
0	P33	J38	J40	1,179.71	12	130	699.47	1.98	1.54	1.31
0	P331	V8052	J206	525.44	12	130	1,996.06	5.66	4.79	9.12
0	P333	J196	V8054	178.3	12	130	2,004.94	5.69	1.64	9.19
0	P335	V8054	J208	525.19	12	130	2,004.94	5.69	4.83	9.19
0	P337	J208	J206	475.84	12	130	3.94	0.01	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0

0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	367.9	1.04	0.53	0.4
0	P365	J222	J220	621.17	12	130	317.5	0.9	0.19	0.3
0	P367	J220	J44	1,095.19	12	130	265.56	0.75	0.24	0.22
0	P37	J26	J46	1,141.00	12	130	179.85	0.51	0.12	0.11
0	P379	J76	J224	678.87	12	130	-382.13	1.08	0.29	0.43
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	349.71	0.99	0.32	0.36
0	P393	J226	J36	1,733.97	20	130	3,127.27	3.19	3.02	1.74
0	P395	J96	J224	650.52	12	130	383.13	1.09	0.28	0.43
0	P41	J44	J42	1,067.11	12	130	521.53	1.48	0.81	0.76
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	3,127.27	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,816.85	0	0	0
0	P43	J42	J48	1,096.37	12	130	-367.14	1.04	0.43	0.4
0	P45	J48	J50	1,194.62	12	130	-443.76	1.26	0.67	0.56
0	P47	J50	J52	765.09	12	130	-520.34	1.48	0.58	0.76
0	P49	J32	J62	1,463.77	16	130	1,112.28	1.77	1.11	0.76
0	P51	J34	J66	1,373.58	12	130	705.17	2	1.82	1.33
0	P53	J66	J64	862.35	12	130	660.45	1.87	1.01	1.18
0	P55	J62	J64	1,082.76	12	130	-172.55	0.49	0.11	0.1
0	P57	J62	J60	691.6	16	130	1,190.71	1.9	0.6	0.86
0	P59	J64	J58	1,424.22	12	130	418.1	1.19	0.72	0.5
0	P61	J60	J56	890.62	16	130	755.12	1.2	0.33	0.37
0	P67	J56	J52	1,036.48	16	130	317.18	0.51	0.08	0.07
0	P69	J52	J54	1,131.15	12	130	-243.88	0.69	0.21	0.19
0	P71	J58	J54	591.64	12	130	320.16	0.91	0.18	0.31
0	P73	J40	J68	1,551.82	12	130	1,312.06	3.72	6.5	4.19
0	P75	J68	J70	838.54	12	130	1,991.43	5.65	7.61	9.08
0	P79	J72	J74	1,086.50	12	130	-1,246.85	3.54	4.14	3.81
0	P83	J76	J78	765.46	12	130	-1,062.20	3.01	2.17	2.83
0	P89	J52	J82	771.55	16	130	-111.79	0.18	0.01	0.01
0	P91	J82	J78	774.7	16	130	-111.79	0.18	0.01	0.01
0	P93	J68	J84	890.35	12	130	-724.51	2.06	1.24	1.4
0	P95	J84	J86	1,204.21	12	130	-748.21	2.12	1.78	1.48
0	P97	J86	J88	946.69	12	130	-786.33	2.23	1.54	1.62
0	P99	J88	J90	874.98	16	130	-828.37	1.32	0.39	0.44

Run B9

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	271.71	64.87
0	J102	0	125.5	273.06	63.94
0	J104	9.32	129.8	274.66	62.77
0	J122	75.78	117.5	267.22	64.87
0	J124	66.76	119.5	267.61	64.18
0	J126	0	130	270.6	60.92
0	J128	0	133	270.6	59.62
0	J130	0	134	270.6	59.19
0	J132	0	131	269.94	60.2
0	J134	0	131	269.94	60.2
0	J136	0	131	269.94	60.2
0	J138	0	122	280.58	68.71
0	J140	0	122	280.58	68.71
0	J146	0	132	263.05	56.79
0	J148	1	132	263.05	56.79
0	J150	0	118	256.56	60.04

0	J152	1	118	256.56	60.04
0	J154	0	90.3	266.44	76.32
0	J156	0	115.5	255.69	60.74
0	J158	1	115.5	255.69	60.74
0	J160	0	128	258.99	56.76
0	J162	1	128	258.99	56.76
0	J164	0	98	254.84	67.96
0	J166	1	98	254.84	67.96
0	J168	0	115.25	266.97	65.74
0	J170	1	120	254.78	58.4
0	J172	0	120	254.78	58.4
0	J174	1	123	256.99	58.06
0	J176	0	123	256.99	58.06
0	J178	1	94	256.37	70.35
0	J180	0	94	256.37	70.35
0	J182	0	118	269.69	65.73
0	J184	1	118	258.78	61
0	J186	0	118	258.78	61
0	J188	0	126	268.54	61.76
0	J190	0	126	268.54	61.76
0	J192	0	126	268.54	61.76
0	J194	0	126	268.54	61.76
0	J196	0	99.75	268.41	73.08
0	J198	0	95.5	261.59	71.97
0	J20	44.06	90.4	266.72	76.4
0	J206	0	100	256.8	67.94
0	J208	1	100	256.8	67.94
0	J210	1,500.00	102	241.58	60.48
0	J212	1,500.00	102	241.72	60.54
0	J214	0	102	248.11	63.31
0	J216	0	100	257.86	68.4
0	J218	1	100	257.86	68.4
0	J22	41.86	118.5	266.99	64.34
0	J220	50.94	116	266.39	65.16
0	J222	50.4	119.1	266.99	64.08
0	J224	0	118	270.39	66.03
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	267.29	65.77
0	J28	34.78	118.6	268.16	64.81
0	J30	44.42	122.2	268.73	63.49
0	J300	0	127.5	276.71	64.65
0	J302	0	128	276.97	64.55
0	J304	0	142	280.84	60.16
0	J32	93.48	126	269.82	62.32
0	J34	0	134	271.38	59.53
0	J36	0	138	274.76	59.26
0	J38	79.7	90.2	265.76	76.07
0	J40	138.2	90	265.05	75.85
0	J42	137.88	101	261.84	69.69
0	J44	93.74	111	265.49	66.94
0	J46	79.04	113	266.73	66.61
0	J48	76.62	114.7	263.92	64.66
0	J50	76.58	120	266.58	63.51
0	J52	152.52	126	268.54	61.76
0	J54	76.28	127.6	268.63	61.11
0	J56	70.04	121.9	268.48	63.51
0	J58	97.94	126	268.72	61.84
0	J60	43.14	124.5	268.6	62.44
0	J62	94.12	122	269.04	63.71
0	J64	69.8	127	269.16	61.6
0	J66	44.72	130.5	269.94	60.42

0	J68	45.14	88	267.56	77.8
0	J70	92.66	97.5	267.97	73.87
0	J72	105.24	102	268.94	72.33
0	J74	104.58	108	269.34	69.91
0	J76	92.9	128	270.06	61.55
0	J78	160.7	126	270.11	62.44
0	J82	0	126.4	269.33	61.93
0	J84	23.7	76	268.01	83.2
0	J86	38.12	78	268.69	82.62
0	J88	42.04	88.4	269.3	78.39
0	J90	52.46	104	269.47	71.7
0	J92	53.12	98	269.11	74.14
0	J94	50.48	107	270.03	70.64
0	J96	40.96	116	270.7	67.03

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,841.84	277.29
0	RES9012	-3,102.28	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	63.71	68.71	0	0	11.54	Open		3
0	V8002	8	122	63.58	68.71	0	0	0	Closed		3
0	V8008	10	132	61.82	56.79	1	0	11.61	Open		2
0	V8010	10	132	59.5	56.79	0	0	0	Closed		2
0	V8012	8	118	64.69	60.04	0	0	0	Closed		3
0	V8014	8	118	65.07	60.04	1	0.01	11.6	Open		3
0	V8016	8	115.5	65.77	60.74	1	0.01	11.6	Open		3
0	V8018	8	115.5	65.64	60.74	0	0	0	Closed		3
0	V8020	8	128	61.79	56.76	1	0.01	11.6	Open		3
0	V8022	8	128	61.45	56.76	0	0	0	Closed		3
0	V8024	8	98	72.69	67.96	0	0	0	Closed		3
0	V8026	8	98	72.99	67.96	1	0.01	11.6	Open		3
0	V8028	10	120	63.68	58.4	0	0	0	Closed		2
0	V8032	8	123	63.09	58.06	1	0.01	11.6	Open		3
0	V8034	8	123	63.28	58.06	0	0	0	Closed		3
0	V8036	8	94	75.4	70.35	0	0	0	Closed		3
0	V8038	8	94	75.38	70.35	1	0.01	11.6	Open		3
0	V8042	10	118	66.03	61	1	0	11.61	Open		2
0	V8044	10	118	65.73	61	0	0	0	Closed		2
0	V8052	10	100	72.78	67.94	0	0	0	Closed		2
0	V8054	10	100	72.97	67.94	1	0	11.61	Open		2
0	V8056	8	102	67.34	64.22	1,611.47	10.29	7.2	Open		3
0	V8058	8	102	68.39	65.37	1,388.53	8.86	6.97	Open		3
0	V8060	8	100	73.36	68.4	0	0	0	Closed		3
0	V8062	8	100	73.43	68.4	1	0.01	11.6	Open		3
0	V8070	10	120	63.43	58.4	1	0	11.61	Open		2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-257.78	0.73	0.17	0.21
0	P103	J92	J90	1,241.83	12	130	-310.9	0.88	0.36	0.29
0	P105	J90	J94	1,132.34	16	130	-886.85	1.42	0.57	0.5
0	P107	J94	J96	1,204.53	16	130	-937.33	1.5	0.67	0.55
0	P111	J78	J100	1,067.79	16	130	-1,604.65	2.56	1.6	1.5
0	P115	J96	J100	886.7	16	130	-1,386.61	2.21	1.01	1.14
0	P117	J100	J102	789.56	20	130	-3,091.96	3.16	1.34	1.7
0	P119	J102	J104	941.88	20	130	-3,091.96	3.16	1.6	1.7
0	P121	J104	J300	1,197.93	20	130	-3,102.28	3.17	2.05	1.71
0	P123	J300	J302	147.08	20	130	-3,102.28	3.17	0.25	1.71
0	P125	J302	J304	2,260.56	20	130	-3,102.28	3.17	3.87	1.71
0	P139	J122	J124	627.68	12	130	-468.26	1.33	0.39	0.62
0	P141	J124	J60	1,242.80	12	130	-535.02	1.52	0.99	0.8

0	P145	J34	J126	846.23	20	130	2,222.05	2.27	0.78	0.92
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,221.05	2.27	0.78	0.92
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-585.15	0.93	0.26	0.23
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-627.01	1	0.3	0.26
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,129.06	1.8	0.87	0.78
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	541.09	1.53	0.28	0.81
0	P215	J154	J38	842.54	12	130	540.09	1.53	0.68	0.81
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,164.84	1.86	0.56	0.83
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-392.48	1.11	0.24	0.45
0	P249	J168	J122	563.66	12	130	-392.48	1.11	0.25	0.45
0	P25	J30	J32	1,229.93	16	130	-1,209.26	1.93	1.09	0.89
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0

0	P281	J76	J182	613.97	12	130	458.42	1.3	0.37	0.6
0	P283	J182	J74	589.22	12	130	458.42	1.3	0.35	0.6
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,841.84	2.9	3.39	1.46
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	506.38	1.44	0.53	0.72
0	P311	J196	J70	609.66	12	130	505.38	1.43	0.44	0.72
0	P313	J40	J198	1,129.17	12	130	1,107.40	3.14	3.46	3.06
0	P315	J198	J42	1,043.66	12	130	-281.12	0.8	0.25	0.24
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	460.39	1.31	0.71	0.6
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	1,388.53	5.67	1.75	11.31
0	P343	V8058	J214	421.16	10	130	1,388.53	5.67	4.76	11.31
0	P345	J214	J210	577.05	10	130	1,388.53	5.67	6.53	11.31
0	P347	J42	V8056	297.78	10	130	1,611.47	6.58	4.44	14.91
0	P349	V8056	J212	569.55	10	130	1,611.47	6.58	8.49	14.91
0	P351	J212	J210	1,312.90	10	130	111.47	0.46	0.14	0.11
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	645.44	1.83	1.49	1.13
0	P365	J222	J220	621.17	12	130	595.04	1.69	0.6	0.97
0	P367	J220	J44	1,095.19	12	130	543.1	1.54	0.9	0.82
0	P37	J26	J46	1,141.00	12	130	412.85	1.17	0.56	0.49
0	P379	J76	J224	678.87	12	130	-407.31	1.16	0.33	0.48
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	726.29	2.06	1.23	1.4
0	P393	J226	J36	1,733.97	20	130	2,841.84	2.9	2.53	1.46
0	P395	J96	J224	650.52	12	130	408.31	1.16	0.31	0.48
0	P41	J44	J42	1,067.11	12	130	1,175.65	3.34	3.65	3.42
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,841.84	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,102.28	0	0	0
0	P43	J42	J48	1,096.37	12	130	-854.83	2.42	2.08	1.9
0	P45	J48	J50	1,194.62	12	130	-931.45	2.64	2.65	2.22
0	P47	J50	J52	765.09	12	130	-1,008.03	2.86	1.97	2.57
0	P49	J32	J62	1,463.77	16	130	918.31	1.47	0.78	0.53
0	P51	J34	J66	1,373.58	12	130	619.79	1.76	1.44	1.05
0	P53	J66	J64	862.35	12	130	575.07	1.63	0.78	0.91
0	P55	J62	J64	1,082.76	12	130	-184.94	0.52	0.12	0.11
0	P57	J62	J60	691.6	16	130	1,009.12	1.61	0.44	0.63
0	P59	J64	J58	1,424.22	12	130	320.33	0.91	0.44	0.31
0	P61	J60	J56	890.62	16	130	429.97	0.69	0.12	0.13
0	P67	J56	J52	1,036.48	16	130	-285.51	0.46	0.06	0.06
0	P69	J52	J54	1,131.15	12	130	-146.11	0.41	0.08	0.07
0	P71	J58	J54	591.64	12	130	222.39	0.63	0.09	0.16
0	P73	J40	J68	1,551.82	12	130	-785.21	2.23	2.51	1.62

0	P75	J68	J70	838.54	12	130	-411.72	1.17	0.41	0.49
0	P79	J72	J74	1,086.50	12	130	-353.84	1	0.4	0.37
0	P83	J76	J78	765.46	12	130	-144	0.41	0.05	0.07
0	P89	J52	J82	771.55	16	130	-1,299.95	2.07	0.78	1.01
0	P91	J82	J78	774.7	16	130	-1,299.95	2.07	0.79	1.01
0	P93	J68	J84	890.35	12	130	-418.63	1.19	0.45	0.51
0	P95	J84	J86	1,204.21	12	130	-442.33	1.25	0.67	0.56
0	P97	J86	J88	946.69	12	130	-480.45	1.36	0.62	0.65
0	P99	J88	J90	874.98	16	130	-522.49	0.83	0.16	0.19

Run B10

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	271.85	64.93
0	J102	0	125.5	273.17	63.99
0	J104	9.32	129.8	274.75	62.81
0	J122	75.78	117.5	267.18	64.86
0	J124	66.76	119.5	267.67	64.2
0	J126	0	130	270.45	60.86
0	J128	0	133	270.45	59.56
0	J130	0	134	270.45	59.13
0	J132	0	131	270.02	60.24
0	J134	0	131	270.02	60.24
0	J136	0	131	270.02	60.24
0	J138	0	122	257.63	58.77
0	J140	0	122	257.63	58.77
0	J146	0	132	263.14	56.82
0	J148	1	132	263.14	56.82
0	J150	0	118	255.53	59.59
0	J152	1	118	255.53	59.59
0	J154	0	90.3	259.1	73.14
0	J156	0	115.5	254.18	60.09
0	J158	1	115.5	254.18	60.09
0	J160	0	128	258.85	56.7
0	J162	1	128	258.85	56.7
0	J164	1,500.00	98	237.23	60.33
0	J166	1,501.00	98	237.23	60.33
0	J168	0	115.25	266.85	65.69
0	J170	1	120	255.63	58.77
0	J172	0	120	255.63	58.77
0	J174	1	123	257.28	58.18
0	J176	0	123	257.28	58.18
0	J178	1	94	256.14	70.25
0	J180	0	94	256.14	70.25
0	J182	0	118	269.8	65.77
0	J184	1	118	258.91	61.06
0	J186	0	118	258.91	61.06
0	J188	0	126	269.01	61.97
0	J190	0	126	269.01	61.97
0	J192	0	126	269.01	61.97
0	J194	0	126	269.01	61.97
0	J196	0	99.75	268.26	73.02
0	J198	0	95.5	265.31	73.58
0	J20	44.06	90.4	261.55	74.16
0	J206	0	100	256.65	67.88
0	J208	1	100	256.65	67.88
0	J210	0	102	277.9	76.22
0	J212	0	102	277.9	76.22
0	J214	0	102	277.9	76.22
0	J216	0	100	257.85	68.39
0	J218	1	100	257.85	68.39
0	J22	41.86	118.5	263.61	62.88

0	J220	50.94	116	267.24	65.53
0	J222	50.4	119.1	267.7	64.39
0	J224	0	118	270.52	66.09
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	265.79	65.12
0	J28	34.78	118.6	267.13	64.36
0	J30	44.42	122.2	267.99	63.17
0	J300	0	127.5	276.78	64.68
0	J302	0	128	277.02	64.57
0	J304	0	142	280.84	60.16
0	J32	93.48	126	269.63	62.24
0	J34	0	134	271.28	59.48
0	J36	0	138	274.72	59.24
0	J38	79.7	90.2	258.99	73.14
0	J40	138.2	90	264.17	75.47
0	J42	137.88	101	266.36	71.65
0	J44	93.74	111	266.58	67.41
0	J46	79.04	113	266.54	66.53
0	J48	76.62	114.7	267.1	66.04
0	J50	76.58	120	268.16	64.2
0	J52	152.52	126	269.01	61.97
0	J54	76.28	127.6	269.03	61.28
0	J56	70.04	121.9	268.86	63.68
0	J58	97.94	126	269.08	61.99
0	J60	43.14	124.5	268.88	62.56
0	J62	94.12	122	269.17	63.77
0	J64	69.8	127	269.34	61.68
0	J66	44.72	130.5	270.02	60.45
0	J68	45.14	88	267.23	77.66
0	J70	92.66	97.5	267.74	73.77
0	J72	105.24	102	268.89	72.31
0	J74	104.58	108	269.39	69.93
0	J76	92.9	128	270.23	61.63
0	J78	160.7	126	270.34	62.54
0	J82	0	126.4	269.67	62.08
0	J84	23.7	76	267.76	83.09
0	J86	38.12	78	268.55	82.56
0	J88	42.04	88.4	269.26	78.37
0	J90	52.46	104	269.45	71.69
0	J92	53.12	98	269.07	74.12
0	J94	50.48	107	270.07	70.66
0	J96	40.96	116	270.8	67.08

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,866.73	277.29
0	RES9012	-3,077.39	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	63.77	58.77	0	0	11.54	Open		3
0	V8002	8	122	63.26	58.77	0	0	0	Closed		3
0	V8008	10	132	61.86	56.82	1	0	11.61	Open		2
0	V8010	10	132	59.65	56.82	0	0	0	Closed		2
0	V8012	8	118	64.04	59.59	0	0	0	Closed		3
0	V8014	8	118	64.62	59.59	1	0.01	11.6	Open		3
0	V8016	8	115.5	65.12	60.09	1	0.01	11.6	Open		3
0	V8018	8	115.5	64.18	60.09	0	0	0	Closed		3
0	V8020	8	128	61.73	56.7	1	0.01	11.6	Open		3
0	V8022	8	128	61.37	56.7	0	0	0	Closed		3
0	V8024	8	98	68.13	65.08	1,461.71	9.33	7.03	Open		3
0	V8026	8	98	68.85	65.78	1,539.28	9.82	7.1	Open		3
0	V8028	10	120	63.63	58.77	0	0	0	Closed		2

0	V8032	8	123	63.21	58.18	1	0.01	11.6	Open	3
0	V8034	8	123	63.34	58.18	0	0	0	Closed	3
0	V8036	8	94	75.29	70.25	0	0	0	Closed	3
0	V8038	8	94	75.28	70.25	1	0.01	11.6	Open	3
0	V8042	10	118	66.09	61.06	1	0	11.61	Open	2
0	V8044	10	118	65.77	61.06	0	0	0	Closed	2
0	V8052	10	100	72.68	67.88	0	0	0	Closed	2
0	V8054	10	100	72.91	67.88	1	0	11.61	Open	2
0	V8056	8	102	71.22	76.22	0	0	11.54	Open	3
0	V8058	8	102	70.76	76.22	0	0	0	Closed	3
0	V8060	8	100	73.34	68.39	0	0	0	Closed	3
0	V8062	8	100	73.42	68.39	1	0.01	11.6	Open	3
0	V8070	10	120	63.8	58.77	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-266.4	0.76	0.18	0.22
0	P103	J92	J90	1,241.83	12	130	-319.52	0.91	0.38	0.31
0	P105	J90	J94	1,132.34	16	130	-934.15	1.49	0.62	0.55
0	P107	J94	J96	1,204.53	16	130	-984.63	1.57	0.73	0.61
0	P111	J78	J100	1,067.79	16	130	-1,556.15	2.48	1.51	1.42
0	P115	J96	J100	886.7	16	130	-1,410.21	2.25	1.05	1.18
0	P117	J100	J102	789.56	20	130	-3,067.07	3.13	1.32	1.68
0	P119	J102	J104	941.88	20	130	-3,067.07	3.13	1.58	1.68
0	P121	J104	J300	1,197.93	20	130	-3,077.39	3.14	2.02	1.69
0	P123	J300	J302	147.08	20	130	-3,077.39	3.14	0.25	1.69
0	P125	J302	J304	2,260.56	20	130	-3,077.39	3.14	3.82	1.69
0	P139	J122	J124	627.68	12	130	-529.03	1.5	0.49	0.78
0	P141	J124	J60	1,242.80	12	130	-595.79	1.69	1.21	0.97
0	P145	J34	J126	846.23	20	130	2,289.24	2.34	0.83	0.98
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,288.24	2.34	0.82	0.98
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-1,780.35	2.84	2.06	1.82
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-1,822.21	2.91	2.18	1.9
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,426.61	2.28	1.35	1.21
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	1,736.29	4.93	2.45	7.04
0	P215	J154	J38	842.54	12	130	197.01	0.56	0.11	0.13
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0

0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,462.39	2.33	0.86	1.26
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	1,461.71	5.97	3.75	12.44
0	P239	J154	V8026	160.09	10	130	1,539.28	6.29	2.19	13.69
0	P241	V8026	J166	918.28	10	130	1,539.28	6.29	12.57	13.69
0	P243	J166	J164	455.03	10	130	38.28	0.16	0.01	0.01
0	P245	V8024	J164	882.35	10	130	1,461.71	5.97	10.98	12.44
0	P247	J46	J168	532.6	12	130	-453.25	1.29	0.31	0.59
0	P249	J168	J122	563.66	12	130	-453.25	1.29	0.33	0.59
0	P25	J30	J32	1,229.93	16	130	-1,506.81	2.4	1.64	1.33
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	499.98	1.42	0.43	0.7
0	P283	J182	J74	589.22	12	130	499.98	1.42	0.41	0.7
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,866.73	2.93	3.44	1.48
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	556.55	1.58	0.63	0.86
0	P311	J196	J70	609.66	12	130	555.55	1.58	0.52	0.85
0	P313	J40	J198	1,129.17	12	130	-608.54	1.73	1.14	1.01
0	P315	J198	J42	1,043.66	12	130	-608.54	1.73	1.05	1.01
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-1,344.41	3.81	5.17	4.38
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0

0	P363	J56	J222	1,322.36	12	130	563.59	1.6	1.16	0.88
0	P365	J222	J220	621.17	12	130	513.19	1.46	0.46	0.74
0	P367	J220	J44	1,095.19	12	130	461.25	1.31	0.66	0.6
0	P37	J26	J46	1,141.00	12	130	-484.8	1.38	0.76	0.66
0	P379	J76	J224	678.87	12	130	-383.62	1.09	0.29	0.43
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	-110.59	0.31	0.04	0.04
0	P393	J226	J36	1,733.97	20	130	2,866.73	2.93	2.57	1.48
0	P395	J96	J224	650.52	12	130	384.62	1.09	0.28	0.43
0	P41	J44	J42	1,067.11	12	130	256.92	0.73	0.22	0.2
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,866.73	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,077.39	0	0	0
0	P43	J42	J48	1,096.37	12	130	-489.5	1.39	0.74	0.68
0	P45	J48	J50	1,194.62	12	130	-566.12	1.61	1.06	0.88
0	P47	J50	J52	765.09	12	130	-642.7	1.82	0.86	1.12
0	P49	J32	J62	1,463.77	16	130	687.95	1.1	0.46	0.31
0	P51	J34	J66	1,373.58	12	130	577.49	1.64	1.26	0.92
0	P53	J66	J64	862.35	12	130	532.77	1.51	0.68	0.79
0	P55	J62	J64	1,082.76	12	130	-219.26	0.62	0.17	0.15
0	P57	J62	J60	691.6	16	130	813.08	1.3	0.29	0.43
0	P59	J64	J58	1,424.22	12	130	243.72	0.69	0.26	0.19
0	P61	J60	J56	890.62	16	130	173.16	0.28	0.02	0.02
0	P67	J56	J52	1,036.48	16	130	-460.48	0.73	0.15	0.15
0	P69	J52	J54	1,131.15	12	130	-69.5	0.2	0.02	0.02
0	P71	J58	J54	591.64	12	130	145.78	0.41	0.04	0.07
0	P73	J40	J68	1,551.82	12	130	-874.07	2.48	3.07	1.98
0	P75	J68	J70	838.54	12	130	-461.89	1.31	0.51	0.61
0	P79	J72	J74	1,086.50	12	130	-395.4	1.12	0.49	0.45
0	P83	J76	J78	765.46	12	130	-209.25	0.59	0.11	0.14
0	P89	J52	J82	771.55	16	130	-1,186.20	1.89	0.66	0.86
0	P91	J82	J78	774.7	16	130	-1,186.20	1.89	0.66	0.86
0	P93	J68	J84	890.35	12	130	-457.31	1.3	0.53	0.6
0	P95	J84	J86	1,204.21	12	130	-481.02	1.36	0.79	0.65
0	P97	J86	J88	946.69	12	130	-519.14	1.47	0.71	0.75
0	P99	J88	J90	874.98	16	130	-561.18	0.9	0.19	0.21

Run B11

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	272.31	65.13
0	J102	0	125.5	273.57	64.16
0	J104	9.32	129.8	275.06	62.94
0	J122	75.78	117.5	267.29	64.9
0	J124	66.76	119.5	267.74	64.23
0	J126	0	130	270.03	60.68
0	J128	0	133	270.03	59.38
0	J130	0	134	270.03	58.94
0	J132	0	131	269.83	60.15
0	J134	0	131	269.83	60.15
0	J136	0	131	269.83	60.15
0	J138	0	122	257.45	58.69
0	J140	0	122	257.45	58.69
0	J146	0	132	263.46	56.96
0	J148	1	132	263.46	56.96
0	J150	1,500.00	118	249.77	57.1
0	J152	1,501.00	118	249.64	57.04
0	J154	0	90.3	265.45	75.89
0	J156	0	115.5	253.26	59.69
0	J158	1	115.5	253.26	59.69
0	J160	0	128	258.43	56.52

0	J162	1	128	258.43	56.52
0	J164	0	98	253.84	67.53
0	J166	1	98	253.84	67.53
0	J168	0	115.25	267	65.75
0	J170	1	120	256.05	58.95
0	J172	0	120	256.05	58.95
0	J174	1	123	257.24	58.17
0	J176	0	123	257.24	58.17
0	J178	1	94	257.61	70.89
0	J180	0	94	257.61	70.89
0	J182	0	118	270.46	66.06
0	J184	1	118	259.47	61.3
0	J186	0	118	259.47	61.3
0	J188	0	126	269.12	62.01
0	J190	0	126	269.12	62.01
0	J192	0	126	269.12	62.01
0	J194	0	126	269.12	62.01
0	J196	0	99.75	269.53	73.56
0	J198	0	95.5	267.25	74.42
0	J20	44.06	90.4	265.19	75.74
0	J206	0	100	257.92	68.43
0	J208	1	100	257.92	68.43
0	J210	0	102	278.83	76.62
0	J212	0	102	278.83	76.62
0	J214	0	102	278.83	76.62
0	J216	0	100	258.77	68.79
0	J218	1	100	258.77	68.79
0	J22	41.86	118.5	265.01	63.48
0	J220	50.94	116	267.66	65.71
0	J222	50.4	119.1	267.99	64.51
0	J224	0	118	271.08	66.33
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	264.86	64.72
0	J28	34.78	118.6	265.07	63.46
0	J30	44.42	122.2	266.47	62.51
0	J300	0	127.5	276.98	64.77
0	J302	0	128	277.22	64.66
0	J304	0	142	280.84	60.16
0	J32	93.48	126	269.13	62.02
0	J34	0	134	270.94	59.34
0	J36	0	138	274.58	59.18
0	J38	79.7	90.2	266.07	76.21
0	J40	138.2	90	267.22	76.79
0	J42	137.88	101	267.29	72.05
0	J44	93.74	111	267.2	67.68
0	J46	79.04	113	266.72	66.61
0	J48	76.62	114.7	267.77	66.32
0	J50	76.58	120	268.5	64.34
0	J52	152.52	126	269.12	62.01
0	J54	76.28	127.6	269.11	61.32
0	J56	70.04	121.9	268.85	63.67
0	J58	97.94	126	269.12	62.01
0	J60	43.14	124.5	268.85	62.55
0	J62	94.12	122	268.99	63.69
0	J64	69.8	127	269.23	61.63
0	J66	44.72	130.5	269.83	60.37
0	J68	45.14	88	268.94	78.4
0	J70	92.66	97.5	269.21	74.4
0	J72	105.24	102	269.91	72.76
0	J74	104.58	108	270.19	70.28
0	J76	92.9	128	270.75	61.85

0	J78	160.7	126	270.76	62.73
0	J82	0	126.4	269.94	62.2
0	J84	23.7	76	269.27	83.74
0	J86	38.12	78	269.77	83.09
0	J88	42.04	88.4	270.24	78.79
0	J90	52.46	104	270.37	72.09
0	J92	53.12	98	270.05	74.55
0	J94	50.48	107	270.84	70.99
0	J96	40.96	116	271.4	67.34

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,952.70	277.29
0	RES9012	-2,991.43	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	63.69	58.69	0	0	11.54	Open	3
0	V8002	8	122	62.6	58.69	0	0	0	Closed	3
0	V8008	10	132	61.99	56.96	1	0	11.61	Open	2
0	V8010	10	132	59.77	56.96	0	0	0	Closed	2
0	V8012	8	118	61.84	58.67	1,639.87	10.47	7.32	Open	3
0	V8014	8	118	62.33	59.32	1,361.13	8.69	6.95	Open	3
0	V8016	8	115.5	64.72	59.69	1	0.01	11.6	Open	3
0	V8018	8	115.5	64.78	59.69	0	0	0	Closed	3
0	V8020	8	128	61.54	56.52	1	0.01	11.6	Open	3
0	V8022	8	128	61.15	56.52	0	0	0	Closed	3
0	V8024	8	98	72.83	67.53	0	0	0	Closed	3
0	V8026	8	98	72.55	67.53	1	0.01	11.6	Open	3
0	V8028	10	120	63.69	58.95	0	0	0	Closed	2
0	V8032	8	123	63.2	58.17	1	0.01	11.6	Open	3
0	V8034	8	123	63.26	58.17	0	0	0	Closed	3
0	V8036	8	94	75.94	70.89	0	0	0	Closed	3
0	V8038	8	94	75.92	70.89	1	0.01	11.6	Open	3
0	V8042	10	118	66.33	61.3	1	0	11.61	Open	2
0	V8044	10	118	66.06	61.3	0	0	0	Closed	2
0	V8052	10	100	73.32	68.43	0	0	0	Closed	2
0	V8054	10	100	73.46	68.43	1	0	11.61	Open	2
0	V8056	8	102	71.62	76.62	0	0	11.54	Open	3
0	V8058	8	102	71.6	76.62	0	0	0	Closed	3
0	V8060	8	100	73.77	68.79	0	0	0	Closed	3
0	V8062	8	100	73.82	68.79	1	0.01	11.6	Open	3
0	V8070	10	120	63.98	58.95	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-237.31	0.67	0.14	0.18
0	P103	J92	J90	1,241.83	12	130	-290.43	0.82	0.32	0.26
0	P105	J90	J94	1,132.34	16	130	-801.86	1.28	0.47	0.41
0	P107	J94	J96	1,204.53	16	130	-852.34	1.36	0.56	0.46
0	P111	J78	J100	1,067.79	16	130	-1,574.06	2.51	1.54	1.45
0	P115	J96	J100	886.7	16	130	-1,306.35	2.08	0.91	1.02
0	P117	J100	J102	789.56	20	130	-2,981.11	3.04	1.26	1.59
0	P119	J102	J104	941.88	20	130	-2,981.11	3.04	1.5	1.59
0	P121	J104	J300	1,197.93	20	130	-2,991.43	3.05	1.92	1.6
0	P123	J300	J302	147.08	20	130	-2,991.43	3.05	0.24	1.6
0	P125	J302	J304	2,260.56	20	130	-2,991.43	3.05	3.62	1.6
0	P139	J122	J124	627.68	12	130	-502.55	1.43	0.44	0.71
0	P141	J124	J60	1,242.80	12	130	-569.31	1.62	1.11	0.89
0	P145	J34	J126	846.23	20	130	2,412.34	2.46	0.91	1.08
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,411.34	2.46	0.91	1.07

0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	470.92	0.75	0.18	0.15
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	429.06	0.68	0.15	0.13
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	1,639.87	6.7	4.14	15.4
0	P205	J28	V8014	295.03	10	130	1,361.13	5.56	3.22	10.9
0	P207	V8014	J152	482.16	10	130	1,361.13	5.56	5.26	10.9
0	P209	V8012	J150	236	10	130	1,639.87	6.7	3.63	15.4
0	P21	J26	J28	1,118.04	16	130	-513.38	0.82	0.2	0.18
0	P211	J152	J150	798.51	10	130	-139.87	0.57	0.13	0.16
0	P213	J20	J154	348.19	12	130	-514.98	1.46	0.26	0.74
0	P215	J154	J38	842.54	12	130	-515.98	1.46	0.63	0.74
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,909.29	3.05	1.41	2.07
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-426.77	1.21	0.28	0.52
0	P249	J168	J122	563.66	12	130	-426.77	1.21	0.3	0.52
0	P25	J30	J32	1,229.93	16	130	-1,953.71	3.12	2.65	2.16
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	397.79	1.13	0.28	0.46
0	P283	J182	J74	589.22	12	130	397.79	1.13	0.27	0.46
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,952.70	3.02	3.64	1.56

0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	425.28	1.21	0.38	0.52
0	P311	J196	J70	609.66	12	130	424.28	1.2	0.32	0.52
0	P313	J40	J198	1,129.17	12	130	-94.29	0.27	0.04	0.03
0	P315	J198	J42	1,043.66	12	130	-94.29	0.27	0.03	0.03
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-595.68	1.69	1.15	0.97
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	480.01	1.36	0.86	0.65
0	P365	J222	J220	621.17	12	130	429.61	1.22	0.33	0.53
0	P367	J220	J44	1,095.19	12	130	377.67	1.07	0.46	0.42
0	P37	J26	J46	1,141.00	12	130	-786.62	2.23	1.85	1.63
0	P379	J76	J224	678.87	12	130	-412.05	1.17	0.33	0.49
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	-438.89	1.25	0.49	0.55
0	P393	J226	J36	1,733.97	20	130	2,952.70	3.02	2.71	1.56
0	P395	J96	J224	650.52	12	130	413.05	1.17	0.32	0.49
0	P41	J44	J42	1,067.11	12	130	-154.97	0.44	0.09	0.08
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,952.70	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	2,991.43	0	0	0
0	P43	J42	J48	1,096.37	12	130	-387.14	1.1	0.48	0.44
0	P45	J48	J50	1,194.62	12	130	-463.76	1.32	0.73	0.61
0	P47	J50	J52	765.09	12	130	-540.34	1.53	0.62	0.81
0	P49	J32	J62	1,463.77	16	130	364.14	0.58	0.14	0.1
0	P51	J34	J66	1,373.58	12	130	540.36	1.53	1.11	0.81
0	P53	J66	J64	862.35	12	130	495.64	1.41	0.6	0.69
0	P55	J62	J64	1,082.76	12	130	-273.03	0.77	0.25	0.23
0	P57	J62	J60	691.6	16	130	543.06	0.87	0.14	0.2
0	P59	J64	J58	1,424.22	12	130	152.81	0.43	0.11	0.08
0	P61	J60	J56	890.62	16	130	-70.39	0.11	0	0
0	P67	J56	J52	1,036.48	16	130	-620.44	0.99	0.27	0.26
0	P69	J52	J54	1,131.15	12	130	21.41	0.06	0	0
0	P71	J58	J54	591.64	12	130	54.87	0.16	0.01	0.01
0	P73	J40	J68	1,551.82	12	130	-639.59	1.81	1.72	1.11
0	P75	J68	J70	838.54	12	130	-330.62	0.94	0.27	0.33
0	P79	J72	J74	1,086.50	12	130	-293.21	0.83	0.28	0.26
0	P83	J76	J78	765.46	12	130	-78.64	0.22	0.02	0.02
0	P89	J52	J82	771.55	16	130	-1,334.71	2.13	0.82	1.07
0	P91	J82	J78	774.7	16	130	-1,334.71	2.13	0.83	1.07

0	P93	J68	J84	890.35	12	130	-354.12	1	0.33	0.37
0	P95	J84	J86	1,204.21	12	130	-377.82	1.07	0.5	0.42
0	P97	J86	J88	946.69	12	130	-415.94	1.18	0.47	0.5
0	P99	J88	J90	874.98	16	130	-457.98	0.73	0.13	0.15

Run B12

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	269.59	63.95
0	J102	0	125.5	271.25	63.15
0	J104	9.32	129.8	273.23	62.15
0	J122	75.78	117.5	259.45	61.51
0	J124	66.76	119.5	260.94	61.29
0	J126	0	130	267.59	59.62
0	J128	0	133	267.59	58.32
0	J130	0	134	267.59	57.88
0	J132	0	131	266.64	58.77
0	J134	0	131	266.64	58.77
0	J136	0	131	266.64	58.77
0	J138	0	122	276.68	67.02
0	J140	0	122	276.68	67.02
0	J146	0	132	261.62	56.16
0	J148	1	132	261.62	56.16
0	J150	0	118	252.69	58.36
0	J152	1	118	252.69	58.36
0	J154	0	90.3	263.12	74.88
0	J156	0	115.5	251.52	58.94
0	J158	1	115.5	251.52	58.94
0	J160	0	128	255.99	55.46
0	J162	1	128	255.99	55.46
0	J164	0	98	251.51	66.52
0	J166	1	98	251.51	66.52
0	J168	0	115.25	258.3	61.98
0	J170	2,001.00	120	244.02	53.74
0	J172	2,000.00	120	244.09	53.77
0	J174	1	123	252.68	56.19
0	J176	0	123	252.68	56.19
0	J178	1	94	254.14	69.39
0	J180	0	94	254.14	69.39
0	J182	0	118	267.18	64.64
0	J184	1	118	256.35	59.95
0	J186	0	118	256.35	59.95
0	J188	0	126	264.84	60.16
0	J190	0	126	264.84	60.16
0	J192	0	126	264.84	60.16
0	J194	0	126	264.84	60.16
0	J196	0	99.75	266.13	72.09
0	J198	0	95.5	262.34	72.29
0	J20	44.06	90.4	263.12	74.84
0	J206	0	100	254.52	66.95
0	J208	1	100	254.52	66.95
0	J210	0	102	273.13	74.15
0	J212	0	102	273.13	74.15
0	J214	0	102	273.13	74.15
0	J216	0	100	255.59	67.42
0	J218	1	100	255.59	67.42
0	J22	41.86	118.5	263.12	62.66
0	J220	50.94	116	256.3	60.79
0	J222	50.4	119.1	258.7	60.49
0	J224	0	118	267.96	64.98
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	263.12	63.97

0	J28	34.78	118.6	264.29	63.13
0	J30	44.42	122.2	265.03	61.89
0	J300	0	127.5	275.76	64.24
0	J302	0	128	276.07	64.16
0	J304	0	142	280.84	60.16
0	J32	93.48	126	266.46	60.86
0	J34	0	134	268.72	58.37
0	J36	0	138	273.63	58.77
0	J38	79.7	90.2	263.12	74.93
0	J40	138.2	90	263.15	75.03
0	J42	137.88	101	261.59	69.58
0	J44	93.74	111	259.24	64.23
0	J46	79.04	113	259.35	63.42
0	J48	76.62	114.7	262.52	64.05
0	J50	76.58	120	263.82	62.32
0	J52	152.52	126	264.84	60.16
0	J54	76.28	127.6	264.93	59.5
0	J56	70.04	121.9	264.19	61.66
0	J58	97.94	126	265.02	60.24
0	J60	43.14	124.5	264.28	60.57
0	J62	94.12	122	265.14	62.02
0	J64	69.8	127	265.47	60
0	J66	44.72	130.5	266.64	58.99
0	J68	45.14	88	265.39	76.86
0	J70	92.66	97.5	265.75	72.9
0	J72	105.24	102	266.6	71.32
0	J74	104.58	108	266.9	68.85
0	J76	92.9	128	267.47	60.43
0	J78	160.7	126	267.47	61.3
0	J82	0	126.4	266.16	60.56
0	J84	23.7	76	265.82	82.25
0	J86	38.12	78	266.45	81.66
0	J88	42.04	88.4	267.03	77.4
0	J90	52.46	104	267.19	70.71
0	J92	53.12	98	266.79	73.14
0	J94	50.48	107	267.76	69.66
0	J96	40.96	116	268.43	66.05

	ID	Flow (gpm)	Head (ft)
0	RES9010	-3,472.09	277.29
0	RES9012	-3,472.03	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	62.02	67.02	0	0	11.54	Open		3
0	V8002	8	122	61.98	67.02	0	0	0	Closed		3
0	V8008	10	132	61.19	56.16	1	0	11.61	Open		2
0	V8010	10	132	58.13	56.16	0	0	0	Closed		2
0	V8012	8	118	62.88	58.36	0	0	0	Closed		3
0	V8014	8	118	63.39	58.36	1	0.01	11.6	Open		3
0	V8016	8	115.5	63.97	58.94	1	0.01	11.6	Open		3
0	V8018	8	115.5	63.96	58.94	0	0	0	Closed		3
0	V8020	8	128	60.48	55.46	1	0.01	11.6	Open		3
0	V8022	8	128	60	55.46	0	0	0	Closed		3
0	V8024	8	98	71.55	66.52	0	0	0	Closed		3
0	V8026	8	98	71.55	66.52	1	0.01	11.6	Open		3
0	V8028	10	120	59.26	55.79	1,765.59	7.21	8.01	Open		2
0	V8032	8	123	61.22	56.19	1	0.01	11.6	Open		3
0	V8034	8	123	61.59	56.19	0	0	0	Closed		3
0	V8036	8	94	74.45	69.39	0	0	0	Closed		3
0	V8038	8	94	74.42	69.39	1	0.01	11.6	Open		3
0	V8042	10	118	64.98	59.95	1	0	11.61	Open		2

0	V8044	10	118	64.64	59.95	0	0	0	Closed	2
0	V8052	10	100	71.82	66.95	0	0	0	Closed	2
0	V8054	10	100	71.98	66.95	1	0	11.61	Open	2
0	V8056	8	102	69.15	74.15	0	0	11.54	Open	3
0	V8058	8	102	69.47	74.15	0	0	0	Closed	3
0	V8060	8	100	72.38	67.42	0	0	0	Closed	3
0	V8062	8	100	72.44	67.42	1	0.01	11.6	Open	3
0	V8070	10	120	58.46	54.14	2,235.41	9.13	9.97	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-276.54	0.78	0.19	0.23
0	P103	J92	J90	1,241.83	12	130	-329.66	0.94	0.4	0.32
0	P105	J90	J94	1,132.34	16	130	-891.4	1.42	0.57	0.5
0	P107	J94	J96	1,204.53	16	130	-941.88	1.5	0.67	0.56
0	P111	J78	J100	1,067.79	16	130	-1,869.38	2.98	2.12	1.99
0	P115	J96	J100	886.7	16	130	-1,491.64	2.38	1.16	1.31
0	P117	J100	J102	789.56	20	130	-3,461.71	3.54	1.66	2.1
0	P119	J102	J104	941.88	20	130	-3,461.71	3.54	1.98	2.1
0	P121	J104	J300	1,197.93	20	130	-3,472.03	3.55	2.53	2.11
0	P123	J300	J302	147.08	20	130	-3,472.03	3.55	0.31	2.11
0	P125	J302	J304	2,260.56	20	130	-3,472.03	3.55	4.77	2.11
0	P139	J122	J124	627.68	12	130	-965.58	2.74	1.49	2.38
0	P141	J124	J60	1,242.80	12	130	-1,032.34	2.93	3.34	2.69
0	P145	J34	J126	846.23	20	130	2,714.34	2.77	1.13	1.34
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,713.33	2.77	1.13	1.34
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-32.86	0.05	0	0
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-74.72	0.12	0.01	0.01
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,318.05	2.1	1.16	1.04
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-11.2	0.03	0	0
0	P215	J154	J38	842.54	12	130	-12.2	0.03	0	0
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,353.83	2.16	0.74	1.09
0	P231	J126	V8020	259.39	10	130	1	0	0	0

0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	875.79	2.48	1.06	1.98
0	P249	J168	J122	563.66	12	130	-889.8	2.52	1.15	2.04
0	P25	J30	J32	1,229.93	16	130	-1,398.25	2.23	1.43	1.16
0	P251	J168	V8028	209.52	12	130	1,765.59	5.01	1.52	7.26
0	P253	V8028	J170	652.72	12	130	1,765.59	5.01	4.74	7.26
0	P255	J170	J172	387.16	12	130	-235.41	0.67	0.07	0.17
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	406.41	1.15	0.29	0.48
0	P283	J182	J74	589.22	12	130	406.41	1.15	0.28	0.48
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-3,472.09	3.55	4.91	2.11
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	473.13	1.34	0.47	0.63
0	P311	J196	J70	609.66	12	130	472.13	1.34	0.38	0.63
0	P313	J40	J198	1,129.17	12	130	507.65	1.44	0.82	0.72
0	P315	J198	J42	1,043.66	12	130	507.65	1.44	0.75	0.72
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-91.9	0.26	0.04	0.03
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	1,305.51	3.7	5.49	4.15
0	P365	J222	J220	621.17	12	130	1,255.11	3.56	2.4	3.86
0	P367	J220	J44	1,095.19	12	130	-1,031.24	2.93	2.94	2.68
0	P37	J26	J46	1,141.00	12	130	1,154.12	3.27	3.77	3.31
0	P379	J76	J224	678.87	12	130	-507.8	1.44	0.49	0.72

0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	199.29	0.57	0.11	0.13
0	P393	J226	J36	1,733.97	20	130	3,472.09	3.55	3.66	2.11
0	P395	J96	J224	650.52	12	130	508.8	1.44	0.47	0.73
0	P41	J44	J42	1,067.11	12	130	-925.69	2.63	2.34	2.2
0	P415	J220	V8070	123.15	12	130	2,235.41	6.34	1.38	11.24
0	P417	V8070	J172	76.51	12	130	2,235.41	6.34	0.86	11.24
0	P419	RES9010	J226	1	1,000.00	130	3,472.09	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,472.03	0	0	0
0	P43	J42	J48	1,096.37	12	130	-555.92	1.58	0.94	0.85
0	P45	J48	J50	1,194.62	12	130	-632.54	1.79	1.3	1.09
0	P47	J50	J52	765.09	12	130	-709.12	2.01	1.03	1.34
0	P49	J32	J62	1,463.77	16	130	1,221.61	1.95	1.32	0.9
0	P51	J34	J66	1,373.58	12	130	757.75	2.15	2.08	1.52
0	P53	J66	J64	862.35	12	130	713.03	2.02	1.17	1.35
0	P55	J62	J64	1,082.76	12	130	-319.99	0.91	0.33	0.31
0	P57	J62	J60	691.6	16	130	1,447.48	2.31	0.86	1.24
0	P59	J64	J58	1,424.22	12	130	323.25	0.92	0.45	0.31
0	P61	J60	J56	890.62	16	130	371	0.59	0.09	0.1
0	P67	J56	J52	1,036.48	16	130	-1,004.55	1.6	0.65	0.63
0	P69	J52	J54	1,131.15	12	130	-149.03	0.42	0.08	0.07
0	P71	J58	J54	591.64	12	130	225.31	0.64	0.09	0.16
0	P73	J40	J68	1,551.82	12	130	-737.75	2.09	2.24	1.44
0	P75	J68	J70	838.54	12	130	-378.47	1.07	0.35	0.42
0	P79	J72	J74	1,086.50	12	130	-301.83	0.86	0.3	0.28
0	P83	J76	J78	765.46	12	130	8.49	0.02	0	0
0	P89	J52	J82	771.55	16	130	-1,717.16	2.74	1.31	1.7
0	P91	J82	J78	774.7	16	130	-1,717.16	2.74	1.32	1.7
0	P93	J68	J84	890.35	12	130	-404.42	1.15	0.42	0.47
0	P95	J84	J86	1,204.21	12	130	-428.12	1.21	0.63	0.53
0	P97	J86	J88	946.69	12	130	-466.24	1.32	0.58	0.62
0	P99	J88	J90	874.98	16	130	-508.28	0.81	0.16	0.18

Run B13

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	272.23	65.09
0	J102	0	125.5	273.5	64.13
0	J104	9.32	129.8	275.01	62.92
0	J122	75.78	117.5	267.65	65.06
0	J124	66.76	119.5	267.53	64.14
0	J126	0	130	270.2	60.75
0	J128	0	133	270.2	59.45
0	J130	0	134	270.2	59.01
0	J132	0	131	269.31	59.93
0	J134	0	131	269.31	59.93
0	J136	0	131	269.31	59.93
0	J138	0	122	255.95	58.04
0	J140	0	122	255.95	58.04
0	J146	0	132	263.4	56.94
0	J148	1	132	263.4	56.94
0	J150	0	118	257.23	60.33
0	J152	1	118	257.23	60.33
0	J154	0	90.3	268.55	77.24
0	J156	0	115.5	256.96	61.3
0	J158	1	115.5	256.96	61.3
0	J160	0	128	258.59	56.59
0	J162	1	128	258.59	56.59
0	J164	0	98	256.95	68.87
0	J166	1	98	256.95	68.87
0	J168	0	115.25	267.82	66.11
0	J170	1	120	256.3	59.06

0	J172	0	120	256.3	59.06
0	J174	1,501.00	123	244.73	52.75
0	J176	1,500.00	123	244.73	52.75
0	J178	1	94	258.07	71.09
0	J180	0	94	258.07	71.09
0	J182	0	118	270.41	66.04
0	J184	1	118	259.38	61.26
0	J186	0	118	259.38	61.26
0	J188	0	126	268.48	61.74
0	J190	0	126	268.48	61.74
0	J192	0	126	268.48	61.74
0	J194	0	126	268.48	61.74
0	J196	0	99.75	269.87	73.71
0	J198	0	95.5	268.36	74.9
0	J20	44.06	90.4	268.55	77.19
0	J206	0	100	258.26	68.57
0	J208	1	100	258.26	68.57
0	J210	0	102	279.69	76.99
0	J212	0	102	279.69	76.99
0	J214	0	102	279.69	76.99
0	J216	0	100	258.92	68.86
0	J218	1	100	258.92	68.86
0	J22	41.86	118.5	268.56	65.02
0	J220	50.94	116	267.91	65.82
0	J222	50.4	119.1	267.89	64.47
0	J224	0	118	270.99	66.29
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	268.56	66.32
0	J28	34.78	118.6	268.84	65.1
0	J30	44.42	122.2	269.02	63.62
0	J300	0	127.5	276.95	64.76
0	J302	0	128	277.18	64.64
0	J304	0	142	280.84	60.16
0	J32	93.48	126	269.39	62.13
0	J34	0	134	271	59.36
0	J36	0	138	274.6	59.19
0	J38	79.7	90.2	268.55	77.28
0	J40	138.2	90	268.58	77.38
0	J42	137.88	101	268.15	72.43
0	J44	93.74	111	267.99	68.02
0	J46	79.04	113	267.99	67.16
0	J48	76.62	114.7	268.19	66.51
0	J50	76.58	120	268.32	64.27
0	J52	152.52	126	268.48	61.74
0	J54	76.28	127.6	268.39	61
0	J56	70.04	121.9	267.88	63.25
0	J58	97.94	126	268.37	61.69
0	J60	43.14	124.5	267.4	61.92
0	J62	94.12	122	267.49	63.04
0	J64	69.8	127	268.38	61.26
0	J66	44.72	130.5	269.31	60.15
0	J68	45.14	88	269.54	78.66
0	J70	92.66	97.5	269.68	74.6
0	J72	105.24	102	270.1	72.84
0	J74	104.58	108	270.24	70.3
0	J76	92.9	128	270.59	61.78
0	J78	160.7	126	270.58	62.65
0	J82	0	126.4	269.53	62.02
0	J84	23.7	76	269.76	83.95
0	J86	38.12	78	270.1	83.24
0	J88	42.04	88.4	270.43	78.87

0	J90	52.46	104	270.53	72.16
0	J92	53.12	98	270.23	74.63
0	J94	50.48	107	270.91	71.02
0	J96	40.96	116	271.37	67.32

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,937.39	277.29
0	RES9012	-3,006.73	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	63.04	58.04	0	0	11.54	Open	3
0	V8002	8	122	63.7	58.04	0	0	0	Closed	3
0	V8008	10	132	61.97	56.94	1	0	11.61	Open	2
0	V8010	10	132	59.59	56.94	0	0	0	Closed	2
0	V8012	8	118	65.24	60.33	0	0	0	Closed	3
0	V8014	8	118	65.36	60.33	1	0.01	11.6	Open	3
0	V8016	8	115.5	66.32	61.3	1	0.01	11.6	Open	3
0	V8018	8	115.5	66.32	61.3	0	0	0	Closed	3
0	V8020	8	128	61.61	56.59	1	0.01	11.6	Open	3
0	V8022	8	128	61.27	56.59	0	0	0	Closed	3
0	V8024	8	98	73.9	68.87	0	0	0	Closed	3
0	V8026	8	98	73.9	68.87	1	0.01	11.6	Open	3
0	V8028	10	120	64.05	59.06	0	0	0	Closed	2
0	V8032	8	123	61.04	57.97	1,505.29	9.61	7.07	Open	3
0	V8034	8	123	60.96	57.9	1,495.71	9.55	7.06	Open	3
0	V8036	8	94	76.16	71.09	0	0	0	Closed	3
0	V8038	8	94	76.12	71.09	1	0.01	11.6	Open	3
0	V8042	10	118	66.29	61.26	1	0	11.61	Open	2
0	V8044	10	118	66.04	61.26	0	0	0	Closed	2
0	V8052	10	100	73.52	68.57	0	0	0	Closed	2
0	V8054	10	100	73.6	68.57	1	0	11.61	Open	2
0	V8056	8	102	71.99	76.99	0	0	11.54	Open	3
0	V8058	8	102	72.08	76.99	0	0	0	Closed	3
0	V8060	8	100	73.85	68.86	0	0	0	Closed	3
0	V8062	8	100	73.89	68.86	1	0.01	11.6	Open	3
0	V8070	10	120	64.09	59.06	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-225.64	0.64	0.13	0.16
0	P103	J92	J90	1,241.83	12	130	-278.76	0.79	0.3	0.24
0	P105	J90	J94	1,132.34	16	130	-718.85	1.15	0.38	0.34
0	P107	J94	J96	1,204.53	16	130	-769.33	1.23	0.46	0.38
0	P111	J78	J100	1,067.79	16	130	-1,630.15	2.6	1.65	1.54
0	P115	J96	J100	886.7	16	130	-1,265.56	2.02	0.86	0.97
0	P117	J100	J102	789.56	20	130	-2,996.41	3.06	1.27	1.61
0	P119	J102	J104	941.88	20	130	-2,996.41	3.06	1.51	1.61
0	P121	J104	J300	1,197.93	20	130	-3,006.73	3.07	1.94	1.62
0	P123	J300	J302	147.08	20	130	-3,006.73	3.07	0.24	1.62
0	P125	J302	J304	2,260.56	20	130	-3,006.73	3.07	3.66	1.62
0	P139	J122	J124	627.68	12	130	246.46	0.7	0.12	0.19
0	P141	J124	J60	1,242.80	12	130	179.7	0.51	0.13	0.11
0	P145	J34	J126	846.23	20	130	2,260.16	2.31	0.81	0.95
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,259.16	2.31	0.8	0.95
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-48.67	0.08	0	0

0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-90.53	0.14	0.01	0.01
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-599.1	0.96	0.27	0.24
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	4.61	0.01	0	0
0	P215	J154	J38	842.54	12	130	3.61	0.01	0	0
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-634.88	1.01	0.18	0.27
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	322.24	0.91	0.17	0.31
0	P249	J168	J122	563.66	12	130	322.24	0.91	0.18	0.31
0	P25	J30	J32	1,229.93	16	130	-679.3	1.08	0.38	0.3
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1,505.29	6.15	3.53	13.14
0	P263	V8032	J174	918.23	10	130	1,505.29	6.15	12.06	13.14
0	P265	J174	J176	448.57	10	130	4.29	0.02	0	0
0	P267	J62	V8034	292.8	10	130	1,495.71	6.11	3.8	12.98
0	P269	V8034	J176	916.13	10	130	1,495.71	6.11	11.9	12.98
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	308.1	0.87	0.18	0.29
0	P283	J182	J74	589.22	12	130	308.1	0.87	0.17	0.29
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,937.39	3	3.6	1.55
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0

0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	323.93	0.92	0.23	0.31
0	P311	J196	J70	609.66	12	130	322.93	0.92	0.19	0.31
0	P313	J40	J198	1,129.17	12	130	252.6	0.72	0.22	0.2
0	P315	J198	J42	1,043.66	12	130	252.6	0.72	0.21	0.2
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-76.09	0.22	0.03	0.02
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	-41.59	0.12	0.01	0.01
0	P365	J222	J220	621.17	12	130	-91.99	0.26	0.02	0.03
0	P367	J220	J44	1,095.19	12	130	-143.93	0.41	0.08	0.07
0	P37	J26	J46	1,141.00	12	130	419.37	1.19	0.58	0.51
0	P379	J76	J224	678.87	12	130	-454.27	1.29	0.4	0.59
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	18.09	0.05	0	0
0	P393	J226	J36	1,733.97	20	130	2,937.39	3	2.69	1.55
0	P395	J96	J224	650.52	12	130	455.27	1.29	0.38	0.59
0	P41	J44	J42	1,067.11	12	130	-219.58	0.62	0.16	0.15
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,937.39	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,006.73	0	0	0
0	P43	J42	J48	1,096.37	12	130	-104.86	0.3	0.04	0.04
0	P45	J48	J50	1,194.62	12	130	-181.48	0.51	0.13	0.11
0	P47	J50	J52	765.09	12	130	-258.06	0.73	0.16	0.21
0	P49	J32	J62	1,463.77	16	130	1,486.39	2.37	1.9	1.3
0	P51	J34	J66	1,373.58	12	130	677.23	1.92	1.69	1.23
0	P53	J66	J64	862.35	12	130	632.51	1.79	0.94	1.09
0	P55	J62	J64	1,082.76	12	130	-543.18	1.54	0.89	0.82
0	P57	J62	J60	691.6	16	130	439.74	0.7	0.09	0.14
0	P59	J64	J58	1,424.22	12	130	19.52	0.06	0	0
0	P61	J60	J56	890.62	16	130	-928.99	1.48	0.49	0.54
0	P67	J56	J52	1,036.48	16	130	-957.44	1.53	0.6	0.58
0	P69	J52	J54	1,131.15	12	130	154.7	0.44	0.09	0.08
0	P71	J58	J54	591.64	12	130	-78.42	0.22	0.01	0.02
0	P73	J40	J68	1,551.82	12	130	-466.9	1.32	0.96	0.62
0	P75	J68	J70	838.54	12	130	-229.27	0.65	0.14	0.17
0	P79	J72	J74	1,086.50	12	130	-203.52	0.58	0.14	0.13
0	P83	J76	J78	765.46	12	130	53.27	0.15	0.01	0.01
0	P89	J52	J82	771.55	16	130	-1,522.72	2.43	1.05	1.36
0	P91	J82	J78	774.7	16	130	-1,522.72	2.43	1.05	1.36
0	P93	J68	J84	890.35	12	130	-282.77	0.8	0.22	0.24
0	P95	J84	J86	1,204.21	12	130	-306.47	0.87	0.34	0.28
0	P97	J86	J88	946.69	12	130	-344.59	0.98	0.33	0.35
0	P99	J88	J90	874.98	16	130	-386.63	0.62	0.09	0.11

Run B14

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	275.21	66.39
0	J102	0	125.5	276.04	65.23
0	J104	9.32	129.8	277.03	63.79
0	J122	75.78	117.5	272.95	67.36
0	J124	66.76	119.5	272.95	66.49
0	J126	0	130	273.77	62.3
0	J128	0	133	273.77	61
0	J130	0	134	273.77	60.56
0	J132	750	131	265.88	58.44
0	J134	750	131	265.51	58.28
0	J136	0	131	269.44	59.99
0	J138	0	122	261.46	60.43
0	J140	0	122	261.46	60.43
0	J146	0	132	265.42	57.81
0	J148	1	132	265.42	57.81
0	J150	0	118	261.6	62.22
0	J152	1	118	261.6	62.22
0	J154	0	90.3	273.05	79.19
0	J156	0	115.5	261.47	63.25
0	J158	1	115.5	261.47	63.25
0	J160	0	128	262.17	58.13
0	J162	1	128	262.17	58.13
0	J164	0	98	261.45	70.82
0	J166	1	98	261.45	70.82
0	J168	0	115.25	272.95	68.33
0	J170	1	120	261.33	61.24
0	J172	0	120	261.33	61.24
0	J174	1	123	261.4	59.97
0	J176	0	123	261.4	59.97
0	J178	1	94	261.94	72.77
0	J180	0	94	261.94	72.77
0	J182	0	118	274.03	67.61
0	J184	1	118	262.8	62.74
0	J186	0	118	262.8	62.74
0	J188	0	126	273.08	63.73
0	J190	0	126	273.08	63.73
0	J192	0	126	273.08	63.73
0	J194	0	126	273.08	63.73
0	J196	0	99.75	273.65	75.35
0	J198	0	95.5	273	76.91
0	J20	44.06	90.4	273.05	79.14
0	J206	0	100	262.04	70.21
0	J208	1	100	262.04	70.21
0	J210	0	102	284.48	79.07
0	J212	0	102	284.48	79.07
0	J214	0	102	284.48	79.07
0	J216	0	100	262.45	70.39
0	J218	1	100	262.45	70.39
0	J22	41.86	118.5	273.06	66.97
0	J220	50.94	116	272.94	68
0	J222	50.4	119.1	272.95	66.66
0	J224	0	118	274.41	67.77
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	273.08	68.28
0	J28	34.78	118.6	273.2	66.99
0	J30	44.42	122.2	273.29	65.47
0	J300	0	127.5	278.29	65.34
0	J302	0	128	278.45	65.19
0	J304	0	142	280.84	60.16

0	J32	93.48	126	273.49	63.91
0	J34	0	134	274.05	60.68
0	J36	0	138	275.91	59.75
0	J38	79.7	90.2	273.05	79.23
0	J40	138.2	90	273.06	79.32
0	J42	137.88	101	272.94	74.5
0	J44	93.74	111	272.94	70.17
0	J46	79.04	113	272.95	69.31
0	J48	76.62	114.7	272.95	68.57
0	J50	76.58	120	273	66.29
0	J52	152.52	126	273.08	63.73
0	J54	76.28	127.6	272.48	62.78
0	J56	70.04	121.9	273.01	65.48
0	J58	97.94	126	272.26	63.38
0	J60	43.14	124.5	273	64.35
0	J62	94.12	122	273	65.43
0	J64	69.8	127	271.97	62.82
0	J66	44.72	130.5	271.9	61.27
0	J68	45.14	88	273.48	80.37
0	J70	92.66	97.5	273.54	76.28
0	J72	105.24	102	273.78	74.43
0	J74	104.58	108	273.89	71.88
0	J76	92.9	128	274.18	63.34
0	J78	160.7	126	274.18	64.21
0	J82	0	126.4	273.63	63.8
0	J84	23.7	76	273.6	85.62
0	J86	38.12	78	273.79	84.84
0	J88	42.04	88.4	274	80.42
0	J90	52.46	104	274.06	73.69
0	J92	53.12	98	273.86	76.2
0	J94	50.48	107	274.32	72.5
0	J96	40.96	116	274.64	68.74

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,053.16	277.29
0	RES9012	-2,390.96	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	65.43	60.43	0	0	11.54	Open		3
0	V8002	8	122	65.56	60.43	0	0	0	Closed		3
0	V8008	10	132	62.84	57.81	1	0	11.61	Open		2
0	V8010	10	132	61.37	57.81	0	0	0	Closed		2
0	V8012	8	118	67.2	62.22	0	0	0	Closed		3
0	V8014	8	118	67.25	62.22	1	0.01	11.6	Open		3
0	V8016	8	115.5	68.28	63.25	1	0.01	11.6	Open		3
0	V8018	8	115.5	68.27	63.25	0	0	0	Closed		3
0	V8020	8	128	63.16	58.13	1	0.01	11.6	Open		3
0	V8022	8	128	63.04	58.13	0	0	0	Closed		3
0	V8024	8	98	75.85	70.82	0	0	0	Closed		3
0	V8026	8	98	75.85	70.82	1	0.01	11.6	Open		3
0	V8028	10	120	66.27	61.24	0	0	0	Closed		2
0	V8032	8	123	65	59.97	1	0.01	11.6	Open		3
0	V8034	8	123	65	59.97	0	0	0	Closed		3
0	V8036	8	94	77.82	72.77	0	0	0	Closed		3
0	V8038	8	94	77.8	72.77	1	0.01	11.6	Open		3
0	V8042	10	118	67.77	62.74	1	0	11.61	Open		2
0	V8044	10	118	67.61	62.74	0	0	0	Closed		2
0	V8052	10	100	75.2	70.21	0	0	0	Closed		2
0	V8054	10	100	75.24	70.21	1	0	11.61	Open		2
0	V8056	8	102	74.07	79.07	0	0	11.54	Open		3
0	V8058	8	102	74.09	79.07	0	0	0	Closed		3

0	V8060	8	100	75.39	70.39	0	0	0	Closed	3
0	V8062	8	100	75.42	70.39	1	0.01	11.6	Open	3
0	V8070	10	120	66.27	61.24	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-170.38	0.48	0.08	0.1
0	P103	J92	J90	1,241.83	12	130	-223.5	0.63	0.2	0.16
0	P105	J90	J94	1,132.34	16	130	-582.67	0.93	0.26	0.23
0	P107	J94	J96	1,204.53	16	130	-633.15	1.01	0.32	0.27
0	P111	J78	J100	1,067.79	16	130	-1,263.70	2.02	1.03	0.96
0	P115	J96	J100	886.7	16	130	-1,016.24	1.62	0.57	0.64
0	P117	J100	J102	789.56	20	130	-2,380.64	2.43	0.83	1.05
0	P119	J102	J104	941.88	20	130	-2,380.64	2.43	0.99	1.05
0	P121	J104	J300	1,197.93	20	130	-2,390.96	2.44	1.27	1.06
0	P123	J300	J302	147.08	20	130	-2,390.96	2.44	0.16	1.06
0	P125	J302	J304	2,260.56	20	130	-2,390.96	2.44	2.39	1.06
0	P139	J122	J124	627.68	12	130	-38.11	0.11	0	0.01
0	P141	J124	J60	1,242.80	12	130	-104.87	0.3	0.05	0.04
0	P145	J34	J126	846.23	20	130	1,282.69	1.31	0.28	0.33
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	1,281.69	1.31	0.28	0.33
0	P161	J66	J132	415.81	8	130	882.6	5.63	6.03	14.49
0	P163	J64	J136	338.87	8	130	617.4	3.94	2.53	7.48
0	P165	J136	J134	525.67	8	130	617.4	3.94	3.93	7.48
0	P167	J132	J134	848.01	8	130	132.6	0.85	0.37	0.43
0	P17	J20	J22	1,133.08	16	130	-83.99	0.13	0.01	0.01
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-125.85	0.2	0.02	0.01
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-396.48	0.63	0.13	0.11
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	39.93	0.11	0	0.01
0	P215	J154	J38	842.54	12	130	38.93	0.11	0.01	0.01
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-432.26	0.69	0.09	0.13
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0

0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	37.67	0.11	0	0.01
0	P249	J168	J122	563.66	12	130	37.67	0.11	0	0.01
0	P25	J30	J32	1,229.93	16	130	-476.68	0.76	0.19	0.16
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	278.98	0.79	0.15	0.24
0	P283	J182	J74	589.22	12	130	278.98	0.79	0.14	0.24
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,053.16	2.1	1.86	0.8
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	239.54	0.68	0.13	0.18
0	P311	J196	J70	609.66	12	130	238.54	0.68	0.11	0.18
0	P313	J40	J198	1,129.17	12	130	122.63	0.35	0.06	0.05
0	P315	J198	J42	1,043.66	12	130	122.63	0.35	0.05	0.05
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-40.77	0.12	0.01	0.01
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	114.2	0.32	0.06	0.05
0	P365	J222	J220	621.17	12	130	63.8	0.18	0.01	0.02
0	P367	J220	J44	1,095.19	12	130	11.86	0.03	0	0
0	P37	J26	J46	1,141.00	12	130	181.43	0.51	0.12	0.11
0	P379	J76	J224	678.87	12	130	-341.13	0.97	0.23	0.35
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	64.72	0.18	0.01	0.02
0	P393	J226	J36	1,733.97	20	130	2,053.16	2.1	1.38	0.8
0	P395	J96	J224	650.52	12	130	342.13	0.97	0.23	0.35
0	P41	J44	J42	1,067.11	12	130	-17.16	0.05	0	0

0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,053.16	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	2,390.96	0	0	0
0	P43	J42	J48	1,096.37	12	130	-32.41	0.09	0	0
0	P45	J48	J50	1,194.62	12	130	-109.03	0.31	0.05	0.04
0	P47	J50	J52	765.09	12	130	-185.61	0.53	0.09	0.11
0	P49	J32	J62	1,463.77	16	130	711.52	1.14	0.49	0.33
0	P51	J34	J66	1,373.58	12	130	770.47	2.19	2.15	1.56
0	P53	J66	J64	862.35	12	130	-156.85	0.44	0.07	0.08
0	P55	J62	J64	1,082.76	12	130	588.21	1.67	1.03	0.95
0	P57	J62	J60	691.6	16	130	29.19	0.05	0	0
0	P59	J64	J58	1,424.22	12	130	-255.84	0.73	0.29	0.2
0	P61	J60	J56	890.62	16	130	-119.82	0.19	0.01	0.01
0	P67	J56	J52	1,036.48	16	130	-304.06	0.49	0.07	0.07
0	P69	J52	J54	1,131.15	12	130	430.06	1.22	0.6	0.53
0	P71	J58	J54	591.64	12	130	-353.78	1	0.22	0.37
0	P73	J40	J68	1,551.82	12	130	-301.59	0.86	0.43	0.28
0	P75	J68	J70	838.54	12	130	-144.88	0.41	0.06	0.07
0	P79	J72	J74	1,086.50	12	130	-174.4	0.49	0.11	0.1
0	P83	J76	J78	765.46	12	130	-30.75	0.09	0	0
0	P89	J52	J82	771.55	16	130	-1,072.25	1.71	0.55	0.71
0	P91	J82	J78	774.7	16	130	-1,072.25	1.71	0.55	0.71
0	P93	J68	J84	890.35	12	130	-201.85	0.57	0.12	0.13
0	P95	J84	J86	1,204.21	12	130	-225.55	0.64	0.19	0.16
0	P97	J86	J88	946.69	12	130	-263.67	0.75	0.2	0.21
0	P99	J88	J90	874.98	16	130	-305.71	0.49	0.06	0.07

Run B15

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	272.95	65.41
0	J102	0	125.5	274.11	64.39
0	J104	9.32	129.8	275.5	63.13
0	J122	75.78	117.5	269.12	65.7
0	J124	66.76	119.5	269.14	64.84
0	J126	0	130	269.36	60.39
0	J128	0	133	269.62	59.2
0	J130	0	134	269.45	58.69
0	J132	0	131	269.72	60.11
0	J134	0	131	269.72	60.11
0	J136	0	131	269.72	60.11
0	J138	0	122	280.79	68.8
0	J140	0	122	280.79	68.8
0	J146	0	132	263.89	57.15
0	J148	1	132	263.89	57.15
0	J150	0	118	257.48	60.44
0	J152	1	118	257.48	60.44
0	J154	0	90.3	269.11	77.48
0	J156	0	115.5	257.48	61.52
0	J158	1	115.5	257.48	61.52
0	J160	1,500.00	128	252.89	54.12
0	J162	1,501.00	128	252.88	54.11
0	J164	0	98	257.51	69.12
0	J166	1	98	257.51	69.12
0	J168	0	115.25	269.12	66.67
0	J170	1	120	257.59	59.62
0	J172	0	120	257.59	59.62
0	J174	1	123	257.67	58.35
0	J176	0	123	257.67	58.35
0	J178	1	94	258.88	71.44
0	J180	0	94	258.88	71.44

0	J182	0	118	271.28	66.41
0	J184	1	118	260.2	61.62
0	J186	0	118	260.2	61.62
0	J188	0	126	269.72	62.28
0	J190	0	126	269.72	62.28
0	J192	0	126	269.72	62.28
0	J194	0	126	269.72	62.28
0	J196	0	99.75	270.68	74.06
0	J198	0	95.5	269.28	75.3
0	J20	44.06	90.4	269.09	77.43
0	J206	0	100	259.07	68.92
0	J208	1	100	259.07	68.92
0	J210	0	102	257.69	67.46
0	J212	0	102	257.69	67.46
0	J214	0	102	257.69	67.46
0	J216	0	100	259.72	69.2
0	J218	1	100	259.72	69.2
0	J22	41.86	118.5	269.09	65.25
0	J220	50.94	116	269.19	66.38
0	J222	50.4	119.1	269.24	65.05
0	J224	0	118	271.81	66.65
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	269.08	66.55
0	J28	34.78	118.6	269.08	65.2
0	J30	44.42	122.2	269.08	63.64
0	J300	0	127.5	277.27	64.9
0	J302	0	128	277.49	64.77
0	J304	0	142	280.84	60.16
0	J32	93.48	126	269.08	62
0	J34	0	134	270.45	59.12
0	J36	0	138	274.37	59.09
0	J38	79.7	90.2	269.17	77.55
0	J40	138.2	90	269.34	77.71
0	J42	137.88	101	269.23	72.89
0	J44	93.74	111	269.16	68.53
0	J46	79.04	113	269.11	67.64
0	J48	76.62	114.7	269.31	66.99
0	J50	76.58	120	269.51	64.78
0	J52	152.52	126	269.72	62.28
0	J54	76.28	127.6	269.55	61.51
0	J56	70.04	121.9	269.39	63.91
0	J58	97.94	126	269.51	62.18
0	J60	43.14	124.5	269.27	62.73
0	J62	94.12	122	269.25	63.8
0	J64	69.8	127	269.49	61.74
0	J66	44.72	130.5	269.72	60.33
0	J68	45.14	88	270.33	79
0	J70	92.66	97.5	270.48	74.95
0	J72	105.24	102	270.92	73.19
0	J74	104.58	108	271.09	70.67
0	J76	92.9	128	271.47	62.17
0	J78	160.7	126	271.47	63.03
0	J82	0	126.4	270.6	62.48
0	J84	23.7	76	270.55	84.3
0	J86	38.12	78	270.89	83.58
0	J88	42.04	88.4	271.22	79.22
0	J90	52.46	104	271.32	72.5
0	J92	53.12	98	271.04	74.98
0	J94	50.48	107	271.69	71.36
0	J96	40.96	116	272.14	67.66

	ID	Flow (gpm)	Head (ft)
0	RES9010	-3,075.39	277.29
0	RES9012	-2,868.73	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	63.8	68.8	0	0	11.54	Open	3
0	V8002	8	122	63.73	68.8	0	0	0	Closed	3
0	V8008	10	132	62.18	57.15	1	0	11.61	Open	2
0	V8010	10	132	60.05	57.15	0	0	0	Closed	2
0	V8012	8	118	65.46	60.44	0	0	0	Closed	3
0	V8014	8	118	65.46	60.44	1	0.01	11.6	Open	3
0	V8016	8	115.5	66.55	61.52	1	0.01	11.6	Open	3
0	V8018	8	115.5	66.55	61.52	0	0	0	Closed	3
0	V8020	8	128	59.87	56.83	1,451.63	9.27	7.02	Open	3
0	V8022	8	128	59.51	56.43	1,549.37	9.89	7.11	Open	3
0	V8024	8	98	74.17	69.12	0	0	0	Closed	3
0	V8026	8	98	74.14	69.12	1	0.01	11.6	Open	3
0	V8028	10	120	64.61	59.62	0	0	0	Closed	2
0	V8032	8	123	63.38	58.35	1	0.01	11.6	Open	3
0	V8034	8	123	63.37	58.35	0	0	0	Closed	3
0	V8036	8	94	76.5	71.44	0	0	0	Closed	3
0	V8038	8	94	76.47	71.44	1	0.01	11.6	Open	3
0	V8042	10	118	66.65	61.62	1	0	11.61	Open	2
0	V8044	10	118	66.41	61.62	0	0	0	Closed	2
0	V8052	10	100	73.87	68.92	0	0	0	Closed	2
0	V8054	10	100	73.95	68.92	1	0	11.61	Open	2
0	V8056	8	102	72.46	67.46	0	0	11.54	Open	3
0	V8058	8	102	72.48	67.46	0	0	0	Closed	3
0	V8060	8	100	74.19	69.2	0	0	0	Closed	3
0	V8062	8	100	74.23	69.2	1	0.01	11.6	Open	3
0	V8070	10	120	64.65	59.62	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-216.25	0.61	0.12	0.15
0	P103	J92	J90	1,241.83	12	130	-269.37	0.76	0.28	0.22
0	P105	J90	J94	1,132.34	16	130	-709.51	1.13	0.37	0.33
0	P107	J94	J96	1,204.53	16	130	-759.99	1.21	0.45	0.38
0	P111	J78	J100	1,067.79	16	130	-1,536.47	2.45	1.48	1.38
0	P115	J96	J100	886.7	16	130	-1,221.24	1.95	0.8	0.9
0	P117	J100	J102	789.56	20	130	-2,858.41	2.92	1.16	1.47
0	P119	J102	J104	941.88	20	130	-2,858.41	2.92	1.39	1.47
0	P121	J104	J300	1,197.93	20	130	-2,868.73	2.93	1.78	1.48
0	P123	J300	J302	147.08	20	130	-2,868.73	2.93	0.22	1.48
0	P125	J302	J304	2,260.56	20	130	-2,868.73	2.93	3.35	1.48
0	P139	J122	J124	627.68	12	130	-109.93	0.31	0.03	0.04
0	P141	J124	J60	1,242.80	12	130	-176.69	0.5	0.13	0.1
0	P145	J34	J126	846.23	20	130	2,648.19	2.7	1.08	1.28
0	P149	J66	J128	522.48	8	130	86.23	0.55	0.1	0.2
0	P155	J126	J130	441.09	8	130	-86.23	0.55	0.09	0.2
0	P157	J128	J130	886.05	8	130	86.23	0.55	0.17	0.2
0	P159	J126	J32	843.52	20	130	1,282.78	1.31	0.28	0.33
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	90.32	0.14	0.01	0.01
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0

0	P19	J22	J26	1,147.36	16	130	48.46	0.08	0	0
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	44.23	0.07	0	0
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-134.38	0.38	0.02	0.06
0	P215	J154	J38	842.54	12	130	-135.38	0.38	0.05	0.06
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	1,549.37	6.33	3.74	13.86
0	P229	V8022	J160	385.74	10	130	1,549.37	6.33	5.35	13.86
0	P23	J28	J30	679.9	16	130	8.45	0.01	0	0
0	P231	J126	V8020	259.39	10	130	1,451.63	5.93	3.19	12.28
0	P233	V8020	J162	510.51	10	130	1,451.63	5.93	6.27	12.28
0	P235	J160	J162	392.51	10	130	49.37	0.2	0.01	0.02
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-34.15	0.1	0	0
0	P249	J168	J122	563.66	12	130	-34.15	0.1	0	0
0	P25	J30	J32	1,229.93	16	130	-35.97	0.06	0	0
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	325.41	0.92	0.19	0.32
0	P283	J182	J74	589.22	12	130	325.41	0.92	0.19	0.32
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-3,075.39	3.14	3.92	1.69
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	331.84	0.94	0.24	0.33
0	P311	J196	J70	609.66	12	130	330.84	0.94	0.2	0.33
0	P313	J40	J198	1,129.17	12	130	121.58	0.34	0.06	0.05

0	P315	J198	J42	1,043.66	12	130	121.58	0.34	0.05	0.05
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-215.08	0.61	0.17	0.15
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	190.8	0.54	0.16	0.12
0	P365	J222	J220	621.17	12	130	140.4	0.4	0.04	0.07
0	P367	J220	J44	1,095.19	12	130	88.46	0.25	0.03	0.03
0	P37	J26	J46	1,141.00	12	130	-84.97	0.24	0.03	0.03
0	P379	J76	J224	678.87	12	130	-419.29	1.19	0.34	0.51
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	-129.86	0.37	0.05	0.06
0	P393	J226	J36	1,733.97	20	130	3,075.39	3.14	2.92	1.69
0	P395	J96	J224	650.52	12	130	420.3	1.19	0.33	0.51
0	P41	J44	J42	1,067.11	12	130	-135.14	0.38	0.07	0.06
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	3,075.39	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	2,868.73	0	0	0
0	P43	J42	J48	1,096.37	12	130	-151.44	0.43	0.08	0.08
0	P45	J48	J50	1,194.62	12	130	-228.06	0.65	0.2	0.16
0	P47	J50	J52	765.09	12	130	-304.64	0.86	0.21	0.28
0	P49	J32	J62	1,463.77	16	130	-396.03	0.63	0.16	0.11
0	P51	J34	J66	1,373.58	12	130	427.2	1.21	0.72	0.52
0	P53	J66	J64	862.35	12	130	296.25	0.84	0.23	0.27
0	P55	J62	J64	1,082.76	12	130	-273.45	0.78	0.25	0.23
0	P57	J62	J60	691.6	16	130	-216.71	0.35	0.03	0.04
0	P59	J64	J58	1,424.22	12	130	-46.99	0.13	0.01	0.01
0	P61	J60	J56	890.62	16	130	-437.54	0.7	0.12	0.14
0	P67	J56	J52	1,036.48	16	130	-698.38	1.11	0.33	0.32
0	P69	J52	J54	1,131.15	12	130	221.21	0.63	0.18	0.16
0	P71	J58	J54	591.64	12	130	-144.93	0.41	0.04	0.07
0	P73	J40	J68	1,551.82	12	130	-474.86	1.35	0.99	0.64
0	P75	J68	J70	838.54	12	130	-237.18	0.67	0.15	0.18
0	P79	J72	J74	1,086.50	12	130	-220.83	0.63	0.17	0.15
0	P83	J76	J78	765.46	12	130	0.98	0	0	0
0	P89	J52	J82	771.55	16	130	-1,376.76	2.2	0.87	1.13
0	P91	J82	J78	774.7	16	130	-1,376.76	2.2	0.87	1.13
0	P93	J68	J84	890.35	12	130	-282.82	0.8	0.22	0.24
0	P95	J84	J86	1,204.21	12	130	-306.52	0.87	0.34	0.28
0	P97	J86	J88	946.69	12	130	-344.64	0.98	0.33	0.35
0	P99	J88	J90	874.98	16	130	-386.68	0.62	0.09	0.11

A.4 EXISTING PLUS PROJECT SIMULATION RESULTS PRINTOUTS

Existing plus Project Simulation Printouts

5/4/2017

Run EB2

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	290.3	72.92
0	J102	0	125.5	290.82	71.63
0	J104	9.32	129.8	291.44	70.04
0	J122	75.78	117.5	289.05	74.33
0	J124	66.76	119.5	289.08	73.48
0	J126	0	130	289.5	69.11
0	J128	0	133	289.44	67.78
0	J130	0	134	289.48	67.37
0	J132	0	131	289.41	68.64
0	J134	0	131	289.41	68.64
0	J136	0	131	289.41	68.64
0	J138	0	122	300.81	77.48
0	J140	0	122	300.81	77.48
0	J146	0	132	302.98	74.09
0	J148	0	132	302.98	74.09
0	J150	0	118	277.62	69.17
0	J152	0	118	277.62	69.17
0	J154	0	90.3	289.04	86.11
0	J156	0	115.5	277.53	70.21
0	J158	0	115.5	277.53	70.21
0	J160	0	128	277.96	64.98
0	J162	0	128	277.96	64.98
0	J164	0	98	300.58	87.78
0	J166	0	98	300.58	87.78
0	J168	0	115.25	289.05	75.31
0	J170	0	120	277.51	68.25
0	J172	0	120	277.51	68.25
0	J174	0	123	300.77	77.03
0	J176	0	123	300.77	77.03
0	J178	0	94	277.66	79.58
0	J180	0	94	277.66	79.58
0	J182	0	118	289.55	74.33
0	J184	0	118	301.34	79.44
0	J186	0	118	301.34	79.44
0	J188	0	126	289.25	70.74
0	J190	0	126	289.25	70.73
0	J192	0	126	289.24	70.73
0	J194	0	126	289.23	70.73
0	J196	0	99.75	289.26	82.11
0	J198	0	95.5	289.02	83.85
0	J20	44.06	90.4	289.04	86.07
0	J206	0	100	277.72	77.01
0	J208	0	100	277.72	77.01
0	J210	0	102	300.56	86.04
0	J212	0	102	300.56	86.04
0	J214	0	102	300.56	86.04
0	J216	0	100	301.05	87.11
0	J218	0	100	301.05	87.11
0	J22	41.86	118.5	289.05	73.9
0	J220	50.94	116	289.05	74.98
0	J222	50.4	119.1	289.09	73.66
0	J224	0	118	289.8	74.44
0	J226	0	130	290.62	69.6
0	J228	0	116	294.62	77.4
0	J230	0	147	296.96	64.98
0	J232	0	148	299.86	65.8
0	J236	2,427.93	166	310.57	62.64

0	J238	1,213.97	181	305.12	53.78
0	J240	0	164	310.91	63.65
0	J242	0	148	300.18	65.94
0	J244	0	148	299.9	65.82
0	J246	1,213.97	146	300.66	67.01
0	J252	0	164.3	311.12	63.62
0	J26	88.2	115.5	289.07	75.21
0	J260	0	164.48	311.16	63.56
0	J262	0	164.48	311.19	63.57
0	J264	0	167.47	312.12	62.68
0	J266	0	167.47	312.15	62.69
0	J268	0	167.47	312.19	62.71
0	J270	0	167.47	312.23	62.72
0	J272	0	167.47	312.27	62.74
0	J274	0	167.47	312.43	62.81
0	J276	0	167.47	312.56	62.87
0	J278	0	164.48	170.6	2.65
0	J28	34.78	118.6	289.16	73.91
0	J280	0	164.48	170.6	2.65
0	J282	0	164.48	170.6	2.65
0	J286	0	164.48	170.4	2.57
0	J288	0	164.48	170.41	2.57
0	J290	0	164.48	170.42	2.57
0	J292	0	164.48	170.46	2.59
0	J294	0	164.48	170.6	2.65
0	J296	0	164.57	170.68	2.65
0	J298	0	164.22	170.95	2.92
0	J30	44.42	122.2	289.23	72.37
0	J300	0	127.5	292.24	71.38
0	J302	0	128	292.33	71.21
0	J304	0	142	293.84	65.79
0	J308	0	163	171.12	3.52
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	170.6	2.65
0	J32	93.48	126	289.38	70.79
0	J328	0	167.47	320.13	66.15
0	J330	0	167.47	319.85	66.03
0	J332	0	167.47	312.19	62.71
0	J334	0	167.47	319.72	65.97
0	J336	0	167.47	312.43	62.81
0	J338	0	167.47	312.23	62.72
0	J34	0	134	289.63	67.44
0	J340	0	167.47	312.15	62.69
0	J36	0	137	290.2	66.38
0	J38	79.7	90.2	289.02	86.15
0	J40	138.2	90	289.02	86.24
0	J42	137.88	101	289.02	81.47
0	J44	93.74	111	289.03	77.14
0	J46	79.04	113	289.04	76.28
0	J48	76.62	114.7	289.04	75.54
0	J50	76.58	120	289.13	73.29
0	J52	152.52	126	289.26	70.74
0	J54	76.28	127.6	289.23	70.04
0	J56	70.04	121.9	289.23	72.5
0	J58	97.94	126	289.23	70.73
0	J60	43.14	124.5	289.23	71.38
0	J62	94.12	122	289.27	72.48
0	J64	69.8	127	289.28	70.32
0	J66	44.72	130.5	289.41	68.86
0	J68	45.14	88	289.18	87.17
0	J70	92.66	97.5	289.2	83.06

0	J72	105.24	102	289.33	81.17
0	J74	104.58	108	289.42	78.61
0	J76	92.9	128	289.68	70.05
0	J78	160.7	126	289.71	70.94
0	J82	0	126.4	289.48	70.66
0	J84	23.7	76	289.23	92.39
0	J86	49.12	78	289.33	91.57
0	J88	42.04	88.4	289.46	87.12
0	J90	52.46	104	289.51	80.38
0	J92	53.12	98	289.38	82.92
0	J94	50.48	107	289.69	79.16
0	J96	40.96	116	289.92	75.36

	ID	Flow (gpm)	Head (ft)
0	RES9010	-7,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.99	74.69	2,597.42	156.26	Open	1	49.26	0
0	U7004	153.8	6.97	74.58	2,599.79	156.04	Open	1	49.21	0
0	U7006	153.8	7.2	68.63	0	0	Closed	0	0	0
0	U7008	153.8	6.96	74.53	2,602.78	155.94	Open	1	49.19	0
0	U7010	153.8	7.28	68.74	0	0	Closed	0	0	0
0	U7012	153.8	7.28	68.65	0	0	Closed	0	0	0
0	U7014	153.8	7.28	68.62	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	72.48	77.48	0	0	11.54	Open	5
0	V8002	8	122	72.46	77.48	0	0	0	Closed	5
0	V8008	10	132	69.09	74.09	0	0	11.54	Open	2
0	V8010	10	132	68.24	74.09	0	0	0	Closed	2
0	V8012	8	118	74.13	69.17	0	0	0	Closed	5
0	V8014	8	118	74.17	69.17	0	0	11.54	Open	5
0	V8016	8	115.5	75.21	70.21	0	0	11.54	Open	5
0	V8018	8	115.5	75.2	70.21	0	0	0	Closed	5
0	V8020	8	128	69.98	64.98	0	0	11.54	Open	5
0	V8022	8	128	69.92	64.98	0	0	0	Closed	5
0	V8024	8	98	82.77	87.78	0	0	0	Closed	5
0	V8026	8	98	82.78	87.78	0	0	11.54	Open	5
0	V8028	10	120	73.25	68.25	0	0	0	Closed	2
0	V8032	8	123	72.03	77.03	0	0	11.54	Open	5
0	V8034	8	123	72.04	77.03	0	0	0	Closed	5
0	V8036	8	94	84.59	79.58	0	0	0	Closed	5
0	V8038	8	94	84.58	79.58	0	0	11.54	Open	5
0	V8042	10	118	74.44	79.44	0	0	11.54	Open	2
0	V8044	10	118	74.33	79.44	0	0	0	Closed	2
0	V8052	10	100	81.98	77.01	0	0	0	Closed	2
0	V8054	10	100	82.01	77.01	0	0	11.54	Open	2
0	V8056	8	102	81.04	86.04	0	0	11.54	Open	5
0	V8058	8	102	81.04	86.04	0	0	0	Closed	5
0	V8060	8	100	82.09	87.11	0	0	0	Closed	5
0	V8062	8	100	82.11	87.11	0	0	11.54	Open	5
0	V8070	10	120	73.25	68.25	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-124.71	0.35	0.04	0.05
0	P103	J92	J90	1,241.83	12	130	-177.83	0.5	0.13	0.1
0	P105	J90	J94	1,132.34	16	130	-480.36	0.77	0.18	0.16
0	P107	J94	J96	1,204.53	16	130	-530.84	0.85	0.23	0.19
0	P111	J78	J100	1,067.79	16	130	-936.16	1.49	0.59	0.55
0	P115	J96	J100	886.7	16	130	-814.44	1.3	0.38	0.43
0	P117	J100	J102	789.56	20	130	-1,851.30	1.89	0.52	0.66

0	P119	J102	J104	941.88	20	130	-1,851.30	1.89	0.62	0.66
0	P121	J104	J300	1,197.93	20	130	-1,860.62	1.9	0.8	0.66
0	P123	J300	J302	147.08	20	130	-1,860.62	1.9	0.1	0.66
0	P125	J302	J304	2,260.56	20	130	-1,860.62	1.9	1.5	0.66
0	P139	J122	J124	627.68	12	130	-123.45	0.35	0.03	0.05
0	P141	J124	J60	1,242.80	12	130	-190.21	0.54	0.15	0.12
0	P145	J34	J126	846.23	20	130	858.26	0.88	0.13	0.16
0	P149	J66	J128	522.48	8	130	-39.74	0.25	0.02	0.05
0	P155	J126	J130	441.09	8	130	39.74	0.25	0.02	0.05
0	P157	J128	J130	886.05	8	130	-39.74	0.25	0.04	0.05
0	P159	J126	J32	843.52	20	130	818.53	0.84	0.12	0.15
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-108.77	0.17	0.01	0.01
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-150.63	0.24	0.02	0.02
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-330.04	0.53	0.09	0.08
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	64.71	0.18	0.01	0.02
0	P215	J154	J38	842.54	12	130	64.71	0.18	0.01	0.02
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-364.82	0.58	0.07	0.1
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-47.67	0.14	0	0.01
0	P249	J168	J122	563.66	12	130	-47.67	0.14	0.01	0.01
0	P25	J30	J32	1,229.93	16	130	-409.24	0.65	0.15	0.12
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0

0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	260.92	0.74	0.13	0.21
0	P283	J182	J74	589.22	12	130	260.92	0.74	0.12	0.21
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-1,083.51	1.11	0.57	0.24
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	19.04	0.12	0	0.01
0	P301	J188	J190	664.92	8	130	19.04	0.12	0.01	0.01
0	P303	J56	J194	178.12	8	130	-19.04	0.12	0	0.01
0	P305	J194	J192	667.8	8	130	-19.04	0.12	0.01	0.01
0	P307	J192	J190	657.08	8	130	-19.04	0.12	0.01	0.01
0	P309	J72	J196	736.36	12	130	175.81	0.5	0.07	0.1
0	P311	J196	J70	609.66	12	130	175.81	0.5	0.06	0.1
0	P313	J40	J198	1,129.17	12	130	20.03	0.06	0	0
0	P315	J198	J42	1,043.66	12	130	20.03	0.06	0	0
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-14.99	0.04	0	0
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	179.39	0.51	0.14	0.11
0	P365	J222	J220	621.17	12	130	128.99	0.37	0.04	0.06
0	P367	J220	J44	1,095.19	12	130	78.05	0.22	0.02	0.02
0	P37	J26	J46	1,141.00	12	130	91.21	0.26	0.03	0.03
0	P379	J76	J224	678.87	12	130	-242.63	0.69	0.12	0.18
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	59.84	0.17	0.01	0.01
0	P393	J226	J36	1,733.97	20	130	1,083.51	1.11	0.42	0.24
0	P395	J96	J224	650.52	12	130	242.63	0.69	0.12	0.18
0	P399	J232	J230	2,608.50	18	130	1,860.62	2.35	2.9	1.11
0	P401	J230	J304	2,813.67	18	130	1,860.62	2.35	3.12	1.11
0	P403	J232	J228	7,230.92	16	130	1,083.51	1.73	5.24	0.72
0	P405	J228	J226	5,520.22	16	130	1,083.51	1.73	4	0.72
0	P41	J44	J42	1,067.11	12	130	44.14	0.13	0.01	0.01
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	6,195.92	1.95	0.34	0.35
0	P423	J236	J238	5,398.38	24	130	3,767.99	2.67	5.46	1.01
0	P425	J238	J246	9,066.36	24	130	2,554.02	1.81	4.46	0.49
0	P427	J246	J244	5,073.87	24	130	1,340.05	0.95	0.76	0.15
0	P429	J240	J242	7,163.69	16	130	1,604.07	2.56	10.73	1.5
0	P43	J42	J48	1,096.37	12	130	-73.7	0.21	0.02	0.02

0	P431	J242	J232	213.31	16	130	1,604.07	2.56	0.32	1.5
0	P433	J244	J232	281.24	24	130	1,340.05	0.95	0.04	0.15
0	P439	RES9010	J310	68.78	1,100.00	130	7,799.99	0	0	0
0	P441	J310	J308	18	36	130	7,799.99	2.46	0.32	17.75
0	P443	J308	J298	106.2	36	130	7,799.99	2.46	0.17	1.6
0	P445	J298	J296	55.4	36	130	7,799.99	2.46	0.27	4.94
0	P447	J296	J294	78.5	36	130	7,799.99	2.46	0.08	1.02
0	P449	J294	J292	19	30	130	7,800.00	3.54	0.13	7.05
0	P45	J48	J50	1,194.62	12	130	-150.32	0.43	0.09	0.08
0	P451	J292	J290	9.2	30	130	5,202.57	2.36	0.04	4.38
0	P453	J290	J288	9.2	30	130	2,602.78	1.18	0.01	1.11
0	P455	J288	J286	9.2	30	130	2,602.78	1.18	0.01	1.11
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,597.42	3.27	0.54	26.31
0	P469	J290	U7004	20.6	18	130	2,599.79	3.28	0.54	26.36
0	P47	J50	J52	765.09	12	130	-226.9	0.64	0.12	0.16
0	P473	J288	U7006	20.6	18	130	0	0	0	0
0	P477	J286	U7008	20.6	18	130	2,602.78	3.28	0.54	26.42
0	P481	J282	U7010	12.1	18	130	0	0	0	0
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	315.8	0.5	0.11	0.07
0	P493	J276	J274	4.9	16	130	2,597.42	4.14	0.12	25.43
0	P495	J274	J272	4.2	16	130	2,597.42	4.14	0.16	39.22
0	P497	J272	J270	4.7	30	130	5,197.21	2.36	0.04	7.97
0	P499	J270	J268	4.7	30	130	5,197.21	2.36	0.04	7.97
0	P501	J268	J266	4.7	30	130	5,197.21	2.36	0.04	7.97
0	P503	J266	J264	4.7	30	130	5,197.21	2.36	0.04	7.97
0	P505	J264	J262	60.6	30	130	7,799.99	3.54	0.93	15.31
0	P507	J262	J260	20.3	36	130	7,799.99	2.46	0.03	1.46
0	P509	J260	J252	30.38	36	130	7,799.99	2.46	0.04	1.16
0	P51	J34	J66	1,373.58	12	130	225.24	0.64	0.22	0.16
0	P511	J252	J240	90.5	36	130	7,799.99	2.46	0.22	2.41
0	P513	J294	J312	36.2	30	130	0	0	0	0
0	P515	J312	J282	31.2	30	130	0	0	0	0
0	P517	U7002	J328	15	12	130	2,597.42	7.37	6.06	403.73
0	P519	J328	J276	9.1	14	130	2,597.42	5.41	7.57	832.01
0	P521	U7004	J330	15	12	130	2,599.79	7.38	6.07	404.46
0	P523	J330	J272	9.1	14	130	2,599.79	5.42	7.59	833.54
0	P525	U7006	J332	15	12	130	0	0	0	0
0	P527	J332	J268	9.1	14	130	0	0	0	0
0	P529	U7008	J334	15	12	130	2,602.78	7.38	6.08	405.39
0	P53	J66	J64	862.35	12	130	220.26	0.62	0.13	0.15
0	P531	J334	J264	9.1	14	130	2,602.78	5.42	7.6	835.45
0	P533	U7010	J336	15	12	130	0	0	0	0
0	P535	J336	J274	9.1	14	130	0	0	0	0
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-53.16	0.15	0.01	0.01
0	P57	J62	J60	691.6	16	130	274.85	0.44	0.04	0.06
0	P59	J64	J58	1,424.22	12	130	97.3	0.28	0.05	0.03
0	P61	J60	J56	890.62	16	130	41.5	0.07	0	0
0	P67	J56	J52	1,036.48	16	130	-188.89	0.3	0.03	0.03
0	P69	J52	J54	1,131.15	12	130	76.92	0.22	0.02	0.02
0	P71	J58	J54	591.64	12	130	-0.64	0	0	0
0	P73	J40	J68	1,551.82	12	130	-173.22	0.49	0.15	0.1
0	P75	J68	J70	838.54	12	130	-83.15	0.24	0.02	0.03
0	P79	J72	J74	1,086.50	12	130	-156.34	0.44	0.09	0.08

0	P83	J76	J78	765.46	12	130	-111.19	0.32	0.03	0.04
0	P89	J52	J82	771.55	16	130	-664.27	1.06	0.23	0.29
0	P91	J82	J78	774.7	16	130	-664.27	1.06	0.23	0.29
0	P93	J68	J84	890.35	12	130	-135.21	0.38	0.06	0.06
0	P95	J84	J86	1,204.21	12	130	-158.91	0.45	0.1	0.08
0	P97	J86	J88	946.69	12	130	-208.03	0.59	0.13	0.14
0	P99	J88	J90	874.98	16	130	-250.07	0.4	0.04	0.05

Run EB3

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	201.4	122	229.73	46.68
0	J102	0	125.5	231.6	45.97
0	J104	17.64	129.8	233.84	45.08
0	J122	151.56	117.5	225.22	46.67
0	J124	133.52	119.5	225.34	45.86
0	J126	0	130	226.84	41.96
0	J128	0	133	226.62	40.56
0	J130	0	134	226.76	40.19
0	J132	0	131	226.53	41.39
0	J134	0	131	226.53	41.39
0	J136	0	131	226.53	41.39
0	J138	0	122	237.55	50.07
0	J140	0	122	237.55	50.07
0	J146	0	132	222.23	39.1
0	J148	1	132	222.23	39.1
0	J150	0	118	214.09	41.64
0	J152	0	118	214.09	41.64
0	J154	0	90.3	225.17	58.44
0	J156	0	115.5	236.85	52.58
0	J158	0	115.5	236.85	52.58
0	J160	0	128	215.23	37.8
0	J162	1	128	215.23	37.8
0	J164	0	98	213.63	50.1
0	J166	0	98	213.63	50.1
0	J168	0	115.25	225.2	47.64
0	J170	0	120	236.77	50.6
0	J172	0	120	236.77	50.6
0	J174	0	123	214.32	39.57
0	J176	0	123	214.32	39.57
0	J178	0	94	214.21	52.09
0	J180	0	94	214.21	52.09
0	J182	0	118	227.01	47.23
0	J184	0	118	216.39	42.63
0	J186	0	118	216.39	42.63
0	J188	0	126	225.95	43.31
0	J190	0	126	225.92	43.3
0	J192	0	126	225.89	43.28
0	J194	0	126	225.87	43.27
0	J196	0	99.75	225.97	54.69
0	J198	0	95.5	225.11	56.16
0	J20	88.12	90.4	225.19	58.4
0	J206	0	100	214.43	49.58
0	J208	0	100	214.43	49.58
0	J210	0	102	213.57	48.34
0	J212	0	102	213.57	48.34
0	J214	0	102	213.57	48.34
0	J216	0	100	215.32	49.97
0	J218	0	100	215.32	49.97
0	J22	83.72	118.5	225.23	46.25
0	J220	101.88	116	225.23	47.33
0	J222	100.8	119.1	225.36	46.04

0	J224	0	118	227.93	47.63
0	J226	0	130	230.9	43.72
0	J228	0	116	245.33	56.04
0	J230	0	147	253.78	46.27
0	J232	0	148	264.24	50.37
0	J236	4,855.86	166	302.9	59.32
0	J238	2,427.93	181	283.21	44.29
0	J240	0	164	304.12	60.71
0	J242	0	148	265.39	50.86
0	J244	0	148	264.39	50.43
0	J246	2,427.93	146	267.12	52.48
0	J252	0	164.3	304.97	60.95
0	J26	176.4	115.5	225.31	47.58
0	J260	0	164.48	305.11	60.93
0	J262	0	164.48	305.22	60.98
0	J264	0	167.47	308.9	61.28
0	J266	0	167.47	309.13	61.38
0	J268	0	167.47	309.36	61.48
0	J270	0	167.47	309.51	61.55
0	J272	0	167.47	309.6	61.58
0	J274	0	167.47	310.25	61.87
0	J276	0	167.47	310.37	61.92
0	J278	0	164.48	167.81	1.44
0	J28	69.56	118.6	225.63	46.38
0	J280	0	164.48	167.81	1.44
0	J282	0	164.48	167.82	1.45
0	J286	0	164.48	167.74	1.41
0	J288	0	164.48	167.75	1.42
0	J290	0	164.48	167.8	1.44
0	J292	0	164.48	167.89	1.48
0	J294	0	164.48	168.12	1.58
0	J296	0	164.57	168.42	1.67
0	J298	0	164.22	169.51	2.29
0	J30	88.84	122.2	225.87	44.92
0	J300	0	127.5	236.72	47.32
0	J302	0	128	237.07	47.26
0	J304	0	142	242.5	43.55
0	J308	0	163	170.17	3.11
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	167.86	1.46
0	J32	186.96	126	226.4	43.5
0	J328	0	167.47	317.92	65.19
0	J330	0	167.47	317.18	64.87
0	J332	0	167.47	316.96	64.77
0	J334	0	167.47	316.54	64.59
0	J336	0	167.47	317.8	65.14
0	J338	0	167.47	317.11	64.84
0	J34	0	134	227.32	40.44
0	J340	0	167.47	309.13	61.38
0	J36	0	137	229.37	40.03
0	J38	159.4	90.2	225.12	58.46
0	J40	276.4	90	225.12	58.55
0	J42	275.76	101	225.11	53.78
0	J44	187.48	111	225.14	49.46
0	J46	158.08	113	225.18	48.61
0	J48	153.24	114.7	225.19	47.87
0	J50	153.16	120	225.52	45.72
0	J52	305.04	126	225.96	43.31
0	J54	152.56	127.6	225.87	42.58
0	J56	140.08	121.9	225.86	45.04
0	J58	195.88	126	225.87	43.28

0	J60	86.28	124.5	225.86	43.92
0	J62	188.24	122	226.01	45.07
0	J64	139.6	127	226.05	42.92
0	J66	88.44	130.5	226.53	41.61
0	J68	90.28	88	225.67	59.65
0	J70	185.32	97.5	225.75	55.57
0	J72	210.48	102	226.24	53.83
0	J74	209.16	108	226.56	51.37
0	J76	185.8	128	227.48	43.1
0	J78	321.4	126	227.6	44.02
0	J82	0	126.4	226.78	43.49
0	J84	47.4	76	225.87	64.94
0	J86	98.24	78	226.24	64.23
0	J88	84.08	88.4	226.71	59.93
0	J90	104.92	104	226.86	53.24
0	J92	106.24	98	226.4	55.64
0	J94	100.96	107	227.52	52.22
0	J96	81.92	116	228.36	48.69

	ID	Flow (gpm)	Head (ft)
0	RES9010	-15,599.96	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	5.87	73.73	2,593.68	156.62	Open	1	46.68	0
0	U7004	153.8	5.83	73.42	2,600.19	156	Open	1	46.59	0
0	U7006	153.8	5.81	73.33	2,601.90	155.83	Open	1	46.55	0
0	U7008	153.8	5.81	73.16	2,608.55	155.45	Open	1	46.53	0
0	U7010	153.8	5.85	73.68	2,594.42	156.55	Open	1	46.63	0
0	U7012	153.8	5.84	73.39	2,601.23	155.9	Open	1	46.62	0
0	U7014	153.8	6.07	67.31	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	45.07	50.07	0	0	11.54	Open	5
0	V8002	8	122	45	50.07	0	0	0	Closed	5
0	V8008	10	132	44.13	39.1	1	0	11.61	Open	2
0	V8010	10	132	41.07	39.1	0	0	0	Closed	2
0	V8012	8	118	46.5	41.64	0	0	0	Closed	5
0	V8014	8	118	46.64	41.64	0	0	11.54	Open	5
0	V8016	8	115.5	47.58	52.58	0	0	11.54	Open	5
0	V8018	8	115.5	47.55	52.58	0	0	0	Closed	5
0	V8020	8	128	42.83	37.8	1	0.01	11.6	Open	5
0	V8022	8	128	42.63	37.8	0	0	0	Closed	5
0	V8024	8	98	55.08	50.1	0	0	0	Closed	5
0	V8026	8	98	55.1	50.1	0	0	11.54	Open	5
0	V8028	10	120	45.58	50.6	0	0	0	Closed	2
0	V8032	8	123	44.57	39.57	0	0	11.54	Open	5
0	V8034	8	123	44.63	39.57	0	0	0	Closed	5
0	V8036	8	94	57.14	52.09	0	0	0	Closed	5
0	V8038	8	94	57.09	52.09	0	0	11.54	Open	5
0	V8042	10	118	47.63	42.63	0	0	11.54	Open	2
0	V8044	10	118	47.23	42.63	0	0	0	Closed	2
0	V8052	10	100	54.49	49.58	0	0	0	Closed	2
0	V8054	10	100	54.58	49.58	0	0	11.54	Open	2
0	V8056	8	102	53.34	48.34	0	0	11.54	Open	5
0	V8058	8	102	53.35	48.34	0	0	0	Closed	5
0	V8060	8	100	54.9	49.97	0	0	0	Closed	5
0	V8062	8	100	54.97	49.97	0	0	11.54	Open	5
0	V8070	10	120	45.59	50.6	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-249.43	0.71	0.16	0.19

0	P103	J92	J90	1,241.83	12	130	-355.67	1.01	0.46	0.37
0	P105	J90	J94	1,132.34	16	130	-960.73	1.53	0.66	0.58
0	P107	J94	J96	1,204.53	16	130	-1,061.69	1.69	0.84	0.7
0	P111	J78	J100	1,067.79	16	130	-1,872.31	2.99	2.13	1.99
0	P115	J96	J100	886.7	16	130	-1,628.87	2.6	1.37	1.54
0	P117	J100	J102	789.56	20	130	-3,702.58	3.78	1.88	2.38
0	P119	J102	J104	941.88	20	130	-3,702.58	3.78	2.24	2.38
0	P121	J104	J300	1,197.93	20	130	-3,721.22	3.8	2.87	2.4
0	P123	J300	J302	147.08	20	130	-3,721.22	3.8	0.35	2.4
0	P125	J302	J304	2,260.56	20	130	-3,721.22	3.8	5.43	2.4
0	P139	J122	J124	627.68	12	130	-246.92	0.7	0.12	0.19
0	P141	J124	J60	1,242.80	12	130	-380.44	1.08	0.53	0.42
0	P145	J34	J126	846.23	20	130	1,716.94	1.75	0.48	0.57
0	P149	J66	J128	522.48	8	130	-79.27	0.51	0.09	0.17
0	P155	J126	J130	441.09	8	130	79.27	0.51	0.07	0.17
0	P157	J128	J130	886.05	8	130	-79.27	0.51	0.15	0.17
0	P159	J126	J32	843.52	20	130	1,636.67	1.67	0.44	0.52
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-217.51	0.35	0.04	0.04
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-301.23	0.48	0.08	0.07
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-660.01	1.05	0.32	0.29
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	129.39	0.37	0.02	0.06
0	P215	J154	J38	842.54	12	130	129.39	0.37	0.05	0.06
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-729.57	1.16	0.24	0.35
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-95.36	0.27	0.02	0.03
0	P249	J168	J122	563.66	12	130	-95.36	0.27	0.02	0.03
0	P25	J30	J32	1,229.93	16	130	-818.41	1.31	0.53	0.43
0	P251	J168	V8028	209.52	12	130	0	0	0	0

0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	521.84	1.48	0.47	0.76
0	P283	J182	J74	589.22	12	130	521.84	1.48	0.45	0.76
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,167.02	2.21	2.05	0.88
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	38.09	0.24	0.01	0.04
0	P301	J188	J190	664.92	8	130	38.09	0.24	0.03	0.04
0	P303	J56	J194	178.12	8	130	-38.09	0.24	0.01	0.04
0	P305	J194	J192	667.8	8	130	-38.09	0.24	0.03	0.04
0	P307	J192	J190	657.08	8	130	-38.09	0.24	0.03	0.04
0	P309	J72	J196	736.36	12	130	351.62	1	0.27	0.37
0	P311	J196	J70	609.66	12	130	351.62	1	0.22	0.37
0	P313	J40	J198	1,129.17	12	130	40.05	0.11	0.01	0.01
0	P315	J198	J42	1,043.66	12	130	40.05	0.11	0.01	0.01
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-30.01	0.09	0	0
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	358.8	1.02	0.5	0.38
0	P365	J222	J220	621.17	12	130	258	0.73	0.13	0.21
0	P367	J220	J44	1,095.19	12	130	156.12	0.44	0.09	0.08
0	P37	J26	J46	1,141.00	12	130	182.37	0.52	0.12	0.11
0	P379	J76	J224	678.87	12	130	-485.26	1.38	0.45	0.66
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	119.65	0.34	0.04	0.05
0	P393	J226	J36	1,733.97	20	130	2,167.02	2.21	1.53	0.88
0	P395	J96	J224	650.52	12	130	485.26	1.38	0.43	0.66
0	P399	J232	J230	2,608.50	18	130	3,721.22	4.69	10.46	4.01
0	P401	J230	J304	2,813.67	18	130	3,721.22	4.69	11.28	4.01
0	P403	J232	J228	7,230.92	16	130	2,167.02	3.46	18.9	2.61
0	P405	J228	J226	5,520.22	16	130	2,167.02	3.46	14.43	2.61
0	P41	J44	J42	1,067.11	12	130	88.29	0.25	0.03	0.03
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0

0	P421	J240	J236	955.52	36	130	12,391.83	3.91	1.21	1.27
0	P423	J236	J238	5,398.38	24	130	7,535.97	5.34	19.69	3.65
0	P425	J238	J246	9,066.36	24	130	5,108.04	3.62	16.1	1.78
0	P427	J246	J244	5,073.87	24	130	2,680.11	1.9	2.73	0.54
0	P429	J240	J242	7,163.69	16	130	3,208.13	5.12	38.73	5.41
0	P43	J42	J48	1,096.37	12	130	-147.43	0.42	0.08	0.07
0	P431	J242	J232	213.31	16	130	3,208.13	5.12	1.15	5.41
0	P433	J244	J232	281.24	24	130	2,680.11	1.9	0.15	0.54
0	P439	RES9010	J310	68.78	1,100.00	130	15,599.96	0.01	0	0
0	P441	J310	J308	18	36	130	15,599.96	4.92	1.27	70.77
0	P443	J308	J298	106.2	36	130	15,599.96	4.92	0.66	6.19
0	P445	J298	J296	55.4	36	130	15,599.96	4.92	1.08	19.57
0	P447	J296	J294	78.5	36	130	15,599.96	4.92	0.3	3.86
0	P449	J294	J292	19	30	130	10,404.31	4.72	0.24	12.44
0	P45	J48	J50	1,194.62	12	130	-300.67	0.85	0.33	0.27
0	P451	J292	J290	9.2	30	130	7,810.63	3.55	0.09	9.8
0	P453	J290	J288	9.2	30	130	5,210.44	2.36	0.04	4.4
0	P455	J288	J286	9.2	30	130	2,608.55	1.18	0.01	1.12
0	P461	J282	J280	9.2	30	130	2,601.23	1.18	0.01	1.11
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,593.68	3.27	0.54	26.23
0	P469	J290	U7004	20.6	18	130	2,600.19	3.28	0.54	26.37
0	P47	J50	J52	765.09	12	130	-453.83	1.29	0.45	0.59
0	P473	J288	U7006	20.6	18	130	2,601.90	3.28	0.54	26.4
0	P477	J286	U7008	20.6	18	130	2,608.55	3.29	0.55	26.53
0	P481	J282	U7010	12.1	18	130	2,594.42	3.27	0.52	43.24
0	P485	J280	U7012	12.1	18	130	2,601.23	3.28	0.53	43.47
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	631.3	1.01	0.39	0.27
0	P493	J276	J274	4.9	16	130	2,593.68	4.14	0.12	25.36
0	P495	J274	J272	4.2	16	130	5,188.10	8.28	0.65	155.04
0	P497	J272	J270	4.7	30	130	7,788.29	3.54	0.08	17.82
0	P499	J270	J268	4.7	30	130	10,389.52	4.72	0.15	31.61
0	P501	J268	J266	4.7	30	130	12,991.42	5.9	0.23	49.32
0	P503	J266	J264	4.7	30	130	12,991.42	5.9	0.23	49.32
0	P505	J264	J262	60.6	30	130	15,599.96	7.08	3.68	60.74
0	P507	J262	J260	20.3	36	130	15,599.96	4.92	0.11	5.65
0	P509	J260	J252	30.38	36	130	15,599.96	4.92	0.13	4.42
0	P51	J34	J66	1,373.58	12	130	450.08	1.28	0.79	0.58
0	P511	J252	J240	90.5	36	130	15,599.96	4.92	0.85	9.41
0	P513	J294	J312	36.2	30	130	5,195.65	2.36	0.26	7.3
0	P515	J312	J282	31.2	30	130	5,195.65	2.36	0.04	1.17
0	P517	U7002	J328	15	12	130	2,593.68	7.36	6.04	402.57
0	P519	J328	J276	9.1	14	130	2,593.68	5.41	7.55	829.62
0	P521	U7004	J330	15	12	130	2,600.19	7.38	6.07	404.59
0	P523	J330	J272	9.1	14	130	2,600.19	5.42	7.59	833.79
0	P525	U7006	J332	15	12	130	2,601.90	7.38	6.08	405.12
0	P527	J332	J268	9.1	14	130	2,601.90	5.42	7.6	834.88
0	P529	U7008	J334	15	12	130	2,608.55	7.4	6.11	407.19
0	P53	J66	J64	862.35	12	130	440.9	1.25	0.48	0.56
0	P531	J334	J264	9.1	14	130	2,608.55	5.44	7.64	839.15
0	P533	U7010	J336	15	12	130	2,594.42	7.36	6.04	402.8
0	P535	J336	J274	9.1	14	130	2,594.42	5.41	7.55	830.09
0	P537	U7012	J338	15	12	130	2,601.23	7.38	6.07	404.91
0	P539	J338	J270	9.1	14	130	2,601.23	5.42	7.59	834.45
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-106.63	0.3	0.04	0.04
0	P57	J62	J60	691.6	16	130	549.7	0.88	0.14	0.21
0	P59	J64	J58	1,424.22	12	130	194.67	0.55	0.17	0.12
0	P61	J60	J56	890.62	16	130	82.98	0.13	0.01	0.01

0	P67	J56	J52	1,036.48	16	130	-377.81	0.6	0.11	0.1
0	P69	J52	J54	1,131.15	12	130	153.77	0.44	0.09	0.08
0	P71	J58	J54	591.64	12	130	-1.21	0	0	0
0	P73	J40	J68	1,551.82	12	130	-346.45	0.98	0.55	0.36
0	P75	J68	J70	838.54	12	130	-166.3	0.47	0.08	0.09
0	P79	J72	J74	1,086.50	12	130	-312.68	0.89	0.32	0.29
0	P83	J76	J78	765.46	12	130	-222.38	0.63	0.12	0.16
0	P89	J52	J82	771.55	16	130	-1,328.53	2.12	0.82	1.06
0	P91	J82	J78	774.7	16	130	-1,328.53	2.12	0.82	1.06
0	P93	J68	J84	890.35	12	130	-270.43	0.77	0.2	0.22
0	P95	J84	J86	1,204.21	12	130	-317.83	0.9	0.37	0.3
0	P97	J86	J88	946.69	12	130	-416.07	1.18	0.47	0.5
0	P99	J88	J90	874.98	16	130	-500.15	0.8	0.15	0.17

Run EB4

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	224.26	44.31
0	J102	0	125.5	225.2	43.2
0	J104	9.32	129.8	226.32	41.82
0	J122	75.78	117.5	222.72	45.59
0	J124	66.76	119.5	222.75	44.74
0	J126	0	130	224.59	40.98
0	J128	0	133	224.25	39.54
0	J130	0	134	224.47	39.2
0	J132	0	131	224.11	40.35
0	J134	0	131	224.11	40.35
0	J136	0	131	224.11	40.35
0	J138	0	122	211.73	38.88
0	J140	0	122	211.73	38.88
0	J146	2,000.00	132	203.34	30.91
0	J148	2,000.00	132	203.34	30.91
0	J150	0	118	211.83	40.66
0	J152	0	118	211.83	40.66
0	J154	0	90.3	222.84	57.43
0	J156	0	115.5	234.56	51.59
0	J158	0	115.5	234.56	51.59
0	J160	0	128	236.13	46.85
0	J162	0	128	236.13	46.85
0	J164	0	98	234.38	59.09
0	J166	0	98	234.38	59.09
0	J168	0	115.25	222.72	46.57
0	J170	0	120	234.08	49.43
0	J172	0	120	234.08	49.43
0	J174	0	123	234.42	48.28
0	J176	0	123	234.42	48.28
0	J178	0	94	234.32	60.8
0	J180	0	94	234.32	60.8
0	J182	0	118	222.97	45.48
0	J184	0	118	234.9	50.65
0	J186	0	118	234.9	50.65
0	J188	0	126	222.57	41.84
0	J190	0	126	222.57	41.84
0	J192	0	126	222.57	41.84
0	J194	0	126	222.57	41.84
0	J196	0	99.75	222.82	53.33
0	J198	0	95.5	222.55	55.05
0	J20	44.06	90.4	222.89	57.41
0	J206	0	100	234.36	58.22
0	J208	0	100	234.36	58.22
0	J210	0	102	210.92	47.2
0	J212	0	102	210.92	47.2

0	J214	0	102	210.92	47.2
0	J216	0	100	234.69	58.36
0	J218	0	100	234.69	58.36
0	J22	41.86	118.5	222.94	45.26
0	J220	50.94	116	222.54	46.16
0	J222	50.4	119.1	222.54	44.82
0	J224	0	118	223.36	45.65
0	J226	0	130	229.52	43.12
0	J228	0	116	247.1	56.81
0	J230	0	147	255.05	46.82
0	J232	0	148	270.13	52.92
0	J236	2,427.93	166	306.06	60.69
0	J238	1,213.97	181	291.88	48.04
0	J240	0	164	306.7	61.83
0	J242	0	148	271.19	53.38
0	J244	0	148	270.43	53.05
0	J246	1,213.97	146	275.85	56.26
0	J252	0	164.3	307.19	61.91
0	J26	88.2	115.5	223.02	46.59
0	J260	0	164.48	307.27	61.87
0	J262	0	164.48	307.33	61.9
0	J264	0	167.47	309.44	61.52
0	J266	0	167.47	309.59	61.58
0	J268	0	167.47	309.74	61.65
0	J270	0	167.47	309.83	61.68
0	J272	0	167.47	309.91	61.72
0	J274	0	167.47	310.57	62.01
0	J276	0	167.47	310.7	62.06
0	J278	0	164.48	169.45	2.15
0	J28	34.78	118.6	223.37	45.4
0	J280	0	164.48	169.45	2.15
0	J282	0	164.48	169.45	2.15
0	J286	0	164.48	169.25	2.07
0	J288	0	164.48	169.26	2.07
0	J290	0	164.48	169.28	2.08
0	J292	0	164.48	169.34	2.11
0	J294	0	164.48	169.53	2.19
0	J296	0	164.57	169.71	2.23
0	J298	0	164.22	170.33	2.65
0	J30	44.42	122.2	223.6	43.94
0	J300	0	127.5	230.46	44.61
0	J302	0	128	230.97	44.62
0	J304	0	142	238.79	41.94
0	J308	0	163	170.71	3.34
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.46	2.16
0	J32	93.48	126	224.07	42.49
0	J328	0	167.47	318.31	65.36
0	J330	0	167.47	317.56	65.03
0	J332	0	167.47	317.4	64.96
0	J334	0	167.47	311.54	62.43
0	J336	0	167.47	318.19	65.31
0	J338	0	167.47	309.83	61.68
0	J34	0	134	225.16	39.5
0	J340	0	167.47	309.59	61.58
0	J36	0	137	227.66	39.28
0	J38	79.7	90.2	222.71	57.42
0	J40	138.2	90	222.64	57.47
0	J42	137.88	101	222.46	52.63
0	J44	93.74	111	222.54	48.33
0	J46	79.04	113	222.71	47.54

0	J48	76.62	114.7	222.37	46.65
0	J50	76.58	120	222.34	44.34
0	J52	152.52	126	222.34	41.74
0	J54	76.28	127.6	222.51	41.13
0	J56	70.04	121.9	222.57	43.62
0	J58	97.94	126	222.67	41.89
0	J60	43.14	124.5	222.88	42.63
0	J62	94.12	122	223.27	43.88
0	J64	69.8	127	223.32	41.74
0	J66	44.72	130.5	224.11	40.56
0	J68	45.14	88	222.77	58.4
0	J70	92.66	97.5	222.78	54.28
0	J72	105.24	102	222.88	52.38
0	J74	104.58	108	222.9	49.79
0	J76	92.9	128	223.04	41.18
0	J78	160.7	126	223	42.03
0	J82	0	126.4	222.12	41.48
0	J84	23.7	76	222.84	63.62
0	J86	49.12	78	222.96	62.81
0	J88	42.04	88.4	223.11	58.37
0	J90	52.46	104	223.15	51.63
0	J92	53.12	98	222.96	54.14
0	J94	50.48	107	223.38	50.43
0	J96	40.96	116	223.67	46.65

	ID	Flow (gpm)	Head (ft)
0	RES9010	-11,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.5	73.92	2,604.19	155.59	Open	1	48.13	0
0	U7004	153.8	6.47	73.61	2,610.57	154.95	Open	1	48.07	0
0	U7006	153.8	6.46	73.54	2,611.87	154.81	Open	1	48.04	0
0	U7008	153.8	6.63	69.08	1,366.93	144.12	Open	1	48.4	0
0	U7010	153.8	6.55	73.87	2,606.43	155.37	Open	1	48.26	0
0	U7012	153.8	6.78	67.61	0	0	Closed	0	0	0
0	U7014	153.8	6.78	67.51	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	43.88	38.88	0	0	11.54	Open	5
0	V8002	8	122	44.02	38.88	0	0	0	Closed	5
0	V8008	10	132	39	35.23	1,975.42	8.07	8.69	Open	2
0	V8010	10	132	38.18	34.33	2,024.58	8.27	8.89	Open	2
0	V8012	8	118	45.51	40.66	0	0	0	Closed	5
0	V8014	8	118	45.66	40.66	0	0	11.54	Open	5
0	V8016	8	115.5	46.59	51.59	0	0	11.54	Open	5
0	V8018	8	115.5	46.56	51.59	0	0	0	Closed	5
0	V8020	8	128	41.85	46.85	0	0	11.54	Open	5
0	V8022	8	128	41.63	46.85	0	0	0	Closed	5
0	V8024	8	98	54.04	59.09	0	0	0	Closed	5
0	V8026	8	98	54.09	59.09	0	0	11.54	Open	5
0	V8028	10	120	44.51	49.43	0	0	0	Closed	2
0	V8032	8	123	43.28	48.28	0	0	11.54	Open	5
0	V8034	8	123	43.45	48.28	0	0	0	Closed	5
0	V8036	8	94	55.83	60.8	0	0	0	Closed	5
0	V8038	8	94	55.8	60.8	0	0	11.54	Open	5
0	V8042	10	118	45.65	50.65	0	0	11.54	Open	2
0	V8044	10	118	45.48	50.65	0	0	0	Closed	2
0	V8052	10	100	53.2	58.22	0	0	0	Closed	2
0	V8054	10	100	53.22	58.22	0	0	11.54	Open	2
0	V8056	8	102	52.2	47.2	0	0	11.54	Open	5
0	V8058	8	102	52.23	47.2	0	0	0	Closed	5

0	V8060	8	100	53.34	58.36	0	0	0	Closed	5
0	V8062	8	100	53.36	58.36	0	0	11.54	Open	5
0	V8070	10	120	44.43	49.43	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-171.23	0.49	0.08	0.1
0	P103	J92	J90	1,241.83	12	130	-224.35	0.64	0.2	0.16
0	P105	J90	J94	1,132.34	16	130	-541.96	0.86	0.23	0.2
0	P107	J94	J96	1,204.53	16	130	-592.44	0.95	0.29	0.24
0	P111	J78	J100	1,067.79	16	130	-1,411.07	2.25	1.26	1.18
0	P115	J96	J100	886.7	16	130	-1,037.00	1.65	0.59	0.67
0	P117	J100	J102	789.56	20	130	-2,548.77	2.6	0.94	1.19
0	P119	J102	J104	941.88	20	130	-2,548.77	2.6	1.12	1.19
0	P121	J104	J300	1,197.93	20	130	-4,533.50	4.63	4.14	3.46
0	P123	J300	J302	147.08	20	130	-4,533.50	4.63	0.51	3.46
0	P125	J302	J304	2,260.56	20	130	-4,533.50	4.63	7.82	3.46
0	P139	J122	J124	627.68	12	130	-112.3	0.32	0.03	0.04
0	P141	J124	J60	1,242.80	12	130	-179.06	0.51	0.13	0.1
0	P145	J34	J126	846.23	20	130	1,886.98	1.93	0.58	0.68
0	P149	J66	J128	522.48	8	130	-100.06	0.64	0.13	0.26
0	P155	J126	J130	441.09	8	130	100.06	0.64	0.11	0.26
0	P157	J128	J130	886.05	8	130	-100.06	0.64	0.23	0.26
0	P159	J126	J32	843.52	20	130	1,786.92	1.82	0.52	0.62
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-258.23	0.41	0.06	0.05
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-300.09	0.48	0.08	0.07
0	P193	J104	V8008	482.89	12	130	1,975.42	5.6	4.32	8.94
0	P195	J82	V8010	213.6	12	130	2,024.58	5.74	2	9.36
0	P197	V8010	J146	842.68	12	130	2,024.58	5.74	7.89	9.36
0	P199	J146	J148	514.03	12	130	24.58	0.07	0	0
0	P201	V8008	J148	1,114.81	12	130	1,975.42	5.6	9.97	8.94
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-685.75	1.09	0.35	0.31
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	214.17	0.61	0.05	0.15
0	P215	J154	J38	842.54	12	130	214.17	0.61	0.12	0.15
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-720.53	1.15	0.23	0.34
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0

0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-36.52	0.1	0	0.01
0	P249	J168	J122	563.66	12	130	-36.52	0.1	0	0.01
0	P25	J30	J32	1,229.93	16	130	-764.95	1.22	0.47	0.38
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	185.37	0.53	0.07	0.11
0	P283	J182	J74	589.22	12	130	185.37	0.53	0.07	0.11
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,410.62	2.46	2.5	1.07
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	146.78	0.42	0.05	0.07
0	P311	J196	J70	609.66	12	130	146.78	0.42	0.04	0.07
0	P313	J40	J198	1,129.17	12	130	155.54	0.44	0.09	0.08
0	P315	J198	J42	1,043.66	12	130	155.54	0.44	0.08	0.08
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	134.47	0.38	0.07	0.06
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	82.56	0.23	0.03	0.02
0	P365	J222	J220	621.17	12	130	32.16	0.09	0	0
0	P367	J220	J44	1,095.19	12	130	-18.78	0.05	0	0
0	P37	J26	J46	1,141.00	12	130	297.46	0.84	0.31	0.27
0	P379	J76	J224	678.87	12	130	-403.6	1.14	0.32	0.47
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	254.94	0.72	0.18	0.2
0	P393	J226	J36	1,733.97	20	130	2,410.62	2.46	1.86	1.07
0	P395	J96	J224	650.52	12	130	403.6	1.14	0.31	0.47
0	P399	J232	J230	2,608.50	18	130	4,533.50	5.72	15.08	5.78

0	P401	J230	J304	2,813.67	18	130	4,533.50	5.72	16.26	5.78
0	P403	J232	J228	7,230.92	16	130	2,410.62	3.85	23.03	3.18
0	P405	J228	J226	5,520.22	16	130	2,410.62	3.85	17.58	3.18
0	P41	J44	J42	1,067.11	12	130	142.42	0.4	0.07	0.07
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,738.80	2.75	0.64	0.67
0	P423	J236	J238	5,398.38	24	130	6,310.87	4.48	14.18	2.63
0	P425	J238	J246	9,066.36	24	130	5,096.90	3.61	16.03	1.77
0	P427	J246	J244	5,073.87	24	130	3,882.93	2.75	5.42	1.07
0	P429	J240	J242	7,163.69	16	130	3,061.20	4.88	35.51	4.96
0	P43	J42	J48	1,096.37	12	130	160.08	0.45	0.09	0.09
0	P431	J242	J232	213.31	16	130	3,061.20	4.88	1.06	4.96
0	P433	J244	J232	281.24	24	130	3,882.93	2.75	0.3	1.07
0	P439	RES9010	J310	68.78	1,100.00	130	11,799.99	0	0	0
0	P441	J310	J308	18	36	130	11,799.99	3.72	0.73	40.54
0	P443	J308	J298	106.2	36	130	11,799.99	3.72	0.38	3.59
0	P445	J298	J296	55.4	36	130	11,799.99	3.72	0.62	11.24
0	P447	J296	J294	78.5	36	130	11,799.99	3.72	0.18	2.26
0	P449	J294	J292	19	30	130	9,193.57	4.17	0.19	9.75
0	P45	J48	J50	1,194.62	12	130	83.46	0.24	0.03	0.03
0	P451	J292	J290	9.2	30	130	6,589.37	2.99	0.06	7
0	P453	J290	J288	9.2	30	130	3,978.80	1.81	0.02	2.58
0	P455	J288	J286	9.2	30	130	1,366.93	0.62	0	0.31
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,604.19	3.28	0.54	26.45
0	P469	J290	U7004	20.6	18	130	2,610.57	3.29	0.55	26.57
0	P47	J50	J52	765.09	12	130	6.88	0.02	0	0
0	P473	J288	U7006	20.6	18	130	2,611.87	3.29	0.55	26.6
0	P477	J286	U7008	20.6	18	130	1,366.93	1.72	0.15	7.34
0	P481	J282	U7010	12.1	18	130	2,606.43	3.29	0.53	43.64
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	928.49	1.48	0.8	0.54
0	P493	J276	J274	4.9	16	130	2,604.19	4.16	0.13	25.56
0	P495	J274	J272	4.2	16	130	5,210.62	8.31	0.66	156.39
0	P497	J272	J270	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P499	J270	J268	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P501	J268	J266	4.7	30	130	10,433.06	4.74	0.15	31.87
0	P503	J266	J264	4.7	30	130	10,433.06	4.74	0.15	31.88
0	P505	J264	J262	60.6	30	130	11,799.99	5.36	2.11	34.87
0	P507	J262	J260	20.3	36	130	11,799.99	3.72	0.07	3.28
0	P509	J260	J252	30.38	36	130	11,799.99	3.72	0.08	2.58
0	P51	J34	J66	1,373.58	12	130	523.64	1.49	1.05	0.76
0	P511	J252	J240	90.5	36	130	11,799.99	3.72	0.49	5.43
0	P513	J294	J312	36.2	30	130	2,606.43	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,606.43	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,604.19	7.39	6.09	405.83
0	P519	J328	J276	9.1	14	130	2,604.19	5.43	7.61	836.36
0	P521	U7004	J330	15	12	130	2,610.57	7.41	6.12	407.82
0	P523	J330	J272	9.1	14	130	2,610.57	5.44	7.65	840.46
0	P525	U7006	J332	15	12	130	2,611.87	7.41	6.12	408.22
0	P527	J332	J268	9.1	14	130	2,611.87	5.44	7.66	841.29
0	P529	U7008	J334	15	12	130	1,366.93	3.88	1.68	112.22
0	P53	J66	J64	862.35	12	130	578.98	1.64	0.79	0.92
0	P531	J334	J264	9.1	14	130	1,366.93	2.85	2.1	230.63
0	P533	U7010	J336	15	12	130	2,606.43	7.39	6.1	406.53
0	P535	J336	J274	9.1	14	130	2,606.43	5.43	7.62	837.79
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0

0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-114.16	0.32	0.05	0.05
0	P57	J62	J60	691.6	16	130	948.54	1.51	0.39	0.57
0	P59	J64	J58	1,424.22	12	130	395.02	1.12	0.65	0.45
0	P61	J60	J56	890.62	16	130	726.34	1.16	0.31	0.35
0	P67	J56	J52	1,036.48	16	130	573.73	0.92	0.23	0.22
0	P69	J52	J54	1,131.15	12	130	-220.8	0.63	0.17	0.15
0	P71	J58	J54	591.64	12	130	297.08	0.84	0.16	0.27
0	P73	J40	J68	1,551.82	12	130	-159.27	0.45	0.13	0.08
0	P75	J68	J70	838.54	12	130	-54.12	0.15	0.01	0.01
0	P79	J72	J74	1,086.50	12	130	-80.79	0.23	0.03	0.02
0	P83	J76	J78	765.46	12	130	125.33	0.36	0.04	0.05
0	P89	J52	J82	771.55	16	130	648.89	1.04	0.22	0.28
0	P91	J82	J78	774.7	16	130	-1,375.69	2.2	0.87	1.13
0	P93	J68	J84	890.35	12	130	-150.29	0.43	0.07	0.08
0	P95	J84	J86	1,204.21	12	130	-173.99	0.49	0.12	0.1
0	P97	J86	J88	946.69	12	130	-223.11	0.63	0.15	0.16
0	P99	J88	J90	874.98	16	130	-265.15	0.42	0.05	0.05

Run EB5

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	221.86	43.27
0	J102	0	125.5	224.5	42.9
0	J104	9.32	129.8	227.65	42.4
0	J122	75.78	117.5	219.88	44.36
0	J124	66.76	119.5	219.96	43.53
0	J126	0	130	221.92	39.83
0	J128	0	133	221.61	38.39
0	J130	0	134	221.82	38.05
0	J132	0	131	221.49	39.21
0	J134	0	131	221.49	39.21
0	J136	0	131	221.49	39.21
0	J138	0	122	209.08	37.73
0	J140	0	122	209.08	37.73
0	J146	0	132	216.11	36.44
0	J148	0	132	216.11	36.44
0	J150	0	118	231.99	49.39
0	J152	0	118	231.99	49.39
0	J154	0	90.3	219.45	55.96
0	J156	0	115.5	231.53	50.27
0	J158	0	115.5	231.53	50.27
0	J160	0	128	233.46	45.7
0	J162	0	128	233.46	45.7
0	J164	0	98	230.99	57.63
0	J166	0	98	230.99	57.63
0	J168	0	115.25	219.85	45.32
0	J170	0	120	208.16	38.2
0	J172	0	120	208.16	38.2
0	J174	0	123	208.69	37.13
0	J176	0	123	208.69	37.13
0	J178	0	94	228.29	58.19
0	J180	0	94	228.29	58.19
0	J182	0	118	212.84	41.09
0	J184	2,000.00	118	200.27	35.65
0	J186	2,000.00	118	200.27	35.65
0	J188	0	126	219.99	40.73
0	J190	0	126	219.99	40.73
0	J192	0	126	219.99	40.73
0	J194	0	126	219.99	40.73
0	J196	0	99.75	216.38	50.53

0	J198	0	95.5	219.01	53.52
0	J20	44.06	90.4	219.63	55.99
0	J206	0	100	227.92	55.43
0	J208	0	100	227.92	55.43
0	J210	0	102	230.89	55.85
0	J212	0	102	230.89	55.85
0	J214	0	102	230.89	55.85
0	J216	0	100	229.18	55.97
0	J218	0	100	229.18	55.97
0	J22	41.86	118.5	219.79	43.89
0	J220	50.94	116	219.7	44.93
0	J222	50.4	119.1	219.77	43.62
0	J224	0	118	214.55	41.83
0	J226	0	130	227.16	42.1
0	J228	0	116	245.76	56.23
0	J230	0	147	255.51	47.02
0	J232	0	148	270.13	52.92
0	J236	2,427.93	166	306.06	60.69
0	J238	1,213.97	181	291.88	48.04
0	J240	0	164	306.7	61.83
0	J242	0	148	271.19	53.38
0	J244	0	148	270.43	53.05
0	J246	1,213.97	146	275.85	56.26
0	J252	0	164.3	307.19	61.91
0	J26	88.2	115.5	219.99	45.27
0	J260	0	164.48	307.27	61.87
0	J262	0	164.48	307.33	61.9
0	J264	0	167.47	309.44	61.52
0	J266	0	167.47	309.59	61.58
0	J268	0	167.47	309.74	61.65
0	J270	0	167.47	309.83	61.68
0	J272	0	167.47	309.91	61.72
0	J274	0	167.47	310.57	62.01
0	J276	0	167.47	310.7	62.06
0	J278	0	164.48	169.45	2.15
0	J28	34.78	118.6	220.45	44.13
0	J280	0	164.48	169.45	2.15
0	J282	0	164.48	169.45	2.15
0	J286	0	164.48	169.25	2.07
0	J288	0	164.48	169.26	2.07
0	J290	0	164.48	169.28	2.08
0	J292	0	164.48	169.34	2.11
0	J294	0	164.48	169.53	2.19
0	J296	0	164.57	169.71	2.23
0	J298	0	164.22	170.33	2.65
0	J30	44.42	122.2	220.75	42.7
0	J300	0	127.5	231.67	45.14
0	J302	0	128	232.16	45.13
0	J304	0	142	239.74	42.35
0	J308	0	163	170.71	3.34
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.46	2.16
0	J32	93.48	126	221.36	41.32
0	J328	0	167.47	318.31	65.36
0	J330	0	167.47	317.56	65.03
0	J332	0	167.47	317.4	64.96
0	J334	0	167.47	311.54	62.43
0	J336	0	167.47	318.19	65.31
0	J338	0	167.47	309.83	61.68
0	J34	0	134	222.54	38.37
0	J340	0	167.47	309.59	61.58

0	J36	0	137	225.19	38.21
0	J38	79.7	90.2	219.04	55.83
0	J40	138.2	90	218.65	55.74
0	J42	137.88	101	219.35	51.28
0	J44	93.74	111	219.64	47.07
0	J46	79.04	113	219.82	46.29
0	J48	76.62	114.7	219.45	45.39
0	J50	76.58	120	219.67	43.19
0	J52	152.52	126	219.91	40.69
0	J54	76.28	127.6	220.04	40.05
0	J56	70.04	121.9	219.99	42.5
0	J58	97.94	126	220.16	40.8
0	J60	43.14	124.5	220.23	41.48
0	J62	94.12	122	220.62	42.73
0	J64	69.8	127	220.7	40.6
0	J66	44.72	130.5	221.49	39.42
0	J68	45.14	88	217.47	56.1
0	J70	92.66	97.5	216.75	51.67
0	J72	105.24	102	215.92	49.36
0	J74	104.58	108	213.76	45.83
0	J76	92.9	128	214.89	37.65
0	J78	160.7	126	219.91	40.69
0	J82	0	126.4	219.91	40.52
0	J84	23.7	76	217.49	61.31
0	J86	49.12	78	217.54	60.46
0	J88	42.04	88.4	217.62	55.99
0	J90	52.46	104	217.64	49.24
0	J92	53.12	98	216.53	51.36
0	J94	50.48	107	218.13	48.15
0	J96	40.96	116	218.71	44.5

	ID	Flow (gpm)	Head (ft)
0	RES9010	-11,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.5	73.92	2,604.19	155.59	Open	1	48.13	0
0	U7004	153.8	6.47	73.61	2,610.57	154.95	Open	1	48.07	0
0	U7006	153.8	6.46	73.54	2,611.86	154.82	Open	1	48.04	0
0	U7008	153.8	6.63	69.08	1,366.93	144.12	Open	1	48.4	0
0	U7010	153.8	6.55	73.87	2,606.43	155.37	Open	1	48.26	0
0	U7012	153.8	6.78	67.61	0	0	Closed	0	0	0
0	U7014	153.8	6.78	67.51	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	42.73	37.73	0	0	11.54	Open	5
0	V8002	8	122	42.79	37.73	0	0	0	Closed	5
0	V8008	10	132	41.45	36.44	0	0	11.54	Open	2
0	V8010	10	132	38.09	36.44	0	0	0	Closed	2
0	V8012	8	118	44.19	49.39	0	0	0	Closed	5
0	V8014	8	118	44.39	49.39	0	0	11.54	Open	5
0	V8016	8	115.5	45.27	50.27	0	0	11.54	Open	5
0	V8018	8	115.5	45.19	50.27	0	0	0	Closed	5
0	V8020	8	128	40.7	45.7	0	0	11.54	Open	5
0	V8022	8	128	40.45	45.7	0	0	0	Closed	5
0	V8024	8	98	52.45	57.63	0	0	0	Closed	5
0	V8026	8	98	52.63	57.63	0	0	11.54	Open	5
0	V8028	10	120	43.26	38.2	0	0	0	Closed	2
0	V8032	8	123	42.13	37.13	0	0	11.54	Open	5
0	V8034	8	123	42.3	37.13	0	0	0	Closed	5
0	V8036	8	94	53.51	58.19	0	0	0	Closed	5
0	V8038	8	94	53.19	58.19	0	0	11.54	Open	5

0	V8042	10	118	41.16	37.22	2,066.51	8.44	9.11	Open	2
0	V8044	10	118	40.25	36.54	1,933.49	7.9	8.55	Open	2
0	V8052	10	100	50.59	55.43	0	0	0	Closed	2
0	V8054	10	100	50.43	55.43	0	0	11.54	Open	2
0	V8056	8	102	50.85	55.85	0	0	11.54	Open	5
0	V8058	8	102	50.7	55.85	0	0	0	Closed	5
0	V8060	8	100	50.96	55.97	0	0	0	Closed	5
0	V8062	8	100	50.97	55.97	0	0	11.54	Open	5
0	V8070	10	120	43.2	38.2	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-517.27	1.47	0.61	0.75
0	P103	J92	J90	1,241.83	12	130	-570.39	1.62	1.11	0.9
0	P105	J90	J94	1,132.34	16	130	-818.83	1.31	0.49	0.43
0	P107	J94	J96	1,204.53	16	130	-869.31	1.39	0.58	0.48
0	P111	J78	J100	1,067.79	16	130	-1,789.14	2.85	1.96	1.83
0	P115	J96	J100	886.7	16	130	-2,559.46	4.08	3.15	3.56
0	P117	J100	J102	789.56	20	130	-4,449.30	4.54	2.64	3.34
0	P119	J102	J104	941.88	20	130	-4,449.30	4.54	3.15	3.34
0	P121	J104	J300	1,197.93	20	130	-4,458.62	4.55	4.02	3.35
0	P123	J300	J302	147.08	20	130	-4,458.62	4.55	0.49	3.35
0	P125	J302	J304	2,260.56	20	130	-4,458.62	4.55	7.58	3.35
0	P139	J122	J124	627.68	12	130	-200.35	0.57	0.08	0.13
0	P141	J124	J60	1,242.80	12	130	-267.11	0.76	0.27	0.22
0	P145	J34	J126	846.23	20	130	1,960.48	2	0.62	0.73
0	P149	J66	J128	522.48	8	130	-95.6	0.61	0.12	0.24
0	P155	J126	J130	441.09	8	130	95.6	0.61	0.1	0.24
0	P157	J128	J130	886.05	8	130	-95.6	0.61	0.21	0.24
0	P159	J126	J32	843.52	20	130	1,864.88	1.9	0.56	0.67
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-456.22	0.73	0.17	0.15
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-498.08	0.79	0.2	0.17
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-800.81	1.28	0.46	0.41
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	412.16	1.17	0.17	0.49
0	P215	J154	J38	842.54	12	130	412.16	1.17	0.41	0.49
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-835.59	1.33	0.3	0.45

0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-124.57	0.35	0.03	0.05
0	P249	J168	J122	563.66	12	130	-124.57	0.35	0.03	0.05
0	P25	J30	J32	1,229.93	16	130	-880.01	1.4	0.61	0.49
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	1,160.75	3.29	2.05	3.34
0	P283	J182	J74	589.22	12	130	-772.74	2.19	0.93	1.57
0	P287	V8042	J184	372.65	12	130	2,066.51	5.86	3.62	9.72
0	P289	J184	J186	299.52	12	130	66.51	0.19	0.01	0.02
0	P29	J34	J36	2,325.70	20	130	-2,485.51	2.54	2.64	1.14
0	P295	J182	V8044	226.67	12	130	1,933.49	5.48	1.95	8.59
0	P297	V8044	J186	240.53	12	130	1,933.49	5.48	2.07	8.59
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	-465.29	1.32	0.45	0.61
0	P311	J196	J70	609.66	12	130	-465.29	1.32	0.37	0.61
0	P313	J40	J198	1,129.17	12	130	-327.71	0.93	0.36	0.32
0	P315	J198	J42	1,043.66	12	130	-327.71	0.93	0.34	0.32
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	332.46	0.94	0.39	0.33
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	232.85	0.66	0.23	0.17
0	P365	J222	J220	621.17	12	130	182.45	0.52	0.07	0.11
0	P367	J220	J44	1,095.19	12	130	131.51	0.37	0.06	0.06
0	P37	J26	J46	1,141.00	12	130	214.53	0.61	0.17	0.15

0	P379	J76	J224	678.87	12	130	417.32	1.18	0.34	0.5
0	P381	J224	V8042	158.85	12	130	2,066.51	5.86	1.54	9.72
0	P39	J46	J44	879.87	12	130	260.05	0.74	0.18	0.21
0	P393	J226	J36	1,733.97	20	130	2,485.51	2.54	1.97	1.14
0	P395	J96	J224	650.52	12	130	1,649.19	4.68	4.16	6.4
0	P399	J232	J230	2,608.50	18	130	4,458.62	5.62	14.62	5.6
0	P401	J230	J304	2,813.67	18	130	4,458.62	5.62	15.77	5.6
0	P403	J232	J228	7,230.92	16	130	2,485.51	3.97	24.37	3.37
0	P405	J228	J226	5,520.22	16	130	2,485.51	3.97	18.6	3.37
0	P41	J44	J42	1,067.11	12	130	297.83	0.84	0.29	0.27
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,738.80	2.75	0.64	0.67
0	P423	J236	J238	5,398.38	24	130	6,310.87	4.48	14.18	2.63
0	P425	J238	J246	9,066.36	24	130	5,096.90	3.61	16.03	1.77
0	P427	J246	J244	5,073.87	24	130	3,882.93	2.75	5.42	1.07
0	P429	J240	J242	7,163.69	16	130	3,061.20	4.88	35.51	4.96
0	P43	J42	J48	1,096.37	12	130	-167.77	0.48	0.1	0.09
0	P431	J242	J232	213.31	16	130	3,061.20	4.88	1.06	4.96
0	P433	J244	J232	281.24	24	130	3,882.93	2.75	0.3	1.07
0	P439	RES9010	J310	68.78	1,100.00	130	11,799.99	0	0	0
0	P441	J310	J308	18	36	130	11,799.99	3.72	0.73	40.54
0	P443	J308	J298	106.2	36	130	11,799.99	3.72	0.38	3.59
0	P445	J298	J296	55.4	36	130	11,799.99	3.72	0.62	11.24
0	P447	J296	J294	78.5	36	130	11,799.99	3.72	0.18	2.26
0	P449	J294	J292	19	30	130	9,193.57	4.17	0.19	9.75
0	P45	J48	J50	1,194.62	12	130	-244.39	0.69	0.22	0.19
0	P451	J292	J290	9.2	30	130	6,589.37	2.99	0.06	7
0	P453	J290	J288	9.2	30	130	3,978.80	1.81	0.02	2.58
0	P455	J288	J286	9.2	30	130	1,366.93	0.62	0	0.31
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,604.19	3.28	0.54	26.45
0	P469	J290	U7004	20.6	18	130	2,610.57	3.29	0.55	26.57
0	P47	J50	J52	765.09	12	130	-320.97	0.91	0.24	0.31
0	P473	J288	U7006	20.6	18	130	2,611.86	3.29	0.55	26.6
0	P477	J286	U7008	20.6	18	130	1,366.93	1.72	0.15	7.34
0	P481	J282	U7010	12.1	18	130	2,606.43	3.29	0.53	43.64
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	891.39	1.42	0.74	0.5
0	P493	J276	J274	4.9	16	130	2,604.19	4.16	0.13	25.56
0	P495	J274	J272	4.2	16	130	5,210.62	8.31	0.66	156.39
0	P497	J272	J270	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P499	J270	J268	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P501	J268	J266	4.7	30	130	10,433.06	4.74	0.15	31.88
0	P503	J266	J264	4.7	30	130	10,433.06	4.74	0.15	31.87
0	P505	J264	J262	60.6	30	130	11,799.99	5.36	2.11	34.87
0	P507	J262	J260	20.3	36	130	11,799.99	3.72	0.07	3.28
0	P509	J260	J252	30.38	36	130	11,799.99	3.72	0.08	2.58
0	P51	J34	J66	1,373.58	12	130	525.03	1.49	1.06	0.77
0	P511	J252	J240	90.5	36	130	11,799.99	3.72	0.49	5.43
0	P513	J294	J312	36.2	30	130	2,606.43	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,606.43	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,604.19	7.39	6.09	405.83
0	P519	J328	J276	9.1	14	130	2,604.19	5.43	7.61	836.36
0	P521	U7004	J330	15	12	130	2,610.57	7.41	6.12	407.82
0	P523	J330	J272	9.1	14	130	2,610.57	5.44	7.65	840.46
0	P525	U7006	J332	15	12	130	2,611.86	7.41	6.12	408.22
0	P527	J332	J268	9.1	14	130	2,611.86	5.44	7.66	841.29
0	P529	U7008	J334	15	12	130	1,366.93	3.88	1.68	112.23

0	P53	J66	J64	862.35	12	130	575.91	1.63	0.79	0.91
0	P531	J334	J264	9.1	14	130	1,366.93	2.85	2.1	230.62
0	P533	U7010	J336	15	12	130	2,606.43	7.39	6.1	406.52
0	P535	J336	J274	9.1	14	130	2,606.43	5.43	7.62	837.79
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-147.35	0.42	0.08	0.07
0	P57	J62	J60	691.6	16	130	944.62	1.51	0.39	0.56
0	P59	J64	J58	1,424.22	12	130	358.76	1.02	0.54	0.38
0	P61	J60	J56	890.62	16	130	634.37	1.01	0.24	0.27
0	P67	J56	J52	1,036.48	16	130	331.48	0.53	0.08	0.08
0	P69	J52	J54	1,131.15	12	130	-184.54	0.52	0.13	0.11
0	P71	J58	J54	591.64	12	130	260.82	0.74	0.12	0.21
0	P73	J40	J68	1,551.82	12	130	521.97	1.48	1.18	0.76
0	P75	J68	J70	838.54	12	130	557.95	1.58	0.72	0.86
0	P79	J72	J74	1,086.50	12	130	877.32	2.49	2.16	1.99
0	P83	J76	J78	765.46	12	130	-1,670.97	4.74	5.02	6.56
0	P89	J52	J82	771.55	16	130	42.53	0.07	0	0
0	P91	J82	J78	774.7	16	130	42.53	0.07	0	0
0	P93	J68	J84	890.35	12	130	-81.12	0.23	0.02	0.02
0	P95	J84	J86	1,204.21	12	130	-104.82	0.3	0.05	0.04
0	P97	J86	J88	946.69	12	130	-153.94	0.44	0.07	0.08
0	P99	J88	J90	874.98	16	130	-195.98	0.31	0.03	0.03

Run EB6

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	242.94	52.4
0	J102	0	125.5	244.91	51.74
0	J104	9.32	129.8	247.25	50.89
0	J122	75.78	117.5	240.89	53.47
0	J124	66.76	119.5	241.02	52.66
0	J126	0	130	242.54	48.76
0	J128	0	133	242.34	47.38
0	J130	0	134	242.47	47
0	J132	0	131	242.26	48.21
0	J134	0	131	242.26	48.21
0	J136	0	131	242.26	48.21
0	J138	0	122	253.19	56.85
0	J140	0	122	253.19	56.85
0	J146	0	132	258.79	54.94
0	J148	0	132	258.79	54.94
0	J150	0	118	252.79	58.41
0	J152	0	118	252.79	58.41
0	J154	0	90.3	240.12	64.92
0	J156	0	115.5	229.28	49.3
0	J158	0	115.5	229.28	49.3
0	J160	0	128	254.08	54.63
0	J162	0	128	254.08	54.63
0	J164	0	98	251.66	66.58
0	J166	0	98	251.66	66.58
0	J168	0	115.25	240.83	54.41
0	J170	0	120	229.27	47.35
0	J172	0	120	229.27	47.35
0	J174	0	123	229.87	46.31
0	J176	0	123	229.87	46.31
0	J178	0	94	225.27	56.88
0	J180	0	94	225.27	56.88
0	J182	0	118	239.31	52.56
0	J184	0	118	251.96	58.05

0	J186	0	118	251.96	58.05
0	J188	0	126	241.33	49.97
0	J190	0	126	241.33	49.97
0	J192	0	126	241.33	49.97
0	J194	0	126	241.33	49.97
0	J196	0	99.75	236.81	59.39
0	J198	0	95.5	239.68	62.47
0	J20	44.06	90.4	240.35	64.97
0	J206	0	100	225.27	54.28
0	J208	0	100	225.27	54.28
0	J210	0	102	251.84	64.92
0	J212	0	102	251.84	64.92
0	J214	0	102	251.84	64.92
0	J216	1,500.00	100	217.7	51
0	J218	1,500.00	100	217.6	50.95
0	J22	41.86	118.5	240.57	52.89
0	J220	50.94	116	240.81	54.08
0	J222	50.4	119.1	240.94	52.79
0	J224	0	118	240.42	53.05
0	J226	0	130	246.5	50.48
0	J228	0	116	260.55	62.64
0	J230	0	147	268.05	52.45
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67
0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	240.82	54.3
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98
0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	241.25	53.15
0	J280	0	164.48	169.76	2.29
0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32
0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	241.54	51.71
0	J300	0	127.5	250.25	53.19
0	J302	0	128	250.62	53.13
0	J304	0	142	256.28	49.52
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	242.1	50.31
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33

0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	243.01	47.23
0	J340	0	167.47	310.29	61.88
0	J36	0	137	245.01	46.8
0	J38	79.7	90.2	239.56	64.72
0	J40	138.2	90	239	64.56
0	J42	137.88	101	240.3	60.36
0	J44	93.74	111	240.65	56.18
0	J46	79.04	113	240.78	55.36
0	J48	76.62	114.7	240.53	54.52
0	J50	76.58	120	240.95	52.41
0	J52	152.52	126	241.33	49.97
0	J54	76.28	127.6	241.36	49.29
0	J56	70.04	121.9	241.33	51.75
0	J58	97.94	126	241.42	50.01
0	J60	43.14	124.5	241.41	50.66
0	J62	94.12	122	241.65	51.85
0	J64	69.8	127	241.72	49.71
0	J66	44.72	130.5	242.26	48.42
0	J68	45.14	88	236.83	64.49
0	J70	92.66	97.5	236.81	60.36
0	J72	105.24	102	236.81	58.41
0	J74	104.58	108	238.28	56.45
0	J76	92.9	128	240.38	48.7
0	J78	160.7	126	241.61	50.09
0	J82	0	126.4	241.47	49.86
0	J84	23.7	76	235.98	69.32
0	J86	49.12	78	234.92	67.99
0	J88	42.04	88.4	234.21	63.18
0	J90	52.46	104	234.94	56.74
0	J92	53.12	98	235.99	59.79
0	J94	50.48	107	237.55	56.57
0	J96	40.96	116	240.46	53.93

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0
0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.00	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	51.85	56.85	0	0	11.54	Open	5
0	V8002	8	122	51.79	56.85	0	0	0	Closed	5
0	V8008	10	132	49.94	54.94	0	0	11.54	Open	2
0	V8010	10	132	47.43	54.94	0	0	0	Closed	2
0	V8012	8	118	53.22	58.41	0	0	0	Closed	5
0	V8014	8	118	53.41	58.41	0	0	11.54	Open	5
0	V8016	8	115.5	54.3	49.3	0	0	11.54	Open	5
0	V8018	8	115.5	54.19	49.3	0	0	0	Closed	5
0	V8020	8	128	49.63	54.63	0	0	11.54	Open	5
0	V8022	8	128	49.44	54.63	0	0	0	Closed	5
0	V8024	8	98	61.34	66.58	0	0	0	Closed	5

0	V8026	8	98	61.58	66.58	0	0	11.54	Open	5
0	V8028	10	120	52.36	47.35	0	0	0	Closed	2
0	V8032	8	123	51.31	46.31	0	0	11.54	Open	5
0	V8034	8	123	51.41	46.31	0	0	0	Closed	5
0	V8036	8	94	61.52	56.88	0	0	0	Closed	5
0	V8038	8	94	61.88	56.88	0	0	11.54	Open	5
0	V8042	10	118	53.05	58.05	0	0	11.54	Open	2
0	V8044	10	118	52.56	58.05	0	0	0	Closed	2
0	V8052	10	100	59.28	54.28	0	0	0	Closed	2
0	V8054	10	100	59.28	54.28	0	0	11.54	Open	2
0	V8056	8	102	59.92	64.92	0	0	11.54	Open	5
0	V8058	8	102	59.65	64.92	0	0	0	Closed	5
0	V8060	8	100	56.36	53.17	1,648.00	10.52	7.35	Open	5
0	V8062	8	100	57.41	54.41	1,352.00	8.63	6.94	Open	5
0	V8070	10	120	52.35	47.35	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	605.92	1.72	0.81	1
0	P103	J92	J90	1,241.83	12	130	552.8	1.57	1.05	0.85
0	P105	J90	J94	1,132.34	16	130	-2,024.65	3.23	2.61	2.31
0	P107	J94	J96	1,204.53	16	130	-2,075.13	3.31	2.91	2.41
0	P111	J78	J100	1,067.79	16	130	-1,451.22	2.32	1.33	1.24
0	P115	J96	J100	886.7	16	130	-2,246.41	3.58	2.48	2.79
0	P117	J100	J102	789.56	20	130	-3,798.33	3.88	1.97	2.49
0	P119	J102	J104	941.88	20	130	-3,798.33	3.88	2.35	2.49
0	P121	J104	J300	1,197.93	20	130	-3,807.65	3.89	3	2.5
0	P123	J300	J302	147.08	20	130	-3,807.65	3.89	0.37	2.5
0	P125	J302	J304	2,260.56	20	130	-3,807.65	3.89	5.66	2.5
0	P139	J122	J124	627.68	12	130	-257.72	0.73	0.13	0.21
0	P141	J124	J60	1,242.80	12	130	-324.48	0.92	0.39	0.32
0	P145	J34	J126	846.23	20	130	1,698.71	1.73	0.48	0.56
0	P149	J66	J128	522.48	8	130	-75.76	0.48	0.08	0.15
0	P155	J126	J130	441.09	8	130	75.76	0.48	0.07	0.15
0	P157	J128	J130	886.05	8	130	-75.76	0.48	0.13	0.15
0	P159	J126	J32	843.52	20	130	1,622.95	1.66	0.44	0.52
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-529.05	0.84	0.22	0.19
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-570.91	0.91	0.25	0.22
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-768.78	1.23	0.43	0.38
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	484.99	1.38	0.23	0.66
0	P215	J154	J38	842.54	12	130	484.99	1.38	0.56	0.66
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0

0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-803.56	1.28	0.28	0.42
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-181.94	0.52	0.06	0.11
0	P249	J168	J122	563.66	12	130	-181.94	0.52	0.06	0.11
0	P25	J30	J32	1,229.93	16	130	-847.98	1.35	0.57	0.46
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	818.16	2.32	1.07	1.75
0	P283	J182	J74	589.22	12	130	818.16	2.32	1.03	1.75
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,136.47	2.18	2	0.86
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	2.42	0.01	0	0
0	P311	J196	J70	609.66	12	130	2.42	0.01	0	0
0	P313	J40	J198	1,129.17	12	130	-458.16	1.3	0.67	0.6
0	P315	J198	J42	1,043.66	12	130	-458.16	1.3	0.62	0.6
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	405.29	1.15	0.56	0.48
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	1,648.00	6.73	4.14	15.54
0	P355	V8060	J216	322.62	10	130	1,648.00	6.73	5.01	15.54
0	P357	J90	V8062	226.9	10	130	1,352.00	5.52	2.44	10.77

0	P359	V8062	J218	739.72	10	130	1,352.00	5.52	7.97	10.77
0	P361	J218	J216	604.58	10	130	-148	0.6	0.11	0.18
0	P363	J56	J222	1,322.36	12	130	314.08	0.89	0.39	0.3
0	P365	J222	J220	621.17	12	130	263.68	0.75	0.13	0.21
0	P367	J220	J44	1,095.19	12	130	212.74	0.6	0.16	0.14
0	P37	J26	J46	1,141.00	12	130	109.67	0.31	0.05	0.04
0	P379	J76	J224	678.87	12	130	-130.33	0.37	0.04	0.06
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	212.57	0.6	0.13	0.14
0	P393	J226	J36	1,733.97	20	130	2,136.47	2.18	1.49	0.86
0	P395	J96	J224	650.52	12	130	130.33	0.37	0.04	0.06
0	P399	J232	J230	2,608.50	18	130	3,807.65	4.8	10.91	4.18
0	P401	J230	J304	2,813.67	18	130	3,807.65	4.8	11.77	4.18
0	P403	J232	J228	7,230.92	16	130	2,136.47	3.41	18.41	2.55
0	P405	J228	J226	5,520.22	16	130	2,136.47	3.41	14.06	2.55
0	P41	J44	J42	1,067.11	12	130	331.57	0.94	0.35	0.33
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-264.48	0.75	0.24	0.22
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91
0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-341.1	0.97	0.41	0.35
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.25	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-417.68	1.18	0.38	0.5
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57
0	P481	J282	U7010	12.1	18	130	2,603.00	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	681.5	1.09	0.45	0.31
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156
0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.92
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	437.76	1.24	0.75	0.55
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87

0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.38
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	468.79	1.33	0.54	0.62
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.78
0	P533	U7010	J336	15	12	130	2,603.00	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.00	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-136.7	0.39	0.07	0.06
0	P57	J62	J60	691.6	16	130	724.08	1.16	0.24	0.34
0	P59	J64	J58	1,424.22	12	130	262.29	0.74	0.3	0.21
0	P61	J60	J56	890.62	16	130	356.45	0.57	0.08	0.09
0	P67	J56	J52	1,036.48	16	130	-27.66	0.04	0	0
0	P69	J52	J54	1,131.15	12	130	-88.07	0.25	0.03	0.03
0	P71	J58	J54	591.64	12	130	164.35	0.47	0.05	0.09
0	P73	J40	J68	1,551.82	12	130	725.25	2.06	2.17	1.4
0	P75	J68	J70	838.54	12	130	90.24	0.26	0.02	0.03
0	P79	J72	J74	1,086.50	12	130	-713.58	2.02	1.47	1.36
0	P83	J76	J78	765.46	12	130	-780.73	2.21	1.23	1.6
0	P89	J52	J82	771.55	16	130	-509.79	0.81	0.14	0.18
0	P91	J82	J78	774.7	16	130	-509.79	0.81	0.14	0.18
0	P93	J68	J84	890.35	12	130	589.87	1.67	0.85	0.95
0	P95	J84	J86	1,204.21	12	130	566.17	1.61	1.06	0.88
0	P97	J86	J88	946.69	12	130	517.05	1.47	0.71	0.75
0	P99	J88	J90	874.98	16	130	-1,172.99	1.87	0.73	0.84

Run EB7

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	222.21	43.42
0	J102	0	125.5	224.83	43.04
0	J104	9.32	129.8	227.96	42.53
0	J122	75.78	117.5	218.96	43.96
0	J124	66.76	119.5	219.19	43.2
0	J126	0	130	221.28	39.55
0	J128	0	133	221.04	38.15
0	J130	0	134	221.2	37.78
0	J132	0	131	220.94	38.97
0	J134	0	131	220.94	38.97
0	J136	0	131	220.94	38.97
0	J138	0	122	231.67	47.52
0	J140	0	122	231.67	47.52
0	J146	0	132	216.42	36.58
0	J148	0	132	216.42	36.58
0	J150	0	118	207.86	38.94
0	J152	0	118	207.86	38.94
0	J154	0	90.3	217.27	55.02
0	J156	0	115.5	230.27	49.73
0	J158	0	115.5	230.27	49.73
0	J160	0	128	232.82	45.42
0	J162	0	128	232.82	45.42
0	J164	0	98	205.73	46.68
0	J166	0	98	205.73	46.68
0	J168	0	115.25	218.83	44.88
0	J170	0	120	230.38	47.83
0	J172	0	120	230.38	47.83

0	J174	0	123	208.28	36.95
0	J176	0	123	208.28	36.95
0	J178	0	94	212.73	51.45
0	J180	0	94	212.73	51.45
0	J182	0	118	215.58	42.28
0	J184	0	118	207.22	38.66
0	J186	0	118	207.22	38.66
0	J188	0	126	219.73	40.61
0	J190	0	126	219.73	40.61
0	J192	0	126	219.72	40.61
0	J194	0	126	219.72	40.61
0	J196	0	99.75	201.22	43.97
0	J198	0	95.5	216.31	52.35
0	J20	44.06	90.4	217.78	55.19
0	J206	2,000.00	100	185.96	37.25
0	J208	2,000.00	100	185.96	37.25
0	J210	0	102	206.28	45.19
0	J212	0	102	206.28	45.19
0	J214	0	102	206.28	45.19
0	J216	0	100	225.56	54.4
0	J218	0	100	225.56	54.4
0	J22	41.86	118.5	218.23	43.21
0	J220	50.94	116	218.84	44.56
0	J222	50.4	119.1	219.07	43.32
0	J224	0	118	218.76	43.66
0	J226	0	130	226.6	41.86
0	J228	0	116	245.44	56.09
0	J230	0	147	255.62	47.06
0	J232	0	148	270.13	52.92
0	J236	2,427.93	166	306.06	60.69
0	J238	1,213.97	181	291.88	48.04
0	J240	0	164	306.7	61.83
0	J242	0	148	271.19	53.38
0	J244	0	148	270.43	53.05
0	J246	1,213.97	146	275.85	56.26
0	J252	0	164.3	307.19	61.91
0	J26	88.2	115.5	218.73	44.73
0	J260	0	164.48	307.27	61.87
0	J262	0	164.48	307.33	61.9
0	J264	0	167.47	309.44	61.52
0	J266	0	167.47	309.59	61.58
0	J268	0	167.47	309.74	61.65
0	J270	0	167.47	309.83	61.68
0	J272	0	167.47	309.91	61.72
0	J274	0	167.47	310.57	62.01
0	J276	0	167.47	310.7	62.06
0	J278	0	164.48	169.45	2.15
0	J28	34.78	118.6	219.4	43.68
0	J280	0	164.48	169.45	2.15
0	J282	0	164.48	169.45	2.15
0	J286	0	164.48	169.25	2.07
0	J288	0	164.48	169.26	2.07
0	J290	0	164.48	169.28	2.08
0	J292	0	164.48	169.34	2.11
0	J294	0	164.48	169.53	2.19
0	J296	0	164.57	169.71	2.23
0	J298	0	164.22	170.33	2.65
0	J30	44.42	122.2	219.83	42.3
0	J300	0	127.5	231.95	45.26
0	J302	0	128	232.44	45.25
0	J304	0	142	239.96	42.45

0	J308	0	163	170.71	3.34
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.46	2.16
0	J32	93.48	126	220.69	41.03
0	J328	0	167.47	318.31	65.36
0	J330	0	167.47	317.56	65.03
0	J332	0	167.47	317.4	64.96
0	J334	0	167.47	311.54	62.43
0	J336	0	167.47	318.19	65.31
0	J338	0	167.47	309.83	61.68
0	J34	0	134	221.92	38.1
0	J340	0	167.47	309.59	61.58
0	J36	0	137	224.6	37.96
0	J38	79.7	90.2	216.06	54.53
0	J40	138.2	90	214.68	54.02
0	J42	137.88	101	217.82	50.62
0	J44	93.74	111	218.52	46.59
0	J46	79.04	113	218.71	45.8
0	J48	76.62	114.7	218.33	44.9
0	J50	76.58	120	219.09	42.93
0	J52	152.52	126	219.73	40.61
0	J54	76.28	127.6	219.79	39.94
0	J56	70.04	121.9	219.72	42.39
0	J58	97.94	126	219.86	40.67
0	J60	43.14	124.5	219.82	41.3
0	J62	94.12	122	220.13	42.52
0	J64	69.8	127	220.24	40.4
0	J66	44.72	130.5	220.94	39.19
0	J68	45.14	88	208.65	52.28
0	J70	92.66	97.5	201.19	44.93
0	J72	105.24	102	208.75	46.26
0	J74	104.58	108	212.94	45.47
0	J76	92.9	128	218.33	39.14
0	J78	160.7	126	220.2	40.82
0	J82	0	126.4	219.96	40.54
0	J84	23.7	76	209.99	58.06
0	J86	49.12	78	211.91	58.02
0	J88	42.04	88.4	213.6	54.25
0	J90	52.46	104	214.02	47.67
0	J92	53.12	98	210.71	48.84
0	J94	50.48	107	216.45	47.43
0	J96	40.96	116	219.17	44.7

	ID	Flow (gpm)	Head (ft)
0	RES9010	-11,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.5	73.92	2,604.19	155.59	Open	1	48.13	0
0	U7004	153.8	6.47	73.61	2,610.57	154.95	Open	1	48.07	0
0	U7006	153.8	6.46	73.54	2,611.86	154.82	Open	1	48.04	0
0	U7008	153.8	6.63	69.08	1,366.93	144.12	Open	1	48.4	0
0	U7010	153.8	6.55	73.87	2,606.43	155.37	Open	1	48.26	0
0	U7012	153.8	6.78	67.61	0	0	Closed	0	0	0
0	U7014	153.8	6.78	67.51	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	42.52	47.52	0	0	11.54	Open	5
0	V8002	8	122	42.39	47.52	0	0	0	Closed	5
0	V8008	10	132	41.58	36.58	0	0	11.54	Open	2
0	V8010	10	132	38.11	36.58	0	0	0	Closed	2
0	V8012	8	118	43.64	38.94	0	0	0	Closed	5

0	V8014	8	118	43.94	38.94	0	0	11.54	Open	5
0	V8016	8	115.5	44.73	49.73	0	0	11.54	Open	5
0	V8018	8	115.5	44.51	49.73	0	0	0	Closed	5
0	V8020	8	128	40.42	45.42	0	0	11.54	Open	5
0	V8022	8	128	40.16	45.42	0	0	0	Closed	5
0	V8024	8	98	51.15	46.68	0	0	0	Closed	5
0	V8026	8	98	51.68	46.68	0	0	11.54	Open	5
0	V8028	10	120	42.82	47.83	0	0	0	Closed	2
0	V8032	8	123	41.95	36.95	0	0	11.54	Open	5
0	V8034	8	123	42.09	36.95	0	0	0	Closed	5
0	V8036	8	94	50.26	51.45	0	0	0	Closed	5
0	V8038	8	94	46.45	51.45	0	0	11.54	Open	5
0	V8042	10	118	43.66	38.66	0	0	11.54	Open	2
0	V8044	10	118	42.28	38.66	0	0	0	Closed	2
0	V8052	10	100	43.11	39.32	1,995.08	8.15	8.75	Open	2
0	V8054	10	100	43.15	39.34	2,004.92	8.19	8.79	Open	2
0	V8056	8	102	50.19	45.19	0	0	11.54	Open	5
0	V8058	8	102	49.53	45.19	0	0	0	Closed	5
0	V8060	8	100	49.22	54.4	0	0	0	Closed	5
0	V8062	8	100	49.4	54.4	0	0	11.54	Open	5
0	V8070	10	120	42.83	47.83	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-974.27	2.76	1.96	2.42
0	P103	J92	J90	1,241.83	12	130	-1,027.39	2.91	3.31	2.66
0	P105	J90	J94	1,132.34	16	130	-1,949.42	3.11	2.43	2.15
0	P107	J94	J96	1,204.53	16	130	-1,999.90	3.19	2.71	2.25
0	P111	J78	J100	1,067.79	16	130	-1,818.47	2.9	2.02	1.89
0	P115	J96	J100	886.7	16	130	-2,512.66	4.01	3.05	3.44
0	P117	J100	J102	789.56	20	130	-4,431.83	4.53	2.62	3.32
0	P119	J102	J104	941.88	20	130	-4,431.83	4.53	3.12	3.32
0	P121	J104	J300	1,197.93	20	130	-4,441.15	4.54	3.99	3.33
0	P123	J300	J302	147.08	20	130	-4,441.15	4.54	0.49	3.33
0	P125	J302	J304	2,260.56	20	130	-4,441.15	4.54	7.53	3.33
0	P139	J122	J124	627.68	12	130	-350.98	1	0.23	0.36
0	P141	J124	J60	1,242.80	12	130	-417.74	1.19	0.63	0.5
0	P145	J34	J126	846.23	20	130	1,999.22	2.04	0.64	0.76
0	P149	J66	J128	522.48	8	130	-82.84	0.53	0.09	0.18
0	P155	J126	J130	441.09	8	130	82.84	0.53	0.08	0.18
0	P157	J128	J130	886.05	8	130	-82.84	0.53	0.16	0.18
0	P159	J126	J32	843.52	20	130	1,916.37	1.96	0.59	0.7
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-782.26	1.25	0.45	0.4
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-824.12	1.32	0.5	0.44
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0

0	P21	J26	J28	1,118.04	16	130	-979.62	1.56	0.67	0.6
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	738.2	2.09	0.5	1.44
0	P215	J154	J38	842.54	12	130	738.2	2.09	1.22	1.44
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,014.40	1.62	0.44	0.64
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-275.2	0.78	0.12	0.23
0	P249	J168	J122	563.66	12	130	-275.2	0.78	0.13	0.23
0	P25	J30	J32	1,229.93	16	130	-1,058.82	1.69	0.85	0.69
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	1,359.17	3.86	2.75	4.47
0	P283	J182	J74	589.22	12	130	1,359.17	3.86	2.64	4.47
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,502.97	2.56	2.68	1.15
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	8.86	0.06	0	0
0	P301	J188	J190	664.92	8	130	8.86	0.06	0	0
0	P303	J56	J194	178.12	8	130	-8.86	0.06	0	0
0	P305	J194	J192	667.8	8	130	-8.86	0.06	0	0
0	P307	J192	J190	657.08	8	130	-8.86	0.06	0	0
0	P309	J72	J196	736.36	12	130	2,123.62	6.02	7.53	10.22
0	P311	J196	J70	609.66	12	130	118.7	0.34	0.03	0.05
0	P313	J40	J198	1,129.17	12	130	-739.17	2.1	1.64	1.45
0	P315	J198	J42	1,043.66	12	130	-739.17	2.1	1.51	1.45
0	P329	J70	V8052	185.71	12	130	1,995.08	5.66	1.69	9.11
0	P33	J38	J40	1,179.71	12	130	658.5	1.87	1.38	1.17
0	P331	V8052	J206	525.44	12	130	1,995.08	5.66	4.79	9.11
0	P333	J196	V8054	178.3	12	130	2,004.92	5.69	1.64	9.19
0	P335	V8054	J208	525.19	12	130	2,004.92	5.69	4.83	9.19
0	P337	J208	J206	475.84	12	130	4.92	0.01	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0

0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	411.4	1.17	0.65	0.49
0	P365	J222	J220	621.17	12	130	361	1.02	0.24	0.38
0	P367	J220	J44	1,095.19	12	130	310.06	0.88	0.32	0.29
0	P37	J26	J46	1,141.00	12	130	67.3	0.19	0.02	0.02
0	P379	J76	J224	678.87	12	130	-471.8	1.34	0.43	0.63
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	263.46	0.75	0.19	0.21
0	P393	J226	J36	1,733.97	20	130	2,502.97	2.56	2	1.15
0	P395	J96	J224	650.52	12	130	471.8	1.34	0.41	0.63
0	P399	J232	J230	2,608.50	18	130	4,441.15	5.6	14.51	5.56
0	P401	J230	J304	2,813.67	18	130	4,441.15	5.6	15.65	5.56
0	P403	J232	J228	7,230.92	16	130	2,502.97	3.99	24.69	3.41
0	P405	J228	J226	5,520.22	16	130	2,502.97	3.99	18.85	3.41
0	P41	J44	J42	1,067.11	12	130	479.78	1.36	0.69	0.65
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,738.80	2.75	0.64	0.67
0	P423	J236	J238	5,398.38	24	130	6,310.87	4.48	14.18	2.63
0	P425	J238	J246	9,066.36	24	130	5,096.90	3.61	16.03	1.77
0	P427	J246	J244	5,073.87	24	130	3,882.93	2.75	5.42	1.07
0	P429	J240	J242	7,163.69	16	130	3,061.20	4.88	35.51	4.96
0	P43	J42	J48	1,096.37	12	130	-397.27	1.13	0.5	0.46
0	P431	J242	J232	213.31	16	130	3,061.20	4.88	1.06	4.96
0	P433	J244	J232	281.24	24	130	3,882.93	2.75	0.3	1.07
0	P439	RES9010	J310	68.78	1,100.00	130	11,799.99	0	0	0
0	P441	J310	J308	18	36	130	11,799.99	3.72	0.73	40.54
0	P443	J308	J298	106.2	36	130	11,799.99	3.72	0.38	3.59
0	P445	J298	J296	55.4	36	130	11,799.99	3.72	0.62	11.24
0	P447	J296	J294	78.5	36	130	11,799.99	3.72	0.18	2.26
0	P449	J294	J292	19	30	130	9,193.57	4.17	0.19	9.75
0	P45	J48	J50	1,194.62	12	130	-473.89	1.34	0.76	0.64
0	P451	J292	J290	9.2	30	130	6,589.37	2.99	0.06	7
0	P453	J290	J288	9.2	30	130	3,978.80	1.81	0.02	2.58
0	P455	J288	J286	9.2	30	130	1,366.93	0.62	0	0.31
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,604.19	3.28	0.54	26.45
0	P469	J290	U7004	20.6	18	130	2,610.57	3.29	0.55	26.57
0	P47	J50	J52	765.09	12	130	-550.47	1.56	0.64	0.84
0	P473	J288	U7006	20.6	18	130	2,611.86	3.29	0.55	26.6
0	P477	J286	U7008	20.6	18	130	1,366.93	1.72	0.15	7.34
0	P481	J282	U7010	12.1	18	130	2,606.43	3.29	0.53	43.64
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	764.07	1.22	0.56	0.38
0	P493	J276	J274	4.9	16	130	2,604.19	4.16	0.13	25.56
0	P495	J274	J272	4.2	16	130	5,210.62	8.31	0.66	156.39
0	P497	J272	J270	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P499	J270	J268	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P501	J268	J266	4.7	30	130	10,433.06	4.74	0.15	31.88
0	P503	J266	J264	4.7	30	130	10,433.06	4.74	0.15	31.87
0	P505	J264	J262	60.6	30	130	11,799.99	5.36	2.11	34.87
0	P507	J262	J260	20.3	36	130	11,799.99	3.72	0.07	3.28

0	P509	J260	J252	30.38	36	130	11,799.99	3.72	0.08	2.58
0	P51	J34	J66	1,373.58	12	130	503.75	1.43	0.98	0.71
0	P511	J252	J240	90.5	36	130	11,799.99	3.72	0.49	5.43
0	P513	J294	J312	36.2	30	130	2,606.43	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,606.43	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,604.19	7.39	6.09	405.83
0	P519	J328	J276	9.1	14	130	2,604.19	5.43	7.61	836.36
0	P521	U7004	J330	15	12	130	2,610.57	7.41	6.12	407.81
0	P523	J330	J272	9.1	14	130	2,610.57	5.44	7.65	840.46
0	P525	U7006	J332	15	12	130	2,611.86	7.41	6.12	408.22
0	P527	J332	J268	9.1	14	130	2,611.86	5.44	7.66	841.29
0	P529	U7008	J334	15	12	130	1,366.93	3.88	1.68	112.23
0	P53	J66	J64	862.35	12	130	541.88	1.54	0.7	0.81
0	P531	J334	J264	9.1	14	130	1,366.93	2.85	2.1	230.62
0	P533	U7010	J336	15	12	130	2,606.43	7.39	6.1	406.52
0	P535	J336	J274	9.1	14	130	2,606.43	5.43	7.62	837.79
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-175.59	0.5	0.11	0.1
0	P57	J62	J60	691.6	16	130	845.55	1.35	0.32	0.46
0	P59	J64	J58	1,424.22	12	130	296.49	0.84	0.38	0.27
0	P61	J60	J56	890.62	16	130	384.67	0.61	0.09	0.11
0	P67	J56	J52	1,036.48	16	130	-87.91	0.14	0.01	0.01
0	P69	J52	J54	1,131.15	12	130	-122.27	0.35	0.06	0.05
0	P71	J58	J54	591.64	12	130	198.55	0.56	0.08	0.13
0	P73	J40	J68	1,551.82	12	130	1,259.47	3.57	6.03	3.89
0	P75	J68	J70	838.54	12	130	1,969.04	5.59	7.45	8.89
0	P79	J72	J74	1,086.50	12	130	-1,254.59	3.56	4.19	3.86
0	P83	J76	J78	765.46	12	130	-980.27	2.78	1.87	2.44
0	P89	J52	J82	771.55	16	130	-677.5	1.08	0.23	0.3
0	P91	J82	J78	774.7	16	130	-677.5	1.08	0.24	0.3
0	P93	J68	J84	890.35	12	130	-754.71	2.14	1.34	1.51
0	P95	J84	J86	1,204.21	12	130	-778.41	2.21	1.92	1.59
0	P97	J86	J88	946.69	12	130	-827.53	2.35	1.69	1.79
0	P99	J88	J90	874.98	16	130	-869.57	1.39	0.42	0.48

Run EB8

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	244.36	53.02
0	J102	0	125.5	246.25	52.32
0	J104	9.32	129.8	248.5	51.43
0	J122	75.78	117.5	237.46	51.98
0	J124	66.76	119.5	237.86	51.29
0	J126	0	130	239.9	47.62
0	J128	0	133	239.77	46.26
0	J130	0	134	239.86	45.87
0	J132	0	131	239.71	47.11
0	J134	0	131	239.71	47.11
0	J136	0	131	239.71	47.11
0	J138	0	122	227.55	45.73
0	J140	0	122	227.55	45.73
0	J146	0	132	236.96	45.48
0	J148	0	132	236.96	45.48
0	J150	0	118	249.63	57.03
0	J152	0	118	249.63	57.03
0	J154	0	90.3	236.77	63.47
0	J156	0	115.5	225.86	47.82
0	J158	0	115.5	225.86	47.82
0	J160	0	128	251.44	53.49

0	J162	0	128	251.44	53.49
0	J164	0	98	225.23	55.13
0	J166	0	98	225.23	55.13
0	J168	0	115.25	237.2	52.84
0	J170	0	120	225.21	45.59
0	J172	0	120	225.21	45.59
0	J174	0	123	227.34	45.21
0	J176	0	123	227.34	45.21
0	J178	0	94	251.13	68.08
0	J180	0	94	251.13	68.08
0	J182	0	118	241.57	53.54
0	J184	0	118	254.03	58.94
0	J186	0	118	254.03	58.94
0	J188	0	126	239.07	48.99
0	J190	0	126	239.01	48.97
0	J192	0	126	238.95	48.94
0	J194	0	126	238.89	48.91
0	J196	0	99.75	240.13	60.83
0	J198	0	95.5	232.16	59.22
0	J20	44.06	90.4	236.98	63.51
0	J206	0	100	251.67	65.72
0	J208	0	100	251.67	65.72
0	J210	1,500.00	102	212.13	47.72
0	J212	1,500.00	102	212.27	47.78
0	J214	0	102	218.67	50.55
0	J216	0	100	253.01	66.3
0	J218	0	100	253.01	66.3
0	J22	41.86	118.5	237.17	51.42
0	J220	50.94	116	236.75	52.32
0	J222	50.4	119.1	237.36	51.24
0	J224	0	118	242.49	53.94
0	J226	0	130	244.16	49.47
0	J228	0	116	259.23	62.06
0	J230	0	147	268.48	52.64
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67
0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	237.4	52.82
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98
0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	238.09	51.77
0	J280	0	164.48	169.76	2.29
0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32

0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	238.53	50.41
0	J300	0	127.5	251.38	53.68
0	J302	0	128	251.74	53.62
0	J304	0	142	257.18	49.91
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	239.41	49.14
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33
0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	240.43	46.11
0	J340	0	167.47	310.29	61.88
0	J36	0	137	242.57	45.74
0	J38	79.7	90.2	236.28	63.3
0	J40	138.2	90	235.8	63.18
0	J42	137.88	101	232.37	56.92
0	J44	93.74	111	235.83	54.09
0	J46	79.04	113	236.95	53.71
0	J48	76.62	114.7	234.46	51.89
0	J50	76.58	120	237.12	50.75
0	J52	152.52	126	239.1	49.01
0	J54	76.28	127.6	239.1	48.31
0	J56	70.04	121.9	238.87	50.68
0	J58	97.94	126	239.11	49.01
0	J60	43.14	124.5	238.88	49.56
0	J62	94.12	122	239.09	50.73
0	J64	69.8	127	239.24	48.63
0	J66	44.72	130.5	239.71	47.32
0	J68	45.14	88	239.06	65.45
0	J70	92.66	97.5	239.59	61.57
0	J72	105.24	102	240.78	60.13
0	J74	104.58	108	241.2	57.72
0	J76	92.9	128	241.96	49.38
0	J78	160.7	126	241.96	50.25
0	J82	0	126.4	240.53	49.45
0	J84	23.7	76	239.63	70.9
0	J86	49.12	78	240.47	70.4
0	J88	42.04	88.4	241.26	66.24
0	J90	52.46	104	241.47	59.57
0	J92	53.12	98	241	61.96
0	J94	50.48	107	242.18	58.57
0	J96	40.96	116	243	55.03

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0
0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.00	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	50.73	45.73	0	0	11.54	Open	5
0	V8002	8	122	50.49	45.73	0	0	0	Closed	5
0	V8008	10	132	50.48	45.48	0	0	11.54	Open	2
0	V8010	10	132	47.03	45.48	0	0	0	Closed	2
0	V8012	8	118	51.74	57.03	0	0	0	Closed	5
0	V8014	8	118	52.03	57.03	0	0	11.54	Open	5
0	V8016	8	115.5	52.82	47.82	0	0	11.54	Open	5
0	V8018	8	115.5	52.72	47.82	0	0	0	Closed	5
0	V8020	8	128	48.49	53.49	0	0	11.54	Open	5
0	V8022	8	128	48.27	53.49	0	0	0	Closed	5
0	V8024	8	98	59.92	55.13	0	0	0	Closed	5
0	V8026	8	98	60.13	55.13	0	0	11.54	Open	5
0	V8028	10	120	50.78	45.59	0	0	0	Closed	2
0	V8032	8	123	50.21	45.21	0	0	11.54	Open	5
0	V8034	8	123	50.3	45.21	0	0	0	Closed	5
0	V8036	8	94	63.1	68.08	0	0	0	Closed	5
0	V8038	8	94	63.08	68.08	0	0	11.54	Open	5
0	V8042	10	118	53.94	58.94	0	0	11.54	Open	2
0	V8044	10	118	53.54	58.94	0	0	0	Closed	2
0	V8052	10	100	60.48	65.72	0	0	0	Closed	2
0	V8054	10	100	60.72	65.72	0	0	11.54	Open	2
0	V8056	8	102	54.57	51.45	1,610.29	10.28	7.19	Open	5
0	V8058	8	102	55.64	52.62	1,389.71	8.87	6.97	Open	5
0	V8060	8	100	61.21	66.3	0	0	0	Closed	5
0	V8062	8	100	61.3	66.3	0	0	11.54	Open	5
0	V8070	10	120	50.59	45.59	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-304.06	0.86	0.23	0.28
0	P103	J92	J90	1,241.83	12	130	-357.18	1.01	0.47	0.38
0	P105	J90	J94	1,132.34	16	130	-1,000.40	1.6	0.71	0.62
0	P107	J94	J96	1,204.53	16	130	-1,050.88	1.68	0.82	0.68
0	P111	J78	J100	1,067.79	16	130	-1,993.92	3.18	2.39	2.24
0	P115	J96	J100	886.7	16	130	-1,622.07	2.59	1.36	1.53
0	P117	J100	J102	789.56	20	130	-3,716.69	3.8	1.89	2.39
0	P119	J102	J104	941.88	20	130	-3,716.69	3.8	2.26	2.39
0	P121	J104	J300	1,197.93	20	130	-3,726.01	3.81	2.88	2.41
0	P123	J300	J302	147.08	20	130	-3,726.01	3.81	0.35	2.41
0	P125	J302	J304	2,260.56	20	130	-3,726.01	3.81	5.44	2.41
0	P139	J122	J124	627.68	12	130	-476.13	1.35	0.4	0.64
0	P141	J124	J60	1,242.80	12	130	-542.89	1.54	1.02	0.82
0	P145	J34	J126	846.23	20	130	1,793.63	1.83	0.53	0.62
0	P149	J66	J128	522.48	8	130	-60.38	0.39	0.05	0.1
0	P155	J126	J130	441.09	8	130	60.38	0.39	0.04	0.1
0	P157	J128	J130	886.05	8	130	-60.38	0.39	0.09	0.1
0	P159	J126	J32	843.52	20	130	1,733.24	1.77	0.49	0.58
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-496.71	0.79	0.19	0.17
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-538.57	0.86	0.23	0.2
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0

0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-993.11	1.58	0.69	0.62
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	452.65	1.28	0.2	0.58
0	P215	J154	J38	842.54	12	130	452.65	1.28	0.49	0.58
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,027.89	1.64	0.45	0.66
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-400.35	1.14	0.25	0.47
0	P249	J168	J122	563.66	12	130	-400.35	1.14	0.26	0.47
0	P25	J30	J32	1,229.93	16	130	-1,072.31	1.71	0.87	0.71
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	470.97	1.34	0.39	0.63
0	P283	J182	J74	589.22	12	130	470.97	1.34	0.37	0.63
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,218.11	2.27	2.14	0.92
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	57.44	0.37	0.03	0.09
0	P301	J188	J190	664.92	8	130	57.44	0.37	0.06	0.09
0	P303	J56	J194	178.12	8	130	-57.44	0.37	0.02	0.09
0	P305	J194	J192	667.8	8	130	-57.44	0.37	0.06	0.09
0	P307	J192	J190	657.08	8	130	-57.44	0.37	0.06	0.09
0	P309	J72	J196	736.36	12	130	565.21	1.6	0.65	0.88
0	P311	J196	J70	609.66	12	130	565.21	1.6	0.54	0.88
0	P313	J40	J198	1,129.17	12	130	1,138.06	3.23	3.64	3.22
0	P315	J198	J42	1,043.66	12	130	-251.65	0.71	0.21	0.2
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	372.95	1.06	0.48	0.41
0	P331	V8052	J206	525.44	12	130	0	0	0	0

0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	1,389.71	5.68	1.75	11.33
0	P343	V8058	J214	421.16	10	130	1,389.71	5.68	4.77	11.33
0	P345	J214	J210	577.05	10	130	1,389.71	5.68	6.54	11.33
0	P347	J42	V8056	297.78	10	130	1,610.29	6.58	4.43	14.89
0	P349	V8056	J212	569.55	10	130	1,610.29	6.58	8.48	14.89
0	P351	J212	J210	1,312.90	10	130	110.29	0.45	0.14	0.1
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	650.37	1.84	1.51	1.14
0	P365	J222	J220	621.17	12	130	599.97	1.7	0.61	0.98
0	P367	J220	J44	1,095.19	12	130	549.03	1.56	0.91	0.83
0	P37	J26	J46	1,141.00	12	130	366.34	1.04	0.45	0.39
0	P379	J76	J224	678.87	12	130	-530.23	1.5	0.53	0.78
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	687.65	1.95	1.11	1.27
0	P393	J226	J36	1,733.97	20	130	2,218.11	2.27	1.6	0.92
0	P395	J96	J224	650.52	12	130	530.23	1.5	0.51	0.78
0	P399	J232	J230	2,608.50	18	130	3,726.01	4.7	10.48	4.02
0	P401	J230	J304	2,813.67	18	130	3,726.01	4.7	11.31	4.02
0	P403	J232	J228	7,230.92	16	130	2,218.11	3.54	19.74	2.73
0	P405	J228	J226	5,520.22	16	130	2,218.11	3.54	15.07	2.73
0	P41	J44	J42	1,067.11	12	130	1,142.94	3.24	3.46	3.25
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-856.88	2.43	2.09	1.9
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91
0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-933.5	2.65	2.67	2.23
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.26	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-1,010.08	2.87	1.98	2.58
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57
0	P481	J282	U7010	12.1	18	130	2,603.00	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	567.45	0.91	0.32	0.22
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156

0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	424.48	1.2	0.71	0.52
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87
0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.37
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	440.15	1.25	0.48	0.55
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.79
0	P533	U7010	J336	15	12	130	2,603.00	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.00	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-205.99	0.58	0.15	0.14
0	P57	J62	J60	691.6	16	130	679.32	1.08	0.21	0.31
0	P59	J64	J58	1,424.22	12	130	164.36	0.47	0.13	0.09
0	P61	J60	J56	890.62	16	130	93.29	0.15	0.01	0.01
0	P67	J56	J52	1,036.48	16	130	-569.68	0.91	0.23	0.22
0	P69	J52	J54	1,131.15	12	130	9.86	0.03	0	0
0	P71	J58	J54	591.64	12	130	66.42	0.19	0.01	0.02
0	P73	J40	J68	1,551.82	12	130	-903.31	2.56	3.26	2.1
0	P75	J68	J70	838.54	12	130	-472.55	1.34	0.53	0.63
0	P79	J72	J74	1,086.50	12	130	-366.39	1.04	0.43	0.39
0	P83	J76	J78	765.46	12	130	-33.64	0.1	0	0
0	P89	J52	J82	771.55	16	130	-1,799.58	2.87	1.43	1.85
0	P91	J82	J78	774.7	16	130	-1,799.58	2.87	1.44	1.85
0	P93	J68	J84	890.35	12	130	-475.9	1.35	0.57	0.64
0	P95	J84	J86	1,204.21	12	130	-499.6	1.42	0.84	0.7
0	P97	J86	J88	946.69	12	130	-548.72	1.56	0.79	0.83
0	P99	J88	J90	874.98	16	130	-590.76	0.94	0.21	0.24

Run EB9

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	244.41	53.04
0	J102	0	125.5	246.3	52.34
0	J104	9.32	129.8	248.55	51.45
0	J122	75.78	117.5	237.39	51.95
0	J124	66.76	119.5	237.87	51.29
0	J126	0	130	239.78	47.57
0	J128	0	133	239.74	46.25
0	J130	0	134	239.77	45.83
0	J132	0	131	239.73	47.11
0	J134	0	131	239.73	47.11
0	J136	0	131	239.73	47.11
0	J138	0	122	227.61	45.76
0	J140	0	122	227.61	45.76
0	J146	0	132	260.09	55.5
0	J148	0	132	260.09	55.5

0	J150	0	118	248.59	56.58
0	J152	0	118	248.59	56.58
0	J154	0	90.3	229.49	60.31
0	J156	0	115.5	224.32	47.15
0	J158	0	115.5	224.32	47.15
0	J160	0	128	228.24	43.43
0	J162	0	128	228.24	43.43
0	J164	1,500.00	98	207.65	47.51
0	J166	1,500.00	98	207.65	47.51
0	J168	0	115.25	237.08	52.79
0	J170	0	120	249.04	55.91
0	J172	0	120	249.04	55.91
0	J174	0	123	250.59	55.28
0	J176	0	123	250.59	55.28
0	J178	0	94	227.77	57.96
0	J180	0	94	227.77	57.96
0	J182	0	118	241.6	53.56
0	J184	0	118	254.08	58.97
0	J186	0	118	254.08	58.97
0	J188	0	126	239.38	49.13
0	J190	0	126	239.29	49.09
0	J192	0	126	239.19	49.05
0	J194	0	126	239.1	49
0	J196	0	99.75	239.92	60.74
0	J198	0	95.5	235.86	60.82
0	J20	44.06	90.4	231.82	61.28
0	J206	0	100	228.38	55.63
0	J208	0	100	228.38	55.63
0	J210	0	102	248.27	63.38
0	J212	0	102	248.27	63.38
0	J214	0	102	248.27	63.38
0	J216	0	100	229.84	56.26
0	J218	0	100	229.84	56.26
0	J22	41.86	118.5	233.79	49.95
0	J220	50.94	116	237.5	52.65
0	J222	50.4	119.1	237.94	51.49
0	J224	0	118	242.54	53.96
0	J226	0	130	244.07	49.43
0	J228	0	116	259.18	62.04
0	J230	0	147	268.5	52.65
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67
0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	235.86	52.15
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98
0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	237.05	51.32
0	J280	0	164.48	169.76	2.29

0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32
0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	237.8	50.09
0	J300	0	127.5	251.43	53.7
0	J302	0	128	251.78	53.63
0	J304	0	142	257.21	49.92
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	239.25	49.07
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33
0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	240.33	46.07
0	J340	0	167.47	310.29	61.88
0	J36	0	137	242.47	45.7
0	J38	79.7	90.2	229.42	60.33
0	J40	138.2	90	234.91	62.79
0	J42	137.88	101	236.73	58.81
0	J44	93.74	111	236.86	54.53
0	J46	79.04	113	236.77	53.63
0	J48	76.62	114.7	237.48	53.2
0	J50	76.58	120	238.56	51.37
0	J52	152.52	126	239.43	49.15
0	J54	76.28	127.6	239.36	48.43
0	J56	70.04	121.9	239.07	50.77
0	J58	97.94	126	239.36	49.12
0	J60	43.14	124.5	239.05	49.63
0	J62	94.12	122	239.15	50.76
0	J64	69.8	127	239.37	48.69
0	J66	44.72	130.5	239.73	47.33
0	J68	45.14	88	238.69	65.29
0	J70	92.66	97.5	239.31	61.45
0	J72	105.24	102	240.67	60.08
0	J74	104.58	108	241.18	57.71
0	J76	92.9	128	242.05	49.42
0	J78	160.7	126	242.07	50.29
0	J82	0	126.4	240.74	49.55
0	J84	23.7	76	239.33	70.77
0	J86	49.12	78	240.28	70.32
0	J88	42.04	88.4	241.16	66.19
0	J90	52.46	104	241.38	59.53
0	J92	53.12	98	240.9	61.92
0	J94	50.48	107	242.14	58.56
0	J96	40.96	116	243.02	55.04

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0

0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.00	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	50.76	45.76	0	0	11.54	Open	5
0	V8002	8	122	50.18	45.76	0	0	0	Closed	5
0	V8008	10	132	50.5	55.5	0	0	11.54	Open	2
0	V8010	10	132	47.12	55.5	0	0	0	Closed	2
0	V8012	8	118	51.07	56.58	0	0	0	Closed	5
0	V8014	8	118	51.58	56.58	0	0	11.54	Open	5
0	V8016	8	115.5	52.15	47.15	0	0	11.54	Open	5
0	V8018	8	115.5	51.25	47.15	0	0	0	Closed	5
0	V8020	8	128	48.43	43.43	0	0	11.54	Open	5
0	V8022	8	128	48.21	43.43	0	0	0	Closed	5
0	V8024	8	98	55.32	52.27	1,462.25	9.33	7.03	Open	5
0	V8026	8	98	56.03	52.95	1,537.75	9.82	7.1	Open	5
0	V8028	10	120	50.73	55.91	0	0	0	Closed	2
0	V8032	8	123	50.28	55.28	0	0	11.54	Open	5
0	V8034	8	123	50.33	55.28	0	0	0	Closed	5
0	V8036	8	94	62.97	57.96	0	0	0	Closed	5
0	V8038	8	94	62.96	57.96	0	0	11.54	Open	5
0	V8042	10	118	53.96	58.97	0	0	11.54	Open	2
0	V8044	10	118	53.56	58.97	0	0	0	Closed	2
0	V8052	10	100	60.36	55.63	0	0	0	Closed	2
0	V8054	10	100	60.63	55.63	0	0	11.54	Open	2
0	V8056	8	102	58.38	63.38	0	0	11.54	Open	5
0	V8058	8	102	58	63.38	0	0	0	Closed	5
0	V8060	8	100	61.16	56.26	0	0	0	Closed	5
0	V8062	8	100	61.26	56.26	0	0	11.54	Open	5
0	V8070	10	120	50.91	55.91	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-310.08	0.88	0.23	0.29
0	P103	J92	J90	1,241.83	12	130	-363.2	1.03	0.48	0.39
0	P105	J90	J94	1,132.34	16	130	-1,038.48	1.66	0.76	0.67
0	P107	J94	J96	1,204.53	16	130	-1,088.96	1.74	0.88	0.73
0	P111	J78	J100	1,067.79	16	130	-1,970.80	3.14	2.34	2.19
0	P115	J96	J100	886.7	16	130	-1,642.16	2.62	1.39	1.56
0	P117	J100	J102	789.56	20	130	-3,713.66	3.79	1.89	2.39
0	P119	J102	J104	941.88	20	130	-3,713.66	3.79	2.25	2.39
0	P121	J104	J300	1,197.93	20	130	-3,722.98	3.8	2.88	2.4
0	P123	J300	J302	147.08	20	130	-3,722.98	3.8	0.35	2.4
0	P125	J302	J304	2,260.56	20	130	-3,722.98	3.8	5.43	2.4
0	P139	J122	J124	627.68	12	130	-521.51	1.48	0.48	0.76
0	P141	J124	J60	1,242.80	12	130	-588.27	1.67	1.18	0.95
0	P145	J34	J126	846.23	20	130	1,833.56	1.87	0.55	0.65
0	P149	J66	J128	522.48	8	130	-31.08	0.2	0.02	0.03
0	P155	J126	J130	441.09	8	130	31.08	0.2	0.01	0.03
0	P157	J128	J130	886.05	8	130	-31.08	0.2	0.03	0.03
0	P159	J126	J32	843.52	20	130	1,802.47	1.84	0.53	0.63
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-1,735.19	2.77	1.96	1.73
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0

0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-1,777.05	2.84	2.08	1.81
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,330.01	2.12	1.18	1.06
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	1,691.13	4.8	2.34	6.71
0	P215	J154	J38	842.54	12	130	153.37	0.44	0.07	0.08
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,364.79	2.18	0.75	1.11
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	1,462.25	5.97	3.76	12.45
0	P239	J154	V8026	160.09	10	130	1,537.75	6.28	2.19	13.67
0	P241	V8026	J166	918.28	10	130	1,537.75	6.28	12.55	13.67
0	P243	J166	J164	455.03	10	130	37.75	0.15	0.01	0.01
0	P245	V8024	J164	882.35	10	130	1,462.25	5.97	10.99	12.45
0	P247	J46	J168	532.6	12	130	-445.73	1.26	0.3	0.57
0	P249	J168	J122	563.66	12	130	-445.73	1.26	0.32	0.57
0	P25	J30	J32	1,229.93	16	130	-1,409.21	2.25	1.45	1.18
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	507.43	1.44	0.44	0.72
0	P283	J182	J74	589.22	12	130	507.43	1.44	0.43	0.72
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,221.14	2.27	2.15	0.92
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	72.89	0.47	0.04	0.14
0	P301	J188	J190	664.92	8	130	72.89	0.47	0.1	0.14
0	P303	J56	J194	178.12	8	130	-72.89	0.47	0.03	0.14
0	P305	J194	J192	667.8	8	130	-72.89	0.47	0.1	0.14
0	P307	J192	J190	657.08	8	130	-72.89	0.47	0.09	0.14
0	P309	J72	J196	736.36	12	130	607.69	1.72	0.74	1.01

0	P311	J196	J70	609.66	12	130	607.69	1.72	0.61	1.01
0	P313	J40	J198	1,129.17	12	130	-548.92	1.56	0.94	0.83
0	P315	J198	J42	1,043.66	12	130	-548.92	1.56	0.87	0.83
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-1,388.57	3.94	5.49	4.66
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	555.52	1.58	1.13	0.85
0	P365	J222	J220	621.17	12	130	505.12	1.43	0.44	0.72
0	P367	J220	J44	1,095.19	12	130	454.18	1.29	0.64	0.59
0	P37	J26	J46	1,141.00	12	130	-535.23	1.52	0.91	0.8
0	P379	J76	J224	678.87	12	130	-512.24	1.45	0.5	0.73
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-168.54	0.48	0.08	0.09
0	P393	J226	J36	1,733.97	20	130	2,221.14	2.27	1.6	0.92
0	P395	J96	J224	650.52	12	130	512.24	1.45	0.48	0.73
0	P399	J232	J230	2,608.50	18	130	3,722.98	4.69	10.47	4.01
0	P401	J230	J304	2,813.67	18	130	3,722.98	4.69	11.29	4.01
0	P403	J232	J228	7,230.92	16	130	2,221.14	3.54	19.79	2.74
0	P405	J228	J226	5,520.22	16	130	2,221.14	3.54	15.11	2.74
0	P41	J44	J42	1,067.11	12	130	191.9	0.54	0.13	0.12
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-494.91	1.4	0.76	0.69
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91
0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-571.53	1.62	1.07	0.9
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.26	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-648.11	1.84	0.87	1.14
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57

0	P481	J282	U7010	12.1	18	130	2,603.00	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	299.78	0.48	0.1	0.07
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156
0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	387.59	1.1	0.6	0.44
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87
0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.37
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	373.95	1.06	0.35	0.41
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.79
0	P533	U7010	J336	15	12	130	2,603.00	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.00	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-255.45	0.72	0.22	0.2
0	P57	J62	J60	691.6	16	130	461.11	0.74	0.1	0.15
0	P59	J64	J58	1,424.22	12	130	48.7	0.14	0.01	0.01
0	P61	J60	J56	890.62	16	130	-170.31	0.27	0.02	0.02
0	P67	J56	J52	1,036.48	16	130	-722.97	1.15	0.35	0.34
0	P69	J52	J54	1,131.15	12	130	125.52	0.36	0.06	0.05
0	P71	J58	J54	591.64	12	130	-49.24	0.14	0.01	0.01
0	P73	J40	J68	1,551.82	12	130	-977.85	2.77	3.77	2.43
0	P75	J68	J70	838.54	12	130	-515.03	1.46	0.62	0.74
0	P79	J72	J74	1,086.50	12	130	-402.85	1.14	0.51	0.47
0	P83	J76	J78	765.46	12	130	-88.09	0.25	0.02	0.03
0	P89	J52	J82	771.55	16	130	-1,722.01	2.75	1.32	1.71
0	P91	J82	J78	774.7	16	130	-1,722.01	2.75	1.32	1.71
0	P93	J68	J84	890.35	12	130	-507.96	1.44	0.64	0.72
0	P95	J84	J86	1,204.21	12	130	-531.66	1.51	0.95	0.79
0	P97	J86	J88	946.69	12	130	-580.78	1.65	0.88	0.93
0	P99	J88	J90	874.98	16	130	-622.82	0.99	0.23	0.26

Run EB10

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	244.74	53.18
0	J102	0	125.5	246.61	52.48
0	J104	9.32	129.8	248.84	51.58
0	J122	75.78	117.5	237.16	51.85
0	J124	66.76	119.5	237.56	51.15
0	J126	0	130	239.13	47.29
0	J128	0	133	239.17	46
0	J130	0	134	239.17	45.57
0	J132	0	131	239.17	46.87

0	J134	0	131	239.17	46.87
0	J136	0	131	239.17	46.87
0	J138	0	122	227.03	45.51
0	J140	0	122	227.03	45.51
0	J146	0	132	237.3	45.63
0	J148	0	132	237.3	45.63
0	J150	1,500.00	118	219.56	44.01
0	J152	1,500.00	118	219.43	43.95
0	J154	0	90.3	235.38	62.86
0	J156	0	115.5	246.21	56.64
0	J158	0	115.5	246.21	56.64
0	J160	0	128	227.59	43.15
0	J162	0	128	227.59	43.15
0	J164	0	98	246.92	64.53
0	J166	0	98	246.92	64.53
0	J168	0	115.25	236.9	52.71
0	J170	0	120	226.11	45.98
0	J172	0	120	226.11	45.98
0	J174	0	123	250.1	55.07
0	J176	0	123	250.1	55.07
0	J178	0	94	228.9	58.45
0	J180	0	94	228.9	58.45
0	J182	0	118	242.01	53.74
0	J184	0	118	254.43	59.12
0	J186	0	118	254.43	59.12
0	J188	0	126	239.13	49.02
0	J190	0	126	238.99	48.96
0	J192	0	126	238.86	48.9
0	J194	0	126	238.72	48.84
0	J196	0	99.75	240.87	61.15
0	J198	0	95.5	237.46	61.51
0	J20	44.06	90.4	235.07	62.69
0	J206	0	100	229.33	56.04
0	J208	0	100	229.33	56.04
0	J210	0	102	225.92	53.7
0	J212	0	102	225.92	53.7
0	J214	0	102	225.92	53.7
0	J216	0	100	230.52	56.55
0	J218	0	100	230.52	56.55
0	J22	41.86	118.5	234.86	50.42
0	J220	50.94	116	237.65	52.71
0	J222	50.4	119.1	237.93	51.49
0	J224	0	118	242.89	54.12
0	J226	0	130	243.51	49.18
0	J228	0	116	258.86	61.9
0	J230	0	147	268.6	52.69
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67
0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	234.67	51.64
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98

0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	234.82	50.36
0	J280	0	164.48	169.76	2.29
0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32
0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	236.11	49.36
0	J300	0	127.5	251.69	53.81
0	J302	0	128	252.04	53.75
0	J304	0	142	257.42	50.01
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	238.56	48.77
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33
0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	239.7	45.8
0	J340	0	167.47	310.29	61.88
0	J36	0	137	241.88	45.45
0	J38	79.7	90.2	236.13	63.23
0	J40	138.2	90	237.46	63.9
0	J42	137.88	101	237.46	59.13
0	J44	93.74	111	237.26	54.71
0	J46	79.04	113	236.65	53.58
0	J48	76.62	114.7	237.91	53.39
0	J50	76.58	120	238.6	51.39
0	J52	152.52	126	239.19	49.05
0	J54	76.28	127.6	238.98	48.26
0	J56	70.04	121.9	238.69	50.6
0	J58	97.94	126	238.93	48.93
0	J60	43.14	124.5	238.56	49.42
0	J62	94.12	122	238.57	50.51
0	J64	69.8	127	238.9	48.49
0	J66	44.72	130.5	239.17	47.09
0	J68	45.14	88	240.03	65.88
0	J70	92.66	97.5	240.44	61.94
0	J72	105.24	102	241.4	60.4
0	J74	104.58	108	241.72	57.94
0	J76	92.9	128	242.32	49.54
0	J78	160.7	126	242.32	50.4
0	J82	0	126.4	240.75	49.55
0	J84	23.7	76	240.5	71.28
0	J86	49.12	78	241.21	70.72
0	J88	42.04	88.4	241.88	66.5
0	J90	52.46	104	242.06	59.82
0	J92	53.12	98	241.61	62.23
0	J94	50.48	107	242.69	58.8
0	J96	40.96	116	243.44	55.22

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0
0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.00	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	50.51	45.51	0	0	11.54	Open	5
0	V8002	8	122	49.45	45.51	0	0	0	Closed	5
0	V8008	10	132	50.63	45.63	0	0	11.54	Open	2
0	V8010	10	132	47.12	45.63	0	0	0	Closed	2
0	V8012	8	118	48.76	45.58	1,641.44	10.48	7.33	Open	5
0	V8014	8	118	49.23	46.22	1,358.56	8.67	6.94	Open	5
0	V8016	8	115.5	51.64	56.64	0	0	11.54	Open	5
0	V8018	8	115.5	51.72	56.64	0	0	0	Closed	5
0	V8020	8	128	48.15	43.15	0	0	11.54	Open	5
0	V8022	8	128	47.91	43.15	0	0	0	Closed	5
0	V8024	8	98	59.85	64.53	0	0	0	Closed	5
0	V8026	8	98	59.53	64.53	0	0	11.54	Open	5
0	V8028	10	120	50.65	45.98	0	0	0	Closed	2
0	V8032	8	123	50.07	55.07	0	0	11.54	Open	5
0	V8034	8	123	50.08	55.07	0	0	0	Closed	5
0	V8036	8	94	63.48	58.45	0	0	0	Closed	5
0	V8038	8	94	63.45	58.45	0	0	11.54	Open	5
0	V8042	10	118	54.12	59.12	0	0	11.54	Open	2
0	V8044	10	118	53.74	59.12	0	0	0	Closed	2
0	V8052	10	100	60.85	56.04	0	0	0	Closed	2
0	V8054	10	100	61.04	56.04	0	0	11.54	Open	2
0	V8056	8	102	58.7	53.7	0	0	11.54	Open	5
0	V8058	8	102	58.7	53.7	0	0	0	Closed	5
0	V8060	8	100	61.48	56.55	0	0	0	Closed	5
0	V8062	8	100	61.55	56.55	0	0	11.54	Open	5
0	V8070	10	120	50.98	45.98	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-294.98	0.84	0.21	0.26
0	P103	J92	J90	1,241.83	12	130	-348.1	0.99	0.45	0.36
0	P105	J90	J94	1,132.34	16	130	-944.88	1.51	0.64	0.56
0	P107	J94	J96	1,204.53	16	130	-995.36	1.59	0.75	0.62
0	P111	J78	J100	1,067.79	16	130	-2,006.92	3.2	2.42	2.27
0	P115	J96	J100	886.7	16	130	-1,586.75	2.53	1.3	1.47
0	P117	J100	J102	789.56	20	130	-3,694.37	3.77	1.87	2.37
0	P119	J102	J104	941.88	20	130	-3,694.37	3.77	2.23	2.37
0	P121	J104	J300	1,197.93	20	130	-3,703.69	3.78	2.85	2.38
0	P123	J300	J302	147.08	20	130	-3,703.69	3.78	0.35	2.38
0	P125	J302	J304	2,260.56	20	130	-3,703.69	3.78	5.38	2.38
0	P139	J122	J124	627.68	12	130	-473.53	1.34	0.4	0.63
0	P141	J124	J60	1,242.80	12	130	-540.29	1.53	1.01	0.81
0	P145	J34	J126	846.23	20	130	1,876.20	1.92	0.57	0.68
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	1,876.20	1.92	0.57	0.68
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0

0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	523.46	0.84	0.21	0.19
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	481.6	0.77	0.19	0.16
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	1,641.44	6.71	4.14	15.42
0	P205	J28	V8014	295.03	10	130	1,358.56	5.55	3.21	10.87
0	P207	V8014	J152	482.16	10	130	1,358.56	5.55	5.24	10.87
0	P209	V8012	J150	236	10	130	1,641.44	6.71	3.64	15.42
0	P21	J26	J28	1,118.04	16	130	-432.83	0.69	0.15	0.13
0	P211	J152	J150	798.51	10	130	-141.44	0.58	0.13	0.16
0	P213	J20	J154	348.19	12	130	-567.52	1.61	0.31	0.89
0	P215	J154	J38	842.54	12	130	-567.52	1.61	0.75	0.89
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,826.17	2.91	1.29	1.9
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-397.75	1.13	0.24	0.46
0	P249	J168	J122	563.66	12	130	-397.75	1.13	0.26	0.46
0	P25	J30	J32	1,229.93	16	130	-1,870.59	2.98	2.45	1.99
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	417.81	1.19	0.31	0.5
0	P283	J182	J74	589.22	12	130	417.81	1.19	0.3	0.5
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,240.43	2.29	2.18	0.94
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0

0	P299	J52	J188	313.33	8	130	88.24	0.56	0.06	0.2
0	P301	J188	J190	664.92	8	130	88.24	0.56	0.14	0.2
0	P303	J56	J194	178.12	8	130	-88.24	0.56	0.04	0.2
0	P305	J194	J192	667.8	8	130	-88.24	0.56	0.14	0.2
0	P307	J192	J190	657.08	8	130	-88.24	0.56	0.13	0.2
0	P309	J72	J196	736.36	12	130	502.97	1.43	0.52	0.71
0	P311	J196	J70	609.66	12	130	502.97	1.43	0.43	0.71
0	P313	J40	J198	1,129.17	12	130	9.2	0.03	0	0
0	P315	J198	J42	1,043.66	12	130	9.2	0.03	0	0
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-647.22	1.84	1.34	1.13
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	446.73	1.27	0.75	0.57
0	P365	J222	J220	621.17	12	130	396.33	1.12	0.28	0.46
0	P367	J220	J44	1,095.19	12	130	345.39	0.98	0.39	0.35
0	P37	J26	J46	1,141.00	12	130	-815.21	2.31	1.98	1.74
0	P379	J76	J224	678.87	12	130	-550.43	1.56	0.57	0.84
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-496.49	1.41	0.61	0.69
0	P393	J226	J36	1,733.97	20	130	2,240.43	2.29	1.63	0.94
0	P395	J96	J224	650.52	12	130	550.43	1.56	0.55	0.84
0	P399	J232	J230	2,608.50	18	130	3,703.69	4.67	10.37	3.97
0	P401	J230	J304	2,813.67	18	130	3,703.69	4.67	11.18	3.97
0	P403	J232	J228	7,230.92	16	130	2,240.43	3.58	20.11	2.78
0	P405	J228	J226	5,520.22	16	130	2,240.43	3.58	15.35	2.78
0	P41	J44	J42	1,067.11	12	130	-244.84	0.69	0.2	0.19
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-373.52	1.06	0.45	0.41
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91
0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-450.14	1.28	0.69	0.58
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.26	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0

0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-526.72	1.49	0.59	0.77
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57
0	P481	J282	U7010	12.1	18	130	2,603.00	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	-87.87	0.14	0.01	0.01
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156
0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	364.24	1.03	0.54	0.39
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87
0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.37
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	319.52	0.91	0.26	0.31
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.79
0	P533	U7010	J336	15	12	130	2,603.00	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.00	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-318.79	0.9	0.33	0.31
0	P57	J62	J60	691.6	16	130	136.79	0.22	0.01	0.02
0	P59	J64	J58	1,424.22	12	130	-69.07	0.2	0.03	0.02
0	P61	J60	J56	890.62	16	130	-446.64	0.71	0.12	0.14
0	P67	J56	J52	1,036.48	16	130	-875.18	1.4	0.51	0.49
0	P69	J52	J54	1,131.15	12	130	243.29	0.69	0.21	0.18
0	P71	J58	J54	591.64	12	130	-167.01	0.47	0.05	0.09
0	P73	J40	J68	1,551.82	12	130	-794.63	2.25	2.57	1.66
0	P75	J68	J70	838.54	12	130	-410.31	1.16	0.41	0.49
0	P79	J72	J74	1,086.50	12	130	-313.23	0.89	0.32	0.3
0	P83	J76	J78	765.46	12	130	39.72	0.11	0	0.01
0	P89	J52	J82	771.55	16	130	-1,885.94	3.01	1.56	2.02
0	P91	J82	J78	774.7	16	130	-1,885.94	3.01	1.57	2.02
0	P93	J68	J84	890.35	12	130	-429.45	1.22	0.47	0.53
0	P95	J84	J86	1,204.21	12	130	-453.15	1.29	0.7	0.59
0	P97	J86	J88	946.69	12	130	-502.27	1.42	0.67	0.71
0	P99	J88	J90	874.98	16	130	-544.31	0.87	0.18	0.2

Run EB11

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	224.41	44.37
0	J102	0	125.5	226.91	43.94
0	J104	9.32	129.8	229.89	43.37

0	J122	75.78	117.5	210.61	40.34
0	J124	66.76	119.5	212.08	40.12
0	J126	0	130	217.17	37.77
0	J128	0	133	217.02	36.41
0	J130	0	134	217.12	36.02
0	J132	0	131	216.97	37.25
0	J134	0	131	216.97	37.25
0	J136	0	131	216.97	37.25
0	J138	0	122	227.44	45.69
0	J140	0	122	227.44	45.69
0	J146	0	132	218.35	37.41
0	J148	0	132	218.35	37.41
0	J150	0	118	203.41	37.01
0	J152	0	118	203.41	37.01
0	J154	0	90.3	214.22	53.69
0	J156	0	115.5	202.59	37.74
0	J158	0	115.5	202.59	37.74
0	J160	0	128	228.71	43.64
0	J162	0	128	228.71	43.64
0	J164	0	98	202.68	45.36
0	J166	0	98	202.68	45.36
0	J168	0	115.25	209.47	40.82
0	J170	2,000.00	120	195.19	32.58
0	J172	2,000.00	120	195.25	32.61
0	J174	0	123	226.94	45.04
0	J176	0	123	226.94	45.04
0	J178	0	94	230.35	59.08
0	J180	0	94	230.35	59.08
0	J182	0	118	220.77	44.53
0	J184	0	118	210.39	40.03
0	J186	0	118	210.39	40.03
0	J188	0	126	216.24	39.1
0	J190	0	126	215.98	38.99
0	J192	0	126	215.73	38.88
0	J194	0	126	215.47	38.77
0	J196	0	99.75	219.38	51.84
0	J198	0	95.5	213.77	51.24
0	J20	44.06	90.4	214.17	53.63
0	J206	0	100	230.92	56.73
0	J208	0	100	230.92	56.73
0	J210	0	102	224.5	53.08
0	J212	0	102	224.5	53.08
0	J214	0	102	224.5	53.08
0	J216	0	100	232.49	57.41
0	J218	0	100	232.49	57.41
0	J22	41.86	118.5	214.14	41.44
0	J220	50.94	116	207.52	39.66
0	J222	50.4	119.1	209.91	39.35
0	J224	0	118	221.93	45.03
0	J226	0	130	222.96	40.28
0	J228	0	116	243.38	55.19
0	J230	0	147	256.28	47.35
0	J232	0	148	270.13	52.92
0	J236	2,427.93	166	306.06	60.69
0	J238	1,213.97	181	291.88	48.04
0	J240	0	164	306.7	61.83
0	J242	0	148	271.19	53.38
0	J244	0	148	270.43	53.05
0	J246	1,213.97	146	275.85	56.26
0	J252	0	164.3	307.19	61.91
0	J26	88.2	115.5	214.13	42.74

0	J260	0	164.48	307.27	61.87
0	J262	0	164.48	307.33	61.9
0	J264	0	167.47	309.44	61.52
0	J266	0	167.47	309.59	61.58
0	J268	0	167.47	309.74	61.65
0	J270	0	167.47	309.83	61.68
0	J272	0	167.47	309.91	61.72
0	J274	0	167.47	310.57	62.01
0	J276	0	167.47	310.7	62.06
0	J278	0	164.48	169.45	2.15
0	J28	34.78	118.6	214.95	41.75
0	J280	0	164.48	169.45	2.15
0	J282	0	164.48	169.45	2.15
0	J286	0	164.48	169.25	2.07
0	J288	0	164.48	169.26	2.07
0	J290	0	164.48	169.28	2.08
0	J292	0	164.48	169.34	2.11
0	J294	0	164.48	169.53	2.19
0	J296	0	164.57	169.71	2.23
0	J298	0	164.22	170.33	2.65
0	J30	44.42	122.2	215.47	40.42
0	J300	0	127.5	233.69	46.01
0	J302	0	128	234.16	46
0	J304	0	142	241.34	43.05
0	J308	0	163	170.71	3.34
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.46	2.16
0	J32	93.48	126	216.5	39.21
0	J328	0	167.47	318.31	65.36
0	J330	0	167.47	317.56	65.03
0	J332	0	167.47	317.4	64.96
0	J334	0	167.47	311.54	62.43
0	J336	0	167.47	318.19	65.31
0	J338	0	167.47	309.83	61.68
0	J34	0	134	217.89	36.35
0	J340	0	167.47	309.59	61.58
0	J36	0	137	220.79	36.31
0	J38	79.7	90.2	214.34	53.79
0	J40	138.2	90	214.64	54.01
0	J42	137.88	101	212.96	48.51
0	J44	93.74	111	210.45	43.09
0	J46	79.04	113	210.53	42.26
0	J48	76.62	114.7	213.94	43
0	J50	76.58	120	215.3	41.29
0	J52	152.52	126	216.37	39.16
0	J54	76.28	127.6	216.32	38.44
0	J56	70.04	121.9	215.4	40.51
0	J58	97.94	126	216.32	39.13
0	J60	43.14	124.5	215.4	39.39
0	J62	94.12	122	215.9	40.68
0	J64	69.8	127	216.34	38.71
0	J66	44.72	130.5	216.97	37.47
0	J68	45.14	88	218.24	56.43
0	J70	92.66	97.5	218.81	52.56
0	J72	105.24	102	220.07	51.16
0	J74	104.58	108	220.44	48.72
0	J76	92.9	128	221.12	40.35
0	J78	160.7	126	221.07	41.2
0	J82	0	126.4	218.71	40
0	J84	23.7	76	218.89	61.91
0	J86	49.12	78	219.84	61.46

0	J88	42.04	88.4	220.72	57.33
0	J90	52.46	104	220.95	50.67
0	J92	53.12	98	220.36	53.02
0	J94	50.48	107	221.76	49.73
0	J96	40.96	116	222.7	46.23

	ID	Flow (gpm)	Head (ft)
0	RES9010	-11,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.5	73.92	2,604.19	155.59	Open	1	48.13	0
0	U7004	153.8	6.47	73.61	2,610.57	154.95	Open	1	48.07	0
0	U7006	153.8	6.46	73.54	2,611.86	154.82	Open	1	48.04	0
0	U7008	153.8	6.63	69.08	1,366.93	144.12	Open	1	48.4	0
0	U7010	153.8	6.55	73.87	2,606.43	155.37	Open	1	48.26	0
0	U7012	153.8	6.78	67.61	0	0	Closed	0	0	0
0	U7014	153.8	6.78	67.51	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	40.68	45.69	0	0	11.54	Open	5
0	V8002	8	122	40.5	45.69	0	0	0	Closed	5
0	V8008	10	132	42.41	37.41	0	0	11.54	Open	2
0	V8010	10	132	37.57	37.41	0	0	0	Closed	2
0	V8012	8	118	41.65	37.01	0	0	0	Closed	5
0	V8014	8	118	42.01	37.01	0	0	11.54	Open	5
0	V8016	8	115.5	42.74	37.74	0	0	11.54	Open	5
0	V8018	8	115.5	42.74	37.74	0	0	0	Closed	5
0	V8020	8	128	38.64	43.64	0	0	11.54	Open	5
0	V8022	8	128	38.35	43.64	0	0	0	Closed	5
0	V8024	8	98	50.41	45.36	0	0	0	Closed	5
0	V8026	8	98	50.36	45.36	0	0	11.54	Open	5
0	V8028	10	120	38.11	34.63	1,766.20	7.21	8.01	Open	2
0	V8032	8	123	40.04	45.04	0	0	11.54	Open	5
0	V8034	8	123	40.25	45.04	0	0	0	Closed	5
0	V8036	8	94	54.11	59.08	0	0	0	Closed	5
0	V8038	8	94	54.08	59.08	0	0	11.54	Open	5
0	V8042	10	118	45.03	40.03	0	0	11.54	Open	2
0	V8044	10	118	44.53	40.03	0	0	0	Closed	2
0	V8052	10	100	51.48	56.73	0	0	0	Closed	2
0	V8054	10	100	51.73	56.73	0	0	11.54	Open	2
0	V8056	8	102	48.08	53.08	0	0	11.54	Open	5
0	V8058	8	102	48.43	53.08	0	0	0	Closed	5
0	V8060	8	100	52.31	57.41	0	0	0	Closed	5
0	V8062	8	100	52.41	57.41	0	0	11.54	Open	5
0	V8070	10	120	37.3	32.99	2,233.80	9.13	9.96	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-349.58	0.99	0.29	0.36
0	P103	J92	J90	1,241.83	12	130	-402.7	1.14	0.58	0.47
0	P105	J90	J94	1,132.34	16	130	-1,078.77	1.72	0.81	0.72
0	P107	J94	J96	1,204.53	16	130	-1,129.25	1.8	0.94	0.78
0	P111	J78	J100	1,067.79	16	130	-2,384.67	3.81	3.33	3.12
0	P115	J96	J100	886.7	16	130	-1,835.60	2.93	1.7	1.92
0	P117	J100	J102	789.56	20	130	-4,320.97	4.41	2.5	3.17
0	P119	J102	J104	941.88	20	130	-4,320.97	4.41	2.98	3.17
0	P121	J104	J300	1,197.93	20	130	-4,330.29	4.42	3.81	3.18
0	P123	J300	J302	147.08	20	130	-4,330.29	4.42	0.47	3.18
0	P125	J302	J304	2,260.56	20	130	-4,330.29	4.42	7.18	3.18
0	P139	J122	J124	627.68	12	130	-961.06	2.73	1.48	2.35
0	P141	J124	J60	1,242.80	12	130	-1,027.82	2.92	3.31	2.67
0	P145	J34	J126	846.23	20	130	2,124.12	2.17	0.72	0.85

0	P149	J66	J128	522.48	8	130	-64.19	0.41	0.06	0.11
0	P155	J126	J130	441.09	8	130	64.19	0.41	0.05	0.11
0	P157	J128	J130	886.05	8	130	-64.19	0.41	0.1	0.11
0	P159	J126	J32	843.52	20	130	2,059.94	2.1	0.68	0.8
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	165.83	0.26	0.03	0.02
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	123.97	0.2	0.01	0.01
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,088.97	1.74	0.82	0.73
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-209.89	0.6	0.05	0.14
0	P215	J154	J38	842.54	12	130	-209.89	0.6	0.12	0.14
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,123.75	1.79	0.53	0.77
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	880.92	2.5	1.07	2
0	P249	J168	J122	563.66	12	130	-885.28	2.51	1.14	2.02
0	P25	J30	J32	1,229.93	16	130	-1,168.17	1.86	1.02	0.83
0	P251	J168	V8028	209.52	12	130	1,766.20	5.01	1.52	7.27
0	P253	V8028	J170	652.72	12	130	1,766.20	5.01	4.74	7.27
0	P255	J170	J172	387.16	12	130	-233.8	0.66	0.07	0.17
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	443.49	1.26	0.35	0.56

0	P283	J182	J74	589.22	12	130	443.49	1.26	0.33	0.56
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,613.83	2.67	2.9	1.25
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	125.24	0.8	0.12	0.39
0	P301	J188	J190	664.92	8	130	125.24	0.8	0.26	0.39
0	P303	J56	J194	178.12	8	130	-125.24	0.8	0.07	0.39
0	P305	J194	J192	667.8	8	130	-125.24	0.8	0.26	0.39
0	P307	J192	J190	657.08	8	130	-125.24	0.8	0.26	0.39
0	P309	J72	J196	736.36	12	130	583.25	1.65	0.69	0.93
0	P311	J196	J70	609.66	12	130	583.25	1.65	0.57	0.93
0	P313	J40	J198	1,129.17	12	130	526.41	1.49	0.87	0.77
0	P315	J198	J42	1,043.66	12	130	526.4	1.49	0.81	0.77
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-289.59	0.82	0.3	0.26
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	1,304.58	3.7	5.48	4.15
0	P365	J222	J220	621.17	12	130	1,254.18	3.56	2.39	3.86
0	P367	J220	J44	1,095.19	12	130	-1,030.56	2.92	2.93	2.68
0	P37	J26	J46	1,141.00	12	130	1,124.74	3.19	3.6	3.15
0	P379	J76	J224	678.87	12	130	-665.39	1.89	0.81	1.19
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	164.78	0.47	0.08	0.09
0	P393	J226	J36	1,733.97	20	130	2,613.83	2.67	2.16	1.25
0	P395	J96	J224	650.52	12	130	665.39	1.89	0.78	1.19
0	P399	J232	J230	2,608.50	18	130	4,330.29	5.46	13.85	5.31
0	P401	J230	J304	2,813.67	18	130	4,330.29	5.46	14.94	5.31
0	P403	J232	J228	7,230.92	16	130	2,613.83	4.17	26.75	3.7
0	P405	J228	J226	5,520.22	16	130	2,613.83	4.17	20.42	3.7
0	P41	J44	J42	1,067.11	12	130	-959.52	2.72	2.51	2.35
0	P415	J220	V8070	127.05	12	130	2,233.80	6.34	1.43	11.23
0	P417	V8070	J172	78.54	12	130	2,233.80	6.34	0.88	11.23
0	P421	J240	J236	955.52	36	130	8,738.80	2.75	0.64	0.67
0	P423	J236	J238	5,398.38	24	130	6,310.87	4.48	14.18	2.63
0	P425	J238	J246	9,066.36	24	130	5,096.90	3.61	16.03	1.77
0	P427	J246	J244	5,073.87	24	130	3,882.93	2.75	5.42	1.07
0	P429	J240	J242	7,163.69	16	130	3,061.20	4.88	35.51	4.96
0	P43	J42	J48	1,096.37	12	130	-571	1.62	0.98	0.9
0	P431	J242	J232	213.31	16	130	3,061.20	4.88	1.06	4.96
0	P433	J244	J232	281.24	24	130	3,882.93	2.75	0.3	1.07
0	P439	RES9010	J310	68.78	1,100.00	130	11,799.99	0	0	0
0	P441	J310	J308	18	36	130	11,799.99	3.72	0.73	40.54
0	P443	J308	J298	106.2	36	130	11,799.99	3.72	0.38	3.59
0	P445	J298	J296	55.4	36	130	11,799.99	3.72	0.62	11.24
0	P447	J296	J294	78.5	36	130	11,799.99	3.72	0.18	2.26

0	P449	J294	J292	19	30	130	9,193.57	4.17	0.19	9.75
0	P45	J48	J50	1,194.62	12	130	-647.62	1.84	1.35	1.13
0	P451	J292	J290	9.2	30	130	6,589.37	2.99	0.06	7
0	P453	J290	J288	9.2	30	130	3,978.80	1.81	0.02	2.58
0	P455	J288	J286	9.2	30	130	1,366.93	0.62	0	0.31
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,604.19	3.28	0.54	26.45
0	P469	J290	U7004	20.6	18	130	2,610.57	3.29	0.55	26.57
0	P47	J50	J52	765.09	12	130	-724.2	2.05	1.07	1.39
0	P473	J288	U7006	20.6	18	130	2,611.86	3.29	0.55	26.6
0	P477	J286	U7008	20.6	18	130	1,366.93	1.72	0.15	7.34
0	P481	J282	U7010	12.1	18	130	2,606.43	3.29	0.53	43.64
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	798.29	1.27	0.6	0.41
0	P493	J276	J274	4.9	16	130	2,604.19	4.16	0.13	25.56
0	P495	J274	J272	4.2	16	130	5,210.62	8.31	0.66	156.39
0	P497	J272	J270	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P499	J270	J268	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P501	J268	J266	4.7	30	130	10,433.06	4.74	0.15	31.88
0	P503	J266	J264	4.7	30	130	10,433.06	4.74	0.15	31.87
0	P505	J264	J262	60.6	30	130	11,799.99	5.36	2.11	34.87
0	P507	J262	J260	20.3	36	130	11,799.99	3.72	0.07	3.28
0	P509	J260	J252	30.38	36	130	11,799.99	3.72	0.08	2.58
0	P51	J34	J66	1,373.58	12	130	489.71	1.39	0.93	0.68
0	P511	J252	J240	90.5	36	130	11,799.99	3.72	0.49	5.43
0	P513	J294	J312	36.2	30	130	2,606.43	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,606.43	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,604.19	7.39	6.09	405.83
0	P519	J328	J276	9.1	14	130	2,604.19	5.43	7.61	836.36
0	P521	U7004	J330	15	12	130	2,610.57	7.41	6.12	407.82
0	P523	J330	J272	9.1	14	130	2,610.57	5.44	7.65	840.45
0	P525	U7006	J332	15	12	130	2,611.86	7.41	6.12	408.22
0	P527	J332	J268	9.1	14	130	2,611.86	5.44	7.66	841.29
0	P529	U7008	J334	15	12	130	1,366.93	3.88	1.68	112.23
0	P53	J66	J64	862.35	12	130	509.17	1.44	0.63	0.73
0	P531	J334	J264	9.1	14	130	1,366.93	2.85	2.1	230.62
0	P533	U7010	J336	15	12	130	2,606.43	7.39	6.1	406.53
0	P535	J336	J274	9.1	14	130	2,606.43	5.43	7.62	837.79
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-373.95	1.06	0.44	0.41
0	P57	J62	J60	691.6	16	130	1,078.12	1.72	0.5	0.72
0	P59	J64	J58	1,424.22	12	130	65.42	0.19	0.02	0.02
0	P61	J60	J56	890.62	16	130	7.16	0.01	0	0
0	P67	J56	J52	1,036.48	16	130	-1,242.22	1.98	0.97	0.93
0	P69	J52	J54	1,131.15	12	130	108.8	0.31	0.05	0.04
0	P71	J58	J54	591.64	12	130	-32.52	0.09	0	0
0	P73	J40	J68	1,551.82	12	130	-954.19	2.71	3.61	2.32
0	P75	J68	J70	838.54	12	130	-490.59	1.39	0.57	0.68
0	P79	J72	J74	1,086.50	12	130	-338.91	0.96	0.37	0.34
0	P83	J76	J78	765.46	12	130	129	0.37	0.04	0.06
0	P89	J52	J82	771.55	16	130	-2,352.98	3.75	2.35	3.04
0	P91	J82	J78	774.7	16	130	-2,352.98	3.75	2.36	3.04
0	P93	J68	J84	890.35	12	130	-508.74	1.44	0.65	0.73
0	P95	J84	J86	1,204.21	12	130	-532.44	1.51	0.95	0.79
0	P97	J86	J88	946.69	12	130	-581.56	1.65	0.88	0.93
0	P99	J88	J90	874.98	16	130	-623.6	1	0.23	0.26

Run EB12

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	244.78	53.2
0	J102	0	125.5	246.65	52.49
0	J104	9.32	129.8	248.87	51.6
0	J122	75.78	117.5	237.59	52.04
0	J124	66.76	119.5	237.45	51.11
0	J126	0	130	239.11	47.28
0	J128	0	133	238.9	45.89
0	J130	0	134	239.04	45.51
0	J132	0	131	238.82	46.72
0	J134	0	131	238.82	46.72
0	J136	0	131	238.82	46.72
0	J138	0	122	248.84	54.96
0	J140	0	122	248.84	54.96
0	J146	0	132	237.33	45.64
0	J148	0	132	237.33	45.64
0	J150	0	118	226.89	47.18
0	J152	0	118	226.89	47.18
0	J154	0	90.3	238.42	64.18
0	J156	0	115.5	226.81	48.23
0	J158	0	115.5	226.81	48.23
0	J160	0	128	250.65	53.14
0	J162	0	128	250.65	53.14
0	J164	0	98	226.88	55.84
0	J166	0	98	226.88	55.84
0	J168	0	115.25	237.8	53.1
0	J170	0	120	226.45	46.13
0	J172	0	120	226.45	46.13
0	J174	1,500.00	123	214.59	39.68
0	J176	1,500.00	123	214.59	39.68
0	J178	0	94	229.41	58.67
0	J180	0	94	229.41	58.67
0	J182	0	118	242.1	53.77
0	J184	0	118	231.4	49.14
0	J186	0	118	231.4	49.14
0	J188	0	126	238.68	48.83
0	J190	0	126	238.47	48.73
0	J192	0	126	238.26	48.64
0	J194	0	126	238.05	48.55
0	J196	0	99.75	241.27	61.32
0	J198	0	95.5	238.52	61.97
0	J20	44.06	90.4	238.38	64.12
0	J206	0	100	229.73	56.21
0	J208	0	100	229.73	56.21
0	J210	0	102	226.74	54.05
0	J212	0	102	226.74	54.05
0	J214	0	102	226.74	54.05
0	J216	0	100	230.76	56.66
0	J218	0	100	230.76	56.66
0	J22	41.86	118.5	238.36	51.94
0	J220	50.94	116	237.99	52.86
0	J222	50.4	119.1	237.99	51.51
0	J224	0	118	242.94	54.14
0	J226	0	130	243.44	49.15
0	J228	0	116	258.82	61.88
0	J230	0	147	268.61	52.69
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67

0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	238.35	53.23
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98
0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	238.43	51.92
0	J280	0	164.48	169.76	2.29
0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32
0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	238.49	50.39
0	J300	0	127.5	251.72	53.83
0	J302	0	128	252.07	53.76
0	J304	0	142	257.44	50.02
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	238.63	48.8
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33
0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	239.63	45.77
0	J340	0	167.47	310.29	61.88
0	J36	0	137	241.81	45.42
0	J38	79.7	90.2	238.51	64.26
0	J40	138.2	90	238.77	64.46
0	J42	137.88	101	238.28	59.49
0	J44	93.74	111	238.02	55.04
0	J46	79.04	113	237.99	54.16
0	J48	76.62	114.7	238.37	53.59
0	J50	76.58	120	238.57	51.38
0	J52	152.52	126	238.78	48.87
0	J54	76.28	127.6	238.44	48.03
0	J56	70.04	121.9	237.99	50.3
0	J58	97.94	126	238.34	48.68
0	J60	43.14	124.5	237.28	48.87
0	J62	94.12	122	237.3	49.96
0	J64	69.8	127	238.24	48.2
0	J66	44.72	130.5	238.82	46.93
0	J68	45.14	88	240.66	66.15
0	J70	92.66	97.5	240.95	62.16
0	J72	105.24	102	241.67	60.52

0	J74	104.58	108	241.88	58.01
0	J76	92.9	128	242.33	49.54
0	J78	160.7	126	242.28	50.39
0	J82	0	126.4	240.53	49.45
0	J84	23.7	76	241.03	71.51
0	J86	49.12	78	241.6	70.89
0	J88	42.04	88.4	242.15	66.62
0	J90	52.46	104	242.3	59.92
0	J92	53.12	98	241.87	62.34
0	J94	50.48	107	242.86	58.87
0	J96	40.96	116	243.53	55.26

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0
0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.01	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	49.96	54.96	0	0	11.54	Open	5
0	V8002	8	122	50.48	54.96	0	0	0	Closed	5
0	V8008	10	132	50.64	45.64	0	0	11.54	Open	2
0	V8010	10	132	47.03	45.64	0	0	0	Closed	2
0	V8012	8	118	52.15	47.18	0	0	0	Closed	5
0	V8014	8	118	52.18	47.18	0	0	11.54	Open	5
0	V8016	8	115.5	53.23	48.23	0	0	11.54	Open	5
0	V8018	8	115.5	53.23	48.23	0	0	0	Closed	5
0	V8020	8	128	48.14	53.14	0	0	11.54	Open	5
0	V8022	8	128	47.93	53.14	0	0	0	Closed	5
0	V8024	8	98	60.88	55.84	0	0	0	Closed	5
0	V8026	8	98	60.84	55.84	0	0	11.54	Open	5
0	V8028	10	120	51.04	46.13	0	0	0	Closed	2
0	V8032	8	123	47.98	44.92	1,506.59	9.62	7.07	Open	5
0	V8034	8	123	47.88	44.82	1,493.41	9.53	7.06	Open	5
0	V8036	8	94	63.71	58.67	0	0	0	Closed	5
0	V8038	8	94	63.67	58.67	0	0	11.54	Open	5
0	V8042	10	118	54.14	49.14	0	0	11.54	Open	2
0	V8044	10	118	53.77	49.14	0	0	0	Closed	2
0	V8052	10	100	61.07	56.21	0	0	0	Closed	2
0	V8054	10	100	61.21	56.21	0	0	11.54	Open	2
0	V8056	8	102	59.05	54.05	0	0	11.54	Open	5
0	V8058	8	102	59.15	54.05	0	0	0	Closed	5
0	V8060	8	100	61.59	56.66	0	0	0	Closed	5
0	V8062	8	100	61.66	56.66	0	0	11.54	Open	5
0	V8070	10	120	51.13	46.13	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-287.13	0.81	0.2	0.25
0	P103	J92	J90	1,241.83	12	130	-340.25	0.97	0.43	0.34
0	P105	J90	J94	1,132.34	16	130	-886.56	1.41	0.57	0.5
0	P107	J94	J96	1,204.53	16	130	-937.04	1.5	0.67	0.55
0	P111	J78	J100	1,067.79	16	130	-2,039.57	3.25	2.5	2.34
0	P115	J96	J100	886.7	16	130	-1,551.76	2.48	1.25	1.41
0	P117	J100	J102	789.56	20	130	-3,692.03	3.77	1.87	2.37
0	P119	J102	J104	941.88	20	130	-3,692.03	3.77	2.23	2.37

0	P121	J104	J300	1,197.93	20	130	-3,701.35	3.78	2.85	2.38
0	P123	J300	J302	147.08	20	130	-3,701.35	3.78	0.35	2.38
0	P125	J302	J304	2,260.56	20	130	-3,701.35	3.78	5.37	2.38
0	P139	J122	J124	627.68	12	130	274.06	0.78	0.14	0.23
0	P141	J124	J60	1,242.80	12	130	207.3	0.59	0.17	0.14
0	P145	J34	J126	846.23	20	130	1,787.27	1.83	0.52	0.62
0	P149	J66	J128	522.48	8	130	-77.25	0.49	0.08	0.16
0	P155	J126	J130	441.09	8	130	77.25	0.49	0.07	0.16
0	P157	J128	J130	886.05	8	130	-77.25	0.49	0.14	0.16
0	P159	J126	J32	843.52	20	130	1,710.01	1.75	0.48	0.57
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	142.02	0.23	0.02	0.02
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	100.16	0.16	0.01	0.01
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-313.12	0.5	0.08	0.07
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-186.08	0.53	0.04	0.11
0	P215	J154	J38	842.54	12	130	-186.08	0.53	0.09	0.11
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-347.9	0.56	0.06	0.09
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	349.84	0.99	0.19	0.36
0	P249	J168	J122	563.66	12	130	349.84	0.99	0.2	0.36
0	P25	J30	J32	1,229.93	16	130	-392.32	0.63	0.14	0.11
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	1,506.59	6.15	3.54	13.16
0	P263	V8032	J174	918.23	10	130	1,506.59	6.15	12.08	13.16
0	P265	J174	J176	448.57	10	130	6.59	0.03	0	0
0	P267	J62	V8034	292.8	10	130	1,493.41	6.1	3.79	12.95
0	P269	V8034	J176	916.13	10	130	1,493.41	6.1	11.86	12.95

0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	354.73	1.01	0.23	0.37
0	P283	J182	J74	589.22	12	130	354.73	1.01	0.22	0.37
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,242.77	2.29	2.19	0.94
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	112.63	0.72	0.1	0.32
0	P301	J188	J190	664.92	8	130	112.63	0.72	0.21	0.32
0	P303	J56	J194	178.12	8	130	-112.63	0.72	0.06	0.32
0	P305	J194	J192	667.8	8	130	-112.63	0.72	0.21	0.32
0	P307	J192	J190	657.08	8	130	-112.63	0.72	0.21	0.32
0	P309	J72	J196	736.36	12	130	432.03	1.23	0.39	0.54
0	P311	J196	J70	609.66	12	130	432.03	1.23	0.33	0.54
0	P313	J40	J198	1,129.17	12	130	269.25	0.76	0.25	0.22
0	P315	J198	J42	1,043.66	12	130	269.25	0.76	0.23	0.22
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-265.78	0.75	0.26	0.22
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	14.84	0.04	0	0
0	P365	J222	J220	621.17	12	130	-35.56	0.1	0	0
0	P367	J220	J44	1,095.19	12	130	-86.5	0.25	0.03	0.03
0	P37	J26	J46	1,141.00	12	130	325.08	0.92	0.36	0.32
0	P379	J76	J224	678.87	12	130	-573.76	1.63	0.61	0.91
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-103.8	0.29	0.03	0.04
0	P393	J226	J36	1,733.97	20	130	2,242.77	2.29	1.63	0.94
0	P395	J96	J224	650.52	12	130	573.76	1.63	0.59	0.91
0	P399	J232	J230	2,608.50	18	130	3,701.35	4.67	10.36	3.97
0	P401	J230	J304	2,813.67	18	130	3,701.35	4.67	11.17	3.97
0	P403	J232	J228	7,230.92	16	130	2,242.77	3.58	20.15	2.79
0	P405	J228	J226	5,520.22	16	130	2,242.77	3.58	15.38	2.79
0	P41	J44	J42	1,067.11	12	130	-284.04	0.81	0.26	0.25
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-152.67	0.43	0.09	0.08
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91

0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-229.29	0.65	0.2	0.17
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.26	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-305.87	0.87	0.22	0.28
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57
0	P481	J282	U7010	12.1	18	130	2,603.01	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	1,224.21	1.95	1.33	0.91
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156
0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	455.51	1.29	0.81	0.59
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87
0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.37
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	488.04	1.38	0.58	0.67
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.79
0	P533	U7010	J336	15	12	130	2,603.01	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.01	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-560.91	1.59	0.94	0.87
0	P57	J62	J60	691.6	16	130	197.59	0.32	0.02	0.03
0	P59	J64	J58	1,424.22	12	130	-142.67	0.4	0.1	0.07
0	P61	J60	J56	890.62	16	130	-1,144.84	1.83	0.71	0.8
0	P67	J56	J52	1,036.48	16	130	-1,117.09	1.78	0.79	0.77
0	P69	J52	J54	1,131.15	12	130	316.89	0.9	0.34	0.3
0	P71	J58	J54	591.64	12	130	-240.61	0.68	0.11	0.18
0	P73	J40	J68	1,551.82	12	130	-673.23	1.91	1.89	1.22
0	P75	J68	J70	838.54	12	130	-339.37	0.96	0.29	0.34
0	P79	J72	J74	1,086.50	12	130	-250.15	0.71	0.21	0.19
0	P83	J76	J78	765.46	12	130	126.13	0.36	0.04	0.05

0	P89	J52	J82	771.55	16	130	-2,005.00	3.2	1.75	2.26
0	P91	J82	J78	774.7	16	130	-2,005.00	3.2	1.75	2.26
0	P93	J68	J84	890.35	12	130	-379	1.08	0.37	0.42
0	P95	J84	J86	1,204.21	12	130	-402.7	1.14	0.57	0.47
0	P97	J86	J88	946.69	12	130	-451.82	1.28	0.55	0.58
0	P99	J88	J90	874.98	16	130	-493.86	0.79	0.15	0.17

Run EB13

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	270.76	64.46
0	J102	0	125.5	271.86	63.42
0	J104	9.32	129.8	273.16	62.12
0	J122	75.78	117.5	267.46	64.98
0	J124	66.76	119.5	267.46	64.11
0	J126	0	130	267.83	59.72
0	J128	0	133	266.9	58.02
0	J130	0	134	267.52	57.86
0	J132	750	131	260.5	56.11
0	J134	750	131	260.13	55.95
0	J136	0	131	264.05	57.65
0	J138	0	122	279.02	68.04
0	J140	0	122	279.02	68.04
0	J146	0	132	284.7	66.16
0	J148	0	132	284.7	66.16
0	J150	0	118	256.03	59.81
0	J152	0	118	256.03	59.81
0	J154	0	90.3	267.53	76.79
0	J156	0	115.5	279.07	70.87
0	J158	0	115.5	279.07	70.87
0	J160	0	128	279.37	65.59
0	J162	0	128	279.37	65.59
0	J164	0	98	279.07	78.46
0	J166	0	98	279.07	78.46
0	J168	0	115.25	267.46	65.95
0	J170	0	120	279.01	68.9
0	J172	0	120	279.01	68.9
0	J174	0	123	279.04	67.61
0	J176	0	123	279.04	67.61
0	J178	0	94	256.98	70.62
0	J180	0	94	256.98	70.62
0	J182	0	118	269.2	65.51
0	J184	0	118	258.16	60.73
0	J186	0	118	258.16	60.73
0	J188	0	126	267.71	61.4
0	J190	0	126	267.66	61.38
0	J192	0	126	267.62	61.36
0	J194	0	126	267.58	61.35
0	J196	0	99.75	268.69	73.2
0	J198	0	95.5	267.55	74.55
0	J20	44.06	90.4	267.53	76.75
0	J206	0	100	280.23	78.09
0	J208	0	100	280.23	78.09
0	J210	0	102	255.95	66.71
0	J212	0	102	255.95	66.71
0	J214	0	102	255.95	66.71
0	J216	0	100	280.79	78.34
0	J218	0	100	280.79	78.34
0	J22	41.86	118.5	267.53	64.57
0	J220	50.94	116	267.47	65.63
0	J222	50.4	119.1	267.49	64.3
0	J224	0	118	269.7	65.73

0	J226	0	130	270.23	60.76
0	J228	0	116	279.14	70.69
0	J230	0	147	284.73	59.68
0	J232	0	148	290.8	61.88
0	J236	2,427.93	166	309.31	62.1
0	J238	1,213.97	181	301.01	52
0	J240	0	164	309.75	63.15
0	J242	0	148	291.35	62.11
0	J244	0	148	290.92	61.93
0	J246	1,213.97	146	292.97	63.68
0	J252	0	164.3	310.06	63.16
0	J26	88.2	115.5	267.53	65.87
0	J260	0	164.48	310.11	63.1
0	J262	0	164.48	310.15	63.12
0	J264	0	167.47	311.46	62.39
0	J266	0	167.47	311.55	62.43
0	J268	0	167.47	311.63	62.47
0	J270	0	167.47	311.67	62.48
0	J272	0	167.47	311.71	62.5
0	J274	0	167.47	311.87	62.57
0	J276	0	167.47	312	62.62
0	J278	0	164.48	170.25	2.5
0	J28	34.78	118.6	267.57	64.55
0	J280	0	164.48	170.25	2.5
0	J282	0	164.48	170.25	2.5
0	J286	0	164.48	169.96	2.38
0	J288	0	164.48	169.97	2.38
0	J290	0	164.48	169.99	2.39
0	J292	0	164.48	170.06	2.42
0	J294	0	164.48	170.25	2.5
0	J296	0	164.57	170.36	2.51
0	J298	0	164.22	170.75	2.83
0	J30	44.42	122.2	267.61	63.01
0	J300	0	127.5	274.83	63.84
0	J302	0	128	275.03	63.71
0	J304	0	142	278.18	59.01
0	J308	0	163	170.99	3.46
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	170.25	2.5
0	J32	93.48	126	267.7	61.4
0	J328	0	167.47	319.58	65.91
0	J330	0	167.47	319.3	65.79
0	J332	0	167.47	319.23	65.76
0	J334	0	167.47	313.99	63.49
0	J336	0	167.47	311.87	62.57
0	J338	0	167.47	311.67	62.48
0	J34	0	134	268.02	58.07
0	J340	0	167.47	311.55	62.43
0	J36	0	137	269.29	57.32
0	J38	79.7	90.2	267.54	76.84
0	J40	138.2	90	267.63	76.97
0	J42	137.88	101	267.49	72.14
0	J44	93.74	111	267.47	67.8
0	J46	79.04	113	267.47	66.93
0	J48	76.62	114.7	267.51	66.21
0	J50	76.58	120	267.6	63.96
0	J52	152.52	126	267.73	61.41
0	J54	76.28	127.6	267.11	60.45
0	J56	70.04	121.9	267.57	63.12
0	J58	97.94	126	266.88	61.04
0	J60	43.14	124.5	267.5	61.96

0	J62	94.12	122	267.48	63.04
0	J64	69.8	127	266.58	60.48
0	J66	44.72	130.5	266.53	58.94
0	J68	45.14	88	268.4	78.17
0	J70	92.66	97.5	268.52	74.1
0	J72	105.24	102	268.89	72.31
0	J74	104.58	108	269.03	69.77
0	J76	92.9	128	269.37	61.26
0	J78	160.7	126	269.37	62.12
0	J82	0	126.4	268.55	61.59
0	J84	23.7	76	268.58	83.45
0	J86	49.12	78	268.86	82.7
0	J88	42.04	88.4	269.17	78.33
0	J90	52.46	104	269.25	71.6
0	J92	53.12	98	269	74.09
0	J94	50.48	107	269.6	70.45
0	J96	40.96	116	270.01	66.73

	ID	Flow (gpm)	Head (ft)
0	RES9010	-9,299.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.81	74.46	2,598.89	156.12	Open	1	48.85	0
0	U7004	153.8	6.78	74.34	2,600.95	155.92	Open	1	48.78	0
0	U7006	153.8	6.77	74.31	2,601.39	155.88	Open	1	48.76	0
0	U7008	153.8	6.92	70.29	1,498.76	146.23	Open	1	49.08	0
0	U7010	153.8	7.13	68.49	0	0	Closed	0	0	0
0	U7012	153.8	7.13	68.4	0	0	Closed	0	0	0
0	U7014	153.8	7.13	68.35	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	63.04	68.04	0	0	11.54	Open	5
0	V8002	8	122	63.09	68.04	0	0	0	Closed	5
0	V8008	10	132	61.16	66.16	0	0	11.54	Open	2
0	V8010	10	132	59.17	66.16	0	0	0	Closed	2
0	V8012	8	118	64.79	59.81	0	0	0	Closed	5
0	V8014	8	118	64.81	59.81	0	0	11.54	Open	5
0	V8016	8	115.5	65.87	70.87	0	0	11.54	Open	5
0	V8018	8	115.5	65.87	70.87	0	0	0	Closed	5
0	V8020	8	128	60.59	65.59	0	0	11.54	Open	5
0	V8022	8	128	60.53	65.59	0	0	0	Closed	5
0	V8024	8	98	73.46	78.46	0	0	0	Closed	5
0	V8026	8	98	73.46	78.46	0	0	11.54	Open	5
0	V8028	10	120	63.9	68.9	0	0	0	Closed	2
0	V8032	8	123	62.61	67.61	0	0	11.54	Open	5
0	V8034	8	123	62.6	67.61	0	0	0	Closed	5
0	V8036	8	94	75.65	70.62	0	0	0	Closed	5
0	V8038	8	94	75.62	70.62	0	0	11.54	Open	5
0	V8042	10	118	65.73	60.73	0	0	11.54	Open	2
0	V8044	10	118	65.51	60.73	0	0	0	Closed	2
0	V8052	10	100	73.02	78.09	0	0	0	Closed	2
0	V8054	10	100	73.09	78.09	0	0	11.54	Open	2
0	V8056	8	102	71.71	66.71	0	0	11.54	Open	5
0	V8058	8	102	71.73	66.71	0	0	0	Closed	5
0	V8060	8	100	73.3	78.34	0	0	0	Closed	5
0	V8062	8	100	73.34	78.34	0	0	11.54	Open	5
0	V8070	10	120	63.9	68.9	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-204.07	0.58	0.11	0.13
0	P103	J92	J90	1,241.83	12	130	-257.19	0.73	0.25	0.2

0	P105	J90	J94	1,132.34	16	130	-677.97	1.08	0.34	0.3
0	P107	J94	J96	1,204.53	16	130	-728.45	1.16	0.42	0.35
0	P111	J78	J100	1,067.79	16	130	-1,486.94	2.37	1.39	1.3
0	P115	J96	J100	886.7	16	130	-1,177.39	1.88	0.75	0.84
0	P117	J100	J102	789.56	20	130	-2,765.03	2.82	1.09	1.38
0	P119	J102	J104	941.88	20	130	-2,765.03	2.82	1.3	1.38
0	P121	J104	J300	1,197.93	20	130	-2,774.35	2.83	1.67	1.39
0	P123	J300	J302	147.08	20	130	-2,774.35	2.83	0.2	1.39
0	P125	J302	J304	2,260.56	20	130	-2,774.35	2.83	3.15	1.39
0	P139	J122	J124	627.68	12	130	-26.54	0.08	0	0
0	P141	J124	J60	1,242.80	12	130	-93.3	0.26	0.04	0.03
0	P145	J34	J126	846.23	20	130	1,037.43	1.06	0.19	0.23
0	P149	J66	J128	522.48	8	130	-172.15	1.1	0.37	0.7
0	P155	J126	J130	441.09	8	130	172.15	1.1	0.31	0.7
0	P157	J128	J130	886.05	8	130	-172.15	1.1	0.62	0.7
0	P159	J126	J32	843.52	20	130	865.27	0.88	0.14	0.16
0	P161	J66	J132	415.81	8	130	883.28	5.64	6.04	14.52
0	P163	J64	J136	338.87	8	130	616.72	3.94	2.53	7.46
0	P165	J136	J134	525.67	8	130	616.72	3.94	3.92	7.46
0	P167	J132	J134	848.01	8	130	133.28	0.85	0.37	0.44
0	P17	J20	J22	1,133.08	16	130	19.02	0.03	0	0
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-22.84	0.04	0	0
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-231.96	0.37	0.05	0.04
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-63.08	0.18	0.01	0.02
0	P215	J154	J38	842.54	12	130	-63.08	0.18	0.01	0.02
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-266.75	0.43	0.04	0.05
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	49.24	0.14	0.01	0.01
0	P249	J168	J122	563.66	12	130	49.24	0.14	0.01	0.01
0	P25	J30	J32	1,229.93	16	130	-311.17	0.5	0.09	0.07
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0

0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	306.81	0.87	0.17	0.28
0	P283	J182	J74	589.22	12	130	306.81	0.87	0.17	0.28
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-1,669.78	1.71	1.27	0.54
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	47.52	0.3	0.02	0.06
0	P301	J188	J190	664.92	8	130	47.52	0.3	0.04	0.06
0	P303	J56	J194	178.12	8	130	-47.52	0.3	0.01	0.06
0	P305	J194	J192	667.8	8	130	-47.52	0.3	0.04	0.06
0	P307	J192	J190	657.08	8	130	-47.52	0.3	0.04	0.06
0	P309	J72	J196	736.36	12	130	301.06	0.85	0.2	0.27
0	P311	J196	J70	609.66	12	130	301.06	0.85	0.17	0.27
0	P313	J40	J198	1,129.17	12	130	135.73	0.39	0.07	0.06
0	P315	J198	J42	1,043.66	12	130	135.73	0.39	0.07	0.06
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-142.78	0.41	0.08	0.07
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	130.98	0.37	0.08	0.06
0	P365	J222	J220	621.17	12	130	80.58	0.23	0.01	0.02
0	P367	J220	J44	1,095.19	12	130	29.64	0.08	0	0
0	P37	J26	J46	1,141.00	12	130	120.93	0.34	0.06	0.05
0	P379	J76	J224	678.87	12	130	-407.98	1.16	0.33	0.48
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-7.35	0.02	0	0
0	P393	J226	J36	1,733.97	20	130	1,669.78	1.71	0.94	0.54
0	P395	J96	J224	650.52	12	130	407.98	1.16	0.31	0.48
0	P399	J232	J230	2,608.50	18	130	2,774.35	3.5	6.07	2.33
0	P401	J230	J304	2,813.67	18	130	2,774.35	3.5	6.55	2.33
0	P403	J232	J228	7,230.92	16	130	1,669.78	2.66	11.67	1.61
0	P405	J228	J226	5,520.22	16	130	1,669.78	2.66	8.91	1.61
0	P41	J44	J42	1,067.11	12	130	-71.45	0.2	0.02	0.02
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	7,153.74	2.25	0.44	0.46

0	P423	J236	J238	5,398.38	24	130	4,725.81	3.35	8.3	1.54
0	P425	J238	J246	9,066.36	24	130	3,511.84	2.49	8.04	0.89
0	P427	J246	J244	5,073.87	24	130	2,297.87	1.63	2.05	0.4
0	P429	J240	J242	7,163.69	16	130	2,146.26	3.42	18.4	2.57
0	P43	J42	J48	1,096.37	12	130	-73.6	0.21	0.02	0.02
0	P431	J242	J232	213.31	16	130	2,146.26	3.42	0.55	2.57
0	P433	J244	J232	281.24	24	130	2,297.87	1.63	0.11	0.4
0	P439	RES9010	J310	68.78	1,100.00	130	9,299.99	0	0	0
0	P441	J310	J308	18	36	130	9,299.99	2.93	0.45	25.21
0	P443	J308	J298	106.2	36	130	9,299.99	2.93	0.24	2.25
0	P445	J298	J296	55.4	36	130	9,299.99	2.93	0.39	7.01
0	P447	J296	J294	78.5	36	130	9,299.99	2.93	0.11	1.43
0	P449	J294	J292	19	30	130	9,300.00	4.22	0.19	9.97
0	P45	J48	J50	1,194.62	12	130	-150.22	0.43	0.09	0.08
0	P451	J292	J290	9.2	30	130	6,701.10	3.04	0.07	7.23
0	P453	J290	J288	9.2	30	130	4,100.16	1.86	0.03	2.74
0	P455	J288	J286	9.2	30	130	1,498.76	0.68	0	0.37
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,598.89	3.28	0.54	26.34
0	P469	J290	U7004	20.6	18	130	2,600.95	3.28	0.54	26.38
0	P47	J50	J52	765.09	12	130	-226.8	0.64	0.12	0.16
0	P473	J288	U7006	20.6	18	130	2,601.39	3.28	0.54	26.39
0	P477	J286	U7008	20.6	18	130	1,498.76	1.89	0.18	8.82
0	P481	J282	U7010	12.1	18	130	0	0	0	0
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	460.63	0.74	0.22	0.15
0	P493	J276	J274	4.9	16	130	2,598.89	4.15	0.12	25.45
0	P495	J274	J272	4.2	16	130	2,598.89	4.15	0.16	39.27
0	P497	J272	J270	4.7	30	130	5,199.84	2.36	0.04	7.98
0	P499	J270	J268	4.7	30	130	5,199.84	2.36	0.04	7.98
0	P501	J268	J266	4.7	30	130	7,801.23	3.54	0.08	17.88
0	P503	J266	J264	4.7	30	130	7,801.23	3.54	0.08	17.88
0	P505	J264	J262	60.6	30	130	9,299.99	4.22	1.32	21.72
0	P507	J262	J260	20.3	36	130	9,299.99	2.93	0.04	2.06
0	P509	J260	J252	30.38	36	130	9,299.99	2.93	0.05	1.63
0	P51	J34	J66	1,373.58	12	130	632.35	1.79	1.49	1.08
0	P511	J252	J240	90.5	36	130	9,299.99	2.93	0.31	3.4
0	P513	J294	J312	36.2	30	130	0	0	0	0
0	P515	J312	J282	31.2	30	130	0	0	0	0
0	P517	U7002	J328	15	12	130	2,598.89	7.37	6.06	404.18
0	P519	J328	J276	9.1	14	130	2,598.89	5.42	7.58	832.96
0	P521	U7004	J330	15	12	130	2,600.95	7.38	6.07	404.82
0	P523	J330	J272	9.1	14	130	2,600.95	5.42	7.59	834.27
0	P525	U7006	J332	15	12	130	2,601.39	7.38	6.07	404.96
0	P527	J332	J268	9.1	14	130	2,601.39	5.42	7.59	834.56
0	P529	U7008	J334	15	12	130	1,498.76	4.25	2.02	134.84
0	P53	J66	J64	862.35	12	130	-123.5	0.35	0.05	0.05
0	P531	J334	J264	9.1	14	130	1,498.76	3.12	2.52	277.22
0	P533	U7010	J336	15	12	130	0	0	0	0
0	P535	J336	J274	9.1	14	130	0	0	0	0
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	547.86	1.55	0.9	0.83
0	P57	J62	J60	691.6	16	130	-181.35	0.29	0.02	0.03
0	P59	J64	J58	1,424.22	12	130	-262.16	0.74	0.3	0.21
0	P61	J60	J56	890.62	16	130	-317.79	0.51	0.07	0.07
0	P67	J56	J52	1,036.48	16	130	-471.29	0.75	0.16	0.15

0	P69	J52	J54	1,131.15	12	130	436.38	1.24	0.62	0.55
0	P71	J58	J54	591.64	12	130	-360.1	1.02	0.23	0.38
0	P73	J40	J68	1,551.82	12	130	-416.72	1.18	0.78	0.5
0	P75	J68	J70	838.54	12	130	-208.4	0.59	0.12	0.14
0	P79	J72	J74	1,086.50	12	130	-202.23	0.57	0.14	0.13
0	P83	J76	J78	765.46	12	130	8.27	0.02	0	0
0	P89	J52	J82	771.55	16	130	-1,334.51	2.13	0.82	1.07
0	P91	J82	J78	774.7	16	130	-1,334.51	2.13	0.83	1.07
0	P93	J68	J84	890.35	12	130	-253.46	0.72	0.18	0.2
0	P95	J84	J86	1,204.21	12	130	-277.16	0.79	0.28	0.24
0	P97	J86	J88	946.69	12	130	-326.28	0.93	0.3	0.32
0	P99	J88	J90	874.98	16	130	-368.32	0.59	0.09	0.1

Run EB14

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	245.24	53.4
0	J102	0	125.5	247.09	52.68
0	J104	9.32	129.8	249.28	51.77
0	J122	75.78	117.5	238.37	52.37
0	J124	66.76	119.5	238.4	51.52
0	J126	0	130	238.06	46.82
0	J128	0	133	238.41	45.68
0	J130	0	134	238.18	45.14
0	J132	0	131	238.55	46.6
0	J134	0	131	238.55	46.6
0	J136	0	131	238.55	46.6
0	J138	0	122	226.85	45.43
0	J140	0	122	226.85	45.43
0	J146	0	132	260.82	55.82
0	J148	0	132	260.82	55.82
0	J150	0	118	249.62	57.03
0	J152	0	118	249.62	57.03
0	J154	0	90.3	238.35	64.15
0	J156	0	115.5	249.71	58.15
0	J158	0	115.5	249.71	58.15
0	J160	1,500.00	128	221.69	40.6
0	J162	1,500.00	128	221.68	40.59
0	J164	0	98	226.81	55.81
0	J166	0	98	226.81	55.81
0	J168	0	115.25	238.37	53.35
0	J170	0	120	227.07	46.4
0	J172	0	120	227.07	46.4
0	J174	0	123	226.99	45.06
0	J176	0	123	226.99	45.06
0	J178	0	94	229.81	58.85
0	J180	0	94	229.81	58.85
0	J182	0	118	242.59	53.98
0	J184	0	118	254.97	59.35
0	J186	0	118	254.97	59.35
0	J188	0	126	239.39	49.13
0	J190	0	126	239.23	49.06
0	J192	0	126	239.07	48.99
0	J194	0	126	238.91	48.92
0	J196	0	99.75	241.7	61.51
0	J198	0	95.5	238.9	62.13
0	J20	44.06	90.4	238.26	64.07
0	J206	0	100	230.16	56.4
0	J208	0	100	230.16	56.4
0	J210	0	102	250.31	64.26
0	J212	0	102	250.31	64.26
0	J214	0	102	250.31	64.26

0	J216	0	100	231.2	56.85
0	J218	0	100	231.2	56.85
0	J22	41.86	118.5	238.21	51.87
0	J220	50.94	116	238.61	53.13
0	J222	50.4	119.1	238.67	51.81
0	J224	0	118	243.43	54.35
0	J226	0	130	242.64	48.81
0	J228	0	116	258.37	61.69
0	J230	0	147	268.75	52.76
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67
0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	238.17	53.15
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98
0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	238.08	51.77
0	J280	0	164.48	169.76	2.29
0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32
0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	238.03	50.19
0	J300	0	127.5	252.09	53.99
0	J302	0	128	252.44	53.92
0	J304	0	142	257.73	50.15
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	237.96	48.51
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33
0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	238.74	45.38
0	J340	0	167.47	310.29	61.88
0	J36	0	137	240.97	45.05
0	J38	79.7	90.2	238.56	64.28
0	J40	138.2	90	239.03	64.57
0	J42	137.88	101	238.77	59.7
0	J44	93.74	111	238.56	55.27
0	J46	79.04	113	238.36	54.32
0	J48	76.62	114.7	238.91	53.82

0	J50	76.58	120	239.19	51.64
0	J52	152.52	126	239.47	49.16
0	J54	76.28	127.6	238.95	48.25
0	J56	70.04	121.9	238.87	50.68
0	J58	97.94	126	238.77	48.86
0	J60	43.14	124.5	238.53	49.41
0	J62	94.12	122	238.39	50.43
0	J64	69.8	127	238.54	48.33
0	J66	44.72	130.5	238.55	46.82
0	J68	45.14	88	241.04	66.31
0	J70	92.66	97.5	241.35	62.33
0	J72	105.24	102	242.12	60.71
0	J74	104.58	108	242.35	58.21
0	J76	92.9	128	242.83	49.76
0	J78	160.7	126	242.81	50.61
0	J82	0	126.4	241.13	49.71
0	J84	23.7	76	241.43	71.68
0	J86	49.12	78	242.02	71.07
0	J88	42.04	88.4	242.59	66.81
0	J90	52.46	104	242.74	60.12
0	J92	53.12	98	242.32	62.53
0	J94	50.48	107	243.32	59.07
0	J96	40.96	116	244	55.46

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0
0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.00	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	50.43	45.43	0	0	11.54	Open	5
0	V8002	8	122	50.27	45.43	0	0	0	Closed	5
0	V8008	10	132	50.82	55.82	0	0	11.54	Open	2
0	V8010	10	132	47.29	55.82	0	0	0	Closed	2
0	V8012	8	118	52.07	57.03	0	0	0	Closed	5
0	V8014	8	118	52.03	57.03	0	0	11.54	Open	5
0	V8016	8	115.5	53.15	58.15	0	0	11.54	Open	5
0	V8018	8	115.5	53.17	58.15	0	0	0	Closed	5
0	V8020	8	128	46.32	43.28	1,443.77	9.22	7.02	Open	5
0	V8022	8	128	46.01	42.93	1,556.23	9.93	7.11	Open	5
0	V8024	8	98	60.9	55.81	0	0	0	Closed	5
0	V8026	8	98	60.81	55.81	0	0	11.54	Open	5
0	V8028	10	120	51.29	46.4	0	0	0	Closed	2
0	V8032	8	123	50.06	45.06	0	0	11.54	Open	5
0	V8034	8	123	50	45.06	0	0	0	Closed	5
0	V8036	8	94	63.88	58.85	0	0	0	Closed	5
0	V8038	8	94	63.85	58.85	0	0	11.54	Open	5
0	V8042	10	118	54.35	59.35	0	0	11.54	Open	2
0	V8044	10	118	53.98	59.35	0	0	0	Closed	2
0	V8052	10	100	61.25	56.4	0	0	0	Closed	2
0	V8054	10	100	61.4	56.4	0	0	11.54	Open	2
0	V8056	8	102	59.26	64.26	0	0	11.54	Open	5
0	V8058	8	102	59.32	64.26	0	0	0	Closed	5
0	V8060	8	100	61.78	56.85	0	0	0	Closed	5

0	V8062	8	100	61.85	56.85	0	0	11.54	Open	5
0	V8070	10	120	51.4	46.4	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-286.57	0.81	0.2	0.25
0	P103	J92	J90	1,241.83	12	130	-339.69	0.96	0.43	0.34
0	P105	J90	J94	1,132.34	16	130	-894.9	1.43	0.58	0.51
0	P107	J94	J96	1,204.53	16	130	-945.38	1.51	0.68	0.56
0	P111	J78	J100	1,067.79	16	130	-2,014.35	3.21	2.44	2.28
0	P115	J96	J100	886.7	16	130	-1,549.79	2.47	1.25	1.41
0	P117	J100	J102	789.56	20	130	-3,664.84	3.74	1.84	2.33
0	P119	J102	J104	941.88	20	130	-3,664.84	3.74	2.2	2.33
0	P121	J104	J300	1,197.93	20	130	-3,674.16	3.75	2.81	2.34
0	P123	J300	J302	147.08	20	130	-3,674.16	3.75	0.34	2.34
0	P125	J302	J304	2,260.56	20	130	-3,674.16	3.75	5.3	2.34
0	P139	J122	J124	627.68	12	130	-112.81	0.32	0.03	0.04
0	P141	J124	J60	1,242.80	12	130	-179.57	0.51	0.13	0.11
0	P145	J34	J126	846.23	20	130	2,064.03	2.11	0.68	0.81
0	P149	J66	J128	522.48	8	130	102.27	0.65	0.14	0.27
0	P155	J126	J130	441.09	8	130	-102.27	0.65	0.12	0.27
0	P157	J128	J130	886.05	8	130	102.27	0.65	0.24	0.27
0	P159	J126	J32	843.52	20	130	722.53	0.74	0.1	0.12
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	243.52	0.39	0.05	0.05
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	201.66	0.32	0.04	0.03
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	343.92	0.55	0.1	0.09
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-287.58	0.82	0.09	0.25
0	P215	J154	J38	842.54	12	130	-287.58	0.82	0.21	0.25
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	1,556.23	6.36	3.77	13.97
0	P229	V8022	J160	385.74	10	130	1,556.23	6.36	5.39	13.97
0	P23	J28	J30	679.9	16	130	309.14	0.49	0.05	0.07
0	P231	J126	V8020	259.39	10	130	1,443.77	5.9	3.15	12.16
0	P233	V8020	J162	510.51	10	130	1,443.77	5.9	6.21	12.16
0	P235	J160	J162	392.51	10	130	56.23	0.23	0.01	0.03
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0

0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-37.03	0.11	0	0.01
0	P249	J168	J122	563.66	12	130	-37.03	0.11	0	0.01
0	P25	J30	J32	1,229.93	16	130	264.72	0.42	0.07	0.05
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	369.46	1.05	0.25	0.4
0	P283	J182	J74	589.22	12	130	369.46	1.05	0.24	0.4
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,269.96	2.32	2.23	0.96
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	96.56	0.62	0.08	0.24
0	P301	J188	J190	664.92	8	130	96.56	0.62	0.16	0.24
0	P303	J56	J194	178.12	8	130	-96.56	0.62	0.04	0.24
0	P305	J194	J192	667.8	8	130	-96.56	0.62	0.16	0.24
0	P307	J192	J190	657.08	8	130	-96.56	0.62	0.16	0.24
0	P309	J72	J196	736.36	12	130	446.22	1.27	0.42	0.57
0	P311	J196	J70	609.66	12	130	446.22	1.27	0.35	0.57
0	P313	J40	J198	1,129.17	12	130	190.83	0.54	0.13	0.12
0	P315	J198	J42	1,043.66	12	130	190.83	0.54	0.12	0.12
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-367.28	1.04	0.47	0.4
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	216.73	0.61	0.2	0.15
0	P365	J222	J220	621.17	12	130	166.33	0.47	0.06	0.09
0	P367	J220	J44	1,095.19	12	130	115.39	0.33	0.05	0.05
0	P37	J26	J46	1,141.00	12	130	-230.46	0.65	0.19	0.17
0	P379	J76	J224	678.87	12	130	-563.44	1.6	0.59	0.88
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-272.47	0.77	0.2	0.23
0	P393	J226	J36	1,733.97	20	130	2,269.96	2.32	1.67	0.96
0	P395	J96	J224	650.52	12	130	563.44	1.6	0.57	0.88
0	P399	J232	J230	2,608.50	18	130	3,674.16	4.63	10.21	3.92
0	P401	J230	J304	2,813.67	18	130	3,674.16	4.63	11.02	3.92

0	P403	J232	J228	7,230.92	16	130	2,269.96	3.62	20.6	2.85
0	P405	J228	J226	5,520.22	16	130	2,269.96	3.62	15.73	2.85
0	P41	J44	J42	1,067.11	12	130	-250.82	0.71	0.21	0.2
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-197.87	0.56	0.14	0.13
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91
0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-274.49	0.78	0.28	0.23
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.25	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-351.07	1	0.28	0.36
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57
0	P481	J282	U7010	12.1	18	130	2,603.00	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	-662.46	1.06	0.43	0.29
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156
0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	205.93	0.58	0.19	0.14
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87
0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.37
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	58.94	0.17	0.01	0.01
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.79
0	P533	U7010	J336	15	12	130	2,603.00	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.00	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0

0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-211.73	0.6	0.15	0.14
0	P57	J62	J60	691.6	16	130	-544.85	0.87	0.14	0.2
0	P59	J64	J58	1,424.22	12	130	-222.59	0.63	0.22	0.16
0	P61	J60	J56	890.62	16	130	-767.56	1.22	0.34	0.38
0	P67	J56	J52	1,036.48	16	130	-957.77	1.53	0.6	0.58
0	P69	J52	J54	1,131.15	12	130	396.81	1.13	0.52	0.46
0	P71	J58	J54	591.64	12	130	-320.53	0.91	0.18	0.31
0	P73	J40	J68	1,551.82	12	130	-696.31	1.98	2.01	1.3
0	P75	J68	J70	838.54	12	130	-353.55	1	0.31	0.37
0	P79	J72	J74	1,086.50	12	130	-264.88	0.75	0.24	0.22
0	P83	J76	J78	765.46	12	130	101.08	0.29	0.03	0.04
0	P89	J52	J82	771.55	16	130	-1,954.73	3.12	1.67	2.16
0	P91	J82	J78	774.7	16	130	-1,954.73	3.12	1.67	2.16
0	P93	J68	J84	890.35	12	130	-387.89	1.1	0.39	0.44
0	P95	J84	J86	1,204.21	12	130	-411.59	1.17	0.59	0.49
0	P97	J86	J88	946.69	12	130	-460.71	1.31	0.57	0.6
0	P99	J88	J90	874.98	16	130	-502.75	0.8	0.15	0.17

A.5 BUILDOUT MODEL BOUNDARY CONDITIONS

B&C Starting Boundary Conditions								
		Ground El	Buildout MDD		Buildout MDD+4,000 gpm FF		Buildout PHD	
		ft.	Head, ft	Head, psi	Head, ft	Head, psi	Head, ft	Head, psi
A		110.00	254.41	62.57	254.41	62.57	254.41	62.57
B	Jackson, Eagles Nest	130.00	298.36	72.95	277.29	63.82	282.92	66.26
C	Kiefer, Eagles Nest	142.00	299.19	68.11	280.84	60.16	287.51	63.05
D		172.00	301.00	55.89	284.30	48.66	295.49	53.51
E		90.00	285.25	84.60	260.61	73.92	262.95	74.94
F		136.00	298.78	70.53	278.82	61.88	284.38	64.29
G		140.00	299.30	69.02	280.96	61.07	287.50	63.91
Existing - Assume Same HGLs as B&C								
Same HGL as C	Assume Kiefer & Sunrise	150.00	299.19	64.64	280.84	56.69	287.51	59.58
				55.00		50.00		45.00
SCWA Starting Boundary Conditions								
B	Jackson, Eagles Nest	130.00	291.56	70.00	280.02	65.00	268.48	60.00
C	Kiefer, Eagles Nest	142.00	303.56	70.00	292.02	65.00	280.48	60.00
Use in Modeling								
B	Jackson, Eagles Nest	130.00	291.56	70.00	277.29	63.82	268.48	60.00
C	Kiefer, Eagles Nest	142.00	299.19	68.11	280.84	60.16	280.48	60.00

From: Grinstead, Michael
To: Stephen AuClair; Smith, Mark
Cc: Gardner, Bob
Subject: FW: Jackson Township Model Cutout
Date: Tuesday, February 23, 2016 6:59:27 AM

Steve and Mark,
Below are links to the Jackson Township model. The contractor tried to send them over yesterday, but we couldn't get the email. Let me know if you have issues downloading the files.
Thanks,
Mike

Hi Mike, Attached is the Jackson Township model cutout from the Zone 40 hydraulic model. Also included is a MS Word doc with a table that lists the nodes and pipes and elevation, flow, and head data for maximum day demands (MDD), MDD plus fireflow, and peak hour conditions. Included in MS Word doc are some snips from the model to illustrate where the boundary condition points are located in the model. The pipe and node numbers in the table can be found when the modeler opens the model. For the boundary conditions I followed your map that identified the desired model cut-out polygon with red dashed ink (attached as a PDF). I added a few additional locations for where pipes are entering the Jackson township area and the boundary conditions are needed at those locations in order for the modeler to run the Jackson Township cutout model.
3 files were sent to you.

Jackson Township Boundary Node conditions_022216.docx

ModelCutoutSketch_withLetters.pdf

Zone40_Water_Model8_JT.zip

Download Files

Size: **13.49 MB** Files will be available for download until **March 08, 2016 06:31 PST**.

At Brown and Caldwell, we appreciate your business. If you have any questions or comments, please visit us at

http://www.brownandcaldwell.com.

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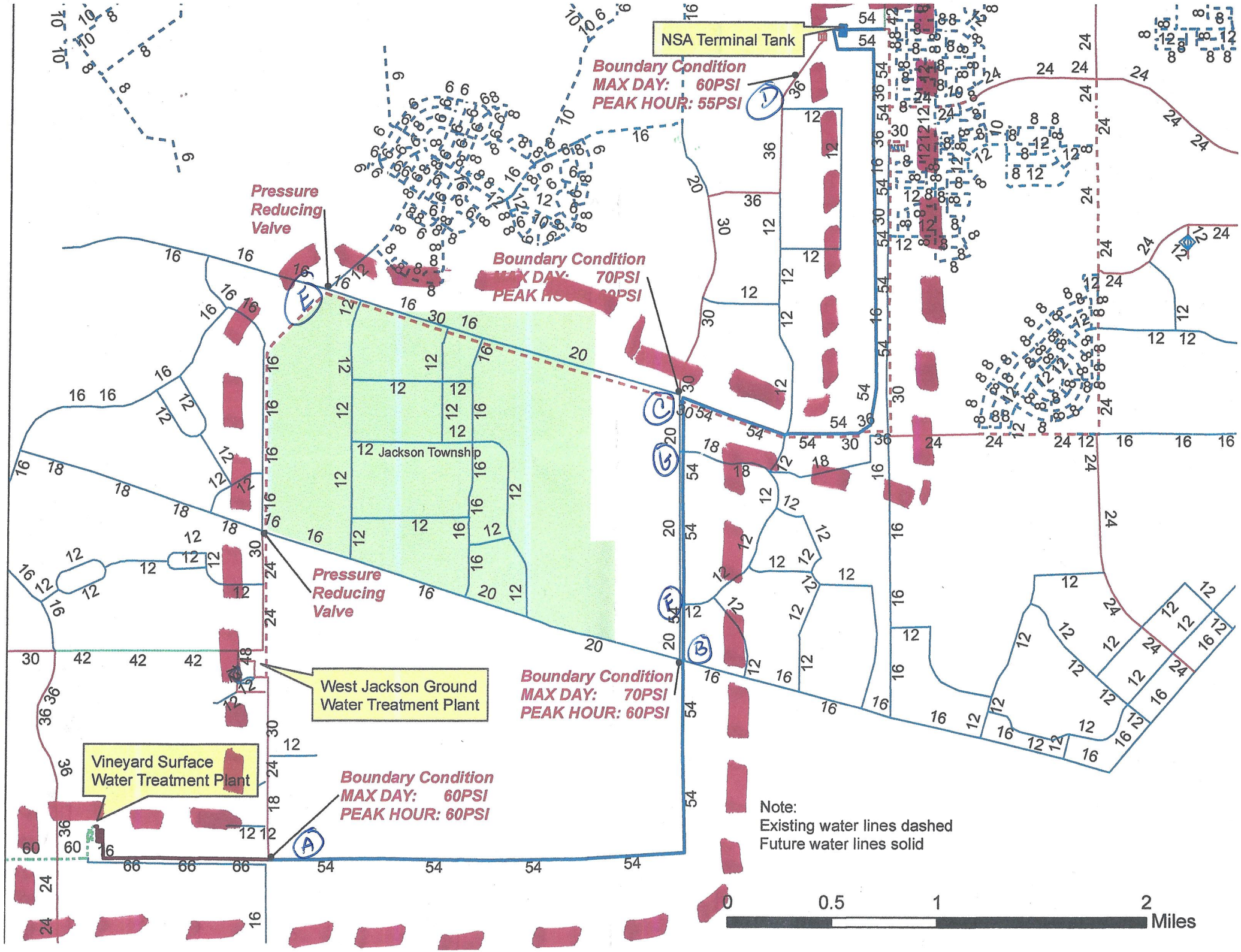

NSA Terminal Tank
Boundary Condition
MAX DAY: 60PSI
PEAK HOUR: 55PSI
Pressure Reducing Valve
Boundary Condition
70PSI
Jackson Township
Pressure Reducing Valve
West Jackson Ground Water Treatment Plant
Boundary Condition
MAX DAY: 70PSI
PEAK HOUR: 60PSI
Vineyard Surface Water Treatment Plant
Boundary Condition
MAX DAY: 60PSI
PEAK HOUR: 60PSI
Note:
Existing water lines dashed
Future water lines solid
0
0.5
1
2
Miles

Jackson Township Model Cutout Boundary Node Conditions at MDD, MDD+FF, and PHD

Boundary node no. (Pipe no. for flow)		Boundary node ground elevation, ft	Buildout MDD conditions		Buildout MDD + 4,000 gpm FF (at node J-4763)		Buildout PHD	
			Flow, gpm	Head, ft	Flow, gpm	Head, ft	Flow, gpm	Head, ft
A	J-4416(P-6324)	110	46,890 (from WTP)	254.41	46,890 (from WTP)	254.41	46,890 (from WTP)	254.41
B	J-4599(P-6533)	130	974.64 (to JT)	298.36	1817.31 (to JT)	277.29	1,394.76 (to JT)	282.92
C	J-4607(P-6541)	142	1926.39 (to JT)	299.19	3,601.41 (to JT)	280.84	4,600.87 (to JT)	287.51
D	J-4588(P-6522)	172	5,211.9 (to JT)	301.00	6,370.23 (to JT)	284.30	11,151.34 (to JT)	295.49
E	J-4880(P-7160)	90	1,732.3 (away from JT)	285.25	1,381.55 (away from JT)	260.61	1,803.15 (away from JT)	262.95
F	J-4598(P-6654)	136	428.25 (to JT)	298.78	806.02 (to JT)	278.82	407.17 (to JT)	284.38
G	J-4608(P-6543)	140	1,528.33 (to JT)	299.34	2,282.12 (to JT)	280.96	1,925.55 (to JT)	287.50

MDD = maximum day demand

FF=fire flow

PHD = peak hour demand

JT= Jackson Township

gpm= gallons per minute

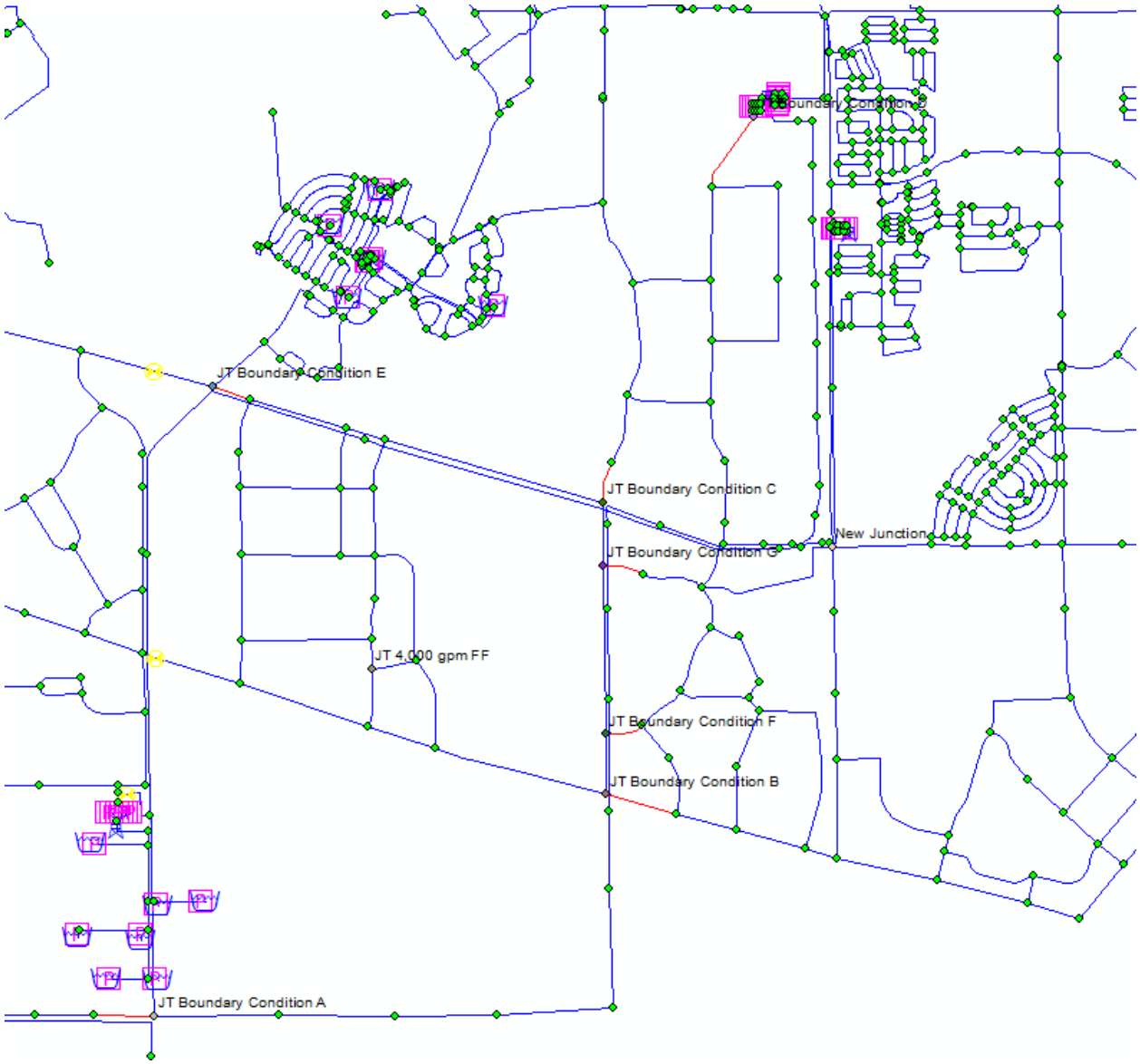


Figure 1. Location of Boundary Nodes and Fire Flow Node

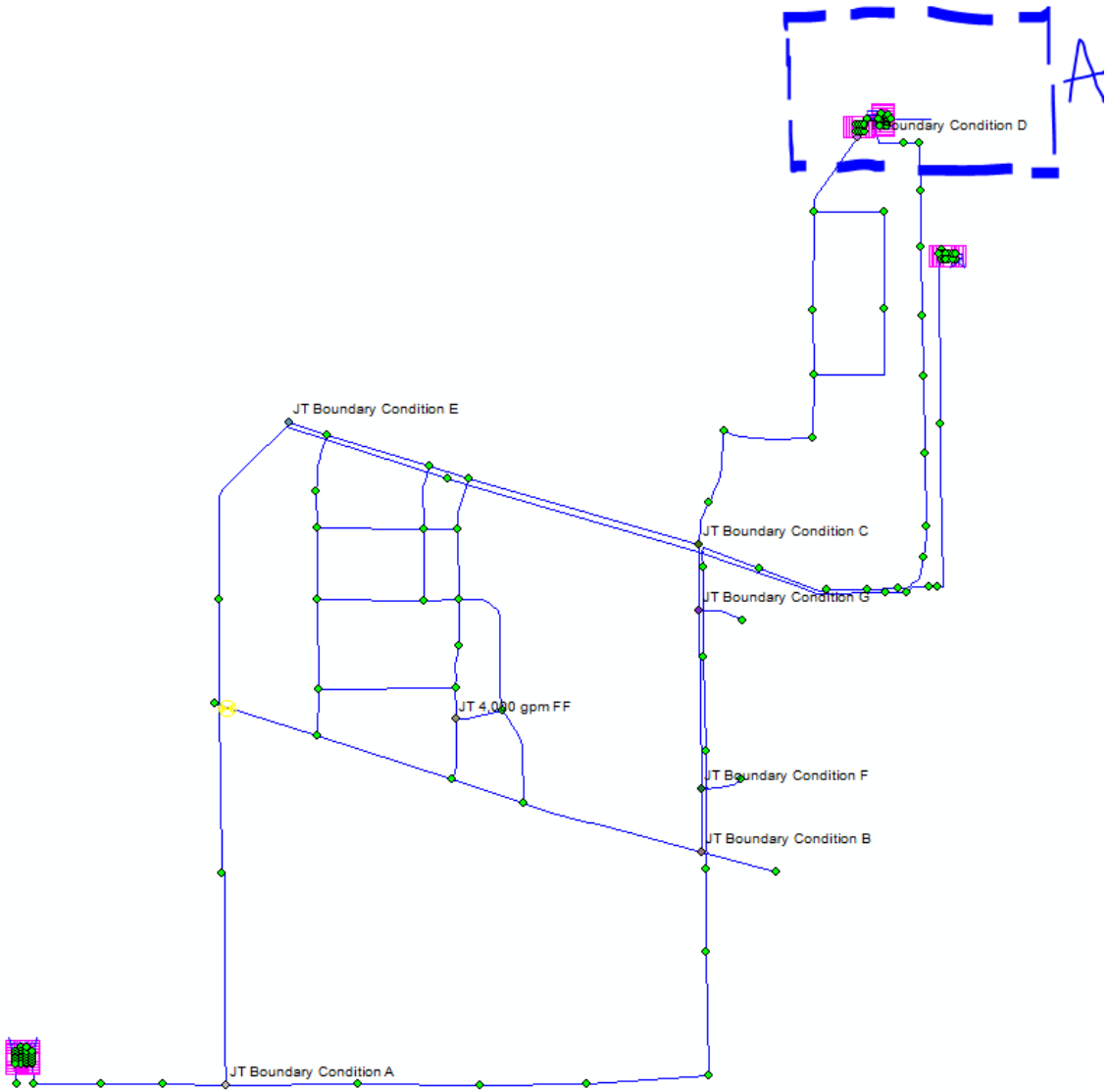


Figure 2. Jackson Township Model Cutout

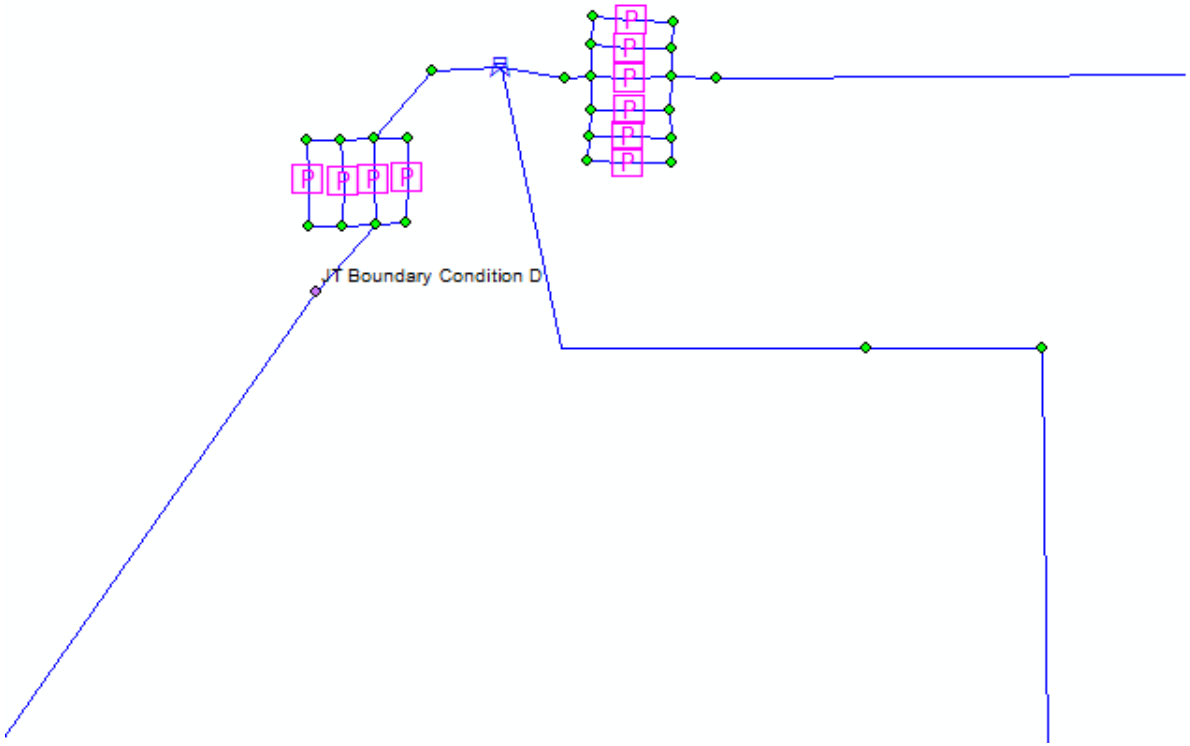
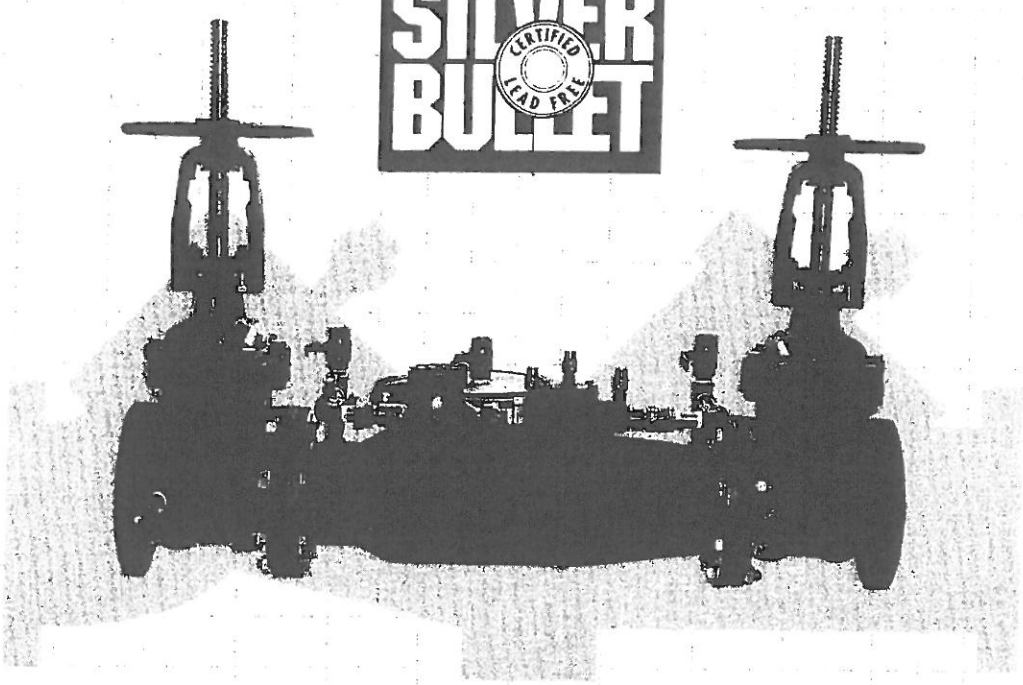


Figure 3. A - Zoom

A.6 TYPICAL FIRE LOOP BACKFLOW PREVENTER INFORMATION

MODEL 3000ss Double Check Detector Assembly

SILVER BULLET
CERTIFIED LEAD FREE



FOR FIRE PROTECTION SYSTEMS

The Ames Backflow Preventer: Lighter, Shorter, Better Flowing Than Any Other

Application

The Ames 3000ss protects the potable water system by preventing backflow from fire protection systems. The device also detects leaks or unauthorized use of water from fire protection lines.

Operation

In the incidence of minimal water flow, the valve clapper remains closed so that the water flows through the bypass loop. When major water flow is required, the water pressure will open the main valves to allow full water flow.

Installation

The 3000ss should be installed with adequate clearance and easy accessibility for maintenance and testing. The 3000ss may be installed vertically or horizontally. Refer to local codes for specific installation requirements.

Features

- *Lowest documented head loss.*
- *Non-Corrosive 300 series stainless steel (lead free) construction.*
- *40% shorter end to end dimensions for compact, inexpensive installation.*
- *Excellent for retrofit installations.*
- *50% lighter in weight, reduces installation and handling costs.*
- *Fully serviceable inline, no special tools.*
- *Pretested cam-check (patented)* assembly for long term reliability, low head loss, ease of serviceability.*
- *Single two-bolt grooved style cover for quick and easy access.*
- *Only ASSE 1048 approved assembly for vertical and horizontal applications.*
- *Made in U.S.A.*
- *Head loss equal to less than single detector check valve.*

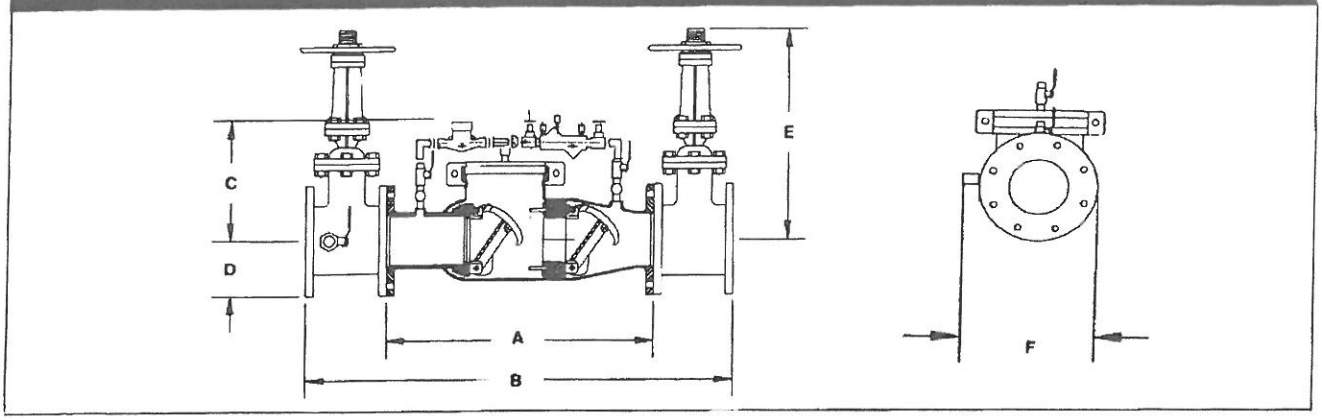
National Approvals

*Approved by national approval agencies.***

AMES CO.
FLUID CONTROL SYSTEMS

*Pat. #5,046,525

MODEL 3000ss Double Check Detector Assembly



Ames 3000ss - Weights & Dimensions (inches)

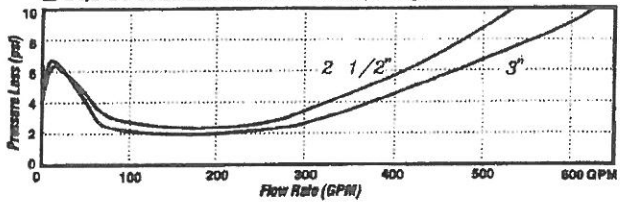
SIZE	A	B	C	D	E (Open)	F	Net Wt. (lb.) w/Gates	Net Wt. (lb.) w/o Gates
2 1/2"	22"	38"	10"	3 1/2"	16"	12 1/2"	155#	68#
3"	22"	38"	10"	3 3/4"	22"	13"	230#	70#
4"	22"	40"	10"	4 1/2"	23 1/2"	14 1/2'	240#	73#
6"	27 1/2"	48 1/2"	15"	5 1/2"	30"	15 1/2'	390#	120#
8"	29 1/2"	52 1/2"	15"	6 3/4"	37 3/4"	18 1/4"	572#	180#
10"	29 1/2"	55 1/2"	15"	8"	48"	19 1/2"	774#	190#
12"	29 1/2"	57 1/2"	15"	9 1/2"	54"	21"	1044#	220#

Physical Characteristics

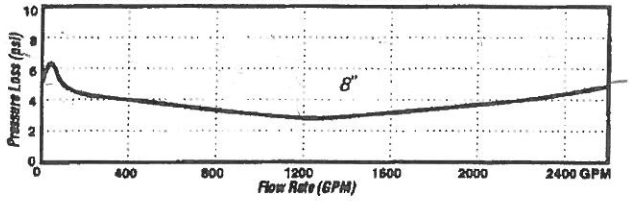
Sizes - 2 1/2", 3", 4", 6", 8", 10", 12"
Rated working pressure - 175 psi
Hydrostatic Pressure - 350 psi
Temperature range - 32°F - 110°F
Body material - 300 series stainless steel
Flange dimension in accordance with AWWA Class D
Assembly shall be ASSE 1048 approved for vertical installations,

8" DCV

2 1/2" & 3" Documented Flow Characteristics (including shut-off valves)

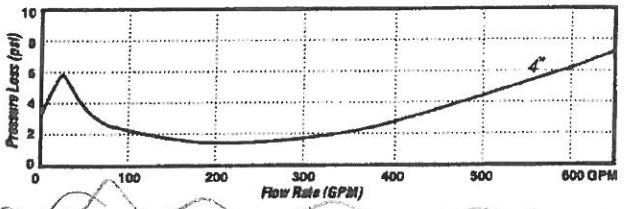


8" Documented Flow Characteristics (including shut-off valves) **

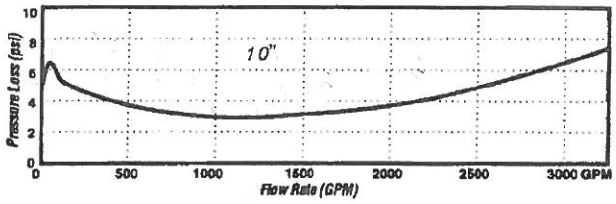


10" DCV

4" Documented Flow Characteristics (including shut-off valves)

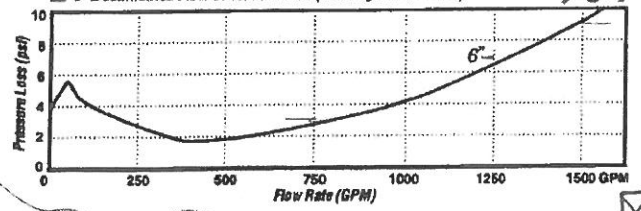


10" Documented Flow Characteristics (including shut-off valves) **

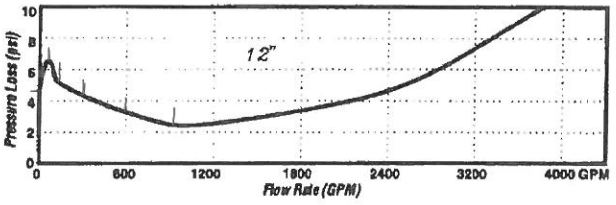


6" DCV

6" Documented Flow Characteristics (including shut-off valves)



12" Documented Flow Characteristics (including shut-off valves) **



Specifications

The double check detector assembly consists of two independently operating, spring loaded check valves, two UL, FM, OSY resilient wedge gate valves, and bypass assembly. The bypass assembly consists of a meter (cubic ft. or gallons), a double check including shut off valves and required test cocks. Each cam-check shall be internally loaded and provide a positive drip tight closure against reverse flow. Cam-check includes a stainless steel cam arm and spring, rubber faced disc and a replaceable seat. The body shall be manufactured from 300 series stainless steel, 100% lead free, through the water way, with a single two-bolt grooved style access cover. No special tools shall be required for servicing. Double check detector shall be 3000ss.

***Contact the factory for specific approvals*

916.666.2493 1485 Tanforan Avenue P.O. Box 1387 Woodland, CA 95776 **FAX 916.666.3914**

MB2-54 3/95

Appendix WS-2

Water Supply Assessment

Sacramento County Water Agency

Water Supply Assessment for Jackson Township

Prepared by Sacramento County Water Agency
August 2016

Limitations:

This is a draft document and is not intended to be a final representation of the work done. Consult the final report when it is finalized and approved by the Sacramento County Water Agency Board of Directors.

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INTRODUCTION

BACKGROUND

The California Water Code (Water Code) requires coordination between land use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet both existing demands and demands of planned development.

Water Code Sections 10910 – 10915 (inclusive) require land use lead agencies: 1) to identify the responsible public water purveyor for a proposed development project, and 2) to request a "Water Supply Assessment" (WSA) from the responsible purveyor. The objective of a WSA is to demonstrate the sufficiency of a purveyor's water supplies to satisfy the water demands of a proposed development project while still meeting the current and projected water demands of existing customers. Water Code Sections 10910 – 10915 delineate specific information that must be included in a WSA.

THE PROPOSED DEVELOPMENT PROJECT

The Sacramento County Planning and Environmental Review (PER) is preparing a CEQA document for the proposed project known as Jackson Township Specific Plan (Project). The Project is an area of 1,391 acres located in the eastern portion of the County of Sacramento; bounded by Jackson Road to the south, Excelsior Road to the west, on the east by the easterly boundary of a block of lands that lie westerly of Eagles Nest Road, and on the north by Kiefer Boulevard. North of Kiefer Boulevard is the Mather Field Specific Plan area and east of the Project is the proposed NewBridge Specific Plan Area and to the west is the West Jackson Plan Area. The Project also lies within the Jackson Corridor Planning Area per the County's 2011 General Plan. See Figure 1 for project location.

PER has identified the Sacramento County Water Agency (SCWA) as the responsible water purveyor for the Project and has requested that SCWA prepare this WSA in accordance with Water Code Sections 10910 – 10915.

WATER SUPPLY ASSESSMENT OBJECTIVE

The objective of the Jackson Township Specific Plan WSA is to demonstrate that the planned water supplies for Zone 40 of SCWA are sufficient to meet the demands of the Project in addition to the existing and projected water supply obligations over the next 20 years. The findings of this WSA will be included in the Project's CEQA review by PER.

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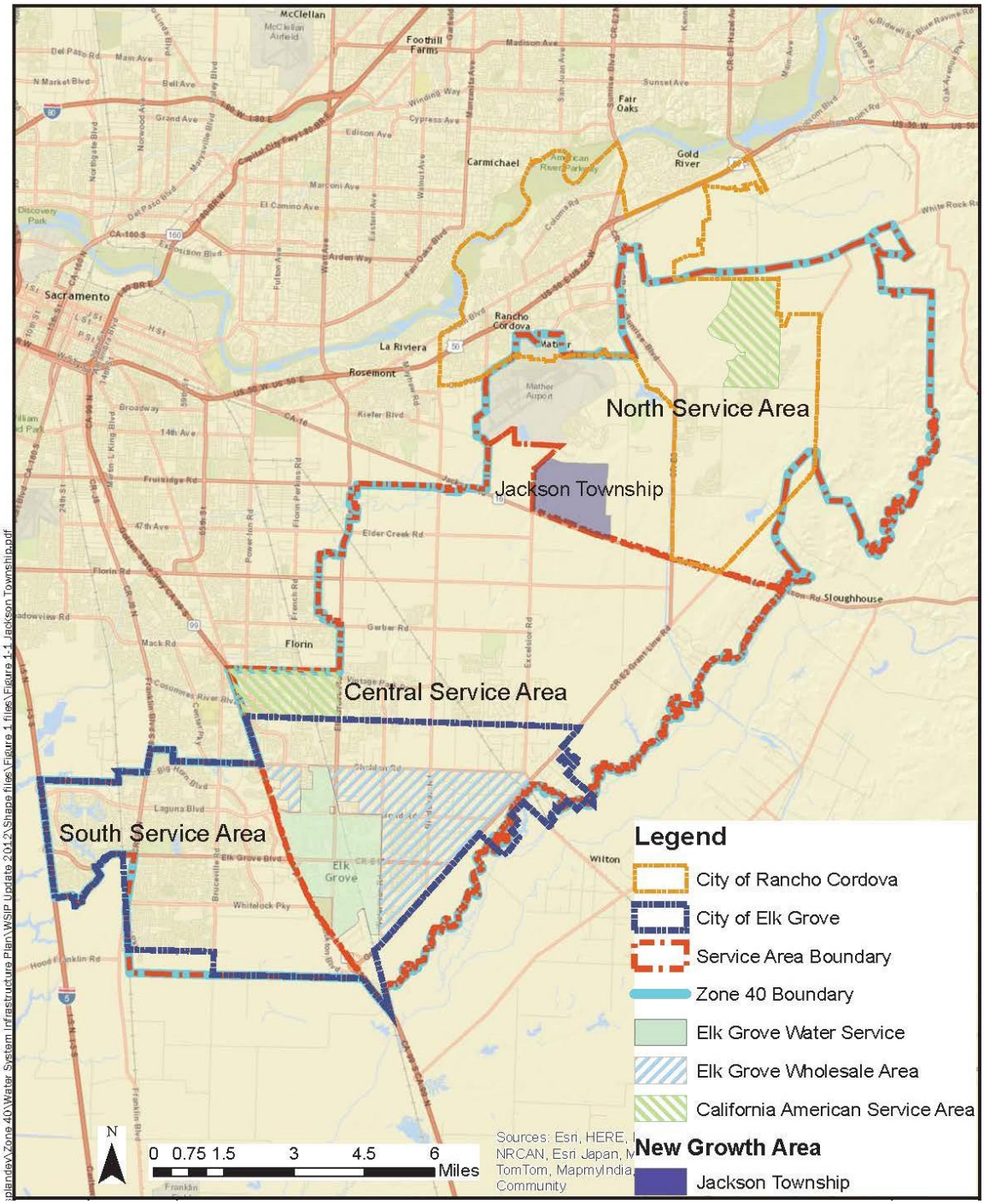

Figure 1 Jackson Township Specific Plan Location Map

OVERVIEW OF THE JACKSON TOWNSHIP WSA

The Project lies entirely within the boundaries of SCWA's Zone 40/41 service area but outside of the 2030 Study Area of the Water Supply Master Plan (WSMP), (SCWA, 2005). An

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amendment to the WSMP including the Project area has been prepared by SCWA staff and is pending Board approval. In 2016, SCWA also developed the Water System Infrastructure Plan (WSIP) (SCWA, 2016). The WSIP is a staff-level document that describes the projected water supply infrastructure needs to meet the projected built-out water demands in Zone 40, including the Project demands. Subsequently, the 2015 Urban Water Management Plan (UWMP) was developed based on water demand and supply information provided in the WSIP. Therefore, the UWMP demand projections include the estimated Project demands.

In addition to the above referenced discussion, the following documents may be used in whole or in part for the water assessment for the Project:

- The Central Sacramento County Groundwater Management Plan (SCGA, February 2006);
- The Final Environmental Impact Report (FEIR) for 2002 Zone 40 Water Supply Master Plan (EDAW, December 2004);
- The Water Forum Agreement (WFA), Sacramento City-County Office of Metropolitan Water Planning, January 2000.

Figure 2 shows the land use diagram of the Project obtained from the Project proponent.

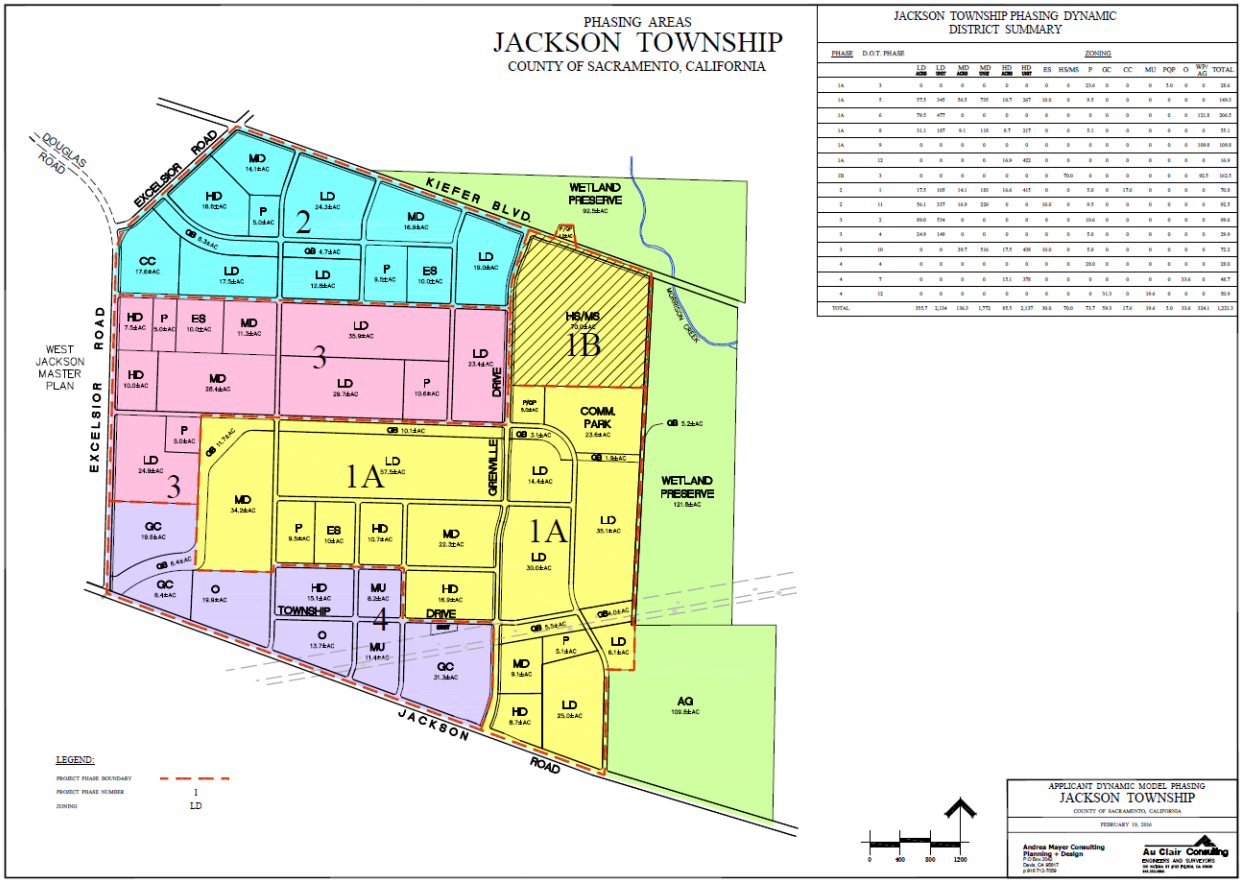

Figure 2 Jackson Township Land Use Diagram

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WSA FOR THE JACKSON TOWNSHIP SPECIFIC PLAN PROJECT

Water Code Sections 10910 – 10915 delineate the specific requirements of a WSA. The WSA for the Project is structured according to these requirements.

DETERMINE IF PROJECT IS SUBJECT TO CEQA [Section 10910 (a)]

PER has made the determination that the Project is subject to CEQA.

IDENTIFY RESPONSIBLE PUBLIC WATER SYSTEM [Section 10910(b)]

PER has identified SCWA as the responsible public water provider for the Project.

DETERMINE IF UWMP INCLUDES WATER DEMANDS [Section 10910(c)]

The total area for the Project is estimated to be 1,391 acres. The projected annual water demand for the Project is 2,360.3 acre-feet per year (AF/year), including system losses. The proposed land use and projected water demand for the Project is provided in Table 1.

Table 1 Proposed Land Use and Water Demands Estimate for the Project

Land Uses	Corresponding Land Use Classification in WSMP	Unit Water Demand Factor (AF/Year/Acre)	Acreage	Water Demand (AF/Year)
Residential Designations				
LD- Low Density Residential	Single Family	2.13	355.7	757.6
MD-Medium Density Residential	Multi-Family Low Density	2.44	136.3	332.6
HD- High Density Residential	Multi-Family High Density	3.33	85.5	284.7
Subtotal		-	**577.5**	**1,374.9**
Commercial + Office Zones				
GC-General Commercial	Commercial	2.02	59.3	119.8
CC-Community Commercial	Commercial	2.02	17.6	35.6
MU-Mixed Use	Mixed Land Use	2.15	19.6	42.1
O- Office	Commercial	2.02	33.6	67.9
Subtotal		-	**130.1**	**265.4**
Public/Quasi Public Zones				
PQP-Fire Station/Comm Ctr/Tank Site	Public	0.81	6.0	4.9
PQP-Highl/Middle School	Public Recreation	2.80	70.0	196.0
PQP-Elementary School	Public Recreation	2.80	30.0	84.0
Subtotal		**-**	**106.0**	**284.9**
Park + Open Space Zones				
CP- Community Park	Public Recreation	2.80	23.6	66.1
P- Neighborhood Park	Public Recreation	2.80	49.7	139.2

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OS- Wetland Preserve	Non-Irrigated	0.00	214.3	0.0
OS- Greenbelt/Drainage Corridor	Public Recreation	2.80	60.9	170.5
OS- Landscape Corridor	Public Recreation	2.80	14.5	40.6
Subtotal		-	**363.0**	**416.4**
Ag and Roads				
AG-Agriculture	-	0.00	109.8	0.0
RW- Primary Roadways	Right-of-Way	0.18	104.6	18.8
Subtotal		-	**214.4**	**18.8**
TOTAL			**1,391.0**	**2,360.3**

Note: The land-use information was provided to SCWA by the County's Planning Department on July 25, 2016. It is slightly different from what was provided previously when the Water Supply Master Plan Amendment was being developed. However, the change to the total water demand is minimal.

The water demand for the proposed Project is included in the current UWMP, which describes SCWA's existing and projected water demands through 2040. Therefore, the UWMP can serve as the base document for preparing the WSA for the proposed Project. The water demand growth shown in the UWMP is based on the estimated gallons per capita per day (GPCD) target and the projected population growth. Establishing a GPCD target is a requirement for the UWMP in accordance with Senate Bill (SB) x7-7, adopted in November 2009, so that each purveyor would achieve 20 percent reduction in water use by 2020. The target for SCWA is determined to be 236 GPCD in the 2015 UWMP.

The projected population growth for Zone 40 was based on the estimated annual number of new connections. First, the buildout population was estimated based on the projected number of dwelling unit connections at buildout. Then the annual number of new connection was estimated. The details of population projection for Zone 40 are documented in the WSIP. The WSIP developed buildout land use acreage by type of land use, which was used to quantify the buildout number of dwelling units and water system connections. That assessment included those in the 2030 Study Area and the new growth areas such as the Project. The UWMP adopts the findings and results of the WSIP, and presents the population growth projection in 5-year interval from 2020 to 2040. Note that buildout is projected to occur after 2040 in Zone 40. The 5-year interval population projection is shown in **Table 2** below (or **Table 3-2 of the UWMP**).

With the population projection and the established GPCD target, the UWMP estimates the water demands for SCWA's service areas in 5-year increments for the 20-year projection (2020 to 2040), as shown in Table 4-3 of the UWMP. A summary of the pertinent data from these tables is presented in **Table 3** below.

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Table 2 Population Projection for SCWA Service Areas

SCWA Service Areas (Table 3-2 of UWMP)	2015[3]	2020	2025	2030	2035	2040
Zone 40 - North Service Area, Central Service Area, South Service Area[1]		186,347	220,402	256,900	295,843	337,229
Arden Park Vista		9,372	9,372	9,372	9,372	9,372
East Walnut Grove		428	432	436	440	440
Hood		256	256	256	256	256
Metro Air Park[2]		0	0	0	0	0
Northgate 880[2]		0	0	0	0	0
Southwest Track		157	157	157	157	157
Total	**165,895**	**196,560**	**230,619**	**267,121**	**306,068**	**347,454**

[1] Population developed in the WSIP (SCWA, 2016). The UWMP also identifies Zone 40 as Laguna Vineyard and Mather-Sunrise system. The more commonly used subarea names are used in this document: North Service Area, Central Service Area, and South Service Area. The proposed project is located in the North Service Area of Zone 40.

[2] Metro Air Park and Northgate 880 customers are non-residential and have no population associated with them.

[3] Total Current population in 2015 was provided in the UWMP. The population for each service area was not quantified separately using DWR population pool.

Table 3 Water Demands for SCWA Service Areas in Five-Year Increments – Normal Year (AF/Year)

	2020	2025	2030	2035	2040
RETAIL					
Zone 40	41,312	48,881	56,816	64,786	72,921
Arden Park Vista	3,630	3,527	3,412	3,315	3,315
East Walnut Grove	132	133	132	133	133
Hood	62	60	59	57	57
Northgate 880	1,264	1,168	1,148	1,131	1,131
Southwest Tract	21	21	21	21	21
Retail Subtotal	**46,421**	**53,790**	**61,588**	**69,443**	**77,578**
RECYCLED/RAW WATER	**1,700**	**1,700**	**1,700**	**1,700**	**1,700**
Retail + Recycled/Raw Water	**48,121**	**55,490**	**63,288**	**71,143**	**79,278**

The water demands for single dry, and multiple dry water year are provided in **Table 4.** The water supply allocation from the CVP supply in 2015 was a historical low. The CVP allocation for the three-year period from 2013 to 2015 was also the lowest historical three year sequence.

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The UWMP (**Table 7-1 of UWMP**) identifies 2013 as an average year, 2015 as a single dry year. For the drought period 2013-2015, 2013 is identified as the first year of multiple-dry years, 2014 as the second year, and 2015 as the third year.

Table 4 SCWA Zone 40 Water Demands in Five-Year Increments in Normal, Single Dry, and Multiple Dry Years (AF/Year)

Water Year	2020	2025	2030	2035	2040
Normal Year (See Table 7-4 of UWMP)	48,121	55,490	63,288	71,143	79,278
Single Dry Year (See Table 7-6 of UWMP)	48,121	55,490	63,288	71,143	79,278
Multiple Dry Year 1(See Table 7-8 of UWMP)	48,121	55,490	63,288	71,143	79,278
Multiple Dry Year 2 (See Table 7-8 of UWMP)	48,121	55,490	63,288	71,143	79,278
Multiple Dry Year 3 (See Table 7-8 of UWMP)	48,121	55,490	63,288	71,143	79,278

The water demands associated with the proposed Project are substantially included in the table above. **Table 5** shows the estimated water demand growth for the proposed Project.

Table 5 Projected Water Demand Growth in Five-Year Increments for the Proposed Project (AF/Year)

	2020	2025	2030	2035	2040
Projected Water Demand	712.4	1,543.5	2,018.4	2,374.6	2,374.6

Note: the growth projection information was provided by the project proponent on September 20, 2016 via email. The built-out demand is slightly different than the calculation based on the land-use information was provided to SCWA by the County's Planning Department on July 25, 2016. However, the change to the total water demand is minimal.

IDENTIFY EXISTING WATER SUPPLIES FOR THE PROJECT [Section 10910(d)]

SECTION 10910(d)(1)

Section 10910(d)(1) requires identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed Project and a description of the quantities of water obtained by SCWA pursuant to these water supply entitlements, water rights, or water service contracts in previous years.

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Use of Groundwater

The Project water demands, as part of the Zone 40 water demand, will ultimately be met by conjunctive use of groundwater and surface water and a small portion of recycled water, as described in the WSMP and UWMP. SCWA currently exercises, and will continue to exercise, its rights as a groundwater appropriator to extract groundwater from the groundwater basin (Central Basin) underlying Zone 40 for delivery to its customers[1]. Currently, the NSA pipeline Phase A is under construction and expected to be online in 2016. The NSA pipeline Phase A will convey treated surface water from the Vineyard SWTP to fill the existing Anatolia Storage Tanks. The water pumped out of the Anatolia Storage Tanks would serve the proposed Project through the NSA system distribution system. There will be a small amount of groundwater use from the Mather Housing wells located at Mather Field as part of the NSA water supply. Ultimately, the NSA pipelines (Phase A and Phase B, see WSIP) will convey treated surface water from the VSWTP to the NSA.

SCWA has a remediated groundwater supply of 8,900 AF/Year in accordance with the terms and conditions in the agreement entitled "Agreement between Sacramento County, SCWA, and Aerojet-General Corporation With Respect To Transfer of GET Water" dated May 18, 2010. The timing and amount of remediated groundwater available is subject to change as a result of on-going negotiations with water purveyors affected by groundwater contamination and with Aerojet/Boeing as their remediation plans may change as directed by various regulatory agencies. This remediated groundwater supply is diverted by SCWA from the Sacramento River at Freeport along with SCWA's surface water supplies.

A bigger portion of groundwater is used in the CSA and SSA of Zone 40. There is also some groundwater pumping in other SCWA service areas outside of Zone 40. The UWMP has identified SCWA's groundwater availability in the next 20 years, as shown in **Table 6** (**see Table 6-12 of UWMP**).

Table 6 SCWA Projected Groundwater Supply Availability (AF/Year)

	2020	2025	2030	2035	2040
Groundwater	47,000	47,000	52,000	62,000	62,000
Remediated Groundwater	8,900	8,900	8,900	8,900	8,900
Total	55,900	55,900	60,900	70,900	70,900

[1] The groundwater basin underlying Zone 40 has not been adjudicated.

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Use of Surface Water

The SCWA conjunctive use program includes the delivery of surface water within the Zone 40 boundaries as part of a comprehensive program to maintain the long-term, regional balance of the groundwater basin (see WSMP). The UWMP uses the terms "purchased water" and "surface water" to describe surface water supply. DWR defines purchased water as water purchased from other suppliers, including non-self supplied surface water. Surface water is defined by DWR as self-supplied water that is drawn from streams, lakes, and reservoirs.

- **Purchased Water**

SCWA has two sources of purchased surface water supplies, as described below.

1. Central Valley Project

The Central Valley Project (CVP) water supply consists of the CVP contract held by SCWA and the two Sacramento Municipal Utilities District (SMUD) assignments that total 45,000 AF/Year. Most of the CVP water is diverted at the Freeport diversion on the Sacramento River and treated at the Vineyard SWTP. Some of the CVP supplies are diverted from the Sacramento River and treated at the City's Sacramento River Surface Water Treatment Plant and delivered to SCWA at the Franklin Intertie.

SCWA entered into a contract in April 1999 with the Reclamation for 22,000 AF/Year of CVP supplies pursuant to Public Law (PL) 101-514. This contract is often referred to as "Fazio Water" in recognition of the efforts by Congressman Vic Fazio to secure this contract. Of this 22,000 AF/Year, 7,000 AF/Year has been subcontracted to the City of Folsom for diversion from Folsom Lake, with 15,000 AF/Year available for SCWA through the Freeport diversion or Franklin Intertie.

SCWA has entered into an agreement with SMUD for the assignment to SCWA of a total of 30,000 AF/Year of water from SMUD's existing contract with Reclamation.

SCWA's total CVP supply is subject to reductions in dry years. The water supply allocations are defined by Reclamation on a year to year basis and are expressed as a percentage of either the contract amount or amount of average use. For the 21 year period of 1995 to 2015, the lowest allocation was in 2015 when it was established as 25 percent of the previous three years average unconstrained use.

The water supply allocations are based on a draft policy that defines water shortage terms and conditions. Reclamation initiated the development of a Municipal and Industrial (M&I) Water Shortage Policy in 1992, with several proposals prepared through 2001. The 2001 draft water shortage policy states that Reclamation would reduce M&I water to a contractor once irrigation water allocations are reduced below 75 percent of the contract amount. Reclamation has a provision in the draft policy for a minimum M&I shortage allocation of 75 percent that is applied to the last three years of historical use with certain adjustments, although the actual allocation in 2014

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was 75 percent and in 2015 it was 25 percent of the use during the previous three unconstrained years. In 2010, Reclamation convened several workshops that will lead to the development of an Environmental Impact Statement that could potentially modify the existing policy or develop a new policy (US, 2011). This process has not been completed.

2. City of Sacramento's American River Place of Use Water Supply

A portion of Zone 40 lies within the City of Sacramento's American River Place of Use (POU). The City of Sacramento has a pre-1914 water right to the American River with a POU boundary that extends beyond the City's boundary and includes a portion of Zone 40. The amount of water available to serve the POU area within Zone 40 is estimated to be 9,300 AF/Year. SCWA is planning for the future wholesale delivery of American River water within the POU. A connection would be constructed to supply the portion of Zone 40 in the POU area, with the timing based on when the supply is actually needed.

The City of Sacramento's diversions from the American River at the Fairbairn Water Treatment Plant are reduced when American River flows are less than the Hodge Flow Criteria, which would likely result in no POU water being available for SCWA in these circumstances. The City of Sacramento may decide to divert water during these restricted times at their Sacramento River diversion, although additional infrastructure might need to be constructed by the City of Sacramento to be able to convey this water to SCWA. It might be possible for SCWA to divert the POU water at the Freeport diversion. Given the uncertainty of the availability of POU water during dry periods, a supply allocation of zero percent is assumed for dry years and 100 percent for normal climate years.

- **Surface Water**

SCWA has an appropriative water supply that is self-supplied surface water that is drawn from the Sacramento River. In February 2008, the State Water Resources Control Board (SWRCB) approved SCWA's appropriative right permit application to divert water from the American and Sacramento Rivers (Permit 21209). The amount of appropriated water available for use could range up to 71,000 AF/Year in wet years, primarily during the winter months. This water would be diverted at the Freeport diversion on the Sacramento River. Since SCWA's demands are low in the winter months, it is possible that not all of this supply could be utilized without the ability to store the water.

Contract documents, agreements, and applications for appropriative water and CVP water supplies are available for review. **Table 7** (see **Table 6-12** in UWMP) shows all the surface water entitlements, water rights, and water services contracts to meet the build-out water demand.

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Table 7 Surface Water Supply Entitlements, Water Rights, and Water Service Contracts to Meet SCWA Build-out Water Demand (AF/Year)

Water Supply Sources	Description	Wholesaler Supplied (Yes/No)	Status of Contract, Permit, and Agreement	Quantity (AF/Year)
Purchased Water	Wholesaler – (City of Sacramento) to serve portion of Zone 40 in City of Sacramento's American river POU	yes	Planned	9,300
Purchased Water	Supplier-produced surface water to Serve Zone 40: U.S. Bureau of Reclamation – CVP Supply (SMUD 1, SMUD 2, and Fazio Water)	yes	Existing	45,000
Surface Water	Supplier-produced surface water to Serve Zone 40: Appropriative Water – SWRCB Permit 21209	no	Existing	71,000
TOTAL	**-**	**-**	**-**	**125,300**

Table 8 (see **Table 6-12** of UWMP) presents the quantities of surface water supply pursuant to these water rights and contract entitlements in five-year increments from 2020 to 2040. The projected volume takes into consideration facility constraints and hydrological constraints.

Table 8 Projected Reasonably Available Surface Water Supply in Five-Year Increments (AF/Year)

Water Supply	Description	2020	2025	2030	2035	2040
Purchased Water	Wholesaler – (City of Sacramento) to serve portion of Zone 40 in City of Sacramento's American river POU	0	0	0	0	0
Purchased Water	Supplier-produced surface water to Serve Zone 40: U.S. Bureau of Reclamation – CVP Supply (SMUD 1, SMUD 2, and Fazio Water)	21,300	21,300	21,300	21,300	21,300
Surface Water	Supplier-produced surface water to Serve Zone 40: Appropriative Water – SWRCB Permit 21209	4,000	4,000	4,000	4,000	4,000
TOTAL		25,300	25,300	25,300	25,300	25,300

- **Recycled Water**

A small amount of recycled water is being used in the SSA of Zone 40 for public landscape irrigation, such as parks, schools, commercial, and streetscapes. In 2015 the recycled water

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use was 575 AF/Year. Recycled water use is projected to increase to 1,700 AF/Year after 2020 (see **Table 4-6** of UWMP).

SECTION 10910(d)(2)

Section 10910(d)(2) requires SCWA to demonstrate that water supplies required to serve the Project actually exist. Section 10910(d)(2) defines what constitutes "proof."

Section 10910(d)(2)(A)

This subsection requires written contracts or other proof of entitlement to the water supplies identified for the Project. The contracts and agreements for the surface water supplies are available for review at the offices of the County of Sacramento, Department of Water Resources.

Initial water demands in the Project will be met with either groundwater or surface water. SCWA will exercise its right as a groundwater appropriator to extract groundwater from the basin for delivery to the Project; surface water will be from existing entitlements diverted from the Sacramento River and treated at the VSWTP. In the long-term, the water demands of the Project will be met in accordance with the conjunctive use program described in the WSMP.

Section 10910(d)(2)(B)

This subsection requires a copy of the capital outlay program for financing the delivery of the identified water supply to the Project. The documents described below are available for review at the offices of the County of Sacramento, Department of Water Resources.

A financing plan for the construction of groundwater and surface water facilities needed to realize the conjunctive use program identified in the WSMP has been approved by SCWA's Board of Directors (Board). The financing plan, as outlined in Chapter 7 of the WSMP, identifies the necessary water facility projects and estimated costs associated with implementation of said conjunctive use program (Capital Improvement Program or CIP).

In addition to the WSMP, the Feasibility Report for Sacramento County Water Financing Authority Series 2007 Revenue Bonds (Sacramento County Water Agency Freeport Project) (MWH, April 2007), and the Sacramento County Water Agency FY 2009/10 Water Rate Study Report (FCS Group) evaluated and updated the total cost and fee requirements of the Zone 40 conjunctive use program incorporating all future Zone 40 expenditures for major capital facilities (i.e., surface water treatment plants, groundwater treatment plants, major transmission mains, etc.) and annual operation and maintenance costs. Funding to meet SCWA's capital and annual funding requirements was then implemented by the Board through the issuance of revenue bonds for certain projects and the adoption of user fee and development fee increases over time (most recently in 2009).

SCWA's capital outlay program includes the means for financing facilities to deliver the identified water supply to the Project. Specifically, all facilities needed to serve the Project are included in the CIP that was financed through the above described revenue bonds, user fee, and development fee. The development fee and user fee, as described in Titles 3 and 4 of the Sacramento County Water Agency Code, will continue to provide revenue to finance all aspects

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of the Zone 40 conjunctive use program, including repayment of debt financing. Both fee programs are evaluated annually and adjusted, if necessary, to accommodate changes in the service area, water demands, needed capital projects, and required debt financing. Based on the CIP, a 10-year CIP is annually updated by the Board of Directors.

Section 10910(d)(2)(C)

This subsection requires identification of any federal, state, and local permits required for construction of the facilities identified for delivering the water supply to the Project.

Since adoption of the WSMP, SCWA has made significant progress in the development of its conjunctive use water supply program. SCWA, in cooperation with East Bay Municipal Utility District (EBMUD), has completed the Freeport Regional Water Project (FRWP). SCWA's portion of the project consists of participation in a large diversion facility on the Sacramento River just north of the community of Freeport and a recently completed transmission pipeline that conveys surface water to:

1. SCWA's recently completed VSWTP at the northeast corner of the intersection of Florin Road and Knox Road for treatment prior to delivery to SCWA's customers, and
2. The Folsom South Canal where EBMUD will discharge their flows for conveyance to their service area in the East Bay.

Initial surface water deliveries to the Project and the broader NSA will be made through NSA Pipeline Phase A - the conversion of the existing Anatolia raw water pipeline, which is expected to go online in 2016. Ultimately, surface water for the Project and other surrounding projects, will be conveyed through the both NSA Pipeline Phase A and Phase B, as outlined in the WSIP. SCWA approved an initial study/mitigated negative declaration for the NSA pipeline project pursuant to CEQA in September 2010. It is SCWA's intent to secure approval of the necessary permits and construction documents for NSA Phase B so that it can be constructed prior to demand for water within the NSA exceeding the capacity of the system currently serving customers in this area. The timing of construction of the NSA Phase B Pipeline cannot be precisely predicted at this time, as it will be dependent on demand growth in the NSA.

Construction of the NSA pipeline and related facilities required for the delivery of surface water to the Project will require a variety of permits. Additional site-specific environmental review and approval may also be needed for water storage tanks and other appurtenances that will be constructed in conjunction with the NSA pipeline. Any additional conveyance pipelines needed to complete the treated water system will be constructed within existing and future public right-of-way and easements. At this time, SCWA does not foresee any regulatory or legal impediments to completing further environmental review and obtaining the permits.

Section 10910(d)(2)(D)

This subsection requires identification of any regulatory approvals required for delivery of the water supply to the Project.

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Water production, treatment, and storage facilities will be added to SCWA's public water system permit issued by the California Department of Public Health (DPH) and the design of these facilities will require review and approval by DPH. No other regulatory approvals are anticipated.

New water service and discretionary approval of any project may be withheld until compliance with the Endangered Species Act (ESA) is demonstrated. Depending upon the source of water, compliance may be demonstrated by one of the following: participation in the South Sacramento Habitat Conservation Plan (SSHCP); a letter from the US Fish and Wildlife Service (USFWS) to the Project proponent and/or federal agency indicating the Project is not likely to adversely affect or result in a take of listed species; incidental take coverage through a biological opinion for the Project; or, incidental take coverage through an ESA section 10(a)(1)(B) permit for the Project. This requirement may be a condition of approval for any discretionary action taken by the local land use authority.

IDENTIFY PARTIES DEPENDENT UPON PROPOSED SUPPLY [Section 10910(e)]

SECTION 10910(e)

Section 10910(e) states:

"If no water has been received in prior years by the public water system…, under the existing water supply entitlements, water rights, or water service contracts [identified to serve the proposed project], the public water system,…shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts to the same source of water as the public water system,…, has identified as a source of water supply within its water supply assessments."

The intent of this section is to identify any potential conflicts that may arise from the exercise of a water supply entitlement, water right, or water service contract to serve a proposed project if such water supply entitlement, water right, or water service contract has not been previously exercised.

Use of Groundwater

The water demands of Zone 40 (including the Project) will be met with groundwater and surface water. SCWA has previously exercised its rights as a groundwater appropriator to meet the water demands of its customers and will continue to exercise those rights to provide treated groundwater supplies to the Project.

Use of Surface Water

The surface water supplies associated with SCWA's conjunctive use program fall into three categories:

1) Purchased water supplies available through a current USBR CVP contract.

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2) Purchased water available through the City of Sacramento for use within the American River Place of Use (POU).
3) Water supplies available through SWRCB Permit 21209.

For USBR CVP purchased water and SWRCB Permit 21209 surface water, the parties that could most directly be affected are other CVP contractors, State Water Project (SWP) contractors, water rights holders subject to Term 91 conditions, and riparian diverters downstream of SCWA's point of diversion. The point of diversion is at a site near the community of Freeport on the Sacramento River.

The source of POU water supply is wholesale water from the City of Sacramento to serve the area that lies within the POU. Delivery of this water to SCWA has been included in the City of Sacramento's long-range plan for perfecting their American River water rights. The diversion location, timing, and volume of delivery are currently under negotiation.

DOES SUPPLY FOR PROJECT INCLUDE GROUNDWATER? [Section 10190(f)]

SECTION 10910(f)

As stated earlier, the water supply for Zone 40 (including the Project) include groundwater. Section 10910(f) requires additional information about groundwater to be presented in this WSA.

Section 10910(f)(1)

Section 10910(f)(1) requires a review of groundwater information contained in the UWMP relevant to the identified water supply for the Project. Section 6.3 of UWMP provides a description of the applicable groundwater basins, the status of groundwater management, overdraft conditions, historical groundwater pumping, and the remediated groundwater supply.

Section 10910(f)(2)

Section 10910(f)(2) requires a description of the groundwater basin and the efforts being taken to prevent long-term overdraft.

- **South American Subbasin (5-21.65)**

For the Project, SCWA would pump groundwater from the South American Sub-basin as defined by the California Department of Water Resources (DWR) Bulletin 118. According to Bulletin 118, the South American Sub-basin is defined as the area bounded on the west by Interstate 5 and the Sacramento River, on the north by the American River, on the south by the Cosumnes and Mokelumne rivers and on the east by the Sierra Nevada. The Central Basin covers a major portion of this basin.

Groundwater in the Central Basin is generally classified as occurring in a shallow aquifer (Laguna or Modesto Formation) and in a deep aquifer (Mehrten Formation). The Laguna or Modesto Formation consists of older alluvial deposits of loosely to moderately compacted sand, silt, and gravel deposited in alluvial fans. These deposits are moderately permeable and have a

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thickness of about 100 to 650 feet. The deeper Mehrten Formation is a sequence of fragmented volcanic rocks which crops out in a discontinuous band along the eastern margin of the basin. It is composed of black volcanic sands, stream gravels, silt, and clay inter-bedded with intervals of dense tuff breccia. The sand and gravel intervals are highly permeable and the tuff breccia intervals act as confining layers. The thickness of the Mehrten Formation is between 200 and 1,200 feet. Groundwater is located from 20 to 100 feet below the ground surface depending on when and where the measurement is taken. The base of the potable water portion of the deep aquifer is located approximately 1,400 feet below the ground surface.

Intensive use of groundwater over the past 60 years has resulted in a general lowering of groundwater elevations. Over time, isolated groundwater depressions have grown and coalesced into a single cone of depression that is centered in the southwestern portion of the basin, approximately 15 miles southwest of the project site. Groundwater level trends through much of the basin have generally declined consistently from the 1950s and 1960s to about 1980 by 20 to 30 feet. From 1980 through 1983, water levels recovered by about 10 feet and remained stable until the beginning of the 1987-1992 drought; however, wells in the vicinity of Rancho Cordova appear to have recovered less than other wells in the basin since 1995 (generally less than 10 feet). From 1995 to 2003 most groundwater levels recovered to levels that were generally higher than levels prior to the 1987 through 1992 drought. Much of this recovery can be attributed to the increased use of surface water in the Central Basin, and the fallowing of previously irrigated agricultural lands transitioning into new urban development areas. In the central portion of the Central Basin, where the Project site is located, groundwater level trends observed in California Department of Water Resources monitoring wells generally vary between 40 feet above to 40 feet below mean sea level over the period of the 1950's through the 2000's.

Recharge of the aquifer system occurs along active river and stream channels where extensive sand and gravel deposits exist, particularly along the American, Cosumnes, and Sacramento rivers. Additional recharge occurs along the eastern boundary of Sacramento County at the transition point from the consolidated rocks of the Sierra Nevada to the alluvial-deposited basin sediments. This recharge is classified as subsurface recharge along with underground flow into and out of the basin with adjacent groundwater basins. Other sources of recharge include deep percolation from applied surface water and precipitation.

As mentioned previously, the estimated long term annual sustainable yield of groundwater from the Central Basin is 273,000 AF/year. The determination of the sustainable yield of the Central Basin (273,000 acre-feet per year) was negotiated by the Water Forum Groundwater Negotiating Team (GWNT) and involved a complex process that developed the long-term average annual pumping limit of the basin. The long-term average annual pumping limit is described as the hydro-geologic process under which groundwater can be pumped and not exceed average natural recharge over a long-term period of time. Under sustainable conditions, natural recharge is said to be able to make up for variations in the amount of pumping that occurs over the long-term, given wet and dry periods in the hydrologic record.

First, the GWNT developed future land and water use projections. Then the impacts associated with increased water demands, assuming that demand is met solely by groundwater, were

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described. These results were then compared with 1990 baseline conditions to provide the level of impact that could be expected if groundwater pumping were increased beyond baseline conditions.

Four quantifiable factors were used to determine the level of impact:

1) Water quality degradation
2) Dewatering of wells
3) Higher cost of pumping
4) Ground subsidence

Based on these four factors, a series of groundwater model runs quantified each condition in 10-year increments, beginning in 1990 and ending in 2030. Each model run was set up to reflect future land and water use conditions; then 70 years of historical hydrology were applied to each model run to determine how the aquifer might behave under wet and dry conditions.

After comprehensive review and analysis of the resulting data, the GWNT concluded that using 2005 levels of groundwater pumping (interpolated from the 2000 and 2010 modeling results) would provide the highest quantity of groundwater yield from the basin while minimizing impacts associated with the four factors of concern. Accordingly, the GWNT determined the 2005 pumping rates equated to a long-term pumping average annual pumping limit of approximately 273,000 acre-feet per year for the Central Basin.

- **SCWA Conjunctive Use Program**

Section 3.2 and Appendix E of the WSMP provide detailed descriptions of the Zone 40 conjunctive use program. SCWA's operational approach for preventing overdraft of the groundwater basin underlying Zone 40 and optimizing the use of both groundwater and surface water is discussed in detail in these sections. The FEIR for 2002 Zone 40 Water Supply Master Plan includes an extensive analysis of the effects of the Zone 40 conjunctive use program on the groundwater basin and on various recharge sources. A summary of the conjunctive use program is as follows:

SCWA's conjunctive use program is a coordinated approach to manage surface water and groundwater supplies to maximize the yield of available water resources. The conjunctive use program for SCWA includes the use of groundwater, surface water, remediated water, and recycled water supplies. The program also includes the construction of a surface water diversion structure, a surface-water treatment plant, and water conveyance pipelines, as well as groundwater extraction, treatment, and distribution facilities.

This conjunctive use program relies on an abundance of surface water in wet years when as much surface water as possible will be diverted, within entitlement limitations, minimizing the use of groundwater. During these years the groundwater aquifer will be allowed to naturally replenish. In dry years, when surface water availability is reduced, SCWA will pump more groundwater from the replenished aquifer. Using surface water and groundwater conjunctively

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makes it easier for SCWA to meet demands in a single dry year or in multiple dry years. The goal of the conjunctive use program is to meet all demands during wet and dry years.

SCWA has adopted policies to insure systematic, incremental implementation of its conjunctive use program. These policies are also consistent with the terms of the WFA, which is intended to maintain a long-term sustainable groundwater supply. The policies are included in the SCWA's UWMP and WSMP, which include specific action items to assure implementation. Action items include development of additional surface water supply and treatment facilities to provide water during wet years, development of groundwater facilities to provide groundwater during dry years, in-lieu "banking" of groundwater during wet years, development and implementation of demand management and water conservation strategies, development of water reclamation facilities to meet non-potable demands, and development of a financing plan to implement these action items.

- **Groundwater Management Plan (GMP)**

As a part of the Groundwater Authority, SCWA has committed to the implementation of the Central Basin GMP. The Central Basin GMP contains five Basin Management Objectives (BMOs) designed to maintain a safe, sustainable and high quality groundwater resource within the Central Basin. These BMOs, in conjunction with the program component action items, focus on managing and monitoring the basin to benefit all groundwater users in the basin and are intended to be specific enough to result in numerical criteria for the basin, but also flexible enough to be modified or adapted to new information on groundwater basin behavior over time. The five BMOs are summarized below:

1. Maintain the long-term average groundwater extraction rate at or below 273,000 acre-feet per year.
2. Maintain specific groundwater elevations within all areas of the basin consistent with the Water Forum "solution."
3. Protect against any potential inelastic land surface subsidence by limiting subsidence to no more than 0.007 feet per 1 foot of drawdown in the groundwater basin.
4. Protect against any adverse impacts to surface water flows in the American, Cosumnes and Sacramento rivers.
5. Water quality objectives:
    a. Total Dissolved Solids (TDS) concentration of less than 1,000 milligrams per liter (mg/l).
    b. Nitrate (NO_3) concentration of less than 45 mg/l.
    c. Volatile Organic Compounds (VOC).

The Groundwater Authority intends to achieve these objectives by implementing the following program component action items:

1. Stakeholder involvement; including public outreach, involving other agencies inside and adjacent to the basin, developing relationships with state and federal agencies, and pursuing partnership opportunities.
2. Monitoring program; including groundwater elevation monitoring, groundwater quality monitoring, land surface elevation monitoring, surface water/groundwater interaction

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monitoring, establishing protocols for collection of groundwater data, and establishing a data management system.

3. Groundwater resource protection; including well construction policies, well abandonment and destruction policies, wellhead protection measures, protection of recharge areas, control of the migration and remediation of contaminated groundwater, and control of saline water intrusion.
4. Groundwater sustainability; including demand reduction.
5. Planning integration; including existing integrated planning efforts, urban water management planning, Drinking Water Source Assessment and Protection (DWSAP) program, land use planning, and integrated groundwater and surface water modeling.

The Central Basin GMP also has an implementation plan that defines specific actions or trigger points and associated remedy activities linked with each of the BMOs. Once a trigger point has been reached, the Groundwater Authority must decide on a course of action.

Water quality analysis of the aquifers underling the Central Basin has shown that groundwater quality found in the upper aquifer system is of higher quality than that found in the lower aquifer system. This is principally because the lower aquifer system (specifically the Mehrten Formation) contains higher concentrations of iron and manganese and higher concentrations of total dissolved solids (TDS). Notwithstanding these findings, the lower aquifer typically meets water quality standards as a potable water source. Water from the upper aquifer (specifically the Laguna Formation) generally does not require treatment, unless high arsenic values are encountered, other than disinfection for public drinking water systems.

- **Sustainable Groundwater Management Act (SGMA)**

The Sustainable Groundwater Management Act (SGMA) was enacted by the legislature in 2014, with subsequent amendments in 2015. SGMA requires groundwater management in priority groundwater basins, which includes the formation of Groundwater Sustainability Agencies (GSAs) and the development of Groundwater Sustainability Plans (GSPs) for groundwater basins or subbasins that are designated by DWR as medium or high priority.

The designation of the priority of groundwater basins was done as part of the California Statewide Groundwater Elevation Monitoring (CASGEM) Program. CASGEM was developed in response to legislation enacted in California's 2009 Comprehensive Water package. The CASGEM Groundwater Basin Prioritization is a statewide ranking of groundwater basin importance that incorporates groundwater reliance and focuses on basins producing greater than 90 percent of California's annual groundwater. The CASGEM Program has ranked the South American Subbasin (5-21.65) as high priority.

SGMA directs DWR to identify groundwater basins and subbasins in conditions of critical overdraft. DWR identified such basins in Bulletin-118, 1980 and Bulletin 118, Update 2003. DWR issued an updated draft list of critically over drafted basins in July 2015. Neither of the two subbasins that supply SCWA is on the list.

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Groundwater basins designated as high or medium priority and identified as critically over-drafted must be managed under GSPs, adjudications, or alternatives by January 31, 2020. All other high and medium priority basins not identified as critically over-drafted must be managed under a GSP by January 31, 2022. The two subbasins that supply SCWA are covered by the latter deadline.

A GSA must be formally established by June 30, 2017. SCGA is currently in discussions with other groundwater basin users of the South American Subbasin (5-21.65) to evaluate options for GSA formation and GSP development for SGMA compliance.

Section 10910(f)(3)

Section 10910(f)(3) requires a description of the volume and geographic distribution of groundwater extractions from the basin for the last five years.

Table 9 (see UWMP **Table 6-2**) identifies past volumes of groundwater extracted by SCWA in Zone 40 between 2011 –2015.

Through the water supply master planning process, SCWA identified a system of sixteen separate well fields throughout Zone 40. A distributed groundwater extraction strategy was selected because it would minimize drawdown effects of pumping by spreading extraction over a wide geographic area. The spatial distribution of the SCWA's current and future well fields is shown in **Figure 3**.

Table 9 Historical Groundwater Pumping in Zone 40, 2011 – 2015

Year	(Acre-Feet)
2011	29,972
2012	30,629
2013	28,828
2014	27,781
2015	24,652

Section 10910(f)(4)

Section 10910(f)(4) requires a description of the projected volume and geographic distribution of groundwater extractions from the basin.

Groundwater use has declined since the VSWTP has come online, but it will increase over time as water demand continues to grow in Zone 40. In wet and normal years, groundwater pumping will be minimized because surface water becomes the major water supply source. In dry years, groundwater pumping will increase significantly as surface water availability is considerably

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reduced. **Table 6** identifies projected potential maximum groundwater pumping necessary to meet Zone 40's water demands from 2020-2040.

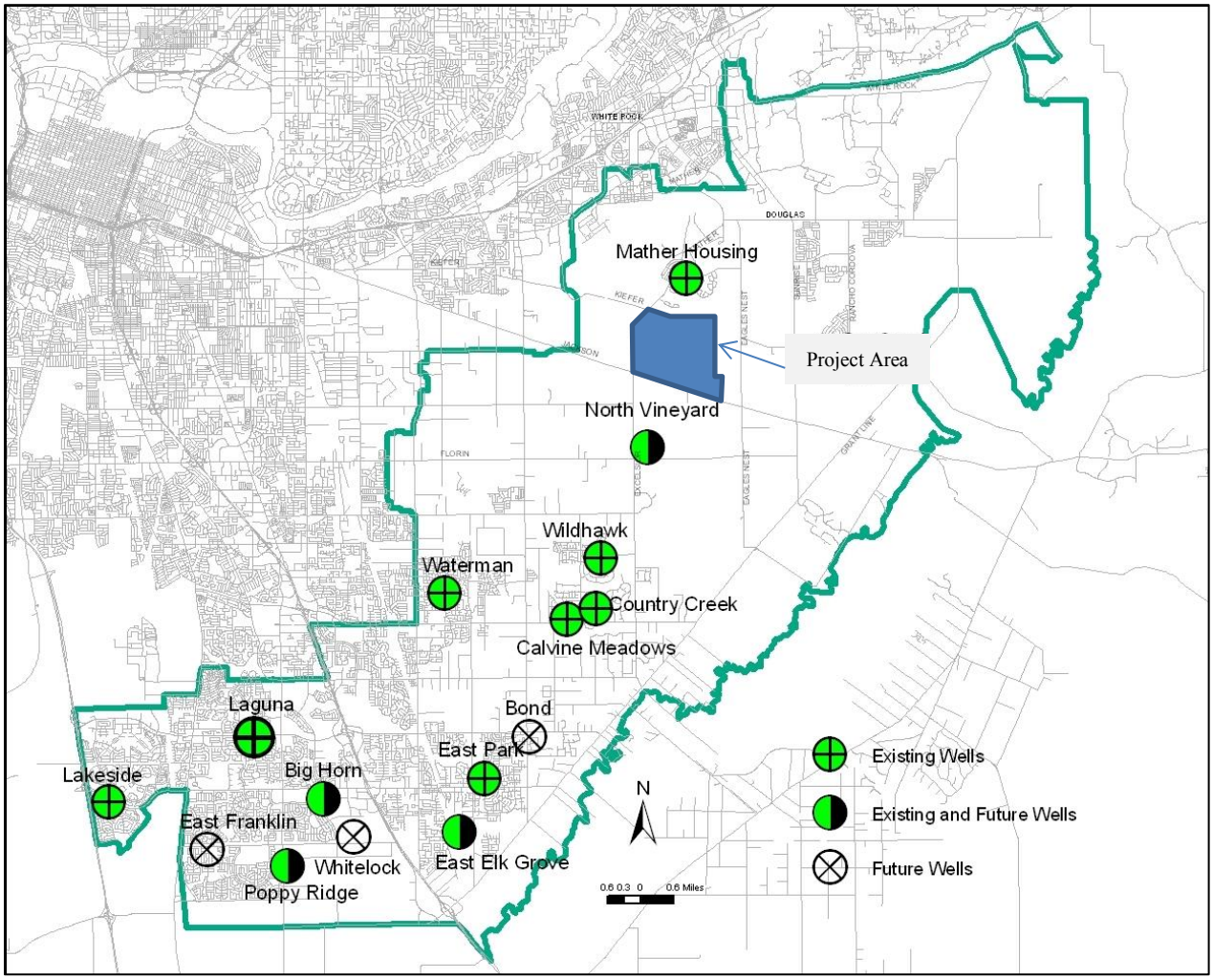

Figure 3 Spatial Distribution of SCWA's Existing and Future Well Fields

Section 10910(f)(5)

Section 10910(f)(5) requires an analysis of the sufficiency of the groundwater basin to meet the demands associated with the Project.

The WFA defined a long-term sustainable average annual yield of 273,000 AF/year for the Central Basin and provided for SCWA's groundwater needs as identified in the WSMP. The WSMP describes a conjunctive use program that identifies and projects a long-term average use of groundwater to meet identified water demands, including the demand associated with the Project.

SCWA's conjunctive use program has been extensively analyzed and documented in the WSMP, the FEIR for 2002 WSMP (certified in February 2006), the FEIR – WFA (certified in 1999), and

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the WFA. All referenced documents have been subjected to thorough technical peer review and public scrutiny.

DETERMINATION OF SUFFICIENCY

SCWA determines that it has identified sufficient water supplies to meet the water demands of the Project over the next 20 years during normal, single dry, and multiple dry years.

SCWA makes this determination based on the information provided in this WSA and on the following specific facts:

- SCWA's conjunctive use program is a sustainable water supply program that provides a 100-percent reliable water supply while protecting environmental values and stabilizing the groundwater basin underlying Zone 40.
- SCWA's conjunctive use program has been extensively analyzed and documented in the WSMP, the FEIR for 2002 WSMP (certified in February 2006), the FEIR – WFA (certified in 1999), and the WFA. All referenced documents have been subjected to thorough technical peer review and public scrutiny.
- The Project will be served by water supplies made available through SCWA's conjunctive use program.
- A financing plan for SCWA's conjunctive use program for constructing facilities required for delivering groundwater and surface water to the Project has been approved by the Board through its adoption of the WSMP, Bond Feasibility Reports, and the Sacramento County Water Agency Code.

The UWMP demonstrates that SCWA's total projected water supplies during normal, single dry, and multiple dry water years meet the proposed water demands over the next 20 years, as shown in **Table 10**.

Table 10 Zone 40 Water Supply Sufficiency Analysis in Five-Year Increments (AF/year)

Water Year	2020	2025	2030	2035	2040
Normal Year (See Table 7-4, UWMP)					
Total Supply	82,900	82,900	87,900	97,900	97,900
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	34,779	27,410	24,612	26,757	18,622
Single Dry Year (See Table 7-6, UWMP)					
Total Supply	70,200	70,500	74,600	83,600	83,800
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	22,079	15,010	11,312	12,457	4,522

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Multiple Dry Year (1) (See Table 7-8, UWMP)					
Total Supply	77,900	77,900	81,900	90,900	90,900
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	29,779	22,410	18,612	19,757	11,622
Multiple Dry Year (2) (See Table 7-8, UWMP)					
Total Supply	77,900	77,900	81,900	90,900	90,900
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	29,779	22,410	18,612	19,757	11,622
Multiple Dry Year (3) (See Table 7-8, UWMP)					
Total Supply	70,200	70,500	74,600	83,600	83,800
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	22,079	15,010	11,312	12,457	4,522

CONCLUSION

This WSA documents all required information specifically delineated by Water Code Sections 10910 – 10915. It demonstrates that SCWA's water supplies are sufficient to satisfy the water demands of the currently proposed Project while still meeting the current and projected water demands of existing customers in the next 20 years. If there are significant changes to land uses for the proposed project in the future, this WSA may need to be revisited and updated accordingly.

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Appendix WS-3

Zone 40 Water Supply
Master Plan Amendment

Brown AND Caldwell

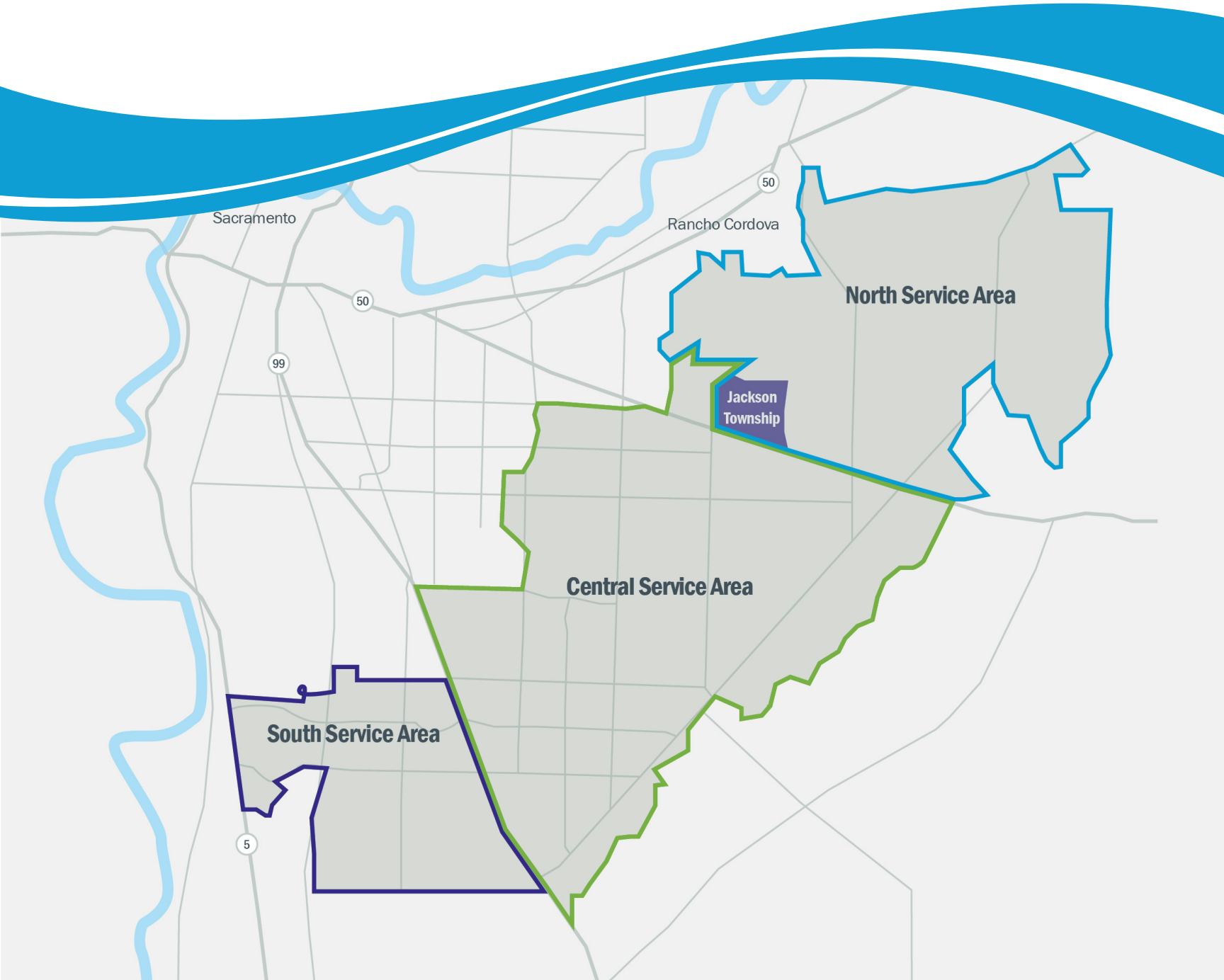
Prepared for
Sacramento County Water Agency

Zone 40 Water Supply Master Plan Amendment

For the Jackson Township Project

February 2016

SACRAMENTO COUNTY WATER AGENCY



Zone 40 Water Supply Master Plan Amendment

For the Jackson Township Project

Prepared for
Sacramento County Water Agency
Sacramento, CA
February 5, 2016

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February 5, 2016

Robert Gardner
Sacramento County Water Agency
827 7th Street, Room 301
Sacramento, CA 95814

148130

Subject: Zone 40 Water Supply Master Plan Amendment for the Jackson Township Project

Dear Mr. Gardner:

Brown and Caldwell is pleased to submit the above referenced plan. Please do not hesitate to contact me if you have any questions or comments.

Very truly yours,

Brown and Caldwell

Paul Selsky, PE
Project Manager

PS:ds

Zone 40 Water Supply Master Plan Amendment

For the Jackson Township Project

Prepared for
Sacramento County Water Agency, Sacramento, CA
February 5, 2016





148130

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List of Abbreviations

AACE	Association for the Advancement Cost Engineering International
ac-ft/yr	acre-feet per year
Agency Act	Sacrament County Water Agency Act
ASR	aquifer storage and recovery
bgs	below ground surface
BMO	basin management objectives
Cal Am	California American Water Company
CIP	capital improvement plan
City	City of Sacramento
CSA	Central Service Area
CMID	Construction Management and Inspection Division
CSCGMP	Central Sacramento County Groundwater Management Plan
CVP	Central Valley Project
DPR	direct potable reuse
DU	dwelling units
EBMUD	East Bay Municipal Utility District
FRWA	Freeport Regional Water Authority
FY	fiscal year
GET	groundwater extraction and treatment
GPCD	gallons per capita per day
gpd	gallons per day
gpm	gallons per minute
GIS	geographic information system
GSWC	Golden State Water Company
GWTP	groundwater treatment plant
HGL	hydraulic grade line
in	inch
IPR	indirect potable reuse
JPA	joint powers authority
lf	linear feet
MDD	maximum day demand
MFR	Multi-family residential
MG	million gallons
mgd	million gallons per day
M&I	municipal and industrial
NSA	North Service Area
OHWD	Omochumne-Hartnell Water District
PL	Public Law
POU	Place of Use
PSA	purveyor specific agreement
Reclamation	U.S. Bureau of Reclamation
SACOG	Sacramento Area Council of Governments
SB	Senate Bill
SCGA	Sacramento Central Groundwater Authority
SCWA	Sacramento County Water Agency
SFR	Single family residential
SRCSD	Sacramento Regional County Sanitation District
SSA	South Service Area
SMUD	Sacramento Municipal Utility District
SWRCB	State Water Resources Control Board
SWTP	Surface Water Treatment Plant
TDS	total dissolved solids
UWDF	unit water demand factors
UWMP	urban water management plan
WFA	Water Forum Agreement
WRPP	Water Recycling Pilot Program
WSIP	Water System Infrastructure Plan
WSMP	Water Supply Master Plan
WTP	Water Treatment Plant

Section 1

Introduction

This amendment to the Zone 40 Water Supply Master Plan (WSMP) for the proposed Jackson Township project has been prepared by Sacramento County Water Agency (SCWA). This section describes SCWA and Zone 40, the purpose of this Amendment, linkage to the 2005 WSMP (SCWA, 2005), the Zone 40 service area, and the report organization.

1.1 SCWA and Zone 40

SCWA was formed in 1952 by a special legislative act of the State of California called the Sacramento County Water Agency Act (Agency Act). SCWA is governed by a Board of Directors. Under the Agency Act, the Board may contract with the federal government and the State of California with respect to the purchase, sale, and acquisition of water. SCWA may also construct and operate any required capital facilities.

Zone 40 was created by SCWA Resolution No. 663 in May 1985, which described the boundaries of the zone and the types of projects to be undertaken. Zone 40 is a benefit zone created for the acquisition, construction, maintenance, and operation of facilities for the production, conservation, transmittal, distribution, and sale of ground or surface water or both for the present and future beneficial use of lands or inhabitants within the zone. Ordinance No. 18, adopted in 1986, empowered SCWA to establish fees, charges, credits, and regulations for the supply of water and required the development of a water supply master plan. The boundaries and scope of Zone 40's activities were expanded in April 1999 by Resolution WA-2331 to include the use of recycled water in conjunction with surface and groundwater.

SCWA provides retail water supply within Zone 40 to portions of unincorporated Sacramento County, the City of Rancho Cordova, and the City of Elk Grove. SCWA also provides wholesale water supply to a portion of the service area of Elk Grove Water District. Elk Grove Water District operates a retail water system serving customers within a portion of the City of Elk Grove and is a department of the Florin Resource Conservation District. SCWA will also provide wholesale water supply in the future to California American Water Company's (Cal Am) service area in Rio del Oro.

1.2 Purpose

The purpose of this WSMP Amendment is to address the sufficiency of water supply for the proposed Jackson Township project and to update information contained within the WSMP (February 2005) due to changes in water demands, the growth rate, and water supplies. Significant changes such as water supply variations, County General Plan Amendments, annexations, incorporations, or new major programs are treated through formal updates or amendments to the WSMP.

The 2005 WSMP was developed to provide a flexible program of water management alternatives that could be implemented as the availability and feasibility of water supply sources change. It presented recommendations to meet future water demands in Zone 40 through the year 2030 (identified as the 2030 Study Area) with a regional conjunctive use program balancing the use of groundwater, surface water, and recycled water supplies. The Freeport Regional Water Project alternative was selected as the preferred alternative.

Subsequently, SCWA developed the 2006 Zone 40 Water System Infrastructure Plan (WSIP) (SCWA, April 2006), the 2006 Central Sacramento County Groundwater Management Plan, the 2010 Urban Water Management Plan (UWMP) (Brown and Caldwell, 2011), and the 2011 Water Supply Master Plan

Amendment for the Cordova Hills Project (SCWA, December 2011). The 2011 Cordova Hills Amendment addressed the proposed development by that name. Since the completion of these documents, the Jackson Township project has been proposed. Significant changes in water use characteristics, land use planning, and water supply availability have also occurred.

The completion of this WSMP amendment is a necessary component for the approval of the proposed Jackson Township project. The proposed project is located on the north side of Highway 16, east of Watt Avenue and west of Sunrise Boulevard. Because the proposed project is located outside of the 2005 WSMP study area, SCWA is required to develop and approve an amendment to the WSMP.

This WSMP amendment presents an evaluation of the water demands, water supplies, water system facilities, and costs for three scenarios, as follows:

Baseline. This scenario consists of Zone 40 with the land uses as currently approved.

Jackson Township. This scenario consists of the Baseline scenario plus the proposed Jackson Township project.

Cumulative. This scenario consists of the Jackson Township scenario plus two other possible projects known as NewBridge and West Jackson.

1.3 Linkage to 2005 Zone 40 Water Supply Master Plan

This WSMP Amendment contains updates and additions to substantial portions of the 2005 WSMP and the 2011 Cordova Hills Amendment. The items that have been updated include buildout land use acreages, unit water demand factors, recent historical demographics and water demands, projected water demands, growth rate projection, projected water supply availability, groundwater supply description, needed future facilities, and the capital improvement plan (CIP). New items that are presented in this Amendment that were not included in the 2005 WSMP and the 2011 Cordova Hills include existing water facilities descriptions; buildout population, connections, and dwelling units by service area; water demand factors expressed as demand per dwelling unit and per type of customer; projected maximum day and annual use of surface water and groundwater for dry and wet/average years; evaluation of storage and pump station capacity; and cost estimates for each proposed facility.

1.4 Service Area Description

The Zone 40 boundary and service areas as well as the Jackson Township area are shown on Figure 1-1. The study area for this analysis is the Zone 40 area including the Jackson Township area, Elk Grove wholesale area, and the future Cal Am area in Rio del Oro, except for the following areas.

- Portion of Elk Grove Water District that is not served by SCWA wholesale water supply.
- Omochumne-Hartnell Water District (OHWD).
- Areas within Zone 40 for which land use categories have not been assigned.
- Cal-Am service area in the CSA.

The study area is further described and illustrated in Section 3.

The Zone 40 has three service areas as follows:

- North Service Area (NSA)
- Central Service Area (CSA)
- South Service Area (SSA)

1.4.1 North Service Area

The NSA is located south of the American River and includes part of the City of Rancho Cordova. The NSA is currently supplied exclusively by groundwater. A surface water supply will be provided to the NSA in the near future that will initiate the conjunctive use program in that area. The NSA is the least developed of the three service areas, with currently less than 10 percent of the projected build out population. This service area includes the old Mather and Sunrise Corridor systems, as well as the newer Sunridge system. SCWA assumed ownership of the Mather System shortly after the County of Sacramento took over the old Mather Air Force Base after it was shut down by the US Air Force in the mid-1990s. In the case of the Sunrise Corridor System, SCWA was asked to take ownership and provide water service after the system was constructed through an assessment district in the late 1980's. The majority of the land within the NSA boundary is rural and undeveloped. The Jackson Township growth area is located in the NSA.

1.4.2 Central Service Area

The CSA is located to the south of the NSA and is supplied by surface water from the Vineyard Surface Water Treatment Plant (SWTP) and groundwater. The CSA is partially developed with approximately 27 percent of the projected build out population. SCWA provides wholesale water to Elk Grove Water District within the CSA. This service area includes the old Grantline-99 system, as well as the newer Vineyard, Vineyard Springs, and North Vineyard Station areas. The CSA is predominately residential with a small amount of commercial and institutional customers and a large rural component to the east.

1.4.3 South Service Area

The SSA is located south of the CSA and to the west of Highway 99. The SSA is the most developed of the three service areas, with currently 60 percent of the projected build out population. The SSA is supplied by a mix of surface water, groundwater, and recycled water. This service area currently supplies the Laguna, East Franklin, and Laguna Ridge areas. The SSA is predominantly residential with some commercial and institutional customers as well.

1.5 Report Organization

The WSMP contains the following nine sections plus appendices, as follows:

Section 2 presents a description of the existing water system and its facilities.

Section 3 presents the methodology used to develop future water demands, the connection growth projection, and the water demand factors.

Section 4 describes the water supplies.

Section 5 describes the approach to quantify the amount of needed supply and storage capacity.

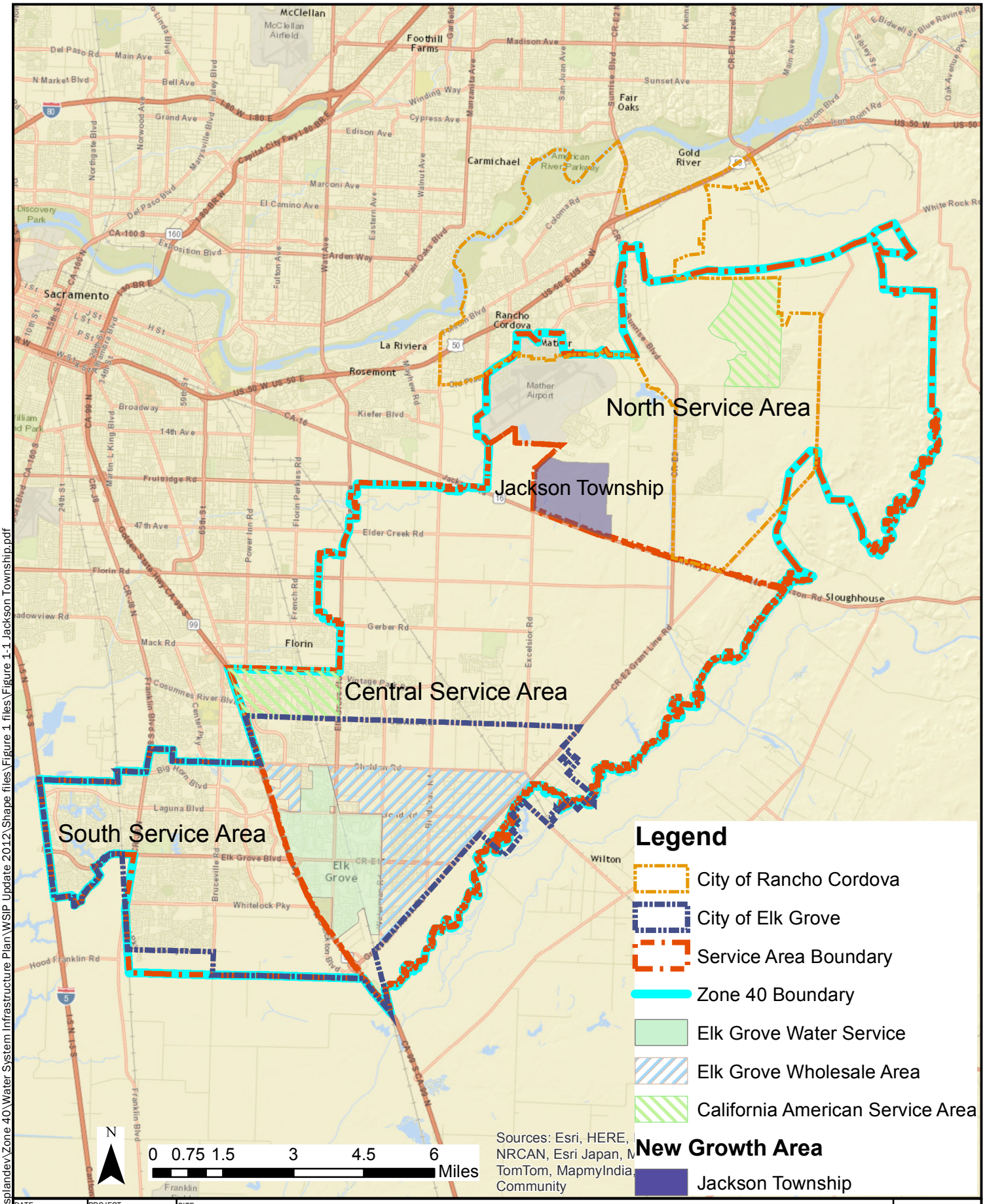
Section 6 describes the approach used to identify the needed water system facilities, the resulting CIP, and the cost estimates.

Section 7 develops the water demands, required water facilities, and their costs for the Baseline scenario. Sections 8 and 9 develop the same information for the Jackson Township and Cumulative scenarios.

Appendix A contains back up information for the development of the demand factors.

Appendices B, C, and D contain the supply capacity, use of supply, comparison to demand, and storage evaluations for the Baseline, Jackson Township, and Cumulative scenarios.

Appendix E has the cost estimate tables for each CIP project.



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DATE	PROJECT	SITE
8/4/15	148130	Zone 40 Water Supply Master Plan Amendment

Brown AND Caldwell

DEPARTMENT OF WATER RESOURCES
SACRAMENTO COUNTY WATER AGENCY

TITLE

Zone 40 Service Area

Figure 1-1

Section 2

Existing Water System Description

This section describes SCWA's existing Zone 40 water system. It contains a description of the water supply facilities including surface water facilities, groundwater wells, storage tanks, pressure zones, and the piping system. Recycled water facilities are also described.

2.1 Surface Water Facilities

SCWA surface water supplies for Zone 40 are diverted from the Sacramento River at Freeport and through the City of Sacramento's (City) Sacramento River SWTP.

Surface water diverted from the Sacramento River at the Freeport diversion structure is conveyed through the Freeport Regional Water Authority (FRWA) pipeline, treated at the Vineyard SWTP, and then delivered to the Zone 40 service area. FRWA was created as a joint powers authority (JPA) between SCWA and East Bay Municipal Utility District (EBMUD) in 2002, to increase surface water supply to the southern part of Sacramento County to reduce the county's dependence on groundwater through the implementation of a conjunctive use program and to provide a dry year surface water supply for EBMUD.

In 2011, FRWA completed the Sacramento River diversion at Freeport and a conveyance pipeline. The 84-inch (in) diameter pipeline starts at the Freeport intake, crosses Interstate 5 and Highway 99 to the east, and then parallels Gerber Road to a bifurcation at Vineyard Road. A SCWA owned 60-in diameter pipeline then conveys water north from this point to the Vineyard SWTP, which is located in the CSA. An EBMUD owned 66-in diameter pipeline continues further east to the Folsom South Canal.

The current capacity of the Vineyard SWTP is 50 million gallons per day (mgd) with an ultimate capacity of 100 mgd. Treatment facilities include coagulation, flocculation, sedimentation, filtration, and chlorine disinfection. The plant is also provided with solids-handling facilities. Other facilities include a clear well / chlorine contact tank, an electrical building, and treated water pump station.

The Vineyard SWTP currently provides treated surface water primarily to customers in the CSA with a smaller amount of supply to customers in the SSA. Three pipelines cross Highway 99 and hydraulically connect the CSA and the SSA at Sheldon Road, Bond Road, and Grant Line Road. The Sheldon Road pipeline was constructed in 2010.

Surface water is also provided to the SSA through the Franklin Intertie. The City diverts and treats a portion of SCWA's surface water at their Sacramento River SWTP, and then wheels that water through their distribution system to the Franklin intertie to Zone 40. The Franklin Intertie has a capacity of 11.1 mgd. Water from the intertie flows into the SSA though two routes. A dedicated transmission main connects to SCWA's Dwight Road facility where the supply is pumped into the SSA. Water from the intertie is also supplied to the SSA through an in-line booster pump that connects directly to the SSA distribution system.

Table 2-1 summarizes the surface water facilities' capacities.

Table 2-1. Zone 40 Surface Water Facilities

Facility	Treated water capacity, mgd	Storage tank volume, MG	Pump station capacity, mgd
Vineyard SWTP	50/100 ultimate	20	75 mgd
Franklin Intertie [(a)]	11.1	--	1.6[a]

[(a)] *This is the in-line booster pump near the intertie. Franklin Intertie supply is pumped to the SSA through both the Dwight Road GWTP booster pump station facility and the in-line booster pump.*

2.2 Groundwater Facilities

Groundwater is supplied to Zone 40 from wells that that are connected to groundwater treatment plants (GWTPs) and from wells that pump directly into the distribution system (direct feed).

Each GWTP facility consists of wells that are manifolded into a treatment plant, a ground level storage tank, and a pump station. Most GWTPs are supplied by more than one well. The existing GWTPs use oxidation and filtration with a manganese zeolite (greensand) filter media for iron and manganese treatment. Treated water from the GWTPs flows into the ground level storage tanks and is subsequently pumped into the distribution system. The pump stations are typically sized larger than the GWTP capacities so that peak hour supply can be pumped to the distribution system from the storage tanks. In the case of the Dwight Road GWTP in the SSA, the pump station is sized larger than the GWTP to also pump the Franklin Intertie supply into the SSA. Storage tanks that are not located at a GWTP facility are described in Section 2.3.3.

The direct feed wells pump directly into the distribution system and do not require treatment. Direct feed wells are located in some areas of the CSA and SSA. SCWA also has some wells that were drilled and planned to be equipped in the future. Because these wells are not currently equipped to provide a groundwater supply to the system, they are not included in this section.

The wells used to feed the Anatolia GWTP are located in the CSA near the Vineyard SWTP, while the GWTP is located in the NSA and the treated water is supplied to the NSA. The wells that supply the GWTPs, storage tanks at the GWTPs, and pump stations in the NSA are listed in Table 2-2. There are no direct feed wells in the NSA. The locations of these facilities are shown on Figure 2-1.

Table 2-2. NSA Groundwater Facilities

Facility	GWTP capacity, mgd	Well capacity		Storage tank volume, MG	Pump station capacity, gpm
		Wells to GWTP, gpm	Direct feed wells, gpm		
Mather Housing GWTP					
W-096 McRoberts Well	--	750			
W-095 Pittsfield Well	--	1,600			
W-087 Plant Well	--	1,200			
W-092 Veterans Park Well	--	1,200			
Subtotal	6.0	4,750		0.5	3,600 (5.2 mgd) [a]
WT-08 Anatolia GWTP					
W-122 Excelsior Well #1		1,800			
W-123 Excelsior Well #2		1,800			
W-124 Excelsior Well #3		1,800			
Subtotal	6.5	5,400		4.0	7,800 (11.2 mgd)
Total	12.5	10,150	--	4.5	11,400 (16.4 mgd)

[a] *The pump station pumps a portion of the supply from the tank. The remaining supply is fed by gravity to Mather Housing.*

The CSA is supplied water from the Vineyard SWTP and five groundwater treatment plants. There are also three direct feed wells that supply the CSA. The GWTPs, wells that supply the GWTPs, direct feed wells, storage tanks at the GWTPs, and pump stations in the CSA are listed in Table 2-3. The locations of these facilities are shown on Figure 2-2.

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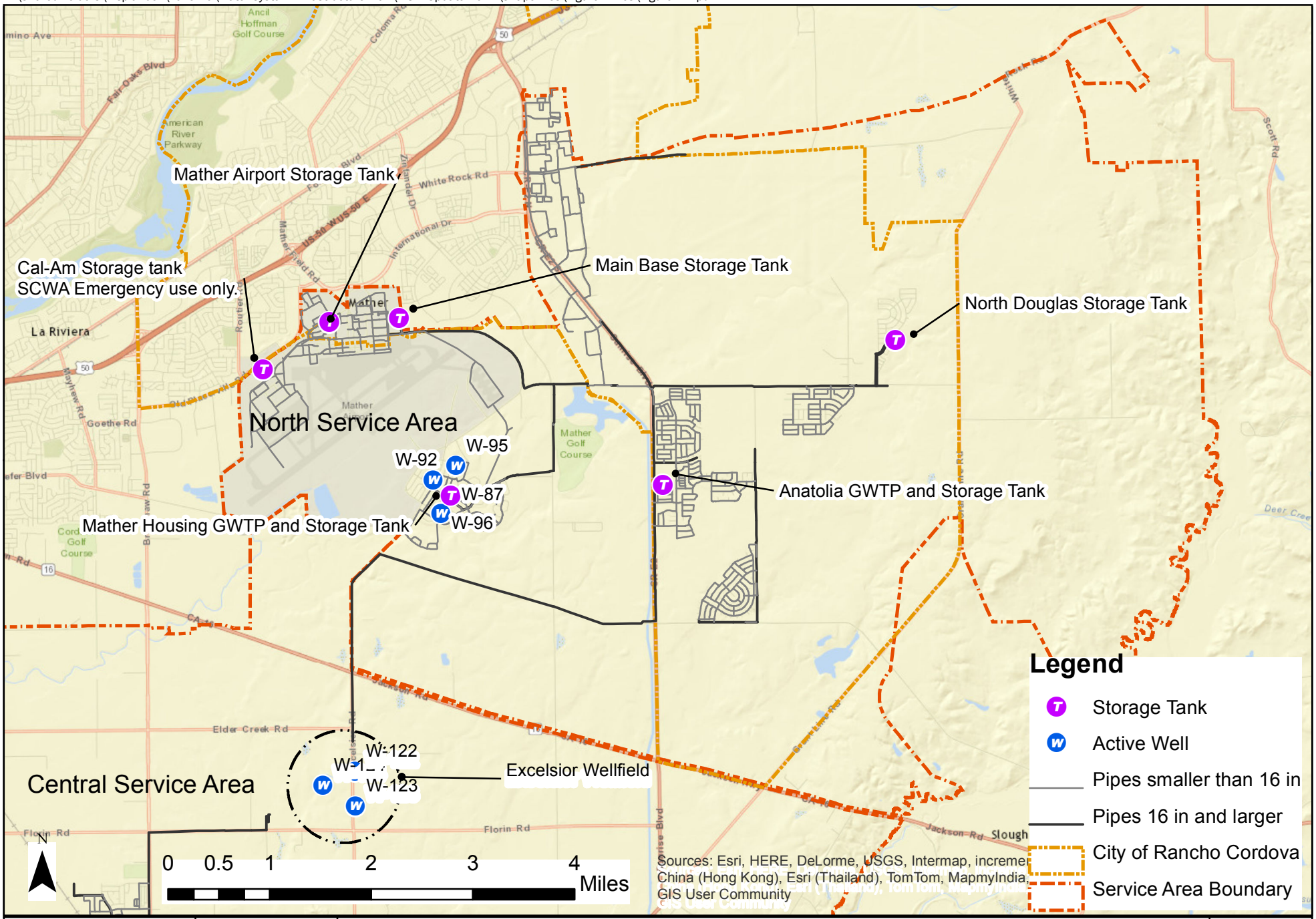
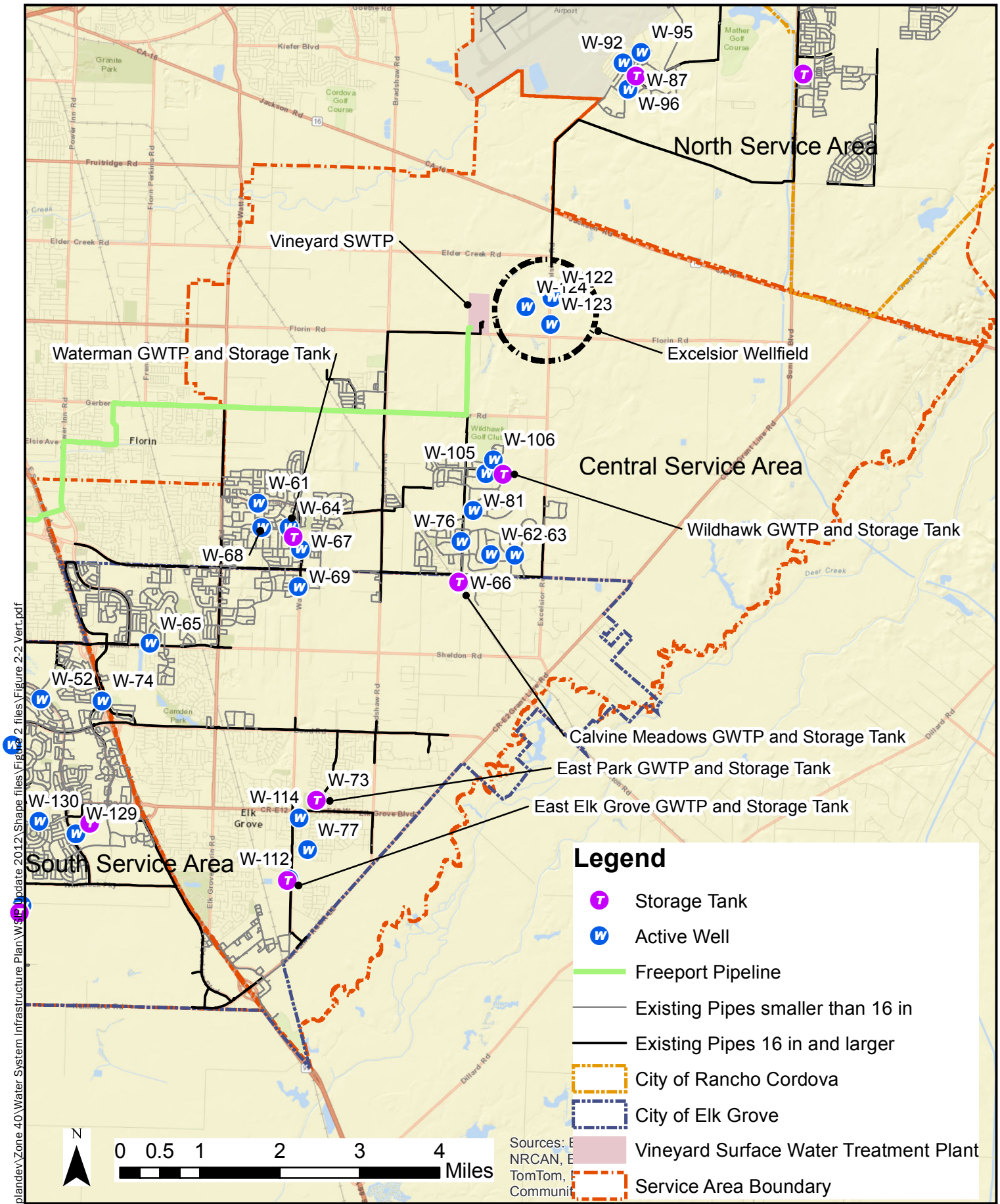


Brown AND Caldwell / DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY	PROJECT 148130	SITE **Zone 40 Water Supply Master Plan Amendment**	**Figure 2-1**
	DATE 11/7/14	TITLE **Existing Supply Facilities - NSA**	



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DATE	PROJECT	SITE
11/12/14	148130	Zone 40 Water Supply Master Plan Amendment

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SACRAMENTO COUNTY WATER AGENCY

TITLE

Existing Supply Facilities - CSA

Figure 2-2

Table 2-3. CSA Groundwater Facilities

Facility	GWTP capacity, mgd	Well capacity		Storage tank volume, MG	Pump station capacity, gpm
		Wells to GWTP, gpm	Direct feed wells, gpm		
WF-01 Calvine Meadows GWTP					
W-066 Calvine Meadows Well		1,700			
W-076 Legends Well		1,750			
Subtotal	5.0	3,450		0.35	6,100 (8.8 mgd)
WT-05 East Elk Grove GWTP					
W-112 East Elk Grove On Site Well		1,500			
W-077 Waterman Ranch Well		1,500			
W-114 Windsor Downs Well		1,500			
Subtotal	6.5	4,500		3.5	9,000 (13.0 mgd)
WF-03 East Park GWTP					
W-073 East Park Well		1,915			
Subtotal	2.9	1,915		0.5	2,400 (3.5 mgd)
WT-02 Waterman GWTP					
W-061 Caymus Well		1,600			
W-069 Perry Ranch Well		1,500			
W-068 Tillotson Well		1,500			
W-067 Waterman Road Well		1,500			
W-064 Westray Well		1,500			
Subtotal	8.6	7,600		7.0	18,000 (25.9 mgd)
WT-03 Wildhawk GWTP					
W-105 Azinger Well		1,800			
W-106 Rodriguez Well		1,800			
W-081 Saddle Creek Well		1,500			
Subtotal	7.5	5,100		3.0	13,200 (19.0 mgd)
Direct feed wells					
W-062 Andalusian Well			1,100		
W-063 Equine Well			1,000		
W-065 Sheldon North Well			608		
Total	30.5		2,700	14.4	48,700 (70.1 mgd)

The SSA is supplied water from four GWTPs and from the Franklin Intertie. There are also six direct feed wells that supply the SSA. The SSA also receives some supply from the CSA. The GWTPs, wells that supply the GWTPs, direct feed wells, storage tanks at the GWTPs, and pump stations in the SSA are listed in Table 2-4. The locations of these facilities are shown on Figure 2-3.

Table 2-4. SSA Groundwater Facilities

Facility	GWTP capacity, mgd	Well capacity		Storage tank volume, MG	Pump station capacity, gpm
		Wells to GWTP, gpm	Direct feed wells, gpm		
Big Horn GWTP					
W-130 Big Horn Blvd #5 Well Civic Center Dr		1,500			
W-129 Big Horn offsite Well #4 Big Horn Blvd.		1,500			
Subtotal	4.5	3,000		2.0	6,000 (8.6 mgd)
Dwight Road GWTP					
W-070 Dwight Road Raw Water Well		1,500			
Subtotal	2.1	1,500		7.0	18,000 (25.9 mgd)[a]
Lakeside GWTP					
W-055 Lakeside Well		1,700			
W-056 Riparian Well		1,500			
W-075 West Taron Well		1,600			
Subtotal	6.5	4,800		0.5	5,000 (7.2 mgd)
Poppy Ridge GWTP					
W-110 Ferragamo Well		1,500			
W-078 Poppy Ridge On-Site Well		1,500			
W-109 Terrazo Well		1,500			
Subtotal	6.5	4,500		3.5	7,200 (10.4 mgd)
Direct feed wells					
W-042 Banyon Well			760		
W-052 Big Horn North Well			940		
W-043 Duck Slough Well			1,000		
W-047 Feather Creek Well			800		
W-041 Seasons Well			650		
W-74 Stockton (Park Meadows)			500		
Total	21.6	--	4,650	13.0	36,200 (52.1 mgd)

[a] *Dwight Road GWTP pump station capacity is sized to also pump the supply from the Franklin intertie into the SSA distribution system.*

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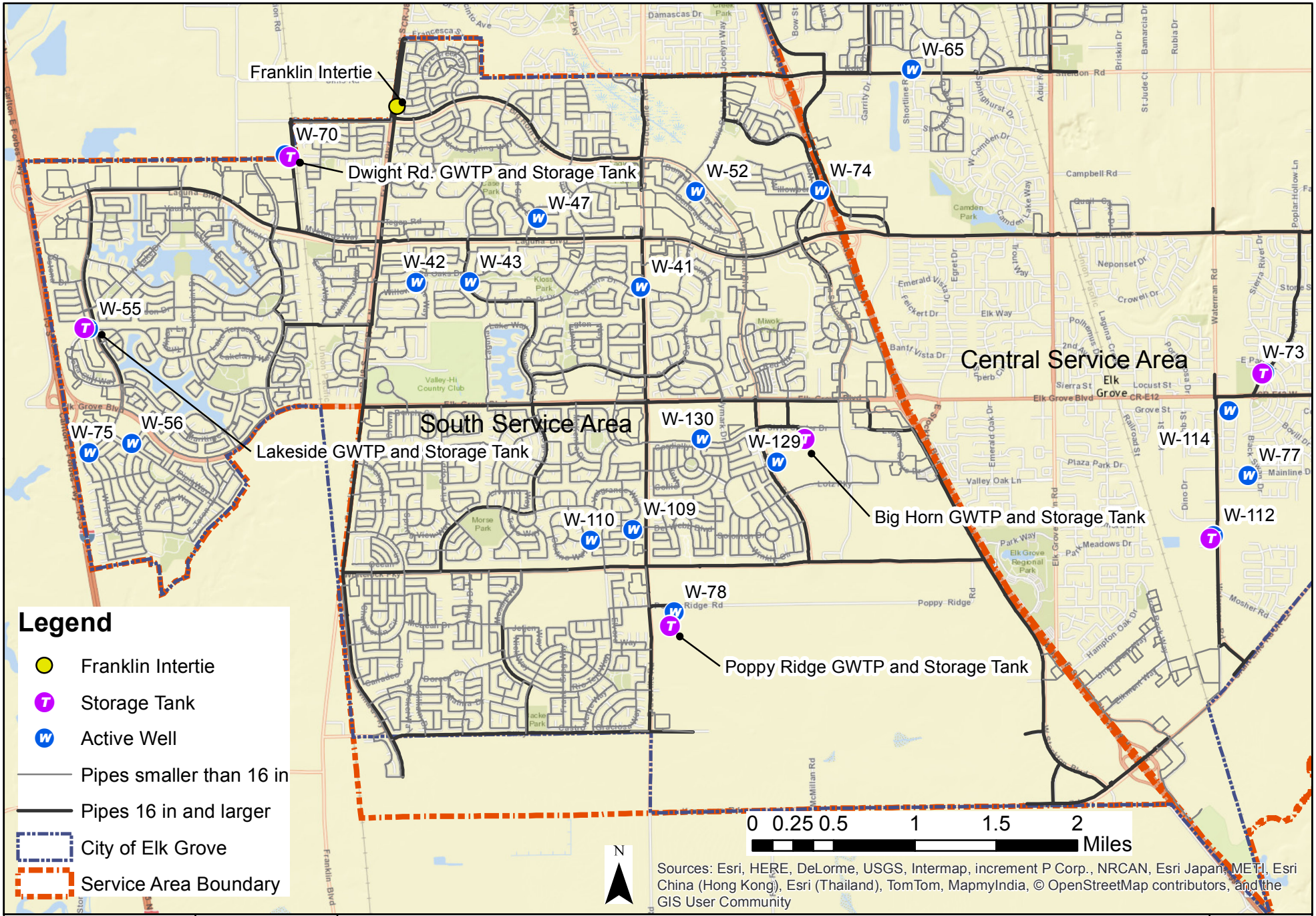

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SACRAMENTO COUNTY WATER AGENCY

PROJECT	SITE	
148130	**Zone 40 Water Supply Master Plan Amendment**	**Figure 2-3**
DATE	TITLE	
7/30/15	**Existing Supply Facilities - SSA**	

2.3 Water Distribution Facilities

Existing water distribution facilities within Zone 40 include storage tanks and pipelines. The system is also comprised of several pressure zones.

2.3.1 Pressure Zones

Zone 40 consists of two pressures zones, as described below. Figure 2-4 provides a hydraulic schematic of the Zone 40 system that illustrates the pressure zones and ground elevations of key water distribution and supply facilities. Table 2-5 summarizes the ground elevation and maximum day pressure range by pressure zone from SCWA's hydraulic model.

- NSA Main Zone – The NSA Main Zone is the largest pressure zone within the NSA. The NSA Upper Zone will be added in the future.
- CSA/SSA Zone - The CSA and SSA form one pressure zone that is hydraulically connected by three pipelines that cross Highway 99.

Table 2-5. Pressure Zones

Pressure zone	Ground elevation range, ft	Maximum day pressure, psi
NSA Main Zone	74 to 215	40 to 85
CSA/SSA Zone	10 to 96	50 to 75

2.3.2 Pipelines

Table 2-6 summarizes the existing transmission and distribution pipeline length by pipe diameter in each of the service areas. SCWA defines transmission pipe to be those 16 inches in diameter and greater. This includes SCWA pipelines within the Elk Grove wholesale area and raw water pipelines that connect the groundwater wells to the GWTPs.

Table 2-6. Distribution Pipeline Length by Diameter by Service Area

Diameter, in	Pipe length, linear feet			
	NSA	CSA	SSA	Total
Distribution				
<8-in	54,200	200	10,600	65,000
8 to 10-in	264,300	421,700	1,080,200	1,766,200
12 to 14-in	128,800	175,700	344,100	648,500
Transmission				
16 to 24-in	52,300	167,600	231,800	451,600
30 to 36-in	47,100	34,300	16,200	97,500
> 36-in	11,800	24,800	1,300	37,800
Total	558,300	824,000	1,684,000	3,066,200

2.3.3 Storage Facilities

Zone 40 has fourteen active storage tanks. Eleven of the storage tanks are located at GWTPs and described in Section 2.2. The three storage tanks that are independent storage facilities that are not part of a GWTP facility are listed in Table 2-7. These tanks are used to meet the peak hour increment of demand that is greater than the maximum day demand as well as emergency and fire flow demands. Cal Am has a 3 mg storage tank in the NSA that is available to SCWA for emergency purposes.

Table 2-7. Stand-alone Storage Facilities

Name	Volume, MG	Pump station capacity, gpm	Pressure zone
Mather 1 storage (Main Base)	1.0	3,600 (5.2 mgd)	NSA Main Zone
Mather 2 storage (Mather Airport)	0.3	Elevated tank	NSA Main Zone
North Douglas	3.0	13,500 (19.4 mgd)	NSA Upper Zone
Total	4.3		

2.4 Recycled Water Facilities

Beginning in 2003, the Sacramento Regional County Sanitation District (SRCSD) started wholesaling recycled water to SCWA for the Phase I SRCSD/SCWA Water Recycling Pilot Program (WRPP). The Phase 1 recycled water service area consists of the Laguna West, Lakeside, and Laguna Stonelake communities that are located in the western third of the Laguna planning subarea in the SSA. In these areas SCWA retails the recycled water to large commercial irrigation customers, industrial customers, right-of-way landscaping, schools, and parks.

Some of the Phase 2 recycled water conveyance facilities have been constructed in the East Franklin Specific Plan planning subarea in the SSA. The portions of the system that are operational are using potable water as a supply source. Phase 2 is planned to also include the Laguna Ridge planning subarea.

SRCSD is responsible for the collection, treatment, and disposal of wastewater throughout most of the urbanized areas of Sacramento County. SRCSD operates a 5 mgd tertiary treatment facility at their regional wastewater treatment plant that includes a pump station. Recycled water is conveyed from the treatment facility via a single 24-inch transmission main than then drops to a 20-inch pipeline to the Phase 1 service area. The recycled water is then conveyed through a branched network of recycled water distribution pipelines ranging from 8-inch to 14-inch diameter in size.

Legend

Pressure Zone | Service Area | Volume in MG (million gallons) Storage Tank | Booster Pump Station | Well(s) | Surface Water Treatment Plant (WTP) | Groundwater Treatment Plant (GWTP) | PRV | Normally Closed Valve | Check Valve | Altitude Valve | Customer Water Use | Intertie

Elevation (ft)

350
300
250
200
150
100
50

96 ft

CSA/SSA Zone

South Service Area

Central Service Area

North Service Area

10 ft

74 ft

130 ft

90 ft

215 ft

212 ft
201 ft

Lakeside Onsite, West Taron, Riparian Dr.
6.5 MGD GWTP
0.5 MG Lake-side
7.2 MGD

Franklin Intertie (from City of Sacramento)
Franklin Booster Station

Dwight Rd Well
2.1 MGD GWTP
7 MG Dwight Rd
25.9 MGD

Poppy Ridge Onsite, Terrazzo, Ferragamo
6.5 MGD GWTP
3.5 MG Poppy Ridge
10.4 MGD

Banyon, Duck Slough, Feather Creek, Seasons Dr, West Stockton Blvd, Big Horn North
Big Horn Offsite 4, 5
4.5 MGD GWTP
2 MG Big Horn
8.6 MGD

East Elk Grove Onsite, Waterman Ranch, Windsor Downs
6.5 MGD GWTP
3.5 MG East Elk Grove
13 MGD

Andalusian Drive, Equine Drive

East Park Well
2.9 MGD GWTP
0.5 MG East Park
3.5 MGD

Perry Ranch, Caymus, Westray, Waterman Rd, Tillotson Parkway
8.6 MGD GWTP
7 MG
25.9 MGD

Waterman
5 MGD GWTP
0.35 MG Calvine Meadows
8.8 MGD

Calvine Rd, Legends Well

Sheldon North

Wildhawk
3 MG
19 MGD
7.5 MGD GWTP

Creekview, Saddle Creek, Azinger 1, Rodriguez 2

CalAM (emergency)
3 MG

Mercantile Intertie (from GSWC)

1 MG Main Base (1)
Main Base Booster

Vineyard Surface Water Treatment Plant
50 MGD WTP

CSA Booster

Excelsior raw water pipeline

Excelsior No. 1, 2, 3

Mather Housing

Main Zone

22.5 MGD

4 MG Anatolia
6.5 MGD GWTP

Upper

Douglas Rd & American Blvd

McRoberts, Pittsfield, Veterans Park Plant
6 MGD GWTP

5.2 MGD

Mather Airport (2)
0.3 MG

Mather Housing
0.5 MG

North Douglas
3 MG

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Sacramento County Water Zone 40

Figure 2-4. Existing System Hydraulic Schematic

Section 3

Water Demands

This section presents the historical water use, the methodology used to develop future water demands, the connection growth projection, and the water demand factors. The projected water demands for the various scenarios are presented later in this document.

3.1 Historical Connections and Water Production

This section describes the historical number of connections, and the analysis to develop the projected demographics at buildout as well as the resulting projected growth rates of connections and population for Zone 40. Following the completion of SCWA's 2010 UWMP, the 2010 census data became available. An analysis of the 2010 population served by Zone 40 based on the 2010 census was performed (Brown and Caldwell, 2012). The historical number of connections by service area within Zone 40 is shown on Figure 3-1.



Note: Connections in Elk Grove wholesale area are not included on this figure because of unavailable historical information for all of the years depicted.

Figure 3-1. Historical Connections by Service Area

Historical potable and recycled water production in Zone 40 from 2001 to 2013 by service area is shown in Table 3-1 and illustrated on Figure 3-2. The production quantities presented in Table 3-1 for the CSA and SSA differ from the water demands in these two service areas since some of the water produced in the CSA

is utilized in the SSA. A portion of the SSA's water demand has been supplied by water from the CSA that has increased with the start-up of the Vineyard SWTP in 2011. Water flows from the CSA to the SSA through three connections across Highway 99 as described in Section 2.1.

Table 3-1. Zone 40 Historical Water Production, ac-ft/yr

Area	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
NSA	2,666	2,550	2,505	2,314	3,066	3,951	4,270	4,619	4,295	4,150	4,353	5,020	4,804
CSA	5,342	6,072	6,578	8,891	9,260	9,817	10,287	11,038	11,941	13,616	12,682	17,592	19,751
CSA (wholesale to Elk Grove)[a]	900	1,707	1,973	2,638	3,018	3,304	3,420	3,219	2,870	3,487	3,487	3,487	3,487
SSA[b]	13,386	14,071	13,558	15,346	17,980	17,104	18,453	18,875	16,610	12,411	12,974	9,185	7,338
SSA (recycled water)	-	-	609	786	695	596	837	915	866	794	829	870	922
Total	22,294	24,399	25,223	29,975	34,019	34,773	37,267	38,666	36,583	34,458	34,325	36,154	36,302

[a] *Historical production for Elk Grove wholesale from 2001 through 2010 provided by SCWA staff. Elk Grove wholesale production for 2011 through 2013 is estimated and assumed to equal 2010 production.*

[b] *These values represent the water production in the SSA.*

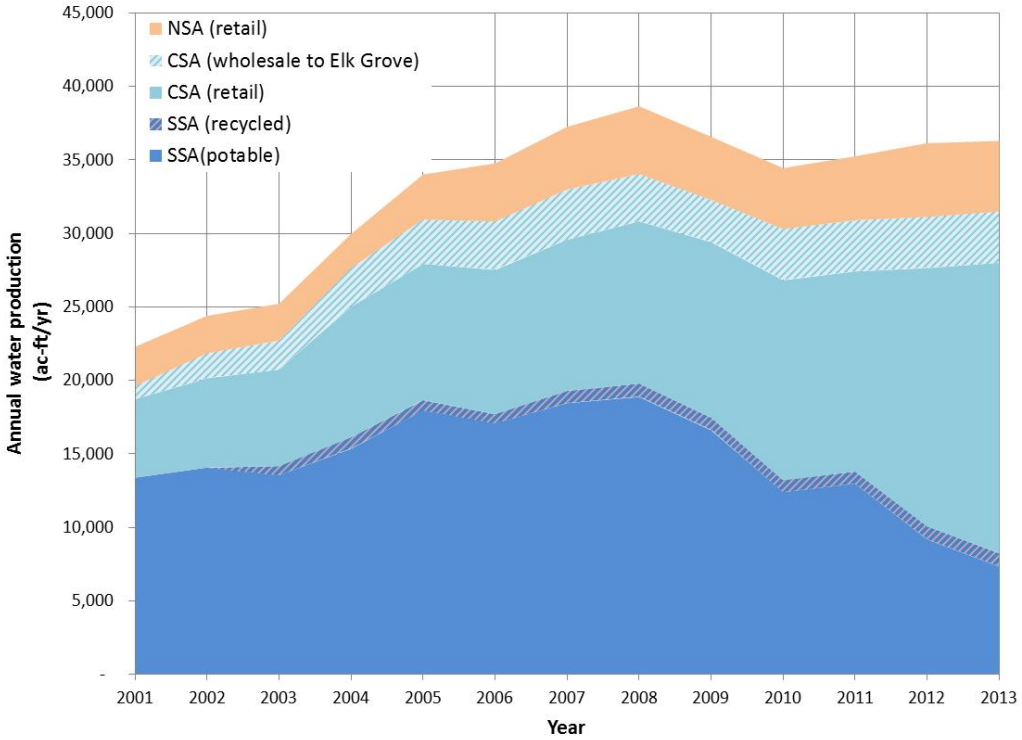


Figure 3-2. Historical Annual Water Production by Service Area

3.2 Water Demand Projection Methodology

Water demands are estimated based on the water demand estimate analysis progression shown on Figure 3-3. The approach has two components, which are the demographics and the water demands.

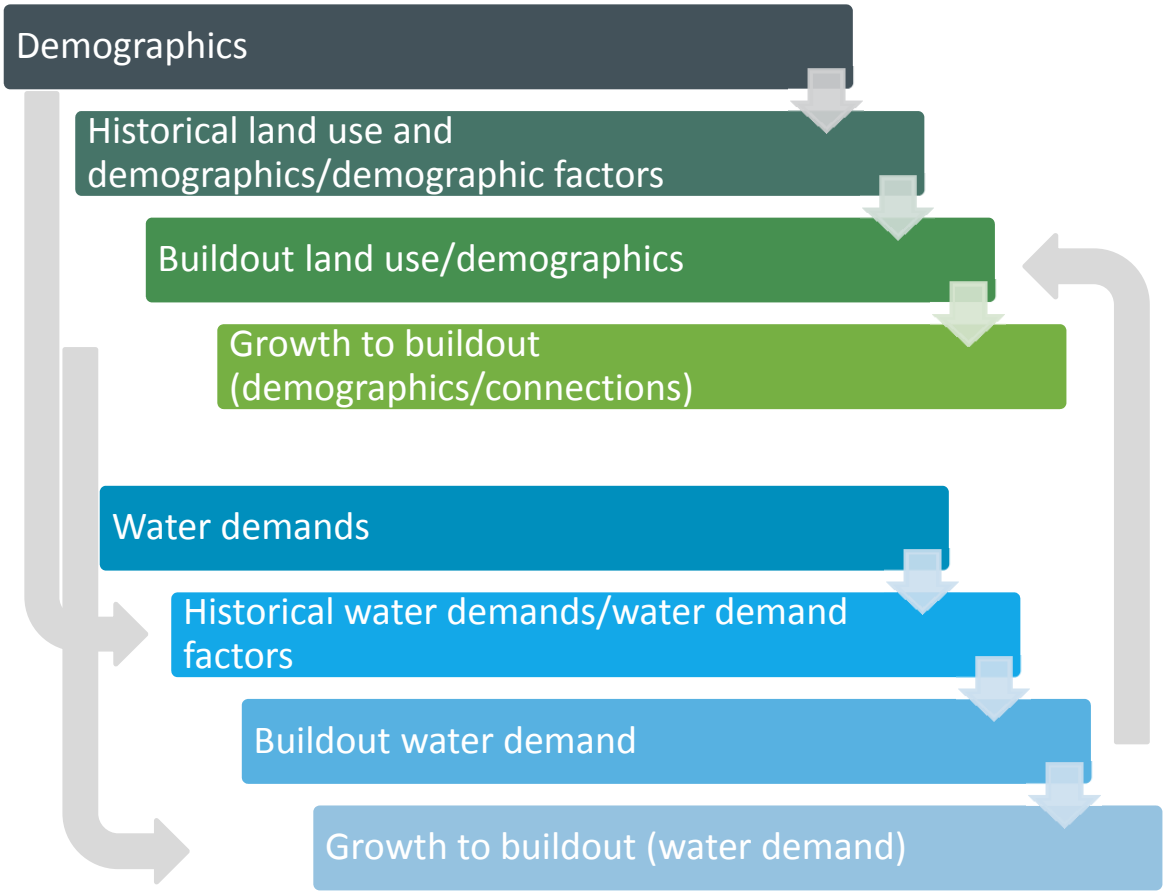


Figure 3-3. Water Demand Estimate Analysis Progression

The first part of the process is focused on land use and demographics. Demographics consist of population, connections, and dwelling units (DUs). The 2010 developed land use acreage by type of use is used to establish demographic factors such as connections and dwelling units per acre. The buildout developed land use acreage is then used to estimate buildout demographics. Buildout is considered to be reached when the available land is fully developed up to the maximum allowed for each land use category.

The number of dwelling units at buildout is estimated based on the maximum number of DUs allowed per acre in each of the general plan residential land use categories multiplied by the number of acres. The projected number of DUs at buildout is used to estimate the number of buildout residential connections and population. The buildout population for Zone 40 is estimated using a population per DU factor from the 2010 population and DU census data. Following the completion of SCWA's 2010 UWMP, the 2010 census data became available. An analysis of the 2010 population served by Zone 40 based on the 2010 census was performed (Brown and Caldwell, 2012). The number of residential connections at buildout is based on the maximum DUs /acre allowed for residential land uses and assumed DUs per connection factors.

For non-residential land uses, the number of connections at buildout is more speculative because of the uncertainty of the mix of types and land area sizes of industries, businesses, parks, and other public facilities. For public land uses the size of parks and public facilities will influence the number of connections in that category. The number of connections at buildout is estimated assuming that the number of connections per acre would be 20 percent higher than the 2010 value. The projected annual connection growth for each service area is estimated.

The second part of the process consists of developing water demand factors based on the historical water use compared to the amount of developed areas, population, and DUs. These historical demand factors are used to develop the demand factors projected for buildout. The buildout demand factors are then used together with the buildout land use and demographics to estimate the buildout water use. The increase in demand to buildout for each service area is based on the projected increase in connections for each service area.

The information presented in this report typically includes all of SCWA's retail service area, the Elk Grove wholesale area, and the future Cal Am wholesale area in Rio del Oro. In the instances where the information excludes the Elk Grove wholesale area, it is so noted.

3.3 Land Use

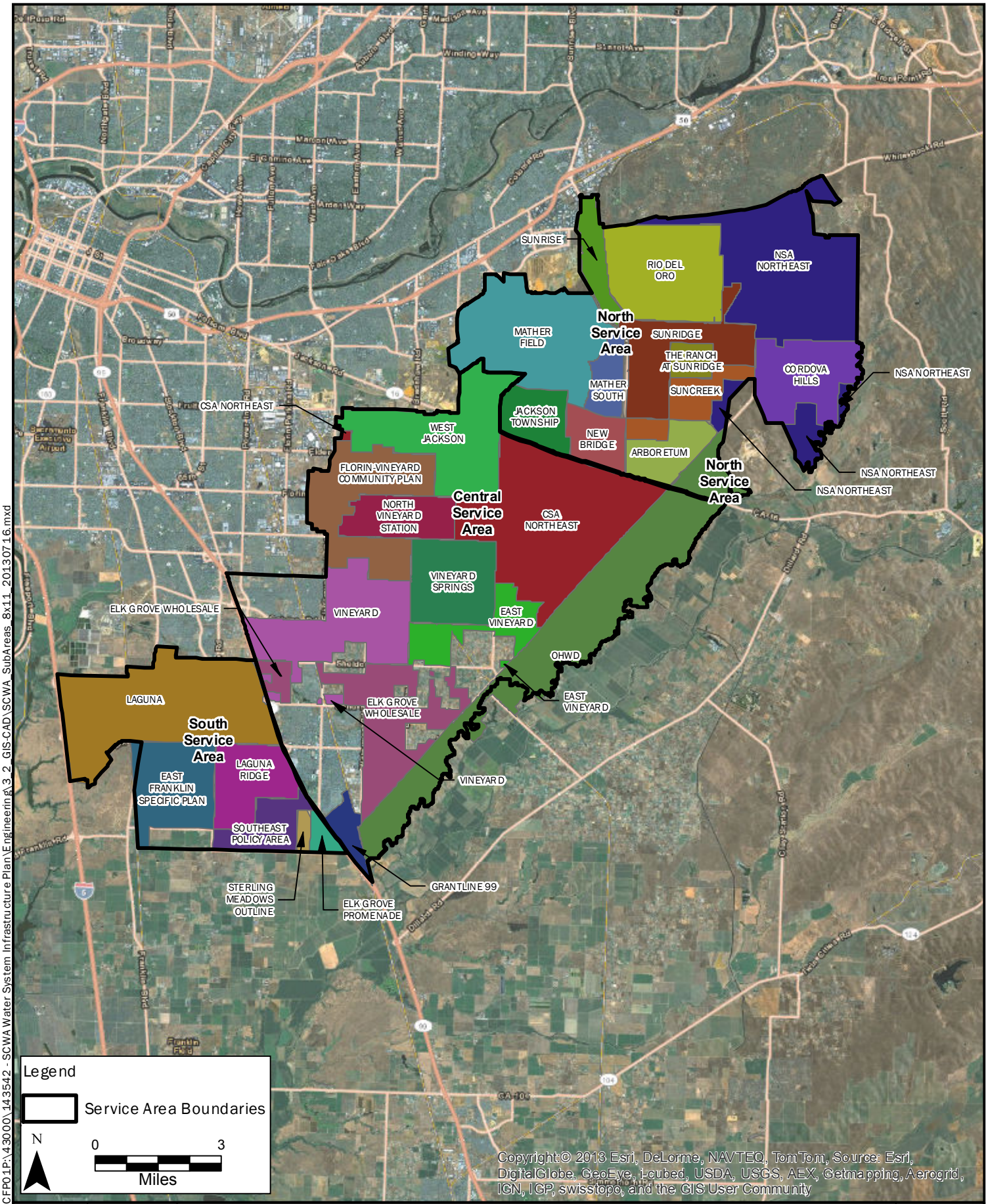
This section describes the planning subareas, land use, and residential density.

3.3.1 Planning Subareas

The study area is divided into planning subareas. The boundaries of the subareas correlate to current city boundaries, unincorporated areas, communities, and new growth areas defined by future development plans. The subareas are grouped into the three Zone 40 service areas: NSA, CSA, and SSA. The location of these subareas is illustrated on Figure 3-4.

3.3.2 Land Use

The area of land that was served by SCWA in 2010 is illustrated on Figure 3-5. The shaded areas on Figure 3-5 represent the area of land developed in 2010 and served retail water by SCWA. Figure 3-5 does not include the portion of Elk Grove Water District that is served by SCWA wholesale water supply. The 2010 developed acreage was estimated based on the location of SCWA's existing retail water distribution piping system.



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DATE	PROJECT	SITE
11/6/14	143542	Zone 40 Water Supply Master Plan Amendment

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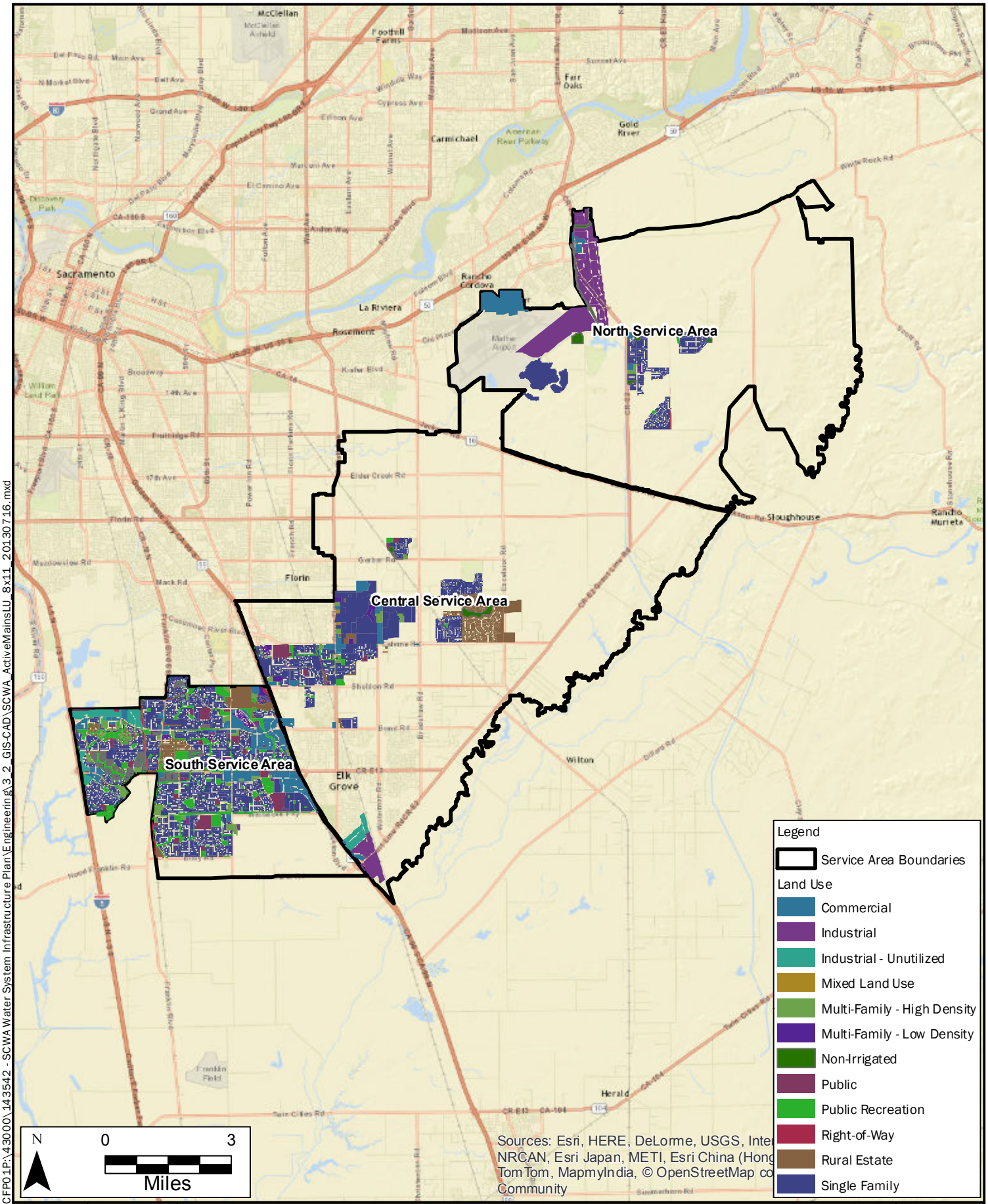
Water Planning Subareas

Figure 3-4



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DATE	PROJECT	SITE
11/6/14	143542	Zone 40 Water Supply Master Plan Amendment

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SACRAMENTO COUNTY WATER AGENCY

TITLE

Developed Area Currently Served by SCWA

Figure 3-5

GIS maps of the land uses defined by the most recent land use planning information for Sacramento County, the City of Elk Grove, and the City of Rancho Cordova, as well as maps of the proposed developments in the new growth areas were used to quantify the area of each land use category within each planning subarea. The land use categories presented in the general plans have been collapsed into a reduced set for the purposes of this analysis. The 2010 land use acreages by land use category are summarized in Table 3-2.

Gross acres are defined as the total land area for each land use category including streets and right of way areas. Net acres exclude the area occupied by streets and right of ways. It is assumed that streets and right of ways cover 20 percent of the gross area within the residential, commercial, and industrial land use categories. All other land use categories are assumed to not have streets and right of ways, so their net and gross acreages are the same. The acreages presented in Table 3-2 are net acres.

The buildout gross acreage presented later in this report was estimated based on GIS data that included areas of both net and gross acreage. For those areas where the GIS data was provided as net acreage, the quantity of net acres was converted to gross acres.

Table 3-2. 2010 Area By Land Use

Land use category	2010 developed area, net acres
Rural estate	1,380
Single family	6,970
Multi-family - low density	220
Multi-family - high density	390
Commercial	1,520
Industrial	1,110
Industrial-unutilized	340
Public	920
Public recreation	1,270
Mixed land use	20
Right-of-way	70
Subtotal, municipal water supply land area	14,210
Self-supported/supplied by others	-
Non-irrigated	500
Agricultural	-
Total	14,710

Note: Elk Grove wholesale area is not included in the 2010 developed area acreage because it was not available.

3.3.3 Residential Land Use Density

The general plan residential land use categories each have a DU density range in terms of the minimum and maximum allowed number of DUs per acre. The buildout DUs and resulting residential water connections developed in this analysis are based on the maximum density allowed within each land use category (i.e. 7 dwelling units/acre for the RD 5-7 land use category). Each of the four residential land use categories defined for this analysis represent several general plan residential land use categories. The average and maximum dwelling unit densities established for each of the four residential land use categories were developed using the weighted average by buildout acreage of the several land use types represented in each category. Actual land use density at buildout may vary from what is assumed in this document.

Another density variable is bonus density. In general, bonus density is an increased DU density above and beyond the maximum allowable residential density under the local zoning ordinance. Section 65915 of the Government Code requires that local government provide a developer with incentives or concessions for increasing the production of housing units and child care facilities when an applicant seeks a density bonus for a housing development or for the donation of land for housing within the county. In 2004, Senate Bill (SB) 1818 amended section 65915 of the Government Code, pertaining to the density bonus law. The purpose of SB 1818 is to encourage developers to build affordable housing by requiring local governments to provide meaningful incentives. The projected number of DUs has not been adjusted for the possibility of bonus density being provided.

3.4 Connection Growth Projection

The future growth rate of Zone 40 is expressed as the growth in the number of water system connections. The growth in water system connections is projected based on an evaluation of the range of historical growth trends that have occurred in each service area. Figure 3-1 depicts the number of historical connections for the 2001 to 20010 period. Because of the uncertainty in the future rate of growth, three growth rates were developed and expressed as low, medium, and high. The medium growth rate is used for the projections in this document. The low and high connection growth rates are approximately the same as the lowest (1,300 connections per year) and highest (3,600 connections per year) historical 5-year moving average growth rate for the 9 year period from 2001 to 2010. The medium growth rate begins at 1,000 new connections per year increasing to 1,500 new connections per year in 2020 and thereafter until buildout. The number of new connections estimated to occur each year for each service area is presented in Table 3-3. The connection growth rate from 2015 to 2024 was provided by SCWA staff. Any change in the growth of new connections to the water system will change the water demand projection.

Table 3-3. Projected Annual Connection Growth (new connections) [a]				
Year	NSA	CSA	SSA	Total
2015	300	300	400	1,000
2016	300	300	500	1,100
2017	300	300	500	1,100
2018	350	350	500	1,200
2019	400	400	500	1,300
2020	500	500	500	1,500
2021	500	500	500	1,500
2022	500	500	500	1,500
2023	500	500	500	1,500
2024	500	500	500	1,500
2025	500	500	500	1,500
2030	500	500	500	1,500
2031	600	600	299	1,499
2035	750	750	-	1,500
2040	750	750	-	1,500
2045	750	750	-	1,500
2050	750	750	-	1,500
2051	750	15	-	765
2052	659	-	-	659

Note: Annual growth is shown from 2015 to 2025. Years after 2025 are shown in 5-year intervals and for years when buildout within a service area occurs. Annual growth for years not shown between 5-year intervals is constant.

[a] *New connections include the Elk Grove wholesale subarea, Cal Am portion of Rio Del Oro subarea, and recycled water connections.*

3.5 Unit Water Demand Factors

Buildout unit water demand factors (UWDFs) are developed using a water demand per land area approach expressed as ac-ft/yr per acre. The buildout water demands are estimated by combining the buildout land use acreage for each type of land use with the applicable buildout UWDFs. This land area based approach for developing the buildout water demands is the same methodology used in the current WSMP and the subsequent Cordova Hills amendment. Since water use characteristics have changed over the last few years, this study includes an update of the UWDFs. The buildout UWDFs are updated based on consideration of several sources of information.

- 2005 WSMP UWDFs: The UWDFs in the 2005 WSMP, which are assumed to be gross factors (applied to gross acreage) (SCWA, 2005).
- Cordova Hills WSMP Amendment: The UWDFs for buildout in the 2005 WSMP were verified with limited meter data (SCWA, 2011).
- SCWA analysis of residential water use: SCWA conducted an analysis of metered residential connections in Zone 40 and developed UWDFs for rural residential, single family, multi-family low density, and multi-family high density land uses for the years 2005 through 2012 (SCWA, 2013). The analysis showed a reduction in the UWDFs since the previous work was completed. This analysis is presented in Appendix A.
- Analysis of SCWA 2010 Water Use Factors: UWDFs representing 2010 were developed for this study using 2010 estimated developed acreage in Zone 40 and SCWA water use data by customer category.
- 2010 UWDFs of other water agencies: The water demands per acre for other local water agencies were analyzed to use as a point of comparison.
- Gallons per capita per day (GPCD): In July 2011, SCWA adopted the 2010 UWMP, which included an analysis and selection of the SBx7-7 GPCD goal for all of SCWA's service areas. To meet SCWA's GPCD goal for all of its service areas, the Zone 40 GPCD target for 2020 is 196 GPCD. The Zone 40 per capita demand was less than the target in 2010. The UWDFs are selected to result in an overall per capita demand that does not exceed the 2020 target.

It's recognized that unit water use on a per capita basis has been trending downward for several years. The analysis of 2005 to 2012 residential water use by SCWA showed marked reductions in the water use per acre, which was also evident in the analysis of 2010 demand conducted for this study. Therefore it can be concluded that the UWDFs for buildout should be lower than those previously established.

As an initial step, the UWDFs from the SCWA analysis were selected for the residential factors. The equivalent water use factors expressed as demand per dwelling unit and per connection were developed and compared to the analysis of 2010 water use factors and similar water use factors for other local water agencies that consist of the City, Sacramento Suburban Water District, and the City of Roseville. The analysis of SCWA's 2010 water use provided multifamily and nonresidential UWDFs that appear to be unrealistically low. It is suspected that the acreages quantified in that analysis include areas not served by the water system. This is an area to further investigate in the future.

The buildout residential UWDFs are defined to be the same as the UWDFs in the SCWA analysis for the rural residential, single family, and multi-family low density categories. The UWDF for multi-family high density is assumed to be 5 percent less at buildout than the value determined in the SCWA analysis. The updated buildout nonresidential UWDFs are established to be 30 percent higher than indicated in the analysis of 2010 factors and 20 percent less than the previous 2005 and 2011 demand factor estimates.

No specific adjustments to the residential demand factors have been made for the bonus density issue discussed previously in this section. Since the residential UWDFs are the same as the 2005 to 2012 UWDFs from the SCWA analysis, the UWDFs may incorporate some bonus density to the extent that bonus density has been awarded in the past.

To compare the UWDFs with the target GPCD, the UWDFs were converted to the equivalent GPCD. As shown in Table 3-4, the actual 2010 and projected buildout GPCD meet the target GPCD.

Table 3-4. Zone 40 Comparison of 2010 to Buildout Water Use Metrics - Baseline

	2010	Buildout	Change ratio
Gallons per capita per day [a]	186	184	0.99
Total use/total DU, gpd/DU	570	559	0.98
SFR use/ SFR DU, gpd/DU	490	475	0.97
MFR use/MFR DU, gpd/DU	119	174	1.47
Non-res use/DU, gpd/DU	102	174	1.71
Total use/total con, gpd/connection	606	852	1.40
SFR use/SFR con, gpd/connection	490	475	0.97
MFR use/MFR con, gpd/connection	2,734	2,012	0.74
Non-res use/non res con, gpd/connection	2,856	3,538	1.24
Total demand per developed acre, ac-ft/ac	2.10	2.19	1.04
Potable demand per developed acre (recycled water removed), ac-ft/ac	2.05	2.12	1.03

SFR=single family residential

MFR=multi-family residential

Note: Water loss of 7.5% of water sales is included in this table.

[a] *Includes recycled water. The Zone 40 2020 target is 196 GPCD. This target value does not include recycled water. GPCD for purposes of reporting to the California Department of Water Resources does not include recycled water.*

The defined buildout UWDFs are less than the factors established in the previous WSMP and close to or exactly the same as the actual unit water use factors experienced from 2005 to 2012. The assumed buildout factors result in an overall buildout per capita demand that is slightly less than the GPCD target and slightly greater than the 2010 GPCD value. Water use declined in 2014 as a result of the Governor's drought declaration. It is assumed that the 2014 water use is temporary and will increase back to the levels of the 2005 to 2012 period. It is quite possible that unit water demands could decline in the future due to the passive savings that result from low flow plumbing fixtures achieving a higher level of saturation in Zone 40. However, the amount of decline of these updated water demand factors compared to the previous WSMP makes it prudent at this time to not assume that even greater reductions that result in a per capita demand significantly below the GPCD target will be achieved and can be counted on. The subject of additional water conservation effects on unit water use should be revisited by SCWA routinely with updates of the buildout UWDFs.

The UWDFs for the non-residential water use categories have some uncertainty due to the unknown water use characteristics of future non-residential development as well as lack of minimal data for current non-residential UWDFs. There can be a wide range in water use by different types of non-residential development. It is recommended that as non-residential development occurs in the future, the water use of that new development be monitored and tracked along with the specific type of development and the amount of acreage occupied.

The gross unit water demand factors are listed in Table 3-5. These UWDFs should be applied to gross acreage that has not been adjusted to remove streets or right-of-way. Water system loss is not included in the UWDFs.

Table 3-5. Buildout Unit Water Demand Factors

Land use	Gross unit water demand factors [a], ac-ft/acre/yr
Rural estate	1.37
Single family	2.13
Multi-family - low density	2.44
Multi-family - high density	3.33
Commercial	2.02
Industrial	2.02
Public	0.81
Public recreation	2.80
Mixed land Use	2.15
Right-of-way	0.18
Self-supported/supplied by others	
Non-irrigated	--
Industrial-unutilized	--
Agricultural	--

[a] *Water loss is not included in the unit water demand factors.*

Table 3-4 compares historical and projected water use metrics including demand per capita, per dwelling unit, per connection, and per acre for Zone 40 for the Baseline scenario. Below are some observations regarding some of the factors with the larger change ratios between 2010 and buildout.

- Non-residential water use/dwelling unit factor increases by 71 percent from 2010 to buildout. This reflects the large increase in the amount of non-residential land area and resulting water use compared to the smaller projected increase in residential land area.
- Non-residential use/non-residential connection factor increases by 24 percent from 2010 to buildout. This reflects the change in the mix of non-residential land use categories. One example is the proportionally large increase in public land use acreage at buildout. The public recreation land use category has connections that serve larger parcels and have a higher UWDF compared to the other non-residential land use categories.

Water loss includes water loss due to leaks, breaks, storage overflows, water use for firefighting, line flushing, and other authorized, but unbilled uses. Since SCWA is not completely metered, data are unavailable for determining the current percent of water loss. Water loss is assumed to 7.5 percent of water sales.

3.6 Recycled Water Demands

Recycled water use is currently approximately 900 ac-ft/yr. Recycled water use is projected to increase to a total of 3,300 ac-ft/yr when the planned Phase 2 recycled water system for the East Franklin and Laguna Ridge areas is completed.

The potential for additional recycled water use in areas in close proximity to the existing and planned Phase 1 and 2 areas are estimated to be approximately 500 ac-ft/yr based on serving public and public recreation land use categories in the adjacent Southeast Policy Area and Sterling Meadows subareas. This analysis of additional potential recycled water demand is not a recommendation to supply recycled water to these areas. SCWA plans to evaluate future recycled water use in a future study.

Section 4

Water Supply

The sources of water for SCWA's Zone 40 consist of surface water, groundwater, and recycled water. The existing water supply sources are described and quantified in this section. The adequacy and reliability of each supply for normal and dry hydrological conditions are presented.

4.1 Water Forum Agreement

SCWA is a stakeholder in the Water Forum, a Sacramento regional water management initiative. The Water Forum Agreement (WFA) was the result of the efforts of a diverse group of community organizations formed in 1994 to formulate principles for a regional solution for protecting the lower American River and providing for future water supply. The WFA was designed to achieve the two coequal objectives of providing a reliable and safe water supply for the region's economic health and planned development to the year 2030 and preserving the fishery, wildlife, recreational, and aesthetic values of the lower American River.

The WFA includes purveyor specific agreements (PSA) that define the benefits each water purveyor will receive as a stakeholder and actions each water purveyor must take to receive these benefits. The PSA for SCWA discusses the planned surface water supplies as part of a conjunctive use program to meet SCWA's water needs for planned growth. The PSA says that SCWA will divert surface water at or near the mouth of the American River or from the Sacramento River. Pertinent elements of the PSA for SCWA are discussed in the surface water and groundwater supply descriptions in this section.

4.2 Surface Water

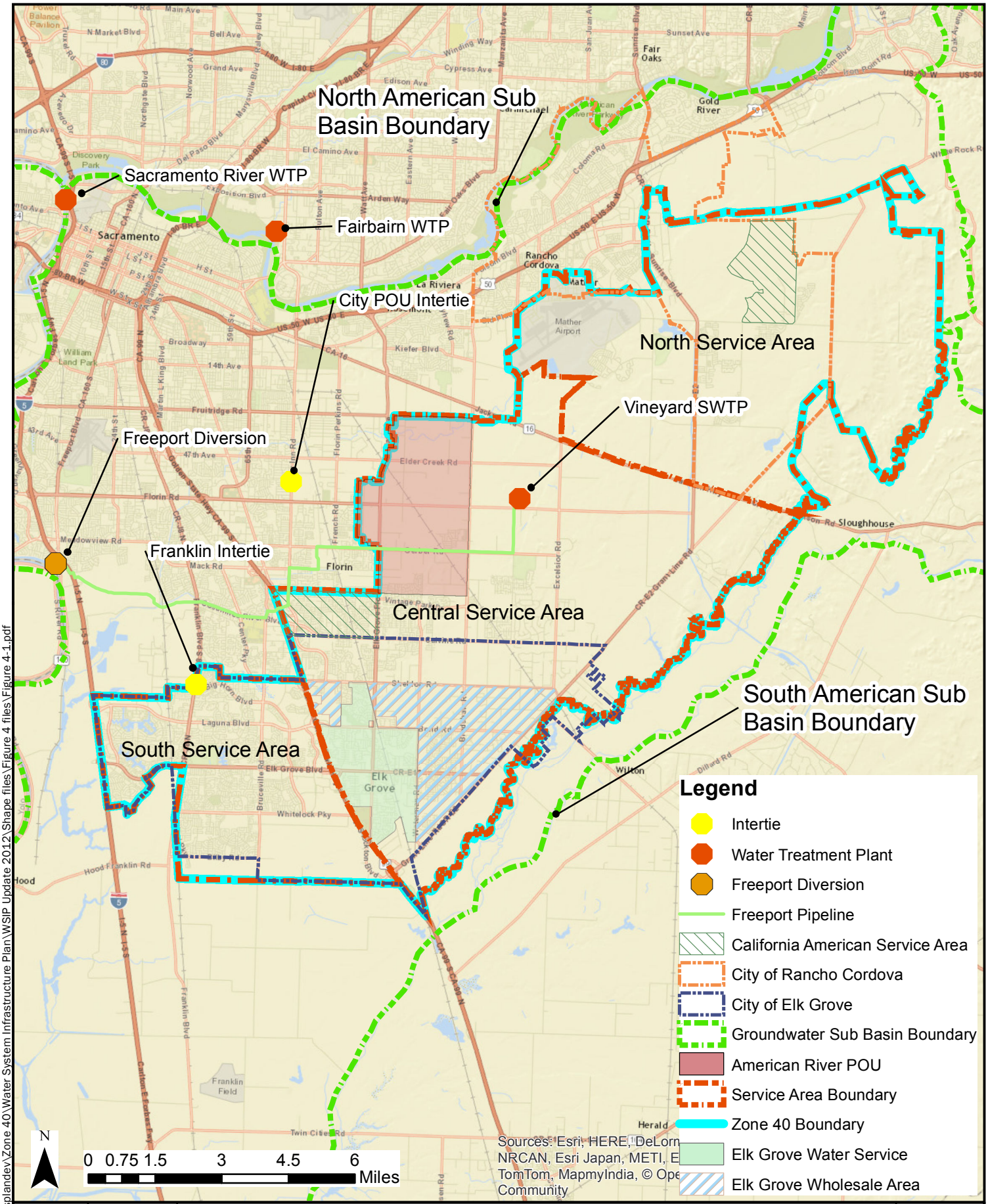
Zone 40 surface water supplies consist of Central Valley Project (CVP) water, appropriative water, American River Place of Use (POU) water, and other surface water sources. Figure 4-1 illustrates the location of the major surface water facilities.

The quantities of surface water available to SCWA in wet/average, drier, and driest years and the frequency of their occurrence are important aspects for the planning of a conjunctive use system. The availability of each surface water supply source in different water year types is described below.

4.2.1 Central Valley Project Water

The CVP water supply consists of the CVP contract held by SCWA and the two Sacramento Municipal Utilities District (SMUD) assignments that total 45,000 ac-ft/yr. Most of the CVP water is diverted at the Freeport diversion on the Sacramento River and treated at the Vineyard SWTP. Some of the CVP supplies are diverted from the Sacramento River and treated at the City's Sacramento River SWTP and delivered to SCWA at the Franklin Intertie.

SCWA entered into a contract in April 1999 with the U.S. Bureau of Reclamation (Reclamation) for 22,000 ac-ft/yr of CVP supplies pursuant to Public Law (PL) 101-514. This contract is often referred to as "Fazio Water" in recognition of the efforts by Congressman Vic Fazio to secure this contract. Of this 22,000 ac-ft/yr, 7,000 ac-ft/yr has been subcontracted to the City of Folsom for diversion from Folsom Lake, with 15,000 ac-ft/yr available for SCWA through the Freeport diversion or Franklin Intertie. This supply is currently (2015) diverted at the City's Sacramento River SWTP and delivered to SCWA at the Franklin Intertie.



P:\Shared Folders\Wsplandev\Zone 40\Water System Infrastructure Plan\WSIP Update 2012\Shape files\Figure 4 files\Figure 4-1.pdf

DATE	PROJECT	SITE
1/20/15	148130	Zone 40 Water Supply Master Plan Amendment

Brown AND Caldwell

DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY

TITLE

Zone 40 Water Supply

Figure 4-1

SCWA has entered into two three-party agreements with the City and SMUD for the assignment to SCWA for a total of 30,000 ac-ft/yr of water from SMUD's existing contract with Reclamation. These assignments are often referred to as "SMUD I" and "SMUD II". This supply is also available for SCWA through the Freeport diversion or Franklin Intertie.

SCWA's total CVP supply is subject to reductions in dry years. The water supply allocations are defined by Reclamation on a year to year basis and are expressed as a percentage of either the contract amount or amount of average use. For the 20 year period of 1995 to 2014, the lowest allocation was 50 percent in 2014.

The water supply allocations are based on a draft policy that defines water shortage terms and conditions. Reclamation initiated the development of a Municipal and Industrial (M&I) Water Shortage Policy in 1992, with several proposals prepared through 2001. The 2001 draft water shortage policy states that Reclamation would reduce M&I water to a contractor once irrigation water allocations are reduced below 75 percent of the contract amount. Reclamation has a provision in the draft policy for a minimum M&I shortage allocation of 75 percent that is applied to the last three years of historical use with certain adjustments, although the actual allocation in 2014 was 50 percent of historical use (US, 2001). In 2010, Reclamation convened several workshops that will lead to the development of an Environmental Impact Statement that could potentially modify the existing policy or develop a new policy (US, 2011).

Supply allocations of 100 percent in a wet and average year, 75 percent for a drier year, and 50 percent of the historical use in the driest year are assumed.

4.2.2 Appropriative Water

In February 2008, the State Water Resources Control Board (SWRCB) approved SCWA's appropriative right permit application to divert water from the American and Sacramento Rivers (Permit 21209). The amount of appropriated water available for use could range up to 71,000 ac-ft/yr in wet years, primarily during the winter months. This water would be diverted at the Freeport diversion on the Sacramento River. Since SCWA's demands are low in the winter months, SCWA would likely have to construct storage to utilize the full amount. It is possible that 35,000 ac-ft/yr of this supply could be utilized without the ability to store the water. No supply from this source is assumed for the drier and driest years.

4.2.3 City of Sacramento's American River Place of Use Water Supply

A portion of Zone 40 lies within the City's American River POU. The City has a pre-1914 water right to the American River with a POU boundary that extends beyond the City's boundary and includes a portion of Zone 40, as shown on Figure 4-1. The amount of water available to serve the POU area within Zone 40 is estimated to be 9,300 ac-ft/yr (SCWA, July 2011).

The Water Forum PSA for SCWA assumes that the City's American River water entitlements would be a source of supply for Zone 40. This is consistent with the City's PSA. The City is planning for the wholesale delivery of American River water within the POU including areas outside of the City limits. A connection would be constructed to supply the Florin Vineyard Community Plan area in the CSA, with the timing based on when the supply is actually needed.

The City's diversions from the American River at the Fairbairn Water Treatment Plant are reduced when American River flows are less than the Hodge Flow Criteria, which would likely result in no POU water being available for SCWA in these circumstances. The City may decide to divert water during these restricted times at their Sacramento River diversion, although additional infrastructure might need to be constructed by the City to be able to convey this water to SCWA. It might be possible for SCWA to divert the POU water at the Freeport diversion. Given the uncertainty of the availability of POU water during dry periods, a supply

allocation of zero percent in the driest year and drier year, and 100 percent in the wet and average year is assumed.

4.2.4 Other Water Supplies

Other water supplies are water transfers that would be obtained from various water users that hold surface water rights on the Sacramento River and the American River upstream of SCWA's point of diversion. To obtain these supplies, SCWA would enter into purchase and transfer agreements with other entities that hold surface water rights. There are Sacramento River water supplies available for transfer in dry years, although the costs of these dry year supplies can exceed $500 per ac-ft.

The assumed quantity of other water supplies is 9,600 ac-ft/yr in dry years and no supplies transferred in wet years. The annual supply to demand comparison presented in Section 5.2 indicates that these other water supplies would not be needed at all if the CVP, POU, and groundwater supply amounts are not less than assumed. Therefore, the amount of other water supplies that would be needed would vary depending on the water supply situation.

SCWA has a Memorandum of Understanding dated April 2000 with GSWC to purchase up to 1,000 gpm of water through the Mercantile Intertie located within the NSA. The intertie between the two systems currently serves as an emergency connection for both water purveyors. No routine water supply from GSWC is assumed.

4.2.5 Summary of Surface Water Supplies

Table 4-1 presents SCWA's surface water supplies for the wet/average years, drier years, and driest years assuming no constraint on supply capacity. The long-term average supply values presented in Table 4-1 assume that the supplies are all fully utilized with no infrastructure capacity constraints for all of the water year types, except for the amount of appropriative water as described in Section 4.2.2. The frequency of occurrence of these water year types are assumed to be 64 percent, 28 percent, 8 percent of the years respectively, based on an analysis of a historical 70-year hydrologic period (SCWA, 2006, Pg. 7-3). The frequency of occurrence of different water year types may change in the future, such as due to the impacts of climate change.

Table 4-1. Summary of Surface Water Supplies, ac-ft/yr

Water supply sources	Contract/water right/transfer amount	Wet/average year	Drier year	Driest year	Long-term average [b]
U.S. Bureau of Reclamation – CVP supply (SMUD 1, SMUD 2, and Fazio Water)	45,000	45,000	33,750 [a]	22,500 [a]	40,050
Appropriative water – SWRCB Permit 21209	71,000	35,000	0	0	22,400
City of Sacramento's American River POU Water Rights	9,300	9,300	0	0	5,952
Other water supplies	9,600	0	9,600	9,600	3,456
Total	134,900	89,300	43,350	32,100	71,858

[a] *CVP drier and driest year supplies are the lesser of these values or 75 and 50 percent of the three year historical average, respectively. The driest year CVP supply may be as low as 13,100 ac-ft/yr since the average year of use of the CVP supply will be lower than the contract amount for a number of years.*

[b] *Based on full use of all supplies for each water year type, which is different than the projected actual use of supplies. The frequency of occurrence for the wet/average, drier, and driest years assumed to be 64 percent, 28 percent, 8 percent of the years respectively, based on an analysis of a 70-year hydrologic period (SCWA, 2006, Pg. 7-3).*

4.2.6 Historical Use of Surface Water Supplies

The use of surface water in Zone 40 started in 1995 through a contract with Browns Valley Irrigation District. In 1999, delivery of the CVP contract water was started through a wheeling agreement with the City. Surface water has historically has been a minor portion of the supply for Zone 40, as shown on an annual basis on Figure 4-2 and a monthly basis on Figure 4-3. The water supplies on Figure 4-2 are identified by the service area where the water production occurs. Some of the surface water and CSA groundwater produced in the CSA are used in the SSA. Surface water use in Zone 40 has increased starting in 2011 with the startup of the Vineyard SWTP.

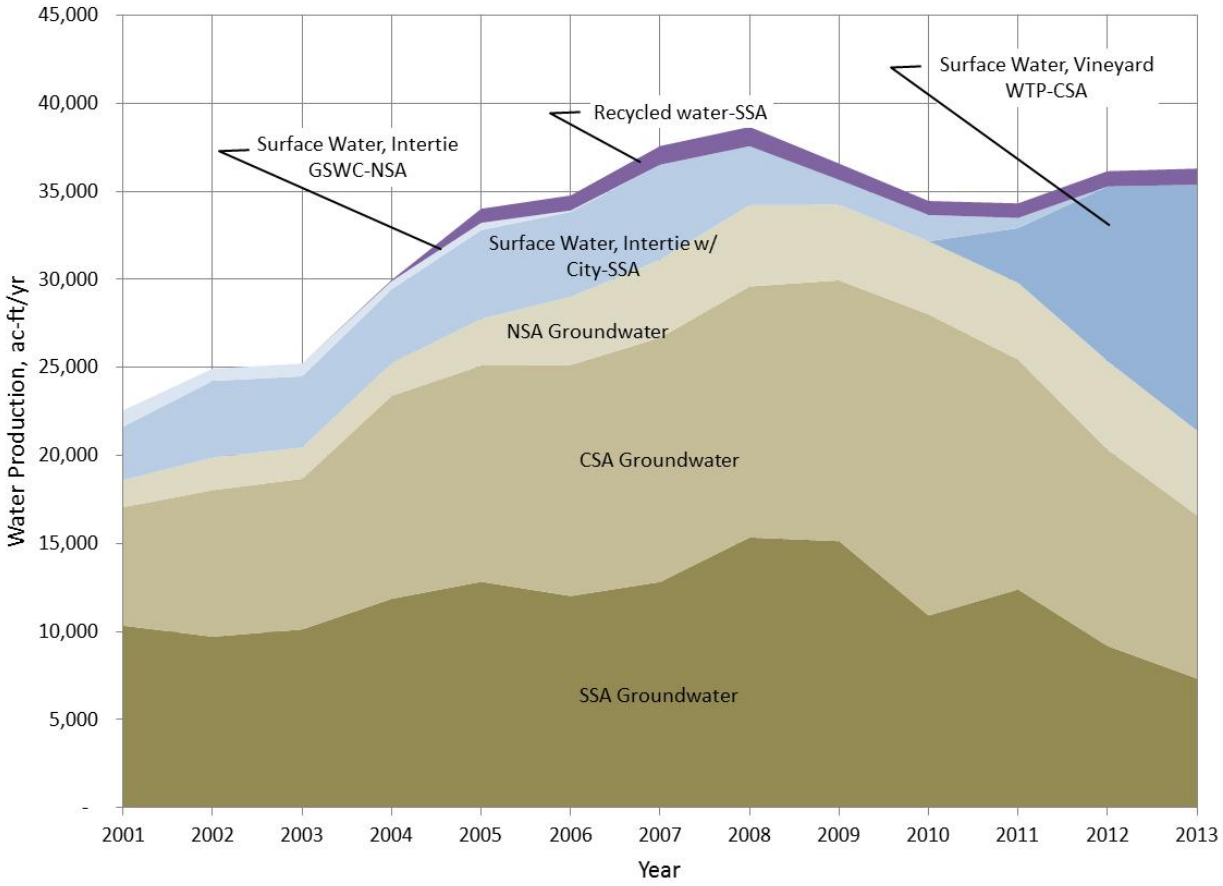


Figure 4-2. Historical Annual Water Supply

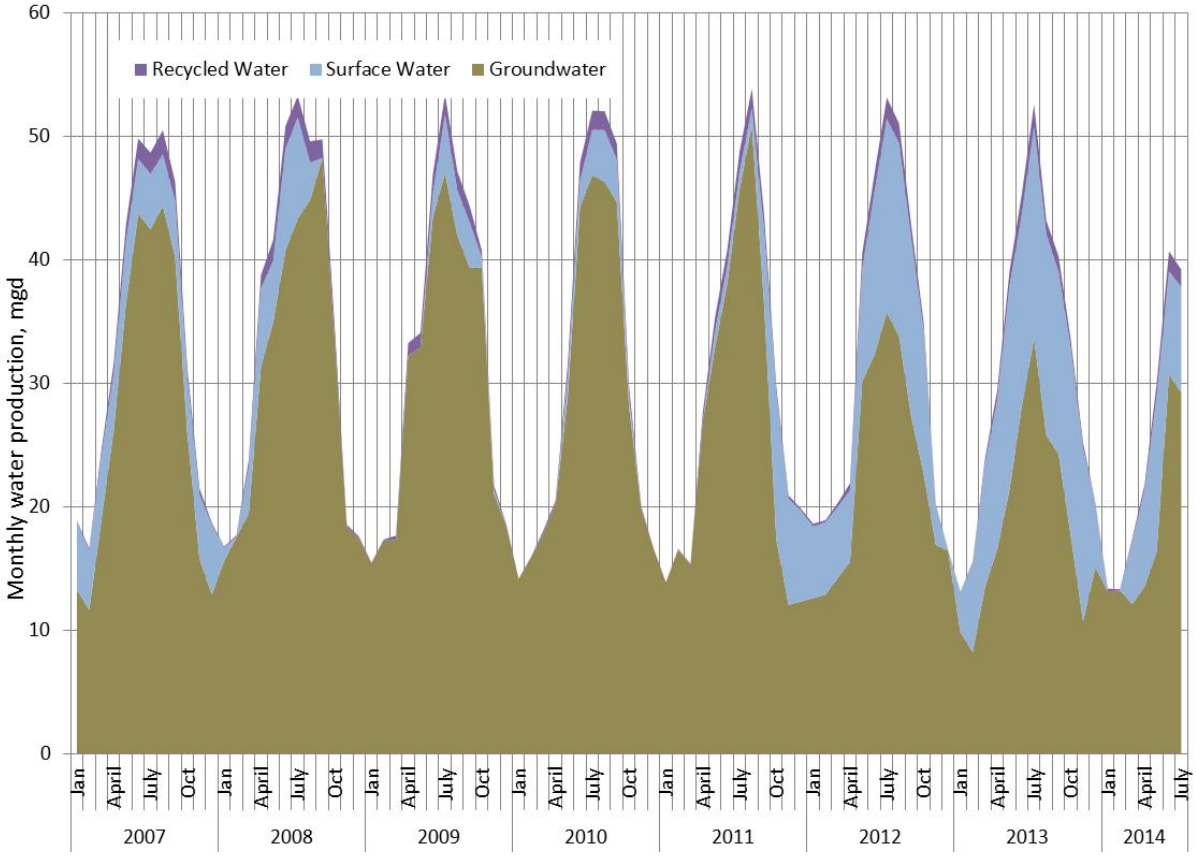


Figure 4-3. Monthly Water Production by Type of Supply

4.3 Groundwater

Zone 40 is supplied groundwater from part of the South American Subbasin (5-21.65) that covers an area of 248,000 acres. The South American Subbasin is not adjudicated and is not considered to be in overdraft according to DWR Bulletin 118 (DWR, 2003). This section describes the Sacramento Central Groundwater Authority (SCGA), the groundwater basin, historical groundwater use, and the remediated groundwater supply.

4.3.1 Sacramento Central Groundwater Authority (SCGA) and Groundwater Management Plan

SCGA was formed in 2006 through a joint powers agreement signed by the Cities of Elk Grove, Folsom, Rancho Cordova, and Sacramento, and the County of Sacramento. SCGA was formed for several purposes including maintaining the long-term sustainable yield of the Central Basin, managing the use of groundwater in the Central Basin, and facilitating the implementation of a conjunctive use program. The Central Basin is defined as the area bounded on the west by the Sacramento River, on the north by the American River, on the south by the Cosumnes River, and on the east by the foothills of the Sierra Nevada Range. The Central Basin's boundaries are similar to the boundaries of the South American Subbasin, although there are some differences. The Water Forum defined the long-term sustainable average annual yield of the Central Basin to be 273,000 ac-ft/yr. Zone 40 lies within a portion of the Central Basin.

The Central Sacramento County Groundwater Management Plan (CSCGMP), which was adopted in 2006 by SCGA, establishes a framework for maintaining sustainable groundwater resources in the Central Basin. This framework includes specific goals, objective, and an action plan to manage the basin and provides guidance to various stakeholders and negotiations for groundwater use.

4.3.2 Groundwater Basin Description

Groundwater in the Central Basin is generally classified as occurring in a shallow or upper unconfined aquifer zone (Laguna or Modesto Formation) and in an underlying deeper semi-confined aquifer zone (Mehrten Formation). These formations are typically composed of lenses of inter-bedded sand, silt, and clay, interlaced with coarse-grained stream channel deposits. The shallow aquifer extends approximately 200 to 300 feet below ground surface (bgs). The deep aquifer is separated from the shallow aquifer by a discontinuous clay layer that serves as a semi-confining layer for the deep aquifer. The base of the potable water portion of the deep aquifer averages approximately 1,400 feet bgs. Groundwater used in the Central Basin is supplied from both the shallow and deeper aquifer systems.

Intensive groundwater extraction from the Central Basin in the past has resulted in a general lowering of groundwater elevations near the center of the basin away from the sources of recharge. These depressions have grown and coalesced into a single cone of depression centered near Elk Grove. In general, the rest of the Central Basin does not show any distinctive patterns with respect to regional groundwater elevations, and the water table tends to mimic the local topography. With the completion of the FRWA project and SCWA's Vineyard WTP, the groundwater levels in the Central Basin are anticipated to stabilize as the conjunctive use program is fully implemented.

Groundwater in the upper aquifer system is of higher quality than that found in the lower aquifer system, although there are some occurrences of arsenic and nitrate. The lower aquifer system contains higher concentrations of iron and manganese and total dissolved solids (TDS). Water from the upper aquifer generally does not require treatment other than disinfection for public drinking water systems, unless high arsenic or nitrate values are encountered. Wells that pump from the lower aquifer often require treatment for iron and manganese. Most of SCWA's Zone 40 wells have iron and manganese treatment facilities.

Groundwater contamination plumes exist in the NSA that have migrated from the Aerojet/Boeing and Mather properties. SCWA has four operating wells (Mather Housing) in the vicinity of these plumes. There are several other smaller contamination plumes located in other areas of Zone 40.

4.3.3 Historical Use of Groundwater Supplies

Groundwater historically has been a substantial portion of the supply for Zone 40, as shown on an annual basis on Figure 4-2 and a monthly basis on Figure 4-3. The recent completion of the FRWA project and the Vineyard SWTP and the resulting increased use of surface water have resulted in a reduction in the annual use of groundwater in Zone 40 since 2009.

The current groundwater pumping to meet agricultural demands within Zone 40 and each of the new growth areas is estimated at 12,730 ac-ft/yr for 4,050 acres based an inspection of aerial photographs to determine existing agricultural acreage for field and row crops and pasture.

4.3.4 Remediated Groundwater

SCWA has a remediated groundwater supply of 8,900 ac-ft/yr in accordance with the terms and conditions in the agreement entitled "Agreement between Sacramento County, SCWA, and Aerojet-General Corporation With Respect To Transfer of GET Water" dated May 18, 2010. The timing and amount of remediated groundwater available is subject to change as a result of on-going negotiations with water purveyors affected by groundwater contamination and with Aerojet/Boeing as their remediation plans may change as directed by various regulatory agencies. The remediated groundwater is discharged into the American River from

Aerojet's Groundwater Extraction and Treatment (GET) facilities located in the Rancho Cordova area that are used for groundwater clean-up operations. This remediated groundwater supply is diverted by SCWA from the Sacramento River at Freeport along with SCWA's surface water supplies. A supply allocation of 100 percent in the driest year, drier year, and in a wet and average year is assumed.

4.4 Recycled Water

Recycled water is tertiary treated wastewater obtained from SRCSD that is supplied to the SSA in Zone 40 as a source of non-potable water for irrigation of parks, schools, and rights-of-way. Currently, SCWA provides recycled water in the SSA as part of a pilot project in the Laguna West, Lakeside, and Laguna Stonelake service areas (Phase 1 Area) that are located in the western portion of the Laguna subarea. Recycled water has historically been a small portion of the supply for Zone 40, as shown on an annual basis on Figure 4-2 and a monthly basis on Figure 4-3.

Recycled water supply availability will increase in the future when SRCSD expands its 5 mgd tertiary treatment facility. Recycled water use would increase to a total of 3,300 ac-ft/yr when the Phase 2 recycled water system is completed in the East Franklin and Laguna Ridge areas in the SSA (Phase 2 Area). Recycled water supply is assumed to be available at 100 percent of full supply in wet/average, drier, and driest years.

There is an emerging trend in California to use recycled water as an indirect source of potable water, known as indirect potable reuse. There are a limited number of water suppliers in California that are introducing recycled water into their potable water supplies through groundwater recharge. The City of San Diego is implementing a program that will result in augmenting one of their surface water supply reservoirs with recycled water. Studies are ongoing to develop requirements for direct potable reuse of recycled water. The attractiveness of these approaches is that the enormous costs of recycled water pipeline distribution systems can be avoided. SCWA intends to consider these options as it develops its long term recycled water strategy.

4.5 Water Supply Portfolio

The various water supplies available to SCWA combine to form Zone 40's water supply portfolio. SCWA has implemented a conjunctive use program within Zone 40 that optimizes the use of groundwater and surface water based on hydrologic conditions.

Historically, SCWA relied primarily on groundwater to provide water service to its customers. Existing groundwater pumping capacity plus a relatively small amount of surface water through the Franklin Intertie had been sufficient to meet system wide water demands. With the completion the Freeport project and the Vineyard SWTP, SCWA is now able to more fully implement a conjunctive use program that results in a variation of the mix of supplies based on the water year type.

Conjunctively using surface water and groundwater allows SCWA to reduce surface water diversions and increase groundwater use in dry years. In wet and average years SCWA can increase surface water use and decrease groundwater use, thereby not exceeding the long term sustainable yield of the underlying groundwater basin.

Table 4-2 presents SCWA's unconstrained water supply portfolio for wet/average, drier, and driest years. Table 4-2 also presents the long-term average use on an annual basis of each supply source assuming that all of the available water supplies are fully used for each climate year type. SCWA would have to construct additional supply, treatment, and conveyance facilities to fully access the available water supplies presented in Table 4-2. Figure 4-4 illustrates the Zone 40 available water supply in each year type assuming that supply facilities with adequate capacities are available. The long-term average supply availability may change if the frequency of occurrence of different water year types changes in the future, such as due to the

impacts of climate change. Section 5 presents the annual supplies that are available with the constraint of the capacity of the facilities and the projected use of the supplies.

Table 4-2. Zone 40 Water Supply Portfolio, ac-ft/yr [a]

Supply source	Wet/average year	Drier year	Driest year	Long-term average[d]
Surface water[b]	89,300	43,350	32,100	71,858
Groundwater[c]	34,900	64,900	71,900	46,260
Recycled water	3,300	3,300	3,300	3,300
Total	127,500	111,550	107,300	121,418

[a] *These water supply values are not constrained by water supply facility capacities. SCWA would have to construct additional supply, treatment, and conveyance facilities to fully access the available water supplies presented in this table.*

[b] *The surface water drier and driest year supplies could be less if the prior 3-year historical CVP use is less than the CVP contract amount. See Table 4-1 and text.*

[c] *Includes the 8,900 ac-ft/yr remediated groundwater supply. Groundwater supply amounts are the projected annual groundwater use at buildout presented in Section 5.*

[d] *Based on full use of all supplies for each water year type. The frequency of occurrence for the wet/average, drier, and driest years assumed to be 64 percent, 28 percent, 8 percent of the years respectively, based on an analysis of a 70-year hydrologic period (SCWA, 2006, Pg. 7-3).*

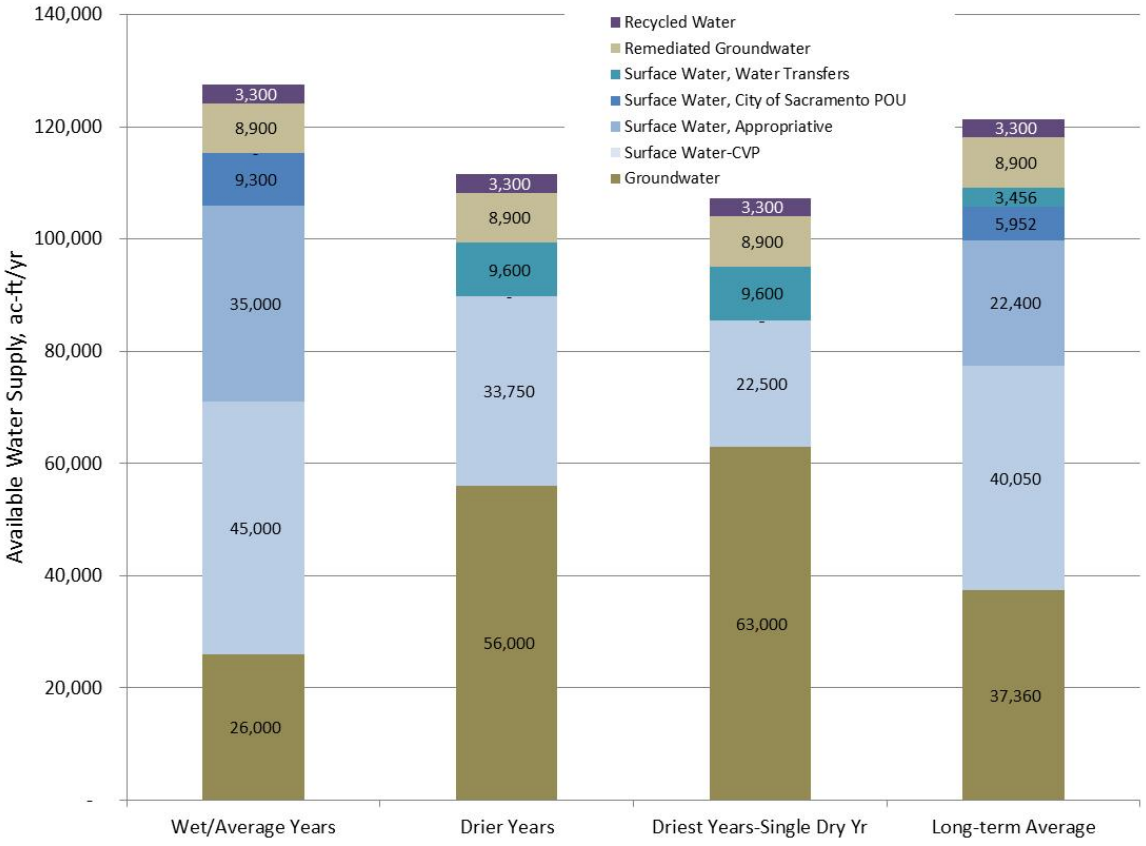


Figure 4-4. Available Water Supplies

Section 5

Water Supply Capacity Approach

This section describes the approach to quantify the amount of supply capacity that would be needed to meet Zone 40 demands through buildout. This information is needed to properly size the future water supply facilities. The capacity of the current system to supply current water demands is evaluated. The approach to evaluate storage requirements is presented.

5.1 Maximum Day Demand Supply Capacity and Use

Zone 40 needs enough water supply capacity to meet the projected future maximum day demand for both wet and dry climate years. The maximum day demand condition is important because the water supply facilities are sized to meet and exceed that condition. The planned future water supply capacity is based on the construction of new groundwater, surface water, and recycled water supply and conveyance facilities that are described in subsequent sections of this report for each of the scenarios. The maximum day demand is estimated using a maximum day demand peaking factor of 2.0.

Both wet year and dry year scenarios are considered in quantifying the needed water supply capacity. The total capacity of all water supply facilities must significantly exceed the maximum day demand because of the requirements of the conjunctive use program. The future water supply capacity is developed to meet the projected maximum day demands while allowing SCWA to vary the mix of supplies based on water year type. The water supply capacity is developed with the approach to increase the use of surface water in wet/average years and groundwater in dry years (conjunctive use program). The supply capacities include the supply for the Elk Grove and Rio del Oro wholesale areas as well as the Zone 40 retail area.

The remediated groundwater is categorized as part of the surface water supply capacity and use since it is conveyed through the surface water facilities. The groundwater capacity and use only reflects groundwater produced from wells owned and operated by SCWA.

The timing of the supply capacities is developed based on three phases. The period from January 2015 to December 2025 is considered Phase 1, January 2026 to December 2035 is considered Phase 2, and Phase 3 is the period from January 2036 through buildout.

Figure 5-1 presents a comparison of the total capacity of the existing water supply facilities to the 2013 maximum day demand for each of the service areas. The detailed supply capacity to demand tables for each service area are presented in Appendix B for 2013. As shown on Figure 5-1, the capacities of all of the existing water supply facilities exceed the maximum day demands for each service area. All three of the service areas currently have adequate groundwater supply capacity to meet their current maximum day demand without the use of surface water. There is enough surface water supply capacity in the CSA to meet the CSA's current maximum day demand without the use of groundwater. The NSA and the SSA currently have a more limited supply of surface water that cannot fully supply the maximum day demand.

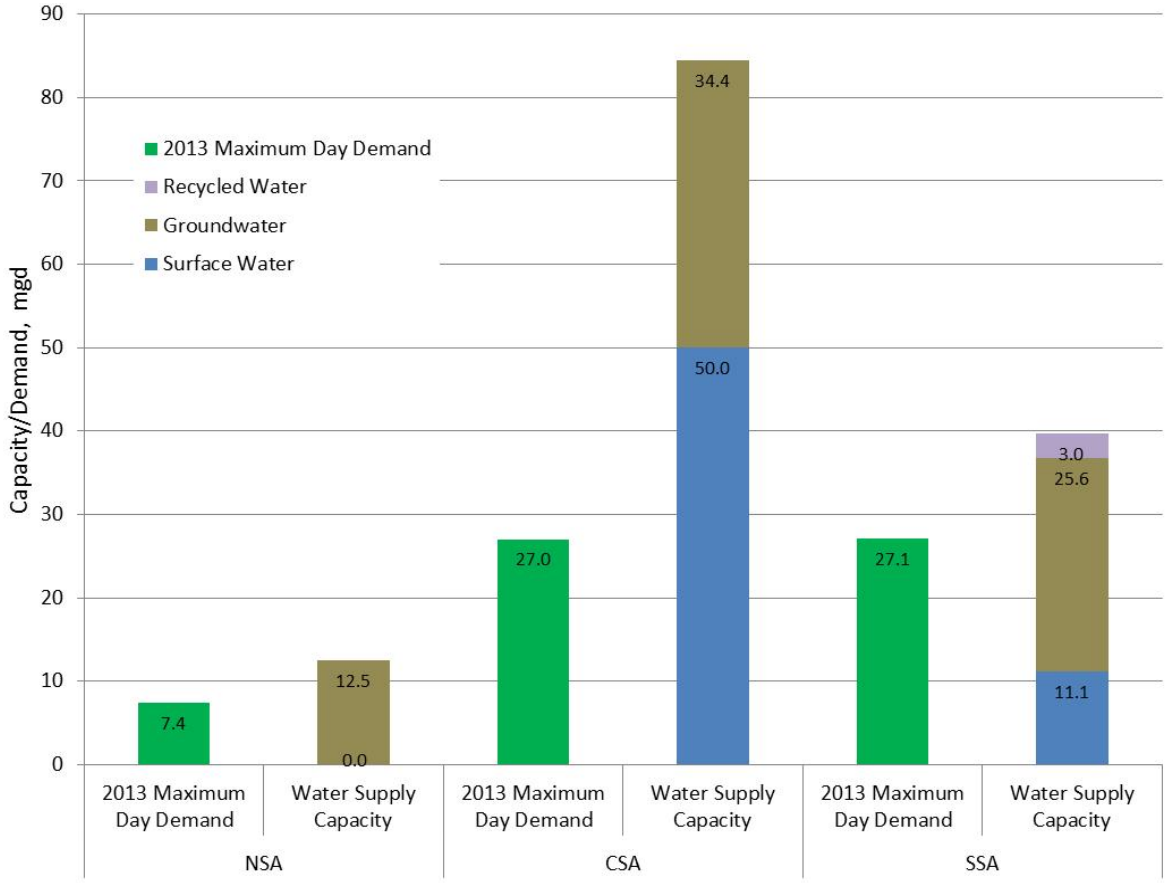


Figure 5-1. 2013 Maximum Day Demand and Supply Capacity by Service Area

5.1.1 North Service Area

The NSA is currently supplied by groundwater from existing groundwater treatment plants. The Mercantile interconnection with Golden State Water Company is only used for emergency purposes. The existing groundwater facilities have the capacity to meet the maximum day demand, with the Anatolia GWTP being the predominant water supply source and a smaller portion of groundwater from the Mather Housing GWTP. Surface water from the existing Vineyard SWTP cannot be delivered to the NSA due to lack of existing pipelines.

5.1.2 Central Service Area

The CSA is currently supplied by groundwater from existing groundwater treatment plants and some direct feed wells and surface water from the Vineyard SWTP. The existing groundwater facilities have the capacity to supply all of the current maximum day demand. Similarly, the Vineyard SWTP's current 50 mgd capacity is more than adequate to supply all of the CSA's current maximum day demand.

Water supplies produced in the CSA can be delivered to the SSA through the three connections between the CSA and SSA. These connections are located along Highway 99 at Sheldon Road, Bond Road, and Grant Line Road. The total capacity of these connections is approximately 30 mgd.

5.1.3 South Service Area

The SSA is currently supplied by surface water from the Franklin intertie and the Vineyard SWTP, groundwater from three existing groundwater treatment plants and some direct feed wells, and a small amount of recycled water. The existing groundwater facilities in the SSA have the capacity to supply all of the current maximum day demand.

As described previously, the three existing connections between the CSA and SSA can be used to supply surface water or groundwater to the SSA from the CSA.

5.2 Annual Water Supply Capacity and Use

The available supply capacity and use of supply are developed for each scenario on an annual basis because the values are directly useable for the development of water supply assessments and urban water management plans. The available water supply amounts that are described in Section 4 represent the full amount of available supply assuming there are no facility capacity constraints. The supply capacities and use of supplies are constrained by the supply and conveyance facility capacities.

The annual supply capacity and use are determined using the maximum day supply capacity and use. The proportional capacity and use of each water supply type on an annual basis is assumed to be the same as the mix of supplies on the day of maximum day. The annual supply capacity and use of supply is determined by assuming that the annual average day capacity or use is 50 percent of the capacity or use on the day of maximum demand. For example, a water supply capacity of 50 mgd equates to an annual average day capacity of 25 mgd or an annual capacity of 28,000 ac-ft/yr.

The actual annual use of supplies could differ from the values presented in this section if SCWA took an operational approach that would result in the annual mix of supplies being different than the mix of supplies used during the day of maximum demand. For example, in a dry year groundwater could be used to meet all of the demands in the winter, spring, and fall months. This would result in less surface water and more groundwater being used annually than what is presented in this section. Similarly, in a wet year surface water could be used to meet all demands in the winter, spring, and fall months. This would result in less groundwater and more surface water being used annually than what is presented in this section.

The remediated groundwater is included in the annual surface water values since it is conveyed through the surface water facilities. The annual groundwater amounts are only for the wells owned and operated by SCWA and exclude the groundwater remediation extraction.

One of the climate year types is expressed as multiple dry years to be consistent with the climate year types used for water supply assessments and urban water management plans. The multiple dry three year period is assumed to mimic the hydrology of 1989, 1990, and 1991 (SCWA, 2011). The CVP allocations for those three years were 100, 75, and 50 percent, respectively. The dry year CVP allocations are based on a percentage of the last three year historical use.

5.3 Storage and Pumping Station Capacity Evaluation Approach

This section presents the approach used to conduct the storage analysis that establishes the sizing and timing of future water storage facilities. Since it is not cost effective to size groundwater and surface water supply facilities to supply demands that occur above the maximum day demand rate, water storage is used to supply these short term demands. The short term demands that can last for a few hours are the peak hour demands and fire flow demands.

Since Zone 40 does not have high enough terrain to locate tanks that can provide adequate pressure with gravity flow, ground level tanks must be used in conjunction with pump stations to pump the stored water into the distribution system. The use of elevated storage tanks is typically not cost effective in the larger

storage volumes required for Zone 40. The storage evaluation has two elements, consisting of the storage volume and pump station capacity.

5.3.1 Storage Volume

The required minimum storage volume is the sum of the following three components:

Equalization Storage. Water is provided for equalization storage to meet the increment of peak demands that exceed the maximum day demand. Equalization storage is assumed to be 20 percent of the maximum day demand.

Emergency Storage. Volume is also required for emergency supplies in the event normal supplies are not available. Emergency storage is assumed to be 1/3 of the average day demand. Many water agencies have criteria to provide greater amounts of emergency storage such as one average day demand. However, since SCWA can utilize the underlying groundwater basin to provide additional volume, the sizing assumption is reasonable.

Fire Flow Storage. Water is stored to provide fire flow. Fire flow storage is assumed as the volume for two fires for each service area, with each fire requiring 3,000 gpm for 3 hours. SCWA also has storage provided by the groundwater basin that can provide a large volume of water. Some building types can have fire flow requirements that are higher. The assumption of having fire storage for two simultaneous fires in each service area provides enough storage for one larger fire flow rate or longer duration fire flow.

5.3.2 Pump Station Capacity

Pump stations must have the capacity to supply peak hour demand. The peak hour demand is estimated using a peak hour factor of 2.0 applied to the maximum day demand. There are two situations in Zone 40 that govern the sizing of the pump stations that are used with storage tanks. A pump station that pumps from a standalone storage tank can use its entire pumping capacity to draw water from storage. A pump station that pumps from a tank that is supplied by a GWTP or a SWTP must be sized large enough to be able to pump the supply from both the GWTP and from the storage facility. Only the portion of the pump station capacity that is larger than the GWTP or SWTP capacity is considered to be able to utilize the stored water. Both situations are considered in the storage pump station evaluation.

In situations where a GWTP or SWTP has surplus maximum day capacity, some of that surplus could be used to help supply demands that are greater than the average rate on the maximum demand day. In these types of situations, the required pump station capacity to meet peak hour demand would be less than presented in this analysis.

Section 6

Water System Facilities and Capital Improvement Plan Approach

This section describes the approach used to identify the needed water system facilities and develop the resulting CIP.

6.1 Needed Water System Facilities

The water supply facilities are sized to provide the maximum day surface water and groundwater supply capacities for each scenario. The storage tank and pumping station facilities are defined based on the storage evaluation developed for each scenario. The water supply, storage, pump station, and pipeline improvements have been identified by SCWA staff and are defined based on water system modeling performed by SCWA staff that is documented in the WSIP.

The sizing and timing of the water supply facilities are developed based on several general conjunctive use guidelines, as described below.

1. The groundwater supply should be able to provide enough maximum day supply in dry years to mitigate the reductions in surface water supply that could occur. The guideline is to be able to provide enough groundwater supply assuming a surface water supply that is reduced during the day of maximum demand in dry years by up to approximately 50 percent of its maximum day use in wet/average years.
2. The surface water supply should be able to supply a significant portion of the maximum day demand in a wet/average year while only using a portion of the groundwater supply capacity. The guideline is to provide enough surface water supply capacity to be able to supply approximately 50 percent or more of the maximum day demand.

6.2 Capital Improvement Plan

The CIP is developed based upon the water facilities identified in Section 6.1. The CIP is presented in three phases as follows:

- Phase 1. 2015 to 2025
- Phase 2. 2026 to 2035
- Phase 3. 2036 to buildout. The estimated buildout year varies dependent upon the Baseline, Jackson Township, or Cumulative scenarios.

The CIP projects are categorized as surface water projects, groundwater projects, pipeline projects, and storage projects. Each of the planned facilities for each scenario is identified by a CIP project identification number. Groundwater treatment projects are identified as GWTP followed by a number. Groundwater well projects are identified as GW. Surface water projects are identified as SW, storage projects as S, and pipeline projects as P.

The projects presented in the CIP are limited to projects that expand the water supply capacity and the conveyance of water supplies to future customers. Not included in the CIP are the following types of projects and items:

- Projects that rehabilitate or replace existing water system facilities.
- Projects that correct existing system deficiencies, such as areas of inadequate pressure or fire flow.
- Land acquisition.
- Projects that provide for groundwater treatment for constituents other than iron and manganese. For example, projects needed to treat constituents that are found to a limited extent in the Central Basin such as Chromium VI, Arsenic, and Radon are not included.
- Projects that would plan and implement aquifer storage and recovery (ASR).
- Projects that would plan and implement an expanded recycled water supply beyond the project RW-1. For example, not included are projects that consist of indirect potable reuse (IPR) or direct potable reuse (DPR) of treated wastewater.
- Special fees or payments.
- Water system connection fees, such as for future interties with other water agencies.

6.3 Basis of Cost Estimates

The cost estimates represent conceptual estimates of the capital costs to construct the water system facilities. Costs should be refined from this conceptual phase as the projects are better defined and proceed into the pre-design and design phases. The cost estimates represent 2014 dollars. Capital cost estimate tables are presented for most of the CIP projects in Appendix E with several exceptions. SCWA provided the cost estimates for the Phase A NSA Project and Phase B NSA Project (P-10 and S-1). The Vineyard SWTP expansion project (SW-1) and recycled water project (RW-1) do not have individual cost estimate tables developed.

Capital costs represent the construction and other costs necessary to get a project completed. Construction costs cover the material, labor, and services necessary to build the identified project. Changes during the design of the project, in the cost of materials, labor, and equipment, and in the bidding environment will cause changes in the estimated cost.

The contingency cost item addresses the uncertainties that are associated with the preliminary sizing of projects. Factors such as unexpected construction conditions, the need for unforeseen construction items, and variations in quantities are some of the items that can increase project cost. An allowance of 25 percent of the construction cost is included to cover such contingencies for the groundwater, surface water, and storage projects.

The engineering, administrative, and legal cost item covers engineering services and items such as legal fees, administrative costs that are typically associated with a project. It is estimated that these costs would be 25 percent of the total of the construction cost plus contingency.

The environmental and permitting cost item is intended to cover services necessary to meet the requirements of the California Environmental Quality Act and services and fees associated with obtaining the necessary permits that would be required. It is estimated that these costs would be 10 percent of the total of the construction cost plus contingency.

The cost estimates for the Phase 1 pipeline projects, which are developer projects, are developed with a different approach. The cost estimates for the developer projects represent the amount that SCWA would pay a developer for a project and do not necessarily represent the total cost of a project. The cost estimates for the pipeline projects are based on the unit costs presented in Schedule C that was issued by SCWA on April 9, 2014. The pipeline projects are characterized as being either in undeveloped areas or under existing pavement to utilize the appropriate Schedule C unit pipeline cost. The Schedule C unit costs are values that have been escalated from unit costs that were developed in 2007 for the development of the Ordinance 18 Schedule C Unit Prices for Zone 40 Credits. The cost estimates for the developer projects include 15

percent for contingency, 8 percent for engineering, and 10 percent for the Construction Management and Inspection Division (CMID).

It is assumed that all future groundwater supply facilities would require groundwater treatment for iron and manganese. The groundwater treatment plant projects each include wells, pipelines from the wells to the treatment plant, treatment facility, storage reservoir, pumping station, and pipeline conveyance to the water distribution system. It is assumed that treatment facilities will not be required for the existing direct feed wells.

The cost for the expansion of the Vineyard SWTP (SW-1) is based on a unit cost of $4 million per mgd capacity. The cost estimate for the recycled water project (RW-1) is assumed to be $20 million, but no recycled water facility project description has been developed for this study. As a comparison, the 2005 WSMP estimated the cost of the recycled water facilities to be $15 million and the 2006 WSIP presented a cost of $11.6 million.

Section 7

Baseline

This section describes the demographics, water demands, water supplies, and needed water system improvements for the existing approved Zone 40 through buildout, which is known as the Baseline scenario.

7.1 Water Demands

This section describes the future land use, demographics, and demand projections for the Baseline scenario.

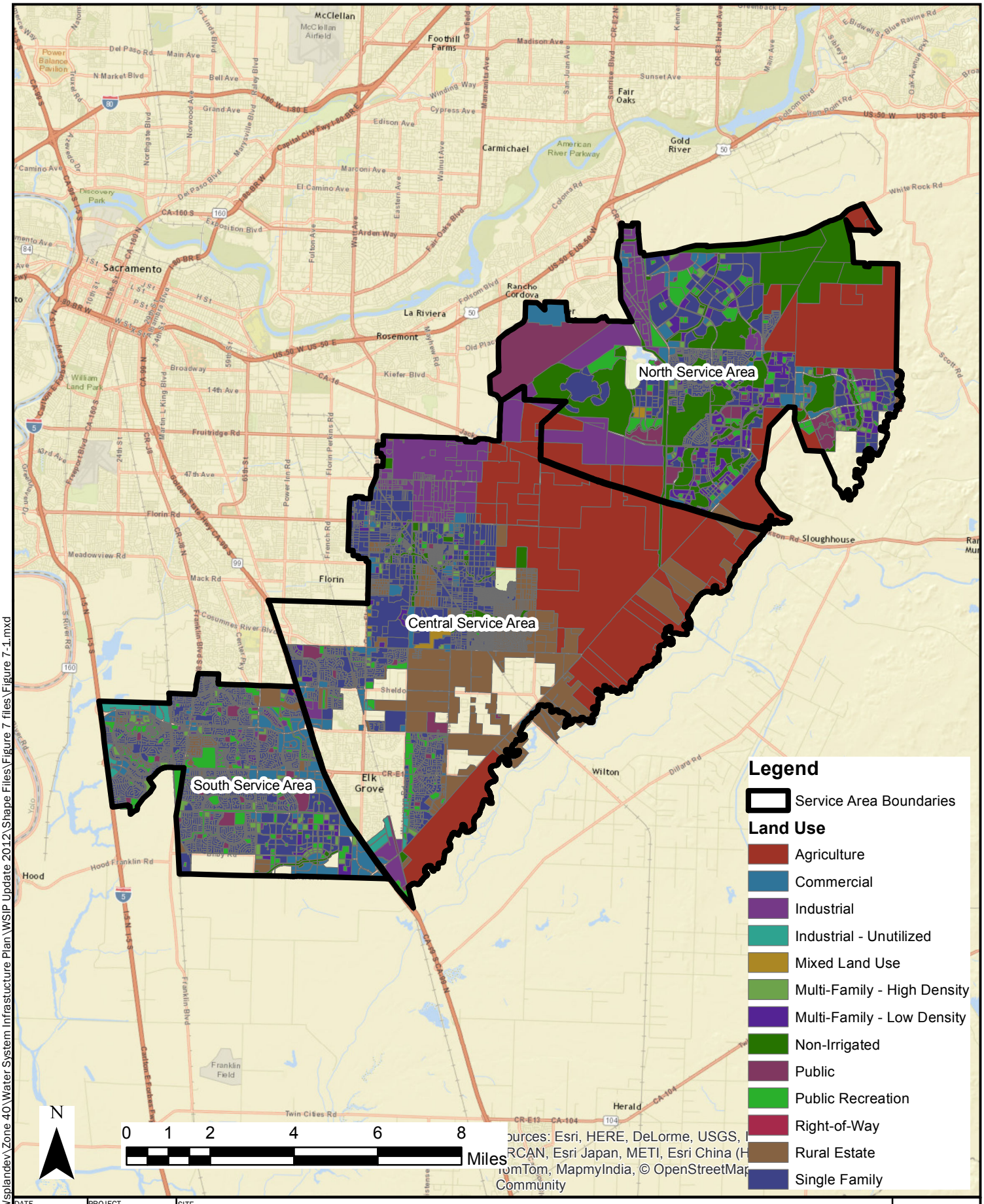
7.1.1 Buildout Demographics

The 2010 and buildout developed land use acreages by land use category are summarized in Table 7-1. The acreages presented in Table 7-1 are net acres for 2010 and gross acres for the study area at buildout. The buildout land use for the study area is illustrated on Figure 7-1.

Table 7-1. 2010 and Buildout Area by Land Use - Baseline

Land use category	2010 developed area, net acres	Fully developed (buildout) area, acres
Rural estate	1,380	6,610
Single family	6,970	16,640
Multi-family - low density	220	3,480
Multi-family - high density	390	1,150
Commercial	1,520	3,760
Industrial	1,110	3,450
Industrial-unutilized	340	580
Public	920	2,110
Public recreation	1,270	4,260
Mixed land use	20	190
Right-of-way	70	230
Subtotal, municipal water supply land area	14,210	42,460
Self-supported/supplied by others	-	3,900
Non-irrigated	500	8,290
Agricultural	-	14,760
Total	14,710	69,410

Note: Elk Grove wholesale area is not included in the 2010 developed area acreage because the 2010 developed area acreage was not available. It is included in the buildout acreage.



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DATE	PROJECT	SITE
07/23/15	148130	Zone 40 Water Supply Master Plan Amendment

Brown AND Caldwell

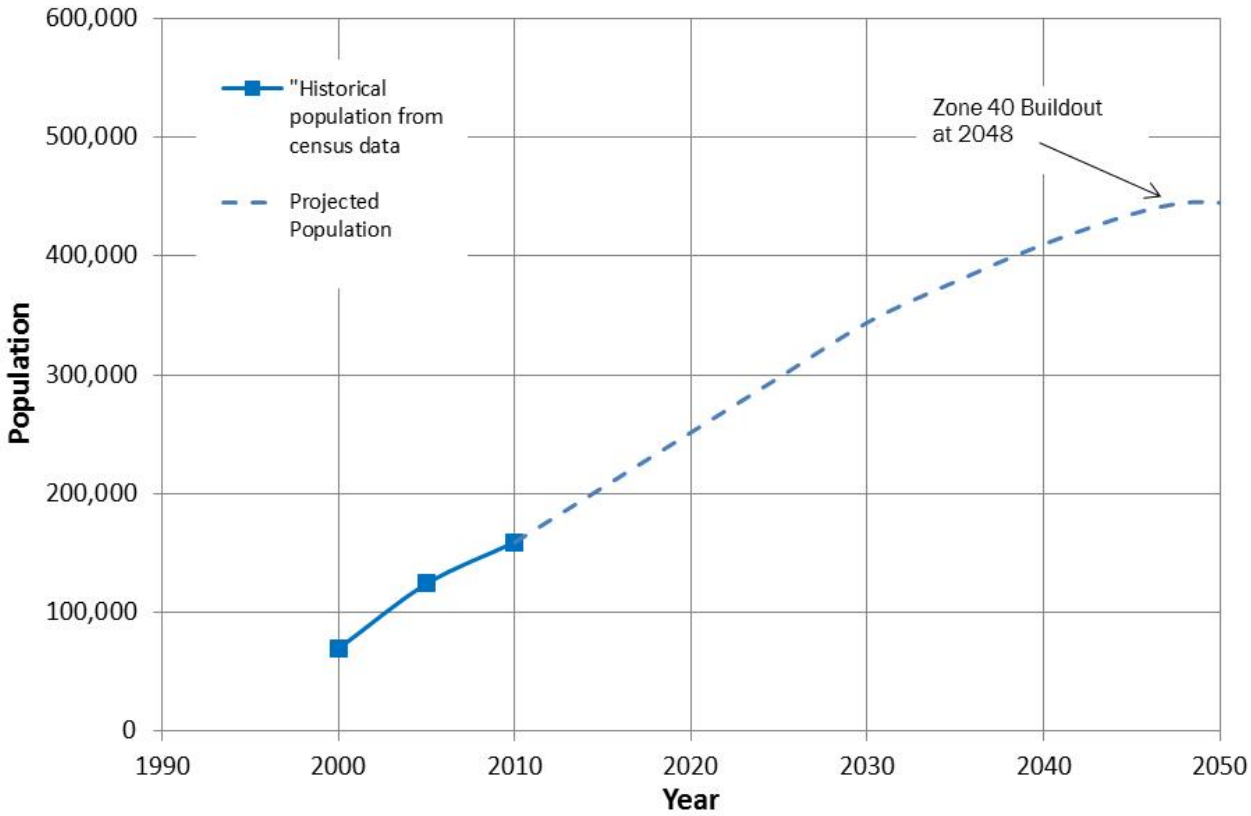
DEPARTMENT OF WATER RESOURCES
SACRAMENTO COUNTY WATER AGENCY

TITLE

Buildout Land Use - Baseline

Figure 7-1

The historical and projected population in Zone 40 is shown on Figure 7-2. The projected DUs, population, and connections at buildout by land use category are presented in Table 7-2. Population per DU and per connection, DUs per connection, and connections per acre by land use category are also shown in this table. The number of people per connection projected at buildout is significantly higher than the 2010 value because of the proportionally large increase in multi-family land use area compared to single family land use area from 2010 to buildout. A larger proportion of the residential dwelling units and connections will be multifamily at buildout compared to 2010, which will result in a higher number of people per connection.



Elk Grove wholesale population is included. 2010 Elk Grove wholesale population is estimated to equal 10,144 people based on 3,210 Elk Grove wholesale connections and 3.16 people per connection in 2010.

Figure 7-2. Historical and Projected Population in Zone 40 - Baseline

Table 7-2. Buildout Dwelling Units, Population, and Connections by Land Use Category - Baseline

Land use category	Dwelling units	Population	Connections	Population/ dwelling unit	Population/ connection	Dwelling units/ connection	Connections/ acre
Rural estate	3,193	10,648	3,193	3.3	3.3	1	0.5
Single family	80,463	265,599	80,463	3.3	3.3	1	4.8
Multi-family - low density	38,733	106,565	3,893	2.8	27.4	10	1.1
Multi-family - high density	24,323	62,089	1,575	2.6	39.4	15	1.4
Commercial	-	-	1,645				0.4
Industrial	-	-	1,391				0.4
Industrial-unutilized	-	-	-				-
Public	-	-	198				0.1
Public recreation	-	-	3,581				0.8
Mixed land use	-	-	35				0.2
Right-of-way	-	-	380				1.7
Self-supported/ supplied by others	-	-	-	-	-	-	-
Non-irrigated	-	-	-	-	-	-	-
Agricultural	-	-	-	-	-	-	-
Total	146,700 [(a)]	444,900 [(a)]	96,300[(a)]	3.0	4.6	1.5	1.8

[(a)] *Totals are rounded to the 100's place.*

The 2010 and projected buildout DUs, population, and connections by service area are shown in Table 7-3. The projected buildout number of DUs and population for the NSA, CSA, and SSA are very similar; however the numbers of connections in the NSA are significantly less than the CSA and SSA. This is because there is a greater number of multi-family DUs in the NSA than the CSA and SSA. Since there are several multi-family dwelling units per connection, a lower number of connections is projected in the NSA to serve the similar number of dwelling units. Table 7-4 shows the projected number of connections by service area in five-year increments through 2050 and at buildout. The projected number of connections through buildout for each of the growth scenarios is illustrated on Figure 7-3.

Table 7-3. 2010 and Buildout Dwelling Units, Population, and Connections by Service Area - Baseline

Service area	2010			Buildout		
	Dwelling units	Population	Connections	Dwelling units	Population	Connections
NSA	4,000	11,700	4,600	46,000	135,800	25,400
CSA	17,400	56,600	15,600	49,400	150,700	32,800
SSA	30,600	91,300	28,900	51,300	158,400	38,100
Total	52,000	159,600	49,100	146,700	444,900	96,300

Note: 2010 dwelling units, population, and connections in Elk Grove wholesale area are estimated and included in the CSA values. Elk Grove wholesale area service connections in 2010 are estimated to be 3,200 connections and the DUs are estimated to be 3,500 based on a 1.1 DU per connection factor. The population is estimated to equal 10,144 people.

Table 7-4. Projected Connections in 5-Year Increments - Baseline										
Service area	2010	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2048)
NSA	4,600	5,600	7,500	10,000	12,500	16,100	19,800	23,600	25,400	25,400
CSA	15,600	16,600	18,400	20,900	23,400	27,000	30,800	32,900	32,900	32,800
SSA	28,900	30,300	32,800	35,300	37,800	38,100	38,100	38,100	38,100	38,100
Total Zone 40	49,100	52,500	58,700	66,200	73,700	81,200	88,700	94,600	96,400	96,300

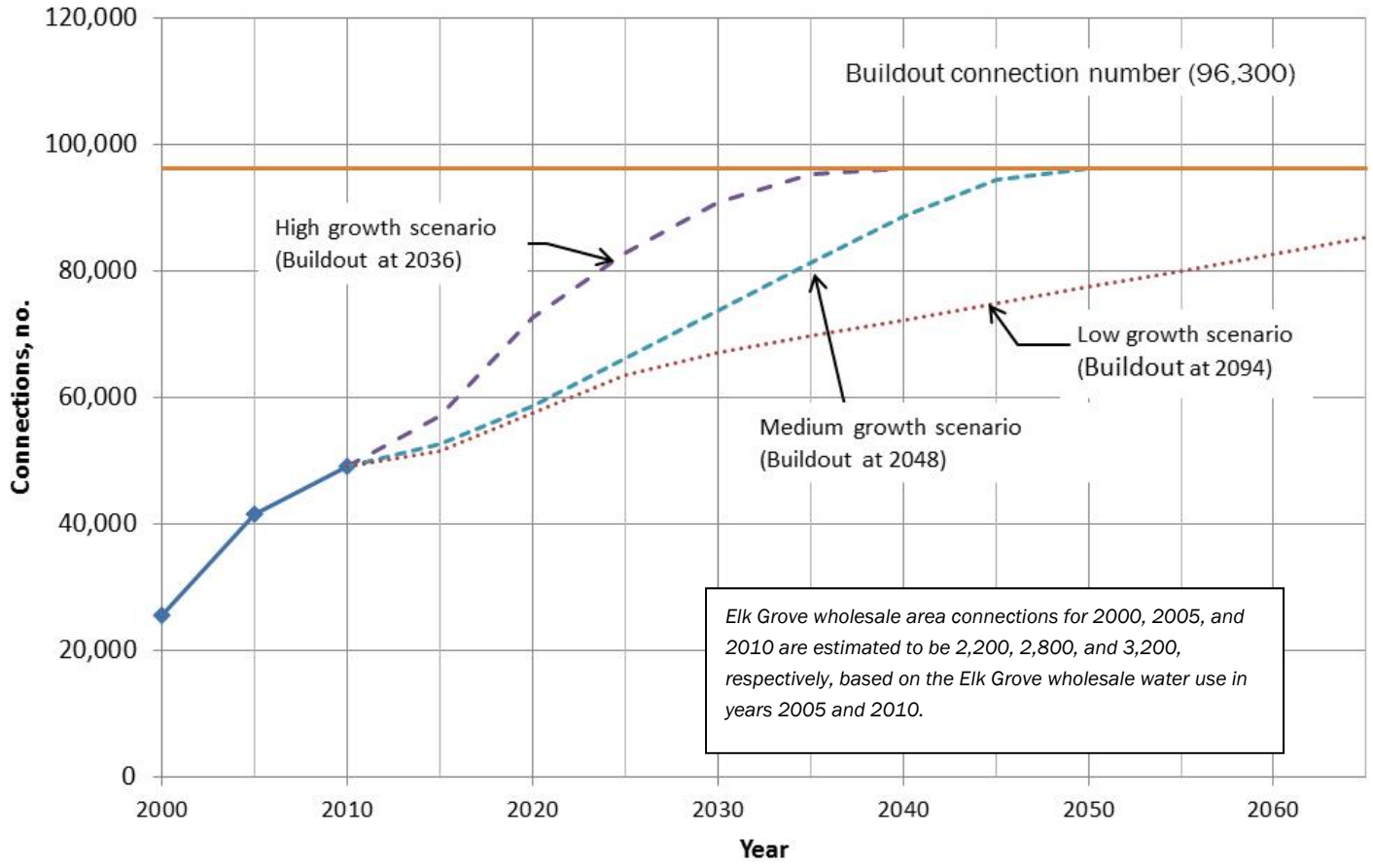


Figure 7-3. Historical and Projected Zone 40 Connections at High, Medium, and Low Growth Rates – Baseline

7.1.2 Buildout Water Demands

This section presents the buildout water demand for the Baseline scenario. Based on the buildout land area in Table 7-1 and the unit water demand factors in Table 3-4, the buildout water demand by land use category is shown in Table 7-5 for the Baseline scenario. The recycled water demand in the SSA is included in the demand projections in Table 7-5 to provide the total Zone 40 water demand for this scenario.

Table 7-5. Buildout Water Demand by Land Use Category - Baseline

Land use category	Water demand, ac-ft/yr
Rural estate	9,100
Single family	35,500
Multi-family - low density	8,500
Multi-family - high density	3,800
Commercial	7,600
Industrial	7,000
Public	1,700
Public recreation	11,900
Mixed land use	400
Right-of-way	0
Subtotal (land use with water demand)	85,500
Water system losses (7.5% of water sales)	6,400
Self-supplied/supported by others	0
Industrial-unutilized	0
Non-irrigated	0
Agricultural	0
Total production	91,900

7.1.3 Water Demand Growth Projection

Water demand growth projections are determined based on the projected connection growth described in Section 3. The projected water demands by service area are shown in Table 7-6 and illustrated on Figure 7-4.

Table 7-6. Projected Water Demand in 5-Year Increments, ac-ft/yr - Baseline

Service area	2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2048)
NSA	4,200	5,300	7,400	10,300	13,500	18,100	23,200	28,600	31,400	31,400
CSA	15,100	16,300	18,400	21,100	23,900	27,800	32,100	34,400	34,400	34,400
SSA	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100
Total	34,500	38,700	45,500	54,000	63,000	72,000	81,400	89,100	91,900	91,900

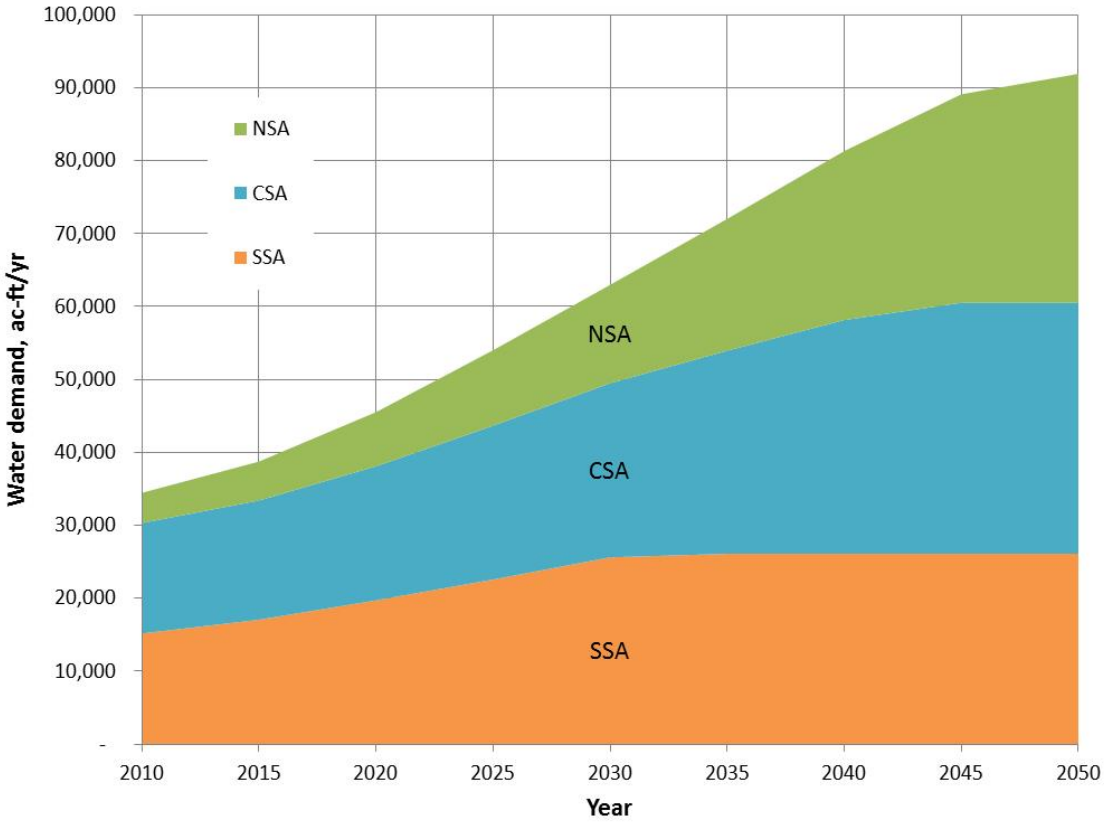


Figure 7-4. Water Demand Projection – Baseline

7.2 Water Supply Capacity

This section quantifies the amount of supply capacity that would be needed to meet demands through buildout. The supply capacity and the use of the supply is presented on both a maximum day basis and an annual basis

7.2.1 Maximum Day Demand Supply Capacity and Use

The maximum day demand to supply capacity comparison tables for each of the three service areas are presented in Appendix B. The future supply capacity is based on the proposed supply and conveyance facilities that are presented in Section 7.3. The maximum day use of each type of supply is quantified for the wet/average years and dry years.

7.2.1.1 North Service Area

Surface water supply from the existing Vineyard SWTP would be provided in Phase 1 to replace the current groundwater supply provided by the Anatolia GWTP. The construction of the Phase A NSA Project (P-10) and Phase B NSA Project (S-1) will allow for some of the Vineyard SWTP's existing capacity to be used to supply the NSA. It is assumed that 65 percent of the Vineyard SWTP would be used to supply the NSA. The Mather wells are used below their capacities in dry years since SCWA operational staff prefer to minimize their use due to the possible impact to nearby contamination plumes.

7.2.1.2 Central Service Area

Once several projects are constructed, including the Phase A NSA Project (P-10) and Phase B NSA Project (S-1), some of the Vineyard SWTP's existing capacity will be used to also supply the NSA. The future West Jackson GWTP will be used to supply the CSA, although it will be connected to the transmission system such that it could also provide supply to the NSA.

7.2.1.3 South Service Area

New groundwater supply capacity would be needed during Phase 1. Additional groundwater supply capacity would be added in Phases 2 and 3. No new surface water supply capacity is specifically planned for the SSA, although the planned Phase 3 expansion of the Vineyard SWTP would provide some additional surface water. The proposed GWTPs for Phase 3 would provide a maximum day groundwater supply capacity that exceeds the SSA's projected buildout maximum day demand. These Phase 3 GWTPs could be used to provide dry year groundwater supply to other areas or groundwater storage, or function as additional backup facilities.

7.2.1.4 Zone 40 Summary

Table 7-7 presents the maximum day demand and supply capacity comparison for Zone 40 from 2013 through buildout. The maximum day use of each type of supply is quantified for the wet/average years and dry years. As can be seen in Table 7-7 and consistent with the established conjunctive use program, the total supply capacity exceeds the maximum day demand for each phase, but neither the groundwater nor surface water supply capacity alone can meet the maximum day demand.

As shown in Table 7-7, Zone 40 will utilize a varying mixture of groundwater and surface water supplies on the maximum demand day based on whether it is a wet/average year or a dry year. The ability to practice conjunctive use by maximizing the use of surface water in wet and average years and minimizing the use of surface water in dry years is limited by the available surface water and groundwater supply capacities and to some extent by distribution system constraints. Several observations are made regarding the maximum day supply capacity and use that pertains to all three phases:

1. In dry years, there is sufficient groundwater capacity to be able to significantly reduce the amount of surface water use on the maximum day compared to wet/average years.
2. In dry years, most of the groundwater capacity will be utilized on the maximum demand day.
3. In wet years, there is sufficient surface water capacity to be able to supply over half of the maximum day demand.
4. In wet years, up to half of the groundwater capacity will be used to help supply the maximum day demand.

Table 7-7. Maximum Day Demand to Supply Comparison for Zone 40 - Baseline, mgd										
Zone 40	2013	Phase 1			Phase 2		Phase 3			
		2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2048)
Maximum day demand										
Zone 40 total	61.5	69.1	81.3	96.5	112.5	128.6	145.2	159.1	164.1	164.1
Existing supply capacity										
Groundwater	72.5	72.5	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
Surface water	61.1	61.1	45.1	28.6	28.6	28.6	28.6	28.6	28.6	28.6
Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total	136.6	136.6	114.1	97.6	97.6	97.6	97.6	97.6	97.6	97.6
Planned future supply capacity										
Groundwater	0.0	0.0	0.0	6.5	15.5	33.0	33.0	33.0	53.0	66.0
Surface water	0.0	0.0	16.0	32.5	32.5	32.5	32.5	32.5	82.5	101.6
Recycled water							0.0	0.0	2.9	2.9
Total supply capacity										
Groundwater	72.5	72.5	66.0	72.5	81.5	99.0	99.0	99.0	119.0	132.0
Surface water	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	111.1	130.2
Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	136.6	136.6	130.1	136.6	145.6	163.1	163.1	163.1	236.0	268.1
Use of supply: average/wet years										
Groundwater	20.4	25.8	21.1	46.4	56.8	64.7	72.2	76.5	56.1	37.0
Surface water	38.1	40.3	57.2	47.1	52.7	60.9	70.0	79.6	102.2	121.3
Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	61.5	69.1	81.3	96.5	112.5	128.6	145.2	159.1	164.1	164.1
Use of supply: dry years										
Groundwater	58.5	64.3	60.4	68.5	76.7	92.3	95.0	95.0	104.3	104.3
Surface water	0.0	1.9	17.9	25.0	32.7	33.3	47.2	61.1	54.0	54.0
Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	61.5	69.1	81.3	96.5	112.5	128.6	145.2	159.1	164.1	164.1

7.2.2 Annual Water Supply

Table 7-8 presents the annual supply to demand comparison for a normal climate year. Table 7-9 presents the annual supply to demand comparison for a single dry year and Table 7-10 presents the comparison for a multiple dry year. The presented supply values are the supplies available to Zone 40 assuming there are no

facility supply capacity constraints. The facility improvements needed to expand existing supply capacity are presented in Section 7.3. Projections of the use of each supply source that consider supply facility capacity constraints for each service area for normal and dry years are presented in Appendix B.

Table 7-8. Supply and Demand Comparison-Normal Year - Baseline, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2048)
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
Appropriative water [(a)]	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
Demand	38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
Difference	146,800	140,000	131,500	122,500	113,500	104,200	96,400	95,200	95,200

[(a)] *Only 35,000 ac-ft/yr assumed to be available without the construction of seasonal storage, as described in Section 4.2.2.*

Table 7-9. Supply and Demand Comparison-Single Dry Year - Baseline, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2048)
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply allocation	11,300	16,000	13,200	14,800	17,100	19,600	22,300	22,500	22,500
Appropriative water									
City of Sacramento American River POU water rights									
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	101,500	106,200	103,400	105,000	107,300	109,800	112,500	114,300	114,300
Demand	38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
Difference	62,800	60,700	49,400	42,000	35,300	28,500	23,400	22,400	22,400

Table 7-10. Supply and Demand Comparison-Multiple Dry Years - Baseline, ac-ft/yr

Year		2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2048)
First year	Supplies									
	US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
	Appropriative water [a]	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
	City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
	Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
	Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
	Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
	Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Supply totals	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
	Demand	38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
	Difference	146,800	140,000	131,500	122,500	113,500	104,200	96,400	95,200	95,200
Second year	Supplies									
	US Bureau of Reclamation-CVP supply	17,000	24,000	19,800	22,100	25,600	29,400	33,500	33,800	33,800
	Appropriative water	-	-	-	-	-	-	-	-	-
	City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
	Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
	Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
	Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
	Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Supply totals	107,200	114,200	110,000	112,300	115,800	119,600	123,700	125,600	125,600
	Demand	38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
	Difference	68,500	68,700	56,000	49,300	43,800	38,300	34,600	33,700	33,700
Third year	Supplies									
	US Bureau of Reclamation-CVP supply	11,300	16,000	13,200	14,800	17,100	19,600	22,300	22,500	22,500
	Appropriative water	-	-	-	-	-	-	-	-	-
	City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
	Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
	Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
	Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
	Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Supply totals	101,500	106,200	103,400	105,000	107,300	109,800	112,500	114,300	114,300
	Demand	38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
	Difference	62,800	60,700	49,400	42,000	35,300	28,500	23,400	22,400	22,400

[a] *Only 35,000 ac-ft/yr assumed to be available without the construction of seasonal storage, as described in Section 4.2.2.*

As can be seen in Tables 7-8, 7-9, and 7-10, as well as in Appendix B, the total water supply is greater than the projected demands. This analysis verifies the sufficiency of the water supply for the Baseline scenario.

7.2.3 Storage and Pumping Station Capacity Evaluation

Table 7-11 and 7-12 presents a summary comparison of the planned to required storage volume and pumping station capacities for this scenario. As shown in Tables 7-11 and 7-12, the planned storage facilities provide more than the required storage volumes and pump station capacities. The detailed storage and pumping station evaluation tables for each pressure zone are presented in Appendix B.

Table 7-11. Zone 40 Storage Capacity Evaluation Summary - Baseline

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2048)
Provided storage volume, MG				
Existing	42.2	42.2	42.2	42.2
Future	0.0	13.5	17.5	36.0
Total	42.2	55.7	59.7	78.2
Required storage volume, MG				
Equalization	12.3	19.0	25.2	31.7
Fire	3.8	3.8	3.8	3.8
Emergency	10.3	15.8	21.0	26.4
Total	26.4	38.6	50.1	61.8
Difference (provided minus required)	15.8	17.1	9.6	16.3

Table 7-12. Zone 40 Pump Station Capacity Evaluation Summary - Baseline

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2048)
Provided pump station capacity from storage, mgd				
Existing	107.6	118.2	112.3	103.4
Future	0.0	20.5	32.6	88.1
Total	107.6	138.7	144.9	191.5
Required pump station capacity from storage, mgd	65.8	96.6	126.2	158.3
Difference (provided minus required)	41.8	42.1	18.7	33.2

7.3 Water System Facilities and Capital Improvement Program

This section describes the water system facilities needed to supply the Baseline scenario and presents the CIP for Phases 1, 2, and 3.

7.3.1 Needed Water System Facilities

The water system facilities needed to serve the Baseline scenario through buildout are defined in this section.

7.3.1.1 Phase 1 (2016 to 2025)

The water system facilities needed to serve the Phase 1 demands are described for the NSA, CSA, and SSA.

North Service Area

As water demand continues to grow in the NSA, new water supply capacity will be needed to keep up with the demand growth. Two immediate options are available: 1) drill new wells at the Excelsior well field and expand the Anatolia GWTP; 2) construct the Phase A NSA Pipeline to deliver treated water from the Vineyard SWTP to the NSA. The Phase A NSA Pipeline involves converting the existing Excelsior raw water pipeline to convey treated water, in addition to other system modifications.

The Phase A NSA Pipeline option (P-10) was selected by SCWA in order to increase the surface water use in Zone 40 as part of the conjunctive use program. The existing Vineyard SWTP has additional capacity beyond what is needed to supply the CSA's current maximum day demand. The project includes the construction of the segment of the NSA Pipeline (66-inch in diameter) from the Vineyard SWTP to connect to the converted Excelsior raw water pipeline. The treatment unit at the Anatolia GWTP will be disconnected. The Anatolia storage tank will become a terminal storage tank to receive treated water from the Vineyard SWTP via the Phase A NSA Pipeline. The pump station capacity at the Anatolia facility would be expanded as part of P-10 to be able to provide peak hour supply with the supply provided by the Vineyard SWTP. The three existing groundwater wells at the Excelsior Well Field will be put on hiatus and occasionally used to provide groundwater for blending. In the future, the Excelsior well field will pump groundwater to the future West Jackson GWTP (CSA) for treatment located near the Excelsior well field. Once the Phase A NSA Project is completed, surface water can be delivered to the NSA from the Vineyard SWTP up to 11,000 gpm (or 15.8 MGD), which is enough to supply surface water to the NSA for several years until demand grows beyond the capacity of the pipeline.

Once the demand for surface water in the NSA exceeds the capacity of the 30-inch Excelsior pipeline, a new pipeline would be constructed. This new pipeline would be part of the Phase B NSA Project (S-1), which would also include the NSA terminal storage and pumping facility. The Phase B NSA Project (S-1) would provide for conveyance of surface water supply from the Vineyard SWTP to the NSA terminal storage and pumping facility from which the surface water supply would be distributed to the NSA, including peak hour and fire flow needs. The Phase B NSA Pipeline (54-inch in diameter) starts from Florin Road at Excelsior Road, extending east on Florin Road and then turning north in Eagles Nest Road, Kiefer Road, and the west bank of Folsom South Canal, and ultimately ending at the NSA terminal tanks (10 MG) located in Mather South. There may be approaches to optimize the Phase B NSA Project (S-1) by not having all of the Vineyard SWTP surface water supply conveyed to the NSA terminal storage and pumping facility. For example, additional storage facilities could be located in the southern portions of the NSA to be supplied off of either the Phase A or B NSA Project pipelines that would provide the maximum day as well as the peak hour and fire flow supplies for their local areas instead of having to deliver it all from the NSA terminal storage and pumping facility.

During Phase 1, several other pipeline projects would be constructed to deliver water to several areas within the NSA that are likely to experience growth, including the Cordova Hills, Rio del Oro, and Mather South subareas, as well as subareas located in the Sunrise/Douglas region. The locations of the Phase 1 projects in the NSA are shown on Figure 7-5.

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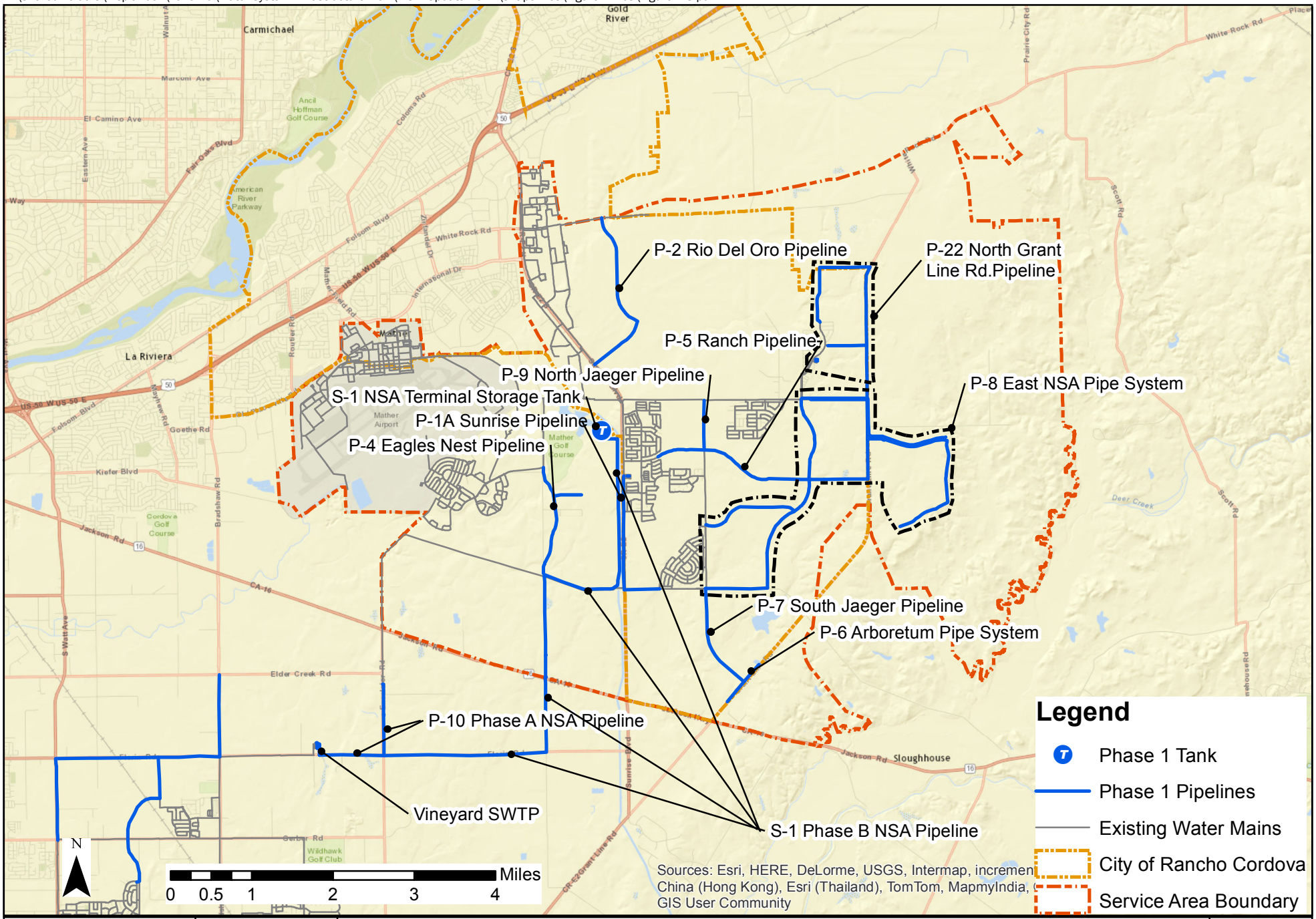

Brown AND Caldwell DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY	PROJECT 143542 DATE 8/4/15	SITE **Water Supply Master Plan Amendment** TITLE **Phase 1 CIP Projects - NSA, Baseline**	**Figure 7-5**

Central Service Area

During Phase 1, several pipeline projects would be constructed in the CSA to improve the interconnectedness and looping of the transmission system. No new storage facilities are planned for the CSA in Phase 1. The locations of the Phase 1 projects in the CSA are shown on Figure 7-6.

South Service Area

New groundwater supply facilities will be needed once the max day demand for the SSA reaches the existing groundwater and recycled water capacity. The water supply and storage in the SSA would be increased with the expansion of the Poppy Ridge GWTP (GWTP-1). Several pipeline projects would be constructed to deliver water to the Southeast Policy area and improve interconnectivity. The locations of the Phase 1 projects in the SSA are shown on Figure 7-6.

7.3.1.2 Phase 2 (2026 to 2035)

The water system facilities needed to serve the Phase 2 demands are described for the NSA, CSA, and SSA. The timing for the Phases 2 and 3 pipelines cannot be accurately defined into either Phase 2 or 3 due to the uncertainty about the specific locations and timing of development. Therefore, the pipeline projects for Phases 2 and 3 are not specifically identified by project number.

North Service Area

Additional pipelines would be constructed within the NSA to supply increased demand in the NSA. The locations of the Phase 2 projects in the NSA are shown on Figure 7-7.

Central Service Area

The next water supply facility in the CSA would be the 18 mgd West Jackson GWTP (GWTP-2) that would use the Excelsior well field as its source of groundwater supply. The West Jackson GWTP would be located in the northern part of the CSA. The Excelsior well field would be reactivated to supply the West Jackson GWTP with some additional wells added as part of the GWTP-2 project.

Additional pipelines would be constructed within the CSA to supply increased demand in the CSA. The locations of the Phase 2 projects in the CSA are shown on Figure 7-8.

South Service Area

The Big Horn GWTP Expansion (GWTP-7) would be constructed in the SSA in Phase 2. Additional pipelines would be constructed within the SSA. The locations of the Phase 2 projects in the SSA are shown on Figure 7-8.

7.3.1.3 Phase 3 (2036 to Buildout)

The water system facilities needed to serve Phase 3 demands are described for the NSA, CSA, and SSA.

North Service Area

In Phase 3, the Vineyard WTP would be expanded to 100 mgd from its present capacity of 50 mgd (SW-1). This added surface water supply capacity would be used to supply both the NSA and the CSA, with some supply for the SSA.

Additional storage facilities would be constructed in the NSA in Phase 3 consisting two storage facilities (S-3 and S-4). Additional pipelines would be constructed within the NSA to supply increased demands. The locations of the Phase 3 projects in the NSA are shown on Figure 7-7.

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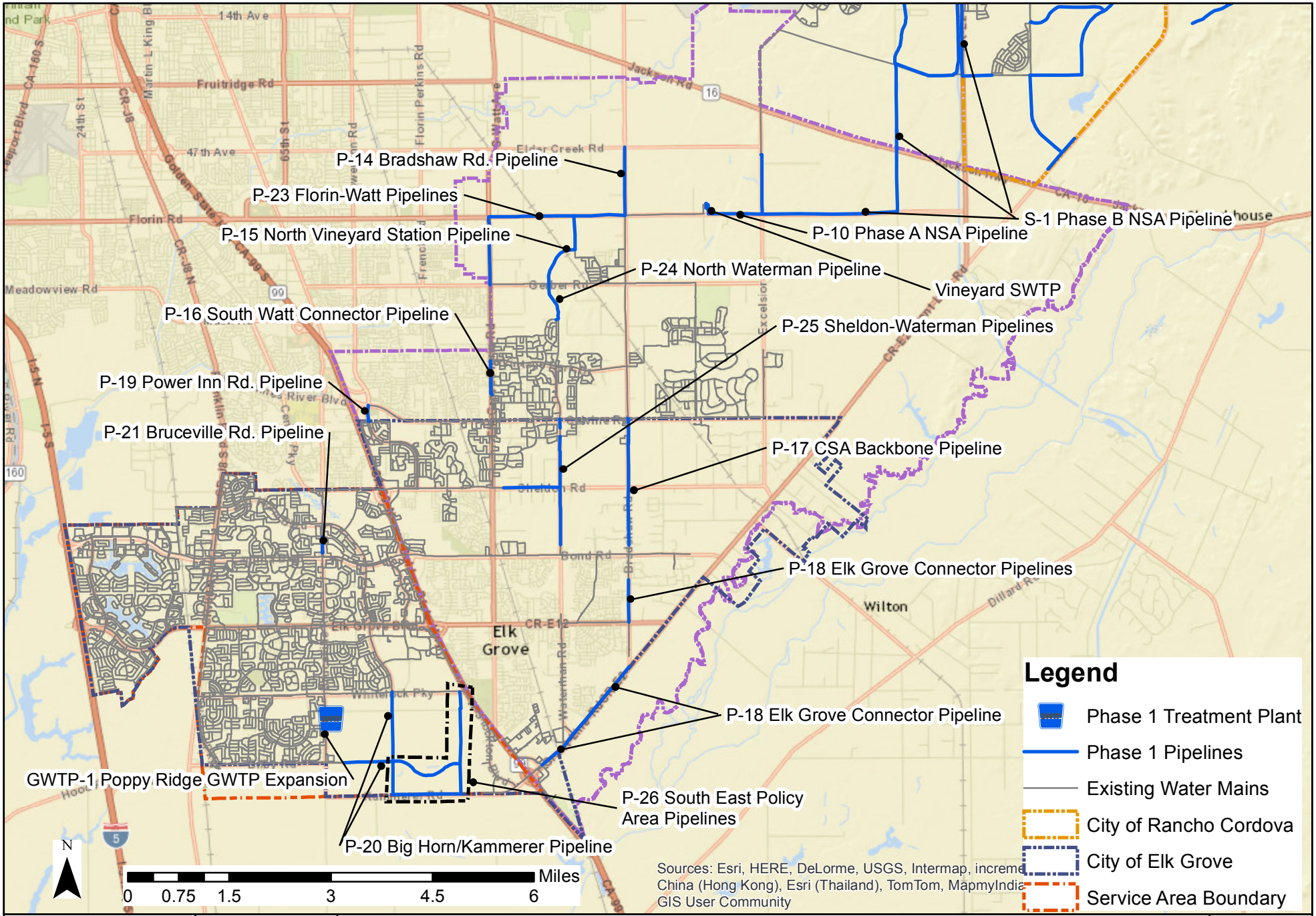

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DEPARTMENT OF WATER RESOURCES
SACRAMENTO COUNTY WATER AGENCY

PROJECT	SITE	
143542	**Water Supply Master Plan Amendment**	**Figure 7-6**
DATE 8/4/15	TITLE **Phase 1 CIP Projects - CSA & SSA, Baseline**	

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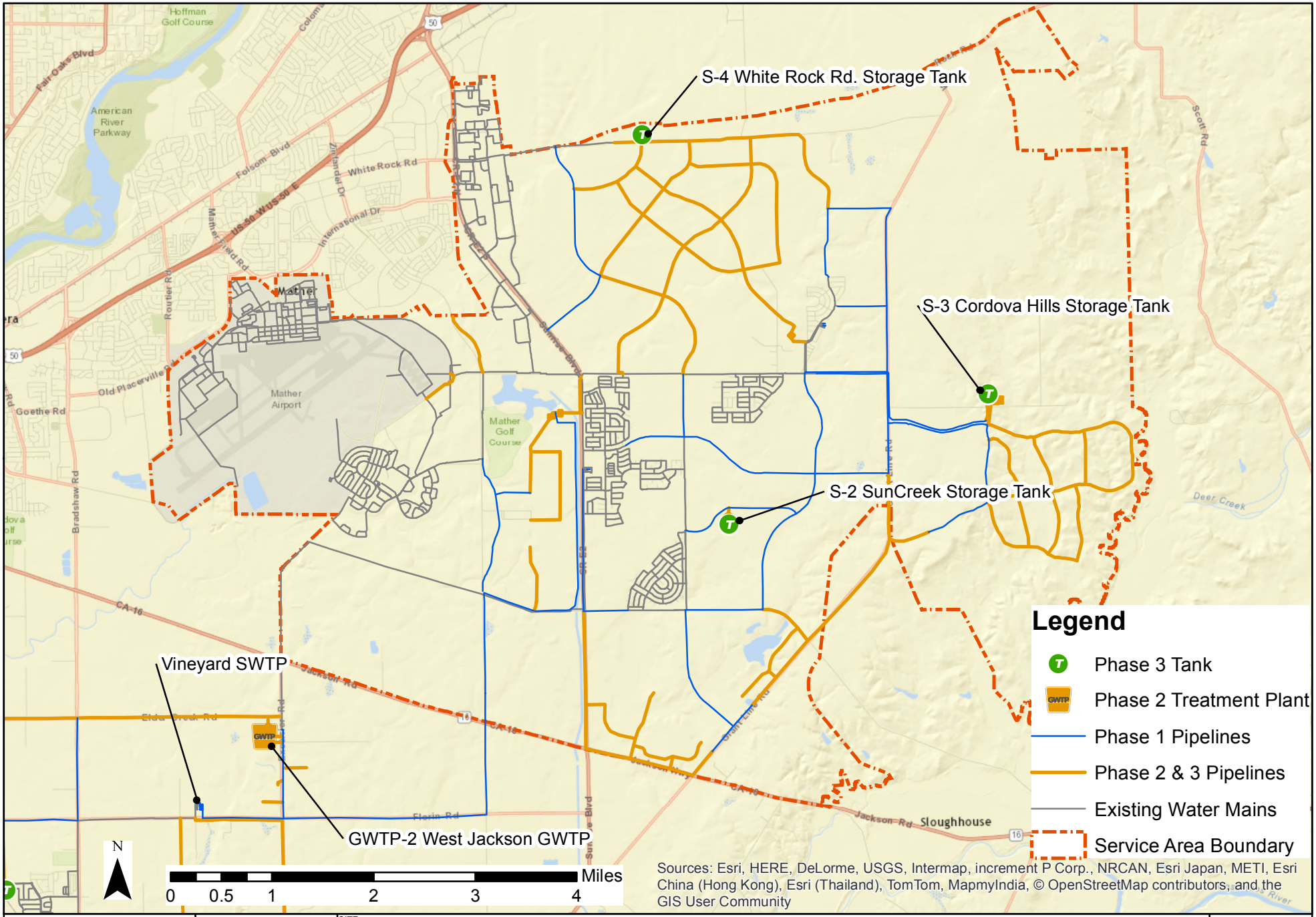

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DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY

PROJECT	SITE	
143542	**Water Supply Master Plan Amendment**	**Figure 7-7**
DATE	TITLE	
8/4/15	**Phase 2 & 3 CIP Projects - NSA, Baseline**	

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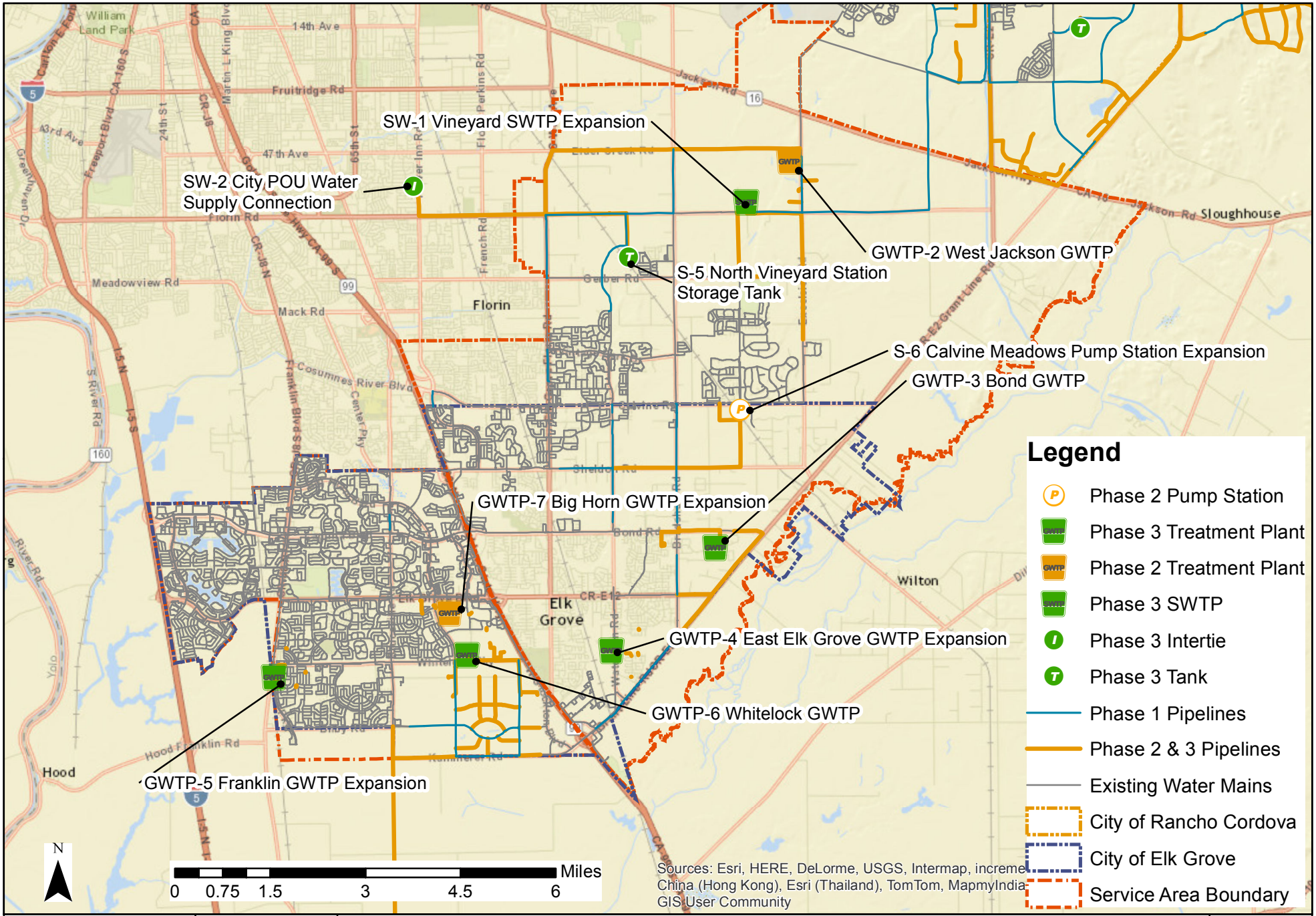

Brown AND Caldwell / DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY	PROJECT 143542	SITE **Water Supply Master Plan Amendment**	**Figure 7-8**
	DATE 8/4/15	TITLE **Phase 2 & 3 CIP Projects - CSA & SSA, Baseline**	

Central Service Area

The surface water supply capacity for the CSA would be increased with the expansion of the Vineyard SWTP (SW-1) from 50 mgd to 100 mgd. The groundwater supply capacity would be increased in the CSA by the construction of one new GWTP and the expansion of one of the existing GWTPs (GWTP 3 and GWTP-4). In addition to the storage that would be constructed at these two GWTPs, one additional storage reservoir would be constructed in the CSA (S-5) and the pump station at a storage facility would be expanded (S-6). Additional pipelines would be constructed within the NSA to supply increased demands.

Facilities would also be added to deliver the POU surface water (19.1 mgd at maximum day) wholesaled by the City (SW-2). In the 2006 WSIP, it was assumed that the POU would be diverted and treated at the City's Fairbairn WTP, and then conveyed to the City's Florin Reservoir through the transmission main in Power Inn Road. The POU water connection to the City would be established at the Florin Reservoir. The water would be pumped out of Florin Reservoir by low-heard pumps; then it would be conveyed in a dedicated transmission main (POU Water Pipeline), and finally the water would fill the North Vineyard Station Storage tank. From there, the water would be pumped out to the CSA.

The delivery of POU water would be significantly impacted by the Hodge flow standard. Recent studies by the City indicated that the POU water for Zone 40 would be subject to cutbacks under certain hydrologic conditions as opposed to being a highly reliable surface water supply as previously thought. Future study and update would be needed once the availability of the POU water is determined.

The locations of the Phase 3 projects in the CSA are shown on Figure 7-8.

South Service Area

The groundwater supply capacity would be increased in the SSA by the construction of two new GWTPs (GWTP-5 and GWTP-6). As shown in Table B-3 in Appendix B, these two GWTPs would provide a total groundwater supply capacity for the SSA that exceeds the SSA's projected maximum day demand at buildout. Consideration should be given to locating these two proposed GWTPs closer to where there is a need for dry year groundwater supply capacity, such as the CSA.

Facilities would also be added to increase the recycled water supply (RW-1). The recycled water project (RW-1) consists of the construction of pipelines, storage, and pumping capacity to deliver recycled water to new customers in the SSA. New storage would consist of the storage provided at the two GWTPs. Additional pipelines would be constructed within the SSA during Phase 3. The locations of the Phase 3 projects in the SSA are shown on Figure 7-8, except for the recycled water project. The specific configuration of the recycled water project has not been defined.

7.3.1.4 Summary

The future water system facilities are categorized as supply facilities, storage facilities, and pipelines. Table 7-13 presents the water supply facilities planned for Zone 40. Each GWTP project consists of wells, a groundwater treatment facility, a storage tank, and a pump station that pumps from the storage tank into the distribution system. Some of the GWTP projects already have wells that were previously drilled but not equipped and some would require the equipping and drilling of new wells. Table 7-13 presents the number of wells that would be equipped and/or drilled and equipped for the pertinent GWTP projects.

Table 7-14 presents the storage facility projects planned for Zone 40. Table 7-15 presents the pipeline projects that are 16 inches in diameter or larger planned for Phase 1 for all of Zone 40. Table 7-16 presents the pipelines that would be needed during Phases 2 and 3 for all of Zone 40.

Table 7-13. Additional Supply Facilities - Baseline

	Supply facility	Treatment/ supply capacity, mgd	Wells		Storage, MG	Pumping station capacity, mgd	Area served	Phase added
			Wells to be drilled and equipped	Wells to be equipped only (already drilled)				
GWTP-1	Poppy Ridge GWTP expansion	6.5		3	3.5	17.0	SSA	Phase 1
GWTP-2	West Jackson GWTP	18.0	5		4.0	21.6	CSA	Phase 2
SW-1	Vineyard WTP expansion	50.0					NSA/CSA	Phase 3
GWTP-3	Bond GWTP	6.5	3		0.5	10.8	CSA	Phase 3
GWTP-4	East Elk Grove GWTP expansion	6.5	2	1		13.0	CSA	Phase 3
SW-2	City POU water supply facilities	19.1					CSA	Phase 3
GWTP-5	Franklin GWTP	7.0	1	3	2.0	21.6	SSA	Phase 3
GWTP-6	Whitelock GWTP	13.0	6		3.0	14.4	SSA	Phase 3
GWTP-7	Big Horn GWTP expansion	8.5	4			17.0	SSA	Phase 2
RW-1	Recycled water supply	4.0					SSA	Phase 3
	Total	139.1	21	7	13.0	115.4		

Table 7-14. Additional Storage Facilities - Baseline

	Storage facility	Capacity, MG	Pumping station, mgd	Area served	Phase added
S-1	Phase B NSA Project	10.0	64.0	NSA	1
S-2	Suncreek	3.0	18.0	NSA	3
S-3	Cordova Hills	3.0	21.6	NSA	3
S-4	White Rock	3.0	14.4	NSA	3
S-5	North Vineyard Station	4.0	21.6	CSA	3
S-6	Calvine Meadows Pump Station Expansion		7.2	CSA	3
	Total	23.0	146.8		

Table 7-15. Phase 1 Pipelines - Baseline				
	Pipeline	Size, in	Length, ft	Area served
P-1A	Sunrise Blvd. Pipeline	16	9,676	NSA
P-2	Rio del Oro Pipeline	24	11,593	NSA
P-4	Eagles Nest Road Pipeline	20-30	7,239	NSA
P-5	Ranch Pipeline	24	7,000	NSA
P-6	Arboretum Pipe System	16	3,167	NSA
P-7	South Jaeger Pipeline	16	5,238	NSA
P-8	East NSA Pipeline System	16-30	61,389	NSA
P-9	North Jaeger Pipeline	24	6,365	NSA
P-10	Phase A NSA Project	42-66	44,662	NSA
P-14A	Bradshaw Road Pipeline	16-24	5,332	CSA
P-15	North Vineyard Station (Florin to Gerber) Pipeline	24-36	11,847	CSA
P-16	South Watt Connect Pipeline	24	2,693	CSA
P-17	CSA Backbone Pipeline	24-30	9,948	CSA
P-18	Elk Grove Loop Connector Pipelines	16-24	11,322	CSA
P-19	Power Inn Road Pipeline	24	1,273	CSA
P-20	Big Horn to Kammerer Pipeline	20	7,832	SSA
P-21	Bruceville Road Pipeline	18	1,267	SSA
P-22	North Grant Line Road Pipeline	20-24	17,000	NSA
P-23	Florin-Watt Pipelines	20-24	10,000	CSA
P-24	North Waterman Pipeline	16	3,000	CSA
P-25	Sheldon-Waterman Pipelines	18-24	15,000	CSA
P-26	South East Policy Area Pipelines	18-24	22,000	SSA
	Total	--	274,843	--

Table 7-16. Phase 2 and 3 Pipelines - Baseline	
Pipeline size, in	Length, ft
16	82,803
18	4,740
20	0
24	64,864
30	4,681
36	29,502
42	3,371
54	40,704
Total	230,665

7.3.2 Capital Improvement Plan

This section presents the CIP for Phases 1, 2, and 3.

7.3.2.1 Phase 1 CIP – 10 Year Plan (FY 2015-16 to 2024-25)

The Phase 1 CIP represents the projects that will be constructed over the near term time period. The development of the Phase 1 CIP requires consideration of the timing and duration of each project. The Phase 1 CIP consists of groundwater, storage, and pipeline projects. No surface water and stand alone storage projects are planned for Phase 1, other than the storage that is part of the GWTP project.

Table 7-17 presents the estimated costs of the Phase 1 water facilities for all of Zone 40. Included in the Phase 1 CIP is an item for non-specific project costs that cover the labor costs of SCWA's planning, development, and development sections.

The timing of the Phase 1 projects presented in Table 7-17 are based on information SCWA has received from developers' engineers regarding the timing of development projects and keeping a somewhat consistent rate of annual expenditure over the duration of Phase 1. The cost of each project would occur over a duration of several years. All of the projects would be completed by the time the end of Phase 1 is reached.

Table 7-17. Phase 1 CIP Cost Estimate - Baseline

Projects		Service area	Capital cost	Project timing	
No.	Name			Start, FY	End, FY
Groundwater projects (SCWA projects)					
GWTP-1	Poppy Ridge GWTP Expansion	SSA	$13,832,800	2016	2018
	Well site acquisitions	CSA/SSA	$180,000	2018	2023
	subtotal		$14,012,800		
Regional transmission and storage projects (SCWA projects)					
S-1	Phase B NSA Project	NSA	$84,586,140	2016	2023
P-10	Phase A NSA Project	NSA	$10,088,000	2016	2019
	Tank site acquisition	NSA	$800,000	2017	2018
	subtotal		$95,474,140		
Pipeline projects (Developer projects)					
P-1A	Sunrise Blvd. Pipeline	NSA	$3,302,200	2018	2020
P-2	Rio del Oro Pipeline	NSA	$3,663,200	2016	2018
P-4	Eagles Nest Road Pipeline	NSA	$3,779,200	2019	2021
P-5	Ranch Pipeline	NSA	$2,202,300	2023	2025
P-6	Arboretum Pipe System	NSA	$1,104,300	2021	2023
P-7	South Jaeger Pipeline	NSA	$1,145,500	2020	2022
P-8	East NSA Pipeline System	NSA	$18,212,400	2016	2021
P-9	North Jaeger Pipeline	NSA	$2,027,300	2017	2018

Table 7-17. Phase 1 CIP Cost Estimate - Baseline					
Projects		Service area	Capital cost	Project timing	
No.	Name			Start, FY	End, FY
P-14A	Bradshaw Road Pipeline	CSA	$2,724,200	2017	2019
P-15	North Vineyard Station (Florin to Gerber) Pipeline	CSA	$5,025,600	2018	2020
P-16	South Watt Connect Pipeline	CSA	$1,742,400	2019	2021
P-17	CSA Backbone Pipeline	CSA	$5,008,300	2023	2025
P-18	Elk Grove Loop Connector Pipelines	CSA	$4,715,500	2023	2025
P-19	Power Inn Road Pipeline	CSA	$584,300	2024	2025
P-20	Big Horn to Kammerer Pipeline	SSA	$2,494,500	2017	2019
P-21	Bruceville Road Pipeline	SSA	$509,400	2024	2025
P-22	North Grant Line Road Pipeline	NSA	$4,588,800	2022	2024
P-23	Florin-Watt Pipelines	CSA	$4,150,400	2023	2025
P-24	North Waterman Pipeline	CSA	$568,900	2019	2020
P-25	Sheldon-Waterman Pipelines	CSA	$5,685,700	2022	2025
P-26	South East Policy Area Pipelines	SSA	$5,868,800	2021	2024
	subtotal		$78,475,800		
Non-specific project costs			$30,000,000	2016	2025
Studies					
	Recycled Water Master Plan		$250,000	2016	2025
	Water Master Plan		$400,000	2016	2025
	EIR		$500,000	2016	2025
	subtotal		$1,150,000		
Total			$219,112,740		

7.3.2.2 Phase 2 CIP – 10 Year Plan (2026 to 2035)

Phase 2 represents the 10 year period following the end of Phase 1. Since Phase 2 is further in the future, the timing of projects is more speculative and less precise. The level of precision provided in the Phase 1 CIP is not needed for Phase 2 since the capacity charges are developed using the Phase 1 CIP costs and not the CIP costs from the subsequent phases.

The new pipelines that are needed for Zone 40 during Phases 2 and 3 are defined. However, the timing of when each pipeline project is needed is dependent on the location and timing of development. Therefore, this document does not identify the specific pipe segments that would need to be constructed in either Phase 2 or 3. The approach used for the development of the CIP is to assume that approximately half the cost of the Phases 2 and 3 pipelines would occur in Phase 2 and half would occur in Phase 3. Table 7-18 presents the cost estimate for the Phases 2 and 3 pipelines for all of Zone 40.

Table 7-19 presents the cost estimate for the Phase 2 CIP projects for all of Zone 40. The Phase 2 CIP consists of groundwater and pipeline projects. No surface water projects are planned for Phase 2.

Table 7-18. Phases 2 and 3 Pipeline Cost Estimate - Baseline

Diameter, in	Length, ft	Capital Cost
16	82,803	$34,629,723
18	4,740	$2,244,180
20	-	
24	64,864	$35,014,206
30	4,681	$3,190,782
36	29,502	$23,806,783
42	3,371	$3,167,568
54	40,704	$57,518,458
Total	206,007	$159,571,700

Table 7-19. Phase 2 CIP - Baseline

Projects		Service area	Capital cost
No.	Name		
Groundwater Projects			
GWTP-2	West Jackson GWTP	CSA	$28,932,200
GWTP-7	Big Horn GWTP Expansion	SSA	$14,744,100
Pipeline Projects		NSA/CSA/SSA	$79,785,850
Total			$123,462,150

7.3.2.3 Phase 3 CIP – 17 Year Plan (2036 – Buildout)

The Phase 3 CIP consists of surface water, groundwater, recycled water, storage, and pipeline projects. Table 7-20 presents the cost estimate for the Phase 3 CIP projects for all of Zone 40. The cost estimate for the City POU supply connection (SW-2) is for the construction of the interconnection and the pipeline to convey the water into the CSA's water transmission system. It does not include the City's capacity buy-in cost that was estimated in 2005 to be $32 million.

Table 7-20. Phase 3 CIP - Baseline			
Projects		Service area	Capital cost
No.	Name		
Surface water projects			
SW-1	Vineyard WTP Expansion	NSA/CSA	$200,000,000
SW-2	City POU Supply Connection [a]	CSA	$2,034,400
	subtotal		$202,034,400
Groundwater projects			
GWTP-3	Bond GWTP	CSA	$14,725,800
GWTP-4	East Elk Grove GWTP Expansion	CSA	$13,687,000
GWTP-5	Franklin GWTP	SSA	$18,544,000
GWTP-6	Whitelock GWTP	SSA	$26,143,800
	subtotal		$73,100,600
Recycled water projects			
RW-1	Recycled Water Project	SSA	$20,000,000
Storage projects			
S-2	Suncreek Storage	NSA	$11,864,500
S-3	Cordova Hills Storage	NSA	$12,848,700
S-4	White Rock Road Storage	NSA	$10,880,400
S-5	North Vineyard Station Storage	CSA	$5,467,500
S-6	Calvine Meadows Pump Station Expansion	CSA	$5,084,800
	subtotal		$46,145,900
Pipeline projects		NSA/CSA/SSA	$79,785,850
Total			$ 421,066,750

[a] *Does not include the City's capacity buy-in cost*

7.3.2.4 CIP Summary

Table 7-21 summarizes the Zone 40 CIP costs by project category and phase. The Phases A and B NSA projects in Phase 1 have been categorized as storage projects for the purpose of Table 7-21.

Table 7-21. Zone 40 CIP Cost Summary - Baseline				
Project categories	Phase 1	Phase 2	Phase 3	Total
Surface water projects			$202,034,400	$202,034,400
Groundwater projects	$14,012,800	$43,676,300	$73,100,600	$130,789,700
Recycled water projects			$20,000,000	$20,000,000
Storage projects	$95,474,140		$46,145,900	$141,620,040
Pipeline projects	$78,475,800	$79,785,850	$79,785,850	$238,047,500
Non-specific project costs	$30,000,000			$30,000,000
Studies	$1,150,000			$1,150,000
Total	$219,112,740	$123,462,150	$421,066,750	$763,641,640

Section 8

Jackson Township

This section describes the demographics, water demands, water supplies, and needed water system improvements for the Jackson Township scenario.

8.1 Water Demands

This section describes the future land use, demographics, and demand projections for the Jackson Township scenario.

8.1.1 Buildout Demographics

This section describes the projected developed area and demographics for the proposed Jackson Township development and for the overall Jackson Township scenario.

8.1.1.1 Proposed Jackson Township Development

The source of land use information for Jackson Township shown below in Table 8-1. This land use information is the basis of the acreage, demographic, and population estimates described in this section, as well as the water demand projection.

Table 8-1. Source of Land Use Information for Jackson Township Development

Subarea name	Agency providing land use data and date
Jackson Township	Au Clair Consulting, 4/30/13

The demographics and water demands for the proposed development were estimated based on the amount of acreage by land use category obtained from the source of land use information presented in Table 8-1. It is anticipated that the land use plans for the proposed development will possibly be revised, perhaps several times, before final approval. It is anticipated that these revisions would not significantly change the overall total buildout water demand for Zone 40 from the projections presented in this report, as well as the planned water system improvements. If the land use changes and resulting demographics, water demands, and facility needs are determined to be significant, the report would be amended as necessary.

The Jackson Township growth area consists of 1,300 acres that are proposed for the development of residential, commercial, office and mixed use buildings, elementary schools, a joint middle/high school, a fire station and community center, parks, wetland space, open space, and agriculture. Currently the land is used for agriculture as well as the Sacramento Raceway.

Proposed land uses and estimates for buildout connections, DUs, and population are shown in Table 8-2. The amount of acreage by land use category was calculated by SCWA staff. The number of connections and dwelling units and the population were estimated based on the acreage by land use category. The proposed land uses are illustrated on Figure 8-1.

Descriptions of eight alternatives for Jackson Township were subsequently provided (Jackson Township, 2014). These alternatives have total areas that range from to 1,100 acres to 1,400 acres (rounded), compared to the 1,300 acres for the development assumed for this analysis. The developer's engineer

subsequently provided an estimate of 6,043 dwelling units based on development plans (Au Clair). The total number of dwelling units presented in Table 8-2 was estimated using overall Zone 40 assumptions for dwelling unit densities as described in Section 3.3.3, so the projected number of dwelling units developed for this study can be expected to differ from the actual planned number dwelling units for a speciific area. Nevertheless, since the water demands are calculated using a demand per acre approach, such differences in the number of dwelling units do not impact the projected demands presented in this report.

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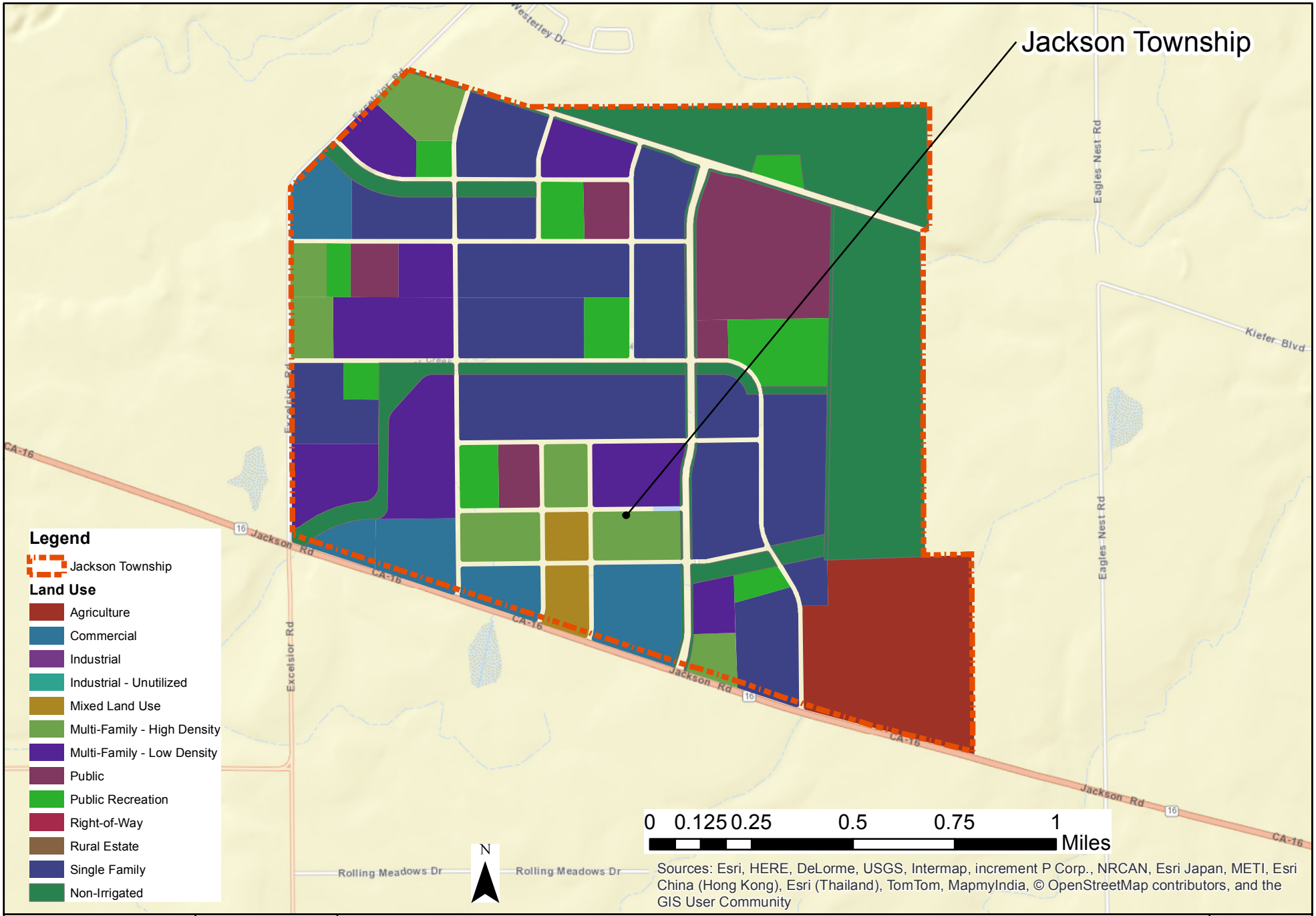


Brown AND Caldwell

DEPARTMENT OF WATER RESOURCES
SACRAMENTO COUNTY WATER AGENCY

PROJECT 148130	SITE **Zone 40 Water Supply Master Plan Amendment**	**Figure 8-1**
DATE 7/29/15	TITLE **Buildout Land Use - Jackson Township**	

Table 8-2. Land Use Area and Buildout Demographics for the Jackson Township Area

Land use category	Buildout gross area from GIS, acres	Connections	Dwelling units	Population
Rural estate	-	-	-	-
Single family	348	1,541	1,541	5,085
Multi-family - low density	157	175	1,745	4,799
Multi-family - high density	84	118	1,777	4,531
Commercial	90	40	-	-
Industrial	-	-	-	-
Public	5	0	-	-
Public recreation	176	163	-	-
Mixed land Use	20	9	-	-
Right-of-way	-	-	-	-
Self-supported/supplied by others	0	0		
Non-irrigated	280	-	-	-
Industrial-unutilized	-	-	-	-
Agricultural	110	-	-	-
Total	1,300 [a]	2,000 [a]	5,100 [a]	14,400 [a]

[a] *Totals are rounded to the 100's place.*

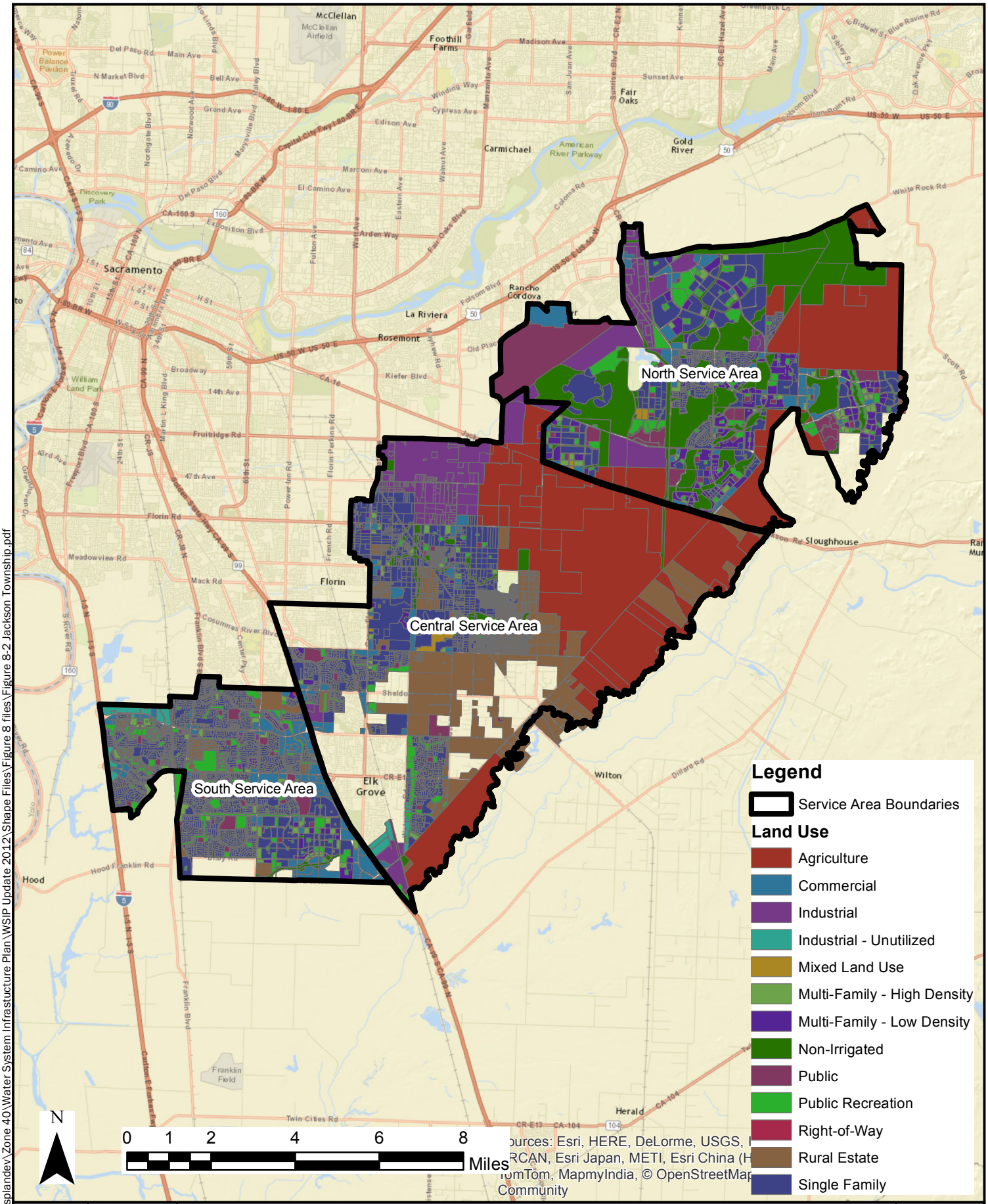
8.1.1.2 Jackson Township Scenario

The 2010 and buildout developed land use acreages by land use category are summarized in Table 8-3. The acreages presented in Table 8-3 are net acres for 2010 and gross acres for this scenario at buildout. The buildout land use for the study area is illustrated on Figure 8-2.

Table 8-3. 2010 and Buildout Area by Land Use – Jackson Township

Land use category	2010 developed area, net acres	Buildout area, gross acres
Rural estate	1,380	6,610
Single family	6,970	16,990
Multi-family - low density	220	3,630
Multi-family - high density	390	1,240
Commercial	1,520	3,850
Industrial	1,110	3,450
Industrial-unutilized	340	580
Public	920	2,110
Public recreation	1,270	4,430
Mixed land use	20	210
Right-of-way	70	230
Subtotal, municipal water supply land area	14,210	43,330
Self-supported/supplied by others	-	3,290
Non-irrigated	500	8,570
Agricultural	-	14,140
Total	14,710	69,330

Note: Elk Grove wholesale area is not included in the 2010 developed area acreage because it was not available. It is included in the buildout acreage.



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DATE	PROJECT	SITE
09/1/15	148130	Zone 40 Water Supply Master Plan Amendment

Brown AND Caldwell

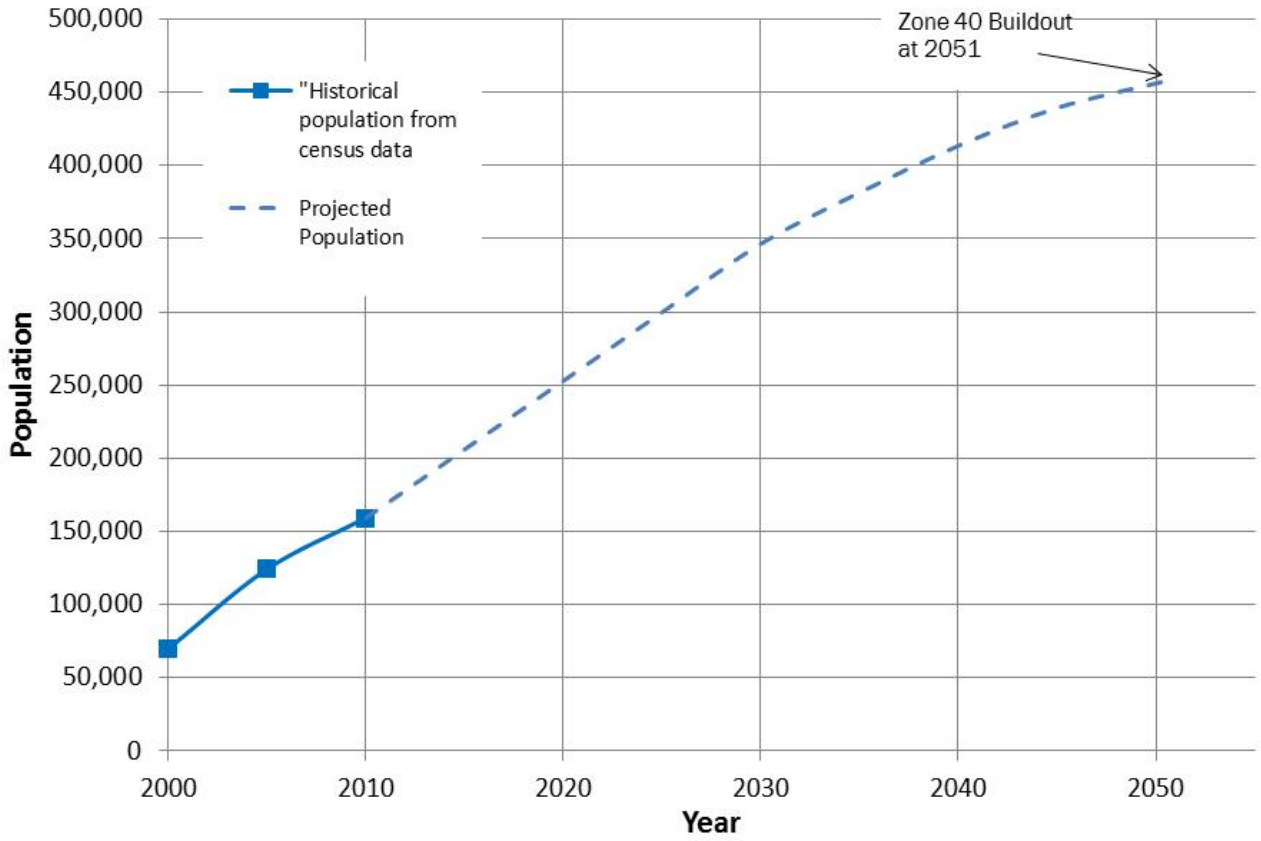
DEPARTMENT OF WATER RESOURCES
SACRAMENTO COUNTY WATER AGENCY

TITLE

Buildout Land Use Jackson Township

Figure 8-2

The historical and projected population for this scenario is shown on Figure 8-3. The projected DUs, population, and connections at buildout by land use category are presented in Table 8-4. Population per DU and per connection, DUs per connection, and connections per acre by land use category are also shown in this table. The number of people per connection projected at buildout is significantly higher than the 2010 value because of the proportionally large increase in multi-family land use area compared to single family land use area from 2010 to buildout. A larger proportion of the residential dwelling units and connections will be multifamily at buildout compared to 2010, which will result in a higher number of people per connection.



Elk Grove wholesale population is included. 2010 Elk Grove wholesale population is estimated to equal 10,144 people based on 3,210 Elk Grove wholesale connections and 3.16 people per connection in 2010.

Figure 8-3. Historical and Projected Population – Jackson Township

Table 8-4. Buildout Dwelling Units, Population, and Connections by Land Use Category- Jackson Township

Land use category	Dwelling units	Population	Connections	Population/ dwelling unit	Population/ connection	Dwelling units/ connection	Connections/ acre
Rural estate	3,193	10,648	3,193	3.3	3.3	1	0.5
Single family	82,004	270,684	82,004	3.3	3.3	1	4.8
Multi-family - low density	40,478	111,364	4,068	2.8	27.4	10	1.1
Multi-family - high density	26,100	66,620	1,693	2.6	39.3	15	1.4
Commercial	-	-	1,685				0.4
Industrial	-	-	1,391				0.4
Industrial-unutilized	-	-	-				-
Public	-	-	199				0.1
Public recreation	-	-	3,744				0.8
Mixed land use	-	-	43				0.2
Right-of-way	-	-	380				1.7
Self-supported/ supplied by others	-	-	-	-	-	-	-
Non-irrigated	-	-	-	-	-	-	-
Agricultural	-	-	-	-	-	-	-
Total	151,800 [(a)]	459,300[(a)]	98,400[(a)]	3.0	4.4	1.4	1.8

[(a)] *Totals are rounded to the 100's place.*

The 2010 and projected buildout DUs, population, and connections by service area are shown in Table 8-5. The projected buildout number of DUs and population for the NSA, CSA, and SSA are very similar; however the numbers of connections in the NSA are significantly less than the CSA and SSA. This is because there is a greater number of multi-family DUs in the NSA than the CSA and SSA. Since there are several multi-family dwelling units per connection, a lower number of connections is projected in the NSA to serve the similar number of dwelling units. Table 8-6 shows the number of connections by service area in five-year increments through 2050 and at buildout. The projected number of connections through buildout for each of the growth scenarios is illustrated on Figure 8-4.

Table 8-5. 2010 and Buildout Dwelling Units, Population, and Connections by Service Area – Jackson Township

Service area	2010			Buildout		
	Dwelling units	Population	Connections	Dwelling units	Population	Connections
NSA	4,000	11,700	4,600	51,000	150,200	27,500
CSA	17,400	56,600	15,600	49,400	150,700	32,800
SSA	30,600	91,300	28,900	51,300	158,400	38,100
Total	52,000	159,600	49,100	151,800	459,300	98,400

Note: 2010 dwelling units, population, and connections in Elk Grove wholesale area are estimated and included in the CSA values. Elk Grove wholesale area service connections in 2010 are estimated to be 3,200 connections and the DUs are estimated to be 3,500 based on a 1.1 DU per connection factor. The population is estimated to equal 10,144 people.

Table 8-6. Projected Connections in 5-Year Increments – Jackson Township										
Service area	2010	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
NSA										
Jackson Township	-	-	500	1,000	1,500	2,000	2,000	2,000	2,000	2,000
Remaining NSA	4,600	5,600	7,000	9,000	11,000	14,000	17,800	21,500	25,300	25,400
Total	4,600	5,600	7,500	10,000	12,500	16,100	19,800	23,600	27,300	27,400
CSA	15,500	16,600	18,400	20,900	23,400	27,000	30,800	32,900	32,900	32,900
SSA	28,900	30,300	32,800	35,300	37,800	38,100	38,100	38,100	38,100	38,100
Total Zone 40	49,100	52,600	58,800	66,300	73,800	81,300	88,800	94,600	98,300	98,400

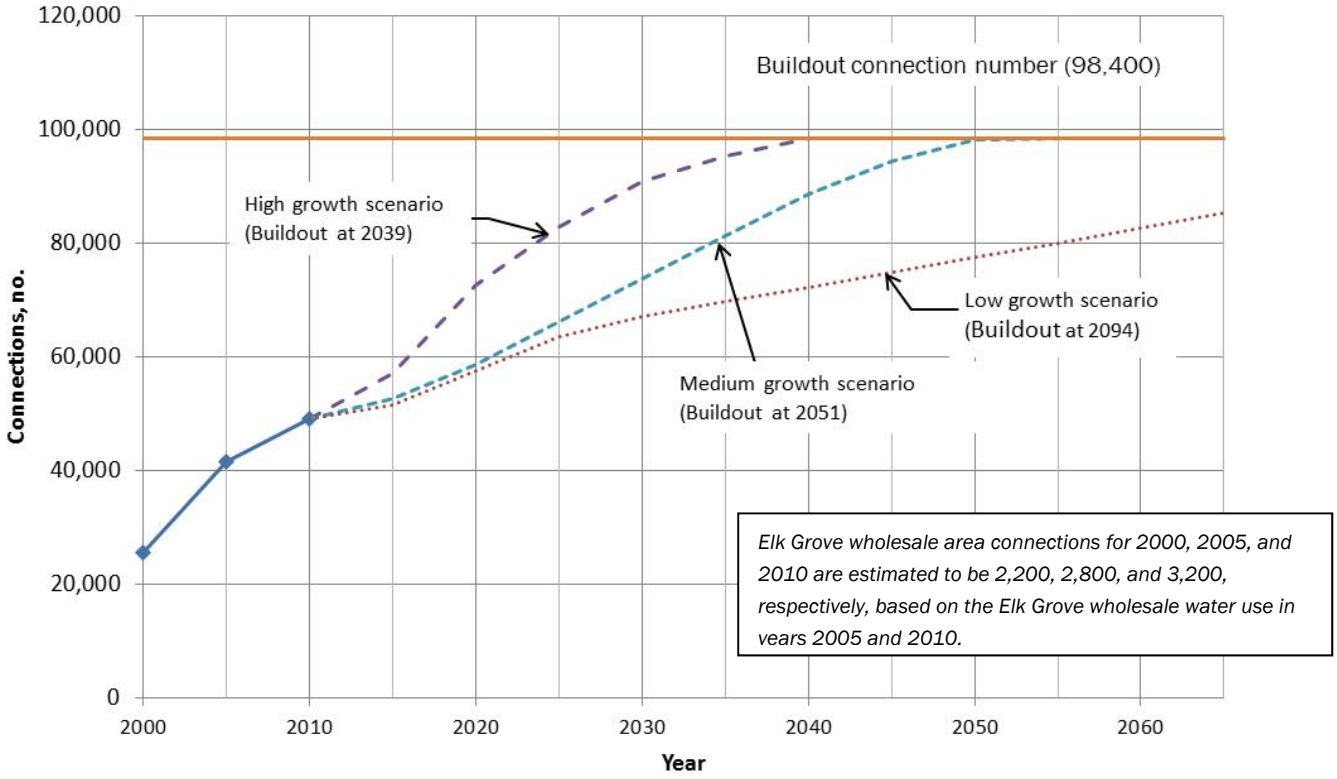


Figure 8-4. Historical and Projected Connections at High, Medium, and Low Growth Rates – Jackson Township

8.1.2 Buildout Water Demands

This section presents the buildout water demand for the Jackson Township area and for the overall Jackson Township scenario. The buildout water demands for the Jackson Township new growth area of 2,282 ac-ft/yr is shown on Table 8-7. Water demand projections for the eight subsequent alternatives for Jackson Township range from to 2,214 ac-ft/yr to 2,329 ac-ft/yr.

Table 8-7. Jackson Township Area Buildout Water Demands

Land use	Buildout gross area from GIS, acres	Gross UWDF, ac-ft/yr/ac	Water demand, ac-ft/yr
Rural estate		1.37	
Single family	348	2.13	741
Multi-family - low density	157	2.44	382
Multi-family - high density	84	3.33	280
Commercial	90	2.02	181
Industrial		2.02	
Public	5	0.81	4
Public recreation	176	2.80	492
Mixed land use	20	2.15	42
Right-of-way		0.18	
Self-supported/supplied by others			
Non-irrigated	280		
Industrial-unutilized			
Agricultural	110		
Subtotal	1,268		2,123
Water loss (7.5% of sales)			159
Total			2,282

Based on the buildout land area in Table 8-3 and the unit water demand factors in Table 3-4, the buildout water demand by land use category is shown in Table 8-8 for the Jackson Township scenario. The recycled water demand in the SSA is included in the demand projections in Table 8-8 to provide the total Zone 40 water demand for this scenario. There is no recycled water demand assumed for the Jackson Township area.

Table 8-8. Buildout Water Demand by Land Use Category – Jackson Township	
Land use category	Water demand, ac-ft/yr
Rural estate	9,100
Single family	36,200
Multi-family - low density	8,900
Multi-family - high density	4,100
Commercial	7,800
Industrial	7,000
Public	1,700
Public recreation	12,400
Mixed land use	500
Right-of-way	0
Subtotal (land use with water demand)	87,600
Water system losses (7.5% of water sales)	6,600
Self-supplied/supported by others	0
Industrial-unutilized	0
Non-irrigated	0
Agricultural	0
Total production	94,200

8.1.3 Water Demand Growth Projection

Water demand growth projections are determined based on the projected connection growth described in Section 8.1.1.2. The projected water demands by service area are shown in Table 8-9 and illustrated on Figure 8-5.

Table 8-9. Projected Water Demand in 5-Year Increments – Jackson Township, ac-ft/yr										
Service area	2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
NSA										
Jackson Township	-	-	600	1,100	1,700	2,300	2,300	2,300	2,300	2,300
Remaining NSA	4,200	5,300	6,800	9,100	11,600	15,500	20,400	25,600	31,100	31,400
Total	4,200	5,300	7,400	10,200	13,300	17,700	22,700	27,900	33,400	33,700
CSA	15,100	16,300	18,400	21,100	23,900	27,800	32,100	34,400	34,400	34,400
SSA	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100
Total	34,500	38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200

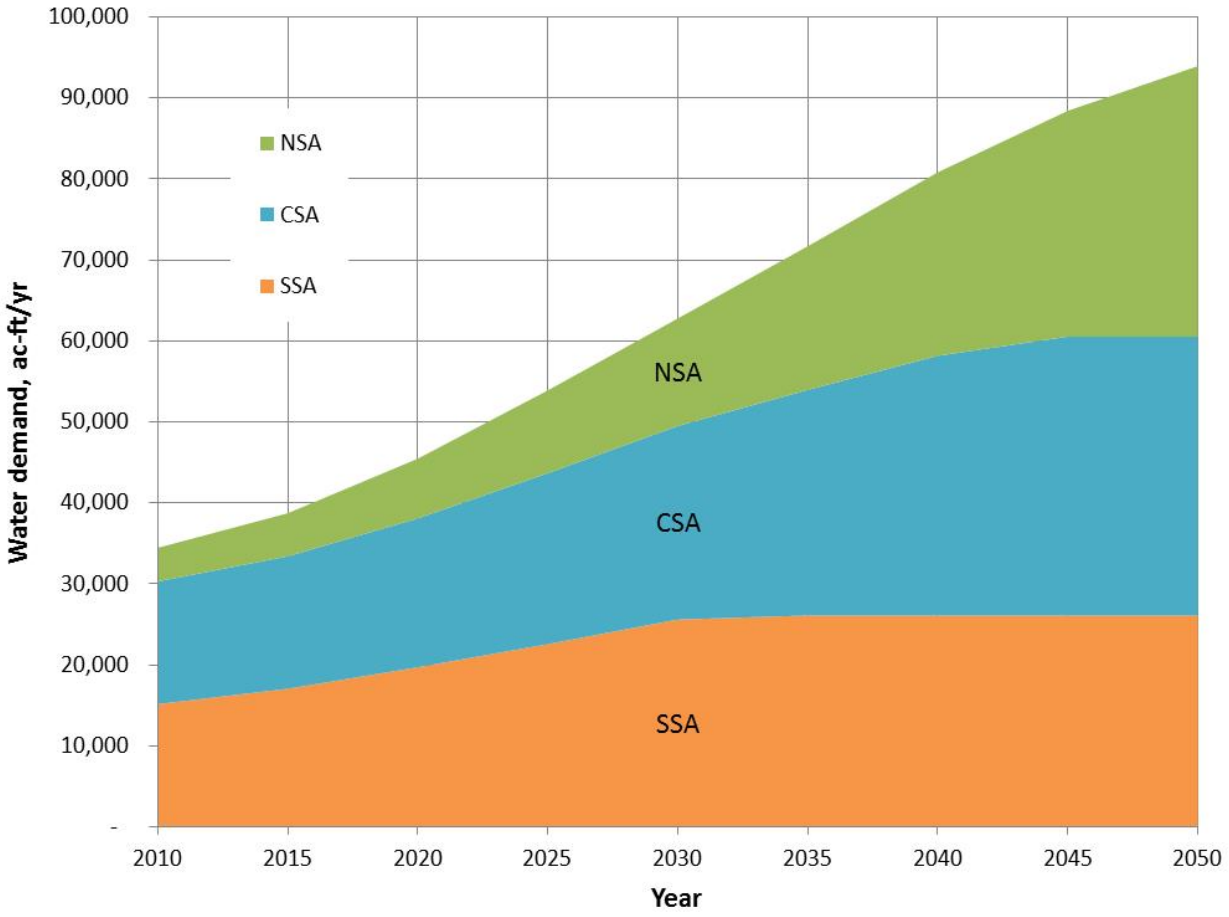


Figure 8-5. Water Demand Projection – Jackson Township

8.2 Water Supply Capacity

This section quantifies the amount of supply capacity that would be needed to meet demands through buildout. The supply capacity and the use of the supply is presented on both a maximum day basis and an annual basis.

8.2.1 Maximum Day Demand Supply Capacity and Use

This section compares the projected maximum day demand to supply capacity for each of the three service areas through buildout. The maximum day demand to supply capacity comparison tables for each of the three service areas are presented in Appendix C. The future supply capacity is based on the proposed supply and conveyance facilities that are presented in Section 8.3. The maximum day use of each type of supply is quantified for the wet/average years and dry years.

8.2.1.1 North Service Area

Surface water supply from the existing Vineyard SWTP would be provided in Phase 1 to replace the current groundwater supply provided by the Anatolia GWTP. The construction of the Phase A NSA Project (P-10) and

Phase B NSA Project (S-1) will allow for some of the Vineyard SWTP's existing capacity to be used to supply the NSA. It is assumed that 65 percent of the Vineyard SWTP would be used to supply the NSA. The Mather wells are used below their capacities in dry years since SCWA operational staff prefer to minimize their use due to the possible impact to nearby contamination plumes.

8.2.1.2 Central Service Area

Once several projects are constructed, including the Phase A NSA Project (P-10) and Phase B NSA Project (S-1), some of the Vineyard SWTP's existing capacity will be used to also supply the NSA. The future West Jackson GWTP will be used to supply the CSA, although it will be connected to the transmission system such that it could also provide supply to the NSA.

8.2.1.3 South Service Area

New groundwater supply capacity would be needed during Phase 1. Additional groundwater supply capacity would be added in Phases 2 and 3. No new surface water supply capacity is specifically planned for the SSA, although the planned Phase 3 expansion of the Vineyard SWTP would provide some additional surface water. The proposed GWTPs for Phase 3 would provide a maximum day groundwater supply capacity that exceeds the SSA's projected buildout maximum day demand. These Phase 3 GWTPs could be used to provide dry year groundwater supply to other areas or groundwater storage, or function as additional backup facilities.

8.2.1.4 Summary

Table 8-10 presents the maximum day demand and supply capacity comparison for Zone 40 from 2013 through buildout. The maximum day use of each type of supply is quantified for the wet/average years and dry years. As can be seen in Table 8-10 and consistent with the established conjunctive use program, the total supply capacity exceeds the maximum day demand for each phase, but neither the groundwater nor surface water supply capacity alone can meet the maximum day demand.

As shown in Table 8-10, Zone 40 will utilize a varying mixture of groundwater and surface water supplies on the maximum demand day based on whether it is a wet/average year or a dry year. The ability to practice conjunctive use by maximizing the use of surface water in wet and average years and minimizing the use of surface water in dry years is limited by the available surface water and groundwater supply capacities and to some extent by distribution system constraints. Several observations are made regarding the maximum day supply capacity and use that pertains to all three phases:

1. In dry years, there is sufficient groundwater capacity to be able to significantly reduce the amount of surface water use on the maximum day compared to wet/average years.
2. In dry years, most of the groundwater capacity will be utilized on the maximum demand day.
3. In wet years, there is sufficient surface water capacity to be able to supply over half of the maximum day demand.
4. In wet years, up to half of the groundwater capacity will be used to help supply the maximum day demand.

Table 8-10. Maximum Day Demand to Supply Comparison for Zone 40 - Jackson Township, mgd

Zone 40	2013	Phase 1			Phase 2		Phase 3	
		2015	2020	2025	2030	2035	2050	Buildout (2051)
Maximum day demand								
Zone 40 total	61.5	69.1	81.2	96.2	112.1	128.0	167.7	168.2
Existing supply capacity								
Groundwater [a]	72.5	72.5	66.0	66.0	66.0	66.0	66.0	66.0
Surface water [b]	61.1	61.1	45.1	28.6	28.6	28.6	28.6	28.6
Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total	136.6	136.6	114.1	97.6	97.6	97.6	97.6	97.6
Planned future supply capacity								
Groundwater	0.0	0.0	0.0	6.5	15.5	33.0	53.0	66.0
Surface water [b]	0.0	0.0	16.0	32.5	32.5	32.5	82.5	101.6
Recycled water							2.9	2.9
Total supply capacity								
Groundwater	72.5	72.5	66.0	72.5	81.5	99.0	119.0	132.0
Surface water	61.1	61.1	61.1	61.1	61.1	61.1	111.1	130.2
Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	136.6	136.6	130.1	136.6	145.6	163.1	236.0	268.1
Use of supply: average/wet years								
Groundwater	20.4	25.8	21.1	46.4	56.8	64.7	56.1	37.0
Surface water	38.1	40.3	57.1	46.8	52.3	60.3	105.7	125.3
Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	61.5	69.1	81.2	96.2	112.1	128.0	167.7	168.2
Use of supply: dry years								
Groundwater	58.5	64.3	60.4	68.5	76.7	92.3	108.2	108.2
Surface water	0.0	1.9	17.8	24.7	32.3	32.7	53.7	54.2
Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	61.5	69.1	81.2	96.2	112.1	128.0	167.7	168.2

[a] *Groundwater supply decrease in 2020 due to Anatolia GWTP removed from service.*

[b] *Reduction in existing capacity and added future surface water supply capacity in 2020 and 2025 because planned delivery to NSA from existing Vineyard SWTP accounted as future supply capacity as requested by SCWA staff.*

8.2.2 Annual Water Supply

Table 8-11 presents the annual supply to demand comparison for a normal climate year. Table 8-12 presents the annual supply to demand comparison for a single dry year and Table 8-13 presents the comparison for a multiple dry year. The presented supply values are the supplies available to Zone 40 assuming there are no facility supply capacity constraints. The facility improvements needed to expand existing supply capacity are presented in Section 8.3. Projections of the use of each supply source that consider supply facility capacity constraints for each service area for normal and dry years are presented in Appendix C.

Table 8-11. Supply and Demand Comparison-Normal Year – Jackson Township, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
Appropriative water [(a)]	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
Demand	38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200
Difference	146,800	140,000	131,600	122,700	113,800	104,700	97,100	93,200	92,900

[(a)] *Only 35,000 ac-ft/yr assumed to be available without the construction of seasonal storage, as described in Section 4.2.2.*

Table 8-12. Supply and Demand Comparison-Single Dry Year- Jackson Township, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply allocation	11,300	16,000	13,100	14,700	16,900	19,400	22,000	22,500	22,500
Appropriative water									
City of Sacramento American River POU water rights									
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	101,500	106,200	103,300	104,900	107,100	109,600	112,200	114,300	114,300
Demand	38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200
Difference	62,800	60,700	49,400	42,100	35,400	28,800	23,800	20,400	20,100

Table 8-13. Supply and Demand Comparison-Multiple Dry Years- Jackson Township, ac-ft/yr

Year		2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
First year	Supplies									
	US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
	Appropriative water [a]	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
	City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
	Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
	Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
	Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
	Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Supply totals	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
	Demand	38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200
	Difference	146,800	140,000	131,600	122,700	113,800	104,700	97,100	93,200	92,900
Second year	Supplies									
	US Bureau of Reclamation-CVP supply	17,000	24,000	19,700	22,000	25,400	29,000	32,900	33,800	33,800
	Appropriative water	-	-	-	-	-	-	-	-	-
	City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
	Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
	Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
	Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
	Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Supply totals	107,200	114,200	109,900	112,200	115,600	119,200	123,100	125,600	125,600
	Demand	38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200
	Difference	68,500	68,700	56,000	49,400	43,900	38,400	34,700	31,700	31,400
Third year	Supplies									
	US Bureau of Reclamation-CVP supply	11,300	16,000	13,100	14,700	16,900	19,400	22,000	22,500	22,500
	Appropriative water	-	-	-	-	-	-	-	-	-
	City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
	Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
	Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
	Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
	Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Supply totals	101,500	106,200	103,300	104,900	107,100	109,600	112,200	114,300	114,300
	Demand	38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200
	Difference	62,800	60,700	49,400	42,100	35,400	28,800	23,800	20,400	20,100

[a] *Only 35,000 ac-ft/yr assumed to be available without the construction of seasonal storage, as described in Section 4.2.2.*

As can be seen in Tables 8-11, 8-12, and 8-13, as well as in Appendix C, the total water supply is greater than the projected demands. This analysis verifies the sufficiency of the water supply for the Jackson Township scenario.

8.2.3 Storage and Pumping Station Capacity Evaluation

Table 8-14 and 8-15 presents a summary comparison of the planned to required storage volume and pumping station capacities for this scenario. As shown in Tables 8-14 and 8-15, the planned storage facilities provide more than the required storage volumes and pump station capacities. The detailed storage evaluation tables for each pressure zone are presented in Appendix C.

Table 8-14. Zone 40 Storage Capacity Evaluation Summary- Jackson Township

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)
Provided storage volume, MG				
Existing	42.2	42.2	42.2	42.2
Future	0.0	13.5	17.5	36.0
Total	42.2	55.7	59.7	78.2
Required storage volume, MG				
Equalization	12.3	19.0	25.2	32.5
Fire	3.8	3.8	3.8	3.8
Emergency	10.3	15.8	21.0	27.1
Total	26.4	38.6	50.1	63.3
Difference (provided minus required)	15.8	17.1	9.6	14.8

Table 8-15. Zone 40 Pump Station Capacity Evaluation Summary- Jackson Township

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)
Provided pump station capacity from storage, mgd				
Existing	107.6	118.2	112.3	102.1
Future	0.0	20.5	32.6	88.1
Total	107.6	138.7	144.9	190.2
Required pump station capacity from storage, mgd	65.8	96.6	126.2	162.3
Difference (provided minus required)	41.8	42.1	18.7	27.9

8.3 Water System Facilities and Capital Improvement Program

This section describes the water system facilities needed to supply the Jackson Township scenario, develops the costs, and presents the CIP for Phases 1, 2, and 3.

8.3.1 Needed Water System Facilities

The water system facilities needed to serve the Phase 1, 2, and 3 demands are the same as the facilities defined for Baseline scenario. The exception is that additional pipelines would be needed in the NSA to supply the Jackson Township development. The locations of the Phase 1 projects in the NSA are shown on Figure 8-6. To supply Jackson Township, a series of pipelines would be constructed to initially convey water supply from the Anatolia groundwater treatment and storage facility and subsequently from the future NSA terminal storage tank (P-1 and P-3). These pipelines would be sized to convey supply to meet peak hour and maximum day plus fire flow demands. The locations of the Phase 1 projects in the CSA and SSA are shown on Figure 8-7. The locations of the Phase 2 and 3 projects in the NSA are shown on Figure 8-8. The locations of the Phase 2 and 3 projects in the CSA and SSA are shown on Figure 8-9.

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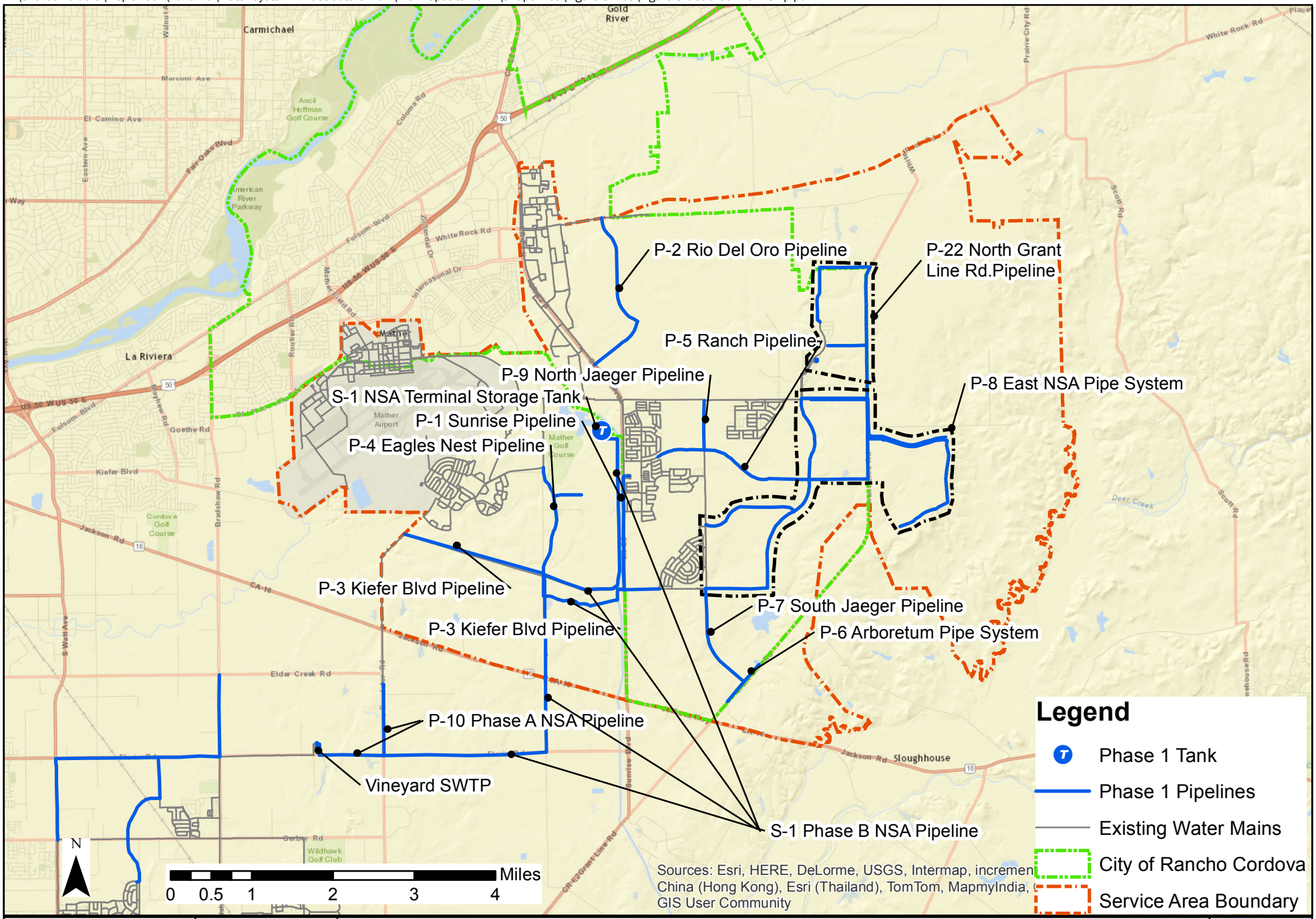

Brown AND Caldwell / DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY	PROJECT 148130	SITE **Zone 40 Water Supply Master Plan Amendment**	**Figure 8-6**
	DATE 9/9/15	TITLE **Phase 1 CIP Projects - NSA, Jackson Township**	

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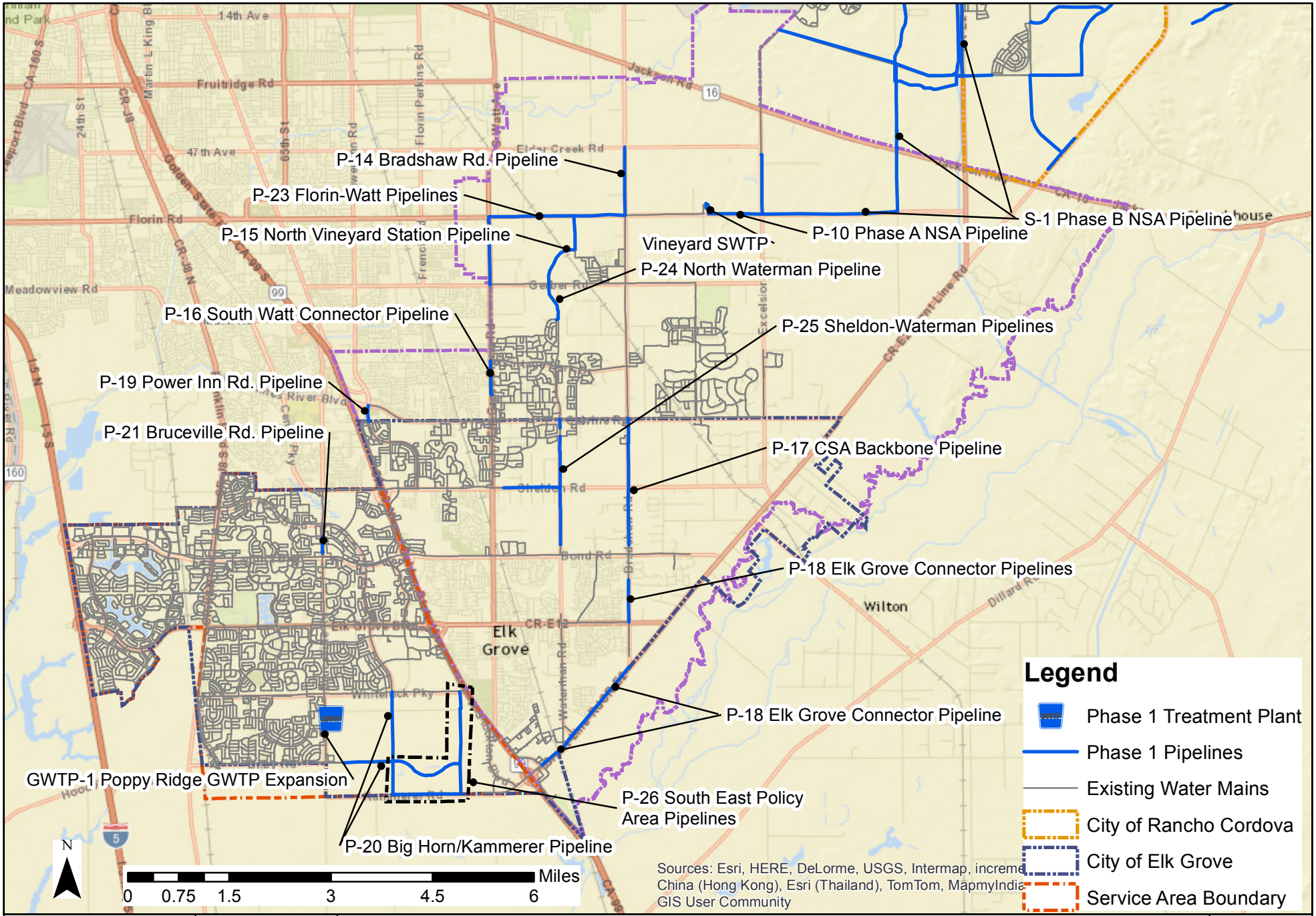

Brown AND Caldwell DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY	PROJECT 148130 DATE 9/9/15	SITE **Zone 40 Water Supply Master Plan Amendment** TITLE **Phase 1 CIP Projects - CSA & SSA, Jackson Township**	**Figure 8-7**

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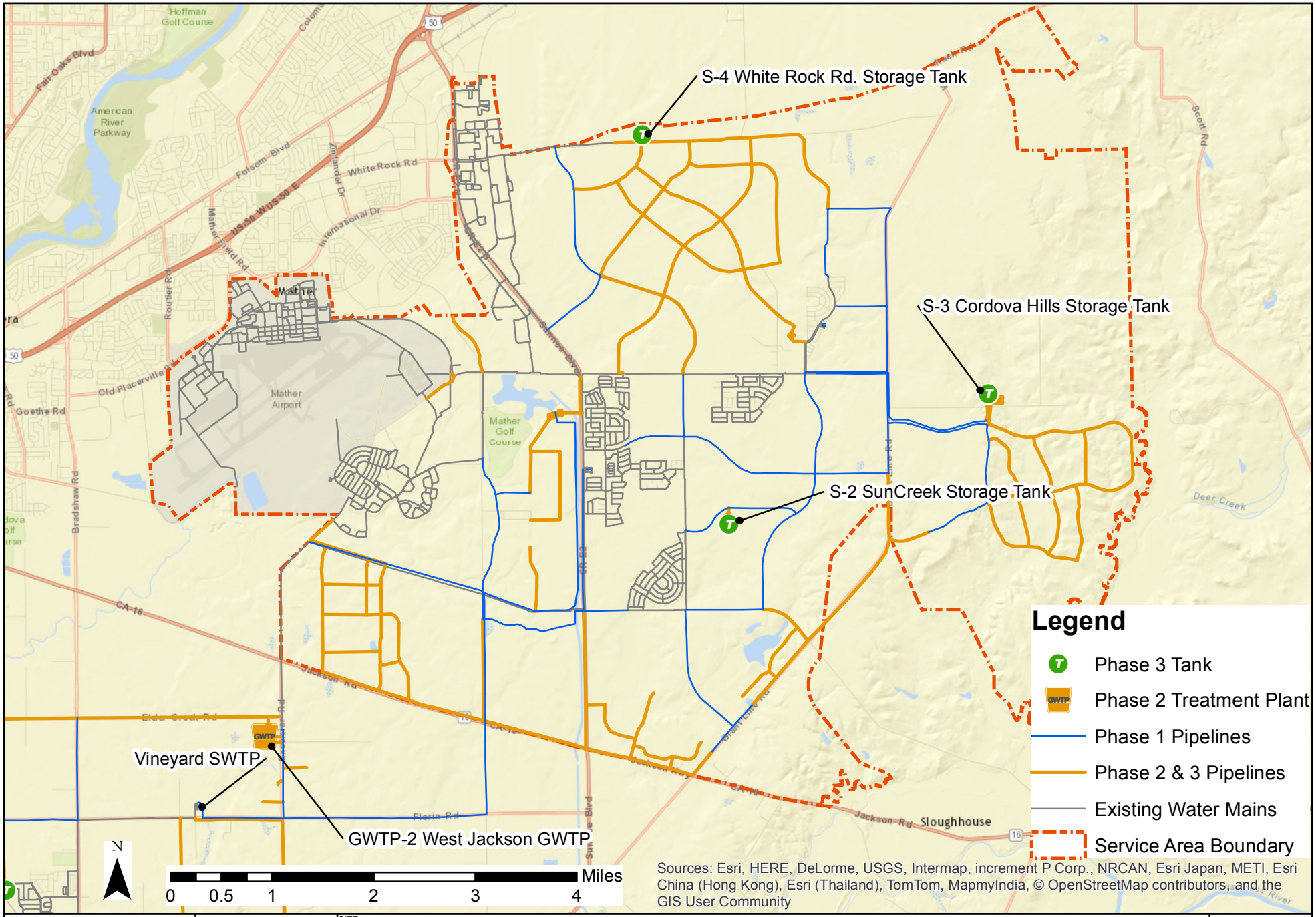

Brown AND Caldwell / DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY	PROJECT 148130	SITE **Zone 40 Water Supply Master Plan Amendment**	**Figure 8-8**
	DATE 9/9/15	TITLE **Phase 2 & 3 CIP Projects - NSA, Jackson Township**	

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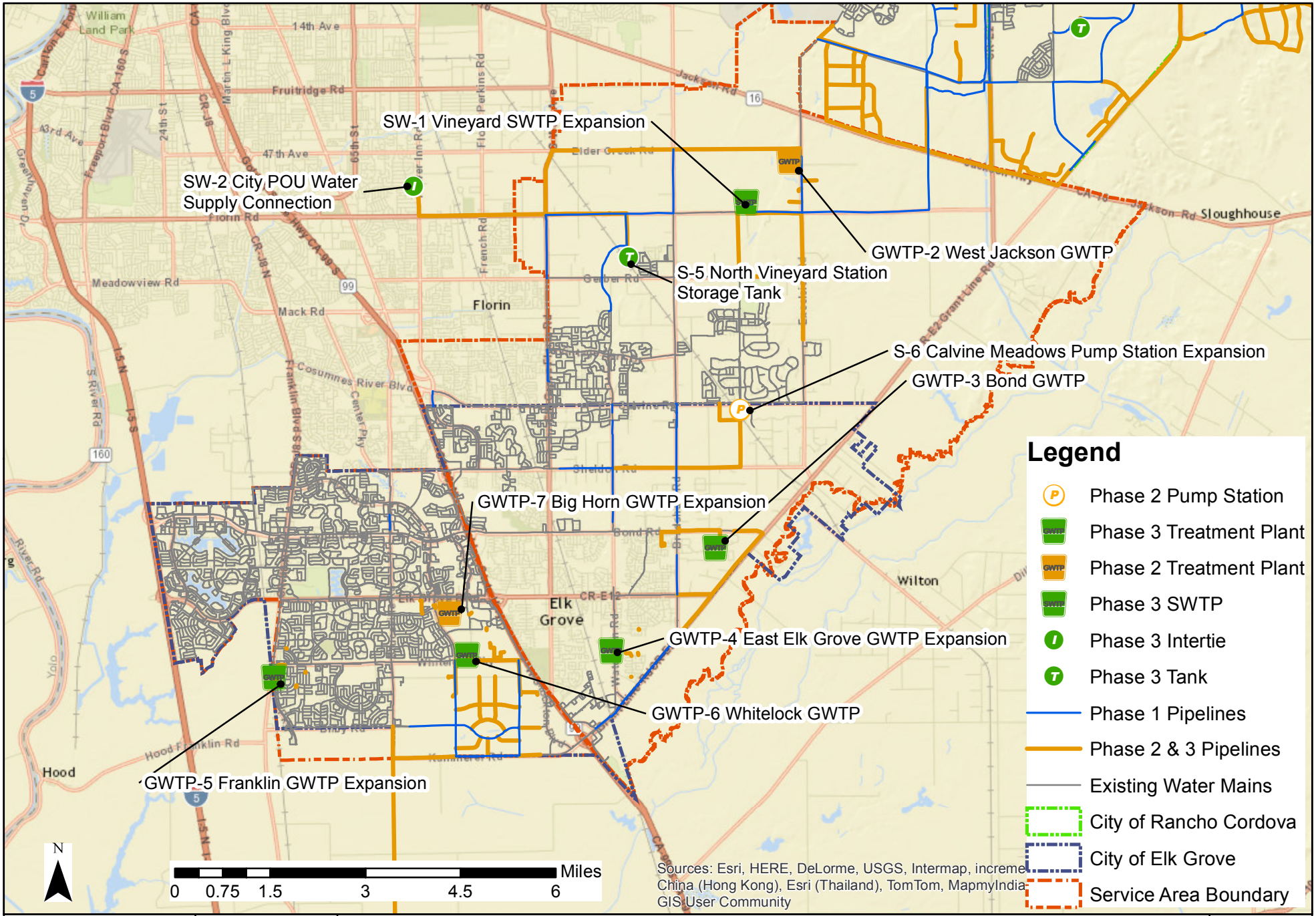

Brown AND Caldwell / DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY	PROJECT 148130	SITE **Zone 40 Water Supply Master Plan Amendment**	**Figure 8-9**
	DATE 9/9/15	TITLE **Phase 2 & 3 CIP Projects - CSA & SSA, Jackson Township**	

The future water system facilities are categorized as supply facilities, storage facilities, and pipelines. Table 8-16 presents the planned water supply facilities for all of Zone 40. Each GWTP project consists of wells, a groundwater treatment facility, a storage tank, and a pump station that pumps from the storage tank into the distribution system. Some of the GWTP projects already have wells that were previously drilled but not equipped and some would require the equipping and drilling of new wells. Table 8-16 presents the number of wells that would be equipped and/or drilled and equipped for the pertinent GWTP projects.

Table 8-17 presents the storage facility projects planned for Zone 40. Table 8-18 presents the pipeline projects that are 16 inches in diameter or larger planned for Phase 1 for all of Zone 40, and identifies the pipelines needed to serve Jackson Township. Table 8-19 presents the pipelines that would be needed during Phases 2 and 3 for all of Zone 40.

Table 8-16. Additional Supply Facilities – Jackson Township

	Supply facility	Treatment/ supply capacity, mgd	Wells		Storage, MG	Pumping station capacity, mgd	Area served	Phase added
			Wells to be drilled and equipped	Wells to be equipped only (already drilled)				
GWTP-1	Poppy Ridge GWTP expansion	6.5		3	3.5	17.0	SSA	Phase 1
GWTP-2	West Jackson GWTP	18.0	5		4.0	21.6	CSA	Phase 2
SW-1	Vineyard WTP expansion	50.0					NSA/CSA	Phase 3
GWTP-3	Bond GWTP	6.5	3		0.5	10.8	CSA	Phase 3
GWTP-4	East Elk Grove GWTP expansion	6.5	2	1		13.0	CSA	Phase 3
SW-2	City POU water supply facilities	19.1					CSA	Phase 3
GWTP-5	Franklin GWTP	7.0	1	3	2.0	21.6	SSA	Phase 3
GWTP-6	Whitelock GWTP	13.0	6		3.0	14.4	SSA	Phase 3
GWTP-7	Big Horn GWTP expansion	8.5	4			17.0	SSA	Phase 2
RW-1	Recycled water supply	4.0					SSA	Phase 3
	Total	139.1	21	7	13.0	115.4		

Table 8-17. Additional Storage Facilities – Jackson Township

	Storage facility	Capacity, MG	Pumping station, mgd	Area served	Phase added
S-1	Phase B NSA Project	10.0	64.0	NSA	1
S-2	Suncreek	3.0	18.0	NSA	3
S-3	Cordova Hills	3.0	21.6	NSA	3
S-4	White Rock	3.0	14.4	NSA	3
S-5	North Vineyard Station	4.0	21.6	CSA	3
S-6	Calvine Meadows Pump Station Expansion		7.2	CSA	3
	Total	23.0	146.8		

Table 8-18. Phase 1 Pipelines - Jackson Township

	Pipeline	Size, in	Length, ft	Area served	Jackson Township [a]
P-1	Sunrise Blvd. Pipeline	16	7,371	NSA	X
P-2	Rio del Oro Pipeline	24	11,593	NSA	
P-3B	Shortened Kiefer Blvd. Pipeline	18-24	18,412	NSA	X
P-4	Eagles Nest Road Pipeline	20-30	7,239	NSA	
P-5	Ranch Pipeline	24	7,000	NSA	
P-6	Arboretum Pipe System	16	3,167	NSA	
P-7	South Jaeger Pipeline	16	5,238	NSA	
P-8	East NSA Pipeline System	16-30	61,389	NSA	
P-9	North Jaeger Pipeline	24	6,365	NSA	
P-10	Phase A NSA Project	42-66	44,662	NSA	X
P-14A	Bradshaw Road Pipeline	16-24	5,300	CSA	
P-15	North Vineyard Station (Florin to Gerber) Pipeline	24-36	11,847	CSA	
P-16	South Watt Connect Pipeline	24	2,693	CSA	
P-17	CSA Backbone Pipeline	24-30	9,948	CSA	
P-18	Elk Grove Loop Connector Pipelines	16-24	11,322	CSA	
P-19	Power Inn Road Pipeline	24	1,273	CSA	
P-20	Big Horn to Kammerer Pipeline	20	7,832	SSA	
P-21	Bruceville Road Pipeline	18	1,267	SSA	
P-22	North Grant Line Road Pipeline	20-24	17,000	NSA	
P-23	Florin-Watt Pipelines	20-24	10,000	CSA	
P-24	North Waterman Pipeline	16	3,000	CSA	
P-25	Sheldon-Waterman Pipelines	18-24	15,000	CSA	
P-26	South East Policy Area Pipelines	18-24	22,000	SSA	
	Total	--	290,918	--	--

[a] *Pipelines that are needed to serve the new growth area are identified with an "X".*

Table 8-19. Phase 2 and 3 Pipelines – Jackson Township	
Pipeline size, in	Length, ft
16	114,351
18	1,739
20	-
24	64,864
30	4,681
36	29,502
42	3,371
54	40,704
Total	259,212

8.3.2 Capital Improvement Plan

This section presents the CIP for Phases 1, 2, and 3.

8.3.2.1 Phase 1 CIP – 10 Year Plan (FY 2015-16 to 2024-25)

The Phase 1 CIP represents the projects that will be constructed over the near term time period and provides the basis for the development of the capacity charge. The development of the Phase 1 CIP requires consideration of the timing and duration of each project. The Phase 1 CIP consists of groundwater, storage, and pipeline projects. No surface water and stand alone storage projects are planned for Phase 1, other than the storage that is part of the GWTP project.

Table 8-20 presents the estimated costs of the Phase 1 water facilities for all of Zone 40. Included in the Phase 1 CIP is an item for non-specific project costs that cover the labor costs of SCWA's planning, development, and development sections.

The timing of the Phase 1 projects presented in Table 8-20 are based on information SCWA has received from developers' engineers regarding the timing of development projects and keeping a somewhat consistent rate of annual expenditure over the duration of Phase 1. The cost of each project would occur over a duration of several years. All of the projects would be completed by the time the end of Phase 1 is reached.

Table 8-20. Phase 1 CIP Cost Estimate - Jackson Township

Projects		Service area	Capital cost	Project timing	
No.	Name			Start, FY	End, FY
Groundwater projects (SCWA projects)					
GWTP-1	Poppy Ridge GWTP Expansion	SSA	$13,832,800	2016	2018
	Well site acquisitions	CSA/SSA	$180,000	2018	2023
	subtotal		$14,012,800		
Regional transmission and storage projects (SCWA projects)					
S-1	Phase B NSA Project	NSA	$84,586,140	2016	2023
P-10	Phase A NSA Project	NSA	$10,088,000	2016	2019
	Tank site acquisition	NSA	$800,000	2017	2018
	subtotal		$95,474,140		
Pipeline projects (Developer projects)					
P-1	Sunrise Blv. Pipeline	NSA	$2,527,900	2018	2020
P-2	Rio del Oro Pipeline	NSA	$3,663,200	2016	2018
P-3B	Kiefer Boulevard Pipeline	NSA	$5,537,700	2020	2022
P-4	Eagles Nest Road Pipeline	NSA	$3,779,200	2019	2021
P-5	Ranch Pipeline	NSA	$2,202,300	2023	2025
P-6	Arboretum Pipe System	NSA	$1,104,300	2021	2023
P-7	South Jaeger Pipeline	NSA	$1,145,500	2020	2022
P-8	East NSA Pipeline System	NSA	$18,212,400	2016	2021
P-9	North Jaeger Pipeline	NSA	$2,027,300	2017	2018
P-14A	Bradshaw Road Pipeline	CSA	$2,724,200	2017	2019
P-15	North Vineyard Station (Florin to Gerber) Pipeline	CSA	$5,025,600	2018	2020
P-16	South Watt Connect Pipeline	CSA	$1,742,400	2019	2021
P-17	CSA Backbone Pipeline	CSA	$5,008,300	2023	2025
P-18	Elk Grove Loop Connector Pipelines	CSA	$4,715,500	2023	2025
P-19	Power Inn Road Pipeline	CSA	$584,300	2024	2025
P-20	Big Horn to Kammerer Pipeline	SSA	$2,494,500	2017	2019
P-21	Bruceville Road Pipeline	SSA	$509,400	2024	2025
P-22	North Grant Line Road Pipeline	NSA	$4,588,800	2022	2024
P-23	Florin-Watt Pipelines	CSA	$4,150,400	2023	2025
P-24	North Waterman Pipeline	CSA	$568,900	2019	2020
P-25	Sheldon-Waterman Pipelines	CSA	$5,685,700	2022	2025
P-26	South East Policy Area Pipelines	SSA	$5,868,800	2021	2024

Table 8-20. Phase 1 CIP Cost Estimate - Jackson Township					
Projects		Service area	Capital cost	Project timing	
No.	Name			Start, FY	End, FY
	subtotal		$84,013,500		
Non-specific project costs			$30,000,000	2016	2025
Studies					
	Recycled Water Master Plan		$250,000	2016	2025
	Water Master Plan		$400,000	2016	2025
	EIR		$500,000	2016	2025
	subtotal		$1,150,000		
Total			$224,650,440		

8.3.2.2 Phase 2 CIP – 10 Year Plan (2026 to 2035)

Phase 2 represents the 10 year period following the end of Phase 1. Since Phase 2 is further in the future, the timing of projects is more speculative and less precise. The level of precision provided in the Phase 1 CIP is not needed for Phase 2 since the capacity charges are developed using the Phase 1 CIP costs and not the CIP costs from the subsequent phases.

The new pipelines that are needed for Zone 40 during Phases 2 and 3 are defined. However, the timing of when each pipeline project is needed is dependent on the location and timing of development. Therefore, this document does not identify the specific pipe segments that would need to be constructed in either Phase 2 or 3. The approach used for the development of the CIP is to assume that approximately half the cost of the Phases 2 and 3 pipelines would occur in Phase 2 and half would occur in Phase 3. Table 8-21 presents the cost estimate for the Phases 2 and 3 pipelines for all of Zone 40.

Table 8-22 presents the cost estimate for the Phase 2 CIP projects for all of Zone 40. The Phase 2 CIP consists of groundwater and pipeline projects. No surface water projects are planned for Phase 2.

Table 8-21. Phases 2 and 3 Pipeline Cost Estimate – Jackson Township		
Diameter, in	Length, ft	Capital cost
16	114,351	$47,700,200
18	1,739	$821,487
20	-	$2,759,900
24	64,864	$34,923,863
30	4,681	$3,182,549
36	29,502	$23,745,357
42	3,371	$3,159,395
54	40,704	$57,370,049
Total	259,212	$173,662,800

Table 8-22. Phase 2 CIP – Jackson Township			
Projects		Service area	Capital cost
No.	Name		
Groundwater projects			
GWTP-2	West Jackson GWTP	CSA	$28,932,200
GWTP-7	Big Horn GWTP Expansion	SSA	$14,744,100
Pipeline projects		NSA/CSA/SSA	$86,831,400
Total			$130,507,700

8.3.2.3 Phase 3 CIP – 17 Year Plan (2036 – Buildout)

The Phase 3 CIP consists of surface water, groundwater, recycled water, storage, and pipeline projects. Table 8-23 presents the cost estimate for the Phase 3 CIP projects for all of Zone 40. The cost estimate for the City POU supply connection (SW-2) is for the construction of the interconnection and the pipeline to convey the water into the CSA's water transmission system. It does not include the City's capacity buy-in cost that was estimated in 2005 to be $32 million.

Table 8-23. Phase 3 CIP – Jackson Township			
Projects		Service area	Capital cost
No.	Name		
Surface water projects			
SW-1	Vineyard WTP Expansion	NSA/CSA	$200,000,000
SW-2	City POU Supply Connection [a]	CSA	$2,034,400
	subtotal		$202,034,400
Groundwater projects			
GWTP-3	Bond GWTP	CSA	$14,725,800
GWTP-4	East Elk Grove GWTP Expansion	CSA	$13,687,000
GWTP-5	Franklin GWTP	SSA	$18,544,000
GWTP-6	Whitelock GWTP	SSA	$26,143,800
	subtotal		$73,100,600
Recycled water projects			
RW-1	Recycled Water Project	SSA	$20,000,000
Storage projects			
S-2	Suncreek Storage	NSA	$11,864,500
S-3	Cordova Hills Storage	NSA	$12,848,700
S-4	White Rock Road Storage	NSA	$10,880,400
S-5	North Vineyard Station Storage	CSA	$5,467,500

Table 8-23. Phase 3 CIP – Jackson Township			
Projects		Service area	Capital cost
No.	Name		
S-6	Calvine Meadows Pump Station Expansion	CSA	$5,084,800
	subtotal		$46,145,900
Pipeline projects		NSA/CSA/SSA	$86,831,400
Total			$428,112,300

(a) *Does not include the City's capacity buy-in cost*

8.3.2.4 CIP Summary

Table 8-24 summarize the Zone 40 CIP costs by project category and phase. The Phases A and B NSA projects in Phase 1 have been categorized as storage projects for the purposes of Table 8-24.

Table 8-24. Zone 40 CIP Cost Summary – Jackson Township				
Project Categories	Phase 1	Phase 2	Phase 3	Total
Surface water projects			$202,034,400	$202,034,400
Groundwater projects	$14,012,800	$43,676,300	$73,100,600	$130,789,700
Recycled water projects			$20,000,000	$20,000,000
Storage projects	$95,474,140		$46,145,900	$141,620,040
Pipeline projects	$84,013,500	$86,831,400	$86,831,400	$257,676,300
Non-specific project costs	$30,000,000			$30,000,000
Studies	$1,150,000			$1,150,000
Total	$224,650,440	$130,507,700	$428,112,300	$783,270,440

Section 9

Cumulative

This section describes the demographics, water demands, water supplies, and needed water system improvements for the Cumulative scenario.

9.1 Water Demands

This section describes the land use, demographics, and demand projections for the Cumulative scenario.

9.1.1 Buildout Demographics

This section describes the projected developed area and demographics for the proposed NewBridge, West Jackson, and Jackson Township new growth areas and for the overall Cumulative scenario.

9.1.1.1 New Growth Areas

Two of the growth areas, Jackson Township and NewBridge, are located within the NSA. One of the growth areas, West Jackson, is located within the CSA. The source of land use information is shown below in Table 9-1. This land use information is the basis of the acreage, demographic, and population estimates described in this section, as well as the water demand projection.

Table 9-1. Sources of Land Use Information for the New Growth Areas

Subarea name	Agency providing land use data and date
NSA	
NewBridge	MacKay & Somps, 4/30/13
Jackson Township	Au Clair Consulting, 4/30/13
CSA	
West Jackson	Wood Rodgers, 4/30/13

The demographics and water demands for the proposed developments were estimated based on the amount of acreage by land use category obtained from the source of land use information presented in Table 9-1. It is anticipated that the land use plans for the proposed development will possibly be revised, perhaps several times, before final approval. It is anticipated that these revisions would not signficantly change the overall total buildout water demand for Zone 40 from the projections presented in this report, as well as the planned water system improvements. If the land use changes and resulting demographics, water demands, and facility needs are determined to be significant, the report would be amended as necessary. The number of connections and dwelling units and the population for each growth area were estimated based on the acreage by land use category. The amount of acreage by land use category was calculated by SCWA staff.

NewBridge

The NewBridge growth area consists of 1,100 acres that are proposed to be used for residential, commercial/office, open space, and public uses. Public uses include an elementary school, electric facility, and fire station as well as a park and community garden. Residential land uses include low, medium, and high density residential units and some acreage for mixed use.

Currently in this area there is a rendering plant site owned by the Sacramento Rendering Company, rural uses, a cemetery and pet cemetery, and a small electric facility operated by SMUD in the southwest corner of the site near the Folsom South Canal. The remainder of the site is non-irrigated lands, wetlands, and river riparian areas.

Proposed land uses and estimates for buildout connections, DUs, and population are shown in Table 9-2. The proposed land uses are illustrated on Figure 9-1.

Table 9-2. Land Use Area and Buildout Demographics for the NewBridge Area

Land use category	Buildout gross area from GIS, acres	Connections	Dwelling units	Population
Rural estate	-	-	-	-
Single family	236	1,047	1,047	3,456
Multi-family - low density	119	132	1,322	3,636
Multi-family - high density	42	59	890	2,270
Commercial	38	17	-	-
Industrial	-	-	-	-
Public	13	1	-	-
Public recreation	44	41	-	-
Mixed land use	13	6	-	-
Right-of-way	48	45	-	-
Self-supported/supplied by others				
Non-irrigated	439	-	-	-
Industrial-unutilized	-	-	-	-
Agricultural	106	-	-	-
Total	1,100 [(a)]	1,300 [(a)]	3,300 [(a)]	9,400 [(a)]

[(a)] *Totals are rounded to the 100's place.*

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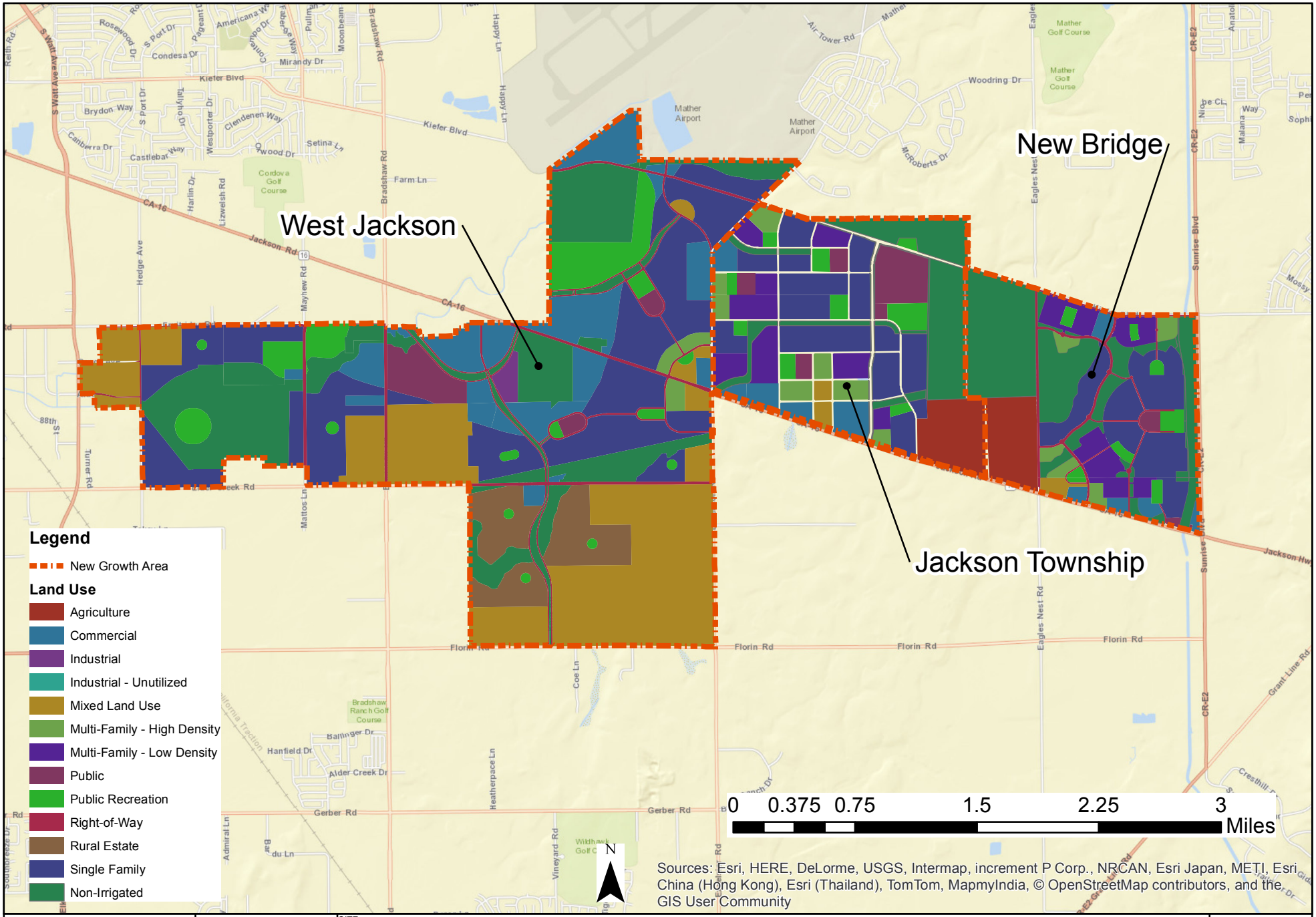


Brown AND Caldwell

DEPARTMENT OF WATER RESOURCES
SACRAMENTO COUNTY WATER AGENCY

PROJECT	SITE	
148130	**Zone 40 Water Supply Master Plan Amendment**	**Figure 9-1**
DATE 7/29/15	TITLE **New Growth Areas Land Use**	

Jackson Township

The Jackson Township growth area consists of 1,300 acres that are proposed for the development of residential, commercial, office and mixed use buildings, elementary schools, a joint middle/high school, a fire station and community center, parks, wetland space, open space, and agriculture. Currently the land is used for agriculture as well as the Sacramento Raceway.

Proposed land uses and estimates for buildout connections, DUs, and population are shown in Table 9-3. The proposed land uses are illustrated on Figure 9-1.

Table 9-3. Land Use Area and Buildout Demographics for the Jackson Township Area

Land use category	Buildout gross area from GIS, acres	Connections	Dwelling units	Population
Rural estate	-	-	-	-
Single family	348	1,541	1,541	5,085
Multi-family - low density	157	175	1,745	4,799
Multi-family - high density	84	118	1,777	4,531
Commercial	90	40	-	-
Industrial	-	-	-	-
Public	5	0	-	-
Public recreation	176	163	-	-
Mixed land Use	20	9	-	-
Right-of-way	-	-	-	-
Self-supported/supplied by others	0	0		
Non-irrigated	280	-	-	-
Industrial-unutilized	-	-	-	-
Agricultural	110	-	-	-
Total	1,300 [(a)]	2,000 [(a)]	5,100 [(a)]	14,400 [(a)]

[(a)]*Totals are rounded to the 100's place.*

West Jackson

The West Jackson growth area within Zone 40 consists of 4,100 acres proposed for the development of residential property, mixed land uses, and commercial and office land uses, with the remainder for recreation, public, and non-irrigated lands. The portion of West Jackson that is outside of the Zone 40 service area will be served water by Cal Am and is not included in this analysis. The area currently is made up of existing and former mining properties and rural residential, agricultural, and industrial land use types. Most of the mining activities have been completed and the mining sites reclaimed, but some of the properties are still used for mining related activities.

Proposed land uses and estimates for buildout connections, DUs, and population are shown in Table 9-4. The proposed land uses are illustrated on Figure 9-1.

Table 9-4. Land Use Area and Buildout Demographics for the West Jackson Area

Land use category	Buildout gross area from GIS, acres	Connections	Dwelling units	Population
Rural estate	256	107	107	352
Single family	914	4,048	4,048	13,360
Multi-family - low density	-	-	-	-
Multi-family - high density	34	47	710	1,810
Commercial	441	198	-	-
Industrial	21	9	-	-
Public	-	-	-	-
Public recreation	341	316	-	-
Mixed land Use	1,006	451	-	-
Right-of-way	297	275	-	-
Self-supported/supplied by others				
Non-irrigated	838	-	-	-
Industrial-unutilized	-	-	-	-
Agricultural	-	-	-	-
Total	4,100 [(a)]	5,500 [(a)]	4,900 [(a)]	15,500 [(a)]

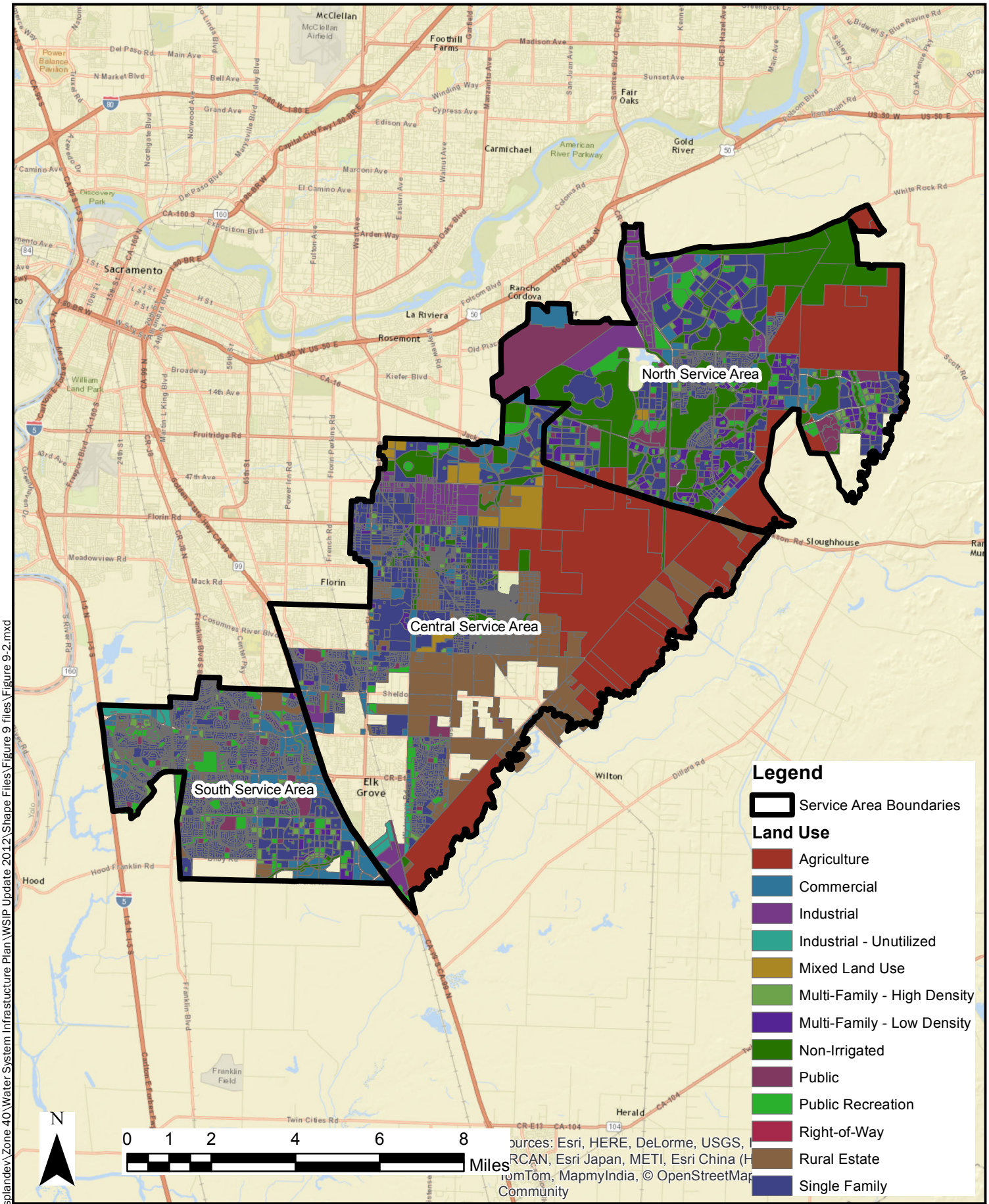
[(a)]*Totals are rounded to the 100's place.*

9.1.1.2 Cumulative Scenario

The 2010 and buildout developed land use acreages by land use category are summarized in Table 9-5. The acreages presented in Table 9-5 are net acres for 2010 and gross acres for the study area at buildout. The buildout land use for the study area is illustrated on Figure 9-2.

Table 9-5. 2010 and Buildout Area By Land Use - Cumulative		
Land use category	2010 developed area, net acres	Buildout area, gross acres
Rural estate	1,380	6,870
Single family	6,970	18,140
Multi-family - low density	220	3,750
Multi-family - high density	390	1,310
Commercial	1,520	4,330
Industrial	1,110	3,470
Industrial-unutilized	340	580
Public	920	2,120
Public recreation	1,270	4,820
Mixed land use	20	1,230
Right-of-way	70	580
Subtotal, municipal water supply land area	14,210	47,200
Self-supported/supplied by others	-	870
Non-irrigated	500	9,800
Agricultural	-	11,620
Total	14,710	69,490

Note: Elk Grove wholesale area is not included in the 2010 developed area acreage and is included in the buildout acreage because it was not available.



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DATE	PROJECT	SITE
07/30/15	148130	Zone 40 Water Supply Master Plan Amendment

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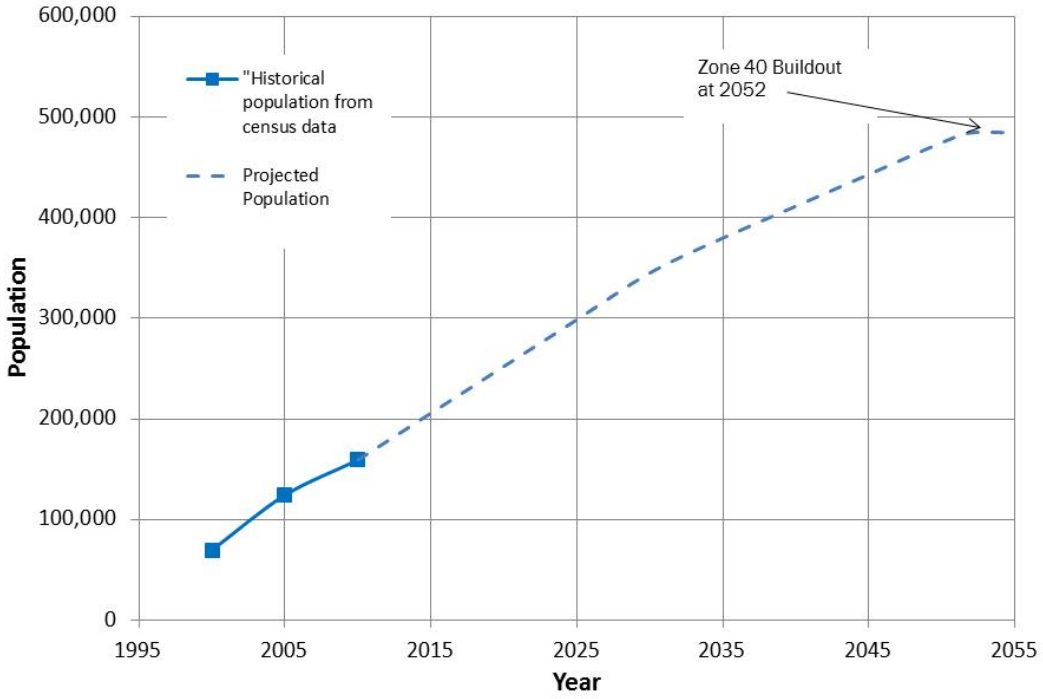
DEPARTMENT OF WATER RESOURCES
SACRAMENTO COUNTY WATER AGENCY

TITLE

Buildout Land Use - Cumulative

Figure 9-2

The historical and projected population is shown on Figure 9-3. The projected DUs, population, and connections at buildout by land use category are presented in Table 9-6. Population per DU and per connection, DUs per connection, and connections per acre by land use category are also shown in this table. The number of people per connection projected at buildout is significantly higher than the 2010 value because of the proportionally large increase in multi-family land use area compared to single family land use area from 2010 to buildout. A larger proportion of the residential dwelling units and connections will be multifamily at buildout compared to 2010, which will result in a higher number of people per connection.



Elk Grove wholesale population is included. 2010 Elk Grove wholesale population is estimated to equal 10,144 people based on 3,210 Elk Grove wholesale connections and 3.16 people per connection in 2010.

Figure 9-3. Historical and Projected Population

Table 9-6. Buildout Dwelling Units, Population, and Connections by Land Use Category - Cumulative

Land use category	Dwelling units	Population	Connections	Population/ dwelling unit	Population/ connection	Dwelling units/ connection	Connections/ acre
Rural estate	3,300	11,000	3,300	3.3	3.3	1.0	0.5
Single family	87,100	287,500	87,100	3.3	3.3	1.0	4.8
Multi-family - low density	41,800	115,000	4,200	2.8	27.4	10.0	1.1
Multi-family - high density	27,700	70,700	1,800	2.6	39.3	15.0	1.4
Commercial			1,900				0.4
Industrial			1,400				0.4
Industrial-unutilized							-

Table 9-6. Buildout Dwelling Units, Population, and Connections by Land Use Category - Cumulative

Land use category	Dwelling units	Population	Connections	Population/ dwelling unit	Population/ connection	Dwelling units/ connection	Connections/ acre
Public			200				0.1
Public recreation			4,100				0.9
Mixed land use			500				0.4
Right-of-way			700				1.2
Self-supported/ supplied by others			-				
Non-irrigated			-				
Agricultural			-				
Total	159,900	484,200	105,200	3.0	4.6	1.5	1.5

The 2010 and projected buildout DUs, population, and connections by service area are shown in Table 9-7. The projected buildout number of DUs and population for the NSA, CSA, and SSA are very similar; however the numbers of connections in the NSA are significantly less than the CSA and SSA. This is because there is a greater number of multi-family DUs in the NSA than the CSA and SSA. Since there are several multi-family dwelling units per connection, a lower number of connections is projected in the NSA to serve the similar number of dwelling units. Table 9-8 shows the projected number of connections by service area in five-year increments through 2050 and at buildout. The projected number of connections through buildout for each of the growth scenarios is illustrated on Figure 9-4.

Table 9-7. 2010 and Buildout Dwelling Units, Population, and Connections by Service Area - Cumulative

Service area	2010			Buildout		
	Dwelling units	Population	Connections	Dwelling units	Population	Connections
NSA	4,000	11,700	4,600	54,300	159,600	28,800
CSA	17,400	56,600	15,600	54,300	166,200	38,300
SSA	30,600	91,300	28,900	51,300	158,400	38,100
Total	52,000	159,600	49,100	159,900	484,200	105,200

Note: 2010 dwelling units, population, and connections in Elk Grove wholesale area are estimated and included in the CSA values. Elk Grove wholesale area service connections in 2010 are estimated to be 3,200 connections and the DUs are estimated to be 3,500 based on a 1.1 DU per connection factor. The population is estimated to equal 10,144 people.

Table 9-8. Projected Connections in 5-Year Increments - Cumulative

Service area	2010	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2052)
NSA										
Jackson Township	-	-	510	1,020	1,530	2,050	2,050	2,050	2,050	2,050
NewBridge	-	-	340	670	1,010	1,350	1,350	1,350	1,350	1,350
Remaining NSA	4,600	5,600	6,600	8,300	9,900	12,700	16,500	20,200	24,000	25,400
Total	4,600	5,600	7,500	10,000	12,500	16,100	19,800	23,600	27,300	28,800
CSA	-	-	-	-	-	-	-	-	-	-
West Jackson	-	-	1,360	2,730	4,090	5,450	5,450	5,450	5,450	5,450
Remaining CSA	15,600	16,600	17,100	18,200	19,400	21,600	25,300	29,100	32,800	32,900
Total	15,600	16,600	18,400	20,900	23,400	27,000	30,800	34,500	38,300	38,300
SSA	-	-	-	-	-	-	-	-	-	-
Total	28,900	30,300	32,800	35,300	37,800	38,100	38,100	38,100	38,100	38,100
Total Zone 40	49,100	52,600	58,800	66,300	73,800	81,300	88,800	96,300	103,800	105,200

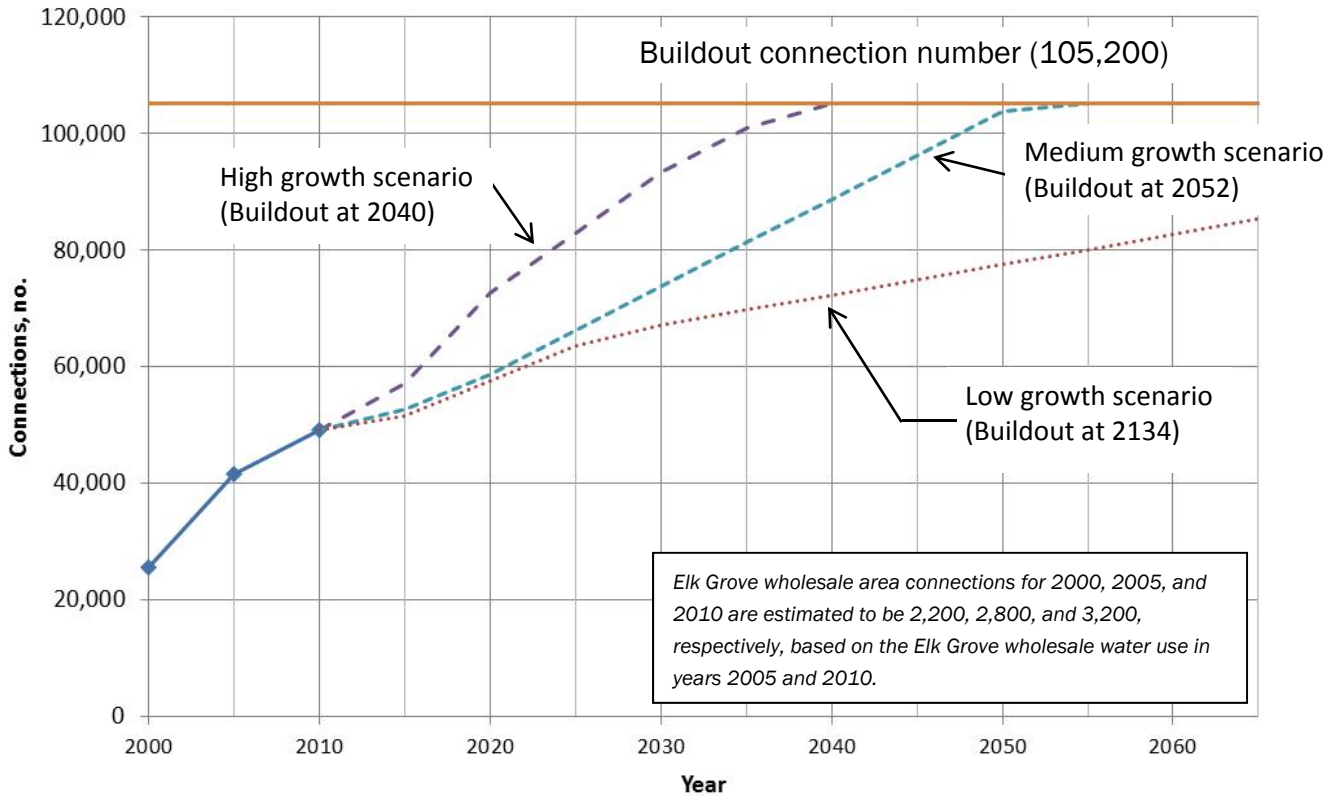


Figure 9-4. Historical and Projected Zone 40 Connections at High, Medium, and Low Growth Rates - Cumulative

9.1.2 Buildout Water Demands

This section presents the buildout water demand for the three new growth areas and for the overall Cumulative scenario. The buildout water demands for the NewBridge, Jackson Township, and West Jackson new growth areas are shown in Tables 9-9, 9-10, and 9-11, respectively.

Table 9-9. NewBridge Area Buildout Water Demands

Land use	Buildout gross area from GIS, acres	Gross UWDF, ac-ft/yr/ac	Water demand, ac-ft/yr
Rural estate		1.37	
Single family	236	2.13	504
Multi-family - low density	119	2.44	289
Multi-family - high density	42	3.33	140
Commercial	38	2.02	78
Industrial		2.02	
Public	13	0.81	10
Public recreation	44	2.80	123
Mixed land use	13	2.15	28
Right-of-way	48.2	0.18	9
Self-supported/supplied by others			
Non-irrigated	439		
Industrial-unutilized			
Agricultural	106		
Subtotal	1,099		1,181
Water loss (7.5% of sales)			89
Total			1,270

Table 9-10. Jackson Township Area Buildout Water Demands			
Land use	Buildout gross area from GIS, acres	Gross UWDF, ac-ft/yr/ac	Water demand, ac-ft/yr
Rural estate		1.37	
Single family	348	2.13	741
Multi-family - low density	157	2.44	382
Multi-family - high density	84	3.33	280
Commercial	90	2.02	181
Industrial		2.02	
Public	5	0.81	4
Public recreation	176	2.80	492
Mixed land use	20	2.15	42
Right-of-way		0.18	
Self-supported/supplied by others			
Non-irrigated	280		
Industrial-unutilized			
Agricultural	110		
Subtotal	1,268		2,123
Water loss (7.5% of sales)			159
Total			2,282

Table 9-11. West Jackson Area Buildout Water Demands			
Land use	Buildout gross area from GIS, acres	Gross UWDF, ac-ft/yr/ac	Water demand, ac-ft/yr
Rural estate	256	1.37	351
Single family	914	2.13	1,947
Multi-family - low density		2.44	
Multi-family - high density	34	3.33	112
Commercial	441	2.02	891
Industrial	21	2.02	43
Public	-	0.81	-
Public recreation	341	2.80	955
Mixed land use	1,006	2.15	2,163
Right-of-way	297	0.18	54
Self-supported/supplied by others			

Table 9-11. West Jackson Area Buildout Water Demands			
Land use	Buildout gross area from GIS, acres	Gross UWDF, ac-ft/yr/ac	Water demand, ac-ft/yr
Non-irrigated	838		
Industrial-unutilized			
Agricultural			
Subtotal	4,149		6,516
Water loss (7.5% of sales)			489
Total			7,004

The buildout water demand by land use category for the Cumulative scenario is shown in Table 9-12. The recycled water demand in the SSA is included in the demand projections in Table 9-12 to provide the total water demand for this scenario. There is no recycled water demand assumed for the three new growth areas.

Table 9-12. Buildout Water Demand by Land Use Category - Cumulative	
Land use category	Water demand, ac-ft/yr
Rural estate	9,400
Single family	38,600
Multi-family - low density	9,200
Multi-family - high density	4,400
Commercial	8,700
Industrial	7,000
Public	1,700
Public recreation	13,500
Mixed land use	2,600
Right-of-way	100
Subtotal (land use with water demand)	95,300
Water system losses (7.5% of water sales)	7,100
Self-supplied/supported by others	0
Industrial-unutilized	0
Non-irrigated	0
Agricultural	0
Total production	102,400

9.1.3 Water Demand Growth Projection

The projected water demands by service area are shown in Table 9-13 and illustrated on Figure 9-5.

Table 9-13. Projected Water Demand in 5-Year Increments - Cumulative, ac-ft/yr

Service area	2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2052)
NSA										
Jackson Township			600	1,150	1,700	2,300	2,300	2,300	2,300	2,300
NewBridge			300	650	950	1,300	1,300	1,300	1,300	1,300
Remaining NSA	4,200	5,300	6,400	8,300	10,450	13,900	18,800	23,900	29,200	31,300
Total	4,200	5,300	7,300	10,100	13,100	17,500	22,400	27,500	32,800	34,900
CSA										
West Jackson			1,750	3,500	5,250	7,000	7,000	7,000	7,000	7,000
Remaining CSA	15,200	16,400	16,650	17,700	18,850	21,100	25,400	29,800	34,300	34,400
Total	15,200	16,400	18,400	21,200	24,100	28,100	32,400	36,800	41,300	41,400
SSA										
Total	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100
Total study area	34,500	38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,400

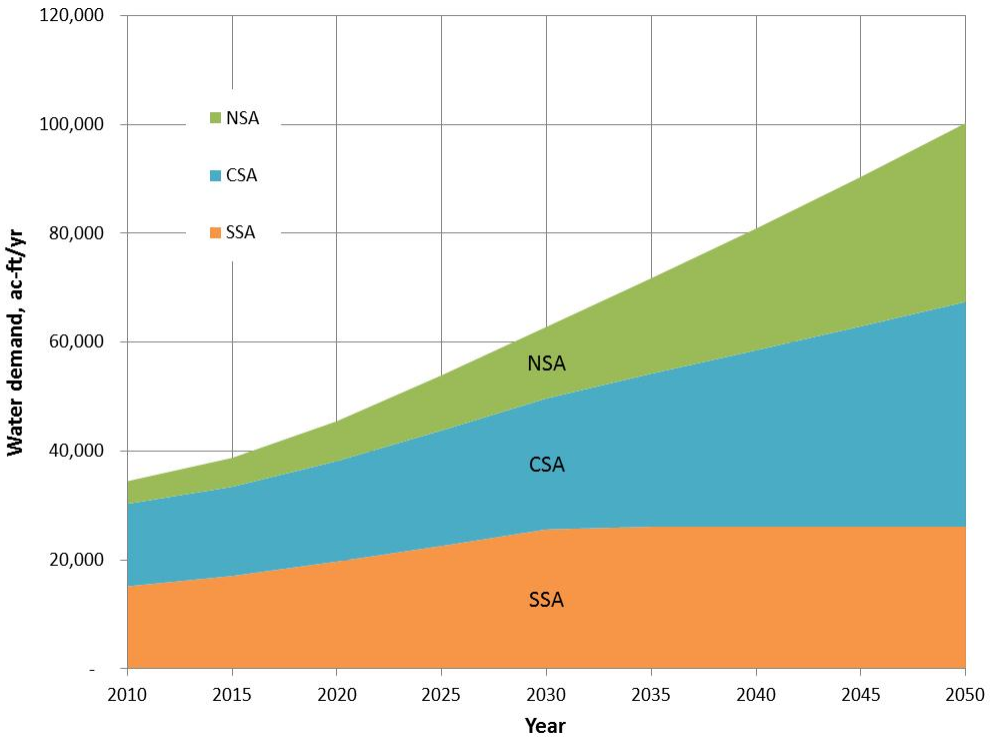


Figure 9-5. Water Demand Projection – Cumulative

9.2 Water Supply Capacity

This section quantifies the amount of supply capacity that would be needed to meet demands through buildout. The supply capacity and the use of the supply are presented on both a maximum day basis and an annual basis.

9.2.1 Maximum Day Demand Supply Capacity and Use

This section compares the projected maximum day demand to supply capacity for each of the three service areas through buildout. The maximum day demand to supply capacity comparison tables for each of the three service areas are presented in Appendix D. The future supply capacity is based on the proposed supply and conveyance facilities that are presented in Section 9.3. The maximum day use of each type of supply is quantified for the wet/average years and dry years.

9.2.1.1 North Service Area

Surface water supply from the existing Vineyard SWTP would be provided in Phase 1 to replace the current groundwater supply provided by the Anatolia GWTP. The construction of the Phase A NSA Project (P-10) and Phase B NSA Project (S-1) will allow for some of the Vineyard SWTP's existing capacity to be used to supply the NSA. It is assumed that 65 percent of the Vineyard SWTP would be used to supply the NSA. The Mather wells are used below their capacities in dry years since SCWA operational staff prefer to minimize their use due to the possible impact to nearby contamination plumes.

9.2.1.2 Central Service Area

Once several projects are constructed, including the Phase A NSA Project (P-10) and Phase B NSA Project (S-1), some of the Vineyard SWTP's existing capacity will be used to also supply the NSA. The future West Jackson GWTP will be used to supply the CSA, although it will be connected to the transmission system such that it could also provide supply to the NSA.

9.2.1.3 South Service Area

New groundwater supply capacity would be needed during Phase 1. Additional groundwater supply capacity would be added in Phases 2 and 3. No new surface water supply capacity is specifically planned for the SSA, although the planned Phase 3 expansion of the Vineyard SWTP would provide some additional surface water. The proposed GWTPs for Phase 3 would provide a maximum day groundwater supply capacity that exceeds the SSA's projected buildout maximum day demand. These Phase 3 GWTPs could be used to provide dry year groundwater supply to other areas or groundwater storage, or function as additional backup facilities.

9.2.1.4 Summary

Table 9-14 and Figure 9-6 present the maximum day demand and supply capacity comparison for Zone 40 from 2013 through buildout. The maximum day use of each type of supply is quantified for the wet/average years and dry years. As can be seen in Table 9-14 and consistent with the established conjunctive use program, the total supply capacity exceeds the maximum day demand for each phase, but neither the groundwater nor surface water supply capacity alone can meet the maximum day demand.

As shown in Table 9-14, Zone 40 will utilize a varying mixture of groundwater and surface water supplies on the maximum demand day based on whether it is a wet/average year or a dry year. The ability to practice conjunctive use by maximizing the use of surface water in wet and average years and minimizing the use of surface water in dry years is limited by the available surface water and groundwater supply capacities and to some extent by distribution system constraints. Several observations are made regarding the maximum day supply capacity and use that pertains to all three phases:

1. In dry years, there is sufficient groundwater capacity to be able to significantly reduce the amount of surface water use on the maximum day compared to wet/average years.
2. In dry years, most of the groundwater capacity will be utilized on the maximum demand day.
3. In wet years, there is sufficient surface water capacity to be able to supply over half of the maximum day demand.
4. In wet years, up to half of the groundwater capacity will be used to help supply the maximum day demand.

Table 9-14. Maximum Day Demand to Supply Comparison for Zone 40 - Cumulative, mgd

Zone 40		2013	Phase 1			Phase 2		Phase 3			
			2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2052)
Maximum day demand											
	Zone 40 total	61.5	69.2	81.2	96.3	112.2	128.1	144.4	161.4	179.0	183.0
Existing supply capacity [a]											
	Groundwater [b]	72.5	72.5	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
	Surface water	61.1	61.1	45.1	28.6	28.6	28.6	28.6	28.6	28.6	28.6
	Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Total	136.6	136.6	114.1	97.6	97.6	97.6	97.6	97.6	97.6	97.6
Planned future supply capacity											
	Groundwater	0.0	0.0	0.0	6.5	15.5	33.0	33.0	33.0	53.0	66.0
	surface water [b]	0.0	0.0	16.0	32.5	32.5	32.5	32.5	32.5	82.5	101.6
	Recycled water									2.9	2.9
Total supply capacity											
	Groundwater	72.5	72.5	66.0	72.5	81.5	99.0	99.0	99.0	119.0	132.0
	Surface water	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	111.1	130.2
	Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	136.6	136.6	130.1	136.6	145.6	163.1	163.1	163.1	236.0	268.1
Use of supply: average/wet years											
	Groundwater	20.4	25.8	21.1	46.6	57.1	65.2	72.9	80.7	68.4	49.5
	Surface water	38.1	40.3	57.1	46.7	52.1	59.9	68.5	77.6	104.7	127.6
	Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	61.5	69.2	81.2	96.3	112.2	128.1	144.4	161.4	179.0	183.0
Use of supply: dry years											
	Groundwater	58.5	64.3	60.5	68.5	77.1	92.8	100.5	108.3	108.2	108.2
	Surface water	0.0	1.9	17.7	24.8	32.1	32.3	40.9	50.0	65.0	69.0
	Recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	61.5	69.2	81.2	96.3	112.2	128.1	144.4	161.4	179.0	183.0

[a] *Groundwater supply decrease in 2020 due to Anatolia GWTP removed from service.*

[b] *Reduction in existing capacity and added future surface water supply capacity in 2020 and 2025 because planned delivery to NSA from existing Vineyard SWTP accounted as future supply capacity as requested by SCWA staff.*

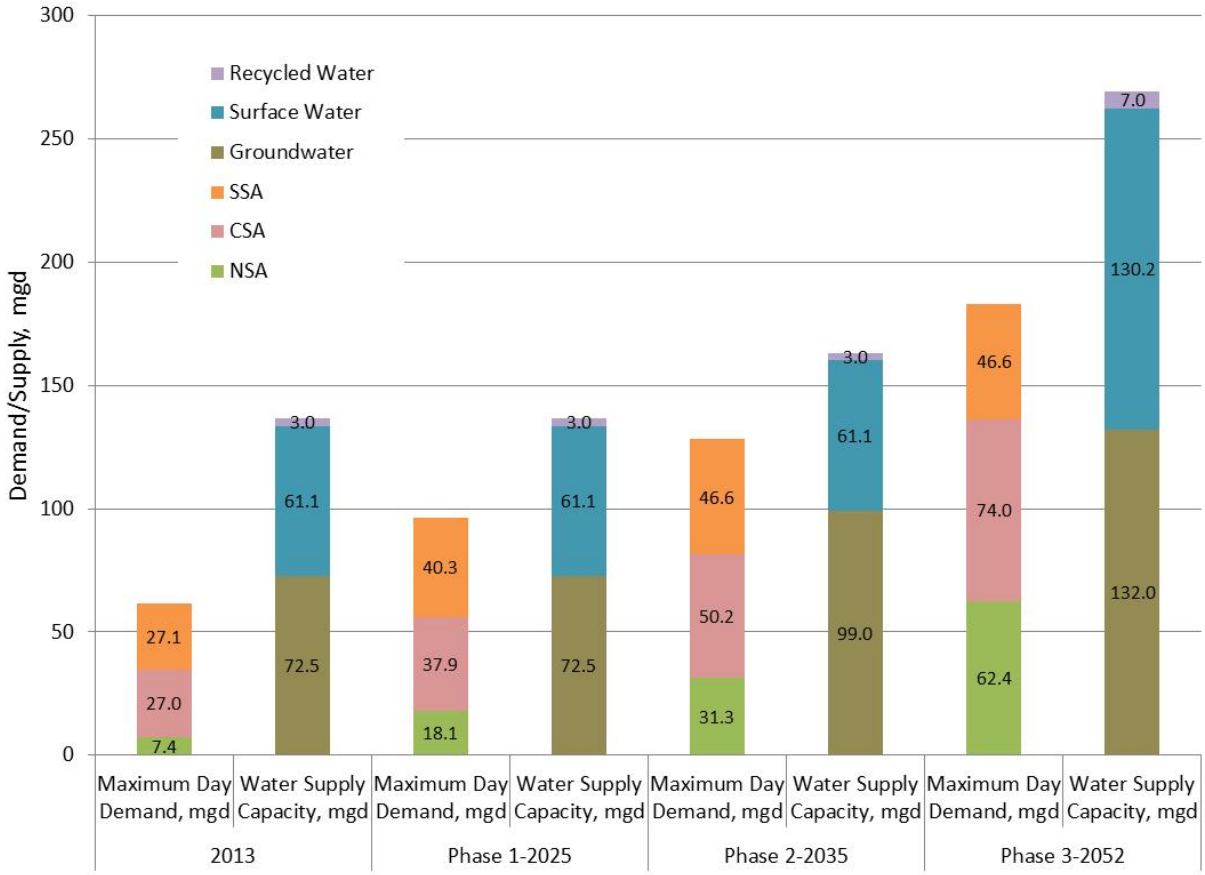


Figure 9-6. Maximum Day Demand to Supply Capacity Comparison by Phase - Cumulative

Figure 9-7 presents the maximum day use of the water supplies by type for wet/average years and dry years for 2013, Phase 1, Phase 2, and Phase 3.

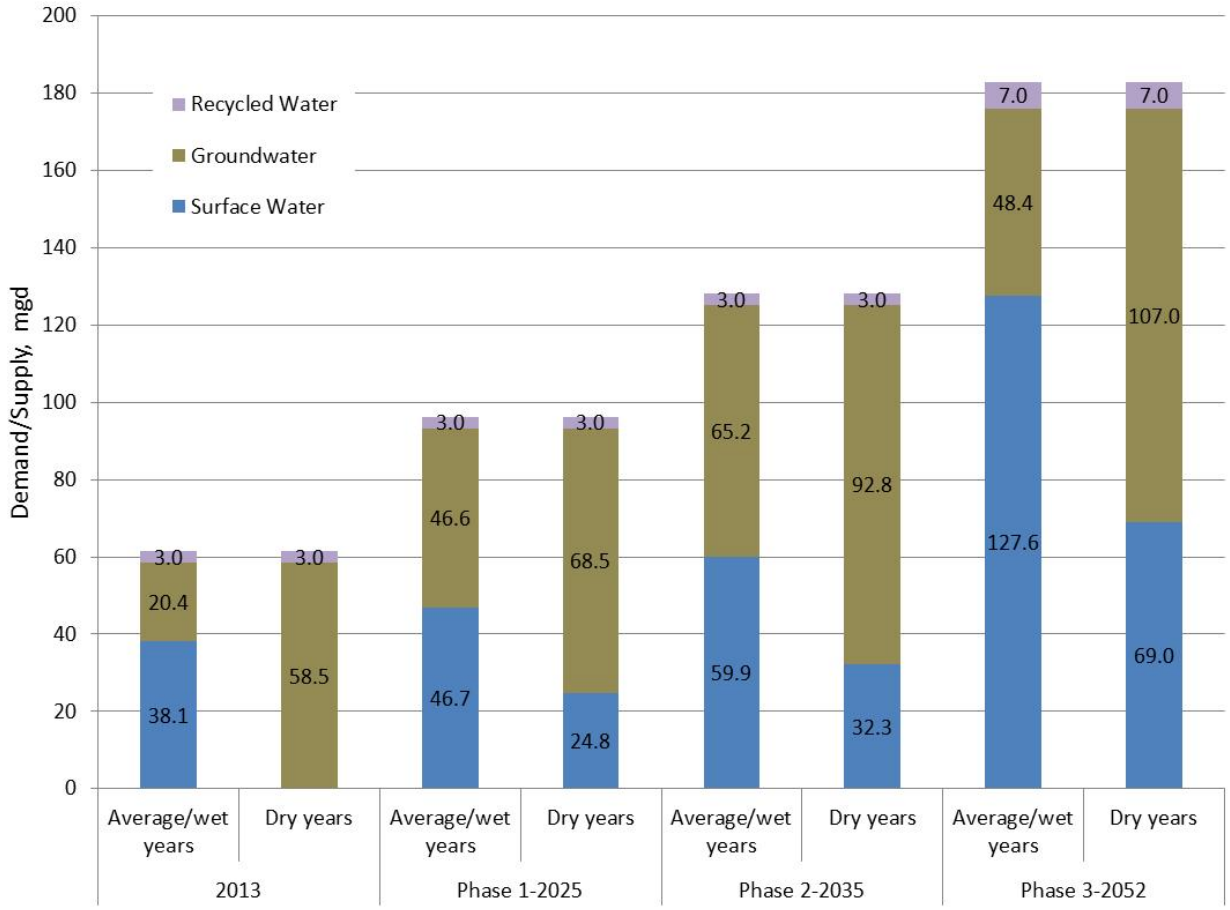


Figure 9-7. Maximum Day Use of Water Supplies by Phase and Climate Year Type - Cumulative

9.2.2 Annual Water Supply

Table 9-15 presents the annual supply to demand comparison for a normal climate year. Table 9-16 presents the annual supply to demand comparison for a single dry year and Table 9-17 presents the comparison for a multiple dry year. The presented supply values are the supplies available to Zone 40 assuming there are no facility supply capacity constraints. The facility improvements needed to expand existing supply capacity are presented in Section 9.3. Projections of the use of each supply source that consider supply facility capacity constraints for each service area for normal and dry years are presented in Appendix D. Figure 9-8 presents the projected use of water supplies by phase and climate year type.

As can be seen in Tables 9-15, 9-16, and 9-17, as well as in Appendix D, the total water supply is greater than the projected demands. This analysis verifies the sufficiency of the water supply for the Cumulative scenario.

Table 9-15. Supply and Demand Comparison-Normal Year - Cumulative, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2052)
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
Appropriative water [(a)]	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
Demand	38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,500
Difference	146,800	140,000	131,600	122,700	113,700	104,600	95,100	86,800	84,600

[(a)] *Only 35,000 ac-ft/yr assumed to be available without the construction of seasonal storage, as described in Section 4.2.2.*

Table 9-16. Supply and Demand Comparison-Single Dry Year - Cumulative, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2052)
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply allocation	11,300	16,000	13,100	14,600	16,800	19,200	21,800	22,500	22,500
Appropriative water									
City of Sacramento American River POU water rights									
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	101,500	106,200	103,300	104,800	107,000	109,400	112,000	114,300	114,300
Demand	38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,500
Difference	62,800	60,700	49,400	42,000	35,200	28,500	21,600	14,000	11,800

Table 9-17. Supply and Demand Comparison-Multiple Dry Years - Cumulative, ac-ft/yr

Year		2015	2020	2025	2030	2035	2040	2045	2050	2052
First year	Supplies									
	US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
	Appropriative water [a]	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
	City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
	Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
	Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
	Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
	Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Supply totals	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
	Demand	38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,500
	Difference	146,800	140,000	131,600	122,700	113,700	104,600	95,100	86,800	84,600
Second year	Supplies									
	US Bureau of Reclamation-CVP supply	17,000	24,000	19,700	21,900	25,100	28,800	32,600	33,800	33,800
	Appropriative water	-	-	-	-	-	-	-	-	-
	City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
	Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
	Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
	Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
	Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Supply totals	107,200	114,200	109,900	112,100	115,300	119,000	122,800	125,600	125,600
	Demand	38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,500
	Difference	68,500	68,700	56,000	49,300	43,500	38,100	32,400	25,300	23,100
Third year	Supplies									
	US Bureau of Reclamation-CVP supply	11,300	16,000	13,100	14,600	16,800	19,200	21,800	22,500	22,500
	Appropriative water	-	-	-	-	-	-	-	-	-
	City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
	Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
	Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
	Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
	Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Supply totals	101,500	106,200	103,300	104,800	107,000	109,400	112,000	114,300	114,300
	Demand	38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,500
	Difference	62,800	60,700	49,400	42,000	35,200	28,500	21,600	14,000	11,800

[a] *Only 35,000 ac-ft/yr assumed to be available without the construction of seasonal storage, as described in Section 4.2.2.*

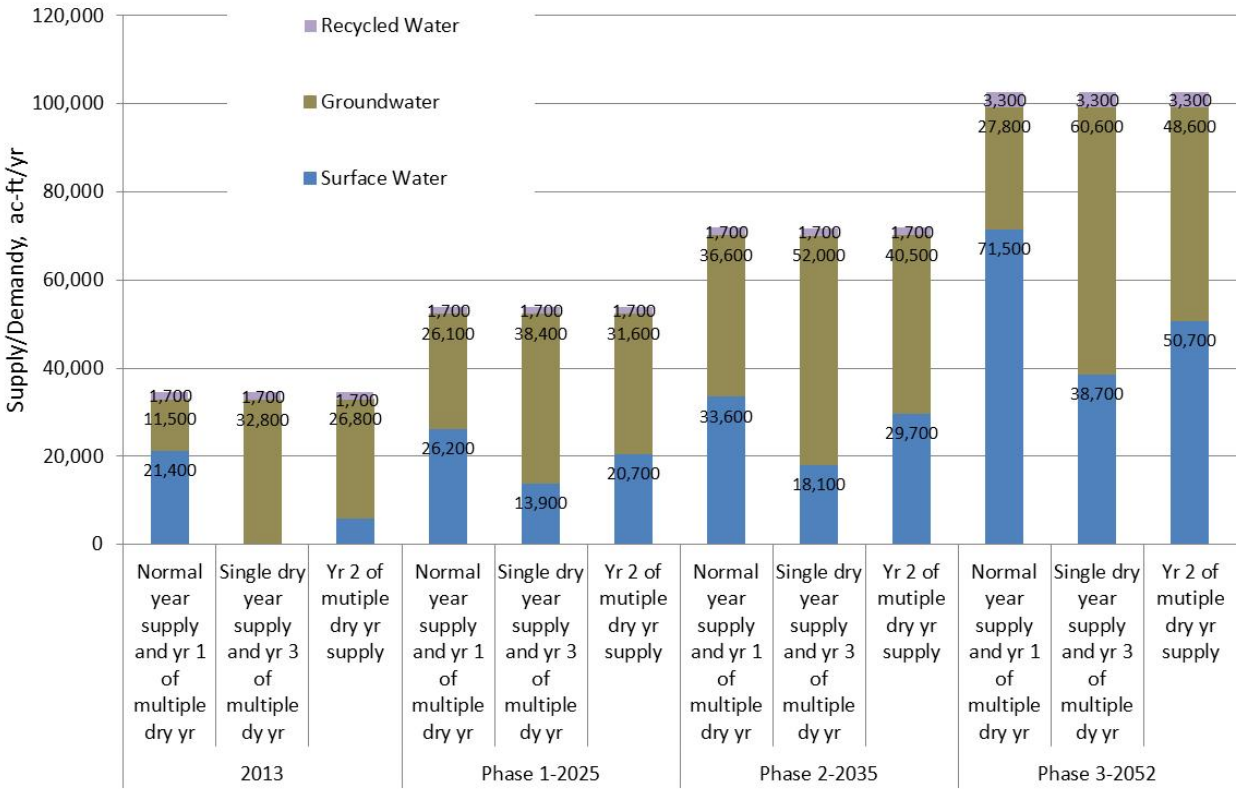


Figure 9-8. Zone 40 Annual Use of Water Supplies by Phase and Climate Year Type

9.2.3 Storage and Pumping Station Capacity Evaluation

Table 9-18 and 9-19 presents a summary comparison of the planned to required storage volume and pumping station capacities for this scenario. As shown in Tables 9-18 and 9-19, the planned storage facilities provide more than the required storage volumes and pump station capacities. The detailed storage evaluation tables for each pressure zone are presented in Appendix D.

Table 9-18. Zone 40 Storage Capacity Evaluation Summary - Cumulative

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)
Provided storage volume, MG				
Existing	42.2	42.2	42.2	42.2
Future	0.0	13.5	17.5	36.0
Total	42.2	55.7	59.7	78.2
Required storage volume, MG				
Equalization	12.3	19.0	25.2	32.9
Fire	3.8	3.8	3.8	3.8
Emergency	10.3	15.8	21.0	27.4
Total	26.4	38.6	50.1	64.2
Difference (provided minus required)	15.8	17.1	9.6	14.0

Table 9-19. Zone 40 Pump Station Capacity Evaluation Summary - Cumulative

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)
Provided pump station capacity from storage, mgd				
Existing	107.6	118.2	112.3	101.3
Future	0.0	20.5	32.6	88.1
Total	107.6	138.7	144.9	189.4
Required pump station capacity from storage, mgd	65.8	96.6	126.2	164.6
Difference (provided minus required)	41.8	42.1	18.7	24.8

9.3 Water System Facilities and Capital Improvement Program

This section describes the water system facilities needed to supply the Cumulative scenario, develops the costs, and presents the CIP for Phases 1, 2, and 3.

9.3.1 Needed Water System Facilities

The water system facilities needed to serve the Phase 1, 2, and 3 demands are the same as defined for the Baseline scenario. The exception is that additional pipelines would be needed in the NSA and CSA to supply the new growth areas. The locations of the Phase 1 projects in the NSA are shown on Figure 9-9. The locations of the Phase 1 projects in the CSA and SSA are shown on Figure 9-10. The locations of the Phase 2 and 3 projects in the NSA are shown on Figure 9-11. The locations of the Phase 2 and 3 projects in the CSA and SSA are shown on Figure 9-12.

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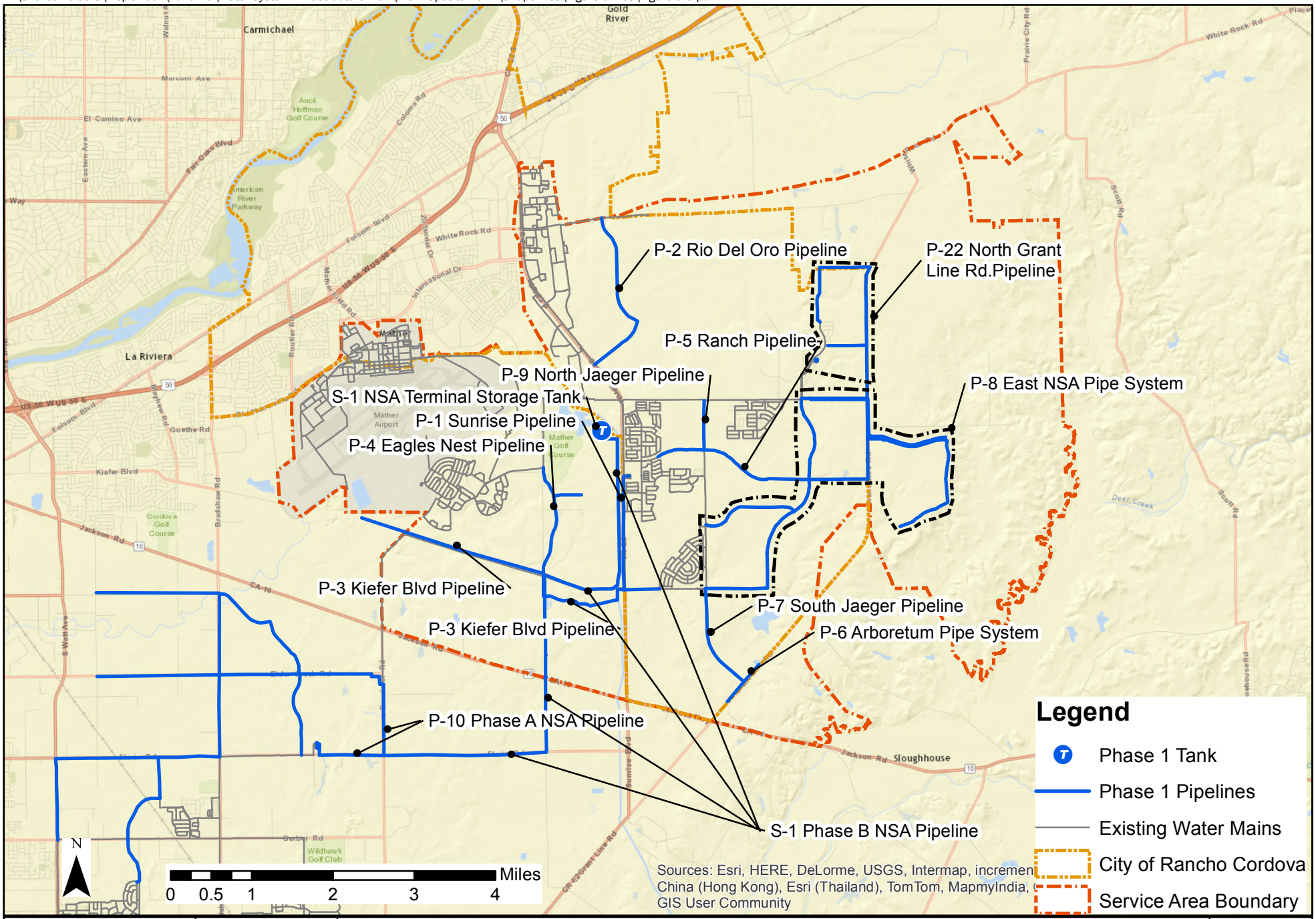

Brown AND Caldwell DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY	PROJECT 148130 DATE 7/30/15	SITE **Zone 40 Water Supply Master Plan Amendment** TITLE **Phase 1 CIP Projects - NSA - Cumulative**	**Figure 9-9**

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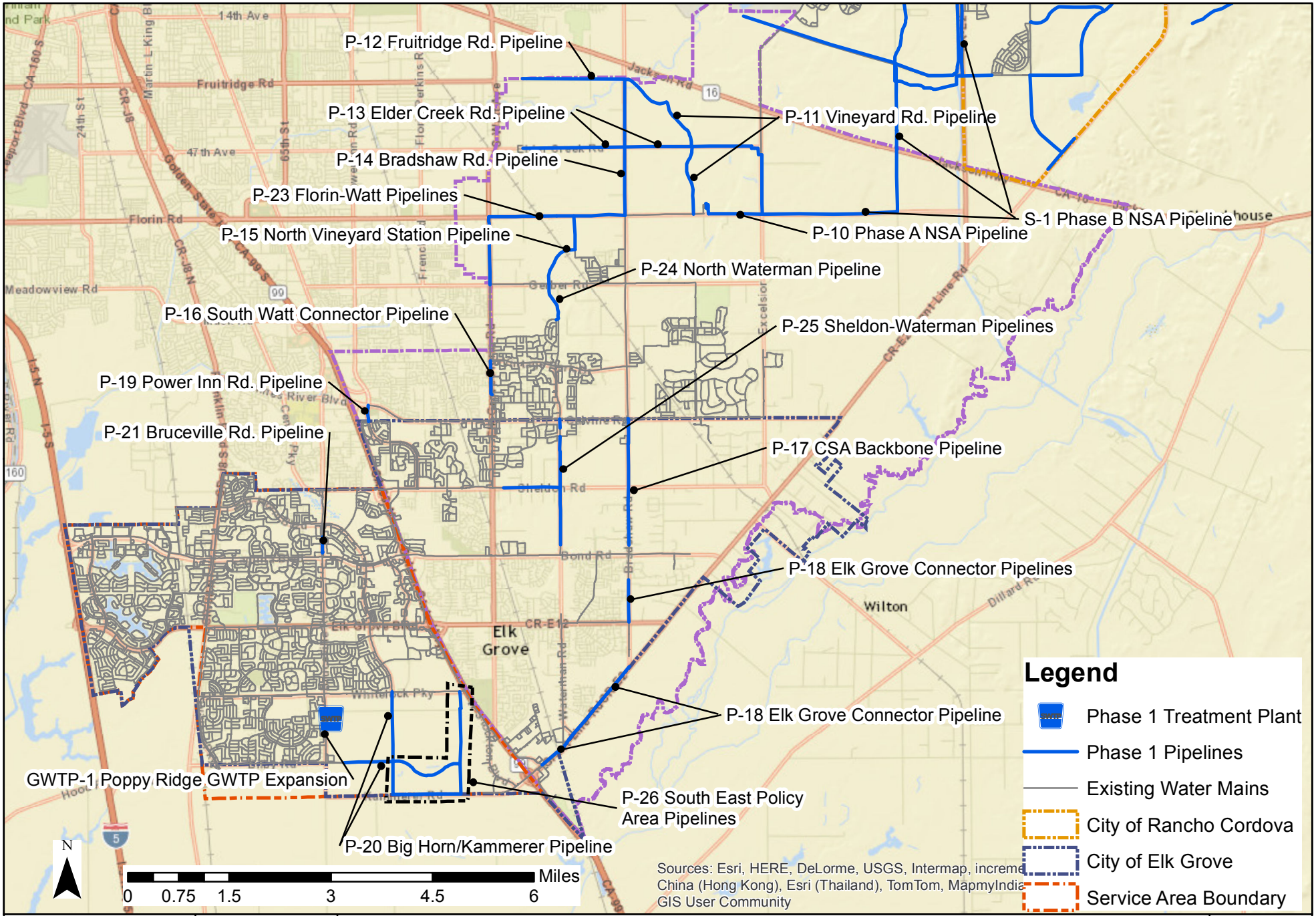

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DEPARTMENT OF WATER RESOURCES
SACRAMENTO COUNTY WATER AGENCY

PROJECT	SITE	
148130	**Zone 40 Water Supply Master Plan Amendment**	**Figure 9-10**
DATE 7/30/15	TITLE **Phase 1 CIP Projects - CSA & SSA - Cumulative**	

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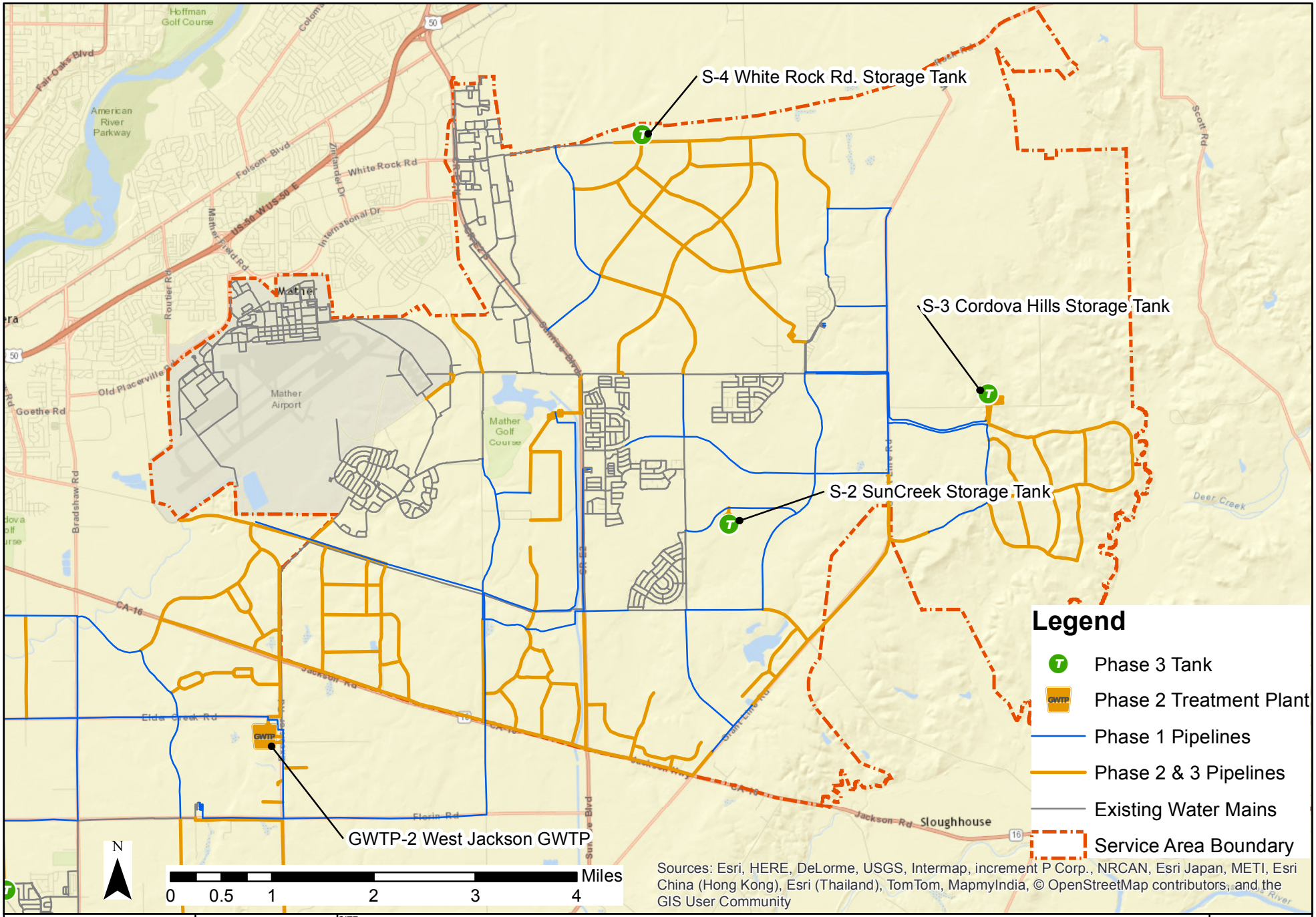

Brown AND Caldwell DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY	PROJECT 148130	SITE **Zone 40 Water Supply Master Plan Amendment**	**Figure 9-11**
	DATE 7/30/15	TITLE **Phase 2 & 3 CIP Projects - NSA - Cumulative**	

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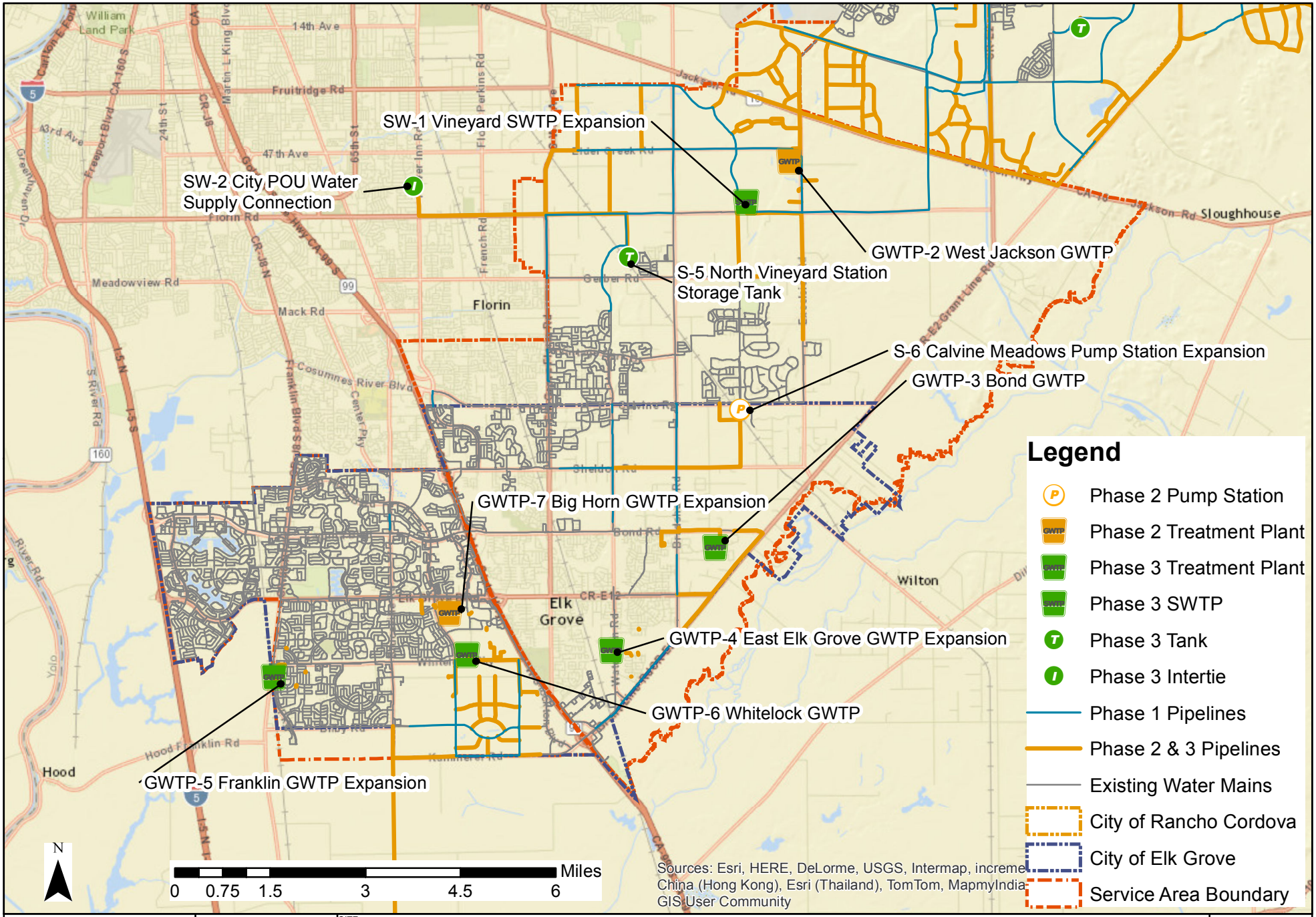

Brown AND Caldwell / DEPARTMENT OF WATER RESOURCES SACRAMENTO COUNTY WATER AGENCY	PROJECT 148130	SITE **Zone 40 Water Supply Master Plan Amendment**	**Figure 9-12**
	DATE 7/30/15	TITLE **Phase 2 & 3 CIP Projects - CSA & SSA - Cumulative**	

The future water system facilities are categorized as supply facilities, storage facilities, and pipelines. Table 9-20 presents the planned water supply facilities for all of Zone 40. Each GWTP project consists of wells, a groundwater treatment facility, a storage tank, and a pump station that pumps from the storage tank into the distribution system. Some of the GWTP projects already have wells that were previously drilled but not equipped and some would require the equipping and drilling of new wells. Table 9-20 presents the number of wells that would be equipped and/or drilled and equipped for the pertinent GWTP projects.

Table 9-21 presents the storage facility projects planned for Zone 40. Table 9-22 presents the pipeline projects that are 16 inches in diameter or larger planned for Phase 1 for all of Zone 40, and identifies the pipelines needed to serve the three new growth areas. Table 9-23 presents the pipelines that would be needed during Phases 2 and 3 for all of Zone 40.

Table 9-20. Additional Supply Facilities - Cumulative

	Supply facility	Treatment/ supply capacity, mgd	Wells		Storage, MG	Pumping station capacity, mgd	Area served	Phase added
			Wells to be drilled and equipped	Wells to be equipped only (already drilled)				
GWTP-1	Poppy Ridge GWTP expansion	6.5		3	3.5	17.0	SSA	Phase 1
GWTP-2	West Jackson GWTP	18.0	5		4.0	21.6	CSA	Phase 2
SW-1	Vineyard WTP expansion	50.0					NSA/CSA	Phase 3
GWTP-3	Bond GWTP	6.5	3		0.5	10.8	CSA	Phase 3
GWTP-4	East Elk Grove GWTP expansion	6.5	2	1		13.0	CSA	Phase 3
SW-2	City POU water supply facilities	19.1					CSA	Phase 3
GWTP-5	Franklin GWTP	7.0	1	3	2.0	21.6	SSA	Phase 3
GWTP-6	Whitelock GWTP	13.0	6		3.0	14.4	SSA	Phase 3
GWTP-7	Big Horn GWTP expansion	8.5	4			17.0	SSA	Phase 2
RW-1	Recycled water supply	4.0					SSA	Phase 3
	Total	139.1	21	7	13.0	115.4		

Table 9-21. Additional Storage Facilities - Cumulative

	Storage facility	Capacity, MG	Pumping station, mgd	Area served	Phase added
S-1	Phase B NSA Project	10.0	64.0	NSA	1
S-2	Suncreek	3.0	18.0	NSA	3
S-3	Cordova Hills	3.0	21.6	NSA	3
S-4	White Rock	3.0	14.4	NSA	3
S-5	North Vineyard Station	4.0	21.6	CSA	3
S-6	Calvine Meadows Pump Station Expansion		7.2	CSA	3
	Total	23.0	146.8		

Table 9-22. Phase 1 Pipelines - Cumulative

	Pipeline	Size, in	Length, ft	Area served	West Jackson [a]	Jackson Township [a]	NewBridge [a]
P-1	Sunrise Blvd. Pipeline	16	7,371	NSA		X	X
P-2	Rio del Oro Pipeline	24	11,593	NSA			
P-3	Kiefer Blvd. Pipeline	16-20	22,446	NSA		X	X
P-4	Eagles Nest Road Pipeline	20-30	7,239	NSA			
P-5	Ranch Pipeline	24	7,000	NSA			
P-6	Arboretum Pipe System	16	3,167	NSA			
P-7	South Jaeger Pipeline	16	5,238	NSA			
P-8	East NSA Pipeline System	16-30	61,389	NSA			
P-9	North Jaeger Pipeline	24	6,365	NSA			
P-10	Phase A NSA Project	42-66	44,662	NSA		X	X
P-11	Vineyard Road Pipeline	16	13,600	CSA	X		
P-12	Fruitridge Road Pipeline	16	7,982	CSA	X		
P-13	Elder Creek Pipeline	16-36	21,343	CSA	X		
P-14	Bradshaw Road Pipeline	16-24	10,599	CSA	X		
P-15	North Vineyard Station (Florin to Gerber) Pipeline	24-36	11,847	CSA			
P-16	South Watt Connect Pipeline	24	2,693	CSA			
P-17	CSA Backbone Pipeline	24-30	9,948	CSA			
P-18	Elk Grove Loop Connector Pipelines	16-24	11,322	CSA			
P-19	Power Inn Road Pipeline	24	1,273	CSA			
P-20	Big Horn to Kammerer Pipeline	20	7,832	SSA			
P-21	Bruceville Road Pipeline	18	1,267	SSA			

Table 9-22. Phase 1 Pipelines - Cumulative							
	Pipeline	Size, in	Length, ft	Area served	West Jackson [a]	Jackson Township [a]	NewBridge [a]
P-22	North Grant Line Road Pipeline	20-24	17,000	NSA			
P-23	Florin-Watt Pipelines	20-24	10,000	CSA			
P-24	North Waterman Pipeline	16	3,000	CSA			
P-25	Sheldon-Waterman Pipelines	18-24	15,000	CSA			
P-26	South East Policy Area Pipelines	18-24	22,000	SSA			
	Total	--	343,176	--	--	--	--

[a] *Pipelines that are needed to serve the new growth area are identified with an "X".*

Table 9-23. Phase 2 and 3 Pipelines - Cumulative	
Pipeline size, in	Length, ft
16	165,716
18	14,351
20	0
24	67,876
30	5,305
36	29,502
42	3,371
54	40,704
Total	326,825

9.3.2 Capital Improvement Plan

This section presents the CIP for Phases 1, 2, and 3.

9.3.2.1 Phase 1 CIP – 10 Year Plan (FY 2015-16 to 2024-25)

The Phase 1 CIP represents the projects that will be constructed over the near term time period and provides the basis for the development of the capacity charge. The development of the Phase 1 CIP requires consideration of the timing and duration of each project. The Phase 1 CIP consists of groundwater, storage, and pipeline projects. No surface water and stand alone storage projects are planned for Phase 1, other than the storage that is part of the GWTP project.

Table 9-24 presents the estimated costs of the Phase 1 water facilities for all of Zone 40. Included in the Phase 1 CIP is an item for non-specific project costs that cover the labor costs of SCWA's planning, development, and development sections.

The timing of the Phase 1 projects presented in Table 9-24 are based on information SCWA has received from developers' engineers regarding the timing of development projects and keeping a somewhat consistent rate of annual expenditure over the duration of Phase 1. The cost of each project would occur over a duration of several years. All of the projects would be completed by the time the end of Phase 1 is reached.

Table 9-24. Phase 1 CIP Cost Estimate - Cumulative

Projects		Service area	Capital cost	Project timing	
No.	Name			Start, FY	End, FY
Groundwater projects (SCWA projects)					
GWTP-1	Poppy Ridge GWTP Expansion	SSA	$ 13,832,800	2016	2018
	Well site acquisitions	CSA/SSA	$ 180,000	2018	2023
	subtotal		$ 14,012,800		
Regional transmission and storage projects (SCWA projects)					
S-1	Phase B NSA Project [a]	NSA	$ 84,586,140	2016	2023
P-10	Phase A NSA Project [a]	NSA	$ 10,088,000	2016	2019
	Tank site acquisition	NSA	$ 800,000	2017	2018
	subtotal		$ 95,474,140		
Pipeline projects (Developer projects)					
P-1	Sunrise Blv. Pipeline [a]	NSA	$ 2,527,900	2018	2020
P-2	Rio del Oro Pipeline	NSA	$ 3,663,200	2016	2018
P-3	Kiefer Boulevard Pipeline [a]	NSA	$ 7,282,700	2020	2022
P-4	Eagles Nest Road Pipeline	NSA	$ 3,779,200	2019	2021
P-5	Ranch Pipeline	NSA	$ 2,202,300	2023	2025
P-6	Arboretum Pipe System	NSA	$ 1,104,300	2021	2023
P-7	South Jaeger Pipeline	NSA	$ 1,145,500	2020	2022
P-8	East NSA Pipeline System	NSA	$ 18,212,400	2016	2021
P-9	North Jaeger Pipeline	NSA	$ 2,027,300	2017	2018
P-11	Vineyard Road Pipeline [a]	CSA	$ 2,923,000	2021	2023
P-12	Fruitridge Road Pipeline [a]	CSA	$ 2,716,100	2022	2024
P-13	Elder Creek Pipeline [a]	CSA	$ 9,142,600	2021	2025
P-14	Bradshaw Road Pipeline [a]	CSA	$ 4,515,400	2017	2019
P-15	North Vineyard Station (Florin to Gerber) Pipeline	CSA	$ 5,025,600	2018	2020
P-16	South Watt Connect Pipeline	CSA	$ 1,742,400	2019	2021
P-17	CSA Backbone Pipeline	CSA	$ 5,008,300	2023	2025
P-18	Elk Grove Loop Connector Pipelines	CSA	$ 4,715,500	2023	2025
P-19	Power Inn Road Pipeline	CSA	$ 584,300	2024	2025
P-20	Big Horn to Kammerer Pipeline	SSA	$ 2,494,500	2017	2019
P-21	Bruceville Road Pipeline	SSA	$ 509,400	2024	2025
P-22	North Grant Line Road Pipeline	NSA	$ 4,588,800	2022	2024
P-23	Florin-Watt Pipelines	CSA	$ 4,150,400	2023	2025

Table 9-24. Phase 1 CIP Cost Estimate - Cumulative					
Projects		Service area	Capital cost	Project timing	
No.	Name			Start, FY	End, FY
P-24	North Waterman Pipeline	CSA	$ 568,900	2019	2020
P-25	Sheldon-Waterman Pipelines	CSA	$ 5,685,700	2022	2025
P-26	South East Policy Area Pipelines	SSA	$ 5,868,800	2021	2024
	subtotal		$ 102,184,500		
Non-specific project costs			$ 30,000,000	2016	2025
Studies					
	Recycled Water Master Plan		$ 250,000	2016	2025
	Water Master Plan		$ 400,000	2016	2025
	EIR		$ 500,000	2016	2025
	subtotal		$ 1,150,000		
Total			$ 242,821,440		

[a] *Projects relevant to the three growth areas.*

9.3.2.2 Phase 2 CIP – 10 Year Plan (2026 to 2035)

Phase 2 represents the 10 year period following the end of Phase 1. Since Phase 2 is further in the future, the timing of projects is more speculative and less precise. The level of precision provided in the Phase 1 CIP is not needed for Phase 2 since the capacity charges are developed using the Phase 1 CIP costs and not the CIP costs from the subsequent phases.

The new pipelines that are needed for Zone 40 during Phases 2 and 3 are defined. However, the timing of when each pipeline project is needed is dependent on the location and timing of development. Therefore, this document does not identify the specific pipe segments that would need to be constructed in either Phase 2 or 3. The approach used for the development of the CIP is to assume that approximately half the cost of the Phases 2 and 3 pipelines would occur in Phase 2 and half would occur in Phase 3. Table 9-25 presents the cost estimate for the Phases 2 and 3 pipelines for all of Zone 40.

Table 9-26 presents the cost estimate for the Phase 2 CIP projects for all of Zone 40. The Phase 2 CIP consists of groundwater and pipeline projects. No surface water projects are planned for Phase 2.

Table 9-25. Phases 2 and 3 Pipeline Cost Estimate - Cumulative		
Diameter, in	Length, ft	Capital Cost
16	165,716	$ 68,859,035
18	14,351	$ 6,751,465
20	-	$ -
24	67,876	$ 36,404,178
30	5,305	$ 3,592,897
36	29,502	$ 23,653,481
42	3,371	$ 3,147,171
54	40,704	$ 57,148,073
Total	326,825	$ 199,556,300

Table 9-26. Phase 2 CIP - Cumulative			
Projects		Service Area	Capital Cost
No.	Name		
Groundwater projects			
GWTP-2	West Jackson GWTP	CSA	$ 28,932,200
GWTP-7	Big Horn GWTP Expansion	SSA	$ 14,744,100
Pipeline projects		NSA/CSA/SSA	$ 99,778,150
Total			$ 143,454,450

9.3.2.3 Phase 3 CIP – 17 Year Plan (2036 – Buildout)

The Phase 3 CIP consists of surface water, groundwater, recycled water, storage, and pipeline projects. Table 9-27 presents the cost estimate for the Phase 3 CIP projects for all of Zone 40. The cost estimate for the City POU supply connection (SW-2) is for the construction of the interconnection and the pipeline to convey the water into the CSA's water transmission system. It does not include the City's capacity buy-in cost that was estimated in 2005 to be $32 million.

Table 9-27. Phase 3 CIP - Cumulative			
Projects		Service Area	Capital Cost
No.	Name		
Surface Water Projects			
SW-1	Vineyard WTP Expansion	NSA/CSA	$ 200,000,000
SW-2	City POU Supply Connection (a)	CSA	$ 2,034,400
	subtotal		$ 202,034,400
Groundwater Projects			
GWTP-3	Bond GWTP	CSA	$ 14,725,800
GWTP-4	East Elk Grove GWTP Expansion	CSA	$ 13,687,000
GWTP-5	Franklin GWTP	SSA	$ 18,544,000
GWTP-6	Whitelock GWTP	SSA	$ 26,143,800
	subtotal		$ 73,100,600
Recycled Water Projects			
RW-1	Recycled Water Project	SSA	$ 20,000,000
Storage Projects			
S-2	Suncreek Storage	NSA	$ 11,864,500
S-3	Cordova Hills Storage	NSA	$ 12,848,700
S-4	White Rock Road Storage	NSA	$ 10,880,400
S-5	North Vineyard Station Storage	CSA	$ 5,467,500
S-6	Calvine Meadows Pump Station Expansion	CSA	$ 5,084,800
	subtotal		$ 46,145,900
Pipeline Projects		NSA/CSA/SSA	$ 99,778,150
Total			$ 441,059,050

(a) *Does not include the City's capacity buy-in cost*

9.3.2.4 CIP Summary

Table 9-28 and Figure 9-13 summarize the Zone 40 CIP costs by project category and phase. The Phases A and B NSA projects in Phase 1 have been categorized as storage projects for the purposes of Table 9-28 and Figure 9-13.

Table 9-28. Zone 40 CIP Cost Summary - Cumulative				
Project Categories	Phase 1	Phase 2	Phase 3	Total
Surface Water Projects			$ 202,034,400	$ 202,034,400
Groundwater Projects	$ 14,012,800	$ 43,676,300	$ 73,100,600	$ 130,789,700
Recycled Water Projects			$ 20,000,000	$ 20,000,000
Storage Projects	$ 95,474,140		$ 46,145,900	$ 141,620,040
Pipeline Projects	$ 102,184,500	$ 99,778,150	$ 99,778,150	$ 301,740,800
Non-Specific Project Costs	$ 30,000,000			$30,000,000
Studies	$ 1,150,000			$1,150,000
Total	$ 242,821,440	$ 143,454,50	$ 441,059,050	$827,334,940

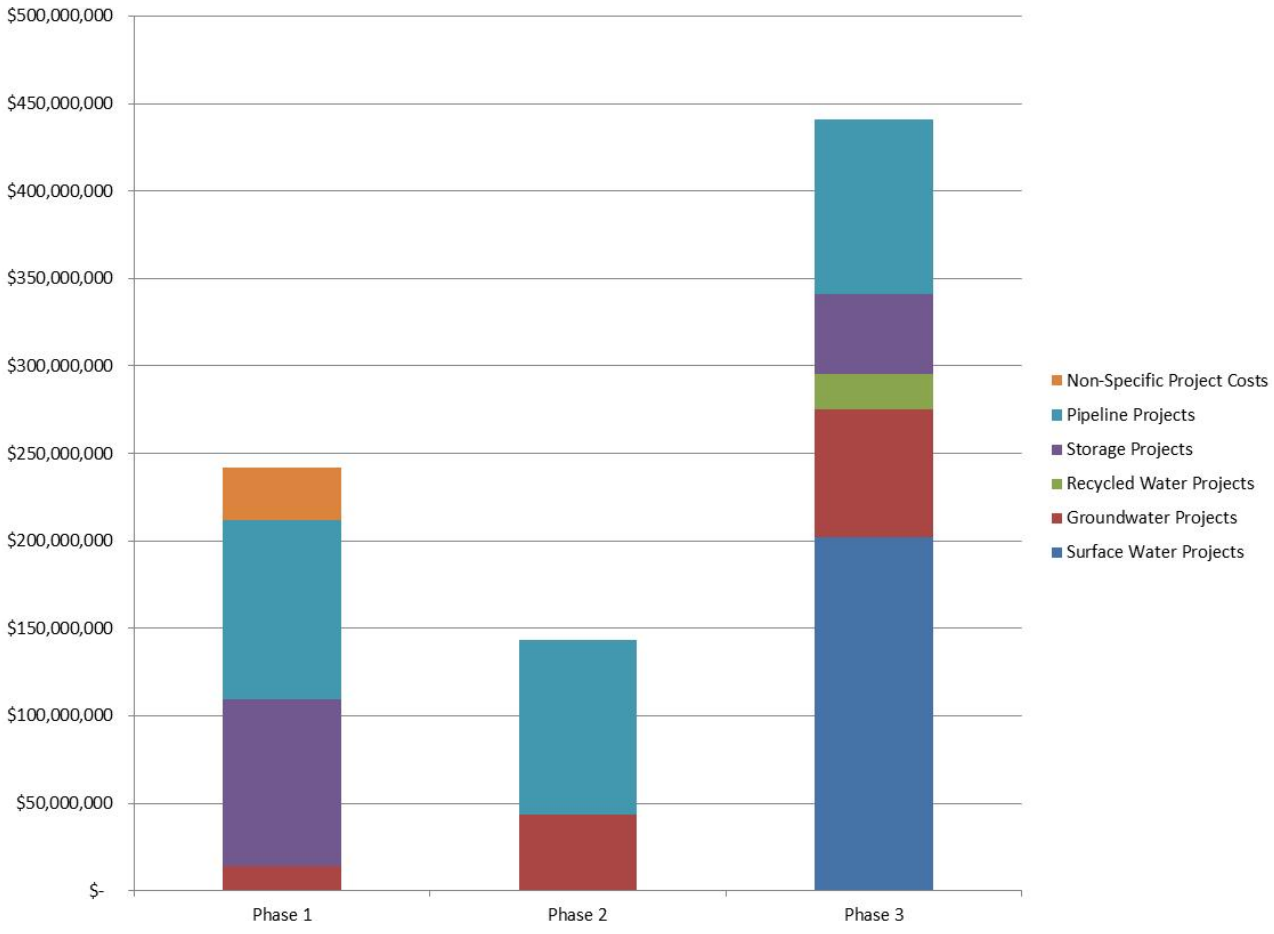

Figure 9-13. CIP Summary by Phase

Section 10

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Appendix A: Zone 40 Residential Unit Water Demand Factors Technical Memorandum

SACRAMENTO COUNTY WATER AGENCY
INTER-OFFICE CORRESPONDENCE
Department Of Water Resources

TECHINICAL MEMORANDUM

TO: Kerry Schmitz, Principal Civil Engineer; Darrell Eck, Senior Civil Engineer

FROM: SCWA Staff

DATE: 08/30/2013

SUBJECT: Zone 40 Residential Unit Water Demand Factors

This memo documents an evaluation of current Zone 40 residential unit demand factors based on multiple years of historical water meter data.

BACKGROUND

Water demands based on land use data is the preferred approach in developing water demand projections for existing and new growth areas in Zone 40. Combining land use and historical water demand information links water use and land use to a specific geographic location. This linkage of geography and water demand data becomes more apparent when modeling the water distribution system.

During the Water Forum negotiations (1993 to 2000), Boyle Engineering provided stakeholders with a technical methodology for deriving unit water demand factors based on water use data and county land use data. As a result of this effort a set of unit water demand factors (UWDF) were developed for SCWA and other water purveyors that were based on the Sacramento County regional average water use as described in the "Estimate of Annual Water Demand within Sacramento-Wide Area", (Boyle, May 1995). In this report water demand factors were determined based on 1990 land and water use data rather than actual retail customer data. The report goes on to state:

"To overcome the general incompleteness of the water use information, a methodology was developed wherein the ratio of water demand factors from the 1991 City (of Sacramento) Study was utilized as a basis for apportionment of water use to the specific land use categories in the urban water agencies...the water demand factors were then proportionately scaled up or down to balance the total 1990 water usage with the particular district."

The Water Forum average annual UWDFs were used in determining the unit water demand factors identified in the 2005 Zone 40 Water Supply Master Plan (WSMP), as shown in Table 1. The left column (Land Use Category) identifies the broad land use categories used at the time of the development of the WSMP. The middle column represents the UWDFs for year 2000. The right-hand column represents the UWDFs for Water Forum Buildout – year 2030 which shows reduced unit water demands of 25.6 percent as a result of water conservation measures mandated in the WFA.

Table 1. Zone 40 Unit Water Demand Factors for Year 2000 and Year 2030 in Ac-Ft/Acre

Land UseCategory	2000	2030
Rural Estate	1.57	1.33
Single Family	3.4	2.89
Multi-Family - Low Density	4.36	3.7
Multi-Family - High Density	4.85	4.12
Commercial	3.24	2.75
Industrial	3.19	2.71
Industrial - Unutilized	0	0
Public	1.22	1.04
Public Recreation	4.08	3.46
Mixed Land Use	2.95	2.51
Right-of-Way	0.25	0.21
Vacant	0	0
Agriculture	0	0

Source: 2005 Zone 40 Water Supply Mater Plan, Tables 2-1 and Table 2-2.

HISTORICAL METER DATA

Since the late 90s and early 2000, meters have been installed increasingly on SCWA's existing and new retail customers. Currently, approximately 90% of SCWA's retail customers have active water meters. Meters for the balance of SCWA's retail customers continue to be added/retrofitted, it is projected that nearly all customers will be metered by 2015. For those meters already in use, a large volume of water usage data has been collected for the purpose of billing (for older metered accounts a considerable amount of water usage data is available). For the purposes of this analysis historical meter data was obtained from the County Utilities Billing System (CUBS).

SCWA collects water usage data every two months. Accordingly, annual water use for each customer should be the total of the six readings recorded each year. In addition to water usage data, Assessor's Parcel Number (APN), and the zoning (land use) information are also available as part of the meter data set.

The historical meter data set was then used to evaluate the Zone 40 UWDFs. Specifically,

1) to develop UWDFs based on the SCWA's actual water usage data rather than the Sacramento regional average water usage developed more than a decade ago.
2) to validate the 2030 UWDFs that assume a 25.6 percent (relative to year 2000) reduction in water demand when implementing the water conservation practices recommendated in the WFA.

The resulting UWDF's from this analysis should provide SCWA staff with information relative to meeting the conservation targets set by the WFA and an ability to decide if changes should be made to the UWDFs represented in the water supply master plan.

METHODOLOGY

The meter data set was processed using Microsoft Access (Access). **Figure 1** shows a sample of the meter database. The first column is "ID", containing the sequence number for each record. The second column is "APN" number associated with each customer. APN number is also a field used to filter out customers that are not inside Zone 40. The third column is "ReadingDate" that shows the reading date for each record. The fourth column is "Reading" that shows the actual meter reading for each record in hundred cubic feet (ccf). The fifth column is "Consumption" that shows the water usage in cubic feet. The last column contains the Zoning information for each customer's property.

ID	APN	ReadingDc	Reading	Consumpti	Zoning
668679	12108001590000	10/10/2011	1959	1200	RD 7
668680	12108001590000	10/11/2011	1959	0	RD 7
668681	12108001590000	11/21/2011	1987	2800	RD 7
668682	12108001590000	1/18/2012	2006	1900	RD 7
668683	12108001590000	3/19/2012	2016	1000	RD 7
668684	12108001590000	5/18/2012	2035	1900	RD 7
668685	12108001590000	7/19/2012	2074	3900	RD 7
668686	12108001590000	9/19/2012	2111	3700	RD 7
668687	12108001590000	11/20/2012	2138	2700	RD 7
668688	12108001600000	8/10/2004	1393	0	RD 7
668689	12108001600000	11/19/2004	1463	7000	RD 7
668690	12108001600000	1/21/2005	1478	1500	RD 7
668691	12108001600000	3/17/2005	1501	2300	RD 7
668692	12108001600000	5/17/2005	1534	3300	RD 7
668693	12108001600000	7/20/2005	1599	6500	RD 7
668694	12108001600000	9/15/2005	1650	5100	RD 7
668695	12108001600000	11/17/2005	1693	4300	RD 7
668696	12108001600000	1/19/2006	1717	2400	RD 7
668697	12108001600000	3/16/2006	1731	1400	RD 7
668698	12108001600000	5/19/2006	1760	2900	RD 7
668699	12108001600000	7/20/2006	1822	6200	RD 7
668700	12108001600000	9/19/2006	1880	5800	RD 7
668701	12108001600000	11/16/2006	1917	3700	RD 7
668702	12108001600000	1/16/2007	1937	2000	RD 7
668703	12108001600000	3/13/2007	1954	1700	RD 7
668704	12108001600000	5/19/2007	1985	3100	RD 7
668705	12108001600000	7/20/2007	2043	5800	RD 7
668706	12108001600000	9/24/2007	2115	7200	RD 7
668707	12108001600000	11/20/2007	2150	3500	RD 7

Record: 1 of 2069208 No Filter Search

Figure 1. Sample of Meter Database

There are over 2 million records in the meter database. The meter data needs to be processed properly to assess the water usage of each land use category in a particular year. This was achieved by creating queries in Access. **Figure 2** shows an example of a query created for water ususage for property zoned RD 7 in 2012. For each meter account the query results shows its APN number, lot size, zoning, and total water usage. Average water usage and lot size are then calculated for all the filtered records. The UWDF is then calculated by diving the average water ususage by the average lot size. Figure 3 provides a screenshot of the above referenced query.

Similarily, the UWDFs for each residential land use catagory were calculated for 2005 through 2012. The UWDFs for non-residential land use were not calculated for this TM.

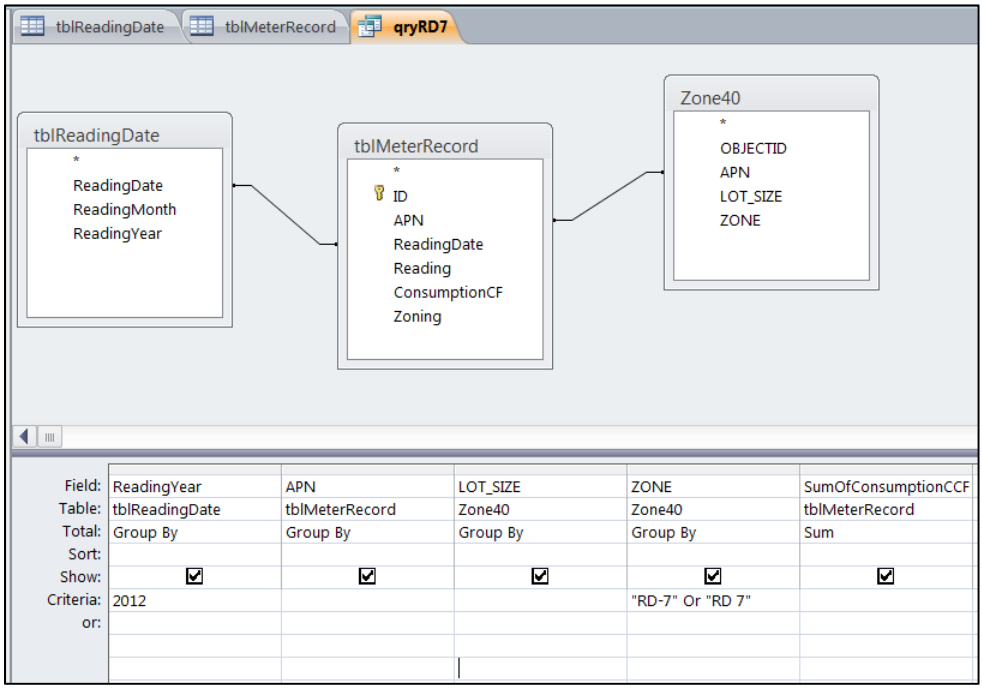


Figure 2. Example of Establishing A Query in the Meter Database

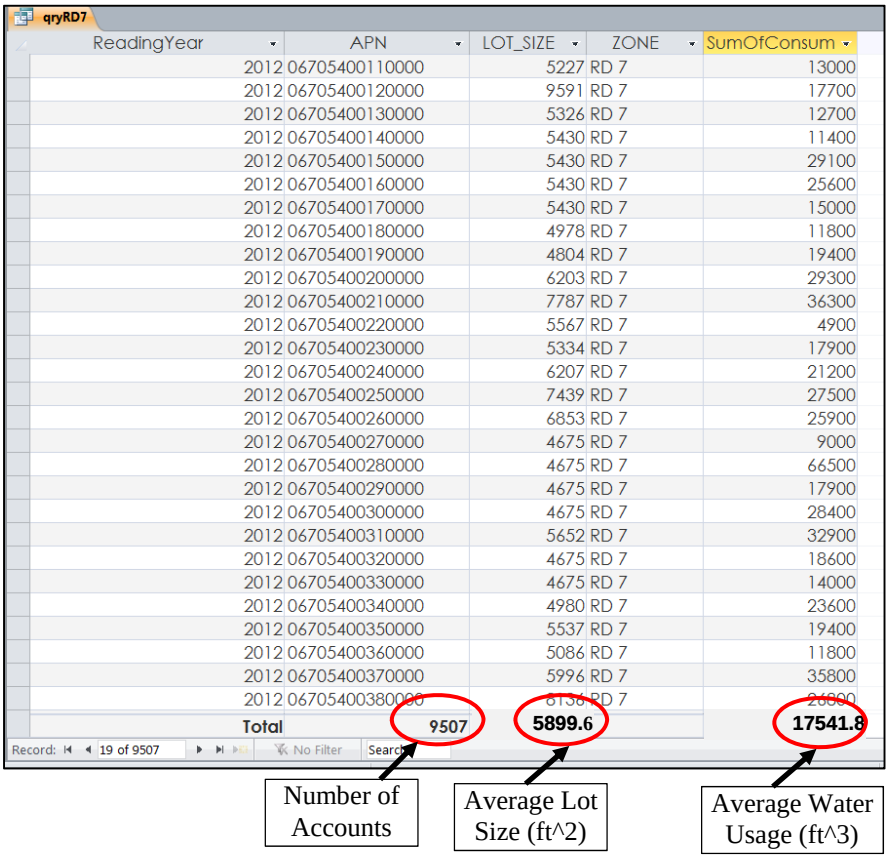


Figure 3. Sample Screenshot of the Query Result for RD 7 in 2012

UNIT WATER DEMAND FACTORS BASED ON METER DATA

The UWDF for each residential land use category for each year are shown in **Table 2** below. **Table 2** indicates that there is a significant variation in UWDFs which generally increase with dwelling density. For example, the UWDF is 1.31 Ac-Ft/Acre for RD 1, 2.66 Ac-Ft/Acre for RD 5, and 3.82 Ac-Ft/Acre for RD 20.

Another observation from **Table 2**, despite the varation certain dwelling density groups have UWDFs that are relatively close in value. Based on this "closeness" four residential categories were identified. They include:

1) Very low density residential (VLDR), for RD 1 and RD 2.
2) Low density residential (LDR), for RD 3 to RD 5.
3) Midium density residential (MDR), for RD 7 to RD 15, and
4) High density residential (HDR), for RD 20.

The UWDFs for these four categories are shown **in Figures 4 to 7**, respectively. **Figures 4** to **6** show that for lower density residential categories (MDR and below) the UWDFs increased from 2005 to

2008 and then trended down over the next four years. The trend generally coincides with impacts to the broad national and regional economy, but also could be attributed to the weather, rising water rates, as well as water conservation measures implemented by property owners. For higher density residential (see **Figure 7)** this trend is not repeated. In fact, the UWDF for higher density residential actually increased slightly over the past couple of years.

Table 2. Zone 40 Unit Water Demand Factors Based on Meter Data, Unit: Ac-Ft/Acre

Year	Very Low Density Residential (VLDR)		Low Density Residential (LDR)			Medium Density Residential (MDR)			High Density Residential (HDR)
	RD 1	RD 2	RD 3	RD 4	RD 5	RD 7	RD 10	RD 15	RD 20
2005	1.47	2.06	2.74	2.64	2.95	3.42	2.39	3.70	3.07
2006	1.62	2.10	2.69	3.01	3.22	3.76	3.43	3.66	3.77
2007	1.72	2.33	3.04	3.19	3.43	3.97	3.93	4.13	3.74
2008	1.72	2.35	2.97	3.14	3.34	3.86	3.83	3.11	4.07
2009	1.43	1.99	2.66	2.83	2.98	3.43	3.44	3.19	3.76
2010	1.35	1.86	2.45	2.57	2.73	3.13	3.22	3.20	3.60
2011	1.23	1.80	2.37	2.51	2.66	3.04	3.13	3.16	4.38
2012	1.31	1.99	2.55	2.54	2.66	2.97	2.93	2.96	3.82

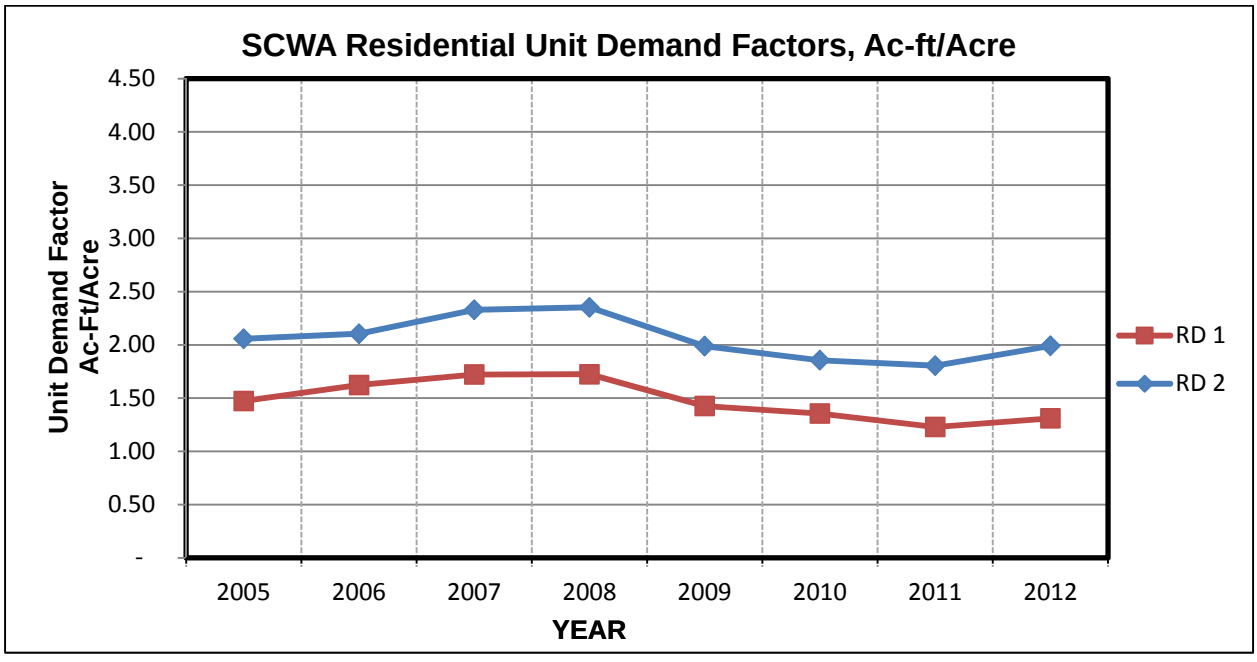


Figure 4. Unit Water Demand Factors for VLDR

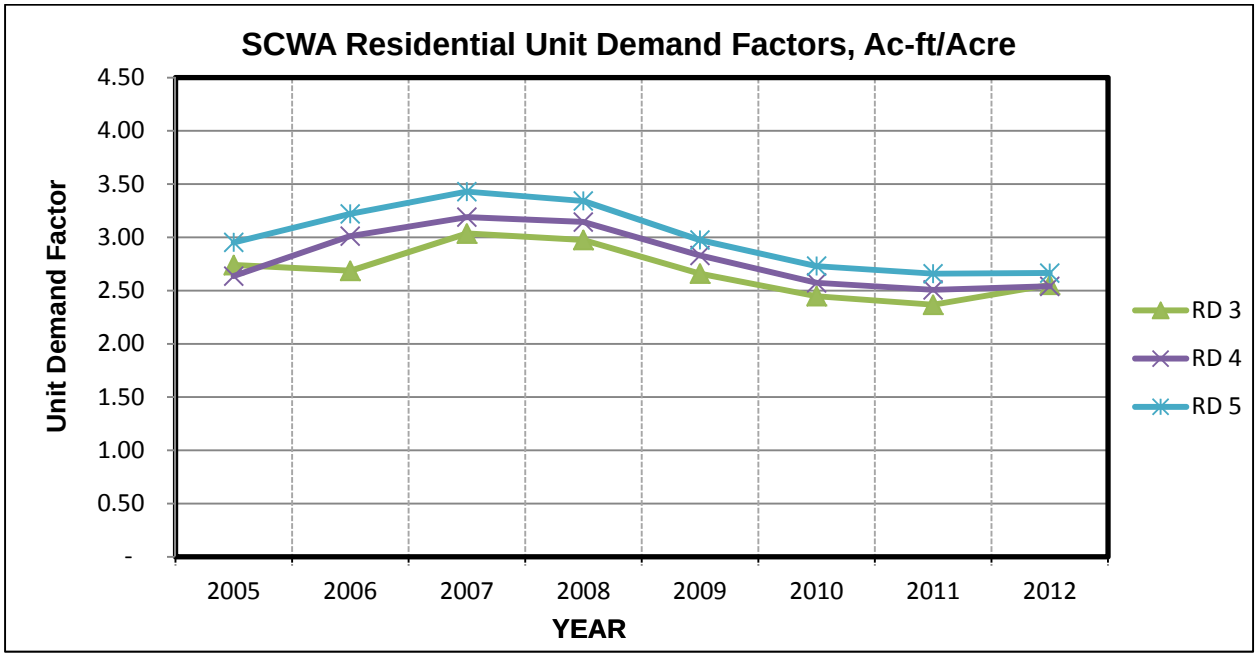


Figure 5. Unit Water Demand Factors for LDR

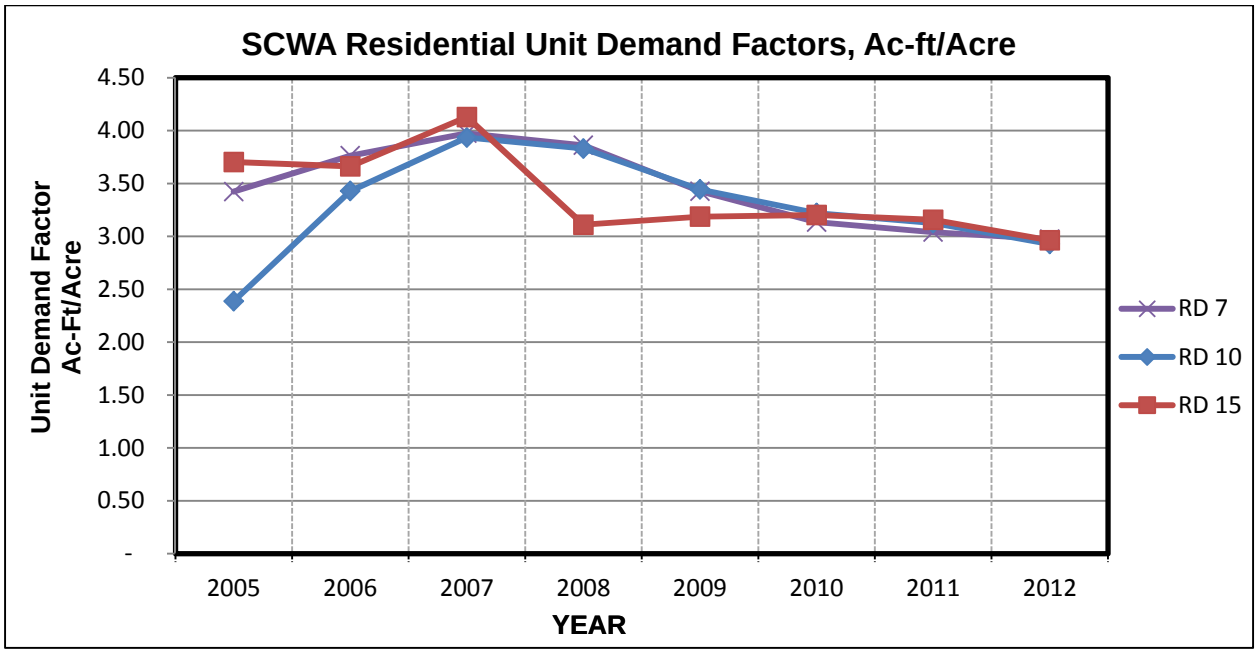


Figure 6. Unit Water Demand Factors for MDR

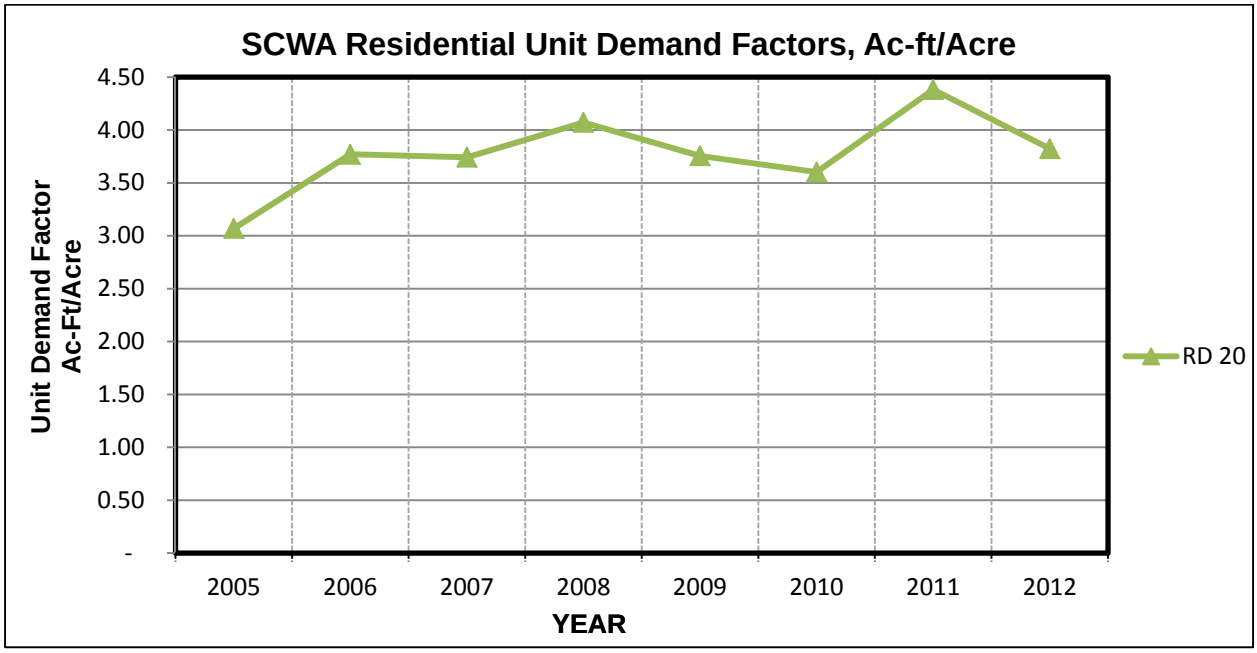


Figure 7. Unit Water Demand Factors for High Density Residential

Table 3 shows the total number of meter accounts for each zoning type from 2005 to 2012. The large majority of meter accounts are associated with RD 4, RD 5, and RD 7 zoning. In 2012, there were 32,930 meter accounts in Zone 40 that were used for this analysis. Of these accounts 0.5% were very low density residential, 64.4% were low density residential, 32.3% were medium density, and 2.7% were high density residential. **Table 4** shows the average lot size in square feet of each residential zoning type.

Table 3. Total Number of Residential Meter Accounts in Zone 40

Year	RD 1	RD 2	RD 3	RD 4	RD 5	RD 7	RD 10	RD 15	RD 20
2005	47	114	179	2,130	13,807	8,120	412	197	684
2006	48	116	200	2,441	15,385	8,853	773	228	737
2007	48	118	202	2,638	16,303	9,071	831	229	765
2008	48	118	209	2,782	16,808	9,302	875	235	868
2009	49	118	209	2,820	17,086	9,377	884	239	881
2010	48	118	209	2,894	17,421	9,423	893	239	887
2011	49	118	209	2,955	17,665	9,445	897	239	897
2012	49	118	209	3,024	17,983	9,507	899	239	902

Table 4. Average Residential Lot Size in Zone 40, 2005 – 2012 in Square Feet

Year	RD 1	RD 2	RD 3	RD 4	RD 5	RD 7	RD 10	RD 15	RD 20
2005	46,044	22,692	11,897	9,592	7,992	5,860	5,803	5,376	11,862
2006	46,292	22,685	11,750	9,720	7,952	5,846	5,267	5,281	11,653
2007	46,292	22,682	11,767	9,717	7,966	5,837	5,375	5,277	12,804
2008	46,292	22,682	11,888	9,738	7,956	5,841	5,380	6,681	11,814
2009	47,036	22,682	11,888	9,752	7,948	5,838	5,385	6,649	11,973
2010	46,292	22,682	11,888	9,777	7,928	5,898	5,372	6,649	11,913
2011	47,036	22,682	11,888	9,775	7,916	5,900	5,371	6,649	11,803
2012	47,036	22,682	11,888	9,770	7,897	5,900	5,373	6,649	12,453

In water supply planning, water demand estimates are typically performed by applying the UWDF to the acreage of a certain land use category. Most often, the density information (dwelling units per acre) are not specified in a land use map, particularly in the general plan process or early planning stages of a development project. Parcels planned for development are generally identified as “very low density residential”, “low density residential”, “medium density residential”, or “high density residential”. This necessitates the development of a composite UWDF to represent each category.

By using the information provided in **Tables 2** to **4**, a weighted average UWDF was developed for each category. Further, a three-year moving average was calculated for these composite UWDFs to take into account various hydrologic conditions and weather (see **Table 5)**. An average of the previous three years (as opposed to a longer period) is preferred because it is more representative of the current water use pattern as well as reflective of water conservation measures taken. Therefore, the numbers shown in the last row (highlighted) of **Table 5** are recommended as the current UWDF for each residential category.

Table 5. Three-Year Moving Average Unit Water Demand Factors in Ac-Ft/Acre

Year	Very Low Density Residential (VLDR)	Low Density Residential (LDR)	Midium Density Residential (MDR)	High Density Residential (HDR)
2005				
2006				
2007	2.00	3.15	3.70	3.53
2008	2.10	3.29	3.85	3.86
2009	2.05	3.21	3.75	3.86
2010	1.90	2.98	3.47	3.81
2011	1.72	2.76	3.20	3.91
2012	1.71	2.66	3.05	3.94

NET ACREAGE AND GROSS ACREAGE BASED UNIT WATER DEMAND FACTORS

Net acreage is defined as the acreage of all residential lots in a subdivision excluding minor streets. Gross acreage is defined as the total acreage of a subdivision including all residential lots and minor streets. Typically, approximately 20% of the land is dedicated to minor streets in a subdivision.

To calculate projected water demand for a subdivision, the UWDF corresponding to the planned land use category is multiplied by the acreage of a subdivision. If net acreage is used, then a net acreage based UWDF should be applied. Similarily, if the gross acreage is used then a gross acreage based UWDF should be applied.

The UWDFs developed from meter data and shown in **Table 5** are net acreage based. To convert to gross net acreage based value, the net acreage based UWDF should be reduced by 20% to take into account acreage for minor streets. **Table 6** shows the net acreage and gross acreage based UWDFs.

Table 6. Net Acreage and Gross Acreage Based Water Demand Factors in Ac-Ft/Acre

Land Use Category	Net Acreage Based	Gross Acreage Based
Very Low Density Residential (VLDR)	1.71	1.37
Low Density Residential (LDR)	2.66	2.13
Midium Density Residential (MDR)	3.05	2.44
High Density Residential (HDR)	3.94	3.15

COMPARISION TO WSMP

As mentioned earlier, the UWDF in the WSMP for build-out was developed based on a combination of regional water and land use data and an assumption of a 25.6% demand reduction as a result of conservation measures mandated by the WFA. By using extensive historical meter data, the UWDFs developed in this TM should give staff a higher level of confidence when evaluating future water demands and water supply reliablity. **Table 7** shows how UWDFs developed based on meter data in this TM compared to those in the current WSMP. It should be noted that the UWDFs in the WSMP are gross acreage based values.

As shown in **Table 7**, the UWDFs developed in this TM are lower than those in the WSMP, with the exception of the “very low density residential” category, which is only slightly higher. The UWDF of 2.89 Ac-Ft/Acre for “Single Family Residential” in the WSMP (corresponding ot “Low Density

Residential") is now 2.13 Ac-Ft/Acre based on meter data. The value for "Multi-Family Low Density" (corresponding to "Medium Density Residential") is 3.70 Ac-Ft/Acre in the WSMP as opposed to 2.44 Ac-Ft/Acre based on meter data. For "Multi-Family High Density" (corresponding to "High Density Residential") the value is 4.12 Ac-Ft/Acre in the WSMP compared to 3.15 Ac-ft/Acre based on meter data.

Table 7. Comparison of Unit Water Demand Factors between WSMP and This TM, in Ac-Ft/Acre

Land Use Category in WSMP	Land Use Category in This TM	2030 Unit Water Demand Factor in WSMP	Unit Water Demand Factor Based on Meter Data (Gross Acreage Based)
Rural Estate	Very Low Density Residential (VLDR)	1.33	1.37
Single Family	Low Density Residential (LDR)	2.89	2.13
Multi-Family - Low Density	Midium Density Residential (MDR)	3.70	2.44
Multi-Family - High Density	High Density Residential (HDR)	4.12	3.15

RECOMMENDATIONS

SCWA's meter database provides a extensive historical water use record of its customers. Using a sound statistical approach, along with the land use information in the meter database, a UWDF was developed for each residential density category. This process when compared to the approach taken in the 2005 WSMP has the following advantages:

- The meter data is unique to Zone 40
- The meter data covers a long period of time
- The UWDFs for buildout in the WSMP are projected or targeted numbers assuming a reduction of 25.6% of water use (relative to year 2000) due to improved conservation practices. The UWDFs based on meter data are not projected or targeted numbers instead, they represent the actual historical water use.

The resulting UWDFs indicate that those referenced in the WSMP were overestimated. It also indicates that SCWA has been moving in the right direction with regard to water conservation and demand management. It is recommended that the results documented in this TM should be considered for incorporation in future water supply master plan updates and other water planning documents.

For non-residential/commercial customers, the UWDFs have not been evaluated based on meter data in this TM, primarily due to low number of meter accounts and a greater variation in water use

because of significant differences in commercial activities. It is recommended that the UWDFs currently described in the WSMP continue to be used for non-residential/commercial applications until more data becomes available.

Appendix B: Baseline Supply and Demand Comparison Tables

Table B-1. Maximum Day Demand to Supply Comparison for NSA, mgd

NSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	2052
Demand											
	Maximum day	7.4	9.5	13.3	18.5	24.1	32.3	41.4	51.0	56.1	56.1
Existing supply capacity											
	Mather Housing GWTP	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	Anatolia GWTP	6.5	6.5								
	total groundwater	12.5	12.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	Vineyard SWTP										
	Total	12.5	12.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Planned future supply capacity											
	surface water, Vineyard SWTP			16.0	32.5	32.5	32.5	32.5	32.5	65.0	65.0
Total supply capacity											
	groundwater	12.5	12.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	surface water	0.0	0.0	16.0	32.5	32.5	32.5	32.5	32.5	65.0	65.0
	Total	12.5	12.5	22.0	38.5	38.5	38.5	38.5	38.5	71.0	71.0
Use of supply: average/wet years											
	groundwater	7.4	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	surface water	0.0	0.0	13.3	18.5	24.1	32.3	41.4	51.0	56.1	56.1
	Total	7.4	9.5	13.3	18.5	24.1	32.3	41.4	51.0	56.1	56.1
Use of supply: dry years											
	groundwater	7.4	9.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	surface water	0.0	0.0	11.3	16.5	22.1	30.3	39.4	49.0	54.1	54.1
	Total	7.4	9.5	13.3	18.5	24.1	32.3	41.4	51.0	56.1	56.1

Table B-2. Maximum Day Demand to Supply Comparison for CSA, mgd

			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	2051
Demand											
	Maximum day	27.0	29.2	32.8	37.7	42.6	49.7	57.2	61.5	61.5	61.5
Existing supply capacity											
	Calvine Meadows GWTP	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	East Elk Grove GWTP	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	East Park GWTP	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
	Waterman GWTP	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
	Wildhawk GWTP	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
	CSA DirectFeed	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
	total groundwater	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4
	Vineyard SWTP	50.0	50.0	34.0	17.5	17.5	17.5	17.5	17.5	17.5	17.5
	Total	84.4	84.4	68.4	51.9	51.9	51.9	51.9	51.9	51.9	51.9
Planned future supply capacity											
	West Jackson GWTP					9.0	18.0	18.0	18.0	18.0	18.0
	Bond GWTP									6.5	6.5
	East Elk Grove GWTP expansion									6.5	6.5
	total groundwater					9.0	18.0	18.0	18.0	31.0	31.0
	Vineyard SWTP expansion									17.5	17.5
	City POU supply										19.1
	total surface water									17.5	36.6
Total supply capacity											
	groundwater	34.4	34.4	34.4	34.4	43.4	52.4	52.4	52.4	65.4	65.4
	surface water	50.0	50.0	34.0	17.5	17.5	17.5	17.5	17.5	35.0	54.1
	Total	84.4	84.4	68.4	51.9	60.9	69.9	69.9	69.9	100.4	119.5
Use of supply: average/wet years											
	groundwater	0.0	0.0	0.0	20.2	25.1	32.2	39.7	44.0	26.5	7.4
	surface water	27.0	29.2	32.8	17.5	17.5	17.5	17.5	17.5	35.0	54.1
	Total	27.0	29.2	32.8	37.7	42.6	49.7	57.2	61.5	61.5	61.5
Use of supply: dry years											
	groundwater	27.0	29.2	32.8	34.4	42.6	49.7	52.4	52.4	61.5	61.5
	surface water	0.0	0.0	0.0	3.3	0.0	0.0	4.8	9.1	0.0	0.0
	Total	27.0	29.2	32.8	37.7	42.6	49.7	57.2	61.5	61.5	61.5

Table B-3. Maximum Day Demand to Supply Comparison for SSA, mgd											
SSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	2052
Demand											
	Maximum day	27.1	30.5	35.2	40.3	45.7	46.6	46.6	46.6	46.6	46.6
Existing supply capacity											
	Big Horn GWTP	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	Dwight Road GWTP	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	Lakeside GWTP	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	Poppy Ridge GWTP	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	SSA Direct Feed	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	total groundwater	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6
	Franklin Intertie to City	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
	SSA Recycled Water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Total	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
Planned future supply capacity											
	Poppy Ridge GWTP expansion				6.5	6.5	6.5	6.5	6.5	6.5	6.5
	Big Horn GWTP expansion						8.5	8.5	8.5	8.5	8.5
	Franklin GWTP									7.0	7.0
	Whitelock GWTP										13.0
	total groundwater			0.0	6.5	6.5	15.0	15.0	15.0	22.0	35.0
	recycled water									2.9	2.9
Total supply capacity											
	groundwater	25.6	25.6	25.6	32.1	32.1	40.6	40.6	40.6	47.6	60.6
	surface water	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	39.7	39.7	39.7	46.2	46.2	54.7	54.7	54.7	64.6	64.6
Use of supply: average/wet years											
	groundwater	13.0	16.4	21.1	26.2	31.6	32.5	32.5	32.5	29.7	29.7
	surface water	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	27.1	30.5	35.2	40.3	45.7	46.6	46.6	46.6	46.6	46.6
Use of supply: dry years											
	groundwater	24.1	25.6	25.6	32.1	32.1	40.6	40.6	40.6	40.8	40.8
	surface water	0.0	1.9	6.6	5.2	10.6	3.0	3.0	3.0	0.0	0.0
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	27.1	30.5	35.2	40.3	45.7	46.6	46.6	46.6	46.6	46.6

Table B-4. Maximum Day Demand to Supply Comparison for Zone 40, mgd											
Zone 40			Phase 1			Phase 2		Phase 3			
	2013	2015	2020	2025	2030	2035	2040	2045	2050	2052
Maximum day demand										
Zone 40 total	61.5	69.1	81.3	96.5	112.5	128.6	145.2	159.1	164.1	164.1
Existing supply capacity										
groundwater	72.5	72.5	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
surface water	61.1	61.1	45.1	28.6	28.6	28.6	28.6	28.6	28.6	28.6
recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total	136.6	136.6	114.1	97.6	97.6	97.6	97.6	97.6	97.6	97.6
Planned future supply capacity										
groundwater	0.0	0.0	0.0	6.5	15.5	33.0	33.0	33.0	53.0	66.0
surface water	0.0	0.0	16.0	32.5	32.5	32.5	32.5	32.5	82.5	101.6
recycled water							0.0	0.0	2.9	2.9
Total supply capacity										
groundwater	72.5	72.5	66.0	72.5	81.5	99.0	99.0	99.0	119.0	132.0
surface water	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	111.1	130.2
recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	136.6	136.6	130.1	136.6	145.6	163.1	163.1	163.1	236.0	268.1
Use of supply: average/wet years										
groundwater	20.4	25.8	21.1	46.4	56.8	64.7	72.2	76.5	56.1	37.0
surface water	38.1	40.3	57.2	47.1	52.7	60.9	70.0	79.6	102.2	121.3
recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	61.5	69.1	81.3	96.5	112.5	128.6	145.2	159.1	164.1	164.1
Use of supply: dry years										
groundwater	58.5	64.3	60.4	68.5	76.7	92.3	95.0	95.0	104.3	104.3
surface water	0.0	1.9	17.9	25.0	32.7	33.3	47.2	61.1	54.0	54.0
recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	61.5	69.1	81.3	96.5	112.5	128.6	145.2	159.1	164.1	164.1

Table B-5. Conjunctive Use Metrics										
		Phase 1			Phase 2		Phase 3			
Parameter	2013	2015	2020	2025	2030	2035	2040	2045	2050	2052
Provided Capacity										
surface water, % of demand	99.3%	88.4%	75.2%	63.3%	54.3%	47.5%	42.1%	38.4%	67.7%	79.3%
groundwater, % of demand	117.8%	104.9%	81.2%	75.2%	72.5%	77.0%	68.2%	62.2%	72.5%	80.4%
Total	217.2%	193.3%	156.4%	138.5%	126.8%	124.5%	110.3%	100.6%	140.2%	159.8%
Use in wet/average years										
surface water, % of demand	62.0%	58.3%	70.3%	48.8%	46.8%	47.3%	48.2%	50.1%	62.2%	73.9%
groundwater, % of demand	33.1%	37.4%	26.0%	48.1%	50.5%	50.3%	49.7%	48.1%	34.2%	22.6%
surface water, % of surface water capacity	62.4%	65.9%	93.6%	77.0%	86.2%	99.7%	114.5%	130.4%	92.0%	93.1%
groundwater, % of groundwater capacity	28.1%	35.6%	32.0%	64.0%	69.7%	65.4%	73.0%	77.2%	47.2%	28.0%
Use in dry years										
surface water, % of demand	0.0%	2.7%	22.0%	25.9%	29.1%	25.9%	32.5%	38.4%	32.9%	32.9%
groundwater, % of demand	95.1%	93.0%	74.3%	71.0%	68.2%	71.8%	65.4%	59.7%	63.5%	63.5%
surface water, % of wet/average year use	0.0%	4.6%	31.3%	53.0%	62.1%	54.7%	67.5%	76.7%	52.9%	44.5%
groundwater, % of groundwater capacity	80.7%	88.6%	91.5%	94.5%	94.2%	93.3%	96.0%	96.0%	87.6%	79.0%

Note: Recycled water values not presented.

Table B-6. Annual Supply Capacity and Use - NSA

NSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	2048-Buildout
Demand											
	Annual, ac-ft/yr	4,200	5,300	7,400	10,300	13,500	18,100	23,200	28,600	31,400	31,400
Supply capacity, ac-ft/yr											
	groundwater	7,000	7,000	3,400	3,400	3,400	3,400	3,400	3,400	3,400	3,400
	surface water	-	-	9,000	18,200	18,200	18,200	18,200	18,200	36,400	36,400
	Total	7,000	7,000	12,300	21,600	21,600	21,600	21,600	21,600	39,800	39,800
Use of supply: average/wet years											
	groundwater	4,100	5,300	-	-	-	-	-	-	-	-
	surface water	-	-	7,400	10,300	13,500	18,100	23,200	28,600	31,400	31,400
	Total	4,100	5,300	7,400	10,300	13,500	18,100	23,200	28,600	31,400	31,400
Use of supply: dry years											
	groundwater	4,100	5,300	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
	surface water	-	-	6,300	9,200	12,400	17,000	22,100	27,500	30,300	30,300
	Total	4,100	5,300	7,400	10,300	13,500	18,100	23,200	28,600	31,400	31,400

Table B-7. Annual Supply Capacity and Use - CSA

CSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	2048-Buildout
Demand											
	Annual, ac-ft/yr	15,100	16,300	18,400	21,100	23,900	27,800	32,100	34,400	34,400	34,400
Supply capacity, ac-ft/yr											
	groundwater	19,300	19,300	19,300	19,300	24,300	29,300	29,300	29,300	36,600	36,600
	surface water	28,000	28,000	19,000	9,800	9,800	9,800	9,800	9,800	19,600	30,300
	Total	47,300	47,300	38,300	29,100	34,100	39,100	39,100	39,100	56,200	66,900
Use of supply: average/wet years											
	groundwater	-	-	-	11,300	14,100	18,000	22,200	24,600	14,800	4,100
	surface water	15,100	16,300	18,400	9,800	9,800	9,800	9,800	9,800	19,600	30,300
	Total	15,100	16,300	18,400	21,100	23,900	27,800	32,000	34,400	34,400	34,400
Use of supply: dry years											
	groundwater	15,100	16,300	18,400	19,300	23,900	27,800	29,300	29,300	34,400	34,400
	surface water	-	-	-	1,800	-	-	2,700	5,100	-	-
	Total	15,100	16,300	18,400	21,100	23,900	27,800	32,000	34,400	34,400	34,400

Table B-8. Annual Supply Capacity and Use - SSA

SSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	2048-Buildout
Demand											
	Annual, ac-ft/yr	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100
Supply capacity, ac-ft/yr											
	groundwater	14,300	14,300	14,300	18,000	18,000	22,700	22,700	22,700	26,700	33,900
	surface water	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	22,200	22,200	22,200	25,900	25,900	30,600	30,600	30,600	36,200	43,400
Use of supply: average/wet years											
	groundwater	7,300	9,200	11,800	14,700	17,700	18,200	18,200	18,200	16,600	16,600
	surface water	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100
Use of supply: dry years											
	groundwater	13,500	14,300	14,300	18,000	18,000	22,700	22,700	22,700	22,800	22,800
	surface water	-	1,000	3,700	2,900	6,000	1,700	1,700	1,700	-	-
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100

Table B-9. Annual Supply Capacity and Use - Total

Total Zone 40			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	2048-Buildout
Demand											
	Annual, ac-ft/yr	34,500	38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
Supply capacity, ac-ft/yr											
	groundwater	40,600	40,600	37,000	40,600	45,600	55,400	55,400	55,400	66,600	73,900
	surface water	34,200	34,200	34,200	34,200	34,200	34,200	34,200	34,200	62,200	72,900
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	76,500	76,500	72,900	76,500	81,500	91,300	91,300	91,300	132,100	150,100
Use of supply: average/wet years											
	groundwater	11,400	14,500	11,800	26,000	31,800	36,300	40,500	42,800	31,400	20,700
	surface water	21,400	22,600	32,000	26,400	29,500	34,100	39,200	44,600	57,200	67,900
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	34,500	38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
Use of supply: dry years											
	groundwater	32,800	36,000	33,800	38,400	43,000	51,700	53,200	53,200	58,400	58,400
	surface water	-	1,000	10,000	14,000	18,300	18,600	26,400	34,200	30,300	30,300
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	34,500	38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900

Table B-10. Supply and Demand Comparison-Normal Year, ac-ft/yr

Supply and Demand Comparison-Normal Year, ac-ft/yr										
	2015	2020	2025	2030	2035	2040	2045	2050	2052
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
Appropriative water	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
Demand	38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
Difference	146,800	140,000	131,500	122,500	113,500	104,200	96,400	95,200	95,200

Table B-11. Use of Supply Normal Year, ac-ft/yr

Use of Supply-Normal Year, ac-ft/yr									
	2015	2020	2025	2030	2035	2040	2045	2050	2052
Use of supplies									
Surface water	22,600	32,000	26,400	29,500	34,100	39,200	44,600	57,200	67,900
Remediated groundwater									
Groundwater	14,500	11,800	26,000	31,800	36,300	40,500	42,800	31,400	20,700
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Total	38,800	45,500	54,100	63,000	72,100	81,400	89,100	91,900	91,900
Surface water use breakdown									
US Bureau of Reclamation-CVP supply	22,600	32,000	26,400	29,500	34,100	39,200	44,600	45,000	45,000
Appropriative water	-	-	-	-	-	-	-	12,200	22,900
City of Sacramento American River POU water rights									
Other surface water supplies									
Surface water plus remediated groundwater	22,600	32,000	26,400	29,500	34,100	39,200	44,600	57,200	67,900

Table B-12. Supply and Demand Comparison – Single Dry Year, ac-ft/yr

Supply and Demand Comparison-Single Dry Year, ac-ft/yr									
	2015	2020	2025	2030	2035	2040	2045	2050	2052
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply allocation	11,300	16,000	13,200	14,800	17,100	19,600	22,300	22,500	22,500
Appropriative water									
City of Sacramento American River POU water rights									
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	101,500	106,200	103,400	105,000	107,300	109,800	112,500	114,300	114,300
Demand	38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
Difference	62,800	60,700	49,400	42,000	35,300	28,500	23,400	22,400	22,400

Table B-13. Use of Supply – Single Dry Year, ac-ft/yr

Use of Supply-Single Dry Year, ac-ft/yr									
	2015	2020	2025	2030	2035	2040	2045	2050	2052
Use of supplies									
Surface water	1,000	1,100	5,100	9,400	9,700	17,500	25,300	21,400	21,400
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Groundwater	27,100	33,800	38,400	43,000	51,700	53,200	53,200	58,400	58,400
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Total	38,700	45,500	54,100	63,000	72,000	81,300	89,100	92,000	92,000
Surface water use breakdown									
US Bureau of Reclamation-CVP supply	1,000	1,100	5,100	9,400	9,700	17,500	25,300	21,400	21,400
Appropriative water									
City of Sacramento American River POU water rights									
Other surface water supplies	-	-	-	-	-	-	-	-	-
Surface water plus remediated groundwater	1,000	10,000	14,000	18,300	18,600	26,400	34,200	30,300	30,300

Table B-14. Supply and Demand Comparison – Multiple Dry Years

Year			2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2048)
First year	Supplies										
		US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
		Appropriative water	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
		City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
		Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
		Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
		Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
		Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
		Supply totals	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
	Demand		38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
	Difference		146,800	140,000	131,500	122,500	113,500	104,200	96,400	95,200	95,200
Second year	Supplies										
		US Bureau of Reclamation-CVP supply	17,000	24,000	19,800	22,100	25,600	29,400	33,500	33,800	33,800
		Appropriative water	-	-	-	-	-	-	-	-	-
		City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
		Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
		Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
		Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
		Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
		Supply totals	107,200	114,200	110,000	112,300	115,800	119,600	123,700	125,600	125,600
	Demand		38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
	Difference		68,500	68,700	56,000	49,300	43,800	38,300	34,600	33,700	33,700
Third year	Supplies										
		US Bureau of Reclamation-CVP supply	11,300	16,000	13,200	14,800	17,100	19,600	22,300	22,500	22,500
		Appropriative water	-	-	-	-	-	-	-	-	-
		City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
		Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
		Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
		Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
		Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
		Supply totals	101,500	106,200	103,400	105,000	107,300	109,800	112,500	114,300	114,300
	Demand		38,700	45,500	54,000	63,000	72,000	81,300	89,100	91,900	91,900
	Difference		62,800	60,700	49,400	42,000	35,300	28,500	23,400	22,400	22,400

Table B-15. NSA Upper Zone Storage Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Maximum day demand, mgd	0.0	2.5	5.0	7.9	Cordova Hills (4,451 ac-ft/yr)
Peak hour demand, mgd	0.0	5.0	10.0	15.8	
Provided storage volume, MG					
Existing					
North Douglas	3.0	3.0	3.0	3.0	
Future					
Cordova Hills				3.0	
Total	3.0	3.0	3.0	6.0	
Required storage volume, MG					
Equalization	0.0	0.5	1.0	1.6	Assume 20% MDD.
Fire	0.5	0.5	0.5	0.5	Assume volume for one fire at 3,000 gpm for 3 hours.
Emergency	0.0	0.4	0.8	1.3	Assume 1/3 average day.
Total	0.5	1.4	2.3	3.4	
Difference (provided minus required)	2.5	1.6	0.7	2.6	Could downsize Cordova Hills tank.

Table B-16. NSA Upper Zone Pump Station Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Provided pumping capacity, mgd					
Existing					
North Douglas	19.4	19.4	19.4	19.4	Very large capacity for such a small demand.
Upper zone max day supply	0.0	2.5	5.0	7.9	
from storage	19.4	16.9	14.4	11.5	
Future					
Cordova Hills				21.6	
Total from storage	19.4	16.9	14.4	33.1	
Required peak hour capacity from storage, mgd	0.0	2.5	5.0	7.9	Capacity increment above maximum day demand capacity.
Required fire flow from storage, mgd	4.3	4.3	4.3	4.3	4.3 mgd for one fire, max day supply accounted for above.
Required capacity from storage	4.3	4.3	5.0	7.9	Greater of pk hr or fire.
Difference (provided minus required)	15.1	12.6	9.4	25.2	Substantial surplus capacity.
Summary					
Total provided pump station capacity, mgd	38.8	36.3	33.8	52.5	
Total required pump station capcity					
from storage, mgd	4.3	4.3	5.0	7.9	
for max day supply capacity, mgd	0.0	2.5	5.0	7.9	
Total	4.3	6.8	10.0	15.8	

Table B-17. NSA Main Zone Storage Capacity Evaluation

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Maximum day demand, mgd	7.4	14.1	24.4	42.3	NSA 56.1 mgd minus Cordova Hills (7.9 mgd) and half of Rio del Oro (5.9 mgd).
Peak hour demand, mgd	14.8	28.2	48.8	84.6	
Provided storage volume, MG					
Existing					
Mather Housing GWTP	0.5	0.5	0.5	0.5	
Anatolia GWTP	4.0	4.0	4.0	4.0	
Mather 1 Main Base	1.0	1.0	1.0	1.0	
Mather 2	0.3	0.3	0.3	0.3	
subtotal	5.8	5.8	5.8	5.8	
Future					
Phase B NSA Project		10.0	10.0	10.0	
White Rock				3.0	
Suncreek				3.0	
subtotal	0.0	10.0	10.0	16.0	
Total	5.8	15.8	15.8	21.8	
Required storage volume, MG					
Equalization	1.5	2.8	4.9	8.5	Assume 20% MDD.
Fire	1.1	1.1	1.1	1.1	Assume volume for two fires at 3,000 gpm for 3 hours.
Emergency	1.2	2.4	4.1	7.1	Assume 1/3 average day.
Total	3.8	6.3	10.0	16.6	Could phase in the Phase B NSA Project storage.
Difference (provided minus required)	2.0	9.5	5.8	5.2	

Table B-18. NSA Main Zone Pump Station Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Provided pumping capacity, mgd					
Existing					
Mather Housing GWTP	5.2	5.2	5.2	5.2	
GWTP	3.0	3.0	3.0	3.0	Assume half of GWTP supplies pump station.
from storage	2.2	2.2	2.2	2.2	
Anatolia GWTP/Storage (a)	11.2	22.5	22.5	22.5	
GWTP/part of MD supply from Vineyard SWTP	6.5	4.7	8.1	14.1	Assume 2/3 of main zone MD demand through NSA terminal and 1/3 through Anatolia tanks.
from storage	4.7	17.8	14.4	8.4	
Mather 1 Main Base	5.2	5.2	5.2	5.2	
Mather 2	2.0	2.0	2.0	2.0	Elevated tank, assumed flow.
subtotal from storage	14.1	27.2	23.8	17.8	
Future					
White Rock				14.4	
Suncreek				18.0	
Phase B NSA-total capacity (b)		64.0	64.0	64.0	Total pump station capacity.
max day supply for Cal Am Rio del Oro		1.0	3.0	5.9	Max day supply for Cal Am tank. Not from storage.
max day supply for upper zone		2.5	5.0	7.9	Supply to North Douglas and Cordova Hills tanks. Not from storage.
part of max day supply from Vineyard SWTP for main zone		9.4	16.3	28.2	Assume 2/3 through NSA terminal and 1/3 through Anatolia tanks.
subtotal, pumping not from Phase B NSA storage		12.9	24.3	42.0	
subtotal, capacity available to pump from Phase B NSA Project storage		51.1	39.7	22.0	
subtotal from storage		51.1	39.7	54.4	
Total from storage	14.1	78.3	63.5	72.2	
Required peak hour capacity from storage, mgd	7.4	14.1	24.4	42.3	
Difference (provided minus required)	6.7	64.2	39.1	29.9	Could phase in the NSA terminal storage pump station capacity.
Summary					
Total provided pump station capacity, mgd	23.6	98.9	98.9	131.3	
Total required pump station capacity					
from storage, mgd	7.4	14.1	24.4	42.3	
for max day supply capacity, mgd	9.5	20.6	35.4	59.1	
Total	16.9	34.7	59.8	101.4	
(a) When Phase A NSA is completed, Anatolia will pump through supply from Vineyard SWTP.					
(b) Calculation of Phase B NSA pump station capacity available to supply from storage the main zone's pk hr increment.					

Table B-19. CSA Storage Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	Notes
Maximum day demand, mgd	27.0	37.9	50.2	61.5	
Peak hour demand, mgd	54.0	75.8	100.4	123.0	
Provided storage volume, MG					
Existing					
Calvine Meadows GWTP	0.35	0.35	0.35	0.35	
East Elk Grove GWTP	3.5	3.5	3.5	3.5	
East Park GWTP	0.5	0.5	0.5	0.5	
Waterman GWTP	7.0	7.0	7.0	7.0	
Wildhawk GWTP	3.0	3.0	3.0	3.0	
Vineyard SWTP clearwell	6.0	6.0	6.0	6.0	Assumed equalization storage available from 20 mgd clearwell.
subtotal	20.4	20.4	20.4	20.4	
Future					
West Jackson GWTP			4.0	4.0	
East Elk Grove GWTP expansion				0.0	
Bond GWTP				0.5	
North Vineyard Station				4.0	
Calvine Meadows GWTP expansion				0.0	
subtotal			4.0	8.5	
Total	20.4	20.4	24.4	28.9	Planned storage volume.
Required storage volume, MG					
Equalization	5.4	7.6	10.0	12.3	Assume 20% MDD.
Fire	1.1	1.1	1.1	1.1	Assume volume for two fires at 3,000 gpm for 3 hours.
Emergency	4.5	6.3	8.4	10.3	Assume 1/3 average day.
Total	11.0	15.0	19.5	23.7	
Difference (provided minus required)	9.4	5.4	4.8	5.2	

Table B-20. CSA Pump Station Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	Notes
Provided pumping capacity, mgd					
Existing					
Calvine Meadows GWTP, total	8.8	8.8	8.8	8.8	
GWTP	5.0	5.0	5.0	5.0	
from storage	3.8	3.8	3.8	3.8	
East Elk Grove GWTP, total	13.0	13.0	13.0	13.0	
GWTP	6.5	6.5	6.5	6.5	
from storage	6.5	6.5	6.5	6.5	
East Park GWTP, total	3.5	3.5	3.5	3.5	
GWTP	2.9	2.9	2.9	2.9	
from storage	0.6	0.6	0.6	0.6	
Waterman GWTP, total	25.9	25.9	25.9	25.9	
GWTP	8.6	8.6	8.6	8.6	
from storage	17.3	17.3	17.3	17.3	
Wildhawk GWTP, total	19.0	19.0	19.0	19.0	
GWTP	7.5	7.5	7.5	7.5	
from storage	11.5	11.5	11.5	11.5	
Vineyard SWTP pump station	13.0	13.0	13.0	13.0	Assume capacity provided from clear well.
subtotal from storage	52.7	52.7	52.7	52.7	
Future					
West Jackson GWTP			21.6	21.6	
GWTP			18.0	18.0	
from storage			3.6	3.6	
East Elk Grove GWTP expansion, total				13.0	
GWTP				6.5	
from storage				6.5	
Bond GWTP, total				10.8	
GWTP				6.5	
from storage				4.3	
North Vineyard Station, total				21.6	Pumps through City POU supply.
City POU supply				19.1	
from storage				2.5	
Calvine Meadows GWTP expansion				7.2	Pump all from storage.
Vineyard SWTP pump station expansion				10.0	Assume future capacity from clear well.
subtotal from storage			3.6	34.1	
Total from storage	52.7	52.7	56.3	86.8	
Required peak hour capacity from storage, mgd	27.0	37.9	50.2	61.5	
Difference (provided minus required) (a)	25.7	14.8	6.1	25.3	Pumping capacity could be reduced in Phase 3.
Summary					
Total provided pump station capacity, mgd	83.2	83.2	104.8	167.4	
Total required pump station capacity					
from storage, mgd	27.0	37.9	50.2	61.5	
for max day supply capacity, mgd	30.5	30.5	48.5	61.5	
Total	57.5	68.4	98.7	123.0	
(a) Peak hour pumping surplus used to supply the SSA.					

Table B-21. SSA Storage Capacity Evaluation

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	Notes
Maximum day demand, mgd	27.1	40.3	46.6	46.6	
Peak hour demand, mgd	54.2	80.6	93.2	93.2	
Provided storage volume, MG					
Existing					
Big Horn GWTP	2.0	2.0	2.0	2.0	
Dwight Road GWTP	7.0	7.0	7.0	7.0	
Lakeside GWTP	0.5	0.5	0.5	0.5	
Poppy Ridge GWTP	3.5	3.5	3.5	3.5	
subtotal	13.0	13.0	13.0	13.0	
Future					
Poppy Ridge GWTP expansion		3.5	3.5	3.5	
Big Horn GWTP expansion					
Franklin GWTP				2.0	
Whitelock GWTP				3.0	
subtotal	0.0	3.5	3.5	8.5	
Total	13.0	16.5	16.5	21.5	Planned storage volume.
Required storage volume, MG					
Equalization	5.4	8.1	9.3	9.3	Assume 20% MDD.
Fire	1.1	1.1	1.1	1.1	Assume volume for two fires at 3,000 gpm for 3 hours.
Emergency	4.5	6.7	7.8	7.8	Assume 1/3 average day.
Total	11.0	15.9	18.2	18.2	
Difference (provided minus required)	2.0	0.6	-1.7	3.3	Phase 2 deficit supplied by CSA storage surplus.

Table B-22. SSA Pump Station Capacity Evaluation

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2050)	Notes
Provided pumping capacity, mgd					
Existing					
Big Horn GWTP, total	8.6	8.6	8.6	8.6	
GWTP	4.5	4.5	4.5	4.5	
from storage	4.1	4.1	4.1	4.1	
Dwight Road GWTP, total	25.9	25.9	25.9	25.9	
GWTP and Franklin Intertie	13.2	13.2	13.2	13.2	
from storage	12.7	12.7	12.7	12.7	
Lakeside GWTP, total	7.2	7.2	7.2	7.2	
GWTP	6.5	6.5	6.5	6.5	
from storage	0.7	0.7	0.7	0.7	
Poppy Ridge GWTP, total	10.4	10.4	10.4	10.4	
GWTP	6.5	6.5	6.5	6.5	
from storage	3.9	3.9	3.9	3.9	
subtotal from storage	21.4	21.4	21.4	21.4	
Future					
Poppy Ridge GWTP expansion, total		17.0	17.0	17.0	
GWTP		6.5	6.5	6.5	
from storage		10.5	10.5	10.5	
Big Horn GWTP expansion, total			17.0	17.0	
GWTP			8.5	8.5	
from storage			8.5	8.5	
Franklin GWTP, total				21.6	
GWTP				7.0	
from storage				14.6	
Whitelock GWTP, total				14.4	
GWTP				13.0	
from storage				1.4	
subtotal from storage	0.0	10.5	19.0	35.0	
Total from storage	21.4	31.9	40.4	56.4	
Required peak hour capacity from storage, mgd	27.1	40.3	46.6	46.6	
Difference (provided minus required) (a)	-5.7	-8.4	-6.2	9.8	Phase 1 and 2 deficit supplied by CSA.
Summary					
Total provided pump station capacity, mgd	52.1	69.1	86.1	122.1	
Total required pump station capacity					
from storage, mgd	27.1	40.3	46.6	46.6	
for max day supply capacity, mgd	30.7	37.2	45.7	65.7	
Total	57.8	77.5	92.3	112.3	
(a) Peak hour pumping deficit to be supplied by surplus in CSA.					

Table B-23. Zone 40 Storage Capacity Evaluation Summary					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	
Provided storage volume, MG					
Existing	42.2	42.2	42.2	42.2	
Future	0.0	13.5	17.5	36.0	
Total	42.2	55.7	59.7	78.2	
Required storage volume, MG					
Equalization	12.3	19.0	25.2	31.7	
Fire	3.8	3.8	3.8	3.8	
Emergency	10.3	15.8	21.0	26.4	
Total	26.4	38.6	50.1	61.8	
Difference (provided minus required)	15.8	17.1	9.6	16.3	

Table B-24. Zone 40 Pump Station Capacity Evaluation Summary					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2050)	
Provided pump station capacity from storage, mgd					
Existing	107.6	118.2	112.3	103.4	
Future	0.0	20.5	32.6	88.1	
Total	107.6	138.7	144.9	191.5	
Required pump station capacity from storage, mgd	65.8	96.6	126.2	158.3	
Difference (provided minus required)	41.8	42.1	18.7	33.2	

Appendix C: Jackson Township Supply and Demand Comparison Tables

Table C-1. Maximum Day Demand to Supply Comparison for NSA, mgd

NSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Demand											
	Maximum day	7.4	9.5	13.1	18.2	23.7	31.7	40.4	49.8	59.6	60.1
Existing supply capacity											
	Mather Housing GWTP	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	Anatolia GWTP	6.5	6.5								
	total groundwater	12.5	12.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	Vineyard SWTP										
	Total	12.5	12.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Planned future supply capacity											
	surface water, Vineyard SWTP			16.0	32.5	32.5	32.5	32.5	32.5	65.0	65.0
Total supply capacity											
	groundwater	12.5	12.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	surface water	0.0	0.0	16.0	32.5	32.5	32.5	32.5	32.5	65.0	65.0
	Total	12.5	12.5	22.0	38.5	38.5	38.5	38.5	38.5	71.0	71.0
Use of supply: average/wet years											
	groundwater	7.4	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	surface water	0.0	0.0	13.1	18.2	23.7	31.7	40.4	49.8	59.6	60.1
	Total	7.4	9.5	13.1	18.2	23.7	31.7	40.4	49.8	59.6	60.1
Use of supply: dry years											
	groundwater	7.4	9.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	surface water	0.0	0.0	11.1	16.2	21.7	29.7	38.4	47.8	57.6	58.1
	Total	7.4	9.5	13.1	18.2	23.7	31.7	40.4	49.8	59.6	60.1

Table C-2. Maximum Day Demand to Supply Comparison for CSA, mgd

CSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Demand											
	Maximum day	27.0	29.2	32.8	37.7	42.6	49.7	57.2	61.5	61.5	61.5
Existing supply capacity											
	Calvine Meadows GWTP	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	East Elk Grove GWTP	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	East Park GWTP	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
	Waterman GWTP	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
	Wildhawk GWTP	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
	CSA DirectFeed	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
	total groundwater	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4
	Vineyard SWTP	50.0	50.0	34.0	17.5	17.5	17.5	17.5	17.5	17.5	17.5
	Total	84.4	84.4	68.4	51.9	51.9	51.9	51.9	51.9	51.9	51.9
Planned future supply capacity											
	West Jackson GWTP					9.0	18.0	18.0	18.0	18.0	18.0
	Bond GWTP									6.5	6.5
	East Elk Grove GWTP expansion									6.5	6.5
	total groundwater					9.0	18.0	18.0	18.0	31.0	31.0
	Vineyard SWTP expansion									17.5	17.5
	City POU supply										19.1
	total surface water									17.5	36.6
Total supply capacity											
	groundwater	34.4	34.4	34.4	34.4	43.4	52.4	52.4	52.4	65.4	65.4
	surface water	50.0	50.0	34.0	17.5	17.5	17.5	17.5	17.5	35.0	54.1
	Total	84.4	84.4	68.4	51.9	60.9	69.9	69.9	69.9	100.4	119.5
Use of supply: average/wet years											
	groundwater	0.0	0.0	0.0	20.2	25.1	32.2	39.7	44.0	26.5	7.4
	surface water	27.0	29.2	32.8	17.5	17.5	17.5	17.5	17.5	35.0	54.1
	Total	27.0	29.2	32.8	37.7	42.6	49.7	57.2	61.5	61.5	61.5
Use of supply: dry years											
	groundwater	27.0	29.2	32.8	34.4	42.6	49.7	57.2	61.5	65.4	65.4
	surface water	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	-3.9	-3.9
	Total	27.0	29.2	32.8	37.7	42.6	49.7	57.2	61.5	61.5	61.5

Table C-3. Maximum Day Demand to Supply Comparison for SSA, mgd

SSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Demand											
	Maximum day	27.1	30.5	35.2	40.3	45.7	46.6	46.6	46.6	46.6	46.6
Existing supply capacity											
	Big Horn GWTP	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	Dwight Road GWTP	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	Lakeside GWTP	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	Poppy Ridge GWTP	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	SSA Direct Feed	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	total groundwater	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6
	Franklin Intertie to City	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
	SSA Recycled Water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Total	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
Planned future supply capacity											-
	Poppy Ridge GWTP expansion				6.5	6.5	6.5	6.5	6.5	6.5	6.5
	Big Horn GWTP expansion						8.5	8.5	8.5	8.5	8.5
	Franklin GWTP									7.0	7.0
	Whitelock GWTP										13.0
	total groundwater			0.0	6.5	6.5	15.0	15.0	15.0	22.0	35.0
	recycled water									2.9	2.9
Total supply capacity											
	groundwater	25.6	25.6	25.6	32.1	32.1	40.6	40.6	40.6	47.6	60.6
	surface water	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	39.7	39.7	39.7	46.2	46.2	54.7	54.7	54.7	64.6	64.6
Use of supply: average/wet years											
	groundwater	13.0	16.4	21.1	26.2	31.6	32.5	32.5	32.5	29.7	29.7
	surface water	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	27.1	30.5	35.2	40.3	45.7	46.6	46.6	46.6	46.6	46.6
Use of supply: dry years											
	groundwater	24.1	25.6	25.6	32.1	32.1	40.6	40.6	40.6	40.8	40.8
	surface water	0.0	1.9	6.6	5.2	10.6	3.0	3.0	3.0	0.0	0.0
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	27.1	30.5	35.2	40.3	45.7	46.6	46.6	46.6	46.6	46.6

Table C-4. Maximum Day Demand to Supply Comparison for Zone 40, mgd

Zone 40		Phase 1			Phase 2		Phase 3			
	2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Maximum day demand										
Zone 40 total	61.5	69.1	81.2	96.2	112.1	128.0	144.3	157.8	167.7	168.2
Existing supply capacity										
groundwater	72.5	72.5	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
surface water	61.1	61.1	45.1	28.6	28.6	28.6	28.6	28.6	28.6	28.6
recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total	136.6	136.6	114.1	97.6	97.6	97.6	97.6	97.6	97.6	97.6
Planned future supply capacity										
groundwater	0.0	0.0	0.0	6.5	15.5	33.0	33.0	33.0	53.0	66.0
surface water	0.0	0.0	16.0	32.5	32.5	32.5	32.5	32.5	82.5	101.6
recycled water									2.9	2.9
Total supply capacity										
groundwater	72.5	72.5	66.0	72.5	81.5	99.0	99.0	99.0	119.0	132.0
surface water	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	111.1	130.2
recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	136.6	136.6	130.1	136.6	145.6	163.1	163.1	163.1	236.0	268.1
Use of supply: average/wet years										
groundwater	20.4	25.8	21.1	46.4	56.8	64.7	72.2	76.5	56.1	37.0
surface water	38.1	40.3	57.1	46.8	52.3	60.3	69.0	78.4	105.7	125.3
recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	61.5	69.1	81.2	96.2	112.1	128.0	144.3	157.8	167.7	168.2
Use of supply: dry years										
groundwater	58.5	64.3	60.4	68.5	76.7	92.3	99.8	104.1	108.2	108.2
surface water	0.0	1.9	17.8	24.7	32.3	32.7	41.5	50.8	53.7	54.2
recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
Total	61.5	69.1	81.2	96.2	112.1	128.0	144.3	157.8	167.7	168.2

Table C-5. Conjunctive Use Metrics

		Phase 1			Phase 2		Phase 3			
Parameter	2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Provided Capacity										
surface water, % of demand	99.3%	88.4%	75.3%	63.5%	54.5%	47.7%	42.3%	38.7%	66.3%	77.4%
groundwater, % of demand	117.8%	104.9%	81.3%	75.4%	72.7%	77.3%	68.6%	62.7%	71.0%	78.5%
Total	217.2%	193.3%	156.6%	138.9%	127.3%	125.1%	111.0%	101.4%	137.2%	155.9%
Use in wet/average years										
surface water, % of demand	62.0%	58.3%	70.3%	48.7%	46.7%	47.1%	47.9%	49.7%	63.0%	74.5%
groundwater, % of demand	33.1%	37.4%	26.0%	48.2%	50.7%	50.6%	50.1%	48.4%	33.5%	22.0%
surface water, % of surface water capacity	62.4%	65.9%	93.4%	76.7%	85.6%	98.6%	113.0%	128.3%	95.2%	96.3%
groundwater, % of groundwater capacity	28.1%	35.6%	32.0%	64.0%	69.7%	65.4%	73.0%	77.2%	47.2%	28.0%
Use in dry years										
surface water, % of demand	0.0%	2.7%	21.9%	25.7%	28.8%	25.5%	28.7%	32.2%	32.0%	32.2%
groundwater, % of demand	95.1%	93.0%	74.4%	71.2%	68.5%	72.1%	69.2%	65.9%	64.5%	64.3%
surface water, % of wet/average year use	0.0%	4.6%	31.1%	52.8%	61.8%	54.2%	60.0%	64.8%	50.8%	43.2%
groundwater, % of groundwater capacity	80.7%	88.6%	91.5%	94.5%	94.2%	93.3%	100.8%	105.1%	90.9%	81.9%
Note: Recycled water values not presented.										

Table C-6. Annual Capacity and Use – NSA

NSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Demand											
	Annual, ac-ft/yr	4,200	5,300	7,400	10,200	13,300	17,700	22,700	27,900	33,400	33,700
Supply capacity, ac-ft/yr											
	groundwater	7,000	7,000	3,400	3,400	3,400	3,400	3,400	3,400	3,400	3,400
	surface water	-	-	9,000	18,200	18,200	18,200	18,200	18,200	36,400	36,400
	Total	7,000	7,000	12,300	21,600	21,600	21,600	21,600	21,600	39,800	39,800
Use of supply: average/wet years											
	groundwater	4,100	5,300	-	-	-	-	-	-	-	-
	surface water	-	-	7,400	10,200	13,300	17,800	22,700	27,900	32,700	32,700
	Total	4,100	5,300	7,400	10,200	13,300	17,800	22,700	27,900	32,700	32,700
Use of supply: dry years											
	groundwater	4,100	5,300	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
	surface water	-	-	6,200	9,100	12,200	16,600	21,600	26,800	31,500	31,500
	Total	4,100	5,300	7,400	10,200	13,300	17,800	22,700	27,900	32,700	32,700

Table C-7. Annual Capacity and Use – CSA

CSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Demand											
	Annual, ac-ft/yr	15,100	16,300	18,400	21,100	23,900	27,800	32,100	34,400	34,400	34,400
Supply capacity, ac-ft/yr											
	groundwater	19,300	19,300	19,300	19,300	24,300	29,300	29,300	29,300	36,600	36,600
	surface water	28,000	28,000	19,000	9,800	9,800	9,800	9,800	9,800	19,600	30,300
	Total	47,300	47,300	38,300	29,100	34,100	39,100	39,100	39,100	56,200	66,900
Use of supply: average/wet years											
	groundwater	-	-	-	11,300	14,100	18,000	22,200	24,600	14,800	4,100
	surface water	15,100	16,300	18,400	9,800	9,800	9,800	9,800	9,800	19,600	30,300
	Total	15,100	16,300	18,400	21,100	23,900	27,800	32,000	34,400	34,400	34,400
Use of supply: dry years											
	groundwater	15,100	16,300	18,400	19,300	23,900	27,800	32,000	34,400	34,400	34,400
	surface water	-	-	-	1,800	-	-	-	-	-	-
	Total	15,100	16,300	18,400	21,100	23,900	27,800	32,000	34,400	34,400	34,400

Table C-8. Annual Capacity and Use – SSA

SSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Demand											
	Annual, ac-ft/yr	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100
Supply capacity, ac-ft/yr											
	groundwater	14,300	14,300	14,300	18,000	18,000	22,700	22,700	22,700	26,700	33,900
	surface water	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	22,200	22,200	22,200	25,900	25,900	30,600	30,600	30,600	36,200	43,400
Use of supply: average/wet years											
	groundwater	7,300	9,200	11,800	14,700	17,700	18,200	18,200	18,200	16,600	16,600
	surface water	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100
Use of supply: dry years											
	groundwater	13,500	14,300	14,300	18,000	18,000	22,700	22,700	22,700	22,800	22,800
	surface water	-	1,000	3,700	2,900	6,000	1,700	1,700	1,700	-	-
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100

Table C-9. Annual Capacity and Use – Total

Total Zone 40			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Demand											
	Annual, ac-ft/yr	34,500	38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200
Supply capacity, ac-ft/yr											
	groundwater	40,600	40,600	37,000	40,600	45,600	55,400	55,400	55,400	66,600	73,900
	surface water	34,200	34,200	34,200	34,200	34,200	34,200	34,200	34,200	62,200	72,900
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	76,500	76,500	72,900	76,500	81,600	91,400	91,400	91,400	132,200	150,100
Use of supply: average/wet years											
	groundwater	11,400	14,500	11,800	26,000	31,800	36,300	40,500	42,800	31,400	20,700
	surface water	21,400	22,600	32,000	26,200	29,300	33,800	38,700	43,900	58,500	69,200
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	34,500	38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,200	93,200
Use of supply: dry years											
	groundwater	32,800	36,000	33,800	38,400	43,000	51,700	55,900	58,300	58,400	58,400
	surface water	-	1,000	9,900	13,900	18,100	18,300	23,300	28,500	31,500	31,500
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	34,500	38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,200	93,200

Table C-10. Supply and Demand Comparison-Normal Year, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
Appropriative water	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
Demand	38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200
Difference	146,800	140,000	131,600	122,700	113,800	104,700	97,100	93,200	92,900

Table C-11. Use of Supply-Normal Year, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Use of supplies									
Surface water	22,600	32,000	26,200	29,300	33,800	38,700	43,900	58,500	69,200
Remediated groundwater									
Groundwater	14,500	11,800	26,000	31,800	36,300	40,500	42,800	31,400	20,700
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Total	38,800	45,500	53,900	62,800	71,800	80,900	88,400	93,200	93,200
Surface water use breakdown									
US Bureau of Reclamation-CVP supply	22,600	32,000	26,200	29,300	33,800	38,700	43,900	45,000	45,000
Appropriative water	-	-	-	-	-	-	-	13,500	24,200
City of Sacramento American River POU water rights									
Other surface water supplies									
Surface water plus remediated groundwater	22,600	32,000	26,200	29,300	33,800	38,700	43,900	58,500	69,200

Table C-12. Supply and Demand Comparison-Single Dry Year, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply allocation	11,300	16,000	13,100	14,700	16,900	19,400	22,000	22,500	22,500
Appropriative water									
City of Sacramento American River POU water rights									
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	101,500	106,200	103,300	104,900	107,100	109,600	112,200	114,300	114,300
Demand	38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200
Difference	62,800	60,700	49,400	42,100	35,400	28,800	23,800	20,400	20,100

Table C-13. Use of Supply-Single Dry Year, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
Use of supplies									
Surface water	1,000	1,000	5,000	9,200	9,400	14,400	19,600	22,600	22,600
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Groundwater	27,100	33,800	38,400	43,000	51,700	55,900	58,300	58,400	58,400
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Total	38,700	45,400	54,000	62,800	71,700	80,900	88,500	93,200	93,200
Surface water use breakdown									
US Bureau of Reclamation-CVP supply	1,000	1,000	5,000	9,200	9,400	14,400	19,600	22,500	22,500
Appropriative water									
City of Sacramento American River POU water rights									
Other surface water supplies	-	-	-	-	-	-	-	100	100
Surface water plus remediated groundwater	1,000	9,900	13,900	18,100	18,300	23,300	28,500	31,500	31,500

Table C-14. Supply and Demand Comparison-Multiple Dry Years

Year			2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2051)
First year	Supplies										
		US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
		Appropriative water	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
		City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
		Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
		Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
		Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
		Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
		Supply totals	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
	Demand		38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200
	Difference		146,800	140,000	131,600	122,700	113,800	104,700	97,100	93,200	92,900
Second year	Supplies										
		US Bureau of Reclamation-CVP supply	17,000	24,000	19,700	22,000	25,400	29,000	32,900	33,800	33,800
		Appropriative water	-	-	-	-	-	-	-	-	-
		City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
		Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
		Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
		Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
		Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
		Supply totals	107,200	114,200	109,900	112,200	115,600	119,200	123,100	125,600	125,600
	Demand		38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200
	Difference		68,500	68,700	56,000	49,400	43,900	38,400	34,700	31,700	31,400
Third year	Supplies										
		US Bureau of Reclamation-CVP supply	11,300	16,000	13,100	14,700	16,900	19,400	22,000	22,500	22,500
		Appropriative water	-	-	-	-	-	-	-	-	-
		City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
		Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
		Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
		Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
		Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
		Supply totals	101,500	106,200	103,300	104,900	107,100	109,600	112,200	114,300	114,300
	Demand		38,700	45,500	53,900	62,800	71,700	80,800	88,400	93,900	94,200
	Difference		62,800	60,700	49,400	42,100	35,400	28,800	23,800	20,400	20,100

Table C-15. NSA Upper Zone Storage Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Maximum day demand, mgd	0.0	2.5	5.0	7.9	Cordova Hills (4,451 ac-ft/yr)
Peak hour demand, mgd	0.0	5.0	10.0	15.8	
Provided storage volume, MG					
Existing					
North Douglas	3.0	3.0	3.0	3.0	
Future					
Cordova Hills				3.0	
Total	3.0	3.0	3.0	6.0	
Required storage volume, MG					
Equalization	0.0	0.5	1.0	1.6	Assume 20% MDD.
Fire	0.5	0.5	0.5	0.5	Assume volume for one fire at 3,000 gpm for 3 hours.
Emergency	0.0	0.4	0.8	1.3	Assume 1/3 average day.
Total	0.5	1.4	2.3	3.4	
Difference (provided minus required)	2.5	1.6	0.7	2.6	Could downsize Cordova Hills tank.

Table C-16. NSA Upper Zone Pump Station Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Provided pumping capacity, mgd					
Existing					
North Douglas	19.4	19.4	19.4	19.4	Very large capacity for such a small demand.
Upper zone max day supply	0.0	2.5	5.0	7.9	
from storage	19.4	16.9	14.4	11.5	
Future					
Cordova Hills				21.6	
Total from storage	19.4	16.9	14.4	33.1	
Required peak hour capacity from storage, mgd	0.0	2.5	5.0	7.9	Capacity increment above maximum day demand capacity.
Required fire flow from storage, mgd	4.3	4.3	4.3	4.3	4.3 mgd for one fire, max day supply accounted for above.
Required capacity from storage	4.3	4.3	5.0	7.9	Greater of pk hr or fire.
Difference (provided minus required)	15.1	12.6	9.4	25.2	Substantial surplus capacity.
Summary					
Total provided pump station capacity, mgd	38.8	36.3	33.8	52.5	
Total required pump station capcity					
from storage, mgd	4.3	4.3	5.0	7.9	
for max day supply capacity, mgd	0.0	2.5	5.0	7.9	
Total	4.3	6.8	10.0	15.8	

Table C-17. NSA Main Zone Storage Capacity Evaluation

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Maximum day demand, mgd	7.4	14.1	24.4	46.3	NSA 60.1 mgd minus Cordova Hills (7.9 mgd) and half of Rio del Oro (5.9 mgd).
Peak hour demand, mgd	14.8	28.2	48.8	92.6	
Provided storage volume, MG					
Existing					
Mather Housing GWTP	0.5	0.5	0.5	0.5	
Anatolia GWTP	4.0	4.0	4.0	4.0	
Mather 1 Main Base	1.0	1.0	1.0	1.0	
Mather 2	0.3	0.3	0.3	0.3	
subtotal	5.8	5.8	5.8	5.8	
Future					
Phase B NSA Project		10.0	10.0	10.0	
White Rock				3.0	
Suncreek				3.0	
subtotal	0.0	10.0	10.0	16.0	
Total	5.8	15.8	15.8	21.8	
Required storage volume, MG					
Equalization	1.5	2.8	4.9	9.3	Assume 20% MDD.
Fire	1.1	1.1	1.1	1.1	Assume volume for two fires at 3,000 gpm for 3 hours.
Emergency	1.2	2.4	4.1	7.7	Assume 1/3 average day.
Total	3.8	6.3	10.0	18.1	Could phase in the Phase B NSA Project storage.
Difference (provided minus required)	2.0	9.5	5.8	3.7	

Table C-18. NSA Main Zone Pump Station Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Provided pumping capacity, mgd					
Existing					
Mather Housing GWTP	5.2	5.2	5.2	5.2	
GWTP	3.0	3.0	3.0	3.0	Assume half of GWTP supplies pump station.
from storage	2.2	2.2	2.2	2.2	
Anatolia GWTP/Storage (a)	11.2	22.5	22.5	22.5	
GWTP/part of MD supply from Vineyard SWTP	6.5	4.7	8.1	15.4	Assume 2/3 of main zone MD demand through NSA terminal and 1/3 through Anatolia tanks.
from storage	4.7	17.8	14.4	7.1	
Mather 1 Main Base	5.2	5.2	5.2	5.2	
Mather 2	2.0	2.0	2.0	2.0	Elevated tank, assumed flow.
subtotal from storage	14.1	27.2	23.8	16.5	
Future					
White Rock				14.4	
Suncreek				18.0	
Phase B NSA-total capacity (b)		64.0	64.0	64.0	Total pump station capacity.
max day supply for Cal Am Rio del Oro		1.0	3.0	5.9	Max day supply for Cal Am tank. Not from storage.
max day supply for upper zone		2.5	5.0	7.9	Supply to North Douglas and Cordova Hills tanks. Not from storage.
part of max day supply from Vineyard SWTP for main zone		9.4	16.3	30.9	Assume 2/3 through NSA terminal and 1/3 through Anatolia tanks.
subtotal, pumping not from Phase B NSA storage		12.9	24.3	44.7	
subtotal, capacity available to pump from Phase B NSA Project storage		51.1	39.7	19.3	
subtotal from storage		51.1	39.7	51.7	
Total from storage	14.1	78.3	63.5	68.2	
Required peak hour capacity from storage, mgd	7.4	14.1	24.4	46.3	
Difference (provided minus required)	6.7	64.2	39.1	21.9	Could phase in the NSA terminal storage pump station capacity.
Summary					
Total provided pump station capacity, mgd	23.6	98.9	98.9	131.3	
Total required pump station capacity					
from storage, mgd	7.4	14.1	24.4	46.3	
for max day supply capacity, mgd	9.5	20.6	35.4	63.1	
Total	16.9	34.7	59.8	109.4	
(a) When Phase A NSA is completed, Anatolia will pump through supply from Vineyard SWTP.					
(b) Calculation of Phase B NSA pump station capacity available to supply from storage the main zone's pk hr increment.					

Table C-19. CSA Storage Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	Notes
Maximum day demand, mgd	27.0	37.9	50.2	61.5	
Peak hour demand, mgd	54.0	75.8	100.4	123.0	
Provided storage volume, MG					
Existing					
Calvine Meadows GWTP	0.35	0.35	0.35	0.35	
East Elk Grove GWTP	3.5	3.5	3.5	3.5	
East Park GWTP	0.5	0.5	0.5	0.5	
Waterman GWTP	7.0	7.0	7.0	7.0	
Wildhawk GWTP	3.0	3.0	3.0	3.0	
Vineyard SWTP clearwell	6.0	6.0	6.0	6.0	Assumed equalization storage available from 20 mgd clearwell.
subtotal	20.4	20.4	20.4	20.4	
Future					
West Jackson GWTP			4.0	4.0	
East Elk Grove GWTP expansion				0.0	
Bond GWTP				0.5	
North Vineyard Station				4.0	
Calvine Meadows GWTP expansion				0.0	
subtotal			4.0	8.5	
Total	20.4	20.4	24.4	28.9	Planned storage volume.
Required storage volume, MG					
Equalization	5.4	7.6	10.0	12.3	Assume 20% MDD.
Fire	1.1	1.1	1.1	1.1	Assume volume for two fires at 3,000 gpm for 3 hours.
Emergency	4.5	6.3	8.4	10.3	Assume 1/3 average day.
Total	11.0	15.0	19.5	23.7	
Difference (provided minus required)	9.4	5.4	4.8	5.2	

Table C-20. CSA Pump Station Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	Notes
Provided pumping capacity, mgd					
Existing					
Calvine Meadows GWTP, total	8.8	8.8	8.8	8.8	
GWTP	5.0	5.0	5.0	5.0	
from storage	3.8	3.8	3.8	3.8	
East Elk Grove GWTP, total	13.0	13.0	13.0	13.0	
GWTP	6.5	6.5	6.5	6.5	
from storage	6.5	6.5	6.5	6.5	
East Park GWTP, total	3.5	3.5	3.5	3.5	
GWTP	2.9	2.9	2.9	2.9	
from storage	0.6	0.6	0.6	0.6	
Waterman GWTP, total	25.9	25.9	25.9	25.9	
GWTP	8.6	8.6	8.6	8.6	
from storage	17.3	17.3	17.3	17.3	
Wildhawk GWTP, total	19.0	19.0	19.0	19.0	
GWTP	7.5	7.5	7.5	7.5	
from storage	11.5	11.5	11.5	11.5	
Vineyard SWTP pump station	13.0	13.0	13.0	13.0	Assume capacity provided from clear well.
subtotal from storage	52.7	52.7	52.7	52.7	
Future					
West Jackson GWTP			21.6	21.6	
GWTP			18.0	18.0	
from storage			3.6	3.6	
East Elk Grove GWTP expansion, total				13.0	
GWTP				6.5	
from storage				6.5	
Bond GWTP, total				10.8	
GWTP				6.5	
from storage				4.3	
North Vineyard Station, total				21.6	Pumps through City POU supply.
City POU supply				19.1	
from storage				2.5	
Calvine Meadows GWTP expansion				7.2	Pump all from storage.
Vineyard SWTP pump station expansion				10.0	Assume future capacity from clear well.
subtotal from storage			3.6	34.1	
Total from storage	52.7	52.7	56.3	86.8	
Required peak hour capacity from storage, mgd	27.0	37.9	50.2	61.5	
Difference (provided minus required) (a)	25.7	14.8	6.1	25.3	Pumping capacity could be reduced in Phase 3.
Summary					
Total provided pump station capacity, mgd	83.2	83.2	104.8	167.4	
Total required pump station capacity					
from storage, mgd	27.0	37.9	50.2	61.5	
for max day supply capacity, mgd	30.5	30.5	48.5	61.5	
Total	57.5	68.4	98.7	123.0	
(a) Peak hour pumping surplus used to supply the SSA.					

Table C-21. SSA Storage Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	Notes
Maximum day demand, mgd	27.1	40.3	46.6	46.6	
Peak hour demand, mgd	54.2	80.6	93.2	93.2	
Provided storage volume, MG					
Existing					
Big Horn GWTP	2.0	2.0	2.0	2.0	
Dwight Road GWTP	7.0	7.0	7.0	7.0	
Lakeside GWTP	0.5	0.5	0.5	0.5	
Poppy Ridge GWTP	3.5	3.5	3.5	3.5	
subtotal	13.0	13.0	13.0	13.0	
Future					
Poppy Ridge GWTP expansion		3.5	3.5	3.5	
Big Horn GWTP expansion					
Franklin GWTP				2.0	
Whitelock GWTP				3.0	
subtotal	0.0	3.5	3.5	8.5	
Total	13.0	16.5	16.5	21.5	Planned storage volume.
Required storage volume, MG					
Equalization	5.4	8.1	9.3	9.3	Assume 20% MDD.
Fire	1.1	1.1	1.1	1.1	Assume volume for two fires at 3,000 gpm for 3 hours.
Emergency	4.5	6.7	7.8	7.8	Assume 1/3 average day.
Total	11.0	15.9	18.2	18.2	
Difference (provided minus required)	2.0	0.6	-1.7	3.3	Phase 2 deficit supplied by CSA storage surplus.

Table C-22. SSA Pump Station Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2050)	Notes
Provided pumping capacity, mgd					
Existing					
Big Horn GWTP, total	8.6	8.6	8.6	8.6	
GWTP	4.5	4.5	4.5	4.5	
from storage	4.1	4.1	4.1	4.1	
Dwight Road GWTP, total	25.9	25.9	25.9	25.9	
GWTP and Franklin Intertie	13.2	13.2	13.2	13.2	
from storage	12.7	12.7	12.7	12.7	
Lakeside GWTP, total	7.2	7.2	7.2	7.2	
GWTP	6.5	6.5	6.5	6.5	
from storage	0.7	0.7	0.7	0.7	
Poppy Ridge GWTP, total	10.4	10.4	10.4	10.4	
GWTP	6.5	6.5	6.5	6.5	
from storage	3.9	3.9	3.9	3.9	
subtotal from storage	21.4	21.4	21.4	21.4	
Future					
Poppy Ridge GWTP expansion, total		17.0	17.0	17.0	
GWTP		6.5	6.5	6.5	
from storage		10.5	10.5	10.5	
Big Horn GWTP expansion, total			17.0	17.0	
GWTP			8.5	8.5	
from storage			8.5	8.5	
Franklin GWTP, total				21.6	
GWTP				7.0	
from storage				14.6	
Whitelock GWTP, total				14.4	
GWTP				13.0	
from storage				1.4	
subtotal from storage	0.0	10.5	19.0	35.0	
Total from storage	21.4	31.9	40.4	56.4	
Required peak hour capacity from storage, mgd	27.1	40.3	46.6	46.6	
Difference (provided minus required) (a)	-5.7	-8.4	-6.2	9.8	Phase 1 and 2 deficit supplied by CSA.
Summary					
Total provided pump station capacity, mgd	52.1	69.1	86.1	122.1	
Total required pump station capacity					
from storage, mgd	27.1	40.3	46.6	46.6	
for max day supply capacity, mgd	30.7	37.2	45.7	65.7	
Total	57.8	77.5	92.3	112.3	
(a) Peak hour pumping deficit to be supplied by surplus in CSA.					

Table C-23. Zone 40 Storage Capacity Evaluation Summary					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	
Provided storage volume, MG					
Existing	42.2	42.2	42.2	42.2	
Future	0.0	13.5	17.5	36.0	
Total	42.2	55.7	59.7	78.2	
Required storage volume, MG					
Equalization	12.3	19.0	25.2	32.5	
Fire	3.8	3.8	3.8	3.8	
Emergency	10.3	15.8	21.0	27.1	
Total	26.4	38.6	50.1	63.3	
Difference (provided minus required)	15.8	17.1	9.6	14.8	

Table C-24. Zone 40 Pump Station Capacity Evaluation Summary					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2050)	
Provided pump station capacity from storage, mgd					
Existing	107.6	118.2	112.3	102.1	
Future	0.0	20.5	32.6	88.1	
Total	107.6	138.7	144.9	190.2	
Required pump station capacity from storage, mgd	65.8	96.6	126.2	162.3	
Difference (provided minus required)	41.8	42.1	18.7	27.9	

Appendix D: Cumulative Supply and Demand Comparison Tables

Table D-1. Maximum Day Demand to Supply Comparison for NSA, mgd

NSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	2052
Demand											
	Maximum day	7.4	9.5	13.1	18.1	23.5	31.3	39.9	49.0	58.6	62.4
Existing supply capacity											
	Mather Housing GWTP	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	Anatolia GWTP	6.5	6.5								
	total groundwater	12.5	12.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	Vineyard SWTP										
	Total	12.5	12.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Planned future supply capacity											
	surface water, Vineyard SWTP			16.0	32.5	32.5	32.5	32.5	32.5	65.0	65.0
Total supply capacity											
	groundwater	12.5	12.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	surface water	0.0	0.0	16.0	32.5	32.5	32.5	32.5	32.5	65.0	65.0
	Total	12.5	12.5	22.0	38.5	38.5	38.5	38.5	38.5	71.0	71.0
Use of supply: average/wet years											
	groundwater	7.4	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	surface water	0.0	0.0	13.1	18.1	23.5	31.3	39.9	49.0	58.6	62.4
	Total	7.4	9.5	13.1	18.1	23.5	31.3	39.9	49.0	58.6	62.4
Use of supply: dry years											
	groundwater	7.4	9.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	surface water	0.0	0.0	11.1	16.1	21.5	29.3	37.9	47.0	56.6	60.4
	Total	7.4	9.5	13.1	18.1	23.5	31.3	39.9	49.0	58.6	62.4

Table D-2. Maximum Day Demand to Supply Comparison for CSA, mgd

CSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	2052
Demand											
	Maximum day	27.0	29.2	32.9	37.9	43.0	50.2	57.9	65.7	73.8	74.0
Existing supply capacity											
	Calvine Meadows GWTP	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	East Elk Grove GWTP	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	East Park GWTP	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
	Waterman GWTP	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
	Wildhawk GWTP	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
	CSA DirectFeed	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
	total groundwater	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4
	Vineyard SWTP	50.0	50.0	34.0	17.5	17.5	17.5	17.5	17.5	17.5	17.5
	Total	84.4	84.4	68.4	51.9	51.9	51.9	51.9	51.9	51.9	51.9
Planned future supply capacity											
	West Jackson GWTP					9.0	18.0	18.0	18.0	18.0	18.0
	Bond GWTP									6.5	6.5
	East Elk Grove GWTP expansion									6.5	6.5
	total groundwater					9.0	18.0	18.0	18.0	31.0	31.0
	Vineyard SWTP expansion									17.5	17.5
	City POU supply										19.1
	total surface water									17.5	36.6
Total supply capacity											
	groundwater	34.4	34.4	34.4	34.4	43.4	52.4	52.4	52.4	65.4	65.4
	surface water	50.0	50.0	34.0	17.5	17.5	17.5	17.5	17.5	35.0	54.1
	Total	84.4	84.4	68.4	51.9	60.9	69.9	69.9	69.9	100.4	119.5
Use of supply: average/wet years											
	groundwater	0.0	0.0	0.0	20.4	25.5	32.7	40.4	48.2	38.8	19.9
	surface water	27.0	29.2	32.9	17.5	17.5	17.5	17.5	17.5	35.0	54.1
	Total	27.0	29.2	32.9	37.9	43.0	50.2	57.9	65.7	73.8	74.0
Use of supply: dry years											
	groundwater	27.0	29.2	32.9	34.4	43.0	50.2	57.9	65.7	65.4	65.4
	surface water	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	8.4	8.6
	Total	27.0	29.2	32.9	37.9	43.0	50.2	57.9	65.7	73.8	74.0

Table D-3. Maximum Day Demand to Supply Comparison for SSA, mgd

SSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	2052
Demand											
	Maximum day	27.1	30.5	35.2	40.3	45.7	46.6	46.6	46.6	46.6	46.6
Existing supply capacity											
	Big Horn GWTP	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	Dwight Road GWTP	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	Lakeside GWTP	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	Poppy Ridge GWTP	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
	SSA Direct Feed	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	total groundwater	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6
	Franklin Intertie to City	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
	SSA Recycled Water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Total	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
Planned future supply capacity											
	Poppy Ridge GWTP expansion				6.5	6.5	6.5	6.5	6.5	6.5	6.5
	Big Horn GWTP expansion						8.5	8.5	8.5	8.5	8.5
	Franklin GWTP									7.0	7.0
	Whitelock GWTP										13.0
	total groundwater			0.0	6.5	6.5	15.0	15.0	15.0	22.0	35.0
	recycled water									2.9	2.9
Total supply capacity											
	groundwater	25.6	25.6	25.6	32.1	32.1	40.6	40.6	40.6	47.6	60.6
	surface water	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	39.7	39.7	39.7	46.2	46.2	54.7	54.7	54.7	64.6	64.6
Use of supply: average/wet years											
	groundwater	13.0	16.4	21.1	26.2	31.6	32.5	32.5	32.5	29.7	29.7
	surface water	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	27.1	30.5	35.2	40.3	45.7	46.6	46.6	46.6	46.6	46.6
Use of supply: dry years											
	groundwater	24.1	25.6	25.6	32.1	32.1	40.6	40.6	40.6	40.8	40.8
	surface water	0.0	1.9	6.6	5.2	10.6	3.0	3.0	3.0	0.0	0.0
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	27.1	30.5	35.2	40.3	45.7	46.6	46.6	46.6	46.6	46.6

Table D-4. Maximum Day Demand to Supply Comparison for Zone 40, mgd

Zone 40			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	2052
Maximum day demand											
	Zone 40 total	61.5	69.2	81.2	96.3	112.2	128.1	144.4	161.4	179.0	183.0
Existing supply capacity											
	groundwater	72.5	72.5	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
	surface water	61.1	61.1	45.1	28.6	28.6	28.6	28.6	28.6	28.6	28.6
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Total	136.6	136.6	114.1	97.6	97.6	97.6	97.6	97.6	97.6	97.6
Planned future supply capacity											
	groundwater	0.0	0.0	0.0	6.5	15.5	33.0	33.0	33.0	53.0	66.0
	surface water	0.0	0.0	16.0	32.5	32.5	32.5	32.5	32.5	82.5	101.6
	recycled water									2.9	2.9
Total supply capacity											
	groundwater	72.5	72.5	66.0	72.5	81.5	99.0	99.0	99.0	119.0	132.0
	surface water	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	111.1	130.2
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	136.6	136.6	130.1	136.6	145.6	163.1	163.1	163.1	236.0	268.1
Use of supply: average/wet years											
	groundwater	20.4	25.8	21.1	46.6	57.1	65.2	72.9	80.7	68.4	49.5
	surface water	38.1	40.3	57.1	46.7	52.1	59.9	68.5	77.6	104.7	127.6
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	61.5	69.2	81.2	96.3	112.2	128.1	144.4	161.4	179.0	183.0
Use of supply: dry years											
	groundwater	58.5	64.3	60.5	68.5	77.1	92.8	100.5	108.3	108.2	108.2
	surface water	0.0	1.9	17.7	24.8	32.1	32.3	40.9	50.0	65.0	69.0
	recycled water	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.9	5.9
	Total	61.5	69.2	81.2	96.3	112.2	128.1	144.4	161.4	179.0	183.0

Table D-5. Conjunctive Use Metrics

		Phase 1			Phase 2		Phase 3			
Parameter	2013	2015	2020	2025	2030	2035	2040	2045	2050	2052
Provided Capacity										
surface water, % of demand	99.3%	88.3%	75.2%	63.4%	54.5%	47.7%			62.1%	71.2%
groundwater, % of demand	117.8%	104.8%	81.3%	75.3%	72.7%	77.3%			66.5%	72.1%
Total	217.2%	193.1%	156.5%	138.7%	127.1%	125.0%			128.6%	143.3%
Use in wet/average years										
surface water, % of demand	62.0%	58.3%	70.3%	48.5%	46.4%	46.8%			58.5%	69.7%
groundwater, % of demand	33.1%	37.3%	26.0%	48.4%	50.9%	50.9%			38.2%	27.1%
surface water, % of surface water capacity	62.4%	66.0%	93.5%	76.4%	85.2%	98.0%			94.3%	98.0%
groundwater, % of groundwater capacity	28.1%	35.6%	32.0%	64.3%	70.1%	65.9%			57.5%	37.5%
Use in dry years										
surface water, % of demand	0.0%	2.7%	21.8%	25.8%	28.6%	25.2%			36.3%	37.7%
groundwater, % of demand	95.1%	93.0%	74.5%	71.1%	68.7%	72.4%			60.4%	59.1%
surface water, % of wet/average year use	0.0%	4.6%	31.0%	53.1%	61.6%	53.9%			62.0%	54.0%
groundwater, % of groundwater capacity	80.7%	88.7%	91.7%	94.5%	94.6%	93.7%			90.9%	81.9%

Note: Recycled water values not presented.

Table D-6. Annual Supply Capacity and Use - NSA

NSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2052)
Demand											
	Annual, ac-ft/yr	4,200	5,300	7,300	10,100	13,100	17,500	22,400	27,500	32,800	35,000
Supply capacity, ac-ft/yr											
	groundwater	7,000	7,000	3,400	3,400	3,400	3,400	3,400	3,400	3,400	3,400
	surface water	-	-	9,000	18,200	18,200	18,200	18,200	18,200	36,400	36,400
	Total	7,000	7,000	12,300	21,600	21,600	21,600	21,600	21,600	39,800	39,800
Use of supply: average/wet years											
	groundwater	4,100	5,300	-	-	-	-	-	-	-	-
	surface water	-	-	7,300	10,100	13,100	17,500	22,300	27,400	32,800	34,900
	Total	4,100	5,300	7,300	10,100	13,100	17,500	22,300	27,400	32,800	34,900
Use of supply: dry years											
	groundwater	4,100	5,300	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
	surface water	-	-	6,200	9,000	12,000	16,400	21,200	26,300	31,700	33,800
	Total	4,100	5,300	7,300	10,100	13,100	17,500	22,300	27,400	32,800	34,900

Table D-7. Annual Supply Capacity and Use - CSA

CSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2052)
Demand											
	Annual, ac-ft/yr	15,100	16,400	18,400	21,200	24,100	28,100	32,400	36,800	41,300	41,400
Supply capacity, ac-ft/yr											
	groundwater	19,300	19,300	19,300	19,300	24,300	29,300	29,300	29,300	36,600	36,600
	surface water	28,000	28,000	19,000	9,800	9,800	9,800	9,800	9,800	19,600	30,300
	Total	47,300	47,300	38,300	29,100	34,100	39,100	39,100	39,100	56,200	66,900
Use of supply: average/wet years											
	groundwater	-	-	-	11,400	14,300	18,300	22,600	27,000	21,700	11,100
	surface water	15,100	16,400	18,400	9,800	9,800	9,800	9,800	9,800	19,600	30,300
	Total	15,100	16,400	18,400	21,200	24,100	28,100	32,400	36,800	41,300	41,400
Use of supply: dry years											
	groundwater	15,100	16,400	18,400	19,300	24,100	28,100	32,400	36,800	36,600	36,600
	surface water	-	-	-	2,000	-	-	-	-	4,700	4,800
	Total	15,100	16,400	18,400	21,200	24,100	28,100	32,400	36,800	41,300	41,400

Table D-8. Annual Supply Capacity and Use - SSA

SSA			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2052)
Demand											
	Annual, ac-ft/yr	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100
Supply capacity, ac-ft/yr											
	groundwater	14,300	14,300	14,300	18,000	18,000	22,700	22,700	22,700	26,700	33,900
	surface water	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	22,200	22,200	22,200	25,900	25,900	30,600	30,600	30,600	36,200	43,400
Use of supply: average/wet years											
	groundwater	7,300	9,200	11,800	14,700	17,700	18,200	18,200	18,200	16,600	16,600
	surface water	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100
Use of supply: dry years											
	groundwater	13,500	14,300	14,300	18,000	18,000	22,700	22,700	22,700	22,800	22,800
	surface water	-	1,000	3,700	2,900	6,000	1,700	1,700	1,700	-	-
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	15,200	17,100	19,700	22,600	25,600	26,100	26,100	26,100	26,100	26,100

Table D-9. Annual Supply Capacity and Use - Total

Total Zone 40			Phase 1			Phase 2		Phase 3			
		2013	2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2052)
Demand											
	Annual, ac-ft/yr	34,500	38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,500
Supply capacity, ac-ft/yr											
	groundwater	40,600	40,600	37,000	40,600	45,600	55,400	55,400	55,400	66,600	73,900
	surface water	34,200	34,200	34,200	34,200	34,200	34,200	34,200	34,200	62,200	72,900
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	76,500	76,500	72,900	76,500	81,600	91,400	91,400	91,400	132,200	150,100
Use of supply: average/wet years											
	groundwater	11,400	14,500	11,800	26,100	32,000	36,500	40,800	45,200	38,300	27,700
	surface water	21,400	22,600	32,000	26,200	29,200	33,500	38,400	43,500	58,600	71,500
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	34,500	38,700	45,500	53,900	62,800	71,700	80,900	90,400	100,200	102,500
Use of supply: dry years											
	groundwater	32,800	36,000	33,900	38,400	43,200	52,000	56,300	60,700	60,600	60,600
	surface water	-	1,000	9,900	13,900	18,000	18,100	22,900	28,000	36,400	38,600
	recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
	Total	34,500	38,700	45,500	53,900	62,800	71,700	80,900	90,400	100,200	102,500

Table D-10. Supply and Demand Comparison-Normal Year, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	2052
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
Appropriative water	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
Demand	38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,500
Difference	146,800	140,000	131,600	122,700	113,700	104,600	95,100	86,800	84,600

Table D-11. Use of Supply-Normal Year, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	2052
Use of supplies									
Surface water	22,600	32,000	26,200	29,200	33,500	38,400	43,500	58,600	71,500
Remediated groundwater									
Groundwater	14,500	11,800	26,100	32,000	36,500	40,800	45,200	38,300	27,700
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Total	38,800	45,500	54,000	62,900	71,700	80,900	90,400	100,200	102,500
Surface water use breakdown									
US Bureau of Reclamation-CVP supply	22,600	32,000	26,200	29,200	33,500	38,400	43,500	45,000	45,000
Appropriative water	-	-	-	-	-	-	-	13,600	26,500
City of Sacramento American River POU water rights									
Other surface water supplies									
Surface water plus remediated groundwater	22,600	32,000	26,200	29,200	33,500	38,400	43,500	58,600	71,500

Table D-12. Supply and Demand Comparison-Single Dry Year, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	2052
Supplies, no facility constraints									
US Bureau of Reclamation-CVP supply allocation	11,300	16,000	13,100	14,600	16,800	19,200	21,800	22,500	22,500
Appropriative water									
City of Sacramento American River POU water rights									
Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Supply total	101,500	106,200	103,300	104,800	107,000	109,400	112,000	114,300	114,300
Demand	38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,500
Difference	62,800	60,700	49,400	42,000	35,200	28,500	21,600	14,000	11,800

Table D-13. Use of Supply-Single Dry Year, ac-ft/yr

	2015	2020	2025	2030	2035	2040	2045	2050	2052
Use of supplies									
Surface water	1,000	1,000	5,000	9,100	9,200	14,000	19,100	27,500	29,700
Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
Groundwater	27,100	33,900	38,400	43,200	52,000	56,300	60,700	60,600	60,600
Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
Total	38,700	45,500	54,000	62,900	71,800	80,900	90,400	100,300	102,500
Surface water use breakdown									
US Bureau of Reclamation-CVP supply	1,000	1,000	5,000	9,100	9,200	14,000	19,100	22,500	22,500
Appropriative water									
City of Sacramento American River POU water rights									
Other surface water supplies	-	-	-	-	-	-	-	5,000	7,200
Surface water plus remediated groundwater	1,000	9,900	13,900	18,000	18,100	22,900	28,000	36,400	38,600

Table D-14. Supply and Demand Comparison-Multiple Dry Years

Year			2015	2020	2025	2030	2035	2040	2045	2050	Buildout (2
First year	Supplies										
		US Bureau of Reclamation-CVP supply	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
		Appropriative water	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000	71,000
		City of Sacramento American River POU water rights	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300	9,300
		Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
		Groundwater	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
		Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
		Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
		Supply totals	185,500	185,500	185,500	185,500	185,500	185,500	185,500	187,100	187,100
	Demand		38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,500
	Difference		146,800	140,000	131,600	122,700	113,700	104,600	95,100	86,800	84,600
Second year	Supplies										
		US Bureau of Reclamation-CVP supply	17,000	24,000	19,700	21,900	25,100	28,800	32,600	33,800	33,800
		Appropriative water	-	-	-	-	-	-	-	-	-
		City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
		Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
		Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
		Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
		Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
		Supply totals	107,200	114,200	109,900	112,100	115,300	119,000	122,800	125,600	125,600
	Demand		38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,500
	Difference		68,500	68,700	56,000	49,300	43,500	38,100	32,400	25,300	23,100
Third year	Supplies										
		US Bureau of Reclamation-CVP supply	11,300	16,000	13,100	14,600	16,800	19,200	21,800	22,500	22,500
		Appropriative water	-	-	-	-	-	-	-	-	-
		City of Sacramento American River POU water rights	-	-	-	-	-	-	-	-	-
		Other surface water supplies	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
		Groundwater	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
		Remediated groundwater	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900	8,900
		Recycled water	1,700	1,700	1,700	1,700	1,700	1,700	1,700	3,300	3,300
		Supply totals	101,500	106,200	103,300	104,800	107,000	109,400	112,000	114,300	114,300
	Demand		38,700	45,500	53,900	62,800	71,800	80,900	90,400	100,300	102,500
	Difference		62,800	60,700	49,400	42,000	35,200	28,500	21,600	14,000	11,800

Table D-15. NSA Upper Zone Storage Capacity Evaluation

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Maximum day demand, mgd	0.0	2.5	5.0	7.9	Cordova Hills (4,451 ac-ft/yr)
Peak hour demand, mgd	0.0	5.0	10.0	15.8	
Provided storage volume, MG					
Existing					
North Douglas	3.0	3.0	3.0	3.0	
Future					
Cordova Hills				3.0	
Total	3.0	3.0	3.0	6.0	
Required storage volume, MG					
Equalization	0.0	0.5	1.0	1.6	Assume 20% MDD.
Fire	0.5	0.5	0.5	0.5	Assume volume for one fire at 3,000 gpm for 3 hours.
Emergency	0.0	0.4	0.8	1.3	Assume 1/3 average day.
Total	0.5	1.4	2.3	3.4	
Difference (provided minus required)	2.5	1.6	0.7	2.6	Could downsize Cordova Hills tank.

Table D-16. NSA Upper Zone Pump Station Capacity Evaluation

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Provided pumping capacity, mgd					
Existing					
North Douglas	19.4	19.4	19.4	19.4	Very large capacity for such a small demand.
Upper zone max day supply	0.0	2.5	5.0	7.9	
from storage	19.4	16.9	14.4	11.5	
Future					
Cordova Hills				21.6	
Total from storage	19.4	16.9	14.4	33.1	
Required peak hour capacity from storage, mgd	0.0	2.5	5.0	7.9	Capacity increment above maximum day demand capacity.
Required fire flow from storage, mgd	4.3	4.3	4.3	4.3	4.3 mgd for one fire, max day supply accounted for above.
Required capacity from storage	4.3	4.3	5.0	7.9	Greater of pk hr or fire.
Difference (provided minus required)	15.1	12.6	9.4	25.2	Substantial surplus capacity.
Summary					
Total provided pump station capacity, mgd	38.8	36.3	33.8	52.5	
Total required pump station capcity					
from storage, mgd	4.3	4.3	5.0	7.9	
for max day supply capacity, mgd	0.0	2.5	5.0	7.9	
Total	4.3	6.8	10.0	15.8	

Table D-17. NSA Main Zone Storage Capacity Evaluation

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Maximum day demand, mgd	7.4	14.1	24.4	48.6	NSA 62.4 mgd minus Cordova Hills (7.9 mgd) and half of Rio del Oro (5.9 mgd).
Peak hour demand, mgd	14.8	28.2	48.8	97.2	
Provided storage volume, MG					
Existing					
Mather Housing GWTP	0.5	0.5	0.5	0.5	
Anatolia GWTP	4.0	4.0	4.0	4.0	
Mather 1 Main Base	1.0	1.0	1.0	1.0	
Mather 2	0.3	0.3	0.3	0.3	
subtotal	5.8	5.8	5.8	5.8	
Future					
Phase B NSA Project		10.0	10.0	10.0	
White Rock				3.0	
Suncreek				3.0	
subtotal	0.0	10.0	10.0	16.0	
Total	5.8	15.8	15.8	21.8	
Required storage volume, MG					
Equalization	1.5	2.8	4.9	9.7	Assume 20% MDD.
Fire	1.1	1.1	1.1	1.1	Assume volume for two fires at 3,000 gpm for 3 hours.
Emergency	1.2	2.4	4.1	8.1	Assume 1/3 average day.
Total	3.8	6.3	10.0	18.9	Could phase in the Phase B NSA Project storage.
Difference (provided minus required)	2.0	9.5	5.8	2.9	

Table D-18. NSA Main Zone Pump Station Capacity Evaluation

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2052)	Notes
Provided pumping capacity, mgd					
Existing					
Mather Housing GWTP	5.2	5.2	5.2	5.2	
GWTP	3.0	3.0	3.0	3.0	Assume half of GWTP supplies pump station.
from storage	2.2	2.2	2.2	2.2	
Anatolia GWTP/Storage (a)	11.2	22.5	22.5	22.5	
GWTP/part of MD supply from Vineyard SWTP	6.5	4.7	8.1	16.2	Assume 2/3 of main zone MD demand through NSA terminal and 1/3 through Anatolia tanks.
from storage	4.7	17.8	14.4	6.3	
Mather 1 Main Base	5.2	5.2	5.2	5.2	
Mather 2	2.0	2.0	2.0	2.0	Elevated tank, assumed flow.
subtotal from storage	14.1	27.2	23.8	15.7	
Future					
White Rock				14.4	
Suncreek				18.0	
Phase B NSA-total capacity (b)		64.0	64.0	64.0	Total pump station capacity.
max day supply for Cal Am Rio del Oro		1.0	3.0	5.9	Max day supply for Cal Am tank. Not from storage.
max day supply for upper zone		2.5	5.0	7.9	Supply to North Douglas and Cordova Hills tanks. Not from storage.
part of max day supply from Vineyard SWTP for main zone		9.4	16.3	32.4	Assume 2/3 through NSA terminal and 1/3 through Anatolia tanks.
subtotal, pumping not from Phase B NSA storage		12.9	24.3	46.2	
subtotal, capacity available to pump from Phase B NSA Project storage		51.1	39.7	17.8	
subtotal from storage		51.1	39.7	50.2	
Total from storage	14.1	78.3	63.5	65.9	
Required peak hour capacity from storage, mgd	7.4	14.1	24.4	48.6	
Difference (provided minus required)	6.7	64.2	39.1	17.3	Could phase in the NSA terminal storage pump station capacity.
Summary					
Total provided pump station capacity, mgd	23.6	98.9	98.9	131.3	
Total required pump station capacity					
from storage, mgd	7.4	14.1	24.4	48.6	
for max day supply capacity, mgd	9.5	20.6	35.4	65.4	
Total	16.9	34.7	59.8	114.0	

(a) When Phase A NSA is completed, Anatolia will pump through supply from Vineyard SWTP.

(b) Calculation of Phase B NSA pump station capacity available to supply from storage the main zone's pk hr increment.

Table D-19. CSA Storage Capacity Evaluation

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	Notes
Maximum day demand, mgd	27.0	37.9	50.2	61.5	
Peak hour demand, mgd	54.0	75.8	100.4	123.0	
Provided storage volume, MG					
Existing					
Calvine Meadows GWTP	0.35	0.35	0.35	0.35	
East Elk Grove GWTP	3.5	3.5	3.5	3.5	
East Park GWTP	0.5	0.5	0.5	0.5	
Waterman GWTP	7.0	7.0	7.0	7.0	
Wildhawk GWTP	3.0	3.0	3.0	3.0	
Vineyard SWTP clearwell	6.0	6.0	6.0	6.0	Assumed equalization storage available from 20 mgd clearwell.
subtotal	20.4	20.4	20.4	20.4	
Future					
West Jackson GWTP			4.0	4.0	
East Elk Grove GWTP expansion				0.0	
Bond GWTP				0.5	
North Vineyard Station				4.0	
Calvine Meadows GWTP expansion				0.0	
subtotal			4.0	8.5	
Total	20.4	20.4	24.4	28.9	Planned storage volume.
Required storage volume, MG					
Equalization	5.4	7.6	10.0	12.3	Assume 20% MDD.
Fire	1.1	1.1	1.1	1.1	Assume volume for two fires at 3,000 gpm for 3 hours.
Emergency	4.5	6.3	8.4	10.3	Assume 1/3 average day.
Total	11.0	15.0	19.5	23.7	
Difference (provided minus required)	9.4	5.4	4.8	5.2	

Table D-20. CSA Pump Station Capacity Evaluation

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	Notes
Provided pumping capacity, mgd					
Existing					
Calvine Meadows GWTP, total	8.8	8.8	8.8	8.8	
GWTP	5.0	5.0	5.0	5.0	
from storage	3.8	3.8	3.8	3.8	
East Elk Grove GWTP, total	13.0	13.0	13.0	13.0	
GWTP	6.5	6.5	6.5	6.5	
from storage	6.5	6.5	6.5	6.5	
East Park GWTP, total	3.5	3.5	3.5	3.5	
GWTP	2.9	2.9	2.9	2.9	
from storage	0.6	0.6	0.6	0.6	
Waterman GWTP, total	25.9	25.9	25.9	25.9	
GWTP	8.6	8.6	8.6	8.6	
from storage	17.3	17.3	17.3	17.3	
Wildhawk GWTP, total	19.0	19.0	19.0	19.0	
GWTP	7.5	7.5	7.5	7.5	
from storage	11.5	11.5	11.5	11.5	
Vineyard SWTP pump station	13.0	13.0	13.0	13.0	Assume capacity provided from clear well.
subtotal from storage	52.7	52.7	52.7	52.7	
Future					
West Jackson GWTP			21.6	21.6	
GWTP			18.0	18.0	
from storage			3.6	3.6	
East Elk Grove GWTP expansion, total				13.0	
GWTP				6.5	
from storage				6.5	
Bond GWTP, total				10.8	
GWTP				6.5	
from storage				4.3	
North Vineyard Station, total				21.6	Pumps through City POU supply.
City POU supply				19.1	
from storage				2.5	
Calvine Meadows GWTP expansion				7.2	Pump all from storage.
Vineyard SWTP pump station expansion				10.0	Assume future capacity from clear well.
subtotal from storage			3.6	34.1	
Total from storage	52.7	52.7	56.3	86.8	
Required peak hour capacity from storage, mgd	27.0	37.9	50.2	61.5	
Difference (provided minus required) (a)	25.7	14.8	6.1	25.3	Pumping capacity could be reduced in Phase 3.
Summary					
Total provided pump station capacity, mgd	83.2	83.2	104.8	167.4	
Total required pump station capacity					
from storage, mgd	27.0	37.9	50.2	61.5	
for max day supply capacity, mgd	30.5	30.5	48.5	61.5	
Total	57.5	68.4	98.7	123.0	

(a) Peak hour pumping surplus used to supply the SSA.

Table D-21. SSA Storage Capacity Evaluation

	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	Notes
Maximum day demand, mgd	27.1	40.3	46.6	46.6	
Peak hour demand, mgd	54.2	80.6	93.2	93.2	
Provided storage volume, MG					
Existing					
Big Horn GWTP	2.0	2.0	2.0	2.0	
Dwight Road GWTP	7.0	7.0	7.0	7.0	
Lakeside GWTP	0.5	0.5	0.5	0.5	
Poppy Ridge GWTP	3.5	3.5	3.5	3.5	
subtotal	13.0	13.0	13.0	13.0	
Future					
Poppy Ridge GWTP expansion		3.5	3.5	3.5	
Big Horn GWTP expansion					
Franklin GWTP				2.0	
Whitelock GWTP				3.0	
subtotal	0.0	3.5	3.5	8.5	
Total	13.0	16.5	16.5	21.5	Planned storage volume.
Required storage volume, MG					
Equalization	5.4	8.1	9.3	9.3	Assume 20% MDD.
Fire	1.1	1.1	1.1	1.1	Assume volume for two fires at 3,000 gpm for 3 hours.
Emergency	4.5	6.7	7.8	7.8	Assume 1/3 average day.
Total	11.0	15.9	18.2	18.2	
Difference (provided minus required)	2.0	0.6	-1.7	3.3	Phase 2 deficit supplied by CSA storage surplus.

Table D-22. SSA Pump Station Capacity Evaluation					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2050)	Notes
Provided pumping capacity, mgd					
Existing					
Big Horn GWTP, total	8.6	8.6	8.6	8.6	
GWTP	4.5	4.5	4.5	4.5	
from storage	4.1	4.1	4.1	4.1	
Dwight Road GWTP, total	25.9	25.9	25.9	25.9	
GWTP and Franklin Intertie	13.2	13.2	13.2	13.2	
from storage	12.7	12.7	12.7	12.7	
Lakeside GWTP, total	7.2	7.2	7.2	7.2	
GWTP	6.5	6.5	6.5	6.5	
from storage	0.7	0.7	0.7	0.7	
Poppy Ridge GWTP, total	10.4	10.4	10.4	10.4	
GWTP	6.5	6.5	6.5	6.5	
from storage	3.9	3.9	3.9	3.9	
subtotal from storage	21.4	21.4	21.4	21.4	
Future					
Poppy Ridge GWTP expansion, total		17.0	17.0	17.0	
GWTP		6.5	6.5	6.5	
from storage		10.5	10.5	10.5	
Big Horn GWTP expansion, total			17.0	17.0	
GWTP			8.5	8.5	
from storage			8.5	8.5	
Franklin GWTP, total				21.6	
GWTP				7.0	
from storage				14.6	
Whitelock GWTP, total				14.4	
GWTP				13.0	
from storage				1.4	
subtotal from storage	0.0	10.5	19.0	35.0	
Total from storage	21.4	31.9	40.4	56.4	
Required peak hour capacity from storage, mgd	27.1	40.3	46.6	46.6	
Difference (provided minus required) (a)	-5.7	-8.4	-6.2	9.8	Phase 1 and 2 deficit supplied by CSA.
Summary					
Total provided pump station capacity, mgd	52.1	69.1	86.1	122.1	
Total required pump station capacity					
from storage, mgd	27.1	40.3	46.6	46.6	
for max day supply capacity, mgd	30.7	37.2	45.7	65.7	
Total	57.8	77.5	92.3	112.3	
(a) Peak hour pumping deficit to be supplied by surplus in CSA.					

Table D-23. Zone 40 Storage Capacity Evaluation Summary					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2051)	
Provided storage volume, MG					
Existing	42.2	42.2	42.2	42.2	
Future	0.0	13.5	17.5	36.0	
Total	42.2	55.7	59.7	78.2	
Required storage volume, MG					
Equalization	12.3	19.0	25.2	32.9	
Fire	3.8	3.8	3.8	3.8	
Emergency	10.3	15.8	21.0	27.4	
Total	26.4	38.6	50.1	64.2	
Difference (provided minus required)	15.8	17.1	9.6	14.0	

Table D-24. Zone 40 Pump Station Capacity Evaluation Summary					
	2013	Phase 1 (2015-2025)	Phase 2 (2026-2035)	Phase 3 (2036-2050)	
Provided pump station capacity from storage, mgd					
Existing	107.6	118.2	112.3	101.3	
Future	0.0	20.5	32.6	88.1	
Total	107.6	138.7	144.9	189.4	
Required pump station capacity from storage, mgd	65.8	96.6	126.2	164.6	
Difference (provided minus required)	41.8	42.1	18.7	24.8	

Appendix E: Cost Estimates for CIP Projects

Sacramento County Water Agency GWTP-1 Poppy Ridge GWTP Expansion

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 607,200
Site Grading, Paving, and Landscaping	1	LS	$ 300,000	$ 300,000
Well Drilling and Casing	0	EA	$ 550,000	$ -
Well Pumping Equipment	3	EA	$ 100,000	$ 300,000
Well Piping and Valving	3	EA	$ 150,000	$ 450,000
Well Electrical and Instrumentation	3	EA	$ 200,000	$ 600,000
Groundwater Treatment Plant, FE & Mn Pressure Filters	6.5	MGD	$ 150,000	$ 975,000
Backwash Tank	1	EA	$ 300,000	$ 300,000
Backwash Pump	1	EA	$ 75,000	$ 75,000
Chemical Feed Equipment and Enclosure	1	LS	$ 50,000	$ 50,000
Standby Generator	1	EA	$ 400,000	$ 400,000
Water Storage Tank	3.5	MG	$ 700,000	$ 2,450,000
Pump Station Building	1	LS	$ 300,000	$ 300,000
Pumps and Motors	17.0	MGD	$ 40,000	$ 680,000
Pump Station Electrical and Instrumentation	1	LS	$ 400,000	$ 400,000
Yard Piping	1	LS	$ 300,000	$ 300,000
Connection to (E) System	1	EA	$ 10,000	$ 10,000
Property Acquisition	0	ACRE		$ -
SUBTOTAL				$ 8,197,200
Contingencies	1	LS	25%	$ 2,049,300
Engineering, Admin, and Legal	1	LS	25%	$ 2,561,625
Environmental & Permitting	1	LS	10%	$ 1,024,650
TOTAL				**$ 13,832,800**

Sacramento County Water Agency P-1 NSA- Sunrise Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch	7,371		$ 227	$ 1,673,300	
18 -inch		LF	$ 257	$ -	
20 -inch		LF	$ 264	$ -	
24 -inch		LF	$ 293	$ -	
30 -inch		LF	$ 370	$ -	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	
Butterfly Valves					
16 -inch	8	EA	$ 5,721	$ 45,800	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	0	EA	$ 10,871	$ -	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	8	EA	$ 17,965	$ 143,720	
SUBTOTAL				$ 1,862,820	
Contingencies	1	LS	15%	$ 279,423	
Engineering	1	LS	8%	$ 171,379	
CMID	1	LS	10%	$ 214,224	
TOTAL				**$ 2,527,900**	

Sacramento County Water Agency P-1A NSA- Sunrise and Keifer Pipeline

Project Element		Quantity	Unit	Unit Cost	Total	Remarks
Pipelines						Assume paved
	16 -inch	9,676		$ 227	$ 2,196,500	Keifer East
	18 -inch		LF	$ 257	$ -	
	20 -inch		LF	$ 264	$ -	
	24 -inch		LF	$ 293	$ -	
	30 -inch		LF	$ 370	$ -	
	36 -inch		LF	$ 438	$ -	
	42 -inch		LF	$ 510	$ -	
Butterfly Valves						
	16 -inch	10	EA	$ 5,721	$ 57,300	
	18 -inch	0	EA	$ 6,866	$ -	
	20 -inch	0	EA	$ 7,896	$ -	
	24 -inch	0	EA	$10,871	$ -	
	30 -inch	0	EA	$20,711	$ -	
	36 -inch	0	EA	$25,061	$ -	
	42 -inch	0	EA	$34,444	$ -	
Horizontal Drilling						
	30 -inch Casing	0	LF	$ 1,361	$ -	
	36 -inch Casing	0	LF	$ 1,361	$ -	
	42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly		10	EA	$17,965	$ 179,650	
SUBTOTAL					$ 2,433,450	
Contingencies		1	LS	15%	$ 365,018	
Engineering		1	LS	8%	$ 223,877	
CMID		1	LS	10%	$ 279,847	
TOTAL					**$ 3,302,200**	

Sacramento County Water Agency P-2 NSA- Rio Del Oro Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch				$ -	
18 -inch		LF	$ 153	$ -	
20 -inch		LF	$ 166	$ -	
24 -inch	11,593	LF	$ 203	$ 2,353,386	
30 -inch		LF	$ 279	$ -	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	12	EA	$ 10,871	$ 130,452	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	12	EA	$ 17,965	$ 215,580	
SUBTOTAL				$ 2,699,418	
Contingencies	1	LS	15%	$ 404,913	
Engineering	1	LS	8%	$ 248,346	
CMID	1	LS	10%	$ 310,433	
TOTAL				**$ 3,663,200**	

Sacramento County Water Agency P-3 NSA- Kiefer Blvd Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch	11,078		$ 134	$ 1,484,400	
18 -inch	6,124	LF	$ 153	$ 936,937	
20 -inch	6,669	LF	$ 166	$ 1,107,100	
24 -inch	2,306	LF	$ 203	$ 468,100	
30 -inch		LF	$ 279	$ -	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	12	EA	$ 5,721	$ 68,700	
18 -inch	7	EA	$ 6,866	$ 48,062	
20 -inch	7	EA	$ 7,896	$ 55,272	
24 -inch	3	EA	$ 10,871	$ 32,613	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	500	LF	$ 1,361	$ 680,500	Folsom Canal crossing 18" pipe
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	27	EA	$ 17,965	$ 485,055	
SUBTOTAL				$ 5,366,739	
Contingencies	1	LS	15%	$ 805,011	
Engineering	1	LS	8%	$ 493,740	
CMID	1	LS	10%	$ 617,175	
TOTAL				**$ 7,282,700**	

Sacramento County Water Agency P-3A NSA- Shortened Kiefer Blvd Pipeline

Project Element		Quantity	Unit	Unit Cost	Total	Remarks
Pipelines						Assume not paved
16	-inch	-		$ 134	$ -	
18	-inch	6,200	LF	$ 153	$ 948,600	
20	-inch	1,450	LF	$ 166	$ 240,700	
24	-inch	2,306	LF	$ 203	$ 468,100	
30	-inch		LF	$ 279	$ -	
36	-inch		LF	$ 342	$ -	
42	-inch		LF	$ 406	$ -	
Butterfly Valves						
16	-inch	0	EA	$ 5,721	$ -	
18	-inch	7	EA	$ 6,866	$ 48,062	
20	-inch	2	EA	$ 7,896	$ 15,792	
24	-inch	3	EA	$10,871	$ 32,613	
30	-inch	0	EA	$20,711	$ -	
36	-inch	0	EA	$25,061	$ -	
42	-inch	0	EA	$34,444	$ -	
Horizontal Drilling						
30	-inch Casing	500	LF	$ 1,361	$ 680,500	Folsom Canal crossing 18" pipe
36	-inch Casing	0	LF	$ 1,361	$ -	
42	-inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly		10	EA	$17,965	$ 179,650	
SUBTOTAL					$ 2,614,017	
Contingencies		1	LS	15%	$ 392,103	
Engineering		1	LS	8%	$ 240,490	
CMID		1	LS	10%	$ 300,612	
TOTAL					**$ 3,547,300**	

Zone 40 Water System Master Plan P-3B NSA- Shortened Kiefer Pipeline for Jackson Township

Sacramento County Water Agency

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch	3,045	LF	$ 134	$ 408,100	
18 -inch	7,571	LF	$ 153	$ 1,158,363	
20 -inch	5,220	LF	$ 166	$ 866,600	
24 -inch	2,306	LF	$ 203	$ 468,118	
30 -inch		LF	$ 279	$ -	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	4	EA	$ 5,721	$ 22,900	
18 -inch	8	EA	$ 6,866	$ 54,928	
20 -inch	6	EA	$ 7,896	$ 47,376	
24 -inch	3	EA	$ 10,871	$ 32,613	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	500	LF	$ 1,361	$ 680,500	Folsom Canal crossing 18" pipe
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	19	EA	$ 17,965	$ 341,335	
SUBTOTAL				$ 4,080,833	
Contingencies	1	LS	15%	$ 612,125	
Engineering	1	LS	8%	$ 375,437	
CMID	1	LS	10%	$ 469,296	
TOTAL				**$ 5,537,700**	

Sacramento County Water Agency P-4 NSA- Eagles Nest Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch				$ -	
18 -inch		LF	$ 153	$ -	
20 -inch	2,043	LF	$ 166	$ 339,200	
24 -inch		LF	$ 203	$ -	
30 -inch	5,196	LF	$ 279	$ 1,449,900	
36 -inch	1,807	LF	$ 342	$ 618,000	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	3	EA	$ 7,896	$ 23,688	
24 -inch	0	EA	$ 10,871	$ -	
30 -inch	6	EA	$ 20,711	$ 124,266	
36 -inch	2	EA	$ 25,061	$ 50,200	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	10	EA	$ 17,965	$ 179,650	
SUBTOTAL				$ 2,784,904	
Contingencies	1	LS	15%	$ 417,736	
Engineering	1	LS	8%	$ 256,211	
CMID	1	LS	10%	$ 320,264	
TOTAL				**$ 3,779,200**	

Sacramento County Water Agency P-5 NSA-Ranch Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines		2020			Assume not paved
16 -inch			$ 134	$ -	
18 -inch		LF	$ 153	$ -	
20 -inch		LF	$ 166	$ -	
24 -inch	7,000	LF	$ 203	$ 1,421,000	
30 -inch		LF	$ 279	$ -	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	7	EA	$ 10,871	$ 76,097	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	7	EA	$ 17,965	$ 125,755	
SUBTOTAL				$ 1,622,852	
Contingencies	1	LS	15%	$ 243,428	
Engineering	1	LS	8%	$ 149,302	
CMID	1	LS	10%	$ 186,628	
TOTAL				**$ 2,202,300**	

Sacramento County Water Agency P-6 NSA- Arboretum Pipe System

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch	3,167		$ 227	$ 719,000	
18 -inch		LF	$ 257	$ -	
20 -inch		LF	$ 264	$ -	
24 -inch		LF	$ 293	$ -	
30 -inch		LF	$ 370	$ -	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	
Butterfly Valves					
16 -inch	4	EA	$ 5,721	$ 22,900	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	0	EA	$ 10,871	$ -	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	4	EA	$ 17,965	$ 71,860	
SUBTOTAL				$ 813,760	
Contingencies	1	LS	15%	$ 122,064	
Engineering	1	LS	8%	$ 74,866	
CMID	1	LS	10%	$ 93,582	
TOTAL				**$ 1,104,300**	

Sacramento County Water Agency P-7 NSA- South Jaeger Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch	5,238		$ 134	$ 701,900	
18 -inch		LF	$ 153	$ -	
20 -inch		LF	$ 166	$ -	
24 -inch		LF	$ 203	$ -	
30 -inch		LF	$ 279	$ -	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	6	EA	$ 5,721	$ 34,400	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	0	EA	$ 10,871	$ -	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	6	EA	$ 17,965	$ 107,790	
SUBTOTAL				$ 844,090	
Contingencies	1	LS	15%	$ 126,614	
Engineering	1	LS	8%	$ 77,656	
CMID	1	LS	10%	$ 97,070	
TOTAL				**$ 1,145,500**	

Sacramento County Water Agency P-8 NSA- East NSA Pipe System

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch	27,571	LF	$ 134	$ 3,694,600	
18 -inch	3,489	LF	$ 153	$ 533,817	
20 -inch		LF	$ 166	$ -	
24 -inch	14,288	LF	$ 203	$ 2,900,464	
30 -inch	16,041	LF	$ 279	$ 4,475,500	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	28	EA	$ 5,721	$ 160,200	
18 -inch	4	EA	$ 6,866	$ 27,464	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	15	EA	$ 10,871	$ 163,065	
30 -inch	17	EA	$ 20,711	$ 352,087	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	62	EA	$ 17,965	$ 1,113,830	
SUBTOTAL				$13,421,027	
Contingencies	1	LS	15%	$ 2,013,154	
Engineering	1	LS	8%	$ 1,234,734	
CMID	1	LS	10%	$ 1,543,418	
TOTAL				**$18,212,400**	

Sacramento County Water Agency P-9 NSA- North Jaeger Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch				$ -	
18 -inch		LF	$ 153	$ -	
20 -inch		LF	$ 166	$ -	
24 -inch	6,365	LF	$ 203	$ 1,292,095	
30 -inch		LF	$ 279	$ -	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	7	EA	$ 10,871	$ 76,097	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	7	EA	$ 17,965	$ 125,755	
SUBTOTAL				$ 1,493,947	
Contingencies	1	LS	15%	$ 224,092	
Engineering	1	LS	8%	$ 137,443	
CMID	1	LS	10%	$ 171,804	
TOTAL				**$ 2,027,300**	

Sacramento County Water Agency P-11 CSA- Vineyard Road Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch	13,600	LF	$ 134	$ 1,822,400	
18 -inch		LF	$ 153	$ -	
20 -inch		LF	$ 166	$ -	
24 -inch		LF	$ 203	$ -	
30 -inch		LF	$ 279	$ -	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves				$ -	
16 -inch	14	EA	$ 5,721	$ 80,100	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	0	EA	$ 10,871	$ -	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	14	EA	$ 17,965	$ 251,510	
SUBTOTAL				$ 2,154,010	
Contingencies	1	LS	15%	$ 323,102	
Engineering	1	LS	8%	$ 198,169	
CMID	1	LS	10%	$ 247,711	
TOTAL				**$ 2,923,000**	

Sacramento County Water Agency P-12 CSA- Fruitridge Road Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch	7,982	LF	$ 227	$ 1,812,000	
18 -inch		LF	$ 257	$ -	
20 -inch		LF	$ 264	$ -	
24 -inch		LF	$ 293	$ -	
30 -inch		LF	$ 370	$ -	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	Installation in Major Arterials - Fruitridge Road
Butterfly Valves				$ -	
16 -inch	8	EA	$ 5,721	$ 45,800	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	0	EA	$ 10,871	$ -	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	8	EA	$ 17,965	$ 143,720	
SUBTOTAL				$ 2,001,520	
Contingencies	1	LS	15%	$ 300,228	
Engineering	1	LS	8%	$ 184,140	
CMID	1	LS	10%	$ 230,175	
TOTAL				**$ 2,716,100**	

Sacramento County Water Agency P-13 CSA- Elder Creek Road Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch	10,070	LF	$ 227	$ 2,285,900	
18 -inch		LF	$ 257	$ -	
20 -inch		LF	$ 264	$ -	
24 -inch	5,245	LF	$ 293	$ 1,536,785	
30 -inch	5,861	LF	$ 370	$ 2,168,600	
36 -inch	167	LF	$ 438	$ 73,200	
42 -inch		LF	$ 510	$ -	Installation in Major Arterials - Elder Creek Road
Butterfly Valves				$ -	
16 -inch	11	EA	$ 5,721	$ 63,000	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	6	EA	$ 10,871	$ 65,226	
30 -inch	6	EA	$ 20,711	$ 124,266	
36 -inch	1	EA	$ 25,061	$ 25,100	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	22	EA	$ 17,965	$ 395,230	
SUBTOTAL				$ 6,737,307	
Contingencies	1	LS	15%	$ 1,010,596	
Engineering	1	LS	8%	$ 619,832	
CMID	1	LS	10%	$ 774,790	
TOTAL				**$ 9,142,600**	

Sacramento County Water Agency P-14 CSA- Bradshaw Road Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch	5,267	LF	$ 227	$ 1,195,700	
18 -inch		LF	$ 257	$ -	
20 -inch		LF	$ 264	$ -	
24 -inch	5,332	LF	$ 293	$ 1,562,276	
30 -inch		LF	$ 370	$ -	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	Installation in Major Arterials - Bradshaw Blvd.
Butterfly Valves				$ -	
16 -inch	6	EA	$ 5,721	$ 34,400	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	6	EA	$ 10,871	$ 65,226	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	200	LF	$ 1,361	$ 272,200	16" crossing under creek
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	11	EA	$ 17,965	$ 197,615	
SUBTOTAL				$ 3,327,417	
Contingencies	1	LS	15%	$ 499,113	
Engineering	1	LS	8%	$ 306,122	
CMID	1	LS	10%	$ 382,653	
TOTAL				**$ 4,515,400**	

Zone 40 Water System Master Plan P-14A CSA- Bradshaw Road Pipeline

Sacramento County Water Agency

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch		LF	$ 227	$ -	
18 -inch		LF	$ 257	$ -	
20 -inch		LF	$ 264	$ -	
24 -inch	5,332	LF	$ 293	$ 1,562,276	
30 -inch		LF	$ 370	$ -	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	Installation in Major Arterials - Bradshaw Blvd.
Butterfly Valves				$ -	
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	6	EA	$ 10,871	$ 65,226	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	200	LF	$ 1,361	$ 272,200	16" crossing under creek
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	6	EA	$ 17,965	$ 107,790	
SUBTOTAL				$ 2,007,492	
Contingencies	1	LS	15%	$ 301,124	
Engineering	1	LS	8%	$ 184,689	
CMID	1	LS	10%	$ 230,862	
TOTAL				**$ 2,724,200**	

Sacramento County Water Agency P-15 CSA- North Vineyard Station (Florin to Gerber) Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch				$ -	
18 -inch		LF	$ 153	$ -	
20 -inch		LF	$ 166	$ -	
24 -inch	7,853	LF	$ 203	$ 1,594,159	
30 -inch	1,337	LF	$ 279	$ 373,100	
36 -inch	2,657	LF	$ 342	$ 908,700	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	8	EA	$ 10,871	$ 86,968	
30 -inch	2	EA	$ 20,711	$ 41,422	
36 -inch	3	EA	$ 25,061	$ 75,200	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	300	LF	$ 1,361	$ 408,300	24" pipe across RR
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	12	EA	$ 17,965	$ 215,580	
SUBTOTAL				$ 3,703,429	
Contingencies	1	LS	15%	$ 555,514	
Engineering	1	LS	8%	$ 340,715	
CMID	1	LS	10%	$ 425,894	
TOTAL				**$ 5,025,600**	

Sacramento County Water Agency P-16 CSA- South Watt Connector Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch				$ -	
18 -inch		LF	$ 257	$ -	
20 -inch		LF	$ 264	$ -	
24 -inch	2,693	LF	$ 293	$ 789,184	
30 -inch		LF	$ 370	$ -	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	Installation in Major Arterials - South Watt
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	3	EA	$ 10,871	$ 32,613	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	300	LF	$ 1,361	$ 408,300	24" pipe across RR
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	3	EA	$ 17,965	$ 53,895	
SUBTOTAL				$ 1,283,992	
Contingencies	1	LS	15%	$ 192,599	
Engineering	1	LS	8%	$ 118,127	
CMID	1	LS	10%	$ 147,659	
TOTAL				**$ 1,742,400**	

Sacramento County Water Agency P-17 CSA- CSA Backbone Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch				$ -	
18 -inch		LF	$ 257	$ -	
20 -inch		LF	$ 264	$ -	
24 -inch	4,525	LF	$ 293	$ 1,325,825	
30 -inch	5,423	LF	$ 370	$ 2,006,600	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	Installation in Major Arterials - Bradshaw
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	5	EA	$ 10,871	$ 54,355	
30 -inch	6	EA	$ 20,711	$ 124,266	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	10	EA	$ 17,965	$ 179,650	
SUBTOTAL				$ 3,690,696	
Contingencies	1	LS	15%	$ 553,604	
Engineering	1	LS	8%	$ 339,544	
CMID	1	LS	10%	$ 424,430	
TOTAL				**$ 5,008,300**	

Sacramento County Water Agency P-18 CSA- Elk Grove Connector Pipelines

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch	8,340	LF	$ 227	$ 1,893,180	Add 1,700 ft per Carlos' TM figure. Bob's map shows 12 in.
18 -inch		LF	$ 257	$ -	
20 -inch		LF	$ 264	$ -	
24 -inch	2,982	LF	$ 293	$ 873,726	
30 -inch		LF	$ 370	$ -	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	Installation in Major Arterials - Bradshaw and Grantline
Butterfly Valves					
16 -inch	9	EA	$ 5,721	$ 51,500	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	3	EA	$ 10,871	$ 32,613	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	300	LF	$ 1,361	$ 408,300	24" under railroad
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	12	EA	$ 17,965	$ 215,580	
SUBTOTAL				$ 3,474,899	
Contingencies	1	LS	15%	$ 521,235	
Engineering	1	LS	8%	$ 319,691	
CMID	1	LS	10%	$ 399,613	
TOTAL				**$ 4,715,500**	

Sacramento County Water Agency P-19 CSA- Power Inn Road Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch				$ -	
18 -inch		LF	$ 257	$ -	
20 -inch		LF	$ 264	$ -	
24 -inch	1,273	LF	$ 293	$ 372,905	
30 -inch		LF	$ 370	$ -	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	2	EA	$ 10,871	$ 21,742	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	2	EA	$ 17,965	$ 35,930	
SUBTOTAL				$ 430,577	
Contingencies	1	LS	15%	$ 64,587	
Engineering	1	LS	8%	$ 39,613	
CMID	1	LS	10%	$ 49,516	
TOTAL				**$ 584,300**	

Sacramento County Water Agency P-20 SSA- Big Horn / Kammerer Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch				$ -	
18 -inch		LF	$ 153	$ -	
20 -inch	7,832	LF	$ 166	$ 1,300,200	
24 -inch	1,347	LF	$ 203	$ 273,441	
30 -inch		LF	$ 279	$ -	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	8	EA	$ 7,896	$ 63,168	
24 -inch	2	EA	$ 10,871	$ 21,742	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	10	EA	$ 17,965	$ 179,650	
SUBTOTAL				$ 1,838,201	
Contingencies	1	LS	15%	$ 275,730	
Engineering	1	LS	8%	$ 169,114	
CMID	1	LS	10%	$ 211,393	
TOTAL				**$ 2,494,500**	

Sacramento County Water Agency P-21 SSA- Bruceville Road Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch				$ -	
18 -inch	1,267	LF	$ 257	$ 325,681	
20 -inch		LF	$ 264	$ -	
24 -inch		LF	$ 293	$ -	
30 -inch		LF	$ 370	$ -	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	Installation in Major Arterials - Bruceville Road
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	2	EA	$ 6,866	$ 13,732	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	0	EA	$ 10,871	$ -	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	2	EA	$ 17,965	$ 35,930	
SUBTOTAL				$ 375,343	
Contingencies	1	LS	15%	$ 56,301	
Engineering	1	LS	8%	$ 34,532	
CMID	1	LS	10%	$ 43,164	
TOTAL				**$ 509,400**	

Sacramento County Water Agency P-22 NSA- North Grant Line Road Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch				$ -	
18 -inch		LF	$ 153	$ -	
20 -inch	14,000	LF	$ 166	$ 2,324,000	
24 -inch	3,000	LF	$ 203	$ 609,000	
30 -inch		LF	$ 279	$ -	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	14	EA	$ 7,896	$ 110,544	
24 -inch	3	EA	$ 10,871	$ 32,613	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	17	EA	$ 17,965	$ 305,405	
SUBTOTAL				$ 3,381,562	
Contingencies	1	LS	15%	$ 507,234	
Engineering	1	LS	8%	$ 311,104	
CMID	1	LS	10%	$ 388,880	
TOTAL				**$ 4,588,800**	

Sacramento County Water Agency P-23 CSA- Florin-Watt Pipelines

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch				$ -	
18 -inch		LF	$ 257	$ -	
20 -inch	5,000	LF	$ 264	$ 1,320,000	
24 -inch	5,000	LF	$ 293	$ 1,465,000	
30 -inch		LF	$ 370	$ -	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	5	EA	$ 7,896	$ 39,480	
24 -inch	5	EA	$ 10,871	$ 54,355	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	10	EA	$ 17,965	$ 179,650	
SUBTOTAL				$ 3,058,485	
Contingencies	1	LS	15%	$ 458,773	
Engineering	1	LS	8%	$ 281,381	
CMID	1	LS	10%	$ 351,726	
TOTAL				**$ 4,150,400**	

Sacramento County Water Agency P-24 CSA- North Waterman Pipeline

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch	3,000	LF	$ 134	$ 402,000	
18 -inch		LF	$ 153	$ -	
20 -inch		LF	$ 166	$ -	
24 -inch		LF	$ 203	$ -	
30 -inch		LF	$ 279	$ -	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	3	EA	$ 5,721	$ 17,200	
18 -inch	0	EA	$ 6,866	$ -	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	0	EA	$ 10,871	$ -	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	0	EA	$ 17,965	$ -	
SUBTOTAL				$ 419,200	
Contingencies	1	LS	15%	$ 62,880	
Engineering	1	LS	8%	$ 38,566	
CMID	1	LS	10%	$ 48,208	
TOTAL				**$ 568,900**	

Sacramento County Water Agency P-25 CSA- Sheldon-Waterman Pipelines

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume paved
16 -inch				$ -	
18 -inch	11,000	LF	$ 257	$ 2,827,000	
20 -inch		LF	$ 264	$ -	
24 -inch	4,000	LF	$ 293	$ 1,172,000	
30 -inch		LF	$ 370	$ -	
36 -inch		LF	$ 438	$ -	
42 -inch		LF	$ 510	$ -	
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	11	EA	$ 6,866	$ 75,526	
20 -inch	0	EA	$ 7,896	$ -	
24 -inch	4	EA	$ 10,871	$ 43,484	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	4	EA	$ 17,965	$ 71,860	
SUBTOTAL				$ 4,189,870	
Contingencies	1	LS	15%	$ 628,481	
Engineering	1	LS	8%	$ 385,468	
CMID	1	LS	10%	$ 481,835	
TOTAL				**$ 5,685,700**	

Sacramento County Water Agency P-26 SSA- South East Policy Area Pipelines

Project Element	Quantity	Unit	Unit Cost	Total	Remarks
Pipelines					Assume not paved
16 -inch				$ -	
18 -inch	3,000	LF	$ 153	$ 459,000	
20 -inch	14,000	LF	$ 166	$ 2,324,000	
24 -inch	5,000	LF	$ 203	$ 1,015,000	
30 -inch		LF	$ 279	$ -	
36 -inch		LF	$ 342	$ -	
42 -inch		LF	$ 406	$ -	
Butterfly Valves					
16 -inch	0	EA	$ 5,721	$ -	
18 -inch	3	EA	$ 6,866	$ 20,598	
20 -inch	14	EA	$ 7,896	$ 110,544	
24 -inch	5	EA	$ 10,871	$ 54,355	
30 -inch	0	EA	$ 20,711	$ -	
36 -inch	0	EA	$ 25,061	$ -	
42 -inch	0	EA	$ 34,444	$ -	
Horizontal Drilling					
30 -inch Casing	0	LF	$ 1,361	$ -	
36 -inch Casing	0	LF	$ 1,361	$ -	
42 -inch Casing	0	LF	$ 1,902	$ -	
Blow-Off Assembly	19	EA	$ 17,965	$ 341,335	
SUBTOTAL				$ 4,324,832	
Contingencies	1	LS	15%	$ 648,725	
Engineering	1	LS	8%	$ 397,885	
CMID	1	LS	10%	$ 497,356	
TOTAL				**$ 5,868,800**	

Sacramento County Water Agency GWTP-2 West Jackson GWTP

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 1,270,000
Site Grading, Paving, and Landscaping	1	LS	$ 300,000	$ 300,000
Well Drilling and Casing	5	EA	$ 550,000	$ 2,750,000
Well Pumping Equipment	5	EA	$ 100,000	$ 500,000
Well Piping and Valving	5	EA	$ 150,000	$ 750,000
Well Electrical and Instrumentation	5	EA	$ 200,000	$ 1,000,000
Groundwater Treatment Plant, FE&Mn Pressure Filters	18	MGD	$ 150,000	$ 2,700,000
Backwash Tank	1	EA	$ 300,000	$ 300,000
Backwash Pump	1	EA	$ 75,000	$ 75,000
Chemical Feed Equipment and Enclosure	1	LS	$ 50,000	$ 50,000
Standby Generator	1	EA	$ 400,000	$ 400,000
Water Storage Tank	4	MG	$ 700,000	$ 2,800,000
Pump Station Building	1	LS	$ 300,000	$ 300,000
Pumps and Motors	21.6	MGD	$ 150,000	$ 3,240,000
Pump Station Electrical and Instrumentation	1	LS	$ 400,000	$ 400,000
Yard Piping	1	LS	$ 300,000	$ 300,000
Connection to (E) System	1	EA	$ 10,000	$ 10,000
Property Acquisition	0	ACRE		$ -
SUBTOTAL				$ 17,145,000
Contingencies	1	LS	25%	$ 4,286,250
Engineering, Admin, and Legal	1	LS	25%	$ 5,357,813
Environmental & Permitting	1	LS	10%	$ 2,143,125
TOTAL				**$ 28,932,200**

Sacramento County Water Agency GWTP-3 Bond GWTP

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 646,400
Site Grading, Paving, and Landscaping	1	LS	$ 300,000	$ 300,000
Well Drilling and Casing	3	EA	$ 550,000	$ 1,650,000
Well Pumping Equipment	3	EA	$ 100,000	$ 300,000
Well Piping and Valving	3	EA	$ 150,000	$ 450,000
Well Electrical and Instrumentation	3	EA	$ 200,000	$ 600,000
Groundwater Treatment Plant, FE&Mn Pressure Filters	6.5	MGD	$ 150,000	$ 975,000
Backwash Tank	1	EA	$ 300,000	$ 300,000
Backwash Pump	1	EA	$ 75,000	$ 75,000
Chemical Feed Equipment and Enclosure	1	LS	$ 50,000	$ 50,000
Standby Generator	1	EA	$ 400,000	$ 400,000
Water Storage Tank	0.5	MG	$ 700,000	$ 350,000
Pump Station Building	1	LS	$ 300,000	$ 300,000
Pumps and Motors	10.8	MGD	$ 150,000	$ 1,620,000
Pump Station Electrical and Instrumentation	1	LS	$ 400,000	$ 400,000
Yard Piping	1	LS	$ 300,000	$ 300,000
Connection to (E) System	1	EA	$ 10,000	$ 10,000
Property Acquisition	0	ACRE		$ -
SUBTOTAL				$ 8,726,400
Contingencies	1	LS	25%	$ 2,181,600
Engineering, Admin, and Legal	1	LS	25%	$ 2,727,000
Environmental & Permitting	1	LS	10%	$ 1,090,800
TOTAL				**$ 14,725,800**

Sacramento County Water Agency GWTP-4 East Elk Grove GWTP Expansion

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 600,800
Site Grading, Paving, and Landscaping	1	LS	$ 300,000	$ 300,000
Well Drilling and Casing	2	EA	$ 550,000	$ 1,100,000
Well Pumping Equipment	3	EA	$ 100,000	$ 300,000
Well Piping and Valving	3	EA	$ 150,000	$ 450,000
Well Electrical and Instrumentation	3	EA	$ 200,000	$ 600,000
Groundwater Treatment Plant, FE&Mn Pressure Filters	6.5	MGD	$ 150,000	$ 975,000
Backwash Tank	1	EA	$ 300,000	$ 300,000
Backwash Pump	1	EA	$ 75,000	$ 75,000
Chemical Feed Equipment and Enclosure	1	LS	$ 50,000	$ 50,000
Standby Generator	1	EA	$ 400,000	$ 400,000
Water Storage Tank	0	MG	$ 700,000	$ -
Pump Station Building	1	LS	$ 300,000	$ 300,000
Pumps and Motors	13	MGD	$ 150,000	$ 1,950,000
Pump Station Electrical and Instrumentation	1	LS	$ 400,000	$ 400,000
Yard Piping	1	LS	$ 300,000	$ 300,000
Connection to (E) System	1	EA	$ 10,000	$ 10,000
Property Acquisition	0	ACRE		$ -
SUBTOTAL				$ 8,110,800
Contingencies	1	LS	25%	$ 2,027,700
Engineering, Admin, and Legal	1	LS	25%	$ 2,534,625
Environmental & Permitting	1	LS	10%	$ 1,013,850
TOTAL				**$ 13,687,000**

Sacramento County Water Agency | GWTP-5 | Franklin GWTP Expansion

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 814,000
Site Grading, Paving, and Landscaping	1	LS	$ 300,000	$ 300,000
Well Drilling and Casing	1	EA	$ 550,000	$ 550,000
Well Pumping Equipment	4	EA	$ 100,000	$ 400,000
Well Piping and Valving	4	EA	$ 150,000	$ 600,000
Well Electrical and Instrumentation	4	EA	$ 200,000	$ 800,000
Groundwater Treatment Plant, FE&Mn Pressure Filters	7	MGD	$ 150,000	$ 1,050,000
Backwash Tank	1	EA	$ 300,000	$ 300,000
Backwash Pump	1	EA	$ 75,000	$ 75,000
Chemical Feed Equipment and Enclosure	1	LS	$ 50,000	$ 50,000
Standby Generator	1	EA	$ 400,000	$ 400,000
Water Storage Tank	2.0	MG	$ 700,000	$ 1,400,000
Pump Station Building	1	LS	$ 300,000	$ 300,000
Pumps and Motors	21.6	MGD	$ 150,000	$ 3,240,000
Pump Station Electrical and Instrumentation	1	LS	$ 400,000	$ 400,000
Yard Piping	1	LS	$ 300,000	$ 300,000
Connection to (E) System	1	EA	$ 10,000	$ 10,000
Property Acquisition	0	ACRE		$ -
SUBTOTAL				$ 10,989,000
Contingencies	1	LS	25%	$ 2,747,250
Engineering, Admin, and Legal	1	LS	25%	$ 3,434,063
Environmental & Permitting	1	LS	10%	$ 1,373,625
TOTAL				**$ 18,544,000**

Sacramento County Water Agency GWTP-6 Whitelock GWTP

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 1,147,600
Site Grading, Paving, and Landscaping	1	LS	$ 300,000	$ 300,000
Well Drilling and Casing	6	EA	$ 550,000	$ 3,300,000
Well Pumping Equipment	6	EA	$ 100,000	$ 600,000
Well Piping and Valving	6	EA	$ 150,000	$ 900,000
Well Electrical and Instrumentation	6	EA	$ 200,000	$ 1,200,000
Groundwater Treatment Plant, FE&Mn Pressure Filters	13.0	MGD	$ 150,000	$ 1,950,000
Backwash Tank	1	EA	$ 300,000	$ 300,000
Backwash Pump	1	EA	$ 75,000	$ 75,000
Chemical Feed Equipment and Enclosure	1	LS	$ 50,000	$ 50,000
Standby Generator	1	EA	$ 400,000	$ 400,000
Water Storage Tank	3.0	MG	$ 700,000	$ 2,100,000
Pump Station Building	1	LS	$ 300,000	$ 300,000
Pumps and Motors	14.4	MGD	$ 150,000	$ 2,160,000
Pump Station Electrical and Instrumentation	1	LS	$ 400,000	$ 400,000
Yard Piping	1	LS	$ 300,000	$ 300,000
Connection to (E) System	1	EA	$ 10,000	$ 10,000
Property Acquisition	0	ACRE		$ -
SUBTOTAL				$ 15,492,600
Contingencies	1	LS	25%	$ 3,873,150
Engineering, Admin, and Legal	1	LS	25%	$ 4,841,438
Environmental & Permitting	1	LS	10%	$ 1,936,575
TOTAL				**$ 26,143,800**

Sacramento County Water Agency GWTP-7 Big Horn GWTP Expansion

Project Element		Quantity	Unit	Unit Cost	Total
Mobilization		$ 1	LS	8.00%	$ 647,200
Site Grading, Paving, and Landscaping		1	LS	$ 300,000	$ 300,000
Well Drilling and Casing		4	EA	$ 550,000	$ 2,200,000
Well Pumping Equipment		4	EA	$ 100,000	$ 400,000
Well Piping and Valving		4	EA	$ 150,000	$ 600,000
Well Electrical and Instrumentation		4	EA	$ 200,000	$ 800,000
Groundwater Treatment Plant, FE&Mn Pressure Filters		8.5	MGD	$ 150,000	$ 1,275,000
Backwash Tank		1	EA	$ 300,000	$ 300,000
Backwash Pump		1	EA	$ 75,000	$ 75,000
Chemical Feed Equipment and Enclosure		1	LS	$ 50,000	$ 50,000
Standby Generator		1	EA	$ 400,000	$ 400,000
Water Storage Tank			MG	$ 700,000	$ -
Pump Station Building		1	LS	$ 300,000	$ 300,000
Pumps and Motors		17.0	MGD	$ 40,000	$ 680,000
Pump Station Electrical and Instrumentation		1	LS	$ 400,000	$ 400,000
Yard Piping		1	LS	$ 300,000	$ 300,000
Connection to (E) System		1	EA	$ 10,000	$ 10,000
Property Acquisition		0	ACRE		$ -
SUBTOTAL					$ 8,737,200
Contingencies		1	LS	25%	$ 2,184,300
Engineering, Admin, and Legal		1	LS	25%	$ 2,730,375
Environmental & Permitting		1	LS	10%	$ 1,092,150
TOTAL					**$ 14,744,100**

Sacramento County Water Agency SW-2 City POU Water Supply Connection

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 85,072
Pipelines				
16 -inch		LF		$ -
18 -inch		LF		$ -
20 -inch		LF		$ -
24 -inch		LF		$ -
30 -inch		LF		$ -
36 -inch	13,000	LF		$ -
42 -inch		LF	$ 438	$ -
Installation in Major Arterials	1	EA	10.00%	$ -
Butterfly Valves				
16 -inch	0	EA		$ -
18 -inch	0	EA		$ -
20 -inch	0	EA		$ -
24 -inch	13	EA	$ 25,061	$ 325,793
30 -inch	0	EA		$ -
36 -inch	13	EA		$ -
42 -inch	0	EA		$ -
Horizontal Drilling				
30 -inch Casing	0	LF	$ -	$ -
36 -inch Casing	0	LF	$ -	$ -
42 -inch Casing	300	LF	$ 1,902	$ 570,600
Trench Restoration				
Paved	58,500	SF	$ 2	$ 117,000
Blow-Off Assembly	0	EA		$ -
Fire Hydrants	0	EA		$ -
Connection to (E) System	1	EA	$ 50,000	$ 50,000
Abandonment Exist Pipe	0	EA		$ -
Property Acquisition	0	ACRE		$ -
Railroad Crossing Permitting	1	EA	10%	$ 57,060
Canal Crossing Permitting	0	EA	10%	$ -
Highway Crossing Permitting	0	EA	10%	$ -
SUBTOTAL				$1,205,525
Contingencies	1	LS	25%	$ 301,381
Engineering, Admin, and Legal	1	LS	25%	$ 376,727
Environmental & Permitting	1	LS	10%	$ 150,691
TOTAL				**$2,034,400**

Sacramento County Water Agency S-2 Suncreek Storage Tank

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 520,800
Site Grading, Paving, and Landscaping	1	LS	$ 300,000	$ 300,000
Water Storage Tank	3	MG	$ 700,000	$ 2,100,000
Pump Station Building	1	LS	$ 300,000	$ 300,000
Pumps and Motors	18.0	MGD	$ 150,000	$ 2,700,000
Standby Generator	1	EA	$ 400,000	$ 400,000
Pump Station Electrical and Instrumentation	1	LS	$ 400,000	$ 400,000
Yard Piping	1	LS	$ 300,000	$ 300,000
Connection to (E) System	1	EA	$ 10,000	$ 10,000
Property Acquisition	0	ACRE		$ -
SUBTOTAL				$ 7,030,800
Contingencies	1	LS	25%	$ 1,757,700
Engineering, Admin, and Legal	1	LS	25%	$ 2,197,125
Environmental & Permitting	1	LS	10%	$ 878,850
TOTAL				**$ 11,864,500**

Sacramento County Water Agency S-3 Cordova Hills Storage Tank

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 564,000
Site Grading, Paving, and Landscaping	1	LS	$ 300,000	$ 300,000
Water Storage Tank	3	MG	$ 700,000	$ 2,100,000
Pump Station Building	1	LS	$ 300,000	$ 300,000
Pumps and Motors	21.6	MGD	$ 150,000	$ 3,240,000
Standby Generator	1	EA	$ 400,000	$ 400,000
Pump Station Electrical and Instrumentation	1	LS	$ 400,000	$ 400,000
Yard Piping	1	LS	$ 300,000	$ 300,000
Connection to (E) System	1	EA	$ 10,000	$ 10,000
Property Acquisition	0	ACRE		$ -
SUBTOTAL				$ 7,614,000
Contingencies	1	LS	25%	$ 1,903,500
Engineering, Admin, and Legal	1	LS	25%	$ 2,379,375
Environmental & Permitting	1	LS	10%	$ 951,750
TOTAL				**$12,848,700**

Sacramento County Water Agency S-4 White Rock Road Storage Tank

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 477,600
Site Grading, Paving, and Landscaping	1	LS	$ 300,000	$ 300,000
Water Storage Tank	3.0	MG	$ 700,000	$ 2,100,000
Pump Station Building	1	LS	$ 300,000	$ 300,000
Pumps and Motors	14.4	MGD	$ 150,000	$ 2,160,000
Standby Generator	1	EA	$ 400,000	$ 400,000
Pump Station Electrical and Instrumentation	1	LS	$ 400,000	$ 400,000
Yard Piping	1	LS	$ 300,000	$ 300,000
Connection to (E) System	1	EA	$ 10,000	$ 10,000
Property Acquisition	0	ACRE		$ -
SUBTOTAL				$ 6,447,600
Contingencies	1	LS	25%	$ 1,611,900
Engineering, Admin, and Legal	1	LS	25%	$ 2,014,875
Environmental & Permitting	1	LS	10%	$ 805,950
TOTAL				**$ 10,880,400**

Sacramento County Water Agency S-5 North Vineyard Station Storage Tank

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 240,000
Site Grading, Paving, and Landscaping	1	LS	$ 300,000	$ 300,000
Water Storage Tank	0	MG	$ 700,000	$ -
Pump Station Building	1	LS	$ 300,000	$ 300,000
Pumps and Motors	8.6	MGD	$ 150,000	$ 1,290,000
Standby Generator	1	EA	$ 400,000	$ 400,000
Pump Station Electrical and Instrumentation	1	LS	$ 400,000	$ 400,000
Yard Piping	1	LS	$ 300,000	$ 300,000
Connection to (E) System	1	EA	$ 10,000	$ 10,000
Property Acquisition	0	ACRE		$ -
SUBTOTAL				$ 3,240,000
Contingencies	1	LS	25%	$ 810,000
Engineering, Admin, and Legal	1	LS	25%	$ 1,012,500
Environmental & Permitting	1	LS	10%	$ 405,000
TOTAL				**$ 5,467,500**

Sacramento County Water Agency S-6 Calvine Meadows Pump Station Expansion

Project Element	Quantity	Unit	Unit Cost	Total
Mobilization	1	LS	8.00%	$ 223,200
Site Grading, Paving, and Landscaping	1	LS	$ 300,000	$ 300,000
Water Storage Tank	0	MG	$ 700,000	$ -
Pump Station Building	1	LS	$ 300,000	$ 300,000
Pumps and Motors	7.2	MGD	$ 150,000	$ 1,080,000
Standby Generator	1	EA	$ 400,000	$ 400,000
Pump Station Electrical and Instrumentation	1	LS	$ 400,000	$ 400,000
Yard Piping	1	LS	$ 300,000	$ 300,000
Connection to (E) System	1	EA	$ 10,000	$ 10,000
Property Acquisition	0	ACRE		$ -
SUBTOTAL				$ 3,013,200
Contingencies	1	LS	25%	$ 753,300
Engineering, Admin, and Legal	1	LS	25%	$ 941,625
Environmental & Permitting	1	LS	10%	$ 376,650
TOTAL				**$ 5,084,800**

Zone 40 Water System Infrastructure Plan
Sacramento County Water Agency

Phases 2 and 3 Pipelines, Baseline

Project Element	Quantity	Unit	Unit Cost	Total
Pipelines				
16 -inch	82,803	LF	$ 227	$ 18,796,400
18 -inch	4,740	LF	$ 257	$ 1,218,101
20 -inch	-	LF	$ 264	$ -
24 -inch	64,864	LF	$ 293	$ 19,005,091
30 -inch	4,681	LF	$ 370	$ 1,731,900
36 -inch	29,502	LF	$ 438	$ 12,921,900
42 -inch	3,371	LF	$ 510	$ 1,719,300
54 -inch	40,704	LF	$ 767	$ 31,220,000
Installation in Major Arterials		EA	10.00%	$ -
Butterfly Valves				
16 -inch	83	EA	$ 6,866	$ 569,900
18 -inch	5	EA	$ 7,896	$ 39,480
20 -inch	0	EA	$ 10,871	$ -
24 -inch	65	EA	$ 20,711	$ 1,346,215
30 -inch	5	EA	$ 25,061	$ 125,305
36 -inch	30	EA	$ 34,444	$ 1,033,400
42 -inch	4	EA	$ 52,409	$ 209,700
54 -inch	41	LF	$ 81,362	$ 3,335,900
Horizontal Drilling				
30 -inch Casing	0	LF	$ 1,361	$ -
36 -inch Casing	0	LF	$ 1,361	$ -
42 -inch Casing	0	LF	$ 1,902	$ -
Trench Restoration				
Paved	644,189	SF	$ 2	$ 1,288,379
Blow-Off Assembly	0	EA		$ -
Fire Hydrants	0	EA		$ -
Connection to (E) System	0	EA	$ 10,000	$ -
Abandonment Exist Pipe	0	EA		$ -
Property Acquisition	0	ACRE		$ -
Railroad Crossing Permitting	0	EA	10%	$ -
Highway Crossing Permitting	0	EA	10%	$ -
HighwayCrossing Permitting	0	EA	10%	$ -
SUBTOTAL				$ 94,560,971
Contingencies	1	LS	25%	$ 23,640,243
Engineering, Admin, and Legal	1	LS	25%	$ 29,550,303
Environmental & Permitting	1	LS	10%	$ 11,820,121
TOTAL				**$ 159,571,700**

Zone 40 Water System Infrastructure Plan
Sacramento County Water Agency

Phases 2 and 3 Pipelines,
Jackson Township

Project Element		Quantity	Unit	Unit Cost	Total
Pipelines					
16 -inch		114,351	LF	$ 227	$ 25,957,800
18 -inch		1,739	LF	$ 257	$ 447,042
20 -inch		5,689	LF	$ 264	$ 1,501,900
24 -inch		64,864	LF	$ 293	$ 19,005,091
30 -inch		4,681	LF	$ 370	$ 1,731,900
36 -inch		29,502	LF	$ 438	$ 12,921,900
42 -inch		3,371	LF	$ 510	$ 1,719,300
54 -inch		40,704	LF	$ 767	$ 31,220,000
Installation in Major Arterials			EA	10.00%	$ -
Butterfly Valves					
16 -inch		115	EA	$ 6,866	$ 789,600
18 -inch		2	EA	$ 7,896	$ 15,792
20 -inch		6	EA	$ 10,871	$ 65,226
24 -inch		65	EA	$ 20,711	$ 1,346,215
30 -inch		5	EA	$ 25,061	$ 125,305
36 -inch		30	EA	$ 34,444	$ 1,033,400
42 -inch		4	EA	$ 52,409	$ 209,700
54 -inch		41	LF	$ 81,362	$ 3,335,900
Horizontal Drilling					
30 -inch Casing		0	LF	$ 1,361	$ -
36 -inch Casing		0	LF	$ 1,361	$ -
42 -inch Casing		0	LF	$ 1,902	$ -
Trench Restoration					
Paved		742,590	SF	$ 2	$ 1,485,180
Blow-Off Assembly		0	EA		$ -
Fire Hydrants		0	EA		$ -
Connection to (E) System		0	EA	$ 10,000	$ -
Abandonment Exist Pipe		0	EA		$ -
Property Acquisition		0	ACRE		$ -
Railroad Crossing Permitting		0	EA	10%	$ -
Highway Crossing Permitting		0	EA	10%	$ -
HighwayCrossing Permitting		0	EA	10%	$ -
SUBTOTAL					$ 102,911,251
Contingencies		1	LS	25%	$ 25,727,813
Engineering, Admin, and Legal		1	LS	25%	$ 32,159,766
Environmental & Permitting		1	LS	10%	$ 12,863,906
TOTAL					**$ 173,662,800**

Zone 40 Water System Infrastructure Plan

Phases 2 and 3 Pipelines, NewBridge

Sacramento County Water Agency

Project Element	Quantity	Unit	Unit Cost	Total
Pipelines				
16 -inch	105,319	LF	$ 227	$ 23,907,600
18 -inch	7,863	LF	$ 257	$ 2,020,910
20 -inch	-	LF	$ 264	$ -
24 -inch	64,864	LF	$ 293	$ 19,005,091
30 -inch	4,681	LF	$ 370	$ 1,731,900
36 -inch	29,502	LF	$ 438	$ 12,921,900
42 -inch	3,371	LF	$ 510	$ 1,719,300
54 -inch	40,704	LF	$ 767	$ 31,220,000
Installation in Major Arterials		EA	10.00%	$ -
Butterfly Valves				
16 -inch	106	EA	$ 6,866	$ 727,800
18 -inch	8	EA	$ 7,896	$ 63,168
20 -inch	0	EA	$ 10,871	$ -
24 -inch	65	EA	$ 20,711	$ 1,346,215
30 -inch	5	EA	$ 25,061	$ 125,305
36 -inch	30	EA	$ 34,444	$ 1,033,400
42 -inch	4	EA	$ 52,409	$ 209,700
54 -inch	41	LF	$ 81,362	$ 3,335,900
Horizontal Drilling				
30 -inch Casing	0	LF	$ 1,361	$ -
36 -inch Casing	0	LF	$ 1,361	$ -
42 -inch Casing	0	LF	$ 1,902	$ -
Trench Restoration				
Paved	717,356	SF	$ 2	$ 1,434,712
Blow-Off Assembly	0	EA		$ -
Fire Hydrants	0	EA		$ -
Connection to (E) System	0	EA	$ 10,000	$ -
Abandonment Exist Pipe	0	EA		$ -
Property Acquisition	0	ACRE		$ -
Railroad Crossing Permitting	0	EA	10%	$ -
Highway Crossing Permitting	0	EA	10%	$ -
HighwayCrossing Permitting	0	EA	10%	$ -
SUBTOTAL				$ 100,802,901
Contingencies	1	LS	25%	$ 25,200,725
Engineering, Admin, and Legal	1	LS	25%	$ 31,500,907
Environmental & Permitting	1	LS	10%	$ 12,600,363
TOTAL				**$ 170,104,900**

Zone 40 Water System Infrastructure Plan

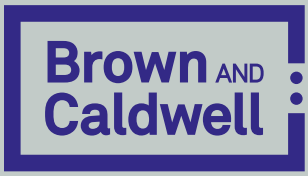
Phases 2 and 3 Pipelines, West Jackson

Sacramento County Water Agency

Project Element		Quantity	Unit	Unit Cost	Total
Pipelines					
16 -inch		148,644	LF	$ 227	$ 33,742,300
18 -inch		8,227	LF	$ 257	$ 2,114,458
20 -inch		1,664	LF	$ 264	$ 439,300
24 -inch		67,876	LF	$ 293	$ 19,887,607
30 -inch		5,305	LF	$ 370	$ 1,962,800
36 -inch		29,502	LF	$ 438	$ 12,921,900
42 -inch		3,371	LF	$ 510	$ 1,719,300
54 -inch		40,704	LF	$ 767	$ 31,220,000
Installation in Major Arterials			EA	10.00%	$ -
Butterfly Valves					
16 -inch		149	EA	$ 6,866	$ 1,023,100
18 -inch		9	EA	$ 7,896	$ 71,064
20 -inch		2	EA	$ 10,871	$ 21,742
24 -inch		68	EA	$ 20,711	$ 1,408,348
30 -inch		6	EA	$ 25,061	$ 150,366
36 -inch		30	EA	$ 34,444	$ 1,033,400
42 -inch		4	EA	$ 52,409	$ 209,700
54 -inch		41	LF	$ 81,362	$ 3,335,900
Horizontal Drilling					
30 -inch Casing		0	LF	$ 1,361	$ -
36 -inch Casing		0	LF	$ 1,361	$ -
42 -inch Casing		0	LF	$ 1,902	$ -
Trench Restoration					
Paved		859,509	SF	$ 2	$ 1,719,019
Blow-Off Assembly		0	EA		$ -
Fire Hydrants		0	EA		$ -
Connection to (E) System		0	EA	$ 10,000	$ -
Abandonment Exist Pipe		0	EA		$ -
Property Acquisition		0	ACRE		$ -
Railroad Crossing Permitting		0	EA	10%	$ -
Highway Crossing Permitting		0	EA	10%	$ -
HighwayCrossing Permitting		0	EA	10%	$ -
SUBTOTAL					$ 112,980,304
Contingencies		1	LS	25%	$ 28,245,076
Engineering, Admin, and Legal		1	LS	25%	$ 35,306,345
Environmental & Permitting		1	LS	10%	$ 14,122,538
TOTAL					**$ 190,654,300**

Sacramento County Water Agency — Phases 2 and 3 Pipelines, Cumulative

Project Element	Quantity	Unit	Unit Cost	Total
Pipelines				
16 -inch	165,716	LF	$ 227	$ 37,617,700
18 -inch	14,351	LF	$ 257	$ 3,688,326
20 -inch	-	LF	$ 264	$ -
24 -inch	67,876	LF	$ 293	$ 19,887,607
30 -inch	5,305	LF	$ 370	$ 1,962,800
36 -inch	29,502	LF	$ 438	$ 12,921,900
42 -inch	3,371	LF	$ 510	$ 1,719,300
54 -inch	40,704	LF	$ 767	$ 31,220,000
Installation in Major Arterials		EA	10.00%	$ -
Butterfly Valves				
16 -inch	166	EA	$ 6,866	$ 1,139,800
18 -inch	15	EA	$ 7,896	$ 118,440
20 -inch	0	EA	$ 10,871	$ -
24 -inch	68	EA	$ 20,711	$ 1,408,348
30 -inch	6	EA	$ 25,061	$ 150,366
36 -inch	30	EA	$ 34,444	$ 1,033,400
42 -inch	4	EA	$ 52,409	$ 209,700
54 -inch	41	LF	$ 81,362	$ 3,335,900
Horizontal Drilling				
30 -inch Casing	0	LF	$ 1,361	$ -
36 -inch Casing	0	LF	$ 1,361	$ -
42 -inch Casing	0	LF	$ 1,902	$ -
Trench Restoration				
Paved	920,983	SF	$ 2	$ 1,841,966
Blow-Off Assembly	0	EA		$ -
Fire Hydrants	0	EA		$ -
Connection to (E) System	0	EA	$ 10,000	$ -
Abandonment Exist Pipe	0	EA		$ -
Property Acquisition	0	ACRE		$ -
Railroad Crossing Permitting	0	EA	10%	$ -
Highway Crossing Permitting	0	EA	10%	$ -
Highway Crossing Permitting	0	EA	10%	$ -
SUBTOTAL				$ 118,255,553
Contingencies	1	LS	25%	$ 29,563,888
Engineering, Admin, and Legal	1	LS	25%	$ 36,954,860
Environmental & Permitting	1	LS	10%	$ 14,781,944
TOTAL				**$ 199,556,300**



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